



INNOVEX
LOGAN FISHING TOOLS

U.S. PRICE BOOK

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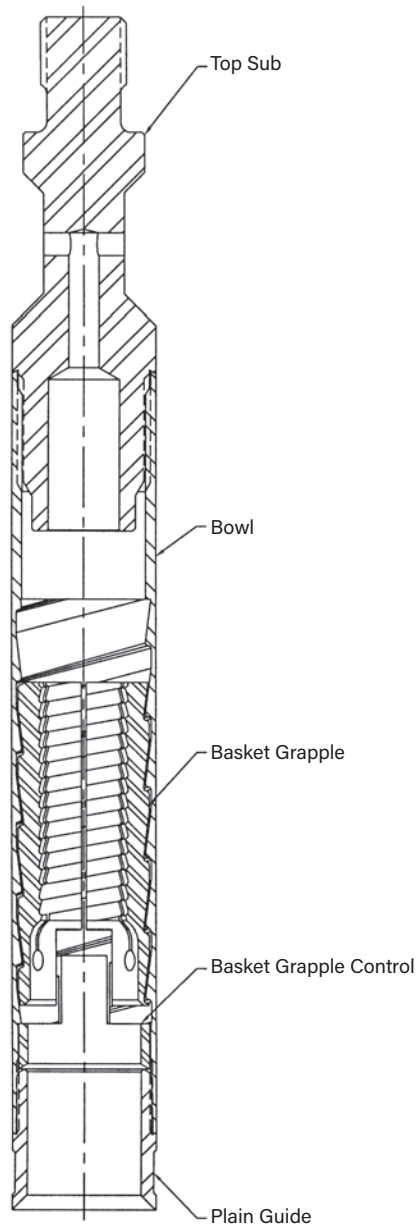
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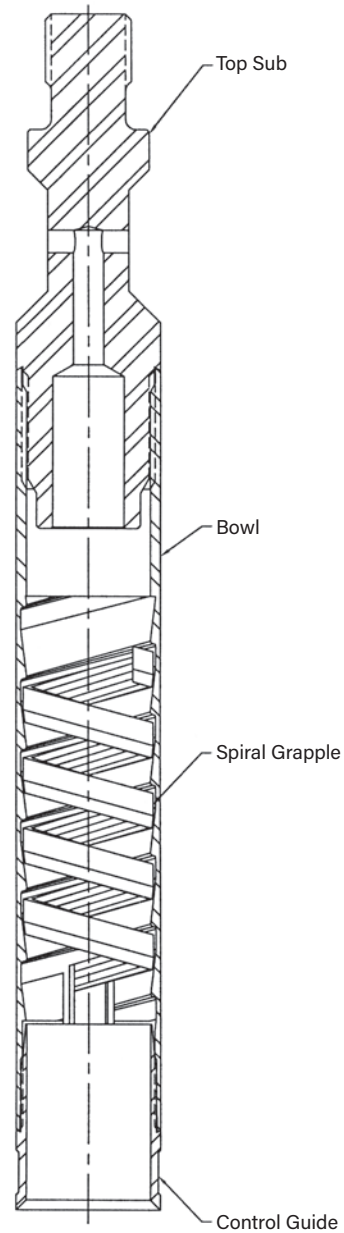
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Innovex reserves the right to change or discontinue designs and/or prices without notice.

LOGAN SERIES 10 SUCKER ROD OVERSHOTS



Basket Grapple Assembly



Spiral Grapple Assembly

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Logan Series 10 Sucker Rod Overshots

MAXIMUM CATCH SIZE (Spiral)		1-1/16	1-1/4	1-3/8	1-1/2	1-1/2	1-5/8	1-5/8
MAXIMUM CATCH SIZE (Basket)		7/8	1-1/16	1-3/16	1-5/16	1-5/16	1-7/16	1-7/16
OVERSHOT O.D.		1-9/16	1.43	1-21/32	1-25/32	1-29/32	1-29/32	2-5/16
TYPE		FS	SH	SH	SH	SH	SH	FS
STANDARD TOP CONNECTION		3/4 Rod	3/4 Rod	3/4 Rod	3/4 Rod	3/4 Rod	3/4 Rod	7/8 Rod
COMPLETE ASSEMBLY	Logan Part No.	110-156-A	110-143-D	110-166-D	110-178-D	110-190-D	110-191-D	110-231-A
	Bowen No.	9790	17985	16490	13940	9990	9340	9880
	Price	...	...	...	...	...	...	...

SPIRAL COMPONENT PARTS

TOP SUB	Logan Part No.	B1000	B1001	B10015	B1002	B1004	B1004	B1004
	Bowen No.	9791	17986	16491	13941	9341	9341	9341
	Price	\$450	\$450	\$450	\$414	\$502	\$502	\$502
BOWL	Logan Part No.	B2000	B2001	B20015	B2002	B2003	B2004	B2005
	Bowen No.	9792	17987	16492	13942	9991	9342	9881
	Price	*	*	\$930	\$857	*	\$1,040	\$1,100
SPIRAL GRAPPLE	Logan Part No.	B3000	B3001	B30015	B3002	B3003	B3004	B3004
	Bowen No.	9793	17988	16493	13943	9992	9343	9343
	Standard Price	\$398	\$398	\$398	\$366	\$398	\$444	\$444
	Nitralloy Price	*	*	\$666	\$656	*	\$797	\$797
CONTROL GUIDE	Logan Part No.	B4000	B4001	B40015	B4002	B4003	B4004	B4005
	Bowen No.	9796	17989	16496	13945	9993	9349	9883
	Price	*	*	\$267	\$244	*	\$298	\$337
SPIRAL GRAPPLE CONTROL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
GUIDE (CUTLIPPED)	Logan Part No.	...	...	B80015	...	B4003	...	...
	Bowen No. ...	...	16496	...	9993	...	...	...
	Price	...	...	\$267	...	*	...	...

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	B5000	B5001	B50015	B5002	B5003	B5004	B5004
	Bowen No.	9793	17988	16493	13943	9992	9343	9343
	Standard Price	\$578	\$578	\$580	\$532	\$578	\$646	\$646
	Nitralloy Price	*	*	\$1,034	\$952	*	\$1,152	\$1,152
BASKET GRAPPLE CONTROL	Logan Part No.	B6000	B6001	B60015	B6002	B6003	B6004	B6005
	Bowen No.	9794	18003	16494	13947	9993	9344	153338
	Price	*	*	\$153	\$141	*	\$171	\$153
PLAIN GUIDE	Logan Part No.	B7000	B7001	B70015	B7002	B7003	B7004	B7005
	Bowen No.	9795	18004	16498	13944	9994	9345	9882
	Price	*	*	\$200	\$186	*	\$230	\$230

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

- A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

Logan Series 10 Sucker Rod Overshots

MAXIMUM CATCH SIZE (Spiral)		1-9/16	1-3/4	1-3/4	1-13/16	1-13/16	1-15/16	2
MAXIMUM CATCH SIZE (Basket)		1-3/8	1-9/16	1-7/16	1-5/8	1-5/8	1-3/4	1-13/16
OVERSHOT O.D.		1-27/32	2-1/16	2-1/16	2-1/8	2-5/16	2-1/4	2-5/16
TYPE		SH	SH	SH	SH	SFS	SH	SH
STANDARD TOP CONNECTION		5/8 Rod	5/8 Rod	7/8 Rod	7/8 Rod	7/8 Rod	7/8 Rod	7/8 Rod
COMPLETE ASSEMBLY	Logan Part No.	110-184-D	110-206-D	110-207-D	110-213-D	110-231-C	110-225-D	110-231-D
	Bowen No.	36423	54178**	156309	27765	11480	16070	9400
	Price	...	*	*	...	...	...	...

SPIRAL COMPONENT PARTS

TOP SUB	Logan Part No.	B10051	B10053	B10054	B10052	B1006	B1007	B1008
	Bowen No.	36424	54179**	156310	27766	11481	16071	9401
	Price	\$354	*	*	\$585	\$589	\$580	*
BOWL	Logan Part No.	B20051	B20053	B20054	B20052	B2006	B2007	B2008
	Bowen No.	36425	54180**	156311	27767	11482	16072	9402
	Price	\$922	*	*	\$952	\$952	\$940	\$872
SPIRAL GRAPPLE	Logan Part No.	B30051	B30053	B30054	B30052	B3006	B3007	B3008
	Bowen No.	36436	54181	156312	27768	11483	16073	9403
	Standard Price	\$383	*	*	\$487	\$487	\$483	\$390
	Nitralloy Price	\$685	*	...	\$898	\$898	\$830	\$702
CONTROL GUIDE	Logan Part No.	B40051	B40053	B40054	B40052	B4006	B4007	B4008
	Bowen No.	36427	54184	156313	27764	11484	16076	9406
	Price	\$222	*	*	\$336	\$344	\$338	\$316
SPIRAL GRAPPLE CONTROL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
GUIDE (CUT LIPPED)	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	B50051	B50053	B50054	B50052	B5006	B5007	B5008
	Bowen No.	36436	54181	156312*	27768	11483	16073	9403
	Standard Price	\$557	*	*	\$651	\$652	\$644	\$569
	Nitralloy Price	\$993	*	*	\$1,161	\$1,165	\$1,151	\$1,071
BASKET GRAPPLE CONTROL	Logan Part No.	B60051	B60053	B60053	B60052	B6006	B6007	B6008
	Bowen No.	36437	54182	54182	27763	11485	16074	9405
	Price	\$130	*	*	\$200	\$200	\$199	\$273
PLAIN GUIDE	Logan Part No.	B70051	B70053	B70054	B70052	B7006	B7007	B7008
	Bowen No.	36426	54183	156333	27769	11486	16075	9404
	Price	\$166	*	*	\$221	\$221	\$221	\$203

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* Available upon request.

Special Notes:

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- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

Logan Series 10 Sucker Rod Overshots

MAXIMUM CATCH SIZE (Spiral)	2	2-3/8				
MAXIMUM CATCH SIZE (Basket)	1-13/16	2-3/16				
OVERSHOT O.D.	2-7/8	2-27/32				
TYPE	FS	SH				
STANDARD TOP CONNECTION	7/8 Rod	7/8 Rod				
COMPLETE ASSEMBLY	Logan Part No.	110-287-A	110-284-D			
	Bowen No.	9530	15860			
	Price	*	...			

SPIRAL COMPONENT PARTS

TOP SUB	Logan Part No.	B1009	B1010			
	Bowen No.	9531	15863			
	Price	*	\$965			
BOWL	Logan Part No.	B2009	B2010			
	Bowen No.	9532	15861			
	Price	*	\$1,648			
SPIRAL GRAPPLE	Logan Part No.	B3008	B3010			
	Bowen No.	9403	9872			
	Standard Price	*	\$689			
	Nitralloy Price	*	\$1,273			
CONTROL GUIDE	Logan Part No.	B4009	...			
	Bowen No.	9535	...			
	Price	*	...			
SPIRAL GRAPPLE CONTROL	Logan Part No.	...	B8000			
	Bowen No.	...	9873			
	Price	...	\$228			
GUIDE (CUTLIPPED)	Logan Part No.	...	B8001			
	Bowen No.	...	15862			
	Price	...	\$337			

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	B5008	B5010			
	Bowen No.	9403	9872			
	Standard Price	\$569	\$876			
	Nitralloy Price	\$1,071	\$1,568			
BASKET GRAPPLE CONTROL	Logan Part No.	B6008	B6010			
	Bowen No.	9405	9873			
	Price	*	\$337			
PLAIN GUIDE	Logan Part No.	B7009	B7010			
	Bowen No.	9533	15862			
	Price	*	\$246			

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* Available upon request.

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- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

- A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
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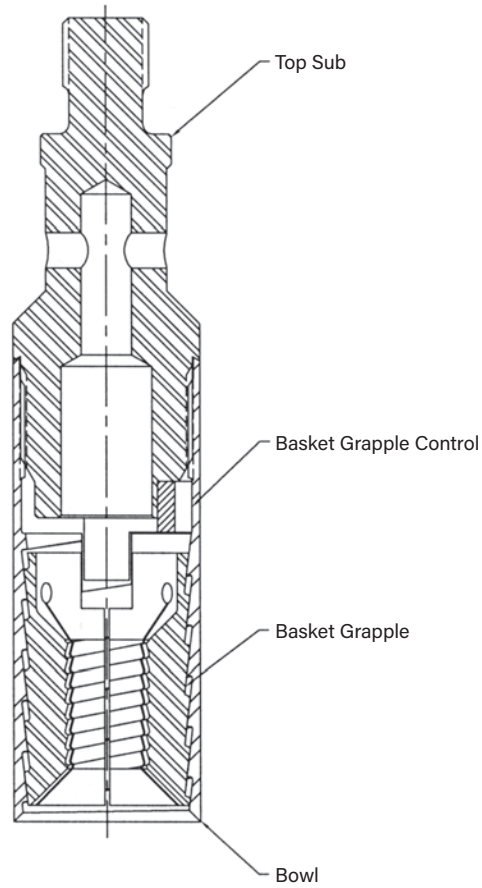
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

LOGAN SERIES 20 SUCKER ROD OVERSHOTS



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Logan Series 20 Sucker Rod Overshots

MAXIMUM CATCH SIZE (Basket)		7/8	1	1-1/4	1-3/8	1-1/2	1-3/4	1-13/16
OVERSHOT O.D.		1-1/4	1-3/8	1-5/8	1-3/4	1-29/32	2-1/4	2-5/16
TYPE		SH	SH	SH	SH	SH	SH	SH
STANDARD TOP CONNECTION		5/8 Rod	5/8 Rod	5/8 Rod	3/4 Rod	3/4 Rod	7/8 Rod	7/8 Rod
COMPLETE ASSEMBLY	Logan Part No.	120-125-D	120-138-D	120-163-D	120-175-D	120-191-D	120-225-D	120-231-D
	Bowen No.	17315	25780	28760	18355	11555	47464	17438
	Price						*	

BASKET COMPONENT PARTS

TOP SUB	Logan Part No.	B1011	B1012	B1013	B1014	B1004	B1007	B1008
	Bowen No.	17316	25781	28761	18356	9341	16071	9401
	Price	\$735	\$484	\$870	\$560	\$502	*	\$542
BOWL	Logan Part No.	B2011	B2012	B2013	B2014	B2015	B20155	B2016
	Bowen No.	17317	25782	28762	18357	11556	47465	17439
	Price	\$832	\$916	\$1,037	\$996	\$904	*	\$899
BASKET GRAPPLE	Logan Part No.	B3011	B3012	B3013	B3014	B3015	B30155	B3016
	Bowen No.	17318	25783	28763	18358	11557	47466	17440
	Standard Price	\$790	\$885	\$603	\$866	\$595	*	\$624
	Nitralloy Price	\$1,082	\$1,082	\$1,082	\$1,068	\$995	*	\$1,119
BASKET GRAPPLE CONTROL	Logan Part No.	B4011	B4012	B4013	B4014	B4015	B40155	B4016
	Bowen No.	17319	25784	28764	18359	11558	47467	17441
	Price	\$209	\$209	\$209	\$206	\$206	*	\$218
OVERSIZED GUIDES	Logan Part No.	...	...	...	...	...	...	B5016
	Bowen No.	...	...	...	...	...	...	22276
	Price	...	...	...	...	...	...	*
GUIDE PINS	Logan Part No.	...	...	...	...	...	...	B6016
	Bowen No.	...	...	...	...	...	...	14876
	Price	...	...	...	...	...	...	\$13

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

Logan Series 20 Sucker Rod Overshots

MAXIMUM CATCH SIZE (Basket)		2-1/8	2-1/8	2-3/8	2-1/2			
OVERSHOT O.D.		2-25/32	2-7/8	3-1/8	3-1/4			
TYPE		SH	FS	SH	FS			
STANDARD TOP CONNECTION		7/8 Rod	2-3/8 Tbg	2-3/8 Tbg	2-3/8 Tbg			
COMPLETE ASSEMBLY	Logan Part No.	120-278-D	120-287-A	120-313-D	120-325-A			
	Bowen No.	18305	20170	20645	22270			
	Price		*	*	*			

BASKET COMPONENT PARTS

TOP SUB	Logan Part No.	B1017	B1018	B1019	B1020			
	Bowen No.	18306	20172	20646	22271			
	Price	\$731	*	*	*			
BOWL	Logan Part No.	B2017	B2018	B2019	B2020			
	Bowen No.	18307	20171	20647	22272			
	Price	\$1,254	*	*	*			
BASKET GRAPPLE	Logan Part No.	B3017	B3017	B3019	B3020			
	Bowen No.	18308	18308	20648	22273			
	Standard Price	\$801	*	*	*			
	Nitralloy Price	\$1,235	*	*	*			
BASKET GRAPPLE CONTROL	Logan Part No.	B4017	B4017	B4019	B4020			
	Bowen No.	18309	18309	20649	22274			
	Price	\$243	*	*	*			
OVERSIZED GUIDES	Logan Part No.	...	B5018	...	B5020			
	Bowen No.	...	20173	...	22275			
	Price	...	*	...	*			
GUIDE PINS	Logan Part No.	...	B6018	...	B6020			
	Bowen No.	...	20174	...	20651			
	Price	...	*	...	*			

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Special Notes:

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- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

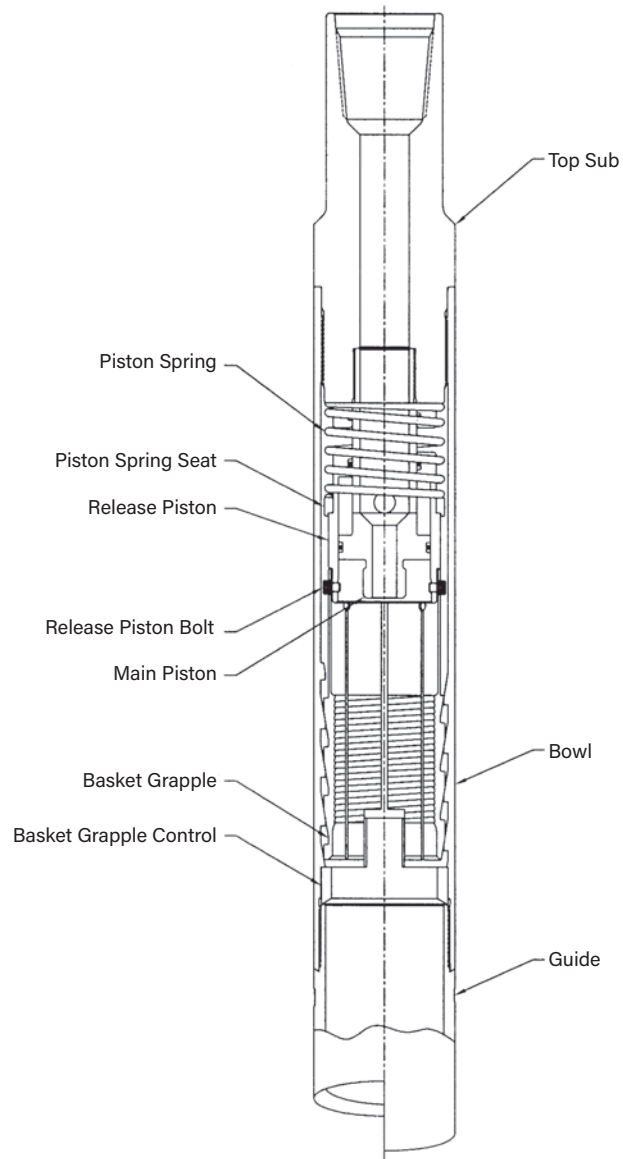
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

LOGAN HYDRAULIC RELEASE OVERSHOTS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Hydraulic Release Overshots

MAXIMUM CATCH (IN)		N/A	4-1/4	6-3/8
OVERSHOT O.D. (IN)		4-11/16	5-3/4	8-1/8
STANDARD CONNECTIONS		CUSTOMER SPECIFIED CONNECTIONS		
TYPE		HR150	HR150	HR150
COMPLETE ASSEMBLY	Logan Part No.	HR180-469-000	HR180-575-002	HR180-813-002
	Price	*	*	*

COMPONENTS

TOP SUB	Logan Part No.	N/A	HR1035-001	HR1059-001
	Price	*	*	*
MAIN PISTON	Logan Part No.	N/A	HR5035-001	HR5059-001
	Price	*	*	*
RELEASE PISTON	Logan Part No.	N/A	HR6035-001	HR6059-001
	Price	*	*	*
SPRING SEAT	Logan Part No.	N/A	HR10035-001	HR10059-001
	Price	*	*	*
SPRING	Logan Part No.	N/A	HR4035-001	HR4059-001
	Price	*	*	*
BOWL	Logan Part No.	N/A	HR2035-001	HR2059-001
	Price	*	*	*
BASKET GRAPPLE	Logan Part No.	N/A	HR7035-112	HR7059-160
	Price	*	*	*
STANDARD GUIDE	Logan Part No.	N/A	A3035	A3054
	Price	*	*	*
PISTON SPRING	Logan Part No.	N/A	HR4035	HR4054
	Price	*	*	*
BASKET GRAPPLE RETAINER SCREWS	Logan Part No.	N/A	HR9035-001	HR9035-001
	Price	*	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	N/A	A9035-112	HR9059-160
	Price	*	*	*
GUIDE	Logan Part No.	N/A	A3035	A3059
	Price	*	*	*
MAIN PISTON SEAL (I.D.) Logan Part No.	N/A	568334	568344	
	Price	*	*	*
MAIN PISTON SEAL (O.D.)	Logan Part No.	N/A	568340	568430
	Price	*	*	*
RELEASE PISTON SEAL (I.D.)	Logan Part No.	N/A	568334	568344
	Price	*	*	*

STRENGTH DATA

TENSILE STRENGTH @ YIELD (LBS)	N/A	673,632	1,000,063
BASKET GRAPPLE STRENGTH (LBS)	N/A	379,064	549,907
TORSIONAL YIELD (FT/LBS)	N/A	22,673	40,470
RECOMMENDED MAKE UP TORQUE (FT/LBS)	N/A	5,668	10,100
MAXIMUM MAKE UP TORQUE (FT/LBS)	N/A	11,000	20,200

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all pulling torsional and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

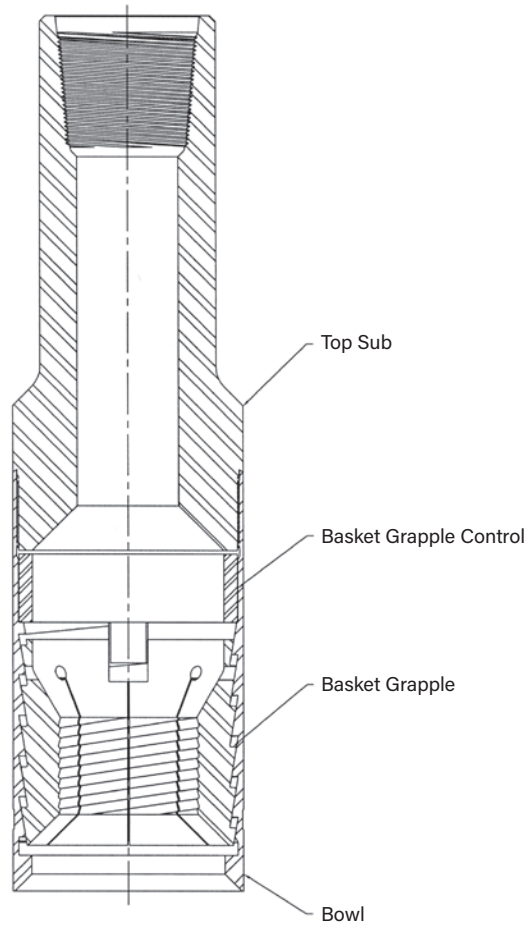
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

LOGAN SERIES 70 SHORT CATCH OVERSHOTS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 70 Short Catch Overshots

MAXIMUM CATCH SIZE (Basket)		1-5/8	2-1/2	2-5/8	3-1/16	3-1/16	3-1/16	3-3/8
OVERSHOT O.D.		2-5/16	3-5/8	3-3/4	3-15/16	4-5/8	4-1/8	4-3/8
TYPE		SH	SH	SH	SH	FS	SH	SH
COMPLETE ASSEMBLY	Logan Part No.	170-231-D	170-363-D	170-375-D	170-394-D	170-463-A	170-413-D	170-438-D
	Bowen No.	38506	17615	13535	63892	11290	10434	C-11023
	Price	*	\$4,520	\$4,554	*	\$5,134	\$5,095	\$5,675
TOP SUB	Logan Part No.	C1000	C1001	C1002	C10025	C1003	C1004	C10045
	Bowen No.	38507	17616	13536	63893	11295	10435	A-11024
	Price	*	\$1,067	\$1,025	*	\$1,158	\$1,105	\$1,108
BOWL	Logan Part No.	C2000	C2001	C2002	C20025	C2003	C2004	C20045
	Bowen No.	38508	17617	13537	63894	11291	10436	B-11025
	Price	*	\$2,032	\$2,156	*	\$2,474	\$2,481	\$2,986
BASKET GRAPPLE	Logan Part No.	C3000	C3001	C3002	C30025	C3003	C3004	C30045
	Bowen No.	38509	17618	13538	63895	11292	10437	B-11026
	Standard Price	*	\$1,118	\$1,068	*	\$1,191	\$1,195	\$1,271
	Nitralloy Price		\$2,032	\$1,950	*	\$2,160	\$2,158	\$2,307
BASKET GRAPPLE CONTROL	Logan Part No.	C4000	C4001	C4002	C40025	C4003	C4004	C40045
	Bowen No.	38510	17619	13539	63896	11294	10438	A-11027
	Price	*	\$304	\$304	*	\$311	\$315	\$311

MAXIMUM CATCH SIZE (Basket)		3-21/32	3-21/32	3-3/4	3-3/4	4-1/4	4-3/4	5-1/4
OVERSHOT O.D.		4-11/16	5-5/8	4-3/4	5-1/2	5-3/4	5-7/8	6-1/4
TYPE		SH	FS	SH	FS	FS	SH	SH
COMPLETE ASSEMBLY	Logan Part No.	170-468-D	170-563-A	170-475-D	170-550-A	170-575-A	170-587-D	170-625-D
	Bowen No.	10543	11297	12645	12785	13065	10560	14805
	Price	\$5,406	*	*	\$5,417	\$6,168	\$7,533	\$6,956
TOP SUB	Logan Part No.	C1005	C1006	C1005	C1008	C1009	C1010	C10105
	Bowen No.	10544	11298	10544	12786	13066	10561	14806
	Price	\$1,058	*	*	\$1,126	\$1,491	\$1,761	\$1,712
BOWL	Logan Part No.	C2005	C2006	C2007	C2008	C2009	C2010	C20105
	Bowen No.	10545	11299	12646	12787	13067	10562	14807
	Price	\$2,747	*	*	\$2,714	\$2,810	\$3,497	\$3,219
BASKET GRAPPLE	Logan Part No.	C3005	C3006	C3007	C3008	C3009	C3010	C30105
	Bowen No.	10546	11300	12647	12788	13068	10563	14808
	Standard Price	\$1,291	*	*	\$1,273	\$1,510	\$1,844	\$1,650
	Nitralloy Price	*	*	*	*	\$2,729	\$3,307	\$2,974
BASKET GRAPPLE CONTROL	Logan Part No.	C4005	C4006	C4007	C4008	C4009	C4010	C40105
	Bowen No.	10547	11301	12648	12789	13069	10564	14809
	Price	\$311	*	*	\$308	\$358	\$431	\$374

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength - For all pulling torsional and jarring strain
 B = XFS Extra Full Strength - For extreme abuse
 C = SFS Semi Full Strength - Maximum strength for special hole conditions
 D = SH Slim Hole - For heavy pulling strains only
 E = XSH Extra Slim Hole - For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

Logan Series 70 Short Catch Overshots

MAXIMUM CATCH SIZE (Basket)		4-3/4	6	6-1/4	6-1/2	7	7-3/4	8
OVERSHOT O.D.		6-5/8	7-5/8	7-7/8	8-14	8-1/2	9-1/4	9-3/4
TYPE		FS	FS	FS	FS	FS	FS	FS
COMPLETE ASSEMBLY	Logan Part No.	170-663-A	170-763-A	170-787-A	170-825-A	170-850-A	170-925-A	170-975-A
	Bowen No.	11303	11630	16975	38939	20050	25030	20060
	Price	*	\$8,869	*	\$9,507	\$9,869	*	*
TOP SUB	Logan Part No.	C1011	C1012	C1013	C1014	C1015	C1016	C1017
	Bowen No.	11304	11631	16976	38940	20051	25031	20061
	Price	*	\$2,337	*	\$2,587	\$2,567	*	*
BOWL	Logan Part No.	C2011	C2012	C2013	C2014	C2015	C2016	C2017
	Bowen No.	11305	11632	16977	38941	20052	25032	20062
	Price	*	\$3,932	*	\$4,599	\$4,585	*	*
BASKET GRAPPLE	Logan Part No.	C3011	C3012	C3013	C3014	C3015	C3016	C3017
	Bowen No.	11306	11633	16978	38942	20053	25033	20063
	Standard Price	*	\$2,101	*	\$1,780	\$2,175	*	*
	Nitralloy Price		\$3,802		\$4,024	\$3,895	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	C4011	C4012	C4013	C4014	C4015	C4016	C4017
	Bowen No.	11307	11634	16979	38943	20054	250034	20064
	Price	*	\$500	*	\$540	\$541	*	*

MAXIMUM CATCH SIZE (Basket)		8-1/4	9	13-1/2				
OVERSHOT O.D.		10	11-1/4	16				
TYPE		FS	FS	FS				
COMPLETE ASSEMBLY	Logan Part No.	170-1000-A	170-1125-A	170-1600-A				
	Bowen No.	...	33878	...				
	Price	*	\$15,425	*				
TOP SUB	Logan Part No.	C10175	C1018	C1019				
	Bowen No.	33879	...	...				
	Price	*	\$5,678	*				
BOWL	Logan Part No.	C20175	C2018	C2019				
	Bowen No.	33880	...	...				
	Price	*	\$6,472	*				
BASKET GRAPPLE	Logan Part No.	C30175	C3018	C3019				
	Bowen No.	...	33581	...				
	Standard Price	*	\$2,486	*				
	Nitralloy Price	*	\$5,678	*				
BASKET GRAPPLE CONTROL	Logan Part No.	C40175	C4018	C4019				
	Bowen No.	...	33882	...				
	Price	*	\$790	*				

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) For oversize Top Subs, Bowls, or Guides, add 20% to the price for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (3) Grapples are available in 1/16" intervals.
- (4) Grapple price may increase when ordering non-standard catch sizes.
- (5) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (6) Add 20% for left-hand application.
- (7) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all pulling torsional and jarring strain
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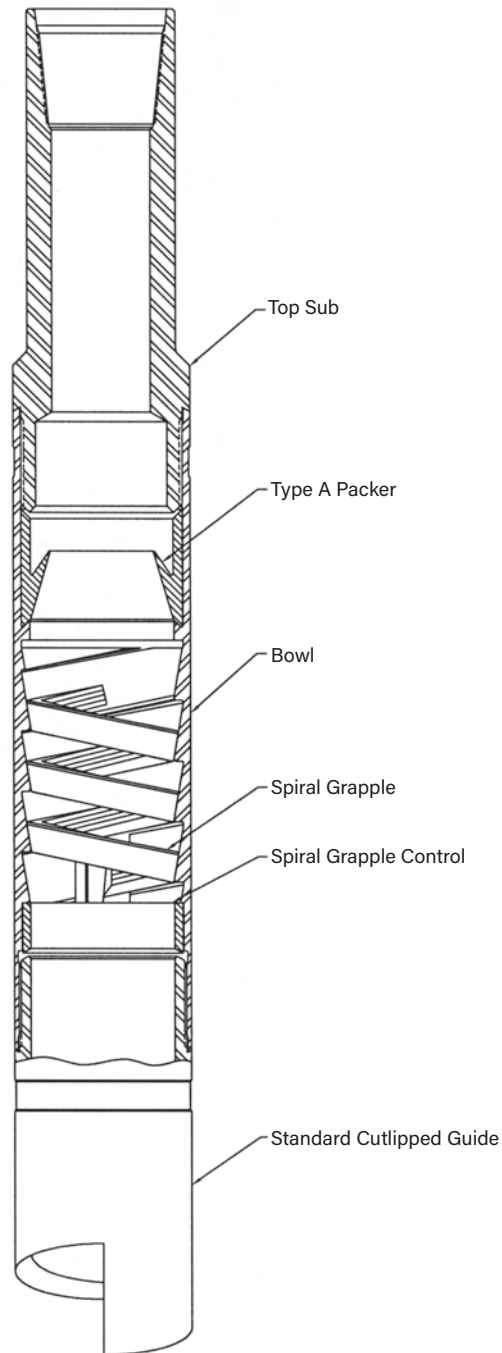
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral Parts: 3 Packers, 2 Grapples for each Catch Size and 1 Control.
- (2) Basket Parts: 2 Grapples, 2 Mill Control Packers for each Catch Size.
- (3) Mill Control Packers: 3 Inner Seals for each Catch Size and 3 Outer Seals.

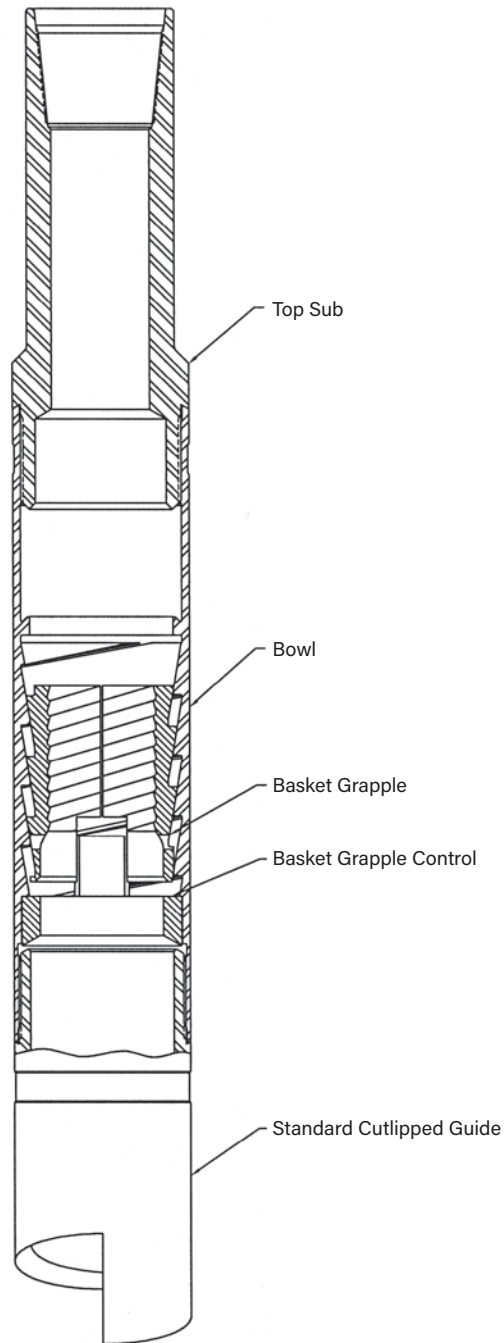
LOGAN SERIES 150 OVERSHOTS



**Spiral Grapple with Spiral Grapple Control
and Type A Packer**

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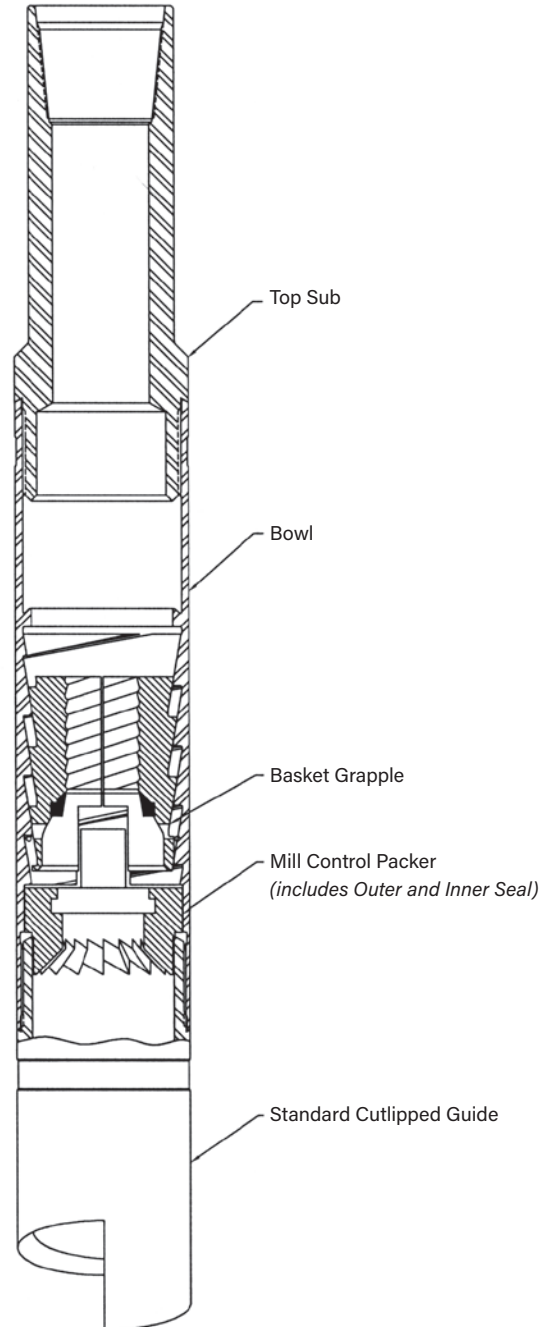
LOGAN SERIES 150 OVERSHOTS



Basket Grapple with Basket Grapple Control

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LOGAN SERIES 150 OVERSHOTS



Basket Grapple with Mill Control Packer

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		2	2-1/8	2-3/8	2-3/8	2-3/8	2-1/2	2-1/2
MAXIMUM CATCH SIZE (Basket)		1-3/4	1-3/4	2	1-7/8	1-7/8	2	2
OVERSHOT O.D.		2-5/16	2-5/8	3-1/8	3-1/2	4-1/8	3-3/8	3-5/8
TYPE		SH	SH	XSH	FS	FS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-231-D	150-263-D	150-313-E	150-350-A	150-414-A	150-338-D	150-363-A
	Bowen No.	B-8919	C-10199	9305	C-4741	1443	C-4623	C-5080
	Price				*			*
TOP SUB	Logan Part No.	A0950	A1000	A1001	A1002	A10025	A1003	A1004
	Bowen No.	A-8920	A-10200	9311	B-4742	1445	A-5083	A-5081
	Price	\$912	\$968	\$998	*	\$1,166	\$1,140	*
BOWL	Logan Part No.	A1950	A2000	A2001	A2002	A20025	A2003	A2004
	Bowen No.	B-8921	B-10201	9306	B-4743	1446	B-5088	B-5082
	Price	\$1,943	\$1,790	\$1,790	*	\$1,870	\$1,943	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	B7008	A3000	A3001	A3002	A30025	A3003	A3004
	Bowen No.	9404	A-10206	9312	A-4745	1450	A-5093	A-5087
	Price	\$601	\$556	\$556	*	\$556	\$603	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4950	A4000	A4001	A4002	A40025	A4003	A4004
	Bowen No.	9407	B-10202	9309	L-1453	1453	B-5089	B-3395
	Price	\$62	\$58	\$58	*	\$62	\$62	*
SPIRAL GRAPPLE	Logan Part No.	B3008	A5000	A5001	A5002	A50025	A5003	A5004
	Bowen No.	9403	B-10204	9307	B-782	1448	B-5091	B-5085
	Standard Price	\$390	\$399	\$482	*	\$517	\$523	*
	Nitralloy Price	\$704	\$719	\$867	*	\$930	\$943	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6950	A6000	A6001	A6002	A60025	A6003	A6004
	Bowen No.	9405	A-10205	9308	B-783	1449	A-5092	A-5086
	Price	\$190	\$192	\$190	*	\$232	\$207	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	B5008	A7000	A7001	A7002	A70025	A7003	A7004
	Bowen No.	9403	B-10204	9307	B-782	1448	B-5091	B-5085
	Standard Price	\$569	\$585	\$638	*	\$668	\$693	*
	Nitralloy Price	\$1,071	\$1,051	\$1,150	*	\$1,204	\$1,252	*
BASKET GRAPPLE CONTROL	Logan Part No.	B6008	A8000	A8001	A8002	A80025	A8003	A8004
	Bowen No.	9405	A-10205	9308	B-783	1449	A-5092	A-5086
	Price	\$273	\$255	\$255	*	\$254	\$277	*
MILL CONTROL PACKER	Logan Part No.	A9950	A9000	A9001	A9002	A90025	A9003	A9004
	Bowen No.	9407M	B-10202-R	9309-R	L-1453-R	1453-R	B-5089-R	B-3395-R
	Price	\$495	\$347	\$347	*	\$364	\$377	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
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 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		2-7/8	3-1/16	3-1/8	2-7/8	2-7/8	3-1/16	3-1/16
MAXIMUM CATCH SIZE (Basket)		2-1/2	2-11/16	2-5/8	2-3/8	2-3/8	2-9/16	2-9/16
OVERSHOT O.D.		3-5/8	3-3/4	3-7/8	3-3/4	4	3-15/16	4-3/16
TYPE		XSH	SH	SH	SH	FS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-363-E	150-375-D	150-388-D	150-376-D	150-400-A	150-393-D	150-419-A
	Bowen No.	9270	37585	C-1835	C-1827	C-4736	C-5101	C-5098
	Price					*	*	*
TOP SUB	Logan Part No.	A1005	A10055	A10056	A10057	A1006	A1007	A1008
	Bowen No.	9276	37586	A-1842	A-1834	A-4737	A-5102	A-5099
	Price	\$1,073	\$1,075	\$1,098	\$1,072	*	*	*
BOWL	Logan Part No.	A2005	A20055	A20056	A20057	A2006	A2007	A2008
	Bowen No.	9271	37587	B-1836	B-1828	B-4738	B-5103	B-5100
	Price	\$2,200	\$2,200	\$2,127	\$2,127	*	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3005	A30055	A30056	A30057	A3006	A3007	A3008
	Bowen No.	9275	37592	A-1841	A-1833	A-4740	A-3598	A-4405
	Price	\$556	\$556	\$556	\$556	*	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4005	A40055	A40056	A40057	A4006	A4007	A4008
	Bowen No.	8550	37588	B-1839	A-1831	L-809	B-3594	L-7090
	Price	\$69	\$81	\$81	\$81	*	*	*
SPIRAL GRAPPLE	Logan Part No.	A5005	A50055	A50056	A50057	A5006	A5007	A5008
	Bowen No.	9272	37590	B-1837	A-1829	M-805	B-3596	B-4403
	Standard Price	\$498	\$510	\$510	\$532	*	*	*
	Nitralloy Price	\$900	\$912	\$912	\$959	*	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6005	A60055	A60056	A60057	A6006	A6007	A6008
	Bowen No.	9273	37591	A-1838	A-1830	M-806	B-3597	B-4403
	Price	\$192	\$204	\$193	\$193	*	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7005	A70055	A70056	A70057	A7006	A7007	A7008
	Bowen No.	9272	37590	B-1837	A-1829	M-805	B-3596	B-4403
	Standard Price	\$713	\$678	\$713	\$745	*	*	*
	Nitralloy Price	\$1,281	\$1,220	\$1,281	\$1,341	*	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8005	A80055	A80056	A80057	A8006	A8007	A8008
	Bowen No.	9273	37591	A-1838	A-1830	M-806	B-3597	B-4404
	Price	\$255	\$274	\$273	\$255	*	*	*
MILL CONTROL PACKER	Logan Part No.	A9005	A90055	A90056	A90057	A9006	A9007	A9008
	Bowen No.	8550-R	37588-R	B-1839-R	A-1831-R	L-809-RS	B-3594-R	L-7090-R
	Price	\$347	\$374	\$374	\$364	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		3-1/8	3-1/8	3-1/8	3-1/8	3-1/4	3-1/4
MAXIMUM CATCH SIZE (Basket)		2-5/8	2-5/8	2-5/8	2-5/8	2-3/4	2-3/4
OVERSHOT O.D.		4	4-1/8	4-1/8	4-1/4	4-1/8	4-3/8
TYPE		SH	FS	FS	FS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-400-D	150-413-A	150-412-A	150-425-A	150-413-D	150-438-A
	Bowen No.	C-5104	9105	8220	C-4822	C-5115	C-5112
	Price	*	*	*	*	*	*
TOP SUB	Logan Part No.	A1009	A1010	A10105	A1011	A1012	A1013
	Bowen No.	A-5105	9106	8221	A-4823	A-5116	A-5113
	Price	*	\$1,163	\$1,163	*	*	*
BOWL	Logan Part No.	A2009	A2010	A20105	A2011	A2012	A2013
	Bowen No.	B-5106	9107	8223	B-4824	B-5117	B-5114
	Price	*	\$2,200	\$2,294	*	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3009	A3010	A3010	A3011	A3012	A3013
	Bowen No.	A-5111	1746	1746	A-793	A-5122	A-3207
	Price	*	\$566	\$566	*	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4009	A4010	A4010	A4011	A4012	A4013
	Bowen No.	B-5107	809	809	L-7090	B-5118	L-1517
	Price	*	\$81	\$81	*	*	*
SPIRAL GRAPPLE	Logan Part No.	A5009	A5010	A5010	A5011	A5012	A5013
	Bowen No.	B-5109	1741	1741	B-791	B-5120	B-3205
	Standard Price	*	\$540	\$540	*	*	*
	Nitralloy Price	*	\$899	\$899	*	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6009	A6010	A6010	A6011	A6012	A6013
	Bowen No.	A-5110	1747	1747	B-792	A-5121	B-3206
	Price	*	\$310	\$310	*	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7009	A7010	A7010	A7011	A7012	A7013
	Bowen No.	B-5109	1741	1741	B-791	B-5120	B-3205
	Standard Price	*	\$713	\$713	*	*	*
	Nitralloy Price	*	\$1,279	\$1,279	*	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8009	A8010	A8010	A8011	A8012	A8013
	Bowen No.	B-5110	1747	1747	B-792	A-5121	B-3206
	Price	*	\$273	\$273	*	*	*
MILL CONTROL PACKER	Logan Part No.	A9009	A9010	A9010	A9011	A9012	A9013
	Bowen No.	B-5107-R	809-R	809-R	L-7090-R	B-5118-R	L-1517-R
	Price	*	\$374	\$374	*	*	*

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		3-3/8	3-3/8	3-3/8	3-3/8	3-1/2	3-1/2	3-21/32
MAXIMUM CATCH SIZE (Basket)		2-7/8	2-7/8	2-7/8	2-7/8	2-7/8	2-7/8	3-1/8
OVERSHOT O.D.		3-7/8	4-1/4	4-3/8	4-1/2	4-3/8	4-13/16	4-1/2
TYPE		XSH	SH	FS	FS	SH	FS	SH
COMPLETE ASSEMBLY	Logan Part No.	150-388-E	150-425-D	150-4375-A	150-450-A	150-438-D	150-482-A	150-450-D
	Bowen No.	21300	C-5126	9635	C-5123	C-4619	C-4732	17201
	Price				*			*
TOP SUB	Logan Part No.	A10135	A1014	A10145	A1015	A1016	A1017	A10175
	Bowen No.	21301	A-5127	9636	A-5124	A-4620	A-4733	17202
	Price	\$1,098	\$1,163	\$1,231	*	\$1,234	\$1,231	*
BOWL	Logan Part No.	A20135	A2014	A20145	A2015	A2016	A2017	A20175
	Bowen No.	21302	B-5128	9637	B-5125	B-4621	B-4734	17203
	Price	\$2,275	\$2,373	\$2,373	*	\$2,275	\$2,373	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A30135	A3014	A30145	A3015	A3016	A3017	A30175
	Bowen No.	21307	A-4629	4197	A-3361	A-4622	A-4735	17204
	Price	\$567	\$564	\$564	*	\$567	\$681	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A40135	A4014	A40145	A4015	A4016	A4017	A4018
	Bowen No.	21303	B-4625	4185	L-6515	L-7065	L-168	L-6665
	Price	\$81	\$81	\$81	*	\$81	\$81	*
SPIRAL GRAPPLE	Logan Part No.	A50135	A5014	A50145	A5015	A5016	A5017	A5018
	Bowen No.	21305	B-4627	4195	B-3359	B-3607	M-164	B-4339
	Standard Price	\$547	\$570	\$570	*	\$519	\$570	*
	Nitralloy Price	\$981	\$1,027	\$1,025	*	\$931	\$1,023	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A60135	A6014	A60145	A6015	A6016	A6017	A6018
	Bowen No.	21306	B-4628	4196	B-3360	B-3608	M-185	B-4340
	Price	\$193	\$193	\$193	*	\$193	\$193	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A70135	A7014	A70145	A7015	A7016	A7017	A7018
	Bowen No.	21305	B-4627	4195	B-3359	B-3607	M-164	B-4339
	Standard Price	\$764	\$799	\$800	*	\$727	\$800	*
	Nitralloy Price	\$1,381	\$1,436	\$1,436	*	\$1,312	\$1,436	*
BASKET GRAPPLE CONTROL	Logan Part No.	A80135	A8014	A80145	A8015	A8016	A8017	A8018
	Bowen No.	21306	B-4628	4196	B-3360	B-3608	M-185	B-4340
	Price	\$273	\$273	\$273	*	\$272	\$273	*
MILL CONTROL PACKER	Logan Part No.	A90135	A9014	A90145	A9015	A9016	A9017	A9018
	Bowen No.	21303-R	B-4625-R	4185-R	L-6515-R	L-7065-R	L-168-R	L-6665-R
	Price	\$414	\$432	\$432	*	\$414	\$432	*

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
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 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		3-21/32	3-21/32	3-21/32	3-3/4	3-3/4	3-13/16	3-3/4
MAXIMUM CATCH SIZE (Basket)		3-1/8	3.220	3-1/8	3-7/32	3-1/4	3-5/16	3-1/8
OVERSHOT O.D.		4-9/16	4-11/16	5	4-5/8	4-11/16	4-7/16	5-1/8
TYPE		SH	SFS	FS	SH	SFS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-456-D	150-469-C	150-500-A	150-463-D	150-468-C	150-444-D	150-513-A
	Bowen No.	C-5151	9109	C-5148	C-5129	9120	C-9773	C-4686
	Price			*			*	*
TOP SUB	Logan Part No.	A1018	A1019	A1020	A1021	A1019	A10217	A1022
	Bowen No.	A-5152	9110	A-5149	A-5130	9110	A-9774	A-4687
	Price	\$1,383	\$1,272	*	\$1,383	\$1,272	*	*
BOWL	Logan Part No.	A2018	A2019	A2020	A2021	A20215	A20217	A2022
	Bowen No.	B-5153	9111	B-5150	B-5131	9121	B-9775	B-4688
	Price	\$2,420	\$2,275	*	\$2,420	\$2,275	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3018	A3019	A3020	A3021	A30215	A30217	A3022
	Bowen No.	A-4341	6667	A-4412	A-5135	9125	A-9779	A-816
	Price	\$681	\$627	*	\$681	\$627	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4018	A4019	A4020	A4021	A40215	A40217	A4022
	Bowen No.	L-6665	6665	B-3219	B-5538	9122	L-6163	A-811
	Price	\$86	\$120	*	\$85	\$81	*	*
SPIRAL GRAPPLE	Logan Part No.	A5018	A5019	A5020	A5021	A50215	A50217	A5022
	Bowen No.	B-4339	6662	B-4410	B-5133	9123	B-9777	B-814
	Standard Price	\$671	\$586	*	\$671	\$616	*	*
	Nitralloy Price	\$1,208	\$1,055	*	\$1,208	\$1,109	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6018	A6019	A6020	A6021	A60215	A60217	A6022
	Bowen No.	B-4340	6674	B-4411	A-5134	9124	A-9778	A-815
	Price	\$214	\$250	*	\$212	\$193	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7018	A7019	A7020	A7021	A70215	A70217	A7022
	Bowen No.	B-4339	6662	B-4410	B-5133	9123	B-9777	B-814
	Standard Price	\$934	\$818	*	\$934	\$860	*	*
	Nitralloy Price	\$1,706	\$1,492	*	\$1,706	\$1,570	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8018	A8019	A8020	A8021	A80215	A80217	A8022
	Bowen No. B-4340	6674	B-4411	A-5134	9124	A-9778	A-815	
	Price	\$299	\$274	*	\$277	\$273	*	*
MILL CONTROL PACKER	Logan Part No.	A9018	A9019	A9020	A9021	A90215	A90217	A9022
	Bowen No. L-6665-R	6665-R	B-3219-R	B-5538-R	9122-R	L-6163-R	811-R	
	Price	\$488	\$448	*	\$488	\$449	*	*

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* Available upon request.

Special Notes:

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- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

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 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		3-7/8	3-7/8	4	4	4-1/8	4-1/8	4-1/4
MAXIMUM CATCH SIZE (Basket)		3-1/4	3-3/8	3-1/2	3-3/8	3-5/8	3-1/2	3-3/4
OVERSHOT O.D.		5-1/4	4-5/8	4-7/8	5-5/16	5	5-7/16	5-1/8
TYPE		FS	SH	SH	FS	SH	FS	SH
COMPLETE ASSEMBLY	Logan Part No.	150-525-A	150-462-D	150-488-D	150-531-A	150-500-D	150-544-A	150-513-D
	Bowen No.	9515	C-6230	C-5154	C-5142	C-5428	C-5425	C-5162
	Price	*			*	*	*	
TOP SUB	Logan Part No.	A1023	A10235	A1024	A1025	A1026	A1027	A1028
	Bowen No.	9516	A-6231	A-5155	A-5143	A-5429	A-5426	A-5163
	Price	*	\$1,434	\$1,399	*	*	*	...
BOWL	Logan Part No.	A2023	A20235	A2024	A2025	A2026	A2027	A2028
	Bowen No.	9517	B-6232	B-5156	B-5144	B-5430	B-5427	B-5164
	Price	*	\$2,644	\$2,645	*	*	*	...
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3023	A30235	A3024	A3025	A3026	A3027	A3028
	Bowen No.	876	A-6236	A-5161	A-1507	B-4899	B-1999	A-4676
	Price	*	\$627	\$775	*	*	*	...

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4023	A40235	A4024	A4025	A4026	A4027	A40285
	Bowen No.	856	A-1707	B-5157	B-1508	B-4895	L-1867	B-4672
	Price	\$123	\$125	\$125	*	*	*	...
SPIRAL GRAPPLE	Logan Part No.	A5023	A50235	A5024	A5025	A5026	A5027	A50285
	Bowen No.	859	B-6234	B-5159	B-1505	B-4897	B-1997	B-4674
	Standard Price	\$687	\$687	\$716	*	*	*	\$745
	Nitralloy Price	\$1,234	\$1,235	\$1,281	*	*	*	...
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6023	A60235	A6024	A6025	A6026	A6027	A60285
	Bowen No.	875	A-6235	B-5160	A-1506	B-4898	A-1998	B-4675
	Price	\$193	\$250	\$325	*	*	*	...

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7023	A70235	A7024	A7025	A7026	A7027	A70285
	Bowen No.	859	B-6234	B-5159	B-1505	B-4897	B-1997	B-4674
	Standard Price	\$956	\$955	\$996	*	*	*	\$1,040
	Nitralloy Price	\$1,723	\$1,723	\$1,785	*	*	*	...
BASKET GRAPPLE CONTROL	Logan Part No.	A8023	A80235	A8024	A8025	A8026	A8027	A80285
	Bowen No.	875	A-6235	B-5160	A-1506	B-4898	A-1998	B-4675
	Price	\$272	\$274	\$299	*	*	*	...
MILL CONTROL PACKER	Logan Part No.	A9023	A90235	A9024	A9025	A9026	A9027	A90285
	Bowen No.	856-R	60947R	B-5157-R	A-1508-R	B-4895-R	L-1867-R	B-4672-R
	Price	\$504	\$504	\$523	*	*	*	...

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* Available upon request.

Special Notes:

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- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
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 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		4-1/4	4-1/4	4-1/4	4-1/2	4-1/2	4-5/8	4-5/8
MAXIMUM CATCH SIZE (Basket)		3-3/4	3-11/16	3-11/16	3-7/8	3-7/8	4-1/8	4-1/8
OVERSHOT O.D.		5-1/8	5-9/16	5-9/16	5-3/8	5-13/16	5-1/2	5-5/8
TYPE		SH	FS	FS	SH	FS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-512-D	150-556-A	150-555-A	150-538-D	150-581-A	150-550-D	150-563-A
	Bowen No.	4716	5896	C-4819	C-5165	C-4814	C-4969	5698
	Price	*		*	*	*	*	
TOP SUB	Logan Part No.	A10285	A1029	A10295	A1030	A1031	A10315	A1032
	Bowen No.	4718	5897	A-4820	A-5166	A-4815	A-4970	5699
	Price	*	\$1,913	*	*	*	*	\$1,913
BOWL	Logan Part No.	A20285	A2029	A20295	A2030	A2031	A20315	A2032
	Bowen No.	4717	5898	B-4821	B-5167	B-4816	B-4971	5700
	Price	*	\$2,793	*	*	*	*	\$2,970
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A30285	A3029	A30295	A3030	A3031	A30315	A3032
	Bowen No.	4719	187	L-187	B-2491	B-1989	M-1138	1143
	Price	*	\$960	*	*	*	*	\$960

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A40285	A4029	A4029	A4030	A4031	A4032	A4032
	Bowen No.	4672	169	169	B-2487	B-2199-1	1140	1140
	Price	*	\$125	\$125	*	*	\$125	\$125
SPIRAL GRAPPLE	Logan Part No.	A50285	A5029	A5029	A5030	A5031	A5032	A5032
	Bowen No.	4674	165	165	B-2489	B-1987	1135	1135
	Standard Price	*	\$773	\$773	*	*	\$825	\$825
	Nitralloy Price	*	\$1,394	\$1,394	*	*	\$1,488	\$1,488
SPIRAL GRAPPLE CONTROL	Logan Part No.	A60285	A6029	A6029	A6030	A6031	A6032	A6032
	Bowen No.	4675	186	186	B-2490	B-1988	1137	1137
	Price	*	\$223	\$223	*	*	\$237	\$237

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A70285	A7029	A7029	A7030	A7031	A7032	A7032
	Bowen No.	4674	165	165	B-2489	B-1987	1135	1135
	Standard Price	*	\$1,082	\$1,083	*	*	\$1,163	\$1,163
	Nitralloy Price	*	\$1,943	\$1,949	*	*	\$2,004	\$2,004
BASKET GRAPPLE CONTROL	Logan Part No.	A80285	A8029	A8029	A8030	A8031	A8032	A8032
	Bowen No.	4675	186	186	B-2490	B-1988	1137	1137
	Price	*	\$301	\$301	*	*	\$333	\$333
MILL CONTROL PACKER	Logan Part No.	A90285	A9029	A9029	A9030	A9031	A9032	A9032
	Bowen No.	4672-R	169-R	169-R	B-2487-R	B-2199-1R	1140-R	1140-R
	Price	*	\$525	\$525	\$*	*	\$534	\$534

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		4-5/8	4-3/4	4-3/4	4-3/4	4-7/8	4-7/8	4-7/8
MAXIMUM CATCH SIZE (Basket)		4	4-1/4	4-1/4	4-1/8	4-1/4	4-1/4	4-1/4
OVERSHOT O.D.		5-15/16	5-5/8	5-3/4	6-1/16	5-3/4	6-1/8	6-3/16
TYPE		FS	SH	FS	FS	SH	FS	FS
COMPLETE ASSEMBLY	Logan Part No.	150-594-A	150-563-D	150-575-A	150-606-A	150-575-D	150-613-A	150-619-A
	Bowen No.	5737	C-5168	8975	C-4829	C-7096	912	C-7093
	Price	*					*	*
TOP SUB	Logan Part No.	A1033	A1034	A1035	A1036	A1037	A10375	A1038
	Bowen No.	5738	A-5169	8976	A-4830	A-7097	908	A-7094
	Price	*	\$1,760	\$1,760	\$1,919	\$2,125	*	*
BOWL	Logan Part No.	A2033	A2034	A2035	A2036	A2037	A20375	A2038
	Bowen No.	5735	B-5170	8977	B-4831	B-7098	905	B-7095
	Price	*	\$2,732	\$2,732	\$2,854	\$3,011	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3033	A3034	A3035	A3036	A3037	A30375	A3038
	Bowen No.	192	B-2203	6121	B-2366	A-6391	1186	A-2459
	Price	*	\$884	\$884	\$921	\$884	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4033	A4034	A4035	A4036	A4037	A40375	A4038
	Bowen No.	195	B-2199	6114	B-2362	B-6387	1189	B-2455
	Price	...	\$113	\$113	\$119	\$123	*	*
SPIRAL GRAPPLE	Logan Part No.	A5033	A5034	A5035	A5036	A5037	A50375	A5038
	Bowen No.	196	B-2201	6112	B-2364	B-6389	1182	B-2457
	Standard Price	...	\$759	\$722	\$793	\$814	*	*
	Nitralloy Price	...	\$1,369	\$1,301	\$1,429	\$1,471	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6033	A6034	A6035	A6036	A6037	A60375	A6038
	Bowen No.	193	B-2202	6113	B-2365	A-6390	1187	B-2458
	Price	...	\$217	\$216	\$217	\$217	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7033	A7034	A7035	A7036	A7037	A70375	A7038
	Bowen No.	196	B-2201	6112	B-2364	B-6389	1182	B-2457
	Standard Price	...	\$1,071	\$1,017	\$1,120	\$1,159	*	*
	Nitralloy Price	...	\$1,839	\$1,751	\$2,018	\$1,929	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8033	A8034	A8035	A8036	A8037	A80375	A8038
	Bowen No.	*	B-2202	6113	B-2365	A-6390	1187	B-2458
	Price	\$260	\$304	\$304	\$374	\$304	*	*
MILL CONTROL PACKER	Logan Part No.	A9033	A9034	A9035	A9036	A9037	A90375	A9038
	Bowen No.	195-R	B-2199-R	6114-R	B-2362-R	B-6387-R	1189-R	B-2455-R
	Price	...	\$650	\$650	\$650	\$650	*	*

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

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 C = SFS Semi Full Strength – Maximum strength for special hole conditions
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 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		5	5	5	5-1/8	5-1/4	5-3/8	5-1/2
MAXIMUM CATCH SIZE (Basket)		4-1/2	4-3/8	4-1/4	4-5/8	4-5/8	4-3/4	4-7/8
OVERSHOT O.D.		5-7/8	6-1/8	6-5/8	5-3/4	6-3/8	6-1/2	6-5/8
TYPE		SH	SFS	FS	SH	SH	SH	SH
COMPLETE ASSEMBLY	Logan Part No.	150-588-D	150-612-C	150-663-A	150-576-D	150-638-D	150-650-D	150-663-D
	Bowen No.	C-5171	7787	C-4825	C-11823	6655	4773	8625
	Price			*			*	
TOP SUB	Logan Part No.	A1039	A10395	A1040	A10402	A10405	A10407	A1041
	Bowen No.	A-5172	7789	B-4826	A-11824	6656	4774	8626
	Price	\$1,820	\$2,090	*	\$1,913	\$2,155	*	\$2,432
BOWL	Logan Part No.	A2039	A20395	A2040	A20402	A20405	A20407	A2041
	Bowen No.	B-5173	7788	B-4827	B-11825	4503	9205	8617
	Price	\$2,883	\$3,133	*	\$3,242	\$3,242	*	\$3,361
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3039	A30395	A3040	A30402	A30405	A30407	A3041
	Bowen No.	B-4371	5946	L-1074	A-11830	4504	4775	8621
	Price	\$993	\$999	*	\$960	\$960	*	\$1,132

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4039	A40395	A4040	A40402	A40405	A40407	A4041
	Bowen No.	L-5950	5950	L-4505	B-11826	4505	9209	8618
	Price	\$128	\$139	*	\$139	\$139	*	\$139
SPIRAL GRAPPLE	Logan Part No.	A5039	A50395	A5040	A50402	A50405	A50407	A5041
	Bowen No.	B-4369	5942	M-1071	B-11828	4498	9207	8619
	Standard Price	\$781	\$849	*	\$885	\$885	*	\$928
	Nitralloy Price	\$1,417	\$1,543	*	\$1,595	\$1,595	*	\$1,665
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6039	A60395	A6040	A60402	A60405	A60407	A6041
	Bowen No.	B-4370	5944	M-1072	A-11829	4499	9208	8620
	Price	\$385	\$237	*	\$277	\$277	*	\$277

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7039	A70395	A7040	A70402	A70405	A70407	A7041
	Bowen No.	B-4369	5942	M-1071	B-11828	4498	9207	8619
	Standard Price	\$1,108	\$1,207	*	\$1,243	\$1,243	*	\$1,299
	Nitralloy Price	\$2,013	\$2,193	*	\$2,256	\$2,256	*	\$2,355
BASKET GRAPPLE CONTROL	Logan Part No.	A8039	A80395	A8040	A80402	A80405	A80407	A8041
	Bowen No.	B-4370	5944	M-1072	A-11829	4499	9208	8620
	Price	\$304	\$333	*	\$376	\$376	*	\$376
MILL CONTROL PACKER	Logan Part No.	A9039	A90395	A9040	A90402	A90405	A90407	A9041
	Bowen No.	L-5950-R	5950-R	M-4505-RS	11826-R	4505-R	9209-R	L-8618-R
	Price	\$497	\$540	*	\$556	\$556	*	\$589

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* Available upon request.

Special Notes:

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- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

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 D = SH Slim Hole - For heavy pulling strains only
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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		5-1/2	5-3/4	5-3/4	6	6-1/8	6-1/8	6-1/4
MAXIMUM CATCH SIZE (Basket)		4-3/4	5-1/8	5	5-1/4	5-1/2	5-3/8	5-5/8
OVERSHOT O.D.		7-1/8	6-7/8	7-3/8	7-5/8	7-1/4	7-3/4	7-3/8
TYPE		FS	SH	FS	FS	SH	FS	SH
COMPLETE ASSEMBLY	Logan Part No.	150-713-A	150-688-D	150-738-A	150-763-A	150-725-D	150-775-A	150-738-D
	Bowen No.	C-5176	8978	C-4689	7572	C-5206	C-5204	9692
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	A1042	A1043	A1044	A1045	A1046	A1047	A1048
	Bowen No.	A-5177	8979	A-4690	7573	A-5207	A-5205	9693
	Price	*	*	*	*	*	*	\$2,653
BOWL	Logan Part No.	A2042	A2043	A2044	A2045	A2046	A2047	A2048
	Bowen No.	B-2791	8980	B-3522	7574	B-5208	B-4218	9694
	Price	*	*	*	*	*	*	\$3,453
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3042	A3043	A3044	A3045	A3046	A3047	A3048
	Bowen No.	A-761	6701	L-120	218	A-5213	A-2065	9691
	Price	*	*	*	*	*	*	\$1,167

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4042	A4043	A4044	A4045	A4046	A4047	A4048
	Bowen No.	A-756	6697	L-110	223	B-5209	L-1642	9689
	Price	*	*	*	*	*	*	\$146
SPIRAL GRAPPLE	Logan Part No.	A5042	A5043	A5044	A5045	A5046	A5047	A5048
	Bowen No.	B-759	6699	M-104	220	B-5211	B-2063	9687
	Standard Price	*	*	*	*	*	*	\$936
	Nitralloy Price	*	*	*	*	*	*	\$1,718
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6042	A6043	A6044	A6045	A6046	A6047	A6048
	Bowen No.	B-760	6700	L-130	219	A-5212	B-2064	9688
	Price	*	*	*	*	*	*	\$304

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7042	A7043	A7044	A7045	A7046	A7047	A7048
	Bowen No.	B-759	6699	M-104	220	B-5211	B-2063	9687
	Standard Price	*	*	*	*	*	*	\$1,315
	Nitralloy Price	*	*	*	*	*	*	\$2,383
BASKET GRAPPLE CONTROL	Logan Part No.	A8042	A8043	A8044	A8045	A8046	A8047	A8048
	Bowen No.	B-760	6700	L-130	219	A-5212	B-2064	9688
	Price	*	*	*	*	*	*	\$371
MILL CONTROL PACKER	Logan Part No.	A9042	A9043	A9044	A9045	A9046	A9047	A9048
	Bowen No.	A-756-R	6697-R	L-110-R	223-R	B-5209-R	L-1642-R	9689-R
	Price	*	*	*	\$580	*	*	\$609

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- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		6-1/4	6-1/4	6-1/4	6-3/8	6-3/8	6-1/2
MAXIMUM CATCH SIZE (Basket)		5-9/16	5-9/16	5-1/2	5-3/4	5-5/8	5-7/8
OVERSHOT O.D.		7-5/8	7-5/8	7-7/8	7-1/2	7-3/4	7-5/8
TYPE		SFS	SFS	FS	SH	SFS	SH
COMPLETE ASSEMBLY	Logan Part No.	150-762-C	150-763-C	150-788-A	150-750-D	150-775-C	150-763-D
	Bowen No.	1873	8741	C-2108	9009	9163	9860
	Price	*	*		*	*	
TOP SUB	Logan Part No.	A10485	A1049	A1050	A1051	A1052	A1053
	Bowen No.	118	8742	B-2106	9010	9165	9861
	Price	*	*	\$2,922	*	*	\$3,012
BOWL	Logan Part No.	A20485	A2049	A2050	A2051	A2052	A2053
	Bowen No.	1875	1641	B-2109	9011	9164	9862
	Price	*	*	\$3,453	*	*	\$3,930
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3049	A3049	A3050	A3051	A3052	A3053
	Bowen No.	5525	5525	A-2075	9007	5506	9867
	Price	\$1,328	\$1,328	\$1,278	*	*	\$1,328

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4049	A4049	A4050	A4051	A4052	A4053
	Bowen No.	1642	1642	L-1680	9005	5508	9865
	Price	\$161	\$161	\$148	*	*	\$161
SPIRAL GRAPPLE	Logan Part No.	A5049	A5049	A5050	A5051	A5052	A5053
	Bowen No.	1644	1644	B-2073	9003	5503	9863
	Standard Price	\$1,016	\$1,016	\$936	*	*	\$1,056
	Nitralloy Price	\$1,866	\$1,866	\$1,718	*	*	\$1,919
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6049	A6049	A6050	A6051	A6052	A6053
	Bowen No.	1645	1645	A-2074	9004	5504	9864
	Price	\$333	\$333	\$304	*	*	\$333

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7049	A7049	A7050	A7051	A7052	A7053
	Bowen No.	1644	1644	B-2073	9003	5503	9863
	Standard Price	\$1,432	\$1,432	\$1,316	*	*	\$1,485
	Nitralloy Price	\$2,600	\$2,600	\$2,389	*	*	\$2,673
BASKET GRAPPLE CONTROL	Logan Part No.	A8049	A8049	A8050	A8051	A8052	A8053
	Bowen No.	1645	1645	A-2074	9004	5504	9864
	Price	\$403	\$403	\$371	*	*	\$403
MILL CONTROL PACKER	Logan Part No.	A9049	A9049	A9050	A9051	A9052	A9053
	Bowen No.	1642-R	1642-R	L-1680-R	9005-R	5508-R	9865-R
	Price	\$638	\$638	\$590	*	*	\$671

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		6-1/2	6-5/8	6-5/8	6-3/4	6-3/4	6-7/8	7
MAXIMUM CATCH SIZE (Basket)		5-3/4	6	5-7/8	6-1/8	6	6-1/4	6-3/8
OVERSHOT O.D.		8-1/8	7-3/4	8-1/4	7-7/8	8-3/8	8	8-1/8
TYPE		FS	SH	FS	SH	FS	SH	SH
COMPLETE ASSEMBLY	Logan Part No.	150-813-A	150-775-D	150-825-A	150-788-D	150-838-A	150-800-D	150-814-D
	Bowen No.	C-5342	4785	C-3032	C-5222	275	N-8995	*
	Price		*				*	*
TOP SUB	Logan Part No.	A1054	A1055	A1056	A1057	A1058	A10587	A10590
	Bowen No.	A-5343	9133	A-3033	A-5223	276	L-8996	
	Price	\$3,168	*	\$3,760	\$3,175	\$3,540	*	*
BOWL	Logan Part No.	A2054	A2055	A2056	A2057	A2058	A20587	A20590
	Bowen No.	B-3711	9134	B-3034	B-5224	277	M-8997	
	Price	\$3,615	*	\$4,116	\$4,116	\$4,094	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3054	A3055	A3056	A3057	A3058	A30587	A3059
	Bowen No.	A-2376	9139	A-1818	A-5229	205	L-8989	9226
	Price	\$1,342	*	\$1,458	\$1,391	\$1,402	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4054	A4055	A4056	A4057	A4058	A40587	A4059
	Bowen No.	2372	9136	A-1814	B-5225	207	L-8985	9224
	Price	\$148	*	\$160	\$160	\$160	*	*
SPIRAL GRAPPLE	Logan Part No.	A5054	A5055	A5056	A5057	A5058	A50587	A5059
	Bowen No.	B-2374	9137	N-84	B-5227	209	M-8987	9222
	Standard Price	\$973	*	\$1,082	\$1,082	\$1,039	*	*
	Nitralloy Price	\$1,766	*	\$1,949	\$1,949	*	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6054	A6055	A6056	A6057	A6058	A60587	A6059
	Bowen No.	B-2375	9138	M-89	A-5228	208	M-8988	9223
	Price	\$385	*	\$358	\$358	\$333	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7054	A7055	A7056	A7057	A7058	A70587	A7059
	Bowen No.	B-2374	9137	N-84	B-5227	209	M-8987	9222
	Standard Price	\$1,366	*	\$1,531	\$1,531	\$1,471	*	*
	Nitralloy Price	\$2,458	*	\$2,748	\$2,744	*	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8054	A8055	A8056	A8057	A8058	A80587	A8059
	Bowen No.	B-2375	9138	M-89	A-5228	208	M-8988	9223
	Price	\$371	*	\$486	\$486	\$447	*	*
MILL CONTROL PACKER	Logan Part No.	A9054	A9055	A9056	A9057	A9058	A90587	A9059
	Bowen No.	L-6635-R	9136-R	A-1814-R	B-5225-R	207-R	L-8985-R	9224-R
	Price	\$616	*	\$676	\$678	\$650	*	*

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* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

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 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		7	7	7	7	7-1/8	7-1/4	7-1/4
MAXIMUM CATCH SIZE (Basket)		6-3/8	6-1/4	6-3/8	6-1/4	6-1/2	6-5/8	6-1/2
OVERSHOT O.D.		8-1/8	8-1/8	8-3/8	8-5/8	8-1/4	8-3/8	8-7/8
TYPE		SH	SH	SH	FS	SH	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-813-D	150-812-D	150-837-D	150-863-A	150-825-D	150-838-D	150-888-A
	Bowen No.	9217	C-3263	17208	C-4817	9570	C-5354	C-5352
	Price		*	*	*	*		*
TOP SUB	Logan Part No.	A1059	A10595	A1058	A1060	A10605	A1061	A1062
	Bowen No.	9218	A-3033	276	B-4818	9544	A-5355	A-5353
	Price	\$3,084	*	*	*	*	\$3,856	*
BOWL	Logan Part No.	A2059	A20595	A20598	A2060	A20605	A2061	A2062
	Bowen No.	9219	B-3264	17209	B-3819	9571	B-5356	M-1026-1
	Price	\$4,025	*	*	*	*	\$4,439	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3059	A30595	A3059	A3060	A30605	A3061	A3062
	Bowen No.	9226	A-3269	9226	M-121	4792	A-5361	M-1029
	Price	\$1,342	*	*	*	*	\$1,529	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4059	A40595	A4059	A4060	A40605	A4061	A4062
	Bowen No.	L-9224	L-6310	9224	L-111	9231	B-5357	L-1025
	Price	\$153	*	\$152	*	*	\$166	*
SPIRAL GRAPPLE	Logan Part No.	A5059	A50595	A5059	A5060	A50605	A5061	A5062
	Bowen No.	9222	B-3267	9222	N-105	9229	B-5359	M-1027
	Standard Price	\$1,034	*	*	*	*	\$1,140	*
	Nitralloy Price	\$1,864	*	*	*	*	\$2,063	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6059	A60595	A6059	A6060	A60605	A6061	A6062
	Bowen No.	9223	B-3268	9223	M-131	9230	B-5360	M-1031
	Price	\$333	*	*	*	*	\$375	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7059	A70595	A7059	A7060	A70605	A7061	A7062
	Bowen No.	9222	B-3267	9222	N-105	9229	B-5359	M-1027
	Standard Price	\$1,436	*	*	*	*	\$1,604	*
	Nitralloy Price	\$2,583	*	*	*	*	\$2,910	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8059	A80595	A8059	A8060	A80605	A8061	A8062
	Bowen No.	9223	B-3268	9223	M-131	9230	B-5360	M-1031
	Price	\$448	*	*	*	*	\$521	*
MILL CONTROL PACKER	Logan Part No.	A9059	A90595	A9059	A9060	A90605	A9061	A9062
	Bowen No.	9224-R	L-6310R	9224-R	L-111-R	9231-R	B-5357-R	L-1025-R
	Price	\$644	*	*	*	*	\$720	*

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Special Notes:

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- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

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 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		7-3/8	7-3/8	7-1/2	7-1/2	7-5/8	7-3/4	
MAXIMUM CATCH SIZE (Basket)		6-3/4	6-5/8	6-7/8	6-3/4	6-7/8	7-1/8	
OVERSHOT O.D.		8-1/2	9	8-5/8	9-1/8	9-1/4	8-7/8	
TYPE		SH	FS	SH	FS	FS	SH	
COMPLETE ASSEMBLY	Logan Part No.	150-850-D	150-900-A	150-913-A	150-875-D	150-762-A	150-888-D	
	Bowen No.	4793	C-5230	C-7101	C-7099	C-5241	9850	
	Price	*	*	\$9,829	\$6,543	*	*	
TOP SUB	Logan Part No.	A1063	A1064	A1066	A1067	A10675	A1068	
	Bowen No.	4794	A-5231	A-7100	A-4797	A-5242	9851	
	Price	*	*	*	*	*	*	
BOWL	Logan Part No.	A2063	A2064	A2066	A2067	A20675	A2068	
	Bowen No.	9233	B-5232	B-4516	B-9239	B-5243	9852	
	Price	*	*	*	*	*	*	
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3063	A3064	A3066	A3067	A30675	A3068	
	Bowen No.	4795	A-4158	A-3456	A-4796	A-5248	9857	
	Price	*	*	*	*	*	*	

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4063	A4064	A4066	A4067	A40675	A4068	
	Bowen No.	9237	B-4154	L-98	9243	B-5244	9855	
	Price	*	*	*	*	*	*	
SPIRAL GRAPPLE	Logan Part No.	A5063	A5064	A5066	A5067	A50675	A5068	
	Bowen No.	9235	C-4156	B-3454	9241	B-5246	9853	
	Standard Price	*	*	*	*	*	*	
	Nitralloy Price	*	*	*	*	*	*	
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6063	A6064	A6066	A6067	A60675	A6068	
	Bowen No.	9236	B-4157	B-3455	9242	B-5247	9854	
	Price	*	*	*	*	*	*	

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7063	A7064	A7066	A7067	A70675	A7068	
	Bowen No.	9235	C-4156	B-3454	9241	B-5246	9853	
	Standard Price	*	*	*	*	*	*	
	Nitralloy Price	*	*	*	*	*	*	
BASKET GRAPPLE CONTROL	Logan Part No.	A8063	A8064	A8066	A8067	A80675	A8068	
	Bowen No.	9236	B-4157	A-3454	9242	B-5247	9854	
	Price	*	*	*	*	*	*	
MILL CONTROL PACKER	Logan Part No.	A9063	A9064	A9066	A9067	A90675	A9068	
	Bowen No.	9237-R	B-4154-R	M-98-R5	9243-C	B-5244-R	9855-R	
	Price	*	*	*	*	*	*	

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- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

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 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		7-3/4	7-3/4	7-3/4	8	8	8-3/8	8-3/8
MAXIMUM CATCH SIZE (Basket)		7	7	7	7-3/8	7-1/4	7-3/4	7-5/8
OVERSHOT O.D.		8-7/8	9-3/8	9-3/8	9-1/8	9-5/8	9-1/2	10-1/16
TYPE		SH	FS	FS	SH	FS	SH	FS
COMPLETE ASSEMBLY	Logan Part No.	150-889-D	150-937-A	150-938-A	150-913-D	150-963-A	150-950-D	150-1006-A
	Bowen No.	C-5257	1665	C-1500	C-5265	264	4834	C-1230
	Price	*	*	*	*			
TOP SUB	Logan Part No.	A1069	A10695	A1070	A1071	A1072	A1073	A1074
	Bowen No.	A-5258	1666	B-1502	A-5266	265	9063	B-1235
	Price	*	*	*	*	\$4,338	\$4,497	\$5,842
BOWL	Logan Part No.	A2069	A20695	A2070	A2071	A2072	A2073	A2074
	Bowen No.	B-5259	1283	B-1501	B-5267	266	9062	B-1231
	Price	*	*	*	*	\$4,445	\$5,428	\$5,217
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3069	A30695	A3070	A3071	A3072	A3073	A3074
	Bowen No.	A-5264	88	M-88	A-5272	240	9059	B-1236
	Price	*	*	*	*	\$1,743	\$1,864	\$2,425

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4069	A40695	A40695	A4071	A4072	A4073	A4074
	Bowen No.	B-5260	98 & L-98	98 & L-98	B-5268	235	9055	L-1060
	Price	*	*	*	*	\$160	\$172	\$172
SPIRAL GRAPPLE	Logan Part No.	A5069	A50695	A5070	A5071	A5072	A5073	A5074
	Bowen No.	B-5262	85 & N-85	N-85	B-5270	238	9057	C-1232
	Standard Price	*	*	*	*	\$1,109	\$1,257	\$1,207
	Nitralloy Price	*	*	*	*	\$2,013	\$2,267	\$2,316
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6069	A60695	A60695	A6071	A6072	A6073	A6074
	Bowen No.	A-5263	100 & M-100	100 & M-100	B-5271	239	9058	B-1233
	Price	*	*	*	*	\$361	\$444	\$410

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7069	A70695	A7070	A7071	A7072	A7073	A7074
	Bowen No.	B-5262	85 & N-85	N-85	B-5270	238	9057	C-1232
	Standard Price	*	*	*	*	\$1,566	\$2,043	\$1,870
	Nitralloy Price	*	*	*	*	\$2,826	\$3,687	\$3,373
BASKET GRAPPLE CONTROL	Logan Part No.	A8069	A80695	A80695	A8071	A8072	A8073	A8074
	Bowen No.	A-5263	100 & M-100	100 & M-100	B-5271	239	9058	B-1233
	Price	*	*	*	*	\$504	\$624	\$573
MILL CONTROL PACKER	Logan Part No.	A9069	A90695	A90695	A9071	A9072	A9073	A9074
	Bowen No.	B-5260-R	98-R	98-R	B-5268-R	235-R	9055-R	L-1060-R
	Price	*	*	*	*	\$1,038	\$1,305	\$1,254

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- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		8-1/2	8-1/2	8-7/8	9	9-5/8	9-3/4	
MAXIMUM CATCH SIZE (Basket)		7-7/8	7-3/4	8-1/8	8-1/4	8-7/8	9	
OVERSHOT O.D.		9-5/8	10-1/8	10-1/2	10-5/8	11-1/4	11-3/8	
TYPE		SH	FS	FS	FS	FS	FS	
COMPLETE ASSEMBLY	Logan Part No.	150-963-D	150-1013-A	150-1050-A	150-1063-A	150-1125-A	150-1138-A	
	Bowen No.	C-5284	8960	C-5305	C-5321	C-12822	26255	
	Price	*		*			*	
TOP SUB	Logan Part No.	A1075	A1076	A1078	A1079	A1080	A1081	
	Bowen No.	A-5285	8961	A-5306	A-5322	A-12823	26256	
	Price	*	\$6,365	*	\$6,169	\$6,810	*	
BOWL	Logan Part No.	A2075	A2076	A2078	A2079	A2080	A2081	
	Bowen No.	B-5286	8962	B-5307	B-5323	B-12824	26257	
	Price	*	\$5,428	*	\$5,389	\$5,712	*	
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3075	A3076	A3078	A3079	A3080	A3081	
	Bowen No.	A-5291	8959	A-5312	A-5328	A-12829	26261	
	Price	*	\$2,639	*	\$2,595	\$2,714	*	

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4075	A4076	A4078	A4079	A4080	A4081	
	Bowen No.	B-5287	8956	B-5308	B-5324	B-12825	26260	
	Price	*	\$151	*	\$141	\$158	*	
SPIRAL GRAPPLE	Logan Part No.	A5075	A5076	A5078	A5079	A5080	A5081	
	Bowen No.	B-5289	8957		B-5310	B-5326	26258	
	Standard Price	*	\$1,257	*	\$1,272	\$1,516	*	
	Nitralloy Price	*	\$2,274	*	\$2,278	\$2,738	*	
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6075	A6076	A6078	A6079	A6080	A6081	
	Bowen No.	A-5290	8958	B-5311	B-5327	B-12828	26259	
	Price	*	\$441	*	\$414	\$523	*	

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7075	A7076	A7078	A7079	A7080	A7081	
	Bowen No.	B-5289	8957	B-5310	B-5326	B-12827	26258	
	Standard Price	*	\$1,944	*	\$2,075	\$2,570	*	
	Nitralloy Price	*	\$3,516	*	\$3,713	\$4,631	*	
BASKET GRAPPLE CONTROL	Logan Part No.	A8075	A8076	A8078	A8079	A8080	A8081	
	Bowen No.	B-5290	8958	B-5311	B-5327	B-12828	26259	
	Price	*	\$622	*	\$594	\$793	*	
MILL CONTROL PACKER	Logan Part No.	A9075	A9076	A9078	A9079	A9080	A9081	
	Bowen No.	B-5287-R	8956-R	B-5308-R	B-5324-R	B-12825-R	26260-R	
	Price	*	\$1,305	*	\$1,378	\$1,626	*	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%
- (9) Additional cost may be incurred for premium connections.

Logan Coding

A = FS Full Strength – For all torsional pulling and jarring strain
 B = XFS Extra Full Strength – For extreme abuse
 C = SFS Semi Full Strength – Maximum strength for special hole conditions
 D = SH Slim Hole – For heavy pulling strains only
 E = XSH Extra Slim Hole – For pick up jobs only

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

Logan Series 150 Overshots

MAXIMUM CATCH SIZE (Spiral)		10-1/8	11-1/4	12	14	14-3/4	16-3/4
MAXIMUM CATCH SIZE (Basket)		9-3/8	10-1/2	11-1/4	13-1/4	14	16
OVERSHOT O.D.		11-3/4	12-3/4	13-3/4	16	16-3/4	20-3/4
TYPE		FS	FS	...	...	...	...
COMPLETE ASSEMBLY	Logan Part No.	150-1175-A	150-1275-A	150-1375	150-1600	150-1675	150-2075
	Bowen No.	C-5329	15800	33006	68028	64553	31653
	Price				*	*	*
TOP SUB	Logan Part No.	A1082	A1083	A1084	A1085	A1086	A1087
	Bowen No.	5330	15801	33007	68029	64554	31654
	Price	\$7,522	\$8,747	\$15,497	*	*	*
BOWL	Logan Part No.	A2082	A2083	A2084	A2085	A2086	A2087
	Bowen No.	5331	15802	33008	68030	64555	31655
	Price	\$5,999	\$7,376	\$12,024	*	*	*
STANDARD GUIDE (CUT-LIPPED)	Logan Part No.	A3082	A3083	A3084	A3085	A3086	A3087
	Bowen No.	5336	15806	33012	68035	64560	31660
	Price	\$2,894	\$3,263	\$4,033	*	*	*

SPIRAL COMPONENT PARTS

PACKER	Logan Part No.	A4082	A4083	A4084	A4085	A4086	A4087
	Bowen No.	B-5332	15805	33011	68031	64556	31656
	Price	\$172	\$381	\$413	*	*	*
SPIRAL GRAPPLE	Logan Part No.	A5082	A5083	A5084	A5085	A5086	A5087
	Bowen No.	5334	15803	33009	68033	64558	31658
	Standard Price	\$1,656	\$2,213	\$2,511	*	*	*
	Nitralloy Price	\$3,124	\$3,821	\$5,441	*	*	*
SPIRAL GRAPPLE CONTROL	Logan Part No.	A6082	A6083	A6084	A6085	A6086	A6087
	Bowen No.	5335	15804	33010	68034	64559	31659
	Price	\$580	\$839	\$852	*	*	*

BASKET COMPONENT PARTS

BASKET GRAPPLE	Logan Part No.	A7082	A7083	A7084	A7085	A7086	A7087
	Bowen No.	5334	15803	33009	68033	64558	31658
	Standard Price	\$2,791	\$3,911	\$4,724	*	*	*
	Nitralloy Price	\$5,279	\$6,709	\$6,224	*	*	*
BASKET GRAPPLE CONTROL	Logan Part No.	A8082	A8083	A8084	A8085	A8086	A8087
	Bowen No.	5335	15804	33010	68034	64559	31659
	Price	\$862	\$1,195	\$1,354	*	*	*
MILL CONTROL PACKER	Logan Part No.	A9082	A9083	A9084	A9085	A9086	A9087
	Bowen No.	5332-R	15805-R	33011-R	68031-R	64556-R	31656-R
	Price	\$1,790	\$2,474	\$2,874	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Overshot assembly prices are based on the sum of its component parts. (i.e. Top Sub, Bowl, Guide, and optional Spiral or Basket Component Parts).
- (2) Spiral Grapple, Basket Grapple, Packer and Mill Control Packer prices may increase when ordering non-standard catch sizes.
- (3) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.
- (4) If Top Sub, Bowl, or Guide is left oversized, add 20% for the first 114" or portion thereof; add an additional 10% for each additional 114" or portion thereof.
- (5) For Basket Grapples with Long Catch Stop add 10% to the Basket Grapple price.
- (6) For Basket Grapples with Short Catch Stop add 25% to the Basket Grapple price.
- (7) For right-hand wickers add 20% to the Grapple price.
- (8) For left-hand application add 20%

Logan Coding

A = FS Full Strength - For all torsional pulling and jarring strain
 B = XFS Extra Full Strength - For extreme abuse
 C = SFS Semi Full Strength - Maximum strength for special hole conditions
 D = SH Slim Hole - For heavy pulling strains only
 E = XSH Extra Slim Hole - For pick up jobs only

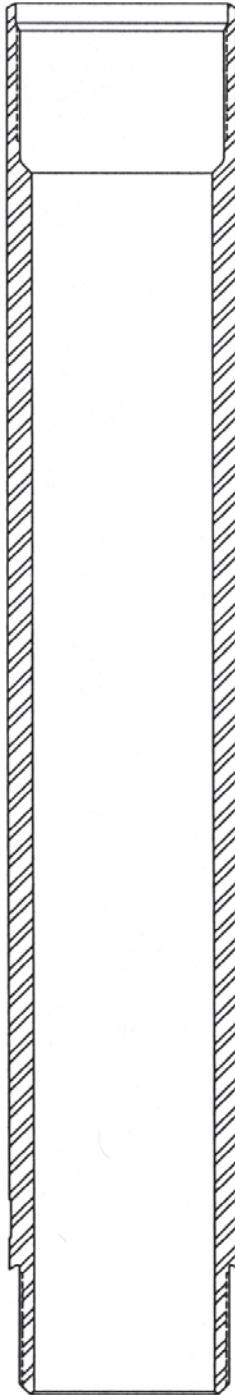
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Size and type of fish to be caught
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) Spiral: 2 Grapples, 1 Control
- (2) Basket: 2 Grapples, 1 Control

LOGAN SERIES 150 OVERSHOT EXTENSION SUBS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshot Extension Subs

		LENGTHS						
EXTENSION SUB OD (INCHES)		24" Long	30" Long	36" Long	42" Long	48" Long	54" Long	60" Long
2 to 2-3/8	Price	\$1,269	\$1,471	\$1,655	\$1,866	\$2,057	\$2,208	\$2,402
2-1/2 to 2-7/8	Price	\$1,411	\$1,592	\$1,796	\$2,043	\$2,202	\$2,402	\$2,630
3 to 3-3/8	Price	\$1,480	\$1,716	\$1,929	\$2,158	\$2,398	\$2,630	\$2,852
3-1/2 to 3-7/8	Price	\$1,566	\$1,816	\$2,057	\$2,296	\$2,527	\$2,776	\$2,997
4 to 4-3/8	Price	\$1,686	\$1,943	\$2,173	\$2,462	\$2,722	\$2,965	\$3,240
4-1/2 to 4-7/8	Price	\$1,783	\$2,090	\$2,332	\$2,626	\$2,918	\$3,209	\$3,483
5 to 5-3/8	Price	\$1,883	\$2,155	\$2,432	\$3,046	\$2,997	\$3,297	\$3,564
5-1/2 to 5-7/8	Price	\$2,155	\$2,513	\$2,852	\$3,175	\$3,483	\$3,840	\$4,210
6 to 6-3/5	Price	\$2,399	\$2,788	\$3,175	\$3,530	\$3,914	\$4,292	\$4,647
6-1/2 to 6-7/8	Price	\$2,696	\$3,039	\$3,492	\$3,898	\$4,254	\$4,642	\$5,005
7 to 7-3/8	Price	\$2,997	\$3,492	\$3,907	\$4,319	\$4,713	\$5,115	\$5,635
7-1/2 to 7-7/8	Price	\$3,360	\$3,816	\$4,227	\$4,647	\$5,071	\$5,617	\$5,977
8 to 8-3/8	Price	\$3,840	\$4,292	\$4,824	\$5,281	\$5,830	\$6,156	\$6,674
8-1/2 to 8-7/8	Price	\$4,222	\$4,642	\$5,103	\$5,621	\$6,074	\$6,512	\$7,159
9 to 9-3/8	Price	\$4,528	\$4,982	\$5,489	\$6,039	\$6,495	\$7,031	\$7,452
9-1/2 to 9-7/8	Price	\$5,084	\$5,621	\$6,181	\$6,739	\$7,239	\$7,806	\$8,357
10 to 10-3/8	Price	\$6,721	\$7,305	\$7,935	\$8,585	\$9,250	\$9,799	\$10,545
10-1/2 to 10-7/8	Price	\$7,336	\$8,130	\$8,762	\$9,533	\$10,188	\$10,870	\$11,548
11 to 11-3/8	Price	\$8,130	\$8,827	\$9,588	\$10,332	\$11,110	\$11,840	\$12,617
11-1/2 to 11-7/8	Price	\$8,762	\$9,588	\$10,349	\$11,303	\$12,033	\$13,019	\$13,736
12 to 12-3/8	Price	\$9,415	\$10,326	\$11,247	\$12,094	\$13,051	\$13,927	\$14,886
12-1/2 to 12-7/8	Price	\$10,303	\$11,249	\$12,227	\$13,149	\$14,153	\$15,180	\$16,146

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

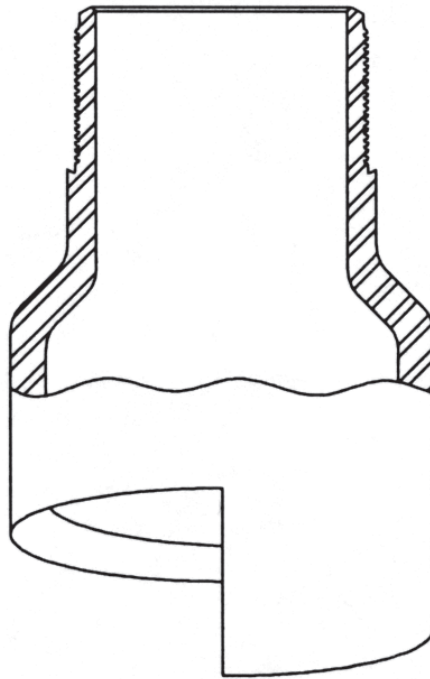
Special Notes:

- (1) Prices for special lengths are available upon request.
- (2) Add 20% for Extension Subs with Stops.

When ordering, please specify:

- (1) O.D. and length
- (2) Top or bottom extension
- (3) For Upper Extension, advise part number for Top Assembly or Assembly
- (4) For Lower Extension, advise part number for Guide or Assembly

LOGAN SERIES 150 OVERSHOT OVERSIZED GUIDES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshot Oversized Guides

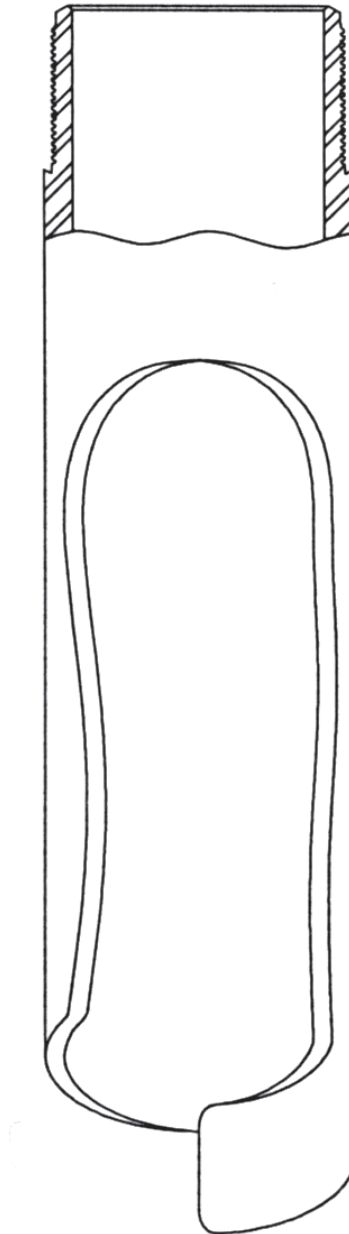
GUIDE OD (INCHES)				GUIDE OD (INCHES)			
	to 4-3/8	Price	\$987	13	to 13-3/8	Price	\$6,014
4-1/2	to 4-7/8	Price	\$1,278	13-1/2	to 13-7/8	Price	\$6,162
5	to 5-3/8	Price	\$1,355	14	to 14-3/8	Price	\$6,587
5-1/2	to 5-7/8	Price	\$1,579	14-1/2	to 14-7/8	Price	\$7,013
6	to 6-3/8	Price	\$1,790	15	to 15-3/8	Price	\$7,049
6-1/2	to 6-7/8	Price	\$1,904	15-1/2	to 15-7/8	Price	\$7,915
7	to 7-3/8	Price	\$1,929	16	to 16-3/8	Price	\$9,395
7-1/2	to 7-7/8	Price	\$2,141	16-1/2	to 16-7/8	Price	\$9,699
8	to 8-3/8	Price	\$2,252	17	to 17-3/8	Price	\$10,232
8-1/2	to 8-7/8	Price	\$2,500	17-1/2	to 17-7/8	Price	\$11,110
9	to 9-3/8	Price	\$2,724	18	to 18-3/8	Price	\$11,953
9-1/2	to 9-7/8	Price	\$3,464	18-1/2	to 18-7/8	Price	\$12,630
10	to 10-3/8	Price	\$3,744	19	to 19-3/8	Price	\$13,604
10-1/2	to 10-7/8	Price	\$5,631	19-1/2	to 19-7/8	Price	\$14,445
11	to 11-3/8	Price	\$5,871	20	to 20-3/8	Price	\$18,675
11-1/2	to 11-7/8	Price	\$5,889	20-1/2	to 20-7/8	Price	\$19,019
12	to 12-3/8	Price	\$5,932	21	to 21-7/8	Price	\$19,710
12-1/2	to 12-7/8	Price	\$5,982	22	to 24	Price	\$26,450

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Part number of Overshot Assembly, Standard Guide, or Bowl
- (2) O.D. of Guide

LOGAN SERIES 150 OVERSHOT WALLHOOK GUIDES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshot Wallhook Guides

OD (INCHES)		30" Long	36" Long	42" Long	48" Long	
5 to 5-3/8	Price	\$2,953	\$3,418	\$3,898	*	
5-1/2 to 5-7/8	Price	\$3,255	\$3,807	\$4,292	\$4,824	
6 to 6-3/8	Price	\$3,619	\$4,227	\$4,724	\$5,186	
6-1/2 to 6-7/8	Price	\$3,930	\$4,552	\$5,245	*	
7 to 7-3/8	Price	\$4,244	\$4,940	\$5,621	\$7,047	
7-1/2 to 7-7/8	Price	\$4,824	\$5,489	\$6,188	\$7,385	
8 to 8-3/8	Price	\$5,218	\$6,026	\$6,739	\$7,627	
8-1/2 to 8-7/8	Price	\$5,600	\$6,430	\$7,288	\$8,197	
9 to 9-3/8	Price	...	\$6,948	\$7,839	\$8,827	
9-1/2 to 9-7/8	Price	...	\$7,676	\$8,616	\$9,603	
10 to 10-3/8	Price	...	\$8,309	\$9,283	\$10,545	
10-1/2 to 10-7/8	Price	...	\$8,585	\$10,008	\$11,435	
11 to 11-3/8	Price	...	\$9,620	\$11,206	\$12,827	
11-1/2 to 11-7/8	Price	...	\$10,802	\$12,553	\$14,253	
12 to 12-3/8	Price	...	...	\$13,994	\$16,041	
12-1/2 to 12-7/8	Price	...	...	\$15,124	\$17,231	
13 to 13-3/8	Price	...	...	\$16,284	\$18,605	
13-1/2 to 13-7/8	Price	...	...	\$17,816	\$20,293	
14 to 14-3/8	Price	...	...	\$18,605	\$21,186	
14-1/2 to 14-7/8	Price	...	...	\$19,482	\$22,404	
15 to 15-3/8	Price	...	...	\$20,895	\$23,718	
15-1/2 to 15-7/8	Price	...	...	\$22,047	\$24,937	
16 to 16-3/8	Price	...	...	\$23,150	\$26,234	
16-1/2 to 16-7/8	Price	...	...	\$24,303	\$27,663	
17 to 17-3/8	Price	...	...	\$25,458	\$28,834	
17-1/2 to 18	Price	...	...	\$26,544	\$30,149	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

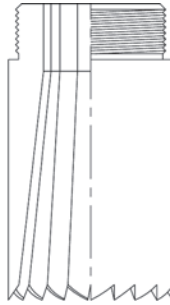
When ordering, please specify:

- (1) Part number of Overshot Assembly, Standard Guide, or Bowl
- (2) Length of Wallhook Guide
- (3) O.D. if other than standard

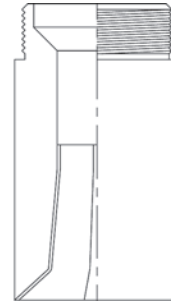
LOGAN SERIES 150 OVERSHOT MILL GUIDES



Type A



Type B



Type C

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshot Mill Guides

TYPE A — Machine cut carburized teeth to mill burrs off tool joints and drill collars

GUIDE O.D. NOT OVER (inches)	3-1/2	4	4-1/2	5	5-1/2	6	6-1/2
Approximate Length of Guide (inches)	8	8	8	8	8	12	12
Price	\$1,242	\$1,307	\$1,378	\$1,459	\$1,543	\$1,607	\$1,702

GUIDE O.D. NOT OVER (inches)	7	7-1/2	8	8-1/2	9	9-1/2	10
Approximate Length of Guide (inches)	12	12	12	16	16	16	16
Price	\$1,748	\$1,896	\$2,135	\$2,432	\$2,732	\$3,059	\$3,357

GUIDE O.D. NOT OVER (inches)	10-1/2	11					
Approximate Length of Guide (inches)	16	16					
Price	\$3,733	\$4,153					

TYPE B — Fluted with end teeth tapered and straight inside teeth to mill over pipe, upset section, or tool joint that the overshot catches

GUIDE O.D. NOT OVER (inches)	4-1/4	5-1/2	6	7	7-1/2	8	8-1/2
Approximate Length of Guide (inches)	8	8	12	12	12	12	16
Price	\$1,959	\$2,252	\$2,458	\$2,732	\$3,140	\$3,686	\$4,116

GUIDE O.D. NOT OVER (inches)	9	9-1/2	9-3/4				
Approximate Length of Guide (inches)	16	16	16				
Price	\$4,586	\$4,897	\$5,143				

TYPE C — Tungsten carbide tapered and straight ID to mill over pipe, upset section, or tool joint that the overshot catches

GUIDE O.D. NOT OVER (inches)	3-1/2	4	4-1/2	5	5-1/2	6	6-1/2
Approximate Length of Guide (inches)	8	8	8	8	8	12	12
Price	\$2,554	\$2,740	\$2,905	\$3,348	\$3,515	\$3,875	\$4,043

GUIDE O.D. NOT OVER (inches)	7	7-1/2	8	8-1/2	9	9-1/2	10
Approximate Length of Guide (inches)	12	12	12	16	16	16	16
Price	\$4,749	\$5,426	\$6,301	\$6,926	\$7,508	\$8,786	\$9,257

GUIDE O.D. NOT OVER (inches)	10-1/2	11	11-3/4				
Approximate Length of Guide (inches)	16	16	16				
Price	\$10,917	\$11,692	\$12,391				

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Special Notes:

- (1) Mill Guide prices shown are for use on Overshots with the same outside diameter.
- (2) An additional fee will apply for Mill Guides with oversized outside diameters.
- (3) Prices for Mill Guides not listed here are available upon request.

When ordering, please specify:

- (1) Mill Guide O.D. and type
- (2) Size of fish to mill over
- (3) O.D. if other than standard
- (4) Overshot Guide part number

Logan Series 150 Overshot Mill Control Packer Inner Seals

STANDARD - TYPE R

FISH SIZE (inches)		3/4	7/8	1	1-1/8	1-1/4	1-5/16	1.315
	Inner Seal	L13591	L66814	L12470	L12471	L12472	L14187	L12280
	Price	\$77	\$77	\$77	\$76	\$76	\$77	\$76

FISH SIZE (inches)		1-1/2	1-5/8-1.660	1-3/4	1-3/4	1-7/8	1.900	2
	Inner Seal	L12281	L11568	L12177	L12177SH	L10803	L218114-1900	L10804
	Price	\$75	\$77	\$76	\$76	\$75	\$77	\$75

FISH SIZE (inches)		2-1/16	2-1/8	2-1/4	2-5/16	2-3/8	2-1/2	2-5/8
	Inner Seal	L218114-66	L10805	L10806	L218114-74	L10807	L10808	L10809
	Price	\$77	\$75	\$75	\$77	\$95	\$75	\$75

FISH SIZE (inches)		2.702	2-3/4	2-13/16	2-7/8	2-7/8	2-7/8	2.900
	Inner Seal	L10994	L10810	L218114-90	L10811	L10811-100	L10811SH	L218114-2.900
	Price	\$90	\$75	\$85	\$81	\$111	\$83	\$90

FISH SIZE (inches)		3	3-1/16	3-1/8	3-3/16	3.220	3-1/4	3-1/4
	Inner Seal	L10812	L10098	L10813	L218114-102	L218114-3.220	L10814	L10814SH
	Price	\$81	\$76	\$97	\$106	\$106	\$100	\$97

FISH SIZE (inches)		3-5/16	3-3/8	3-7/16	3-1/2	3-5/8	3-21/32	3-3/4
	Inner Seal	L218114-106	L10815	L218114-110	L10816	L10817	L218114-130	L10819
	Price	\$106	\$97	\$106	\$97	\$97	\$106	\$97

FISH SIZE (inches)		3-3/4	3-13/16	3-7/8	3-15/16	4	4-1/16	4-1/8
	Inner Seal	L10819SH	L218114-122	L10820	L11694	L10821	L218114-130	L10822
	Price	\$97	\$155	\$144	\$148	\$144	\$153	\$144

FISH SIZE (inches)		4-1/8	4-1/4	4-1/4	4-3/8	4-1/2	4-5/8	4-5/8
	Inner Seal	L10822SH	L10823	L10823SH	L10824	L10825	L10826	L10826SH
	Price	\$148	\$144	\$148	\$144	\$144	\$144	\$147

FISH SIZE (inches)		4-3/4	4-7/8	5	5-1/8	5-1/4	5-3/8	5-1/2
	Inner Seal	L10827	L10828	L10829	L10830	L10831	L10832	L10833
	Price	\$144	\$153	\$153	\$153	\$153	\$153	\$153

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: L10811-100 (2-718 catch) inner seal is HNBR material.

When ordering, please specify:

- (1) Size of fish
- (2) Inner Seal number

Recommended Spare Parts:

- (1) 3 Inner Seals

Logan Series 150 Overshot Mill Control Packer Inner Seals

STANDARD - TYPE R

FISH SIZE (inches)		5-5/8	5-3/4	5-7/8	6	6-1/8	6-1/4	6-3/8
	Inner Seal	L10834	L10835	L10836	L10837	L10838	L10839	L10840
	Price	\$1,525	\$153	\$168	\$166	\$166	\$166	\$166

FISH SIZE (inches)		6-1/2	6-5/8	6-3/4	6-7/8	7	7-1/8	7-1/4
	Inner Seal	L10841	L10842	L10843	L10844	L10845	L10846	L10847
	Price	\$166	\$166	\$166	\$180	\$180	\$180	\$180

FISH SIZE (inches)		7-3/8	7-1/2	7-5/8	7-3/4	7-7/8	8	8-1/8
	Inner Seal	L10848	L10849	L10850	L10851	L10852	L10853	L10854
	Price	\$180	\$180	\$181	\$180	\$186	\$186	\$186

FISH SIZE (inches)		8-1/4	8-3/8	8-1/2	8-5/8	8-3/4	8-7/8	9
	Inner Seal	L10855	L10856	L10857	L10858	L10859	L10860	L10861
	Price	\$186	\$186	\$186	\$196	\$196	\$196	\$196

FISH SIZE (inches)		9-1/8	9-1/4	9-3/8	9-1/2	9-5/8	9-3/4	10
	Inner Seal	L10862	L10863	L10864	L12099	L12100	L12101	L12103
	Price	\$207	\$207	\$221	\$230	\$230	\$230	\$230

FISH SIZE (inches)		10-1/2	11-1/4	12	12-3/4			
	Inner Seal	L218114-336	L63841	L81071	L81497			
	Price	\$366	\$405	\$628	\$690			

PACKOFF PIPE SIZE		1-1/4	1-1/2	2-1/16	2-3/8	2-3/8	2-7/8	2-7/8
PASS UPSET SIZE		1-13/16	1.900	2.330	2-19/32	2-21/32	3-3/32	3-7/32
	Inner Seal	L13366	L13317-999	L13285SH	L11690	L11690	L11691	L11692
	Price	\$75	\$77	\$77	\$72	\$75	\$97	\$97

PACKOFF PIPE SIZE		3-1/2	3-1/2	3-1/2	4-1/2	4-1/2		
PASS UPSET SIZE		3-3/4	3-13/16	3-15/16	5	5-1/8		
	Inner Seal	L11693	L11693	L11694	L11695	L11696		
	Price	\$148	\$148	\$148	\$152	\$152		

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: L10811-100 (2-718 catch) inner seal is HNBR material.

When ordering, please specify:

- (1) Size of fish
- (2) Inner Seal number

Recommended Spare Parts:

- (1) 3 Inner Seals

Logan Series 150 Overshot Mill Control Packer Outer Seals

PACKER	Logan Part No.	A9950	A9000	A9001	A9002	A90025	A9003	A9004
	Bowen No.	9407-M	B-10202-R	9309-R	L-1453-R	1453-R	B-5089-R	B-3395-R
	Outer Seal	568032	568226	568228	568228	568228	568229	568230
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3

PACKER	Logan Part No.	A9005	A90055	A90056	A90057	A9006	A9007	A9009
	Bowen No.	8550-R	37588-R	B-1839-R	A-1831-R	L-809-RS	B-3594-R	B-5107-R
	Outer Seal	568233	568234	568235	568233	568233	568234	568234
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER	Logan Part No.	A9010	A9011	A9012	A90125	A9013	A90135	A9014
	Bowen No.	809-R	L-7090-R	B-5118-R	1517-R	L-1517-R	21303-R	B-4625-R
	Outer Seal	568234	568235	568235	568236	568236	568236	568237
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER	Logan Part No.	A90145	A9015	A9016	A90165	A9017	A9018	A9019
	Bowen No.	4185-R	L-6515-R	L-7065-R	1253-R	L-168-R	L-6665-R	6665-R
	Outer Seal	568237	568237	568238	568239	568239	568239	568239
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER	Logan Part No.	A9020	A9021	A90215	A90217	A9022	A9023	A90235
	Bowen No.	B-3219-R	B-5538-R	9122-R	L-6163-R	811-R	856-R	60947R
	Outer Seal	568239	568240	568239	568238	568240	568241	568241
	Price	\$6	\$7	\$6	\$6	\$7	\$7	\$7

PACKER	Logan Part No.	A9024	A9025	A9026	A9027	A90285	A9029	A9030
	Bowen No.	B-5157-R	A-1508-R	B-4895-R	L-1867-R	B-4672-R	169-R	B-2487-R
	Outer Seal	568242	568243	568242	568243	568244	568244	568246
	Price	\$7	\$7	\$7	\$8	\$8	\$8	\$10

PACKER	Logan Part No.	A9031	A9032	A9033	A9034	A9035	A9036	A9037
	Bowen No.	B-2199-1R	1140-R	195-R	B-2199-R	6114-R	B-2362-R	B-6387-R
	Outer Seal	568248	568247	568249	568248	568247	568248	568249
	Price	\$650	\$650	\$650	\$650	\$650	\$650	\$650

PACKER	Logan Part No.	A90375	A9038	A9039	A90395	A9040	A90402	A90405
	Bowen No.	1189-R	B-2455-R	L-5950-R	5950-R	M-4505-RS	11826-R	4505-R
	Outer Seal	568250	568249	568250	568250	568252	568251	568252
	Price	\$11	\$10	\$11	\$11	\$13	\$13	\$13

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Recommended Spare Parts:

(1) 3 Outer Seals

Logan Series 150 Overshot Mill Control Packer Outer Seals

PACKER	Logan Part No.	A90407	A9041	A9042	A9043	A9044	A9045	A9046
	Bowen No.	9209-R	L-8618-R	A-756-R	6697-R	L-110-R	223-R	B-5209-R
	Outer Seal	568252	568253	568254	568255	568359	568437	568259
	Price	\$15	\$16	\$16	\$16	\$17	\$17	\$17

PACKER	Logan Part No.	A9047	A90618	A9049	A90495	A9050	A9051	A9052
	Bowen No.	L-1642-R	9689-R	1642-R	1680-R	L-1680-R	9005-R	5508-R
	Outer Seal	568259	568258	568259	568438	568438	568259	568260
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17

PACKER	Logan Part No.	A9053	A9054	A9055	A90555	A9056	A9057	A9058
	Bowen No.	9865-R	L-6635-R	9136-R	1634-R	A-1814-R	B-5225-R	207-R
	Outer Seal	568259	568439	568260	568260	568260	568261	568261
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17

PACKER	Logan Part No.	A90587	A9059	A90595	A9060	A90605	A9061	A9062
	Bowen No.	L-8985-R	9224-R	L-6310-R	L-111-R	9231-R	B-5357-R	L-1025-R
	Outer Seal	568261	568261	568262	568441	568262	568263	568263
	Price	\$17	\$17	\$17	\$18	\$17	\$18	\$18

PACKER	Logan Part No.	A9063	A9064	A9065	A9066	A9067	A90675	A9068
	Bowen No.	9237-R	B-4154-R	B-7104-R	M-98-RS	9243-R	B-5244-R	9855-R
	Outer Seal	568263	568263	568264	568264	568263	568264	568264
	Price	\$18	\$18	\$18	\$18	\$18	\$18	\$18

PACKER	Logan Part No.	A9069	A90695	A9070	A9071	A9072	A9073	A9074
	Bowen No.	B-5260-R	98-R	L-98-R	B-5268-R	235-R	9055-R	L-1060-R
	Outer Seal	568265	568265	568265	568266	568369	568267	568268
	Price	\$19	\$19	\$19	\$19	\$24	\$24	\$24

PACKER	Logan Part No.	A9075	A9076	A9077	A9078	A9079	A9080	A9081
	Bowen No.	B-5287-R	8956-R	B-5300-R	B-5308-R	B-5324-R	B-12825-R	26260-R
	Outer Seal	568266	568268	568269	568270	568269	568271	568273
	Price	\$19	\$24	\$24	\$26	\$24	\$26	\$26

PACKER	Logan Part No.	A9082	A9083	A9084	A9085	A9086	A9087	
	Bowen No.	5332-R	15805-R	33011-R	68031-R	64556-R	31656-R	
	Outer Seal	568274	568451	568453	568279	568458	568463	
	Price	\$26	\$40	\$48	\$50	\$83	*	

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* Available upon request.

Recommended Spare Parts:

(1) 3 Inner Seals

Logan Type E Mill Control Packers

PACKER NUMBER	Logan Part No.	A9950E	A9000E	A9001E	A9002E	A90025E	A9003E	A9004E
	Bowen No.	9407-E	B-10202-E	9309-E	L-1453-E	1453-E	B-5089-E	B-3395-E
	Price	\$517	\$517	\$517	\$517	\$517	\$707	\$519
	Outer Seal	568032	568226	568228	568228	568228	568229	568230
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3

PACKER NUMBER	Logan Part No.	A9005E	A90055E	A90056E	A90057E	A9006E	A9007E	A9009E
	Bowen No.	8550-E	37588-E	B-1839-E	A-1831-E	L-809-ES	B-3594-E	B-5107-E
	Price	\$517	\$573	\$573	\$519	\$570	\$573	\$573
	Outer Seal	568233	568234	568235	568233	568233	568234	568234
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER NUMBER	Logan Part No.	A9010E	A9011E	A9012E	A90125E	A9013E	A90135E	A9014E
	Bowen No.	809-E	L-7090-E	B-5118-E	1517-E	L-1517-E	21303-E	B-4625-E
	Price	\$570	\$573	\$535	\$573	\$573	\$626	\$626
	Outer Seal	568234	568235	568235	568236	568236	568236	568237
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER NUMBER	Logan Part No.	A90145E	A9015E	A9016E	A90165E	A9017E	A9018E	A9019E
	Bowen No.	4185-E	L-6515-E	L-7065-E	1253-E	L-168-E	L-6665-E	6665-E
	Price	\$626	\$626	\$664	\$626	\$626	\$664	\$663
	Outer Seal	568237	568237	568238	568239	568239	568239	568239
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$6

PACKER NUMBER	Logan Part No.	A9020E	A9021E	A90215E	A90217E	A9022E	A9023E	A90235E
	Bowen No.	B-3219-E	B-5538-E	9122-E	L-6163-E	811-E	856-E	60947E
	Price	\$664	\$664	\$663	\$664	\$664	\$704	\$704
	Outer Seal	568239	568240	568239	568238	568240	568241	568241
	Price	\$6	\$7	\$6	\$6	\$7	\$7	\$7

PACKER NUMBER	Logan Part No.	A9024E	A9025E	A9026E	A9027E	A90285E	A9029E	A9030E
	Bowen No.	B-5157-E	A-1508-E	B-4895-E	L-1867-E	B-4672-E	169-E	B-2487-E
	Price	\$704	\$818	\$707	\$707	\$707	\$712	\$728
	Outer Seal	568242	568243	568242	568243	568244	568244	568246
	Price	\$7	\$8	\$7	\$8	\$8	\$8	\$10

PACKER NUMBER	Logan Part No.	A9031E	A9032E	A9033E	A9034E	A9035E	A9036E	A9037E
	Bowen No.	B-2199-1E	1140-E	195-E	B-2199-E	6114-E	B-2362-E	B-6387-E
	Price	\$737	\$759	\$737	\$737	\$736	\$737	\$775
	Outer Seal	568248	568247	568249	568248	568247	568248	568249
	Price	\$11	\$11	\$11	\$11	\$11	\$11	\$11

PACKER NUMBER	Logan Part No.	A90375E	A9038E	A9039E	A90395E	A9040E	A90402E	A90405E
	Bowen No.	1189-E	B-2455-E	L-5950-E	5950-E	M-4505-ES	11826-E	4505-E
	Price	\$775	\$775	\$775	\$774	\$787	\$787	\$787
	Outer Seal	568250	568249	568250	568250	568252	568251	568252
	Price	\$11	\$11	\$11	\$11	\$15	\$13	\$15

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

(1) Catch Size

Logan Type E Mill Control Packers

PACKER NUMBER	Logan Part No.	A90407E	A9041E	A9042E	A9043E	A9044E	A9045E	A9046E
	Bowen No.	9209-E	L-8618-E	A-756-E	6697-E	L-110-E	223-E	B-5209-E
	Price	\$811	\$811	\$811	\$837	\$956	\$866	\$883
	Outer Seal	568252	568253	568254	568255	568359	568437	568259
	Price	\$15	\$16	\$16	\$16	\$17	\$17	\$17

PACKER NUMBER	Logan Part No.	A9047E	A9048E	A9049E	A90495E	A9050E	A9051E	A9052E
	Bowen No.	L-1642-E	9689-E	1642-E	1680-E	L-1680-E	9005-E	5508-E
	Price	\$883	\$881	\$883	\$883	\$824	\$914	\$914
	Outer Seal	568259	568258	568259	568438	568438	568259	568260
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17

PACKER NUMBER	Logan Part No.	A9053E	A9054E	A9055E	A90555E	A9056E	A9057E	A9058E
	Bowen No.	9865-E	L-6635-E	9136-E	1634-E	A-1814-E	B-5225-E	207-E
	Price	\$914	\$912	\$924	\$925	\$925	\$934	\$936
	Outer Seal	568259	568439	568260	568260	568260	568261	568261
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17

PACKER NUMBER	Logan Part No.	A90587E	A9059E	A90595E	A9060E	A90605E	A9061E	A9062E
	Bowen No.	L-8985-E	9224-E	L-6310-E	L-111-E	9231-E	B-5357-E	L-1025-E
	Price	\$956	\$955	\$956	\$956	\$1,005	\$1,005	\$1,005
	Outer Seal	568261	568261	568262	568441	568262	568263	568263
	Price	\$17	\$17	\$17	\$18	\$17	\$18	\$18

PACKER NUMBER	Logan Part No.	A9063E	A9064E	A9065E	A9066E	A9067E	A90675E	A9068E
	Bowen No.	9237-E	B-4154-E	B-7104-E	M-98-ES	9243-E	B-5244-E	9855-E
	Price	\$1,285	\$1,285	\$1,285	\$1,381	\$1,381	\$1,381	\$1,381
	Outer Seal	568263	568263	568264	568264	568263	568264	568264
	Price	\$18	\$18	\$18	\$18	\$18	\$18	\$18

PACKER NUMBER	Logan Part No.	A9069E	A90695E	A9070E	A9071E	A9072E	A9073E	A9074E
	Bowen No.	B-5260-E	98-E	L-98-E	B-5268-E	235-E	9055-E	L-1060-E
	Price	\$1,381	\$1,381	\$1,381	\$1,598	\$1,598	\$1,795	\$1,795
	Outer Seal	568265	568265	568265	568266	568369	568267	568268
	Price	\$19	\$19	\$19	\$20	\$24	\$24	\$24

PACKER NUMBER	Logan Part No.	A9075E	A9076E	A9077E	A9078E	A9079E	A9080E	A9081E
	Bowen No.	B-5287-E	8956-E	B-5300-E	B-5308-E	B-5324-E	B-12825-E	26260-E
	Price	\$1,801	\$1,801	\$1,949	\$2,069	\$2,069	\$2,463	\$2,504
	Outer Seal	568266	568268	568269	568270	568269	568271	568273
	Price	\$19	\$24	\$24	\$26	\$24	\$26	\$26

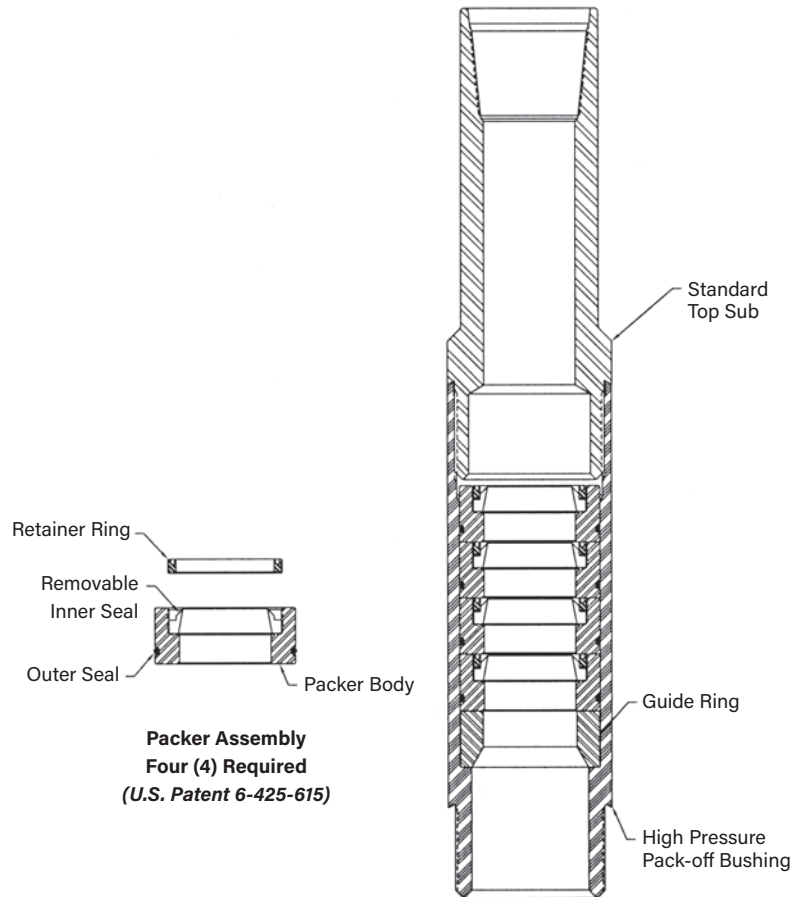
PACKER NUMBER	Logan Part No.	A9082E	A9083E	A9084E	A9085E	A9086E	A9087E	
	Bowen No.	5332-E	15805-E	33011-E	68031-E	64556-E	31656-E	
	Price	\$2,727	\$3,773	...	...	...	...	
	Outer Seal	568274	568451	568453	568457	568458	568463	
	Price	\$26	\$40	\$48	\$54	\$83	*	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

(1) Catch Size

LOGAN SERIES 150 OVERSHOT HIGH PRESSURE PACK-OFF ASSEMBLIES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 150 Overshot High Pressure Pack-off Assemblies

FOR USE WITH:								
OVERSHOT ASSEMBLY	Logan Part No.	150-413-A	150-413-D	150-438-A	150-425-D	150-4375-A	150-450-A	150-438-D
	Bowen No.	9105	C5115	C5112	C5126	9635	C5123	C4619
COMPLETE ASSEMBLY	Logan Part No.	800-249	800-252	800-254	800-256	800-257	800-258	800-259
	Price	\$5,032	\$5,075	\$5,075	\$5,141	\$5,141	\$5,408	\$5,734
BUSHING	Logan Part No.	HPP1010	HPP1012	HPP1013	HPP1014	HPP10145	HPP1015	HPP1016
	Price	\$178	\$1,840	\$1,840	\$1,905	\$1,905	\$1,905	\$1,770
PACKER *	Logan Part No.	HPP4010	HPP4012	HPP4013	HPP4014	HPP40145	HPP4015	HPP4016
	No. Req'd	4	4	4	4	4	4	4
	Price	\$603	\$603	\$603	\$603	\$603	\$699	\$831
GUIDE RING	Logan Part No.	GR1010	GR1012	GR1013	GR1014	GR10145	GR1015	GR1016
	Price	\$414	\$354	\$354	\$354	\$354	\$354	\$354

* Includes O-ring, Inner Seal, and Retainer Ring

FOR USE WITH:								
OVERSHOT ASSEMBLY	Logan Part No.	150-482-A	150-456-D	150-469-C	150-575-A	150-813-D		
	Bowen No.	C4732	C5151	9109	8975	9217		
COMPLETE ASSEMBLY	Logan Part No.	800-260	800-262	800-263	800-284	800-316		
	Price	\$5,408	\$5,629	\$5,616	\$6,123	\$8,604		
BUSHING	Logan Part No.	HPP1017	HPP1018	HPP1019	HPP1035	HPP1059		
	Price	\$1,906	\$1,906	\$1,904	\$2,663	\$4,207		
PACKER *	Logan Part No.	HPP4017	HPP4018	HPP4019	HPP4035	HPP4059		
	No. Req'd	4	4	4	4	4		
	Price	\$831	\$831	\$831	\$831	\$1,100		
GUIDE RING	Logan Part No.	GR1017	GR1018	GR1019	GR1035	GR1059		
	Price	\$354	\$354	\$354	\$386	\$386		

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Includes O-Ring, Inner Seal, and Retainer Ring

Special Notes:

- (1) Above High Pressure Pack-off Assemblies are used between the Top Sub and Bowl.
- (2) High Pressure Pack-off Assemblies for use between the Bowl and Guide are available upon request.
- (3) High Pressure Pack-off Assemblies for Overshots not listed are available upon request.

When ordering, please specify:

- (1) Overshot Assembly to be used with
- (2) O.D. of tubing or pipe size to pack-off

Logan Hollow Mill Extensions & Hollow Mill Inserts

Overshot	OD Overshot Assy. Part	No Hollow Mill Extension	Hollow Mill Insert
3 7/8	150-388-D	AN30056	AP30056
4 1/8	150-413-A	AN3010	AP3010
4 11/16	150-469-C	AN3019	AP3019
4 1/16	150-468-C	AN30215	AP30215
5 9/16	150-556-A	AN3029	AP3029
5 5/8	150-563-D	AN3034	AP3034
5 3/4	150-575-A	AN3035	AP3035
6 3/8	150-638-D	AN30405	AP30405
7 5/8	150-738-D	AN3048	AP3048
8 1/8	150-813-A	AN3054	AP3054
10 1/8	150-1013-A	AN3076	AP3076
11 3/4	150-1175-A	AN3082	AP3082

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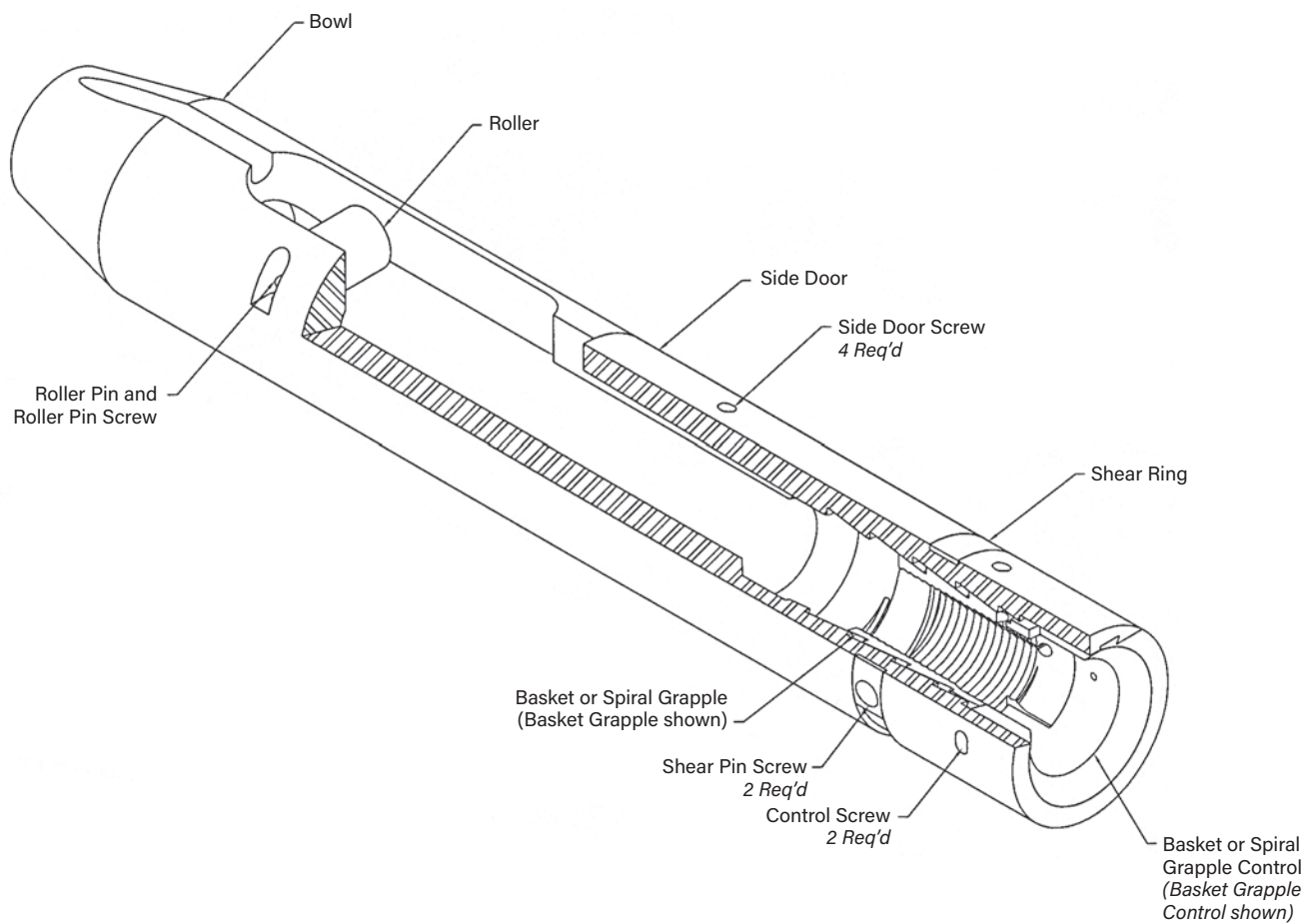
Special Notes:

(1) Additional Hollow Mill Extensions and Hollow Mill Inserts are available upon request.

When ordering, please specify:

- (1) Your Overshot Assembly part number
- (2) Hollow Mill Extension Length 18", 24" or 36" (Standard 18")
- (3) Hollow Mill Insert Tubing size
- (4) If you require the Hollow Mill Blank or dressed with Tungsten Carbide

LOGAN SERIES 160 SIDE DOOR OVERSHOTS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Series 160 Side Door Overshots

MAXIMUM CATCH SIZE (Spiral)		2-3/8	2-3/8	3-1/8	3-21/32			
MAXIMUM CATCH SIZE (Basket)		1-7/8	1-7/8	2-5/8	3-1/8			
OVERSHOT O.D.		4-1/2	4-1/2	4-11/16	5-1/2			
COMPLETE ASSEMBLY	Logan Part No.	160-450	160-451	160-469	160-550			
	Bowen No.	6400	9985	9965	9920			
	Price	*	*	*	*			

COMPONENT PARTS

BOWL	Logan Part No.	AK1003	AK1004	AK1005	AK1006			
	Bowen No.	6401	9986	9966	9921			
	Price	*	*	*	\$21,326			
ROLLER	Logan Part No.	AK2003	AK2003	AK2004	AK2005			
	Bowen No.	6456	6456	9967	9922			
	Price	*	*	*	\$196			
ROLLER PIN	Logan Part No.	AK3003	AK3003	AK3004	AK3005			
	Bowen No.	6457	6457	9968	9923			
	Price	*	*	*	\$122			
ROLLER PIN SCREW	Logan Part No.	AK4000	AK4000	AK4000	AK4001			
	Bowen No.	9568	9568	9568	9924			
	Price	*	*	*	\$2			
SHEAR RING	Logan Part No.	AK5003	AK5003	AK5004	AK5005			
	Bowen No.	6422	6422	9970	9925			
	Price	*	*	*	\$366			
SHEAR RING SCREW (2 req'd)	Logan Part No.	AK6003	AK6003	AK6004	AK6004			
	Bowen No.	25220	25220	9906	9906			
	Price	*	*	\$32	\$32			
SPIRAL GRAPPLE	Logan Part No.	A50025	A50025	A5010	A5019			
	Bowen No.	1448	1448	1741	6662			
	Standard Price	\$517	\$517	\$540	\$616			
	Nitralloy Price	\$931	\$931	\$899	\$1,110			
SPIRAL GRAPPLE CONTROL	Logan Part No.	AK8002	AK8002	AK8003	AK8004			
	Bowen No. 6403	6403	9973	9927				
	Price	*	*	*	\$596			
CONTROL SCREW (2 req'd)	Logan Part No.	AK9003	AK9003	AK9004	AK9004			
	Bowen No. 6459	6459	9928	9928				
	Price	*	*	\$2	\$2			
TOP SUB (see Note 1)	Logan Part No.	AK10000	...	...	...			
	Bowen No.	7243, 7244	...	...	...			
	Price (Each)*, *	...	...	...	...			
SIDE DOOR SCREW	Logan Part No.	AK4000	AK9001	Q3012	Q3012			
	Bowen No.	9568	9933	9558	9558			
	No. Req'd	4	4	4	4			
	Price	*	*	\$2	\$2			
BASKET GRAPPLE	Logan Part No.	AK12002	AK12002	AK12003	AK12004			
	Bowen No.	6402	6402	9972	9934			
	Standard Price	*	*	*	\$979			
	Nitralloy Price	*	*	*	\$1,771			
BASKET GRAPPLE CONTROL	Logan Part No.	AK13002	AK13002	AK13003	AK13004			
	Bowen No.	6403	6403	9973	9927			
	Price	*	*	*	\$656			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

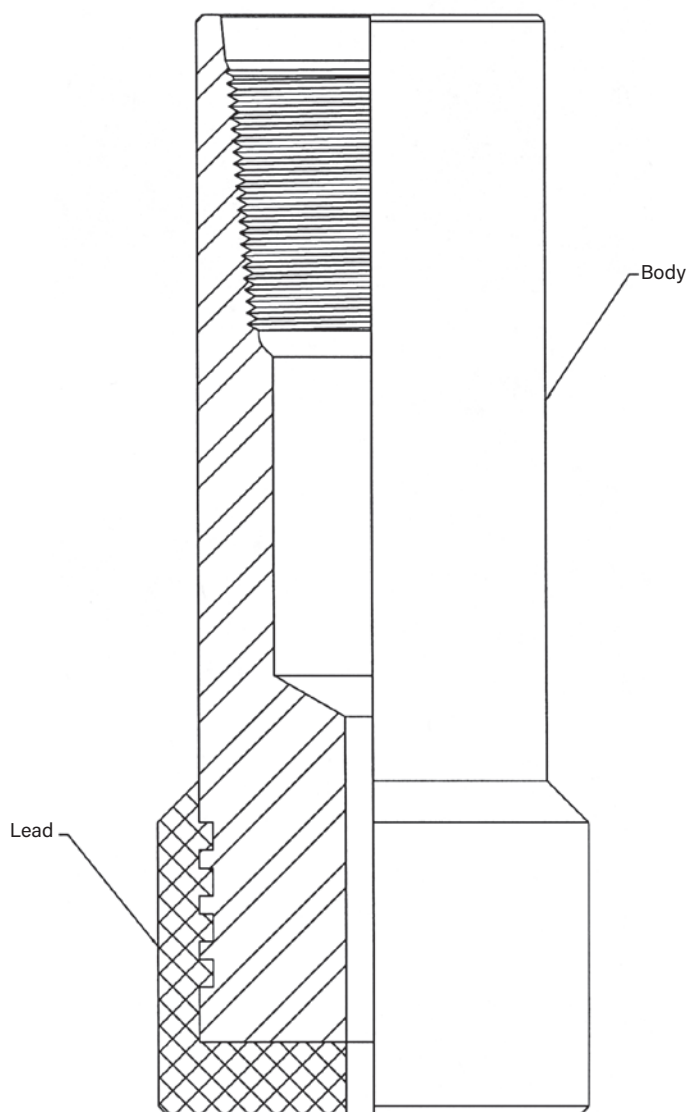
Special Notes:

- (1) Assembly number 160-450 (6400) has a straight thread top connection in bowl and requires special Top Subs. Price includes Top Subs.
- (2) Overshot assembly price can be determined by adding each component item associated with the complete assembly (i.e. Bowl, Roller, Roller Pin, Roller Pin Screw, Shear Ring, Shear Ring Screw, Side Door Screw, and optional Spiral or Basket Component Parts).
- (3) Spiral Grapple and Basket Grapple prices may increase when ordering non-standard catch sizes.
- (4) A minimum quantity of two Spiral Grapples is required when ordering non-standard catch sizes.

Recommended Spare Parts:

- (1) 2 Grapples for each size, Basket and Spiral
- (2) 2 Grapple Controls for each size

LOGAN LEAD IMPRESSION BLOCKS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Lead Impression Blocks

SIZE (O.D. OF LEAD)		1	1-5/8	1-3/4	2-1/8	2-1/4	2-3/4	3
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-100	100-163	100-175	100-213	100-225	100-275	100-300
	Price	None	None	None	None	None	None	1/2
		\$945	\$1,042	\$1,083	\$1,109	\$1,188	\$1,314	\$1,437

SIZE (O.D. OF LEAD)		3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-325	100-350	100-375	100-400	100-425	100-450	100-475
	Price	1/2	1/2	1/2	1/2	1/2	3/4	3/4
		\$1,534	\$1,626	\$1,690	\$1,749	\$1,827	\$1,904	\$1,926

SIZE (O.D. OF LEAD)		5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-500	100-525	100-550	100-575	100-600	100-625	100-650
	Price	3/4	3/4	3/4	3/4	3/4	3/4	3/4
		\$2,007	\$2,060	\$2,107	\$2,216	\$2,332	\$2,447	\$2,570

SIZE (O.D. OF LEAD)		6-3/4	7	7-1/4	7-1/2	7-3/4	8	8-1/4
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-675	100-700	100-725	100-750	100-775	100-800	100-825
	Price	3/4	3/4	3/4	3/4	3/4	3/4	3/4
		\$2,694	\$3,022	\$3,137	\$3,226	\$3,306	\$3,373	\$3,661

SIZE (O.D. OF LEAD)		8-1/2	8-3/4	9	9-1/4	9-1/2	9-3/4	10
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-850	100-875	100-900	100-925	100-950	100-975	100-1000
	Price	3/4	3/4	3/4	3/4	3/4	3/4	3/4
		\$3,949	\$4,237	\$4,640	\$4,806	\$5,067	\$5,368	\$5,629

SIZE (O.D. OF LEAD)		10-1/4	10-1/2	10-3/4	11	11-1/4	11-1/2	11-3/4
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-1025	100-1050	100-1075	100-1100	100-1125	100-1150	100-1175
	Price	3/4	3/4	3/4	3/4	3/4	3/4	3/4
		\$5,877	\$6,094	\$6,327	\$6,558	\$6,761	\$6,968	\$7,171

SIZE (O.D. OF LEAD)		12	12-1/4					
COMPLETE ASSEMBLY WATERCOURSE SIZE	Logan Part No.	100-1200	100-1225					
	Price	3/4	3/4					
		\$7,392	\$7,719					

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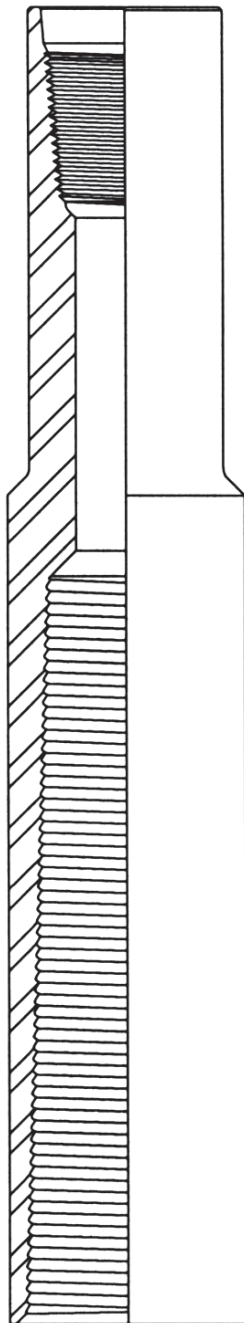
Special Notes:

- (1) Additional sizes available upon request.
- (2) All Logan Impression Blocks are furnished with metal lead protectors.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) Lead O.D.

LOGAN ROTARY DIE COLLARS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Rotary Die Collars

COMPLETE ASSEMBLY	Logan Part No.	102-166	102-181	102-191	102-231	102-344	102-368	102-419
NOMINAL SIZE		3/4	1	1	1-1/4	2-3/8	2-3/8	2-3/8
		Pipe	Pipe	Upset	Pipe	Pipe	Upset	API Reg
TO CATCH		1.050	1.315	1.469	1.660	2-3/8	2-21/32	3-1/8
TOTAL LENGTH		8	17	15	12	24	24	24
O.D.		1.660	1-13/16	1-29/32	2-5/16	3-7/16	3-11/16	4-3/16
DIAMETER OF LARGEST WICKER		1-3/16	1-1/2	1-5/8	1-7/8	2-9/16	2-13/16	3-5/16
DIAMETER OF SMALLEST WICKER		7/8	1	1-1/8	1-3/8	1-3/4	2	2-1/2
TYPE A WITH PLAIN OR LIPPED BOTTOM	Price	\$1,620	\$1,707	\$2,304	\$2,116	\$2,405	\$2,405	\$2,582
TYPE A WITH CARBURIZED MILL TEETH	Price	\$1,929	\$2,017	\$2,471	\$2,424	\$2,717	\$2,763	\$2,980
TYPE B LESS GUIDE	Price	...	...	...	...	\$2,717	\$2,763	\$2,980
GUIDE (STANDARD O.D.)	Price	...	...	...	...	\$535	\$532	\$552
WITH PLAIN OR LIPPED BOTTOM								
WITH CARBURIZED MILL TEETH	Price	...	...	...	...	\$1,460	\$1,536	\$1,622
ADDITIONAL LENGTH PRICE PER INCH	Price	\$123	\$208	\$196	\$208	\$208	\$208	\$208

COMPLETE ASSEMBLY	Logan Part No.	102-444	102-400	102-438	102-488	102-525	102-475	102-506
NOMINAL SIZE		2-3/8	2-7/8	2-7/8	2-7/8	2-7/8	3-1/2	3-1/2
		API IF	Pipe	Upset	API Reg	API IF	Pipe	Upset
TO CATCH		3-3/8	2-7/8	3-7/32	3-3/4	4-1/8	3-1/2	3-13/16
TOTAL LENGTH		24	24	24	24	24	32	32
O.D.		4-7/16	4	4-3/8	4-7/8	5-1/4	4-3/4	5-1/16
DIAMETER OF LARGEST WICKER	3-9/16	3-1/16	3-7/16	3-15/16	4-5/16	3-3/4	4-1/16	
DIAMETER OF SMALLEST WICKER	2-3/4	2-1/4	2-5/8	3-1/8	3-1/2	2-5/8	2-15/16	
TYPE A WITH PLAIN OR LIPPED BOTTOM	Price	\$2,669	\$2,387	\$2,669	\$3,106	\$2,381	\$3,644	\$4,016
TYPE A WITH CARBURIZED MILL TEETH	Price	\$3,012	\$2,909	\$3,012	\$3,331	\$3,931	\$4,322	\$4,749
TYPE B LESS GUIDE	Price	\$3,012	\$2,909	\$3,012	\$3,552	\$3,815	\$4,048	\$4,631
GUIDE (STANDARD O.D.)	Price	\$552	\$535	\$552	\$775	\$825	\$647	\$825
WITH PLAIN OR LIPPED BOTTOM								
WITH CARBURIZED MILL TEETH	Price	\$1,622	\$1,536	\$1,622	\$1,886	\$2,001	\$1,886	\$2,001
ADDITIONAL LENGTH PRICE PER INCH	Price	\$208	\$208	\$208	\$208	\$208	\$228	\$228

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Special Notes:

- (1) Prices shown represent specific details listed per assembly. An additional charge will apply for any modification to the I.D., O.D., length, and/or catch range.
- (2) For left-hand application add 20%.

When ordering, please specify:

- (1) Name and number of part
- (2) Connection
- (3) Type and size of guide if required
- (4) O.D. if other than standard

Logan Rotary Die Collars

COMPLETE ASSEMBLY	Logan Part No.	102-550	102-588	102-600	102-588	102-638	102-688	102-713
NOMINAL SIZE		3-1/2	3-1/2	3-1/2	4-1/2	4-1/2	4-1/2	4-1/2
		API Reg	API FH	API IF	Pipe	Upset	API Reg	API FH
TO CATCH		4-1/4	4-5/8	4-3/4	4-1/2	5	5-1/2	5-3/4
TOTAL LENGTH		32	32	32	36	36	36	36
O.D.		5-1/2	5-7/8	6	5-7/8	6-3/8	6-7/8	7-1/8
DIAMETER OF LARGEST WICKER		4-1/2	4-7/8	5	4-3/4	5-1/4	5-3/4	6
DIAMETER OF SMALLEST WICKER		3-3/8	3-3/4	3-7/8	3-3/8	3-7/8	4-3/8	4-5/8
TYPE A WITH PLAIN OR LIPPED BOTTOM	Price	\$4,313	\$4,707	\$4,812	\$5,248	\$5,727	\$6,411	\$6,021
TYPE A WITH CARBURIZED MILL TEETH	Price	\$4,997	\$5,450	\$5,524	\$5,976	\$6,412	\$7,188	\$6,767
TYPE B LESS GUIDE	Price	\$4,780	\$5,261	\$5,434	\$5,846	\$6,270	\$6,971	\$7,188
GUIDE (STANDARD O.D.)	Price	\$881	\$964	\$964	\$964	\$993	\$1,109	\$1,168
WITH PLAIN OR LIPPED BOTTOM								
WITH CARBURIZED MILL TEETH	Price							
ADDITIONAL LENGTH PRICE PER INCH	Price	\$252	\$252	\$252	\$252	\$252	\$252	\$252

COMPLETE ASSEMBLY	Logan Part No.	102-750	102-706	102-756	102-825	102-850	102-888	102-813
NOMINAL SIZE		4-1/2	5-9/16	5-9/16	5-9/16	5-9/16	5-9/16	6-5/8
		API IF	Pipe	Upset	API Reg	API FH	API IF	Pipe
TO CATCH		6-1/8	5-9/16	6-1/16	6-3/4	7	7-3/8	6-5/8
TOTAL LENGTH		36	42	42	42	42	42	42
O.D.		7-1/2	7-1/16	7-9/16	8-1/4	8-1/2	8-7/8	8-1/8
DIAMETER OF LARGEST WICKER		6-3/8	5-13/16	6-5/16	7	7-1/4	7-5/8	6-7/8
DIAMETER OF SMALLEST WICKER		5	3-15/16	4-7/16	5-1/8	5-3/8	5-3/4	5
TYPE A WITH PLAIN OR LIPPED BOTTOM	Price	\$6,879	\$8,004	\$8,615	\$9,520	\$9,955	\$10,792	\$9,457
TYPE A WITH CARBURIZED MILL TEETH	Price	\$7,673	\$9,015	\$9,541	\$10,622	\$10,913	\$12,012	\$10,622
TYPE B LESS GUIDE	Price	\$7,513	\$8,663	\$9,088	\$10,083	\$106,215	\$11,500	\$10,083
GUIDE (STANDARD O.D.)	Price	\$1,259	\$1,168	\$1,313	\$1,307	\$1,378	\$1,492	\$1,307
WITH PLAIN OR LIPPED BOTTOM								
WITH CARBURIZED MILL TEETH	Price							
ADDITIONAL LENGTH PRICE PER INCH	Price	\$252	\$252	\$317	\$410	\$410	\$410	\$410

COMPLETE ASSEMBLY	Logan Part No.	102-863	102-925	102-950	102-1000	102-1075	102-1363
NOMINAL SIZE		6-5/8	6-5/8	6-5/8	6-5/8	6-5/8	6-5/8
		Upset	API Reg	API FH	API IF	API Reg	API Reg
TO CATCH		7-1/8	7-3/4	8	8-1/2	8-5/8	10-3/4
TOTAL LENGTH		42	42	42	42	42	46
O.D.		8-5/8	9-1/4	9-1/2	10	10-3/4	13-5/8
DIAMETER OF LARGEST WICKER		7-3/8	8	8-1/4	8-3/4	9-3/4	12
DIAMETER OF SMALLEST WICKER		5-1/2	6-1/8	6-3/8	6-7/8	7-7/8	10
TYPE A WITH PLAIN OR LIPPED BOTTOM	Price	\$10,530	\$11,412	\$11,402	\$13,453	\$14,728	\$26,906
TYPE A WITH CARBURIZED MILL TEETH	Price	\$11,820	\$12,406	\$15,299	\$14,917	\$16,160	\$28,914
TYPE B LESS GUIDE	Price	\$11,265	\$12,172	\$12,727	\$14,377	\$15,691	\$28,536
GUIDE (STANDARD O.D.)	Price	\$1,592	\$1,727	\$1,828	\$2,004	\$2,763	\$4,442
WITH PLAIN OR LIPPED BOTTOM							
WITH CARBURIZED MILL TEETH	Price						
ADDITIONAL LENGTH PRICE PER INCH	Price	\$410	\$454	\$450	\$542	\$591	\$866

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Special Notes:

- (1) Prices shown represent specific details listed per assembly. An additional charge will apply for any modification to the I.D., O.D., length, and/or catch range.
- (2) For left-hand application add 20%.

When ordering, please specify:

- (1) Name and number of part
- (2) Connection
- (3) Type and size of guide if required
- (4) O.D. if other than standard

Logan/HE "PRS" Packer Milling and Retrieving Tool

CASING SIZES (INCHES)	2-7/8"-3-1/2"	4"-5"	5-1/2"-7"	7"-9-5/8"	9-5/8"-13-3/8"
STANDARD PIN CONN.	1-13/16 WFJ (NS) Box	2-3/8 API Reg. Pin API Reg. Pin	2-7/8 API Reg. Pin	3-1/2 API Reg. Pin	4-1/2 API Reg. Pin
COMPLETE ASSEMBLY SHORT SHOE DRESSED:					
PART NUMBER	15012	15014	15016	15018	15020
Req'd	1	1	1	1	1
COMPLETE ASSEMBLY LONG SHOE DRESSED:					
PART NUMBER	*	15015	15017	15019	15021
Req'd	*	1	1	1	1
Price	*	*	*	*	*

Logan/HE Packer Retriever Spear

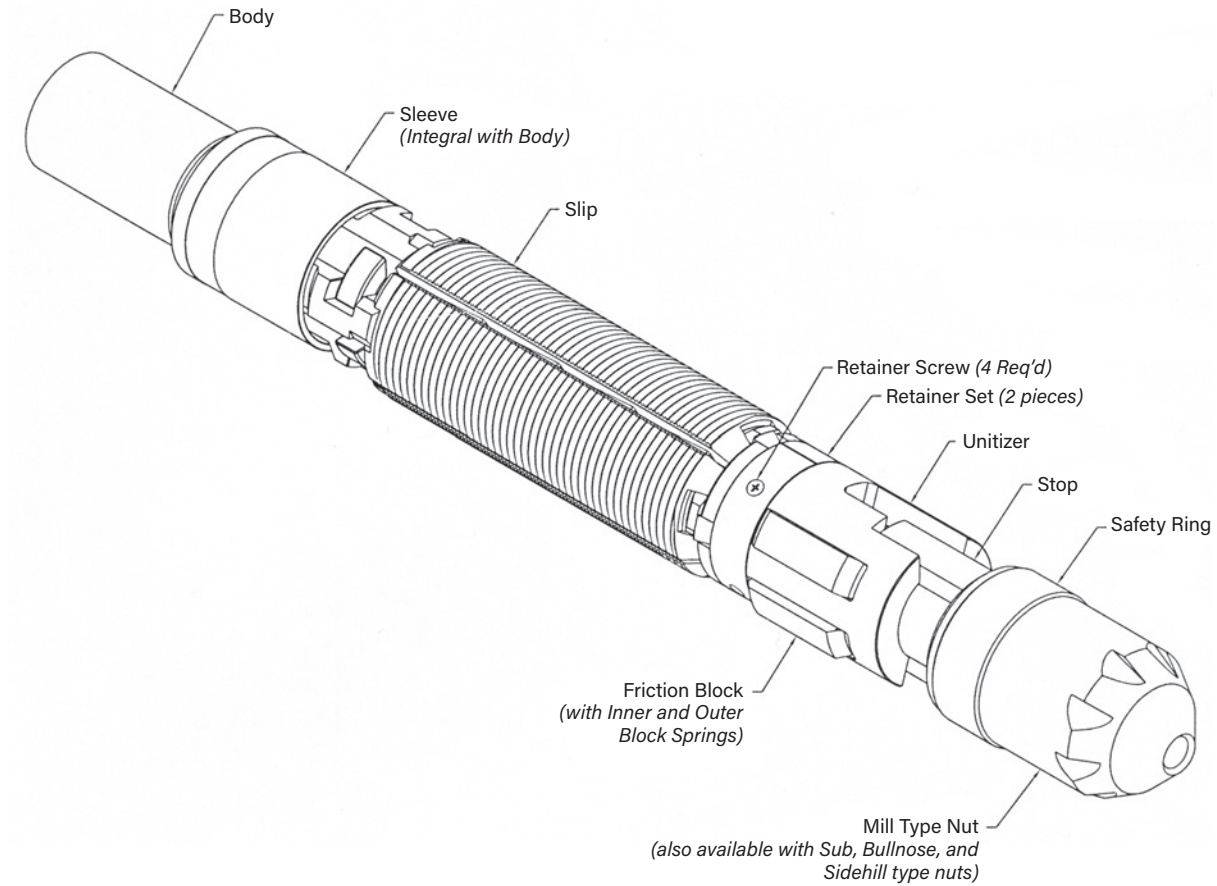
NOMINAL SIZE (INCHES)	1-1/4"	1-13/16"	2"	2-1/2"	3"
Tool O.D.	1-3/16"	1-3/4"	2-3/8"	2-3/4"	3-1/2"
Tool I.D.	1/4"	3/8"	3/8"	5/8"	3/4"
Standard Pin Conn.	Optional	1-13/16 WFJ-OS	1-1/4" API Reg.	2-3/8 WFJ	2-3/8" API Reg.
COMPLETE ASSEMBLY:					
Part Number	14079	14080	14081	14082	14083
Price	*	*	*	*	*

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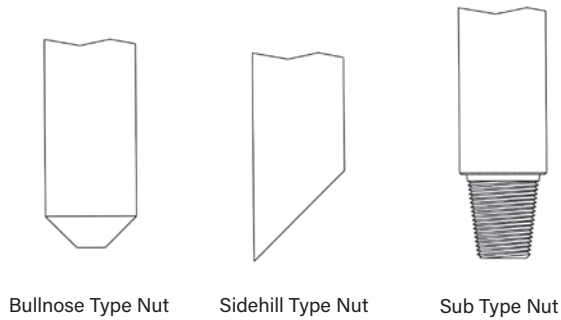
Special Notes:

- (1) Price and Delivery Upon Request
- (2) When ordering larger sizes, please specify Slip catch size and make, model and I.D. of Packer to be caught.
- (3) Complete assembly includes smallest catch slip available. When ordering larger sizes, please specify slip catch size desired and make, model and I.D. of Packer to be caught. Box and Pin connection must be specified on Assembly 14079. Non-Standard threads on other assemblies must be specified. Recommended spare parts: One Slip for each size.

LOGAN FULL CIRCLE RELEASING SPEARS



Optional Nuts



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Full Circle Releasing Spears

NOMINAL SIZE		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
RECOMMENDED CATCHING RANGE *		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
OD SMALLEST SLIPS RETRACTED		1-29/32	2-5/16	2-13/16	3-5/16			
EXPANSION SLIPS OVER SAFETY RING		11/32	3/8	13/32	15/32			
SLIP ENGAGEMENT AREA (SQ IN)		59	87	115	136			
COMPLETE ASSEMBLY	Logan Part No.	204-001	204-003 ††	204-005	204-007			
	Bowen No.	6693	6684	6701	6710			
	Price	\$11,399	\$13,703	\$15,798	*			
TOP SUB	Logan Part No.	AV1001	AV1003	AV1005	AV1007			
<i>(Includes Protector)</i>	Bowen No.	5858	5774	6702	5839			
	Price	\$1,724	\$1,877	\$2,029	*			
PROTECTOR	Logan Part No.	AV2001	AV2003	AV2005	AV2007			
	Bowen No.	5858-1	5774-1	6702-1	5839-1			
	Price	\$270	\$283	\$323	*			
BODY	Logan Part No.	AV3001	AV3003	AV3005	AV3007			
	Bowen No.	6694	6685	6703	6711			
	Price	\$2,859	\$3,936	\$4,561	*			
SLIP	Logan Part No.	AV4001	AV4003	AV4005	AV4007			
<i>(Includes Fingers)</i>	Bowen No.	6695	6686	6704	6712			
	No. Req'd	3	3	3	3			
	Price Each	\$1,091	\$1,251	\$1,561	*			
UNITIZER	Logan Part No.	AV5001	AV5003	AV5005	...			
	Bowen No.	6696	6687	A6705	...			
	Price	\$1,032	\$1,191	\$1,342	...			
FRICTION RETAINER	Logan Part No.	AV6001	AV6003	AV6005	...			
<i>(Includes Springs)</i>	Bowen No.	6697F	6688F	A6706F	...			
	Price	\$753	\$848	\$890	...			
FRICTION RETAINER	Logan Part No.	AV7000	AV7000	R4000	...			
SCREWS	Bowen No.	6423	6423	23508	...			
	No. Req'd	4	4	4	...			
	Price	\$22	\$22	*	...			
FRICTION RETAINER	Logan Part No.	AV8000	AV8001	AV8002	...			
SPRINGS	Bowen No.	8951	8945	A8952	...			
	No. Req'd	8	10	12	...			
	Price	\$77	\$20	\$53	...			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** Weight of Drill Pipe and/or Tubing to be specified by client.

†† 204-003 dressed for 2-7/8" 8.7 lb tubing will not go in completely. The Top Sub is 3-5/8" and will not fit into tubing.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
RECOMMENDED CATCHING RANGE *		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
OD SMALLEST SLIPS RETRACTED		1-29/32	2-5/16	2-13/16	3-5/16			
EXPANSION SLIPS OVER SAFETY RING		11/32	3/8	13/32	15/32			
SLIP ENGAGEMENT AREA (SQ IN)		59	87	115	136			
COMPLETE ASSEMBLY	Logan Part No.	204-001	204-003	204-005	204-007			
	Bowen No.	6693	6684	6701	6710			
FRICITION BLOCK ASSY.	Logan Part No.	...	...	...	AV90001			
<i>Consists of:</i>	Bowen No.	...	...	...	14901			
	Price	...	...	...	*			
UNITIZER	Logan Part No.	...	...	...	AV10001			
	Bowen No.	...	...	...	14902			
	Price	...	...	...	*			
RETAINER SET	Logan Part No.	...	...	...	AV11001			
<i>(2 pieces)</i>	Bowen No.	...	...	...	14903			
	Price Per Set	...	...	...	*			
FRICITION BLOCK	Logan Part No.	...	...	...	AV12001			
	Bowen No.	...	...	...	14904			
	No. Req'd	...	...	...	2			
	Price	...	...	...	*			
RETAINER SCREW	Logan Part No.	...	...	...	AV13001			
	Bowen No.	...	...	...	23108			
	No. Req'd	...	...	...	4			
	Price	...	...	...	*			
OUTER BLOCK SPRING	Logan Part No.	...	...	...	AV14001			
	Bowen No.	...	...	...	14919			
	No. Req'd	...	...	...	4			
	Price	...	...	...	*			
INNER BLOCK SPRING	Logan Part No.	...	...	...	AV15001			
	Bowen No.	...	...	...	14920			
	No. Req'd	...	...	...	4			
	Price	...	...	...	*			
STOP	Logan Part No.	AV16001	AV16003	AV16005	AV16007			
	Bowen No.	6961	A7452	7647	7654			
	Price	\$610	\$678	\$678	*			
SAFETY RING	Logan Part No.	AV17001	AV17003	AV17005	AV17007			
	Bowen No.	6545	6424	6707	6539			
	Price	\$160	\$206	\$208	*			
NUT	Logan Part No.	AV18001	AV18003	AV18005	AV18007			
	Bowen No.	5864	6345	6708	5729			
	Price	\$399	\$467	\$616	*			
NUT SET SCREW	Logan Part No.	AV19000	AV19001	AV19002	AV19004			
	Bowen No.	23330	17762	23358	23366			
	No. Req'd	2	2	2	2			
	Price	\$2	\$2	\$3	*			

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** Weight of Drill Pipe and/or Tubing to be specified by client.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
RECOMMENDED CATCHING RANGE		2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg			
OD SMALLEST SLIPS RETRACTED		1-29/32	2-5/16	2-13/16	3-5/16			
EXPANSION SLIPS OVER SAFETY RING		11/32	3/8	13/32	15/32			
SLIP ENGAGEMENT AREA (SQ IN)		59	87	115	136			
COMPLETE ASSEMBLY	Logan Part No.	204-001	204-003	204-005	204-007			
	Bowen No.	6693	6684	6701	6710			

OPTIONAL COMPONENTS

UNITIZER	Logan Part No.	...	...	AV20001				
	Bowen No.	...	...	B6713				
	Price	...	...	*				
FRICTION RETAINER (Includes Springs)	Logan Part No.	...	...	AV21001				
	Bowen No.	...	...	6714F				
	Price	...	...	*				
FRICTION RETAINER SCREWS	Logan Part No.	...	...	AV22000				
	Bowen No.	...	...	23508				
	No. Req'd	...	...	4				
	Price Each	...	...	*				
FRICTION RETAINER SPRINGS	Logan Part No.	...	...	AV23000				
	Bowen No.	...	...	A8953				
	No. Req'd	...	...	12				
	Price Each	...	...	*				
FRICTION BLOCK	Logan Part No.	...	...	...				
	Bowen No.	...	...	...				
	Price Each	...	...	...				

OPTIONAL ACCESSORIES

SAFETY RING PACKOFF	Logan Part No.	AV25001	AV25003	AV25007				
	Bowen No.	6174	5779	5730				
	Price	*	*	*				
EXTENSION (3 feet long)	Logan Part No.	AV26001	AV26003	AV26007				
	Bowen No.	5858-6694	577-16685	5839-6711				
	Price	\$1,271	\$1,417	*				
MILL TYPE NUT	Logan Part No.	AV18001-A	AV18003-A	AV18007-A				
	Bowen No.	5864A	6343A	5729A				
	Price	\$690	\$790	*				
SUB TYPE NUT	Logan Part No.	AV18001-B	AV18005-B	AV18007-B				
	Bowen No.	5864B	6708B	5729B				
	Price	\$569	\$641	*				
SIDEHILL TYPE NUT	Logan Part No.	AV18001-C	AV18005-C	AV18007-C				
	Bowen No.	5864C	6708C	5729C				
	Price	\$569	\$641	*				

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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 Csg	9-5/8 Csg		
RECOMMENDED CATCHING RANGE *		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 & 9 Csg	9-5/8 & 10 Csg		
OD SMALLEST SLIPS RETRACTED		4	4-1/2	6-7/16	7-1/4	8-3/16		
EXPANSION SLIPS OVER SAFETY RING		1/2	9/16	5/8	11/16	3/4		
SLIP ENGAGEMENT AREA (SQ IN)		217	265	430	485	580		
COMPLETE ASSEMBLY	Logan Part No.	204-011	204-012	204-016	204-017	204-018		
	Bowen No.	9337	9342	10608	6318	10473		
	Price	*	*	*	*	*		
TOP SUB <i>(Includes Protector)</i>	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
PROTECTOR	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
BODY	Logan Part No.	AV3011	AV3012	AV3016	AV3017	AV3018		
	Bowen No.	C9338	9343	10609	6319	10474		
	Price	*	*	*	*	*		
SLIP <i>(Includes Fingers)</i>	Logan Part No.	AV4011	AV4012	AV4016	AV4017	AV4018		
	Bowen No.	9339	9344	10610	6320	10475		
	No. Req'd	3	4	4	4	4		
	Price Each	*	*	*	*	*		
UNITIZER	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
FRICTION RETAINER <i>(Includes Springs)</i>	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
FRICTION RETAINER SCREWS	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	No. Req'd	...	...	...	...	...		
	Price	...	...	...	...	...		
FRICTION RETAINER SPRINGS	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	No. Req'd	...	...	...	...	...		
	Price	...	...	...	...	...		

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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 Csg	9-5/8 Csg		
RECOMMENDED CATCHING RANGE *		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 & 9 Csg	9-5/8 & 10 Csg		
OD SMALLEST SLIPS RETRACTED		4	4-1/2	6-7/16	7-1/4	8-3/16		
EXPANSION SLIPS OVER SAFETY RING		1/2	9/16	5/8	11/16	3/4		
SLIP ENGAGEMENT AREA (SQ IN)		217	265	430	485	580		
COMPLETE ASSEMBLY	Logan Part No.	204-011	204-012	204-016	204-017	204-018		
	Bowen No.	9337	9342	10608	6318	10473		
FRICTION BLOCK ASSEMBLY	Logan Part No.	AV90005	AV90006	AV90010	AV90011	AV90012		
	Bowen No.	14943	14949	14964	14970	14976		
<i>Consists of:</i>	Price	*	*	*	*	*		
UNITIZER	Logan Part No.	AV10005	AV10006	AV10010	AV10011	AV10012		
	Bowen No.	14944	14962	14965	14971	14977		
	Price	*	*	*	*	*		
RETAINER SET <i>(2 pieces)</i>	Logan Part No.	AV11005	AV11006	AV11010	AV11011	AV11012		
	Bowen No.	14945	14841	14966	14972	14978		
	Price Per Set	*	*	*	*	*		
FRICTION BLOCK	Logan Part No.	AV12005	AV12006	AV12010	AV12011	AV12012		
	Bowen No.	14946	14840	14967	14973	14979		
	No. Req'd	2	4	4	4	4		
	Price	*	*	*	*	*		
RETAINER SCREW	Logan Part No.	AV13001	AV13001	AV13004	AV13004	AV13004		
	Bowen No.	25214	25214	25221	25221	25221		
	No. Req'd	4	4	4	4	4		
	Price	*	*	*	*	*		
OUTER BLOCK SPRING	Logan Part No.	AV14005	AV14006	AV14009	AV14010	AV14011		
	Bowen No.	14947	14842	14968	14974	17694		
	No. Req'd	...	4	8	8	12		
	Price	*	*	*	*	*		
INNER BLOCK SPRING	Logan Part No.	AV15005	AV15006	AV15008	AV15009	AV15010		
	Bowen No.	14948	14837	14969	14975	11816		
	No. Req'd	2	4	8	8	12		
	Price	*	*	*	*	*		

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When ordering, please specify:

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- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 Csg	9-5/8 Csg		
RECOMMENDED CATCHING RANGE *		5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 & 9 Csg	9-5/8 & 10 Csg		
OD SMALLEST SLIPS RETRACTED		4	4-1/2	6-7/16	7-1/4	8-3/16		
EXPANSION SLIPS OVER SAFETY RING		1/2	9/16	5/8	11/16	3/4		
SLIP ENGAGEMENT AREA (SQ IN)		217	265	430	485	580		
COMPLETE ASSEMBLY	Logan Part No.	204-011	204-012	204-016	204-017	204-018		
	Bowen No.	9337	9342	10608	6318	10473		
STOP	Logan Part No.	AV16011	AV16009	AV16015	AV16016	AV16018		
	Bowen No.	A7580	7454	7626	7494	7531		
	Price	*	*	*	*	*		
SAFETY RING	Logan Part No.	AV17011	AV17012	AV17016	AV17017	AV17018		
	Bowen No.	7581	6485	6524	6528	6531		
	Price	*	*	*	*	*		
NUT	Logan Part No.	AV18011	AV18012	AV18016	AV18017	AV18018		
	Bowen No.	7582	6483	6054	6321	6062		
	Price	*	*	*	*	*		
NUT SET SCREW	Logan Part No.	AV19005	AV19006	AV19007	AV19007	AV19007		
	Bowen No.	23368	23379	23386	23386	23386		
	No. Req'd	2	2	2	2	2		
	Price	*	*	*	*	*		

OPTIONAL COMPONENTS

UNITIZER	Logan Part No.	AV20005	AV20006	AV20010	AV20011	AV20012		
	Bowen No.	B9340	9345	10611	7493	10476		
	Price	*	*	*	*	*		
FRICTION RETAINER (Includes Springs)	Logan Part No.	AV21005	AV21006	AV21010	AV21011	AV21012		
	Bowen No.	9341	9346	10612	7495F	B10477		
	Price	*	*	*	*	*		
FRICTION RETAINER SCREWS	Logan Part No.	AV22001	AV22001	AV22004	AV22004	AV22004		
	Bowen No.	25214	25214	25175	25175	25175		
	No. Req'd	4	4	4	4	4		
	Price Each	*	*	*	*	*		
FRICTION RETAINER SPRINGS	Logan Part No.	AV23002	AV23002	AV23004	AV23005	AV23005		
	Bowen No.	10541	10541	10613	8948	8948		
	No. Req'd	14	16	16	14	16		
	Price Each	*	*	*	*	*		
FRICTION BLOCK	Logan Part No.	...	...	...	AV24000	...		
	Bowen No.	...	...	...	15001	...		
	No. Req'd	...	...	...	...	...		
	Price Each	...	...	...	*	...		

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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE	5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 Csg	9-5/8 Csg		
RECOMMENDED CATCHING RANGE *	5 Csg	5-1/2 Csg	7-5/8 Csg	8-5/8 & 9 Csg	9-5/8 & 10 Csg		
OD SMALLEST SLIPS RETRACTED	4	4-1/2	6-7/16	7-1/4	8-3/16		
EXPANSION SLIPS OVER SAFETY RING	1/2	9/16	5/8	11/16	3/4		
SLIP ENGAGEMENT AREA (SQ IN)	217	265	430	485	580		
COMPLETE ASSEMBLY	Logan Part No.	204-011	204-012	204-016	204-017	204-018	
	Bowen No.	9337	9342	10608	6318	10473	

OPTIONAL ACCESSORIES

SAFETY RING	Logan Part No.	AV25011	AV25009	AV25014	AV25016	AV25017		
PACKOFF	Bowen No.	A7583	6484	6055	6529	6063		
	Price	*	*	*	*	*		
EXTENSION	Logan Part No.	...	...	...	...	...		
<i>(3 feet long)</i>	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
MILL TYPE NUT	Logan Part No.	AV18011-A	AV18012-A	AV18016-A	AV18017-A	AV18018-A		
	Bowen No.	7582A	6483A	6054A	6321A	6062A		
	Price	*	*	*	*	*		
SUB TYPE NUT	Logan Part No.	AV18011-B	AV18012-B	AV18016-B	AV18017-B	AV18018-B		
	Bowen No.	7582B	6483B	6054B	6321B	6062B		
	Price	*	*	*	*	*		
SIDEHILL TYPE NUT	Logan Part No.	AV18011-C	AV18012-C	AV18016-C	AV18017-C	AV18018-C		
	Bowen No.	7582C	6483C	6054C	6321C	6062C		
	Price	*	*	*	*	*		

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- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		11-3/4 Csg	13-3/8 Csg				
RECOMMENDED CATCHING RANGE *		11-3/4 to 12 Csg	13 to 13-3/8 Csg				
OD SMALLEST SLIPS RETRACTED		10-9/16	12				
EXPANSION SLIPS OVER SAFETY RING		13/16	13/16				
SLIP ENGAGEMENT AREA (SQ IN)		785	890				
COMPLETE ASSEMBLY	Logan Part No.	204-020	204-021				
	Bowen No.	6073	6081				
	Price	*	*				
TOP SUB	Logan Part No.	...	...				
(Includes Protector)	Bowen No.	...	...				
	Price	...	*				
PROTECTOR	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	*				
BODY	Logan Part No.	AV3020	AV3021				
	Bowen No.	6074	6082				
	Price	*	*				
SLIP	Logan Part No.	AV4020	AV4021				
(Includes Fingers)	Bowen No.	6075	6083				
	No. Req'd	6	6				
	Price Each	*	*				
UNITIZER	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	*				
FRICTION RETAINER	Logan Part No.	...	...				
(Includes Springs)	Bowen No.	...	...				
	Price	...	*				
FRICTION RETAINER	Logan Part No.	...	...				
SCREWS	Bowen No.	...	...				
	No. Req'd	...	...				
	Price	...	*				
FRICTION RETAINER	Logan Part No.	...	...				
SPRINGS	Bowen No.	...	...				
	No. Req'd	...	...				
	Price	...	*				

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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE		11-3/4 Csg	13-3/8 Csg				
RECOMMENDED CATCHING RANGE *		11-3/4 to 12 Csg	13 to 13-3/8 Csg				
OD SMALLEST SLIPS RETRACTED		10-9/16	12				
EXPANSION SLIPS OVER SAFETY RING		13/16	13/16				
SLIP ENGAGEMENT AREA (SQ IN)		785	890				
COMPLETE ASSEMBLY	Logan Part No.	204-020	204-021				
	Bowen No.	6073	6081				
FRICTION BLOCK ASSEMBLY	Logan Part No.	AV90014	AV90015				
	Bowen No.	14986	14991				
<i>Consists of:</i>	Price	*	*				
UNITIZER	Logan Part No.	AV10014	AV10015				
	Bowen No.	14987	14992				
	Price	*	*				
RETAINER SET (2 pieces)	Logan Part No.	AV11014	AV11015				
	Bowen No.	14988	14993				
	Price Per Set	*	*				
FRICTION BLOCK	Logan Part No.	AV12014	AV12015				
	Bowen No.	14989	14994				
	No. Req'd.	6	6				
	Price	*	*				
RETAINER SCREW	Logan Part No.	AV13004	AV13004				
	Bowen No.	25221	25221				
	No. Req'd	4	4				
	Price	*	*				
OUTER BLOCK SPRING	Logan Part No.	AV14014	AV14015				
	Bowen No.	14990	14996				
	No. Req'd	18	18				
	Price	*	*				
INNER BLOCK SPRING	Logan Part No.	...	...				
	Bowen No.	...	...				
	No. Req'd	...	...				
	Price	...	...				
STOP	Logan Part No.	AV16019	AV16020				
	Bowen No.	7628	7629				
	Price	*	*				
SAFETY RING	Logan Part No.	AV17020	AV17021				
	Bowen No.	6535	6537				
	Price	*	*				
NUT	Logan Part No.	AV18020	AV18021				
	Bowen No.	6079	6087				
	Price	*	*				
NUT SET SCREW	Logan Part No.	AV19008	AV19008				
	Bowen No.	41056	41056				
	No. Req'd	2	2				
	Price	*	*				

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When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spears

NOMINAL SIZE	11-3/4 Csg	13-3/8 Csg				
RECOMMENDED CATCHING RANGE *	11-3/4 to 12 Csg	13 to 13-3/8 Csg				
OD SMALLEST SLIPS RETRACTED	10-9/16	12				
EXPANSION SLIPS OVER SAFETY RING	13/16	13/16				
SLIP ENGAGEMENT AREA (SQ IN)	785	890				
COMPLETE ASSEMBLY	Logan Part No.	204-020	204-021			
	Bowen No.	6073	6081			

OPTIONAL COMPONENTS

UNITIZER	Logan Part No.	AV20014	AV20015			
	Bowen No.	6078	6086			
	Price	*	*			
FRICTION RETAINER <i>(Includes Springs)</i>	Logan Part No.	AV21014	AV21015			
	Bowen No.	6534	6536F			
	Price	*	*			
FRICTION RETAINER SCREWS	Logan Part No.	AV22004	AV22004			
	Bowen No.	25175	25175			
	No. Req'd	4	4			
	Price Each	*	*			
FRICTION RETAINER SPRINGS	Logan Part No.	AV23012	AV23013			
	Bowen No.	9631	8950			
	No. Req'd	18	16			
	Price Each	*	*			
FRICTION BLOCK	Logan Part No.	AV24001	AV24002			
	Bowen No.	15000	14995			
	Price Each	*	*			

OPTIONAL ACCESSORIES

SAFETY RING PACKOFF	Logan Part No.	AV25019	AV25020			
	Bowen No.	6080	6088			
	Price	*	*			
EXTENSION <i>(3 feet long)</i>	Logan Part No.	...	...			
	Bowen No.	...	...			
	Price	...	...			
MILL TYPE NUT	Logan Part No.	AV18020-A	AV18021-A			
	Bowen No.	6079A	6087A			
	Price	*	*			
SUB TYPE NUT	Logan Part No.	AV18020-B	AV18021-B			
	Bowen No.	6079B	6087B			
	Price	*	*			
SIDEHILL TYPE NUT	Logan Part No.	AV18020-C	AV18021-C			
	Bowen No.	6079C	6087C			
	Price	*	*			

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* Available upon request.

** Weight of Drill Pipe and/or Tubing to be specified by client.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of top connection
- (3) Size and type of fish to be caught

Recommended Spare Parts:

- (1) 2 sets of Slips for each size
- (2) 1 Safety Ring for each size
- (3) 1 Unitizer and 2 Friction Retainers on 2-3/8" to 3-1/2" Tubing Spears or 2 Friction Block Assemblies on 4" Tubing Spears and larger
- (4) 1 Stop

Logan Full Circle Releasing Spear Skirts

NOMINAL SIZE OF SPEAR		2-3/8	2-7/8	3-1/2	4	4-1/2	5-1/2	6-5/8
SKIRT SIZE (INCHES)								
4 OD	Logan Part No.	AV27000-128	AV27001-128	...	...	...	...	...
	Bowen No.	4644	4646	...	...	...	...	...
	Price	*	*	...	...	...	...	...
4-1/2 OD	Logan Part No.	AV27000-144	AV27001-144	AV27002-144	AV27003-144	...	...	...
	Bowen No.	4645	4647	4649	19446	...	...	...
	Price	*	*	*	*	...	...	...
5 OD	Logan Part No.	...	AV27001-160	AV27002-160	AV27003-160	...	...	...
	Bowen No.	...	4648	4650	19447	...	...	...
	Price	...	*	*	*	...	...	...
5-1/2 OD	Logan Part No.	...	AV27001-176	AV27002-176	AV27003-176	AV27004-176	...	...
	Bowen No.	...	4778	4651	19448	4652	...	...
	Price	...	*	*	*	*	...	...
6 OD	Logan Part No.	...	...	AV27002-192	AV27003-192	AV27004-192	...	...
	Bowen No.	...	...	19441	19449	19454	...	...
	Price	...	...	*	*	*	...	...
6-5/8 OD	Logan Part No.	...	...	AV27002-212	AV27003-212	AV27004-212	AV27005-212	...
	Bowen No.	...	...	5495	19450	4653	4655	...
	Price	...	...	*	*	*	*	...
7 OD	Logan Part No.	...	...	AV27002-224	AV27003-224	AV27004-224	AV27005-224	...
	Bowen No.	...	...	5494	19451	4654	5497	...
	Price	...	...	*	*	*	*	...
7-5/8 OD	Logan Part No.	...	...	AV27002-244	AV27003-244	AV27004-244	AV27005-244	AV27006-244
	Bowen No.	...	...	4772	19452	4864	4656	4658
	Price	...	...	*	*	*	*	*
8-5/8 OD	Logan Part No.	...	...	AV27002-276	AV27003-276	AV27004-276	AV27005-276	AV27006-276
	Bowen No.	...	...	4773	19453	5496	4657	4659
	Price	...	...	*	*	*	*	*
9-5/8 OD	Logan Part No.	...	...	AV27002-308	...	AV27004-308	...	AV27006-308
	Bowen No.	...	...	56829	...	39190	...	4661
	Price	...	...	*	...	*	...	*
10-3/4 OD	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

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Logan Full Circle Releasing Spear Skirts

NOMINAL SIZE OF SPEAR		7-5/8					
SKIRT SIZE (INCHES)							
4 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
4-1/2 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
5 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
5-1/2 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
6 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
6-5/8 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
7 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
7-5/8 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
8-5/8 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
9-5/8 OD	Logan Part No.	...					
	Bowen No.	...					
	Price	...					
10-3/4 OD	Logan Part No.	AV27007-344					
	Bowen No.	79749					
	Price	*					

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* Available upon request.

Logan Full Circle Releasing Spear Guides

NOMINAL SIZE		4	4-1/2	5	5-1/2	6	6-5/8	7
GUIDE SIZE (INCHES)								
5 to 5-7/8	Logan Part No.	AV28000	AV28001	AV28002	...	...	...	...
	Bowen No.	4662	4663	4664	...	...	...	...
	Price	*	*	*	...	...	...	...
6 to 6-7/8	Logan Part No.	AV28000	AV28001	AV28002	AV28003	...	...	...
	Bowen No.	4662	4663	4664	4665	...	...	...
	Price	*	*	*	*	...	...	...
7 to 7-7/8	Logan Part No.	...	AV28001	AV28002	AV28003	AV28004	...	...
	Bowen No.	...	4663	4664	4665	4685	...	...
	Price	...	*	*	*	*	...	...
8 to 8-7/8	Logan Part No.	...	AV28001	AV28002	AV28003	AV28004	AV28005	AV28006
	Bowen No.	...	4663	4664	4665	4685	4299	3824
	Price	...	*	*	*	*	*	*
9 to 9-7/8	Logan Part No.	...	...	...	AV28003	AV28004	AV28005	AV28006
	Bowen No.	...	...	...	4665	4685	4299	3824
	Price	...	...	...	*	*	*	*
10 to 10-7/8	Logan Part No.	...	...	...	AV28003	AV28004	AV28005	AV28006
	Bowen No.	...	...	...	4665	4685	4299	3824
	Price	...	...	...	*	*	*	*
11 to 11-7/8	Logan Part No.	...	...	...	...	...	AV28005	AV28006
	Bowen No.	...	...	...	...	...	4299	3824
	Price	...	...	...	...	...	*	*
12 to 12-7/8	Logan Part No.	...	...	...	...	...	...	AV28006
	Bowen No.	...	...	...	...	...	...	3824
	Price	...	...	...	...	...	...	*
13 to 13-7/8	Logan Part No.	...	...	...	...	...	...	AV28006
	Bowen No.	...	...	...	...	...	...	3824
	Price	...	...	...	...	...	...	*

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Logan Full Circle Releasing Spear Guides

NOMINAL SIZE		7-5/8	8-5/8	9	9-5/8	10-3/4	11-3/4	
GUIDE SIZE (INCHES)								
5 to 5-7/8	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
6 to 6-7/8	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
7 to 7-7/8	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
8 to 8-7/8	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
9 to 9-7/8	Logan Part No.	AV28007	...	...	...	...	...	
	Bowen No.	4666	...	...	...	...	...	
	Price	*	...	...	...	...	...	
10 to 10-7/8	Logan Part No.	AV28007	AV28008	...	...	...	...	
	Bowen No.	4666	4295	...	...	...	...	
	Price	*	*	...	...	...	...	
11 to 11-7/8	Logan Part No.	AV28007	AV28008	AV28009	AV28010	AV28011	AV28012	
	Bowen No.	4666	4295	4667	4668	79750	65526	
	Price	*	*	*	*	*	*	
12 to 12-7/8	Logan Part No.	AV28007	AV28008	AV28009	AV28010	...	...	
	Bowen No.	4666	4295	4667	4668	...	...	
	Price	*	*	*	*	...	...	
13 to 13-7/8	Logan Part No.	AV28007	AV28008	AV28009	AV28010	...	...	
	Bowen No.	4666	4295	4667	4668	...	...	
	Price	*	*	*	*	...	...	

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Logan Full Circle Slip Range for Drill Pipe and Tubing

FISH SIZE		2-3/8 DP	2-3/8 Tbg	2-7/8 DP	2-7/8 DP	2-7/8 DP	2-7/8 Tbg	
WEIGHT (LBS/FT)		4.8, 4.6	4.7, 4.6, 4.0	10.4	8.35	6.45	6.5, 6.4	
SPEAR ASSEMBLY	Logan Part No.	204-000	204-001	204-002	204-002	204-002	204-003	
	Bowen No.	6175	6693	6246	6246	6246	6684	
SLIP SIZE STAMPED		2	2-1/32	2-5/32	2-11/32	2-1/2	2-7/16	
	Logan Part No.	AV4000	AV4001	AV4002	AV4002	AV4002	AV4003	
	Bowen No.	6178	6695	6249	6249	6249	6686	
SAFETY RING SIZE STAMPED		1-7/8	1-29/32	2	2-3/16	2-11/32	2-5/16	
	Logan Part No.	AV17000	AV17001	AV17002	AV17002	AV17002	AV17003	
	Bowen No.	6547	6545	6543	6543	6543	6424	
SAFETY RING PACKOFF SIZE STAMPED	1-7/8							
	Logan Part No.	AV25000	AV25001	AV25002	AV25002	AV25002	AV25003	
	Bowen No.	6181	6174	6252	6252	6252	5779	

FISH SIZE		3-1/2 DP	3-1/2 DP	3-1/2 DP	3-1/2 DP	3-1/2 Tbg	3-1/2 Tbg	4 DP
WEIGHT (LBS/FT)		15.5	13.3	11.2	8.5	10.2, 9.3, 9.2	7.7	15.7
SPEAR ASSEMBLY	Logan Part No.	204-004	204-004	204-004	204-004	204-005	204-005	204-006
	Bowen No.	7640	7640	7640	7640	6701	6701	7648
SLIP SIZE STAMPED		2-5/8	2-25/32	2-15/16	3-3/32	2-31/32	3-1/8	3-9/32
	Logan Part No.	AV4004	AV4004	AV4004	AV4004	AV4005	AV4005	AV4006
	Bowen No.	C7642	C7642	C7642	C7642	6704	6704	7650
FRICTION BLOCK SIZE STAMPED		...	...	...	...	...	...	...
	Logan Part No.	...	...	...	...	...	...	AV12000
	Bowen No.	...	...	...	...	...	...	14934
SAFETY RING SIZE STAMPED		2-7/16	2-19/32	2-3/4	2-29/32	2-13/16	2-15/16	3-3/32
	Logan Part No.	AV17004	AV17004	AV17004	AV17004	AV17005	AV17005	AV17006
	Bowen No.	6541	6541	6541	6541	6707	6707	6681
SAFETY RING PACKOFF SIZE STAMPED		2-7/16	2-19/32	2-3/4	2-29/32	2-13/16	2-15/16	3-3/32
	Logan Part No.	AV25004	AV25004	AV25004	AV25004	AV25005	AV25005	AV25006
	Bowen No.	6268	6268	6268	6268	6709	6709	6683

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Logan Full Circle Slip Range for Drill Pipe and Tubing

FISH SIZE		4 DP	4 Tbg	4 Tbg	4-1/2 DP	4-1/2 DP	4-1/2 DP	5-1/2 DP
WEIGHT (LBS/FT)		14	11	9.5	20	18.1, 16.6	13.75, 12.75	24.7, 21.9
SPEAR ASSEMBLY	Logan Part No.	204-006	204-007	204-007	204-008	204-008	204-008	204-009
	Bowen No.	7648	6710	6710	6715	6715	6715	6723
SLIP SIZE STAMPED		3-11/32	3-1/2	3-19/32	3-11/16	3-7/8	4-1/32	4-3/4
	Logan Part No.	AV4006	AV4007	AV4007	AV4008	AV4008	AV4008	AV4009
	Bowen No.	7650	6712	6712	6717	6717	6717	6725
FRICTION BLOCK SIZE STAMPED		...	3-1/4	3-1/4	3-5/8	3-5/8	3-5/8	4-3/4
	Logan Part No.	AV12000	AV12001	AV12001	AV12002	AV12002	AV12002	AV12003
	Bowen No.	14934	14904	14904	14940	14940	14940	14840
SAFETY RING SIZE STAMPED		3-5/32	3-5/16	3-13/32	3-15/32	3-21/32	3-13/16	4-1/2
	Logan Part No.	AV17006	AV17007	AV17007	AV17008	AV17008	AV17008	AV17009
	Bowen No.	6681	6539	6539	6720	6720	6720	6485
SAFETY RING PACKOFF SIZE STAMPED		3-5/32	3 5/16	3-13/32	3-15/32	3 21/32	3-13/16	4-1/2
	Logan Part No.	AV25006	AV25007	AV25007	AV25008	AV25008	AV25008	AV25009
	Bowen No.	6683	5730	5730	6722	6722	6722	6484

FISH SIZE		5-1/2 DP	5-1/2 DP	5-1/2 DP				
WEIGHT (LBS/FT)		25.25	22.2	19				
SPEAR ASSEMBLY	Logan Part No.	204-009	204-009	204-009				
	Bowen No.	6723	6723	6723				
SLIP SIZE STAMPED		4-3/4	4-7/8	5-1/16				
	Logan Part No.	AV4009	AV4009	AV4009				
	Bowen No.	6725	6725	6725				
FRICTION BLOCK SIZE STAMPED		4-3/4	4-3/4	4-3/4				
	Logan Part No.	AV12003	AV12003	AV12003				
	Bowen No.	14840	14840	14840				
SAFETY RING SIZE STAMPED		4-1/2	4-5/8	4-13/16				
	Logan Part No.	AV17009	AV17009	AV17009				
	Bowen No.	6485	6485	6485				
SAFETY RING PACKOFF SIZE STAMPED		4-1/2	4-5/8	4-13/16				
	Logan Part No.	AV25009	AV25009	AV25009				
	Bowen No.	6484	6484	6484				

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Logan Full Circle Slip Range for Casing

FISH SIZE		4-1/2 Csg	4-1/2 Csg	4-3/4 Csg	5 Csg	5 Csg	5 Csg *	5 Csg
WEIGHT (LBS/FT)		13.5, 11.6	9.5	16	21	18.0, 17.7	15	13.0, 11.5
SPEAR ASSEMBLY	Logan Part No.	204-010	204-010	204-010	204-011	204-011	204-011	204-011
	Bowen No.	10536	10536	10536	9337	9337	9337	9337
SLIP SIZE STAMPED		4	4-5/32	4-5/32	4-7/32	4-11/32	4-15/32	4-19/32
	Logan Part No.	AV4010	AV4010	AV4010	AV4011	AV4011	AV4011	AV4011
	Bowen No.	10538	10538	10538	9339	9339	9339	9339
FRICTION BLOCK SIZE STAMPED		4-1/2	...	4-1/2	4-5/8	...	...	...
	Logan Part No.	AV12004	...	AV12004	AV12005	...	...	...
	Bowen No.	14927	...	14927	14946	...	...	...
SAFETY RING SIZE STAMPED		3-25/32	3-15/16	3-15/16	4	4-1/8	4-1/4	4-3/8
	Logan Part No.	AV17010	AV17010	AV17010	AV17011	AV17011	AV17011	AV17011
	Bowen No.	6733	6733	6733	7581	7581	7581	7581
SAFETY RING PACKOFF SIZE STAMPED		3-25/32	3-15/16	3-15/16	4	4-1/8	4-1/4	4-3/8
	Logan Part No.	AV25010	AV25010	AV25010	AV25011	AV25011	AV25011	AV25011
	Bowen No.	6734	6734	6734	A7583	A7583	A7583	A7583

FISH SIZE		5-1/2 Csg	5-1/2 Csg	5-1/2 Csg	5-3/4 **	5-3/4 **	6 Csg	6 Csg
WEIGHT (LBS/FT)		23	20, 17	15.5, 14, 13	22.5, 19.5	17, 14	23	20, 18
Spear AsSEMBLY	Logan Part No.	204-012	204-012	204-012	204-012	204-012	204-012	204-012
	Bowen No.	9342	9342	9342	9342	9342	9347	9347
SLIP SIZE STAMPED		4-3/4	4-7/8	5-1/16	5-1/16	5-5/16	5-5/16	5-7/16
	Logan Part No.	AV4012	AV4012	AV4012	AV4012	AV4012	AV4013	AV4013
	Bowen No.	9344	9344	9344	9344	9344	9349	9349
FRICTION BLOCK SIZE STAMPED		4-3/4	...	...	5-1/16	...	4-3/4	...
	Logan Part No.	AV12006	...	...	AV12006	...	AV12007	...
	Bowen No.	14840	...	...	14840	...	14953	...
SAFETY RING SIZE STAMPED		4-1/2	4-5/8	4-13/16	4-13/16	5-1/16	5-1/16	5-3/16
	Logan Part No.	AV17012	AV17012	AV17012	AV17012	AV17012	AV17013	AV17013
	Bowen No.	6485	6485	6485	6485	6485	6520	6520
SAFETY RING PACKOFF SIZE STAMPED		4-1/2	4-5/8	4-13/16	4-13/16	5-1/16	5-1/16	5-3/16
	Logan Part No.	AV25009	AV25009	AV25009	AV25009	AV25009	AV25012	AV25012
	Bowen No.	6484	6484	6484	6484	6484	6041	6041

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Logan Full Circle Slip Range for Casing

FISH SIZE		11-3/4 Csg	12 Csg	13 Csg	13-3/8 Csg	13-3/8 Csg	16 Csg	
		47, 42, 38	40	54, 50, 45, 40	83, 72, 68, 61	54, 48	84, 75, 65, 55	
SPEAR ASSEMBLY	Logan Part No.	204-020	204-020	204-021	204-021	204-021	204-021	
	Bowen No.	6073	6073	6081	6081	6081	6081	
SLIP SIZE STAMPED		11-1/8	11-3/8	12-3/8	12-3/8	12-5/8	15-3/16	
	Logan Part No.	AV4020	AV4020	AV4021	AV4021	AV4021	AV4021	
	Bowen No.	6075	6075	6083	6083	6083	6083	
FRICTION BLOCK SIZE STAMPED		...	...	12-1/4	12-1/4	...	15	
	Logan Part No.	...	...	AV12015	AV12015	...	AV12015	
	Bowen No.	...	...	14994	14994	...	14994	
SAFETY RING SIZE STAMPED		10-13/16	11-1/16	12	12	12-1/4	14-13/16	
	Logan Part No.	AV17020	AV17020	AV17021	AV17021	AV17021	AV17021	
	Bowen No.	6535	6535	6537	6537	6537	6537	
SAFETY RING PACK-OFF SIZE STAMPED		10-13/16	11-1/16	12	12	12-1/4	14-13/16	
	Logan Part No.	AV25019	AV25019	AV25020	AV25020	AV25020	AV25020	
	Bowen No.	6080	6080	6088	6088	6088	6	

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Logan Full Circle Slip Range for Casing

FISH SIZE		8-1/8 Csg	8-5/8 Csg	8-5/8 Csg	8-5/8 Csg *	9 Csg	9 Csg	9 Csg
WEIGHT (LBS/FT)		32, 28	49, 44 38, 36	43, 40,	32, 28, 24	55	45	40, 38, 34
SPEAR ASSEMBLY	Logan Part No.	204-016	204-017	204-017	204-017	204-017	204-017	204-017
	Bowen No.	10608	6318	6318	6318	6318	6318	6318
SLIP SIZE STAMPED		7-7/16	7-9/16	7-13/16	8-1/16	7-13/16	8-1/16	8-5/16
	Logan Part No.	AV4016	AV4017	AV4017	AV4017	AV4017	AV4017	AV4017
	Bowen No.	10610	6320	6320	6320	6320	6320	6320
FRICTION BLOCK SIZE STAMPED		...	7-3/4	...	...	7-3/4	...	...
	Logan Part No.	...	AV12011	...	...	AV12011	...	...
	Bowen No.	...	14973	...	...	14973	...	...
SAFETY RING SIZE STAMPED		7-3/16	7-1/4	7-1/2	7-3/4	7-1/2	7-3/4	8
	Logan Part No.	AV17016	AV17017	AV17017	AV17017	AV17017	AV17017	AV17017
	Bowen No.	6524	6528	6528	6528	6528	6528	6528
SAFETY RING PACKOFF SIZE STAMPED		7-3/16	7-1/4	7-1/2	7-3/4	7-1/2	7-3/4	8
	Logan Part No.	AV25014	AV25016	AV25016	AV25016	AV25016	AV25016	AV25016
	Bowen No.	6055	6529	6529	6529	6529	6529	6529

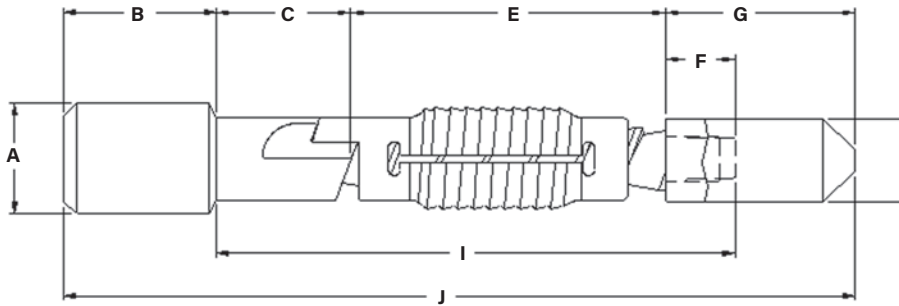
FISH SIZE		9-5/8 Csg	9-5/8 Csg	9-5/8 Csg	10 Csg	10-3/4 Csg	10-3/4 Csg	11-3/4 Csg
WEIGHT (LBS/FT)		58, 47, 53.5	40, 36, 43.5	32.3, 29.3	33 48	55.5, 54, 51, 40.5, 32.75	45.5, 45, 40,	60, 54
SPEAR ASSEMBLY	Logan Part No.	204-018	204-018	204-018	204-018	204-019	204-019	204-020
	Bowen No.	10473	10473	10473	10473	6067	6067	6073
SLIP SIZE STAMPED		8-1/2	8-13/16	9	9-3/8	9-13/16	10-1/16	10-7/8
	Logan Part No.	AV4018	AV4018	AV4018	AV4018	AV4019	AV4019	AV4020
	Bowen No.	10475	10475	10475	10475	6069	6069	6075
FRICTION BLOCK SIZE STAMPED		8-7/8	...	...	8 7/8	10	...	...
	Logan Part No.	AV12012	...	...	AV12012	AV12013	...	...
	Bowen No.	14979	...	...	14979	14984	...	...
SAFETY RING SIZE STAMPED		8-3/16	8-1/2	8-11/16	9-1/16	9-1/2	9-3/4	10-9/16
	Logan Part No.	AV17018	AV17018	AV17018	AV17018	AV17019	AV17019	AV17020
	Bowen No.	6531	6531	6531	6531	6533	6533	6535
SAFETY RING PACKOFF SIZE STAMPED		8-3/16	8-1/2	8-11/16	9-1/16	9-1/2	9-3/4	10-9/16
	Logan Part No.	AV25017	AV25017	AV25017	AV25017	AV25018	AV25018	AV25019
	Bowen No.	6063	6063	6063	6063	6072	6072	6080

Logan Full Circle Slip Range for Casing

FISH SIZE		11-3/4 Csg	12 Csg	13 Csg	13-3/8 Csg	13-3/8 Csg	16 Csg	
WEIGHT (LBS/FT)		47, 42, 38	40	54, 50, 45, 40	83, 72, 68, 61	54, 48	84, 75, 65, 55	
SPEAR ASSEMBLY	Logan Part No.	204-020	204-020	204-021	204-021	204-021	204-021	
	Bowen No.	6073	6073	6081	6081	6081	6081	
SLIP SIZE STAMPED		11-1/8	11-3/8	12-3/8	12-3/8	12-5/8	15-3/16	
	Logan Part No.	AV4020	AV4020	AV4021	AV4021	AV4021	AV4021	
	Bowen No.	6075	6075	6083	6083	6083	6083	
FRICTION BLOCK SIZE STAMPED		...	...	12-1/4	12-1/4	...	15	
	Logan Part No.	...	...	AV12015	AV12015	...	AV12015	
	Bowen No.	...	...	14994	14994	...	14994	
SAFETY RING SIZE STAMPED		10-13/16	11-1/16	12	12	12-1/4	14-13/16	
	Logan Part No.	AV17020	AV17020	AV17021	AV17021	AV17021	AV17021	
	Bowen No.	6535	6535	6537	6537	6537	6537	
SAFETY RING PACKOFF SIZE STAMPED		10-13/16	11-1/16	12	12	12-1/4	14-13/16	
	Logan Part No.	AV25019	AV25019	AV25020	AV25020	AV25020	AV25020	
	Bowen No.	6080	6080	6088	6088	6088	6088	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

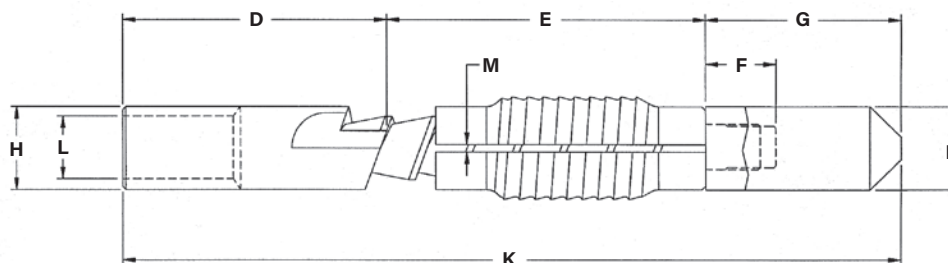
LOGAN STANDARD RELEASING SPEAR PRINCIPAL DIMENSIONS



SPEAR MANDREL	SPEAR SIZE	CLASS	ID	A	B	SHOULDER TYPE ONLY C	FLUSH TYPE ONLY D	E
F1000	1.050 OD Pipe	Standard	...	1-1/2	4-1/8	6	...	2-3/8
F1001	1.313 OD Pipe	Standard	...	1-5/8	3	3	...	3-5/16
F1002	1.660 OD Tubing	Standard	...	1-13/16	3	3	3-25/32	3-5/16
F1004	1.900 OD Tubing	Standard	...	2-1/2	5	3	7	5-1/16
F1005	2-3/8 OD Drill Pipe	Standard	...	3-1/8	7	3	7	5-29/32
F1007	2-3/8 OD Tubing	Standard	3/8	3-1/8	7	3	7	6-3/4
F1008	2-3/8 OD Tubing	Standard	3/8	3-1/8	7	3	7	9
F1009	2-7/8 OD Tubing	Standard	3/8	3-3/4	7	3	7-1/4	6-3/4
F1010	2-7/8 OD Tubing	Heavy Duty	3/8	3-3/4	7	3	7-1/4	9
F1012	3-1/2 OD Tubing	Standard	1/2	3-3/4	7	3-1/2	10-1/2	12
F1013	3-1/2 OD Drill Pipe	Heavy Duty	1/2	3-3/8	7	3-1/2	10-1/2	9-3/4
F1014	4 OD Tubing	Light Duty	3/4	3-3/4	7-1/2	3	10-3/8	8-1/8
F1015	4 OD Tubing	Standard	3/4	4-1/8	7-1/2	3	10-1/2	12
F1016	4-1/2 OD Tubing	Light Duty	3/4	4-1/2	8	3-1/2	3-3/4	9-3/4
F1017	4-1/2 OD Tubing	Standard	3/4	4-1/2	8	3-1/2	9-1/2	14-1/4
F1018	5 OD Casing	Light Duty	7/8	4-3/8	8	3-1/2	9-1/2	9-3/4
F1019	5 OD Casing	Standard	1	5	8	3-1/2	12	14-1/4
F1022	6 OD Casing	Light Duty	1	6	8	5-1/2	12	13
F1023	6 OD Casing	Standard	1	6	8	5-1/2	12	13
F1024	7 OD Casing	Standard	2	7	10	6-1/2	16-1/2	14-5/8
F1026	7 OD Casing	Heavy Duty	2	7	10	6-1/2	13-1/2	21-3/8
F1029	8-5/8 OD Casing	Standard	2-3/4	8-5/8	14	7	20-7/8	14-5/8
F1030	8-5/8 OD Casing	Heavy Duty	2-3/4	8-5/8	...	...	20-7/8	21-3/8
F1032	9-5/8 OD Casing	Standard	2-13/16	9-5/8	15-3/8	7	20-7/8	14-5/8
F1034	9-5/8 OD Casing	Standard	2-13/16	9-5/8	...	...	20-7/8	21-3/8
F1035	13-3/8 OD Casing	Standard	3-1/2	13-3/8	17-7/8	7	22-3/8	16-7/8

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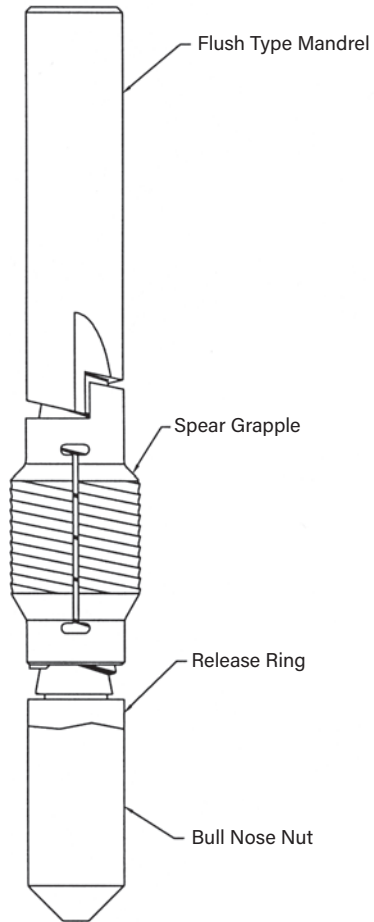
LOGAN STANDARD RELEASING SPEAR PRINCIPAL DIMENSIONS



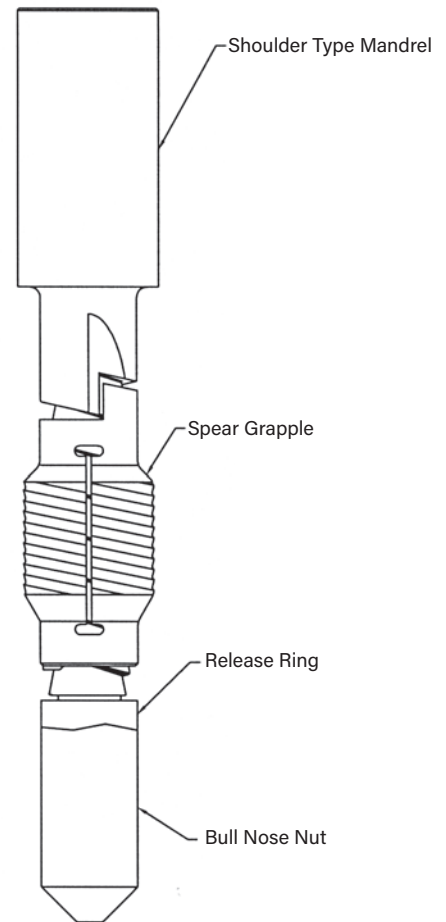
SPEAR MANDREL	F	G	H	I	J	SHOULDER TYPE ONLY K	FLUSH TYPE ONLY L	M
F1000	7/8	2-3/8	11/16	9-5/8	15-1/4	...	...	3/16
F1001	1-3/8	2-1/2	15/16	7-11/16	11-13/16	...	...	1/4
F1002	1-3/8	2-1/2	1-1/8	7-11/16	11-13/16	...	...	3/8
F1004	2-1/4	5-5/8	1-3/8	10-5/16	18-11/16	...	...	7/16
F1005	2-1/4	6-17/32	1-11/16	...	...	19-7/16	...	5/8
F1007	2-1/4	6-5/8	1-7/8	12	23-3/8	23-3/8	...	5/8
F1008	2-1/4	6-5/8	1-7/8	14-1/4	25-5/8	22-5/8	...	5/8
F1009	2-1/2	7	2-5/16	12-1/4	23-3/4	21	...	5/8
F1010	2-1/2	7	2-5/16	14-1/2	26	23-1/4	...	5/8
F1012	3-1/2	9	2-13/16	19	31-1/2	32-1/2	...	5/8
F1013	3-5/8	8-1/8	2-1/2	16-5/8	31-1/8	...	...	5/8
F1014	2-1/2	8	3-1/4	13-5/8	26-5/8	26-1/2	...	5/8
F1015	3-1/2	9	3-1/4	18-1/2	31-1/2	31-1/2	...	5/8
F1016	3-1/2	10-3/4	3-5/8	16-3/4	32	32	...	1
F1017	3-1/2	10	3-5/8	21-1/4	35-3/4	33-3/4	...	3/4
F1018	3-1/2	10-5/8	4-1/32	16-3/4	31-7/8	29-7/8	...	13/16
F1019	3-1/2	10-5/8	4-1/32	21-1/4	36-3/8	36-7/8	...	13/16
F1022	3-1/2	12	5	16-3/8	39-3/16	37-11/16	3-5/16	1-1/4
F1023	3-1/2	12	5	16-3/8	...	43	3-5/16	1-1/4
F1024	3-1/2	12-3/4	5-3/4	...	...	40-1/4	3-1/2	1-5/8
F1026	3-1/2	12-3/4	5-3/4	31-3/8	53-3/8	47	3-1/2	1-5/8
F1029	4-1/2	13-3/4	7-1/4	26-1/8	53-7/8	49-1/4	5	1-5/8
F1030	4-1/2	13-3/4	7-1/4	...	...	56	5-3/4	1-5/8
F1032	3-1/2	14	8-1/4	25-1/8	51	49-1/4	6-1/4	1-5/8
F1034	3-1/2	13-3/4	8-1/4	...	...	56	6-1/4	1-5/8
F1035	3-1/2	12	11-3/4	27-3/8	53-3/4	51-1/4	7-3/4	1-5/8

Innovex reserves the right to change or discontinue designs and/or prices without notice.

LOGAN STANDARD RELEASING SPEARS



**Spear Assembly
with Flush Type Mandrel**



**Spear Assembly
with Shoulder Type Mandrel**

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Standard Releasing Spears

NOMINAL CATCH SIZE O.D.		1.050	1.313	1.660	1.900	2-3/8	2-3/8	2-3/8
SPEAR O.D.		11/16	7/8 NOM	1-1/8	1-3/8	1-11/16	1-7/8	1-7/8
SPEAR I.D.		...	...	...	...	...	3/8	3/8
DUTY CLASS		STD	STD	STD	STD	STD	STD	STD
COMPLETE ASSEMBLY	Logan Part No.	202-001	202-002	202-003	202-004	202-036	202-005	202-006
	Bowen No.	16455	19350	11195	9915	9645	1344	17228
	Price	\$2,934	\$3,222	\$3,263	\$3,444	\$3,548	\$3,732	\$5,272

REPLACEMENT PARTS

TOP SUB	Logan Part No.	F1000-A	F1001-A	F1002-A	...	...	...	...
	Bowen No.	16456A	19351A	11196A	...	...	...	...
	Price	\$447	\$466	\$501	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1000	F1001	F1002	F1004	F1005	F1007	F1008
	Bowen No.	16456B	19351B	11196B	9916	9646	1345	17229
	Price	\$969	\$969	\$969	\$1,219	\$1,256	\$1,589	\$2,174
GRAPPLE **	Logan Part No.	F3000	F3001	F3002	F3004	F3005	F3007	F3008
	Bowen No.	16457	19352	11197	9917	9647	1348	17230
	Price	**	**	**	**	**	**	**
RELEASE RING	Logan Part No.	F4000	F4001	F4002	F4004	F4005	F4007	F4007
	Bowen No.	16458	19353	11198	9918	9649	1347	1347
	Price	\$172	\$207	\$256	\$230	\$230	\$243	\$243
BULL NOSE NUT	Logan Part No.	F5000	F5001	F5002	F5004	F5005	F5007	F5007
	Bowen No.	16459	19354	11199	9919	9648	1346	1346
	Price	\$237	\$325	\$385	\$482	\$498	\$708	\$708

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1000	F1001	F1002	F1004	F1005	F1007	F1008
	Bowen No.	16456	19351	11196	9916	9646	1345	17229
	Price	\$1,475	\$1,472	\$1,514	\$1,733	\$1,729	\$1,641	\$2,740
MANDREL EXTRA LENGTH PER INCH (C & D)	Price	\$58	\$58	\$60	\$60	\$60	\$60	\$60

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5000-A	F5001-A	F5002-A	F5004-A	F5005-A	F5007-A	F5007-A
	Bowen No.	16459-A	19354-A	11199-A	9919-A	9648-A	1346-A	1346-A
	Price	\$702	\$824	\$907	\$996	\$998	\$920	\$920
SUB TYPE NUT	Logan Part No.	F5000-B	F5001-B	F5002-B	F5004-B	F5005-B	F5007-B	F5007-B
	Bowen No.	16459-B	19354-B	11199-B	9919-B	9648-B	1346-B	1346-B
	Price	\$478	\$636	\$702	\$786	\$788	\$725	\$725
SIDE HILL NUT	Logan Part No.	F5000-C	F5001-C	F5002-C	F5004-C	F5005-C	F5007-C	F5007-C
	Bowen No.	16459-C	19354-C	11199-C	9919-C	9648-C	1346-C	1346-C
	Price	\$478	\$636	\$702	\$788	\$788	\$724	\$724

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Note: Prices shown for the Spear assemblies include Flush-Type Mandrels ("H" O.D.). To price an assembly furnished with a Shoulder-Type Mandrel, subtract the price of the

Flush-Type Mandrel and add the price of the Shoulder-Type Mandrel to the assembly price.

Special Notes:

- (1) Assembly prices are with Flush-Type Mandrels.
- (2) Oversize shoulders add 10% of Mandrel price for each 114" or portion thereof.
- (3) Add 10% to Mandrel (Shoulder-Type) price for skirt thread and cap.
- (4) Add 20% for left-hand applications.

When ordering, please specify:

- (1) Part number of assembly or component
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder-Type Mandrel. (Specify O.D. of Shoulder-Type Mandrel "A" dimension.)
- (5) "C" dimension of Shoulder-Type Mandrel if other than standard.
- (6) Type of Nut. For Sub Type Nut, specify size and type of pin connection.

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

Logan Standard Releasing Spears

NOMINAL CATCH SIZE O.D.		2-7/8	2-7/8	3-1/2	4	4	4-1/2	
SPEAR O.D.		2-5/16	2-5/16	2-13/16	3-1/4	3-1/4	3-5/8	
SPEAR I.D.		3/8	3/8	1/2	3/4	3/4	3/4	
DUTY CLASS		STD	HD	STD	LD	STD	LD	
COMPLETE ASSEMBLY	Logan Part No.	202-007	202-008	202-009	202-024	202-011	202-017	
	Bowen No.	1227	17231	9410	530	9485	13200	
	Price	\$4,061	\$5,553	\$6,159	\$5,802	\$6,583	\$6,197	

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
MANDREL (FLUSH TYPE)	Logan Part No.	F1009	F1010	F1012	F1014	F1015	F1016	
	Bowen No.	1231	17232	9411	531	9486	13201	
	Price	\$1,673	\$2,174	\$2,286	\$2,026	\$2,488	\$2,228	
GRAPPLE *	Logan Part No.	F3009	F3010	F3012	F3014	F3015	F3016	
	Bowen No.	1230	17233	9412	532	9487	13202	
	Price	**	**	**	**	**	**	
RELEASE RING	Logan Part No.	F4009	F4009	F4012	F4015	F4015	F4017	
	Bowen No.	1229	1229	1584	534	534	13183	
	Price	\$255	\$255	\$299	\$312	\$312	\$358	
BULL NOSE NUT	Logan Part No.	F5009	F5009	F5012	F5014	F5015	F5017	
	Bowen No.	1228	1228	9413	533	9488	13184	
	Price	\$831	\$831	\$1,007	\$1,102	\$1,094	\$1,195	

OPTIONAL

MANDREL (SHOULDER TYPE)	Logan Part No.	F1009	F1010	F1012	F1014	F1015	F1016	
	Bowen No.	1231	17232	9411	531	9486	13201	
	Price	\$1,728	\$2,956	\$2,894	\$2,676	\$3,053	\$2,971	
MANDREL EXTRA LENGTH PER INCH (C & D)	Price	\$63	\$69	\$72	\$72	\$72	\$80	

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5009-A	F5010-A	F5012-A	F5014-A	F5015-A	F5017-A	
	Bowen No.	1228-A	1228-A	9413-A	533-A	9488-A	13184-A	
	Price	\$1,051	\$1,051	\$1,328	\$1,665	\$1,553	\$1,914	
SUB TYPE NUT	Logan Part No.	F5009-B	F5009-B	F5012-B	F5014-B	F5015-B	F5017-B	
	Bowen No.	1228-B	1228-B	9413-B	533-B	9488-B	13184-B	
	Price	\$875	\$875	\$1,225	\$1,462	\$1,366	\$1,538	
SIDE HILL NUT	Logan Part No.	F5009-C	F5009-C	F5012-C	F5014-C	F5015-C	F5017-C	
	Bowen No.	1228-C	1228-C	9413-C	533-C	9488-C	13184-C	
	Price	\$875	\$875	\$1,225	\$1,462	\$1,366	\$1,538	

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* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Note: Prices shown for the Spear assemblies include Flush-Type Mandrels ("H" O.D.). To price an assembly furnished with a Shoulder-Type Mandrel, subtract the price of the

Flush-Type Mandrel and add the price of the Shoulder-Type Mandrel to the assembly price.

Special Notes:

- (1) Assembly prices are with Flush-Type Mandrels.
- (2) Oversize shoulders add 10% of Mandrel price for each 114" or portion thereof.
- (3) Add 10% to Mandrel (Shoulder-Type) price for skirt thread and cap.
- (4) Add 20% for left-hand applications.

When ordering, please specify:

- (1) Part number of assembly or component
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder-Type Mandrel. (Specify O.D. of Shoulder-Type Mandrel "A" dimension.)
- (5) "C" dimension of Shoulder-Type Mandrel if other than standard.
- (6) Type of Nut. For Sub Type Nut, specify size and type of pin connection.

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

Logan Standard Releasing Spears

NOMINAL CATCH SIZE O.D.		4-1/2	5	5	6	6	7	7
SPEAR O.D.		3-5/8	4-1/32	4-1/32	5	5	5-3/4	5-3/4
SPEAR I.D.		3/4	7/8	1	1	1	2	2
DUTY CLASS		STD	LD	STD	LD	STD	STD	HD
COMPLETE ASSEMBLY	Logan Part No.	202-012	202-035	202-013	202-023	202-014	202-015	202-016
	Bowen No.	17475	1332	9680	9715	17234	9266	17237
	Price	\$7,654	\$6,355	\$7,240	\$10,048	\$12,864	\$11,939	\$18,206

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL (FLUSH TYPE)	Logan Part No.	F1017	F1018	F1019	F1022	F1023	F1024	F1026
	Bowen No.	17476	1333	9681	9716	17235	9267	17238
	Price	\$2,740	\$2,363	\$2,621	\$3,823	\$4,885	\$4,870	\$6,802
GRAPPLE *	Logan Part No.	F3017	F3018	F3019	F3022	F3023	F3024	F3026
	Bowen No.	17477	1334	9682	9717	17236	9268	17239
	Price	**	**	**	**	**	**	**
RELEASE RING	Logan Part No.	F4017	F4019	F4019	F4023	F4023	F4024	F4024
	Bowen No.	13183	1336	1336	9718	9718	9279	9279
	Price	\$358	\$337	\$337	\$610	\$610	\$653	\$653
BULL NOSE NUT	Logan Part No.	F5017	F5019	F5019	F5023	F5023	F5024	F5024
	Bowen No.	13184	1335	1335	9719	9719	9269	9269
	Price	\$1,195	\$1,157	\$1,157	\$1,783	\$1,783	\$2,127	\$2,127

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1017	F1018	F1019	F1022	F1023	F1024	F1026
	Bowen No.	17476	1333	9681	9716	17235	9267	17238
	Price	\$3,727	\$2,989	\$3,556	\$4,742	\$5,871	\$5,762	*
MANDREL EXTRA LENGTH PER INCH (C & D)	Price	\$80	\$92	\$92	\$97	\$97	\$103	\$106

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5017-A	F5019-A	F5019-A	F5023-A	F5023-A	F5024-A	F5024-A
	Bowen No.	13184-A	1335-A	1335-A	9719-A	9719-A	9269-A	9269-A
	Price	\$1,914	\$1,961	\$1,961	\$2,625	\$2,625	\$3,106	\$3,106
SUB TYPE NUT	Logan Part No.	F5017-B	F5019-B	F5019-B	F5023-B	F5023-B	F5024-B	F5024-B
	Bowen No.	13184-B	1335-B	1335-B	9719-B	9719-B	9269-B	9269-B
	Price	\$1,538	\$1,553	\$1,553	\$2,147	\$1,594	\$2,559	\$2,559
SIDE HILL NUT	Logan Part No.	F5017-C	F5019-C	F5019-C	F5023-C	F5023-C	F5024-C	F5024-C
	Bowen No.	13184-C	1335-C	1335-C	9719-C	9719-C	9269-C	9269-C
	Price	\$1,538	\$1,553	\$1,553	\$2,147	\$2,147	\$2,559	\$2,559

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* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Note: Prices shown for the Spear assemblies include Flush-Type Mandrels ("H" O.D.). To price an assembly furnished with a Shoulder-Type Mandrel, subtract the price of the

Flush-Type Mandrel and add the price of the Shoulder-Type Mandrel to the assembly price.

Special Notes:

- (1) Assembly prices are with Flush-Type Mandrels.
- (2) Oversize shoulders add 10% of Mandrel price for each 1/4" or portion thereof.
- (3) Add 10% to Mandrel (Shoulder-Type) price for skirt thread and cap.
- (4) Add 20% for left-hand applications.

When ordering, please specify:

- (1) Part number of assembly or component
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder-Type Mandrel. (Specify O.D. of Shoulder-Type Mandrel "A" dimension.)
- (5) "C" dimension of Shoulder-Type Mandrel if other than standard.
- (6) Type of Nut. For Sub Type Nut, specify size and type of pin connection.

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

Logan Standard Releasing Spears

NOMINAL CATCH SIZE O.D.		8-5/8	8-5/8	9-5/8	9-5/8	13-3/8		
SPEAR O.D.		7-1/4	7-1/4	8-1/4	8-1/4	11-3/4		
SPEAR I.D.		2-3/4	2-3/4	2-13/16	2-13/16	3-1/2		
DUTY CLASS		STD	HD	STD	HD	STD		
COMPLETE ASSEMBLY	Logan Part No.	202-025	202-018	202-019	202-020	202-021		
	Bowen No.	9380	17243	9281	17246	27780		
	Price	\$16,484	\$21,870	\$18,220	\$27,423	*		

REPLACEMENT PARTS

TOP SUB	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
MANDREL (FLUSH TYPE)	Logan Part No.	F1029	F1030	F1032	F1034	F1035		
	Bowen No.	9381	17244	9282	17247	27781		
	Price	\$6,583	\$7,996	\$7,923	\$13,564	*		
GRAPPLE*	Logan Part No.	F3029	F3030	F3032	F3034	F3035		
	Bowen No.	9382	17245	9283	17248	27782		
	Price	**	**	**	**	*		
RELEASE RING	Logan Part No.	F4029	F4029	F4032	F4032	F4033		
	Bowen No.	9383	9383	9286	9286	27783		
	Price	\$847	\$888	\$912	\$912	*		
BULL NOSE NUT	Logan Part No.	F5029	F5029	F5032	F5032	F5033		
	Bowen No.	9384	9384	9284	9284	27784		
	Price	\$2,990	\$2,990	\$3,205	\$3,205	*		

OPTIONAL PARTS

MANDREL (SHOULDER TYPE)	Logan Part No.	F1029	F1030	F1032	F1034	F1035		
	Bowen No.	9381	17244	9282	17247	27781		
	Price	\$8,103	\$10,065	\$14,041	\$16,789	*		
MANDREL EXTRA LENGTH PER INCH (C & D)	Price	\$179	\$196	\$208	\$228	*		

ACCESSORIES

MILL TYPE NUT	Logan Part No.	F5029-A	F5029-A	F5032-A	F5032-A	F5035-A		
	Bowen No.	9384-A	9384-A	9284-A	9284-A	27784-A		
	Price	\$4,308	\$4,308	\$5,029	\$5,029	*		
SUB TYPE NUT	Logan Part No.	F5029-B	F5029-B	F5032-B	F5032-B	F5035-B		
	Bowen No.	9384-B	9384-B	9284-B	9284-B	27784-B		
	Price	\$3,652	\$3,652	\$3,922	\$3,922	*		
SIDE HILL NUT	Logan Part No.	F5029-C	F5029-C	F5032-C	F5032-C	F5035-C		
	Bowen No.	9384-C	9384-C	9284-C	9284-C	27784-C		
	Price	\$3,652	\$3,652	\$3,922	\$3,922	*		

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* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Note: Prices shown for the Spear assemblies include Flush-Type Mandrels ("H" O.D.). To price an assembly furnished with a Shoulder-Type Mandrel, subtract the price of the

Flush-Type Mandrel and add the price of the Shoulder-Type Mandrel to the assembly price.

Special Notes:

- (1) Assembly prices are with Flush-Type Mandrels.
- (2) Oversize shoulders add 10% of Mandrel price for each 114" or portion thereof.
- (3) Add 10% to Mandrel (Shoulder-Type) price for skirt thread and cap.
- (4) Add 20% for left-hand applications.

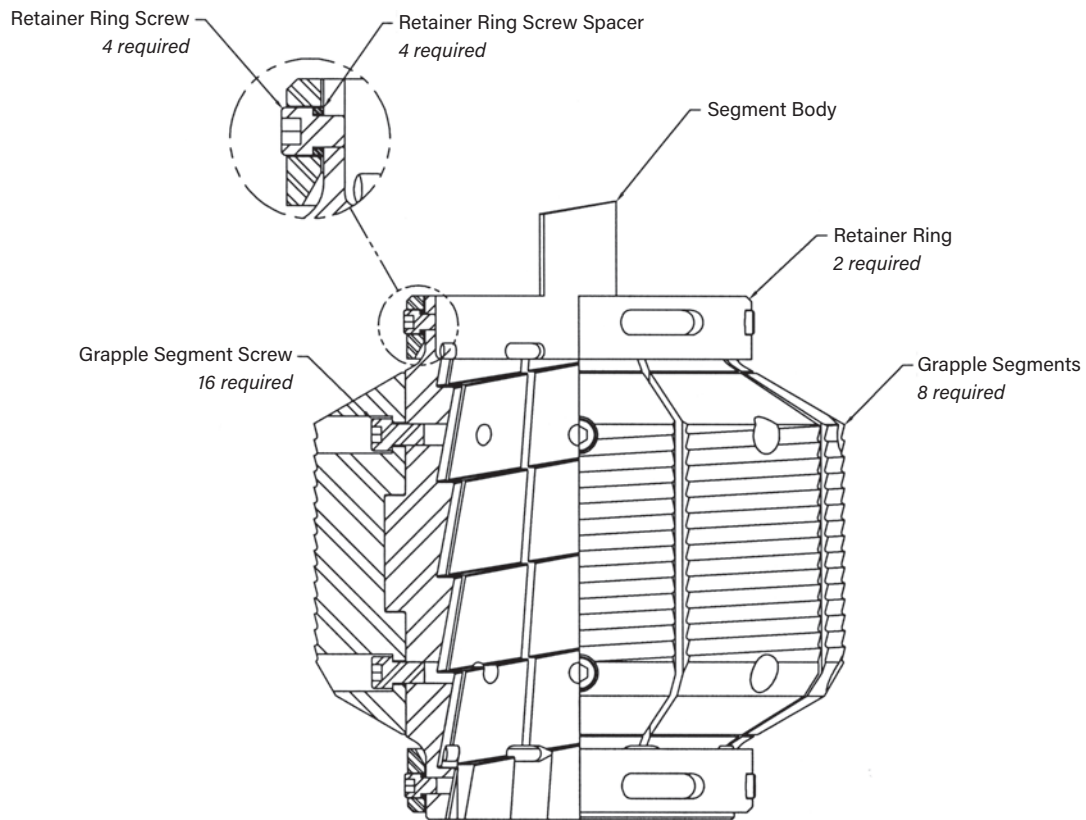
When ordering, please specify:

- (1) Part number of assembly or component
- (2) Size and type of top connection
- (3) Size and weight(s) of pipe to catch
- (4) Flush or Shoulder-Type Mandrel. (Specify O.D. of Shoulder-Type Mandrel "A" dimension.)
- (5) "C" dimension of Shoulder-Type Mandrel if other than standard.
- (6) Type of Nut. For Sub Type Nut, specify size and type of pin connection.

Recommended Spare Parts:

- (1) 2 Grapples for each catch size

LOGAN SEGMENTED SPEAR GRAPPLE ASSEMBLIES



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Logan Segmented Spear Grapple Assemblies

ASSEMBLES TO SPEAR	Logan Part No. Bowen No.	202-025 9380				202-018 17243			
CATCH SIZE (PIPE SIZE)		10-3/4	11-3/4	12-3/4	13-3/8	10-3/4	11-3/4	12-3/4	13-3/8
PIPE WEIGHT		32.75	38.00	45.45	48.00	32.75	38.00	45.45	48.60
		48.00	54.00	66.72	68.00	48.00	54.00	66.72	68.00
		40.00	47.00	...	61.00	40.00	47.00	...	61.00
		55.50	60.00	...	85.00	55.50	60.00	...	85.00
COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price			205-000 9382				205-001 17245	
		\$14,563	\$15,607	\$16,253	\$15,514	\$21,756	\$22,634	\$25,619	\$24,441
GRAPPLE BODY	Logan Part No. Bowen No. Price			F3029-A 9382-A \$8,140				F3030-A 17245-A \$11,581	
GRAPPLE SEGMENT (8 per set)	Logan Part No. Bowen No. Price			F3029-B 9382-B				F3030-B 17245-B	
		\$5,821	\$6,816	\$7,424	\$8,166	\$8,017	\$8,721	\$9,545	\$10,270
SEGMENT SCREW (16 req'd)	Logan Part No. Bowen No. Price			T3000 12198 \$3				T3000 12198 \$3	
RETAINER RING (2 req'd)	Logan Part No. Bowen No. Price			T4000 56855 \$377				T4000 56855 \$377	
RETAINER RING SCREW (4 req'd)	Logan Part No. Bowen No. Price			T5000 23535 \$3				T5000 23535 \$3	
RETAINER RING SCREW SPACER (4 req'd)	Logan Part No. Bowen No. Price			T6000 56979 \$11				T6000 56979 \$11	

ASSEMBLES TO SPEAR	Logan Part No. Bowen No.	202-019 9281					202-020 17246				
CATCH SIZE (PIPE SIZE)		13-3/8	14	16	18-5/8	20	13-3/8	14	16	18-5/8	20
PIPE WEIGHT		48.00	42.00	55.00	90.00	90.00	48.00	42.00	55.00	...	90.00
		68.00	57.00	65.00	106.50	94.00	68.00	57.00	65.00	...	94.00
		61.00	...	84.00	...	106.00	61.00	...	84.00	...	133.00
		85.00	...	109.00	...	133.00	85.00	...	...	...	...
COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price			205-002 9283					205-003 17248		
		\$16,340	\$17,127	\$17,630	\$27,016	\$27,016	\$23,361	\$23,361	\$27,560	\$42,078	\$42,078
GRAPPLE BODY	Logan Part No. Bowen No. Price			F3032-A 9283-A \$8,202					F3034-A 17248-A \$14,699		
GRAPPLE SEGMENT (8 per set)	Logan Part No. Bowen No. Price			F3032-B 9283-B					F3034-B 17248-B		
		\$7,726	\$9,523	\$9,523	\$18,882	\$18,882	\$9,651	\$10,313	\$13,820	\$26,436	
\$26,505											
SEGMENT SCREW (16 req'd)	Logan Part No. Bowen No. Price			T3001 23020 \$8					T3001 23020 \$8		
RETAINER RING (2 req'd)	Logan Part No. Bowen No. Price			T4001 56409 \$375					T4001 56409 \$375		
RETAINER RING SCREW (4 req'd)	Logan Part No. Bowen No. Price			T5001 56813 \$3					T5001 56813 \$3		
RETAINER RING SCREW SPACER (4 req'd)	Logan Part No. Bowen No. Price			T6000 56979 \$11					T6000 56979 \$11		

Logan Segmented Spear Grapple Assemblies

ASSEMBLES TO SPEAR	Logan Part No.	202-021	
	Bowen No.	27780	
CATCH SIZE (PIPE SIZE)		16 18-5/8 20	
PIPE WEIGHT		55.00 ... 90.00	
		65.00 ... 94.00	
		84.00 ... 133.00	
COMPLETE ASSEMBLY	Logan Part No.	205-004	
	Bowen No.	27782	
	Price	* * *	
GRAPPLE BODY	Logan Part No.	F3035-A	
	Bowen No.	27782A	
	Price	*	
GRAPPLE SEGMENT (8 per set)	Logan Part No.	F3035-B	
	Bowen No.	27782B	
	Price	* * *	
SEGMENT SCREW	Logan Part No.	T3002	
	Bowen No.	12019	
	No. Req'd	16	
	Price	\$11	
RETAINER RING	Logan Part No.	T4002	
	Bowen No.	56858	
	No. Req'd	2	
	Price	\$924	
RETAINER RING SCREW	Logan Part No.	T5002	
	Bowen No.	56859	
	No. Req'd	4	
	Price	\$3	
RETAINER RING SCREW SPACER	Logan Part No.	T6000	
	Bowen No.	56979	
	No. Req'd	4	
	Price	\$11	

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** Available upon request.*

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3000	F3000	F3000	F3000	F3000	F3000	F3000
	Bowen No.	16457	16457	16457	16457	16457	16457	16457
	Price	\$1,057	\$1,057	\$1,057	\$1,057	\$1,057	\$1,057	\$1,057
Actual Catching Range								
Minimum ID		.725	...	.799	...	.850	.912	.932
Nominal Catch Size		.742	...	.813	...	.864	.924	.944
Maximum ID		.750	...	.824	...	.875	.937	.957
Old Nominal Size (inches)		3/4 ID & 3/4 X-STG Pipe	...	3/4 Std Pipe .824 ID	...	.875 -.864 ID 1 to 2.25# CS Hydril	.937 ID	.957 ID 1" X-STG Pipe

Logan Spear Grapple	Logan Part No.	F3000	F3000	F3000	F3000	F3001	F3001	F3001
	Bowen No.	16457	16457	16457	16457	19352	19352	19352
	Price	\$1,057	\$1,057	\$1,057	\$1,057	\$1,122	\$1,122	\$1,122
Actual Catching Range								
Minimum ID		.955	.975	1.033	1.100	.913	.956	1.005
Nominal Catch Size		.967	.987	1.049	1.112	.937	.978	1.027
Maximum ID		.982	1.000	1.058	1.125	.957	1.000	1.049
Old Nominal Size (inches)		.982 ID	1" ID	1" Std Pipe 1.049 ID	1-1/8 ID	.957 ID 1" X-STG Pipe	1" ID	1.045 ID 1" Std Pipe

Logan Spear Grapple	Logan Part No.	F3001	F3001	F3002	F3002	F3002	F3002	F3002
	Bowen No.	19352	19352	11197	11197	11197	11197	11197
	Price	\$1,122	810	\$1,122	\$1,122	\$1,122	\$1,122	\$1,122
Actual Catching Range								
Minimum ID		1.050	1.081	1.137	1.180	1.211	1.242	1.273
Nominal Catch Size		1.072	1.103	1.170	1.215	1.246	1.277	1.308
Maximum ID		1.093	1.125	1.207	1.250	1.281	1.312	1.342
Old Nominal Size (inches)		1.093 ID	1.250 ID	1.187 ID	1.250 to 1.219 ID	1.281 to 1.250 ID	1.312 to 1.281 ID	1.343 to 1.312 ID

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3002	F3002	F3002	F3002	F3002	F3002	F3002
	Bowen No.	11197	11197	11197	11197	11197	11197	11197
	Price	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179
Actual Catching Range:								
Minimum ID		1.332	1.394	1.430	1.580	1.481	1.519	1.650
Nominal Catch Size		1.367	1.429	1.465	1.615	1.516	1.554	1.687
Maximum ID		1.402	1.464	1.500	1.652	1.551	1.589	1.720
Old Nominal Size (inches)		1-3/8 ID 1-1/4 Tbg	1.438 ID	1.500 to 1.469 ID	1-1/2 Std Pipe & 1-5/8 ID	1.531 ID	1 9/16 ID	1.687 to 1.700 ID

Logan Spear Grapple	Logan Part No.	F3002	F3002	F3002	F3002	F3002	F3002	F3004
	Bowen No.	11197	11197	11197	11197	11197	11197	9917
	Price	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179
Actual Catching Range:								
Minimum ID		1.722	1.771	1.836	1.895	1.957	2.024	1.441
Nominal Catch Size		1.757	1.806	1.875	1.930	1.992	2.061	1.470
Maximum ID		1.792	1.841	1.906	1.965	2.027	2.094	1.500
Old Nominal Size (inches)		1-3/4 to 1-25/32 ID	1.815 ID	1-7/8 to 1-29/32	1-15/16 ID	2 ID	2.067 ID	1.500 ID to 1-1/2 X-STG Pipe

Logan Spear Grapple	Logan Part No.	F3004	F3004	F3004	F3004	F3004	F3004	F3004
	Bowen No.	9917	9917	9917	9917	9917	9917	9917
	Price	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179	\$1,179
Actual Catching Range:								
Minimum ID		1.470	1.472	1.553	1.566	1.598	1.612	1.673
Nominal Catch Size		1.500	1.502	1.583	1.596	1.628	1.642	1.700
Maximum ID		1.527	1.529	1.610	1.625	1.657	1.670	1.750
Old Nominal Size (inches)		to 1.610 ID	1-1/2 Std Pipe	1-5/8 ID	1.657 ID	1.670 ID 1.700 ID	1-3/4	

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
Logan Spear Grapple	Logan Part No.	F3004	F3004	F3004	F3004	F3004	F3005	F3005
	Bowen No.	9917	9917	9917	9917	9917	9647	9647
	Price	\$1,122	\$1,122	\$1,122	\$1,122	\$1,122	\$1,238	\$1,238
Actual Catching Range:								
Minimum ID		1.707	1.742	1.817	1.881	1.942	1.677	1.742
Nominal Catch Size		1.737	1.772	1.847	1.911	1.972	1.719	1.778
Maximum ID		1.781	1.800	1.875	1.939	2.000	1.750	1.815
Old Nominal Size (inches)		1.781 ID	1.800 ID	1-7/8 ID	1.939 ID	2 ID	1.719 to 1.750 ID	2-3/8 DP, 65.5#

Logan Spear Grapple	Logan Part No.	...	...	...	F3007	F3007	F3007	F3007
	Bowen No.	...	...	...	1348	1348	1348	1348
	Price	...	...	...	\$1,137	\$1,137	\$1,137	\$1,137
Logan Spear Grapple	Logan Part No.	F3005	F3005	F3005	F3008	F3008	F3008	F3008
	Bowen No.	9647	9647	9647	17230	17230	17230	17230
	Price	\$1,238	\$1,238	\$1,238	\$2,044	\$2,044	\$2,044	\$2,044
Actual Catching Range:								
Minimum ID		1.802	1.864	1.968	1.788	1.796	1.889	1.952
Nominal Catch Size		1.838	1.900	2.004	1.828	1.836	1.929	1.992
Maximum ID		1.875	1.937	2.041	1.867	1.876	1.968	2.041
Old Nominal Size (inches)		1-7/8 & 1-27/32 ID	1.875 to 1.937 ID	2-3/8 Tbg, 4 to 4.7#	1.867 ID Turn Body Down	1.875 ID Turn Body Down	1.937 to 1.968 ID	2-3/8 Tbg, 4 to 4.7#

Logan Spear Grapple	Logan Part No.	F3007	F3007	F3007	F3007	F3007	F3007	F3007
	Bowen No.	1348	1348	1348	1348	1348	1348	1348
	Price	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137
Logan Spear Grapple	Logan Part No.	F3008	F3008	F3008	F3008	F3008	F3008	F3008
	Bowen No.	17230	17230	17230	17230	17230	17230	17230
	Price	\$2,044	\$2,044	\$2,044	\$2,044	\$2,044	\$2,044	\$2,044
Actual Catching Range:								
Minimum ID		1.983	2.045	2.091	2.170	2.186	2.233	2.249
Nominal Catch Size		2.023	2.085	2.131	2.211	2.226	2.273	2.289
Maximum ID		2.062	2.125	2.172	2.250	2.266	2.312	2.329
Old Nominal Size (inches)		2.000 to 2.062 ID	2-1/8 ID	2-7/8 DP, 9.75 to 10.4#	2-1/4 to 2-3/16 ID	2-17/64 ID	2-5/16 ID	2-7/8 OD 7.8 to 8.35# DP

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3007	F3007	F3007	F3007	F3007	F3007	F3007
	Bowen No.	1348	1348	1348	1348	1348	1348	1348
	Price	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137	\$1,137
Logan Spear Grapple	Logan Part No.	F3008	F3008	F3008	F3008	F3008	F3008	F3008
	Bowen No.	17230	17230	17230	17230	17230	17230	17230
	Price	\$2,147	\$2,147	\$2,147	\$2,147	\$2,147	\$2,147	\$2,147
Actual Catching Range:								
Minimum ID		2.295	2.358	2.390	2.420	2.556	2.608	2.670
Nominal Catch Size		2.335	2.398	2.430	2.460	2.596	2.648	2.710
Maximum ID		2.375	2.438	2.469	2.500	2.625	2.688	2.750
Old Nominal Size (inches)		2-3/8 ID NX 1/2 Rod	2-3/8 ID & 2-7/16 ID	2-7/8 Tbg 6.25 to 6.5#, 2-7/8 OD	2-7/16 ID	2-5/8 ID & 2-1/2 ID	2-5/8 ID & 2-9/16 ID	2-3/4 ID & 2-11/16 ID

Logan Spear Grapple	Logan Part No.	F3007	F3007	F3007	F3007	F3009	F3009	F3009
	Bowen No.	1348	1348	1348	1348	1230	1230	1230
	Price	\$1,137	\$1,137	\$1,137	\$1,137	\$1,242	\$1,242	\$1,242
Logan Spear Grapple	Logan Part No.	F3008	F3008	F3008	F3008	F3010	F3010	F3010
	Bowen No.	17230	17230	17230	17230	17233	17233	17233
	Price	\$2,147	\$2,147	\$2,147	\$2,147	\$2,294	\$2,294	\$2,294
Actual Catching Range:								
Minimum ID		2.921	3.046	3.170	3.264	2.280	2.351	2.390
Nominal Catch Size		2.961	3.086	3.210	3.304	2.328	2.399	2.438
Maximum ID		3.000	3.126	3.250	3.344	2.375	2.446	2.487
Old Nominal Size (inches)		3 ID & 2-15/16 ID - NX DRIVE	3-1/16 ID & 3-1/8 ID	3-1/4 ID & 3-3/16 ID	3-11/32 ID & 3-9/32 ID	2-3/8 ID	2-3/8 to 2-7/16 ID	2-7/8 Tbg 6.25 to 6.5# 2-7/8 OD

Logan Spear Grapple	Logan Part No.	F3009	F3009	F3009	F3009	F3009	F3009	F3009
	Bowen No.	1230	1230	1230	1230	1230	1230	1230
	Price	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242
Logan Spear Grapple	Logan Part No.	F3010	F3010	F3010	F3010	F3010	F3010	F3010
	Bowen No.	17233	17233	17233	17233	17233	17233	17233
	Price	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294
Actual Catching Range:								
Minimum ID		2.468	2.515	2.593	2.671	2.718	2.700	2.827
Nominal Catch Size		2.516	2.562	2.641	2.718	2.766	2.748	2.875
Maximum ID		2.563	2.610	2.688	2.766	2.814	2.813	2.922
Old Nominal Size (inches)		2.562 to 2-15/32 ID	3-1/2 OD 15.5# Drill Pipe	2-11/16 2-5/8 ID	3-1/2 OD 12.4 to 13.3# Drill Pipe		2-13/16 ID & 2-3/4 ID Drill Pipe	3-1/2 OD 10.2 to 11.2#

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3009	F3009	F3009	F3009	F3009	F3009	F3009
	Bowen No.	1230	1230	1230	1230	1230	1230	1230
	Price	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242	\$1,242
Logan Spear Grapple	Logan Part No.	F3010	F3010	F3010	F3010	F3010	F3010	F3010
	Bowen No.	17233	17233	17233	17233	17233	17233	17233
	Price	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294	\$2,294
Actual Catching Range:								
Minimum ID		2.843	2.890	2.984	3.030	3.155	3.297	3.437
Nominal Catch Size		2.891	2.938	3.032	3.078	3.203	3.345	3.485
Maximum ID		2.938	2.992	3.079	3.125	3.250	3.392	3.532
Old Nominal Size (inches)		2-7/8 to 2-15/16 ID	3-1/2 OD 9.2 to 10.2# Tbg	3-1/2 OD 7.7# Tbg	3-1/8 3-1/16 ID	3-1/4 3-3/16 ID	3.340 to 3.382 ID	3-1/2 ID

Logan Spear Grapple	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
Logan Spear Grapple	Logan Part No.	F3012	F3012	F3012	F3012	F3012	F3012	F3012
	Bowen No.	9412	9412	9412	9412	9412	9412	9412
	Price	\$2,570	\$2,570	\$2,570	\$2,570	\$2,570	\$2,570	\$2,570
Actual Catching Range:								
Minimum ID		2.881	2.949	3.021	3.146	3.256	3.365	3.444
Nominal Catch Size		2.933	3.001	3.073	3.198	3.308	3.417	3.496
Maximum ID		2.992	3.068	3.125	3.250	3.364	3.476	3.548
Old Nominal Size (inches)		3-1/2 OD 9.2 to 10.2# Tbg	3-1/2 OD 7.7 to 9.2#	3-1/8 ID	3-1/4 ID 3-3/16 ID	4 OD 12.5 to 14.0# Drill Pipe	4 OD 11.0 to 11.6#	4 OD 9.5 to 11.0#

Logan Spear Grapple	Logan Part No.	...	...	...	F3014	F3014	F3014	F3014
	Bowen No.	...	...	...	532	532	532	532
	Price	...	...	...	\$2,362	\$2,362	\$2,362	\$2,362
Logan Spear Grapple	Logan Part No.	F3012	F3012	F3012	F3015	F3015	F3015	F3015
	Bowen No.	9412	9412	9412	9487	9487	9487	9487
	Price	\$2,570	\$2,570	\$2,570	\$2,566	\$2,566	\$2,566	\$2,566
Actual Catching Range:								
Minimum ID		3.522	3.584	3.646	3.218	3.327	3.406	3.484
Nominal Catch Size		3.574	3.636	3.698	3.291	3.400	3.479	3.557
Maximum ID		3.625	3.687	3.750	3.364	3.476	3.548	3.625
Old Nominal Size (inches)		3.500 to 3.625 ID	3-11/16 ID	3-3/4 ID	4 OD 12.5 to 14.0 Tbg	4 OD 11.0 to 11.6# Tbg	4 OD 9.5 to 11.0# Tbg	3-5/8 ID & 3-9/16 ID

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3014	F3014	F3014	F3014	F3014	F3014	F3014
	Bowen No.	532	532	532	532	532	532	532
	Price	\$2,566	\$2,566	\$2,566	\$2,566	\$2,566	\$2,362	\$2,440
Logan Spear Grapple	Logan Part No.	F3015	F3015	F3015	F3015	F3015	F3015	F3015
	Bowen No.	9487	9487	9487	9487	9487	9487	9487
	Price	\$2,566	\$2,566	\$2,566	\$2,566	\$2,566	\$2,685	\$2,685
Actual Catching Range:								
Minimum ID		3.671	3.812	3.874	3.937	4.134	4.155	4.358
Nominal Catch Size		3.744	3.885	3.947	4.010	4.207	4.228	4.431
Maximum ID		3.826	3.958	4.026	4.090	4.276	4.300	4.506
Old Nominal Size (inches)		4-1/2 OD 15.3 to 18.1# Tbg	4-1/2 OD 13.7 to 15.3# Tbg	4-1/2 OD 11.0 to 13.7# Tbg	4-1/2 OD 9.5 to 11.6# Tbg	5 OD 18.0 to 21.0# Tbg	5 OD 17.7 to 18.0# Tbg	5 Tbg 12.6 to 15.0# (4.408 ID)

Logan Spear Grapple	Logan Part No.	F3014	F3014	F3016	F3016	F3016	F3016	F3016
	Bowen No.	532	532	13202	13202	13202	13202	13202
	Price	\$2,449	\$2,449	\$2,404	\$2,404	\$2,404	\$2,404	\$2,404
Logan Spear Grapple	Logan Part No.	F3015	F3015	F3017	F3017	F3017	F3017	F3017
	Bowen No.	9487	9487	17477	17477	17477	17477	17477
	Price	\$2,685	\$2,685	\$3,361	\$3,361	\$3,361	\$3,361	\$3,361
Actual Catching Range:								
Minimum ID		4.406	4.874	3.682	3.761	3.823	3.886	4.073
Nominal Catch Size		4.479	4.947	3.782	3.861	3.923	3.986	4.173
Maximum ID		4.560	5.012	3.881	3.958	4.026	4.090	4.276
Old Nominal Size (inches)		5 OD 11.5# Tbg	5-1/2 OD 14.0 to 17.0# Tbg	4-1/2 OD 15.3 to 18.1# Tbg	4-1/2 OD 13.7 to 15.3# Tbg	4-1/2 OD 11.0 to 13.7# Tbg	4-1/2 OD 9.5 to 11.6# Csg	5 OD 18.0 to 21.0# Csg

Logan Spear Grapple	Logan Part No.	F3016	F3016	F3018	F3018	F3018	F3018	F3018
	Bowen No.	13202	13202	1334	1334	1334	1334	1334
	Price	\$2,404	\$2,404	\$2,488	\$2,488	\$2,488	\$2,488	\$2,488
Logan Spear Grapple	Logan Part No.	F3017	F3017	F3019	F3019	F3019	F3019	F3019
	Bowen No.	17477	17477	9682	9682	9682	9682	9682
	Price	\$3,361	\$3,361	\$3,127	\$3,127	\$3,127	\$3,127	\$3,127
Actual Catching Range:								
Minimum ID		4.214	4.307	4.093	4.234	4.390	4.469	4.515
Nominal Catch Size		4.314	4.407	4.179	4.320	4.476	4.555	4.601
Maximum ID		4.408	4.506	4.276	4.408	4.562	4.642	4.696
Old Nominal Size (inches)		5 OD 15.0 to 18.0# Csg	5 OD 12.6 to 15.0# Csg	5 OD 18.0 to 21.0# Csg	5 OD 15.0 to 18.0# Csg	5 OD 11.5 to 15.0# Csg	5 OD 9.0 to 13.0# Csg	5 OD, 8# 5-1/2 OD 23 to 25# Csg

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3018	F3018	F3018	F3018	F3018	F3018	F3018
	Bowen No.	1334	1334	1334	1334	1334	1334	1334
	Price	\$3,154	\$3,154	\$3,154	\$3,154	\$3,154	\$3,497	\$3,497
Logan Spear Grapple	Logan Part No.	F3019	F3019	F3019	F3019	F3019	F3019	F3019
	Bowen No.	9682	9682	9682	9682	9682	9682	9682
	Price	\$3,252	\$3,252	\$3,252	\$3,252	\$3,252	\$3,751	\$3,751
Actual Catching Range:								
Minimum ID		4.609	4.719	4.875	4.922	5.015	5.124	5.218
Nominal Catch Size		4.695	4.805	4.961	5.008	5.101	5.210	5.304
Maximum ID		4.782	4.892	5.048	5.095	5.192	5.297	5.390
Old Nominal Size (inches)		5-1/2 OD 20.0 to 23.0# Csg	5-1/2 OD 17.0 to 20.0# Csg	5-1/2 OD 14.0 to 17.0# Csg	5-3/4 OD 19.5 to 22.5# Csg 9.0 to 13.0# Csg	5-3/4 OD 17 to 19.5# 5-1/2 OD	5-3/4 OD 14.0 to 17.0 Csg	6 OD 20.0 to 23.0# Csg

Logan Spear Grapple	Logan Part No.	F3018	F3018	F3018	F3022	F3022	F3022	F3022
	Bowen No.	1334	1334	1334	9717	9717	9717	9717
	Price	\$3,497	\$3,497	\$3,497	\$3,835	\$3,835	\$3,835	\$3,835
Logan Spear Grapple	Logan Part No.	F3019	F3019	F3019	F3023	F3023	F3023	F3023
	Bowen No.	9682	9682	9682	17236	17236	17236	17236
	Price	\$3,750	\$3,750	\$3,750	\$5,589	\$5,589	\$5,589	\$5,589
Actual Catching Range:								
Minimum ID		5.281	5.375	5.500	5.000	5.093	5.187	5.280
Nominal Catch Size		5.367	5.461	5.586	5.134	5.227	5.321	5.414
Maximum ID		5.454	5.552	5.675	5.266	5.360	5.454	5.547
Old Nominal Size (inches)		6 OD 17.0 to 20.0# Csg	6 OD 14.0 to 17.0# Csg	6-5/8 OD 32.0 to 34.0# Csg	6 OD 23.0 to 26.0# Csg	6 OD 20.0 to 23.0# Csg	6 OD 17.0 to 20.0# Csg	6 OD 14.0 to 17.0# Csg

Logan Spear Grapple	Logan Part No.	F3022	F3022	F3022	F3022	F3022	F3022	F3022
	Bowen No.	9717	9717	9717	9717	9717	9717	9717
	Price	\$3,835	\$4,080	\$4,080	\$4,672	\$4,672	\$4,672	\$4,672
Logan Spear Grapple	Logan Part No.	F3023	F3023	F3023	F3023	F3023	F3023	F3023
	Bowen No.	17236	17236	17236	17236	17236	17236	17236
	Price	\$5,589	\$5,871	\$5,871	\$6,881	\$6,881	\$6,881	\$6,881
Actual Catching Range:								
Minimum ID		5.406	5.530	5.593	5.656	5.671	5.781	5.796
Nominal Catch Size		5.540	5.664	5.727	5.790	5.805	5.915	5.930
Maximum ID		5.675	5.797	5.860	5.923	5.938	6.049	6.063
Old Nominal Size (inches)		6 OD 10.5 to 14.0# Csg	6-5/8 OD 28.0 to 32.0# Csg	6-5/8 OD 26.0 to 29.0# Csg	6-5/8 OD 24.0 to 28.0# Csg	7 OD 38.0 to 40.0# Csg	6-5/8 OD 20.0 to 24.0# Csg	7 OD 33.7 to 38.0# Csg

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3022	F3022	F3022	F3022	F3022	F3022	F3024
	Bowen No.	9717	9717	9717	9717	9717	9717	9268
	Price	\$4,672	\$5,212	\$5,212	\$5,212	\$5,212	\$5,212	\$4,092
Logan Spear Grapple	Logan Part No.	F3023	F3023	F3023	F3023	F3023	F3023	F3026
	Bowen No.	17236	17236	17236	17236	17236	17236	17239
	Price	\$6,881	\$7,452	\$7,452	\$7,452	\$7,452	\$7,452	\$8,626
Actual Catching Range:								
Minimum ID		5.875	5.937	6.015	6.140	6.202	6.281	5.770
Nominal Catch Size		6.009	6.071	6.149	6.274	6.335	6.415	5.970
Maximum ID		6.142	6.204	6.282	6.407	6.469	6.548	6.173
Old Nominal Size (inches)		6-5/8 OD 17.0 to 22.0# Csg	7 OD 29.0 to 33.7# Csg	7 OD 26.0 to 29.0# Csg	7 OD 22.0 to 26.0# Csg	7 OD 20.0 to 23.0# Csg	7 OD 17.0 to 20.0# Csg	7" 30.0-40.0# & 6-5/8 24.0# Csg

Logan Spear Grapple	Logan Part No.	F3024	F3024	F3024	F3024	F3024	F3024	F3024
	Bowen No.	9268	9268	9268	9268	9268	9268	9268
	Price	\$4,092	\$4,092	\$4,092	\$4,283	\$4,283	\$4,283	\$4,283
Logan Spear Grapple	Logan Part No.	F3026	F3026	F3026	F3026	F3026	F3026	F3026
	Bowen No.	17239	17239	17239	17239	17239	17239	17239
	Price	\$8,626	\$8,626	\$8,626	\$8,991	\$8,991	\$8,991	\$8,991
Actual Catching Range:								
Minimum ID		5.895	6.020	6.270	6.364	6.567	6.864	6.987
Nominal Catch Size		6.095	6.220	6.470	6.564	6.767	7.064	7.187
Maximum ID		6.297	6.423	6.673	6.765	6.969	7.263	7.391
Old Nominal Size (inches)		7 OD 26.0 to 35.0# Csg	7 OD 22.0 to 33.7# Csg	7 OD 13.0 to 24.0# Csg	7-5/8 OD 33.7 to 45.0# Csg	7-5/8 OD 26.4 to 39.0# Csg	7-5/8 OD 14.7 to 26.4# Csg	8-1/8 OD 32.0 to 42.0# Csg

Logan Spear Grapple	Logan Part No.	F3024	F3024	F3024	F3024	F3024	F3024	F3024
	Bowen No.	9268	9268	9268	9268	9268	9268	9268
	Price	\$5,393	\$5,393	\$5,393	\$5,393	\$5,643	\$5,643	\$7,095
Logan Spear Grapple	Logan Part No.	F3026	F3026	F3026	F3026	F3026	F3026	F3026
	Bowen No.	17239	17239	17239	17239	17239	17239	17239
	Price	\$9,232	\$9,232	\$9,232	\$9,232	\$9,623	\$9,623	\$10,106
Actual Catching Range:								
Minimum ID		7.225	7.239	7.489	7.755	7.911	7.958	8.692
Nominal Catch Size		7.425	7.439	7.689	7.955	8.111	8.158	8.892
Maximum ID		7.628	7.642	7.892	8.157	8.313	8.360	9.094
Old Nominal Size (inches)		8 OD 16.0 to 26.0# Csg	7-9/16 ID	8-5/8 OD 34.0 to 48.0# Csg	8-5/8 24.0- 38.0#, 9" 55# Csg	8-5/8 OD 17.6 to 29.3# Csg	9 OD 34.0 to 45.0# Csg	9-5/8 OD 29.3 to 42.0# Csg

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Note: Grapples are stenciled with nominal catch size.

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	F3024	F3029	F3029	F3029	F3029	F3029	F3029
	Bowen No.	9268	9382	9382	9382	9382	9382	9382
	Price	\$7,094	\$6,024	\$6,024	\$6,024	\$7,128	\$7,128	\$7,128
Logan Spear Grapple	Logan Part No.	F3026	F3030	F3030	F3030	F3030	F3030	F3030
	Bowen No.	17239	17245	17245	17245	17245	17245	17245
	Price	\$9,623	\$8,558	\$8,558	\$8,558	\$9,757	\$9,757	\$9,757
Actual Catching Range:								
Minimum ID		8.442	7.537	7.729	7.981	8.435	8.535	8.760
Nominal Catch Size		8.642	7.690	7.882	8.134	8.588	8.688	8.913
Maximum ID		8.884	7.846	8.034	8.315	8.755	8.846	9.065
Old Nominal Size (inches)		9-5/8 OD 43.5 to 53.5# Csg	8-5/8 OD 36.0 to 48.0# Csg	8-5/8 28.0 to 38.0#, 9 OD 45.0 to 55.0# Csg	8-5/8 17.5 to 29.3#, 9 OD 34.0 to 45.0# Csg	9 OD 19.0# & 9-5/8 OD 43.5 to 58.0# Csg	9-5/8 OD 40.0 to 53.5# Csg	9-5/8 OD 29.3 to 42.0# Csg

Logan Spear Grapple	Logan Part No.	F3029	205-000 *	205-000 *	205-000 *	205-000 *	205-000 *	205-000 *
	Bowen No.	9382	9382	9382	9382	9382	9382	9382
	Price	\$7,128	\$14,563	\$14,563	\$15,607	\$15,607	\$16,899	\$17,046
Logan Spear Grapple	Logan Part No.	205-001 *	205-001 *	205-001 *	205-001 *	205-001 *	205-001 *	205-001 *
	Bowen No.	17245	17245	17245	17245	17245	17245	17245
	Price	\$21,782	\$21,782	\$21,756	\$22,634	\$22,634	\$24,441	\$24,441
Actual Catching Range:								
Minimum ID		9.479	9.760	9.885	10.729	10.854	12.228	12.415
Nominal Catch Size		9.632	9.913	10.038	10.882	11.007	12.381	12.568
Maximum ID		9.784	10.065	10.192	11.034	11.159	12.534	12.721
Old Nominal Size (inches)		10-3/4 OD 55.5 to 65.7# Csg	10-3/4 OD 40.0 to 55.5# Csg	10-3/4 OD 32.7 to 48.0# Csg	11-3/4 OD 47.0 to 60.0# Csg	11-3/4 OD 38.0 to 54.0# Csg	13-3/8 OD 61.0 to 85.0# Csg	13-3/8 OD 48.0 to 68.0# Csg

Logan Spear Grapple	Logan Part No.	F3032	F3032	F3032	F3032	F3032	F3032	F3032
	Bowen No.	9283	9283	9283	9283	9283	9283	9283
	Price	\$5,877	\$5,877	\$5,877	\$5,877	\$7,747	\$7,747	\$7,747
Logan Spear Grapple	Logan Part No.	F3034	F3034	F3034	F3034	F3034	F3034	F3034
	Bowen No.	17248	17248	17248	17248	17248	17248	17248
	Price	\$9,746	\$9,746	\$9,746	\$9,746	\$11,554	\$11,554	\$11,554
Actual Catching Range:								
Minimum ID		8.435	8.519	8.596	8.738	9.738	9.867	9.225
Nominal Catch Size		8.597	8.681	8.758	8.900	9.900	10.029	9.387
Maximum ID		8.755	8.844	8.921	9.063	10.063	10.192	9.550
Old Nominal Size (inches)		9-5/8 OD 43.5 to 58.0# Csg	9-5/8 OD 40.0 to 53.5# Csg	9-5/8 OD 36.0 to 43.5# Csg	9-5/8 OD 29.3 to 40.0# Csg	10-3/4 OD 40.0 to 55.5# Csg	10-3/4 OD 32.7 to 48.0# Csg	10-3/4 OD 71.0 to 76.0# Csg

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Note: Grapples are stenciled with nominal catch size.

* Segmented Grapples

Logan Releasing Spear Grapple Range Chart

Logan Spear Grapple	Logan Part No.	205-002 *	F3032	F3032	F3032	F3032	205-002 *	205-002 *
	Bowen No.	9283	9283	9283	9283	9283	9283	9283
	Price	\$16,381	\$10,133	\$10,133	\$10,133	\$10,133	\$16,340	\$16,340
Logan Spear Grapple	Logan Part No.	205-003 *	F3034	F3034	F3034	F3034	205-003 *	205-003 *
	Bowen No.	17248	17248	17248	17248	17248	17248	17248
	Price	\$23,419	\$14,562	\$14,562	\$14,562	\$14,562	\$23,362	\$23,362
Actual Catching Range:								
Minimum ID		11.206	10.581	10.832	10.612	10.675	11.643	11.674
Nominal Catch Size		11.369	10.743	10.994	10.774	10.837	11.805	11.837
Maximum ID		11.531	10.906	11.157	10.937	11.000	11.968	12.000
Old Nominal Size (inches)		11.5 ID	11-3/4 OD 54.0 to 65.0# Csg	11-3/4 OD 38.0 to 54.0# Csg	11-3/4 OD 60.0# Csg	11-3/4 OD 47.0 to 60.0# Csg	13-3/8 OD 11.937 ID Csg	13-3/8 OD 96.0#, 11.975 ID Csg

Logan Spear Grapple	Logan Part No.	205-002 *	205-002 *	205-002 *	205-002 *	205-002 *	205-002 *	205-002 *
	Bowen No.	9283	9283	9283	9283	9283	9283	9283
	Price	\$16,341	\$16,340	\$16,340	\$17,084	\$17,084	\$17,084	\$17,630
Logan Spear Grapple	Logan Part No.	205-003 *	205-003 *	205-003 *	205-003 *	205-003 *	205-003 *	205-003 *
	Bowen No.	17248	17248	17248	17248	17248	17248	17248
	Price	\$23,361	\$23,362	\$23,362	\$24,080	\$24,080	\$24,080	\$27,626
Actual Catching Range:								
Minimum ID		12.022	12.393	12.455	13.143	13.312	13.330	15.112
Nominal Catch Size		12.184	12.555	12.617	13.305	13.474	13.492	15.274
Maximum ID		12.347	12.718	12.780	13.468	13.637	13.655	15.437
Old Nominal Size (inches)		13-3/8 OD 72.0 to 85.0# Csg	13-3/8 OD 48.0 to 68.0# Csg	12-3/4 ID	14 OD 42.0 to 57.0# Csg	13.599 to 13.609 ID	13-5/8 ID	16 OD 55.0 to 75.0# Csg

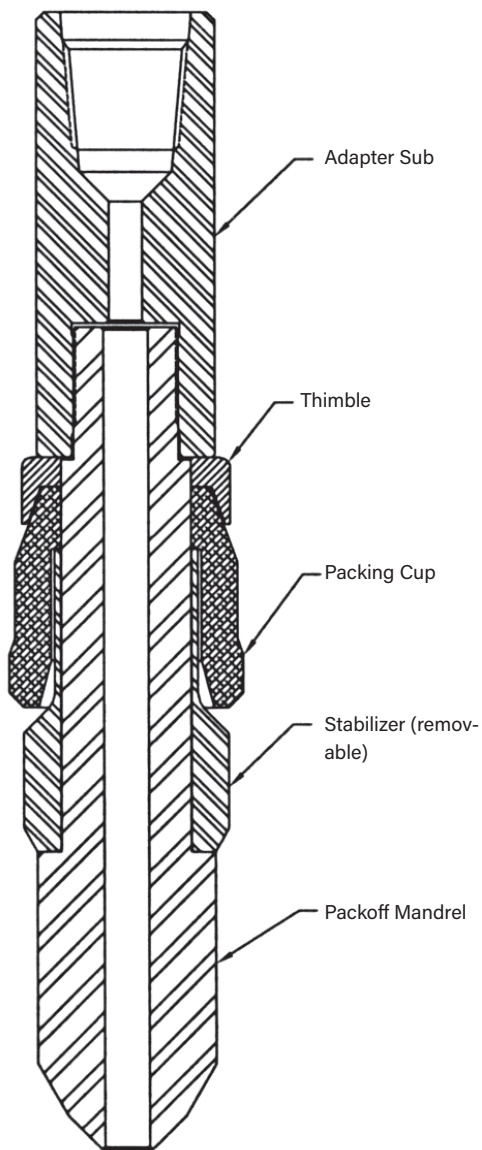
Logan Spear Grapple	Logan Part No.	205-002 *	205-002 *	205-002 *	205-002 *			
	Bowen No.	9283	9283	9283	9283			
	Price	\$17,630	\$27,016	\$27,016	\$27,016			
Logan Spear Grapple	Logan Part No.	205-003 *	205-003 *	205-003 *	205-003 *			
	Bowen No.	17248	17248	17248	17248			
	Price	\$23,361	\$42,078	\$42,078	\$42,078			
Actual Catching Range:								
Minimum ID		14.925	17.331	18.862	17.487			
Nominal Catch Size		15.087	17.493	19.024	17.650			
Maximum ID		15.250	17.656	19.187	17.812			
Old Nominal Size (inches)		16 OD 65.0 to 84.0# Csg	17-1/2 ID	20 OD 90.0 to 106.5# Csg	18-5/8 OD 87.5# Csg			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: Grapples are stenciled with nominal catch size.

* Segmented Grapples

LOGAN RELEASING SPEAR PACKOFF ASSEMBLIES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Releasing Spear Packoff Assemblies

CASING SIZE TO PACKOFF		1-1/2 Tbg	2-3/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4 Tbg	4-1/2 Tbg	5 Csg
OD ADAPTER SUB (INCHES)		1-1/4	1-13/16	1-13/16	2-1/2	3-1/4	3-1/2	4
OD INTEGRAL NUT (INCHES)		1	1-3/4	2	2	2-1/2	3-1/4	3-1/8
PACKOFF ASSEMBLY	Logan Part No.	400-036	400-037	400-038	400-039	400-040	400-041	400-042
	Price	*	\$3,174	\$3,294	\$3,563	\$4,876	\$5,034	\$5,986
MANDREL	Logan Part No.	F6000	F6001	F6002	F6003	F6004	F6005	F6006
	Price	\$914	\$1,071	\$1,104	\$1,211	\$1,684	\$1,604	\$1,977
ADAPTER SUB	Logan Part No.	F7000	F7001	F7002	F7003	F7004	F7005	F7006
	Std. Length	6	8	8	8	8	9	10
	Price	\$718	\$865	\$896	\$954	\$972	\$1,067	\$999
PACKING CUP	Logan Part No.	F8000	F8001	F8002	F8003	F8004	F8005	F8006
	Price	*	\$230	\$243	\$335	\$540	\$394	\$533
THIMBLE	Logan Part No.	F9000	F9001	F9002	F9003	F9004	F9005	F9006
	Price	*	\$149	\$158	\$317	\$317	\$431	\$865
STABILIZER	Logan Part No.	F10000	F10001	F10002	F10003	F10004	F10005	F10006
	Price	*	\$860	\$893	\$1,161	\$1,334	\$1,537	\$1,606
CAN BE DRESSED TO PACKOFF				3-1/2 DP	4 Tbg		4-1/2 Csg & 4-3/4 Csg	

CASING SIZE TO PACKOFF		5-1/2 Csg	6 Csg	6-5/8 Csg	8 Csg	9-5/8 Csg	10-3/4 Csg	11-3/4 Csg
OD ADAPTER SUB (INCHES)		4	4-3/4	4-3/4	6-1/8	6-3/8	8	8
OD INTEGRAL NUT (INCHES)		4	4-1/2	4-3/4	6-3/8	6-3/8	8	8
PACKOFF ASSEMBLY	Logan Part No.	400-043	400-044	400-045	400-046	400-047	400-048	400-055
	Price	\$6,206	\$6,499	\$6,721	*	\$9,523	\$13,724	\$15,260
MANDREL	Logan Part No.	F6007	F6008	F6009	F6011	F6011	F6013	F6013
	Price	\$1,839	\$2,116	\$2,233	\$2,717	\$2,717	\$4,798	\$4,798
ADAPTER SUB	Logan Part No.	F7006	F7007	F7007	F7009	F7009	F7009	F7009
	Std. Length	10	12	12	12	12	12	12
	Price	\$1,230	\$1,372	\$1,372	\$1,631	\$2,029	\$2,424	\$2,424
PACKING CUP	Logan Part No.	F8007	F8008	F8009	F8009	F8011	F8012	F80125
	Price	\$875	\$809	\$716	*	\$917	\$1,938	\$2,045
THIMBLE	Logan Part No.	F9007	F9008	F9009	F9009	F9011	F9012	F90125
	Price	\$870	\$825	\$911	*	\$1,406	\$2,699	\$3,595
STABILIZER	Logan Part No.	F10007	F10008	F10009	F10011	F10011	F10012	F100125
	Price	\$1,617	\$1,649	\$1,707	\$2,289	\$2,289	\$3,306	\$3,851
CAN BE DRESSED TO PACKOFF		5-3/4 Csg		7 & 7-5/8 Csg	8-5/8 Csg 9 Csg			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

When ordering, please specify:

- (1) Part description and part number of item desired
- (2) Size and type of top connection
- (3) Size and weight of pipe to run in

Recommended Spare Parts:

- (1) 2 Packers for each size
- (2) 1 Thimble for each size

Logan Releasing Spear Packoff Assemblies

CASING SIZE TO PACKOFF		13-3/8 Csg	16 Csg	18-5/8 Csg	20 Csg			
OD ADAPTER SUB (INCHES)		8	8	8	8			
OD INTEGRAL NUT (INCHES)		8	8	8	8			
PACKOFF ASSEMBLY	Logan Part No.	400-049	400-066	400-067	400-068			
	Price	\$17,967	\$19,585	\$22,617	\$21,961			
MANDREL	Logan Part No.	F6013	F6013	F6013	F6013			
	Price	\$4,798	\$4,872	\$4,872	\$4,872			
ADAPTER SUB	Logan Part No.	F7009	F7009	F7009	F7009			
	Std. Length	12	12	12	12			
	Price	\$2,028	\$2,028	\$2,028	\$2,028			
PACKING CUP	Logan Part No.	F8013	F8014	F8015	F8016			
	Price	\$2,877	\$7,971	\$7,618	\$7,766			
THIMBLE	Logan Part No.	F9013	<i>not req'd</i>	<i>not req'd</i>	<i>not req'd</i>			
	Price	\$4,030	...	...	...			
STABILIZER	Logan Part No.	F10013	F10014	F10015	F10016			
	Price	\$4,234	\$4,713	\$5,330	\$7,292			
CAN BE DRESSED TO PACKOFF		13-5/8 Csg						

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** Available upon request.*

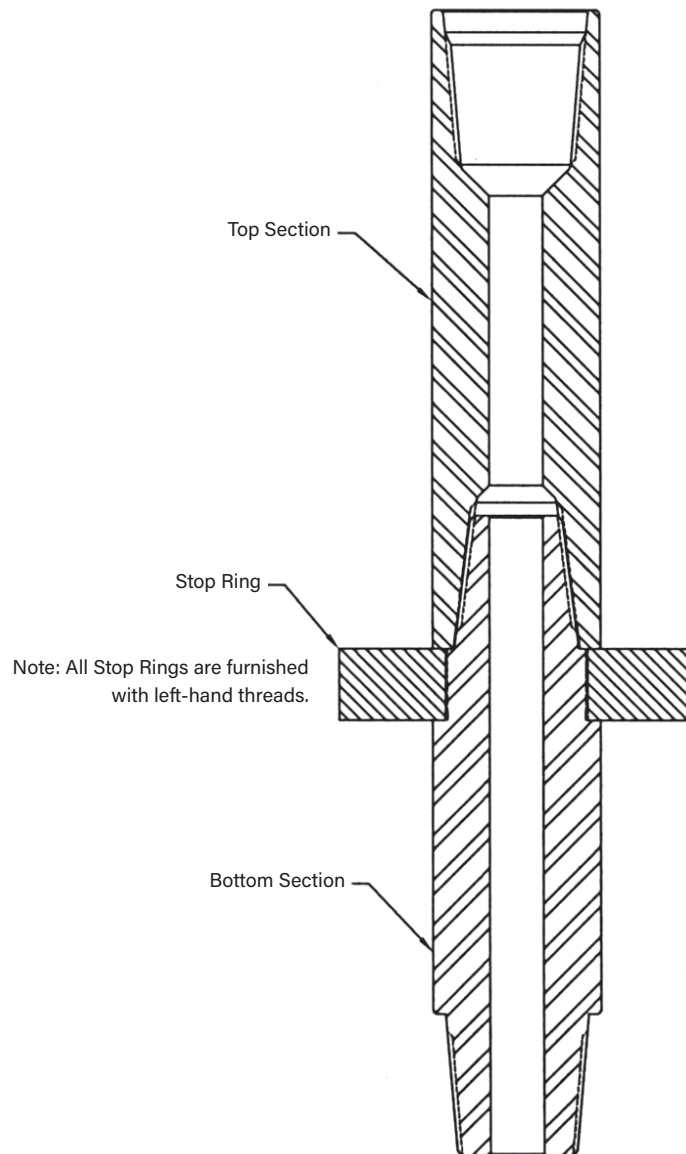
When ordering, please specify:

- (1) Part description and part number of item desired
- (2) Size and type of top connection
- (3) Size and weight of pipe to run in

Recommended Spare Parts:

- (1) 2 Packers for each size
- (2) 1 Thimble for each size

LOGAN RELEASING SPEAR STOP SUB ASSEMBLIES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Releasing Spear Stop Sub Assemblies

STANDARD STOP SUB & FLUSH MANDREL OD		2-5/16	3-1/8	3-1/2	3-5/8	4-1/32	5	5-3/4
STOP SUB ASSEMBLY	Logan Part No.	400-071	400-064	400-063	400-050	400-051	400-052	400-053
	Price	\$3,487	\$3,167	\$4,086	\$3,196	\$3,792	\$3,677	\$4,427
STOP SUB (2 PCS. REQ'D)								
UPPER SECTION 18" LENGTH	Logan Part No.	F11009-A	F110002-A	F110005-A	F11000-A	F11001-A	F11002-A	F11003-A
	Price	\$1,452	\$1,294	\$1,565	\$1,478	\$1,737	\$1,624	\$1,798
LOWER SECTION 12" LENGTH	Logan Part No.	F11009-B	F110002-B	F110005-B	F11000-B	F11001-B	F11002-B	F11003-B
	Price	\$1,452	\$1,045	\$2,090	\$1,200	\$1,390	\$1,314	\$1,452
STOP RING	Logan Part No.	F12009	F120002	F120005	F12000	F12001	F12002	F12003
	Minimum O.D.	3	4-1/8	4-1/8	4-1/2	5	6	7
	Price	\$585	\$830	\$430	\$519	\$664	\$739	\$1,177

STANDARD STOP SUB & FLUSH MANDREL O.D.		7-1/4	7-3/4	8-1/4	11-3/4			
STOP SUB ASSEMBLY	Logan Part No.	400-054	400-062	400-065	400-056			
	Price	\$6,354	\$6,356	\$7,706	*			
STOP SUB (2 PCS. REQ'D)								
UPPER SECTION 18" LENGTH	Logan Part No.	F11004-A	F11005-A	F11015-A	F11006-A			
	Price	\$2,757	\$2,732	\$3,330	*			
LOWER SECTION 12" LENGTH	Logan Part No.	F11004-B	F11005-B	F11015-B	F11006-B			
	Price	\$2,062	\$2,010	\$2,474	*			
STOP RING	Logan Part No.	F12004	F12005	F12015	F12006			
	Minimum O.D.	8-5/8	9-5/8	9-5/8	13-3/8			
	Price	\$1,534	\$1,616	\$1,820	*			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Note: All Stop Rings are furnished with left-hand threads.

To oversize add 10% to the Upper and Lower Section price for each 1/4" or portion thereof.

When ordering, please specify:

- (1) O.D. of Stop Subs
- (2) Length from Stop to threaded connection
- (3) Top and bottom connection desired
- (4) Spear assembly number that the Stop Sub will be used in conjunction with
- (5) O.D. of Stop Ring

Logan/HE EFL Rotating and Releasing Spears

Nominal - Size-Inches	2	2-3/8	3	4	4	5
Catch Size - Inches	2" Tubing	2-7/8" Tubing	3-1/2" Tubing	4" Casing	4-1/2" Casing	5" Casing
Spear O.D. - Inches	1-29/32'	2-5/16"	2-11/16"	3-1/8"	3-1/8"	4-1/16"
Spear I.D. - Inches	3/8"	3/8"	1/2"	1"	1"	1-1/4"
Complete Assembly	Logan Part No.	14272	14273	14274	14275	14276

REPLACEMENT PARTS

TOP COUPLING	Logan Part No.	213920	213925	213931	213940	213940	313101
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
MANDREL	Logan Part No.	313097	313098	213930	313099	313099	313100
	No. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK RING	Logan Part No.	213921	213926	213932	113638	113638	213944
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG	Logan Part No.	113632	113634	113636	113639	113639	113642
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG SCREW	Logan Part No.	113706	113706	113706	113706	113706	113703
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
BULL PLUG	Logan Part No.	113633	113635	113637	113640	113640	113641
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
Slip (Smallest Catch Size)	Logan Part No.	213922	213929	213934	213941	213945	213953
	Qty. Req'd	2-3/8" 5.8-6.65	2-7/8" 6.4	3-1/2" 12.7-13.3	4" 14.0	4-1/2" 20.0	5" 18.0-20.8
	Price	*	*	*	*	*	*

SLIPS - ADDITIONAL CATCH SIZES

SLIP	Logan Part No.	213623	214609	213936	213942	213947	213954
	Casing Size/Wt	2-3/8" 4.0-4.85	3-1/2" 14.9-15.5	3-1/2" 9.2-10.2	4"- 9.5-11.85	4-1/2" 16.6-13.5	5" 13.0-15.0
	Price	*	*	*	*	*	*
SLIP	Logan Part No.	214607	...	213938	...	213942	213955
	Casing Size/Wt	2-7/8" 10.4	...	3-1/2" 9.5-11.85	...	4-1/2" DP 11.85	5" 11.5
	Price	*	...	*	...	*	*
SLIP	Logan Part No.	214608	...	...	...	...	...
	Casing Size/Wt	2-7/8" 7.9-8.7	...	...	...	...	...
	Price	*	...	...	...	...	...
SLIP	Logan Part No.	...	...	...	...	...	...
	Casing Size/Wt	...	...	...	...	...	...
	Price	...	...	...	...	...	...
SLIP	Logan Part No.	...	...	...	...	...	...
	Casing Size/Wt	...	...	...	...	...	...
	Price	...	...	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Complete assembly includes the smallest catch available, larger sizes are additional, mandrel threaded with bull plug standard.

Note: Slips to catch additional catch range sizes are available on request.

Slips listed are less Flange, Flange Type Slips are available upon request.

When ordering, please specify:

- (1) Tool joint connection required
- (2) Size and weight of Tubing or Casing to be caught

Recommended Spare Parts:

Qty. 1 set of Lock Lugs

Qty. 1 set of Lock Lug Screws

Qty. 1 extra Slip for each size Tubing or Casing

Logan/HE EFL Rotating and Releasing Spears

Nominal - Size-Inches	5	6-5/8	6-5/8	6-5/8	8-5/8	8-5/8
Catch Size - Inches	5-1/2" Casing	6-5/8" Casing	7" Casing	7-5/8" Casing	8-5/8" Casing	9-5/8" Casing
Spear O.D. - Inches	4-1/16"	5-11/16"	5-11/16"	5-11/16"	7-1/4"	7-1/4"
Spear I.D. - Inches	1-1/4"	2-1/4"	2-1/4"	2-1/4"	3"	3"
Complete Assembly	Logan Part No.	14276	14277	14277	14278	14278

REPLACEMENT PARTS

TOP COUPLING	Logan Part No.	313101	113643	113643	113643	213970	213970
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
MANDREL	Logan Part No.	313100	313102	313102	313102	313103	313103
	No. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK RING	Logan Part No.	213944	113644	113644	113644	113648	113648
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG	Logan Part No.	113642	113645	113645	113645	113647	113647
	Qty. Req'd	1	3	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG SCREW	Logan Part No.	113703	113704	113704	113704	113704	113704
	Qty. Req'd	1	3	1	1	1	1
	Price	*	*	*	*	*	*
BULL PLUG	Logan Part No.	113641	113646	113646	113646	113649	113649
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
SLIP (SMALLEST CATCH SIZE)	Logan Part No.	213956	213959	213959	213965	213971	214565
	Qty. Req'd	5-1/2" 14.0-21.0	6-5/8" 24.0-28.0	7" 38.0	7-5/8" 45.3	8-5/8" 44.0-49.0	9-5/8" 71.8
	Price	*	*	*	*	*	*

SLIPS - ADDITIONAL CATCH SIZES

SLIP	Logan Part No.	213957	213960	214588	213966	213972	213976
	Casing Size/Wt	5-1/2" 14.0-17.0	6-5/8" 20.0	7" 32.0-35.0	7-5/8" 39.0	8-5/8" 36.0-40.0	9-5/8" 53.5-58.4
	Price	*	*	*	*	*	*
SLIP	Logan Part No.	214607	...	213962	213967	213973	214563
	Casing Size/Wt	5-3/4" 18.8	...	7" 29.0	7-5/8" 29.7-33.7	8-5/8" 28.0-32.0	9-5/8" 43.5-47.0
	Price	*	...	*	*	*	*
SLIP	Logan Part No.	214610	...	213963	213968	213974	214562
	Casing Size/Wt	6-5/8" 32.0	...	7" 23.0-26.0	7-5/8" 24.0-25.4	8-5/8" 24.0	9-5/8" 36.0-40.0
	Price	*	...	*	*	*	*
SLIP	Logan Part No.	...	...	216923	213969	...	213978
	Casing Size/Wt	...	...	7" 20.0-23.0	7-5/8" 20.0	...	9-5/8" 29.3-32.3
	Price	...	...	...	*	...	*
SLIP	Logan Part No.	...	...	...	214549	...	214564
	Casing Size/Wt	...	...	...	8" 30.54	...	9-5/8" 61.10
	Price	...	...	...	*	...	*

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Complete assembly includes the smallest catch available, larger sizes are additional, mandrel threaded with bull plug standard.

Note: Slips to catch additional catch range sizes are available on request.

Slips listed are less Flange, Flange Type Slips are available upon request.

When ordering, please specify:

- (1) Tool joint connection required
- (2) Size and weight of Tubing or Casing to be caught

Recommended Spare Parts:

Qty. 1 set of Lock Lugs

Qty. 1 set of Lock Lug Screws

Qty. 1 extra Slip for each size Tubing or Casing

Logan/HE EFL Rotating and Releasing Spears

Nominal - Size-Inches	8-5/8	8-5/8	13-3/8	13-3/8	13-3/8	13-3/8
Catch Size - Inches	10-3/4" Casing	11-3/4" Casing	13-3/8" Casing	16" Casing	18-5/8" Casing	20" Casing
Spear O.D. - Inches	7-1/4"	7-1/4"	11-3/4"	11-3/4"	11-3/4"	11-3/4"
Spear I.D. - Inches	3"	3"	3-1/4"	3-1/4"	3-1/4"	3-1/4"
Complete Assembly	Logan Part No.	14278	14278	14279	14279	14279

REPLACEMENT PARTS

TOP COUPLING	Logan Part No.	213970	213970	213986	213986	213986	213986
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
MANDREL	Logan Part No.	313103	313103	213985	213985	213985	213985
	No. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK RING	Logan Part No.	113648	113648	113652	113652	113652	113652
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG	Logan Part No.	113647	113647	113650	113650	113650	113650
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
LOCK LUG SCREW	Logan Part No.	113704	113704	113705	113705	113705	113705
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
BULL PLUG	Logan Part No.	113649	113649	113651	113651	113651	113651
	Qty. Req'd	1	1	1	1	1	1
	Price	*	*	*	*	*	*
SLIP (SMALLEST CATCH SIZE)	Logan Part No.	213979	213979	213987	216625	14730	14731
	Qty. Req'd	10-3/4" 65.7-71.1	11-3/4" 54.0-60.0	13-3/8" 98.0	16" 109.0	18-5/8" 87.5	20" 133.0
	Price	*	*	*	*	*	*

SLIPS - ADDITIONAL CATCH SIZES

SLIP	Logan Part No.	213980	213984	213988	216626	...	14732
	Casing Size/Wt	10-3/4" 55.5-60.7	11-3/4" 42.0-47.0	13-3/8" 77.0-85.0	16" 75.0-84.0	...	20" 94.0-106.5
	Price	*	*	*	*	*	*
SLIP	Logan Part No.	213981	...	213989	216627	...	...
	Casing Size/Wt	10-3/4" 45.5-51.0	...	13-3/8" 68.0-72.0	16" 65.0	...	...
	Price	*	...	*	*	...	...
SLIP	Logan Part No.	213982	...	213990	...	...	...
	Casing Size/Wt	10-3/4" 32.75-40.5	...	13-3/8" 54.5-61.0	...	...	...
	Price	*	...	*	...	...	...
SLIP	Logan Part No.	...	...	213991	...	...	...
	Casing Size/Wt	...	...	13-3/8" 48.0	...	...	...
	Price	...	...	...	...	...	...
SLIP	Logan Part No.	...	...	...	...	...	...
	Casing Size/Wt	...	...	...	...	...	...
	Price	...	...	...	...	...	...

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Complete assembly includes the smallest catch available, larger sizes are additional, mandrel threaded with bull plug standard.

Note: Slips to catch additional catch range sizes are available on request.

Slips listed are less Flange, Flange Type Slips are available upon request.

When ordering, please specify:

- (1) Tool joint connection required
- (2) Size and weight of Tubing or Casing to be caught

Recommended Spare Parts:

Qty. 1 set of Lock Lugs

Qty. 1 set of Lock Lug Screws

Qty. 1 extra Slip for each size Tubing or Casing

Logan/HE EFL Rotating and Releasing Spears

Nominal - Size-Inches	8-5/8	8-5/8	13-3/8	13-3/8	13-3/8	13-3/8
Catch Size - Inches	10-3/4" Casing	11-3/4" Casing	13-3/8" Casing	16" Casing	18-5/8" Casing	20" Casing
Spear O.D. - Inches	7-1/4"	7-1/4"	11-3/4"	11-3/4"	11-3/4"	11-3/4"
Spear I.D. - Inches	3"	3"	3-1/4"	3-1/4"	3-1/4"	3-1/4"
Complete Assembly	Logan Part No.	14278	14278	14279	14279	14279

REPLACEMENT PARTS

SLIP CARRIER (MASTER SLIP)	Logan Part No.	...	...	...	...	313163	313163
	...	...	...	...	...	1	1
	Price	...	...	...	...	*	*
SLIP SEGMENT (SET OF 8)	Logan Part No.	...	...	...	...	213995	213996
	Casing Size ...	...	...	...	18-5/8" 87.5	20" 133.0	
	Price	...	...	...	...	*	*
SLIP SEGMENT (SET OF 8)	Logan Part No.	...	...	...	...	...	213997
	Casing Size ...	...	...	...	...	20"94.0-106.	
	Price	...	...	...	...	...	*
SEGMENT BOLTS	Logan Part No.	...	...	...	...	113956	113956
	Qty. Req'd	...	...	...	...	16	16
	Price	...	...	...	...	*	*
SLIP CARRIER STOP RING	Logan Part No.	...	...	...	...	313093	313093
	Qty. Req'd	...	...	...	...	1	1
	Price	...	...	...	...	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Complete assembly includes the smallest catch available, larger sizes are additional, mandrel threaded with bull plug standard.

Note: Slips to catch additional catch range sizes are available on request.

Slips listed are less Flange, Flange Type Slips are available upon request.

When ordering, please specify:

- (1) Tool joint connection required
- (2) Size and weight of Tubing or Casing to be caught

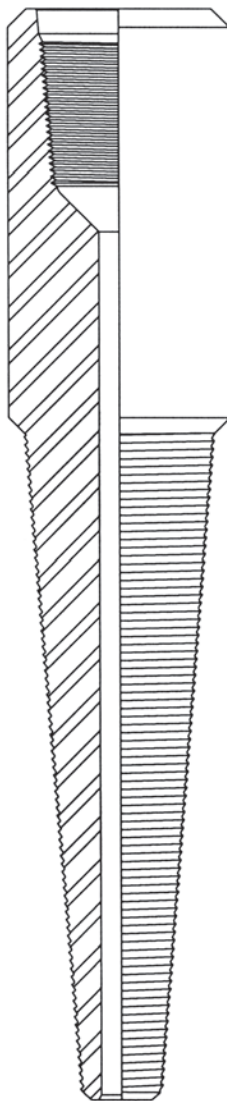
Recommended Spare Parts:

Qty. 1 set of Lock Lugs

Qty. 1 set of Lock Lug Screws

Qty. 1 extra Slip for each size Tubing or Casing

LOGAN TAPER TAPS



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Logan Taper Taps

COMPLETE ASSEMBLY	Logan Part No.	203-150	203-175	203-181	203-190	203-231	203-238	203-306
	Price	\$1,340	\$1,436	\$1,436	\$1,436	\$1,511	\$1,513	\$1,866
NOMINAL SIZE		5/8 SR	3/4 SR	1-13/16 FJ	1 EUE	7/8 SR	1-1/4 EUE	2-3/8 EUE
O.D.		1-1/2	1-3/4	1-13/16	1.9	2-5/16	2-3/8	3-1/16
TO CATCH		1/2 to 1 ID	5/8 to 1-1/4 ID	3/4 to 1-3/8 ID	1 PIPE	7/8 to 1-1/2 ID	1-1/4 PIPE	2-3/8 OD CPL
DIAMETER OF SMALLEST WICKER		3/8	1/2	5/8	3/4	3/4	7/8	1-5/8
DIAMETER OF LARGEST WICKER		1-1/4	1-1/2	1-5/8	1-3/4	1-3/4	1-7/8	2-5/8
LENGTH OF TAPER	Inches	14	16	16	16	16	16	16
	Price	\$1,340	\$1,436	\$1,436	\$1,436	\$1,511	\$1,513	\$1,866
ADDITIONAL LENGTH	Price Per Inch	\$71	\$71	\$71	\$101	\$118	\$147	\$147

COMPLETE ASSEMBLY	Logan Part No.	203-313	203-338	203-363	203-375	203-413	203-425	203-463
	Price	\$1,866	\$2,016	\$3,165	\$2,228	\$2,359	\$2,660	\$2,872
NOMINAL SIZE		2-3/8 Reg	2-3/8 IF	2-3/8 Reg	2-7/8 Reg	2-7/8 IF	3-1/2 Reg	3-1/2 FH
O.D.		3-1/8	3-3/8	3-5/8	3-3/4	4-1/8	4-1/4	4-5/8
TO CATCH		2-3/8 Reg	2-3/8 IF HYD	2-3/8 Reg	2-7/8 Reg	2-7/8 PIPE API	3-1/2 Reg	3-1/2 PIPE API, FH
DIAMETER OF SMALLEST WICKER		5/8	1-3/8	1-1/2	7/8	1-3/4	1	1-5/8
DIAMETER OF LARGEST WICKER		1-5/8	2-3/8	3	1-7/8	2-3/4	2-1/2	3-1/8
LENGTH OF TAPER	Inches	16	16	24	16	16	24	24
	Price	\$1,866	\$2,016	\$3,165	\$2,228	\$2,359	\$2,660	\$2,872
ADDITIONAL LENGTH	Price Per Inch	\$147	\$147	\$147	\$147	\$149	\$149	\$149

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: For left-hand application add 20%.

When ordering, please specify:

- (1) Assembly number
- (2) Size of fish to be caught
- (3) Size and type of top connection
- (4) Fluted or non-fluted wickers; same price
- (5) Threaded for skirt with skirt thread protector. An additional charge will apply (add 10% to our list price).

Logan Taper Taps

COMPLETE ASSEMBLY	Logan Part No.	203-475	203-500	203-525	203-550	203-575	203-600	203-613
	Price	\$2,872	\$3,288	\$3,540	\$3,733	\$3,932	\$4,292	\$4,292
NOMINAL SIZE		3-1/2 IF	4-1/2 REED DS	4 FH	4-1/2 Reg	4-1/2 FH	4-1/2 XH	4-1/2 IF
O.D.		4-3/4	5	5 1/4	5 1/2	5 3/4	6	6-1/8
TO CATCH		3-1/2 IF 3-1/2 PIPE	4-1/2 REED DS	4 FH	4-1/2 Reg	4 IF 4 PIPE 4-1/2 FH 4-1/2 PIPE	4-1/2 XH	4-1/2 IF 4-1/2 PIPE
DIAMETER OF SMALLEST WICKER		2-3/16	2-5/16	2-5/16	1-3/4	2-5/8	2-7/8	3-1/4
DIAMETER OF LARGEST WICKER		3-11/16	3-13/16	3-15/16	3-3/8	4-1/4	4-1/2	4-3/4
LENGTH OF TAPER	Inches	24	24	26	26	26	26	24
	Price	\$2,872	\$3,288	\$3,540	\$3,733	\$3,932	\$4,292	\$4,292
ADDITIONAL LENGTH	Price Per Inch	\$149	\$158	\$158	\$158	\$158	\$168	\$168

COMPLETE ASSEMBLY	Logan Part No.	203-675	203-700	203-738	203-775	203-800		
	Price	\$4,862	\$5,312	\$6,375	\$5,890	\$6,586		
NOMINAL SIZE		5-1/2 Reg	5-1/2 FH	5-1/2 IF	6-5/8 Reg	6-5/8 Reg		
O.D.		6-3/4	7	7-3/8	7-3/4	8		
TO CATCH		5-1/2 OR 5-9/16 Reg	5-1/2 OR 5-9/16 FH PIPE	5-1/2 OR 5-9/16 IF PIPE	6-5/8 Reg	6-5/8 FH IF PIPE		
DIAMETER OF SMALLEST WICKER		2-1/4	3-5/8	4-1/4	3	4-5/8		
DIAMETER OF LARGEST WICKER		4	5-3/8	6	4-3/4	6-3/8		
LENGTH OF TAPER	Inches	28	28	28	28	28		
	Price	\$4,862	\$5,312	\$6,375	\$5,890	\$6,586		
ADDITIONAL LENGTH	Price Per Inch	\$183	\$190	\$190	\$205	\$214		

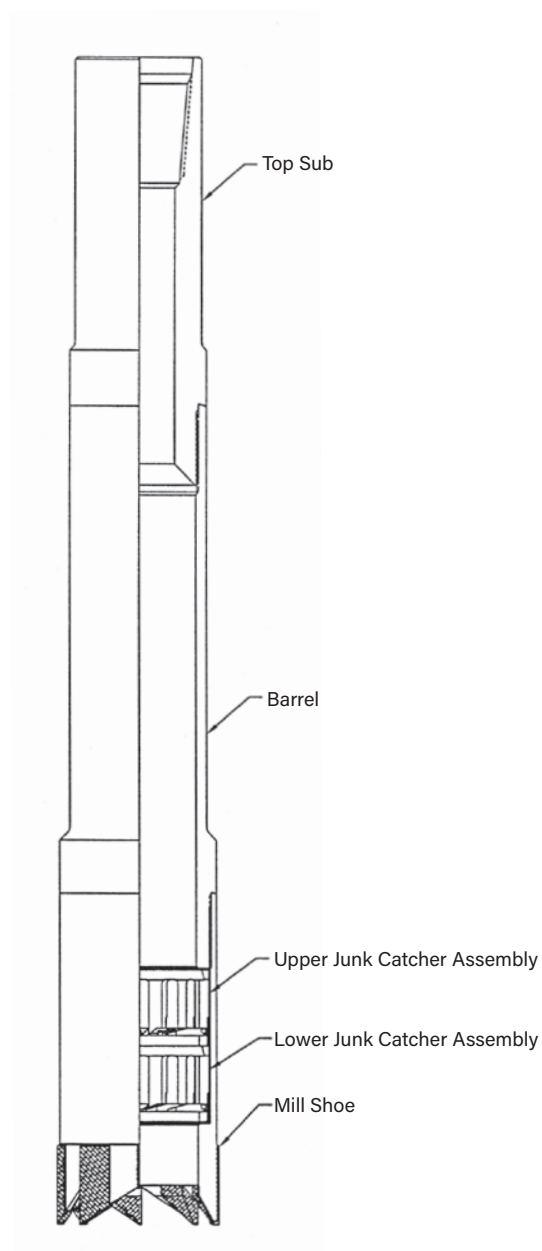
Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: For left-hand application add 20%.

When ordering, please specify:

- (1) Assembly number
- (2) Size of fish to be caught
- (3) Size and type of top connection
- (4) Fluted or non-fluted wickers; same price
- (5) Threaded for skirt with skirt thread protector. An additional charge will apply (add 10% to our list price).

LOGAN CORE TYPE JUNK BASKETS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Core Type Junk Baskets

HOLE SIZE		3-3/4 to 4-1/8	4-1/4 to 4-1/2	4-5/8 to 5	4-5/8 to 5	5-1/8 to 5-1/2	5-5/8 to 6	5-5/8 to 6
BARREL O.D.		3-5/8	3-3/4	3-7/8	3-7/8	4-1/4	5-1/8	4-3/4
SHOE O.D.		3-5/8	4-1/16	4-1/2	4-1/2	4-7/8	5-1/8	5-3/8
MAXIMUM DIAMETER OF FISH		2-23/32	2-31/32	3-9/32	3-3/8	3-23/32	3-25/32	4-1/16
COMPLETE ASSEMBLY	Logan Part No.	301-363	301-375	301-388	301-387	301-425	301-512	301-475
	Bowen No.	14590	14586	14595	19375	14600	59993	14605
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	E1000	E1001	E1002	E1002	E1003	D1004	E1004
	Bowen No.	14725	14726	14727	14727	14728	2619	14729
	Price	*	*	*	*	*	*	*
BARREL	Logan Part No.	E2000	E2001	E20015	E2002	E2003	E20035	E2004
	Bowen No.	14591	14587	14596	19376	14601	14746	14606
	Price	*	*	*	*	*	*	*
UPPER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	...	...	...	...	...	600-083	500-014
	Bowen No.	...	...	...	...	...	14747-W	14607-W
	Price	...	...	...	...	...	*	*
LOWER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	500-023	500-024	500-050	500-025	500-026	500-026	500-027
	Bowen No.	14593-W	14589-W	14598-W	19377-W	14603-W	14603-W	14608-W
	Price	*	*	*	*	*	*	*
TYPE A MILL SHOE (Hard Faced Mill Teeth)	Logan Part No.	E5000-A	E5001-A	E50015	E5002-A	E5003-A	E50035-A	E5004-A
	Bowen No.	14594-A	14574-A	14599-A	19378-A	14604-A	2625-A	14609-A
	Price	*	*	*	*	*	*	*

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No.	E5000-B	E5001-B	E50015-B	E5002-B	E5003-B	E50035-B	E5004-B
	Bowen No.	14594-B	14574-B	14599-B	19378-B	14604-B	2625-B	14609-B
	Price	*	*	*	*	*	*	*
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No.	E5000-C	E5001-C	E50015-C	E5002-C	E5003-C	E50035-C	E5004-C
	Bowen No.	14594-C	14574-C	14599-C	19378-C	14604-C	2625-C	14609-C
	Price	*	*	*	*	*	*	*
FINGER SHOE	Logan Part No.	E3000	E3001	E3002	E3002	E3003	...	E3004
	Bowen No.	22205	22206	22207	22207	22208	...	22209
	Max. Dia. of Fish	3-1/4	3-13/16	4-1/16	4-1/16	4-1/2	...	4-3/4
MAGNET INSERTS	Logan Part No.	500-036	500-037	500-038	500-038	500-039	...	500-040
	Bowen No.	61842	61838	61858	61858	61854	...	61862
	Price	*	*	*	*	*	...	*
ADAPTER	Logan Part No.	E4000	E4001	E4002	E4002	E4003	...	E4004
	Bowen No.	M-61843	M-61839	M-61859	M-61859	M-61853	...	M-61853
	Price	*	*	*	*	*	...	*
MAGNETIC ASSEMBLY	Logan Part No.	600-069	600-069	600-070	600-070	600-070	...	600-071
	Bowen No.	61812	61812	61814	61814	61814	...	61816
	Price	*	*	*	*	*	...	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Special Notes:

(1) For component breakdown of the junk catcher assemblies, refer to Junk Catcher Assemblies chart.

(2) For type A, B, or C shoes: unless specified, shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.

(3) For type A, B, or C shoes: left blank, no teeth, no hard facing, no tungsten carbide. Deduct 10% from above list price.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of shoe

Recommended Spare Parts:

- (1) 2 Upper Catchers
- (2) 2 Lower Catchers
- (3) 2 Mill Shoes
- (4) 2 Finger Shoes
- (5) 4 Finger Shoe Replacements

Logan Core Type Junk Baskets

HOLE SIZE		6-1/8 to 6-1/2	6-1/8 to 6-1/2	6-1/8 to 6-1/2	6-5/8 to 7	7-1/4 to 8	8-1/4 to 9	9-1/4 to 10-1/8
BARREL O.D.		5-3/4	5-1/8	5-1/4	5-3/4	6-1/2	7-1/2	8-1/2
SHOE O.D.		5-3/4	5-7/8	5-7/8	6-1/4	7-1/8	8-1/8	9-1/8
MAXIMUM DIAMETER OF FISH		4-13/32	4-5/16	4-1/2	4-13/16	5-7/16	6-3/16	7-3/16
COMPLETE ASSEMBLY	Logan Part No.	301-576	301-513	301-525	301-575	301-650	301-750	301-850
	Bowen No.	59996	14610	19379	14615	14620	14625	14630
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	E10045	E10047	E1005	E1006	E1007	E1008	E1009
	Bowen No.	59997	14730	19380	14731	14732	14733	14734
	Price	*	*	*	*	*	*	*
BARREL	Logan Part No.	E20045	E20047	E2005	E2006	E2007	E2008	E2009
	Bowen No.	15134	14611	19381	14616	14621	14626	14631
	Price	*	*	*	*	*	*	*
UPPER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	500-051	600-065	500-015	500-016	500-017	500-018	14000-013
	Bowen No.	15130-W	14612-W	19382-W	14617-W	14622-W	14627-W	14632-W
	Price	*	*	*	*	*	*	*
LOWER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-020	600-066	500-028	500-029	500-030	500-031	600-024
	Bowen No.	28349-W	14613-W	19383-W	14618-W	14623-W	14628-W	14633-W
	Price	*	*	*	*	*	*	*
TYPE A MILL SHOE (Hard Faced Mill Teeth)	Logan Part No.	E50045-A	E50047-A	E5005-A	E5006-A	E5007-A	E5008-A	E5009-A
	Bowen No.	2676-A	14614-A	19384-A	14619-A	14624-A	14629-A	14634-A
	Price	*	*	*	*	*	*	*

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No.	E50045-B	E50047-B	E5005-B	E5006-B	E5007-B	E5008-B	E5009-B
	Bowen No.	2676-B	14614-B	19384-B	14619-B	14624-B	14629-B	14634-B
	Price	*	*	*	*	*	*	*
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No.	E50045-C	E50047-C	E5005-C	E5006-C	E5007-C	E5008-C	E5009-C
	Bowen No.	2676-C	14614-C	19384-C	14619-C	14624-C	14629-C	14634-C
	Price	*	*	*	*	*	*	*
FINGER SHOE	Logan Part No.	E30045	...	E3005	E3006	E3007	E3008	E3009
	Bowen No.	22218	...	19406	22210	22211	22212	22213
	Max. Dia. of Fish	4-13/32	...	5-3/8	5-29/32	6-1/2	7-1/4	8-1/8
	Price	*	...	*	*	*	*	*
MAGNET INSERTS (Complete Assembly)	Logan Part No.	500-055	500-053	500-041	500-042	500-043	500-044	500-045
	Bowen No.	61866	62637	61868	61874	61949	61955	61959
	Price	*	*	*	*	*	*	*
ADAPTER	Logan Part No.	E4018	E4031	E4005	E4006	E4007	E4008	E4009
	Bowen No.	M-61867	62638	M-61869	M-61875	M-61950	M-61956	M-61960
	Price	*	*	*	*	*	*	*
MAGNETIC ASSEMBLY	Logan Part No.	600-071	600-071	600-071	600-072	600-072	600-079	600-075
	Bowen No.	61816	61816	61816	61818	61822	61824	61826
	Price	*	*	*	*	*	*	*

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* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Special Notes:

- (1) For component breakdown of the junk catcher assemblies, refer to Junk Catcher Assemblies chart.
- (2) For type A, B, or C shoes: unless specified, shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) For type A, B, or C shoes: left blank, no teeth, no hard facing, no tungsten carbide. Deduct 10% from above list price.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of shoe

Recommended Spare Parts:

- (1) 2 Upper Catchers
- (2) 2 Lower Catchers
- (3) 2 Mill Shoes
- (4) 2 Finger Shoes
- (5) 4 Finger Shoe Replacements

Logan Core Type Junk Baskets

HOLE SIZE		10-1/4 to 11-5/8	11-3/4 to 12-1/2	12-5/8 to 15	15 to 20			
BARREL O.D.		9-3/8	10-3/8	11-3/8	13-3/4			
SHOE O.D.		10-1/8	11-1/4	12-1/4	14-1/2			
MAXIMUM DIAMETER OF FISH		8-1/16	9-1/16	10-1/16	12-1/16			
COMPLETE ASSEMBLY	Logan Part No.	301-938	301-1038	301-1138	301-1375			
	Bowen No.	14635	14640	14645	14650			
	Price	*	*	*	*			
TOP SUB	Logan Part No.	E1010	E1011	E1012	E1013			
	Bowen No.	14735	14736	14737	14738			
	Price	*	*	*	*			
BARREL	Logan Part No.	E2010	E2011	E2012	E2013			
	Bowen No.	14636	14641	14646	14651			
	Price	*	*	*	*			
UPPER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	500-054	500-020	500-021	500-022			
	Bowen No.	14637-W	14642-W	14647-W	14652-W			
	Price	*	*	*	*			
LOWER CATCHER ASSEMBLY (See Note 1)	Logan Part No.	500-032	500-033	500-034	500-035			
	Bowen No.	14638-W	14643-W	14648-W	14653-W			
	Price	*	*	*	*			
TYPE A MILL SHOE (Hard Faced Mill Teeth)	Logan Part No.	E5010-A	E5011-A	E5012-A	E5013-A			
	Bowen No.	14639-A	14644-A	14649-A	14654-A			
	Price	*	*	*	*			

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No.	E5010-B	E5011-B	E5012-B	E5013-B			
	Bowen No.	14639-B	14644-B	14649-B	14654-B			
	Price	*	*	*	*			
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No.	E5010-C	E5011-C	E5012-C	E5013-C			
	Bowen No.	14639-C	14644-C	14649-C	14654-C			
	Price	*	*	*	*			
FINGER SHOE	Logan Part No.	E3010	E3011	E3012	E3013			
	Bowen No.	22214	22215	22216	22217			
	Max. Dia. of Fish	9-15/16	11	11-7/8	15-1/4			
	Price	*	*	*	*			
MAGNET INSERTS (Complete Assembly)	Logan Part No.	500-046	500-047	500-048	500-049			
	Bowen No.	61969	61977	61979	61987			
	Price	*	*	*	*			
ADAPTER	Logan Part No.	E4010	E4011	E4012	E4013			
	Bowen No.	M-61970	M-61978	M-61980	M-61988			
	Price	*	*	*	*			
MAGNETIC ASSEMBLY	Logan Part No.	600-076	600-077	600-077	600-078			
	Bowen No.	61828	61830	61830	61834			
	Price	*	*	*	*			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** See Range Chart for weight and oversize Grapple price.

Special Notes:

- (1) For component breakdown of the junk catcher assemblies, refer to Junk Catcher Assemblies chart.
- (2) For type A, B, or C shoes: unless specified, shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) For type A, B, or C shoes: left blank, no teeth, no hard facing, no tungsten carbide. Deduct 10% from above list price.

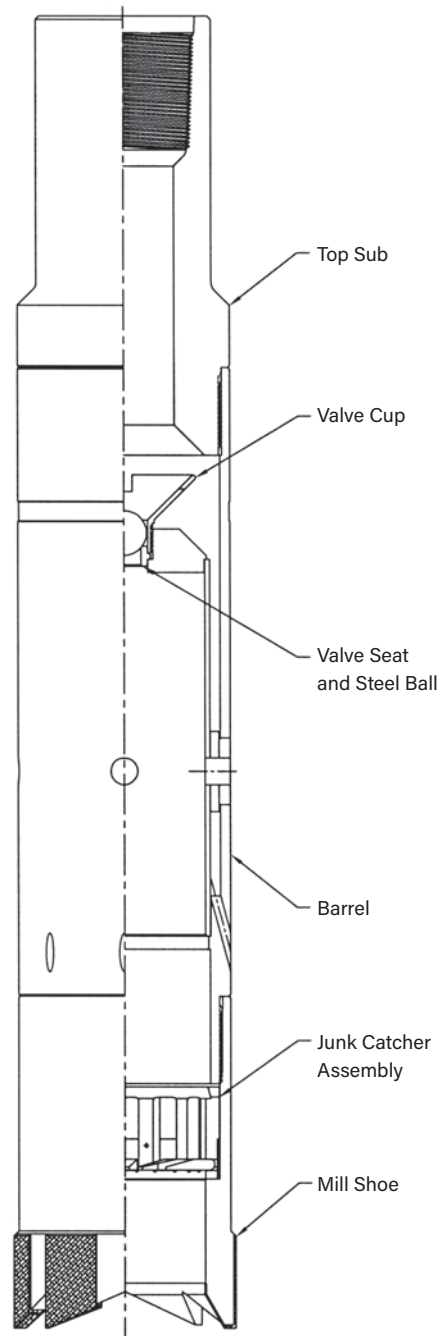
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of shoe

Recommended Spare Parts:

- (1) 2 Upper Catchers
- (2) 2 Lower Catchers
- (3) 2 Mill Shoes
- (4) 2 Finger Shoes
- (5) 4 Finger Shoe Replacements

LOGAN REVERSE CIRCULATION JUNK BASKETS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Reverse Circulation Junk Baskets

HOLE SIZE		3-3/4 to 4	4-1/8 to 4-1/2	4-5/8 to 5	5-1/8 to 5-1/2	5-5/8 to 6	6-1/8 to 6-1/2	6-5/8 to 7-3/8
BARREL O.D.		3-5/8	4	4-1/2	4-7/8	5-1/8	5-3/4	6-1/4
MAXIMUM DIAMETER OF FISH		2-11/32	2-17/32	3-1/16	3-9/16	3-3/4	4-13/32	4-3/4
COMPLETE ASSEMBLY	Logan Part No.	302-363	302-400	302-450	302-487	302-513	302-575	302-625
	Bowen No.	6635	7295	4448	4572	2618	2670	2677
	Price	\$12,264	*	*	*	\$15,054	\$17,079	*
TOP SUB	Logan Part No.	D1000	D1001	D1002	D1003	D1004	D1005	D1006
	Bowen No.	6636	7296	4449	4573	2619	2671	2678
	Price	\$2,116	*	*	*	\$2,404	\$3,500	*
BARREL	Logan Part No.	D2000	D2001	D2002	D2003	D2004	D2005	D2006
	Bowen No.	6637	7297	4450	4574	2620	2672	2679
	Price	\$9,270	*	*	*	\$7,876	\$8,186	*
VALVE CUP	Logan Part No.	D3000	D3000	D3002	D3002	D3004	D3004	D3004
	Bowen No.	6638	6638	4451	4451	2621	2621	2621
	Price	\$367	\$367	*	*	\$398	\$398	\$398
STEEL BALL	Logan Part No.	D4000	D4000	D4002	D4002	D4004	D4004	D4004
	Bowen No.	6640	6640	4453	4453	2623	2623	2623
	Price	\$34	\$34	*	*	\$83	\$83	\$83
VALVE SEAT	Logan Part No.	D5000	D5000	D5002	D5002	D5004	D5004	D5004
	Bowen No.	6639	6639	4452	4452	2622	2622	2622
	Price	\$134	\$134	*	*	\$193	\$193	\$193
LIFTING SUB	Logan Part No.	D6000	D6000	D6002	D6002	D6004	D6004	D6006
	Bowen No.	4568	4568	424	424	425	425	1849
	Price	\$831	\$831	\$905	\$905	\$921	\$866	\$1,108
JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-015	600-016	600-017	600-018	600-019	600-020	600-021
	Bowen No.	21795W	21855W	21780W	21790W	21735W	28349W	21750W
	Price	\$1,546	\$1,546	\$1,681	\$1,603	\$1,624	\$2,116	\$2,171
TYPE A MILL SHOE (Hard Faced Mill Teeth)	Logan Part No.	D8000-A	D8001-A	D8002-A	D8003-A	D8004-A	D8005-A	D8006-A
	Bowen No.	6642A	7299A	4455A	4576A	2625A	2676A	2683A
	Price	\$1,540	\$1,861	*	*	\$1,695	\$2,155	\$2,270

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

Logan Reverse Circulation Junk Baskets

HOLE SIZE		3-3/4 to 4	4-1/8 to 4-1/2	4-5/8 to 5	5-1/8 to 5-1/2	5-11/16 to 6	6-1/8 to 6-1/2	6-5/8 to 7-3/8
BARREL O.D.		3-5/8	4	4-1/2	4-7/8	5-1/8	5-3/4	6-1/4
MAXIMUM DIAMETER OF FISH		2-11/32	2-17/32	3-1/16	3-9/16	3-3/4	4-13/32	4-3/4
COMPLETE ASSEMBLY	Logan Part No.	302-363	302-400	302-450	302-487	302-513	302-575	302-625
	Bowen No.	6635	7295	4448	4572	2618	2670	2677

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No.	D8000-B	D8001-B	D8002-B	D8003-B	D8004-B	D8005-B	D8006-B
	Bowen No.	6642B	7299B	4455B	4576B	2625B	2676B	2683B
	Price	\$2,264	*	*	*	\$3,163	\$3,621	*
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No.	D8000-C	D8001-C	D8002-C	D8003-C	D8004-C	D8005-C	D8006-C
	Bowen No.	6642C	7299C	4455C	4576C	2625C	2676C	2683C
	Price	\$2,433	*	*	*	\$3,363	\$3,777	*
FINGER SHOES (Complete Assembly)	Logan Part No.	600-100	600-101	600-102	600-103	600-104	600-105	600-106
	Bowen No.	6643	7300	4456	4577	22208	22218	2739
	Max. Dia. of Fish	3-1/4	3-3/4	4-1/16	4-1/2	4-3/4	5-17/32	5-29/32
	Price	*	*	*	*	*	*	*
BODY	Logan Part No.	D7000	D7001	D7002	D7003	D7004	D7005	D7006
	Bowen No.	6643-2	7300-2	4456-2	4577-2	22208-2	22218-2	2739-2
	Price	*	*	*	*	*	*	*
REPLACEMENT	Logan Part No.	D10000	D10001	D10002	D10003	D10004	D10005	D10006
	Bowen No.	6643-1	7300-1	4456-1	4577-1	22208-1	22218-1	2739-1
	Price	*	*	*	*	*	*	*
MAGNET INSERTS (Complete Assembly)	Logan Part No.	600-045	600-046	600-047	600-048	600-049	600-050	600-051
	Bowen No.	61836	61848	61840	61850	61852	61866	61872
	Price	\$3,639	*	*	*	\$5,570	\$7,242	*
MAGNETIC ASSEMBLY	Logan Part No.	600-068	600-069	600-069	600-070	600-070	600-071	600-072
	Bowen No.	61810	61812	61812	61814	61814	61816	61818
	Price	\$3,352	*	*	*	\$5,536	\$6,915	*
ADAPTER	Logan Part No.	E4028	E4029	E4016	E4030	E4003	E4018	E4019
	Bowen No.	61837	61849	61841	61851	61853	61867	61873
	Price	\$267	*	*	*	\$302	\$347	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

Logan Reverse Circulation Junk Baskets

HOLE SIZE		7-1/2 to 8-1/4	8-3/8 to 9-1/2	9-5/8 to 10-5/8	10-3/4 to 11-5/8	11-3/4 to 12-1/2	12-5/8 to 13-5/8	13-3/4 to 16
BARREL O.D.		7	7-7/8	9-1/8	10-1/8	11	11-7/8	13
MAXIMUM DIAMETER OF FISH		5-3/16	6-1/16	7-1/16	7-11/16	8-5/16	8-11/16	9-7/8
COMPLETE ASSEMBLY	Logan Part No.	302-700	302-787	302-913	302-1013	302-1100	302-1187	302-1300
	Bowen No.	2554	2567	2659	2684	2690	2696	2702
	Price	\$18,884	\$19,233	\$28,165	*	\$30,800	*	\$52,499
TOP SUB	Logan Part No.	D1007	D1008	D1009	D1010	D1011	D1012	D1013
	Bowen No.	2493	2568	2660	2685	2691	2697	2703
	Price	\$3,916	\$4,342	\$6,632	*	\$7,983	*	\$13,840
BARREL	Logan Part No.	D2007	D2008	D2009	D2010	D2011	D2012	D2013
	Bowen No.	2555	2569	2661	2686	2692	2698	2704
	Price	\$9,104	\$8,757	\$13,100	*	\$13,148	*	\$23,800
VALVE CUP	Logan Part No.	D3007	D3007	D3009	D3009	D3009	D3009	D3009
	Bowen No.	2570	2570	2662	2662	2662	2662	2662
	Price	\$281	\$281	\$410	\$410	\$410	\$410	\$410
STEEL BALL	Logan Part No.	D4007	D4007	D4009	D4009	D4009	D4009	D4009
	Bowen No.	2572	2572	2665	2665	2665	2665	2665
	Price	\$148	\$148	\$284	\$284	\$284	\$284	\$284
VALVE SEAT	Logan Part No.	D5007	D5007	D5009	D5009	D5009	D5009	D5009
	Bowen No.	2571	2571	2663	2663	2663	2663	2663
	Price	\$250	\$250	\$517	\$517	\$517	\$517	\$517
LIFTING SUB	Logan Part No.	D6006	D6008	D6009	D6009	D6009	D6009	D6009
	Bowen No.	1849	426	427	427	427	427	427
	Price	\$1,166	\$1,251	\$1,544	\$1,544	\$1,544	\$1,544	\$1,544
JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-022	600-023	600-024	500-019	600-026	600-027	600-028
	Bowen No.	21725W	18725W	14633W	18945W	21760W	21840W	21770W
	Price	\$2,389	\$2,480	\$2,716	\$3,898	\$3,895	*	\$5,417
TYPE A MILL SHOE (Hard faced Mill Teeth)	Logan Part No.	D8007-A	D8008-A	D8009-A	D8010-A	D8011-A	D8012-A	D8013-A
	Bowen No.	2556A	2574A	2668A	2689A	2695A	2701A	2707A
	Price	\$2,388	\$2,591	\$2,763	*	\$4,659	*	\$6,852

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* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

Logan Reverse Circulation Junk Baskets

HOLE SIZE		7-1/2 to 8-1/4	8-3/8 to 9-1/2	9-5/8 to 10-5/8	10-3/4 to 11-5/8	11-3/4 to 12-1/2	12-5/8 to 13-5/8	13-3/4 to 16
BARREL O.D.		7	7-7/8	9-1/8	10-1/8	11	11-7/8	13
MAXIMUM DIAMETER OF FISH		5-3/16	6-1/16	7-1/16	7-11/16	8-5/16	8-11/16	9-7/8
COMPLETE ASSEMBLY	Logan Part No.	302-700	302-787	302-913	302-1013	302-1100	302-1187	302-1300
	Bowen No.	2554	2567	2659	2684	2690	2696	2702

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No.	D8007-B	D8008-B	D8009-B	D8010-B	D8011-B	D8012-B	D8013-B
	Bowen No.	2556B	2574B	2668B	2689B	2695B	2701B	2707B
	Price	\$3,799	\$3,700	\$4,803	*	\$5,760	*	\$8,485
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No.	D8007-C	D8008-C	D8009-C	D8010-C	D8011-C	D8012-C	D8013-C
	Bowen No.	2556C	2574C	2668C	2689C	2695C	2701C	2707C
	Price	\$4,897	\$3,976	\$5,067	*	\$6,129	*	\$8,935
FINGER SHOES (Complete Assembly)	Logan Part No.	600-107	600-108	600-109	600-110	600-111	600-112	600-113
	Bowen No.	2740	2741	2742	2743	2744	2745	2746
	Max. Dia. of Fish	6-3/4	7-23/32	9	9-15/16	11	11-7/8	13
	Price	*	*	*	*	*	*	*
BODY	Logan Part No.	D7007	D7008	D7009	D7010	D7011	D7012	D7013
	Bowen No.	2740-2	2741-2	2742-2	2743-2	2744-2	2745-2	2746-2
	Price	*	*	*	*	*	*	*
REPLACEMENT	Logan Part No.	D10007	D10008	D10009	D10010	D10011	D10012	D10013
	Bowen No.	2740-1	2741-1	2742-1	2743-1	2744-1	2745-1	2746-1
	Price	*	*	*	*	*	*	*
MAGNET INSERTS (Complete Assembly)	Logan Part No.	600-052	600-053	600-054	600-055	600-056	600-057	600-058
	Bowen No.	61947	61953	61965	61963	61973	61975	61983
	Price	\$8,495	\$8,793	\$11,504	*	\$14,448	*	\$19,902
MAGNETIC ASSEMBLY	Logan Part No.	600-073	600-074	600-075	600-075	600-076	600-076	600-077
	Bowen No.	61820	61822	61826	61826	61828	61828	61830
	Price	\$8,081	\$8,336	\$10,862	\$10,862	\$13,350	\$13,350	\$18,124
ADAPTER	Logan Part No.	E4020	E4021	E4022	E4023	E4024	E4025	E4026
	Bowen No.	61948	61954	61966	61968	61974	61976	61982
	Price	\$405	\$461	\$636	*	\$1,105	*	\$1,528

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* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

Logan Reverse Circulation Junk Baskets

HOLE SIZE		16 to 17-1/2					
BARREL O.D.		15					
MAXIMUM DIAMETER OF FISH		11-1/8					
COMPLETE ASSEMBLY	Logan Part No.	302-1500					
	Bowen No.	2708					
	Price	\$62,708					
TOP SUB	Logan Part No.	D1014					
	Bowen No.	2709					
	Price	\$18,089					
BARREL	Logan Part No.	D2014					
	Bowen No.	2710					
	Price	\$27,623					
VALVE CUP	Logan Part No.	D3009					
	Bowen No.	2662					
	Price	\$409					
STEEL BALL	Logan Part No.	D4009					
	Bowen No.	2665					
	Price	\$284					
VALVE SEAT	Logan Part No.	D5009					
	Bowen No.	2663					
	Price	\$517					
LIFTING SUB	Logan Part No.	D6009					
	Bowen No.	427					
	Price	\$1,468					
JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-029					
	Bowen No.	21775W					
	Price	\$8,144					
TYPE A MILL SHOE (Hard faced Mill Teeth)	Logan Part No.	D8014-A					
	Bowen No.	2713A					
	Price	\$10,018					

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* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

Logan Reverse Circulation Junk Baskets

HOLE SIZE	16 to 17-1/2						
BARREL O.D.	15						
MAXIMUM DIAMETER OF FISH	11-1/8						
COMPLETE ASSEMBLY	Logan Part No. 302-1500						
	Bowen No. 2708						

OPTIONAL COMPONENTS

TYPE B MILL SHOE (Tungsten Carbide Mill Teeth)	Logan Part No. Bowen No. Price	D8014-B 2713B \$10,435					
TYPE C MILL SHOE (Tungsten Carbide Faced)	Logan Part No. Bowen No. Price	D8014-C 2713C \$11,073					
FINGER SHOES (Complete Assembly)	Logan Part No. Bowen No. Max. Dia. of Fish Price	600-114 2747 15-1/4 *					
BODY	Logan Part No. Bowen No. Price	D7014 2747-2 *					
REPLACEMENT	Logan Part No. Bowen No. Price	D10014 2747-1 *					
MAGNET INSERTS (Complete Assembly)	Logan Part No. Bowen No. Price	600-059 61985 \$24,530					
MAGNETIC ASSEMBLY	Logan Part No. Bowen No. Price	600-078 61832 \$22,796					
ADAPTER	Logan Part No. Bowen No. Price	E4027 61986 \$1,805					

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* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard.

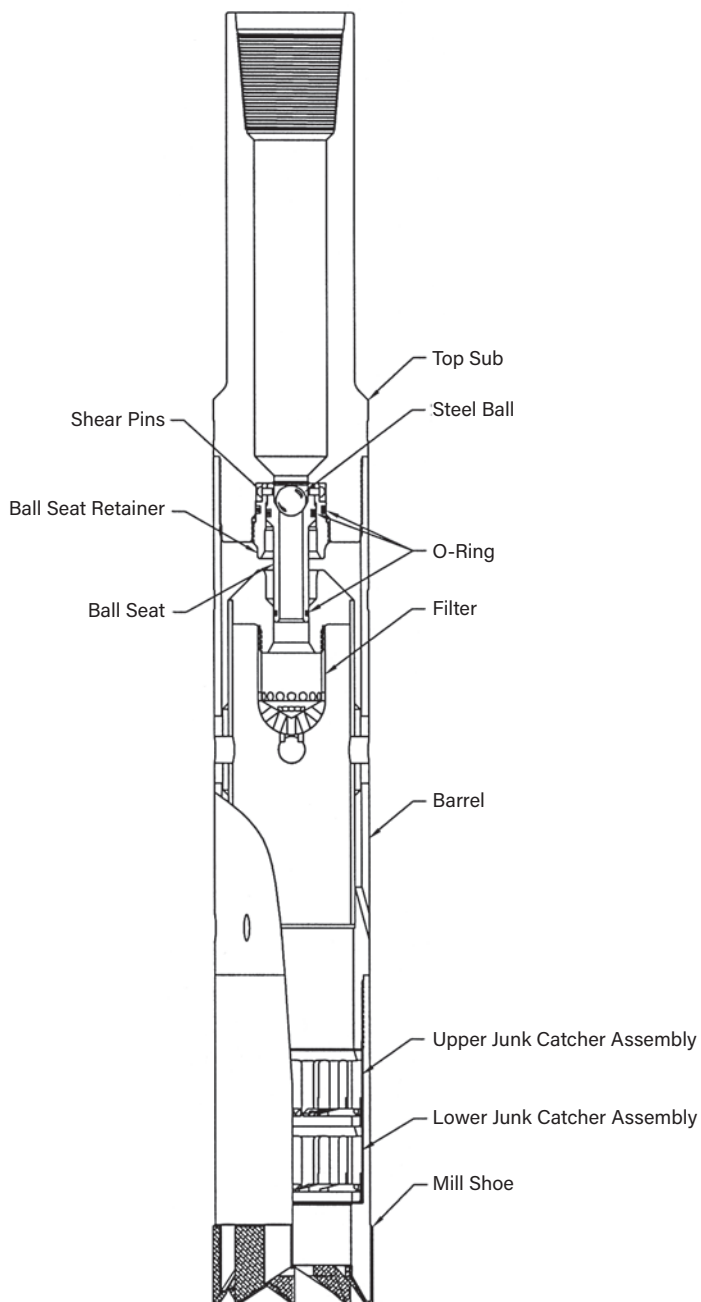
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- (1) 2 Junk Catchers
- (2) 2 Mill Shoes
- (3) 1 Valve Cup
- (4) 1 Valve Seat
- (5) 1 Steel Ball

LOGAN FULL FLOW REVERSE CIRCULATION JUNK BASKETS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		4-1/8 to 4-1/2	4-5/8 to 5	6-1/8 to 6-1/2	7-1/2 to 8-1/4	8-3/8 to 9-1/2	9-5/8 to 10-5/8	10-3/4 to 11-5/8
BARREL O.D.		4	4-1/2	5-3/4	7	7-7/8	9-1/8	10-1/8
MAXIMUM DIAMETER OF FISH		2-1/2	3-1/16	4-3/8	5-1/8	6-1/16	7-1/16	7-11/16
COMPLETE ASSEMBLY	Logan Part No.	304-400	304-450	304-575	304-700	304-788	304-913	304-1013
	Bowen No.	71226	70702	71127	70908	70923	71198	71218
	Price	*	*	\$23,249	*	\$30,361	*	*
BALL SEAT	Logan Part No.	S1000	S1002	S1002	S1003	S1003	S1005	S1005
	Bowen No.	70699	70851	70851	67354	67354	67168	67168
	Price	*	*	\$2,304	*	\$1,075	*	*
SHEAR PIN	Logan Part No.	S2000	S2000	S2000	S2003	S2003	S2003	S2003
	Bowen No.	70852	70852	70852	67175	67175	67175	67175
	No. Req'd	4	4	4	4	4	4	4
	Price	\$38	\$38	\$38	\$38	\$38	\$38	\$38
UPPER JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	14000-008	14000-009	500-051	14000-011	14000-012	14000-013	14000-014
	Bowen No.	22070-W	22075-W	15130-W	22050-W	21640-W	14632-W	25235-W
	Price	\$1,665	\$1,818	\$2,116	\$2,582	\$2,899	\$2,699	\$4,179
LOWER JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-016	600-017	600-020	600-022	600-023	600-024	500-019
	Bowen No.	21855-W	21780-W	28349-W	21725-W	18725-W	14633-W	18945-W
	Price	\$1,546	\$1,682	\$2,116	\$2,389	\$2,480	\$2,716	\$3,898
STEEL BALL	Logan Part No.	D4000	D4002	D4002	D4007	D4007	D4009	D4009
	Bowen No.	6640	4453	4453	2572	2572	2665	2665
	Price	*	\$53	\$53	\$148	\$148	*	\$385
TOP SUB	Logan Part No.	S4000	S4001	S4002	S4003	S4004	S4005	S4006
	Bowen No.	71227	71104	71125	70935	70926	71202	71219
	Price	*	*	\$2,781	*	\$4,601	*	*
BARREL	Logan Part No.	S5000	S5001	S5002	S5003	S5004	S5005	S5006
	Bowen No.	71230	71116	71115	70911	70924	71203	71220
	Price	*	*	\$8,569	*	\$11,878	*	*
BALL SEAT RETAINER	Logan Part No.	S6002	S6002	S6002	S6003	S6003	S6005	S6005
	Bowen No.	70850	70850	70850	67353	67353	67167	67167
	Price	\$1,042	\$1,042	\$1,042	\$2,712	\$2,712	*	\$2,763
FILTER	Logan Part No.	S7002	S7002	S7002	S7003	S7003	S7005	S7005
	Bowen No.	80768	80768	80768	70731	70731	70764	70764
	Price	\$2,202	\$2,202	\$2,202	\$2,799	\$2,799	*	\$3,681
RETAINER O-RING SEAL	Logan Part No.	568331	568331	568331	568243	568243	568248	568248
	Bowen No.	27-34	27-34	27-34	30-21	30-21	30-26	30-26
	Price	\$3	\$3	\$3	\$8	\$8	\$11	\$11
UPPER SEAT O-RING SEAL	Logan Part No.	568325	568325	568325	568231	568231	568235	568235
	Bowen No.	27-28	27-28	27-28	30-9	30-9	30-13	30-13
	Price	\$3	\$3	\$3	\$3	\$3	\$6	\$6
LOWER SEAT O-RING SEAL	Logan Part No.	568215	568215	568215	568224	568224	568229	568229
	Bowen No.	27-20	27-20	27-20	30-2	30-2	30-7	30-7
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
MILL SHOE A (Hard Faced Mill Teeth)	Logan Part No.	S3000A	S3001A	S3002A	S3003A	S3004A	S3005A	S3006A
	Bowen No.	71228	70909	71124	72070	72081	71199	72080
	Price	*	*	\$2,480	*	\$3,031	*	*

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		4-1/8 to 4-1/2	4-5/8 to 5	6-1/8 to 6-1/2	7-1/2 to 8-1/4	8-3/8 to 9-1/2	9-5/8 to 10-5/8	10-3/4 to 11-5/8
BARREL O.D.		4	4-1/2	5-3/4	7	7-7/8	9-1/8	10-1/8
MAXIMUM DIAMETER OF FISH		2-1/2	3-1/16	4-3/8	5-1/8	6-1/16	7-1/16	7-11/16
COMPLETE ASSEMBLY	Logan Part No.	304-400	304-450	304-575	304-700	304-788	304-913	304-1013
	Bowen No.	71226	70702	71127	70908	70923	71198	71218

OPTIONAL COMPONENTS

MILL SHOE B (Tungsten Carbide Mill Teeth)	Logan Part No.	S3000-B	S3001-B	S3002-B	S3003-B	S3004-B	S3005-B	S3006-B
	Bowen No.	71228	70909	71124	72070	72081	71199	72080
	Price	*	*	\$3,835	*	\$4,388	*	*
MILL SHOE C (Tungsten Carbide Faced)	Logan Part No.	S3000-C	S3001-C	S3002-C	S3003-C	S3004-C	S3005-C	S3006-C
	Bowen No.	71228	70909	71124	72070	72081	71199	72080
	Price	*	*	\$4,038	*	\$4,666	*	*
LIFTING SUB	Logan Part No.	D6000	D6002	D6004	D6006	D6008	D6009	D6009
	Bowen No.	4568	424	425	1849	426	427	427
	Price	*	*	\$921	*	\$1,186	\$1,947	\$1,947
PIPE PLUG	Logan Part No.	S9000	S9000	S9001	S9002	S9003	S9003	S9003
	Bowen No.	61520	61520	61521	61522	61523	61523	61523
	Price	*	*	\$31	*	\$40	\$40	\$40
T-WRENCH	Logan Part No.	S10000	S10000	S10000	S10001	S10001	S10002	S10002
	Bowen No.	72067	72067	72067	72069	72069	72068	72068
	Price	\$834	\$834	\$834	\$728	\$728	*	\$836

FINGER SHOE

COMPLETE ASSEMBLY	Logan Part No.	600-101	600-102	600-115	600-107	600-108	600-109	600-110
	Bowen No.	7300	4456	2738	2740	2741	2742	2743
	Price	*	*	*	*	*	*	*
BODY	Logan Part No.	D7001	D7002	D7015	D7007	D7008	D7009	D7010
	Bowen No.	7300-2	4456-2	2738-2	2740-2	2741-2	2742-2	2743-2
	Price	*	*	*	*	*	*	*
REPLACEMENT	Logan Part No.	D10001	D10002	D10015	D10007	D10008	D10009	D10010
	Bowen No.	7300-1	4456-1	2738-1	2740-1	2741-1	2742-1	2743-1
	Price	*	*	*	*	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

When ordering, please specify:

- Complete assembly or part number
- Size and type of connection for Top Sub
- O.D. and type of Shoe

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		4-1/8 to 4-1/2	4-5/8 to 5	6-1/8 to 6-1/2	7-1/2 to 8-1/4	8-3/8 to 9-1/2	9-5/8 to 10-5/8	10-3/4 to 11-5/8
BARREL O.D.		4	4-1/2	5-3/4	7	7-7/8	9-1/8	10-1/8
MAXIMUM DIAMETER OF FISH		2-1/2	3-1/16	4-3/8	5-1/8	6-1/16	7-1/16	7-11/16
COMPLETE ASSEMBLY	Logan Part No.	304-400	304-450	304-575	304-700	304-788	304-913	304-1013
	Bowen No.	71226	70702	71127	70908	70923	71198	71218

MAGNET INSERTS

COMPLETE ASSEMBLY	Logan Part No.	...	600-047	600-050	600-052	600-053	600-054	600-055
	Bowen No.	...	61840	61866	61876	61953	61961	61963
	Price	...	*	\$7,242	*	\$8,793	*	*
ADAPTER	Logan Part No.	...	E4016	E4018	E4020	E4021	E4022	E4023
	Bowen No.	...	61841	61867	61948	61954	61966	61968
	Price	...	*	\$347	*	\$461	*	*
MAGNETIC ASSEMBLY	Logan Part No.	...	600-069	600-071	600-073	600-074	600-075	600-075
	Bowen No.	...	61812	61816	61820	61822	61826	61826
	Price	...	*	\$6,915	*	\$8,336	\$10,862	*

REPAIR KITS

UPPER CATCHER REPAIR KIT	Logan Part No.	14000-008RK	14000-009RK	600-020RK	14000-011RK	14000-012RK	14000-013RK	14000-014RK
	Bowen No.	22070-WK	22075-WK	28349-WK	22050-WK	21640-WK	14632-WK	25235-WK
	Price	\$463	\$547	\$749	\$778	\$736	\$756	*
LOWER CATCHER REPAIR KIT	Logan Part No.	600-016RK	600-017RK	500-051RK	600-022RK	600-023RK	600-024RK	500-019RK
	Bowen No.	21855-WK	21780-WK	15130-WK	21725-WK	18725-WK	14633-WK	18945-WK
	Price	\$510	\$697	\$736	\$778	\$735	\$755	*
VALVE REPAIR KIT	Logan Part No.	14000-032	14000-033	14000-034	14000-035	14000-036	14000-037	14000-038
	Bowen No.	72064	72062	72063	72058	72061	72065	72059
	Price	*	*	\$97	*	\$111	*	*

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* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		11-3/4 to 12-1/2					
BARREL O.D.		11					
MAXIMUM DIAMETER OF FISH		8-5/16					
COMPLETE ASSEMBLY	Logan Part No.	304-1100					
	Bowen No.	70910					
	Price	\$50,197					
BALL SEAT	Logan Part No.	S1005					
	Bowen No.	67168					
	Price	\$3,382					
SHEAR PIN	Logan Part No.	S2003					
	Bowen No.	67175					
	No. Req'd	4					
	Price	\$74					
UPPER JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	14000-015					
	Bowen No.	31046-W					
	Price	\$4,546					
LOWER JUNK CATCHER ASSEMBLY (See Note 1)	Logan Part No.	600-026					
	Bowen No.	21760-W					
	Price	\$3,895					
STEEL BALL	Logan Part No.	D4009					
	Bowen No.	2665					
	Price	\$284					
TOP SUB	Logan Part No.	S4007					
	Bowen No.	70920					
	Price	\$10,356					
BARREL	Logan Part No.	S5007					
	Bowen No.	70921					
	Price	\$17,345					
BALL SEAT RETAINER	Logan Part No.	S6005					
	Bowen No.	67167					
	Price	\$2,756					
FILTER	Logan Part No.	S7005					
	Bowen No.	70764					
	Price	\$3,675					
RETAINER O-RING SEAL	Logan Part No.	568248					
	Bowen No.	30-26					
	Price	\$11					
UPPER SEAT O-RING SEAL	Logan Part No.	568235					
	Bowen No.	30-13					
	Price	\$6					
LOWER SEAT O-RING SEAL	Logan Part No.	568229					
	Bowen No.	30-7					
	Price	\$3					

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		11-3/4 to 12-1/2					
BARREL O.D.		11					
MAXIMUM DIAMETER OF FISH		8-5/16					
COMPLETE ASSEMBLY	Logan Part No.	304-1100					
	Bowen No.	70910					
MILL SHOE A (Hard Faced Mill Teeth)	Logan Part No.	S3007-A					
	Bowen No.	72071					
	Price	\$6,354					
MILL SHOE B (Tungsten Carbide Mill Teeth)	Logan Part No.	S3007-B					
	Bowen No.	72071					
	Price	\$7,711					
MILL SHOE C (Tungsten Carbide Faced)	Logan Part No.	S3007-C					
	Bowen No.	72071					
	Price	\$8,111					
LIFTING SUB	Logan Part No.	D6009					
	Bowen No.	427					
	Price	\$1,468					
PIPE PLUG	Logan Part No.	S9003					
	Bowen No.	61523					
	Price	\$40					
T-WRENCH	Logan Part No.	S10002					
	Bowen No.	72068					
	Price	\$896					

FINGER SHOE

COMPLETE ASSEMBLY	Logan Part No.	600-111					
	Bowen No.	2744					
	Price	*					
BODY	Logan Part No.	D7011					
	Bowen No.	2744-2					
	Price	*					
REPLACEMENT	Logan Part No.	D10011					
	Bowen No.	2744-1					
	Price	*					

MAGNET INSERTS

COMPLETE ASSEMBLY	Logan Part No.	600-056					
	Bowen No.	61973					
	Price	\$14,448					
ADAPTER	Logan Part No.	E4024					
	Bowen No.	61974					
	Price	\$1,105					
MAGNETIC ASSEMBLY	Logan Part No.	600-076					
	Bowen No.	61828					
	Price	\$13,350					

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

Logan Full Flow Reverse Circulation Junk Baskets

HOLE SIZE		10-3/4 to 11-5/8	11-3/4 to 12-1/2				
BARREL O.D.		10-1/8	11				
MAXIMUM DIAMETER OF FISH		7-11/16	8-5/16				
COMPLETE ASSEMBLY	Logan Part No.	304-1013	304-1100				
	Bowen No.	71218	70910				

REPAIR KITS

UPPER CATCHER REPAIR KIT	Logan Part No.	14000-014RK	14000-015RK				
	Bowen No.	25235-WK	31046-WK				
	Price	*	\$978				
LOWER CATCHER REPAIR KIT	Logan Part No.	500-019RK	600-026RK				
	Bowen No.	18945-WK	21760-WK				
	Price	\$737	\$858				
VALVE REPAIR KIT	Logan Part No.	14000-038	14000-039				
	Bowen No.	72059	72060				
	Price	*	\$112				

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For component breakdown of the Junk Catcher Assemblies, refer to Junk Catcher Assemblies chart.
- (2) For Type A, B, or C Shoes: unless specified, Shoes will be furnished with the same O.D. as minimum hole size shown. Shoes larger than this will be an additional 10% per 1/4" or portion thereof of standard price.
- (3) Finger Shoe replacement is furnished with the same O.D. as standard Shoe unless otherwise specified. Add 5% per 114" of portion thereof for Shoes left oversize.

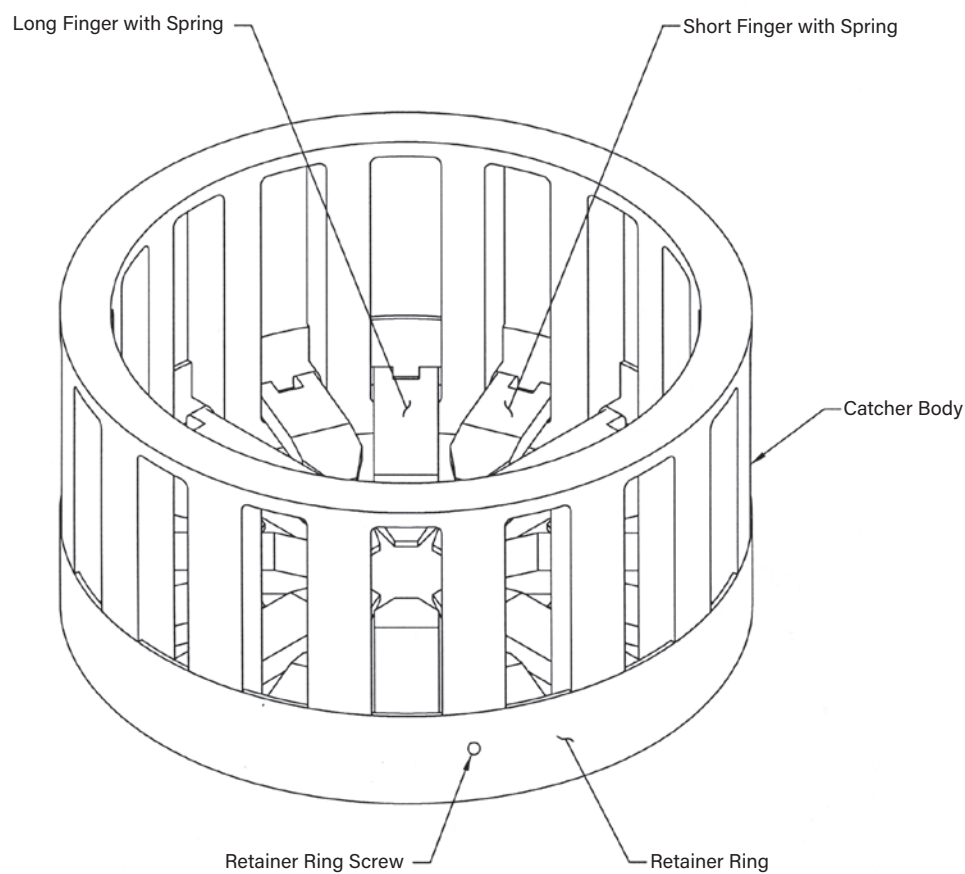
When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) O.D. and type of Shoe

Recommended Spare Parts:

- | | |
|--------------------------|---------------------------|
| (1) 2 Junk Catchers | (5) 1 Steel Ball |
| (2) 2 Mill Shoes | (6) 4 Valve Repair Kits |
| (3) 1 Ball Seat | (7) 2 Catcher Repair Kits |
| (4) 1 Ball Seat Retainer | (for each assembly) |

LOGAN JUNK CATCHER ASSEMBLIES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Junk Catcher Assemblies

INSIDE DIAMETER		2-11/32	2-39/64	2-23/32	2-17/32	2-17/32	2-31/32	3-1/16
OUTSIDE DIAMETER		3-3/32	3-15/64	3-1/4	3-11/32	3-11/32	3-11/16	3-13/16
LENGTH		1-7/8	1-7/8	1-7/8	1-7/8	1-7/8	2-1/4	2-1/2
COMPLETE ASSEMBLY	Logan Part No.	600-015	600-031	500-023	14000-008	600-016	500-024	14000-009
	Bowen No.	21795W	21810W	14593-W	22070-W	21855W	14589-W	22075-W
	Price	\$1,546	\$1,786	\$1,622	\$1,665	\$1,546	\$1,654	\$1,818
BODY	Logan Part No.	D11000	D11021	E7000	D11001	D11001	E7001	D11002
	Bowen No.	56357	45542	45541	68366	68366	45590	45591
	Price	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029
FINGER RETAINER <i>(stainless steel)</i>	Logan Part No.	D12000	D12019	E8000	D12001	D12001	E8001	D12002
	Bowen No.	56358	45538	45543	68367	68367	45562	45592
	Price	\$172	\$172	\$172	\$172	\$172	\$172	\$172
SHORT FINGER *	Logan Part No.	E9011	E9001	E9001	E9011	E9011	E9002	E9002
	Bowen No.	68368	45539	45539	68368	68368	45574	45574
	Code	...	E	E	W-5	W-5	W-3	R
	No. Req'd	4	5	5	8	4	5	10
	Price	\$41	\$41	\$41	\$41	\$41	\$45	\$45
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Code	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
LONG FINGER *	Logan Part No.	E11012	E11000	E11000	...	E11012	E11001	...
	Bowen No.	68369	45540	45540	...	68369	45575	...
	Code	...	F	F	...	...	W-4	...
	No. Req'd	4	5	5	...	4	5	...
	Price	\$41	\$41	\$41	...	\$41	\$45	...
PIVOT PIN *	Logan Part No.	E12001	E12000	E12000	E12001	E12001	E12001	E12001
	Bowen No.	45583	45535	45535	45583	45583	45583	45583
	No. Req'd	8	10	10	8	8	10	10
	Price	\$7	\$7	\$7	\$7	\$7	\$7	\$7
TORSION SPRING * <i>(stainless steel)</i>	Logan Part No.	E13009	E13006	E13006	E13009	E13009	E13007	E13009
	Bowen No.	45571	45567	45567	45571	45571	55958	45571
	No. Req'd	8	10	10	8	8	10	10
	Price	\$7	\$7	\$7	\$7	\$7	\$7	\$7
RETAINER SCREW * <i>(stainless steel)</i>	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>* Indicates parts included in kit</i>	Logan Part No.	600-015RK	600-031RK	500-023RK	14000-008RK	600-016RK	500-024RK	14000-009RK
	Bowen No.	21795K	21810K	14593K	22070K	21855K	14589K	22075K
	Price	\$510	\$553	\$410	\$463	\$510	\$547	\$547

Special Notes:

(1) Code: Each finger is stenciled with a letter or letter-number code. These codes are used in lieu of the part number because of space limitation. See the Finger Code Chart below to cross-reference the code with the part number.

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Finger number and code, when ordering fingers

Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		3-1/16	3-13/32	3-13/32	3-9/32	3-13/32	3-21/32	3-3/4
OUTSIDE DIAMETER		3-13/16	3-31/32	3-31/32	4	4-1/16	4-9/32	4-15/32
LENGTH		2-1/2	1-63/64	1-63/64	2-3/8	2-3/8	2-1/4	2-9/16
COMPLETE ASSEMBLY	Logan Part No.	600-017	600-032	600-033	500-050	500-025	600-018	600-019
	Bowen No.	21780W	21880W	21805W	14598-W	19377-W	21790W	21735W
	Price	\$1,681	\$1,964	\$1,935	\$1,786	\$1,786	\$1,603	\$1,624
BODY	Logan Part No.	D11002	D11022	D11022	E70015	E7002	D11003	E7003
	Bowen No.	45591	45565	45565	45568	45563	45579	45559
	Price	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029	\$1,029
FINGER RETAINER (stainless steel)	Logan Part No.	D12002	D12020	D12020	E80015	E8002	D12003	E8003
	Bowen No.	45592	45566	45566	45569	45564	45580	45560
	Price	\$172	\$172	\$172	\$172	\$172	\$172	\$172
SHORT FINGER *	Logan Part No.	E9002	E9002	E9002	E90015	E90015	E9012	E9004
	Bowen No.	45574	45574	45574	55962	55962	45581	45558
	Code	W-3	R	R	690-W	690-W	W-1	H
	No. Req'd	5	12	6	5	5	6	5
	Price	\$45	\$45	\$45	\$45	\$45	\$55	\$55
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Code	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
LONG FINGER *	Logan Part No.	E11001	...	E11001	E11015	E11015	E11013	E11003
	Bowen No.	45575	...	45575	55963	55963	45582	45561
	Code	W-4	...	W-4	691-W	691-W	W-2	I
	No. Req'd	5	...	6	5	5	6	5
	Price	\$45	...	\$44	\$50	\$50	\$55	\$58
PIVOT PIN *	Logan Part No.	E12001	E12001	E12001	E12002	E12002	E12001	...
	Bowen No.	45583	45583	45583	55957	55957	45583	...
	No. Req'd	10	12	12	10	10	12	...
	Price	\$7	\$7	\$7	\$7	\$7	\$7	...
TORSION SPRING * (stainless steel)	Logan Part No.	E13009	E13009	E13009	E13007	E13007	E13009	E13000
	Bowen No.	45571	45571	45571	55958	55958	45571	45520
	No. Req'd	10	12	12	10	10	12	10
	Price	\$7	\$7	\$7	\$7	\$7	\$7	\$8
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>* Indicates parts included in kit</i>	Logan Part No.	600-017RK	600-032RK	600-033RK	500-050RK	500-025RK	600-018RK	600-019RK
	Bowen No.	21780K	21880K	21805K	14598K	19377K	21790K	21735K
	Price	\$697	\$625	\$656	\$668	\$697	\$823	\$535

Special Notes:

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When ordering, please specify:

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- (2) Finger number and code, when ordering fingers

Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		3-3/4	3-3/4	4-3/32	4-1/16	4-1/16	4-13/32	4-13/32
OUTSIDE DIAMETER		4-15/32	4-15/32	4-3/4	4-7/8	4-7/8	5-5/32	5-5/32
LENGTH		2-9/16	2-9/16	2-1/2	2-25/32	2-25/32	2-13/16	1-13/32
COMPLETE ASSEMBLY	Logan Part No.	600-083	500-026	600-062	500-014	500-027	600-020	600-067
	Bowen No.	14747-W	14603-W	21820W	14607-W	14608-W	28349W	25250-W
	Price	\$1,697	\$1,727	\$2,175	*	*	\$2,116	\$2,236
BODY	Logan Part No.	E7003	E7003	D11015	E7004	E7004	D11004	D11019
	Bowen No.	45559	45559	45595	45555	45555	45511	68375
	Price	\$1,029	\$1,029	\$1,029	*	*	\$1,336	\$1,342
FINGER RETAINER (stainless steel)	Logan Part No.	E8003	E8003	D12015	E8004	E8004	D12004	D12004
	Bowen No.	45560	45560	45596	45556	45556	45519	45519
	Price	\$172	\$172	\$172	*	*	\$172	\$172
SHORT FINGER *	Logan Part No.	E9004	E9004	E9019	E9004	E9004	E9005	E9018
	Bowen No.	45558	45558	45597	45558	45558	45517	68376
	Code	H	H	X-1	H	H	B	...
	No. Req'd	10	5	6	12	6	8	12
	Price	\$55	\$55	\$55	\$55	\$55	\$55	\$85
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Code	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
LONG FINGER *	Logan Part No.	...	E11003	E11020	...	E9013	E11006	...
	Bowen No.	...	45561	45598	...	45557	45516	...
	Code	...	I	X-2	...	G	A	...
	No. Req'd	...	5	6	...	6	4	...
	Price	...	\$58	\$60	...	*	\$60	...
PIVOT PIN *	Logan Part No.	...	...	E12010	...	...	...	...
	Bowen No.	...	...	45599	...	...	...	...
	No. Req'd	...	...	12	...	...	...	...
	Price	...	...	\$15	...	...	...	...
TORSION SPRING * (stainless steel)	Logan Part No.	E13000	E13000	E13009	E13000	E13000	E13000	E13000
	Bowen No.	45520	45520	45571	45520	45520	45520	45520
	No. Req'd	10	10	12	12	12	12	12
	Price	\$8	\$8	\$7	\$8	\$8	\$8	\$8
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>*Indicates parts included in kit</i>	Logan Part No.	600-083RK	500-026RK	600-062RK	500-014RK	500-027RK	600-020RK	600-067RK
	Bowen No.	14747K	14603K	21820K	14607K	14608K	28349K	25250K
	Price	\$612	\$628	\$808	*	*	\$747	\$1,067

Special Notes:

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- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		4-13/32	4-5/16	4-5/16	4-17/32	4-17/32	4-3/4	4-13/16
OUTSIDE DIAMETER		5-5/32	5-5/16	5-5/16	5-13/32	5-13/32	5-5/8	5-23/32
LENGTH		2-13/16	2-7/8	2-7/8	2-7/8	2-7/8	2-5/8	3-1/16
COMPLETE ASSEMBLY	Logan Part No.	500-051	600-065	600-066	500-015	500-028	600-021	500-016
	Bowen No.	15130-W	14612-W	14613-W	19382-W	19383-W	21750W	14617-W
	Price	\$2,116	\$2,116	\$2,128	\$2,116	*	\$2,174	\$2,116
BODY	Logan Part No.	D11004	D11018	D11018	E7005	E7005	D11005	E7006
	Bowen No.	45511	45572	45572	45553	45553	45584	45512
	Price	\$1,336	\$1,336	\$1,336	\$1,336	\$1,336	\$1,336	\$1,336
FINGER RETAINER (stainless steel)	Logan Part No.	D12004	D12017	D12017	E8005	E8005	D12005	E8006
	Bowen No.	45519	45573	45573	45554	45554	45585	45552
	Price	\$172	\$172	\$172	\$172	\$172	\$172	\$172
SHORT FINGER *	Logan Part No.	E9005	E9005	E9005	E9005	E9005	E9005	E9005
	Bowen No.	45517	45517	45517	45517	45517	45517	45517
	Code	B	B	B	B	B	B	B
	No. Req'd	12	12	6	12	6	6	12
	Price	\$55	\$55	\$55	\$55	\$55	\$55	\$55
MEDIUM FINGER *	Logan Part No.	...	...	E9013	...	...	...	...
	Bowen No.	...	...	45557	...	...	...	...
	Code	...	...	G	...	...	...	...
	No. Req'd	...	...	3	...	...	...	...
	Price	...	...	\$60	...	...	...	...
LONG FINGER *	Logan Part No.	...	...	E11006	...	E11006	E11006	...
	Bowen No.	...	...	45516	...	45516	45516	...
	Code	...	...	A	...	A	A	...
	No. Req'd	...	...	3	...	6	6	...
	Price	...	...	\$60	...	\$60	\$60	...
PIVOT PIN *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
TORSION SPRING * (stainless steel)	Logan Part No.	E13000	E13000	E13000	E13000	E13000	E13000	E13000
	Bowen No.	45520	45520	45520	45520	45520	45520	45520
	No. Req'd	12	12	12	12	12	12	12
	Price	\$8	\$8	\$8	\$8	\$8	\$8	\$8
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>* Indicates parts included in kit</i>	Logan Part No.	500-051RK	600-065RK	600-066RK	500-015RK	500-028RK	600-021RK	500-016RK
	Bowen No.	15130K	14612K	14613K	19382K	19383K	21750K	14617K
	Price	\$736	\$736	\$756	\$736	*	\$756	\$736

Special Notes:

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When ordering, please specify:

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Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		4-13/16	5-1/4	5-3/16	5-3/16	5-7/16	5-7/16	5-5/8
OUTSIDE DIAMETER		5-23/32	6-1/8	6-1/4	6-1/4	6-3/8	6-3/8	6-19/32
LENGTH		3-1/16	3-5/16	3-5/16	3-5/16	3	3-5/16	2-7/8
COMPLETE ASSEMBLY	Logan Part No.	500-029	600-063	14000-011	600-022	500-017	500-030	600-060
	Bowen No.	14618-W	18935-W	22050-W	21725W	14622-W	14623-W	21865W
	Price	...	...	\$2,582	\$2,389	\$2,418	\$2,447	\$2,550
BODY	Logan Part No.	E7006	D11016	D11006	D11006	E7007	E7007	D11013
	Bowen No.	45512	45513	45550	45550	45545	45545	45602
	Price	...	...	\$1,530	\$1,530	\$1,530	\$1,530	\$1,530
FINGER RETAINER (stainless steel)	Logan Part No.	E8006	D12016	D12006	D12006	E8007	E8007	D12014
	Bowen No.	45552	45527	45551	45551	45546	45546	45528
	Price	...	...	\$172	\$172	\$172	\$172	\$172
SHORT FINGER *	Logan Part No.	E9005	E9005	E9013	E9013	E9005	E9005	E9005
	Bowen No.	45517	45517	45557	45557	45517	45517	45517
	Code	B	B	G	G	B	B	B
	No. Req'd	6	6	12	6	14	7	12
	Price	\$55	\$55	\$60	\$60	\$55	\$55	\$55
MEDIUM FINGER *	Logan Part No.	...	E11006	...	...	...	...	...
	Bowen No.	...	45516	...	...	...	...	...
	Code	...	A	...	...	...	...	...
	No. Req'd	...	3	...	...	...	...	...
	Price	...	*	...	...	...	...	...
LONG FINGER *	Logan Part No.	E11006	E11005	...	E11005	...	E11005	...
	Bowen No.	45516	45518	...	45518	...	45518	...
	Code	A	C	...	C	...	C	...
	No. Req'd	6	3	...	6	...	7	...
	Price	\$60	\$60	...	\$60	...	\$60	...
PIVOT PIN *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
TORSION SPRING * (stainless steel)	Logan Part No.	E13000	E13000	E13000	E13000	E13000	E13000	E13000
	Bowen No.	45520	45520	45520	45520	45520	45520	45520
	No. Req'd	12	12	12	12	14	14	12
	Price	\$8	\$8	\$8	\$8	\$8	\$8	\$8
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>*Indicates parts included in kit</i>	Logan Part No.	500-029RK	600-063RK	14000-011RK	600-022RK	500-017RK	500-030RK	600-060RK
	Bowen No.	14618K	18935K	22050K	21725K	14622K	14623K	21865K
	Price	...	...	\$778	\$778	\$856	\$881	\$736

Special Notes:

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- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		5-5/8	6	6	6-3/16	6-3/16	6-1/2	7-1/16
OUTSIDE DIAMETER		6-19/32	7	7	7-1/8	7-1/8	7-7/16	7-7/8
LENGTH		3-5/8	1-23/32	3-7/16	3-13/16	3-13/16	3-1/2	4-5/16
COMPLETE ASSEMBLY	Logan Part No.	600-061	14000-012	600-023	500-018	500-031	600-030	600-034
	Bowen No.	18936W	21640-W	18725W	14627-W	14628-W	18720-W	9800W
	Price	\$2,624	\$2,899	\$2,480	\$2,716	\$2,790	*	*
BODY	Logan Part No.	D11014	E7014	D11007	E7008	E7008	D11020	D11023
	Bowen No.	45514	68382	45505	45547	45547	45515	68396
	Price	\$1,530	\$1,391	\$1,612	\$1,893	\$1,893	*	*
FINGER RETAINER <i>(stainless steel)</i>	Logan Part No.	D12014	D12007	D12007	E8008	E8008	D12018	D12021
	Bowen No.	45528	45506	45506	45548	45548	45529	68397
	Price	\$172	\$172	\$172	\$172	\$172	*	*
SHORT FINGER *	Logan Part No.	E9005	E9016	E9014	E9006	E9006	E9014	E9010
	Bowen No.	45517	68383	45508	47670	47670	45508	45525
	Code	B	AH	K	362-W	362-W	K	M
	No. Req'd	6	12	6	12	6	6	6
	Price	\$55	\$55	\$55	\$55	\$55	\$55	*
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Code	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
LONG FINGER *	Logan Part No.	E11005	...	E11014	...	E11007	E11014	E10003
	Bowen No.	45518	...	45507	...	47669	45507	45510
	Code	C	...	J	...	363-W	J	L
	No. Req'd	6	...	6	...	6	6	6
	Price	\$60	...	\$55	...	\$74	\$55	*
PIVOT PIN *	Logan Part No.	...	...	...	E12008	E12008	...	...
	Bowen No.	...	...	...	45536	45536	...	...
	No. Req'd	...	...	...	12	12	...	...
	Price	...	...	...	\$15	\$15	...	...
TORSION SPRING * <i>(stainless steel)</i>	Logan Part No.	E13000	E13002	E13004	E13001	E13001	E13004	E13002
	Bowen No.	45520	45549	45509	45537	45537	45509	45549
	No. Req'd	12	12	12	12	12	12	12
	Price	\$8	\$8	\$8	\$10	\$10	\$8	\$8
RETAINER SCREW * <i>(stainless steel)</i>	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>* Indicates parts included in kit</i>	Logan Part No.	600-061RK	14000-012RK	600-023RK	500-018RK	500-031RK	600-030RK	600-034RK
	Bowen No.	18936K	21640K	18725K	14627K	14628K	18720K	9800K
	Price	\$1,008	\$736	\$735	\$814	\$924	*	*

Special Notes:

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Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		7-3/16	7-3/16	7-13/16	7-13/16	8-1/16	8-1/16	
OUTSIDE DIAMETER		8-1/8	8-1/8	9-1/32	9-1/32	9-5/16	9-5/16	
LENGTH		4-5/16	4-5/16	2-5/16	4-5/8	5	5	
COMPLETE ASSEMBLY	Logan Part No.	14000-013	600-024	14000-014	500-019	500-054	500-032	
	Bowen No.	14632-W	14633W	25235-W	18945-W	14637-W	14638-W	
	Price	\$2,699	\$2,716	*	\$3,890	*	\$4,164	
BODY	Logan Part No.	E7009	E7009	E7016	E7010	E7013	E7013	
	Bowen No.	45521	45521	68388	45522	45523	45523	
	Price	\$1,893	\$1,893	*	\$3,064	*	\$3,157	
FINGER RETAINER (stainless steel)	Logan Part No.	D12008	D12008	E8010	E8010	E8013	E8013	
	Bowen No.	45530	45530	45531	45531	45532	45532	
	Price	\$216	\$216	*	\$216	*	\$216	
SHORT FINGER *	Logan Part No.	E9007	E9007	E9016	E11014	E9010	E9010	
	Bowen No.	45588	45588	68383	45507	45525	45525	
	Code	N	P-1	S	J	M	M	
	No. Req'd	12	6	12	6	16	8	
	Price	\$55	\$55	*	\$55	*	\$54	
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...	E11014	
	Bowen No.	...	...	...	...	...	45507	
	Code	...	...	...	...	...	J	
	No. Req'd	...	...	...	...	...	4	
	Price	...	...	...	...	...	\$50	
LONG FINGER *	Logan Part No.	...	E11008	...	E11018	...	E11017	
	Bowen No.	...	45589	...	70277	...	68295	
	Code	...	P-2	...	J	...	N	
	No. Req'd	...	6	...	6	...	4	
	Price	...	\$60	...	\$60	...	\$59	
PIVOT PIN *	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	No. Req'd	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
TORSION SPRING * (stainless steel)	Logan Part No.	E13002	E13002	E13004	E13004	E13004	E13004	
	Bowen No.	45549	45549	45509	45509	45509	45509	
	No. Req'd	12	12	12	12	16	16	
	Price	\$8	\$8	\$8	\$8	\$8	\$8	
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	
	Bowen No.	42257	42257	42257	42257	42257	42257	
	No. Req'd	2	2	2	2	2	2	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
REPAIR KIT <i>*Indicates parts included in kit</i>	Logan Part No.	14000-013RK	600-024RK	14000-014RK	500-019RK	500-054RK	500-032RK	
	Bowen No.	14632K	14633K	25235K	18945K	154611K	14638K	
	Price	\$756	\$755	*	\$737	*	\$1,008	

Special Notes:

- (1) Code: Each finger is stenciled with a letter or letter-number code. These codes are used in lieu of the part number because of space limitation. See the Finger Code Chart below to cross-reference the code with the part number.

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Finger number and code, when ordering fingers

Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		8-5/16	8-5/16	8-5/16	8-11/16	9-1/8	9-1/8	10-1/8
OUTSIDE DIAMETER		9-3/4	9-3/4	9-3/4	10-3/32	10-7/16	10-7/16	11-3/8
LENGTH		5	5	4-1/2	5-3/32	5-3/16	5-3/16	6
COMPLETE ASSEMBLY	Logan Part No.	14000-015	600-026	600-064	600-027	500-020	500-033	500-021
	Bowen No.	31046-W	21760W	22000-W	21840W	14642-W	14643-W	14647-W
	Price	\$4,546	\$3,895	*	*	\$4,184	\$4,199	*
BODY	Logan Part No.	D11009	D11009	D11017	D11010	E7011	E7011	E7012
	Bowen No.	45576	45576	45577	45593	45524	45524	45586
	Price	\$3,151	\$3,151	*	*	\$3,151	\$3,151	*
FINGER RETAINER (stainless steel)	Logan Part No.	D12010	D12010	D12010	D12011	E8011	E8011	E8012
	Bowen No.	45578	45578	45578	45594	45533	45533	45587
	Price	\$217	\$217	\$217	*	\$272	\$272	*
SHORT FINGER *	Logan Part No.	E9010	E9010	E9010	E11014	E11014	E11014	E9009
	Bowen No.	45525	45525	45525	45507	45507	45507	666
	Code	M	M	M	J	J	J	666-W
	No. Req'd	16	8	16	8	16	8	16
	Price	\$55	\$55	\$55	\$55	\$55	\$55	*
MEDIUM FINGER *	Logan Part No.	...	E10003	...	E10003	...	E10003	...
	Bowen No.	...	45510	...	45510	...	45510	...
	Code	...	L	...	L	...	L	...
	No. Req'd	...	4	...	4	...	4	...
	Price	...	\$60	...	\$60	...	\$60	...
LONG FINGER *	Logan Part No.	...	E11010	...	E11010	...	E11010	...
	Bowen No.	...	45526	...	45526	...	45526	...
	Code	...	N	...	N	...	N	...
	No. Req'd	...	4	...	4	...	4	...
	Price	...	\$60	...	\$60	...	\$60	...
PIVOT PIN *	Logan Part No.	...	...	...	...	...	...	E12012
	Bowen No.	...	...	...	...	...	...	45603
	No. Req'd	...	...	...	...	...	...	16
	Price	...	...	...	...	...	...	\$26
TORSION SPRING * (stainless steel)	Logan Part No.	E13004	E13004	E13004	E13004	E13004	E13004	E13005
	Bowen No.	45509	45509	45509	45509	45509	45509	45604
	No. Req'd	16	16	16	16	16	16	16
	Price	\$7	\$7	\$7	\$7	\$7	\$7	*
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000	E14000	E14000
	Bowen No.	42257	42257	42257	42257	42257	42257	42257
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
REPAIR KIT <i>* Indicates parts included in kit</i>	Logan Part No.	14000-015RK	600-026RK	600-064RK	600-027RK	500-020RK	500-033RK	500-021RK
	Bowen No.	31046K	21760K	22000K	21840K	14642K	14643K	14647K
	Price	\$978	\$858	*	*	\$979	\$1,007	*

Special Notes:

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When ordering, please specify:

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- (2) Finger number and code, when ordering fingers

Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

Logan Junk Catcher Assemblies

INSIDE DIAMETER		10-1/8	9-7/8	11-3/16	12-3/8	12-3/8		
OUTSIDE DIAMETER		11-3/8	11-21/32	13-5/8	13-13/16	13-13/16		
LENGTH		6	5-31/32	7-5/16	7-7/8	7-7/8		
COMPLETE ASSEMBLY	Logan Part No.	500-034	600-028	600-029	500-022	500-035		
	Bowen No.	14648-W	21770W	21775W	14652-W	14653-W		
	Price	*	\$5,417	\$8,144	\$9,435	\$9,494		
BODY	Logan Part No.	E7012	D11011	D11012	E7015	E7015		
	Bowen No.	45586	64810	45605	68391	68391		
	Price	*	\$4,291	\$6,030	\$8,429	\$8,429		
FINGER RETAINER (stainless steel)	Logan Part No.	E8012	D12012	D12013	E8014	E8014		
	Bowen No.	45587	64811	45606	68392	68392		
	Price	*	\$274	\$274	\$299	\$299		
SHORT FINGER *	Logan Part No.	E9009	E9009	E9015	E9017	E9017		
	Bowen No.	666	666	45607	68393	68393		
	Code	666-W	666-W	21778-W	...	...		
	No. Req'd	8	8	7	14	7		
	Price	\$59	\$59	\$59	\$74	\$74		
MEDIUM FINGER *	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Code	...	...	...	...	...		
	No. Req'd	...	...	...	...	...		
	Price	...	...	...	...	...		
LONG FINGER *	Logan Part No.	E11011	E11011	E11016	...	E11019		
	Bowen No.	667	667	45608	...	68395		
	Code	667-W	667-W	21779-W	...	...		
	No. Req'd	8	8	7	...	7		
	Price	*	*	\$179	...	\$192		
PIVOT PIN *	Logan Part No.	E12012	E12012	E12009	E12013	E12013		
	Bowen No.	45603	45603	45609	68394	68394		
	No. Req'd	16	16	14	14	14		
	Price	\$26	\$26	\$26	\$26	\$26		
TORSION SPRING * (stainless steel)	Logan Part No.	E13005	E13005	E13010	E13004	E13004		
	Bowen No.	45604	45604	45610	45509	45509		
	No. Req'd	16	16	14	14	14		
	Price	\$10	\$10	\$10	\$10	\$10		
RETAINER SCREW * (stainless steel)	Logan Part No.	E14000	E14000	E14000	E14000	E14000		
	Bowen No.	42257	42257	42257	42257	42257		
	No. Req'd	2	2	2	2	2		
	Price	\$3	\$3	\$3	\$3	\$3		
REPAIR KIT * Indicates parts included in kit	Logan Part No.	500-034RK	600-028RK	600-029RK	500-022RK	500-035RK		
	Bowen No.	14648K	21770K	21775K	14652K	14653K		
	Price	*	\$1,496	\$1,450	\$1,186	\$1,235		

Special Notes:

- (1) Code: Each finger is stenciled with a letter or letter-number code. These codes are used in lieu of the part number because of space limitation. See the Finger Code Chart below to cross-reference the code with the part number.

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Finger number and code, when ordering fingers

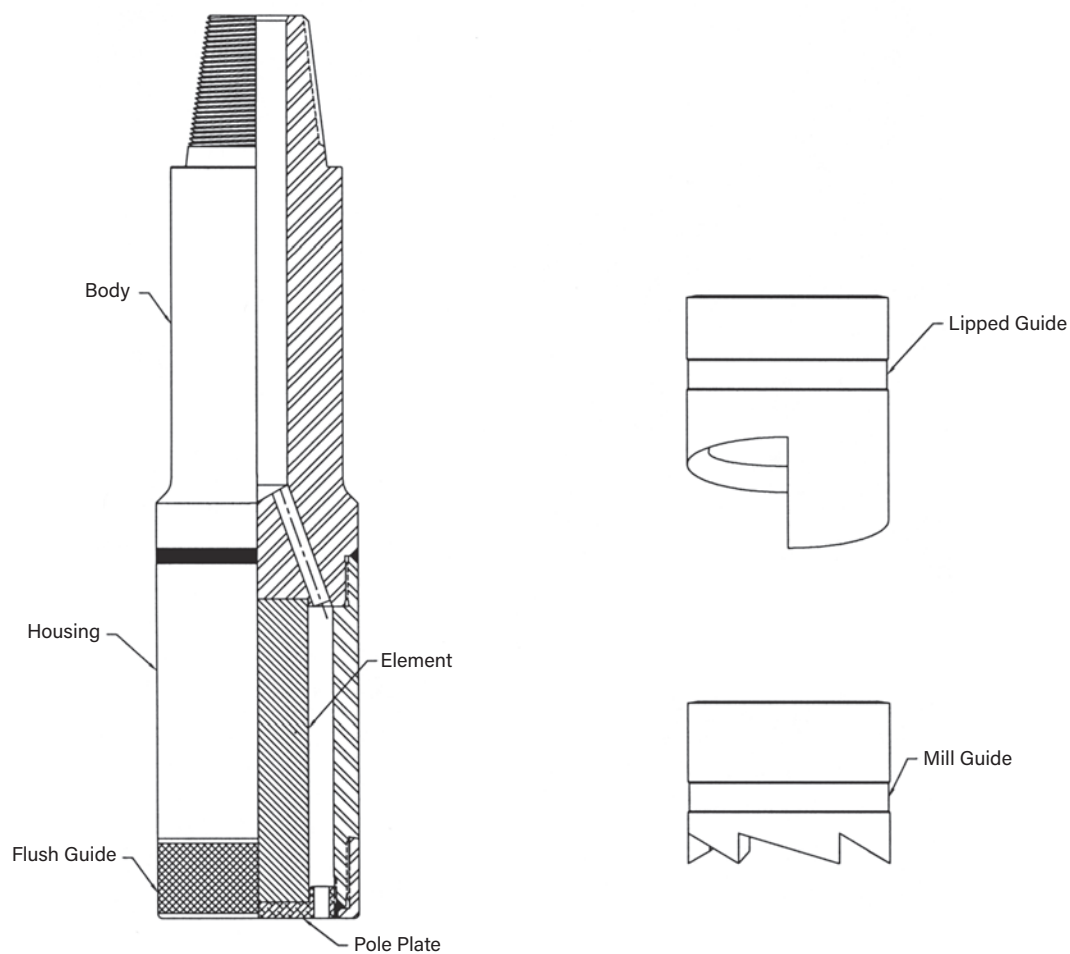
Recommended Spare Parts:

- (1) 2 Sets of Fingers
- (2) 4 Sets of Torsion Springs
- (3) 1 Set of Pivot Pins
- (4) 4 Retainer Screws

Finger Code Chart

Code	Part No.	Code	Part No.	Code	Part No.	Code	Part No.
A	E11006	I	E11003	P-1	E9007	21778-W	E9015
B	E9005	J	E11014	P-2	E11008	21779-W	E11016
C	E11005	K	E9014	W-1	E9012	362-W	E9006
D	—	L	E10003	W-2	E11013	363-W	E11007
E	E9001	M	E9010	W-3	E9002	690-W	E90015
F	E11000	N	E11010	W-4	E11001	691-W	E11015
G	E9013	O	—	X-1	E9019	666-W	E9009
H	E9004	P	—	X-2	E11020	667-W	E11011

LOGAN FISHING MAGNETS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Fishing Magnets

HOLE SIZE		1-1/4 to 2	1-5/8 to 2-1/2	2 to 2-3/4	2-3/8 to 3-1/4	2-3/4 to 3-5/8	3 to 3-3/4	3-1/4 to 4-1/8
O.D. OF BODY		1	1-1/4	1-1/2	1-3/4	2-1/4	2-1/2	3
TOP CONNECTION		5/8-11 UNC	5/8 SR	5/8 SR	3/4 SR	3/4 SR	3/4 SR	2-3/8 Tbg
ESTIMATED PULLING CAPACITY (LBS)		4	6	9	12	20	65	70
COMPLETE ASSEMBLY	Logan Part No.	306-100	306-125	306-150	306-175	306-225	306-250	306-300
	Bowen No.	32060	32080	32100	32120	32150	32170	32180
	Price	*	*	*	*	\$5,589	*	*
BODY *	Logan Part No.	...	V1000	V1001	V1002	V1003	V1004	V1005
	Bowen No.	...	32081	32101	32121	32151	32171	32181
	Price	...	*	*	*	\$1,015	*	*
HOUSING *	Logan Part No.	V20005	V2000	V2001	V2002	V2003	V2004	V2005
	Bowen No.	32062	32082	32102	32122	32152	32172	32182
	Price	*	*	*	*	\$508	*	*
POLE PLATE *	Logan Part No.	V30005	V3000	V3001	V3002	V3003	V3004	V3005
	Bowen No.	32063	32083	32103	32123	32153	32173	32183
	Price	*	*	*	*	\$884	*	*
MAGNETIC ELEMENT *	Logan Part No.	V4000	V4000	V4001	V4002	V4003	V4004	V4005
	Bowen No.	32064	32084	32104	32124	32154	32174	32184
	Price	*	*	*	*	\$506	*	*
FLUSH GUIDE	Logan Part No.	...	V6000	V6001	V6002	V6003	V6004	V6005
	Bowen No.	...	32085	32105	32125	32155	32175	32185
	Price	...	*	*	*	\$204	*	*
LIFTING CAP	Logan Part No.	...	...	...	...	...	...	...
	Connection	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

OPTIONAL COMPONENTS

CUTLIPPED GUIDE	Logan Part No.	...	V6000	V6001	V6002	V6003	V6004	V6005
	Bowen No.	...	32085	32105	32125	32155	32175	32185
	Price	...	*	*	*	\$338	*	*
MILL GUIDE	Logan Part No.	...	V6000	V6001	V6002	V6003	V6004	V6005
	Bowen No.	...	32085	32105	32125	32155	32175	32185
	Price	...	*	*	*	\$603	*	*
ADAPTER - 5/8" SUCKER ROD	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
ADAPTER - 3/4" SUCKER ROD	Logan Part No.	...	...	...	...	...	...	V7005
	Bowen No.	...	...	...	...	...	...	70513
	Price	...	...	...	...	...	...	*
KEEPER	Logan Part No.	V90005	V9000	V9001	V9002	V9003	V9004	V9005
	Bowen No.	...	66005	66008	74731	74732	66014	71716
	Price	**	**	**	**	**	**	**

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* Available upon request.

** Prices furnished for reference. Individual parts furnished for repairs made at Logan Oil Tools.

Special Notes:

(1) An additional charge will apply for Guides left oversized. Price available upon request.

(2) Magnets shipped via air freight must include Keepers.

When ordering, please specify:

- (1) Name and part number of assembly
- (2) O.D. of Body
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Cut-Lipped Guide
- (2) 1 Mill Guide

Logan Fishing Magnets

HOLE SIZE		4 to 4-1/4	4-1/4 to 4-1/2	4-1/2 to 5	5-1/8 to 5-1/2	5-5/8 to 6	6-1/8 to 6-1/2	6-1/8 to 6-1/2
O.D. OF BODY		3-1/4	3-1/2	4	4-1/2	5	5-1/2	5-3/4
TOP CONNECTION		2-3/8 Tbg	2-3/8 API Reg	2-3/8 API Reg	2-7/8 API Reg	2-7/8 API Reg	3-1/2 API Reg	3-1/2 API Reg
ESTIMATED PULLING CAPACITY (LBS)		85	90	115	160	200	250	250
COMPLETE ASSEMBLY	Logan Part No.	306-325	306-350	306-400	306-450	306-500	306-550	306-575
	Bowen No.	32190	32210	32230	32240	32260	32270	32280
	Price	*	\$5,960	\$6,477	\$7,339	\$7,333	\$8,571	\$8,654
BODY *	Logan Part No.	V1006	V1007	V1008	V1009	V1010	V1011	V1012
	Bowen No.	32191	32211	32231	32241	32261	32271	32281
	Price	*	\$1,737	\$1,972	\$2,278	\$2,414	\$3,002	\$3,041
HOUSING *	Logan Part No.	V2006	V2007	V2008	V2009	V2010	V2011	V2012
	Bowen No.	32192	32212	32232	32242	32262	32272	32282
	Price	*	\$690	\$764	\$875	\$865	\$1,074	\$2,081
POLE PLATE *	Logan Part No.	V3006	V3007	V3008	V3009	V3010	V3011	V3012
	Bowen No.	32193	32213	32233	32243	32263	32273	32283
	Price	*	\$1,118	\$1,221	\$1,331	\$1,317	\$1,529	\$1,529
MAGNETIC ELEMENT *	Logan Part No.	V4006	V4007	V4008	V4009	V4010	V4011	V4011
	Bowen No.	32194	32214	32234	32244	32264	32274	32274
	Price	*	\$1,501	\$1,625	\$1,944	\$1,790	\$1,960	\$1,960
FLUSH GUIDE	Logan Part No.	V6006	V6007	V6008	V6009	V6010	V6011	V6012
	Bowen No.	32195	32215	32235	32245	32265	32275	32285
	Price	*	\$311	\$291	\$308	\$336	\$965	\$1,063
LIFTING CAP	Logan Part No.	...	V8000	V8000	V8001	V8001	V8002	V8002
	Connection	...	2-3/8 API Reg	2-3/8 API Reg	2-7/8 API Reg	2-7/8 API Reg	3-1/2 API Reg	3-1/2 API Reg
	Price	...	\$608	\$608	\$605	\$605	\$666	\$666

OPTIONAL COMPONENTS

CUTLIPPED GUIDE	Logan Part No.	V6006	V6007	V6008	V6009	V6010	V6011	V6012
	Bowen No.	32195	32215	32235	32245	32265	32275	32285
	Price	*	\$386	\$411	\$412	\$467	\$552	\$584
MILL GUIDE	Logan Part No.	V6006	V6007	V6008	V6009	V6010	V6011	V6012
	Bowen No.	32195	32215	32235	32245	32265	32275	32285
	Price	*	\$633	\$645	\$659	\$767	\$924	\$969
ADAPTER — 5/8" SUCKER ROD	Logan Part No.	...	...	V5008	V5009	V5009	V5011	V5011
	Bowen No.	...	...	62250	62252	62252	62254	62254
	Price	...	...	**	**	**	**	**
ADAPTER — 3/4" SUCKER ROD	Logan Part No.	V7005	...	V7008	V7009	V7009	V7011	V7011
	Bowen No.	70513	...	62251	62253	62253	62255	62255
	Price	**	...	\$1,025	**	**	**	**
KEEPER	Logan Part No.	V9006	V9007	V9008	V9009	V9010	V9011	V9012
	Bowen No.	66016	66021	66026	66027	66030	66031	74962

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(2) Magnets shipped via air freight must include Keepers.

When ordering, please specify:

- (1) Name and part number of assembly
- (2) O.D. of Body
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Cut-Lipped Guide
- (2) 1 Mill Guide

Logan Fishing Magnets

HOLE SIZE		6-5/8 to 7-1/2	7-5/8 to 8-1/2	8-5/8 to 9-3/4	9-7/8 to 11-5/8	10-1/2 to 11-7/8	11-3/4 to 13	12-1/4 to 14
O.D. OF BODY		6	7	8	9	10	10-1/2	11-1/2
TOP CONNECTION		3-1/2 API Reg	4-1/2 API Reg	4-1/2 API Reg	4-1/2 API Reg	6-5/8 API Reg	6-5/8 API Reg	6-5/8 API Reg
ESTIMATED PULLING CAPACITY (LBS)		250	330	560	680	750	800	800
COMPLETE ASSEMBLY	Logan Part No.	306-600	306-700	306-800	306-900	306-1000	306-1050	306-1150
	Bowen No.	32290	32300	32310	32330	32340	32350	32370
	Price	*	\$9,881	\$12,636	\$17,193	\$19,141	\$21,367	\$27,141
BODY *	Logan Part No.	V1013	V1014	V1015	V1016	V1017	V1018	V1019
	Bowen No.	32291	32301	32311	32331	32341	32351	32371
	Price	*	\$3,502	\$4,180	\$6,416	\$6,700	\$7,235	\$8,893
HOUSING *	Logan Part No.	V2013	V2014	V2015	V2016	V2017	V2018	V2019
	Bowen No.	32292	32302	32312	32332	32342	32352	32372
	Price	*	\$1,271	\$1,706	\$1,996	\$3,595	\$3,862	\$4,330
POLE PLATE *	Logan Part No.	V3013	V3014	V3015	V3016	V3017	V3017	V3019
	Bowen No.	32293	32303	32313	32333	32343	32343	32373
	Price	*	\$1,434	\$1,681	\$1,820	\$2,111	\$2,111	\$2,532
MAGNETIC ELEMENT *	Logan Part No.	V4013	V4014	V4015	V4016	V4017	V4017	V4019
	Bowen No.	32294	32304	32314	32334	32344	32344	32374
	Price	*	\$2,342	\$3,641	\$5,429	\$6,180	\$6,180	\$9,045
FLUSH GUIDE	Logan Part No.	V6013	V6014	V6015	V6016	V6017	V6018	V6019
	Bowen No.	32295	32305	32315	32335	32345	32355	32375
	Price	*	\$458	\$552	\$659	\$852	\$894	\$1,259
LIFTING CAP	Logan Part No.	V8002	V8003	V8003	V8003	V8004	V8004	V8004
	Connection	3-1/2 API Reg	4-1/2 API Reg	4-1/2 API Reg	4-1/2 API Reg	6-5/8 API Reg	6-5/8 API Reg	6-5/8 API Reg
	Price	*	\$879	\$879	\$879	\$1,090	\$1,090	\$1,090

OPTIONAL COMPONENTS

CUTLIPPED GUIDE	Logan Part No.	V6013	V6014	V6015	V6016	V6017	V6018	V6019
	Bowen No.	32295	32305	32315	32335	32345	32355	32375
	Price	*	\$661	\$852	\$1,108	\$1,362	\$1,625	\$1,851
MILL GUIDE	Logan Part No.	V6013	V6014	V6015	V6016	V6017	V6018	V6019
	Bowen No.	32295	32305	32315	32335	32345	32355	32375
	Price	*	\$1,002	\$1,285	\$1,664	\$2,167	\$2,613	\$2,747
ADAPTER — 5/8" SUCKER ROD	Logan Part No.	V5011	V5014	V5014	V5014	V5017	V5017	V5017
	Bowen No.	62254	62256	62256	62256	62258	62258	62258
	Price	**	**	**	**	**	**	**
ADAPTER — 3/4" SUCKER ROD	Part No.	V7011	V7014	V7014	V7014	V7017	V7017	V7017
	Bowen No.	62255	62257	62257	62257	62259	62259	62259
	Price	**	**	**	**	**	**	**
KEEPER	Logan Part No.	V9013	V9014	V9015	V9016	V9017	V9017	V9019
	Bowen No.	66039	56181	66041	66044	66045	66045	66218

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** Prices furnished for reference. Individual parts furnished for repairs made at Logan Oil Tools.

Special Notes:

(1) An additional charge will apply for Guides left oversized. Price available upon request.

(2) Magnets shipped via air freight must include Keepers.

When ordering, please specify:

- (1) Name and part number of assembly
- (2) O.D. of Body
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Cut-Lipped Guide
- (2) 1 Mill Guide

Logan Fishing Magnets

HOLE SIZE		15	17	20				
O.D. OF BODY		14	16	19				
TOP CONNECTION		6-5/8 API Reg	6-5/8 API Reg	7-5/8 API Reg				
ESTIMATED PULLING CAPACITY (LBS)		1,100	1,100	1,470				
COMPLETE ASSEMBLY	Logan Part No.	306-1400	306-1600	306-1900				
	Bowen No.	32380	79183	79189				
	Price	\$41,341	\$56,785	\$100,138				
BODY *	Logan Part No.	V1020	V1021	V1022				
	Bowen No.	32381	145730	79190				
	Price	\$13,419	\$25,663	\$39,034				
HOUSING *	Logan Part No.	V2020	V2021	V2022				
	Bowen No.	32382	145731	79191				
	Price	\$6,123	\$8,305	\$13,886				
POLE PLATE *	Logan Part No.	V3020	V3021	V3022				
	Bowen No.	32383	145732	79192				
	Price	\$4,425	\$5,738	\$9,111				
MAGNETIC ELEMENT *	Logan Part No.	V4020	V4020	V4022				
	Bowen No.	32384	32384	79193				
	Price	\$14,551	\$14,551	\$38,147				
FLUSH GUIDE	Logan Part No.	V6020	V6021	V6022				
	Bowen No.	32385	79188	79194				
	Price	\$1,740	\$2,070	\$3,077				
LIFTING CAP	Logan Part No.	V8004	V8004	V8005				
	Connection	6-5/8 API Reg	6-5/8 API Reg	7-5/8 API Reg				
	Price	\$1,090	\$1,090	\$1,141				

OPTIONAL COMPONENTS

CUTLIPPED GUIDE	Logan Part No.	V6020	V6021	V6022				
	Bowen No.	32385	79188	79194				
	Price	\$2,948	\$3,348	\$2,793				
MILL GUIDE	Logan Part No.	V6020	V6021	V6022				
	Bowen No.	32385	79188	79194				
	Price	\$3,672	\$4,389	\$5,469				
ADAPTER — 5/8" SUCKER ROD	Logan Part No.	V5017	...	...				
	Bowen No.	62258	...	...				
	Price	**	...	...				
ADAPTER — 3/4" SUCKER ROD	Logan Part No.	V7017	...	...				
	Bowen No.	62259	...	...				
	Price	**	...	...				
KEEPER	Logan Part No.	V9020	V9021	V9022				
	Bowen No.	66219	145867	...				

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* Available upon request.

** Prices furnished for reference. Individual parts furnished for repairs made at Logan Oil Tools.

Special Notes:

(1) An additional charge will apply for Guides left oversized. Price available upon request.

(2) Magnets shipped via air freight must include Keepers.

When ordering, please specify:

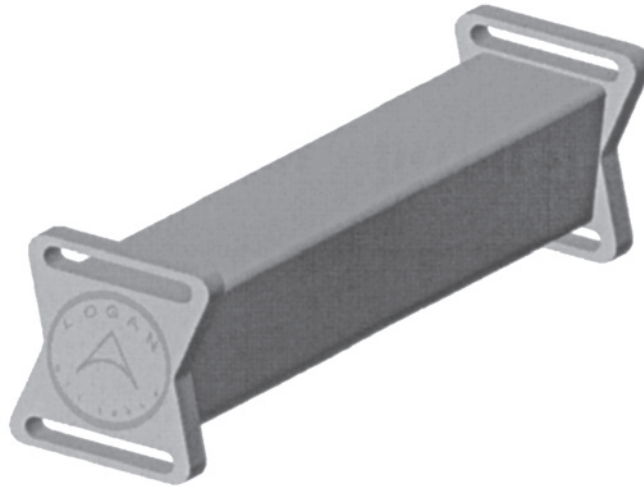
- (1) Name and part number of assembly
- (2) O.D. of Body
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Cut-Lipped Guide
- (2) 1 Mill Guide

Logan Heavy Duty Ditch Magnets

LENGTH		14"	18"	24"	30"	36"	48"	60"
COMPLETE ASSEMBLY	Logan Part No.	305-014	305-018	305-024	305-030	305-036	305-048	305-060
	Bowen No.	...	...	152761	...	79162	...	...
	Price	\$1,828	\$3,273	\$3,349	\$3,373	\$3,488	*	*
KEEPER	Logan Part No.	DMK-014	DMK-018	DMK-024	DMK-030	DMK-036	DMK-048	DMK-060
	Price Per Set	\$515	\$634	\$769	\$924	\$981	*	*



Innovex reserves the right to change or discontinue designs and/or prices without notice.

** Available upon request.*

Special Notes:

- (1) Prices shown are for Heavy Duty application. Light Duty prices available upon request.
- (2) Magnets shipped via air freight must include a Keeper set.

When ordering, please specify:

- (1) Name and part number of assembly

Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		3-5/8	4-1/2	5-3/4	6-3/4
COMPLETE ASSEMBLY	Logan Part No.	15918	15920	15923	15925
	Price	*	*	*	*
JET SECTION ASSEMBLY					
Jet Section Assembly		15936	15937	15938	15939
Outside Diameter		3-5/8"	4-1/2"	5-3/4"	6-3/4"
Jet Nozzle Required		4	4	4	4
Top Connection (Pin)		2-3/8" API Reg.	2-7/8" API Reg.	3-1/2" API Reg.	4-1/2" API Reg.
Approx. Piston Shear Press (PSI)		...	...	700 PSI	700 PSI
Top Sub	Logan Part No.	214944	214947	214949	214592
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Lift Cap (To fit Top Connection)	Logan Part No.	214943	214946	214948	214591
	No. Req'd	1	1	1	1
	Price	*	*	*	*
Drop Ball	Logan Part No.	116122	116122	114203	114203
	Qty. Req'd	2	2	2	2
	Price	*	*	*	*
Jet Sleeve	Logan Part No.	313413	313419	313427	313433
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Ejector Pump Head	Logan Part No.	313412	313418	313426	313432
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Ejector Pump Head O-Ring	Logan Part No.	11819	118199	118217	119235
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Jet Nozzle	Logan Part No.	118860	118570	118959	118968
	Qty. Req'd	4	4	1	4
	Price	*	*	*	*
Copper Gasket	Logan Part No.	118861	118871	118871	118969
	Qty. Req'd	4	4	4	4
	Price	*	*	*	*
Jet Sleeve Set Screw	Logan Part No.	117699	119214	119214	119214
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Jet Nozzle Protector	Logan Part No.	...	...	118965	118965
	Qty. Req'd	...	...	4	4
	Price	...	...	*	*
Flushing Nozzle	Logan Part No.	118863	118863	118962	118962
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Pipe Plug O-RING SEAL	Logan Part No.	119743	119743	119744	119745
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Ball Seat Wrench O-RING SEAL	Logan Part No.	118864	118864	118864	118864
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Strainer Sleeve Assembly (Hard Faced Mill Teeth)	Logan Part No.	15943	15943	15944	15944
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*

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*Junk Catcher and Core Catcher Repair Kits consist of the required number of fingers and torsion springs to permit the complete replacement of these parts in one catcher assembly.

**All Rotary Shoes require two Junk Catchers or a combination of any of the following Junk Catcher, Short Core Catcher, Spacer Ring with a Bearing Assembly. Prices for the complete Assembly reflect an application of Kutrite on the Rotary Shoes. Special 2-114" and 3-118" O.D. Models are available for junk fishing in Slim Hole, tubingless completion.

Ordering Specifications:

Specify size and type of Top Sub, if other than shown. Specify if other than Kutrite is to be applied to the Rotary Shoe. If Lift Caps are ordered separately, specify thread and whether pin or box.

Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		7-7/8	8-3/4	10-1/8
COMPLETE ASSEMBLY	Logan Part No.	15927	15929	15932
	Price			

JET SECTION ASSEMBLY

Jet Section Assembly		15940	15941	15942
Outside Diameter		7-7/8"	8-3/4"	10-1/8"
Jet Nozzle Required		4	5	7
Top Connection (Pin)		4-1/2"API Reg	6-5/8"API Reg.	6-5/8"API Reg.
Approx. Piston Shear Press (PSI)		1000 PSI	1000 PSI	1000 PSI

Top Sub	Logan Part No.	214954	214956	214953
	Qty. Req'd	1	1	1
	Price	*	*	*
Lift Cap (To fit Top Connection)	Logan Part No.	214951	214957	214957
	No. Req'd	1	1	1
	Price			
Drop Ball	Logan Part No.	114209	114209	114209
	Qty. Req'd	2	2	2
	Price	*	*	*
Jet Sleeve	Logan Part No.	313439	313445	313453
	Qty. Req'd	1	1	1
	Price	*	*	*
Ejector Pump Head	Logan Part No.	313438	313444	313452
	Qty. Req'd	1	1	1
	Price	*	*	*
Ejector Pump Head O-Ring	Logan Part No.	118243	118251	118261
	Qty. Req'd	1	1	1
	Price	*	*	*
Jet Nozzle	Logan Part No.	118971	118971	118971
	Qty. Req'd	4	5	7
	Price	*	*	*
Copper Gasket	Logan Part No.	118969	118969	118969
	Qty. Req'd	4	5	7
	Price	*	*	*
Jet Sleeve Set Screw	Logan Part No.	119214	119214	119214
	Qty. Req'd	1	1	1
	Price	*	*	*
Jet Nozzle Protector	Logan Part No.	118977	118977	118977
	Qty. Req'd	4	5	7
	Price	*	*	*
Flushing Nozzle	Logan Part No.	118974	118974	118974
	Qty. Req'd	1	1	1
	Price	*	*	*
Pipe Plug O-RING SEAL	Logan Part No.	119745	119745	119745
	Qty. Req'd	1	1	1
	Price	*	*	*
Ball Seat Wrench O-RING SEAL	Logan Part No.	118864	118864	118864
	Qty. Req'd	1	1	1
	Price	*	*	*
Strainer Sleeve Assembly (Hard Faced Mill Teeth)	Logan Part No.	15945	15945	15945
	Qty. Req'd	1	1	1
	Price	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		3-5/8	4-1/2	5-3/4	6-3/4
COMPLETE ASSEMBLY	Logan Part No.	15918	15920	15923	15925
	Price	*	*	*	*
JET SECTION ASSEMBLY					
Jet Section Assembly		15936	15937	15938	15939
Outside Diameter		3-5/8"	4-1/2"	5-3/4"	6-3/4"
Jet Nozzle Required		4	4	4	4
Top Connection (Pin)		2-3/8" API Reg.	2-7/8" API Reg.	3-1/2" API Reg.	4-1/2" API Reg.
Approx. Piston Shear Press (PSI)		...	...	700 PSI	700 PSI
Piston	Logan Part No.	...	...	118961	118961
	Qty. Req'd	...	...	1	1
Piston Shear Pins	Logan Part No.	...	...	119215	119215
	No. Req'd	...	...	6	6
Piston O-Ring	Logan Part No.	...	...	118177	118177
	Qty. Req'd	...	...	2	2
Drop Ball Seat	Logan Part No.	119211	119211	114220	114220
	Qty. Req'd	1	1	1	1
Ball Seat Retainer	Logan Part No.	118866	118866	118966	118966
	Qty. Req'd	1	1	1	1
Strainer Sleeve	Logan Part No.	214945	214945	214950	214950
	Qty. Req'd	1	1	1	1
Strainer Sleeve O-Ring	Logan Part No.	118315	118315	118185	118185
	Qty. Req'd	1	1	1	1
Seal Bushing	Logan Part No.	118862	118862	118960	118960
	Qty. Req'd	1	1	1	1
Seal Bushing O-Ring	Logan Part No.	118171	118171	118177	118177
	Qty. Req'd	1	1	1	1
Seal Bushing Screw	Logan Part No.	119222	119222	119224	119224
	Qty. Req'd	3	3	3	1
Complete Seal Kit	Logan Part No.	15949	15950	15951	115952
	Price	*	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		7-7/8	8-3/4	10-1/8
COMPLETE ASSEMBLY	Logan Part No.	15927	15929	15932
	Price	*	*	*

JET SECTION ASSEMBLY

Jet Section Assembly	15940	15941	15942
Outside Diameter	7-7/8"	8-3/4"	10-1/8"
Jet Nozzle Required	4	5	7
Top Connection (Pin)	4-1/2"API Reg	6-5/8"API Reg.	6-5/8"API Reg.
Approx. Piston Shear Press (PSI)	1000 PSI	1000 PSI	1000 PSI

Piston	Logan Part No.	118973	118973	118973
	Qty. Req'd	1	1	1
	Price	*	*	*
Piston Shear Pins	Logan Part No.	119215	119215	119215
	No. Req'd	8	8	8
	Price	*	*	*
Piston O-Ring	Logan Part No.	118191	118191	118191
	Qty. Req'd	2	2	2
	Price	*	*	*
Drop Ball Seat	Logan Part No.	118697	118697	118697
	Qty. Req'd	1	1	1
	Price	*	*	*
Ball Seat Retainer	Logan Part No.	118978	118978	118978
	Qty. Req'd	1	1	1
	Price	*	*	*
Strainer Sleeve	Logan Part No.	214955	214955	214955
	Qty. Req'd	1	1	1
	Price	*	*	*
Strainer Sleeve O-Ring	Logan Part No.	118201	118201	118201
	Qty. Req'd	1	1	1
	Price	*	*	*
Seal Bushing	Logan Part No.	118872	118972	118972
	Qty. Req'd	1	1	1
	Price	*	*	*
Seal Bushing O-Ring	Logan Part No.	118191	118191	118191
	Qty. Req'd	1	1	1
	Price	*	*	*
Seal Bushing Screw	Logan Part No.	119223	119223	119223
	Qty. Req'd	3	3	3
	Price	*	*	*
Complete Seal Kit	Logan Part No.	15953	15954	15955
	Qty. Req'd			
	Price	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		3-5/8	4-1/2	5-3/4	6-3/4
COMPLETE ASSEMBLY	Logan Part No.	15918	15920	15923	15925
	Price	*	*	*	*

JET SECTION ASSEMBLY

Jet Section Assembly		15936	15937	15938	15939
Outside Diameter		3-5/8"	4-1/2"	5-3/4"	6-3/4"
Jet Nozzle Required		4	4	4	4
Top Connection (Pin)		2-3/8" API Reg.	2-7/8" API Reg.	3-1/2" API Reg.	4-1/2" API Reg.
Approx. Piston Shear Press (PSI)		...	...	700 PSI	700 PSI
Copper Gasket	Logan Part No.	118861	118871	118871	118969
	Qty. Req'd	4	1	4	4
	Price	*	*	*	*
Ejector Pump O-Ring	Logan Part No.	118189	118199	118217	118235
	No. Req'd	1	1	1	1
	Price	*	*	*	*
Piston O-Ring	Logan Part No.	...	...	118177	118177
	Qty. Req'd	...	...	3	2
	Price	...	...	*	*
Strainer Sleeve O-Ring	Logan Part No.	118315	118315	118185	118185
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Seal Bushing O-Ring	Logan Part No.	118171	118171	118177	118177
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		7-7/8	8-3/4	10-1/8
COMPLETE ASSEMBLY	Logan Part No.	15927	15929	15932
	Price	*	*	*

JET SECTION ASSEMBLY

Jet Section Assembly	15940	15941	15942
Outside Diameter	7-7/8"	8-3/4"	10-1/8"
Jet Nozzle Required	4	5	7
Top Connection (Pin)	4-1/2"API Reg	6-5/8"API Reg.	6-5/8"API Reg.
Approx. Piston Shear Press (PSI)	1000 PSI	1000 PSI	1000 PSI

Copper Gasket	Logan Part No.	118969	118969	118969
	Qty. Req'd	4	5	7
	Price	*	*	*
Ejector Pump O-Ring	Logan Part No.	118243	118251	118261
	No. Req'd	1	1	1
	Price	*	*	*
Piston O-Ring	Logan Part No.	118191	118191	118191
	Qty. Req'd	2	2	2
	Price	*	*	*
Strainer Sleeve O-Ring	Logan Part No.	118201	118201	118201
	Qty. Req'd	1	1	1
	Price	*	*	*
Seal Bushing O-Ring	Logan Part No.	118191	118191	118191
	Qty. Req'd	1	1	1
	Price	*	*	*

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*Junk Catcher and Core Catcher Repair Kits consist of the required number of fingers and torsion springs to permit the complete replacement of these parts in one catcher assembly.

**All Rotary Shoes require two Junk Catchers or a combination of any of the following Junk Catcher, Short Core Catcher, Spacer Ring with a Bearing Assembly. Prices for the complete Assembly reflect an application of Kutrite on the Rotary Shoes. Special 2-114" and 3-118" O.D. Models are available for junk fishing in Slim Hole, tubingless completion.

Ordering Specifications:

Specify size and type of Top Sub, if other than shown. Specify if other than Kutrite is to be applied to the Rotary Shoe. If Lift Caps are ordered separately, specify thread and whether pin or box.

Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		3-5/8	3-5/8	4-1/2	4-1/2
COMPLETE ASSEMBLY	Logan Part No.	15918	15918	15920	15920
	Price	*	*	*	*
JUNK RETAINING ASSEMBLY					
Hole Size		4"-4-1/8"	4-1/4"-4-1/2"	4-7/8"-5"	5-1/8"-5-1/2"
Junk Retaining Assembly		15956	15957	15958	15959
Outside Diameter		3-5/8"	4-1/16"	4-1/2"	4-7/8"
Inside Diameter (Catcher&Shoe)		2-3/4"	3"	3-9/32"	3-21/32"
Junk Sleeve	Logan Part No.	313414	313406	313420	313422
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Bearing Retainer**	Logan Part No.	...	...	...	...
	No. Req'd	...	...	...	...
	Price	...	...	...	...
Race Ring**	Logan Part No.	...	...	...	...
	Qty. Req'd	...	...	...	...
	Price	...	...	...	...
Junk Catcher**	Logan Part No.	118867	118868	118872	118873
	Qty. Req'd	2	2	2	2
	Price	*	*	*	*
Short Junk Catcher**	Logan Part No.	...	...	...	...
	Qty. Req'd	...	...	...	...
	Price	...	...	...	...
Spacer Ring**	Logan Part No.	119234	119235	119236	119237
	Qty. Req'd	...	...	...	...
	Price	*	*	*	*
Rotary Shoe	Logan Part No.	313415	313417	313421	313423
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
REPAIR KITS					
Junk Catcher Repair Kit*	Logan Part No.	118901	118902	118903	118904
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Junk Catcher Repair Kit*	Logan Part No.	...	...	...	...
	Qty. Req'd	...	...	...	...
	Price	...	...	...	...

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**Junk Catcher and Core Catcher Repair Kits consist of the required number of fingers and torsion springs to permit the complete replacement of these parts in one catcher assembly.*

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Ordering Specifications:

Specify size and type of Top Sub, if other than shown. Specify if other than Kutrite is to be applied to the Rotary Shoe. If Lift Caps are ordered separately, specify thread and whether pin or box.

Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		4-1/2	5-3/4	5-3/4	
COMPLETE ASSEMBLY	Logan Part No.	15920	15923	15923	
	Price	*	*	*	
JUNK RETAINING ASSEMBLY					
Hole Size		5-5/8"-6"	6-1/8"-6-1/2"	6-5/8"-7"	
Junk Retaining Assembly		15960	15961	15962	
Outside Diameter		5-3/8"	5-3/4"	6-1/4"	
Inside Diameter (Catcher&Shoe)		4-1/16"	4-3/8"	4-3/4"	
Junk Sleeve	Logan Part No.	313424	313428	313430	
	Qty. Req'd	1	1	1	
	Price	*	*	*	
Bearing Retainer**	Logan Part No.	...	118932	118934	
	No. Req'd	...	1	1	
	Price	...	*	*	
Race Ring**	Logan Part No.	...	118933	118935	
	Qty. Req'd	...	2	2	
	Price	...	*	*	
Junk Catcher**	Logan Part No.	118874	118875	11887	
	Qty. Req'd	2	1	1	
	Price	*	*	*	
Short Junk Catcher**	Logan Part No.	...	118876	118878	
	Qty. Req'd	...	1	1	
	Price	...	*	*	
Spacer Ring**	Logan Part No.	119238	119239	119240	
	Qty. Req'd	...	...	...	
	Price	*	*	*	
Rotary Shoe	Logan Part No.	313425	313429	313431	
	Qty. Req'd	1	1	1	
	Price	*	*	*	
REPAIR KITS					
Junk Catcher Repair Kit*	Logan Part No.	118905	118906	118908	
	Qty. Req'd	1	1	1	
	Price	*	*	*	
Junk Catcher Repair Kit*	Logan Part No.	...	118907	118909	
	Qty. Req'd	...	1	1	
	Price	...	*	*	

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Ordering Specifications:

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		6-3/4	6-3/4	7-7/8	7-7/8
COMPLETE ASSEMBLY	Logan Part No.	15925	15925	15927	15927
	Price	*	*	*	*

JUNK RETAINING ASSEMBLY

Hole Size	7-1/8"-7-1/2"	8-1/8"-8-3/8"	8-1/2"-9"	9-1/2"-9-7/8"
Junk Retaining Assembly	15963	15964	15965	15966
Outside Diameter	6-3/4"	7-1/4"	7-7/8"	8-3/16"
Inside Diameter (Catcher&Shoe)	5-1/4"	5-5/8"	6-1/16"	6-1/2"

Junk Sleeve	Logan Part No.	313434	313436	313440	313442
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Bearing Retainer**	Logan Part No.	118936	118938	118940	118942
	No. Req'd	1	1	1	1
	Price	*	*	*	*
Race Ring**	Logan Part No.	118937	118939	118941	118943
	Qty. Req'd	2	2	2	2
	Price	*	*	*	*
Junk Catcher**	Logan Part No.	118879	118881	118883	118885
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Short Junk Catcher**	Logan Part No.	118880	118882	118884	118886
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Spacer Ring**	Logan Part No.	119241	119242	119243	119244
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Rotary Shoe	Logan Part No.	313435	313457	313441	313443
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*

REPAIR KITS

Junk Catcher Repair Kit*	Logan Part No.	118910	118912	118914	118916
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Junk Catcher Repair Kit*	Logan Part No.	118911	118913	118915	118917
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		8-3/4	8-3/4	8-3/4
COMPLETE ASSEMBLY	Logan Part No.	15929	15929	15929
	Price	*	*	*
JUNK RETAINING ASSEMBLY				
Hole Size		9-1/2"-9-7/8"	10"-10-3/4"	10-7/8"-11-5/8"
Junk Retaining Assembly		15967	15968	15969
Outside Diameter		8-3/4"	9"	9-7/8"
Inside Diameter (Catcher&Shoe)		6-7/8"	7-3/16"	7-3/4"
Junk Sleeve	Logan Part No.	313446	313448	313450
	Qty. Req'd	1	1	1
	Price	*	*	*
Bearing Retainer**	Logan Part No.	118952	118944	118946
	No. Req'd	1	1	1
	Price	*	*	*
Race Ring**	Logan Part No.	118953	118945	118947
	Qty. Req'd	2	2	2
	Price	*	*	*
Junk Catcher**	Logan Part No.	118887	118889	118891
	Qty. Req'd	1	1	1
	Price	*	*	*
Short Junk Catcher**	Logan Part No.	118888	118890	118892
	Qty. Req'd	1	1	1
	Price	*	*	*
Spacer Ring**	Logan Part No.	119245	119246	119247
	Qty. Req'd	1	1	1
	Price	*	*	*
Rotary Shoe	Logan Part No.	313447	313449	313451
	Qty. Req'd	1	1	1
	Price	*	*	*
REPAIR KITS				
Junk Catcher Repair Kit*	Logan Part No.	118918	118920	118922
	Qty. Req'd	1	1	1
	Price	*	*	*
Junk Catcher Repair Kit*	Logan Part No.	118919	118921	118923
	Qty. Req'd	1	1	1
	Price	*	*	*

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Logan HE Jet Junk Baskets

OUTSIDE DIAMETER - INCHES		H	H	H	H
COMPLETE ASSEMBLY	Logan Part No.	15932	15932	15932	15932
	Price	*	*	*	*
JUNK RETAINING ASSEMBLY					
Hole Size		11-3/4"-12"	12-1/4"-14-1/4"	14-1/2"-16"	17"-20"
Junk Retaining Assembly		15970	15971	15972	15973
Outside Diameter		10-1/8"	11-1/4"	12-1/4"	14-3/4"
Inside Diameter (Catcher&Shoe)		8-1/16"	9-1/16"	10-1/8"	12-3/8"
Junk Sleeve	Logan Part No.	313454	313456	313458	313460
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Bearing Retainer**	Logan Part No.	118948	118950	118954	118956
	No. Req'd	1	1	1	1
	Price	*	*	*	*
Race Ring**	Logan Part No.	118949	118951	118955	118957
	Qty. Req'd	2	2	2	2
	Price	*	*	*	*
Junk Catcher**	Logan Part No.	118893	118895	118897	118899
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Short Junk Catcher**	Logan Part No.	118894	118896	118898	118900
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Spacer Ring**	Logan Part No.	119248	119249	...	...
	Qty. Req'd	...	...	...	...
	Price	*	*	*	*
Rotary Shoe	Logan Part No.	313155	313457	313459	313461
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
REPAIR KITS					
Junk Catcher Repair Kit*	Logan Part No.	118924	118926	118928	118930
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*
Junk Catcher Repair Kit*	Logan Part No.	118925	118927	118929	118931
	Qty. Req'd	1	1	1	1
	Price	*	*	*	*

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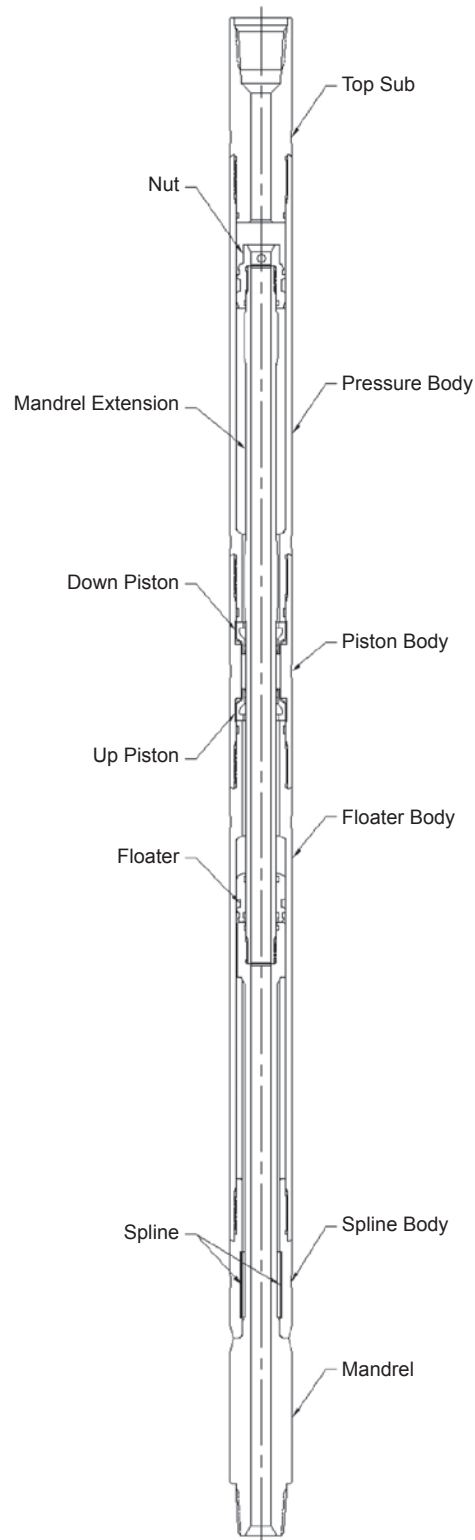
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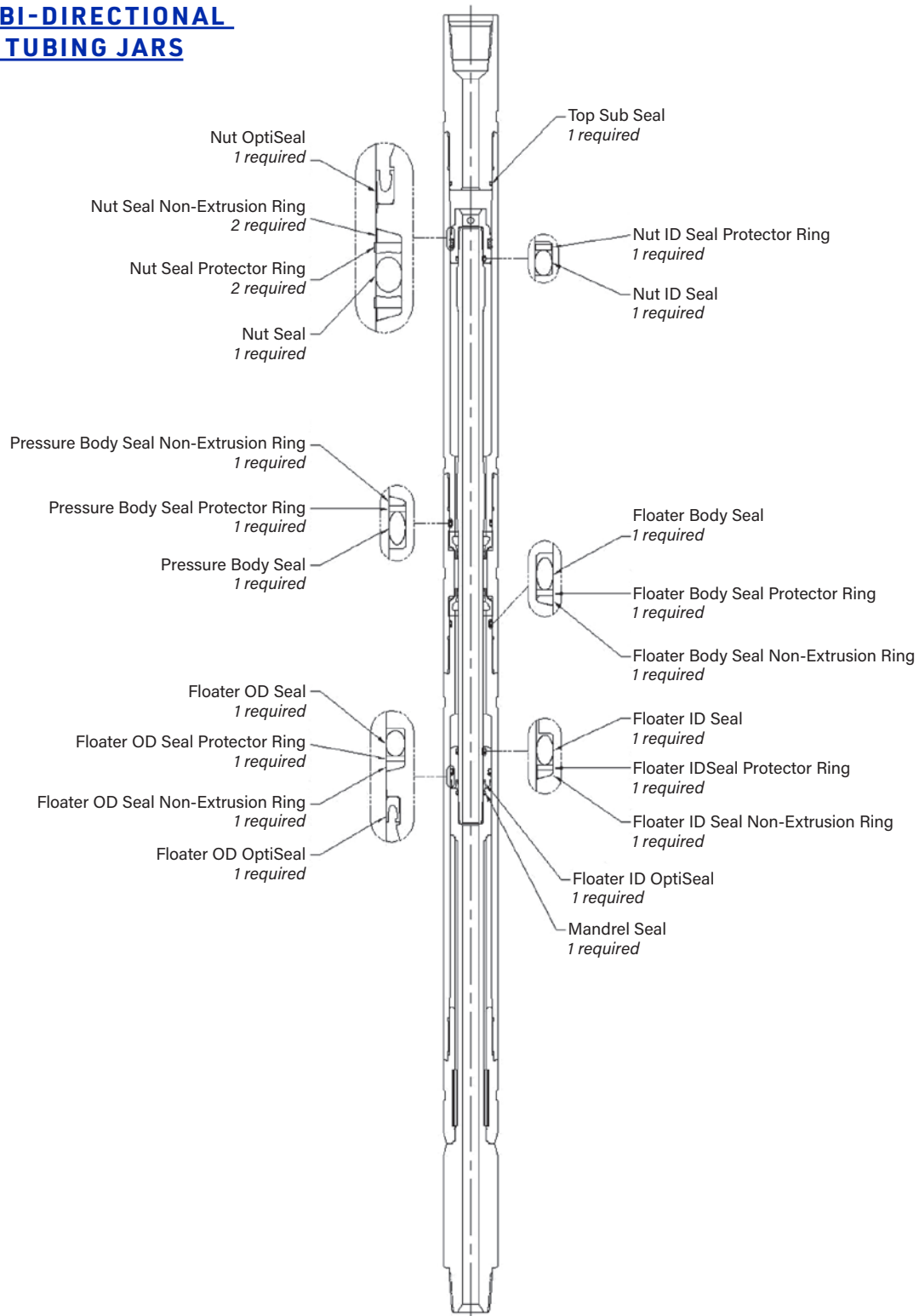
**LOGAN BI-DIRECTIONAL
COILED TUBING JARS**



**Bi-Directional Coiled Tubing
Jar Components**

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**LOGAN BI-DIRECTIONAL
COILED TUBING JARS**



**Bi-Directional Coiled Tubing
Jar Seal Components**

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Logan Bi-Directional Coiled Tubing Jars

OUTSIDE DIAMETER - INCHES		1-11/16	2-1/8	2-7/8
INSIDE DIAMETER - INCHES		17/32	21/32	29/32
CONNECTION SIZE (BOX UP)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
CONNECTION SIZE (PIN DOWN)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
COMPLETE ASSEMBLY	Logan Part No.	616-169	616-213	616-288
	Price	\$24,189	\$22,842	\$27,801
COMPONENT PARTS				
TOP SUB	Logan Part No.	CC1000	CC1002	CC1004
	Price	\$1,159	\$1,294	\$1,480
TOP SUB SEAL *	Logan Part No.	568122	568128	568226
	Price	*	*	*
PRESSURE BODY	Logan Part No.	CC2000	CC2002	CC2004
	Price	\$4,026	\$3,340	\$3,525
PRESSURE BODY NON-EXTRUSION RING	Logan Part No.	CC14000	CC14002	CC14004
	Price	\$190	\$190	\$37
PRESSURE BODY SEAL PROTECTOR RING *	Logan Part No.	8-025	8-128	8-226
	Price	*	*	*
PRESSURE BODY SEAL *	Logan Part No.	568025	568128	568226
	Price	*	*	*
PISTON BODY	Logan Part No.	CC3000	CC3002	CC3004
	Price	\$2,803	\$2,881	\$2,323
FLOATER BODY	Logan Part No.	CC4000	CC4002	CC4004
	Price	\$3,770	\$3,096	\$3,839
FLOATER BODY NON-EXTRUSION RING	Logan Part No.	CC14000	CC14002	CC14004
	Price	\$190	\$190	\$37
FLOATER BODY SEAL PROTECTOR RING *	Logan Part No.	8-025	8-128	8-226
	Price	*	*	*
FLOATER BODY SEAL *	Logan Part No.	568025	568128	568226
	Price	*	*	*
SPLINE BODY	Logan Part No.	CD5000	CC5002	CC5004
	Price	\$3,948	\$2,684	\$2,588
MANDREL	Logan Part No.	CD6000	CD6002	CD6004
	Price	\$3,908	\$4,008	\$4,120
MANDREL ID SEAL *	Logan Part No.	568118	568120	568220
	Price	*	*	*
MANDREL EXTENSION	Logan Part No.	CD7000	CD7002	CD7004
	Price	\$4,899	\$4,813	\$6,406
NUT	Logan Part No.	CD8000	CC8002	CC8004
	Price	\$949	\$968	\$999
NUT ID SEAL PROTECTOR RING *	Logan Part No.	8-117	8-120	8-220
	Price	*	*	*
NUT ID SEAL *	Logan Part No.	568118	568120	568220
	Price	*	*	*
NUT OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	No. Req'd	2	2	2
	Price Each	\$29	\$35	\$36
NUT OD SEAL PROTECTOR RING *	Logan Part No.	8-121	8-221	8-327
	No. Req'd	2	2	2
	Price	*	*	*
NUT OD SEAL *	Logan Part No.	568914	568221	568327
	Price	*	*	*
NUT OD OPTISEAL *	Logan Part No.	CC19000-001	CC19002-001	CC19004-001
	Price	\$47	\$60	\$47
UP PISTON	Logan Part No.	CC9000	CC9002	CC9004
	Price	\$598	\$498	\$625
DOWN PISTON	Logan Part No.	CC10000	CC10002	CC10004
	Price	\$598	\$498	\$625
FLOATER	Logan Part No.	CC11000	CC11002	CC11004
	Price	\$744	\$547	\$753
FLOATER ID NON-EXTRUSION RING	Logan Part No.	CC13000	CC13002	CC13004
	Price	\$55	\$31	\$37

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Logan Bi-Directional Coiled Tubing Jars

OUTSIDE DIAMETER - INCHES		1-11/16	2-1/8	2-7/8
INSIDE DIAMETER - INCHES		17/32	21/32	29/32
CONNECTION SIZE (BOX UP)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
CONNECTION SIZE (PIN DOWN)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
COMPLETE ASSEMBLY	Logan Part No.	616-169	616-213	616-288
	Price	\$27,869	\$22,898	\$27,869
COMPONENT PARTS				
FLOATER ID SEAL PROTECTOR RING *	Logan Part No.	8-117	8-120	8-220
	Price	*	*	*
FLOATER ID SEAL *	Logan Part No.	568911	568120	568220
	Price	*	*	*
FLOATER ID OPTISEAL *	Logan Part No.	CC19000-002	CC22002	CC22004
	Price	\$47	\$60	\$53
FLOATER OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	Price	\$29	\$35	\$36
FLOATER OD SEAL PROTECTOR RING *	Logan Part No.	8-121	8-221	8-327
	Price	*	*	*
FLOATER OD SEAL *	Logan Part No.	568914	568221	568327
	Price	*	*	*
FLOATER OD OPTISEAL *	Logan Part No.	CC19000-001	CC19002-001	CC19004-001
	Price	\$47	\$47	\$47
SPLINE	Logan Part No.	CC12000	CC12002	CC12004
	No. Req'd	2	2	4
	Price Each	\$35	\$35	\$37

* NOTE: These items are included in the Seal Kit indicated below.

REDRESS KIT	Logan Part No.	CC21000	CC21002	CC21004
Consists of:	Price	\$356	\$452	\$564
FLOATER ID NON-EXTRUSION RING	Logan Part No.	CC13000	CC13002	CC13004
	No. Req'd	1	1	1
	Price Each	\$55	\$31	\$37
PRESSURE & FLOATER BODY OD NON-EXTRUSION RING	Logan Part No.	CC14000	CC14002	CC14004
	No. Req'd	2	2	2
	Price Each	\$190	\$190	\$37
FLOATER & NUT OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	No. Req'd	3	3	3
	Price Each	\$29	\$35	\$36
SEAL KIT *	Logan Part No.	CC20000	CC20002	CC20004
	No. Req'd	1	1	1
	Price Each	\$220	\$159	\$256
SPLINE	Logan Part No.	CC12000	CC12002	CC12004
	No. Req'd	2	2	4
	Price Each	\$35	\$35	\$37

REQUIRED ACCESSORIES

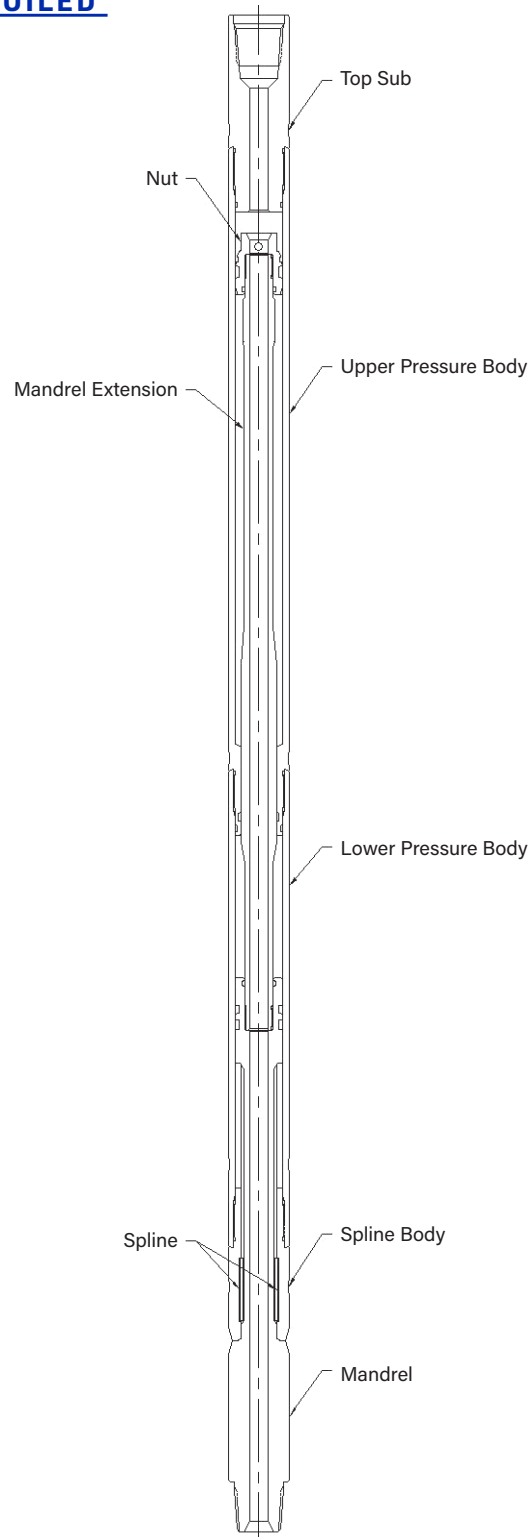
COMBINATION WRENCH SIZE		0.8125	1	1-3/8
FOR MANDREL EXTENSION - INCHES	No. Req'd	2	2	2
SIX-POINT SOCKET SIZE FOR NUT - INCHES		0.875	1-1/8	1-1/2
FLOATER ID SETTING TOOL	Logan Part No.	CC17000	CC17002	CC17004
	Price	...	...	...
FLOATER REMOVAL TOOL	Logan Part No.	CC18000	CC18002	CC18004
	Price	...	...	...
POLYPAK STRETCHER *	Logan Part No.	CD11000	CD11002	CD11004
	Price	...	...	...
POLYPAK INSTALLATION TOOL *	Logan Part No.	CD12000	CD12002	CD12004
	Price	...	...	...

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* Available upon request.

** Used for installing seals onto OD of Nut and Floater.

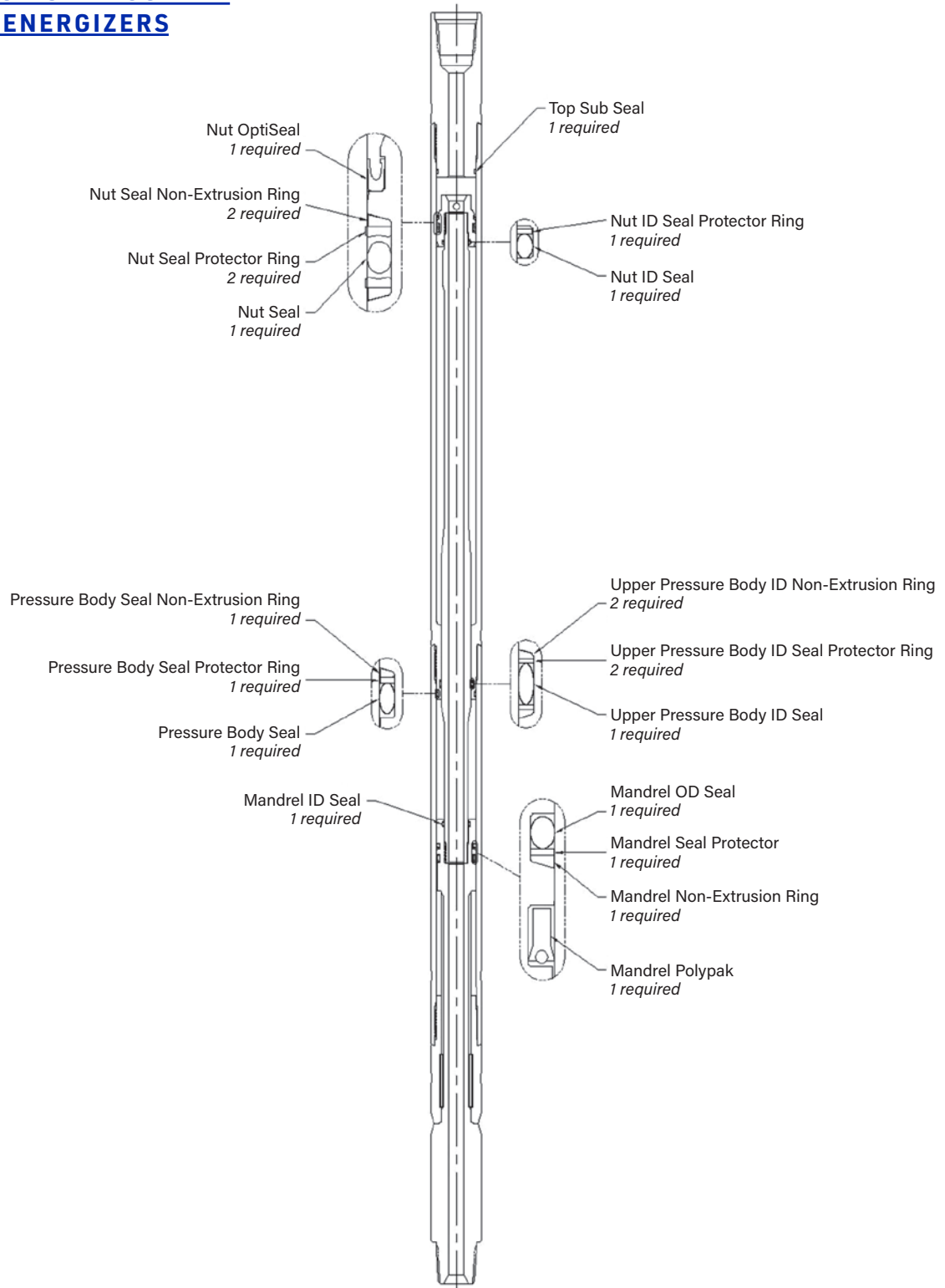
**LOGAN BI-DIRECTIONAL COILED
TUBING ENERGIZERS**



**Bi-Directional Coiled Tubing Energizer
Components**

Innovex reserves the right to change or discontinue designs without notice.

**BI-DIRECTIONAL COILED
TUBING ENERGIZERS**



**Bi-Directional Coiled Tubing Energizer
Seal Components**

Innovex reserves the right to change or discontinue designs without notice.

Logan Bi-Directional Coiled Tubing Energizers

OUTSIDE DIAMETER - INCHES		1-11/16	2-1/8	2-7/8
INSIDE DIAMETER - INCHES		9/16	21/32	29/32
CONNECTION SIZE (BOX UP)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
CONNECTION SIZE (PIN DOWN)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
COMPLETE ASSEMBLY	Logan Part No.	617-169	617-213	617-288
	Price	\$24,146	\$22,245	\$26,616
COMPONENT PARTS				
TOP SUB	Logan Part No.	CC1000	CC1002	CC1004
	Price	\$1,159	\$1,294	\$1,480
TOP SUB SEAL *	Logan Part No.	568122	568128	568226
	Price	*	*	*
UPPER PRESSURE BODY	Logan Part No.	CC2000	CC2002	CC2004
	Price	\$4,026	\$3,340	\$3,525
UPPER PRESSURE BODY NON-EXTRUSION RING	Logan Part No.	CC14000	CC14002	CC14004
	Price	\$190	\$190	\$37
UPPER PRESSURE BODY OD SEAL PROTECTOR RING *	Logan Part No.	8-025	8-128	8-226
	Price	*	*	*
UPPER PRESSURE BODY OD SEAL *	Logan Part No.	568025	568128	568226
	Price	*	*	*
UPPER PRESSURE BODY ID NON-EXTRUSION RING	Logan Part No.	CD4000	CD4002	CD4004
	No. Req'd	2	2	2
	Price Each	\$20	\$37	\$36
UPPER PRESSURE BODY ID SEAL PROTECTOR RING *	Logan Part No.	8-120	8-217	8-223
	No. Req'd	2	2	2
	Price	*	*	*
UPPER PRESSURE BODY ID SEAL *	Logan Part No.	568120	568216	568224
	Price	*	*	*
LOWER PRESSURE BODY	Logan Part No.	CD3000	CD3002	CD3004
	Price	\$3,908	\$3,615	\$4,530
SPLINE BODY	Logan Part No.	CD5000	CC5002	CC5004
	Price	\$2,290	\$2,684	\$2,588
MANDREL	Logan Part No.	CD6000	CD6002	CD6004
	Price	\$4,493	\$4,366	\$4,912
MANDREL ID SEAL *	Logan Part No.	568118	568120	568220
	Price	*	*	*
MANDREL OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	List Price	\$29	\$35	\$36
MANDREL OD SEAL PROTECTOR RING *	Logan Part No.	8-121	8-221	8-327
	List Price	*	*	*
MANDREL OD SEAL *	Logan Part No.	568914	568221	568327
	List Price	*	*	*
MANDREL OD POLYPAK *	Logan Part No.	BD209-11	BD209-13	BD209-12
	List Price	\$69	\$71	\$76
MANDREL EXTENSION	Logan Part No.	CD7000	CD7002	CD7004
	Price	\$6,107	\$4,702	\$6,814
NUT	Logan Part No.	CD8000	CC8002	CC8004
	Price	\$902	\$949	\$999
NUT ID SEAL PROTECTOR RING *	Logan Part No.	8-118	8-120	8-220
	Price	*	*	*
NUT ID SEAL *	Logan Part No.	568118	568120	568220
	Price	*	*	*
NUT OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	No. Req'd	2	2	2
	Price Each	\$29	\$35	\$36
NUT OD SEAL PROTECTOR RING	Logan Part No.	8-121	8-221	8-327
	No. Req'd	2	2	2
	Price Each	*	*	*
NUT OD SEAL	Logan Part No.	568118	568120	568220
	Price	...	...	...
NUT OD OPTISEAL *	Logan Part No.	CC19000-001	CC19002-001	CC19004-001
	Price	\$47	\$47	\$47

Innovex reserves the right to change or discontinue designs and/or prices without notice.

** These items are included in the Seal Kit indicated on Sheet 4 of 4.

Logan Bi-Directional Coiled Tubing Energizers

OUTSIDE DIAMETER - INCHES		1-11/16	2-1/8	2-7/8
INSIDE DIAMETER - INCHES		17/32	21/32	29/32
CONNECTION SIZE (BOX UP)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
CONNECTION SIZE (PIN DOWN)		1" AMMT	1-1/2 AMMT	2-3/8 PAC
COMPLETE ASSEMBLY	Logan Part No.	617-169	617-213	617-288
	Price	\$27,869	\$22,898	\$27,869

REDRESS KIT	Logan Part No.	CD10000	CD10002	CD10004
Consists of:	Price	\$407	\$353	\$427
UPPER PRESSURE BODY OD NON-EXTRUSION RING	Logan Part No.	CC14000	CC14002	CC14004
	No. Req'd	1	1	1
	Price Each	\$190	\$190	\$37
NUT & MANDREL OD NON-EXTRUSION RING	Logan Part No.	CC15000	CC15002	CC15004
	No. Req'd	2	2	2
	Price Each	\$29	\$35	\$36
UPPER PRESSURE ID NON-EXTRUSION RING	Logan Part No.	CD4000	CD4002	CD4004
	No. Req'd	3	3	3
	Price Each	17	31	30
SEAL KIT	Logan Part No.	CD9000	CD9002	CD9004
	No. Req'd	1	1	1
	Price Each	\$101	\$132	\$83
SPLINE	Logan Part No.	CC12000	CC12002	CC12004
	No. Req'd	2	2	4
	Price Each	\$35	\$35	\$37

REQUIRED ACCESSORIES

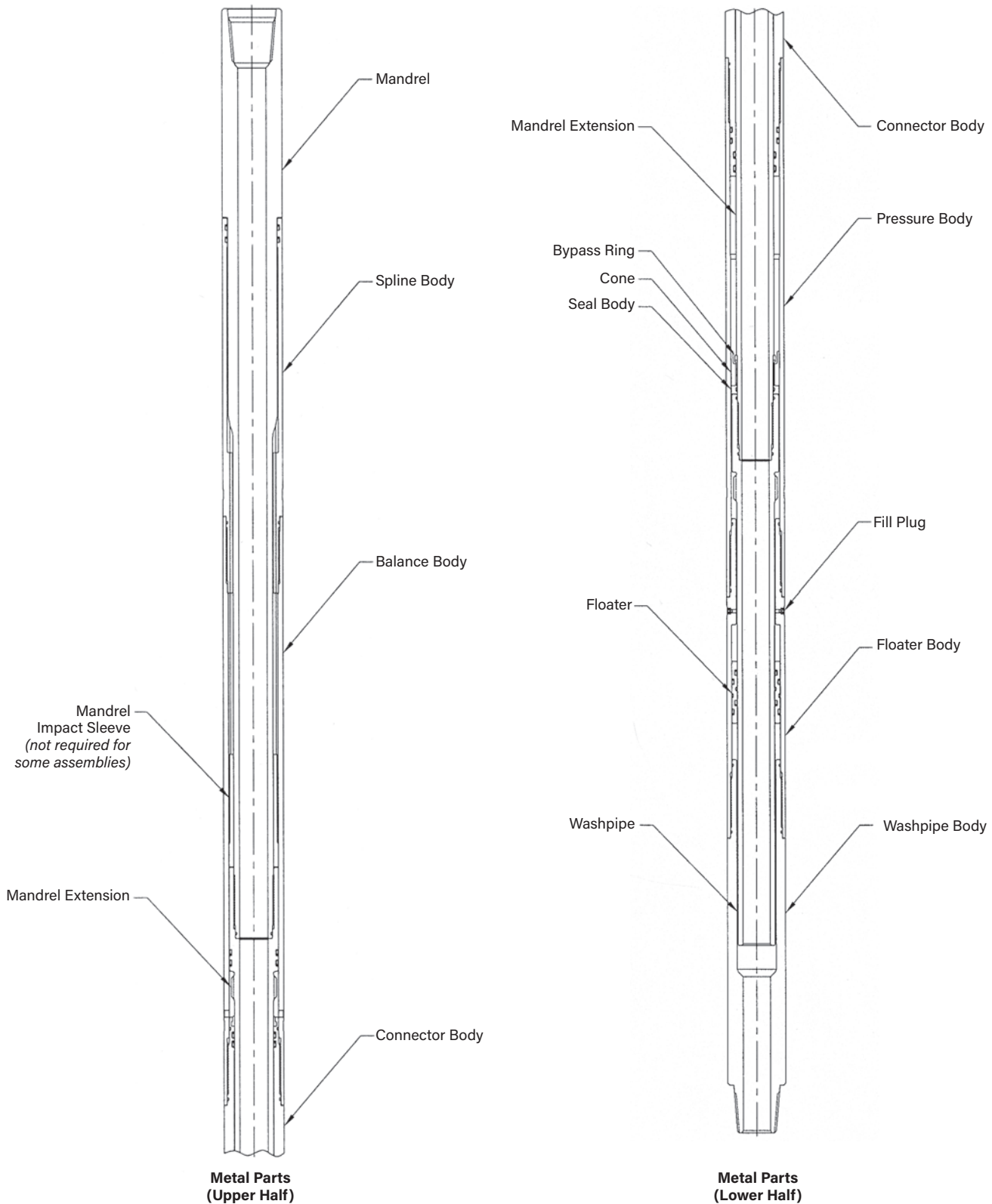
COMBINATION WRENCH SIZE		13/16	1	1-3/8
FOR MANDREL EXTENSION - INCHES	No. Req'd	2	2	2
SIX-POINT SOCKET SIZE FOR NUT - INCHES		7/8	1-1/8	1-1/2
FLOATER REMOVAL TOOL *	Logan Part No.	CC18000	CC18002	CC18004
	Price	...	...	...
POLYPAK STRETCHER	Logan Part No.	CD11000	CD11002	CD11004
	Price	...	...	...
POLYPAK INSTALLATION TOOL	Logan Part No.	CD12000	CD12002	CD12004
	Price	...	...	...
UPPER PRESSURE BODY SETTING TOOL	Logan Part No.	CD13000	CD13002	CD13004
	Price	...	...	...
SAFETY SUB	Logan Part No.	CD15000	CD15002	CD15004
	Price	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

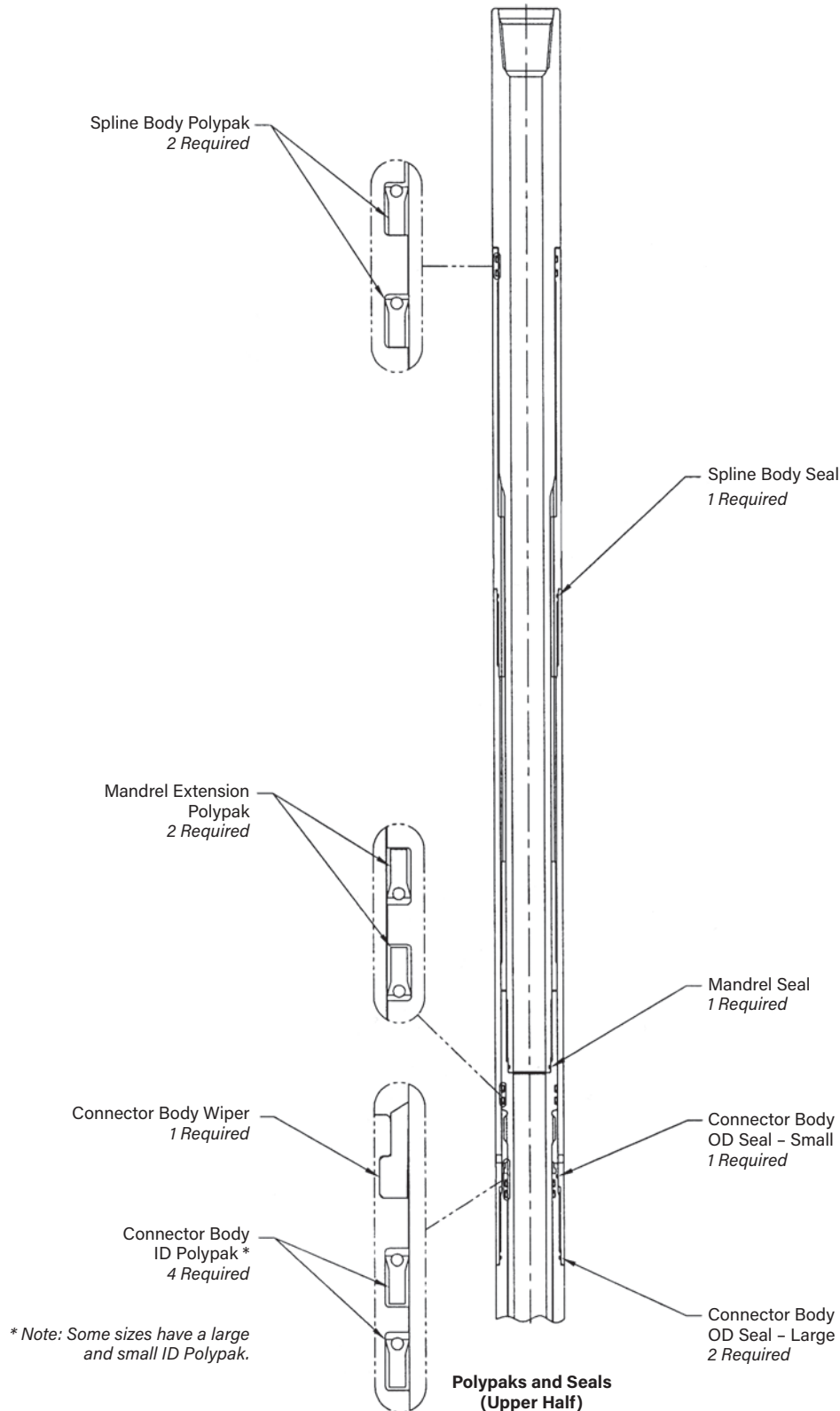
* Available upon request.

** Used for removing Nut from Upper Pressure Body.

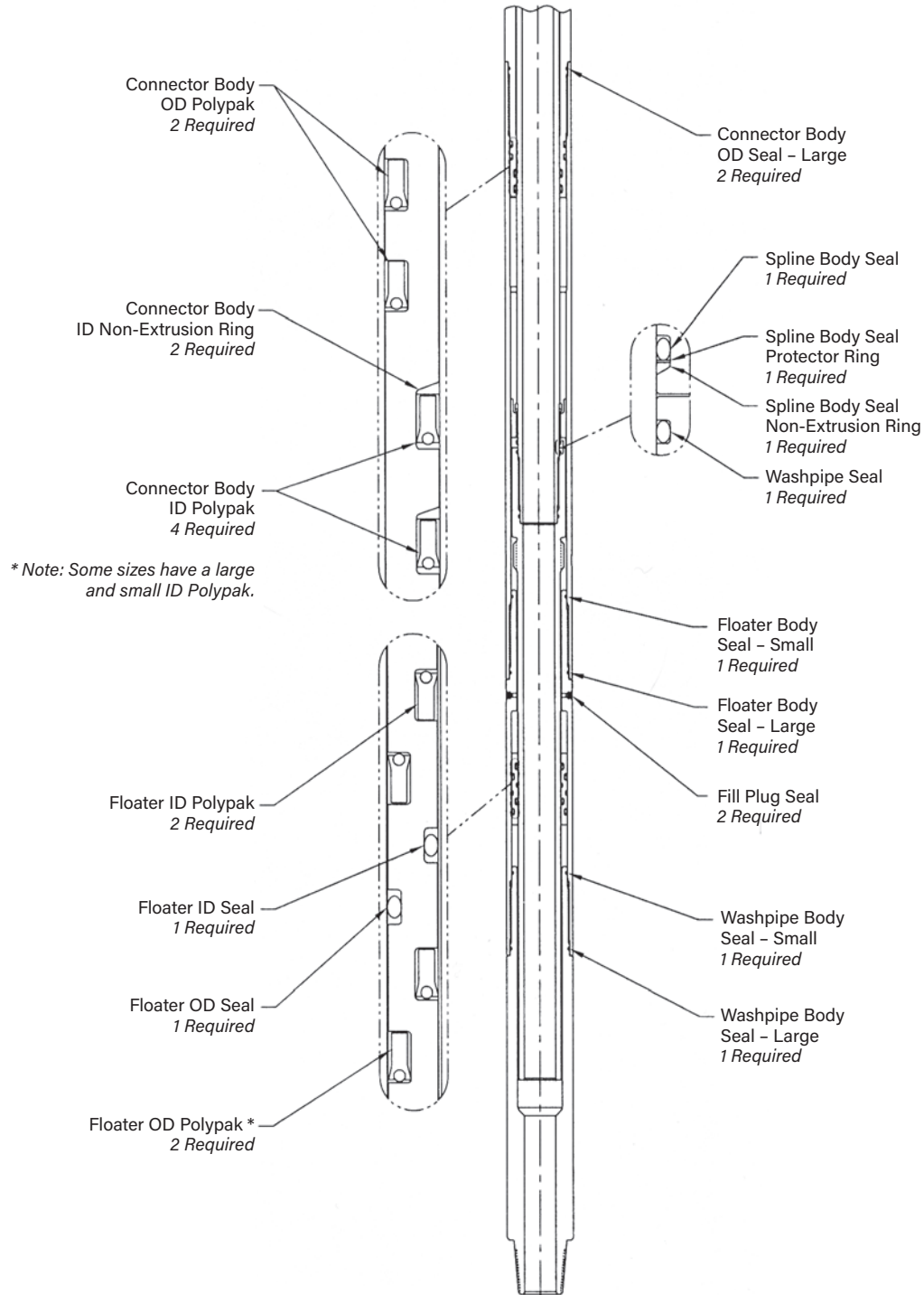
LOGAN SUPERIOR HYDRAULIC FISHING JARS



LOGAN SUPERIOR HYDRAULIC FISHING JARS



LOGAN SUPERIOR HYDRAULIC FISHING JARS



**Polypaks and Seals
(Lower Half)**

Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		1-13/16 WFJ	2-3/8 EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 Reg	2-3/8 EUE
OUTSIDE DIAMETER — INCHES		1-13/16	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAMETER — INCHES		5/16	1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	Logan Part No.	611-181	611-306	611-312-001	611-313 -001	611-375 -001	611-377	611-376
	Price	*	\$29,064	\$31,064	\$31,064	\$32,249	\$32,249	\$32,249
COMPONENTS								
MANDREL	Logan Part No.	BD1000	BD15	BD10	BD15	BD11	BD11	BD18
	Price	*	\$3,911	\$2,874	\$3,954	\$3,815	\$3,815	\$3,567
MANDREL SEAL	Logan Part No.	...	...	...	...	568225	568225	...
	No. Req'd	...	...	...	...	1	1	...
	Price	...	...	...	...	\$3	\$3	...
MANDREL EXTENSION	Logan Part No.	BD2000	BD25	BD20	BD25	BD21	BD21	BD28
	Price	*	\$2,923	\$2,969	\$2,923	\$3,362	\$3,362	\$1,280
MANDREL EXTENSION SEAL	Logan Part No.	568020	568225	568224	568225	...	...	568229
	No. Req'd	1	1	1	1	...	...	1
	Price	\$3	\$3	\$3	\$3	...	...	\$3
MANDREL EXTENSION POLYPAK	Logan Part No.	...	BD205-2	BD205-2	BD205-2	BD201-2	BD201-2	AQ29003
	No. Req'd	...	1	2	1	2	2	2
	Price	...	\$20	\$20	\$20	\$16	\$16	\$22
MANDREL EXTENSION WIPER	Logan Part No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL IMPACT SLEEVE	Logan Part No.	...	BD35	BD30-001	BD35-002	...	...	...
	Price	...	\$232	\$386	\$268	...	...	...
SPLINE BODY	Logan Part No.	BD4000	BD45	BD40-001	BD45-001	BD41-001	BD41-001	BD48
	Price	*	\$3,326	\$3,314	\$5,047	\$3,847	\$3,847	\$2,713
SPLINE BODY SEAL	Logan Part No.	568219	568230	568230	568230	568234	568234	568235
	No. Req'd	1	1	1	1	1	1	1
	Price	\$3	\$3	\$3	\$3	\$4	\$4	\$4
SPLINE BODY POLYPAK	Logan Part No.	...	BD205-1	BD205-1	BD205-1	BD202-3	BD202-3	BX144-3
	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$19	\$19	\$19	\$19	\$19	\$13
BALANCE BODY	Logan Part No.	...	BD55	BD50-001	BD55-003	BD51-001	BD51-001	BD58
	Price	...	\$4,275	\$3,494	\$4,275	\$3,992	\$3,992	\$4,876
CONNECTOR BODY	Logan Part No.	...	BD65	BD60-001	BD65-003	BD61-001	BD61-001	BD68
	Price	...	\$2,009	\$1,663	\$3,242	\$2,479	\$2,479	\$4,745
CONNECTOR BODY SEAL (LARGE)	Logan Part No.	...	568230	568230	568230	568234	568234	568235
	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$3	\$3	\$3	\$4	\$4	\$4
CONNECTOR BODY SEAL (SMALL)	Logan Part No.	...	568228	568228	568228	568232	568232	568233
	No. Req'd	...	2	2	2	1	1	1
	Price	...	\$3	\$3	\$3	\$3	\$3	\$4
CONNECTOR BODY WIPER	Logan Part No.	...	...	...	...	BD71-001	BD71-001	BD78
	Price	...	...	...	...	\$35	\$35	\$36
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No.	...	BD205-3	BD200-3	BD205-3	BD201-3	BD201-3	BD208-3
	No. Req'd	...	3	3	3	4	4	4
	Price	...	\$34	\$16	\$34	\$15	\$15	\$16
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
CONNECTOR BODY OD POLYPAK	Logan Part No.	...	...	...	...	AQ29003	AQ29003	AQ29003
	No. Req'd	...	...	...	...	2	2	2
	Price	...	...	...	...	\$22	\$22	\$22

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, Floater Body, and Washpipe Body.

Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		1-13/16 WFJ	2-3/8 EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 Reg	2-3/8 EUE
OUTSIDE DIAMETER — INCHES		1-13/16	3-1/16	3 -1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAMETER — INCHES		5/16	1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8
COMPLETE ASSEMBLY	Logan Part No.	611-181	611-306	611-312-001	611-313 -001	611-375-001	611-377	611-376
COMPONENTS								
CONNECTOR BODY	Logan Part No.	...	8-228	8-228	8-228	L375-34	L375-34	L375-36
SEAL PROTECTOR RING	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$4	\$4	\$4	\$18	\$18	\$18
CONNECTOR BODY ID	Logan Part No.	...	L365-32	L365-30	L365-32	BD231-001	BD231-001	L365-36
NON-EXTRUSION RING	No. Req'd	...	1	2	1	2	2	2
	Price	...	\$138	\$44	\$138	\$125	\$125	\$37
CONNECTOR BODY ID	Logan Part No.	*	*	AG1000-3013	*	*	*	*
NON-EXTRUSION RING	Price	*	*	\$902	*	*	*	*
SETTING TOOL								
CONNECTOR BODY OD	Logan Part No.	...	...	BD240-001	...	...	...	...
NON-EXTRUSION RING	No. Req'd	...	...	1	...	...	...	...
(LARGE)	Price	...	...	\$25	...	...	...	...
CONNECTOR BODY OD	Logan Part No.	...	L366-33.5	BD250-001	L366-33.5	...	...	...
NON-EXTRUSION RING	No. Req'd	...	2	1	2	...	...	...
(SMALL)	Price	...	\$44	\$125	\$44	...	...	...
PRESSURE BODY	Logan Part No.	BD8000	BD85	BD80-001	BD85-003	BD81-001	BD81-001	BD88
	Price	*	\$2,697	\$3,627	\$3,140	\$3,466	\$3,466	\$4,125
FLOATER BODY	Logan Part No.	...	BD95	BD90-001	BD95-003	BD91-001	BD91-001	BD98
	Price	...	\$2,859	\$2,569	\$2,731	\$3,222	\$3,222	\$3,536
FLOATER BODY SEAL	Logan Part No.	...	568230	568230	568230	568234	568234	568235
(LARGE)	No. Req'd	...	1	1	1	1	1	1
	Price	...	\$3	\$3	\$3	\$4	\$4	\$4
FLOATER BODY SEAL	Logan Part No.	...	568228	568228	568228	568232	568232	568233
(SMALL)	No. Req'd	...	1	1	1	1	1	1
	Price	...	\$3	\$3	\$3	\$3	\$3	\$4
FLOATER BODY	Logan Part No.	...	AG10002	AG10002	AG10002	AG10002	AG10002	AG10002
FILL PLUG	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$17	\$20	\$20	\$20	\$20	\$20
FLOATER BODY	Logan Part No.	...	568006	568006	568006	568006	568006	568006
FILL PLUG SEAL	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$2	\$2	\$2	\$2	\$2	\$2
FLOATER	Logan Part No.	BD1100	BD115	BD110-001	BD115-002	BD111-001	BD111-001	BD118
	Price	*	\$269	\$360	\$309	\$725	\$725	\$475
FLOATER SEAL	Logan Part No.	568123	568228	568228	568228	568232	568232	568233
(LARGE)	No. Req'd	3	3	1	3	1	1	1
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$4
FLOATER SEAL	Logan Part No.	568120	568226	568224	568226	568228	568230	568230
(SMALL)	No. Req'd	4	3	1	3	1	1	1
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
FLOATER OD	Logan Part No.	...	...	BD200-4	...	BD201-2	BD201-2	AQ29003
POLYPAK	No. Req'd	...	...	2	...	2	2	2
	Price	...	...	\$17	...	\$16	\$16	\$22
FLOATER ID	Logan Part No.	...	...	BD200-3	...	BD201-3	BD201-3	BD208-3
POLYPAK	No. Req'd	...	...	2	...	2	2	2
	Price	...	...	\$16	...	\$15	\$15	\$16
FLOATER OD	Logan Part No.	...	...	...	...	8-232	8-232	...
PARBAK RING	No. Req'd	...	...	...	...	1	1	...
	Price	...	...	...	...	\$2	\$2	...
FLOATER ID	Logan Part No.	...	8-226	...	8-226	8-228	8-228	...
PARBAK RING	No. Req'd	...	3	...	3	1	1	...
	Price	...	\$2	...	\$2	\$4	\$4	...
FLOATER	Logan Part No.	...	BD295	BD290	BD295	BD291	BD291	BD298
POSITIONING TOOL	Price	...	\$1,145	\$1,544	\$1,145	\$1,080	\$1,080	\$881

Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		1-13/16 WFJ	2-3/8 EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 Reg	2-3/8 EUE
OUTSIDE DIAMETER — INCHES		1-13/16	3-1/16	3 -1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAMETER — INCHES		5/16	1-1/2	1	1-1/4	1-1/2	1-1/2	1-7/8
COMPLETE ASSEMBLY	Logan Part No.	611-181	611-306	611-312	611-313-001	611-375-001	611-377	611-376
COMPONENTS								
SEAL BODY	Logan Part No.	BD1200	BD125	BD120-001	BD125-002	BD121-001	BD121-001	BD128
	Price	*	\$746	\$771	\$999	\$883	\$883	\$760
SEAL BODY SEAL	Logan Part No.	568020	568225	568130	568225	568227	568227	568143
	No. Req'd	1	1	1	1	1	1	1
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$4
NON-EXTRUSION RING	Logan Part No.	...	BD265-001	BD260-001	BD265-001	L370-5	L370-5	BD268
	No. Req'd	...	1	1	1	1	1	1
	Price	...	\$29	\$112	\$76	\$131	\$131	\$17
SEAL PROTECTOR RING	Logan Part No.	...	BD285-001	8-130	BD285-001	8-227	8-227	8-143
	No. Req'd	...	1	1	1	1	1	1
	Price	...	\$20	\$2	\$25	\$2	\$2	\$2
SETTING TOOL	Logan Part No.	AG1000-19	AG1000-30.25	AG1000-29.25	AG1000-30.25	AG1000-33.5	AG1000-33.5	AG1000-35.5
	Price	*	\$903	\$902	\$902	\$902	\$902	\$927
CONE	Logan Part No.	BD1300	BD135	BD130-001	BD135-001	BD131-001	BD131-001	BD138
	Price	...	\$765	\$1,707	\$824	\$1,707	\$1,707	\$1,018
BYPASS RING	Logan Part No.	...	BD155	BD150-001	BD155-001	BD151-001	BD151-001	BD158
	Price	...	\$139	\$258	\$190	\$262	\$262	\$351
WASHPIPE	Logan Part No.	BD1600	BD165	BD160-002	BD165	BD161-003	BD161-003	BD168
	Price	*	\$1,473	\$2,962	\$1,473	\$3,091	\$3,091	\$2,322
WASHPIPE SEAL (LARGE)	Logan Part No.	568020	...	568130	...	568227	568227	568143
	No. Req'd	1	...	1	...	1	1	1
	Price	\$3	...	\$3	...	\$3	\$3	\$4
WASHPIPE SEAL (SMALL)	Logan Part No.	...	568224	568221	568224	568225	568225	568228
	No. Req'd	...	1	1	1	1	1	1
	Price	...	\$3	\$3	\$3	\$3	\$3	\$3
WASHPIPE BODY	Logan Part No.	BD1700	BD170	BD170-001	BD175-003	BD171-001	BD171-001	BD178
	Price	*	\$1,577	\$1,814	\$2,042	\$2,886	\$2,886	\$3,639
WASHPIPE BODY SEAL (LARGE)	Logan Part No.	568219	568230	568230	568230	568234	568234	568235
	No. Req'd	1	1	1	1	1	1	1
	Price	\$3	\$3	\$3	\$3	\$4	\$4	\$4
WASHPIPE BODY SEAL (SMALL)	Logan Part No.	568027	568228	568228	568228	568232	568232	568233
	No. Req'd	1	1	1	1	1	1	1
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$4
REDRESS KITS ***	Logan Part No.	...	BD185	BD180	BD185	BD181	BD181	BD188
	Price	...	\$206	\$198	\$206	\$293	\$293	\$268
COMPLETE O-RING KIT	Logan Part No.	BD1900	BD195	BD190-001	BD195-002	BD191-001	BD191-001	BD198
	Price	*	\$35	\$17	\$55	\$29	\$29	\$26
COMPLETE POLYPAK KIT	Logan Part No.	BD5000	BD205	BD200	BD205	BD201	BD201	BD208
	Price	*	\$92	\$170	\$92	\$148	\$148	\$224
<i>Consists of:</i>								
SPLINE BODY POLYPAK	Logan Part No.	...	BD205-1	BD205-1	BD205-1	BD202-3	BD202-3	BX144-3
	No. Req'd	...	2	2	2	2	2	2
	Price	...	\$16	\$16	\$19	\$19	\$19	\$13
MANDREL EXTENSION POLYPAK	Logan Part No.	...	BD205-2	BD205-2	BD205-2	BD201-2	BD201-2	AQ29003
	No. Req'd	...	1	2	1	2	2	2
	Price	...	\$17	\$17	\$20	\$16	\$16	\$22
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No.	...	BD205-3	BD200-3	BD205-3	BD201-3	BD201-3	BD208-3
	No. Req'd	...	3	3	3	4	4	4
	Price	...	\$34	\$16	\$39	\$15	\$15	\$16
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

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 * Available upon request.

Special Notes:
 (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, Floater Body, and Washpipe Body.

Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		1-13/16 WFJ	2-3/8 EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 Reg	2-3/8 EUE
OUTSIDE DIAMETER — INCHES		1-13/16	3-1/16	3 -1/8	3-1/8	3-3/4	3-3/4	3-3/4
INSIDE DIAMETER — INCHES		5/16	1-1/2	1	1-1/4	1-1/2	1-1/2	1-7/8
COMPLETE ASSEMBLY Logan Part No.		611-181	611-306	611-312	611-313-001	611-375-001	611-377	611-376
COMPONENTS								
CONNECTOR BODY OD POLYPAK	Logan Part No.	...	...	...	...	AQ29003	AQ29003	AQ29003
	No. Req'd	...	...	...	...	2	2	2
	Price	...	...	...	...	\$22	\$22	\$22
FLOATER OD POLYPAK	Logan Part No.	...	...	BD200-4	...	BD201-2	BD201-2	AQ29003
	No. Req'd	...	...	2	...	2	2	2
	Price	...	...	\$17	...	\$16	\$16	\$22
FLOATER ID POLYPAK	Logan Part No.	...	...	BD200-3	...	BD201-3	BD201-3	BD208-3
	No. Req'd	...	...	2	...	2	2	2
	Price	...	...	\$16	...	\$15	\$15	\$16
MANDREL EXTENSION ASSEMBLY SLEEVE †	Logan Part No.	...	BD205-6	BD200-6	BD205-6	BD201-6	BD201-6	BD208-6
	No. Req'd	...	1	2	1	1	1	1
	Price	...	\$388	\$337	\$388	\$504	\$504	\$231
JAR LUBE		Logan Part No.	49844-A	49844-B	49844-C			
		Price	1 Gallon \$57	5 Gallons \$278	20 Gallons \$1,656	55 Gallons \$3,046		

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** Available upon request.*

**** Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.*

† Mandrel Extension Assembly Sleeve is not included in the Redress Kit. Must be purchased separately.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, Floater Body, and Washpipe Body.

Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	4-1/2 API IF	5-1/2 API Reg	5-1/2 API Reg	
OUTSIDE DIAMETER — INCHES		4-1/4	4-1/2	4-3/4	6-1/4	6-3/4	7-3/4	
INSIDE DIAMETER — INCHES		2	2-3/8	2-1/4	2-1/4	2-3/4	3-1/16	
COMPLETE ASSEMBLY	Logan Part No.	611-425-001	611-450	611-475-002	611-625	611-675	611-775	
	Price	\$34,512	\$42,912	\$39,629	\$52,586	\$53,763	\$67,238	
COMPONENTS								
MANDREL	Logan Part No.	BD16-001	BD19	BD12-002	BD13	BD14		
	Price	\$5,044	\$5,634	\$6,694	\$7,475	*	\$10,937	
MANDREL SEAL	Logan Part No.	568229	568238	568232	568236	*	568348	
	No. Req'd	1	1	1	1	*	1	
	Price	\$3	\$4	\$3	\$4	*	\$10	
MANDREL EXTENSION	Logan Part No.	BD26-001	BD29	BD22-002	BD23	BD27	BD24	
	Price	\$3,735	\$3,863	\$3,332	\$4,489	*	\$7,389	
MANDREL EXTENSION SEAL	Logan Part No.	...	...	...	568234	*	568341	
	No. Req'd	...	...	...	1	*	1	
	Price	...	...	...	\$4	*	\$6	
MANDREL EXTENSION POLYPAK	Logan Part No.	BX144-3	BD209-2	BD202-2	BD203-2	*	BD204-2	
	No. Req'd.	2	2	2	2	...	2	
	Price	\$13	\$19	\$20	\$34	*	\$58	
MANDREL EXTENSION WIPER	Logan Part No.	...	...	...	BD223	*	BD224	
	No. Req'd	...	...	...	...	*	1	
	Price	...	...	...	\$28	*	\$32	
MANDREL IMPACT SLEEVE	Logan Part No.	...	...	BD32-001	...	BD37	...	
	Price	...	...	\$660	...	*	...	
SPLINE BODY	Logan Part No.	BD46-001	BD49	BD42-002	BD43	BD47	BD44	
	Price	\$3,692	\$5,085	\$4,056	\$4,529	*	\$8,989	
SPLINE BODY SEAL	Logan Part No.	568238	568240	568242	568250	*	568362	
	No. Req'd	1	1	1	1	*	1	
	Price	\$4	\$6	\$6	\$6	*	\$15	
SPLINE BODY POLYPAK	Logan Part No.	BD202-2	BD209-1	BD202-1	BD203-1	*	BD204-1	
	No. Req'd	2	2	2	2	*	2	
	Price	\$20	\$20	\$27	\$39	*	\$60	
BALANCE BODY	Logan Part No.	BD56-001	BD59	BD52-002	BD53	BD57	BD54	
	Price	\$3,235	\$3,810	\$4,423	\$4,640	*	\$8,073	
CONNECTOR BODY	Logan Part No.	BD66-001	BD69	BD62-002	BD63	BD67	BD64	
	Price	\$2,825	*	\$2,479	\$3,258	*	\$6,561	
CONNECTOR BODY SEAL (LARGE)	Logan Part No.	568238	568240	568242	568253	*	568362	
	No. Req'd	2	2	2	2	*	2	
	Price	\$4	\$6	\$6	\$13	*	\$15	
CONNECTOR BODY SEAL (SMALL)	Logan Part No.	568236	568239	568239	568250	*	568361	
	No. Req'd	1	1	1	1	*	1	
	Price	\$4	\$4	\$4	\$10	*	\$15	
CONNECTOR BODY WIPER	Logan Part No.	BD76-001	BD79	BD72-001	BD73	BD77	BD74	
	Price	\$34	\$34	\$38	\$28	*	\$32	
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No.	AQ29003	BX144-3	BD202-3	BD203-3	*	...	
	No. Req'd	4	4	2	4	*	...	
	Price	\$22	\$13	\$19	\$26	*	...	
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No.	...	...	BD202-4	...	*	BD204-3	
	No. Req'd	...	...	2	...	*	4	
	Price	...	...	\$25	...	*	\$35	

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Special Notes:

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Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-7/8 API IF	2-7/8 EUE IF	3-1/2 API IF	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	
OUTSIDE DIAMETER — INCHES		4-1/4	4-1/2	4-3/4	6-1/4	6-3/4	7-3/4	
INSIDE DIAMETER — INCHES		2	2-3/8	2-1/4	2-1/4	2-3/4	3-1/16	
COMPLETE ASSEMBLY	Logan Part No.	611-425-001	611-450	611-475-002	611-625	611-675	611-775	
COMPONENTS								
CONNECTOR BODY OD POLYPAK	Logan Part No.	BX144-3	BD209-4	BD202-5	BD203-5	**	BD204-2	
	No. Req'd	2	2	2	2	*	2	
	Price	\$16	\$32	\$22	\$35	*	\$58	
CONNECTOR BODY SEAL PROTECTOR RING	Logan Part No.	...	L375-41	...	...	*	BD274	
	No. Req'd	...	2	...	...	*	2	
	Price	...	\$11	...	\$18	*	\$29	
CONNECTOR BODY ID NON-EXTRUSION RING	Logan Part No.	BD236-001	L365-41	BD232-001	BD233	*	BD234	
	No. Req'd	2	2	2	2	*	2	
	Price	\$32	\$38	\$170	\$36	*	\$41	
CONNECTOR BODY ID NON-EXTRUSION RING SETTING TOOL	Logan Part No.	*	*	AG1000-40	*	*	AG1000-52	
	Price	*	*	\$961	*	*	\$1,081	
CONNECTOR BODY OD NON-EXTRUSION RING (LARGE)	Logan Part No.	...	...	...	...	*	...	
	No. Req'd	...	...	...	...	*	...	
	Price	...	...	...	...	*	...	
CONNECTOR BODY OD NON-EXTRUSION RING (SMALL)	Logan Part No.	...	...	...	...	**	...	
	No. Req'd	...	...	...	...	...	...	
	Price	...	...	...	...	*	...	
PRESSURE BODY	Logan Part No.	BD86-001	BD89	BD82-002	BD83	BD87	BD84	
	Price	\$4,002	\$4,418	\$3,853	\$5,088	*	\$9,530	
FLOATER BODY	Logan Part No.	BD96-001	BD99	BD92-002	BD93	BD97	BD94	
	Price	\$3,618	\$4,719	\$3,311	\$3,786	*	\$6,328	
FLOATER BODY SEAL (LARGE)	Logan Part No.	568238	568240	568242	568253	**	568362	
	No. Req'd	1	1	1	1	...	1	
	Price	\$4	\$6	\$6	\$12	*	\$15	
FLOATER BODY SEAL (SMALL)	Logan Part No.	568236	568238	568239	568250	**	568361	
	No. Req'd	1	1	1	1	...	1	
	Price	\$4	\$4	\$53	\$4	*	\$15	
FLOATER BODY FILL PLUG	Logan Part No.	AG10002	AG10002	AG10002	AG10002	**	AG10002	
	No. Req'd	2	2	2	2	...	2	
	Price	\$20	\$20	\$20	\$20	*	\$20	
FLOATER BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568006	568006	**	568006	
	No. Req'd	2	2	2	2	...	2	
	Price	\$2	\$2	\$2	\$2	*	\$2	
FLOATER	Logan Part No.	BD116-001	BD119	BD112-001	BD113	BD117	BD114	
	Price	\$353	\$1,160	\$371	\$689	*	\$1,170	
FLOATER SEAL (LARGE)	Logan Part No.	568236	568238	568341	568351	**	568361	
	No. Req'd	1	1	1	1	...	1	
	Price	\$4	\$4	\$4	\$10	*	\$15	
FLOATER SEAL (SMALL)	Logan Part No.	568232	568235	568337	268-343	**	568349	
	No. Req'd	1	1	1	1	...	1	
	Price	\$3	\$3	\$3	\$3	*	\$10	
FLOATER OD POLYPAK	Logan Part No.	BX144-3	BD209-2	BD202-2	BD203-2	**	BD204-4	
	No. Req'd	2	2	2	2	...	2	
	Price	\$16	\$19	\$20	\$34	*	\$67	
FLOATER ID POLYPAK	Logan Part No.	AQ29003	BX144-3	BD202-3	BD203-3	**	BD204-3	
	No. Req'd	2	2	2	2	...	2	
	Price	\$22	\$13	\$19	\$26	*	\$35	

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Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	
OUTSIDE DIAMETER — INCHES		4-1/4	4-1/2	4-3/4	6-1/4	6-3/4	7-3/4	
INSIDE DIAMETER — INCHES		2	2-3/8	2-1/4	2-1/4	2-3/4	3-1/16	
COMPLETE ASSEMBLY	Logan Part No.	611-425-001	611-450	611-475-002	611-625	611-675	611-775	
COMPONENTS								
FLOATER OD	Logan Part No.	...	...	...	...	*	...	
PARBAK RING	No. Req'd	...	...	...	...	*	...	
	Price	...	...	...	...	*	...	
FLOATER ID	Logan Part No.	...	...	...	...	*	...	
PARBAK RING	No. Req'd	...	...	...	...	*	...	
	Price	...	...	...	...	*	...	
FLOATER	Logan Part No.	BD296	BD299	BD292	BD293	BD297	BD294	
POSITIONING TOOL	Price	\$1,444	\$2,178	\$1,552	\$1,667	*	\$3,006	
SEAL BODY	Logan Part No.	BD126-002	BD129	BD122-001	BD123	BD127	BD124	
	Price	\$840	\$1,561	\$840	\$801	*	\$1,362	
SEAL BODY SEAL	Logan Part No.	568231	568234	568234	568341	*	568347	
	No. Req'd	1	1	1	1	*	1	
	Price	\$3	\$4	\$4	\$6	*	\$10	
NON-EXTRUSION RING	Logan Part No.	L370-9	L370-12	L370-12	L365-44	*	BD264	
	No. Req'd	1	1	1	1	...	1	
	Price	\$46	\$26	\$78	\$37	*	\$37	
SEAL	Logan Part No.	L376-9	L376-12	L388-12	L375-44	**	BD284	
PROTECTOR RING	No. Req'd	1	1	1	1	...	1	
	Price	\$18	\$10	\$12	\$21	*	\$26	
SETTING TOOL	Logan Part No.	AG1000-37	AG1000-38	AG1000-40	AG1000-44	*	AG1000-50	
	Price	\$902	\$902	\$961	\$1,081	*	\$1,081	
CONE	Logan Part No.	BD136-001	BD139	BD132-001	BD133	BD137	BD134	
	Price	\$1,650	\$2,066	\$1,537	\$2,023	*	\$2,488	
BYPASS RING	Logan Part No.	BD156-001	BD159	BD152-002	BD153	BD157	BD154	
	Price	\$277	\$756	\$1,508	\$288	...	\$488	
WASHPIPE	Logan Part No.	BD166-002	BD169	BD162-002	BD163	BD167	BD164	
	Price	\$4,189	\$3,773	\$4,379	\$2,502	*	\$4,649	
WASHPIPE SEAL	Logan Part No.	568231	568234	568234	568238	*	568347	
(LARGE)	No. Req'd	1	1	1	1	*	1	
	Price	\$3	\$4	\$4	\$4	*	\$10	
WASHPIPE SEAL	Logan Part No.	568229	569-232	568232	...	*	...	
(SMALL)	No. Req'd	1	1	1	...	*	...	
	Price	\$3	\$3	\$3	...	*	...	
WASHPIPE BODY	Logan Part No.	BD176-001	BD179	BD172-002	BD173	BD177	BD174	
	Price	\$2,754	\$2,518	\$2,414	\$2,970	*	\$5,882	
WASHPIPE BODY SEAL	Logan Part No.	568238	568240	568242	568253	*	568362	
(LARGE)	No. Req'd	1	1	1	1	*	1	
	Price	\$4	\$6	\$6	\$13	*	\$15	
WASHPIPE BODY SEAL	Logan Part No.	568236	568238	568239	568250	*	568361	
(SMALL)	No. Req'd	1	1	1	1	*	1	
	Price	\$4	\$4	\$4	\$10	*	\$15	

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Logan Superior Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	
OUTSIDE DIAMETER — INCHES		4-1/4	4-1/2	4-3/4	6-1/4	6-3/4	7-3/4	
INSIDE DIAMETER — INCHES		2	2-3/8	2-1/4	2-1/4	2-3/4	3-1/16	
COMPLETE ASSEMBLY Logan Part No.		611-425-001	611-450	611-475-002	611-625	611-675	611-775	
COMPONENTS								
REDRESS KITS *	Logan Part No.	BD186	BD189	BD182	BD183	BD187	BD184	
	Price	\$256	\$295	\$342	\$542	*	\$834	
COMPLETE O-RING KIT	Logan Part No.	BD196-001	BD199	BD192-002	BD193	BD197	BD194	
	Price	\$35	\$31	\$48	\$44	*	\$63	
COMPLETE POLYPAK KIT	Logan Part No.	BD206	BD209	BD202	BD203	BD207	BD204	
	Price	\$205	\$274	\$260	\$544	*	*	
<i>Consists of:</i>								
SPLINE BODY POLYPAK	Logan Part No.	BD202-2	BD209-1	BD202-1	BD203-1	**	BD204-1	
	No. Req'd	2	2	2	2	...	2	
	Price	\$20	\$20	\$27	\$39	*	\$60	
MANDREL EXTENSION POLYPAK	Logan Part No.	BX144-3	BD209-2	BD202-2	BD203-2	**	BD204-2	
	No. Req'd	2	2	2	2	...	2	
	Price	\$16	\$19	\$20	\$34	*	\$58	
CONNECTOR BODY ID POLYPAK (SMALL)	Logan Part No.	AQ29003	BX144-3	BD202-3	BD203-3	**	BD204-3	
	No. Req'd	4	4	2	4	...	4	
	Price	\$22	\$13	\$19	\$26	*	\$35	
CONNECTOR BODY ID POLYPAK (LARGE)	Logan Part No.	...	...	BD202-4	...	*	...	
	No. Req'd	...	...	2	...	*	...	
	Price	...	...	\$25	...	*	...	
CONNECTOR BODY OD POLYPAK	Logan Part No.	BX144-3	BD209-4	BD202-5	BD203-5	*	BD204-2	
	No. Req'd	2	2	2	2	*	2	
	Price	\$16	\$32	\$22	\$35	*	\$58	
FLOATER OD POLYPAK	Logan Part No.	BX144-3	BD209-2	BD202-2	BD203-2	*	BD204-4	
	No. Req'd	2	2	2	2	*	2	
	Price	\$16	\$19	\$20	\$34	*	\$67	
FLOATER ID POLYPAK	Logan Part No.	AQ29003	BX144-3	BD202-3	BD203-3	*	BD204-3	
	No. Req'd	2	2	2	2	*	2	
	Price	\$22	\$13	\$19	\$26	*	\$35	
MANDREL EXTENSION ASSEMBLY SLEEVE †	Logan Part No.	BD206-6	BD209-6	BD202-6	BD203-6	*	BD204-6	
	No. Req'd	1	1	2	1	*	1	
	Price	\$504	*	\$466	\$1,817	*	\$396	
JAR LUBE	Logan Part No.	49844A	49844B	49844C	49844D			
		1 Gallon	5 Gallons	20 Gallons	55 Gallons			
	Price	\$57	\$278	\$1,656	\$3,046			

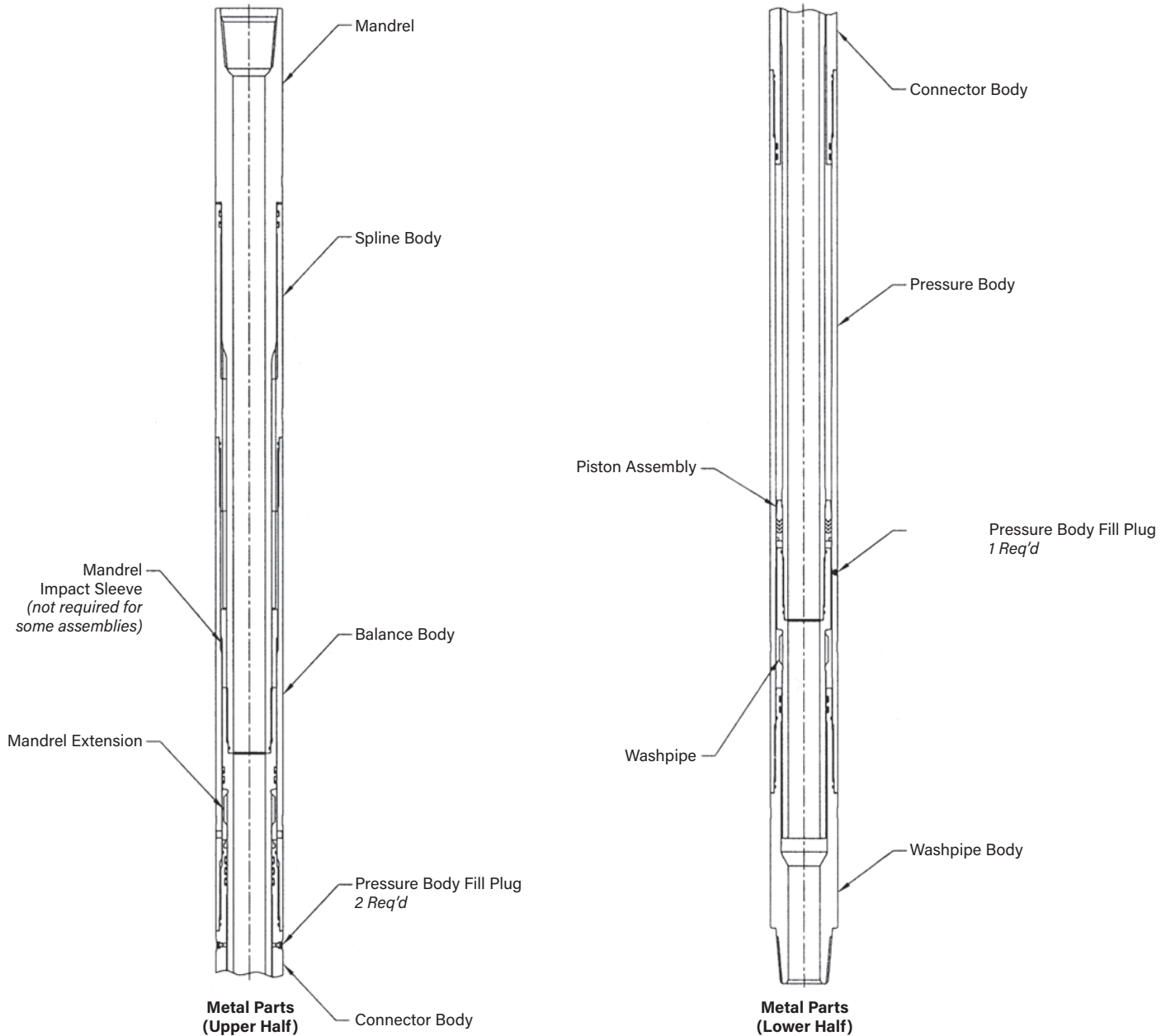
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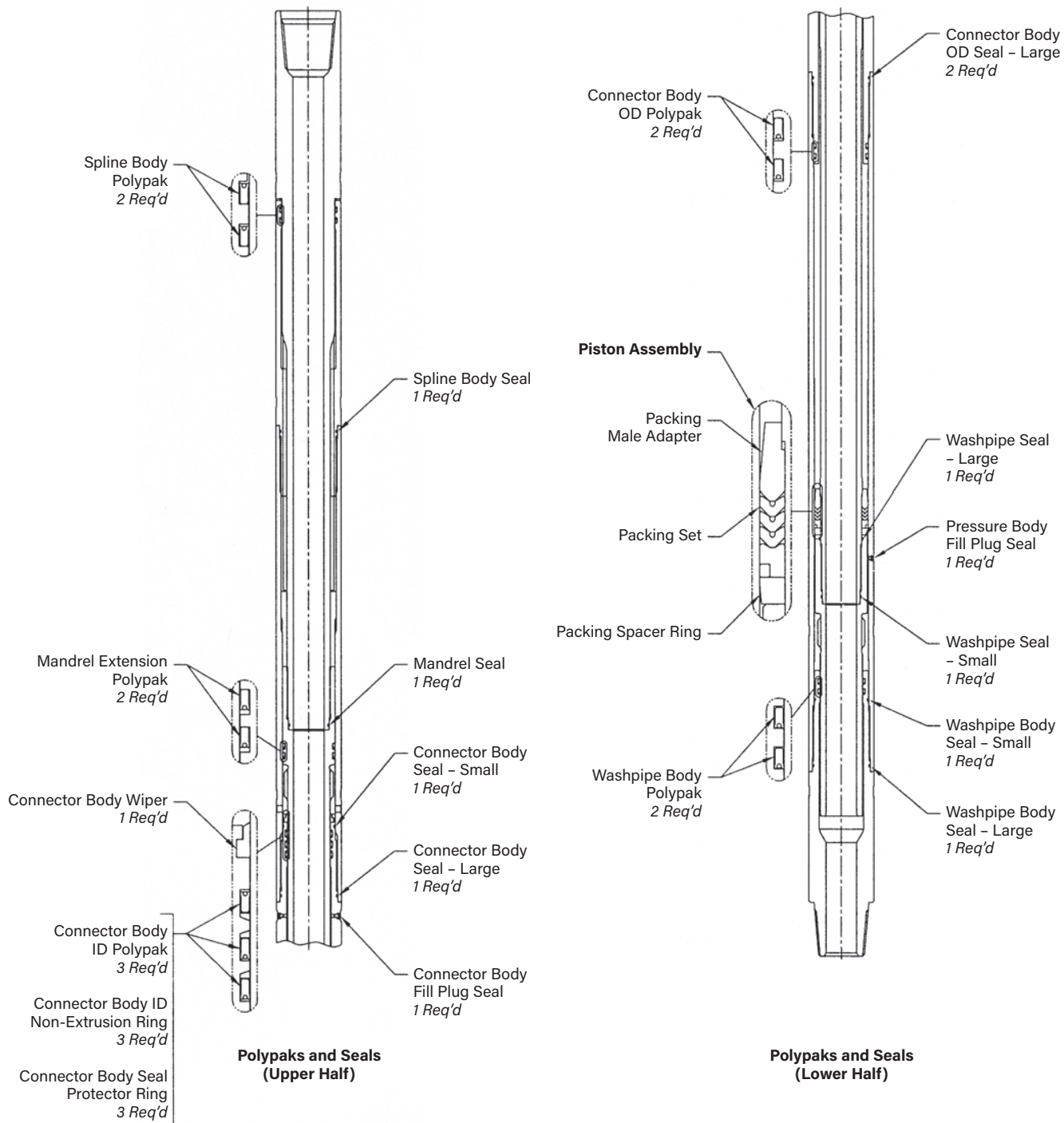
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LOGAN SUPERIOR ENERGIZERS



LOGAN SUPERIOR ENERGIZERS



Logan Superior Energizers

TOOL JOINT CONNECTION		2-3/8 API REG	2-3/8 EUE & 2-7/8 PAC	2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	3-1/2 API IF	4-1/2 API IF
OUTSIDE DIAMETER — INCHES		3-1/8	3-1/16 & 3-1/8	3-3/4	3-3/4	4-1/4	4-3/4	6-1/4
INSIDE DIAMETER — INCHES		1	1-1/2	1-1/2	1-7/8	2	2-1/4	2-1/4
COMPLETE ASSEMBLY	Logan Part No.	614-312-001	614-306 & 614-313	614-375-001	614-376	614-425	614-475-001	614-625
	Price	\$26,022	\$26,022	\$26,550	\$26,550	\$28,839	\$33,507	\$52,429

COMPONENTS

MANDREL	Logan Part No.	BX10-001	BX11	BX12	BX18	BX13	BX14-001	BX15
	Price	\$3,500	\$5,042	\$4,137	*	\$6,084	\$5,103	\$7,563
MANDREL SEAL	Logan Part No.	...	568225	568225	*	568229	568232	568236
	No. Req'd	...	1	1	*	1	1	1
	Price	...	\$3	\$3	*	\$3	\$3	\$3
SPLINE BODY	Logan Part No.	BX20-001	BX21	BX22-001	BX28	BX23	BX24-001	BX25
	Price	\$2,544	\$2,544	\$3,250	*	\$3,501	\$4,189	\$6,612
SPLINE BODY SEAL	Logan Part No.	568230	568230	568234	*	568238	568242	568254
	No. Req'd	1	1	1	*	1	1	1
	Price	\$3	\$3	\$3	*	\$3	\$6	\$12
SPLINE BODY POLYPAK	Logan Part No.	BD205-1	BD205-1	BD202-3	*	BD202-2	BD202-1	BD203-1
	No. Req'd	2	2	2	*	2	2	2
	Price	\$19	\$19	\$20	*	\$17	\$22	\$39
MANDREL SLEEVE	Logan Part No.	BX30-001	BX31	...	BX38	...	BX34-001	...
	Price	\$449	\$278	...	*	...	\$738	...
BALANCE BODY	Logan Part No.	BX40-001	BX41	BX42-001	BX48	BX43	BX44-001	BX45
	Price	\$3,021	\$3,625	\$3,053	*	\$3,362	\$4,311	\$5,552
MANDREL EXTENSION	Logan Part No.	BX50-001	BX51	BX52-001	BX58	BX53	BX54-001	BX55
	Price	\$3,689	\$4,698	\$4,698	*	\$4,173	\$5,057	\$7,937
MANDREL EXTENSION POLYPAK	Logan Part No.	BD205-2	BD205-2	BD201-2	*	BX144-3	BD202-2	BD203-2
	No. Req'd	2	2	2	*	2	2	2
	Price	\$20	\$20	\$16	*	\$15	\$17	\$32
PISTON ASSEMBLY	Logan Part No.	BX60	BX61	BX62	BX68	BX63	BX64	BX65
Consists of:	Price	\$440	*	\$777	*	\$680	\$584	\$1,045
PACKING SET	Logan Part No.	BX60-1-001	BX61-1	BX62-1-001	BX68-1	BX63-1	BX64-1	BX65-1
	Price	\$267	\$297	\$216	*	\$299	\$317	\$722
PACKING MALE ADAPTER	Logan Part No.	BX60-2-001	BX61-2	BX62-2-001	BX68-2	BX63-2	BX64-2	BX65-2
	Price	\$265	\$372	\$436	*	\$123	\$92	\$315
PACKING SPACER RING	Logan Part No.	BX60-3-001	BX61-3	BX62-3-001	BX68-3	BX63-3	BX64-3	BX65-3
	Price	\$243	\$180	\$197	*	\$123	\$92	\$149
CONNECTOR BODY	Logan Part No.	BX70-001	BX71	BX72-001	BX78	BX73	BX74-001	BX75
	Price	\$1,842	\$3,080	\$2,568	*	\$2,759	\$2,885	\$3,931
CONNECTOR BODY WIPER	Logan Part No.	...	...	BD71-001	*	BD76	BX84-001	BD73
	Price	...	...	\$35	*	\$30	\$102	\$28
CONNECTOR BODY ID POLYPAK	Logan Part No.	BD200-3	BD205-3	BD201-3	*	AQ29005	BX144-3	BD203-3
	No. Req'd	3	3	3	*	3	3	3
	Price	\$16	\$39	\$15	*	\$18	\$13	\$27
CONNECTOR BODY ID NON-EXTRUSION RING	Logan Part No.	L365-30	L365-32	BD231-001	**	BD236	BX154-001	BD233
	No. Req'd	2	2	3	...	3	3	3
	Price	\$35	\$43	\$27	*	\$25	\$30	\$58

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* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, and Washpipe Body.

(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

Logan Superior Energizers

TOOL JOINT CONNECTION	2-3/8 API Reg	2-3/8 EUE & 2-7/8 PAC	2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	3-1/2 API IF	4-1/2 API IF
OUTSIDE DIAMETER — INCHES	3-1/8	3-1/16 & 3-1/8	3-3/4	3-3/4	4-1/4	4-3/4	6-1/4
INSIDE DIAMETER — INCHES	1	1-1/2	1-1/2	1-7/8	2	2-1/4	2-1/4
COMPLETE ASSEMBLY Logan Part No.	614-312-001	614-306 & 614-313	614-375-001	614-376	614-425	614-475-001	614-625

COMPONENTS (CONTINUED)

CONNECTOR BODY	Logan Part No.	*	8-228	*	*	*	L375-41	BD273
SEAL PROTECTOR RING	No. Req'd	*	2	*	*	*	3	3
	Price	*	\$4	*	*	*	\$11	\$18
CONNECTOR BODY	Logan Part No.	*	...	...	*	...	...	...
OD PARBAK RING	No. Req'd	*	...	...	*	...	...	...
	Price	...	...	...	*	...	...	...
CONNECTOR BODY OD	Logan Part No.	BX160-001	L366-33.5	...	*	...	*	...
NON-EXTRUSION RING	No. Req'd	1	2	...	*	...	*	...
	Price	\$40	\$44	...	*	...	*	...
CONNECTOR BODY	Logan Part No.	568330	568228	568232	*	568236	568239	568250
SEAL (SMALL)	No. Req'd	2	2	1	*	1	1	1
	Price	\$3	\$3	\$3	*	\$4	\$4	\$10
CONNECTOR BODY	Logan Part No.	568230	568230	568234	*	568238	568242	568252
SEAL (LARGE)	No. Req'd	2	2	2	*	2	2	2
	Price	\$3	\$3	\$4	*	\$4	\$4	\$12
CONNECTOR BODY	Logan Part No.	AG10002	AG10000	AG10002	*	AG10002	AG10002	AG10002
FILL PLUG	No. Req'd	2	2	2	*	2	2	2
	Price	\$20	\$17	\$20	*	\$20	\$21	\$20
CONNECTOR BODY	Logan Part No.	568006	568005	568006	*	568006	568006	568006
FILL PLUG SEAL	No. Req'd	2	2	2	*	2	2	2
	Price	\$2	\$9	\$2	*	\$2	\$2	\$2
CONNECTOR BODY	Logan Part No.	...	...	AQ29003	*	AQ29005	BD202-5	BD203-5
OD POLYPAK	No. Req'd	...	...	2	*	2	2	2
	Price	...	...	\$22	*	\$20	\$25	\$35
PRESSURE BODY	Logan Part No.	BX90-001	BX91	BX92-001	BX98	BX93	BX94-001	BX95
	Price	\$2,674	\$4,188	\$6,040	*	\$4,804	\$6,219	\$8,690
PRESSURE BODY	Logan Part No.	AG10004	AG10004	AG10004	*	AG10000	AG10000	AG10000
FILL PLUG	No. Req'd	1	1	1	*	1	1	1
	Price	\$3	\$3	\$3	*	\$17	\$17	\$19
PRESSURE BODY	Logan Part No.	...	...	...	*	568005	568005	568005
FILL PLUG SEAL	No. Req'd	...	...	...	*	1	1	1
	Price	...	...	...	*	\$9	\$9	\$9
WASHPIPE	Logan Part No.	BX100-003	BX101	BX102-005	BX108	BX103	BX104-003	BX105
	Price	\$2,029	\$1,674	\$2,126	*	\$1,328	\$2,940	\$1,935
WASHPIPE SEAL	Logan Part No.	568130	...	568227	*	568231	568234	568238
(LARGE)	No. Req'd	1	...	1	*	1	1	1
	Price	\$3	...	\$3	*	\$3	\$4	\$4
WASHPIPE SEAL	Logan Part No.	568221	568224	568225	**	568229	568232	568234
(SMALL)	No. Req'd	1	1	1	...	1	1	1
	Price	\$3	\$3	\$3	*	\$3	\$3	\$4

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* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, and Washpipe Body.

(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

Logan Superior Energizers

TOOL JOINT CONNECTION	2-3/8 API Reg	2-3/8 EUE & 2-7/8 PAC	2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	3-1/2 API IF	4-1/2 API IF
OUTSIDE DIAMETER — INCHES	3-1/8	3-1/16 & 3-1/8	3-3/4	3-3/4	4-1/4	4-3/4	6-1/4
INSIDE DIAMETER — INCHES	1	1-1/2	1-1/2	1-7/8	2	2-1/4	2-1/4
COMPLETE ASSEMBLY Logan Part No.	614-312-001	614-306 & 614-313	614-375-001	614-376	614-425	614-475-001	614-625

COMPONENTS (CONTINUED)

WASHPipe BODY	Logan Part No.	BX110-001	BX111	BX112-001	BX118	BX113	BX114-001	BX115
	Price	\$2,576	\$2,080	\$2,698	*	\$2,470	\$3,161	\$2,812
WASHPipe BODY SEAL (LARGE)	Logan Part No.	568230	568230	568234	*	568238	568242	568252
	No. Req'd	1	1	1	*	1	1	1
	Price	\$3	\$3	\$4	*	\$3	\$6	\$12
WASHPipe BODY SEAL (SMALL)	Logan Part No.	568228	568228	568232	*	568236	568240	568250
	No. Req'd	1	1	1	*	1	1	1
	Price	\$3	\$3	\$3	*	\$4	\$6	\$10
WASHPipe BODY POLYPAK	Logan Part No.	BD200-3	BD200-3	BD201-3	*	AQ29003	BX144-3	BD203-3
	No. Req'd	2	2	2	*	2	2	2
	Price	\$16	\$13	\$12	*	\$22	\$17	\$26
REDRESS KITS *	Logan Part No.	BX120	BX121	BX122	BX128	BX123	BX124	BX125
	Price	\$357	\$508	\$447	*	\$552	\$578	\$1,091
O-RING PACKING SET	Logan Part No.	BX130-001	BX131	BX132-001	BX138	BX133	BX134-001	BX135
	Price	\$49	\$46	\$38	*	\$26	\$46	\$45
POLYPAK KIT	Logan Part No.	BX140	BX141	BX142	BX148	BX143	BX144	BX145
	Price	\$124	\$109	\$155	*	\$206	\$188	\$308
SPLINE BODY POLYPAK	Logan Part No.	BD205-1	BD205-1	BD202-3	*	BD202-2	BD202-1	BD203-1
	No. Req'd	2	2	2	*	2	2	2
	Price	\$19	\$16	\$19	*	\$17	\$29	\$39
MANDREL EXTENSION POLYPAK	Logan Part No.	BD205-2	BD205-2	BD201-2	*	BX144-3	BD202-2	BD203-2
	No. Req'd	2	1	2	*	2	2	2
	Price	\$20	\$17	\$16	*	\$13	\$21	\$34
CONNECTOR BODY ID POLYPAK	Logan Part No.	BD200-3	BD205-3	BD201-3	*	AQ29005	BX144-3	BD203-3
	No. Req'd	3	3	3	*	3	3	3
	Price	\$16	\$34	\$15	*	\$20	\$17	\$26
CONNECTOR BODY OD POLYPAK	Logan Part No.	...	...	AQ29003	*	AQ29005	BD202-5	BD203-5
	No. Req'd	...	...	2	*	2	2	2
	Price	...	...	\$22	*	\$20	\$25	\$35
WASHPipe BODY POLYPAK	Logan Part No.	BD200-3	BD205-3	BD201-3	*	AQ29003	BX144-3	BD203-3
	No. Req'd	2	2	2	*	2	2	2
	Price	\$16	\$34	\$15	*	\$22	\$17	\$26
MANDREL EXTENSION ASSEMBLY SLEEVE	Logan Part No.	BX140-5	BD205-6	BD201-6	**	BD202-6	BX144-5	BD203-6
	No. Req'd	1	1	1	...	1	1	1
	Price	\$158	\$388	\$504	*	\$466	\$321	*
ENERGIZER FLUID	Logan Part No.	50529-A	50529-C	50529-D	50529-E			
		1 Gallon	5 Gallons	30 Gallons	55 Gallons			
	Price	\$237	\$492	\$2,960	\$4,577			

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* Available upon request.

† Mandrel Extension Assembly Sleeve is not included in the Redress Kit. Must be purchased separately.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, and Washpipe Body.

(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

Logan Superior Energizers

TOOL JOINT CONNECTION		5-1/2 API Reg	6-5/8 API Reg				
OUTSIDE DIAMETER — INCHES		6-3/4	7-3/4				
INSIDE DIAMETER — INCHES		2-3/4	3-1/16				
COMPLETE ASSEMBLY	Logan Part No.	614-675	614-775				
	Price	\$56,187	\$80,250				

COMPONENTS

MANDREL	Logan Part No.	BX16	BX17				
	Price	*	\$10,904				
MANDREL SEAL	Logan Part No.	*	*				
	No. Req'd	*	1				
	Price	*	\$9				
SPLINE BODY	Logan Part No.	BX26	BX27				
	Price	*	\$7,526				
SPLINE BODY SEAL	Logan Part No.	*	568362				
	No. Req'd	*	1				
	Price	*	\$15				
SPLINE BODY POLYPAK	Logan Part No.	**	BD204-1				
	No. Req'd	*	2				
	Price	*	\$60				
MANDREL SLEEVE	Logan Part No.	BX36	BX37				
	Price	*	*				
BALANCE BODY	Logan Part No.	BX46	BX47				
	Price	*	*				
MANDREL EXTENSION	Logan Part No.	BX56	BX57				
	Price	*	\$13,729				
MANDREL EXTENSION POLYPAK	Logan Part No.	*	BD204-2				
	No. Req'd	*	1				
	Price	*	\$58				
MANDREL EXTENSION WIPER	Logan Part No.	...	BD224				
	Price	...	\$32				
CONNECTOR BODY	Logan Part No.	BX76	BX77				
	Price	*	\$6,579				
CONNECTOR BODY WIPER	Logan Part No.	BX86	BD74				
	Price	*	\$31				
CONNECTOR BODY ID POLYPAK	Logan Part No.	*	BD204-3				
	No. Req'd	*	6				
	Price	*	\$35				
PISTON ASSEMBLY	Logan Part No.	BX66	BX67				
	Price	*	\$2,344				
PACKING SET	Logan Part No.	BX66-1	BX67-1				
	Price	*	\$1,782				
PACKING MALE ADAPTER	Logan Part No.	BX66-2	BX67-2				
	Price	*	\$211				
PACKING SPACER RING	Logan Part No.	BX66-3	BX67-3				
	Price	*	\$255				

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* Available upon request.

Special Notes:

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(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

Logan Superior Energizers

TOOL JOINT CONNECTION	5-1/2 API Reg	6-5/8 API Reg				
OUTSIDE DIAMETER — INCHES	6-3/4	7-3/4				
INSIDE DIAMETER — INCHES	2-3/4	3-1/16				
COMPLETE ASSEMBLY Logan Part No.	614-675	614-775				

COMPONENTS

CONNECTOR BODY ID	Logan Part No.	*	BD234-001			
NON-EXTRUSION RING	No. Req'd	*	4			
	Price	*	\$41			
CONNECTOR BODY	Logan Part No.	*	BD274			
SEAL PROTECTOR RING	No. Req'd	*	4			
	Price	*	\$29			
CONNECTOR BODY	Logan Part No.	*	BD204-2			
OD PARBAK RING	No. Req'd	*	1			
	Price	*	\$58			
CONNECTOR BODY OD	Logan Part No.	*	...			
NON-EXTRUSION RING	No. Req'd	*	...			
	Price	*	...			
CONNECTOR BODY	Logan Part No.	*	BD204-3			
SEAL (SMALL)	No. Req'd	*	...			
	Price	*	\$35			
CONNECTOR BODY	Logan Part No.	*	568362			
SEAL (LARGE)	No. Req'd	*	1			
	Price	*	\$15			
CONNECTOR BODY	Logan Part No.	*	*			
FILL PLUG	No. Req'd	*	*			
	Price	*	*			
CONNECTOR BODY	Logan Part No.	*	*			
FILL PLUG SEAL	No. Req'd	*	*			
	Price	*	*			
CONNECTOR BODY	Logan Part No.	*	*			
OD POLYPAK	No. Req'd	*	*			
	Price	*	*			
PRESSURE BODY	Logan Part No.	BX96	BX97			
	Price	*	\$12,249			
PRESSURE BODY	Logan Part No.	*	*			
FILL PLUG	No. Req'd	*	*			
	Price	*	*			
PRESSURE BODY	Logan Part No.	*	*			
FILL PLUG SEAL	No. Req'd	*	*			
	Price	*	*			
WASHPIPE	Logan Part No.	BX106	BX107			
	Price	...	\$2,869			

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* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, and Washpipe Body.

(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

Logan Superior Energizers

TOOL JOINT CONNECTION	5-1/2 API Reg	6-5/8 API Reg				
OUTSIDE DIAMETER — INCHES	6-3/4	7-3/4				
INSIDE DIAMETER — INCHES	2-3/4	3-1/16				
COMPLETE ASSEMBLY Logan Part No.	614-675	614-775				

COMPONENTS

WASHPIPE SEAL (LARGE)	Logan Part No. No. Req'd Price	*	*			
WASHPIPE SEAL (SMALL)	Logan Part No. No. Req'd Price	*	*			
WASHPIPE BODY	Logan Part No. Price	BX116 *	BX117 \$6,755			
WASHPIPE BODY SEAL (LARGE)	Logan Part No. Price	*	*			
WASHPIPE BODY SEAL (SMALL)	Logan Part No. No. Req'd Price	*	*			
WASHPIPE BODY POLYPAK	Logan Part No. No. Req'd Price	*	*			
REDRESS KITS *	Logan Part No. Price	BX126 *	BX127 \$2,531			
O-RING PACKING SET	Logan Part No. Price	BX136 *	BX137 \$41			
POLYPAK KIT	Logan Part No. Price	BX146 *	BX147 \$584			
SPLINE BODY POLYPAK	Logan Part No. No. Req'd Price	*	*			
MANDREL EXTENSION POLYPAK	Logan Part No. No. Req'd Price	*	*			
CONNECTOR BODY ID POLYPAK	Logan Part No. No. Req'd Price	*	*			
CONNECTOR BODY OD POLYPAK	Logan Part No. No. Req'd Price	*	*			
WASHPIPE BODY POLYPAK	Logan Part No. No. Req'd Price	*	*			
MANDREL EXTENSION ASSEMBLY SLEEVE	Logan Part No. No. Req'd Price	*	*			
ENERGIZER FLUID	Logan Part No. Price	50529-A 1 Gallon \$116	50529-C 5 Gallons \$492			

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** Available upon request.*

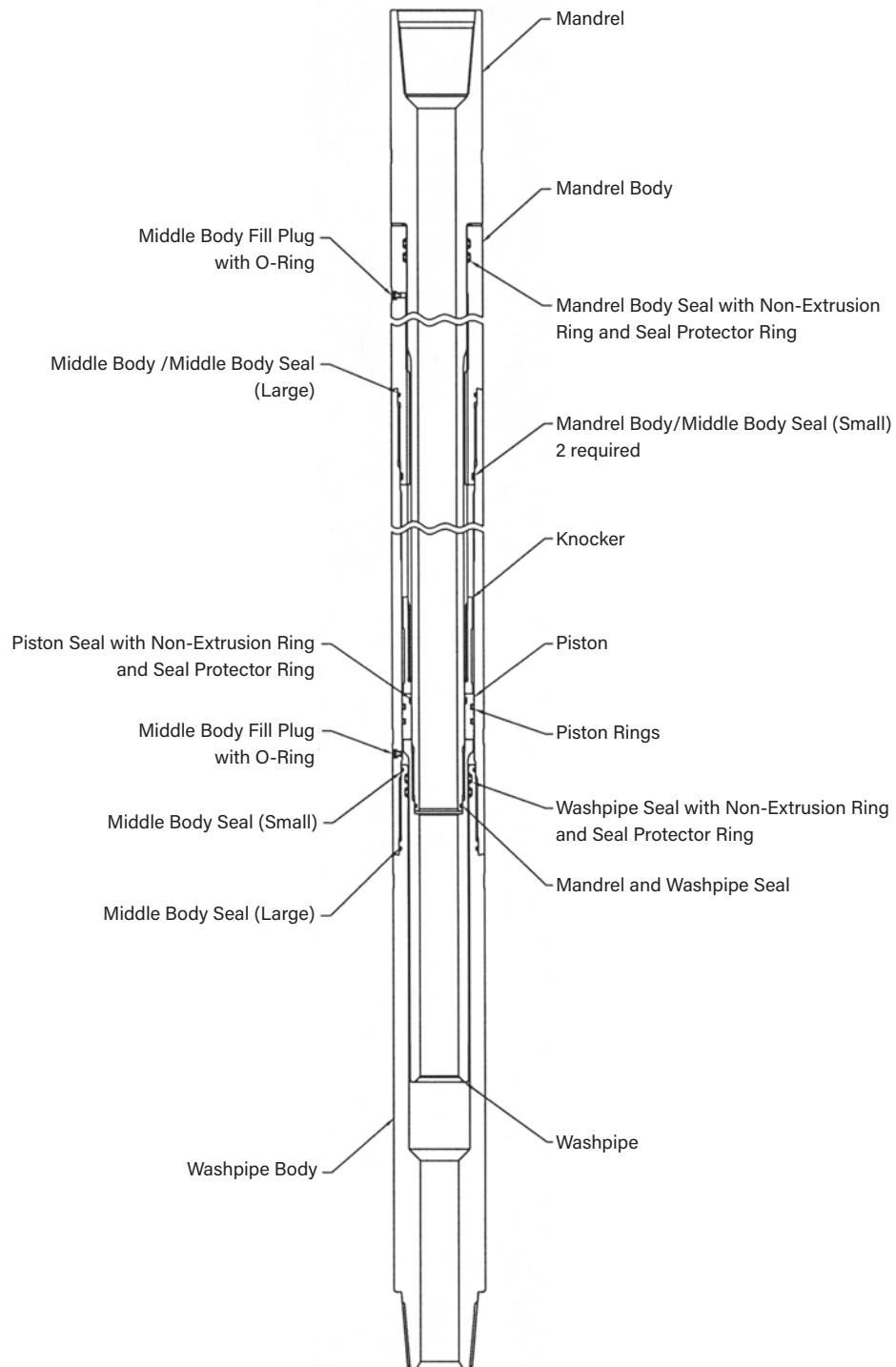
† Mandrel Extension Assembly Sleeve is not included in the Redress Kit. Must be purchased separately.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Spline Body, Balance Body, Connector Body, Pressure Body, and Washpipe Body.

(2) Redress Kits include O-Ring Packing Sets, Polypak Kits, and Connector Body Wipers.

LOGAN Z TYPE HYDRAULIC FISHING JARS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
OUTSIDE DIAMETER (INCHES)		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
INSIDE DIAMETER (INCHES)		1/4	5/16	3/8	1	1-1/2	1	1-1/4
TYPE JAR		Sub	Special Mandrel	Integral	Sub	Sub Mandrel	Integral Mandrel	Integral
COMPLETE ASSEMBLY	Logan Part No.	605-000	605-001	605-002	605-003	605-004	605-005	605-006
	Bowen No.	70822	74723	54020	68010	55670	52504	52506
	Price	*	\$17,132	\$19,219	\$20,095	\$24,530	\$22,167	\$23,662
TOP SUB	Logan Part No.	AG3000	AG3001	...	AG3003	AG3004	...	...
	Bowen No.	70823	21156	...	68015	55889	...	...
	Price	*	\$610	...	\$880	\$1,187	...	...
MANDREL	Logan Part No.	AG4000	AG4001	AG4002	AG4003	AG4004	AG4005	AG4006
	Bowen No.	70825	21155	18780	68014	55888	38056	38041
	Price	*	\$3,562	\$41,061	\$3,699	\$4,408	\$5,967	\$7,339
PISTON ASSEMBLY (Ring Type Standard)	Logan Part No.	26000-018	26000-019	26000-020	26000-021	26000-022	26000-023	26000-024
	Bowen No.	70853	74725	59585	68019	56368	61282	68128
	Price	*	\$846	\$790	\$1,387	\$1,708	\$1,011	\$930
MANDREL BODY	Logan Part No.	AG5000	AG5001	AG5002	AG5003	AG5004	AG5005	AG5006
	Bowen No.	70824	21153	56571	68013	55887	52764	52770
	Price	*	\$4,492	\$4,607	\$3,854	\$4,044	\$4,706	\$4,732
MIDDLE BODY	Logan Part No.	AG6000	AG6001	AG6002	AG6003	AG6004	AG6005	AG6006
	Bowen No.	70826	74724	18777	68012	55886	42737	38044
	Price	*	\$3,562	\$4,245	\$3,489	\$4,168	\$4,170	\$4,444
WASHPIPE BODY	Logan Part No.	AG7000	AG7001	AG7002	AG7003	AG7004	AG7005	AG7006
	Bowen No.	70829	21151	18776	68011	55885	38064	38045
	Price	*	\$2,953	\$3,056	\$3,022	\$2,854	\$3,118	\$3,229
KNOCKER	Logan Part No.	...	...	AG8002	...	...	AG8005	AG8006
	Bowen No.	...	...	18781	...	...	38060	38049
	Price	...	...	\$556	...	...	\$612	\$653
WASHPIPE	Logan Part No.	AG9000	AG9001	AG9002	AG9003	AG9004	AG9005	AG9006
	Bowen No.	70828	21154	18779	68016	55890	42738	38046
	Price	*	\$1,186	\$1,284	\$1,578	\$1,280	\$1,418	\$1,531
MANDREL BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10002	AG10000	AG10000	AG10002	AG10002
	Bowen No.	617	617	329	617	617	329	329
	Price	\$17	\$17	\$20	\$17	\$17	\$20	\$20
MIDDLE BODY FILL PLUG	Logan Part No.	...	...	AG10000	AG10004	AG10004	AG10000	AG10000
	Bowen No.	...	...	617	10641	10641	617	617
	Price	...	...	\$17	\$3	\$3	\$17	\$17
PACKING SET	Logan Part No.	26000-036	26000-037	26000-038	26000-039	26000-040	26000-041	26000-042
	Bowen No.	70961	74802	18793	68017	55924	44622	38048
	Price	\$29	\$30	\$30	\$37	\$32	\$34	\$34

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* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
OUTSIDE DIAMETER (INCHES)		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
INSIDE DIAMETER (INCHES)		1/4	5/16	3/8	1	1-1/2	1	1-1/4
TYPE JAR		Sub	Special Mandrel	Integral	Sub	Sub Mandrel	Integral Mandrel	Integral
COMPLETE ASSEMBLY	Logan Part No.	605-000	605-001	605-002	605-003	605-004	605-005	605-006
	Bowen No.	70822	74723	54020	68010	55670	52504	52506
MANDREL NON-EXTRUSION RING	Logan Part No.	L365-16	L365-17	L365-24	L365-30.5	L364-32.5	L365-32	L365-35
	Bowen No.	365-16	365-17	365-24	365-30.5	364-32.5	365-32	365-35
	No. Req'd	8	4	4	8	8	8	8
MANDREL SEAL PROTECTOR RING	Logan Part No.	L375-16	L375-17	L375-24	L375-30.5	L375-32.5	L375-32	L375-35
	Bowen No.	375-16	375-17	375-24	375-30.5	375-32.5	375-32	375-35
	No. Req'd	8	4	4	8	8	8	8
MANDREL BODY NON-EXTRUSION RING	Logan Part No.	...	...	L56542	...	...	...	...
	Bowen No.	...	...	56542	...	...	...	...
	Price	...	...	\$48	...	...	...	...
MANDREL BODY INSERT	Logan Part No.	AG11000	...	...	...	...	...	...
	Bowen No.	71254	...	...	...	...	...	...
	Price	*	...	...	...	...	...	...
MANDREL BODY SEAL PROTECTOR RING	Logan Part No.	...	...	L227-27.25	...	...	...	...
	Bowen No.	...	...	227-27.25	...	...	...	...
	Price	...	...	\$7	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
OUTSIDE DIAMETER (INCHES)		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
INSIDE DIAMETER (INCHES)		1/4	5/16	3/8	1	1-1/2	1	1-1/4
TYPE JAR		Sub	Special Mandrel	Integral	Sub	Sub Mandrel	Integral Mandrel	Integral
COMPLETE ASSEMBLY	Logan Part No. Bowen No.	605-000 70822	605-001 74723	605-002 54020	605-003 68010	605-004 55670	605-005 52504	605-006 52506
RING TYPE	Logan Part No.	26000-018	26000-019	26000-020	26000-021	26000-022	26000-023	26000-024
PISTON ASSEMBLY	Bowen No.	70853	74725	59585	68019	56368	61282	68128
<i>Consists of:</i>	Price	*	\$846	\$790	\$1,387	\$1,708	\$1,011	\$931
PISTON	Logan Part No.	AG15000	...	AG15002	...	...	AG15005	AG15006
	Bowen No.	70827	...	59586	...	...	61283	68127
	Price	*	...	\$653	...	...	\$776	\$776
WAVE SPRING	Logan Part No.	L66164	...	...	...	...	...	...
	Bowen No.	66164	...	...	...	...	...	...
	No. Req'd	2	...	...	...	...	...	...
	Price	*	...	...	...	...	...	...
PISTON RING	Logan Part No.	...	...	L18783	...	...	L61284	L61287
	Bowen No.	...	...	18783	...	...	61284	61287
	No. Req'd	...	...	4	...	...	4	2
	Price	...	...	\$48	...	...	\$48	\$60
SEAL	Logan Part No.	...	...	568214	...	...	568223	568226
	Bowen No.	...	...	568214	...	...	568223	568226
	Price	...	...	\$3	...	...	\$3	\$3
NON-EXTRUSION RING	Logan Part No.	...	...	L365-19	L370-1.5	L370-3.5	L370-1	L370-4
	Bowen No.	...	...	365-19	370-1.5	370-3.5	370-1	370-4
	Price	...	...	\$36	\$34	\$34	\$32	\$32
SEAL	Logan Part No.	...	...	L375-19	L376-1.5	L376-3.5	L376-1	L376-4
PROTECTOR RING	Bowen No.	...	...	375-19	376-1.5	376-3.5	376-1	376-4
	Price	...	...	\$7	\$7	\$7	\$7	\$7
CONE TYPE	Logan Part No.	...	26000-019	...	...	...	...	...
PISTON ASSEMBLY	Bowen No.	...	74725	...	...	...	...	...
<i>Consists of:</i>	Price	...	\$846	...	...	...	...	...
CONE	Logan Part No.	...	AG14001	...	AG14003	AG14004	...	...
	Bowen No.	...	74726	...	68020	55891	...	...
	Price	...	\$545	...	\$850	\$983	...	...
BY-PASS BODY	Logan Part No.	...	AG13001	...	...	...	...	...
	Bowen No.	...	74727	...	...	...	...	...
	Price	...	\$94	...	...	...	...	...
SEAL BODY	Logan Part No.	...	AG12001	...	AG12003	AG12004	...	...
	Bowen No.	...	74728	...	68021	55892	...	...
	Price	...	\$209	...	\$496	\$653	...	...
SEAL BODY SEAL	Logan Part No.	...	568020	...	568224	568226	...	...
	Bowen No.	...	568020	...	568224	568226	...	...
	Price	...	\$2	...	\$3	\$3	...	...

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* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.

(2) Packing Sets include all seals necessary to dress the tool.

Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.

(3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
OUTSIDE DIAMETER (INCHES)		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
INSIDE DIAMETER (INCHES)		1/4	5/16	3/8	1	1-1/2	1	1-1/4
TYPE JAR		Sub	Special Mandrel	Integral	Sub	Sub Mandrel	Integral Mandrel	Integral
COMPLETE ASSEMBLY	Logan Part No.	605-000	605-001	605-002	605-003	605-004	605-005	605-006
	Bowen No.	70822	74723	54020	68010	55670	52504	52506

OPTIONAL

MANDREL BODY		Logan Part No.	AG1000-16	AG1000-17	AG1000-24	AG1000-29.5	AG1000-32.5	AG1000-32	AG1000-35
SETTING TOOL		Bowen No.	22709-16	22709-17	22709-24	22709-29.5	22709-32.5	22709-32	22709-35
		Price	\$226	*	\$841	\$805	\$902	\$902	\$914
PISTON SETTING TOOL		Logan Part No.	...	...	AG1000-19	AG1000-30.5	AG1000-31	AG1000-29	AG1000-32
		Bowen No.	...	...	22709-19	22709-30.5	22709-31	22709-29	22709-32
		Price	...	...	\$842	\$902	\$903	\$841	\$902
SERVICE KIT		Logan Part No.	26000-054	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
		Bowen No.	21279	55403	55403	55403	55403	55403	55403
		Price	*	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763
HI-TEMPERATURE PACKING SET		Logan Part No.	...	26000-73	26000-074	...	26000-076	26000-077	26000-078
		Bowen No.	...	149945	149884	...	148247	73659	80004
		Price	...	*	*	...	*	\$136	*
PACKING SET		Logan Part No.	26000-036	26000-037	26000-038	26000-039	26000-040	26000-041	26000-042
<i>Consists of:</i>		Bowen No.	70961	74802	18793	68017	55924	44622	38048
		Price	\$30	\$30	\$30	\$37	\$32	\$34	\$36
MANDREL/ WASHPipe SEAL		Logan Part No.	568211	568212	568219	568328	568330	568329	568332
		Bowen No.	568211	568212	568219	568328	568330	568329	568332
		No. Req'd	4	4	4	4	4	4	4
		Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
LARGE MIDDLE BODY SEAL		Logan Part No.	568216	568019	568224	568036	568038	568231	568235
		Bowen No.	568216	568019	568224	568036	568038	568231	568235
		No. Req'd	2	2	2	2	2	2	2
		Price	\$3	\$3	\$3	\$4	\$4	\$3	\$4
SMALL MIDDLE BODY SEAL		Logan Part No.	568214	568027	568228	568035	568036	568228	568233
		Bowen No.	568214	568027	568228	568035	568036	568228	568233
		No. Req'd	3	3	3	3	3	3	3
		Price	\$3	\$3	\$3	\$4	\$4	\$3	\$4
WASHPipe SEAL		Logan Part No.	...	568115	568210	568224	568226	568220	568222
		Bowen No.	...	568115	568210	568224	568226	568220	568222
		Price	...	\$3	\$3	\$3	\$3	\$3	\$3

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Special Notes:

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- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		7/8 Sucker Rod	1-13/16 Wilson FJ	1-1/4 API Reg	2-3/8 PH6 5.9# Hyd Bx	2-3/8 EUE	2-3/8 API Reg	2-7/8 API Reg
OUTSIDE DIAMETER (INCHES)		1-5/8	1-13/16	2-1/4	2-29/32	3-1/16	3-1/8	3-3/4
INSIDE DIAMETER (INCHES)		1/4	5/16	3/8	1	1-1/2	1	1-1/4
TYPE JAR		Sub	Special Mandrel	Integral	Sub	Sub Mandrel	Integral Mandrel	Integral
COMPLETE ASSEMBLY	Logan Part No.	605-000	605-001	605-002	605-003	605-004	605-005	605-006
	Bowen No.	70822	74723	54020	68010	55670	52504	52506
MANDREL BODY	Logan Part No.	568005	568005	568006	568005	568006	568006	568006
FILL PLUG SEAL	Bowen No.	568005	568005	568006	568005	568006	568006	568006
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
MIDDLE BODY	Logan Part No.	...	...	568005	...	...	568005	568005
FILL PLUG SEAL	Bowen No.	...	...	568005	...	...	568005	568005
	Price	...	...	\$2	...	...	\$2	\$2
PISTON SEAL	Logan Part No.	...	...	568214	...	...	568223	568226
	Bowen No.	...	...	568214	...	...	568223	568226
	Price	...	...	\$3	...	...	\$3	\$3
MIDDLE BODY /	Logan Part No.	...	...	...	...	...	...	...
MANDREL BODY SEAL	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
WASHPIPE /	Logan Part No.	...	...	...	...	...	...	...
MIDDLE BODY SEAL	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
BACK-UP RINGS	Logan Part No.	8-024	...	...	...	...	...	...
	Bowen No.	8-024	...	...	...	...	...	...
	Price	\$3	...	...	...	...	...	...
MANDREL SEAL	Logan Part No.	568015	...	...	...	...	...	...
	Bowen No.	568015	...	...	...	...	...	...
	Price	\$2	...	...	...	...	...	...
MANDREL BODY SEAL	Logan Part No.	568024	...	...	...	...	...	...
	Bowen No.	568024	...	...	...	...	...	...
	Price	\$2	...	...	...	...	...	...

JAR LUBE	Logan Part No.	49842-A	49842-B	49842-C	49842-D			
	Bowen No.	49842-A	49842-B	49842-C	49842-D			
		1 Gallon	5 Gallons	20 Gallons	55 Gallons			
	Price	\$57	\$278	\$1,656	\$3,046			

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Special Notes:

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(2) Packing Sets include all seals necessary to dress the tool.

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(3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API IF	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
COMPLETE ASSEMBLY	Logan Part No.	605-007	605-008	605-009	605-010	605-011	605-012	605-018
	Bowen No.	52528	52497	52502	52653	52530	52500	...
	Price	\$22,920	*	\$25,551	*	\$26,822	\$26,823	\$26,822
TOP SUB	Logan Part No.	AG3007	AG3008	...	...	...	...	...
	Bowen No.	37412	20156	...	...	...	...	...
	Price	\$756	\$757	...	...	...	...	...
MANDREL	Logan Part No.	AG4007	AG4008	AG4009	AG4010	AG4011	AG4012	AG40125
	Bowen No.	37411	20155	44484	35850	25965	38115	38115
	Price	\$6,363	*	\$7,978	*	\$8,071	\$8,071	\$8,071
PISTON ASSEMBLY (Ring Type Standard)	Logan Part No.	26000-025	26000-026	26000-027	26000-028	26000-029	26000-030	26000-030
	Bowen No.	61288	61285	68420	69421	55285	55193	55193
	Price	\$1,436	*	\$1,264	*	\$1,564	\$1,114	\$1,114
MANDREL BODY	Logan Part No.	AG5007	AG5008	AG5009	AG5010	AG5011	AG5012	AG5012
	Bowen No.	52771	52772	52780	52815	52749	52833	52833
	Price	\$4,732	*	\$4,988	*	\$5,270	\$5,270	\$5,270
MIDDLE BODY	Logan Part No.	AG6007	AG6007	AG6009	AG6010	AG6011	AG6012	AG6012
	Bowen No.	20152	20152	41840	35853	25962	38112	38112
	Price	\$4,482	*	\$4,633	*	\$4,988	\$4,992	\$4,992
WASHPIPE BODY	Logan Part No.	AG7007	AG7008	AG7009	AG7010	AG7011	AG7012	AG70125
	Bowen No.	37407	20151	44487	35854	25961	38111	38111
	Price	\$3,236	*	\$3,677	*	\$4,109	\$4,109	\$4,109
KNOCKER	Logan Part No.	...	...	AG8009	AG8010	AG8011	AG8012	AG8012
	Bowen No.	...	...	44490	35857	25966	38116	38116
	Price	...	...	\$672	\$719	\$719	\$719	\$719
WASHPIPE	Logan Part No.	AG9007	AG9008	AG9009	AG9010	AG9011	AG9012	AG90125
	Bowen No.	37410	20154	44488	35855	25964	38114	38114
	Price	\$1,531	*	\$1,618	*	\$1,665	\$1,665	\$1,665
MANDREL BODY FILL PLUG	Logan Part No.	AG10002	AG10002	AG10002	AG10002	AG10002	AG10002	AG10002
	Bowen No.	329	329	329	329	329	329	329
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17
MIDDLE BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10000	AG10000	AG10002	AG10002	AG10002
	Bowen No.	617	617	617	617	329	329	329
	Price	\$15	\$15	\$15	\$15	\$17	\$17	\$17
PACKING SET	Logan Part No.	26000-043	26000-044	26000-045	26000-046	26000-047	26000-048	26000-048
	Bowen No.	37415	20163	44491	35858	25892	38120	38120
	Price	\$34	*	\$36	*	\$44	\$41	\$41

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- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API FH	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
COMPLETE ASSEMBLY	Logan Part No.	605-007	605-008	605-009	605-010	605-011	605-012	605-018
	Bowen No.	52528	52497	52502	52653	52530	52500	...
MANDREL NON-EXTRUSION RING (8 req'd)	Logan Part No.	L365-36	L365-36	L365-40	L365-42	L365-40	L365-41	L365-41
	Bowen No.	365-36	365-36	365-40	365-42	365-40	365-41	365-41
	Price	\$37	\$37	\$37	\$37	\$37	\$38	\$38
MANDREL SEAL PROTECTOR RING (8 req'd)	Logan Part No.	L375-36	L375-36	L375-40	L375-42	L375-40	L375-41	L375-41
	Bowen No.	375-36	375-36	375-40	375-42	375-40	375-41	375-41
MANDREL BODY NON-EXTRUSION RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL BODY INSERT	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL BODY SEAL PROTECTOR RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
RING TYPE PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	26000-025	26000-026	26000-027	26000-028	26000-029	26000-030	26000-030
	Bowen No.	61288	61285	68420	68421	55285	55193	55193
	Price	\$1,436	*	\$1,264	*	\$1,564	\$1,114	\$1,114
PISTON	Logan Part No.	AG15007	AG15008	AG15009	AG15010	AG15011	AG15012	AG15012
	Bowen No.	61289	61286	68413	68415	55286	55194	55194
	Price	\$1,217	*	\$1,046	*	\$1,418	\$1,204	\$1,204
WAVE SPRING (2 req'd)	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
PISTON RING	Logan Part No.	L61287	L61287	L68414	L68416	L25968	L25293	L25293
	Bowen No.	61287	61287	68414	68416	25968	25293	25293
	No. Req'd	4	4	3	3	2	2	2
	Price	\$60	\$60	\$60	\$53	\$53	\$53	\$53
SEAL	Logan Part No.	568228	568229	568231	568233	568231	568232	568232
	Bowen No.	568228	568229	568231	568233	568231	568232	568232
	Price	\$3	\$3	\$3	\$4	\$3	\$3	\$3
NON-EXTRUSION RING	Logan Part No.	L370-6	L52495	L370-9	L370-11	L370-8.5	L370-10	L370-10
	Bowen No.	370-6	52495	370-9	370-11	370-8.5	370-10	370-10
	Price	\$32	\$48	\$21	\$32	\$34	\$32	\$32
SEAL PROTECTOR RING	Logan Part No.	L376-6	L52496	L376-9	L376-11	L376-8.5	L376-10	L376-10
	Bowen No.	376-6	52496	376-9	376-11	376-8.5	376-10	376-10
	Price	\$7	\$47	\$9	\$7	\$9	\$7	\$7

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* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.

(2) Packing Sets include all seals necessary to dress the tool.

Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.

(3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API FH	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
COMPLETE ASSEMBLY	Logan Part No.	605-007	605-008	605-009	605-010	605-011	605-012	605-018
	Bowen No.	52528	52497	52502	52653	52530	52500	...
CONE TYPE	Logan Part No.	...	...	...	...	...	...	...
PISTON ASSEMBLY	Bowen No.	...	...	...	...	...	...	...
<i>Consists of:</i>	Price	...	...	...	...	...	...	...
CONE	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
BY-PASS BODY	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
SEAL BODY	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
SEAL BODY SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

OPTIONAL

MANDREL BODY	Logan Part No.	AG1000-36	AG1000-36	AG1000-40	AG1000-42	AG1000-40	AG1000-41	AG1000-41
SETTING TOOL	Bowen No.	22709-36	22709-36	22709-40	22709-42	22709-40	22709-41	22709-41
	Price	\$926	\$926	\$961	\$961	\$961	\$961	\$961
PISTON SETTING TOOL	Logan Part No.	AG1000-34	AG2000	AG1000-37	AG1000-39	AG1000-36.5	AG1000-38	AG1000-38
	Bowen No.	22709-34	54922	22709-37	22709-39	22709-36.5	22709-38	22709-38
	Price	\$914	\$902	\$902	\$961	\$926	\$902	\$902
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
	Bowen No.	55403	55403	55403	55403	55403	55403	55403
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763
HI-TEMPERATURE	Logan Part No.	...	...	26000-081	...	26000-083	26000-084	26000-084
PACKING SET	Bowen No.	...	...	78330	...	80115	80005	80005
	Price	...	...	*	...	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5)16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API FH	3-1/2 API FH	3-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	4-3/4
INSIDE DIAMETER (INCHES)		1-1/2	1-7/8	1-15/16	2-3/8	1-1/2	2	2-1/4
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel
COMPLETE ASSEMBLY	Logan Part No.	605-007	605-008	605-009	605-010	605-011	605-012	605-018
	Bowen No.	52528	52497	52502	52653	52530	52500	...
PACKING SET	Logan Part No.	26000-043	26000-044	26000-045	26000-046	26000-047	26000-048	26000-048
<i>Consists of:</i>	Bowen No.	37415	20163	44491	35858	25892	38120	38120
	Price	\$34	\$34	\$36	\$43	\$44	\$41	\$41
MANDREL / WASHPIPE SEAL	Logan Part No.	568333	568333	568337	568339	568337	568338	568338
	Bowen No.	568333	568333	568337	568339	568337	568338	568338
<i>(4 req'd)</i>	Price	\$3	\$3	\$4	\$4	\$4	\$4	\$4
LARGE MIDDLE BODY SEAL	Logan Part No.	568235	568235	568239	568241	568241	568241	568241
	Bowen No.	568235	568235	568239	568241	568241	568241	568241
<i>(2 req'd)</i>	Price	\$4	\$4	\$4	\$6	\$6	\$6	\$6
SMALL MIDDLE BODY SEAL	Logan Part No.	568233	568233	568237	568239	568239	568239	568239
	Bowen No.	568233	568233	568237	568239	568239	568239	568239
<i>(3 req'd)</i>	Price	\$4	\$4	\$4	\$4	\$4	\$4	\$4
WASHPIPE SEAL	Logan Part No.	568224	568227	568227	568233	568228	568228	568228
	Bowen No.	568224	568227	568227	568233	568228	568228	568228
	Price	\$3	\$3	\$3	\$4	\$3	\$3	\$3
MANDREL BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568006	568006	568006	568006	568006
	Bowen No.	568006	568006	568006	568006	568006	568006	568006
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	568005	568005	568006	568006	568006
	Bowen No.	568005	568005	568005	568005	568006	568006	568006
	Price	\$9	\$9	\$9	\$9	\$2	\$2	\$2
PISTON SEAL	Logan Part No.	568228	568229	568231	568233	568231	568232	568232
	Bowen No.	568228	568229	568231	568233	568231	568232	568232
	Price	\$3	\$3	\$3	\$4	\$3	\$3	\$3
MIDDLE BODY / MANDREL BODY SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
WASHPIPE / MIDDLE BODY SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
BACK-UP RINGS	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL BODY SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
 - (2) Packing Sets include all seals necessary to dress the tool.
 - (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.
- Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg		
OUTSIDE DIAMETER (INCHES)		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9		
INSIDE DIAMETER (INCHES)		2	2-1/4	2-3/8	3-1/16	3-3/4		
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel		
COMPLETE ASSEMBLY	Logan Part No.	605-013	605-014	605-015	605-016	605-017		
	Bowen No.	52498	52544	52680	52711	68346		
	Price	*	\$35,455	\$38,017	\$45,556	\$81,908		
TOP SUB	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
MANDREL	Logan Part No.	AG4013	AG4014	AG4015	AG4016	AG4017		
	Bowen No.	14715	12375	11131	15156	66352		
	Price	*	\$10,329	\$12,786	\$14,317	\$27,710		
PISTON ASSEMBLY (Ring Type Standard)	Logan Part No.	26000-031	26000-032	26000-033	26000-034	26000-035		
	Bowen No.	55246	55212	55335	68924	66355		
	Price	*	\$1,590	\$1,344	\$1,448	\$2,430		
MANDREL BODY	Logan Part No.	AG5013	AG5014	AG5015	AG5016	AG5017		
	Bowen No.	52834	52835	52836	53088	66354		
	Price	*	\$5,167	\$5,560	\$5,584	\$12,748		
MIDDLE BODY	Logan Part No.	AG6013	AG6014	AG6015	AG6016	AG6017		
	Bowen No.	14712	12372	11133	15158	66347		
	Price	*	\$6,868	\$8,284	\$8,884	\$22,215		
WASHPIPE BODY	Logan Part No.	AG7013	AG7014	AG7015	AG7016	AG7017		
	Bowen No.	14711	12371	701	15164	66350		
	Price	*	\$4,798	\$5,535	\$6,020	\$7,215		
KNOCKER	Logan Part No.	AG8013	AG8014	AG8015	AG8016	AG8017		
	Bowen No.	14717	12377	11134	15159	66348		
	Price	*	\$809	\$909	\$1,034	\$1,745		
WASHPIPE	Logan Part No.	AG9013	AG9014	AG9015	AG9016	AG9017		
	Bowen No.	14714	12374	704	15163	66349		
	Price	*	\$2,023	\$2,274	\$2,949	\$5,648		
MANDREL BODY FILL PLUG	Logan Part No.	AG10003	AG10003	AG10003	AG10003	AG10003		
	Bowen No.	508	508	508	508	508		
	Price	\$16	\$16	\$16	\$16	\$16		
MIDDLE BODY FILL PLUG	Logan Part No.	AG10002	AG10002	AG10002	AG10002	AG10002		
	Bowen No.	329	329	329	329	329		
	Price	\$20	\$20	\$20	\$20	\$20		
PACKING SET	Logan Part No.	26000-049	26000-050	26000-051	26000-052	26000-053		
	Bowen No.	14720	12383	9738	20980	66359		
	Price	\$57	\$71	\$84	\$111	\$121		
MANDREL NON-EXTRUSION RING	Logan Part No.	L453	L365-48	L365-50.75	L365-59	L365-65		
	Bowen No.	453	365-48	708	365-59	365-65		
	No. Req'd	8	8	8	8	8		
MANDREL SEAL PROTECTOR RING	Logan Part No.	L449	L375-48	L375-50.75	L375-59	L375-65		
	Bowen No.	449	375-48	709	375-59	375-65		
	No. Req'd	8	8	8	8	8		
MANDREL BODY NON-EXTRUSION RING	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		

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* Available upon request. + See notes on Sheet 12 of 14.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5)16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg	
OUTSIDE DIAMETER (INCHES)		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9	
INSIDE DIAMETER (INCHES)		2	2-1/4	2-3/8	3-1/16	3-3/4	
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	
COMPLETE ASSEMBLY	Logan Part No.	605-013	605-014	605-015	605-016	605-017	
	Bowen No.	52498	52544	52680	52711	68346	
MANDREL BODY INSERT	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
MANDREL BODY SEAL PROTECTOR RING	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
RING TYPE PISTON ASSEMBLY	Logan Part No.	26000-031	26000-032	26000-033	26000-034	26000-035	
	Bowen No.	55246	55212	55335	68924	66355	
	Price	*	\$1,590	\$1,344	\$1,448	\$2,430	
<i>Consists of:</i>							
PISTON	Logan Part No.	AG15013	AG15014	AG15015	AG15016	AG15017	
	Bowen No.	55247	55213	55339	68925	66357	
	Price	*	\$1,156	\$1,124	\$1,129	\$1,984	
WAVE SPRING	Logan Part No.	...	...	...	...	...	
	No. Req'd	...	...	...	...	...	
	Price	...	...	...	...	...	
PISTON RING	Logan Part No.	L1999	L12379	L719	L15162	L66356	
	Bowen No.	1999	12379	719	15162	66356	
	No. Req'd	1	2	2	4	5	
	Price	\$62	\$57	\$65	\$54	\$95	
SEAL	Logan Part No.	568236	568237	568239	568426	568430	
	Bowen No.	568236	568237	568239	568426	568430	
	Price	\$4	\$4	\$4	\$10	\$13	
NON-EXTRUSION RING	Logan Part No.	L370-13.75	L370-15	L370-17	L365-53	L365-57	
	Bowen No.	370-13.75	370-15	370-17	365-53	365-57	
	Price	\$37	\$37	\$37	\$41	\$48	
SEAL PROTECTOR RING	Logan Part No.	L376-13.75	L376-15	L376-17	L375-53	L375-57	
	Bowen No.	376-13.75	376-15	376-17	375-53	375-57	
	Price	\$11	\$11	\$12	\$20	\$22	
CONE TYPE PISTON ASSEMBLY	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
<i>Consists of:</i>							
CONE	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
BY-PASS BODY	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
SEAL BODY	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	
SEAL BODY SEAL	Logan Part No.	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	
	Price	...	...	...	...	...	

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* Available upon request.

+ While assembly reflects two Outside Diameters, the price shown represents the smallest OD listed. An oversize fee will apply for any size above the smallest outside diameter. See "Special Notes" below with reference to this issue.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg		
OUTSIDE DIAMETER (INCHES)		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9		
INSIDE DIAMETER (INCHES)		2	2-1/4	2-3/8	3-1/16	3-3/4		
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel		
COMPLETE ASSEMBLY	Logan Part No.	605-013	605-014	605-015	605-016	605-017		
	Bowen No.	52498	52544	52680	52711	68346		

OPTIONAL

MANDREL BODY SETTING TOOL	Logan Part No.	AG1001	AG1000-48	AG1000-51	AG1000-59	AG1000-65		
	Bowen No.	448	22709-48	22709-51	22709-59	22709-65		
	Price	*	\$1,081	\$1,081	\$1,226	\$1,226		
PISTON SETTING TOOL	Logan Part No.	AG1000-41.75	AG2001	AG1000-45	AG1000-53	AG1000-57		
	Bowen No.	22709-41.75	54309	22709-45	22709-53	22709-57		
	Price	*	\$782	\$1,081	\$1,081	\$1,226		
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055		
	Bowen No.	55403	55403	55403	55403	55403		
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763		
HI-TEMPERATURE PACKING SET	Logan Part No.	26000-085	26000-086	26000-087	26000-088	...		
	Bowen No.	148246	79015 & 147932	9738/006	20980/006 & 007	...		
	Price	*	*	*	*	...		
PACKING SET <i>Consists of:</i>	Logan Part No.	26000-049	26000-050	26000-051	26000-052	26000-053		
	Bowen No.	14720	12383	9738	20980	66359		
	Price	\$57	\$71	\$84	\$111	\$121		
MANDREL / WASHPIPE SEAL <i>(4 req'd)</i>	Logan Part No.	568344	568345	568348	568432	568438		
	Bowen No.	568344	568345	568348	568432	568438		
	Price	\$6	\$7	\$9	\$13	\$15		
LARGE MIDDLE BODY SEAL <i>(2 req'd)</i>	Logan Part No.	568248	568252	568256	568261	568265		
	Bowen No.	568248	568252	568256	568261	568265		
	Price	\$10	\$12	\$15	\$15	\$17		
SMALL MIDDLE BODY SEAL <i>(3 req'd)</i>	Logan Part No.	568246	568250	568254	568259	...		
	Bowen No.	568246	568250	568254	568259	...		
	Price	\$9	\$10	\$13	\$15	...		
WASHPIPE SEAL	Logan Part No.	568234	568235	568235	568242	568246		
	Bowen No.	568234	568235	568235	568242	568246		
	Price	\$4	\$4	\$4	\$6	\$9		
MANDREL BODY FILL PLUG SEAL	Logan Part No.	568011	568011	568011	568011	568011		
	Bowen No.	568011	568011	568011	568011	568011		
	Price	\$2	\$2	\$2	\$2	\$2		
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568006	568006	568011		
	Bowen No.	568006	568006	568006	568006	568011		
	Price	\$2	\$2	\$2	\$2	\$2		
PISTON SEAL	Logan Part No.	568236	568237	568239	568426	568430		
	Bowen No.	568236	568237	568239	568426	568430		
	Price	\$4	\$4	\$4	\$10	\$13		

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* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5)16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

Logan Z Type Hydraulic Fishing Jars

TOOL JOINT CONNECTION		4-1/2 API FH	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg		
OUTSIDE DIAMETER (INCHES)		6	6-1/4 & 6-1/2	6-3/4	7-3/4 & 8	9		
INSIDE DIAMETER (INCHES)		2	2-1/4	2-3/8	3-1/16	3-3/4		
TYPE JAR		Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel	Integral Mandrel		
COMPLETE ASSEMBLY	Logan Part No.	605-013	605-014	605-015	605-016	605-017		
	Bowen No.	52498	52544	52680	52711	68346		
MIDDLE BODY / MANDREL BODY SEAL	Logan Part No.	...	...	...	...	568441		
	Bowen No.	...	...	...	...	568441		
	Price	...	...	...	...	\$16		
WASHPIPE / MIDDLE BODY SEAL	Logan Part No.	...	...	...	...	568263		
	Bowen No.	...	...	...	...	568263		
	Price	...	...	...	...	\$16		
BACK-UP RINGS	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
MANDREL SEAL	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		
MANDREL BODY SEAL	Logan Part No.	...	...	...	...	...		
	Bowen No.	...	...	...	...	...		
	Price	...	...	...	...	...		

JAR LUBE	Logan Part No.	49842-A	49842-B	49842-C	49842-D			
	Bowen No.	49842-A	49842-B	49842-C	49842-D			
	Price	1 Gallon \$57	5 Gallons \$278	20 Gallons \$1,656	55 Gallons \$3,046			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

(1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.

(2) Packing Sets include all seals necessary to dress the tool.

Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.

(3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

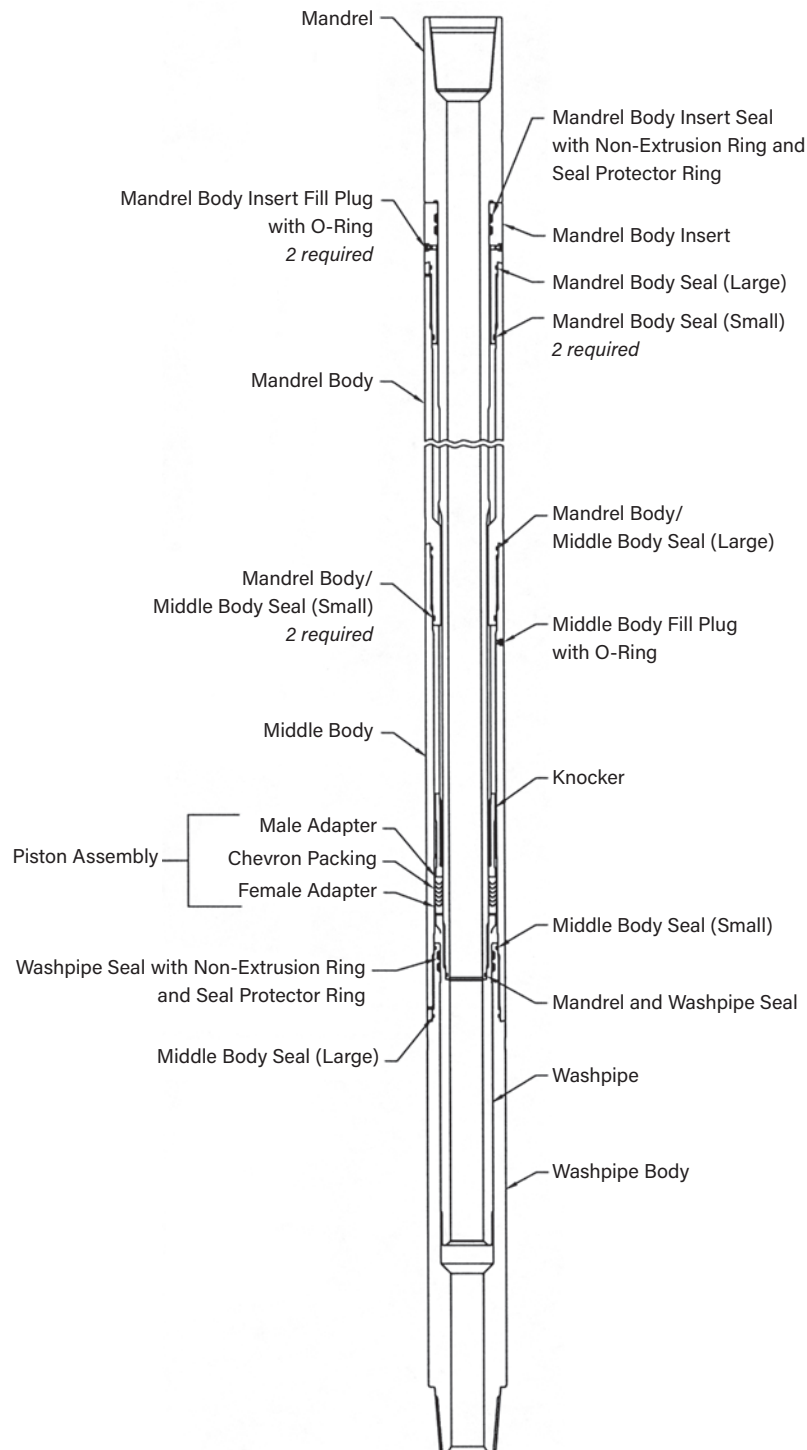
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 1 Washpipe
- (3) 2 Piston Assemblies
- (4) 16 Non-Extrusion Rings (5) 16 Seal Protector Rings
- (6) 4 Mandrel Body Fill Plugs
- (7) 4 Middle Body Fill Plugs
- (8) 8 Packing Sets
- (9) 1 Mandrel Body Setting Tool
- (10) 1 Piston Setting Tool

LOGAN Z TYPE ENERGIZERS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Z Type Energizers

TOOL JOINT CONNECTION		1-13/16 WFJ	1-1/4 API Reg	2-3/8 PH6 5.9# HYD	2-3/8 API Reg	2-3/8 API IF	2-3/8 EUE	
OUTSIDE DIAMETER (INCHES)		1-13/16	2-1/4	2-29/32	3-1/8	3-3/4	3-3/4	
INSIDE DIAMETER (INCHES)		5/16	3/8	1	1	1-1/2	1-7/8	
JARS USED WITH		74723	54020	68010	52504	52528	52497	
TOTAL STROKE TO SOLID (INCHES)		6	6	12-3/4	8-3/4	7-7/8	7-5/8	
COMPLETE ASSEMBLY	Logan Part No.	606-001	606-002	606-003	606-004	606-005	606-006	
	Bowen No.	64460	50640	68262	55867	55747	50660	
	Price	*	\$20,397	\$24,584	\$24,413	\$25,804	*	
TOP SUB	Logan Part No.	AG3001	...	AG3003	...	AG3007	AG3008	
	Bowen No.	21156	...	68015	...	37412	20156	
	Price	...	...	\$880	...	\$756	*	
MANDREL	Logan Part No.	AH3001	AH3002	AH3003	AH3004	AH3005	AH3006	
	Bowen No.	64461	50641	68267	55869	55749	50661	
	Price	*	\$5,929	\$6,518	\$8,057	\$9,008	*	
PISTON ASSEMBLY	Logan Part No.	27000-018	27000-019	27000-020	27000-021	27000-022	27000-023	
	Bowen No.	64455	64317	68268	64234	64211	64330	
	Price	*	\$376	\$421	\$429	\$450	*	
MANDREL BODY INSERT	Logan Part No.	AH4001	AH4002	AH4003	AH4004	AH4005	AH4005	
	Bowen No.	50634	50642	68266	50650	50283	50283	
	Price	*	\$829	\$1,088	\$1,124	\$1,124	\$1,124	
MANDREL BODY EXTENSION	Logan Part No.	...	...	AH5003	...	...	...	
	Bowen No.	...	...	68265	...	...	...	
	Price	...	...	\$4,785	...	...	...	
MANDREL BODY	Logan Part No.	AH6001	AH6002	AH6003	AH6004	AH6006	AH6006	
	Bowen No.	50635	50643	68264	50651	50284	50284	
	Price	*	\$4,612	\$4,303	\$5,093	\$5,322	\$5,322	
MIDDLE BODY	Logan Part No.	AH7001	AH7002	AH7003	AH7004	AH7005	AH7005	
	Bowen No.	50636	50644	68263	55870	55748	55748	
	Price	*	\$3,018	\$3,937	\$3,459	\$3,459	\$3,459	
WASHPIPE BODY	Logan Part No.	AG7001	AG7002	AG7003	AG7005	AG7007	AG7008	
	Bowen No.	21151	18776	68011	38064	37407	20151	
	Price	*	\$3,056	\$3,022	\$3,118	\$3,229	*	
KNOCKER	Logan Part No.	...	AG8002	...	AG8005	...	...	
	Bowen No.	...	18781	...	38060	...	...	
	Price	...	\$483	...	\$612	...	...	
WASHPIPE	Logan Part No.	AG9001	AG9002	AG9003	AG9005	AG9007	AG9008	
	Bowen No.	21154	18779	68016	42738	37410	20154	
	Price	*	\$1,284	\$1,578	\$1,418	\$1,531	*	
MANDREL BODY INSERT FILL PLUG	Logan Part No.	AG10000	AG10002	AG10000	AG10002	AG10002	AG10002	
	Bowen No.	617	329	617	329	329	329	
	No. Req'd	2	2	2	2	2	2	
	Price	\$17	\$20	\$17	\$20	\$20	\$20	
MIDDLE BODY FILL PLUG	Logan Part No.	AG10004	AG10000	AG10004	AG10000	AG10000	AG10000	
	Bowen No.	10641	617	10641	617	617	617	
	Price	\$3	\$17	\$3	\$17	\$17	\$17	

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* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Seal Protector Rings are not included, and must be ordered separately.
- (3) Service Kit does not include any Seal Setting Tools, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		1-13/16 WFJ	1-1/4 API Reg	2-3/8 PH6 5.9# HYD	2-3/8 API Reg	2-3/8 API IF	2-3/8 EUE	
OUTSIDE DIAMETER (INCHES)		1-13/16	2-1/4	2-29/32	3-1/8	3-3/4	3-3/4	
INSIDE DIAMETER (INCHES)		5/16	3/8	1	1	1-1/2	1-7/8	
JARS USED WITH		74723	54020	68010	52504	52528	52497	
TOTAL STROKE TO SOLID (INCHES)		6	6	12-3/4	8-3/4	7-7/8	7-5/8	
COMPLETE ASSEMBLY	Logan Part No.	606-001	606-002	606-003	606-004	606-005	606-006	
	Bowen No.	64460	50640	68262	55867	55747	50660	
MANDREL BODY INSERT	Logan Part No.	...	L56542	...	...	...	...	
NON-EXTRUSION RING	Bowen No.	...	56542	...	...	...	...	
	Price	...	\$48	...	...	...	...	
MIDDLE BODY INSERT	Logan Part No.	L8-027	L227-27.25	...	...	...	...	
SEAL RING	Bowen No.	8-027	227-27.25	...	...	...	...	
	No. Req'd	2	2	...	...	...	...	
	Price	\$4	\$4	...	...	...	...	
MANDREL & WASHPIPE	Logan Part No.	L365-17	L365-24	L365-30.5	L365-32	L365-36	L365-36	
NON-EXTRUSION RING	Bowen No.	365-17	365-24	365-30.5	365-32	365-36	365-36	
	No. Req'd	8	8	8	8	8	8	
	Price	\$36	\$36	\$36	\$36	\$37	\$37	
MANDREL & WASHPIPE	Logan Part No.	L375-17	L375-24	L375-30.5	L375-32	L375-36	L375-36	
SEAL PROTECTOR RING	Bowen No.	375-17	375-24	375-30.5	375-32	375-36	375-36	
	No. Req'd	8	8	8	8	8	8	
	Price	\$7	\$10	\$9	\$7	\$18	\$18	

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Special Notes:

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- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Back-up Rings are not included, and must be ordered separately.
- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION	1-13/16 WFJ	1-1/4 API Reg	2-3/8 PH6 5.9# HYD	2-3/8 API Reg	2-3/8 API IF	2-3/8 EUE	
OUTSIDE DIAMETER (INCHES)	1-13/16	2-1/4	2-29/32	3-1/8	3-3/4	3-3/4	
INSIDE DIAMETER (INCHES)	5/16	3/8	1	1	1-1/2	1-7/8	
JARS USED WITH	74723	54020	68010	52504	52528	52497	
TOTAL STROKE TO SOLID (INCHES)	6	6	12-3/4	8-3/4	7-7/8	7-5/8	
COMPLETE ASSEMBLY	Logan Part No.	606-001	606-002	606-003	606-004	606-005	606-006
	Bowen No.	64460	50640	68262	55867	55747	50660

OPTIONAL

MANDREL BODY	Logan Part No.	AG1000-17	AG1000-24	AG1000-30.5	AG1000-32	AG1000-36	AG1000-36	
SETTING TOOL	Bowen No.	22709-17	22709-24	22709-30.5	22709-32	22709-36	22709-36	
	Price	\$277	\$841	\$902	\$902	\$926	\$926	
PISTON ASSEMBLY	Logan Part No.	27000-018	27000-019	27000-020	27000-021	27000-022	27000-023	
<i>Consists of:</i>	Bowen No.	64455	64317	68268	64234	64211	64330	
	Price	\$439	\$376	\$421	\$429	\$450	*	
UPPER ADAPTER	Logan Part No.	AH12001	AH12002	AH12003	AH12004	AH12005	AH12006	
	Bowen No.	64456	64318	68270	64236	64213	64331	
	Price	\$143	\$143	\$143	\$143	\$143	*	
PACKING	Logan Part No.	AH13001	AH13002	AH13003	AH13004	AH13005	AH13006	
	Bowen No.	64458	64320	68271	64237	64214	64333	
	Price	\$166	\$118	\$147	\$162	\$184	*	
LOWER ADAPTER	Logan Part No.	AH14001	AH14002	AH14003	AH14004	AH14005	AH14006	
	Bowen No.	64457	64319	68269	64235	64212	64332	
	Price	\$132	\$132	\$132	\$136	\$136	*	
CONE	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
BY-PASS BODY	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
SEAL BODY	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
O-RING SEAL	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	

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Special Notes:

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- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

Logan Z Type Energizers

TOOL JOINT CONNECTION		1-13/16 WFJ	1-1/4 API Reg	2-3/8 PH6 5.9# HYD	2-3/8 API Reg	2-3/8 API IF	2-3/8 EUE	
OUTSIDE DIAMETER (INCHES)		1-13/16	2-1/4	2-29/32	3-1/8	3-3/4	3-3/4	
INSIDE DIAMETER (INCHES)		5/16	3/8	1	1	1-1/2	1-7/8	
JARS USED WITH		74723	54020	68010	52504	52528	52497	
TOTAL STROKE TO SOLID (INCHES)		6	6	12-3/4	8-3/4	7-7/8	7-5/8	
COMPLETE ASSEMBLY	Logan Part No.	606-001	606-002	606-003	606-004	606-005	606-006	
	Bowen No.	64460	50640	68262	55867	55747	50660	
O-RING PACKING SET	Logan Part No.	27000-035	27000-036	27000-037	27000-038	27000-039	27000-040	
<i>Consists of:</i>	Bowen No.	50638	50835	68272	55873	55816	55497	
	Price	\$29	\$36	\$36	\$43	\$45	\$41	
WASHPipe SEAL	Logan Part No.	568115	568210	568224	568220	568224	568227	
	Bowen No.	568115	568210	568224	568220	568224	568227	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
MANDREL & WASHPipe SEAL	Logan Part No.	568212	568219	568328	568329	568333	568333	
	Bowen No.	568212	568219	568328	568329	568333	568333	
	No. Req'd	2	4	5	4	4	3	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
MANDREL BODY & MIDDLE BODY SEAL - LARGE	Logan Part No.	568219	568224	568036	568231	568235	568235	
	Bowen No.	568219	568224	568036	568231	568235	568235	
	No. Req'd	3	3	4	3	3	3	
	Price	\$3	\$3	\$4	\$3	\$4	\$4	
MANDREL BODY & MIDDLE BODY SEAL - SMALL	Logan Part No.	568027	568222	568035	568228	568233	568233	
	Bowen No.	568027	568222	568035	568228	568233	568233	
	No. Req'd	3	3	8	5	5	5	
	Price	\$3	\$3	\$4	\$3	\$4	\$4	
MANDREL BODY INSERT FILL PLUG SEAL	Logan Part No.	...	568006	568005	568006	568006	568006	
	Bowen No.	...	568006	568005	568006	568006	568006	
	No. Req'd	...	2	2	2	2	2	
	Price	...	\$2	\$2	\$2	\$2	\$2	
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	...	568005	568005	568005	
	Bowen No.	568005	568005	...	568005	568005	568005	
	Price	\$2	\$2	...	\$2	\$2	\$2	
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055	
	Bowen No.	55403	55403	55403	55403	55403	55403	
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	

ENERGIZER FLUID	Logan Part No.	50529-C	50529-D	50529-E				
	Bowen No.	50529-C	50529-D	50529				
		5 Gallons	30 Gallons	55 Gallons				
	Price	\$533	\$3,115	\$5,059				

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- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Back-up Rings are not included, and must be ordered separately.
- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
INSIDE DIAMETER (INCHES)		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
JARS USED WITH		52506	52502	52653	52530	52500	52498	52544
TOTAL STROKE TO SOLID (INCHES)		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
COMPLETE ASSEMBLY	Logan Part No.	606-007	606-008	606-009	606-010	606-011	606-012	606-013
	Bowen No.	55895	55664	50708	50700	55812	55860	55905
	Price	\$27,679	\$30,436	*	\$33,722	\$35,570	*	\$53,486
TOP SUB	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL	Logan Part No.	AH3007	AH3008	AH3009	AH3010	AH3011	AH3012	AH3013
	Bowen No.	55897	55769	50709	50701	55817	55862	55908
	Price	\$10,833	\$11,593	*	\$13,391	\$12,848	*	\$18,810
PISTON ASSEMBLY	Logan Part No.	27000-024	27000-025	27000-026	27000-027	27000-028	27000-029	27000-030
	Bowen No.	64248	64206	64340	64995	64264	64268	64272
	Price	\$486	\$510	*	\$560	\$487	*	\$930
MANDREL BODY INSERT	Logan Part No.	AH4008	AH4009	AH4010	AH4011	AH4012	AH4013	AH4014
	Bowen No.	50591	49412	50710	50702	49394	49635	50598
	Price	\$1,124	\$1,198	*	\$1,294	\$124	*	\$2,104
MANDREL BODY EXTENSION	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL BODY	Logan Part No.	AH6007	AH6008	AH6009	AH6010	AH6011	AH6012	AH6013
	Bowen No.	50589	50371	50711	50703	50374	49634	50597
	Price	\$5,322	\$5,711	*	\$6,787	\$6,511	*	\$15,142
MIDDLE BODY	Logan Part No.	AH7007	AH7008	AH7009	AH7010	AH7011	AH7012	AH7013
	Bowen No.	55898	55660	50712	50704	55814	55863	55920
	Price	\$3,459	\$4,963	*	\$4,232	\$4,060	*	\$4,775
WASHPIPE BODY	Logan Part No.	AG7006	AG7009	AG7010	AG7011	AG7012	AG7013	AG7014
	Bowen No.	38045	44487	35854	25961	38111	14711	12371
	Price	\$3,229	\$3,677	*	\$4,109	\$4,109	*	\$4,798
KNOCKER	Logan Part No.	AG8006	AH9008	AG8010	AG8011	AG8012	AG8013	AG8014
	Bowen No.	38049	51185	35857	25966	38116	14717	12377
	Price	\$653	\$788	*	\$719	\$719	*	\$809
WASHPIPE	Logan Part No.	AG9006	AG9009	AH10009	AG9011	AG9012	AG9013	AH10013
	Bowen No.	38046	44488	64344	25964	38114	14714	55907
	Price	\$1,531	\$1,618	*	\$1,665	\$1,665	*	\$2,229
MANDREL BODY INSERT FILL PLUG	Logan Part No.	AG10002	AG10002	AG10002	AG10002	AG10002	AG10003	AG10003
	Bowen No.	329	329	329	329	329	508	508
	No. Req'd	2	2	2	2	2	2	2
MIDDLE BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10000	AG10002	AG10000	AG10002	AG10002
	Bowen No.	617	617	617	329	617	329	329
	Price	\$17	\$17	\$17	\$20	\$17	\$20	\$20

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* Available upon request.

+ While assembly reflects two outside diameters, the price shown represents the smallest OD listed. An oversize fee will apply for any size above the smallest outside diameter. See "Special Notes" below with reference to this issue.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Back-up Rings are not included, and must be ordered separately.
- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
INSIDE DIAMETER (INCHES)		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
JARS USED WITH		52506	52502	52653	52530	52500	52498	52544
TOTAL STROKE TO SOLID (INCHES)		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
COMPLETE ASSEMBLY	Logan Part No.	606-007	606-008	606-009	606-010	606-011	606-012	606-013
	Bowen No.	55895	55664	50708	50700	55812	55860	55905
MANDREL BODY INSERT NON-EXTRUSION RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MIDDLE BODY INSERT SEAL RING (2 req'd)	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL & WASHPIPE NON-EXTRUSION RING (8 req'd)	Logan Part No.	L365-35	L365-40	L365-42	L365-40	L365-41	L453	L365-48
	Bowen No.	365-35	365-40	365-42	365-40	365-41	453	365-48
	Price	\$37	\$37	\$37	\$37	\$37	\$38	\$47
MANDREL & WASHPIPE SEAL PROTECTOR RING (8 req'd)	Logan Part No.	L375-35	L375-40	L375-42	L375-40	L375-41	L449	L375-48
	Bowen No.	375-35	375-40	375-42	375-40	375-41	449	375-48
	Price	\$18	\$18	\$18	\$18	\$11	\$13	\$13

OPTIONAL

MANDREL BODY SETTING TOOL	Logan Part No.	AG1000-35	AG1000-40	AG1000-42	AG1000-40	AG1000-41	AG1001	AG1000-48
	Bowen No.	22709-35	22709-40	22709-42	22709-40	22709-41	448	22709-48
	Price	\$914	\$961	*	\$961	\$961	*	\$1,081
PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	27000-024	27000-025	27000-026	27000-027	27000-028	27000-029	27000-030
	Bowen No.	64248	64206	64340	64995	64264	64268	64272
	Price	\$486	\$510	*	\$560	\$487	*	\$930
UPPER ADAPTER	Logan Part No.	AH12007	AH12008	AH12009	AH12010	AH12011	AH12012	AH12013
	Bowen No.	64250	64208	64341	64997	64266	64269	64273
	Price	\$143	\$149	*	\$149	\$132	*	\$232
PACKING	Logan Part No.	AH13007	AH13008	AH13009	AH13010	AH13011	AH13012	AH13013
	Bowen No.	64251	64209	64343	64998	64267	64271	64275
	Price	\$217	\$237	*	\$261	\$232	*	\$523
LOWER ADAPTER	Logan Part No.	AH14007	AH14008	AH14009	AH14010	AH14011	AH14012	AH14013
	Bowen No.	64249	64207	64342	64996	64265	64270	64274
	Price	\$136	\$143	*	\$143	\$127	*	\$180
CONE	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
BY-PASS BODY	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
SEAL BODY	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
O-RING SEAL	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

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* Available upon request.

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Special Notes:

- For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Back-up Rings are not included, and must be ordered separately.
- Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- Name and number of assembly or part
- Connections, if other than standard
- Name and number of any desired spares
- Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4 & 6-1/2
INSIDE DIAMETER (INCHES)		1-1/4	1-15/16	2-3/8	1-1/2	2	2	2-1/4
JARS USED WITH		52506	52502	52653	52530	52500	52498	52544
TOTAL STROKE TO SOLID (INCHES)		8-1/4	8-5/8	10-3/8	8-7/8	10-1/8	8-5/8	13
COMPLETE ASSEMBLY	Logan Part No.	606-007	606-008	606-009	606-010	606-011	606-012	606-013
	Bowen No.	55895	55664	50708	50700	55812	55860	55905
	Price							
O-RING PACKING SET <i>Consists of:</i>	Logan Part No.	27000-041	27000-042	27000-043	27000-044	27000-045	27000-046	27000-047
	Bowen No.	55902	55666	50840	50841	55815	55866	55919
	Price	\$47	\$48	\$50	\$50	\$46	\$82	\$82
WASHPipe SEAL	Logan Part No.	568222	568227	568233	568228	568228	568234	568232
	Bowen No.	568222	568227	568233	568228	568228	568234	568232
	Price	\$3	\$3	\$4	\$3	\$3	\$4	\$3
MANDREL & WASHPipe SEAL	Logan Part No.	568332	568327	568339	568337	568338	568344	568345
	Bowen No.	568332	568327	568339	568337	568338	568344	568345
	No. Req'd	4	4	4	4	4	4	4
	Price	\$3	\$3	\$4	\$4	\$4	\$6	\$7
MANDREL BODY & MIDDLE BODY SEAL - LARGE	Logan Part No.	568235	568239	568241	568241	568241	568248	568252
	Bowen No.	568235	568239	568241	568241	568241	568248	568252
	No. Req'd	3	3	3	3	3	3	3
	Price	\$4	\$4	\$6	\$6	\$6	\$10	\$12
MANDREL BODY & MIDDLE BODY SEAL - SMALL	Logan Part No.	568233	568237	568239	568239	568239	568246	568250
	Bowen No.	568233	568237	568239	568239	568239	568246	568250
	No. Req'd	5	5	5	5	5	3	5
	Price	\$4	\$4	\$4	\$4	\$4	\$9	\$10
MANDREL BODY INSERT FILL PLUG SEAL	Logan Part No.	568006	568006	568006	568006	568006	568011	568011
	Bowen No.	568006	568006	568006	568006	568006	568011	568011
	No. Req'd	2	2	2	2	2	2	2
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	568005	568006	568005	568006	568006
	Bowen No.	568005	568005	568005	568006	568005	568006	568006
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
	Bowen No.	55403	55403	55403	55403	55403	55403	55403
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763

ENERGIZER FLUID	Logan Part No.	50529-A	50529-C	50529-D	50529-E			
	Bowen No.	50529-A	50529-C	50529-D	50529			
		1 Gallon	5 Gallons	30 Gallons	55 Gallons			
	Price	\$116	\$492	\$3,116	\$4,577			

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Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel Body, Mandrel Body Insert, Middle Body, Washpipe Body, and either Mandrel or Top Sub.
- (2) Packing Sets include all seals necessary to dress the tool. Non-Extrusion Rings and Back-up Rings are not included, and must be ordered separately.
- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
OUTSIDE DIAMETER (INCHES)		6-3/4	7-3/4 & 8	9				
INSIDE DIAMETER (INCHES)		2-3/8	3-1/16	3-3/4				
JARS USED WITH		52680	52711	66346				
TOTAL STROKE TO SOLID (INCHES)		13	13	13				
COMPLETE ASSEMBLY	Logan Part No.	606-014	606-015	606-016				
	Bowen No.	50720	55910	66372				
	Price	*	\$69,522	*				
TOP SUB	Logan Part No.	...	...	...				
	Bowen No.	...	...	...				
	Price	...	...	...				
MANDREL	Logan Part No.	AH3014	AH3015	AH3016				
	Bowen No.	50721	50146	66376				
	Price	*	\$23,572	*				
PISTON ASSEMBLY	Logan Part No.	27000-031	27000-032	27000-033				
	Bowen No.	64240	64276	66382				
	Price	*	\$1,821	*				
MANDREL BODY INSERT	Logan Part No.	AH4015	AH4016	AH4017				
	Bowen No.	50722	50149	66380				
	Price	*	\$2,509	*				
MANDREL BODY EXTENSION	Logan Part No.	...	...	...				
	Bowen No.	...	...	...				
	Price	...	...	...				
MANDREL BODY	Logan Part No.	AH6014	AH6015	AH6016				
	Bowen No.	50723	50147	66377				
	Price	*	\$15,454	*				
MIDDLE BODY	Logan Part No.	AH7014	AH7015	AH7016				
	Bowen No.	50724	55911	66373				
	Price	*	\$7,390	*				
WASHPIPE BODY	Logan Part No.	AG7015	AG7016	AG7017				
	Bowen No.	701	15164	66350				
	Price	*	\$7,022	*				
KNOCKER	Logan Part No.	AG8015	AH9015	AG8017				
	Bowen No.	11134	50150	66348				
	Price	\$885	\$1,042	\$1,635				
WASHPIPE	Logan Part No.	AG9015	AH10015	AG9017				
	Bowen No.	704	55912	66349				
	Price	*	\$3,246	*				
MANDREL BODY INSERT FILL PLUG	Logan Part No.	AG10003	AG10003	AG10003				
	Bowen No.	508	508	508				
	No. Req'd	2	2	2				
	Price	\$15	\$15	\$15				
MIDDLE BODY FILL PLUG	Logan Part No.	AG10002	AG10002	...				
	Bowen No.	329	329	...				
	Price	\$20	\$20	...				

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Special Notes:

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg			
OUTSIDE DIAMETER (INCHES)		6-3/4	7-3/4 & 8	9			
INSIDE DIAMETER (INCHES)		2-3/8	3-1/16	3-3/4			
JARS USED WITH		52680	52711	66346			
TOTAL STROKE TO SOLID (INCHES)		13	13	13			
COMPLETE ASSEMBLY	Logan Part No.	606-014	606-015	606-016			
	Bowen No.	50720	55910	66372			
MANDREL BODY INSERT NON-EXTRUSION RING	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			
MIDDLE BODY INSERT SEAL RING (2 req'd)	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			
MANDREL & WASHPIPE NON-EXTRUSION RING (8 req'd)	Logan Part No.	L365-50.75	L365-59	L365-65			
	Bowen No.	708	365-59	365-65			
	Price	\$45	\$62	\$181			
MANDREL & WASHPIPE SEAL PROTECTOR RING (8 req'd)	Logan Part No.	L375-50.75	L375-59	L375-65			
	Bowen No.	709	375-59	375-65			
	Price	\$19	\$31	\$63			

OPTIONAL

MANDREL BODY SETTING TOOL	Logan Part No.	AG1000-51	AG1000-59	AG1017			
	Bowen No.	22709-51	22709-59	22709-65			
	Price	*	\$1,226	*			
PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	27000-031	27000-032	27000-033			
	Bowen No.	64240	64276	66382			
	Price	*	\$1,913	*			
UPPER ADAPTER	Logan Part No.	AH12014	AH12015	AH12016			
	Bowen No.	64242	64277	66378			
	Price	*	\$622	*			
PACKING	Logan Part No.	AH13014	AH13015	AH13016			
	Bowen No.	64243	64279	66384			
	Price	*	\$701	*			
LOWER ADAPTER	Logan Part No.	AH14014	AH14015	AH14016			
	Bowen No.	64241	64278	66379			
	Price	*	\$588	*			
CONE	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			
BY-PASS BODY	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			
SEAL BODY	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			
O-RING SEAL	Logan Part No.	...	...	...			
	Bowen No.	...	...	...			
	Price	...	...	...			

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

Logan Z Type Energizers

TOOL JOINT CONNECTION		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg			
OUTSIDE DIAMETER (INCHES)		6-3/4	7-3/4 & 8	9			
INSIDE DIAMETER (INCHES)		2-3/8	3-1/16	3-3/4			
JARS USED WITH		52680	52711	66346			
TOTAL STROKE TO SOLID (INCHES)		13	13	13			
COMPLETE ASSEMBLY	Logan Part No.	606-014	606-015	606-016			
	Bowen No.	50720	55910	66372			
O-RING PACKING SET <i>Consists of:</i>	Logan Part No.	27000-048	27000-049	27000-050			
	Bowen No.	50842	55921	66383			
	Price	\$101	\$131	\$241			
WASHPIPE SEAL	Logan Part No.	568235	568242	568246			
	Bowen No.	568235	568242	568246			
	Price	\$4	\$6	\$9			
MANDREL & WASHPIPE SEAL	Logan Part No.	568348	568432	568438			
	Bowen No.	568348	568432	568438			
	No. Req'd	4	4	4			
	Price	\$9	\$13	\$15			
MANDREL BODY & MIDDLE BODY SEAL - LARGE	Logan Part No.	568256	568261	568265			
	Bowen No.	568256	568261	568265			
	No. Req'd	3	3	3			
	Price	\$15	\$15	\$17			
MANDREL BODY & MIDDLE BODY SEAL - SMALL	Logan Part No.	568254	568259	568263			
	Bowen No.	568254	568259	568263			
	No. Req'd	5	3	1			
	Price	\$13	\$15	\$16			
MANDREL BODY INSERT FILL PLUG SEAL	Logan Part No.	568011	568011	568441			
	Bowen No.	568011	568011	568441			
	No. Req'd	2	2	2			
	Price	\$2	\$2	\$16			
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568011			
	Bowen No.	568006	568006	568011			
	Price	\$2	\$2	\$2			
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055			
	Bowen No.	55403	55403	55403			
	Price	\$2,763	\$2,763	\$2,763			

ENERGIZER FLUID	Logan Part No.	50529-A	50529-C	50529-D	50529-E		
	Bowen No.	50529-A	50529-C	50529-D	50529		
	Price	1 Gallon \$116	5 Gallons \$492	30 Gallons \$3,116	55 Gallons \$4,577		

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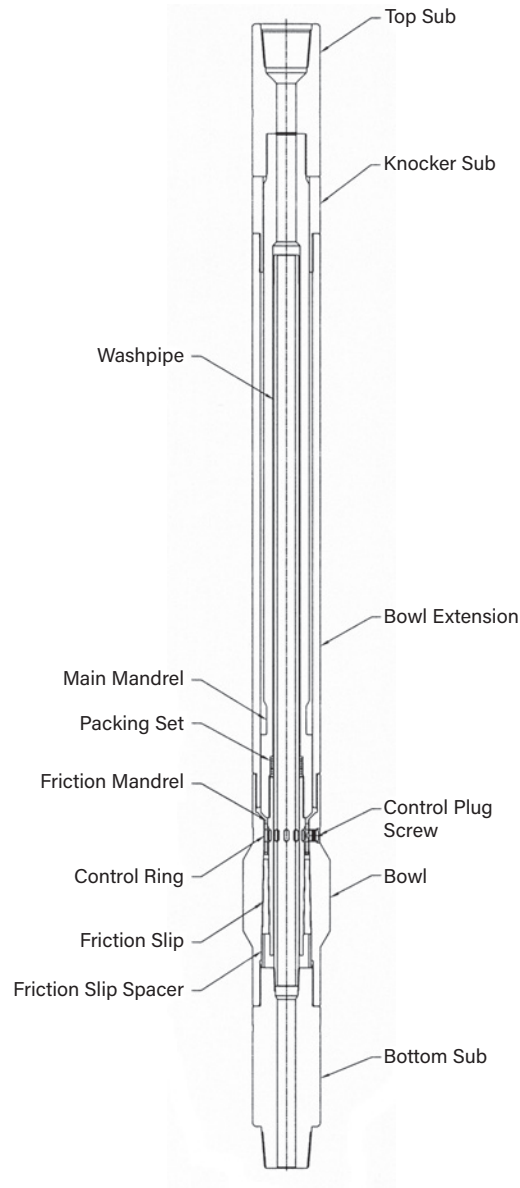
Special Notes:

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- (3) Service Kit does not include Mandrel Body Seal Setting Tool, which must be ordered separately.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) Outside diameter, if other than standard

LOGAN SURFACE BUMPER JARS



Logan Surface Bumper Jars

TOOL JOINT CONNECTION		4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		7
INSIDE DIAMETER (INCHES)		1-7/8
STROKE		48
COMPLETE ASSEMBLY	Logan Part No.	609-001
	Bowen No.	74520
	Price	\$46,232
TOP SUB	Logan Part No.	AS1000
	Bowen No.	13587
	Price	\$3,462
KNOCKER SUB	Logan Part No.	AS2000
	Bowen No.	74522
	Price	\$3,816
BOWL EXTENSION	Logan Part No.	AS3000
	Bowen No.	74523
	Price	\$8,895
BOWL	Logan Part No.	AS4000
	Bowen No.	74524
	Price	\$6,551
BOTTOM SUB	Logan Part No.	AS5000
	Bowen No.	74525
	Price	\$2,919
MAIN MANDREL	Logan Part No.	AS6000
	Bowen No.	78609
	Price	\$9,055
WASHPIPE	Logan Part No.	AS7000
	Bowen No.	13588
	Price	\$3,975
PACKING SET	Logan Part No.	AS8000
	Bowen No.	66816
	Price	\$529
FRICTION MANDREL	Logan Part No.	AS9000
	Bowen No.	78610
	Price	\$2,274
CONTROL RING	Logan Part No.	AS10000
	Bowen No.	844
	Price	\$1,150
FRICTION SLIP	Logan Part No.	AS11000
	Bowen No.	B-236
	Price	\$1,935

REPLACEMENT PARTS

FRICTION SLIP SPACER	Logan Part No.	AS12000
	Bowen No.	13594
	Price	\$271
CONTROL RING PLUG	Logan Part No.	AS13000
	Bowen No.	4144
	Price	\$243
PLUG & CONTROL RING WRENCH	Logan Part No.	AS14000
	Bowen No.	86
	Price	\$193
MANDREL SOCKET WRENCH	Logan Part No.	AS15000
	Bowen No.	14773
	Price	\$1,884
LIFTING SUB	Logan Part No.	AS17000
	Bowen No.	242
	Price	\$832
FRICTION SLIP LUBE (1 Tube)	Logan Part No.	AS18000
	Bowen No.	74285
	Price	\$80

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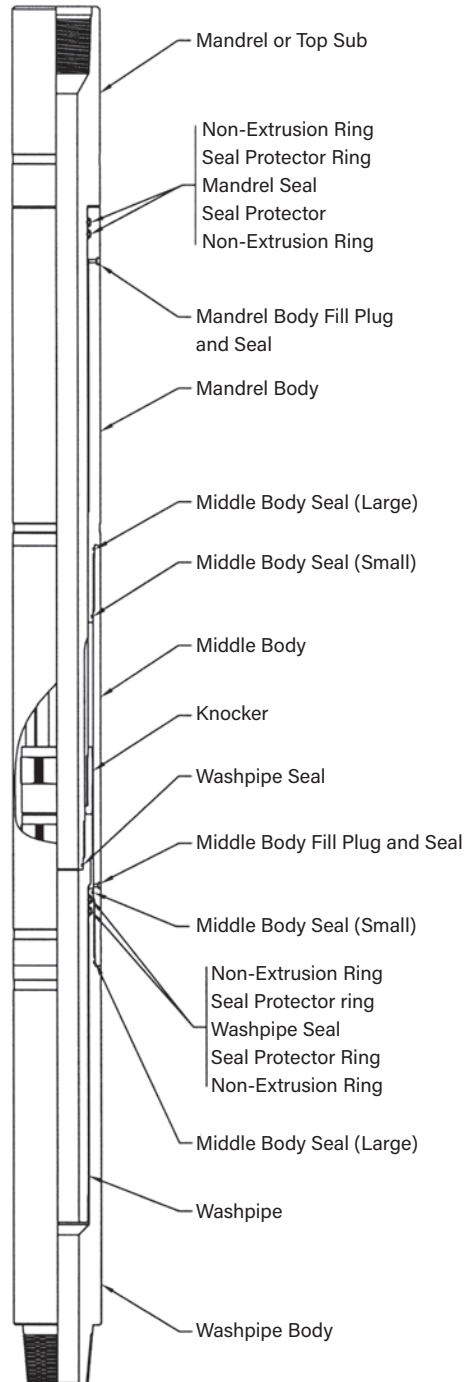
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard

Recommended Spare Parts:

- (1) 2 Washpipes
- (2) 1 Friction Mandrel
- (3) 1 Control Ring
- (4) 1 Friction Slip
- (5) 1 Control Ring Plug
- (6) 6 Packing Sets

LOGAN LUBRICATED FISHING BUMPER SUBS



Logan Lubricated Fishing Bumper Subs

CONNECTION		1-13/16 WILSON FJ	1-1/4 API REG	2-3/8 PAC	2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-7/8 API REG
OUTSIDE DIAMETER		1-13/16	2-1/4	2 29/32	3-1/16	3-1/8	3-1/8	3-3/4
INSIDE DIAMETER		3/8	3/8	1	1-1/2	1	1-1/2	1-1/4
STROKE LENGTH		10	10	12	15-1/2	15-1/2	15-1/2	15-1/2
COMPLETE ASSEMBLY	Logan Part No.	607-181	607-225	607-228	607-306	607-312-001	607-313-001	607-375
	Bowen No.	54781	41490	...	...	43501	...	43509
	Price	*	*	\$20,516	\$23,257	\$24,549	\$25,509	\$24,443
TOP SUB	Logan Part No.	AJ1000	...	AG3003	...	...	...	...
	Price	*	...	\$880	...	...	...	...
MANDREL BODY	Logan Part No.	AJ2000	AJ2001	AJ20015	AJ20025	AJ2002-001	AJ20025-001	AJ2003
	Price	*	*	*	\$3,372	\$3,879	\$3,879	\$3,585
MIDDLE BODY	Logan Part No.	AJ3000	AJ3001	AJ30015	AJ30025	AJ3002-001	AJ30025-001	AJ3003
	Price	*	*	*	\$3,687	\$4,240	\$4,240	\$3,871
WASHPIPE BODY	Logan Part No.	AJ4000	AJ4001	AG7003	AJ40025	AJ4002-001	AJ40025-001	AJ4003
	Price	*	*	\$3,022	\$3,521	\$3,307	\$4,581	\$3,980
MANDREL	Logan Part No.	AJ5000	AJ5001	AJ50015	AJ50025	AJ5002-001	AJ50025-001	AJ5003
	Price	*	*	\$4,586	\$6,841	\$7,868	\$7,869	\$7,543
WASHPIPE	Logan Part No.	...	AJ6001	AJ60015	AJ60025	AJ6002-004	AJ60025-001	AJ6003
	Price	...	*	\$1,480	\$2,792	\$3,349	\$3,211	\$3,096
NON-EXTRUSION RING	Logan Part No.	L365-19	L365-24	L365-30.5	...	L365-32	...	L365-35
	Bowen No.	365-19	365-24	365-30.5	...	365-32	...	365-35
	No. Req'd.	4	8	8	...	8	...	8
	Price	*	*	\$36	...	\$172	...	\$37
SEAL PROTECTOR RING	Logan Part No.	L375-19	L375-24	L375-305	...	L375-32	...	L375-35
	Bowen No.	375-19	375-24	375-30.5	...	375-32	...	375-35
	No. Req'd.	4	8	8	...	8	...	8
	Price	*	*	\$36	...	\$172	...	\$37
MANDREL BODY	Logan Part No.	AG10000	AG10002	AG10002	AG10000	AG10002	AG10000	AG10002
	Price	\$17	\$20	\$20	\$17	\$20	\$17	\$20
MIDDLE BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10004	AG10000	AG10004	AG10000	AG10000
	Price	\$17	\$17	\$3	\$17	\$3	\$17	\$17
KNOCKER	Logan Part No.	...	AJ7001	...	AJ7002-001	AJ7002-001	AJ7002-001	AJ7003
	Price	...	*	...	\$1,663	\$1,663	\$1,663	\$1,456

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* Available upon request.

Special Notes:

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard
- (4) Name and number of any desired spares

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 6 Seal Packing Sets
- (3) 4 Middle Body Fill Plugs
- (4) 4 Mandrel Body Fill Plugs
- (5) 16 Main Mandrel Non-Extrusion Rings
- (6) 16 Main Mandrel Seal Protector Rings
- (7) 1 Seal Ring Setting Tool

Logan Lubricated Fishing Bumper Subs

CONNECTION		1-13/16 WILSON FJ	1-1/4 API REG	2-3/8 PAC	2-3/8 API EUE	2-3/8 API REG	2-7/8 PAC	2-7/8 API REG
OUTSIDE DIAMETER		1-13/16	2-1/4	2 29/32	3-1/16	3-1/8	3-1/8	3-3/4
INSIDE DIAMETER		3/8	3/8	1	1-1/2	1	1-1/2	1-1/4
STROKE LENGTH		10	10	12	15-1/2	15-1/2	15-1/2	15-1/2
COMPLETE ASSEMBLY	Logan Part No.	607-181	607-225	607-228	607-306	607-312-001	607-313-001	607-375
	Bowen No.	54781	41490	...	...	43501	...	43509
	Price	*	*	\$20,516	\$23,257	\$23,257	\$23,257	\$24,443
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
	Qty. Req'd	55403	55403	55403	55403	55403	55403	55403
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763
SETTING TOOL	Logan Part No.	AG1000-19	AG1000-24	AG1000-30.5	...	AG1000-32	...	AG1000-35
	Qty. Req'd	22709-19	22709-24	22709-30.5	...	22709-32	...	22709-35
	Price	\$842	\$841	\$902	...	\$902	...	\$914
SEAL PACKING	Logan Part No.	28000-013	28000-014	28000-027	28000-026	28000-015-200	28000-026-200	28000-016
	Qty. Req'd	54784	41846	...	...	43519	...	43517
	Price	\$28	\$31	\$49	\$30	\$38	\$35	\$35
MAIN MANDREL & W.P. BODY SEAL	Logan Part No.	568211	568219	568328	...	568329	BD201-3	568332
	Qty. Req'd	4	4	4	...	4	...	4
	Price	-	-	-	-	-	\$15	-
MIDDLE BODY SEAL LARGE	Logan Part No.	568029	568224	568036	...	568231	...	568235
	Qty. Req'd	2	2	2	...	2	...	2
	Price	-	-	-	-	-	...	-
MIDDLE BODY SEAL SMALL	Logan Part No.	568027	568222	568035***	...	568229	...	568233
	Bowen No.	568027	568222	568035	...	568229	...	568233
	No. Req'd	2	2	2	2	2	...	2
	Price	\$3	\$3	\$4	...	\$3	...	\$4
WASHPIPE SEAL	Logan Part No.	...	568210	568217	568133	568220	568133	568222
	Qty. Req'd	...	568210	568217	568133	568220	568133	568222
	Price	...	\$3	\$3	\$3	\$3	\$3	\$3
WASHPIPE BODY SEAL UPPER	Logan Part No.	...	...	...	...	...	568130	...
	Qty. Req'd	...	...	...	...	...	568230	...
	Price	...	...	...	...	...	\$3	...
WASHPIPE BODY SEAL LOWER	Logan Part No.	...	...	...	...	...	568146	...
	Qty. Req'd	...	...	...	...	...	568146	...
	Price	...	...	...	...	...	\$4	...
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	...	568005	...	568005	568005
	Qty. Req'd	568005	568005	...	568005	...	568005	568005
	Price	\$9	\$9	...	\$9	...	\$9	\$9
MANDREL BODY FILL PLUG SEAL	Logan Part No.	568005	568006	568006	568005	568006	568005	568006
	Qty. Req'd	568005	568006	568006	568005	568006	568005	568006
	Price	\$9	\$2	\$2	\$9	\$2	\$9	\$2

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* Available upon request.

Special Notes:

- (1) For oversize, add 5% for each additional 1/4" or portion thereof to Mandrel, Mandrel Body, Middle Body, and Washpipe Body.

When ordering, please specify:

- Name and number of assembly or part
- Connections, if other than standard
- Outside diameter, if other than standard
- Name and number of any desired spares

Recommended Spare Parts:

- 1 Service Kit
- 6 Seal Packing Sets
- 4 Middle Body Fill Plugs
- 4 Mandrel Body Fill Plugs
- 16 Main Mandrel Non-Extrusion Rings
- 16 Main Mandrel Seal Protector Rings
- 1 Seal Ring Setting Tool

Logan Lubricated Fishing Bumper Subs

CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF OR FH	3-1/2 API IF	4-1/2 API FH
OUTSIDE DIAMETER		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6
INSIDE DIAMETER		1-1/2	1-7/8	1-15/16	2-3/8	2	2-1/4	2-13/16
STROKE LENGTH		15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	18
COMPLETE ASSEMBLY	Logan Part No.	607-376-001	607-377	607-425	607-450	607-475	607-476-001	607-600
	Bowen No.	43470	43521	43531	42700	39727	...	39732
	Price	\$27,927	*	\$25,544	*	\$27,201	\$25,907	*
TOP SUB	Logan Part No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL BODY	Logan Part No.	AJ2004-001	AJ2005	AJ2006	AJ2007	AJ2008	AJ2008	AJ2009
	Price	\$4,240	*	\$3,585	*	\$4,676	\$4,676	*
MIDDLE BODY	Logan Part No.	AJ3004-001	AJ3005	AJ3006	AJ3007	AJ3008	AJ3008	AJ3009
	Price	\$4,579	*	\$4,106	*	\$4,580	\$4,580	*
WASHPIPE BODY	Logan Part No.	AJ4004-001	AJ4005	AJ4006	AJ4007	AJ4008	AJ40085	AJ4009
	Price	\$4,707	*	\$3,980	*	\$4,673	\$5,233	*
MANDREL	Logan Part No.	AJ5004-001	AJ5005	AJ5006	AJ5007	AJ5008	AJ50085	AJ5009
	Price	\$8,917	*	\$8,085	*	\$8,413	\$9,676	*
WASHPIPE	Logan Part No.	AJ6004-001	AJ6005	AJ6006	AJ6007	AJ6008	AJ60085-003	AJ6009
	Price	\$3,606	*	\$3,414	*	\$3,511	\$3,993	*
NON-EXTRUSION RING	Logan Part No.	L365-36	L365-37.5	L365-40	L365-43	L365-42	L365-42	L365-50.25
	Bown No.	365-36	365-37.5	365-40	365-43	365-42	365-42	365-50.25
	Qty. Req'd	8	8	8	8	8	8	8
	Price	\$38	*	\$37	*	\$56	\$56	*
SEAL PROTECTOR RING	Logan Part No.	L375-36	L375-37.5	L375-40	L375-43	L375-42	L375-42	L375-50.25
	Bown No.	375-36	375-37.5	375-40	375-43	375-42	375-42	375-50.25
	Qty. Req'd	8	8	8	8	8	8	8
	Price	\$40	*	\$18	*	\$39	\$39	*
MANDREL BODY	Logan Part No.	AG10002	AG10002	AG10002	AG10002	AG10002	AG10002	AG10002
	Price	\$20	\$20	\$20	\$20	\$20	\$20	\$20
MIDDLE BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10000	AG10000	AG10000	AG10000	AG10000
	Price	\$17	\$17	\$17	\$17	\$17	\$17	\$17
KNOCKER	Logan Part No.	AJ7004	AJ7005	AJ7006	AJ7007	AJ7008	AJ7008	AJ7009
	Price	\$1,721	*	\$1,456	*	\$1,838	\$1,838	*

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Special Notes:

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When ordering, please specify:

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- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard
- (4) Name and number of any desired spares

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 6 Seal Packing Sets
- (3) 4 Middle Body Fill Plugs
- (4) 4 Mandrel Body Fill Plugs
- (5) 16 Main Mandrel Non-Extrusion Rings
- (6) 16 Main Mandrel Seal Protector Rings
- (7) 1 Seal Ring Setting Tool

Logan Lubricated Fishing Bumper Subs

CONNECTION		2-3/8 API IF	2-3/8 EUE	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF OR FH	3-1/2 API IF	4-1/2 API FH
OUTSIDE DIAMETER		3-3/4	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6
INSIDE DIAMETER		1-1/2	1-7/8	1-15/16	2-3/8	2	2-1/4	2-13/16
STROKE LENGTH		15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	15-1/2	18
COMPLETE ASSEMBLY	Logan Part No.	607-376-001	607-377	607-425	607-450	607-475	607-476-001	607-600
	Bowen No.	43470	43521	43531	42700	39727	...	39732
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055	26000-055
	Qty. Req'd	55403	55403	55403	55403	55403	55403	55403
	Price	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763	\$2,763
SETTING TOOL	Logan Part No.	AG1000-36	AG1000-37.5	AG1000-40	AG1000-43	AG1000-42	AG1000-42	AJ8000
	Qty. Req'd	22709-36	22709-37.5	22709-40	22709-43	22709-42	22709-42	10572
	Price	\$926	\$902	\$961	\$961	\$961	\$961	\$588
SEAL PACKING	Logan Part No.	28000-017-200	28000-018	28000-019	28000-020	28000-021	28000-021	28000-022
	Qty. Req'd	39720	43529	43539	42709	39730	39730	39735
	Price	\$40	\$39	\$39	\$46	\$46	\$52	\$63
MAIN MANDREL & W.P. BODY SEAL	Logan Part No.	568333	568334	568337	568340	568339	568339	568347
	Bowen No.	568333	568334	568337	568340	568339	568339	568347
	Qty. Req'd	4	4	4	4	4	4	4
	Price	\$3	\$3	\$4	\$4	\$4	\$4	\$7
MIDDLE BODY SEAL LARGE	Logan Part No.	568235	568236	568239	568242	568242	568242	568250
	Bowen No.	568235	568236	568239	568242	568242	568242	568250
	Qty. Req'd	2	2	2	2	2	2	2
	Price	\$4	\$4	\$4	\$6	\$6	\$6	\$10
MIDDLE BODY SEAL SMALL	Logan Part No.	568233	568233	568237	568239	568239	568239	568247
	Bowen No.	568233	568233	568237	568239	568239	568239	568247
	No. Req'd	2	2	2	2	2	2	2
	Price	\$4	\$4	\$4	\$4	\$4	\$4	\$10
WASHPipe SEAL	Logan Part No.	568223	568229	568227	568231	568229	568227	568236
	Qty. Req'd	568223	568229	568227	568231	568229	568227	568236
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$4
WASHPipe BODY SEAL UPPER	Logan Part No.	...	...	...	...	...	...	...
	Qty. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
WASHPipe BODY SEAL LOWER	Logan Part No.	...	...	...	...	...	...	...
	Qty. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	568005	568005	568005	568005	568005
	Qty. Req'd	568005	568005	568005	568005	568005	568005	568005
	Price	\$9	\$9	\$9	\$9	\$9	\$9	\$9
MANDREL BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568006	568006	568006	568006	568006
	Qty. Req'd	568006	568006	568006	568006	568006	568006	568006
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2

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- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard
- (4) Name and number of any desired spares

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 6 Seal Packing Sets
- (3) 4 Middle Body Fill Plugs
- (4) 4 Mandrel Body Fill Plugs
- (5) 16 Main Mandrel Non-Extrusion Rings
- (6) 16 Main Mandrel Seal Protector Rings
- (7) 1 Seal Ring Setting Tool

Logan Lubricated Fishing Bumper Subs

CONNECTION		4-1/2 API IF OR FH	5-1/2 API REG	6-5/8 API REG			
OUTSIDE DIAMETER		6-1/4	6-3/4	7-3/4			
INSIDE DIAMETER		3-1/8	2-3/4	3-1/2			
STROKE LENGTH		18	18	18			
COMPLETE ASSEMBLY	Logan Part No.	607-625	607-675	607-775			
	Bowen No.	39737	39778	39752			
	Price	\$37,789	\$40,602	\$50,090			
TOP SUB	Logan Part No.	...	...	...			
	Qty. Req'd	...	...	...			
	Price	...	...	...			
MANDREL BODY	Logan Part No.	AJ2010	AJ2011	AJ2012			
	Qty. Req'd	34966	33244	34992			
	Price	\$5,727	\$6,144	\$7,260			
MIDDLE BODY	Logan Part No.	AJ3010	AJ3011	AJ3012			
	Qty. Req'd	34967	33245	34993			
	Price	\$5,828	\$6,144	\$7,260			
WASHPIPE BODY	Logan Part No.	AJ4010	AJ4011	AJ4012			
	Qty. Req'd	39738	39779	39753			
	Price	\$6,527	\$6,920	\$8,111			
MANDREL	Logan Part No.	AJ5010	AJ5011	AJ5012			
	Qty. Req'd	34970	33248	34996			
	Price	\$11,364	\$12,458	\$16,570			
WASHPIPE	Logan Part No.	AJ6010	AJ6011	AJ6012			
	Qty. Req'd	39739	39780	39754			
	Price	\$5,233	\$5,500	\$6,716			
NON-EXTRUSION RING	Logan Part No.	L365-53	L365-54	L365-61			
	Bown No.	365-53	365-54	365-61			
	Qty. Req'd	8	8	8			
	Price	\$41	\$50	\$68			
SEAL PROTECTOR RING	Logan Part No.	L375-53	L375-54	L375-61			
	Bown No.	375-53	375-54	375-61			
	Qty. Req'd	8	8	8			
	Price	\$20	\$20	\$32			
MANDREL BODY FILL PLUG	Logan Part No.	AG10002	AG10002	AG10002			
	Qty. Req'd	329	329	329			
	Price	\$20	\$20	\$20			
MIDDLE BODY FILL PLUG	Logan Part No.	AG10000	AG10000	AG10000			
	Qty. Req'd	617	617	617			
	Price	\$17	\$17	\$17			
KNOCKER	Logan Part No.	AJ7010	AJ7011	AJ7012			
	Qty. Req'd	34972	33250	34998			
	Price	\$1,876	\$1,939	\$2,321			

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard
- (4) Name and number of any desired spares

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 6 Seal Packing Sets
- (3) 4 Middle Body Fill Plugs
- (4) 4 Mandrel Body Fill Plugs
- (5) 16 Main Mandrel Non-Extrusion Rings
- (6) 16 Main Mandrel Seal Protector Rings
- (7) 1 Seal Ring Setting Tool

Logan Lubricated Fishing Bumper Subs

CONNECTION		4-1/2 API IF OR FH	5-1/2 API REG	6-5/8 API REG			
OUTSIDE DIAMETER		6-1/4	6-3/4	7-3/4			
INSIDE DIAMETER		3-1/8	2-3/4	3-1/2			
STROKE LENGTH		18	18	18			
COMPLETE ASSEMBLY	Logan Part No.	607-625	607-675	607-775			
	Bowen No.	39737	39778	39752			
SERVICE KIT	Logan Part No.	26000-055	26000-055	26000-055			
	Qty. Req'd	55403	55403	55403			
	Price	\$2,763	\$2,763	\$2,763			
SETTING TOOL	Logan Part No.	AG1000-53	AG1000-54	AG1000-61			
	Qty. Req'd	22709-53	22709-54	22709-61			
	Price	\$1,081	\$1,081	\$1,226			
SEAL PACKING	Logan Part No.	28000-023	28000-024	28000-025			
	Qty. Req'd	39740	39781	39755			
	Price	\$81	\$86	\$115			
MAIN MANDREL & W.P. BODY SEAL	Logan Part No.	568426	568427	568434			
	Bowen No.	568426	568427	568434			
	Qty. Req'd	4	4	4			
	Price	\$10	\$10	\$13			
MIDDLE BODY SEAL LARGE	Logan Part No.	568253	568256	568261			
	Bowen No.	568253	568256	568261			
	Qty. Req'd	2	2	2			
	Price	\$13	\$15	\$15			
MIDDLE BODY SEAL SMALL	Logan Part No.	568251	568254	568260			
	Bowen No.	568251	568254	568260			
	No. Req'd	2	2	2			
	Price	\$11	\$13	\$15			
WASHPipe SEAL	Logan Part No.	568239	568238	568246			
	Qty. Req'd	568239	568238	568246			
	Price	\$4	\$4	\$9			
WASHPipe BODY SEAL UPPER	Logan Part No.	...	...	...			
	Qty. Req'd	...	...	...			
	Price	...	...	...			
WASHPipe BODY SEAL LOWER	Logan Part No.	...	...	...			
	Qty. Req'd	...	...	...			
	Price	...	...	...			
MIDDLE BODY FILL PLUG SEAL	Logan Part No.	568005	568005	568005			
	Qty. Req'd	568005	568005	568005			
	Price	\$9	\$9	\$9			
MANDREL BODY FILL PLUG SEAL	Logan Part No.	568006	568006	568006			
	Qty. Req'd	568006	568006	568006			
	Price	\$2	\$2	\$2			

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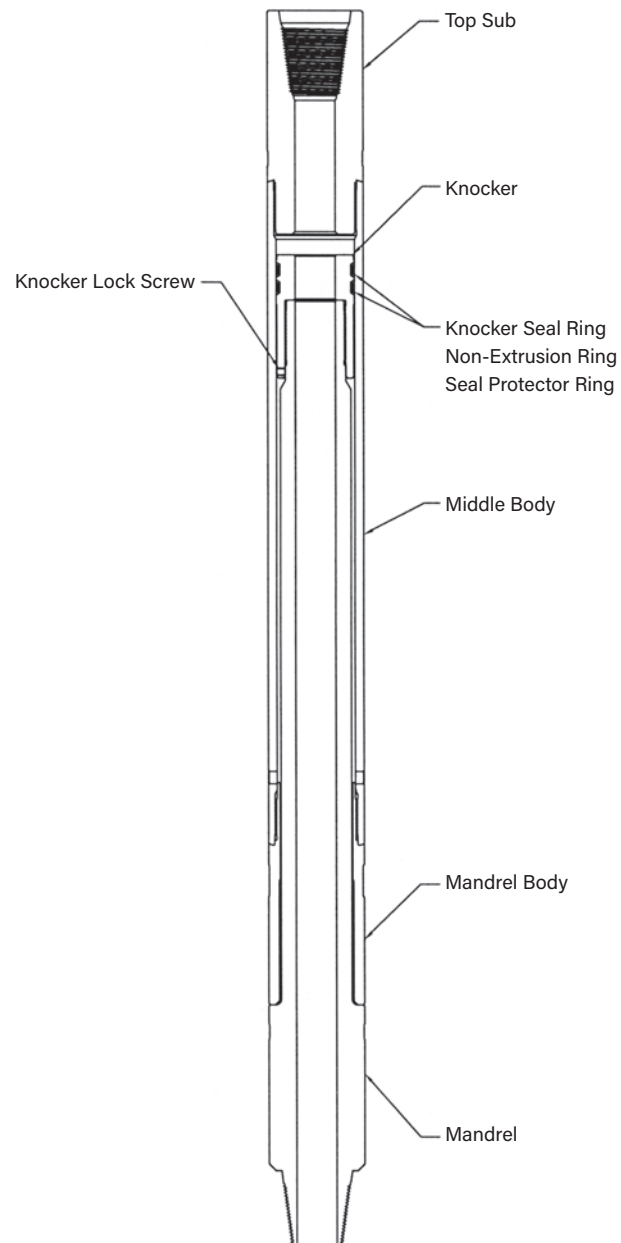
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Outside diameter, if other than standard
- (4) Name and number of any desired spares

Recommended Spare Parts:

- (1) 1 Service Kit
- (2) 6 Seal Packing Sets
- (3) 4 Middle Body Fill Plugs
- (4) 4 Mandrel Body Fill Plugs
- (5) 16 Main Mandrel Non-Extrusion Rings
- (6) 16 Main Mandrel Seal Protector Rings
- (7) 1 Seal Ring Setting Tool

LOGAN FISHING BUMPER SUBS



Logan Fishing Bumper Subs

CONNECTION		1-13/16 WFJ	1-1/4 API Reg	2-3/8 EUE	2-3/8 API Reg	2-3/8 API IF	2-3/8 API IF	2-3/8 EUE
OUTSIDE DIAMETER (INCHES)		1-13/16	2-1/4	3-1/8	3-5/32	3-3/8	3-3/4	3-3/4
INSIDE DIAMETER (INCHES)		3/8	1/2	1-17/32	1	1	1-1/2	1-7/8
STROKE (INCHES)		20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No.	604-181	604-225	604-313	604-315	604-338	604-375	604-376
	Bowen No.	10120	18785	42592	10105	10190	39887	39893
	Price	\$6,240	\$7,121	\$9,406	\$9,406	*	\$9,282	\$8,071
TOP SUB	Logan Part No.	AF1000	AF1001	AF10015	AF1002	AF10025	AF1003	AF1004
	Bowen No.	10121	18786	42593	10106	10191	39888	39894
	Price	\$526	\$606	\$847	\$847	*	\$925	\$925
MANDREL BODY	Logan Part No.	AF2000	AF2001	AF20015	AF2002	AF20025	AF2003	AF2004
	Bowen No.	10123	18788	42596	10108	10193	39890	39896
	Price	\$824	\$829	\$951	\$951	*	\$1,026	\$1,026
MIDDLE BODY 20" STROKE	Logan Part No.	AF3000-20	AF3001-20	AF30015-20	AF3002-20	AF30025-20	AF3003-20	AF3004-20
	Bowen No.	10122	18787	42594	10107	10192	39889	39895
	Price	\$2,117	\$2,117	\$2,117	\$2,117	*	\$2,117	\$2,117
MANDREL 20" STROKE	Logan Part No.	AF4000-20	AF4001-20	AF40015-20	AF4002-20	AF40025-20	AF4003-20	AF4004-20
	Bowen No.	10125	18789	42597	10110	10194	39891	39897
	Price	\$2,573	\$2,573	\$2,649	\$2,649	*	\$2,877	\$2,877
KNOCKER	Logan Part No.	AF5000	AF5001	AF50015	AF5002	AF50025	AF5003	AF5004
	Bowen No.	10126	18790	42595	10111	10195	39892	39898
	Price	\$552	\$769	\$852	\$852	*	\$916	\$916
NON-EXTRUSION RING	Logan Part No.	L385-22	L385-27	L216-34	L387-6	L385-35	L216-38	L216-38
	Bowen No.	385-22	385-27	216-34	387-6	385-35	216-38	216-38
	No. Req'd	4	4	4	4	4	4	4
SEAL PROTECTOR RING	Logan Part No.	L386-22	L386-27	L227-34	L388-6	L386-35	L227-38	L227-38
	Bowen No.	386-22	386-27	227-34	388-6	386-35	227-38	227-38
	No. Req'd	4	4	4	4	4	4	4
KNOCKER SEAL RING	Logan Part No.	568-217	568-222	568-331	568-228	568-332	568-335	568-335
	Bowen No.	568217	568222	568331	568228	568332	568335	568335
	No. Req'd	2	2	2	2	2	2	2
KNOCKER LOCK SCREW	Logan Part No.	...	...	AF6001	AF6000	AF6000	AF6000	AF6001
	Bowen No.	...	...	54775	48879	48879	48879	54775
	Price	...	...	\$2	\$2	\$2	\$2	\$2

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION		1-13/16 WFJ	1-1/4 API Reg	2-3/8 EUE	2-3/8 API Reg	2-3/8 API IF	2-3/8 API IF	2-3/8 EUE
OUTSIDE DIAMETER (INCHES)		1-13/16	2-1/4	3-1/8	3-5/32	3-3/8	3-3/4	3-3/4
INSIDE DIAMETER (INCHES)		3/8	1/2	1-17/32	1	1	1-1/2	1-7/8
STROKE (INCHES)		20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No.	604-181	604-225	604-313	604-315	604-338	604-375	604-376
	Bowen No.	10120	18785	42592	10105	10190	39887	39893

OPTIONAL ACCESSORIES

CHEVRON PACKING KNOCKER ASSEMBLY - BREAKDOWN:

COMPLETE ASSEMBLY	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
KNOCKER	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
PACKING RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
CENTER RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
CHEVRON PACKING SET	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
RETAINING RING	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
PACKING RETAINER	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	No. Req'd	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Klocker Seals

Logan Fishing Bumper Subs

CONNECTION	1-13/16 WFJ	1-1/4 API Reg	2-3/8 EUE	2-3/8 API Reg	2-3/8 API IF	2-3/8 API IF	2-3/8 EUE
OUTSIDE DIAMETER (INCHES)	1-13/16	2-1/4	3-1/8	3-5/32	3-3/8	3-3/4	3-3/4
INSIDE DIAMETER (INCHES)	3/8	1/2	1-17/32	1	1	1-1/2	1-7/8

30" STROKE

COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price	604-181 29523 *	604-225 29529 *	604-313 46881 *	604-315 29535 *	604-338 29538 *	604-375 46863 *	604-376 46866 *
MANDREL	Logan Part No. Bowen No. Price	AF4000-30 29524 *	AF4001-30 29530 *	AF40015-30 46882 *	AF4002-30 29536 *	AF40025-30 29539 *	AF4003-30 46864 *	AF4004-30 46867 *
MIDDLE BODY	Logan Part No. Bowen No. *	AF3000-30 29525 *	AF3001-30 29531 *	AF30015-30 46883 *	AF3002-30 29537 *	AF30025-30 29540 *	AF3003-30 46865 *	AF3004-30 46868 *

36" STROKE

COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price	604-181 29574 *	604-225 29580 *	604-313 49608 *	604-315 29586 *	604-338 29589 *	604-375 46890 *	604-376 46893 *
MANDREL	Logan Part No. Bowen No. Price	AF4000-36 29575 *	AF4001-36 29581 *	AF40015-36 46909 *	AF4002-36 29587 *	AF40025-36 29590 *	AF4003-36 46891 *	AF4004-36 46894 *
MIDDLE BODY	Logan Part No. Bowen No. Price	AF3000-36 29576 *	AF3001-36 29582 *	AF30015-36 46910 *	AF3002-36 29588 *	AF30025-36 29591 *	AF3003-36 46892 *	AF3004-36 46895 *

42" STROKE

COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price	604-181 29619 *	604-225 29625 *	604-313 46935 *	604-315 16933 *	604-338 29643 *	604-375 46917 *	604-376 46920 *
MANDREL	Logan Part No. Bowen No. Price	AF4000-42 29620 *	AF4001-42 29626 *	AF40015-42 46936 *	AF4002-42 16935 *	AF40025-42 26944 *	AF4003-42 46918 *	AF4004-42 46921 *
MIDDLE BODY	Logan Part No. Bowen No. Price	AF3000-42 29621 *	AF3001-42 29627 *	AF30015-42 46937 *	AF3002-42 16934 *	AF30025-42 26945 *	AF3003-42 46919 *	AF3004-42 46922 *

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* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Klocker Seals

Logan Fishing Bumper Subs

CONNECTION	1-13/16 WFJ	1-1/4 API Reg	2-3/8 EUE	2-3/8 API Reg	2-3/8 API IF	2-3/8 API IF	2-3/8 EUE
OUTSIDE DIAMETER (INCHES)	1-13/16	2-1/4	3-1/8	3-5/32	3-3/8	3-3/4	3-3/4
INSIDE DIAMETER (INCHES)	3/8	1/2	1-17/32	1	1	1-1/2	1-7/8

48" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-181	604-225	604-313	604-315	604-338	604-375	604-376
	Bowen No.	29682	29688	46962	16936	29694	46944	46947
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4000-48	AF4001-48	AF40015-48	AF4002-48	AF40025-48	AF4003-48	AF4004-48
	Bowen No.	29683	29689	46963	16938	29695	46945	46948
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3000-48	AF3001-48	AF30015-48	AF3002-48	AF30025-48	AF3003-48	AF3004-48
	Bowen No.	29684	29690	46964	16937	29696	46946	46949
	Price	*	*	*	*	*	*	*

60" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-181	604-225	604-313	604-315	604-338	604-375	604-376
	Bowen No.	29748	29754	46989	29760	29763	46971	46974
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4000-60	AF4001-60	AF40015-60	AF4002-60	AF40025-60	AF4003-60	AF4004-60
	Bowen No.	29749	29755	46990	29761	29764	46972	46975
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3000-60	AF3001-60	AF30015-60	AF3002-60	AF30025-60	AF3003-60	AF3004-60
	Bowen No.	29750	29756	46991	29762	29765	46973	46976
	Price	*	*	*	*	*	*	*

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* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4
INSIDE DIAMETER (INCHES)		1-1/4	1-15/16	2-3/8	2	1-1/2	2	2-1/4
STROKE (INCHES)		20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	10090	41824	36794	39905	10225	10135	10257
	Price	\$8,071	\$10,179	\$10,180	\$10,180	*	*	\$15,873
TOP SUB	Logan Part No.	AF1005	AF1006	AF1007	AF1008	AF10085	AF1009	AF1010
	Bowen No.	10091	41825	36795	39906	10226	10136	10258
	Price	\$925	\$1,000	\$1,039	\$1,039	*	*	\$1,544
MANDREL BODY	Logan Part No.	AF2005	AF2006	AF2007	AF2008	AF20085	AF2009	AF2010
	Bowen No.	10093	10158	36797	39908	10228	10138	10267
	Price	\$1,026	\$1,259	\$1,407	\$1,407	*	*	\$2,345
MIDDLE BODY (20-inch stroke)	Logan Part No.	AF3005-20	AF3006-20	AF3007-20	AF3008-20	AF30085-20	AF3009-20	AF3010-20
	Bowen No.	10092	10157	36796	39907	10227	10137	10262
	Price	\$2,117	\$2,550	\$2,664	\$2,675	*	*	\$4,385
MANDREL (20-inch stroke)	Logan Part No.	AF4005-20	AF4006-20	AF4007-20	AF4008-20	AF40085-20	AF4009-20	AF4010-20
	Bowen No.	10095	41828	36798	39909	10229	10140	10268
	Price	\$2,877	\$3,625	\$3,820	\$3,821	*	*	\$5,982
KNOCKER	Logan Part No.	AF5005	AF5006	AF5007	AF5008	AF50085	AF5009	AF5010
	Bowen No.	10096	41829	36799	39910	10230	10141	10250
	Price	\$916	\$892	\$996	\$996	*	*	\$1,223
NON-EXTRUSION RING	Logan Part No.	L385-37	L385-41	L216-44.5	L385-44	L385-44	L385-52	L385-54
	Bowen No.	385-37	385-41	216-44.5	385-44	385-44	385-52	385-54
	No. Req'd	4	4	4	4	4	4	4
	Price	\$48	\$46	\$49	\$49	\$49	*	\$63
SEAL PROTECTOR RING	Logan Part No.	L386-37	L386-41	L227-44.5	L386-44	L386-44	L386-52	L386-54
	Bowen No.	386-37	386-41	227-44.5	386-44	386-44	386-52	386-54
	No. Req'd	4	4	4	4	4	4	4
	Price	\$6	\$7	\$11	\$9	\$9	*	\$20
KNOCKER SEAL RING	Logan Part No.	568-334	568-338	568-341	568-341	568-341	568-349	568-427
	Bowen No.	568334	568338	568341	568341	568341	568349	568427
	No. Req'd	2	2	2	2	2	2	2
	Price	\$3	\$4	\$4	\$4	\$4	\$10	\$10
KNOCKER LOCK SCREW	Logan Part No.	AF6002	AF6000	AF6000	AF6000	AF6002	AF6003	AF6003
	Bowen No.	54769	48879	48879	48879	54769	43305	43305
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2

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* Available upon request.

Special Notes:

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- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION		2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)		3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4
INSIDE DIAMETER (INCHES)		1-1/4	1-15/16	2-3/8	2	1-1/2	2	2-1/4
STROKE (INCHES)		20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	10090	41824	36794	39905	10225	10135	10257

OPTIONAL ACCESSORIES

CHEVRON PACKING KNOCKER ASSEMBLY

COMPLETE ASSEMBLY	Logan Part No.	25000-014	25000-015	25000-016	25000-017	25000-023	25000-018	25000-019
	Bowen No.	30910	59191	62774	59177	81172	50321	62205
	Price	*	*	*	*	...	*	*
KNOCKER	Logan Part No.	AF7000	AF7001	AF7002	AF7003	AF70035	AF7004	AF7005
	Bowen No.	30911	59192	62775	59178	81173	50322	62206
	Price	*	*	*	*	...	*	*
PACKING RING	Logan Part No.	AF8000	AF8001	AF8002	AF8003	AF80035	AF8004	AF8005
	Bowen No.	30912	59193	62776	59179	81174	50323	62207
	Price	*	*	*	*	*	*	*
CENTER RING	Logan Part No.	AF9000	AF9001	AF9002	AF9003	AF90035	AF9004	AF9005
	Bowen No.	30913	59194	62777	59180	81175	50324	62208
	Price	*	*	*	*	*	*	*
CHEVRON PACKING SET	Logan Part No.	AF10000	AF10001	AF10002	AF10003	AF100035	AF10004	AF10005
	Bowen No.	30914	59195	62778	59181	81176	50325	62209
	Price	*	*	*	*	*	*	*
RETAINING RING	Logan Part No.	AF11000	AF11001	AF11002	AF11003	AF110035	AF11004	AF11005
	Bowen No.	19812	59196	59182	59182	81177	50326	13177
	Price	*	*	*	*	*	*	*
PACKING RETAINER	Logan Part No.	AF12000	AF12001	AF12002	AF12003	...	AF12004	AF12005
	Bowen No.	62345	59197	62780	59183	...	50009	62210
	No. Req'd	2	2	2	2	...	2	2
	Price	*	*	*	*	...	*	*

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* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION	2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4
INSIDE DIAMETER (INCHES)	1-1/4	1-15/16	2-3/8	2	1-1/2	2	2-1/4

30" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	29541	46869	46875	46878	29562	16150	20005
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4005-30	AF4006-30	AF4007-30	AF4008-30	AF40085-30	AF4009-30	AF4010-30
	Bowen No.	29542	46870	46876	46879	29563	16151	20007
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3005-30	AF3006-30	AF3007-30	AF3008-30	AF30085-30	AF3009-30	AF3010-30
	Bowen No.	29543	46871	46877	46880	29564	16152	20006
	Price	*	*	*	*	*	*	*

36" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	25180	46896	46902	46905	29604	10147	29610
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4005-36	AF4006-36	AF4007-36	AF4008-36	AF40085-36	AF4009-36	AF4010-36
	Bowen No.	25182	46897	46903	46906	29605	10149	29611
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3005-36	AF3006-36	AF3007-36	AF3008-36	AF30085-36	AF3009-36	AF3010-36
	Bowen No.	25181	46898	46904	46907	29606	10148	29612
	Price	*	*	*	*	*	*	*

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Special Notes:

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- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Klocker Seals

Logan Fishing Bumper Subs

CONNECTION	2-7/8 API Reg	2-7/8 API IF	2-7/8 EUE	3-1/2 API IF	3-1/2 API IF	4-1/2 API FH	4-1/2 API IF
OUTSIDE DIAMETER (INCHES)	3-3/4	4-1/4	4-1/2	4-3/4	4-3/4	6	6-1/4
INSIDE DIAMETER (INCHES)	1-1/4	1-15/16	2-3/8	2	1-1/2	2	2-1/4

42" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	29646	46923	46929	46932	29661	29667	29670
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4005-42	AF4006-42	AF4007-42	AF4008-42	AF40085-42	AF4009-42	AF4010-42
	Bowen No.	29647	46924	46930	46933	29662	29668	29671
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3005-42	AF3006-42	AF3007-42	AF3008-42	AF30085-42	AF3009-42	AF3010-42
	Bowen No.	*	*	*	*	*	*	*
	Price	*	*	*	*	*	*	*

48" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	29697	46950	46956	46959	29715	19880	29736
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4005-48	AF4006-48	AF4007-48	AF4008-48	AF40085-48	AF4009-48	AF4010-48
	Bowen No.	29698	46951	46957	46960	29716	19881	29737
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3005-48	AF3006-48	AF3007-48	AF3008-48	AF30085-48	AF3009-48	AF3010-48
	Bowen No.	29699	46952	46958	46961	29717	19882	29738
	Price	*	*	*	*	*	*	*

60" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-377	604-425	604-450	604-475	604-476	604-600	604-625
	Bowen No.	29766	46977	46983	46986	29781	29790	25385
	Price	*	*	*	*	*	*	*
MANDREL	Logan Part No.	AF4005-60	AF4006-60	AF4007-60	AF4008-60	AF40085-60	AF4009-60	AF4010-60
	Bowen No.	29767	46978	46984	46987	29782	29791	25387
	Price	*	*	*	*	*	*	*
MIDDLE BODY	Logan Part No.	AF3005-60	AF3006-60	AF3007-60	AF3008-60	AF30085-60	AF3009-60	AF3010-60
	Bowen No.	29768	46979	46985	46988	29786	29792	25386
	Price	*	*	*	*	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION		5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg			
OUTSIDE DIAMETER (INCHES)		6-3/4	7-3/4	9			
INSIDE DIAMETER (INCHES)		2-3/4	3-1/2	4			
STROKE (INCHES)		20	20	20			
COMPLETE ASSEMBLY	Logan Part No.	604-675	604-775	604-900			
	Bowen No.	10690	26595	61596			
	Price	\$17,002	\$20,181	\$28,448			
TOP SUB	Logan Part No.	AF1011	AF1012	AF1013			
	Bowen No.	10691	26596	61597			
	Price	\$1,812	\$2,244	\$3,081			
MANDREL BODY	Logan Part No.	AF2011	AF2012	AF2013			
	Bowen No.	10693	26598	61599			
	Price	\$2,446	\$2,904	\$4,299			
MIDDLE BODY (20-inch stroke)	Logan Part No.	AF3011-20	AF3012-20	AF3013-20			
	Bowen No.	10692	26597	61598			
	Price	\$4,992	\$5,322	\$7,785			
MANDREL (20-inch stroke)	Logan Part No.	AF4011-20	AF4012-20	AF4013-20			
	Bowen No.	10694	26599	61600			
	Price	\$5,982	\$8,032	\$10,196			
KNOCKER	Logan Part No.	AF5011	AF5012	AF5013			
	Bowen No.	10695	26594	61601			
	Price	\$1,370	\$1,495	\$2,241			
NON-EXTRUSION RING	Logan Part No.	L385-58	L385-65	L216-68.5			
	Bowen No.	385-58	385-65	216-68.5			
	No. Req'd	4	4	4			
	Price	\$75	\$123	\$115			
SEAL PROTECTOR RING	Logan Part No.	L386-58	L386-65	8-441			
	Bowen No.	386-58	386-65	227-68.5			
	No. Req'd	4	4	4			
	Price	\$22	\$34	\$34			
KNOCKER SEAL RING	Logan Part No.	568-431	568-438	568-441			
	Bowen No.	568431	568438	568441			
	No. Req'd	2	2	2			
	Price	\$12	\$15	\$16			
KNOCKER LOCK SCREW	Logan Part No.	AF6003	AF6003	AF6004			
	Bowen No.	43305	43305	54770			
	Price	\$2	\$2	\$3			

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* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

Logan Fishing Bumper Subs

CONNECTION	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
OUTSIDE DIAMETER (INCHES)	6-3/4	7-3/4	9				
INSIDE DIAMETER (INCHES)	2-3/4	3-1/2	4				
STROKE (INCHES)	20	20	20				
COMPLETE ASSEMBLY	Logan Part No.	604-675	604-775	604-900			
	Bowen No.	10690	26595	61596			

OPTIONAL ACCESSORIES

CHEVRON PACKING KNOCKER ASSEMBLY

COMPLETE ASSEMBLY	Logan Part No.	25000-020	25000-021	...			
	Bowen No.	57013	61103	...			
	Price	*	*	...			
KNOCKER	Logan Part No.	AF7006	AF7007	...			
	Bowen No.	57014	61104	...			
	Price	*	*	...			
PACKING RING	Logan Part No.	AF8006	AF8007	...			
	Bowen No.	57015	61105	...			
	Price	*	*	...			
CENTER RING	Logan Part No.	AF9006	AF9007	...			
	Bowen No.	62374	62378	...			
	Price	*	*	...			
CHEVRON PACKING SET	Logan Part No.	AF10006	AF10007	...			
	Bowen No.	57016	61106	...			
	Price	*	*	...			
RETAINING RING	Logan Part No.	AF11006	AF11007	...			
	Bowen No.	57017	59907	...			
	Price	*	*	...			
PACKING RETAINER	Logan Part No.	AF12006	AF12007	...			
	Bowen No.	62375	62379	...			
	No. Req'd	2	2	...			
	Price	*	*	...			

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Special Notes:

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- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Klocker Seals

Logan Fishing Bumper Subs

CONNECTION	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
OUTSIDE DIAMETER (INCHES)	6-3/4	7-3/4	9				
INSIDE DIAMETER (INCHES)	2-3/4	3-1/2	4				

30" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-675	604-775	604-900			
	Bowen No.	14520	29568	70408			
	Price	*	*	*			
MANDREL	Logan Part No.	AF4011-30	AF4012-30	AF4013-30			
	Bowen No.	14522	29569	70410			
	Price	*	*	*			
MIDDLE BODY	Logan Part No.	AF3011-30	AF3012-30	AF3013-30			
	Bowen No.	14521	29570	70409			
	Price	*	*	*			

36" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-675	604-775	604-900			
	Bowen No.	13590	29616	70411			
	Price	*	*	*			
MANDREL	Logan Part No.	AF4011-36	AF4012-36	AF4013-36			
	Bowen No.	13592	29617	70413			
	Price	*	*	*			
MIDDLE BODY	Logan Part No.	AF3011-36	AF3012-36	AF3013-36			
	Bowen No.	13591	29618	70412			
	Price	*	*	*			

42" STROKE

COMPLETE ASSEMBLY	Logan Part No.	604-675	604-775	604-900			
	Bowen No.	29676	29679	70414			
	Price	*	*	*			
MANDREL	Logan Part No.	AF4011-42	AF4012-42	AF4013-42			
	Bowen No.	29677	29680	70416			
	Price	*	*	*			
MIDDLE BODY	Logan Part No.	AF3011-42	AF3012-42	AF3013-42			
	Bowen No.	29678	29681	70415			
	...	*	*	*			

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* Available upon request.

Special Notes:

- (1) Standard stroke for Bumper Subs is 20". Only the Mandrel and Middle Body need to be ordered to convert a standard 20" stroke assembly to one of greater stroke length. All other parts interchange for a given size. When a long stroke assembly is ordered by assembly number, the entire tool is ordered. To convert, order only the Mandrel and Middle Body by part number.
- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Klocker Seals

Logan Fishing Bumper Subs

CONNECTION	5-1/2 API Reg	6-5/8 API Reg	7-5/8 API Reg				
OUTSIDE DIAMETER (INCHES)	6-3/4	7-3/4	9				
INSIDE DIAMETER (INCHES)	2-3/4	3-1/2	4				

48" STROKE

COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price	604-675 29742 *	604-775 29745 *	604-900 70417 *			
MANDREL	Logan Part No. Bowen No. Price	AF4011-48 29743 *	AF4012-48 29746 *	AF4013-48 70419 *			
MIDDLE BODY	Logan Part No. Bowen No. Price	AF3011-48 29744 *	AF3012-48 29747 *	AF3013-48 70418 *			

60" STROKE

COMPLETE ASSEMBLY	Logan Part No. Bowen No. Price	604-675 29796 *	604-775 29799 *	604-900 70420 *			
MANDREL	Logan Part No. Bowen No. Price	AF4011-60 29797 *	AF4012-60 29800 *	AF4013-60 70422 *			
MIDDLE BODY	Logan Part No. Bowen No. Price	AF3011-60 29798 *	AF3012-60 29801 *	AF3013-60 70421 *			

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- (2) For oversize, add 10% for each additional 1/4" or portion thereof to Mandrel Body, Middle Body, Mandrel, and Top Sub.

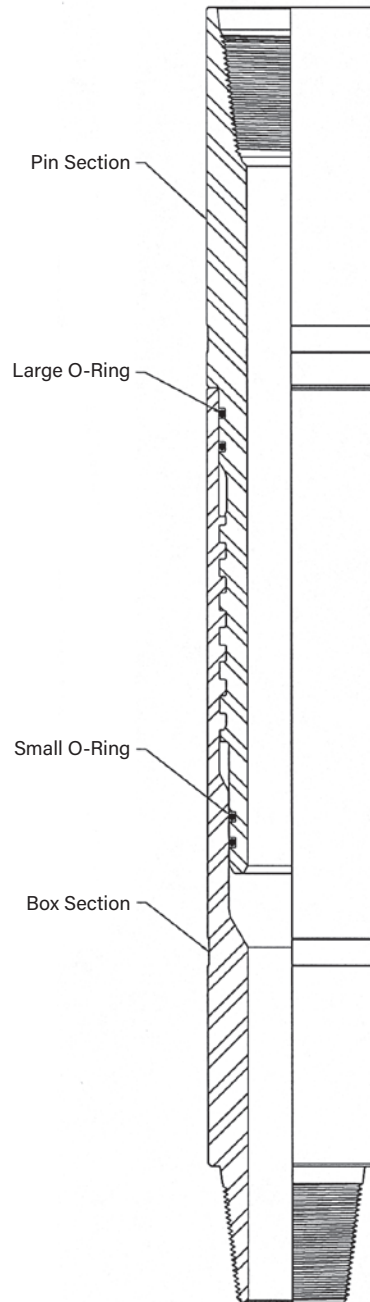
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Stroke length
- (4) O.D., if other than standard

Recommended Spare Parts:

- (1) 8 Non-Extrusion Rings
- (2) 8 Seal Protector Rings
- (3) 16 Knocker Seals

LOGAN DRILL PIPE SAFETY JOINTS



Logan Drill Pipe Safety Joints

CONNECTION SIZE		2-3/8	2-3/8	2-7/8	2-7/8	2-7/8	3-1/2	3-1/2
CONNECTION TYPES		API Reg ACME Reg	API IF API FH HYD IF	API Reg ACME Reg	HYD IF	INT FLUSH	API Reg	HYD IF
TOOL O.D.		3-1/8	3-3/8	3-3/4	3-7/8	4-1/8	4-1/4	4-1/2
BORE		1	1-3/4	1-1/4	2-1/8	2-1/8	1-1/2	2-9/16
COMPLETE ASSEMBLY	Logan Part No.	601-313	601-338	601-375	601-388	601-413	601-425	601-450
	Price	\$8,276	\$6,121	\$7,185	\$8,289	\$8,289	\$8,690	*
PIN SECTION	Logan Part No.	Y1000	Y1001	Y1002	Y1003	Y1004	Y1005	Y1006
	Price	\$3,312	\$2,380	\$2,874	\$3,649	\$3,649	\$3,824	*
BOX SECTION	Logan Part No.	Y2000	Y2001	Y2002	Y2003	Y2004	Y2005	Y2006
	Price	\$4,965	\$3,674	\$4,406	\$4,972	\$4,972	\$5,217	*
O-RING - SMALL	Logan Part No.	568-325	568-226	568-013	...	568-333	568-333	...
	No. Req'd	2	2	2	...	2	2	...
	Price	\$3	\$3	\$3	...	\$3	\$3	...
O-RING - LARGE	Logan Part No.	568-329	568-332	568-333	...	568-337	568-337	...
	No. Req'd	2	2	2	...	2	2	...
	Price	\$3	\$3	\$3	...	\$6	\$6	...

CONNECTION SIZE		3-1/2	3-1/2	3-1/2	4	4	4-1/2	4-1/2
CONNECTION TYPES		API FH	API Reg	API IF	API FH	INT. FLUSH	API Reg	API FH
TOOL O.D.		4-5/8	4-3/4	4-3/4	5-1/4	5-3/4	5-1/2	5-3/4
BORE		2-7/16	1-1/2	2-11/16	2-13/16	3-1/4	2-1/4	3
COMPLETE ASSEMBLY	Logan Part No.	601-463	601-475	601-476	601-525	601-575	601-550	601-575
	Price	\$8,707	\$9,094	\$9,101	*	*	\$9,997	\$11,109
PIN SECTION	Logan Part No.	Y1007	Y1008	Y1009	Y1010	Y1011	Y1012	Y1013
	Price	\$2,891	\$3,604	\$2,671	*	*	*	\$5,589
BOX SECTION	Logan Part No.	Y2007	Y2008	Y2009	Y2010	Y2011	Y2012	Y2013
	Price	\$4,338	\$5,284	\$4,005	*	*	*	\$8,229
O-RING - SMALL	Logan Part No.	568-337	...	568-337	...	...	...	568-344
	No. Req'd	2	...	2	...	...	...	2
	Price	\$6	...	\$6	...	...	...	\$7
O-RING - LARGE	Logan Part No.	568-341	...	568-341	...	...	...	568-349
	No. Req'd	2	...	2	...	...	...	2
	Price	\$6	...	\$6	...	...	...	\$11

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* Available upon request.

Special Notes:

(1) Add 20% for left-hand application.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) O.D., if other than standard. For oversize, add 10% for each additional 1/4" or portion thereof to Pin Section and Box Section.

Logan Drill Pipe Safety Joints

CONNECTION SIZE		4-1/2	4-1/2	5-1/2	5-1/2	5-1/2	6-5/8	6-5/8
CONNECTION TYPES		X-HOLE	API IF HYD IF	API Reg	API FH	API IF	API Reg	API FH
TOOL O.D.		6	6-1/8	6-3/4	7	7-3/8	7-3/4	8
BORE		3-1/4	3-3/4	2-3/4	4	4-13/16	3-1/2	5
COMPLETE ASSEMBLY	Logan Part No.	601-600	601-613	601-675	601-700	601-738	601-775	601-800
	Price	*	\$13,378	*	\$16,510	\$15,790	\$17,892	\$18,779
PIN SECTION	Logan Part No.	Y1014	Y1015	Y1016	Y1017	Y1018	Y1019	Y1020
	Price	*	\$6,052	*	\$6,159	\$5,874	\$7,158	\$7,513
BOX SECTION	Logan Part No.	Y2014	Y2015	Y2016	Y2017	Y2018	Y2019	Y2020
	Price	*	\$8,029	*	\$9,237	\$8,811	\$11,282	\$11,157
O-RING - SMALL	Logan Part No.	...	568-347	...	...	...	568-355	568-435
	No. Req'd	...	2	...	...	...	2	2
	Price	...	\$8	...	...	...	\$16	\$17
O-RING - LARGE	Logan Part No.	...	568-429	...	...	...	568-359	568-438
	No. Req'd	...	2	...	...	...	2	2
	Price	...	\$15	...	...	...	\$17	\$17

CONNECTION SIZE		6-5/8	7-5/8	8-5/8				
CONNECTION TYPES		API IF	API Reg	API Reg				
TOOL O.D.		8-1/2	9	10				
BORE		5-29/32	4	4-3/4				
COMPLETE ASSEMBLY	Logan Part No.	601-850	601-900	601-1000				
	Price	\$20,658	\$20,660	\$24,853				
PIN SECTION	Logan Part No.	Y1021	Y1022	Y1023				
	Price	\$8,263	\$9,941	\$9,250				
BOX SECTION	Logan Part No.	Y2021	Y2022	Y2023				
	Price	\$12,394	\$12,396	\$13,876				
O-RING - SMALL	Logan Part No.	...	568-361	...				
	No. Req'd	...	2	...				
	Price	...	\$17	...				
O-RING - LARGE	Logan Part No.	...	568-363	...				
	No. Req'd	...	2	...				
	Price	...	\$17	...				

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* Available upon request.

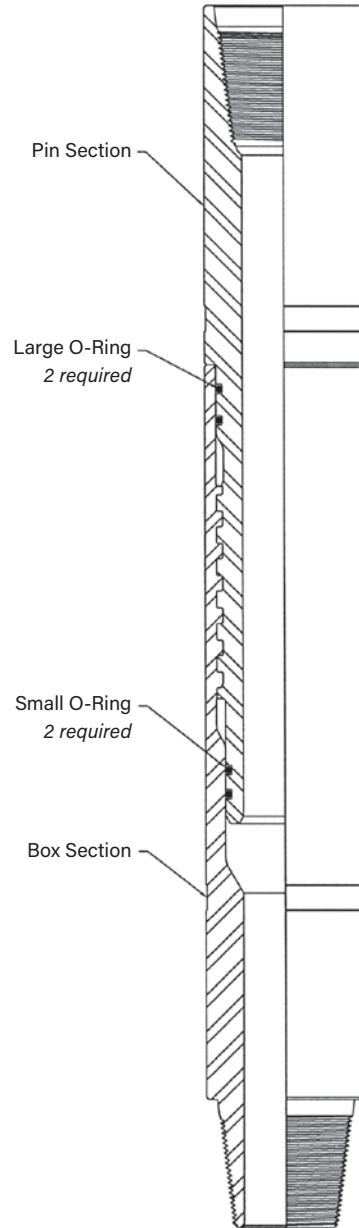
Special Notes:

(1) Add 20% for left-hand application.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) O.D., if other than standard. For oversize, add 10% for each additional 1/4" or portion thereof to Pin Section and Box Section.

LOGAN TUBING SAFETY JOINTS



Logan Tubing Safety Joints

CONNECTION SIZE		3/4	1	1-13/16	1	1-1/2	2	2-1/2
CONNECTION TYPE		EUE	DSS HARDY GRIFFIN	WFJ	EUE	CS	EUE	EUE
TOOL O.D.		1.660	1.590	1.813	1-29/32	2-1/8	3-1/16	3-21/32
BORE		.812	.812	5/16	1	1-1/2	2	2-7/16
COMPLETE ASSEMBLY	Logan Part No.	602-166	602-159	602-181	602-191	602-213	602-306	602-366
	Price	*	*	*	*	*	\$7,762	\$9,090
PIN SECTION	Logan Part No.	Y3000	Y3001	Y30015	Y3002	Y3003	Y3004	Y3005
	Price	*	*	*	*	*	\$3,874	\$4,536
BOX SECTION	Logan Part No.	Y4000	Y4001	Y40015	Y4002	Y4003	Y4004	Y4005
	Price	*	*	*	*	*	\$3,874	\$4,536
O-RING - SMALL	Logan Part No.	...	...	568-210	568-025	568-131	568-138	568-228
	No. Req'd	...	...	2	2	2	2	2
	Price	...	...	\$3	\$3	\$3	\$3	\$3
O-RING - LARGE	Logan Part No.	...	...	568-217	568-128	568-225	568-332	568-336
	No. Req'd	...	...	2	2	2	2	2
	Price	...	...	\$3	\$3	\$3	\$3	\$6

CONNECTION SIZE		2-7/8	3	3				
CONNECTION TYPE		HYDRILL C-100	EUE	EUE				
TOOL O.D.		3-1/2	4-1/2	5				
BORE		2-3/8	3	3				
COMPLETE ASSEMBLY	Logan Part No.	602-350	602-450	602-500				
	Price	*	*	*				
PIN SECTION	Logan Part No.	Y3006	Y3007	Y3008				
	Price	*	*	*				
BOX SECTION	Logan Part No.	Y4006	Y4007	Y4008				
	Price	*	*	*				
O-RING - SMALL	Logan Part No.	...	568-152	...				
	No. Req'd	...	2	...				
	Price	...	\$3	...				
O-RING - LARGE	Logan Part No.	...	568-241	...				
	No. Req'd	...	2	...				
	Price	...	\$7	...				

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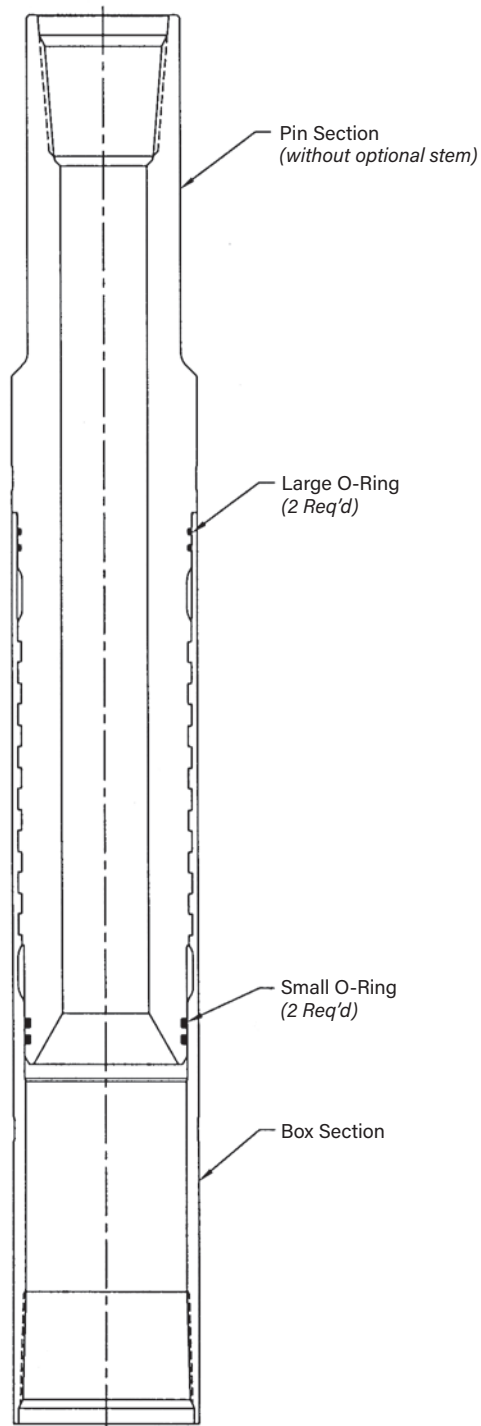
Special Notes:

(1) Add 20% for left-hand application.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) For oversize, add 10% for each additional 1/4" or portion thereof to Pin Section and Box Section.

Logan Washover Safety Joints



Logan Washover Safety Joints

CONNECTION SIZE		4	4-1/2	5	5-1/2	5-3/4	7	7-3/8
CONNECTION TYPE		FJ	FJ	FJ	FJ	FJ	HYDRIL FJ	FJ
TOOL O.D.		4	4-1/2	5-3/8	5-5/8	5-3/4	7-5/16	7-3/8
BORE		1-1/4	1-1/4	2-1/8	2-9/16	2-7/16	3-3/4	3
COMPLETE ASSEMBLY	Logan Part No.	603-400	603-450	603-538	603-563	603-575	603-731	603-738
	Price	*	*	*	*	*	*	*
PIN SECTION WITHOUT STEM	Logan Part No.	Y5000-B	Y5001-B	Y5002-B	Y5003-B	Y5004-B	Y5005-B	Y5006-B
	Price	*	*	*	*	*	*	*
BOX SECTION	Logan Part No.	Y6000	Y6001	Y6002	Y6003	Y6004	Y6005	Y6006
	Price	*	*	*	*	*	*	*
O-RING	Logan Part No.	...	...	...	...	...	...	568-261
	No. Req'd	...	...	...	...	...	...	2
	Price	...	...	...	...	...	...	*

OPTIONAL

PIN SECTION WITH STEM	Logan Part No.	Y5000-A	Y5001-A	Y5002-A	Y5003-A	Y5004-A	Y5005-A	Y5006-A
	Price	*	*	*	*	*	*	*

CONNECTION SIZE		7-5/8	8-1/8	9	9-5/8	10-3/4	11-3/4	
CONNECTION TYPE		FJ	FJ	FJ	FJ	FJ	FJ	
TOOL O.D.		8	8-5/32	9-3/8	10-1/8	11-1/16	11-3/4	
BORE		3-3/4	3-5/32	4		4		
COMPLETE ASSEMBLY	Logan Part No.	603-800	603-816	603-938	603-1013	603-1106	603-1175	
	Price	*	*	*	*	*	*	
PIN SECTION WITHOUT STEM	Logan Part No.	Y5007-B	Y5008-B	Y5009-B	Y5010-B	Y5011-B	Y5012-B	
	Price	*	*	*	*	*	*	
BOX SECTION	Logan Part No.	Y6007	Y6008	Y6009	Y6010	Y6011	Y6012	
	Price	*	*	*	*	*	*	
O-RING	Logan Part No.	568-262	...	...	...	...	...	
	No. Req'd	2	...	...	...	...	...	
	Price	*	...	...	...	...	...	

OPTIONAL

PIN SECTION WITH STEM	Logan Part No.	Y5007-A	Y5008-A	Y5009-A	Y5010-A	Y5011-A	Y5012-A	
	Price	*	*	*	*	*	*	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

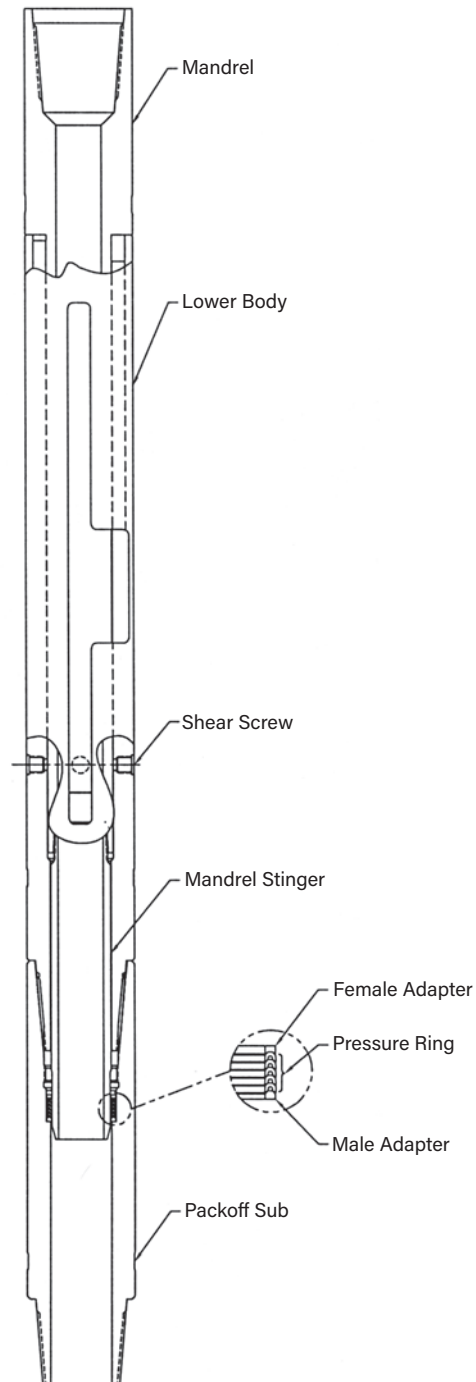
Special Notes:

(1) Add 20% for left-hand application.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard
- (3) Name and number of any desired spares
- (4) If ordering Pin Section With Stem, specify stem length
- (5) For oversize, add 10% for each additional 1/4" or portion thereof to Pin Section and Box Section.

LOGAN TYPE J SAFETY JOINTS



Logan Type J Safety Joints

STANDARD TOOL O.D.		4-1/8	4-3/4	5-3/4	6-1/4	7-3/4		
COMPLETE ASSEMBLY	Logan Part No.	610-413	610-475	610-575	610-625	610-775		
	Price	\$18,219	\$19,982	\$33,230	\$29,915	\$35,877		
MANDREL	Logan Part No.	Y7000	Y7001	Y70015	Y7002	Y7003		
	Price	*	*	*	*	*		
MANDREL STINGER	Logan Part No.	Y8000	Y8001	Y80015	Y8002	Y8003		
	Price	*	*	*	*	*		
LOWER BODY	Logan Part No.	Y9000	Y9001	Y90015	Y9002	Y9003		
	Price	*	*	*	*	*		
PACK-OFF SUB	Logan Part No.	Y10000	Y10001	Y100015	Y10002	Y10003		
	Price	*	*	*	*	*		
GLAND NUT	Logan Part No.	Y11000	Y11001	Y110015	Y11002	Y11002		
	Price	*	*	*	*	*		
FEMALE ADAPTER	Logan Part No.	SC3131-480	SC2652-480	SC2728-480	SC3123-480	SC3433-480		
	Price	*	*	*	*	*		
MALE ADAPTER	Logan Part No.	SC3132-280	SC2652-280	SC2728-280	SC3123-280	SC3433-280		
	Price	*	*	*	*	*		
CHEVRON PACKING	Logan Part No.	SC3132-160	SC2652-160	SC2728-160	SC3123-160	SC3433-160		
	Price	*	*	*	*	*		
SHEAR SCREW	Logan Part No.	Y12000	Y12000	Y12000	Y12000	Y12000		
	No. Req'd	2	2	2	4	4		
GLAND WRENCH	Logan Part No.	Y13000	Y13001	Y130015	Y13002	Y13002		
	Price	*	*	*	*	*		

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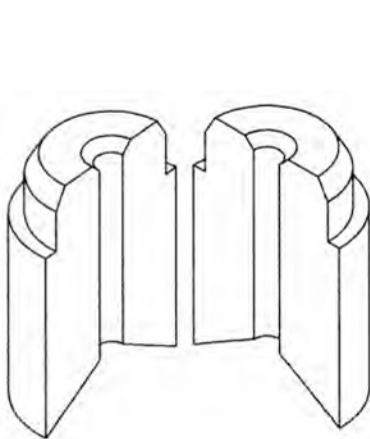
** Available upon request.*

Note: Gland Wrench provided with each assembly.

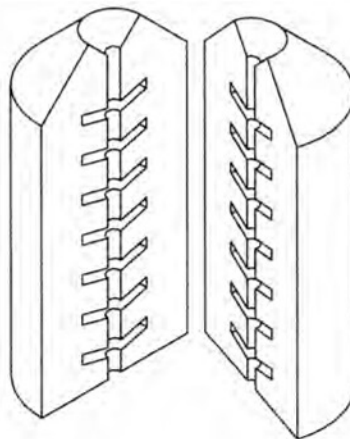
When ordering, please specify:

- (1) Complete assembly or part number
- (2) O.D. of assembly
- (3) Size and type of connection

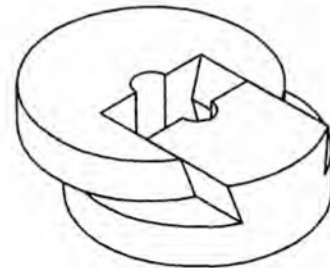
Logan Wireline Spare Parts



Line Bushing



Line Rubber



Interlocking Seats

REPLACEMENT PARTS FOR HYDRAULIC AND MANUAL LINE WIPERS AND CONTROL HEADS

LINE BUSHINGS	Logan Part No.	L262	L10402	L745451				
	Price	\$121	\$166	*				
LINE RUBBERS	Logan Part No.	L10975	L267	L10203				
	Price	\$37	\$40	\$55				
INTERLOCKING SEATS	Logan Part No.	L10974	L6482	L10204				
	Price	*	\$58	*				

Innovex reserves the right to change or discontinue designs and/or prices without notice.

** Available upon request.*

When ordering, please specify:

(1) Your preferred line size.

Logan Flo-Tubes

Part Number	Description	Actual Bore*
L44906-183	.178" - .180"	.183"
L44906-186	.181" - .183"	.186"
L44906-189	.184" - .186"	.189"
L44906-192	.187" - .189"	.192"
L44906-194	.188" - .190"	.194"
L44906-196-A	.191" - .193"	.196"
L44906-199	.194" - .196"	.199"
L44906-201	.195" - .198"	.201"
L44906-208	.201" - .205"	.208"
L44906-216	.211" - .213"	.216"
L44906-219	.214" - .216"	.219"
L44906-221	.216" - .218"	.221"
L44906-222	.216" - .219"	.222"
L44906-223	.218" - .220"	.223"
L44906-224	.219" - .221"	.224"
L44906-225	.220" - .222"	.225"
L44906-226	.221" - .223"	.226"
L44906-227	.222" - .224"	.227"
L44906-228	.222" - .225"	.228"
L44906-229	.224" - .226"	.229"
L44906-231	.225" - .228"	.231"
L44906-232	.227" - .229"	.232"
L44906-233	.228" - .230"	.233"
L44906-234	.229" - .231"	.234"
L44906-236	.231" - .233"	.236"
L44906-238	.233" - .235"	.238"
L44906-239	.234" - .236"	.239"
L44906-240	.235" - .237"	.240"
L44906-242	.237" - .239"	.242"
L44906-250	.244" - .247"	.250"
L44906-252	.247" - .249"	.252"
L44906-254	.249" - .251"	.254"
L44906-256	.251" - .253"	.256"
L44906-258	.253" - .255"	.258"
L44906-261	.256" - .258"	.261"
L44906-262	.257" - .259"	.262"
L44906-267	.262" - .264"	.267"
L44906-268	.263" - .265"	.267"
L44906-282	.277" - .279"	.282"
L44906-284	.279" - .281"	.284"
L44906-285	.280" - .282"	.285"
L44906-286	.281" - .283"	.286"
L44906-287	.282" - .284"	.287"
L44906-288	.283" - .285"	.288"
L44906-290	.285" - .287"	.290"
L44906-291	.286" - .288"	.291"
L44906-292	.287" - .289"	.292"
L44906-293	.288" - .290"	.293"

Part Number	Description	Actual Bore*
L44906-294	.289" - .291"	.294"
L44906-295	.290" - .292"	.295"
L44906-296	.291" - .293"	.296"
L44906-297	.292" - .294"	.297"
L44906-298	.292" - .295"	.298"
L44906-300	.295" - .297"	.300"
L44906-303	.297" - .300"	.303"
L44906-312	.307" - .309"	.312"
L44906-315	.310" - .312"	.315"
L44906-316	.311" - .313"	.316"
L44906-318	.312" - .315"	.318"
L44906-321	.315" - .318"	.321"
L44906-322	.317" - .319"	.322"
L44906-323	.318" - .320"	.323"
L44906-325	.319" - .322"	.325"
L44906-326	.321" - .323"	.326"
L44906-327	.322" - .324"	.327"
L44906-328	.323" - .325"	.328"
L44906-329	.324" - .326"	.329"
L44906-330	.324" - .327"	.330"
L44906-331	.325" - .328"	.331"
L44906-332	.327" - .329"	.332"
L44906-334	.329" - .331"	.334"
L44906-335	.329" - .332"	.335"
L44906-337	.332" - .334"	.337"
L44906-341	.336" - .338"	.341"
L44906-375	.370" - .372"	.375"
L44906-377	.372" - .374"	.377"
L44906-379	.374" - .376"	.379"
L44906-380	.375" - .377"	.380"
L44906-381	.375" - .378"	.381"
L44906-382	.377" - .379"	.382"
L44906-384	.379" - .381"	.384"
L44906-386	.381" - .384"	.386"
L44906-390	.385" - .388"	.390"
L44906-394	.389" - .391"	.394"
L44906-397	.392" - .394"	.397"
L44906-406	.401" - .403"	.406"
L44906-425	.420" - .422"	.425"
L44906-427	.422" - .424"	.427"
L44906-429	.424" - .426"	.429"
L44906-431	.426" - .428"	.431"
L44906-433	.428" - .430"	.433"
L44906-435	.430" - .432"	.435"
L44906-436	.431" - .433"	.436"
L44906-437	.432" - .434"	.437"
L44906-445	.440" - .442"	.445"
L44906-467	.462" - .464"	.467"

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* +.002/- .000

Price available upon request.

Note: If your preferred size is not listed, please contact your local Innovex Sales Representative for pricing and availability (price subject to change).

When ordering, please specify:

- (1) Caliper size
- (2) Actual bore size or range of tubes needed

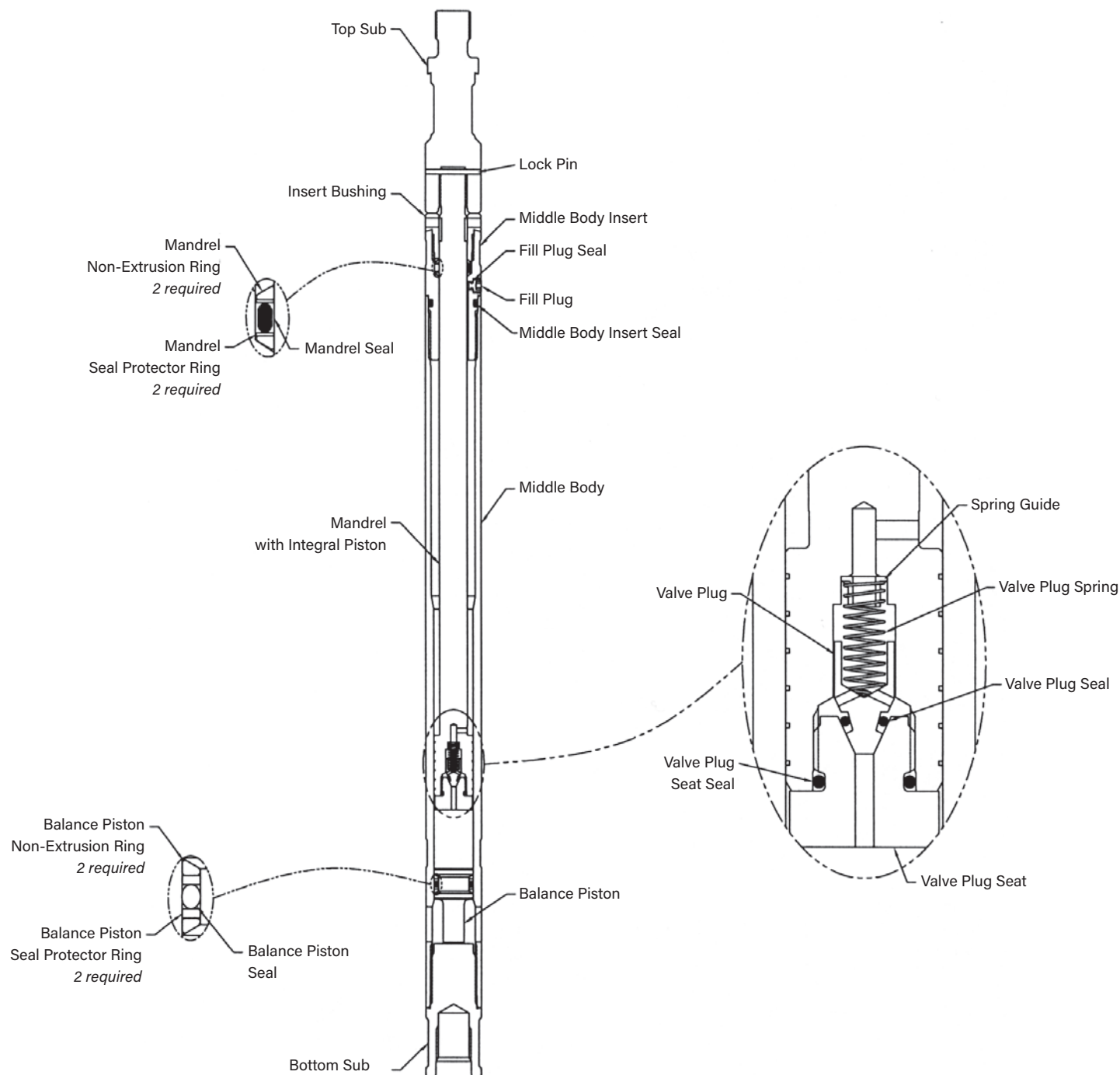
Logan HE "AJ" Reversing Tool

NOMINAL SIZE (INCHES)		3	4	6 (With Wing Extensions)	6	8	8 (With Wing Extensions)
OUTSIDE DIAMETER		3-3/4"	4-1/16"	5-13/16"	5-13/16"	7-3/4"	7-3/4"
INSIDE DIAMETER		5/8"	1-1/8"	1-1/4"	1-1/4"	1-1/4"	1-1/4"
LENGTH		106"	116"	147"	147"	157"	157"
TO OPERATE IN CASING SIZES		4-1/2" up to 13 Lbs thru 5-1/2" 13 Lbs.	5" up to 18 Lbs thru 7" 38 & 40 Lbs	7" up to 35 Lbs thru All Wts. 8-5/8"	9-5/8" All Wts.	9-5/8" thru 10-3/4" All Wts.	11-3/4" thru 13-3/8" All Wts. Or 15" thru 16" All Wts.
COMPLETE ASSEMBLY	Logan Part No. Weight Price	16084 210	15690 375	16082 *	16082 *	16083 *	16083 *

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** Note: Price and delivery upon request*

LOGAN HYDRAULIC WIRELINE JARS



Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-3/4	
CONNECTIONS		15/16	15/16	15/16	15/16	15/16	3/4	
PIN UP - BOX DOWN		10 THD	10 THD	10 THD	10 THD	10 THD	SR	
LENGTH OF STROKE		9-1/4	8-3/4	8-3/4	20	12	10	
COMPLETE ASSEMBLY	Logan Part No.	700-925	700-875	700-002	700-003	700-004	700-1000	
	Bowen No.	11740	11180	48383	51227	35518	79297	
	Price	\$2,694	\$2,317	*	\$4,613	*	\$3,630	
TOP SUB	Logan Part No.	AL1001	AL1002	AL1002	AL1002	AL1002	AL1003	
	Bowen No.	11741	10761	10761	10761	10761	12761	
	Price	\$263	\$196	\$196	\$196	\$196	\$356	
MIDDLE BODY	Logan Part No.	AL2001	AL2002	AL2002	AL2003	AL2004	AL2005	
	Bowen No.	11744	11182	11182	51228	35519	12765	
	Price	\$1,079	\$1,079	\$1,079	\$2,761	*	\$1,628	
MIDDLE BODY INSERT	Logan Part No.	AL3001	AL3002	AL3002	AL3002	AL3002	AL3003	
	Bowen No.	29486	28652	28652	28652	28652	79298	
	Price	\$302	\$302	\$302	\$302	\$302	\$520	
INSERT BUSHING	Part No.	AL4001	AL4002	AL4003	AL4002	AL4003	AL4006	
	Bowen No.	33572	33571	35085	33571	35085	79299	
	Price	\$139	\$139	\$395	\$139	\$395	\$395	
MANDREL	Logan Part No.	AL5001	AL5002	AL5003	AL5004	AL5005	AL5006	
	Bowen No.	11742	11184	35086	51229	35520	79300	
	Price	\$648	\$648	*	\$1,878	*	\$952	
BOTTOM SUB	Logan Part No.	AL6001	AL6002	AL6002	AL6002	AL6002	AL6003	
	Bowen No.	11747	11181	11181	11181	11181	12767	
	Price	\$196	\$167	\$167	\$167	\$167	\$226	
BALANCE PISTON	Logan Part No.	AL7001	AL7002	AL7002	AL7002	AL7002	AL7003	
	Bowen No.	11746	11185	11185	11185	11185	12766	
	Price	\$72	\$72	\$72	\$72	\$72	\$179	
VALVE PLUG	Logan Part No.	AL8000	AL8000	AL8000	AL8000	AL8000	AL8000	
	Bowen No.	11189	11189	11189	11189	11189	11189	
	Price	\$53	\$53	\$53	\$53	\$53	\$53	
VALVE PLUG SPRING	Logan Part No.	AL9000	AL9000	AL9000	AL9000	AL9000	AL9000	
	Bowen No.	834	834	834	834	834	834	
	Price	\$9	\$9	\$9	\$9	\$9	\$9	
VALVE PLUG SEAT	Logan Part No.	AL10000	AL10001	AL10001	AL10001	AL10001	AL10001	
	Bowen No.	11745	11186	11186	11186	11186	11186	
	Price	\$68	\$68	\$68	\$68	\$68	\$68	
FILL PLUG	Logan Part No.	AG10000	AG10000	AG10000	AG10000	AG10000	AG10000	
	Bowen No.	617	617	617	617	617	617	
	Price	\$17	\$17	\$17	\$17	\$17	\$17	
LOCK PIN	Logan Part No.	AL11001	AL11002	AL11002	AL11002	AL11002	AL11003	
	Bowen No.	16010	13432	13432	13432	13432	18183	
	Price	\$1	\$1	\$2	\$2	\$2	\$2	
SPRING GUIDE	Logan Part No.	AL16000	AL16000	AL16000	AL16000	AL16000	AL16000	
	Bowen No.	48307	48307	48307	48307	48307	48307	
	Price	\$11	\$11	\$11	\$11	\$11	\$11	

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* Available upon request.

Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-3/4	
CONNECTIONS		15/16	15/16	15/16	15/16	15/16	3/4	
PIN UP - BOX DOWN		10 THD	10 THD	10 THD	10 THD	10 THD	SR	
LENGTH OF STROKE		9-1/4	8-3/4	8-3/4	20	12	10	
COMPLETE ASSEMBLY	Logan Part No.	700-925	700-875	700-002	700-003	700-004	700-1000	
	Bowen No.	11740	11180	48383	51227	35518	79297	
MANDREL NON-EXTRUSION RING	Logan Part No.	L365-11	L365-15	L365-15	L365-15	L365-15	L365-17	
	Bowen No.	365-11	365-15	365-15	365-15	365-15	365-17	
	No. Req'd	2	2	2	2	2	2	
	Price	\$39	\$39	\$39	\$39	\$39	\$36	
MANDREL SEAL PROTECTOR RING	Logan Part No.	L375-11	L375-15	L375-15	L375-15	L375-15	L375-17	
	Bowen No.	375-11	375-15	375-15	375-15	375-15	375-17	
	No. Req'd	2	2	2	2	2	2	
	Price	\$7	\$7	\$7	\$7	\$7	\$7	
BALANCE PISTON NON-EXTRUSION RING	Logan Part No.	L366-11	L366-16	L366-16	L366-16	L366-16	L366-20	
	Bowen No.	366-11	366-16	366-16	366-16	366-16	366-20	
	No. Req'd	2	2	2	2	2	2	
	Price	\$38	\$38	\$38	\$38	\$38	\$36	
BALANCE PISTON SEAL PROTECTOR RING	Logan Part No.	L82-11	L82-16	L82-16	L82-16	L82-16	L82-20	
	Bowen No.	82-11	82-16	82-16	82-16	82-16	82-20	
	No. Req'd	2	2	2	2	2	2	
	Price	\$6	\$6	\$6	\$6	\$6	\$6	

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard

Recommended Spare Parts:

- | | |
|-----------------------------------|---|
| (1) 1 Balanced Piston | (6) 6 Mandrel Seal Protector Rings |
| (2) 2 Valve Plugs | (7) 4 Balance Piston Non-Extrusion Rings |
| (3) 4 Valve Plug Springs | (8) 4 Balance Piston Seal Protector Rings |
| (4) 2 Valve Plug Seats | (9) 6 Complete Packing Sets |
| (5) 6 Mandrel Non-Extrusion Rings | |

Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		1-1/4	1-1/2	1-1/2	1-1/2	1-1/2	1-3/4	
CONNECTIONS		15/16	15/16	15/16	15/16	15/16	3/4	
PIN UP - BOX DOWN		10 THD	10 THD	10 THD	10 THD	10 THD	SR	
LENGTH OF STROKE		9-1/4	8-3/4	8-3/4	20	12	10	
COMPLETE ASSEMBLY	Logan Part No.	700-001	700-875	700-002	700-003	700-004	700-1000	
	Bowen No.	11740	11180	48383	51227	35518	79297	
O-RING PACKING SET	Logan Part No.	28000-009	28000-010	28000-010	28000-010	28000-010	28000-011	
<i>Consists of:</i>	Bowen No.	11754	11191	11191	11191	11191	79327	
	Price	\$13	\$13	\$13	\$13	\$13	\$13	
MANDREL SEAL	Logan Part No.	568-112	568-210	568-210	568-210	568-210	568-212	
	Bowen No.	568112	568210	568210	568210	568210	568212	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
BALANCE PISTON SEAL	Logan Part No.	568-113	568-211	568-211	568-211	568-211	568-215	
	Bowen No.	568113	568211	568211	568211	568211	568215	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
MIDDLE BODY INSERT SEAL (LARGE)	Logan Part No.	568-116	568-215	568-215	568-215	568-215	568-218	
	Bowen No.	568116	568215	568215	568215	568215	568218	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
MIDDLE BODY INSERT SEAL (SMALL)	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
VALVE PLUG SEAL	Logan Part No.	568-007	568-007	568-007	568-007	568-007	568-007	
	Bowen No.	568007	568007	568007	568007	568007	568007	
	Price	\$2	\$2	\$2	\$2	\$2	\$2	
VALVE PLUG SEAT SEAL	Logan Part No.	568-110	568-112	568-112	568-112	568-112	568-112	
	Bowen No.	568110	568112	568112	568112	568112	568112	
	Price	\$3	\$3	\$3	\$3	\$3	\$3	
FILL PLUG SEAL	Logan Part No.	568-005	568-005	568-005	568-005	568-005	568-005	
	Bowen No.	68005	568005	568005	568005	568005	568005	
	Price	\$1	\$1	\$1	\$1	\$1	\$7	

ACCESSORIES

SERVICE KIT	Logan Part No.	28001-014	28001-015	28001-015	28001-015	28001-015	28001-016	
	Bowen No.	11751	11178	11178	11178	11178	15997	
	Price	*	*	*	*	*	*	
MANDREL BODY SETTING TOOL	Logan Part No.	AG1000-11	AG1000-15	AG1000-15	AG1000-15	AG1000-15	AG1000-17	
	Bowen No.	22709-11	22709-15	22709-15	22709-15	22709-15	22709-17	
	Price	*	*	*	*	*	*	
BALANCE PISTON SETTING TOOL	Logan Part No.	AL13001	AL13000-16	AL13000-16	AL13000-16	AL13000-16	AL13000-20	
	Bowen No.	11753	22729-16	22729-16	22729-16	22729-16	22729-20	
	Price	*	*	*	*	*	*	

Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		2-1/8	2-3/4				
CONNECTIONS		7/8	1-9/16				
PIN UP - BOX DOWN		SR	10 THD				
LENGTH OF STROKE		11-5/8	20				
COMPLETE ASSEMBLY	Logan Part No.	700-1163	700-006				
	Bowen No.	11550	...				
	Price	\$4,902	*				
TOP SUB	Logan Part No.	AL1004	AL1005				
	Bowen No.	11543	...				
	Price	\$419	*				
MIDDLE BODY	Logan Part No.	AL2006	AL2007				
	Bowen No.	11537	...				
	Price	\$2,573	*				
MIDDLE BODY INSERT	Logan Part No.	AL3004	AL3005				
	Bowen No.	11538	...				
	Price	\$1,080	*				
INSERT BUSHING	Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
MANDREL	Logan Part No.	AL5007	AL5008				
	Bowen No.	11539	...				
	Price	\$1,027	*				
BOTTOM SUB	Logan Part No.	AL6004	AL6005				
	Bowen No.	11536	...				
	Price	\$395	*				
BALANCE PISTON	Logan Part No.	AL7004	AL7005				
	Bowen No.	11540	...				
	Price	\$242	*				
VALVE PLUG	Logan Part No.	AL8000	AL8000				
	Bowen No.	11189	...				
	Price	\$52	*				
VALVE PLUG SPRING	Logan Part No.	AL9000	AL9000				
	Bowen No.	834	...				
	Price	\$7	*				
VALVE PLUG SEAT	Logan Part No.	AL10001	AL10001				
	Bowen No.	11186	...				
	Price	\$67	*				
FILL PLUG	Logan Part No.	AG10002	AG10002				
	Bowen No.	329	...				
	Price	\$20	*				
LOCK PIN	Logan Part No.	AL11004	AL11005				
	Bowen No.	42732	...				
	Price	\$1	*				
SPRING GUIDE	Logan Part No.	AL16000	AL16001				
	Bowen No.	48307	...				
	Price	\$11	*				

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		2-1/8	2-3/4				
CONNECTIONS		7/8	1-9/16				
PIN UP - BOX DOWN		SR	10 THD				
LENGTH OF STROKE		11-5/8	20				
COMPLETE ASSEMBLY	Logan Part No.	700-1163	700-006				
	Bowen No.	11550	...				
MANDREL NON-EXTRUSION RING	Logan Part No.	L365-21	L365-27				
	Bowen No.	365-21	365-27				
	No. Req'd	2	2				
	Price	\$39	\$36				
MANDREL SEAL PROTECTOR RING	Logan Part No.	L375-21	L375-27				
	Bowen No.	375-21	375-27				
	No. Req'd	2	2				
	Price	\$9	\$15				
BALANCE PISTON NON-EXTRUSION RING	Logan Part No.	L366-24	L366-28.5				
	Bowen No.	366-24	...				
	No. Req'd	2	4				
	Price	\$36	\$36				
BALANCE PISTON SEAL PROTECTOR RING	Logan Part No.	L82-24	8-235-400				
	Bowen No.	82-24	...				
	No. Req'd	2	4				
	Price	\$7	*				

Innovex reserves the right to change or discontinue designs and/or prices without notice.

** Available upon request.*

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Connections, if other than standard

Recommended Spare Parts:

- | | |
|-----------------------------------|---|
| (1) 1 Balanced Piston | (6) 6 Mandrel Seal Protector Rings |
| (2) 2 Valve Plugs | (7) 4 Balance Piston Non-Extrusion Rings |
| (3) 4 Valve Plug Springs | (8) 4 Balance Piston Seal Protector Rings |
| (4) 2 Valve Plug Seats | (9) 6 Complete Packing Sets |
| (5) 6 Mandrel Non-Extrusion Rings | |

Logan Hydraulic Wireline Jars

OUTSIDE DIAMETER		2-1/8	2-3/4				
CONNECTIONS		7/8	1-9/16				
PIN UP - BOX DOWN		SR	10 THD				
LENGTH OF STROKE		11-5/8	20				
COMPLETE ASSEMBLY	Logan Part No.	700-1163	700-006				
	Bowen No.	11550					
O-RING PACKING SET	Logan Part No.	28000-012	28000-013				
<i>Consists of:</i>	Bowen No.	11553	54784				
	Price	\$18	\$28				
MANDREL SEAL	Logan Part No.	568-216	568-222				
	Bowen No.	568216	568222				
	Price	\$3	\$3				
BALANCE PISTON SEAL	Logan Part No.	568-219	568-325				
	Bowen No.	568219	568-325				
	Price	\$3	\$3				
MIDDLE BODY INSERT SEAL (LARGE)	Logan Part No.	568-223	568-226				
	Bowen No.	568223	568-226				
	Price	\$3	\$3				
MIDDLE BODY INSERT SEAL (SMALL)	Logan Part No.	568-211	568-224				
	Bowen No.	568211	568-224				
	Price	\$3	\$3				
VALVE PLUG SEAL	Logan Part No.	568-007	568-007				
	Bowen No.	568007	568-007				
	Price	\$2	\$2				
VALVE PLUG SEAT SEAL	Logan Part No.	568-112	568-112				
	Bowen No.	568112	568-112				
	Price	\$3	\$3				
FILL PLUG SEAL	Logan Part No.	568-006	568-006				
	Bowen No.	568006	568-006				
	Price	\$2	\$2				

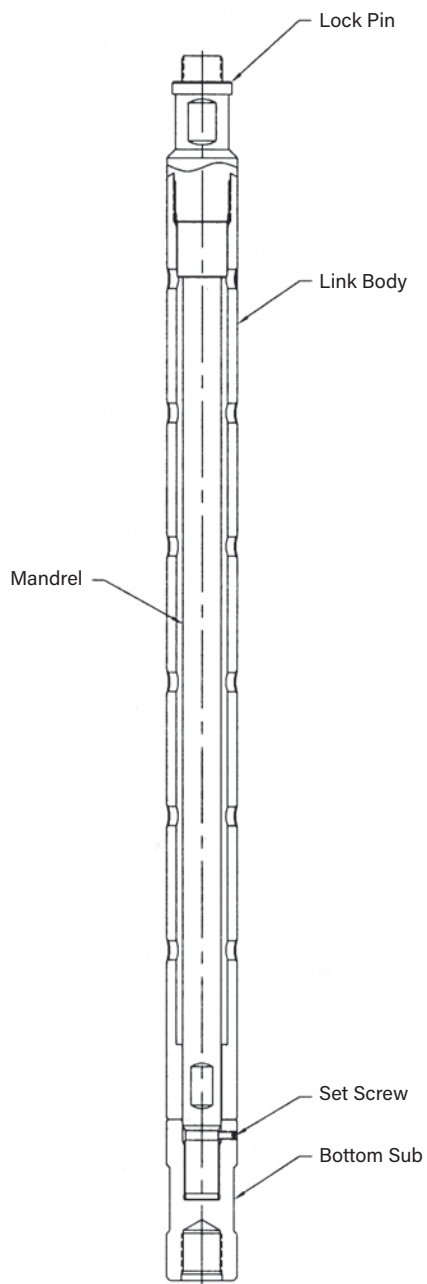
ACCESSORIES

SERVICE KIT	Logan Part No.	28001-017	...				
	Bowen No.	11554	...				
	Price	*	...				
MANDREL BODY SETTING TOOL	Logan Part No.	AG1000-24	...				
	Bowen No.	22709-21	...				
	Price	*	...				
BALANCE PISTON SETTING TOOL	Logan Part No.	AL13000-24	...				
	Bowen No.	22729-24	...				
	Price	*	...				

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** Available upon request.*

LOGAN TUBULAR WIRELINE JARS



Logan Tubular Wireline Jars

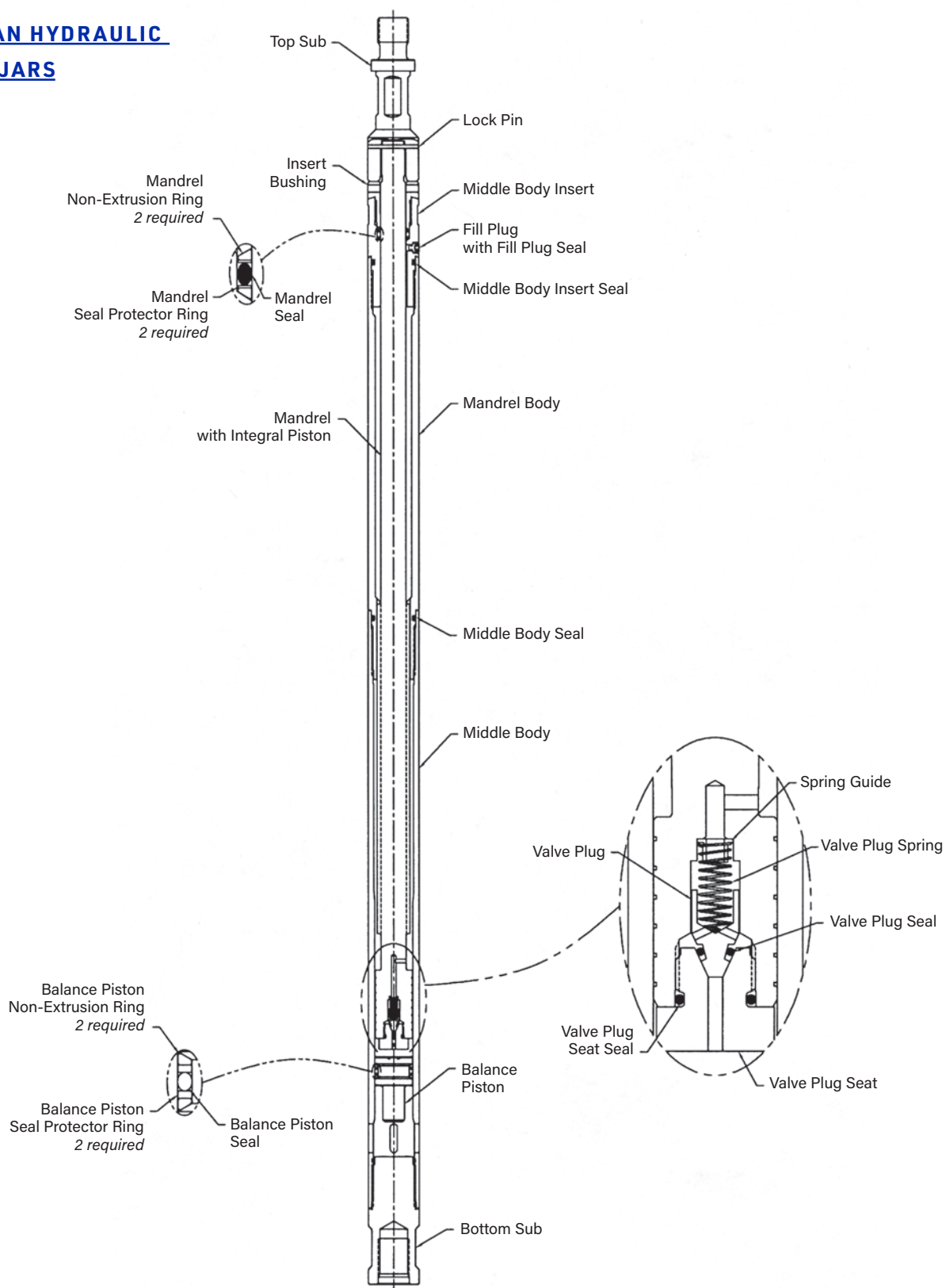
OUTSIDE DIAMETER		1-1/8	1-3/4	1-3/4			
CONNECTIONS		5/8	3/4	3/4			
PIN UP - BOX DOWN		11 THD	SR	SR			
LENGTH OF STROKE (INCHES)		18	20	30			
COMPLETE ASSEMBLY	Logan Part No.	700-000-018	701-003-020	701-003-030			
	Bowen No.	19355	14235	14235			
	Price	*	*	*			
TOP SUB	Logan Part No.	AM1000	AM1003	AM1003			
	Bowen No.	19356	14236	14236			
	Price	*	*	*			
BODY	Logan Part No.	AM2000	AM2003	AM2003			
	Bowen No.	19357	14237	14237			
	Price	*	*	*			
MANDREL	Logan Part No.	AM3000	AM3003	AM3003			
	Bowen No.	19358	14232	14232			
	Price	*	*	*			
BOTTOM SUB	Logan Part No.	AM4000	AM4003	AM4003			
	Bowen No.	19359	14233	14233			
	Price	*	*	*			
SPRING PIN	Logan Part No.	AM5000	AM5003	AM5003			
	Bowen No.	13431	27220	27220			
	Price	*	*	*			

OUTSIDE DIAMETER		1-7/8	1-7/8				
CONNECTIONS		3/4	3/4				
PIN UP - BOX DOWN		SR	SR				
LENGTH OF STROKE (INCHES)		20	30				
COMPLETE ASSEMBLY	Logan Part No.	701-004-020	701-004-030				
	Bowen No.	21430	21430				
	Price	*	*				
TOP SUB	Logan Part No.	AM1004	AM1004				
	Bowen No.	21431	21431				
	Price	*	*				
BODY	Logan Part No.	AM2004	AM2004				
	Bowen No.	21432	21432				
	Price	*	*				
MANDREL	Logan Part No.	AM3003	AM3003				
	Bowen No.	14232	14232				
	Price	*	*				
BOTTOM SUB	Logan Part No.	AM4004	AM4004				
	Bowen No.	21433	21433				
	Price	\$264	*				
SPRING PIN	Logan Part No.	AM5004	AM5004				
	Bowen No.	18183	18183				
	Price	*	*				

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* Available upon request.

LOGAN HYDRAULIC
ROD JARS



Logan Hydraulic Rod Jars

OUTSIDE DIAMETER		1-1/2	1-3/4	2-1/8			
CONNECTIONS		15/16	3/4	7/8			
PIN UP - BOX DOWN		10 THD	SR	SR			
LENGTH OF STROKE (INCHES)		9-3/16	10	11-5/16			
COMPLETE ASSEMBLY	Logan Part No.	703-001	703-003	703-005			
	Bowen No.	28591	79316	13570			
	Price	*	\$6,736	\$9,436			
TOP SUB	Logan Part No.	AL1002	AL1003	AL1004			
	Bowen No.	10761	12761	11543			
	Price	*	\$356	\$419			
MANDREL BODY INSERT	Logan Part No.	BA2000	BA2001	BA2002			
	Bowen No.	28594	79317	10723			
	Price	*	\$552	\$877			
MANDREL BODY	Logan Part No.	BA3000	BA3001	BA3002			
	Bowen No.	28593	12763	13572			
	Price	*	\$1,152	\$1,598			
MANDREL	Logan Part No.	BA4000	BA4001	BA4002			
	Bowen No.	28592	79318	13571			
	Price	*	\$1,957	\$2,797			
MIDDLE BODY	Logan Part No.	AL2002	AL2005	AL2006			
	Bowen No.	11182	12765	11537			
	Price	*	\$1,628	\$2,568			
BALANCE PISTON	Logan Part No.	AL7002	AL7003	AL7004			
	Bowen No.	11185	12766	11540			
	Price	*	\$179	\$242			
BOTTOM SUB	Logan Part No.	AL6002	AL6003	AL6004			
	Bowen No.	11181	12767	11536			
	Price	*	\$226	\$395			
VALVE PLUG	Logan Part No.	AL8000	AL8000	AL8000			
	Bowen No.	11189	11189	11189			
	Price	\$53	\$53	\$53			
VALVE PLUG SPRING	Part No.	AL9000	AL9000	AL9000			
	Bowen No.	834	834	834			
	Price	\$9	\$9	\$9			
VALVE PLUG SEAT	Logan Part No.	AL10001	AL10001	AL10001			
	Bowen No.	11186	11186	11186			
	Price	\$68	\$68	\$68			
MANDREL NON-EXTRUSION RING	Logan Part No.	L365-15	L365-17	L365-21			
	Bowen No.	365-15	365-17	365-21			
	Price	\$39	\$36	\$39			
MANDREL SEAL PROTECTOR RING	Logan Part No.	L375-15	L375-17	L375-21			
	Bowen No.	375-15	375-17	375-21			
	Price	\$7	\$7	\$9			
BALANCE PISTON NON-EXTRUSION RING	Logan Part No.	L366-16	L366-20	L366-24			
	Bowen No.	366-16	366-20	366-24			
	Price	\$38	\$36	\$36			
BALANCE PISTON SEAL PROTECTOR RING	Part No.	L82-16	L82-20	L82-24			
	Bowen No.	9382-16	9382-20	9382-24			
	Price	\$6	\$6	\$7			

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* Available upon request.

Logan Hydraulic Rod Jars

OUTSIDE DIAMETER		1-1/2	1-3/4	2-1/8				
CONNECTIONS		15/16	3/4	7/8				
PIN UP - BOX DOWN		10 THD	SR	SR				
LENGTH OF STROKE (INCHES)		9-3/16	10	11-5/16				
COMPLETE ASSEMBLY	Logan Part No.	703-001	703-003	703-005				
	Bowen No.	28591	79316	13570				
FILL PLUG	Logan Part No.	AG10000	AG10000	AG10002				
	Bowen No.	617	617	329				
	Price	\$17	\$17	\$20				
LOCK PINS	Logan Part No.	AL11002	AL11003	AL11004				
	Bowen No.	13432	18183	42732				
	Price	\$1	\$1	\$1				
SPRING GUIDE	Logan Part No.	AL16000	AL16000	AL16000				
	Bowen No.	48307	48307	48307				
	Price	\$11	\$11	\$11				
O-RING PACKING SET	Logan Part No.	703-002	703-004	703-006				
<i>Consists of:</i>	Bowen No.	32679	79328	13573				
	Price	\$25	\$25	\$25				
MANDREL SEAL	Logan Part No.	568-210	568-212	568-216				
	Bowen No.	27-15	27-17	27-21				
	No. Req'd	2	2	2				
	Price	\$3	\$3	\$3				
BALANCE PISTON SEAL	Logan Part No.	568-211	568-215	568-219				
	Bowen No.	27-16	27-20	27-24				
	Price	\$3	\$3	\$3				
MANDREL BODY	Logan Part No.	...	...	568-221				
INSERT - SMALL SEAL	Bowen No.	...	...	27-26				
	Price	...	...	\$3				
MANDREL BODY	Logan Part No.	568-215	568-218	568-223				
INSERT - LARGE SEAL	Bowen No.	27-20	27-23	30-1				
	Price	\$3	\$3	\$3				
MIDDLE BODY SEAL	Logan Part No.	568-215	568-218	568-223				
	Bowen No.	27-20	27-23	30-1				
	Price	\$3	\$3	\$3				
VALVE PLUG SEAL	Logan Part No.	568-007	568-007	568-007				
	Bowen No.	27-2	27-2	27-2				
	Price	\$2	\$2	\$2				
FILL PLUG SEAL	Logan Part No.	568-005	568-005	568-006				
	Bowen No.	568005	568005	27-1				
	Price	\$1	\$1	\$2				
VALVE PLUG	Logan Part No.	568-112	568-112	568-112				
SEAT SEAL	Bowen No.	27-10	27-10	27-10				
	Price	\$3	\$3	\$3				

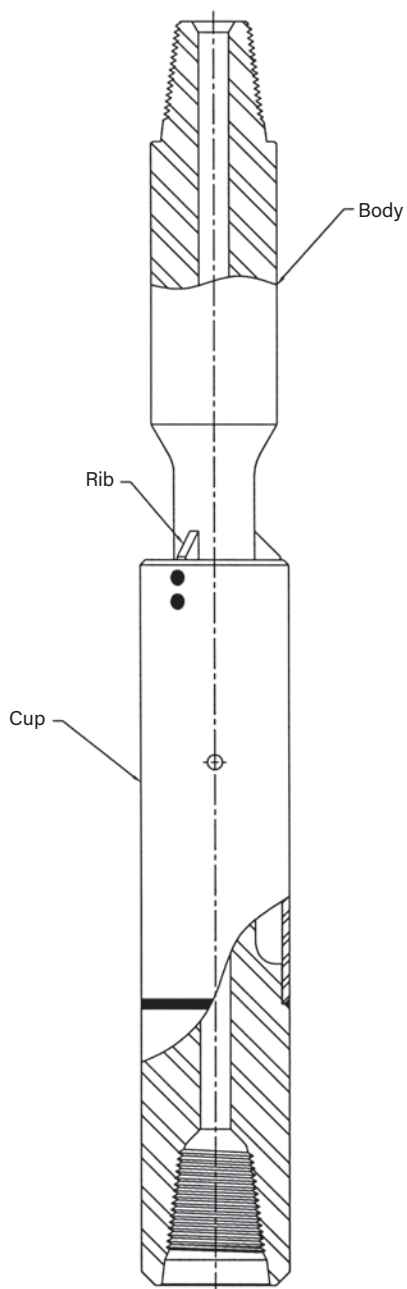
ACCESSORIES

SERVICE KIT	Logan Part No.	28001-015	28001-016	28001-017				
	Bowen No.	11178	15997	11554				
	Price	*	*	*				
MANDREL BODY	Logan Part No.	AG1000-15	AG1000-17	AG1000-21				
SETTING TOOL	Bowen No.	22709-15	22709-17	22709-21				
	Price	*	*	*				
BALANCE PISTON	Logan Part No.	AL13000-16	AL13000-20	AL13000-24				
SETTING TOOL	Bowen No.	22729-16	22729-20	22729-24				
	Price	*	*	*				

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* Available upon request.

LOGAN WELDED CUP JUNK SUBS



Logan Welded Cup Junk Subs

SIZE RANGE (HOLE SIZE)		4-1/4 to 5-5/8	4-5/8 to 4-7/8	5-1/8 to 5-7/8	6 to 6-3/8	6-1/2 to 7-1/2	7-1/2 to 8-1/2	8-5/8 to 9-5/8
CONNECTION (STD. API REG)		2-3/8	2-7/8	3-1/2	3-1/2	3-1/2	4-1/2	4-1/2
DIAMETER OF BORE		3/4	1-1/4	1-1/2	1-1/2	1-1/2	2-1/4	2-1/4
O.D. OF TOP CONNECTION BODY		3-1/8	3-3/4	4-1/4	4-1/4	4-1/4	5-1/2	5-1/2
O.D. UNDER TOP CONNECTION		2	2-5/8	3-1/8	3-1/4	3-1/4	4-1/2	4-1/2
O.D. OF CUP		3-11/16	4	4-1/2	5	5-1/2	6-5/8	7
I.D. OF CUP		3-5/16	3-5/8	4-1/4	4-9/16	4-7/8	5-15/16	6-9/32
COMPLETE ASSEMBLY	Logan Part No.	200-000-010	200-001-010	200-002-010	200-003-010	200-004-010	200-005-010	200-006-010
	Bowen No.	20340	15450	15455	15460	15465	15470	15475
	Cup Length (in)	10	10	10	10	10	10	10
	Price	\$4,138	\$4,691	\$4,751	\$4,777	\$5,181	\$5,644	\$6,191

LONG TYPE

COMPLETE ASSEMBLY	Logan Part No.	200-000-020	200-001-020	200-002-020	200-003-020	200-004-020	200-005-020	200-006-020
	Bowen No.	20345	17060	17065	17070	17075	17080	17085
	Cup Length (in)	20	20	20	20	20	20	20
	Price	\$4,553	\$5,106	\$5,167	\$5,383	\$5,872	\$6,459	\$7,075

EXTRA LONG TYPE

COMPLETE ASSEMBLY	Logan Part No.	200-000-030	200-001-030	200-002-030	200-003-030	200-004-030	200-005-030	200-006-030
	Bowen No.	20295	20300	20305	20310	20315	20320	20325
	Cup Length (in)	30	30	30	30	30	30	30
	Price	\$5,106	\$5,519	\$5,719	\$6,327	\$6,385	\$7,300	\$9,602

SIZE RANGE (HOLE SIZE)		9-5/8 to 11-5/8	11-1/2 to 13	14-3/4 to 17-1/2				
CONNECTION (STD. API REG)		6-5/8	6-5/8	7-5/8				
DIAMETER OF BORE		3-1/2	3-1/2	4				
O.D. OF TOP CONNECTION BODY		7-3/4	7-3/4	8-7/8				
O.D. UNDER TOP CONNECTION		5-3/4	5-3/4	7-5/8				
O.D. OF CUP		8-5/8	9-5/8	12-7/8				
I.D. OF CUP		7-15/16	8-17/32	11-5/8				
COMPLETE ASSEMBLY	Logan Part No.	200-007-010	200-008-010	200-009-010				
	Bowen No.	15480	15485	55306				
	Cup Length (in)	10	10	10				
	Price	\$6,896	\$7,868	\$20,654				

LONG TYPE

COMPLETE ASSEMBLY	Logan Part No.	200-007-020	200-008-020	200-009-020				
	Bowen No.	17090	17095	62533				
	Cup Length (in)	20	20	20				
	Price	\$9,096	\$11,216	\$22,676				

EXTRA LONG TYPE

COMPLETE ASSEMBLY	Logan Part No.	200-007-030	200-008-030	200-009-030				
	Bowen No.	20330	20335	62536				
	Cup Length (in)	30	30	30				
	Price	\$12,426	\$14,007	\$32,163				

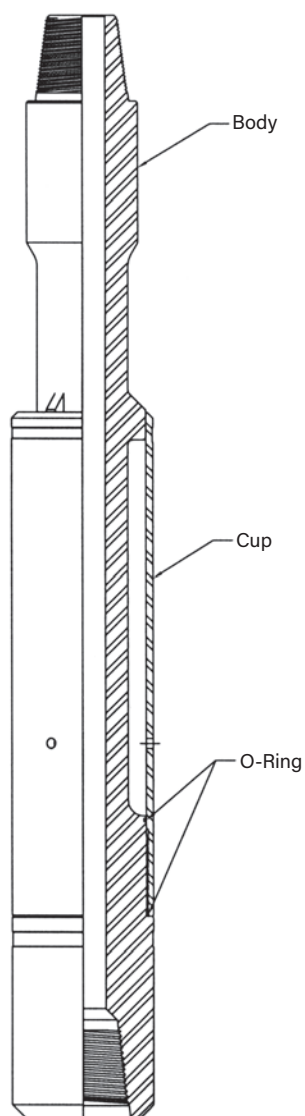
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Note: Prices available upon request for Junk Subs with ODs and/or Cup lengths not listed above.

When ordering, please specify:

- (1) Complete assembly number
- (2) Size and type of connections
- (3) Cup length

LOGAN THREADED CUP JUNK SUBS



Logan Threaded Cup Junk Subs

CASING SIZE RANGE (HOLE SIZE)		4-1/4 to 5-5/8	4-5/8 to 4-7/8	4-5/8 to 4-7/8	5-1/8 to 5-7/8	6 to 6-3/8	6-1/2 to 7-1/2
CONNECTION (STD API REG)	2-3/8	2-3/8	2-7/8	2-7/8	3-1/2	3-1/2	3-1/2
DIAMETER OF BORE	3/4	1-1/4	1-1/4	1-1/2	1-1/2	1-1/2	
O.D. OF TOP CONNECTION BODY	2-15/16	3-1/8	3-1/2	3-1/2	4-1/4	4-1/4	4-1/4
O.D. UNDER TOP CONNECTION	2	2	2-5/8	2-5/8	3-1/8	3-1/4	3-1/4
O.D. OF CUP (Determines Part Number)	3-1/2	3-11/16	4	4-1/4	4-1/2	5	5-1/2
I.D. OF CUP	3	3-5/16	3-9/16	3-3/4	4-1/4	4-9/16	4-7/8

LONG TYPE

CUP LENGTH (INCHES)		20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No.	201-014-20	201-000-20	201-013-20	201-001-20	201-002-20	201-003-20	201-004-20
	Price	*	\$4,328	\$4,745	\$4,888	\$5,982	\$5,977	\$6,063
BODY	Logan Part No.	KA1014-20	KA1000-20	KA1013-20	KA1001-20	KA1002-20	KA1003-20	KA1004-20
	Price	*	\$3,450	\$3,427	\$3,324	\$4,025	\$4,479	\$4,433
O-RING FOR GROOVE	Logan Part No.	*	568-234	568-237	*	*	568-244	568-247
	Price	*	\$6	\$6	*	*	\$8	\$11
O-RING FOR THREADED RELIEF GROOVE	Logan Part No.	*	568-151	568-238	*	*	568-157	568-158
	Price	*	\$6	\$6	*	*	\$11	\$13
THREADED CUP	Logan Part No.	KA2014-20	KA2000-20	KA2013-20	KA2001-20	KA2002-20	KA2003-20	KA2004-20
	Price	*	\$1,492	\$1,483	\$1,529	\$1,728	\$1,925	\$1,947

EXTRA LONG TYPE

CUP LENGTH (INCHES)		30	30	30	30	30	30	30
COMPLETE ASSEMBLY	Logan Part No.	201-014-30	201-000-30	201-013-30	201-001-30	201-002-30	201-003-30	201-004-30
	Price	*	\$5,342	\$5,765	\$5,779	\$6,087	\$7,129	\$7,511
BODY	Logan Part No.	KA1014-30	KA1000-30	KA1013-30	KA1001-30	KA1002-30	KA1003-30	KA1004-30
	Price	*	\$3,992	\$4,050	\$4,322	\$4,557	\$4,990	\$5,627
O-RING FOR GROOVE	Logan Part No.	*	568-234	568-237	*	*	568-244	568-247
	Price	*	\$6	\$6	*	*	\$8	\$11
O-RING FOR THREADED RELIEF GROOVE	Logan Part No.	*	568-151	568-238	*	*	568-157	568-158
	Price	*	\$6	\$6	*	*	\$11	\$13
THREADED CUP	Logan Part No.	KA2014-30	KA2000-30	KA2013-30	KA2001-30	KA2002-30	KA2003-30	KA2004-30
	Price	*	\$1,712	\$1,732	\$1,849	\$1,947	\$2,289	\$2,411

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Note: Prices available upon request for Junk Subs with ODs and/or Cup lengths not listed above.

The connection on the Cup to the Body is left-hand.

When ordering, please specify:

- (1) Complete assembly number
- (2) Size and type of connections
- (3) Length of Cup

Logan Threaded Cup Junk Subs

CASING SIZE RANGE (HOLE SIZE)	7-1/2 to 8-1/2	8-5/8 to 9-5/8		9-5/8 to 11-5/8		11-1/2 to 13	
CONNECTION (STD API REG)	4-1/2	4-1/2	4-1/2	6-5/8	6-5/8	6-5/8	6-5/8
DIAMETER OF BORE	2-1/4	2-1/4	2-1/4	3-1/2	3-1/2	3-1/2	3-1/2
O.D. OF TOP CONNECTION BODY	5-1/2	5-1/2	5-1/2	8	7-3/4	8	8
O.D. UNDER TOP CONNECTION	4-1/2	4-1/2	5-1/2	5-3/4	5-3/4	6	6
O.D. OF CUP (Determines Part Number)	6-5/8	7	8-1/4	8-5/8	9	9-5/8	10
I.D. OF CUP	5-15/16	6-9/32	7-9/16	7-15/16	8-1/8	8-17/32	8-29/32

LONG TYPE

CUP LENGTH	20	20	20	20	20	20	20	20
COMPLETE ASSEMBLY	Logan Part No. Price	201-005-20 \$6,321	201-006-20 \$7,160	201-007-20 \$9,751	201-008-20 \$10,287	201-009-20 \$12,703	201-010-20 \$12,734	201-011-20 \$13,976
BODY	Logan Part No. Price	KA1005-20 \$4,731	KA1006-20 \$6,535	KA1007-20 \$7,307	KA1008-20 \$7,692	KA1009-20 \$8,588	KA1010-20 \$9,514	KA1011-20 \$10,444
O-RING FOR GROOVE	Logan Part No. Price	568-256 \$17	568-258 \$17	568-263 \$18	* *	568-265 \$19	568-267 \$24	568-268 \$24
O-RING FOR THREADED RELIEF GROOVE	Logan Part No. Price	568-163 \$18	568-258 \$17	568-264 \$18	* *	568-266 \$19	568-268 \$24	568-269 \$24
THREADED CUP	Logan Part No. Price	KA2005-20 \$2,033	KA2006-20 \$2,300	KA2007-20 \$3,127	KA2008-20 \$3,297	KA2009-20 \$3,681	KA2010-20 \$4,081	KA2011-20 \$4,476

EXTRA LONG TYPE

CUP LENGTH	30	30	30	30	30	30	30	30
COMPLETE ASSEMBLY	Logan Part No. Price	201-005-30 \$7,860	201-006-30 \$8,821	201-007-30 \$12,134	201-008-30 \$13,252	201-009-30 \$15,269	201-010-30 \$16,267	201-011-30 \$18,534
BODY	Logan Part No. Price	KA1005-30 \$5,891	KA1006-30 \$6,609	KA1007-30 \$8,510	KA1008-30 \$9,275	KA1009-30 \$10,685	KA1010-30 \$12,108	KA1011-30 \$15,938
O-RING FOR GROOVE	Logan Part No. Price	568-256 \$17	568-258 \$17	568-263 \$18	* *	568-265 \$19	568-267 \$24	568-268 \$24
O-RING FOR THREADED RELIEF GROOVE	Logan Part No. Price	568-163 \$18	568-258 \$17	568-264 \$18	* *	568-266 \$19	568-268 \$24	568-269 \$24
THREADED CUP	Logan Part No. Price	KA2005-30 \$2,522	KA2006-30 \$2,831	KA2007-30 \$3,656	KA2008-30 \$3,976	KA2009-30 \$4,586	KA2010-30 \$5,228	KA2011-30 \$6,832

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Note: Prices available upon request for Junk Subs with ODs and/or Cup lengths not listed above.

The connection on the Cup to the Body is left-hand.

When ordering, please specify:

- (1) Complete assembly number
- (2) Size and type of connections
- (3) Length of Cup

Logan Threaded Cup Junk Subs

CASING SIZE RANGE (HOLE SIZE)	14-3/4 to 17-1/2	14-3/4 to 17-1/2					
CONNECTION (STD API REG)	7-5/8	7-5/8					
DIAMETER OF BORE	4	4					
O.D. OF TOP CONNECTION BODY	8-7/8	8-7/8					
O.D. UNDER TOP CONNECTION	7-5/8	7-5/8					
O.D. OF CUP (Determines Part Number)	12-3/4	12-7/8					
I.D. OF CUP	11-1/2	11-5/8					

LONG TYPE

CUP LENGTH		20	20				
COMPLETE ASSEMBLY	Logan Part No.	201-039-20	201-012-20				
	Price	\$30,157	\$33,088				
BODY	Logan Part No.	KA10115-20	KA1012-20				
	Price	\$20,266	\$23,220				
O-RING FOR GROOVE	Logan Part No.	568-276	*				
	Price	\$37	*				
O-RING FOR THREADED RELIEF GROOVE	Logan Part No.	568-277	*				
	Price	\$48	*				
THREADED CUP	Logan Part No.	KA20115-20	KA2012-20				
	Price	\$8,689	\$9,953				

EXTRA LONG TYPE

CUP LENGTH		30	30				
COMPLETE ASSEMBLY	Logan Part No.	201-039-30	201-012-30				
	Price	\$38,737	\$39,141				
BODY	Logan Part No.	KA10115-30	KA1012-30				
	Price	\$19,665	\$30,211				
O-RING FOR GROOVE	Logan Part No.	568-276	*				
	Price	\$37	*				
O-RING FOR THREADED RELIEF GROOVE	Logan Part No.	568-277	*				
	Price	\$48	*				
THREADED CUP	Logan Part No.	KA20115-30	KA2012-30				
	Price	\$6,241	\$12,947				

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* Available upon request.

Note: Prices available upon request for Junk Subs with ODs and/or Cup lengths not listed above.

The connection on the Cup to the Body is left-hand.

When ordering, please specify:

- (1) Complete assembly number
- (2) Size and type of connections
- (3) Length of Cup

Logan Crossover Subs

LARGEST OD		1-1/2	1-3/4	2	2-1/4	2-1/2	2-3/4	3
	Min. Base Length	10	10	10	10	10	10	10
	Logan Part No.	XO048	XO056	XO064	XO072	XO080	XO088	XO096
	Price	\$872	\$984	\$1,017	\$1,017	\$1,049	\$1,073	\$1,096
	Add'l per Inch	\$28	\$35	\$38	\$40	\$43	\$45	\$45

LARGEST OD		3-1/4	3-1/2	3-3/4	4	4-1/4	4-1/2	4-3/4
	Min. Base Length	10	10	10	10	10	10	12
	Logan Part No.	XO104	XO112	XO120	XO128	XO136	XO144	XO152
	Price	\$1,096	\$1,219	\$1,272	\$1,340	\$1,359	\$1,472	\$1,492
	Add'l per Inch	\$45	\$45	\$52	\$52	\$52	\$55	\$55

LARGEST OD		5	5-1/4	5-1/2	5-3/4	6	6-1/4	6-1/2
	Min. Base Length	12	12	12	12	12	12	12
	Logan Part No.	XO160	XO168	XO176	XO180	XO192	XO200	XO208
	Price	\$1,495	\$1,543	\$1,574	\$1,658	\$1,723	\$1,816	\$1,931
	Add'l per Inch	\$58	\$58	\$58	\$66	\$69	\$74	\$74

LARGEST OD		6-3/4	7	7-1/4	7-1/2	7-3/4	8	8-1/4
	Min. Base Length	12	12	14	14	14	14	14
	Logan Part No.	XO216	XO224	XO232	XO240	XO248	XO256	XO264
	Price	\$2,057	\$2,120	\$2,436	\$2,583	\$2,679	\$2,869	\$2,934
	Add'l per Inch	\$80	\$80	\$93	\$104	\$112	\$121	\$136

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: All prices given are at Minimum Base Length.

When ordering, please specify:

- (1) O.D., I.D., and length (shoulder-to-shoulder).
- (2) Size and type of connection or thread on each end.

Note: Prices shown represent API threads.

Logan Crossover Subs with an alternative thread type are priced upon request.

Logan Crossover Subs

LARGEST OD		8-1/2	8-3/4	9	9-1/4	9-1/2	9-3/4	10
	Min. Base Length	14	14	16	16	16	16	16
	Logan Part No.	XO272	XO280	XO288	XO296	XO304	XO312	XO320
	Price	\$3,045	\$3,313	\$3,696	\$4,750	\$5,038	\$5,417	\$5,914
	Add'l per Inch	\$136	\$151	\$160	\$183	\$192	\$214	\$221

LARGEST OD		10-1/4	10-1/2	10-3/4	11	11-1/4	11-1/2	11-3/4
	Min. Base Length	16	16	16	16	16	16	16
	Logan Part No.	XO328	XO336	XO344	XO352	XO360	XO368	XO376
	Price	\$7,048	\$7,459	\$7,572	\$8,048	\$8,163	\$8,606	\$9,054
	Add'l per Inch	\$274	\$298	\$307	\$340	\$345	\$364	\$364

LARGEST OD		12	12-1/4	12-1/2	12-3/4	13	13-1/4	13-1/2
	Min. Base Length	16	16	16	16	16	16	16
	Logan Part No.	XO384	XO392	XO400	XO408	XO416	XO424	XO432
	Price	\$9,196	\$9,466	\$9,962	\$10,090	\$10,648	\$10,839	\$11,412
	Add'l per Inch	\$399	\$399	\$413	\$428	\$460	\$460	\$486

LARGEST OD		13-3/4	14					
	Min. Base Length	16	16					
	Logan Part No.	XO440	XO448					
	Price	\$11,491	\$12,275					
	Add'l per Inch	\$486	\$525					

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: All prices given are at Minimum Base Length.

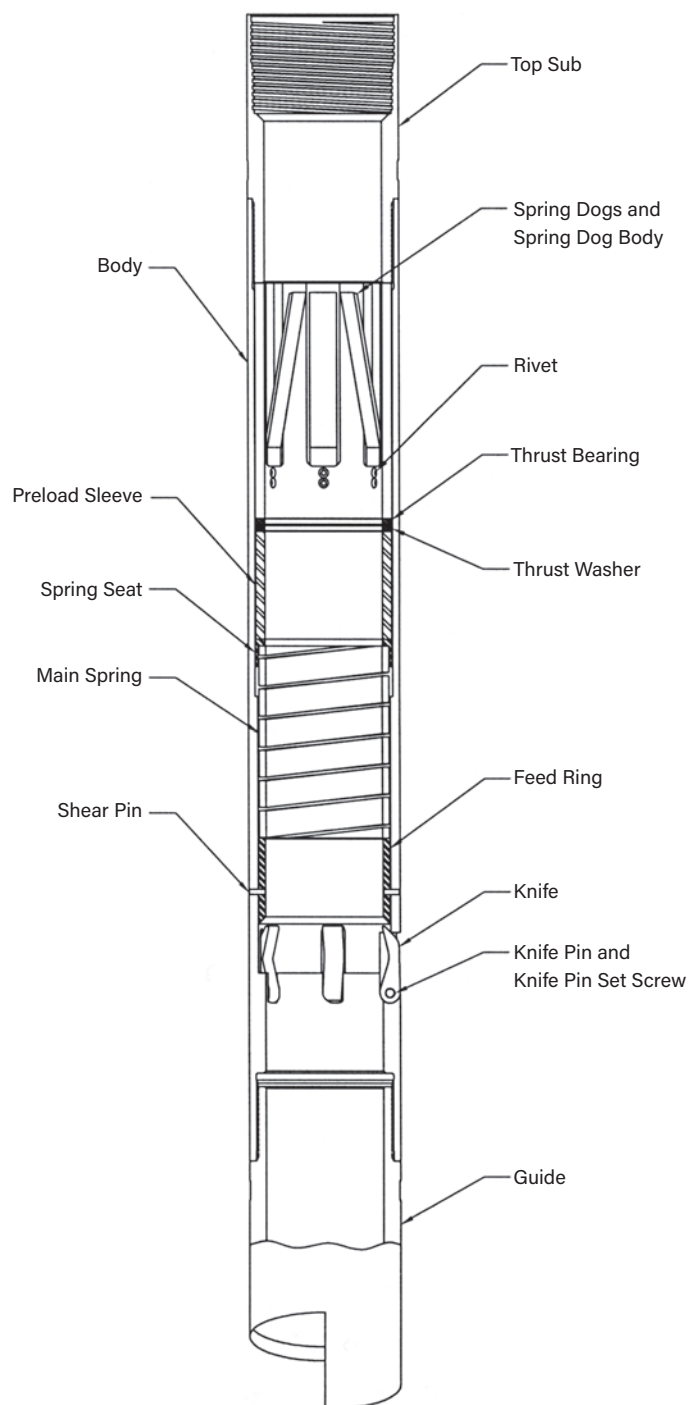
When ordering, please specify:

- (1) O.D., I.D., and length (shoulder-to-shoulder).
- (2) Size and type of connection or thread on each end.

Note: Prices shown represent API threads.

Logan Crossover Subs with an alternative thread type are priced upon request.

LOGAN STANDARD EXTERNAL CUTTERS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Standard External Cutters

TUBING/CASING SIZE TO CUT		1.050 to 1.315 Tbg	1.315 to 2-3/8 Tbg	1.660 to 2-3/8 Tbg	1.900 to 2-7/8 Tbg	2-1/16 to 3-1/2 Tbg	2-3/8 to 3-1/2 Tbg	2 3/8 to 4 Tbg
MAX SIZE WILL PASS OVER		1.552	3-1/16	3-1/8	3-3/4	4-1/4	4-1/2	4-3/4
INSIDE DIAMETER (CUTTER)		1-5/8	3-1/8	3-1/4	3-7/8	4-3/8	4-5/8	4-7/8
OUTSIDE DIAMETER (CUTTER)		2-5/16	3-7/8	4-1/2	4-11/16	5-5/8	5-7/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		2-7/16	4-1/8	4-3/4	4-15/16	5-7/8	6-1/8	6-1/4
COMPLETE ASSEMBLY w/SPRING DOG	Logan Part No.	410-231	410-388	410-450	410-468	410-563	410-588	410-606
	Bowen No.	32848	47127	47167	47210	47309	47264	47360
	Price	\$8,064	\$13,049	\$12,354	\$14,347	\$17,371	\$18,192	\$18,678
TOP SUB	Logan Part No.	P1000	P1001	P1002	P1003	P1004	P1005	P1006
	Bowen No.	13626	47128	47168	47211	33574	47265	33648
	Price	\$883	\$1,055	\$1,127	\$1,233	\$1,496	\$1,568	\$1,655
BODY	Logan Part No.	P2000	P2001	P2002	P2003	P2004	P2005	P2006
	Bowen No.	13627	47129	47169	47212	47310	47266	47361
	Price	\$3,423	\$6,329	\$6,098	\$6,291	\$8,111	\$8,370	\$8,449
THRUST WASHER	Logan Part No.	P3000	P3001	P3002	P3003	P3004	P3005	P3006
	Bowen No.	13633	32904	47171	33083	36484	47268	33650
	Price	\$132	\$153	\$160	\$183	\$181	\$187	\$187
THRUST BEARING	Logan Part No.	P4000	P4001	P4002	P4003	P4004	P4005	P4006
	Bowen No.	32852	32905	47172	33084	33595	47269	33651
	Price	\$134	\$134	\$153	\$153	\$161	\$168	\$166
PRELOAD SLEEVE	Logan Part No.	P5000	P5001	P5002	P5003	P5004	P5005	P5006
	Bowen No.	32891	45844	47173	47214	33582	47270	47362
	Price	\$174	\$187	\$217	\$242	\$242	\$248	\$265
SPRING SEAT	Logan Part No.	P6000	P6001	P6002	P6003	P6004	P6005	P6006
	Bowen No.	80149	14209	47174	47215	33583	49254	47363
	Price	\$214	\$226	\$242	\$242	\$273	\$293	\$291
MAIN SPRING	Logan Part No.	P7000	P7001	P7002	P7003	P7004	P7005	P7006
	Bowen No.	13634	14217	33020	33085	9994	39164	33652
	Price	\$1,623	\$1,148	\$1,308	\$1,014	\$1,915	\$1,020	\$18,411
FEED RING	Logan Part No.	P8000	P8001	P8002	P8003	P8004	P8005	P8006
	Bowen No.	13635	32907	47175	33086	33579	47577	33653
	Price	\$168	\$248	\$273	\$389	\$388	\$389	\$393
SHEAR PIN	Logan Part No.	P9000	P9000	P9004	P9000	P9004	P9004	P9006
	Bowen No.	14205	14205	47578	14205	33580	33580	33654
	No. Req'd	2	2	2	2	2	2	2
	Price	\$16	\$16	\$18	\$16	\$18	\$18	\$18
KNIFE	Logan Part No.	P10000	P10001	P10002	P10003	P10004	P10004	P10006
	Bowen No.	13637	32909	33023	33088	34553	34553	33655
	No. Req'd	5	5	5	5	5	5	5
	Price	\$276	\$299	\$386	\$386	\$487	\$487	\$486
KNIFE PIN	Logan Part No.	P11000	P11001	P11002	P11003	P11004	P11004	P11006
	Bowen No.	37015	32910	33024	33089	34554	34554	33656
	No. Req'd	5	5	5	5	5	5	5
	Price	\$19	\$24	\$24	\$24	\$28	\$28	\$28
KNIFE PIN SET SCREW	Logan Part No.	...	P12001	P12002	P12003	P12004	P12004	P12006
	Bowen No.	...	32911	23687	23664	23703	23703	23685
	No. Req'd	...	5	5	5	5	5	5
	Price	...	\$3	\$3	\$3	\$3	\$3	\$3
GUIDE	Logan Part No.	P13000	P13001	P13002	P13003	P13004	P13005	P13006
	Bowen No.	13628	14203	47176	33093	33584	39169	33660
	Price	\$478	\$479	\$495	\$540	\$753	\$769	\$801

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Standard External Cutters

TUBING/CASING SIZE TO CUT		1.050 to 1.315 Tbg	1.315 to 2-3/8 Tbg	1.660 to 2-3/8 Tbg	1.900 to 2-7/8 Tbg	2-1/16 to 3-1/2 Tbg	2-3/8 to 3-1/2 Tbg	2 3/8 to 4 Tbg
MAXIMUM SIZE WILL PASS OVER		1.552	3-1/16	3-1/8	3-3/4	4-1/4	4-1/2	4-3/4
INSIDE DIAMETER (CUTTER)		1-5/8	3-1/8	3-1/4	3-7/8	4-3/8	4-5/8	4-7/8
OUTSIDE DIAMETER (CUTTER)		2-5/16	3-7/8	4-1/2	4-11/16	5-5/8	5-7/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		2-7/16	4-1/8	4-3/4	4-15/16	5-7/8	6-1/8	6-1/4
COMPLETE ASSEMBLY	Logan Part No.	410-231	410-388	410-450	410-468	410-563	410-588	410-606
w/SPRING DOG	Bowen No.	32848	47127	47167	47210	47309	47264	47360

SPRING DOG ASSEMBLY

COMPLETE ASSEMBLY	Logan Part No.	11000-000	11000-001	11000-002	11000-003	11000-004	11000-005	11000-006
Consists of:	Bowen No.	13629	47131	47177	47216	47313	47271	47365
	Price	\$1,071	\$2,311	\$2,404	\$2,699	\$2,848	\$2,929	\$3,118
SPRING DOG BODY	Logan Part No.	P14000	P14001	P14002	P14003	P14004	P14005	P14006
	Bowen No.	13630	47132	47178	47217	47314	47272	47366
	Price	\$747	\$1,432	\$1,432	\$1,595	\$1,768	\$1,879	\$2,042
SPRING DOG	Logan Part No.	P15000	P15001	P15002	P15003	P15004	P15004	P15006
	Bowen No.	13631	32917	47179	33103	33644	33644	33663
	No. Req'd	6	6	6	6	6	6	6
	Price	\$53	\$155	\$200	\$181	\$183	\$181	\$181
RIVET	Logan Part No.	P16000	P16001	P16002	P16003	P16004	P16002	P16004
	Bowen No.	13632	45626	47180	45842	44803	47180	44803
	No. Req'd	12	12	12	12	12	12	12
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Special Notes:

- (1) Assembly price includes one Spring Dog assembly, which differs with Ratchet Pawl or Slip assemblies: see chart above
- (2) Connections other than API will be priced upon request.
- (3) Single Pawl Spacer is required when using Ratchet Pawl Assembly. (Must be purchased separately. Not sold with Ratchet Pawl Assembly).

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and type of top connection
- (3) Any desired options by name and number
- (4) Any desired spares by name and number

Recommended Spare Parts:

- (1) 2 sets Knife Pins
- (2) 1 Feed Ring
- (3) 24 Shear Pins
- (4) 6 sets of Knives
- (5) 2 Spring Dog, Ratchet Pawl, or Slip Assemblies
- (6) 1 set Knife Pin Screws

Logan Standard External Cutters

TUBING/CASING SIZE TO CUT		1.050 to 1.315 Tbg	1.315 to 2-3/8 Tbg	1.660 to 2-3/8 Tbg	1.900 to 2-7/8 Tbg	2-1/16 to 3-1/2 Tbg	2-3/8 to 3-1/2 Tbg	2 3/8 to 4 Tbg
MAXIMUM SIZE WILL PASS OVER		1.552	3-1/16	3-1/8	3-3/4	4-1/4	4-1/2	4-3/4
INSIDE DIAMETER (CUTTER)		1-5/8	3-1/8	3-1/4	3-7/8	4-3/8	4-5/8	4-7/8
OUTSIDE DIAMETER (CUTTER)		2-5/16	3-7/8	4-1/2	4-11/16	5-5/8	5-7/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		2-7/16	4-1/8	4-3/4	4-15/16	5-7/8	6-1/8	6-1/4
COMPLETE ASSEMBLY w/SPRING DOG	Logan Part No.	410-231	410-388	410-450	410-468	410-563	410-588	410-606
	Bowen No.	32848	47127	47167	47210	47309	47264	47360

OPTIONAL RATCHET PAWL ASSEMBLY

COMPLETE ASSEMBLY		Logan Part No.	11000-009	11000-010	11000-011	11000-012	11000-013	11000-014	11000-015
<i>Consists of:</i>		Bowen No.	13666	47138	47181	47218	47315	47275	47367
		Price	\$1,341	\$2,107	\$2,362	\$2,404	\$2,728	\$2,793	\$2,874
PAWL BODY		Logan Part No.	P17000	P17001	P17002	P17003	P17004	P17005	P17006
		Bowen No.	13667	47139	47182	47219	47316	47276	47368
		Price	\$747	\$1,071	\$1,323	\$1,432	\$1,648	\$1,702	\$1,768
RATCHET PAWL (6 req'd)		Logan Part No.	P18000	P18001	P18002	P18003	P18004	P18005	P18006
		Bowen No.	13668	32946	47183	47220	47317	47277	47369
		Price	\$111	\$153	\$153	\$153	\$160	\$160	\$160
PAWL SPRING (6 req'd)		Logan Part No.	P19000	P19001	P19002	P19003	P19002	P19002	P19002
		Bowen No.	14213	15656	14829	18729	14829	14829	14829
		Price	\$37	\$8	\$7	\$10	\$7	\$7	\$7
PAWL PIN (6 req'd)		Logan Part No.	P20000	P20001	P20002	P20001	P20004	P20005	P20002
		Bowen No.	37011	33128	37019	33128	37031	47253	37019
		Price	\$13	\$20	\$20	\$20	\$20	\$20	\$20
SINGLE PAWL SPACER (See Note 3)		Logan Part No.	P27000	P27001	P27002	P27003	P27004	P27005	P27006
		Bowen No.	32890	47141	47190	47227	47326	47286	47378
		Price	\$152	\$187	\$189	\$190	\$206	\$287	\$388

OPTIONAL SLIP ASSEMBLY

COMPLETE ASSEMBLY		Logan Part No.	...	11000-019	11000-020	11000-021	11000-022	11000-023	11000-024
<i>Consists of:</i>		Bowen No.	...	47133	47185	47221	47319	47279	47371
		Price	...	\$4,561	\$4,682	\$5,008	\$5,924	\$6,061	\$6,481
SLIP		Logan Part No.	...	P21001	P21002	P21003	P21004	P21005	P21006
		Bowen No.	...	47134	47186	47222	47320	47280	47372
		Price	...	\$1,879	\$1,882	\$1,947	\$2,294	\$2,392	\$2,516
SLIP BOWL		Logan Part No.	...	P22001	P22002	P22003	P22004	P22005	P22006
		Bowen No.	...	47135	47187	47223	47321	47281	47373
		Price	...	\$428	\$457	\$498	\$570	\$629	\$698
SLIP BOWL RETAINER		Logan Part No.	...	P23001	P23002	P23003	P23004	P23005	P23006
		Bowen No.	...	47136	47188	47224	47322	47282	47374
		Price	...	\$865	\$937	\$993	\$1,214	\$1,214	\$1,275
SLIP SPRING		Logan Part No.	...	P24001	P24002	P24003	P24004	P24005	P24006
		Bowen No.	...	47137	47189	47225	47323	47283	47375
		Price	...	*	*	*	\$1,182	\$954	*
SLIP BOWL SHEAR PIN (4 req'd)		Logan Part No.	...	P25001	P25001	P25001	P25004	P25004	P25004
		Bowen No.	...	47208	47208	47208	47324	47324	47324
		Price	...	\$18	\$18	\$18	\$18	\$18	\$18
SLIP ADAPTER		Logan Part No.	...	P26001	P26002	P26003	P26004	P26005	P26006
		Bowen No.	...	47130	47170	47213	47311	47267	47364
		Price	...	\$1,128	\$1,151	\$1,184	\$1,500	\$1,500	\$1,706

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Standard External Cutters

TUBING/CASING SIZE TO CUT	3-1/2, 4, 4-1/2 & 5 DP	4 to 5-3/4 Csg
MAXIMUM SIZE WILL PASS OVER	6-1/4	6-1/2
INSIDE DIAMETER (CUTTER)	6-3/8	6-5/8
OUTSIDE DIAMETER (CUTTER)	7-5/8	8-1/8
MINIMUM SIZE HOLE TO RUN IN	8-1/4	8-5/8
COMPLETE ASSEMBLY	Logan Part No.	410-763 410-813
w/SPRING DOG	Bowen No.	47422 47541
<i>Consists of:</i>	Price	\$20,608 \$25,075
TOP SUB	Logan Part No.	P1007 P1008
	Bowen No.	33885 33959
	Price	\$2,173 \$3,692
BODY	Logan Part No.	P2007 P2008
	Bowen No.	47423 47542
	Price	\$9,300 \$10,917
THRUST WASHER	Logan Part No.	P3007 P3008
	Bowen No.	33887 33961
	Price	\$206 \$206
THRUST BEARING	Logan Part No.	P4007 P4008
	Bowen No.	33888 33962
	Price	\$183 \$183
PRELOAD SLEEVE	Logan Part No.	P5007 P5008
	Bowen No.	47424 47543
	Price	\$336 \$345
SPRING SEAT	Logan Part No.	P6007 P6008
	Bowen No.	49255 49258
	Price	\$315 \$329
MAIN SPRING	Logan Part No.	P7007 P7008
	Bowen No.	33889 33963
	Price	\$2,135 \$2,837
FEED RING	Logan Part No.	P8007 P8008
	Bowen No.	33890 33964
	Price	\$454 \$516
SHEAR PIN	Logan Part No.	P9007 P9008
	Bowen No.	33891 33965
	No. Req'd	2 2
	Price	\$66 \$36
KNIFE	Logan Part No.	P10004 P10008
	Bowen No.	34553 44802
	No. Req'd	5 5
	Price	\$487 \$599
KNIFE PIN	Logan Part No.	P11004 P11008
	Bowen No.	34554 33966
	No. Req'd	5 5
	Price	\$28 \$28
KNIFE PIN SET SCREW	Logan Part No.	P12004 P12008
	Bowen No.	23703 23705
	No. Req'd	5 5
	Price	\$3 \$3
GUIDE	Logan Part No.	P13007 P13008
	Bowen No.	33897 33969
	Price	\$1,071 \$1,167

TUBING/CASING SIZE TO CUT	3-1/2, 4, 4-1/2 & 5 DP	4 to 5-3/4 Csg
MAXIMUM SIZE WILL PASS OVER	6-1/4	6-1/2
INSIDE DIAMETER (CUTTER)	6-3/8	6-5/8
OUTSIDE DIAMETER (CUTTER)	7-5/8	8-1/8
MINIMUM SIZE HOLE TO RUN IN	8-1/4	8-5/8
SPRING DOG ASSEMBLY		
COMPLETE ASSEMBLY	Logan Part No.	11000-007 11000-008
<i>Consists of:</i>	Bowen No.	33949 47545
	Price	\$3,294 \$3,675
SPRING DOG BODY	Logan Part No.	P14007 P14008
	Bowen No.	33950 7546
	Price	\$2,187 \$2,578
SPRING DOG	Logan Part No.	P15007 P15007
	Bowen No.	50192 50192
	No. Req'd	6 6
	Price	\$181 \$181
RIVET	Logan Part No.	P16004 P16008
	Bowen No.	44803 50191
	No. Req'd	12 12
	Price	\$2 \$2

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Special Notes:

- (1) Assembly price includes one Spring Dog Assembly which differs with Ratchet Pawl or Slip Assemblies. See table on next page.
- (2) Connections other than API will be priced upon request.
- (3) Single Pawl Spacer is required when using Ratchet Pawl Assembly. (Must be purchased separately. Not sold with Ratchet Pawl Assembly).

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and type of top connection
- (3) Any desired options by name and number
- (4) Any desired spares by name and number

Recommended Spare Parts:

- (1) 2 sets Knife Pins
- (2) 1 Feed Ring
- (3) 24 Shear Pins
- (4) 6 sets of Knives
- (5) 2 Spring Dog, Ratchet Pawl, or Slip Assemblies
- (6) 1 set Knife Pin Screws

Logan Standard External Cutters

TUBING/CASING SIZE TO CUT	3-1/2, 4, 4-1/2 & 5 DP	4 to 5-3/4 Csg
MAXIMUM SIZE WILL PASS OVER	6-1/4	6-1/2
INSIDE DIAMETER (CUTTER)	6-3/8	6-5/8
OUTSIDE DIAMETER (CUTTER)	7-5/8	8-1/8
MINIMUM SIZE HOLE TO RUN IN	8-1/4	8-5/8

OPTIONAL RATCHET PAWL ASSEMBLY

COMPLETE ASSEMBLY	Logan Part No.	11000-016	11000-017
Consists of:	Bowen No.	47426	47547
	Price	\$3,712	\$3,952
PAWL BODY	Logan Part No.	P17007	P17008
	Bowen No.	47427	47548
	Price	\$2,578	\$2,808
RATCHET PAWL	Logan Part No.	P18007	P18008
	Bowen No.	47428	47549
	No Req'd	6	6
	Price	\$166	\$166
PAWL SPRING	Logan Part No.	P19002	P19008
	Bowen No.	14829	47443
	No Req'd	6	6
	Price	\$7	\$10
PAWL PIN	Logan Part No.	P20004	P20008
	Bowen No.	37031	47550
	No Req'd	6	6
	Price	\$20	\$24
SINGLE PAWL SPACER	Logan Part No.	P27007	P27008
(See Note 3)	Bowen No.	47437	47557
	Price	\$473	\$495

TUBING/CASING SIZE TO CUT	3-1/2, 4, 4-1/2 & 5 DP	4 to 5-3/4 Csg
MAXIMUM SIZE WILL PASS OVER	6-1/4	6-1/2
INSIDE DIAMETER (CUTTER)	6-3/8	6-5/8
OUTSIDE DIAMETER (CUTTER)	7-5/8	8-1/8
MINIMUM SIZE HOLE TO RUN IN	8-1/4	8-5/8

OPTIONAL RATCHET PAWL ASSEMBLY

COMPLETE ASSEMBLY	Logan Part No.	11000-025	11000-026
Consists of:	Bowen No.	47430	47551
	Price	\$8,541	\$9,300
SLIP	Logan Part No.	P21007	P21008
	Bowen No.	47431	47552
	Price	\$3,077	\$3,201
SLIP BOWL	Logan Part No.	P22007	P22008
	Bowen No.	47432	47553
	Price	\$1,167	\$1,294
SLIP BOWL RETAINER	Logan Part No.	P23007	P23008
	Bowen No.	47433	47554
	Price	\$1,795	\$2,042
SLIP SPRING	Logan Part No.	P24007	P24008
	Bowen No.	47434	47556
	Price	\$315	\$1,337
SLIP BOWL SHEAR PIN	Logan Part No.	P25007	P25008
	Bowen No.	47435	47555
	No Req'd	4	4
	Price	\$18	\$18
SLIP ADAPTER	Logan Part No.	P26007	P26008
	Bowen No.	47425	47544
	Price	\$2,107	\$2,377

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Special Notes:

- (1) Assembly price includes one Spring Dog Assembly which differs with Ratchet Pawl or Slip Assemblies. See table on next page.
- (2) Connections other than API will be priced upon request.
- (3) Single Pawl Spacer is required when using Ratchet Pawl Assembly. (Must be purchased separately. Not sold with Ratchet Pawl Assembly).

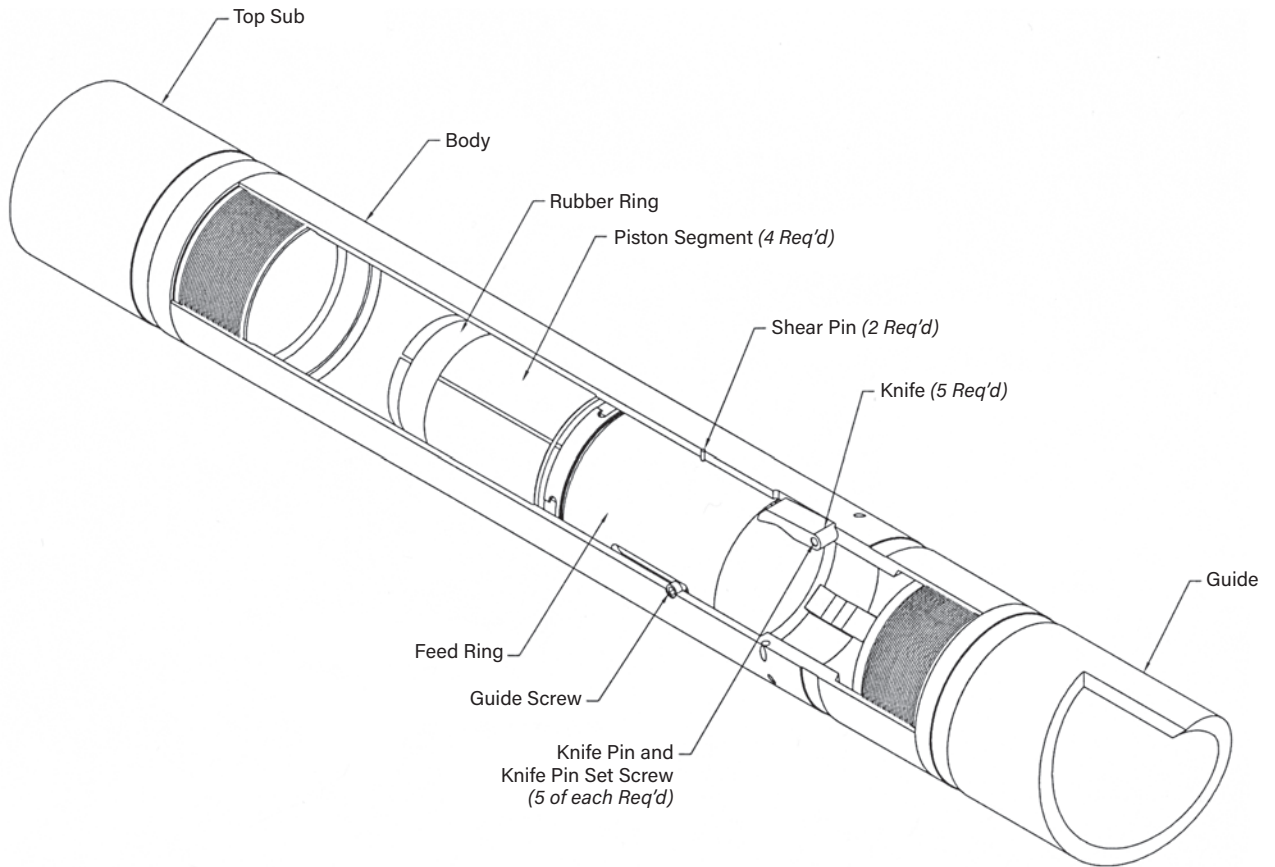
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and type of top connection
- (3) Any desired options by name and number
- (4) Any desired spares by name and number

Recommended Spare Parts:

- (1) 2 sets Knife Pins
- (2) 1 Feed Ring
- (3) 24 Shear Pins
- (4) 6 sets of Knives
- (5) 2 Spring Dog, Ratchet Pawl, or Slip Assemblies
- (6) 1 set Knife Pin Screws

LOGAN HYDRAULIC EXTERNAL CUTTERS



Logan Hydraulic External Cutters

PIPE SIZE TO CUT		1.315 to 2-1/16	1.315 to 2-3/8	1.315 to 2-3/8	1.900 to 2-7/8	1.900 to 2-7/8	1.900 to 2-7/8	2-1/16 to 4 FJ	2-3/8 to 4
MAXIMUM SIZE WILL PASS OVER		2-3/4	3-1/16	3-1/16	3-7/16	3-9/16	3-5/8	4-1/8	4-13/16
INSIDE DIAMETER (CUTTER)		2-7/8	3-1/8	3-3/16	3-5/8	3-13/16	3-7/8	4-5/16	4-7/8
OUTSIDE DIAMETER (CUTTER)		3-3/4	3-7/8	4-1/16	4-7/16	4-9/16	4-11/16	5-5/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		4	4-1/8	4-5/16	4-11/16	4-13/16	4-15/16	5-7/8	6-1/4
COMPLETE ASSEMBLY	Logan Part No.	411-375	411-388	411-406	411-444	411-456	411-468	411-563	411-606
	Bowen No.	70086	47127	34415	70209	79215	41727	34551	51148
	Price	\$9,620	\$11,091	\$10,608	\$11,701	\$14,390	\$12,188	\$14,819	\$15,560
TOP SUB	Logan Part No.	N1001	N10015	N10027	N1002	N10025	N1003	N1004	N1005
	Bowen No.	70087	47128	34416	70210	79271	33081	33574	13177
	Price	\$912	\$804	\$973	\$1,058	\$973	\$1,071	\$1,301	\$2,541
BODY	Logan Part No.	N2001	N20015	N2004	N2002	N20025	N2005	N2006	N2007
	Bowen No.	70088	47129	34417	70211	79272	41728	34552	56992
	Price	\$4,481	\$4,996	\$5,304	\$5,372	\$5,415	\$5,425	\$7,057	\$7,356
FEED RING	Logan Part No.	N3001	N30015	N3004	N3002	N30025	N3005	N3006	N3007
	Bowen No.	70089	32907	49819	70212	79273	49824	49829	51150
	Price	\$786	\$1,491	\$850	\$962	\$980	\$1,016	\$1,016	\$1,016
SHEAR PIN	Logan Part No.	P9000	N40015	P9000	P9000	N40015	P9000	N4006	N4007
	Bowen No.	33087	14205	33087	33087	34420	33087	34555	7227
	No. Req'd	2	2	2	2	2	2	2	2
	Price	\$16	\$16	\$16	\$16	\$16	\$16	\$16	\$16
KNIFE	Logan Part No.	N5001	N50015	N5004	P10003	N50025	P10003	P10004	N5007
	Bowen No.	80147	32909	34421	33088	79275	33088	34553	12382
	No. Req'd	5	5	5	5	5	5	5	5
	Price	\$281	\$370	\$259	\$386	\$422	\$386	\$487	\$422
KNIFE PIN	Logan Part No.	N6001	N6001	N6004	P11003	N60025	P11003	P11004	N6007
	Bowen No.	80148	80148	34422	33089	A14348	33089	34554	37022
	No. Req'd	5	5	5	5	5	5	5	5
	Price	\$19	\$19	\$19	\$24	\$20	\$24	\$28	\$25
KNIFE PIN SET SCREW	Logan Part No.	N7001	N7001	N7002	N7002	...	N7002	P12004	...
	Bowen No.	23654	23654	23666	23666	...	23666	23703	...
	No. Req'd	5	5	5	5	...	5	5	...
	Price	\$2	\$2	\$2	\$2	...	\$2	\$3	...
FEED RING O-RING	Logan Part No.	568-235	568235	568-237	568-241	568-242	568-243	568-247	568-251
	Bowen No.	568235	568235	568237	568241	568242	568243	568247	568251
	Price	\$6	\$6	\$6	\$7	\$7	\$8	\$11	\$13
GUIDE	Logan Part No.	N8001	N80015	N8004	N8002	N80025	P13003	N8006	N8007
	Bowen No.	70090	14203	34424	70213	79274	33093	187	13412
	Price	\$394	\$422	\$430	\$444	\$458	\$540	\$764	\$693
GUIDE SCREW (2 req'd)	Logan Part No.	N9001	N9001	N9001	N9001	N9001	N9001	N9006	N9007
	Bowen No.	34418	34418	34418	34418	34418	34418	34556	51149
	Price	\$32	\$32	\$32	\$32	\$32	\$32	\$67	\$67
PISTON ASSEMBLY (Consists of):	Logan Part No.	10000-010	10000-051	10000-013	10000-011	10000-047	10000-014	10000-015	10000-016
	Bowen No.	70091	...	34425	70232	79283	41733	34559	51151
	Pipe Size	2-1/16	2-3/8	2-3/8	2-7/8	2-7/8	2-7/8	3-1/2	4
	Price	\$1,718	*	\$1,767	\$2,214	\$2,475	\$2,605	\$2,660	\$2,848
PISTON SEGMENT SET	Logan Part No.	N10001	N100015	N10004	N10002	N100025	N10005	N10006	N10007
	Bowen No.	70092	...	49814	70233	79284	49825	49830	51152
	Price	\$1,637	\$1,805	\$1,729	\$2,174	\$2,404	\$2,541	\$2,605	\$2,781
RUBBER RING	Logan Part No.	N11002	N11002	N11001	N11001	N11001	N11001	N11006	N11007
	Bowen No.	70093	70093	34564	34564	34564	34564	34561	51153
	Price	\$55	\$55	\$57	\$57	\$57	\$57	\$55	\$55
PISTON O-RING	Logan Part No.	568-234	568234	568-236	568-235	568-236	568-237	568-246	568-250
	Bowen No.	568234	568234	568236	568235	568236	568237	568246	568250
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$10	\$11

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change or discontinue designs and/or
prices without notice.

* Available upon request.

When ordering, please specify:

See Sheet 4 of 5 / pg 270

Recommended Spare Parts:

See Sheet 4 of 5 / pg 270

Logan Hydraulic External Cutters

PIPE SIZE TO CUT		1.315 to 2-1/16	1.315 to 2-3/8	1.315 to 2-3/8	1.900 to 2-7/8	1.900 to 2-7/8	1.900 to 2-7/8	2-1/16 to 4 FJ	2-3/8 to 4
MAXIMUM SIZE WILL PASS OVER		2-3/4	3-1/16	3-1/16	3-7/16	3-9/16	3-5/8	4-1/8	4-13/16
INSIDE DIAMETER (CUTTER)		2-7/8	3-1/8	3-3/16	3-5/8	3-13/16	3-7/8	4-5/16	4-7/8
OUTSIDE DIAMETER (CUTTER)		3-3/4	3-7/8	4-1/16	4-7/16	4-9/16	4-11/16	5-5/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		4	4-1/8	4-5/16	4-11/16	4-13/16	4-15/16	5-7/8	6-1/4
COMPLETE ASSEMBLY	Logan Part No.	411-375	411-388	411-406	411-444	411-456	411-468	411-563	411-606
	Bowen No.	70086	...	34415	70209	79215	41727	34551	51148

OPTIONAL

PISTON ASSEMBLY	Logan Part No.	10000-019	10000-052	10000-022	10000-020	10000-048	10000-023	10000-024	10000-025
<i>Consists of:</i>	Bowen No.	70094	...	34427	70214	79281	41736	34562	51230
	Pipe Size	1.900	2	2-1/16	2-3/8	2-3/8	2-3/8	2-7/8	3-1/2
	Price	\$1,718	*	\$1,771	\$2,214	\$2,471	\$2,605	\$2,660	\$2,848
PISTON SEGMENT SET	Logan Part No.	N12001	N100015	N12004	N12002	N120025	N12005	N12006	N12007
	Bowen No.	70095	...	49817	70215	79282	49828	49831	51231
	Price	\$1,632	\$1,809	\$1,733	\$2,174	\$2,408	\$2,541	\$2,605	\$2,781
RUBBER RING	Logan Part No.	N13001	N11001	N13002	N13002	N11001	N13002	N11001	N11006
	Bowen No.	70096	...	34567	34567	34564	34567	34564	34561
	Price	\$55	\$143	\$55	\$55	\$143	\$55	\$55	\$55
PISTON O-RING	Logan Part No.	568-234	568234	568-236	568-235	568-236	568-237	568-246	568-250
	Bowen No.	568234	568234	568236	568235	568236	568237	568246	568250
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$10	\$11

PISTON ASSEMBLY	Logan Part No.	10000-028	...	10000-031	10000-029	10000-049	10000-032	10000-033	10000-034
<i>Consists of:</i>	Bowen No.	70097	...	34429	70217	79279	41738	34565	51345
	Pipe Size	1.660	...	1.900	2-1/16	2-1/16	2-1/16	2-3/8	2-7/8
	Price	\$1,718	...	\$1,771	\$2,218	\$2,475	\$2,613	\$2,660	\$2,848
PISTON SEGMENT SET	Logan Part No.	N14001	...	N14004	N14002	N140025	N14005	N14006	N14007
	Bowen No.	70098	...	49818	70218	79280	49826	49832	51346
	Price	\$1,637	...	\$1,733	\$2,222	\$2,408	\$1,733	\$2,620	\$2,781
RUBBER RING	Logan Part No.	N13001	...	N13002	N13002	N13002	N13002	N11001	N11001
	Bowen No.	70096	...	34567	34567	34567	34567	34564	34564
	Price	\$55	...	\$55	\$55	\$55	\$55	\$57	\$57
PISTON O-RING	Logan Part No.	568-234	...	568-236	568-235	568-236	568-237	568-246	568-250
	Bowen No.	568234	...	568236	568235	568236	568237	568246	568250
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$10	\$11

PISTON ASSEMBLY	Logan Part No.	10000-037	...	10000-040	10000-038	10000-050	10000-041	10000-042	10000-043
<i>Consists of:</i>	Bowen No.	70100	...	34432	70219	79277	41740	34568	51344*
	Pipe Size	1.315	...	1.600	1.900	1.900	1.900	2-1/16	2-3/8
	Price	\$1,718	...	\$1,771	\$2,218	\$2,475	\$2,613	\$2,660	\$2,848
PISTON SEGMENT SET	Logan Part No.	N16001	...	N16004	N16002	N160025	N16005	N16006	N16007
	Bowen No.	70101	...	49815	70220	79278	49827	49833	51343
	Price	\$1,637	...	\$1,733	\$2,174	\$2,408	\$2,545	\$2,603	\$2,781
RUBBER RING	Logan Part No.	N17001	...	N17004	N13002	N13002	N13002	N13002	N11001
	Bowen No.	70102	...	34431	34567	34567	34567	34567	34564
	Price	\$57	...	\$57	\$55	\$55	\$55	\$55	\$57
PISTON O-RING	Logan Part No.	568-234	...	568-236	568-235	568-236	568-237	568-246	568-250
	Bowen No.	568234	...	568236	568235	568236	568237	568246	568250
	Price	\$6	\$6	\$6	\$6	\$6	\$6	\$10	\$11

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prices without notice.

* Available upon request.

When ordering, please specify:

See Sheet 4 of 5 / pg 270

Recommended Spare Parts:

See Sheet 4 of 5 / pg 270

Logan Hydraulic External Cutters

PIPE SIZE TO CUT		1.315 to 2-1/16	1.315 to 2-3/8	1.315 to 2-3/8	1.900 to 2-7/8	1.900 to 2-7/8	1.900 to 2-7/8	2-1/16 to 4 FJ	2-3/8 to 4
MAXIMUM SIZE WILL PASS OVER		2-3/4	3-1/16	3-1/16	3-7/16	3-9/16	3-5/8	4-1/8	4-13/16
INSIDE DIAMETER (CUTTER)		2-7/8	3-1/8	3-3/16	3-5/8	3-13/16	3-7/8	4-5/16	4-7/8
OUTSIDE DIAMETER (CUTTER)		3-3/4	3-7/18	4-1/16	4-7/16	4-9/16	4-11/16	5-5/8	6-1/16
MINIMUM SIZE HOLE TO RUN IN		4	4-1/8	4-5/16	4-11/16	4-13/16	4-15/16	5-7/8	6-1/4
COMPLETE ASSEMBLY	Logan Part No.	411-375	411-388	411-406	411-444	411-456	411-468	411-563	411-606
	Bowen No.	70086	...	34415	70209	79215	41727	34551	51148
OPTIONAL									
PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	...		10000-045	...	...	...	10000-046	...
	Bowen No.	...		34434	...	...	...	53881	...
	Pipe Size	...		1.315	...	...	...	4	...
	Price	...		*	...	...	...	\$2,660	...
PISTON SEGMENT SET	Logan Part No	...		N18004	...	...	...	N18006	...
	Bowen No.	...		49816	...	...	...	53880	...
	Price	...		*	...	...	...	\$2,811	...
RUBBER RING	Logan Part No.	...		N19004	...	...	...	N11007	...
	Bowen No.	...		34436	...	...	...	51153	...
	Price	...		\$52	...	...	...	\$55	...
PISTON O-RING	Logan Part No.	...		568-236	...	...	...	568-246	...
	Bowen No.	...		568236	...	...	...	568246	...
	Price	...		\$3	...	...	...	\$10	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and type of top connection
- (3) Name and number of any desired options

Recommended Spare Parts:

- | | | |
|-------------------------|------------------------|-------------------------|
| (1) 2 Piston Assemblies | (4) 30 Knives | (7) 6 Rubber Rings |
| (2) 1 Feed Ring | (5) 10 Knife Pins | (8) 6 Piston O-Rings |
| (3) 24 Shear Pins | (6) 5 Knife Pin Screws | (9) 6 Feed Ring O-Rings |

Logan Hydraulic External Cutters

PIPE SIZE TO CUT		3-1/2 to 5
MAXIMUM SIZE WILL PASS OVER		6-3/8
INSIDE DIAMETER (CUTTER)		6-1/2
OUTSIDE DIAMETER (CUTTER)		8
MINIMUM SIZE HOLE TO RUN IN		8-1/2
COMPLETE ASSEMBLY	Logan Part No.	411-800
	Bowen No.	35957
	Price	\$18,264
TOP SUB	Logan Part No.	N1006
	Bowen No.	35958
	Price	\$2,605
BODY	Logan Part No.	N2008
	Bowen No.	35959
	Price	\$9,070
FEED RING	Logan Part No.	N3008
	Bowen No.	49834
	Price	\$1,114
SHEAR PIN	Logan Part No.	N4006
	Bowen No.	34555
	No. Req'd	2
	Price	\$16
KNIFE	Logan Part No.	N5008
	Bowen No.	35960
	No. Req'd	5
	Price	\$483
KNIFE PIN	Logan Part No.	P11004
	Bowen No.	34554
	No. Req'd	5
	Price	\$28
KNIFE PIN SET SCREW	Logan Part No.	P12004
	Bowen No.	23703
	No. Req'd	5
	Price	\$3
FEED RING O-RING	Logan Part No.	568-438
	Bowen No.	568438
	Price	\$17
GUIDE	Logan Part No.	N8008
	Bowen No.	35932
	Price	\$968
GUIDE SCREW	Logan Part No.	N9006
	Bowen No.	34556
	No. Req'd	2
	Price	\$67
PISTON ASSEMBLY <i>(Consists of):</i>	Logan Part No.	10000-017
	Bowen No.	35963
	Pipe Size	5
	Price	\$4,063
PISTON SEGMENT SET	Logan Part No.	N10008
	Bowen No.	49821
	Price	\$4,007
RUBBER RING	Logan Part No.	N11008
	Bowen No.	35965
	Price	\$55
PISTON O-RING	Logan Part No.	568-259
	Bowen No.	568259
	Price	\$17

OPTIONAL

PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	10000-026
	Bowen No.	35966
	Pipe Size	4-1/2
	Price	\$4,064
PISTON SEGMENT SET	Logan Part No.	N12008
	Bowen No.	49823
	Price	\$4,007
RUBBER RING	Logan Part No.	N11008
	Bowen No.	35965
	Price	\$55
PISTON O-RING	Logan Part No.	568-259
	Bowen No.	568259
	Price	\$17
PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	10000-035
	Bowen No.	35968
	Pipe Size	4
	Price	\$4,063
PISTON SEGMENT SET	Logan Part No.	N14008
	Bowen No.	49822
	Price	\$4,069
RUBBER RING	Logan Part No.	N15008
	Bowen No.	35970
	Price	\$92
PISTON O-RING	Logan Part No.	568-259
	Bowen No.	568259
	Price	\$17
PISTON ASSEMBLY <i>Consists of:</i>	Logan Part No.	10000-044
	Bowen No.	35971
	Pipe Size	3-1/2
	Price	\$4,063
PISTON SEGMENT SET	Logan Part No.	N16008
	Bowen No.	49820
	Price	\$4,007
RUBBER RING	Logan Part No.	N11001
	Bowen No.	34564
	Price	\$57
PISTON O-RING	Logan Part No.	568-259
	Bowen No.	568259
	Price	\$17

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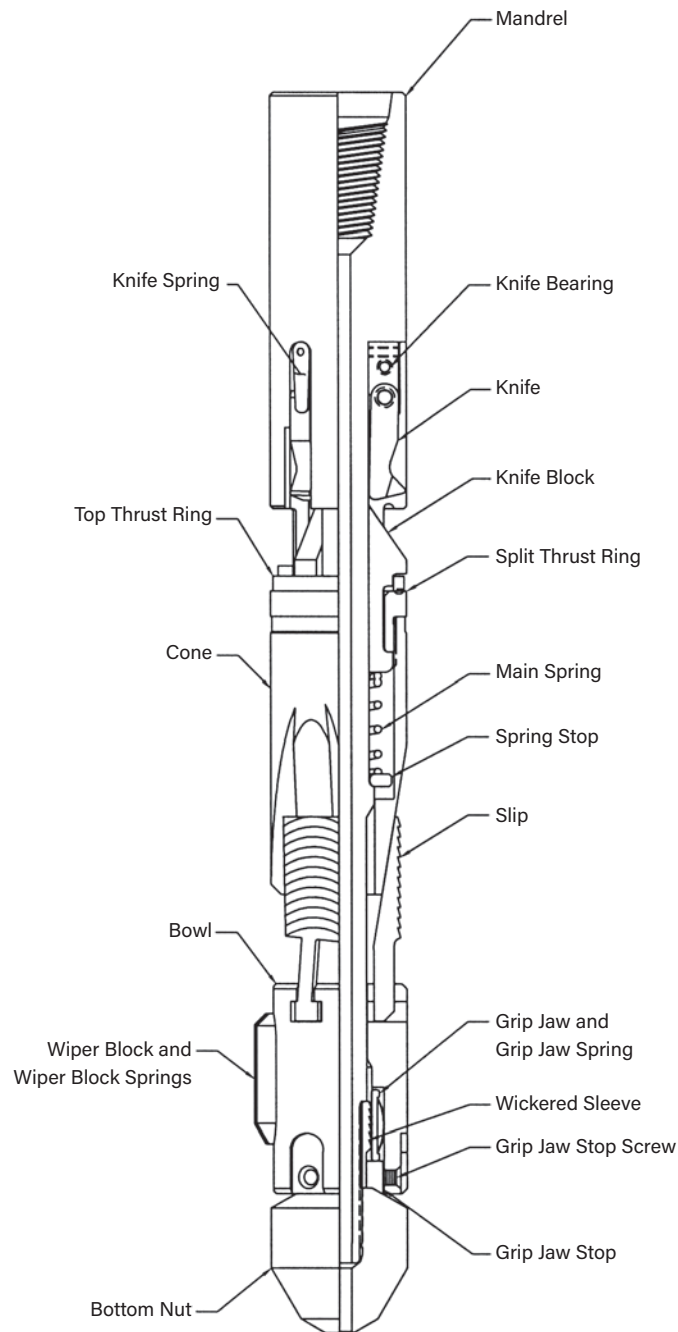
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and type of top connection
- (3) Name and number of any desired options

Recommended Spare Parts:

See Sheet 4 of 5

LOGAN INTERNAL CUTTERS



Logan Internal Cutters

PIPE SIZE TO CUT		1.900 Tbg	2-3/8 Tbg	2-7/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4-1/2 FHDP	4-1/2 IFDP
CAN BE DRESSED FOR		...	2-7/8 IFDP	...	3-1/2 IFDP	4 Tbg	4-1/2 IFDP	4-1/2, 4-3/4,
		2-7/8 Tbg				4-1/2 Tbg	4-1/2 Csg	5 & 5-1/2 Csg
MINIMUM CUTTER O.D.		1-1/2	1-13/16	2-1/4	2-1/4	2-5/8	2-1/2	3-3/8
STANDARD ASSEMBLY		Drag Spring	Drag Spring	Drag Spring	Drag Spring	Wiper Block	Drag Spring	Wiper Block
COMPLETE ASSEMBLY		Logan Part No.	409-000	409-002	409-003	409-004	409-005	409-006
<i>Consists of:</i>	Bowen No.	25940	2174	8505	9176	8570	9465	8844
	Price	\$12,256	\$12,310	\$23,052	\$24,004	\$30,309	\$17,656	\$23,232
MANDREL		Logan Part No.	Q1000	Q1002	Q1003	Q1004	Q1005	Q1006
	Bowen No.	25941	2175	8506	9177	8571	9466	8845
	Price	\$2,368	\$2,362	\$2,970	\$3,050	\$3,535	\$3,516	\$3,795
KNIFE BEARING		Logan Part No.	Q2000	Q2002	Q2002	Q2004	Q2004	Q2004
<i>3 req'd</i>	Bowen No.	25942	8433	8433	8575	8575	8575	8575
	Price	\$152	\$615	\$615	\$355	\$355	\$355	\$355
KNIFE SPRING SCREW		Logan Part No.	Q3000	Q3002	Q3002	Q3002	Q3002	Q3002
<i>3 req'd</i>	Bowen No.	13834	8181	8181	8181	8181	8181	8181
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
KNIFE SPRING		Logan Part No.	Q4000	Q4002	Q4002	Q4004	Q4004	Q4004
<i>3 req'd</i>	Bowen No.	25959	8434	8434	8629	8629	8629	8629
	Price	\$110	\$26	\$26	\$43	\$43	\$43	\$43
KNIFE		Logan Part No.	Q5000	Q5002	Q5002	Q5004	Q5004	Q5006
<i>3 req'd</i>	Bowen No.	25943	8432	8432	8572	8572	6807	8572
	Price	\$217	\$217	\$217	\$384	\$375	\$216	\$375
KNIFE BEARING SCREW		Logan Part No.	Q6000	Q6002	Q6003	Q6004	Q6005	Q6005
<i>3 req'd</i>	Bowen No.	23501	8529	8567	9189	8576	8576	8576
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
KNIFE PIN		Logan Part No.	Q7000	Q7002	Q7002	Q7004	Q7004	Q7006
<i>3 req'd</i>	Bowen No.	25944	8501	8501	8573	8573	9467	8573
	Price	\$17	\$17	\$17	\$18	\$18	\$18	\$18
KNIFE PIN SCREW		Logan Part No.	AA9001	Q8002	Q8002	Q8004	Q8004	Q8002
<i>3 req'd</i>	Bowen No.	12484	8445	8445	8574	8574	8445	8574
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2
KNIFE BLOCK		Logan Part No.	Q9000	Q9002	Q9003	Q9004	Q9004	Q9006
<i>3 req'd</i>	Bowen No.	25945	8436	8507	8580	8580	6809	8846
	Price	\$587	\$196	\$371	\$446	\$446	\$206	\$217
TOP THRUST		Logan Part No.	Q10000	Q10002	Q10003	Q10004	Q10005	Q10006
	Bowen No.	25946	9421	8508	9422	8612	6810	8931
	Price	\$613	\$936	\$1,492	\$1,151	\$2,620	\$1,261	\$1,406
SPLIT THRUST		Logan Part No.	Q11000	Q11002	Q11003	Q11004	Q11005	Q11006
	Bowen No.	25947	8438	8509	9179	8582	7496	8848
	Price	\$1,408	\$1,406	\$1,485	\$1,514	\$1,887	\$1,598	\$1,595

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		1.900 Tbg	2-3/8 Tbg	2-7/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4-1/2 FHDP	4-1/2 IFDP
CAN BE DRESSED FOR		...	2-7/8 IFDP 2-7/8 Tbg	...	3-1/2 IFDP	4 Tbg 4-1/2 Tbg	4-1/2 IFDP 4-1/2 Csg	4-1/2, 4 3/4, & 5 Csg
MINIMUM CUTTER O.D.		1-1/2	1-13/16	2-1/4	2-1/4	2-5/8	2-1/2	3-3/8
STANDARD ASSEMBLY		Drag Spring	Drag Spring	Drag Spring	Drag Spring	Wiper Block	Drag Spring	Wiper Block
COMPLETE ASSEMBLY		Logan Part No.	409-000	409-002	409-003	409-004	409-005	409-006
		Bowen No.	25940	2174	8505	9176	8570	9465
								8844
CONE		Logan Part No.	Q12000	Q12002	Q12003	Q12004	Q12005	Q12006
		Bowen No.	25948	2177	8510	9180	8583	9468
		Price	\$1,118	\$1,114	\$1,496	\$1,223	\$2,802	\$1,420
								\$1,485
MAIN SPRING		Logan Part No.	Q13000	Q13002	Q13002	Q13004	Q13005	Q13006
		Bowen No.	25949	8440	8440	9191	8584	9469
		Price	\$105	\$198	\$198	\$101	\$119	\$141
								\$141
SPRING STOP		Logan Part No.	Q14000	Q14002	Q14002	Q14004	Q14005	Q14005
		Bowen No.	25950	8442	8442	9192	8585	8585
		Price	\$178	\$187	\$568	\$180	\$818	\$818
								\$818
SLIP		Logan Part No.	Q15000	Q15002	Q15003	Q15004	Q15005	Q15006
		Bowen No.	25958	2180	4005	2178	8586	7201
		No. Req'd	3	3	3	3	3	2
		Price	\$335	\$335	\$816	\$335	\$989	\$495
								\$570
GRIP JAW SET		Logan Part No.	Q16000	Q16002	Q16002	Q16002	Q16005	Q16005
		Bowen No.	25951	8443	8443	8443	8588	8588
		Price	\$685	\$1,090	\$1,090	\$1,090	\$1,042	\$1,042
								\$1,042
GRIP JAW SPRING		Logan Part No.	Q17000	Q17000	Q17000	Q17000	Q17005	Q17005
		Bowen No.	8444	8444	8444	8444	8589	8589
		No. Req'd	3	3	3	3	3	3
		Price	\$35	\$35	\$35	\$35	\$38	\$38
								\$38
BOWL		Logan Part No.	Q18000	Q18002	Q18003	Q18004	Q18005	Q18006
		Bowen No.	25952	8521	8520	9181	8597	9470
		Price	\$1,949	\$1,943	\$3,036	\$2,458	\$7,306	\$3,773
								\$3,874
GRIP JAW STOP		Logan Part No.	Q19000	Q19002	Q19003	Q19004	Q19005	Q19006
		Bowen No.	25953	8446	8515	9182	8590	9471
		Price	\$252	\$252	\$753	\$371	\$1,056	\$409
								\$1,056
GRIP JAW STOP SCREW		Logan Part No.	Q20000	Q20002	Q20002	Q20002	Q20005	Q20005
		Bowen No.	23096	62517	62517	62517	62681	62681
		No. Req'd	3	3	3	3	3	3
		Price	...	\$20	\$20	\$20	\$24	\$24
								\$24
WICKERED SLEEVE LONG		Logan Part No.	Q21000	Q21002	Q21002	Q21004	Q21005	Q21006
		Bowen No.	25954	8568	8568	9185	8591	9475
		Price	\$1,008	\$1,366	\$1,366	\$1,007	\$1,183	\$1,046
								\$1,169
BOTTOM NUT		Logan Part No.	Q22000	Q22002	Q22003	Q22003	Q22005	Q22006
		Bowen No.	25955	8565	8566	8566	8596	9476
		Price	\$234	\$235	\$567	\$567	\$539	\$404
								\$431

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT CAN BE DRESSED FOR		1.900 Tbg	2-3/8 Tbg	2-7/8 Tbg	2-7/8 Tbg	3-1/2 Tbg	4-1/2 FHDP	4 1/2 IFDP
		...	2-7/8 IFDP 2-7/8 Tbg	...	3-1/2 IFDP	4-Tbg 4-1/2 Tbg	4-1/2 IFDP 4-1/2 Csg	4-1/2, 4 3/4, & 5 Csg
MINIMUM CUTTER O.D.		1-1/2	1-13/16	2-1/4	2-1/4	2-5/8	2-1/2	3-3/8
STANDARD ASSEMBLY		Drag Spring	Drag Spring	Drag Spring	Drag Spring	Wiper Block	Drag Spring	Wiper Block
COMPLETE ASSEMBLY		Logan Part No. Bowen No.	409-000 25940	409-002 2174	409-003 8505	409-004 9176	409-005 8570	409-006 9465
								409-007 8844
WIPER BLOCK 3 req'd	Logan Part No.	...	...	...	...	Q23005	...	Q23007
	Bowen No.	...	...	...	...	8598	...	8854
	Price	...	...	...	...	\$814	...	\$329
WIPER BLOCK SPRING 9 req'd	Logan Part No.	...	...	...	...	Q24005	...	Q24007
	Bowen No.	...	...	...	...	8599	...	8863
	Price	...	...	...	...	\$18	...	\$18
WIPER BLOCK SCREW 6 req'd	Logan Part No.	...	...	...	...	Q25005	...	Q25005
	Bowen No.	...	...	...	...	8856	...	8856
	Price	...	...	...	...	\$52	...	\$52
BOWL DRAG SPRING TYPE	Logan Part No.	...	...	...	...	...	...	...
	Bowen No.	...	...	...	...	...	...	...
	Price	...	...	...	...	...	...	...
MANDREL EXTENSION	Logan Part No.	...	...	...	Q27004	Q27005	Q27006	Q27005
	Bowen No.	...	...	...	9183	8595	9472	8595
	Price	...	...	...	\$790	\$1,166	\$1,166	\$1,166
DRAG SPRING 3 req'd	Logan Part No.	Q28000	Q28002	Q28002	Q28002	Q28005	Q28005	Q28005
	Bowen No.	25956	8569	8569	8569	8592	8592	8592
	Price	\$180	\$181	\$181	\$181	\$122	\$122	\$122
DRAG SPRING RING	Logan Part No.	Q29000	Q29002	Q29003	Q29003	Q29005	Q29006	Q29007
	Bowen No.	25957	8500	8518	8518	8594	9473	8855
	Price	\$323	\$323	\$1,029	\$1,029	\$517	\$431	\$519
DRAG SPRING SCREW 6 req'd	Logan Part No.	Q20000	Q20002	Q20002	Q20002	Q30005	Q20005	AK6004
	Bowen No.	23096	62517	62517	62517	62734	62681	8593
	Price	\$20	\$20	\$20	\$20	*	\$24	\$32
WICKERED SLEEVE SHORT	Logan Part No.	...	Q21002	Q31003	...	...	...	...
	Bowen No.	...	8568	8564	...	...	...	...
	Price	...	\$1,366	\$1,007	...	...	...	...
DRAG SPRING SHORT 3 req'd	Logan Part No.	...	...	Q32003	...	...	...	...
	Bowen No.	...	...	8449	...	...	...	...
	Price	...	...	*	...	...	...	...
ROD KNIFE	Logan Part No.	...	...	Q33003	Q33003	...	...	...
	Bowen No.	...	...	9423	9423	...	...	...
	Price	...	...	\$246	\$246	...	...	...

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		5 IUDP	5 Csg	7 Csg	8-5/8 to 9 Csg	9-5/8 Csg	11-3/4 Csg	
CAN BE DRESSED FOR		...	5-1/2 Csg	7-5/8, 8 Csg 8-1/8 Csg	9-5/8 Csg	10-3/4 Csg 11-3/4 Csg	12 LP	
MINIMUM CUTTER O.D.		3-3/8	4	5-11/16	7-1/4	8-1/4	...	
STANDARD ASSEMBLY		Drag Spring	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	
COMPLETE ASSEMBLY	Logan Part No.	409-008	409-009	409-011	409-012	409-013	409-014	
	Bowen No.	9081	8200	8745	15532	15080	41876	
	Price	\$19,331	\$21,486	\$28,843	\$39,650	\$46,053	\$61,921	
MANDREL	Logan Part No.	Q1008	Q1009	Q1011	Q1012	Q1013	Q1014	
	Bowen No.	9082	8176	8746	15533	15081	41877	
	Price	\$4,263	\$4,844	\$7,112	\$10,636	\$14,171	\$20,253	
KNIFE BEARING	Logan Part No.	Q2004	Q2009	Q2009	Q2012	Q2012	Q2012	
	Bowen No.	8575	8179	8179	15110	15110	15110	
	No. Req'd	3	3	3	5	5	5	
KNIFE SPRING SCREW	Logan Part No.	Q3002	Q3002	Q3002	Q3012	Q3012	Q3012	
	Bowen No.	8181	8181	8181	9558	9558	9558	
	No. Req'd	3	3	3	5	5	5	
KNIFE SPRING	Logan Part No.	Q4004	Q4009	Q4009	Q4012	Q4012	Q4012	
	Bowen No.	8629	8180	8180	15111	15111	15111	
	No. Req'd	3	3	3	5	5	5	
KNIFE	Logan Part No.	Q5008	Q5009	Q5009	Q5012	Q5012	Q5012	
	Bowen No.	9042	8177	8177	15102	15102	15102	
	No. Req'd	3	3	3	5	5	5	
KNIFE BEARING SCREW	Logan Part No.	Q6005	Q6009	Q6009	Q6012	Q6013	Q6013	
	Bowen No.	8576	8229	8229	15553	15112	15112	
	No. Req'd	3	3	3	5	5	5	
KNIFE PIN	Logan Part No.	Q7004	Q7009	Q7009	Q7012	Q7013	Q7013	
	Bowen No.	8573	8178	8178	15558	15113	15113	
	No. Req'd	3	3	3	5	5	5	
KNIFE PIN SCREW	Logan Part No.	Q8004	Q8009	Q8009	Q8012	Q8012	Q8012	
	Bowen No.	8574	8208	8208	15114	15114	15114	
	No. Req'd	3	3	3	5	5	5	
KNIFE BLOCK	Logan Part No.	Q9007	Q9009	Q9009	Q9012	Q9012	Q9012	
	Bowen No.	8846	8183	8183	15115	15115	15115	
	No. Req'd	3	3	3	5	5	5	
TOP THRUST	Logan Part No.	Q10008	Q10009	Q10011	Q10012	Q10013	Q10014	
	Bowen No.	8847	8241	8748	15534	15099	41878	
	Price	\$1,836	\$1,943	\$2,267	\$2,848	\$2,918	\$3,046	

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		5 IUDP	5 Csg	7 Csg	8-5/8 to 9 Csg	9-5/8 Csg	11-3/4 Csg	
CAN BE DRESSED FOR		...	5-1/2 Csg	7-5/8, 8 Csg 8-1/2 Csg	9-5/8 Csg	10-3/4 Csg 11-3/4 Csg	12 LP	
MINIMUM CUTTER O.D.		3-3/8	4	5-11/16	7-1/4	8-1/4	...	
STANDARD ASSEMBLY		Drag Spring	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	
COMPLETE ASSEMBLY	Logan Part No. Bowen No.	409-008 9081	409-009 8200	409-011 8745	409-012 15532	409-013 15080	409-014 41876	
SPLIT THRUST	Logan Part No.	Q11007	Q11009	Q11011	Q11012	Q11013	Q11014	
	Bowen No.	8848	8185	8750	15535	15084	41879	
	Price	\$1,595	\$1,648	\$1,742	\$2,135	\$2,187	\$2,950	
CONE	Logan Part No.	Q12008	Q12009	Q12011	Q12012	Q12013	Q12014	
	Bowen No.	9083	8186	8751	15536	15085	41880	
	Price	\$1,488	\$1,810	\$2,458	\$3,133	\$4,062	\$4,019	
MAIN SPRING	Logan Part No.	Q13008	Q13009	Q13011	Q13012	Q13013	Q13014	
	Bowen No.	9084	8187	8752	15537	15086	41881	
	Price	\$141	\$141	\$357	\$329	\$403	\$450	
SPRING STOP	Logan Part No.	Q14007	Q14009	Q14011	Q14012	Q14013	Q14014	
	Bowen No.	8851	8209	8753	15538	15087	41882	
	Price	\$818	\$252	\$315	\$337	\$540	\$540	
SLIP (3 req'd)	Logan Part No.	Q15008	Q15009	Q15011	Q15012	Q15013	Q15014	
	Bowen No.	9043	1924	8754	15539	15275	41883	
	Price	\$573	\$570	\$759	\$801	\$801	\$987	
GRIP JAW SET	Logan Part No.	...	Q16009	Q16011	Q16012	Q16013	Q16014	
	Bowen No.	...	8193	8755	15540	15089	41884	
	Price	...	\$1,114	\$1,472	\$1,663	\$1,742	\$1,919	
GRIP JAW SPRING (3 req'd)	Logan Part No.	...	Q17009	Q17011	Q17012	Q17012	Q17012	
	Bowen No.	...	8194	8756	15108	15108	15108	
	Price	...	\$38	\$83	\$83	\$83	\$83	
BOWL	Logan Part No.	Q18008	Q18009	Q18011	Q18012	Q18013	Q18014	
	Bowen No.	9044	8190	8761	15542	15090	41885	
	Price	\$3,882	\$3,928	\$6,181	\$6,802	\$7,031	\$11,108	
GRIP JAW STOP	Logan Part No.	Q19005	Q19009	Q19011	Q19012	Q19013	Q19014	
	Bowen No.	8590	8202	8757	15543	15091	41886	
	Price	\$1,056	\$410	\$431	\$473	\$530	\$987	
GRIP JAW STOP SCREW (3 req'd)	Logan Part No.	Q20005	Q20009	Q20010	Q20010	Q20010	Q20010	
	Bowen No.	62681	25221	8251	8251	8251	8251	
	Price	\$24	\$25	\$7	\$7	\$7	\$7	
WICKERED SLEEVE LONG	Logan Part No.	Q21008	Q21009	Q21011	Q21012	Q21013	Q21014	
	Bowen No.	9045	8236	8762	15546	15096	41888	
	Price	\$1,046	\$1,114	\$1,514	\$1,943	\$2,026	\$2,205	
BOTTOM NUT	Logan Part No.	Q22007	Q22009	Q22011	Q22012	Q22013	Q22014	
	Bowen No.	8857	8196	8763	15547	15097	41889	
	Price	\$431	\$533	\$1,336	\$2,362	\$2,458	\$3,832	

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
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- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		5 IUDP	5 Csg	7 Csg	8-5/8 to 9 Csg	9-5/8 Csg	11-3/4 Csg	
CAN BE DRESSED FOR		...	5-1/2 Csg	7-5/8, 8 Csg, & 8-1/2 Csg	9-5/8 Csg	10-3/4 Csg 11-3/4 Csg	12 LP	
MINIMUM CUTTER O.D.		3-3/8	4	5-11/16	7-1/4	8-1/4	...	
STANDARD ASSEMBLY		Drag Spring	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	
COMPLETE ASSEMBLY	Logan Part No.	409-008	409-009	409-011	409-012	409-013	409-014	
	Bowen No.	9081	8200	8745	15532	15080	41876	
WIPER BLOCK	Logan Part No.	...	Q23009	Q23011	Q23012	Q23013	Q23014	
(3 req'd)	Bowen No.	...	8191	8758	15548	15098	41887	
	Price	...	\$403	\$540	\$666	\$699	\$774	
WIPER BLOCK SPRING	Logan Part No.	...	Q24005	Q24010	Q24012	Q24012	Q24012	
(9 req'd)	Bowen No.	...	8599	8759	15276	15276	15276	
	No. Req'd	...	24	24	36	36	36	
	Price	...	\$18	\$18	\$18	\$18	\$18	
WIPER BLOCK SCREW	Logan Part No.	...	Q25005	Q25010	Q25010	Q25010	Q25010	
(6 req'd)	Bowen No.	...	8856	8760	8760	8760	8760	
	Price	...	\$50	\$35	\$35	\$35	\$35	
BOWL DRAG	Logan Part No.	...	Q26005	...	...	...	...	
SPRING TYPE	Bowen No.	...	8201	...	...	...	...	
	Price	...	\$3,936	...	...	...	...	
MANDREL EXTENSION	Logan Part No.	Q27008	Q27009	Q27011	Q27012	Q27013	Q27014	
	Bowen No.	9093	8237	8246	15544	15092	41892	
	Price	\$1,260	\$1,569	\$2,408	\$2,800	\$3,274	*	
DRAG SPRING	Logan Part No.	Q28008	Q28009	Q28010	Q28012	Q28012	Q28014	
(3 req'd)	Bowen No.	9092	8203	8247	15093	15093	41890	
	Price	\$304	\$304	\$540	\$270	\$270	*	
DRAG SPRING RING	Logan Part No.	Q29007	Q29009	Q29011	Q29012	Q29013	Q29014	
	Bowen No.	8855	8205	8248	15545	15095	41891	
	Price	\$517	\$570	\$699	\$936	\$1,023	*	
DRAG SPRING SCREW	Logan Part No.	Q20005	Q20009	Q20010	Q20010	Q20010	Q20010	
(6 req'd)	Bowen No.	62681	25221	8251	8251	8251	8251	
	No. Req'd	...	3	3	3	3	3	
	Price	\$24	\$26	\$7	\$7	\$7	\$7	
WICKERED	Logan Part No.	...	...	...	...	...	...	
SLEEVE SHORT	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
DRAG SPRING SHORT	Logan Part No.	...	...	...	...	...	...	
(3 req'd)	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
ROD KNIFE	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
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When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
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- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		5 IUDP	5 Csg	7 Csg	8-5/8 to 9 Csg	9-5/8 Csg	11-3/4 Csg	
CAN BE DRESSED FOR		...	5-1/2 Csg	7-5/8, 8 Csg, & 8-1/2 Csg	9-5/8 Csg	10-3/4 Csg 11-3/4 Csg	12 LP	
MINIMUM CUTTER O.D.		3-3/8	4	5-11/16	7-1/4	8-1/4	...	
STANDARD ASSEMBLY		Drag Spring	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	
COMPLETE ASSEMBLY	Logan Part No.	409-008	409-009	409-011	409-012	409-013	409-014	
	Bowen No.	9081	8200	8745	15532	15080	41876	
TOP THRUST TO CUT COUPLING	Logan Part No.	...	Q34009	Q34011	Q34012	Q39015	Q34014	
	Bowen No.	...	8184	8749	15541	15083	41896	
	Price	...	\$881	\$2,124	\$1,611	\$2,153	*	
TOP THRUST	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
SLIP	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
WIPER BLOCK	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
BOTTOM NUT	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	
KNIFE BLOCK	Logan Part No.	...	...	...	...	...	...	
	Bowen No.	...	...	...	...	...	...	
	Price	...	...	...	...	...	...	

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Special Notes:

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- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
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- (8) 1 set of Wiper Block Screws
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- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		16 Csg	20 Tbg				
CAN BE DRESSED FOR		18-5/8 Csg	20-3/4 Csg				
MINIMUM CUTTER O.D.		14-1/2	18-5/8				
STANDARD ASSEMBLY		Wiper Block	Wiper Block				
COMPLETE ASSEMBLY	Logan Part No.	409-016	409-017				
	Bowen No.	21240	19760				
	Price	\$106,379	\$141,472				
MANDREL	Logan Part No.	Q1016	Q1017				
	Bowen No.	21241	19761				
	Price	\$33,513	\$47,406				
KNIFE BEARING	Logan Part No.	Q2012	Q2012				
	Bowen No.	15110	15110				
	No. Req'd	5	5				
	Price	\$178	\$178				
KNIFE SPRING SCREW	Logan Part No.	Q3012	Q3012				
	Bowen No.	9558	9558				
	No. Req'd	5	5				
	Price	\$2	\$2				
KNIFE SPRING	Logan Part No.	Q4012	Q4012				
	Bowen No.	15111	15111				
	No. Req'd	5	5				
	Price	\$43	\$43				
KNIFE	Logan Part No.	Q5012	Q5012				
	Bowen No.	15102	15102				
	No. Req'd	5	5				
	Price	\$517	\$517				
KNIFE BEARING SCREW	Logan Part No.	Q6013	Q6013				
	Bowen No.	15112	15112				
	No. Req'd	5	5				
	Price	\$7	\$7				
KNIFE PIN	Logan Part No.	Q7013	Q7013				
	Bowen No.	15113	15113				
	No. Req'd	5	5				
	Price	\$22	\$22				
KNIFE PIN SCREW	Logan Part No.	Q8012	Q8012				
	Bowen No.	15114	15114				
	No. Req'd	5	5				
	Price	\$3	\$3				
KNIFE BLOCK	Logan Part No.	Q9012	Q9012				
	Bowen No.	15115	15115				
	No. Req'd	5	5				
	Price	\$323	\$323				

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When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
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- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		16 Csg	20 Csg				
CAN BE DRESSED FOR		18-5/8 Csg	20-3/4 Csg				
MINIMUM CUTTER O.D.		14-1/2	18-5/8				
STANDARD ASSEMBLY		Wiper Block	Wiper Block				
COMPLETE ASSEMBLY	Logan Part No.	409-016	409-017				
	Bowen No.	21240	19760				
TOP THRUST	Logan Part No.	Q10016	Q10017				
	Bowen No.	21242	19762				
	Price	\$3,938	\$5,303				
SPLIT THRUST	Logan Part No.	Q11016	Q11017				
	Bowen No.	21243	19763				
	Price	\$6,035	\$6,981				
CONE	Logan Part No.	Q12016	Q12017				
	Bowen No.	21244	19764				
	Price	\$13,002	\$18,752				
MAIN SPRING	Logan Part No.	Q13016	Q13017				
	Bowen No.	21245	19765				
	Price	\$534	\$712				
SPRING STOP	Logan Part No.	Q14016	Q14017				
	Bowen No.	21246	19766				
	Price	\$747	\$1,025				
SLIP	Logan Part No.	Q15016	Q15017				
	Bowen No.	21247	19767				
	No. Req'd	3	3				
	Price	\$2,004	\$2,193				
GRIP JAW SET	Logan Part No.	Q16016	Q16017				
	Bowen No.	21248	19768				
	Price	\$2,274	\$2,315				
GRIP JAW SPRING	Logan Part No.	Q17016	8234				
	Bowen No.	21249	19769				
	No. Req'd	4	4				
	Price	\$69	\$69				
BOWL	Logan Part No.	Q18016	Q18017				
	Bowen No.	21250	19770				
	Price	\$16,480	\$26,720				
GRIP JAW STOP	Logan Part No.	Q19016	Q19017				
	Bowen No.	21251	19771				
	Price	\$1,623	\$2,153				
GRIP JAW STOP SCREW	Logan Part No.	Q20016	Q20010				
	Bowen No.	21679	8251				
	No. Req'd	3	3				
	Price	\$7	\$7				

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- (11) 1 set of Drag Springs
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Logan Internal Cutters

PIPE SIZE TO CUT		16 Csg	20 Csg				
CAN BE DRESSED FOR		18-5/8 Csg	20-3/4 Csg				
CUTTER O.D. (MINIMUM)		14-1/2	18-5/8				
STANDARD ASSEMBLY		Wiper Block	Wiper Block				
COMPLETE ASSEMBLY	Logan Part No.	409-016	409-017				
	Bowen No.	21240	19760				
WICKERED SLEEVE LONG	Logan Part No.	Q21016	Q21017				
	Bowen No.	21253	19778				
	Price	\$2,490	\$2,558				
BOTTOM NUT	Logan Part No.	Q22016	Q22017				
	Bowen No.	21254	19779				
	Price	\$6,523	\$9,293				
WIPER BLOCK	Logan Part No.	Q23016	Q23017				
	Bowen No.	21252	19772				
	No. Req'd	8	6				
	Price	\$830	\$1,025				
WIPER BLOCK SPRING	Logan Part No.	Q24012	Q24012				
	Bowen No.	15276	15276				
	No. Req'd	54	48				
	Price	\$18	\$18				
WIPER BLOCK SCREW	Logan Part No.	Q25016	Q25010				
	Bowen No.	21678	8760				
	No. Req'd	12	6				
	Price	*	\$18				
BOWL DRAG SPRING TYPE	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
MANDREL EXTENSION	Logan Part No.	Q27016	Q27017				
	Bowen No.	21255	19773				
	Price	*	*				
DRAG SPRING	Logan Part No.	Q28016	Q28017				
	Bowen No.	21256	19774				
	No. Req'd	6	6				
	Price	*	*				
DRAG SPRING RING	Logan Part No.	Q29016	Q29017				
	Bowen No.	21257	19799				
	Price	*	*				
DRAG SPRING SCREW	Logan Part No.	Q20010	Q20010				
	Bowen No.	8251	8251				
	No. Req'd	6	6				
	Price	\$7	\$7				

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- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
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- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		16 Csg	20 Csg				
CAN BE DRESSED FOR		18-5/8 Csg	20-3/4 Csg				
MINIMUM CUTTER O.D.		14-1/2	18-5/8				
STANDARD ASSEMBLY		Wiper Block	Wiper Block				
COMPLETE ASSEMBLY	Logan Part No.	409-016	409-017				
	Bowen No.	21240	19760				
WICKERED SLEEVE SHORT	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
DRAG SPRING SHORT	Logan Part No.	...	...				
	Bowen No.	...	...				
	No. Req'd	...	...				
	Price	...	...				
ROD KNIFE	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
TOP THRUST TO CUT COUPLING	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
TOP THRUST	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
SLIP	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
WIPER BLOCK	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
BOTTOM NUT	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				
KNIFE BLOCK	Logan Part No.	...	...				
	Bowen No.	...	...				
	Price	...	...				

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		2-3/8 Tbg	3-1/2 OD Tbg	3-1/2 OD Tbg	4-1/2 FHDP	4-1/2 FHDP	4-1/2 IFDP	4-1/2 IFDP
CAN BE DRESSED TO CUT		2-7/8 IF DP	4 OD Tbg & 2-7/8 Tbg	4-1/2 OD	4-1/2	4-1/2 OD	4-1/2 OD	4-3/4 OD
Csg					Tbg	X-Hole DP	Csg	Tbg & Csg
CUTTER O.D. (MINIMUM)		1-13/16	2-5/8	2-5/8	2-1/2	2-1/2	3-3/8	3-3/8
STANDARD ASSEMBLY		Drag Spring	Wiper Block	Wiper Block	Drag Spring	Drag Spring	Wiper Block	Wiper Block
COMPLETE ASSEMBLY		Logan Part No.	409-002	409-005	409-005	409-006	409-007	409-007
		Bowen No.	2174	8570	8570	9465	9465	8844
TOP THRUST		Logan Part No.	Q39000	Q39003	Q34005	...	...	Q10008
		Bowen No.	8437	8613	8581	...	...	8847
		Price	\$685	\$1,223	\$1,223	...	...	\$1,836
SLIP		Logan Part No.	Q40000	Q40003	Q35005	...	Q40006	Q40007
		Bowen No.	2181	8577	8587	...	23945	8932
		No. Req'd	3	3	3	...	3	3
		Price Each	\$383	\$540	\$542	...	\$540	\$570
WIPER BLOCK		Logan Part No.	...	Q41003	Q36005	...	...	Q41007
		Bowen No.	...	8614	8605	...	...	8933
		No. Req'd	...	3	3	...	...	3
		Price	...	\$298	\$329	...	\$337	\$337
DRAG SPRING		Logan Part No.	...	Q42003	...	Q42005	Q42006	...
		Bowen No.	...	8611	...	8611	23946	...
		No. Req'd	...	3	...	3	...	...
		Price	...	\$125	...	\$123	\$105	\$123
BOTTOM NUT		Logan Part No.	...	Q43003	Q43004	Q43005	...	...
		Bowen No.	...	8602	8634	9457	...	...
		Price	...	\$388	\$431	\$49	...	\$475
KNIFE BLOCK		Logan Part No.	...	...	Q38005	...	...	...
		Bowen No.	...	...	22278	...	...	...
		No. Req'd	...	...	3	...	...	...
		Price	...	...	\$246	...	...	...
TOP THRUST CUT COUPLING		Logan Part No.	...	...	...	...	...	...
		Bowen No.	...	...	...	...	...	...
		Price	...	...	...	...	...	...
KNIFE		Logan Part No.	...	...	...	...	...	...
		Bowen No.	...	...	...	...	...	...
		Price	...	...	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		4-1/2 IFDP	4-1/2 IFDP	5 OD Csg	5-1/2 Csg	7 OD Csg		
CAN BE DRESSED TO CUT		5 OD Csg	5-1/2 OD Csg	5-1/2 OD Csg	5-3/4 OD Csg	7-5/8 OD Csg		
CUTTER O.D. (MINIMUM)		3-3/8	3-3/8	4	4	5-11/16		
STANDARD ASSEMBLY		Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block		
COMPLETE ASSEMBLY		Logan Part No. Bowen No.	409-007 8844	409-007 8844	409-009 8200	409-009 8200	409-011 8745	
TOP THRUST		Logan Part No. Bowen No. Price	Q10008 8847 \$1,836	Q10008 8847 \$1,836	Q39009 8242 \$1,943	Q39020 54550 \$2,210	Q34011 8749 \$2,267	
SLIP		Logan Part No. Bowen No. No. Req'd Price Each	Q40008 14004 3 \$594	Q40020 53055 3 \$626	Q40009 8405 3 \$570	Q40021 54551 3 \$676	Q40012 8764 3 \$801	
WIPER BLOCK		Logan Part No. Bowen No. No. Req'd Price	Q41008 14001 3 \$337	Q41020 53056 3 \$431	Q41009 8219 3 \$403	Q41021 54552 3 \$486	Q41012 8770 3 \$590	
DRAW SPRING		Logan Part No. Bowen No. No. Req'd Price	Q42005 8611 3 \$123		Q42009 8207 3 \$647	Q42013 54553 3 \$123	Q42010 8249 3 \$125	
BOTTOM NUT		Logan Part No. Bowen No. Price	Q43009 14002 \$533	Q43009 14002 \$533	Q43010 8234 \$590	Q43010 8234 \$590	Q43013 8774 \$1,485	
KNIFE BLOCK		Logan Part No. Bowen No. No. Req'd Price	Q44009 14003 3 \$246	Q44010 53057 3 \$267				
TOP THRUST CUT COUPLING		Logan Part No. Bowen No. Price						
KNIFE		Logan Part No. Bowen No. Price		Q5008 9042 \$274				

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

Logan Internal Cutters

PIPE SIZE TO CUT		7 OD Csg	8 5/8 – 9 OD Csg	9-5/8 OD Csg	9-5/8 OD Csg	11-3/4 OD Csg	16 OD Csg	20 OD Csg
CAN BE DRESSED TO CUT		8 & 8-1/8 OD Csg	9-5/8 OD Csg	10-3/4 OD Csg	11-3/4 OD Csg	12 LP	18-5/8 OD Csg	20-3/4 OD Csg
CUTTER O.D. (MINIMUM)		5-11/16	7-1/4	8-1/4	8-1/4	...	14-1/2	18-5/8
STANDARD ASSEMBLY		Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block	Wiper Block
COMPLETE ASSEMBLY		Logan Part No.	409-011	409-012	409-013	409-013	409-014	409-016
		Bowen No.	8745	15532	15080	15080	41876	21240
TOP THRUST		Logan Part No.	Q34011	Q34012	Q39015	Q45015	Q34014	...
		Bowen No.	8749	15541	15083	15116	41896	...
		Price	\$2,267	\$2,848	\$2,918	\$2,918	\$3,043	...
SLIP		Logan Part No.	Q40013	Q40014	Q40015	Q40016	Q40017	Q40018
		Bowen No.	15408	15551	15088	15079	41894	21672
		No. Req'd	3	3	3	3	3	3
		Price Each	\$801	\$892	\$912	\$986	\$1,119	\$2,153
WIPER BLOCK		Logan Part No.	Q41013	Q41014	Q41015	Q41016	Q41017	Q41018
		Bowen No.	15407	15554	15101	15078	41893	21671
		No. Req'd	3	3	3	3	3	3
		Price	\$641	\$746	\$759	\$830	\$839	\$922
DRAG SPRING		Logan Part No.	Q42010	Q42011	Q42011	Q28012	...	...
		Bowen No.	8249	15109	15109	15129	...	...
		No. Req'd	3	3	3	3	...	...
		Price	\$125	*	*	*	...	...
BOTTOM NUT		Logan Part No.	Q43014	Q43017	Q43015	Q43016	Q43018	...
		Bowen No.	15405	15552	15268	15077	41895	...
		Price	\$1,620	\$2,524	\$2,673	\$2,902	\$4,224	...
KNIFE BLOCK		Logan Part No.	...	...	...	...	...	...
		Bowen No.	...	...	...	...	...	...
		No. Req'd	...	...	...	...	...	...
		Price	...	...	...	...	...	...
TOP THRUST CUT COUPLING		Logan Part No.	...	Q45014	Q45015	...	...	...
		Bowen No.	...	15549	15116	...	...	...
		Price	...	\$1,718	\$2,792	...	...	...
KNIFE		Logan Part No.	Q46013	...	...	...	Q46018	...
		Bowen No.	15406	...	...	...	21673	...
		Price	\$577	...	...	...	\$594	...

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Special Notes:

- (1) Slip number Q15009 is for 5" 15-21# casing. For 5" 11.5-13# casing use Slip number Q40009.
- (2) Where both Wiper Block and Drag Spring parts are shown, the cutter can be ordered with either. If not specified, Wiper Block parts will be furnished. (Note: Assemblies are priced differently.)

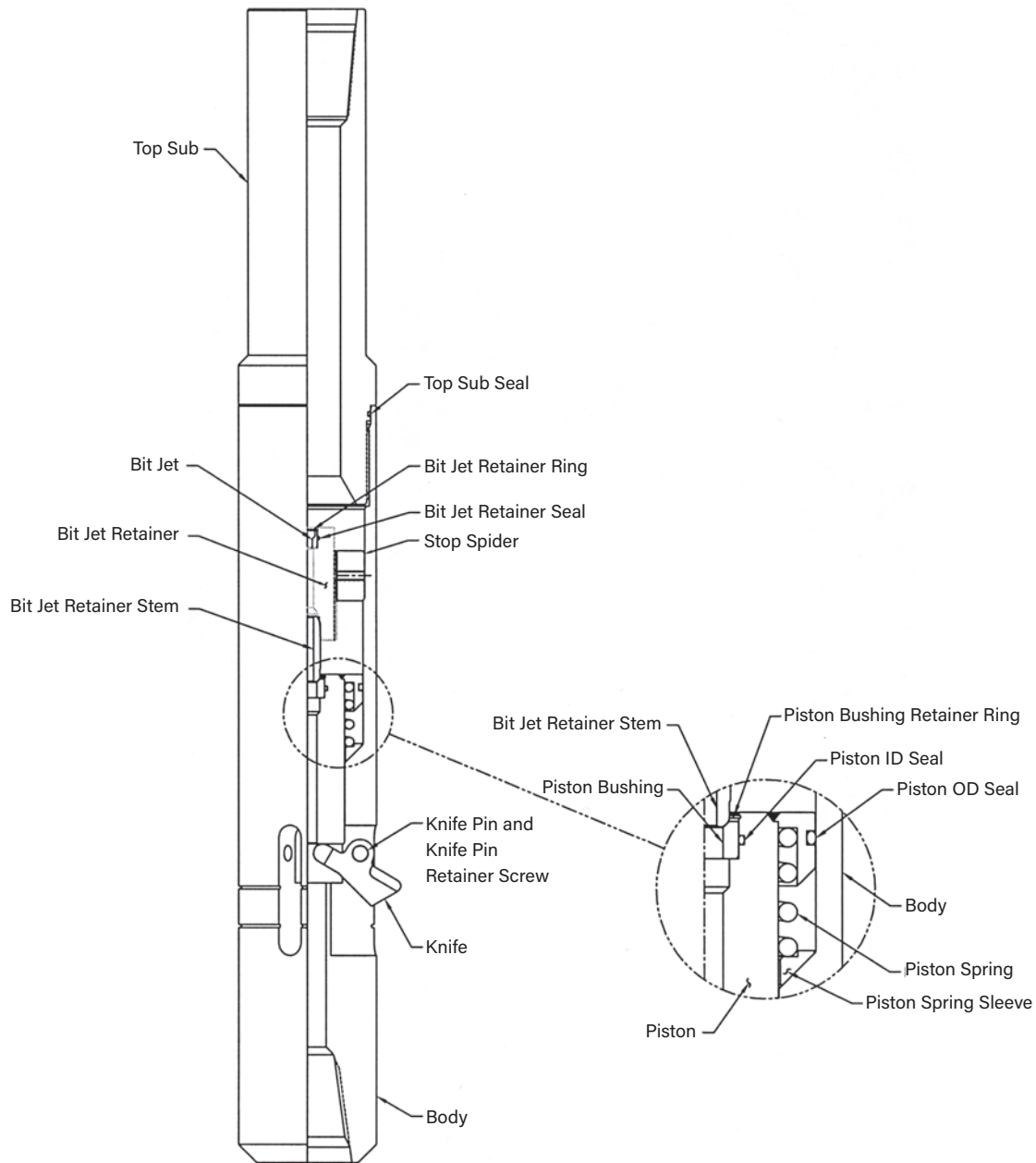
When ordering, please specify:

- (1) Name and part number of assembly or part
- (2) Size of pipe to cut
- (3) Whether or not Bottom Nut is to be fitted for collar finder
- (4) Knives with carbide tips available upon request
- (5) Size and type of top connection

Recommended Spare Parts:

- (1) 6 sets of Knives
- (2) 2 sets of Knife Pins
- (3) 6 sets of Knife Springs
- (4) 2 sets of Knife Spring Screws
- (5) 1 set of Slips
- (6) 1 set of Wiper Blocks
- (7) 1 set of Wiper Block Springs
- (8) 1 set of Wiper Block Screws
- (9) 1 set of Grip Jaw Springs
- (10) 1 Wickered Sleeve
- (11) 1 set of Drag Springs
- (12) 1 set of Drag Springs Screws

LOGAN INTERNAL PRESSURE PIPE CUTTERS



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Logan Internal Pressure Pipe Cutters

PIPE SIZE TO CUT		4	4-1/2 to 6-1/8	6-5/8 to 7-5/8	8-5/8 to 11-3/4	9-5/8 to 36	10-3/4 to 36	13-3/8 to 36
CUTTER O.D.		3-1/4	3-5/8	5-9/16	7-3/8	8-1/4	9-1/2	11-3/4
CONNECTION SIZE (BOX UP)		2-3/8 Reg	2-3/8 IF	3-1/2 IF	Blank	Blank	Blank	Blank
CONNECTION SIZE (BOX DOWN)		2-3/8 Reg	2-3/8 Reg	3-1/2 Reg	Blank	Blank	Blank	Blank
COMPLETE ASSEMBLY	Logan Part No.	412-325	412-363	412-556	412-738	412-825	412-950	412-1175
	Bowen No.	150444	147483	147489	150959	147495	147343	147369
	Price	\$11,628	\$12,685	\$17,544	...	\$40,042	\$47,262	\$69,636
BODY	Logan Part No.	R1000	R1001	R1002	R1003	R1004	R1005	R1006
	Bowen No.	150445	147484	147490	151022	147496	147344	147370
	Price	\$5,660	\$3,795	\$6,098	...	\$17,464	\$19,906	\$35,642
KNIFE (UNDRESSED)	Logan Part No.	R2000	R2001	R2002	R2003	R2004	R2005	R2013
	Bowen No.	150446	80357	80717	151023	147008	147357	147358
	No. Req'd	3	3	3	3	3	3	3
	Price	*	*	*	*	*	*	*
KNIFE PIN	Logan Part No.	R3000	R3000	R3002	R3003	R3004	R3005	R3005
	Bowen No.	80359	80359	80719	151024	147009	147371	147371
	No. Req'd	3	3	3	3	3	3	3
	Price	\$129	\$129	\$83	*	\$533	\$533	\$533
KNIFE PIN RETAINER SCREW	Logan Part No.	AK9004	AK9004	R4002	R4003	R4003	R4004	R4004
	Bowen No.	23508	23508	13847	148526	148526	148256	148256
	No. Req'd	3	3	3	3	3	3	3
	Price	\$2	\$2	\$2	\$3	\$3	\$3	\$50
SPRING SLEEVE	Logan Part No.	...	R5001	R5002	...	R5003	...	...
	Bowen No.	...	147487	147493	...	147499	...	...
	Price	...	\$160	\$158	...	\$193	...	...
SPRING	Logan Part No.	R6000	R6001	R6002	R6003	R6003	R6004	R6004
	Bowen No.	150449	147488	147494	147500	147500	147384	147384
	Price	\$371	\$109	\$109	\$158	\$158	\$235	\$235
PISTON	Logan Part No.	R7000	R7001	R7002	R7003	R7004	R7005	R7005
	Bowen No.	150450	147485	147491	151025	147497	147373	147373
	Price	\$1,242	\$1,364	\$1,810	...	\$2,848	\$3,577	\$3,577
PISTON O.D. SEAL	Logan Part No.	568-330	568-333	568-346	R8003	R8004	R8005	R8005
	Bowen No.	27-33	27-36	27-49	151026	147012	147374	147374
	Price	\$3	\$3	\$8	*	\$407	\$750	\$750
PISTON I.D. SEAL	Logan Part No.	568-220	568-220	568-220	568-228	568-331	568-331	568-331
	Bowen No.	27-25	27-25	27-25	568228	27-34	27-34	27-34
	Price	\$3	\$3	\$3	\$3	\$3	\$3	\$3
PISTON BUSHING	Logan Part No.	R10000	R10000	R10000	R10002	R10002	R10002	R10002
	Bowen No.	80356	80356	80356	147013	147013	147013	147013
	Price	\$517	\$517	\$517	\$413	\$413	\$413	\$413
PISTON BUSHING RETAINER RING	Logan Part No.	R11000	R11000	R11000	R11001	R11001	R11001	R11001
	Bowen No.	21116	21116	21116	147014	147014	147014	147014
	Price	\$7	\$7	\$7	\$15	\$15	\$15	\$15
BIT JET RETAINER	Logan Part No.	R12000	R12000	R12001	R12002	R12002	R12003	R12003
	Bowen No.	80352	80352	80714	147015	147015	147377	147377
	Price	\$921	\$921	\$1,187	\$2,766	\$2,766	\$2,929	\$2,929

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* Available upon request.

Special Notes:

(1) Optional bullnose nut available upon request.

When ordering, please specify:

(1) Size and type of top connection

(2) O.D. of pipe to be cut

(3) Dressed or undressed knives when ordering

Logan Internal Pressure Pipe Cutters

PIPE SIZE TO CUT		4	4-1/2 to 6-1/8	6-5/8 to 7-5/8	8-5/8 to 11-3/4	9-5/8 to 36	10-3/4 to 36	13-3/8 to 36
CUTTER O.D.		3-1/4	3-5/8	5-9/16	7-3/8	8-1/4	9-1/2	11-3/4
CONNECTION SIZE (BOX UP)		2-3/8 Reg	2-3/8 IF	3-1/2 IF	Blank	Blank	Blank	Blank
CONNECTION SIZE (BOX DOWN)		2-3/8 Reg	2-3/8 Reg	3-1/2 Reg	Blank	Blank	Blank	Blank
COMPLETE ASSEMBLY	Logan Part No.	412-325	412-363	412-556	412-738	412-825	412-950	412-1175
	Bowen No.	150444	147483	147489	150959	147495	147343	147369
BIT JET RETAINER SEAL	Logan Part No.	568-117	568-117	568-117	568-219	568-219	568-219	568-219
	Bowen No.	568117	568117	568117	27-24	27-24	27-24	27-24
	Price	\$3	\$3	\$3	\$6	\$6	\$6	\$6
BIT JET RETAINER STEM	Logan Part No.	R16000	R16000	R16000	R16001	R16001	R16001	R16001
	Bowen No.	80354	80354	80354	147017	147017	147017	147017
	Price	\$1,314	\$1,314	\$1,314	\$2,475	\$2,475	\$2,475	\$2,475
STOP SPIDER	Logan Part No.	R17000	R17001	R17002	R17003	R17004	R17005	R17006
	Bowen No.	150451	80353	80715	151027	145168	147347	147381
	Price	\$1,406	\$1,278	\$1,607	*	\$1,768	\$1,865	\$2,053
STOP SPIDER SET SCREW	Logan Part No.	P12008	R18001	R18002	AX10002	AX10002	AX10002	R18004
	Bowen No.	23705	23706	23709	145165	145165	145165	23384
	No. Req'd	3	3	3	3	3	3	3
	Price	\$3	\$2	\$2	\$6	\$6	\$6	\$2
BIT JET	Logan Part No.	R14000	R14001	R14001	R14002	R14002	R14002	R14002
	Bowen No.	150682	80453	80453	147016	147016	147016	147016
	Price	*	\$97	\$97	\$250	\$250	\$250	\$250
BIT JET RETAINER RING	Logan Part No.	R15000	R15000	R15000	R15002	R15002	R15002	R15002
	Bowen No.	54131	54131	54131	33788	33788	33788	33788
	Price	\$11	\$11	\$11	\$6	\$6	\$6	\$6
TOP SUB	Logan Part No.	R19000	R19001	R19002	R19003	R19004	R19005	R19006
	Bowen No.	150452	80351	80713	151028	147018	147356	147383
	Price	\$2,267	\$1,497	\$2,090	*	\$4,552	\$8,278	\$16,649
TOP SUB SEAL	Logan Part No.	568-231	568-234	568-249	568-359	568-438	568-440	568-447
	Bowen No.	30-9	30-12	30-27	568359	27-65	568440	27-74
	Price	\$3	\$6	\$11	\$17	\$17	\$18	\$20
TOP SUB SEAL	Logan Part No.	...	...	...	...	568-437	...	...
	Bowen No.	...	...	...	...	27-64	...	...
	Price	...	...	...	...	...	...	...

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* Available upon request.

Special Notes:

(1) Optional bullnose nut available upon request.

When ordering, please specify:

- (1) Size and type of top connection
- (2) O.D. of pipe to be cut
- (3) Dressed or undressed knives when ordering

Logan Internal Pressure Pipe Cutters

CENTRALIZING TOP SUBS

5" O.D.	Logan Part No.	...	R2100	...	...	...	...	...
	Bowen No.	...	80566	...	...	...	...	...
	Price	...	...	...	...	...	...	...
5-1/2" O.D.	Logan Part No.	...	R2101	...	...	...	...	...
	Bowen No.	...	80567	...	...	...	...	...
	Price	...	...	...	...	...	...	...
7" O.D.	Logan Part No.	...	...	R2102	...	...	...	...
	Bowen No.	...	...	80720	...	...	...	...
	Price	...	...	...	...	...	...	...
7-5/8" O.D.	Logan Part No.	...	...	R2103	...	...	...	...
	Bowen No.	...	...	80721	...	...	...	...
	Price	...	...	...	...	...	...	...

KNIVES (UNDRESSED)

7-5/8" to 9-5/8" O.D.	Logan Part No.	...	...	R2006	...	...	...	...
	Bowen No.	...	...	81896	...	...	...	...
	Price	...	...	...	...	...	...	...
10-3/4" O.D.	Logan Part No.	...	...	...	R2007	R2008	...	...
	Bowen No.	...	...	...	151029	147021	...	...
	Price	...	...	...	*	...	...	...
11-3/4" to 13-3/8" O.D.	Logan Part No.	...	...	...	R2007	...	R2026	...
	Bowen No.	...	...	...	151029	...	147358	...
	Price	...	...	...	*	...	...	...
13-3/8" to 16" O.D.	Logan Part No.	...	...	...	...	R2011	R2026	R2013
	Bowen No.	...	...	...	...	147022	147359	147358
	Price	...	...	...	...	*	...	*
16" to 18-5/8" O.D.	Logan Part No.	...	...	...	...	...	...	R2014
	Bowen No.	...	...	...	...	...	...	147359
	Price	...	...	...	...	...	...	*
18" to 20" O.D.	Logan Part No.	...	...	...	...	R2015	...	...
	Bowen No.	...	...	...	...	147023	...	...
	Price	...	...	...	...	...	...	...
18-5/8 to 24" O.D.	Logan Part No.	...	...	...	...	...	R2027	R2017
	Bowen No.	...	...	...	...	...	...	147360
	Price	...	...	...	...	...	...	...
24" to 30" O.D.	Logan Part No.	...	...	...	...	R2018	R2020	...
	Bowen No.	...	...	...	...	147024	147361	...
	Price	...	...	...	...	...	...	...
26" to 30" O.D.	Logan Part No.	...	...	...	...	...	...	R2020
	Bowen No.	...	...	...	...	...	...	147361
	Price	...	...	...	...	...	...	...
30" to 34" O.D.	Logan Part No.	...	...	...	...	R2021	...	...
	Bowen No.	...	...	...	...	147025	...	...
	Price	...	...	...	...	...	...	...
34" to 36" O.D.	Logan Part No.	...	...	...	...	R2022	R2024	R2024
	Bowen No.	...	...	...	...	147026	147362	147362
	Price	...	...	...	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

(1) Optional bullnose nut available upon request.

When ordering, please specify:

- (1) Size and type of top connection
- (2) O.D. of pipe
- (3) Dressed or undressed knives when ordering

Logan HE DH Releasable Washover External Tubing Cutter

OUTSIDE DIAMETER (CUTTER)		4-1/8"	4-9/16"	5-9/16"
INSIDE DIAMETER (CUTTER)		3-3/16"	3-3/8"	4
TUBING TO CUT		1.900" - 2-3/8"	1.900"- 2-3/8"	2-3/8" - 2-7/8"
EUE OR INT. JOINT				
COMPLETE ASSEMBLY				
W/T-DOG - SLIP	Logan Part No.	14094	14095	14096
OVERSHOT ASSEMBLY	Assembly Price	*	*	*
T-DOG OVERSHOT:	Logan Part No.	14172	14173	14174
T-DOG KIT	Price Each	*	*	*
CONSIST OF FOLLOWING:				
T-DOG CAGE	Logan Part No.	213455	213475	213482
	Qty. Req'd	1	1	1
	Price Each	*	*	*
T-DOGS	Logan Part No.	213456	213476	213493
	Qty. Req'd	1	3	3
	Price Each	*	*	*
T-DOG SPRING	Logan Part No.	113282	113282	113299
	Qty. Req'd	3	3	3
	Price Each	*	*	*
RATCHET PAWL	Logan Part No.	113866	113571	113571
	Qty. Req'd	1	1	1
	Price Each	*	*	*
RATCHET PAWL SPRING	Logan Part No.	113568	113579	113582
	Qty. Req'd	1	1	1
	Price Each	*	*	*
PAWL PIN	Logan Part No.	113865	113284	113572
	Qty. Req'd	1	1	1
	Price Each	*	*	*
T-DOG RETAINER RING	Logan Part No.	113277	113290	13300
	Qty. Req'd	1	1	1
	Price Each	*	*	*
RETAINER RING SCREW	Logan Part No.	FSHS10-24-250	FSHS-510-24-375	FSHS-250-20-500
	Qty. Req'd	1	1	1
	Price Each	*	*	*

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When ordering, please specify:

- (1) Part Name and Number
- (2) Size, type and weight of Washpipe connection
- (3) Size and type of Tubing to be cut (Collared or Integral)
- (4) Washpipe connections at additional cost

*Available only in sets

** NOTE: 2-3.8" O.D. x 4.7Lb Tubing is the minimum diameter tubing this tool will cut through , heavier than 2-3/8" Lb./Ft.

A special centralizer is required to cut the 2-3/8" 4.7 Lb Tubing

Recommended Spare Parts:

- (1) 1 complete overshot assembly (collared or integral)
- (2) 3 Sets of Race and Ball Bearing Rings
- (3) 3 Sets of Knives
- (4) 3 Sets of Knife Pins
- (5) 3 Sets of T-Dogs for Slip Dogs and Springs

Logan HE DH Releasable Washover External Tubing Cutter

OUTSIDE DIAMETER (CUTTER)		4-1/8"	4-9/16"	5-9/16"
INSIDE DIAMETER (CUTTER)		3-3/16"	3-3/8"	4
TUBING TO CUT		1.900" - 2-3/8"	1.900" - 2-3/8"	2-3/8" - 2-7/8"
EUE OR INT. JOINT				
REPLACEMENT PARTS				
TOP SUB	Logan Part No.	213446	213466	213483
	Qty. Req'd	1	1	1
	Price Each	*	*	*
DRIVE SLEEVE	Logan Part No.	213447	213467	213484
	Qty. Req'd	1	1	1
	Price Each	*	*	*
OVERSHOT BODY	Logan Part No.	213448	213468	213485
	Qty. Req'd	1	1	1
	Price Each	*	*	*
SPRING RETAINER	Logan Part No.	213449	213469	213486
	Qty. Req'd	1	1	1
	Price Each	*	*	*
ACTUATOR SLEEVE	Logan Part No.	213450	213470	213487
	Qty. Req'd	1	1	1
	Price Each	*	*	*
KNIFE BODY	Logan Part No.	213451	213471	213488
	Qty. Req'd	1	1	1
	Price Each	*	*	*
KNIFE (CARBIDE TIP)	Logan Part No.	213452	213472	213489
	Qty. Req'd	4	4	5
	Price Each	*	*	*
KNIFE PIN	Logan Part No.	113274	113284	113305
	Qty. Req'd	4	4	5
	Price Each	*	*	*
DRIVE BODY	Logan Part No.	213453	213473	213490
	Qty. Req'd	1	1	1
	Price Each	*	*	*
*THRUST BEARING RACE	Logan Part No.	113275	113285	113295
	Qty. Req'd	2	2	2
	Price Each	*	*	*
*BALL BEARING RING	Logan Part No.	113276	113286	113296
	Qty. Req'd	1	1	1
	Price Each	*	*	*
RETRACTOR SPRING	Logan Part No.	113280	113287	113297
	Qty. Req'd	1	1	1
	Price Each	*	*	*
DRIVE SPRING	Logan Part No.	113281	113288	113298
	Qty. Req'd	1	1	1
	Price Each	*	*	*
GUIDE BUSHING	Logan Part No.	213463	213482	213503
	Qty. Req'd	1	1	1
	Price Each	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Part Name and Number
- (2) Size, type and weight of Washpipe connection
- (3) Size and type of Tubing to be cut (Collared or Integral)
- (4) Washpipe connections at additional cost

*Available only in sets

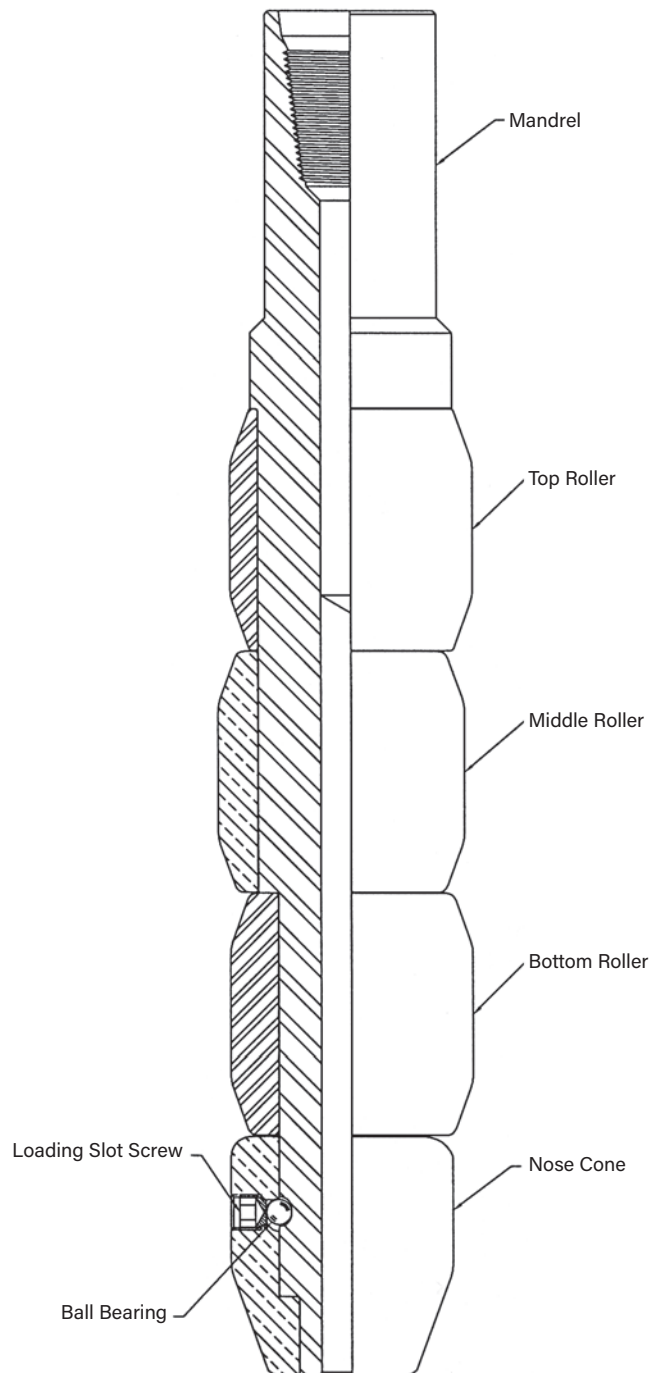
** NOTE: 2-3/8" O.D. x 4.7Lb Tubing is the minimum diameter tubing this tool will cut through, heavier than 2-3/8" Lb./Ft.

A special centralizer is required to cut the 2-3/8" 4.7 Lb Tubing

Recommended Spare Parts:

- (1) 1 complete overshot assembly (collared or integral)
- (2) 3 Sets of Race and Ball Bearing Rings
- (3) 3 Sets of Knives
- (4) 3 Sets of Knife Pins
- (5) 3 Sets of T-Dogs for Slip Dogs and Springs

LOGAN CASING ROLLERS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Casing Rollers

CASING SIZE TO ROLL		3-1/2 Tbg 3-1/2 LP 4 Tbg	4 4-3/4 5	4-1/2 5-3/4 6	5-1/2 7	6-5/8		
TOP CONNECTION		API 1-1/4 Reg	API 2-3/8 Reg	API 2-3/8 Reg	API 2-7/8 Reg	API 3-1/2 Reg		
CIRCULATION HOLE		5/16	1/4	1/2	5/8	1		
ROLLER LENGTH		3	4	4	5	6		
COMPLETE ASSEMBLY	Logan Part No.	502-350	502-400	502-450	502-550	502-663		
	Bowen No.	29046	28963	20660	20910	20920		
	Price	*	*	*	*	*		
MANDREL	Logan Part No.	W1002	W1003	W1004	W1005	W1006		
	Bowen No.	29051	28964	20661	20911	20921		
	Price	*	*	*	*	*		
NOSE CONE	Logan Part No.	W2002	W2003	W2004	W2005	W2006		
	Bowen No.	29050	28965	20662	20912	20922		
	Price	*	*	*	*	*		
BOTTOM ROLLER	Logan Part No.	W3002	W3003	W3004	W3005	W3006		
	Bowen No.	29049	28966	20663	20913	20923		
	Price	*	*	*	*	*		
MIDDLE ROLLER	Logan Part No.	W4002	W4003	W4004	W4005	W4006		
	Bowen No.	29048	28967	20664	20914	20924		
	Price	*	*	*	*	*		
TOP ROLLER	Logan Part No.	W5002	W5003	W5004	W5005	W5006		
	Bowen No.	29047	28968	20665	20915	20925		
	Price	*	*	*	*	*		
BALL BEARINGS	Logan Part No.	W6002	W6003	W6003	W6003	W6006		
	Bowen No.	27940	20666	20666	20666	20926		
	No. Req'd.	9	7	9	13	15		
SET SCREW (LOADING SLOT)	Logan Part No.	W7002	W7005	W7005	W7005	W7006		
	Price	*	*	*	*	*		

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D. and weight
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Middle Roller for each casing size
- (2) 1 Nose Cone for each casing size
- (3) 1 set of Ball Bearings
- (4) 2 Loading Slot Set Screws

Logan Casing Rollers

CASING SIZE TO ROLL		7-5/8 8-5/8	9 9-5/8 10	10-3/4 11-3/4 12	13 13-3/8	16 18-5/8		
TOP CONNECTION		API 4-1/2 Reg	API 4-1/2 Reg	API 6-5/8 Reg	API 6-5/8 Reg	API 6-5/8 Reg		
CIRCULATION HOLE		1-1/4	1-1/2	1-3/4	2	2		
ROLLER LENGTH		7	8	9	10	11		
COMPLETE ASSEMBLY	Logan Part No.	502-763	502-900	502-1075	502-1300	502-1600		
	Bowen No.	20930	20940	20950	20960	20970		
	Price	*	*	*	*	*		
MANDREL	Logan Part No.	W1007	W1008	W1009	W1010	W1011		
	Bowen No.	20931	20941	20951	20961	20971		
	Price	*	*	*	*	*		
NOSE CONE	Logan Part No.	W2007	W2008	W2009	W2010	W2011		
	Bowen No.	20932	20942	20952	20962	20972		
	Price	*	*	*	*	*		
BOTTOM ROLLER	Logan Part No.	W3007	W3008	W3009	W3010	W3011		
	Bowen No.	20933	20943	20953	20963	20973		
	Price	*	*	*	*	*		
MIDDLE ROLLER	Logan Part No.	W4007	W4008	W4009	W4010	W4011		
	Bowen No.	20934	20944	20954	20964	20974		
	Price	*	*	*	*	*		
TOP ROLLER	Logan Part No.	W5007	W5008	W5009	W5010	W5011		
	Bowen No.	20935	20945	20955	20965	20975		
	Price	*	*	*	*	*		
BALL BEARINGS	Logan Part No.	W6007	W6007	W6007	W6010	W6010		
	Bowen No.	20936	20936	20936	20966	20966		
	Qty. Req'd.	12	16	24	21	28		
SET SCREW (LOADING SLOT)	Logan Part No.	W7007	W7007	W7009	W7010	W7011		
	Price	*	*	*	*	*		

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** Available upon request.*

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D. and weight
- (3) Top connection, if other than standard

Recommended Spare Parts:

- (1) 1 Middle Roller for each casing size
- (2) 1 Nose Cone for each casing size
- (3) 1 set of Ball Bearings
- (4) 2 Loading Slot Set Screws

Logan Casing Roller Range Sheet

CASING DATA		UPPER ROLLER			MIDDLE ROLLER				
SIZE	CASING WEIGHT	PART NO.	OUTSIDE DIA.	SEQ. NO.	PART NO.	OUTSIDE DIA.	SEQ. NO.		
3-1/2	7.7	W5002 29047	2.8121	001	W4002 29048	2.674	001		
4	9.5	W5003 28968	3.219	001	W4003 28967	3.281	001		
4-1/2	9.5	W5004 20665	3.688	001	W4004 20664	3.875	002		
	11.6					3.688	001		
	13.6					3.526	003		
4-3/4	15.8		3.875	001					
5	11.5		4.250	002		4.250	008		
	13.0					4.114	005		
	15.0					4.192	006		
	17.7					3.976	007		
	18.0					3.965	004		
	21.0		3.688	001		4.000	009		
5-1/2	13.0		W5005 20915	4.662		005	W4005 20914	4.554	004
	14.0	4.738			005				
	15.0	4.666			003				
	15.5	4.802			001				
	17.0	4.574			002				
	20.0	4.358			006				
5-3/4	23.0	4.359		002	5.082	007			
	14.0	4.875		004	4.894	008			
	17.0	4.662		005	4.694	009			
	19.5	5.125		006	5.300	010			
22.5	5.250				011				
15.0	5.100				012				
16.0	4.956				013				
18.0	4.875				004	4.982		014	
6-5/8	20.0	W5006 20925		5.734	007	W4006 20924		5.910	001
	22.0			5.609	002			5.745	002
	24.0		5.609				003		
	26.0		5.478				004		
	26.0		5.442				005		
	28.0		5.350				006		
	29.0		5.547	007					
	32.0		5.375	008					
	7		17.0	6.250	004		6.202	009	
20.0			6.038				010		
22.0			6.164				011		
23.0			6.108				012		
24.0			6.048				013		
26.0			5.830	006	6.094		014		
28.0					5.970		015		
29.0					5.910		001		
30.0			5.734	007	5.854		016		
32.0					5.830		017		
35.0					5.776		018		
38.0					5.609		003		
40.0					5.442		005		

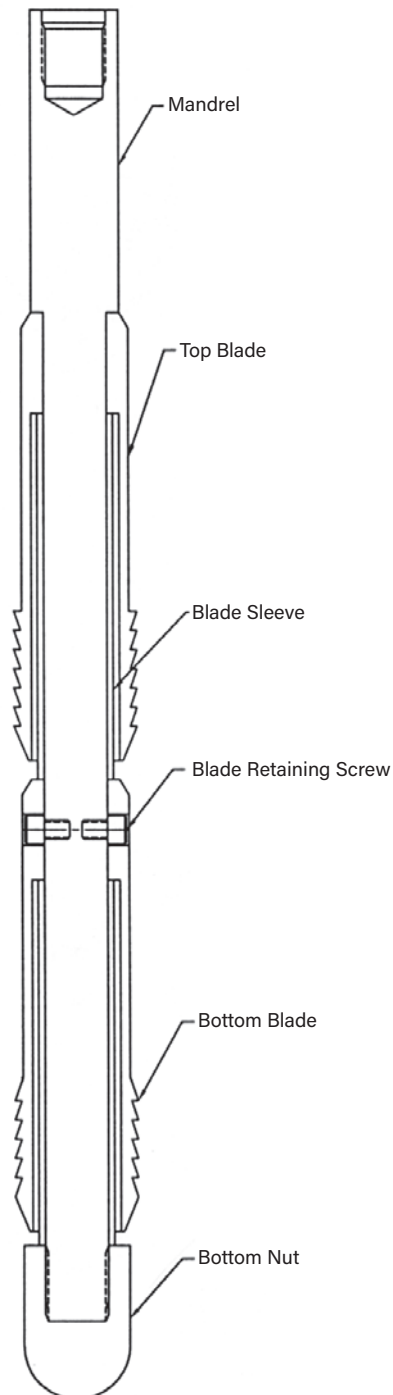
Logan Casing Roller Range Sheet

CASING DATA		LOWER ROLLER			NOSE CONE				
SIZE	CASING WEIGHT	PART NO.	OUTSIDE DIA.	SEQ. NO.	PART NO.	OUTSIDE DIA.	SEQ. NO.		
3-1/2	7.7	W3002 29049	2.812	001	W2002 29050	2.437	001		
4	9.5	W3003 28966	3.219	001	W2003 28965	2.875	001		
4-1/2	9.5	W3004 20663	3.688	001	W2004 20662	3.125	001		
	11.6								
	13.6								
4-3/4	15.8		5	11.5				4.250	002
13.0									
15.0	4.000			004					
17.7									
18.0									
21.0	3.688			001					
5-1/2	13.0		W3005 20913	4.662				005	W2005 20912
	14.0								
	15.0								
	15.5								
	17.0								
	20.0								
23.0	4.609	001							
5-3/4	14.0	4.359		002					
	17.0	4.875		003					
	19.5	4.662		005					
	22.5	6		15.0	5.125	004			
16.0									
18.0									
20.0									
23.0	4.875			003					
6-5/8	17.0	W3006 20923		5.734	005	W2006 20922	5.000	002	
	20.0								
	22.0								
	24.0		5.609	002					
	26.0								
	26.0								
	28.0		5.359	003					
	29.0								
32.0	6.250		004						
7	17.0		5.830	006					
	20.0								
	22.0								
	23.0				6.000		001		
	24.0								
	26.0								
	28.0								
	29.0								
	30.0				5.734		005		
	32.0								
	35.0				5.609		002		
	38.0								
	40.0								

CASING DATA		UPPER ROLLER			MIDDLE ROLLER					
SIZE	CASING WEIGHT	PART NO.	OUTSIDE DIA.	SEQ. NO.	PART NO.	OUTSIDE DIA.	SEQ. NO.			
7-5/8	20.0	W5007 20935	6.500	001	W4007 20934	6.875	001			
	24.0					6.676	002			
	26.4					6.562	003			
	29.7		6.188	002		6.686	004			
	33.7					6.468	005			
	39.0					6.188	006			
8-5/8	24.0		7.562	003		W4007 20934	7.758	007		
	28.0						7.375	004	7.594	008
	32.0								7.402	009
	36.0		7.302	010						
	38.0		7.125	005			7.452	011		
	40.0						7.304	012		
	43.0						7.250	013		
	44.5						7.024	014		
49.0										
9	34.0	W5008 20945	8.000	003	W4008 20944	7.676	009			
	38.0		7.718	002		7.768	011			
	40.0		7.343	001		7.676	009			
	45.0					7.812	010			
	55.0					7.375	004			
9-5/8	29.3		8.500	004		W4008 20944	8.720	005		
	32.3						8.696	006		
	36.0						8.438	007		
	40.0		8.250	005			8.514	008		
	43.0						8.354	001		
	47.0						8.456	003		
	53.5		8.000	003		8.164	002			
	33.0		8.812	006		9.050	012			
10-3/4	32.7	W5009 20955	9.500	001	W4009 20954	9.728	001			
	40.0					9.444	002			
	40.5					9.254	003			
	45.0									
	45.5		9.250	002		9.148	004			
	48.0					9.294	005			
	51.0					9.162	006			
	54.0					9.114	007			
	11-3/4		55.5	10.250		003	10.896	008		
38.0			10.754				009			
42.0			10.594				010			
47.0			10.354				011			
54.0			10.138				012			
12	40.0		10.750	004		10.862	013			
13	40.0		W5010 20965	11.625		002	W4010 20964	11.846	006	
	45.0	11.677			002					
	50.0	11.534			003					
	54.0	11.410			004					
13-3/8	48.0	12.000		001	12.024	005				
	54.5				11.812	001				
	61.0				11.625	007				
	68.0	11.626		002	11.812	001				
	72.0				11.677	002				
	83.0				11.320	009				
	85.0				11.288	010				
16	55.0	W5011 20975	14.500	001	W4011 20974	14.844	001			
	65.0					14.554	002			
	75.0					14.344	003			
	84.0					14.114	004			
18-5/8	78.0		17.000	002		17.304	005			
	87.5					17.104	006			
	96.6					16.904	007			

CASING DATA		LOWER ROLLER			NOSE CONE						
SIZE	CASING WEIGHT	PART NO.	OUTSIDE DIA.	SEQ. NO.	PART NO.	OUTSIDE DIA.	SEQ. NO.				
7-5/8	20.0	W3007 20933	6.500	001	W2007 20932	5.375	001				
	24.0										
	26.4										
	29.7		6.188	002		6.500	002				
	33.7										
39.0	7.562		003	6.000		003					
8-5/8	24.0		7.375				004				
	28.0										
	32.0										
	36.0										
	38.0		7.125	005							
	40.0										
43.0											
44.5											
49.0											
9	34.0	W3008 20943	8.000	003	W2008 20942	6.625	001				
	38.0		7.718	002							
	40.0										
	45.0		7.343	001							
	55.0										
9-5/8	29.3		8.500	004				8.250	005		
	32.3										
	36.0										
	40.0										
	43.0		8.000	003							
10	47.0		8.812	006							
	53.5										
33.0											
10-3/4	32.7		W3009 20953	9.500				001	W2009 20952	8.250	001
	40.0									8.750	002
	40.5										
	45.0										
	45.5										
	48.0										
	51.0	9.250		002							
	54.0										
55.5											
38.0	10.250				003						
42.0											
47.0											
54.0											
11-3/4	60.0	10.750		004							
	12				40.0						
13	40.0		W3010 20963		11.625	002	W2010 20962	10.000	001		
	45.0										
	50.0										
	54.0										
13-3/8	48.0	12.000		001							
	54.5										
	61.0										
	68.0	11.626		002							
	72.0										
	83.0										
	85.0										
16	55.0	W3011 20973		14.500	001	W2011 20972				14.000	001
	65.0										
	75.0										
	84.0										
18-5/8	78.0		17.000	002							
	87.5										
	96.6										

LOGAN TUBING SCRAPERS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Tubing Scrapers

SIZE TO SCRAPE (O.D.)		2-7/8 Tbg	3-1/2 Tbg				
WEIGHT (LBS)		9.5 to 15.1					
CONNECTION		1-13/16 WFJ	1-13/16 WFJ				
TOOL O.D.		2.10	2.25				
COMPLETE ASSEMBLY	Logan Part No.	508-213	508-225				
	Price	\$7,384	\$8,353				
MANDREL	Logan Part No.	AX1006	AX1007				
	Price	\$2,205	*				
TOP BLADE	Logan Part No.	AX2006-A	AX2007-A				
	Price	\$1,605	\$2,165				
BOTTOM BLADE	Logan Part No.	AX2006-B	AX2007-B				
	Price	\$1,995	*				
BLADE SLEEVE	Logan Part No.	AX11000	AX11001				
	No. Req'd	2	2				
BLADE RETAINING SCREW	Logan Part No.	AK4001	AK4001				
	No. Req'd	4	4				
BULL NOSE NUT	Logan Part No.	AX12000	AX12000				
	Price	\$457	\$457				

OPTIONAL COMPONENTS

BOTTOM ADAPTER	Logan Part No.	AX13000	AX13001				
	Price	\$943	*				

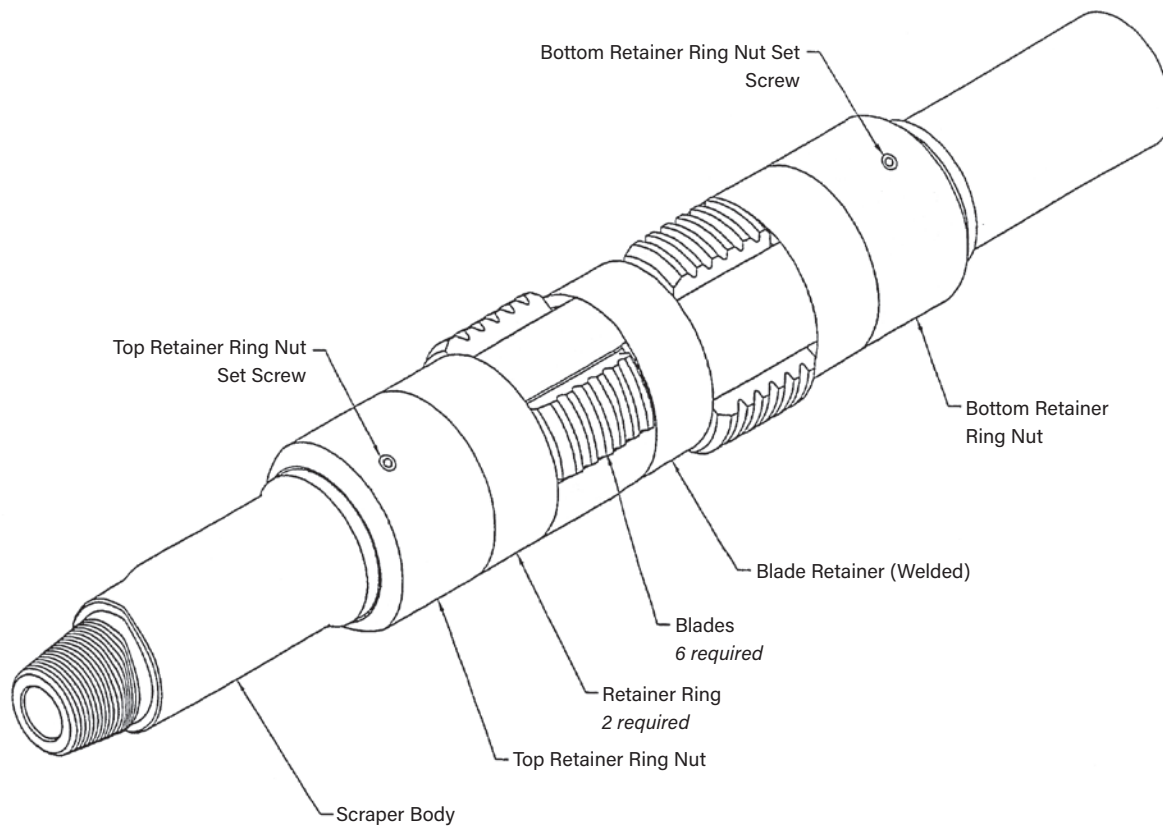
Innovex reserves the right to change or discontinue designs and/or prices without notice.

** Available upon request.*

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and weight of tubing

LOGAN CASING SCRAPERS



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Casing Scrapers

SIZE TO SCRAPE (O.D.)		4-1/2	5-1/2	7	9-5/8	10-3/4	13-3/8
WEIGHT (LBS)		9.5 to 15.1 5 13.0 to 26.7	14.0 to 23.0	17.0 to 38.0	32.2 to 64.9	32.75 to 73.2	48.0 to 98.0
CONNECTION		2-3/8 API Reg	2-7/8 API Reg	3-1/2 API Reg	4-1/2 API Reg	6-5/8 API Reg	6-5/8 API Reg
TOOL O.D.		3-5/8	4-1/2	5-3/8	7-1/2	8-3/4	11
COMPLETE ASSEMBLY	Logan Part No.	508-361	508-450	508-538	508-750	508-875	508-1100
	Price	\$9,159	\$10,596	\$11,036	\$18,255	\$24,578	\$45,629
MANDREL	Logan Part No.	AX800	AX10011	AX1002	AX1003	AX1004	AX1005
	Price	\$6,807	\$7,450	\$7,729	\$11,651	\$12,659	\$23,012
BLADE	Logan Part No.	AX2000	AX2001	AX2002	AX2003	AX2004	AX2005
	No. Req'd	6	6	6	6	8	6
SPRING	Logan Part No.	AX802	AX40011	AX4000	AX4003	AX40013	AX4005
	No. Req'd	18	18	30	30	24	30
TOP RETAINER RING NUT (LEFT-HAND THREAD)	Logan Part No.	AX7000	AX7001	AX7002	AX7003	AX7004	AX7005
	Price	\$336	\$402	\$436	\$1,080	\$1,247	\$1,632
BTM RETAINER RING NUT (RIGHT-HAND THREAD)	Logan Part No.	AX8000	AX8001	AX8002	AX8003	AX8004	AX8005
	Price	\$281	\$302	\$436	\$995	\$1,034	\$1,632
RETAINER RING	Logan Part No.	AX9000	AX9001	AX9002	AX9003	AX9004	AX9005
	No. Req'd	2	2	2	2	2	2
SET SCREW	Logan Part No.	P12004	P12004	AX10002	AX10002	AX10002	AX10004
	No. Req'd	2	2	2	2	2	2
	Price	\$3	\$3	\$6	\$6	\$6	\$6

OPTIONAL DRESS FOR SIZE (O.D.)		5-1/2	5-3/4	7-5/8	10-3/4	...	...
WEIGHT (LBS)		20 to 26	14 to 24.4	24 to 47.1	32 to 73	...	...
BLADE	Logan Part No.	AX2000-002	AX30012	AX3002	AX2003-004	...	...
	No. Req'd	6	6	6	6	...	...
	Price	\$514	\$336	\$497	...	...	...
SPRING	Logan Part No.	AX802	AX40012	AX4000	...	...	...
	No. Req'd	18	18	30	...	...	...
	Price	\$10	\$10	\$10	...	...	...

OPTIONAL DRESS FOR SIZE (O.D.)		...	6-5/8	...	...	...	...
WEIGHT (LBS)		...	17 to 24	...	...	...	...
BLADE	Logan Part No.	...	AX30013	...	...	...	...
	No. Req'd	...	6	...	...	...	...
	Price	...	\$374	...	...	...	...
SPRING	Logan Part No.	...	AX40013	...	...	...	...
	No. Req'd	...	18	...	...	...	...
	Price	...	\$10	...	...	...	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

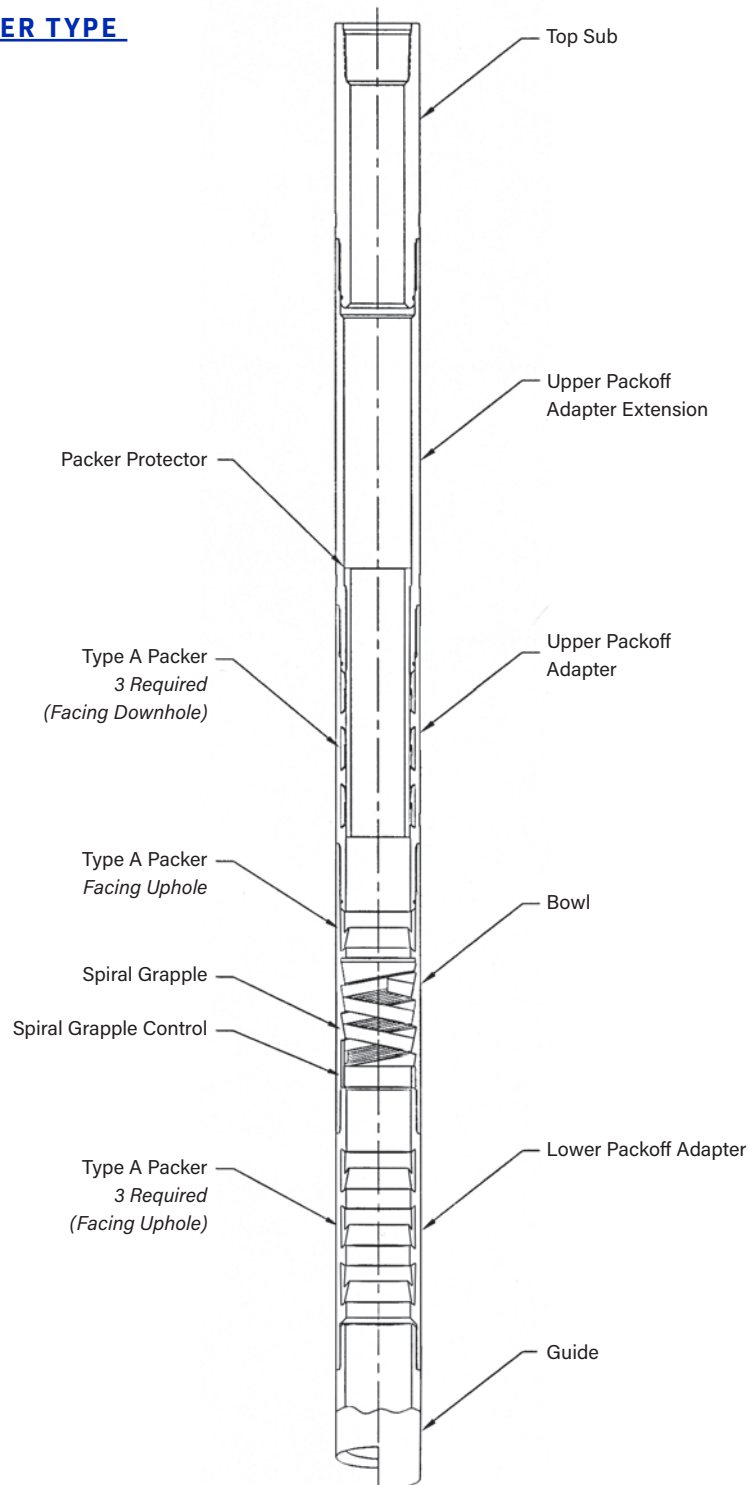
When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Size and weight of casing

Recommended Spare Parts:

- (1) 1 set of Blades for each size casing
- (2) 1 set of Springs
- (3) 1 set of Set Screws

**LOGAN TYPE A PACKER TYPE
TUBING PATCHES**



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Type A Packer Type Tubing Patches – 5,000 PSI

O.D. TUBING		2-3/8	2-7/8	3-1/2				
O.D. PATCH		3-1/8	3-5/8	4-11/16				
COMPLETE ASSEMBLY	Logan Part No.	503-002	503-003	503-004				
	Bowen No.	...	...	...				
	Price	\$10,597	\$11,152	\$15,687				
TOP SUB	Logan Part No.	Z1002	Z1003	Z10035				
	Bowen No.	...	36295	...				
	Price	\$989	\$10,964	\$1,316				
TOP SUB SEAL	Logan Part No.	568-143	568-233	568-241				
	Bowen No.	568143	568233	568241				
	Price	\$6	\$6	\$7				
BOWL	Logan Part No.	Z2002	Z2003	Z20035				
	Bowen No.	...	36827	...				
	Price	\$2,962	\$3,065	\$3,471				
BOWL SEAL	Logan Part No.	568-146	568-235	568-241				
	Bowen No.	568146	568235	568241				
	No. Req'd	2	1	1				
	Price	\$6	\$6	\$7				
PACKER PROTECTOR	Logan Part No.	Z3002	Z3003	Z30035				
	Bowen No.	...	36296	...				
	Price	\$456	\$472	\$547				
PACKER	Logan Part No.	A4001	A4005	A4019				
	Bowen No.	9309	8550	...				
	No. Req'd	7	7	7				
	Price	\$58	\$69	\$120				
GRAPPLE	Logan Part No.	A5001	A5005	A5019				
	Bowen No.	9307	9272	6662				
	Price	\$482	\$498	\$586				
GRAPPLE CONTROL	Logan Part No.	A6001	A6005	A6019				
	Bowen No.	9308	9273	6674				
	Price	\$190	\$192	\$250				
GUIDE	Logan Part No.	A3001	A3005	A3019				
	Bowen No.	9312	9275	6667				
	Price	\$556	\$556	\$627				
UPPER PACK-OFF ADAPTER	Logan Part No.	Z9002	Z9003	Z90035				
	Bowen No.	...	36297	...				
	Price	\$2,652	\$2,746	\$3,432				
LOWER PACK-OFF ADAPTER	Logan Part No.	Z10002	Z10003	Z100035				
	Bowen No.	...	36298	...				
	Price	\$2,028	\$2,120	\$2,613				
PACK-OFF ADAPTER EXTENSION	Logan Part No.	Z11002	...	Z110035				
	Bowen No.	...	...	...				
	Price	\$1,157	...	\$1,157				

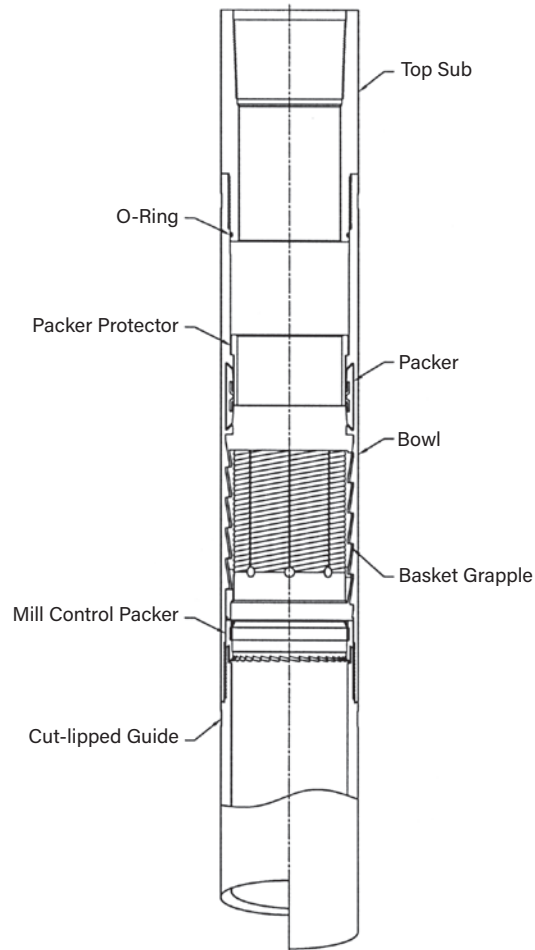
Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: Price for H2S casing patches available upon request.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub

LOGAN TYPE A PACKER TYPE CASING PATCHES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Type A Packer Type Casing Patches – 5,000 PSI

O.D. CASING		4-1/2 Csg	5	5-1/2	5-3/4	6	6-5/8	7
O.D. PATCH		5-3/4	6-1/4	6-13/16	7-1/16	7-5/16	7-15/16	8-3/8
COMPLETE ASSEMBLY	Logan Part No.	503-005	503-006	503-007	503-008	503-009	503-010	503-011
	Bowen No.	11215	11220	11225	...	11230	11235	11240
	Price	\$9,290	\$10,891	\$10,782	*	*	*	\$13,050
TOP SUB	Part No.	Z1005	Z1006	Z1007	Z1008	Z1009	Z1010	Z1011
	Bowen No.	5186	4866	4886	...	4966	4986	5026
	Price	\$1,230	\$1,347	\$1,548	...	...	...	\$1,982
TOP SUB SEAL	Part No.	568-247	568-251	568-255	568-257	568-259	568-261	568-262
	Bowen No.	568247	568251	568255	568257	568259	568261	568262
	No. Req'd	1	1	1	1	1	1	1
	Price	\$11	\$13	\$16	*	*	*	\$17
BOWL	Logan Part No.	Z2005	Z2006	Z2007	Z2008	Z2009	Z2010	Z2011
	Bowen No.	11217	11222	11227	...	11232	11237	11242
	Price	\$4,692	\$4,870	\$4,988	...	...	...	\$5,786
PACKER PROTECTOR	Logan Part No.	Z3005	Z3006	Z3007	Z3008	Z3009	Z3010	Z3011
	Bowen No.	5188	4868	4888	...	4968	4988	5028
	Price	\$501	\$516	\$535	...	...	...	\$594
PACKER	Logan Part No.	Z4005	Z4006	Z4007	Z4008	Z4009	Z4010	Z4011
	Bowen No.	11216	11221	11226	...	11231	11236	11241
	Price	\$141	\$148	\$148	*	*	*	\$162
BASKET GRAPPLE	Logan Part No.	Z5005	Z5006	Z5007	Z5008	Z5009	Z5010	Z5011
	Bowen No.	11218	11223	11228	...	11233	11238	11243
	Price	\$1,299	\$1,418	\$1,469	...	...	...	\$1,907
GRAPPLE CONTROL	Logan Part No.	Z6005	Z6006	Z6007	Z6008	Z6009	Z6010	Z6011
	Bowen No.	11459	11461	11463	...	11465	11467	11469
	Price	\$831	\$1,583	\$918	...	...	...	\$1,956
GUIDE	Logan Part No.	Z7005	Z7006	Z7007	Z7008	Z7009	Z7010	Z7011
	Bowen No.	11219	11224	11229	...	11234	11239	11244
	Price	\$898	\$1,002	\$1,084	...	...	...	\$1,408

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Note: Price for H2S casing patches available upon request.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub

Logan Type A Packer Type Casing Patches – 5,000 PSI

O.D. CASING		7-5/8	8-5/8	9-5/8	10-3/4	11-3/4	13-3/8	13-5/8
O.D. PATCH		9	10-1/16	11-1/8	12-5/16	13-3/8	15-1/4	16
COMPLETE ASSEMBLY	Logan Part No.	503-012	503-013	503-014	503-015	503-016	503-017	503-018
	Bowen No.	11245	11250	11255	11260	39136	41042	...
	Price	\$15,665	\$18,218	\$21,192	*	*	\$56,697	*
TOP SUB	Logan Part No.	Z1012	Z1013	Z1014	Z1015	Z1016	LP1007	Z1018
	Bowen No.	5046	5151	5206	5162	39137		...
	Price	\$2,181	\$2,800	\$3,186	*	*	\$19,604	*
TOP SUB SEAL	Logan Part No.	568265	568269	568273	568274	568278	568280	...
	Bowen No.	568265	568269	568273	568274	568278		...
	No. Req'd	1	1	1	1	1	1	...
	Price	\$19	\$24	\$26	*	*	\$54	...
TOP SUB SEAL	Logan Part No.	N/A	N/A	N/A	N/A	N/A	568279	...
	Bowen No.	N/A	N/A	N/A	N/A	N/A		...
	No. Req'd	N/A	N/A	N/A	N/A	N/A	2	...
	Price	*	*	*	*	*	\$50	...
BOWL	Logan Part No.	Z2012	Z2013	Z2014	Z2015	Z2016	LP2007	Z2018
	Bowen No.	11247	11252	11257	11262	39138		...
	Price	\$7,382	\$8,285	\$9,326	*	*	\$18,825	*
PACKER PROTECTOR	Logan Part No.	Z3012	Z3013	Z3014	Z3015	Z3016	LP7007	Z3018
	Bowen No.	5048	5153	5208	5164	39139		...
	Price	\$664	\$1,093	\$1,170	*	*	\$2,697	*
PACKER	Logan Part No.	Z4012	Z4013	Z4014	Z4015	Z4016	AT6007	Z4018
	Bowen No.	11246	11251	11256	11261	39140		...
	No. Req'd	N/A	N/A	N/A	N/A	N/A	2	...
	Price	\$162	\$168	\$203	*	*	\$575	*
BASKET GRAPPLE	Logan Part No.	Z5012	Z5013	Z5014	Z5015	Z5016	AT11007	Z5018
	Bowen No.	11248	11253	11258	11263	39142		...
	Price	\$2,256	\$2,784	\$3,507	*	*	\$6,801	*
MILL CONTROL	Logan Part No.	Z6012	Z6013	Z6014	Z6015	Z6016	AT10007 **	Z6018
	Bowen No.	11471	11473	11475	11477	39141		...
	Price	\$1,278	\$1,753	\$2,075	*	*	\$4,331	*
GUIDE	Logan Part No.	Z7012	Z7013	Z7014	Z7015	Z7016	LP3007	Z7018
	Bowen No.	11249	...	11259	11264	39144		...
	Price	\$1,598	\$2,103	\$2,754	*	*	\$5,375	*
SHEAR PINS	Logan Part No.	N/A	N/A	N/A	N/A	N/A	AC14002	...
	Bowen No.	N/A	N/A	N/A	N/A	N/A	2	...
	Price	*	*	*	*	*	\$20	*

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* Available upon request.

** Basket Grapple Control

Note:

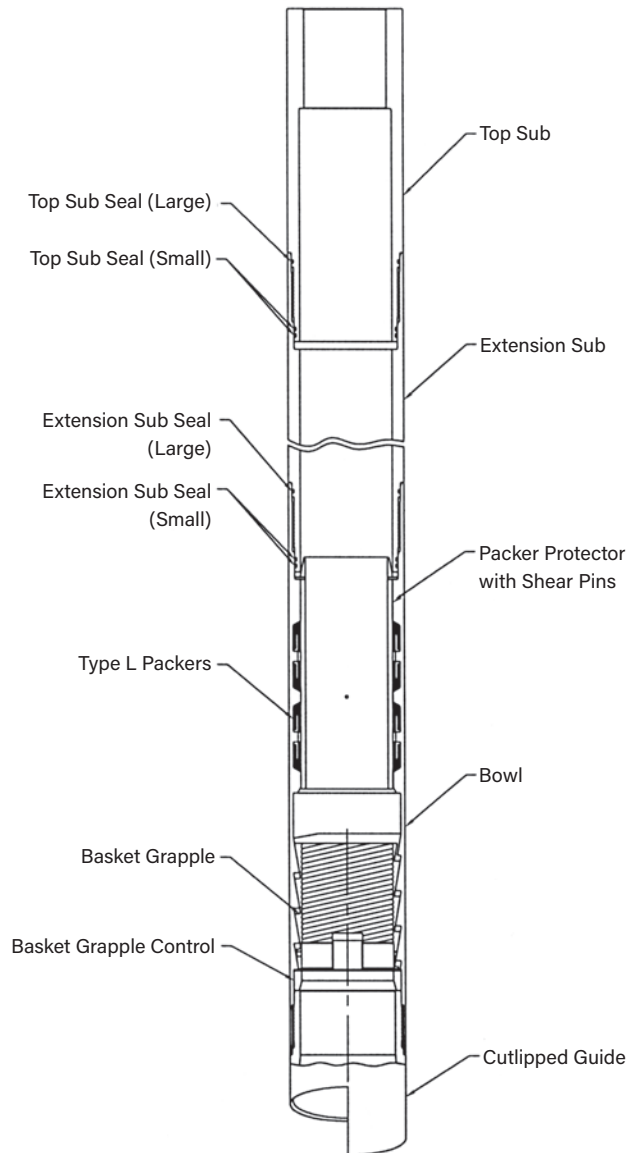
(1) Price for H2S casing patches available upon request.

When ordering, please specify:

(1) Complete assembly or part number

(2) Size and type of connection for Top Sub

LOGAN TYPE L PACKER TYPE CASING PATCHES - 7,000 PSI



**Logan Type L Packer Type Casing Patch
for 7K, 10K, and 12K Assemblies**

Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Type L Packer Type Casing Patches – 7,000 psi

O.D. CASING		4-1/2	5	5-1/2	5-3/4	6	6-5/8	7	7-5/8
O.D. PATCH		5-3/4	6-1/4	6-13/16	7-1/16	7-5/16	7-15/16	8-3/8	9
COMPLETE ASSEMBLY	Logan Part No.	509-709	509-710	509-700	509-701	509-712	509-713	509-711	509-714
	Price	\$11,439	...	\$13,276	*	*	*	\$16,069	
TOP SUB	Logan Part No.	ZL1005	LP1010	LP1000	LP1001	LP1012	LP1013	LP1011	LP1014
	Price	\$1,028	...	\$15,026	*	*	*	\$6,465	*
TOP SUB SEAL (SMALL)	Logan Part No.	568248	*	568-257	*	*	*	568-263	568-265
	No. Req'd	2	...	2	...	...	...	2	2
	Price	\$11	...	\$17	...	...	...	\$18	...
TOP SUB SEAL (LARGE)	Logan Part No.	568251	*	568-257	*	*	*	568-265	568-266
	No. Req'd	1	...	1	...	...	...	1	1
	Price	\$13	...	\$17	...	...	...	\$19	...
BOWL	Logan Part No.	ZL2005	LP2010	LP2000	LP2001	LP2012	LP2013	LP2011	LP2014
	Price	\$5,840	...	\$6,141	*	*	*	\$12,096	*
GUIDE	Logan Part No.	ZL7005	LP3010	LP3000	LP3001	LP3012	LP3013	Z7011	Z7012
	Price	\$898	...	\$927	*	*	*	\$1,408	
SHEAR PINS	Logan Part No.	AC14002	*	AC14002	*	*	*	AC14002	AC14002
	No. Req'd	2	...	2	...	...	...	2	2
	Price	\$20	...	\$20	...	...	...	\$20	...
TYPE L PACKER	Logan Part No.	AT6009	AT6010	AT6000	AT6011	AT6012	AT6013	AT6001	AT6014
	No. Req'd	4	4	4	4	4	4	4	4
	Price	\$460	...	\$465	*	*	*	\$575	*
PACKER PROTECTOR	Logan Part No.	ZL3005	AT7010	ZL5007	AT7001	AT7012	AT7013	ZL3011	AT7014
	Price	\$836	...	\$860	*	*	*	\$2,075	*
GRAPPLE CONTROL	Logan Part No.	ZL6005	AT10010	ZL6007	AT10001	AT10012	AT10013	Z6011	Z6012
	Price	\$831	\$844	\$319	*	*	*	\$1,956	*
GRAPPLE	Logan Part No.	ZL5005	AT11010	ZL3007	AT11001	AT11012	AT11013	Z5011	AT1014
	Price	\$1,299	\$1,456	\$1,469	*	*	*	\$1,907	*

OPTIONAL

EXTENSION SUB (5 feet long)	Logan Part No.	ZLE1005	LPE1010	LPE1000	LPE1001	LPE1012	LPE1013	LPE1011	LPE1014
	Price	*	*	\$7,908	*	*	*	\$13,997	*
EXTENSION SUB SEAL (SMALL)	Logan Part No.	568248	*	568257	*	*	*	568263	*
	No. Req'd	2	...	2	...	...	...	2	...
	Price	\$11	...	\$17	...	...	...	\$18	...
EXTENSION SUB SEAL (LARGE)	Logan Part No.	568251	*	568257	*	*	*	568265	*
	No. Req'd	1	...	1	...	...	...	1	...
	Price	\$13	...	\$17	...	...	...	\$19	...

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Price for H2S casing patches available upon request.
- (2) Prices for higher pressure casing patches of this design are available upon request.
- (3) With or without five foot extension

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub

Logan Type L Packer Type Casing Patches – 7,000 psi

O.D. CASING		8-5/8	9-5/8	11-3/4	11-3/4	11-7/8	13-3/8	13-5/8
O.D. PATCH		10-1/16	11-1/4	12-5/16	13-3/8	13-7/8	15-1/2	15-3/4
COMPLETE ASSEMBLY	Logan Part No.	509-715	509-702	509-704	509-705	509-706	509-707	509-708
	Price	*	\$33,023	\$34,925**	*	*	\$80,826	*
TOP SUB	Logan Part No.	LP1015	LP1002	LP1004	LP1005	LP1006	LP1007	LP1008
	Price	*	\$5,840	\$4,642	*	*	\$21,242	*
TOP SUB SEAL (SMALL)	Logan Part No.	*	568-274	568-275	...	...	568-279	568-280
	No. Req'd	...	2	2	...	...	2	2
	Price	...	\$26	\$28	...	...	\$50	\$54
TOP SUB SEAL (LARGE)	Logan Part No.	*	568-274	568-276	*	...	568-280	568-280
	No. Req'd	...	1	1	...	...	2	2
	Price	...	\$24	\$34	...	...	\$54	\$54
BOWL	Logan Part No.	LP2015	LP2002	LP2004	LP2005	LP2006	LP2007	LP2008
	Price	*	\$8,812	\$13,181	*	*	\$20,064	*
GUIDE	Logan Part No.	LP3015	LP3002	LP3004	LP3005	LP3006	LP3007	LP3008
	Price	*	\$2,052	\$2,607	*	*	\$5,387	*
SHEAR PINS	Logan Part No.	*	AC14002	AC14002	...	...	AC14002	AC14008
	No. Req'd	...	2	2	...	...	2	2
	Price	...	\$20	\$19	...	...	\$20	\$19
TYPE L PACKER	Logan Part No.	AT6015	AT6002	AT6004	AT6005	AT6006	AT6007	AT6008
	No. Req'd	4	4	4	4	4	4	4
	Price	*	\$836	\$878	*	*	\$575	*
PACKER PROTECTOR	Logan Part No.	AT7015	AT7002	AY6004	AT7005	AT7006	AT7007	AT7008
	Price	*	\$1,926	\$2,911	*	*	\$3,424	*
GRAPPLE CONTROL	Logan Part No.	AT10015	AT10002	AY9004	AT10005	AT10006	AT10007	AT10008
	Price	*	\$2,741	\$2,685	*	*	\$4,331	*
GRAPPLE	Logan Part No.	AT11015	AT11002	AY10004	AT11005	AT11006	AT11007	AT11008
	Price	*	\$4,202	\$4,231	*	*	\$6,801	*

OPTIONAL

EXTENSION SUB (5 feet long)	Logan Part No.	LPE1015	LPE1002	LPE1004	LPE1005	LPE1006	LPE1007	LPE1008
	Price	*	\$14,002	*	*	*	\$25,300	*
EXTENSION SUB SEAL (SMALL)	Logan Part No.	*	568-274	...	...	568-278	568-279	568-280
	No. Req'd	...	2	...	...	2	2	2
	Price	...	\$26	...	...	\$48	\$50	\$54
EXTENSION SUB SEAL (LARGE)	Logan Part No.	*	568-274	...	...	568-278	568-280	568-280
	No. Req'd	...	1	...	...	1	1	1
	Price	...	\$26	...	...	\$48	\$54	\$54

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** 6,000 psi working pressure

Special Notes:

(1) Price for H2S casing patches available upon request.

(2) Prices for higher pressure casing patches of this design are available upon request.

(3) With or without five foot extension

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub

Logan Type L Packer Type Casing Patches – 7,000 psi

O.D. CASING		20					
O.D. PATCH		23-1/2					
COMPLETE ASSEMBLY	Logan Part No.	514-520					
	Price	*					
TOP SUB	Logan Part No.	BP1025					
	Price	*					
TOP SUB SEAL (SMALL)	Logan Part No.	568-390					
	No. Req'd.	2					
	Price	*					
TOP SUB SEAL (LARGE)	Logan Part No.	568-390					
	No. Req'd.	1					
	Price	*					
BOWL	Logan Part No.	BP2020					
	Price	*					
GUIDE	Logan Part No.	BP3020					
	Price	*					
SHEAR PINS (2 REQ'D)	Logan Part No.	AC14008					
	Price	*					
TYPE L PACKER	Logan Part No.	AT6017					
	No. Req'd	4					
	Price	*					
PACKER PROTECTOR	Logan Part No.	BP4020					
	Price	*					
GRAPPLE CONTROL	Logan Part No.	BP5020					
	Price	*					
GRAPPLE	Logan Part No.	BP6020					
	Price	*					

OPTIONAL

EXTENSION SUB	Logan Part No.	BPE1020					
(5 feet long)	Price	*					
EXTENSION SUB SEAL (SMALL)	Logan Part No.	568-390					
	No. Req'd	2					
	Price	*					
EXTENSION SUB SEAL (LARGE)	Logan Part No.	568-390					
	No. Req'd	1					
	Price	*					

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

Special Notes:

- (1) Price for H2S casing patches available upon request.
- (2) Prices for higher pressure casing patches of this design are available upon request.
- (3) With or without five foot extension

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub

Logan Type L Packer Type Casing Patches - 10,000 psi

O.D. CASING		4-1/2	5-1/2	7	9-5/8	9-7/8	10-3/4	13-3/8
O.D. PATCH		5-7/8	7	8-5/8	11.43	11-3/4	12-3/4	15-5/8
PRESSURE RATING (PSI)		10,000	10,000	10,000	10,000	10,000	10,000	10,000
COMPLETE ASSEMBLY	Logan Part No.	510L-005	510L-007	510L-011	510-963-010	510-1175-010	510-1275-010	510-1338
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	ZL1005-10	ZL1007-10	ZL1011-10	BT1002-010	BT1003-010	BT2004-010	BT2007-010
	Price	*	*	*	*	*	*	*
TOP SUB SEAL (SMALL)	Logan Part No.	568248-200	568257-200	568263-200	568274-200	568274-400	568275-200	568279-200
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
TOP SUB SEAL (LARGE)	Logan Part No.	568251-200	568257-200	568265-200	568274-200	568275-400	568276-200	568280-200
	No. Req'd	1	1	1	1	1	1	1
	Price	*	*	*	*	*	*	*
BOWL	Logan Part No.	ZL2005-10	ZL2007-10-001	ZL2011-10	BT12002-010	BT2003-010	BT11004-010	BT11007-010
	Price	*	*	*	*	*	*	*
GUIDE	Logan Part No.	Z7005-10	ZL3007-10	Z7011-10	BT13002-010	BT3003-010	BT12004-010	BT12007-010
	Price	*	*	*	*	*	*	*
SHEAR PINS	Logan Part No.	AC14002	AC14002	AC14002	AC14008	AC14002	AC14008	AC14000
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
TYPE L PACKER	Logan Part No.	AT6009	AT6000	AT6001	AT6002	AT6003	AT6004	AT6007
	No. Req'd	4	4	4	4	4	4	4
	Price	*	*	*	*	*	*	*
PACKER PROTECTOR	Logan Part No.	ZL3005	ZL3007-10	ZL3011	AT7002	AT7003	AY6004-500	AT7007
	Price	*	*	*	*	*	*	*
GRAPPLE CONTROL	Logan Part No.	Z6005 **	ZL6007	Z6011	AT10002	AT10003	AY9004	AT10007
	Price	*	*	*	*	*	*	*
GRAPPLE	Logan Part No.	Z5005	ZL5007	Z5011	AY11002	AT11003	AY10004	AT11007
	Price	*	*	*	*	*	*	*

OPTIONAL

EXTENSION SUB	Logan Part No.	ZLE1005-10	ZLE1007-10	ZLE1011-10	BT3002-010	BTE1003-010	BTE3004-010	BT3007-010
(5 feet long)	Price	*	*	*	*	*	*	*
EXTENSION SUB SEAL (SMALL)	Logan Part No.	568248-200	568257-200	568263-200	568274-200	568274-400	568275-200	568279-200
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
EXTENSION SUB SEAL (LARGE)	Logan Part No.	568251-200	568257-200	568265-200	568274-200	568275-400	568276-200	568280-200
	No. Req'd	1	1	1	1	1	1	1
	Price	*	*	*	*	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

** Furnished with Mill Control instead of Grapple Control.

Special Notes:

- (1) H2S casing patches available upon request.
- (2) Higher pressure casing patches of this design are available upon request.
- (3) Other sizes of casing patches are available upon request.
- (4) Casing patches can be made from special materials. Prices and delivery information is available upon request.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) With or without five-foot extensions

Logan Type L Packer Type Casing Patches – 12,000 psi

O.D. CASING		5-1/2	9-5/8	9-7/8	10-3/4	11-3/4	13-3/8	13-5/8
O.D. PATCH		7-1/8	11-5/8	11-7/8	12-7/8	14-3/8	15-3/4	16-1/8
PRESSURE RATING (PSI)		12,000	12,000	12,000	12,000	12,000	12,000	12,000
COMPLETE ASSEMBLY	Logan Part No.	512-550-012	512-963-012	507-1188-12K	512-1288-012	507-1438-12K-500	507-1544-012-500	512-1363
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	AT1000-12	AT1002-012	AY2003-12K	**	AY2006-12K-500	AY2007-012	AT1008-012
	Price	*	*	*	*	*	*	*
TOP SUB SEAL (SMALL)	Logan Part No.	568257-200	568273-200	568274-200	**	568278-200	568279-200	568279-200
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
TOP SUB SEAL (LARGE)	Logan Part No.	568257-200	568273-200	568275-200	**	568278-200	568280-200	568280-200
	No. Req'd	1	1	1	1	1	1	1
	Price	*	*	*	*	*	*	*
BOWL	Logan Part No.	AT12000-12	AT12002-012	AY11003-12K-500	**	AY11006-12K-500	AY11007-012-502	AT12008-012
	Price	*	*	*	*	*	*	*
GUIDE	Logan Part No.	AT13000-12	AT13002-012	AY12003-12K-500	**	AY12006-12K-500	AY12007-012-502	AT13008-012
	Price	*	*	*	*	*	*	*
SHEAR PINS	Logan Part No.	AC14002	AC14002	AC14002	**	AC14002	AC14008	AC14008
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
TYPE L PACKER	Logan Part No.	AT6000	AT6002	AT6003	AT6004	AT6006	AT6004	AT6008
	No. Req'd	4	4	4	4	4	4	4
	Price	*	*	*	*	*	*	*
PACKER PROTECTOR	Logan Part No.	ZL3007	AT7002	AY6003-500	**	AY6006-12K-500	AY6007-012-502	AT7008
	Price	*	*	*	*	*	*	*
GRAPPLE CONTROL	Logan Part No.	Z6007	AT10002	AY9003-500	**	AY9006-12K-500	AY9007-501	AT10008
	Price	*	*	*	*	*	*	*
GRAPPLE	Logan Part No.	Z5007	AT11002	AY10003	**	AY10006	AY10007-502	AT11008
	Price	*	*	*	*	*	*	*

OPTIONAL

EXTENSION SUB	Logan Part No.	AT3000-12	AT3002-012	AY3003-12K-500	**	AY3006-12K-500	AY3007-012-502	AT3008-012
(5 feet long)	Price	*	*	*	*	*	*	*
EXTENSION SUB SEAL (SMALL)	Logan Part No.	568257-200	568273-200	568274-200	**	568278-200	568279-200	568279-200
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
EXTENSION SUB SEAL (LARGE)	Logan Part No.	568257-200	568273-200	568275-200	**	568278-200	568280-200	568280-200
	No. Req'd	1	1	1	1	1	1	1
	Price	*	*	*	*	*	*	*

Innovex reserves the right to change or discontinue designs and/or prices without notice.

* Available upon request.

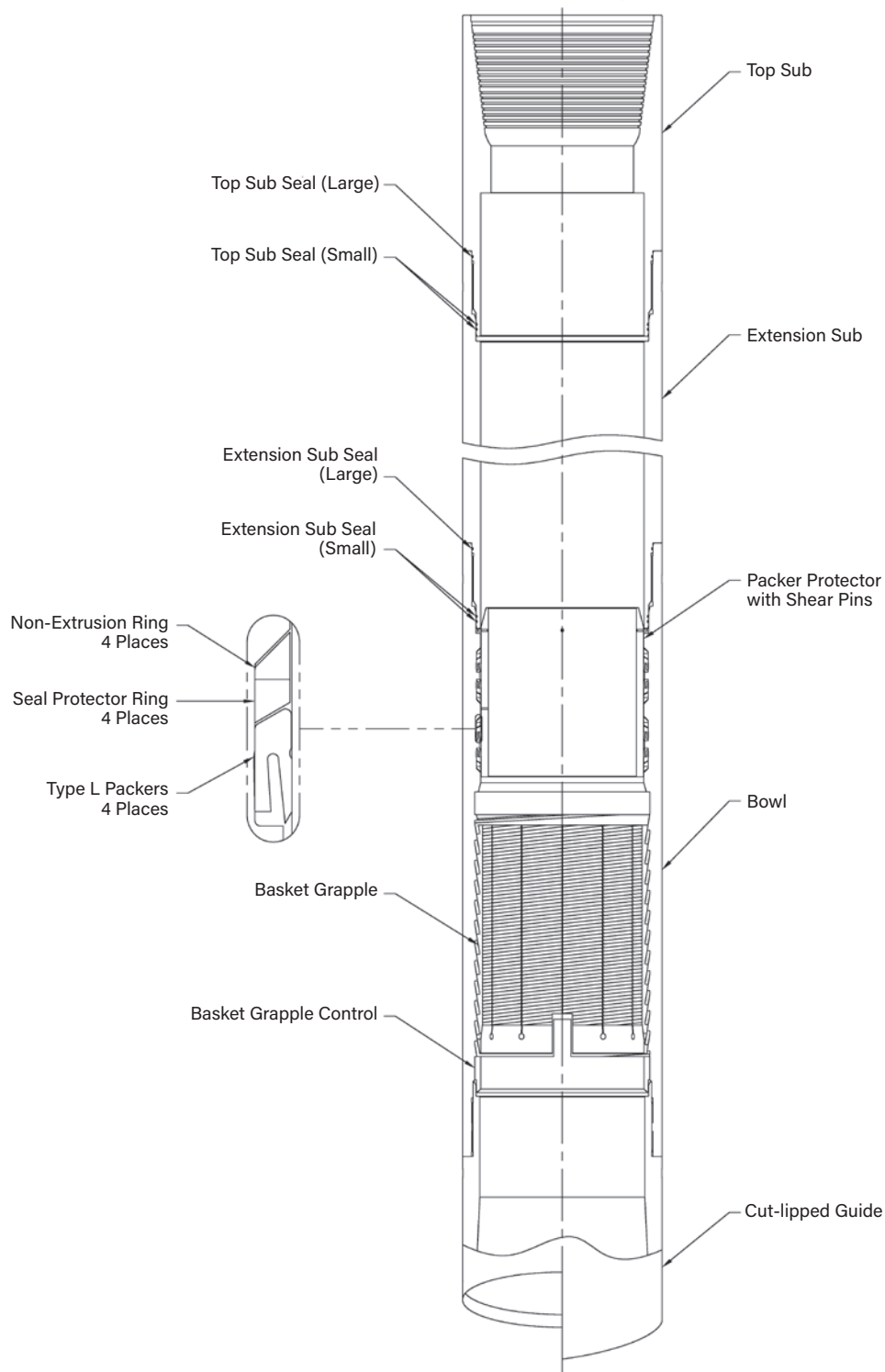
Special Notes:

- (1) H2S casing patches available upon request.
- (2) Higher pressure casing patches of this design are available upon request.
- (3) Other sizes of casing patches are available upon request.
- (4) Casing patches can be made from special materials. Prices and delivery information is available upon request.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) With or without five-foot extensions

LOGAN TYPE L PACKER TYPE CASING PATCHES - 15,000 PSI



Innovex reserves the right to change or discontinue designs without notice.

Logan Type L Packer Type Casing Patches – 15,000 psi

O.D. CASING		4-1/2	5-1/2	14				
O.D. PATCH		6-1/4	7-1/8	17-3/8				
PRESSURE RATING (PSI)		15,000	15,000	15,000				
COMPLETE ASSEMBLY	Logan Part No.	515-625-15	515-713	515-1738				
	Price	*	*	*				
TOP SUB	Logan Part No.	BT10056-15	ZL1007-15	AT1009-15				
TOP SUB SEAL (SMALL)	Logan Part No.	568248-200	568257-200	568280-200				
	No. Req'd	2	2	2				
	Price	*	*	*				
TOP SUB SEAL (LARGE)	Logan Part No.	568251-200	568257-200	568281-200				
	No. Req'd	1	1	1				
	Price	*	*	*				
BOWL	Logan Part No.	BT2005-15	ZL2007-15	AT12009-15				
	Price	*	*	*				
GUIDE	Logan Part No.	BT7005-15	ZL7007-15	AT13009-15				
	Price	*	*	*				
SHEAR PINS	Logan Part No.	AC14002	AC14002	AC14008				
	No. Req'd	2	2	4				
	Price	*	*	*				
TYPE L SEAL RING SET	Logan Part No.	...	...	AT15009-15				
	No. Req'd.	...	...	1 Set				
	Price	*	*	*				
NON-EXTRUSION RING (STEEL)	Logan Part No.	...	...	AT15009-15-004				
	No. Req'd.	...	...	4				
	Price	*	*	*				
<i>Consisting of: **</i>								
TYPE L PACKER **	Logan Part No.	AT6009	AT6000	...				
	No. Req'd	4	4	...				
	Price	*	*	*				
SEAL PROTECTOR RING (LEAD) **	Logan Part No.	AT15009-15-003	...	...				
	No. Req'd	4	...	...				
	Price	*	*	*				
PACKER PROTECTOR	Logan Part No.	ZL3005-001	ZL3007	AT7009-15				
	Price	*	*	*				
GRAPPLE CONTROL	Logan Part No.	Z6005 ***	ZL6007-15	AT10009-15				
	Price	*	*	*				
GRAPPLE	Logan Part No.	Z5005	ZL5007-15	AT11009-15				
	Price	*	*	*				

OPTIONAL

EXTENSION SUB	Logan Part No.	BTE1005-15	BTE1007-15	AT3009-15				
<i>(5 feet long)</i>	Price	*	*	*				
EXTENSION SUB SEAL (SMALL)	Logan Part No.	568248-200	568257-200	568280-200				
	No. Req'd	2	2	2				
	Price	*	*	*				
EXTENSION SUB SEAL (LARGE)	Logan Part No.	568251-200	568257-200	568281-200				
	No. Req'd	1	1	1				
	Price	*	*	*				

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* Available upon request.

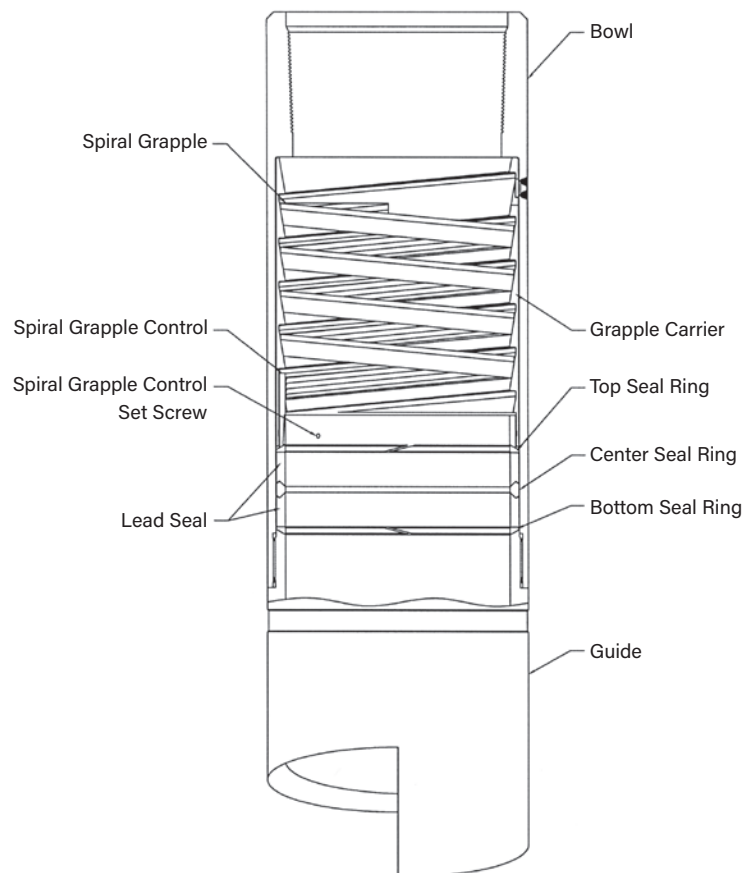
Special Notes:

- (1) H2S casing patches available upon request.
- (2) Other sizes of casing patches are available upon request.
- (3) Casing patches can be made from special materials. Prices and delivery information is available upon request.

When ordering, please specify:

- (1) Complete assembly or part number
- (2) Size and type of connection for Top Sub
- (3) With or without five-foot extensions

LOGAN LEAD SEAL CASING PATCHES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Lead Seal Casing Patches

O.D. CASING		2-3/8	2-7/8	3-1/2	4	4-1/2	5	5-1/2
O.D. PATCH		3-7/16	4	4-3/4	5-1/4	5-3/4	6-1/4	6-13/16
COMPLETE ASSEMBLY	Logan Part No.	504-343	504-400	504-475	504-525	504-575	504-625	504-681
	Bowen No.	17258	16140	26525	22400	13270	13280	12315
	Price	\$11,248	\$10,821	\$17,359	*	\$8,223	\$11,394	\$10,139
BOWL	Logan Part No.	AA1000	AA1001	AA10015	AA1002	AA1003	AA1004	AA1005
	Bowen No.	17259	16141	26526	22401	13271	13281	12316
	Price	\$3,698	\$4,258	\$4,723	*	\$3,053	\$5,256	\$3,436
GRAPPLE CARRIER	Logan Part No.	AA2000	AA2001	AA20015	AA2002	AA2003	AA2004	AA2005
	Bowen No.	17260	16142	26527	22402	13272	13282	12317
	Price	\$3,381	\$4,338	\$4,885	*	\$2,421	\$2,519	\$2,339
SPIRAL GRAPPLE	Logan Part No.	AA3000	AA3001	AA30015	AA3002	AA3003	AA3004	AA3005
	Bowen No.	17261	16143	26528	22403	13273	13283	12318
	Price	\$1,023	\$756	\$661	*	\$830	\$939	\$969
SPIRAL GRAPPLE CONTROL	Logan Part No.	AA4000	AA4001	AA40015	AA4002	AA4003	AA4004	AA4005
	Bowen No.	17262	16144	26529	22404	13274	13284	12319
	Price	\$277	\$256	\$384	*	\$280	\$298	\$333
GUIDE	Logan Part No.	AA5000	AA5001	AA50015	AA5002	AA5003	AA5004	AA5005
	Bowen No.	17263	16145	26530	22405	13275	13285	12320
	Price	\$528	\$1,182	\$3,574	*	\$800	\$1,140	\$950
LEAD SEAL	Logan Part No.	AA6000	AA6001	AA60015	AA6002	AA6003	AA6004	AA6005
	Bowen No.	17264	16146	26531	22406	13276	13286	12324
	No. Req'd	2	2	2	2	2	2	2
END SEAL RING	Logan Part No.	AA7000	AA7001	AA70015	AA7002	AA7003	AA7004	AA7005
	Bowen No.	17265	16147	26532	22407	13277	13287	12322
	No. Req'd	2	2	2	2	2	2	2
CENTER SEAL RING	Logan Part No.	AA8000	AA8001	AA80015	AA8002	AA8003	AA8004	AA8005
	Bowen No.	17266	16148	26533	22408	13278	13288	12323
	Price	\$492	\$492	\$1,512	*	\$328	\$445	\$281
CONTROL SET SCREW	Logan Part No.	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000
	Bowen No.	12329	12329	12329	12329	12329	12329	12329
	No. Req'd	2	2	2	2	2	2	2
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection

Logan Lead Seal Casing Patches

O.D. CASING		5-3/4	6	6-5/8	7	7-5/8	8-5/8	9-5/8
O.D. PATCH		7-1/16	7-5/16	7-15/16	8-3/8	9	10-1/16	11-1/8
COMPLETE ASSEMBLY	Logan Part No.	504-706	504-731	504-793	504-825	504-900	504-1006	504-1113
	Bowen No.	22410	13290	13300	12500	13070	13310	12475
	Price	\$8,447	\$8,730	\$9,247	\$9,650	\$10,610	\$17,371	\$18,829
BOWL	Logan Part No.	AA1006	AA1007	AA1008	AA1009	AA1010	AA1011	AA1012
	Bowen No.	22411	13291	13301	12501	13071	13311	12476
	Price	\$3,125	\$3,320	\$3,527	\$3,621	\$4,921	\$7,478	\$7,416
GRAPPLE CARRIER	Logan Part No.	AA2006	AA2007	AA2008	AA2009	AA2010	AA2011	AA2012
	Bowen No.	22412	13292	13302	12502	13072	13312	12477
	Price	\$2,157	\$2,300	\$2,416	\$2,551	\$2,578	\$3,951	\$3,918
SPIRAL GRAPPLE	Logan Part No.	AA3006	AA3007	AA3008	AA3009	AA3010	AA3011	AA3012
	Bowen No.	22413	13293	13303	12503	13073	13313	12478
	Price	\$995	\$1,025	\$1,126	\$1,166	\$1,223	\$1,655	\$1,729
SPIRAL GRAPPLE CONTROL	Logan Part No.	AA4006	AA4007	AA4008	AA4009	AA4010	AA4011	AA4012
	Bowen No.	22414	13294	13304	12504	13074	13314	12479
	Price	\$334	\$334	\$375	\$392	\$392	\$455	\$632
GUIDE	Logan Part No.	AA5006	AA5007	AA5008	AA5009	AA5010	AA5011	AA5012
	Bowen No.	22415	13295	13305	12505	13075	13315	12480
	Price	\$907	\$918	\$964	\$972	\$1,163	\$1,854	\$2,894
LEAD SEAL	Logan Part No.	AA6006	AA6007	AA6008	AA6009	AA6010	AA6011	AA6012
	Bowen No.	22416	13296	13306	12506	13076	13316	12481
	No. Req'd	2	2	2	2	2	2	2
	Price	\$122	\$127	\$137	\$146	\$152	\$161	\$170
END SEAL RING	Logan Part No.	AA7006	AA7007	AA7008	AA7009	AA7010	AA7011	AA7012
	Bowen No.	22417	13297	13307	12507	13077	13317	12482
	No. Req'd	2	2	2	2	2	2	2
	Price	\$198	\$198	\$212	\$215	\$233	\$267	\$251
CENTER SEAL RING	Logan Part No.	AA8006	AA8007	AA8008	AA8009	AA8010	AA8011	AA8012
	Bowen No.	22418	13298	13308	12508	13078	13318	12483
	Price	\$160	\$160	\$178	\$198	\$232	\$250	\$1,404
CONTROL SET SCREW	Logan Part No.	AA9000	AA9000	AA9000	AA9000	AA9000	AA9001	AA9001
	Bowen No.	12329	12329	12329	12329	12329	12484	12484
	No. Req'd	2	2	2	2	2	2	2
	Price	\$2	\$2	\$2	\$2	\$2	\$2	\$2

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection

Logan Lead Seal Casing Patches

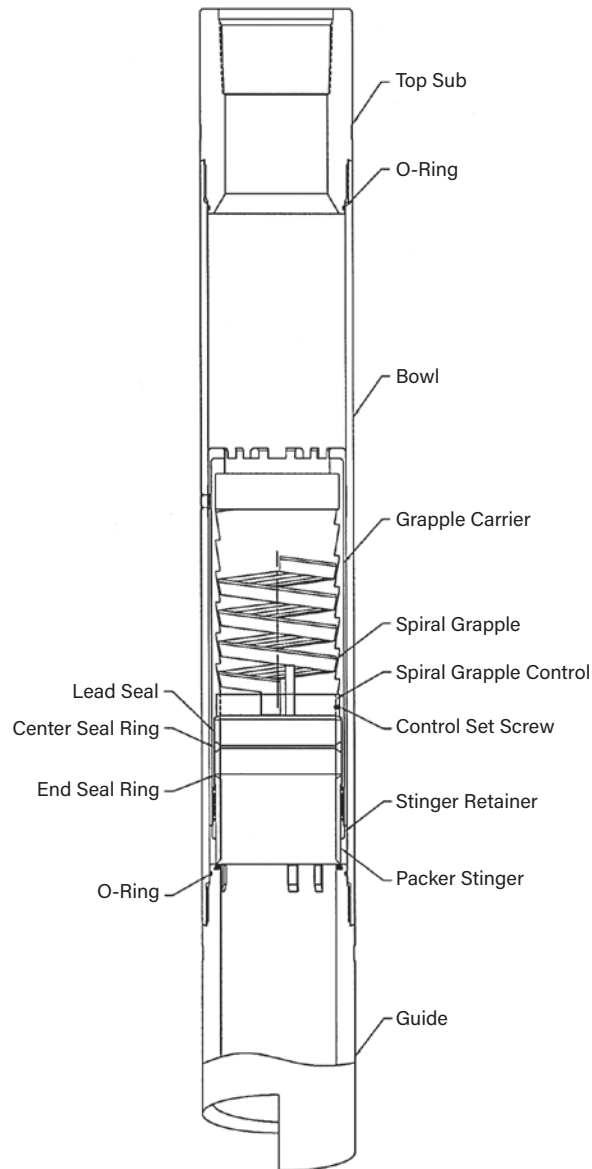
O.D. CASING		10-3/4	11-3/4	13-3/8			
O.D. PATCH		12-5/16	13-1/4	15-1/2			
COMPLETE ASSEMBLY	Logan Part No.	504-1231	504-1325	504-1550			
	Bowen No.	13320	20855	18445			
	Price	\$19,517	\$25,340	\$34,087			
BOWL	Logan Part No.	AA1013	AA1014	AA1015			
	Bowen No.	13321	20856	18446			
	Price	\$8,182	\$11,285	\$14,184			
GRAPPLE CARRIER	Logan Part No.	AA2013	AA2014	AA2015			
	Bowen No.	13322	20857	18447			
	Price	\$4,047	\$4,972	\$7,332			
SPIRAL GRAPPLE	Logan Part No.	AA3013	AA3014	AA3015			
	Bowen No.	13323	20858	18448			
	Price	\$2,257	\$3,049	\$4,086			
SPIRAL GRAPPLE CONTROL	Logan Part No.	AA4013	AA4014	AA4015			
	Bowen No.	13324	20859	18449			
	Price	\$795	\$1,119	\$1,485			
GUIDE	Logan Part No.	AA5013	AA5014	AA5015			
	Bowen No.	13325	20860	18450			
	Price	\$2,923	\$3,300	\$5,042			
LEAD SEAL	Logan Part No.	AA6013	AA6014	AA6015			
	Bowen No.	13326	20861	18451			
	No. Req'd	2	2	2			
	Price	\$207	\$233	\$450			
END SEAL RING	Logan Part No.	AA7013	AA7014	AA7015			
	Bowen No.	13327	20862	18452			
	No. Req'd	2	2	2			
	Price	\$547	\$405	\$688			
CENTER SEAL RING	Logan Part No.	AA8013	AA8014	AA8015			
	Bowen No.	13328	20863	18453			
	Price	\$616	\$405	\$688			
CONTROL SET SCREW	Logan Part No.	AA9001	AA9001	AA9001			
	Bowen No.	12484	12484	12484			
	No. Req'd	2	2	2			
	Price	\$3	\$3	\$3			

Innovex reserves the right to change or discontinue designs and/or prices without notice.

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection

LOGAN LEAD SEAL CEMENTING CASING PATCHES



Innovex reserves the right to change or discontinue designs and/or prices without notice.

Logan Lead Seal Cementing Casing Patches

O.D. CASING		2-3/8	2-7/8	3-1/2	4	4-1/2	5	5-1/2
O.D. PATCH		4-1/8	4-5/8	5-1/4	5-3/4	6-1/2	6-3/4	7-7/16
COMPLETE ASSEMBLY	Logan Part No.	505-413	505-463	505-525	505-575	505-650	505-675	505-744
	Bowen No.	40514	41209	41210	40596	40619	40649	38179
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	AB12000	AB12001	AB12016	AB12002	AB12003	AB12004	AB12005
	Bowen No.	41092	41098	41104	41110	41116	41122	38415
	Price	*	*	*	*	*	*	*
BOWL	Logan Part No.	AB1000	AB1001	AB1016	AB1002	AB1003	AB1004	AB1005
	Bowen No.	41093	41099	41105	41111	41117	41123	38416
	Price	*	*	*	*	*	*	*
GRAPPLE CARRIER	Logan Part No.	AB2000	AB2001	AB2016	AB2002	AB2003	AB2004	AB2005
	Bowen No.	41095	41101	41107	41113	41119	41125	38417
	Price	*	*	*	*	*	*	*
GRAPPLE	Logan Part No.	AA3000	AA3001	AB3016	AA3002	AA3003	AA3004	AA3005
	Bowen No.	17261	16143	26528	22403	13273	13283	12318
	Price	*	*	*	*	*	*	*
GRAPPLE CONTROL	Logan Part No.	AA4000	AA4001	AB4016	AA4002	AA4003	AA4004	AA4005
	Bowen No.	17262	16144	26529	22404	13274	13284	12319
	Price	*	*	*	*	*	*	*
GUIDE	Logan Part No.	AB5000	AB5001	AB5016	AB5002	AB5003	AB5004	AB5005
	Bowen No.	41094	41100	41106	41112	41118	41124	38421
	Price	*	*	*	*	*	*	*
LEAD SEAL	Logan Part No.	AA6000	AA6001	AB6016	AA6002	AA6003	AA6004	AA6005
	Bowen No.	17264	16146	26531	22406	13276	13286	12324
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
END SEAL RING	Logan Part No.	AA7000	AA7001	AB7016	AA7002	AA7003	AA7004	AA7005
	Bowen No.	17265	16147	26532	22407	13277	13287	12322
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
CENTER SEAL RING	Logan Part No.	AA8000	AA8001	AB8016	AA8002	AA8003	AA8004	AA8005
	Bowen No.	17266	16148	26533	22408	13278	13288	12323
	Price	*	*	*	*	*	*	*
PACKER STINGER	Logan Part No.	AB10000	AB10001	AB10016	AB10002	AB10003	AB10004	AB10005
	Bowen No.	41096	41102	41108	41114	41120	41126	38420
	Price	*	*	*	*	*	*	*
STINGER RETAINER	Logan Part No.	AB11000	AB11001	AB11016	AB11002	AB11003	AB11004	AB11005
	Bowen No.	41097	41103	41109	41115	41121	41127	38419
	Price	*	*	*	*	*	*	*
CONTROL SET SCREW	Logan Part No.	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000	AA9000
	Bowen No.	12329	12329	12329	12329	12329	12329	12329
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
BOWL SEAL	Logan Part No.	568-237	568-240	568-246	568-250	568-255	568-258	568-260
	Bowen No.	30-15	30-18	30-24	30-28	30-33	30-36	30-38
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*

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When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection for Top Sub

Logan Lead Seal Cementing Casing Patches

O.D. CASING		5-3/4	6	6-5/8	7	7-5/8	8-5/8	9-5/8
O.D. PATCH		7-3/4	8	8-5/8	9-1/8	9-7/8	11-1/8	11-15/16
COMPLETE ASSEMBLY	Logan Part No.	505-775	505-800	505-863	505-913	505-988	505-1113	505-1194
	Bowen No.	41088	40679	40858	40859	40869	41004	41085
	Price	*	*	*	*	*	*	*
TOP SUB	Logan Part No.	AB12006	AB12007	AB12008	AB12009	AB12010	AB12011	AB12012
	Bowen No.	41128	41134	41140	41146	41152	41158	41164
	Price	*	*	*	*	*	*	*
BOWL	Logan Part No.	AB1006	AB1007	AB1008	AB1009	AB1010	AB1011	AB1012
	Bowen No.	41129	41135	41141	41147	41153	41159	41165
	Price	*	*	*	*	*	*	*
GRAPPLE CARRIER	Logan Part No.	AB2006	AB2007	AB2008	AB2009	AB2010	AB2011	AB2012
	Bowen No.	41131	41137	41143	41149	41155	41161	41167
	Price	*	*	*	*	*	*	*
GRAPPLE	Logan Part No.	AA3006	AA3007	AA3008	AA3009	AA3010	AA3011	AA3012
	Bowen No.	22413	13293	13303	12503	13073	13313	12478
	Price	*	*	*	*	*	*	*
GRAPPLE CONTROL	Logan Part No.	AA4006	AA4007	AA4008	AA4009	AA4010	AA4011	AA4012
	Bowen No.	22414	13294	13304	12504	13074	13314	12479
	Price	*	*	*	*	*	*	*
GUIDE	Logan Part No.	AB5006	AB5007	AB5008	AB5009	AB5010	AB5011	AB5012
	Bowen No.	41130	41136	41142	41148	41154	41160	41166
	Price	*	*	*	*	*	*	*
LEAD SEAL	Logan Part No.	AA6006	AA6007	AA6008	AA6009	AA6010	AA6011	AA6012
	Bowen No.	22416	13296	13306	12506	13076	13316	12481
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
END SEAL RING	Logan Part No.	AA7006	AA7007	AA7008	AA7009	AA7010	AA7011	AA7012
	Bowen No.	22417	13297	13307	12570	13077	13317	12482
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
CENTER SEAL RING	Logan Part No.	AA8006	AA8007	AA8008	AA8009	AA8010	AA8011	AA8012
	Bowen No.	22418	13298	13308	12508	13078	13318	12483
	Price	*	*	*	*	*	*	*
PACKER STINGER	Logan Part No.	AB10006	AB10007	AB10008	AB10009	AB10010	AB10011	AB10012
	Bowen No.	41132	41138	41144	41150	41156	41162	41168
	Price	*	*	*	*	*	*	*
STINGER RETAINER	Logan Part No.	AB11006	AB11007	AB11008	AB11009	AB11010	AB11011	AB11012
	Bowen No.	41133	41139	41145	41151	13074	13314	12479
	Price	*	*	*	*	*	*	*
CONTROL SET SCREW	Logan Part No.	AA9000	AA9000	AA9000	AA9000	AA9000	AA9001	P12003
	Bowen No.	12329	12329	12329	12329	12329	12484	12484
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*
BOWL SEAL	Logan Part No.	568-262	568-263	568-265	568-267	568-270	568-449	568-450
	Bowen No.	30-40	30-41	30-43	30-45	30-48	27-76	27-77
	No. Req'd	2	2	2	2	2	2	2
	Price	*	*	*	*	*	*	*

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- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection for Top Sub

Logan Lead Seal Cementing Casing Patches

O.D. CASING		10-3/4	11-3/4	13-3/8			
O.D. PATCH		13-5/8	14-3/4	16-5/8			
COMPLETE ASSEMBLY	Logan Part No.	505-1363	505-1475	505-1663			
	Bowen No.	41086	41089	41087			
	Price	*	*	*			
TOP SUB	Logan Part No.	AB12013	AB12014	AB12015			
	Bowen No.	41170	41176	41185			
	Price	*	*	\$10,288			
BOWL	Logan Part No.	AB1013	AB1014	AB1015			
	Bowen No.	41171	41177	41182			
	Price	*	*	*			
GRAPPLE CARRIER	Logan Part No.	AB2013	AB2014	AB2015			
	Bowen No.	41173	41179	41183			
	Price	*	*	*			
GRAPPLE	Logan Part No.	AA3013	AA3014	AA3015			
	Bowen No.	13323	20858	18448			
	Price	*	*	*			
GRAPPLE CONTROL	Logan Part No.	AA4013	AA4014	AA4015			
	Bowen No.	13324	20859	18449			
	Price	*	*	*			
GUIDE	Logan Part No.	AB5013	AB5014	AB5015			
	Bowen No.	41172	41178	41184			
	Price	*	*	\$11,375			
LEAD SEAL	Logan Part No.	AA6013	AA6014	AA6015			
	Bowen No.	13326	20861	18451			
	No. Req'd	2	2	2			
END SEAL RING	Logan Part No.	AA7013	AA7014	AA7015			
	Bowen No.	13327	20862	18452			
	No. Req'd	2	2	2			
CENTER SEAL RING	Logan Part No.	AA8013	AA8014	AA8015			
	Bowen No.	13328	20863	18453			
	Price	*	*	*			
PACKER STINGER	Logan Part No.	AB10013	AB10014	AB10015			
	Bowen No.	41174	41180	41186			
	Price	*	*	*			
STINGER RETAINER	Logan Part No.	AB11013	AB11014	AB11015			
	Bowen No.	13324	20859	18449			
	Price	*	*	*			
CONTROL SET SCREW	Logan Part No.	AA9001	AA9001	AA9001			
	Bowen No.	12484	12484	12484			
	No. Req'd	2	2	2			
BOWL SEAL	Logan Part No.	568-455	568-453	568-459			
	Bowen No.	27-82	27-80	27-86			
	No. Req'd	2	2	2			
	Price	*	*	*			

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* Available upon request.

Recommended Spare Parts:

- (1) Name and number of assembly or part
- (2) Casing O.D.
- (3) Size and type of connection for Top Sub



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