

OVERVIEW

The Logan Superior Energizer is run in conjunction with a Logan Superior Fishing Jar of the same size. Its function is to supply intensified impact during the jarring operation. Each size of Logan Superior Energizer is designed to match a corresponding size of Logan Superior Fishing Jar. The Superior Energizer is essentially a fluid spring, which stores energy when a strain is pulled on the fishing string. When the strain is removed by the free stroke of the fishing jar, the stored energy is released, accelerating the collars upward until a blow of high impact is struck. The tool absorbs much of the jarring shock from the rebounding string to protect tools and string from damage.

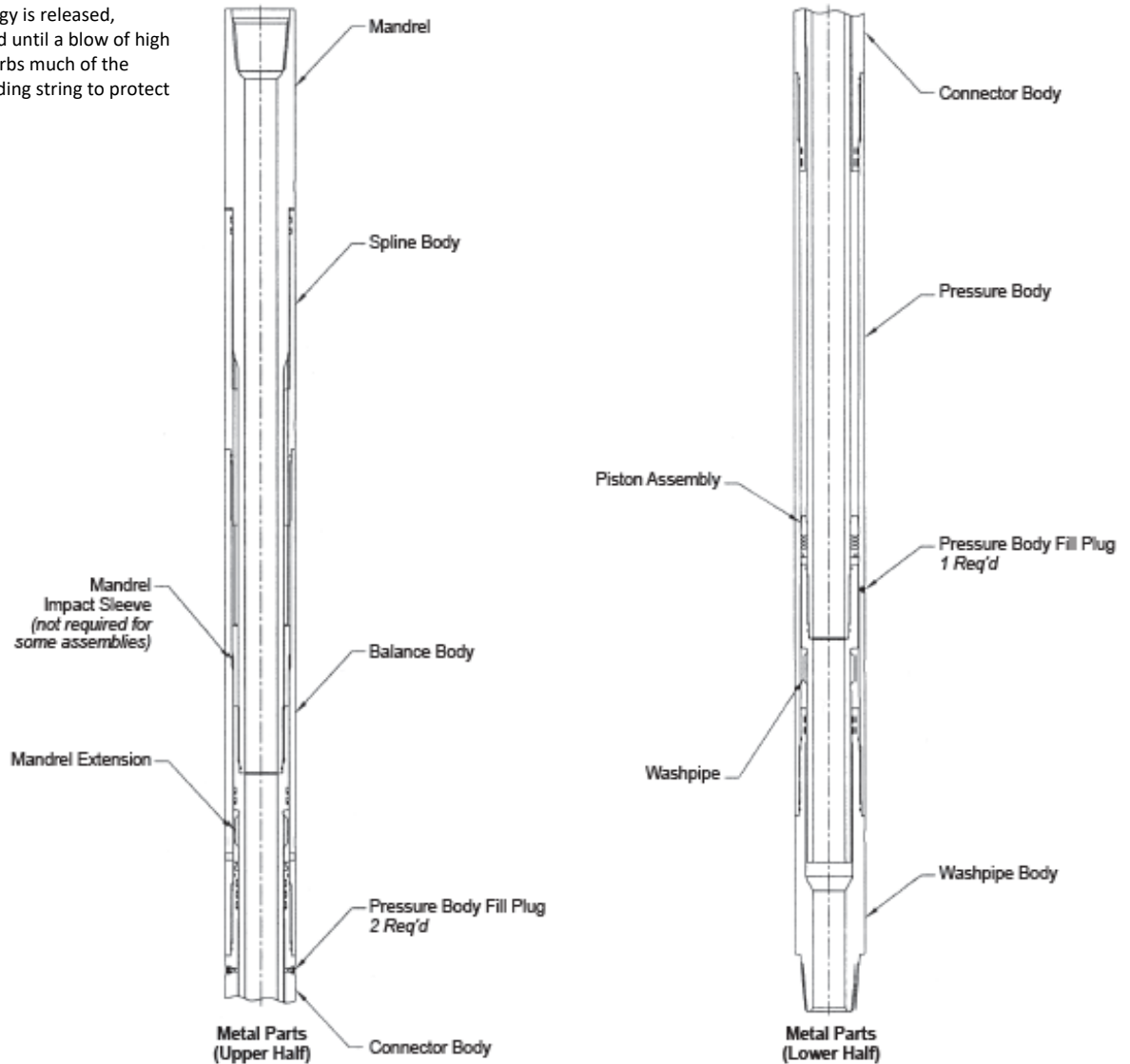
OPERATION

Operation of the Logan Superior Energizer is simple to use and requires only a straight pull at a speed determined by the job. It is completely safe to assemble since no high-pressure pre-loading is required.

The Logan Superior Energizer can transmit full torque in either direction at all times while maintaining full circulation throughout the tool.

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



PRODUCT LINE

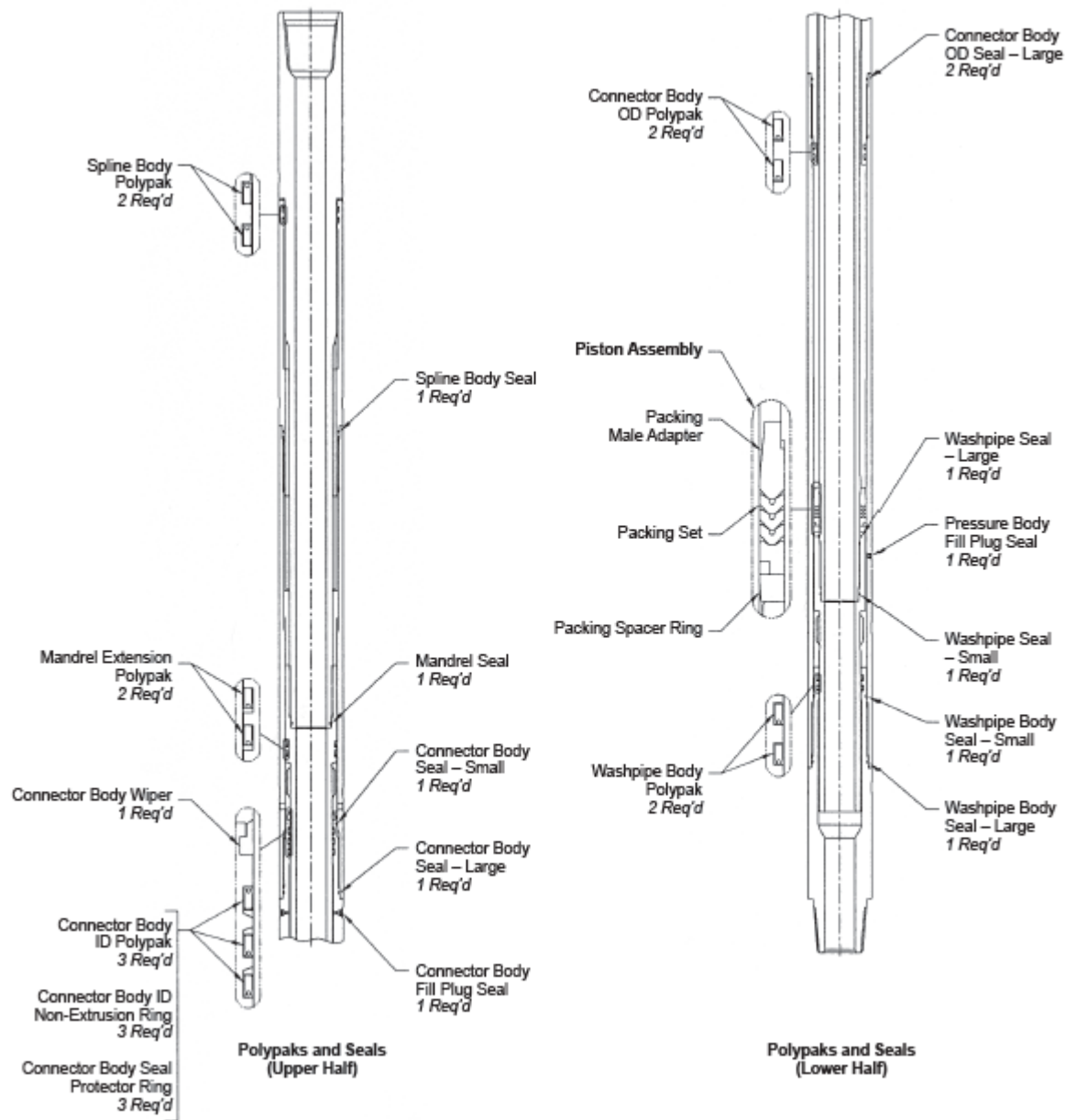
Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



INNOVEX
LOGAN FISHING TOOLS



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

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	614-306 614-313	614-375	614-376	614-425	614-475 614-625

Component Parts

Mandrel	Logan Part No.	BX10	BX11	BX12	BX18	BX13	BX14	BX15
Mandrel Seal	Logan Part No.	-	568-225	568-225	**	568-229	568-232	568-236
	No. Req'd	-	1	1	-	1	1	1
Spline Body	Logan Part No.	BX20	BX21	BX22	BX28	BX23	BX24	BX25
Spline Body Seal	Logan Part No.	568-230	568-230	568-234	**	568-238	568-242	568-254
	No. Req'd	1	1	-	-	1	1	1
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
Mandrel Sleeve	Logan Part No.	BX30	BX31	-	BX38	-	BX34	-
Balance Body	Logan Part No.	BX40	BX41	BX42	BX48	BX43	BX44	BX45
Mandrel Extension	Logan Part No.	BX50	BX51	BX52	BX58	BX53	BX54	BX55
Mandrel Extension	Logan Part No.	BD205-2	BD205-2	BD201-2	**	BX144-3	BD202-2	BD203-2
Polypak	No. Req'd	2	1	2	-	2	2	2
Piston Assembly	Logan Part No.	BX60	BX61	BX62	BX68	BX63	BX64	BX65

Consists of:

Packing Set	Logan Part No.	BX60-1	BX61-1	BX62-1	BX68-1	BX63-1	BX64-1	BX65-1
Packing Male Adapter	Logan Part No.	BX60-2	BX61-2	BX62-2	BX68-2	BX63-2	BX64-2	BX65-2
Packing Spacer Ring	Logan Part No.	BX60-3	BX61-3	BX62-3	BX68-3	BX63-3	BX64-3	BX65-3
Connector Body	Logan Part No.	BX70	BX71	BX72	BX78	BX73	BX74	BX75
Connector Body Wiper	Logan Part No.	-	-	BD71	**	BD76	BX84	BD73
Connector Body ID	Logan Part No.	BD200-3	BD205-3	BD201-3	**	AQ29005	BX144-3	BD203-3
Polypak	No. Req'd	3	3	3	-	3	3	3
Connector Body ID	Logan Part No.	L365-30	L365-32	BD231	**	BD236	BX154	BD233
Non-Extrusion Ring	No. Req'd	2	2	3	-	3	3	3
Connector Body	Logan Part No.	L375-30	8-228	**	**	**	L375-41	BD273
Seal Protector Ring	No. Req'd	2	2	-	-	-	3	3
Connector Body OD	Logan Part No.	8-330	-	-	**	-	-	-
Parbak Ring	No. Req'd	1	-	-	-	-	-	-
Connector Body OD	Logan Part No.	BX160	L366-33.5	-	**	-	**	-
Non-Extrusion Ring	No. Req'd	1	2	-	-	-	-	-
Connector Body Seal	Logan Part No.	568-330	568-228	568-232	**	568-236	568-239	568-250
(Small)	No. Req'd	2	2	1	-	1	1	1
Connector Body Seal	Logan Part No.	568-230	568-230	568-234	**	568-238	568-242	568-252
(Large)	No. Req'd	2	2	2	-	2	2	2
Connector Body	Logan Part No.	AG10002	AG10000	AG10002	**	AG10002	AG10002	AG10002
Fill Plug	No. Req'd	2	2	2	-	2	2	2
Connector Body	Logan Part No.	568-006	568-005	568-006	**	568-006	568-006	568-006
Fill Plug Seal	No. Req'd	2	2	2	-	2	2	2

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

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

** To be advised by engineering

When ordering, please specify:

Name and number of assembly or part
Casing O.D.
Size and type of connection

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	614-306 614-313	614-375	614-376	614-425	614-475 614-625

Component Parts

For more information: visit www.innovex-inc.com or contact your local sales office
Domestic and international patents and trademarks granted and/or applied for where applicable
REV- FEBRUARY 2022



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



INNOVEX
LOGAN FISHING TOOLS

		-	-	AQ29003	**	AQ29005	BD202-5	BD203-5
Connector Body OD Polypak	Logan Part No. No. Reqd							
Pressure Body	Logan Part No.							
Pressure Body Fill Plug	Logan Part No. No. Reqd							
Pressure Body Fill Plug Seal	Logan Part No. No. Reqd							
Washpipe	Logan Part No.							
Washpipe Seal (Large)	Logan Part No. No. Reqd							
Washpipe Seal (Small)	Logan Part No. No. Reqd							
Washpipe Body	Logan Part No.							
Washpipe Body Seal (Large)	Logan Part No. No. Reqd							
Washpipe Body Seal (Small)	Logan Part No. No. Reqd							
Washpipe Body Polypak	Logan Part No. No. Reqd							
Redress Kits*	Logan Part No.							
O-Ring Packing Set	Logan Part No.							
Polypak Kit								
Consists of:								
Spline Body Polypak	Logan Part No. No. Reqd							
Mandrel Extension Polypak	Logan Part No. No. Reqd							
Connector Body ID Polypak	Logan Part No. No. Reqd							
Connector Body OD Polypak	Logan Part No. No. Reqd							
Washpipe Body Polypak	Logan Part No. No. Reqd							
Mandrel Extension Assembly Sleeve	Logan Part No. No. Reqd							

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

When ordering, please specify:

- Name and number of assembly or part
- Casing O.D.
- Size and type of connection



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



Tool Joint Connection		2-3/8 API EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 API Reg	2-3/8 API EUE	2-7/8 API IF
Outside Diameter (inches)		3-1/6	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4	4-1/4
Inside Diameter (inches)		1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8	2
Complete Assembly	Logan Part No.	611-306	611-312	611-313	611-375	611-377	611-376	611-425
Component Parts								
Redress Kits*	Logan Part No.	BD185	BD180	BD185	BD181	BD81	BD188	BD186
Complete O-Ring Kit	Logan Part No.	BD195	BD190	BD195	BD191	BD191	BD198	BD196
Complete Polypak Kit	Logan Part No.	BD205	BD200	BD205	BD201	BD201	BD208	BD206
<i>Consists of</i>								
Spline Body	Logan Part No.	BD205-1	BD205-1	BD205-1	BD202-3	BD202-3	BX144-3	BD202-2
Polypak	No. Reqd	2	2	2	2	2	2	2
Mandrel Extension	Logan Part No.	BD205-2	BD205-2	BD205-2	BD201-2	BD201-2	AQ290003	BX144-3
Polypak	No. Reqd	1	2	1	2	2	2	2
Connector Body ID	Logan Part No.	BD205-3	BD200-3	B205-3	BD201-3	BD201-3	BD208-3	AQ29003
Polypak (Small)	No. Reqd	3	3	3	4	4	4	4
Connector Body ID	Logan Part No.	-	-	-	-	-	-	-
Polypak (Large)	No. Reqd	-	-	-	-	-	-	-
Connector Body OD	Logan Part No.	-	-	-	AQ29003	AQ29003	AQ29003	BX144-3
Polypak	No. Reqd	-	-	-	2	2	2	2
Floater OD Polypak	Logan Part No.	-	BD204-4	-	BD201-2	BD201-2	AQ29003	BX144-3
	No. Reqd	-	2	-	2	2	2	2
Floater ID Polypak	Logan Part No.	-	BD200-3	-	BD201-3	BD201-3	BD208-6	BD206-6
	No. Reqd	-	2	-	2	2	2	2
Mandrel Extension	Logan Part No.	BD205-6	BD200-6	BD205-6	BD201-6	BD201-6	BD208-6	BD206-6
Assembly Sleeve†	No. Reqd	1	1	1	1	1	1	1
<hr/>								
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	-	-	-

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

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

** To be advised by engineering

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

When ordering, please specify:

Name and number of assembly or part

Casing O.D.

Size and type of connection



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



Tool Joint Connection	2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	6-5/8 API Reg		
Outside Diameter (inches)	4-1/2	4-3/4	6-1/4	7-3/4		
Inside Diameter (inches)	2-3/8	2-1/4	2-1/4	3-1/16		
Complete Assembly	Logan Part No.	611-450	611-475	611-625	611-775	
Component Parts						
Mandrel	Logan Part No.	BD19	BD12	BD13	BD14	
Mandrel Seal	Logan Part No.	568-238	568-232	568-236	568-348	
	No. Reqd	1	1	1	1	
Mandrel Extension	Logan Part No.	BD29	BD22	BD23	BD24	
Mandrel Extension Seal	Logan Part No.	-	-	568-234	568-341	
	No. Reqd	-	-	1	1	
Mandrel Extension Polypak	Logan Part No.	BD209-2	BD202-2	BD203-2	BD204-2	
	No. Reqd	2	2	2	2	
Mandrel Extension Wiper	Logan Part No.	-	-	BD223	BD224	
	No. Reqd	-	-	-	1	
Mandrel Impact Sleeve	Logan Part No.	-	BD32	-	-	
Spline Body	Logan Part No.	BD49	BD42	BD43	BD44	
Spline Body Seal	Logan Part No.	568-240	568-242	568-250	568-362	
	No. Reqd	1	1	1	1	
Spline Body Polypak	Logan Part No.	BD209-1	BD202-1	BD203-1	BD204-1	
	No. Reqd	2	2	2	2	
Balance Body	Logan Part No.	BD59	BD52	BD53	BD54	
Connector Body	Logan Part No.	BD69	BD62	BD63	BD64	
Connector Body Seal (Large)	Logan Part No.	568-240	568-242	568-253	568-362	
	No. Reqd	2	2	2	2	
Connector Body Seal (Small)	Logan Part No.	568-239	568-239	568-250	568-361	
	No. Reqd	1	1	1	1	
Connector Body Wiper	Logan Part No.	BD79	BD72	BD73	BD74	
Connector Body ID Polypak (Small)	Logan Part No.	BX144-3	BD202-3	BD203-3	-	
	No. Reqd	4	2	4	-	
Connector Body ID Polypak (Large)	Logan Part No.	-	BD202-4	-	BD204-3	
	No. Reqd	-	2	-	4	
Connector Body OD Polypak	Logan Part No.	BD209-4	BD202-5	BD203-5	BD204-2	
	No. Reqd	2	2	2	2	
Connector Body Seal Protector Ring	Logan Part No.	L375-41	-	-	BD274	
	No. Reqd	2	-	-	2	
Connector Body ID Non-Extrusion Ring	Logan Part No.	L365-41	BD232	BD233	BD234	
	No. Reqd	2	2	2	2	
Connector Body ID Non-Extrusion Ring Setting Tool	Logan Part No.	**	AG1000-40	**	AG1000-52	
Connector Body OD Non-Extrusion Ring (Large)	Logan Part No.	-	-	-	-	
	No. Reqd	-	-	-	-	
Connector Body OD Non-Extrusion Ring (Small)	Logan Part No.	-	-	-	-	
	No. Reqd	-	-	-	-	
Pressure Body	Logan Part No.	BD89	BD82	BD83	BD84	

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

When ordering, please specify:

- Name and number of assembly or part
- Casing O.D.
- Size and type of connection



Tool Joint Connection		2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	6-5/8 API Reg
Outside Diameter (inches)		4-1/2	4-3/4	6-1/4	7-3/4
Inside Diameter (inches)		2-3/8	2-1/4	2-1/4	3-1/16
Complete Assembly	611-450	611-450	611-475	611-625	611-775
Component Parts					
Floater Body	Logan Part No.	BD99	BD92	BD93	BD94
Floater Body Seal (Large)	Logan Part No.	568-240	568-242	568-253	568-362
	No. Req'd	1	1	1	1
Floater Body Seal (Small)	Logan Part No.	568-238	568-239	568-250	568-361
	No. Req'd	1	1	1	1
Floater Body Fill Plug	Logan Part No.	AG10002	AG10002	AG10002	AG10002
	No. Req'd	2	2	2	2
Floater Body Fill Plug Seal	Logan Part No.	568-006	568-006	568-006	568-006
	No. Req'd	2	2	2	2
Floater	Logan Part No.	BD119	BD112	BD113	BD114
Floater Seal (Large)	Logan Part No.	568-238	568-341	568-351	568-361
	No. Req'd	2	2	2	2
Floater Seal (Small)	Logan Part No.	568-235	568-337	568-343	568-349
	No. Req'd	1	1	1	1
Floater OD Polypak	Logan Part No.	BD209-2	BD202-2	BD203-2	BD204-4
	No. Req'd	2	2	2	2
Floater ID Polypak	Logan Part No.	BX144-3	BD202-3	BD203-3	BD204-3
	No. Req'd	2	2	2	2
Floater OD Parbak Ring	Logan Part No.	-	-	-	-
	No. Req'd	-	-	-	-
Floater ID Parbak Ring	Logan Part No.	-	-	-	-
	No. Req'd	-	-	-	-
Floater Positioning Tool	Logan Part No.	BD299	BD292	BD293	BD294
Seal Body	Logan Part No.	BD129	BD122	BD123	BD124
Seal Body Seal	Logan Part No.	568-234	568-234	568-341	568-347
	No. Req'd	1	1	1	1
Non-Extrusion Ring	Logan Part No.	L370-12	L370-12	L365-44	BD264
	No. Req'd	1	1	1	1
Seal Protector Ring	Logan Part No.	L376-12	L388-12	L375-44	BD284
	No. Req'd	1	1	1	1
Setting Tool	Logan Part No.	AG1000-38	AG1000-40	AG1000-44	AG1000-50
Cone	Logan Part No.	BD139	BD132	BD133	BD134
Bypass Ring	Logan Part No.	BD159	BD152	BD153	BD154
Washpipe	Logan Part No.	BD169	BD162	BD163	BD164
Washpipe Seal (Large)	Logan Part No.	568-234	568-234	568-238	568-347
	No. Req'd	1	1	1	1
Washpipe Seal (Small)	Logan Part No.	569-232	568-232	-	-
	No. Req'd	1	1	-	-
Washpipe Body	Logan Part No.	BD179	BD172	BD173	BD174
Washpipe Body Seal (Large)	Logan Part No.	568-240	568-242	568-253	568-362
	No. Req'd	1	1	1	1
Washpipe Body Seal (Small)	Logan Part No.	568-238	568-239	568-250	568-361
	No. Req'd	1	1	1	1

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

When ordering, please specify:

- Name and number of assembly or part
- Casing O.D.
- Size and type of connection

PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



Tool Joint Connection		2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	5-1/2 API Reg	6-5/8 API Reg		
Outside Diameter (inches)		4-1/2	4-3/4	6-1/4	6-3/4	7-3/4		
Inside Diameter (inches)		2-3/8	2-1/4	2-1/4	2-3/4	3-1/16		
Complete Assembly	Logan Part No.	611-450	611-475	611-625	611-675	611-775		
Component Parts								
Redress Kits*	Logan Part No.	BD189	BD182	BD183	-	BD184		
Complete O-Ring Kit	Logan Part No.	BD199	BD192	BD193	-	BD194		
Complete Polypak Kit	Logan Part No.	BD209	BD202	BD203	BD207	BD204		
<i>Consists of</i>								
Spline Body	Logan Part No.	BD209-1	BD202-1	BD203-1	**	BD204-1		
Polypak	No. Reqd	2	2	2	-	2		
Mandrel Extension	Logan Part No.	BD209-2	BD202-2	BD203-2	**	BD204-2		
Polypak	No. Reqd	2	2	2	-	2		
Connector Body ID	Logan Part No.	BX144-3	BD202-3	BD203-3	**	BD204-3		
Polypak (Small)	No. Reqd	4	2	4	-	4		
Connector Body ID	Logan Part No.	-	BD202-4	-	**	-		
Polypak (Large)	No. Reqd	-	2	-	-	-		
Connector Body OD	Logan Part No.	BD209-4	BD202-5	BD203-5	**	BD204-2		
Polypak	No. Reqd	2	2	2	-	2		
Floater OD Polypak	Logan Part No.	BD209-2	BD202-2	BD203-2	**	BD204-4		
	No. Reqd	2	2	2	-	2		
Floater ID Polypak	Logan Part No.	BX144-3	BD202-3	BD203-3	**	BD204-3		
	No. Reqd	2	2	2	-	2		
Mandrel Extension	Logan Part No.	BD209-6	BD202-6	BD203-6	**	BD204-6		
Assembly Sleeve†	No. Reqd	1	2	1	-	1		
<hr/>								
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	-		

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

** To be advised by engineering

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

When ordering, please specify:

Name and number of assembly or part

Casing O.D.

Size and type of connection



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



CHART A - SPECIFICATIONS

Complete Assembly	611-306	611-312	611-313	611-375	611-377	611-376
Outside Diameter (inches)	3-1/16	3-1/8	3-1/8	3-3/4	3-3/4	3-3/4
Inside Diameter (inches)	1-1/2	1	1-1/2	1-1/2	1-1/4	1-7/8
Connection	2-3/8 API EUE	2-3/8 API Reg	2-7/8 PAC	2-3/8 API IF	2-7/8 API Reg	2-3/8 API EUE
Length (feet and inches)	10' 0"	10' 0"	10' 0"	12' 8"	12' 8"	12' 8"
Stroke (inches)	10	10	10	10	10	10
Floater Position (inches)	^	^	^	^	^	^
Standard Temperature	8	8	8	9	9	8-3/4
High Temperature	9-3/4	9-3/4	9-3/4	11	11	10-3/4
Drill Collar Weight Range (lbs)	300 to 4,000	300 to 4,000	300 to 4,000	400 to 6,000	400 to 6,000	400 to 6,000
Pump Open Area (sq in)	3	3	3	4	4	4

^Measured distance from Floater to end of Floater Body

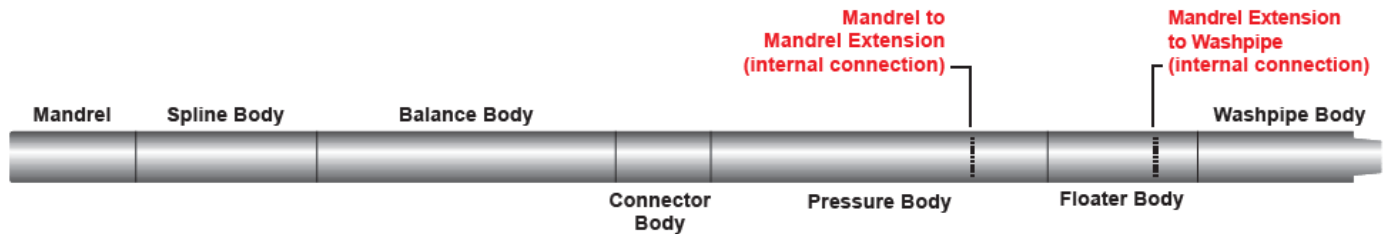
CHART B – STRENGTH AND TEST DATA

Complete Assembly	611-306	611-312	611-313	611-375	611-377	611-376
Jar Tester Low Test Pull Load Min/Max (lbs)	7,000/12,000	9,000/12,000	7,000/12,000	12,000/16,000	12,000/16,000	12,000/16,000
Jar Tester Standard Pull Test (lbs)	18,000	30,000	18,000	35,000	35,000	35,000
Field Load – Max Pull Load	36,000	55,000	36,000	72,000	72,000	51,000
Lift Load After Jarring – Jar Fully Extended Tensile @ Yield (lbs)	185,000	253,000	185,000	330,000	330,000	285,000
Torque @ Yield (ft-lbs)	4,200	7,500	4,200	14,500	14,500	9,650

CHART C – RECOMMENDED TIGHTENING TORQUES (FT-LBS)

Complete Assembly	611-306	611-312	611-313	611-375	611-377	611-376
Spline Body to Balance Body	2,100	2,700	2,100	3,500	3,650	3,500
Balance Body to Connector Body	2,100	2,700	2,100	3,500	3,650	3,500
Connector Body to Pressure Body	2,100	2,700	2,100	3,500	3,650	3,500
Mandrel to Mandrel Extension	500	600	500	700	700	700
Pressure Body to Floater Body	2,100	2,700	2,100	3,500	3,650	3,500
Mandrel Extension to Washpipe	500	600	500	700	700	700
Floater Body to Washpipe Body	2,100	2,700	2,100	3,500	3,650	3,500

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



PRODUCT LINE

Fishing & Intervention | Stroking
Tools | Jars & Energizers

PRODUCT

Superior Energizers



CHART A - SPECIFICATIONS

Complete Assembly	611-425	611-450	611-475	611-625	611-775
Outside Diameter (inches)	4-1/4	4-1/2	4-3/4	6-1/4	7-3/4
Inside Diameter (inches)	2	2-3/8	2-1/4	2-1/4	3
Connection	2-7/8 API IF	2-7/8 API EUE	3-1/2 API IF	4-1/2 API IF	6-5/8 API Reg
Length (feet and inches)	13' 6"	13' 6"	13' 6"	13' 6"	15' 0"
Stroke (inches)	12	12	12	12	12
Floater Position (inches)	^	^	^	^	^
Standard Temperature	9	9	10-3/4	10-3/4	11
High Temperature	11	11	11-1/2	11-1/2	12-1/2
Drill Collar Weight Range (lbs)	400 to 6,000	400 to 4,000	500 to 8,000	8,500 to 15,000	12,200 to 21,000
Pump Open Area (sq in)	6	7-1/2	7	11	16

^Measured distance from Floater to end of Floater Body

CHART B – STRENGTH AND TEST DATA

Complete Assembly	611-425	611-450	611-475	611-625	611-775
Jar Tester Low Test Pull Load Min/Max (lbs)	12,000/16,000	12,000/16,000	15,000/20,000	18,000/26,000	18,000/26,000
Jar Tester Standard Pull Test (lbs)	35,000	30,000	50,000	100,000	100,000
Field Load – Max Pull Load	75,000	60,000	100,000	200,000	275,000
Lift Load After Jarring – Jar Fully Extended Tensile @ Yield (lbs)	375,000	360,000	505,000	1,000,000	1,600,000
Torque @ Yield (ft-lbs)	18,500	12,000	18,100	40,800	79,000

CHART C – RECOMMENDED TIGHTENING TORQUES (FT-LBS)

Complete Assembly	611-425	611-450	611-475	611-625	611-775
Spline Body to Balance Body	5,000	5,000	9,090	20,000	39,000
Balance Body to Connector Body	5,000	5,000	9,090	20,000	39,000
Connector Body to Pressure Body	5,000	5,000	9,090	20,000	39,000
Mandrel to Mandrel Extension	1,500	1,500	1,800	7,000	12,500
Pressure Body to Floater Body	5,000	5,000	9,090	20,000	39,000
Mandrel Extension to Washpipe	1,500	1,500	1,000	4,800	10,500
Floater Body to Washpipe Body	5,000	5,000	9,090	20,000	39,000

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

