



PRODUCT LINE

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PRODUCT

Bi-Directional Coiled Tubing Energizers

OVERVIEW

The double-acting Logan Bi-Directional Coiled Tubing Energizer is an impact enhancement tool designed for slim holes (generally a wellbore less than 6 inches in diameter). Its function is to supply intensified impact during the jarring operation by providing or enhancing jar impact from energy stored within its oil-filled compression chambers. It also functions as a shock absorber that prevents impact damage to the tool string at the bottom of the coil – which is often referred to as the bottom hole assembly of BHA. A Logan Bi-Directional Coiled Tubing Energizer is recommended any time a Logan Bi-Directional Coiled Tubing Jar is included in the workstring.

CONSTRUCTION

Each size of Logan Bi-Directional Coiled Tubing Energizer is designed to match the corresponding size of Logan Bi-Directional Coiled Tubing Jar. The pull, push, torque, and lift loads are equal to, or exceed those, of the matching Logan Bi-Directional Coiled Tubing Jar.

Logan Bi-Directional Coiled Tubing Energizers are hydrostatically pressure balanced and have automatic oil thermal compensation. The independent push (compression) and pull (tension) oil-filled chambers are sealed and isolated from each other to prevent contamination.

OPERATION

The Logan Bi-Directional Coiled Tubing Energizer is run in conjunction with a Logan Bi-Directional Coiled Tubing Jar of the same size. It operates by straight push or pull and has splines that are engaged at all times.

The Bi-Directional Coiled Tubing 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 Bi-Directional Coiled Tubing Jar, the stored energy is released, accelerating portions of the tool and the weight bars until a blow of high impact is struck. The Logan Bi-Directional Coiled Tubing Energizer absorbs much of the jarring shock from the rebounding string to protect the bottom hole assembly from damage.

The Logan Bi-Directional Coiled Tubing Energizer can be run at any depth. It can be dressed with special packing to withstand temperatures above 350°F. The Bi-Directional Coiled Tubing Energizer is also capable of transmitting torque for downhole motors (see Strength Data Chart).

When ordering, please specify:

- Name and number of assembly or part
- Outside diameter
- Connections – if other than standard
- Name and number of any desired spares
- Outside diameter of spare parts

SPECIFICATIONS

Complete Assembly	617-169	617-213	617-288
Outside Diameter (inches)	1-11/16 (1.708)	2-1/8 (2.156)	2-7/8 (2.906)
Minimum Inside Diameter (inches)	17/32 (.530)	21/32 (.656)	29/32 (.906)
Connection	1 AM MT	1-1/4 API Reg	2-3/8 PAC
Length – Fully Closed (feet and inches)	4' 3-5/16"	5' 9-3/16"	6' 11/16"
Total Stroke (inches)	3.95	5.50	6.00
Pump Open Area (sq in)	1.128	2.23*	3.98

STRENGTH AND TEST DATA

Complete Assembly	617-169	617-213	617-288
Outside Diameter (inches)	1-11/16 (1.708)	2-1/8 (2.156)	2-7/8 (2.906)
Max Push/Pull Load (lbs)	-	-	-
Jar with Energizer	13,500	24,000*	40,000
	<i>No weight bars between tools</i>		
	15,500	30,000*	50,000
	<i>With at least one weight bar between tools</i>		
All other cases	15,500	30,000*	50,000
Max Lift Load After Jarring Jar Fully Extended Tensile @ Yield (lbs)	69,000	125,000	225,000
Torque @ Yield (ft-lbs)	800	1,700	4,000*

* Data Pending

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
Top Sub	Logan Part No.	CC1000	CC1002	CC1004
Top Sub Seal	Logan Part No.	568122	568128	568226
Upper Pressure Body	Logan Part No.	CD2000	CD2002	CD2004

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Upper Pressure Body OD Non-Extrusion Ring	Logan Part No.	CC14000	CC14002	CC14004
Upper Pressure Body OD Seal Protector Ring	Logan Part No.	8-025	8-128	8-226
Upper Pressure Body OD Seal	Logan Part No.	568025	568128	568226
Upper Pressure Body ID Non-Extrusion Ring	Logan Part No.	CD4000	CD4002	CD4004
	No Req'd	2	2	2
Upper Pressure Body ID Seal Protector Ring	Logan Part No.	8-120	8-271	8-223
	No Req'd	2	2	2
Upper Pressure Body ID Seal	Logan Part No.	568120	568216	568224
Lower Pressure Body	Logan Part No.	CD3000	CD3002	CD3004
Spline Body	Logan Part No.	CD5000	CD5002	CD5004
Mandrel	Logan Part No.	CD6000	CD6002	CD6004
Mandrel ID Seal	Logan Part No.	568118	568120	568220
Mandrel OD Non-Extrusion Ring	Logan Part No.	CC15000	CC15002	CC15004
Mandrel OD Seal Protector Ring	Logan Part No.	8-121	8-221	8-327
Mandrel OD Seal	Logan Part No.	568914	568221	568327
Mandrel OD Polypak	Logan Part No.	BD209-11	BD209-13	BD209-12
Mandrel Extension	Logan Part No.	CD7000	CD7002	CD7004
Nut	Logan Part No.	CD8000	CD8002	CD8004
Nut ID Seal Protector Ring	Logan Part No.	8-118	8-120	8-220
Nut ID Seal	Logan Part No.	568118	568120	568220
Nut OD Non-Extrusion Ring	Logan Part No.	CC15000	CC15002	CC15004
	No Req'd	2	2	2
Nut OD Seal Protector Ring	Logan Part No.	8-121	8-221	8-327
	No Req'd	2	2	2
Nut OD Seal	Logan Part No.	568914	568120	568327
Nut OD Optiseal	Logan Part No.	CC19000-001	CC19002-001	CC19004-001
Spline	Logan Part No.	CC12000	CC12002	CC12004
	No Req'd	2	2	4

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

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- Name and number of any desired spares

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Redress Kit	Logan Part No.	CD1000	CD10002	CD10004
Consists of:				
Upper Pressure Body OD Non-Extrusion Ring	Logan Part No. No Reqd	CC14000 1	CC14002 1	CC14004 1
Nut & Mandrel OD Non-Extrusion Ring	Logan Part No. No Reqd	CC15000 3	CC15002 3	CC15004 3
Upper Pressure Body ID Non-Extrusion Ring	Logan Part No. No Reqd	CD4000 2	CD4002 2	CD4004 2
Seal Kit	Logan Part No. No Reqd	CD9000 1	CD9002 1	CD9004 1
Spline	Logan Part No. No Reqd	CC12000 2	CC12002 2	CC12004 4

Required Accessories				
Combination Wrench Size for Mandrel Extension (inches)		3-16	1	1-3/8
	No Reqd	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
Polypak Stretcher	Logan Part No.	CD11000	CD11002	CD11004
Polypak Installation Tool	Logan Part No.	CD12000	CD12002	CD12004
Under Pressure Body Setting Tool	Logan Part No.	CD13000	CD13002	CD13004
Safety Sub	Logan Part No.	CD15000	CD15002	CD15004

* Used for removing Nut from Upper Pressure Body

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