

Bi-Directional Coiled Tubing Energizers

BI-DIRECTIONAL COILED TUBING ENERGIZERS

Overview

The double-acting, Bi-Directional Coiled Tubing Energizer is an impact enhancement tool designed for slim holes (generally a well bore 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 or BHA. A Logan Bi-Directional Coiled Tubing Energizer is recommended any time a Bi-Directional Coiled Tubing Jar is included in the work string.

Construction

Each size of Bi-Directional Coiled Tubing Energizer is designed to match the corresponding size of 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.

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 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 Bi-Directional Coiled Tubing Energizer absorbs much of the jarring shock from the rebounding string to protect the bottom hole assembly from damage.

The 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 below.)

When ordering, please specify:

- (1) Name and number of assembly or part
- (2) Outside diameter
- (3) Connections, if other than standard
- (4) Name and number of any desired spares
- (5) 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 & INCHES)	4' - 3-5/16"	5" - 9-3/16"	6' - 11/16"
TOTAL STROKE (INCHES)	3.95	5.50	6
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:			
No weight bars between tools	13,500	24,000 *	40,000
With at least one weight bar between tools	15,500	30,000 *	50,000
All Other Cases	15,500	30,000 *	50,000
MAX LIFT LOAD AFTER JARRING JAR FULLY EXTENDED	69,000	125,000 *	225,000 *
TENSILE @ YIELD (LBS)			
TORQUE @ YIELD (FT-LBS)	800	1,700 *	4,000 *

* Data pending





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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	617-169	617-213	617-288

COMPONENT PARTS

TOP SUB		CC1000	CC1002	CC1004
TOP SUB SEAL		568122	568128	568226
UPPER PRESSURE BODY		CD2000	CD2002	CD2004
UPPER PRESSURE BODY OD NON-EXTRUSION RING		CC14000	CC14002	CC14004
UPPER PRESSURE BODY OD SEAL PROTECTOR RING		8-025	8-128	8-226
UPPER PRESSURE BODY OD SEAL		568025	568128	568226
UPPER PRESSURE BODY ID NON-EXTRUSION RING		CD4000	CD4002	CD4004
	No. Req'd	2	2	2
UPPER PRESSURE BODY ID SEAL PROTECTOR RING		8-120	8-217	8-223
	No. Req'd	2	2	2
UPPER PRESSURE BODY ID SEAL		568120	568216	568224
LOWER PRESSURE BODY		CD3000	CD3002	CD3004
SPLINE BODY		CD5000	CD5002	CD5004
MANDREL		CD6000	CD6002	CD6004
MANDREL ID SEAL		568118	568120	568220
MANDREL OD NON-EXTRUSION RING		CC15000	CC15002	CC15004
MANDREL OD SEAL PROTECTOR RING		8-121	8-221	8-327
MANDREL OD SEAL		568914	568221	568327
MANDREL OD POLYPAK		BD209-11	BD209-13	BD209-12
MANDREL EXTENSION		CD7000	CD7002	CD7004
NUT		CD8000	CC8002	CC8004
NUT ID SEAL PROTECTOR RING		8-118	8-120	8-220
NUT ID SEAL		568118	568120	568220
NUT OD NON-EXTRUSION RING		CC15000	CC15002	CC15004
	No. Req'd	2	2	2
NUT OD SEAL PROTECTOR RING		8-121	8-221	8-327
	No. Req'd	2	2	2
NUT OD SEAL		568914	568120	568327
NUT OD OPTISEAL		CC19000-001	CC19002-001	CC19004-001
SPLINE		CC12000	CC12002	CC12004
	No. Req'd	2	2	4

REDRESS KIT

Consists of:

UPPER PRESSURE BODY OD NON-EXTRUSION RING	No. Req'd	1	1	1
NUT & MANDREL OD NON-EXTRUSION RING	No. Req'd	3	3	3
UPPER PRESSURE BODY ID NON-EXTRUSION RING	No. Req'd	2	2	2
SEAL KIT	No. Req'd	1	1	1
SPLINE	No. Req'd	2	2	4

REQUIRED ACCESSORIES

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

* Used for removing Nut from Upper Pressure Body