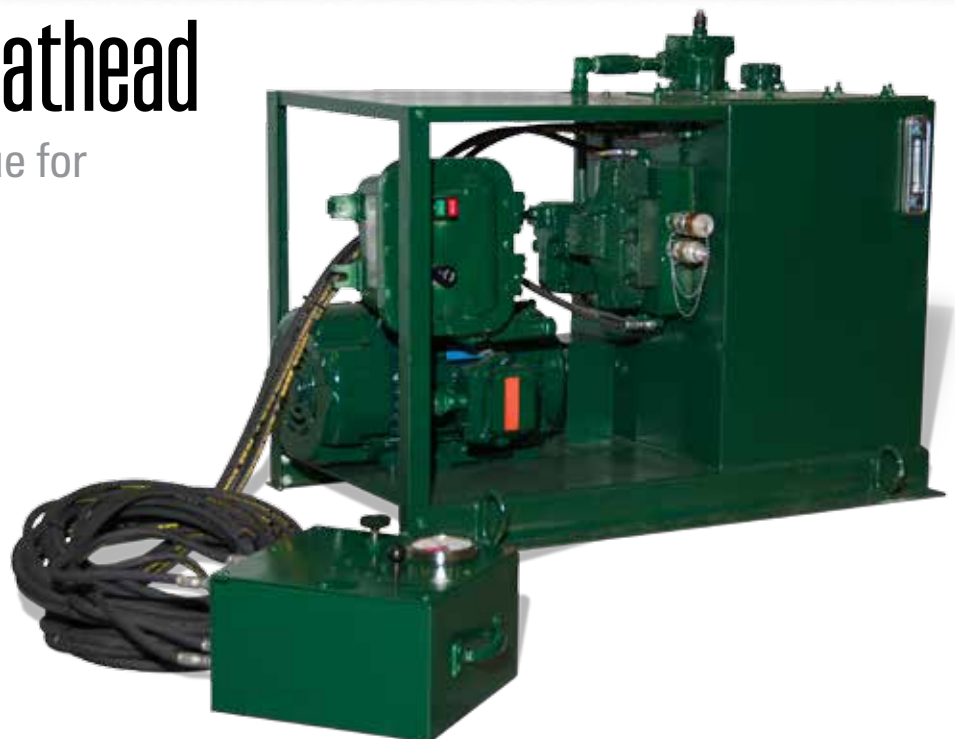


DRILCO



Ezy-Torq Hydraulic Cathead

Delivers even and reliable torque for proper makeup



60
YEARS

DRILCO's Ezy-Torq hydraulic cathead remains an essential part of any drill floor equipment package. The accurate and smooth torque it delivers, to make up today's large diameter bottom hole assemblies with both premium and standard connections, is key to maintaining proper connection torque, reducing maintenance costs, and helping eliminate potential connection failures.



The Ezy-Torq cathead can be configured for any drilling rig application. Units can be specially designed to endure ambient temperatures of up to 131 degF [55 degC] and can be used on drillships, semi-submersibles, jackups as well as land rigs.

Hydraulic power increases torque arc smoothly

The Ezy-Torq* Hydraulic Cathead is specially designed to provide an accurate, smooth, constantly increasing makeup load for large diameter BHA components, in a torque range of 40,000 to 150,000 ft.lbs. When the system is used for rotary shouldered connections requiring less than 40,000 ft.lbs of makeup torque, the unit should be set-up with a calibrated load cell. For these large diameter BHA components, the smooth and consistent line pull to the rig tongs ensures proper, consistent makeup of large diameter, rotary shouldered connections. In all applications, the torque rating of the rig tongs should never be exceeded.

DRILCO Ezy-Torq System Design

DRILCO Ezy-Torq systems are available to fit individual rig requirements and operation parameters. Available systems can be either self contained, powered by the rig, or use an independent power source. Also available are high temperature rated components for harsh environment operation.

The Ezy-Torq Hydraulic cathead is available in three power systems to suit the individual rig requirements. These are: Type I, Type II or Type III systems.

Type I

DRILCO Ezy-Torq Hydraulic Cathead (Self Contained System)

The Type I Ezy-Torq system is a fully self-contained hydraulic supply power source and control console, designed to properly operate the unit's hydraulic cylinder assembly. The entire unit can be temporarily or permanently installed on the rig floor as a self contained system. The cylinder assembly includes a specially rated wireline for easy connection to rig tongs.

Constructed for durability and flexible performance

The Type I Ezy-Torq hydraulic cathead's power unit system features unitized construction and has a self-contained hydraulic power unit, a remote control module, five 25-ft [7,620-mm] remote control module hoses, and two 25-ft cylinder hoses.

Accurate and remote hydraulic pressure control

The unit is powered by its positive displacement, tandem pump with a typical high/low pump circuit. It produces low power consumption, high speed cylinder movement at low force to work loading, and a slow steady pull at high force to full loading. When a work load causes system pressure to rise, the high volume pump stage automatically unloads into the reservoir while the low volume pump stage continues to supply high force for connection makeup.

The power unit can be controlled from a convenient location on the rig with a remote control module: It features a lever actuated control valve, pressure gauge, and a pilot relief valve to provide pressure operation and regulation.

Benefits

- can be configured for any drilling application
- reduces wear on drillstring connections
- ensures proper makeup of large, rotary shouldered connections
- delivers smooth and even torque during makeup
- durable and flexible design

Features

- precise pressure control enables continuous makeup capability
- hydraulic operation of remote control module eliminates electrical hazards
- simple hydraulic circuit ensures trouble-free performance
- unitized construction ensures durability
- positive displacement, tandem pump provides efficient, steady hydraulic energy
- control module enables remote pressure regulation and cylinder operation

Type II

Ezy-Torq Hydraulic Cathead System (Connects to Existing Rig Hydraulic system)

The Type II Ezy-Torq system provides the same superior performance as the Type I system, but it operates with hydraulic components that connect into an existing rig hydraulic supply system, such as the accumulator portion of a blowout preventer system. The Type II system consists of the main control unit, a remote control module, six 50-ft [15.24-m] remote control module hoses, and two 25-ft [7.62 m] cylinder hoses. Conversion hydraulic fittings to existing rig components are supplied by the customer.

Pressure Control with a Minimized Footprint

The Type II system is remotely controlled by an air and hydraulic operated module, which features an adjustable relief valve and high pressure gauge for setting required fluid pressure. The adjustable relief valve pilot operates a pressure reducing valve located on the main control unit, which governs the maximum pressure developed on the blind end of the cylinder (makeup stroke).

An additional preset relief valve limits maximum pressure on the rod side of the cylinder (retraction stroke).

A lever-actuated air valve mounted on the remote control module can extend, retract, or stop cylinder movement. Air operation eliminates the hazards associated with electrical circuits.

Note: The hydraulic auxiliary control unit is designed with a closed center valve for connection to a hydraulic system utilizing accumulators. A conversion kit may be required depending on the rig's hydraulic power source, such as when powered by a positive displacement pump.

Benefits

- uses existing rig hydraulic equipment, minimizing unit space requirements
- air and hydraulic operation eliminates electrical hazards

Features

- remotely controlled
- adjustable relief valve and high pressure gauge sets required fluid pressure

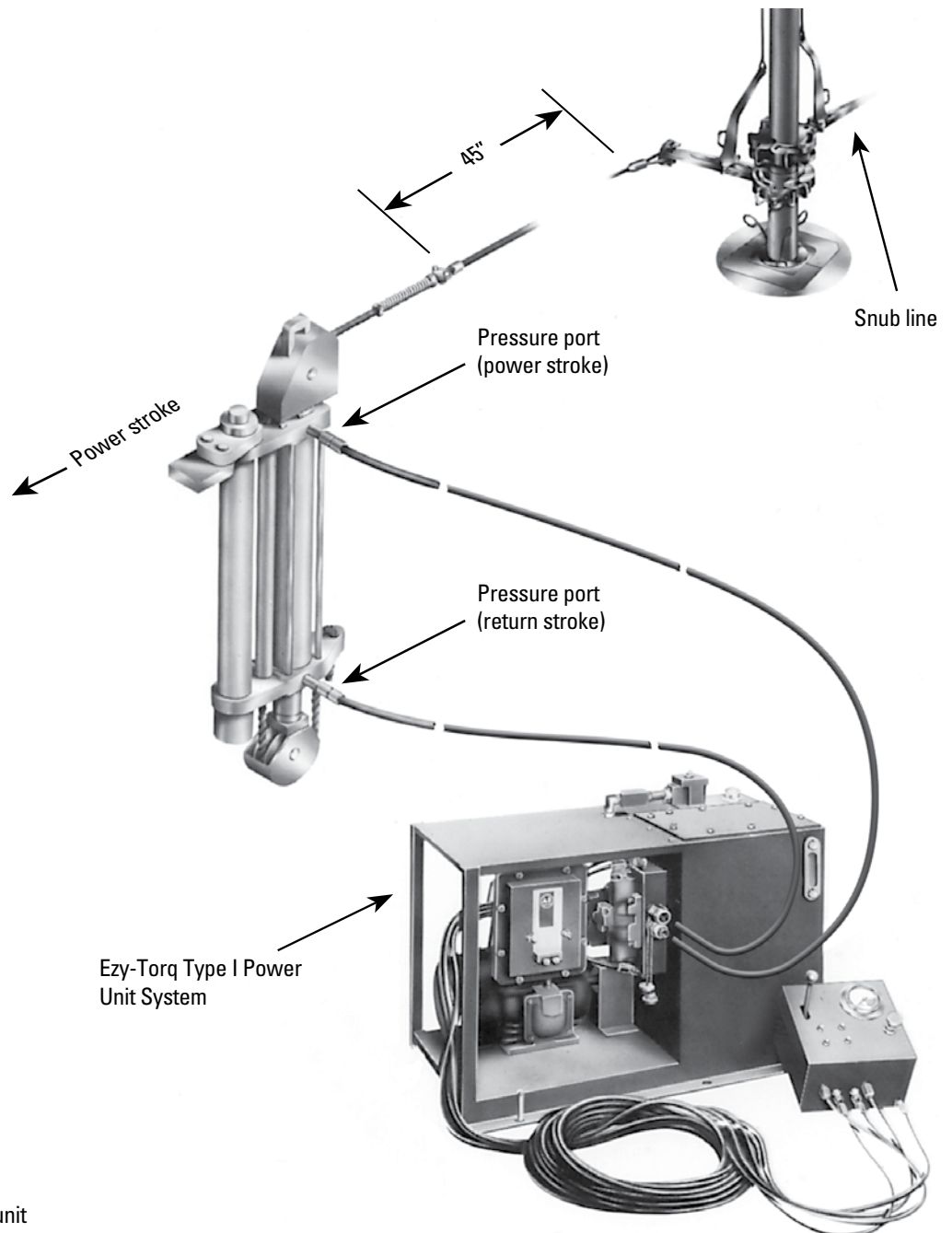
Type III

Ezy-Torq Hydraulic Cathead System (Type II conversion kit for use on rigs with positive displacement hydraulic systems)

Type III Ezy-Torq system (Type II system, with conversion kit) incorporates the same great benefits of the Ezy-Torq Type I or II systems, but is used when connecting to a rig hydraulic source that uses positive displacement type pumps to supply hydraulic pressure to the system. This system is not intended for use with a hydraulic system that uses an accumulator (see Type II system instead).

Type III System Requirements

Many rig hydraulic supplies utilize continuous running pumps such as positive displacement gear pumps. If flow is blocked, the hydraulic supply motor may overload or cause system breakage because due to fluid pressure build up. If this type hydraulic supply is to be used, then a conversion kit (Type III Ezy-Torq system) will be necessary for proper operation.



The Type I system is a self-contained system with three main components: power source, control console, and hydraulic cylinder.

Pressure Control Guards Against Damage

The Type III system uses a pilot-operated relief valve to bypass flow to the reservoir return line at low pressure when the remote control lever is released.

This capability helps prevent damage that may be caused by a blockage in the hydraulic system: hydraulically supplied motors may become overloaded or a rupture in the system may occur if the fluid pressure fails to dissipate.

Rig hydraulic supplies which contain relief valves capable of by-passing fluid to the reservoir may possibly be used without a conversion kit (Type II system). Oil heating may become a problem however if fluid flows continuously across the relief valves for long periods of time at high pressures.

CAUTION: The Conversion Kit must not be used if the Ezy-Torq hydraulic cathead is to be connected to an accumulator system.

Range of dependable power for connection make up

The Ezy-Torq Types I, II, and III will deliver smooth line force needed to ensure rig loads from 40,000 to 150,000 ft.lbf are properly and safely made up.

Ezy-Torq Hydraulic Cathead

Operating 24/7, DRILCO's global service centers offer service, repair, and a complete line of spare parts and consumables for every Ezy-Torq system. Please contact your local DRILCO representative or visit our website at www.DRILCO.com for more information.

Ezy-Torq Cathead Recommended Spare Parts Kits for 12 Months Operation	
Description	Part Number
Type I Model E Power Unit Spare Parts Kit	07257001
Type II Auxiliary Unit Spare Parts Kit	03677801
Type III Auxiliary Unit Spare Parts Kit	03677801
Cylinder Assembly Spare Parts Kit (includes wireline assembly)	03677701

Shipping Weight Data		
Hydraulic Cylinder Assembly [†] , lbm	Power Unit Assembly [‡] , lbf	Auxiliary Power Unit Assembly [‡] , lbf
850	900	400

All weights are approximate
[†]Contains remote control module with hoses
[‡]Contains wireline assembly

System Power Design Data							
Motor Design	Cycle Frequency, hz	Amperage, amp				Cylinder Time, s	
		230 v	460 v	220 v	380 v	Power Stroke	Return Stroke
10 hp - 1750 rpm	60	25.4	12.7	N/A	N/A	10	5
7½ hp - 1450 rpm	50	N/A	N/A	23.4	11.7	11	6

Cylinder Assembly						
Minimum Flow Rate	Maximum Flow Rate	Maximum Test Pressure	Maximum Working Pressure	Stroke Length	Line Pull	Torque Range
4 galUS/min	35 galUS/min	3,000 psi	2,500 psi	22.5 in	32,900 lbf	40,000–150,000 ft.lbf
18.9 l/min	132.5 lpm	20.68 Mpa	17.2 Mpa	571.5 mm	146,000 N	54,240–203,400 N.m

Ordering instructions, please specify:

- Ezy-Torq Type I System (standard)
- Ezy-Torq Type II System for Rig Accumulator Utilization.
- Ezy-Torq Type III System for Positive Displacement Rig Pump Systems
- Hertz (Hz) of power source: 50 Hz or 60 Hz
- Motor Voltage - The following are available:
 - 60 Hz - 230V, 460V, 1750 RPM, 10HP
 - 50 Hz - 220V or 380V, 1450 RPM, 7-1/2 HP
 - Other voltages are available upon special order
- Motor Temperature Rating
 - 104 degF [40 degC] ambient operating temperature standard.
 - 131 degF [55 degC] ambient operating temperature optional.

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