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### INTRODUCTION

With the FASTORQ® Auto-Zip Sub-Sea Flange Puller you can safely and efficiently pull flanges together in an underwater environment.

Versatility: can be used on a wide range of flange sizes

Flexibility: Fits on ANSI and API flanges

Precision: Pulling Force is controlled by adjusting pump pressure

Speed: Extends and retracts without manual intervention

### SAFETY TIPS

Do not allow the hydraulic hoses to kink, twist, curl or bend so that the oil flow within becomes blocked or reduced.

Never attempt to grasp a pressurized hose that is leaking.

Never exceed 10,000 psi of hydraulic pressure while operating the equipment.

### NOTE:

(See Parts Layout & Description on Page 5)

# 4 Double-Zip Pulling Device and

# 6 Double-Zip Reaction Device

are seated at the factory. Opening these components will void the warranty.

## POWER REQUIREMENTS

The Auto-Zip Sub-Sea Flange Puller is hydraulically driven. All models require a hydraulic pump that delivers 10,000 psi of pressure.



Recommended FASTORQ Hydraulic Pumps to be used with the Auto-Zip Sub-Sea Flange Puller:

205A - Air Driven (as seen above)

215E - Electric

All FASTORQ hydraulic pumps include the necessary fittings and hoses. If a FASTORQ hydraulic pump is not being used to power the Auto-Zip Sub-Sea Flange Puller, the following requirements must be met:

Valve Type / 4-way

Hose Rated at 10,000 psi

Usable Minimum Capacity / 460 in<sup>3</sup>

# Auto-Zip Sub-Sea Flange Puller

## Parts Layout and Description



1. Double-Zip Control Lever (open position)
2. Double-Zip Control Lever (open position)
3. 1-7/8" Double-Zip Reaction Nut
4. Double-Zip Pulling Device
5. 60 Ton Auto-Zip Sub-Sea Flange Puller cylinder
6. Double-Zip Reaction Device
7. 1-7/8" Threaded Puller Bar

## ASSEMBLY

1. Put Double-Zip Control Levers ( 1 ) and ( 2 ) in the "OPEN" position.



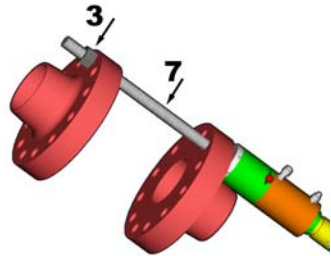
2. Slide the threaded puller bar ( 7 ) through the center of the flange puller

3. Put the Double-Zip Control Levers ( 1 ) and ( 2 ) in the "CLOSED" position.



## OPERATION

1. Slide the free end of the Threaded Puller Bar (7) through a bolt hole in one flange half and extend the Threaded Puller Bar (7) through a bolt hole in the opposite flange half. Push the Double-Zip Reaction Nut (3) on the end of the Threaded Puller Bar (7).



2. Position the second Flange Puller on the flange 180° (opposite) of the first . Repeat Step 1.

3. Connect hydraulic hoses to the quick disconnects on each Flange Puller and the opposite hose ends to the TB3 manifold at the pump.

4. Press the Advance Button on the remote control to extend the Flange Puller cylinders and draw the flange halves closer together.



*TB3 Manifold with two hose sets*

5. Push the Retract Button to retract the Flange Puller cylinders to reposition the Double-Zip Pulling Device (4) for another stroke.

6. Repeat steps 4 and 5 until the two flange halves are close enough to insert the stud bolts and secure them with nuts.

## MAINTENANCE

The Auto-Zip Sub-Sea Flange Puller is designed to be a low maintenance tool. The following should be done a regular basis to increase the longevity of the tool:

1. Always wash down the tool with fresh water after use
2. Lubricate all moving parts with FASTORQ 70+ lubricant
3. Replace the dust covers on the quick disconnects and thread protectors on the cylinder after each use

## Trouble-Shooting Table

<u>Problem</u>	<u>Possible Causes</u>	<u>Possible Solutions</u>
Cylinder does not hold pressure	<ol style="list-style-type: none"> <li>1. Cylinder seal leaking</li> <li>2. Leaking connection</li> <li>3. Pump malfunction</li> </ol>	<ol style="list-style-type: none"> <li>1. Change cylinder</li> <li>2. Tighten connections</li> <li>3. Change pump</li> </ol>
Cylinder does not advance or advances partially	<ol style="list-style-type: none"> <li>1. Pump release valve open</li> <li>2. Not enough oil in pump</li> <li>3. Air in system</li> <li>4. Couplers not tightened</li> <li>5. Pump reservoir too small</li> <li>6. Strainer on pump is clogged</li> </ol>	<ol style="list-style-type: none"> <li>1. Close valve</li> <li>2. Add oil</li> <li>3. Bleed air</li> <li>4. Fully tighten couplers</li> <li>5. Change pump (use one w/ larger reservoir)</li> <li>6. Clean Strainer</li> </ol>
Cylinder advances slowly	<ol style="list-style-type: none"> <li>1. Leaking connection</li> <li>2. Restricted hydraulic hose or fitting</li> <li>3. Loose coupler</li> <li>4. Pump flow rate too slow</li> </ol>	<ol style="list-style-type: none"> <li>1. Tighten connections</li> <li>2. Change hoses or fittings</li> <li>3. Tighten couplers</li> <li>4. Change pump (use one w/ faster flow rate)</li> </ol>
Cylinder does not retract, retracts slowly or retracts partially	<ol style="list-style-type: none"> <li>1. Pump release valve closed</li> <li>2. Coupler not fully closed</li> <li>3. Blocked hydraulic hose</li> <li>4. Pump reservoir overfilled</li> </ol>	<ol style="list-style-type: none"> <li>1. Open valve</li> <li>2. Close coupler</li> <li>3. Replace hoses</li> <li>4. Remove excess oil</li> </ol>

## LIMITED WARRANTY

FASTORQ® warrants its products against defects in workmanship and materials for 180 days from date of delivery to customer. Warranty does not cover ordinary wear and tear, abuse, misuse, overloading or altered products.

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