TFS Series

OPERATION AND MAINTENANCE

MANUAL

TFS Hydraulic Flange Spreaders

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Operational and Maintenance Manual for TorcUP
TFS Series
Hydraulic Flange Spreaders
Version 1: 2013 April

NOTICE

TFS Series hydraulic flange spreaders is a multi-purpose flange spreader. Working on flanges, heavy machinery, injection molding machines, and heavy field equipment maintenance, this tool is universally useful. The TFS Flange Spreader is available in both hydraulic and manual models, and is made for easy, single-operator usage. The jaws are designed for “no-drift.” The unit stays where it is placed. With 10,000 Ft/lbs of spreading force and a full operation spread to 3”, the TFS Series Flange Spreader applies spreading force where you need it, when you need it.

TorcUP Inc. is not responsible for customer modification of tools for applications on which TorcUP Inc. was not consulted.

WARNING

IMPORTANT SAFETY INFORMATION ENCLOSED.
READ THIS MANUAL BEFORE OPERATING TOOL.
IT IS THE RESPONSIBILITY OF THE EMPLOYER TO PLACE THE INFORMATION IN THIS MANUAL INTO THE HANDS OF THE OPERATOR.
FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY.

The TFS Series flange spreader model TFS-10H is designed for spreading and lifting. It generates 10,000 lbs of spreading for at the feet by using hydraulic power. It is extremely versatile and can be used where ever lifting power is needed.

The TFS flange spreader is simple to use. To spread the feet, connect the hydraulic cylinder to a hydraulic pump and pressurize it. To close the feet, release the pressure of the pump. The cylinder has a spring return.

The TFS flange spreader only needs 0.15” or 4mm clearance to engage the feet. It has separating capacity of 3” spread under full load. The high strength alloy steel forged feet close automatically when the pressure is released.

Note: When using the TFS flange spreader for flange spreading, it is recommended that two TFS flange spreaders be used. Place the flange spreaders on opposite sides of the flange for even spreading.

The use of other than genuine TorcUP replacement parts may result in safety hazards, decreased tool performance, and increased maintenance, and may invalidate all warranties. Repairs should be made only by authorized personnel. Consult your nearest TorcUP Authorized Service Center.

Refer All Communications to the Nearest TorcUP Office or Distributor.

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FAILURE TO OBSERVE THE FOLLOWING WARNINGS COULD RESULT IN INJURY

Always wear ear protection when operating this tool.

WARNING

Always wear eye protection when operating or performing maintenance on this tool.

Keep body stance balanced and firm. Do not overreach when operating this tool.

Take all precautions to make certain the operator's hand cannot be pinched between the arm and a solid object.

USING THE TOOL

- Keep hands, loose clothing & long hair away from the reaction point and working area during operation. Do not attempt to support the tool with your hands during operation.
- Always wear the appropriated protective equipment, such as safety glasses and gloves.
- Use cribbing or blocking under any load being lifted with the tool where possible
- Creating pressure beyond 10,000 PSI rated capacity may result in injury.
- Never place any body part between the tool and the equipment being worked on.
- This tool is not designed for working in explosive atmosphere.

Depending on the working environment and how the TFS Flange Spreader is used, your local health and safety regulations may require you protective gear (i.e. Ear Protection, Safety Shoes, Hard Hat, Gloves, Coveralls, etc.) In case external forces are exerted on the equipment, non-compliance with these regulations may result in injury. EAR PROTECTION MUST BE WORN WHEN OPERATING THIS TOOL.

MAXIMUM SPREADER EXTENSION

A red mark will appear on the shaft of the center foot when maximum safe extension is achieved. Creating pressure beyond the 10,000 PSI rated capacity may result in injury.

OPERATING THE TOOL

MAINTENANCE

Treat the TFS flange spreader like any other precision tool. Keep it clean and free from moisture. Wipe it down with a cloth or paper towel after each use.

All the materials used in the TFS flange spreader were chosen through extensive research. All parts are rated for their intended use, and do not need field repair. Improper assembly, modification or substitution of other parts is unsafe, will void the warranty and could damage the tool.

FOOT REPLACEMENT

When it is necessary to replace a foot on the TFS flange spreader, follow these steps:

1. Close the feet. The center foot should be aligned with the outside feet.
2. Loosen the two allen head screws on the bottom of the feet being replaced.
3. Remove the old feet and position the new feet in place.
4. Tighten the two allen head screws.

NOTE: it is very important that the allen screws be properly tightened. The required torque value is 40FT/lbs.

ASSEMBLY/DISASSEMBLY INSTRUCTIONS

The TFS flange spreader is delivered assembled and ready to use. If it is necessary to disassemble the TFS flange spreader for repairs, follow the assembly instructions carefully when re-assembling. Failure to follow these insturctions may damage one or more components.

TOOL STORAGE

Wipe tool clean with a cloth or paper towel after each used.
NOTE: The TFS flange spreader should be kept in the ready position when not in use.

DISASSEMBLY INSTRUCTIONS

Should it become necessary to disassemble the TFS flange spreader, follow these steps:

1. Close the feet by retracting the center foot until it is aligned with the outside feet.
2. Position the TFS flange spread on its side with the roll pin should be facing up.
3. Look down through the hole of the pin; you should be looking into the slot on the side of the piston.
4. Connect the cylinder to a pump. Open the feet by slowly pressurizing the hydraulic cylinder and watch the piston travel down.

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OPERATING THE TOOL

5. Continue opening the feet until you have located the hole in the middle of the slot on the side of the piston.
6. Line up the hole in the slot with the roll pin in the sidewall of the housing.
7. Push the roll pin down through the wall of the housing into the hole in the side of the pis ton. A hammer and punch may be used to push the roll pin into the housing and piston.
8. Extend the cylinder to the maximum extension mark on the piston.
9. Pressurize the cylinder to 1,000 PSI.
10. Turn the subassembly counter-clockwise until it is completely unscrewed and slides out easily. The subassembly consists of the adaptor, piston and center foot.
11. Release the pressure to retract the cylinder and disconnect the cylinder from the pump.
12. Loosen the set screw in the front of the housing with a 5/32" allen wrench. Remove the cylinder by turning it counterclockwise.

NOTE: Before disassembling the tool, mark the position of the cylinder in reference to the housing.

ASSEMBLY INSTRUCTIONS

1. Make sure all parts are available and in working order.
2. Clean all the parts with a degreasing solvent.
3. Screw the cylinder all the way into the housing.
4. Position the outside feet against the bottom of the housing. Be sure the place the feet, which are marked left and right, on the appropriate sides of the housing. The countersunk screw holes should be facing out, and not against the bottom of the housing.
5. Insert the flat head allen screw in the screw holes on the outside feet, and tighten them with a 5/16" allen wrench to 35-40Ft/lbs.
6. Placed the center foot on the top of the piston. The countersunk screw holes will be facing up.
7. Insert the flat head allen screw in the screw holes on the center foot and tighten them with a 1/4" allen wrench to 25-30Ft/lbs.
8. Screw the adaptor into the piston all the way until the shoulder on the adaptor touches the top of the piston. Torque the approximately 35Ft/lbs. NOTE: The adaptor has left hand threads.
9. Lightly lubricate the ouside of the piston.
10. Connect the hydraulic cylinder through the quick disconnect attached to the cylinder. Use 10.000 PSI W.P. rated hydraulic hose. Extend the cylinder by pressurizing the pump. Maintain full pressure on the cylinder while executing step 11.
11. Insert subassembly inside the housing. The subassembly consists of the center foot, piston, and adaptor. Screw the assembly clockwise into the front of the piston rod, until the adaptor stops against the cylinder rod.
12. Release the hydraulic pressure from the cylinder and the center foot will retract.
13. Install the roll pin in the hole on the side of the housing, use a hammer if necessary. The roll pin will slide into the slot on the side of the piston, if everything is properly assembled.
14. Check the feet again to be sure they are still aligned. Check the alignment of the cylinder in reference to the housing (this should have been marked in the disassembly). Insert the set screw in the hole provided int he front of the housing. Tighten the set screw to the cylinder. Do not tighten the set screw too tight, for future removal of the cylinder may be too difficult.
15. Pressurize and depressurize the cylinder to check that the tool is operating properly.

LIMITED WARRANTY

The product is warranted against defects in workmanship and materials for 13 months from date of shipment to customer. Warranty does not cover ordinary wear and tear, abuse, misuse, overloading or altered products.

TROUBLE SHOOTING

Problem	***Possible Causes***	***Possibly Solutions***
Cylinder doesn't cycle in and out.	1. Insufficient hydraulic pressure and flow 2. Quick disconnect not completely engaged	1. Check for sufficient supply of hydraulic oil 2. Check the quick disconnects as they must be fully engaged and in good repair 3. When using pneumatic pumps, check that there is sufficient air pressure and check the air supply hose
Dirt or contaminated oil circulating in the system	1. External or internal parts are not clean 2. Dirty filter	1. Change the oil and clean the pump 2. Check the internal filter
Oil level low	1. Leaking pump, hose or filter	1. Check the oil level and refill to proper level 2. Replace hoses and/or gaskets.
Air in system	1. Improperly purged hoses	1. Bleed system and check for cause of air in system
Piston will not return	1. Damaged piston rod 2. Improper connections 3. Broken return spring	1. Check for obstructions around rod. 2. Check quick disconnects to make sure they are fully engaged. 3. Replace spring
Spreader leaks around piston	Worn seals	1. Replace seals

SAVE THESE INSTRUCTIONS DO NOT DESTROY

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