

# Chesterton® SuperSet™ Featuring SpiralTrac™ Installation Instructions

## PREPARE EQUIPMENT

1. Unpack stuffing box using standard methods. Clean the stuffing box to ensure that it is completely free from used packing, solids or corrosion.
2. If replacing a SuperSet or disassembling the equipment for repair, refer to **Table I** for SpiralTrac removal instructions.
3. Inspect pump sleeve to ensure that it is in good condition (**Figure 1**). Sleeve condition will have a direct impact on the service life of packing in pumps. If the sleeve requires replacement, replace with an OEM sleeve or equivalent.
4. Clean packing gland and gland follower to ensure free insertion into the stuffing box.
5. **Plug Flush Out Port.** Where flush in/flush out piping is utilized **use flush in only** (see **Figure 6**).

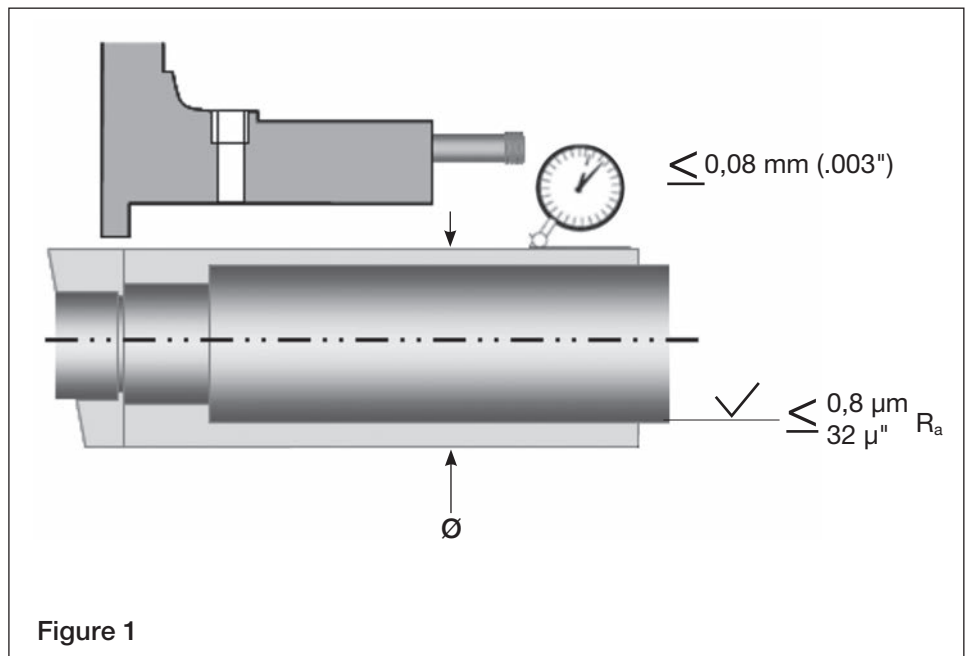


Figure 1

## CAUTIONS

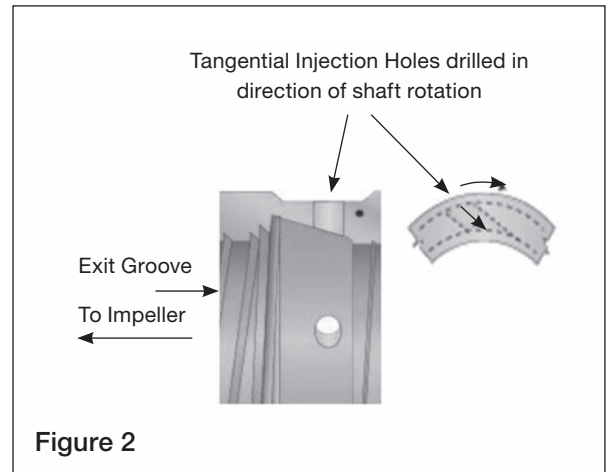
These instructions are general in nature. It is assumed that the installer is familiar with mechanical packing and with the plant requirements for the successful use of mechanical packing. If in doubt, get assistance from someone in the plant that is familiar with the product, or delay the installation until a packing representative is available.

All necessary auxiliary arrangements for successful operation (heating, cooling, flushing) as well as safety devices must be employed. These decisions are to be made by the user. The decision to use this or any other Chesterton product in a particular service is the customer's responsibility.

## PREPARE SpiralTrac™ DEVICE

Refer to SpiralTrac images and Table I on page 3 for specific device configuration and installation details.

1. Separate halves of SpiralTrac™ Version P Type “S”. Components will be matched split halves with alignment pins in place. Type S in STR material is one piece with a single split; Types A and B are one piece, solid units.
2. SpiralTrac is directional. On double ended pumps make sure rotation is correct for each end (see Figure 2).
3. A sticker is placed on the OD of every SpiralTrac device, showing direction of rotation. Check to make sure device being installed corresponds to shaft rotation of equipment. Remove **all** stickers and labels from device before installation.
4. Check to make sure that the device slides freely into the stuffing box and that there is clearance between the shaft and device ID. SpiralTrac P is a clearance locational fit on the OD and should install without excessive force.
5. Fill out the green SpiralTrac information tag with the date of installation and attach to the equipment for future reference.



## INSTALLATION

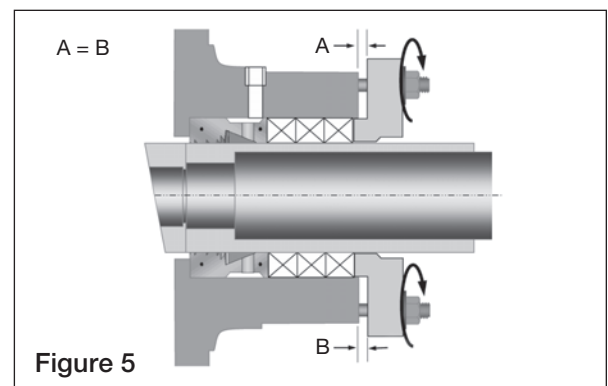
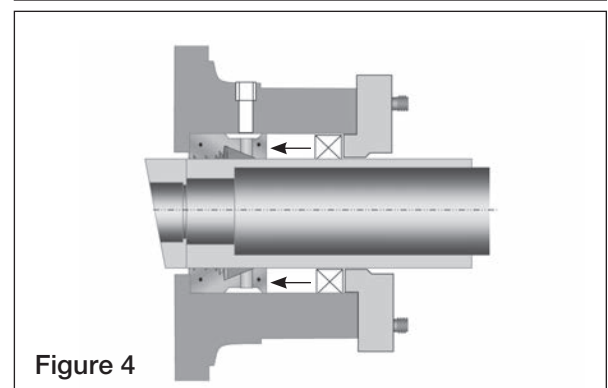
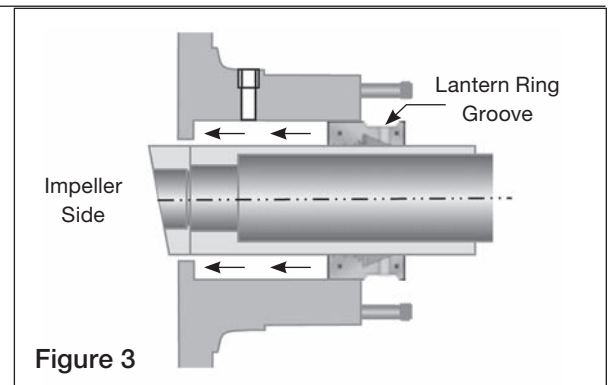
### NOTE:

If installing a SuperSet Repair Kit go directly to Step 4.

1. Disassemble SpiralTrac split halves (see TABLE I).
2. Assemble device halves around shaft (see TABLE I).
3. Push SpiralTrac device evenly into stuffing box until it bottoms out (Figure 3).
4. Install each packing ring by inserting it into the stuffing box, then pushing it as far as it will go into the box using the packing gland (Figure 4). Use a Chesterton Tamping Tool to seat the ring against the SpiralTrac device. Stagger consecutive ring joints 90°.

Refer to TABLE II for continued Installation sequence specific to packing type.

5. Install packing gland/follower; tighten gland bolts with a wrench until gland/follower is inserted into the stuffing box a minimum of 3 mm (1/8") (Figure 5).
6. Loosen gland bolts and slide gland back until it moves freely.
7. Alternately tighten gland bolts finger tight until gland nose contacts the packing in stuffing box. Check for even spacing between gland and stuffing box face (Figure 5).
8. Use a 0,5 mm (0.020") feeler gauge between the shaft and the gland ID to make sure that the gland is not in contact with the shaft (gland contact with the shaft can cause excessive heat and damage equipment).
9. Supply flush fluid by connecting a flow meter (Chesterton® Flow Guardian™ S50 is recommended) and a check valve to the appropriate piping connection (Figure 6).



## EQUIPMENT START-UP AND OPERATION

Prior to starting the pump, make sure that the gland follower is inserted into the stuffing box a minimum of 3 mm (1/8").

### Packing Break-In:

During break-in the packing may generate heat, causing the packing gland to get hot. Normally, within 4 hours of operation, the packing will “break in” and the gland temperature will be reduced.

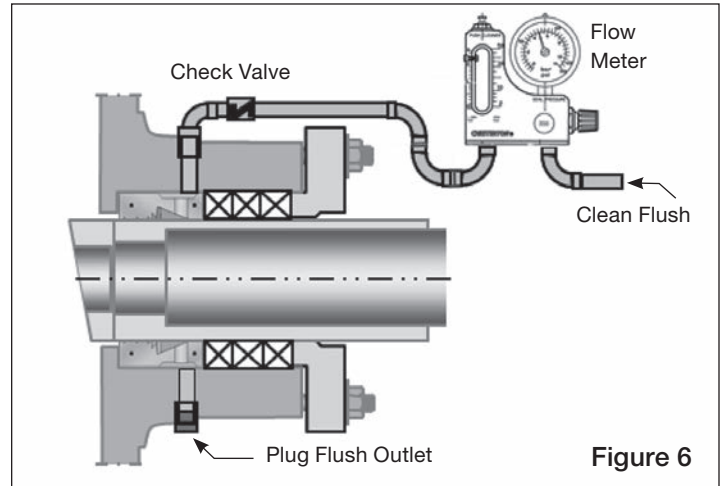

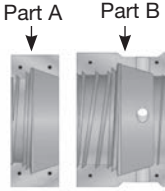





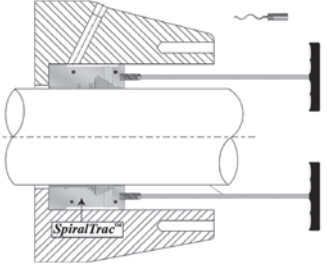
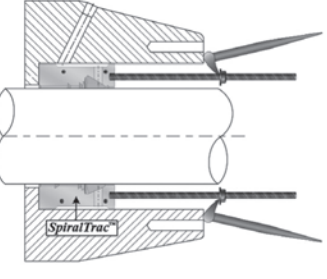
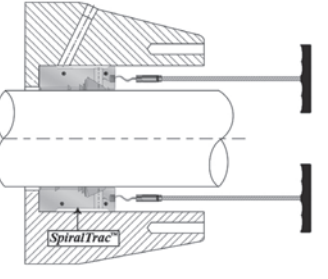
TABLE I: SpiralTrac VERSION P CONFIGURATION

 <p>Type S</p>	 <p>Part A    Part B</p> <p>Type S Multi-Piece</p>	 <p>Type S STR</p>	 <p>Type B — Type A</p>
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### INSTALLATION DETAILS

TYPE	CONFIGURATION	SPECIAL INSTRUCTIONS
S (standard)	Split; 2-Piece	Standard instructions apply
S - Multi-Piece	Split; 4-Pieces: Part A (2-pc split); Part B (2-pc split)	Install Part A first and Part B second; when installed correctly, lantern ring groove of Part B will correspond with flush injection port.
S - STR	Single Split; 1-Piece	Separate STR bushing at single split; stretch/twist open bushing, allowing the device to be “wrapped” around shaft.
A or B	Solid; Type A (Counter bore fit) or Type B (Bore fit)	Non-Split devices; Install prior to or during pump assembly.

### REMOVAL DETAILS

 <p>PRE-THREADED* EXTRACTION HOLES</p>	 <p>OPTION 1</p>	 <p>OPTION 2</p>	 <p>OPTION 3</p>						
<table border="1"> <tr> <th>Cross-Section</th> <th>Thread Size</th> </tr> <tr> <td>3/8" – 1/2"</td> <td>10x24 Threaded Shaft</td> </tr> <tr> <td>&gt;1/2"</td> <td>0.250" NC Threaded Shaft</td> </tr> </table>	Cross-Section	Thread Size	3/8" – 1/2"	10x24 Threaded Shaft	>1/2"	0.250" NC Threaded Shaft	<p>Remove corkscrew end from two packing tools and screw the shafts into the prethreaded holes in the face of the <i>SpiralTrac</i> packing device and pull evenly.</p>	<p>Screw threaded rods into the pre-threaded holes in the face of the <i>SpiralTrac</i> Version P. Thread nuts and washers evenly down the rods until pressure can be applied with pry bars. Then pull the <i>SpiralTrac</i> out evenly.</p>	<p>(PTFE devices only) Using the predrilled holes as guides, screw the corkscrew end of the packing removal tools directly into the face of the <i>SpiralTrac</i> version P and pull evenly.</p>
Cross-Section	Thread Size								
3/8" – 1/2"	10x24 Threaded Shaft								
>1/2"	0.250" NC Threaded Shaft								

\* PTFE is Pre-drilled, no threads. Use OPTION 3

# PACKING

**TABLE II: PACKING STYLE SPECIFIC INSTALLATION DETAILS**

STYLE	PRE-COMPRESSION (PREPARE FOR START-UP)	START-UP LEAKAGE RATE DPM (DROPS PER MINUTE)	GLAND ADJUSTMENTS	OPERATING LEAKAGE RATE <sup>3</sup> DPM/INCH SHAFT DIAMETER
370 <sup>1,2</sup>	Installation steps 1 thru 4; go to Installation step 7 thru 9.	100+	½ to 1 Flat/15 minutes	8 – 10
1400R	Installation Steps 1 thru 9	100+	½ to 1 Flat/15 minutes	8 – 10
GraphMax™	Installation Steps 1 thru 9	100+	½ to 1 Flat/15 minutes	8 – 10
1730	Installation steps 1 thru 4; go to installation step 7 thru 9	20 – 30	½ to 1 Flat/15 minutes	8 – 10
412-W	Installation steps 1 thru 4; go to installation step 7 thru 9	20 – 30	½ to 1 Flat/15 minutes	8 – 10
477-1T	Installation steps 1 thru 4; go to installation step 7 thru 9	20 – 30+	½ to 1 Flat/15 minutes	8 – 10
1760	Installation steps 1 thru 4; go to installation step 7 thru 9	100+	½ to 1 Flat/15 minutes	20 – 60
1830-SSP	Installation steps 1 thru 4; go to installation step 7 thru 9	100+	½ to 1 Flat/15 minutes	20 – 60
DualPac® 2211	Installation steps 1 thru 4; go to installation step 7 thru 9	100 – 200	½ to 1 Flat/15 minutes	20 – 60
DualPac® 2212	Installation steps 1 thru 4; go to installation step 7 thru 9	100 – 200	½ to 1 Flat/15 minutes	20 – 60

\*For other packing style recommendations contact Chesterton Mechanical Packing Applications Engineering

## Notes

<sup>1</sup> Shaft condition (radial run-out) per Figure 1 is a requirement for this style packing.

<sup>2</sup> For lower leakage rates cut rings must be no more than 3,2 mm (1/8") shorter than standard.

<sup>3</sup> Operating leakage is generally between 8 to 10 dpm (drops per minute) per inch of shaft. Lower leakage may be achieved depending on packing style and application conditions. Leakage rates will vary for all packing depending on equipment condition as well as application temperature, surface speed and pressure.

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