

## SUPPLEMENT FOR RETROFITTING A REDESIGNED FP SINGLE FLANGE SHAFT

### PUMP SHAFT AND/OR MOTOR REPLACEMENT



Begin all pump maintenance by disconnecting the energy source to the pump. Observe all lock out/tag out procedures as outlined by ANSI Z244.1-1982 and OSHA 1910.147 to prevent accidental start-up and injury.

#### TOOLS FOR PUMP SHAFT AND/OR MOTOR REPLACEMENT:

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One 9/16" wrench	(for 56C - 145TC motor frames)
One 3/4" wrench	(for 182TC or 215TC motor frames)
Soft-faced hammer	
One set of feeler gauges	
Dial indicator	
3/16" Allen wrench	
1/4" Allen wrench	
Motor frames:	56C-184TC                      213-215TC
wrenches:	41mm (1-5/8")                  46 mm (1-13/16")
	46 mm (1-13/16")              55 mm (2-3/16")

#### PUMP DISASSEMBLY (REFERS TO FP SINGLE FLANGE MANUAL)

Disassemble the pump as described on pages 9-11.

- a) Loosen and remove the threaded ring (7) with two open-end wrenches. Place one wrench on the flat portion of the tapered shaft sleeve (5) and hold while loosening the threaded ring (7) with the second wrench (**Figure 21**).
- b) Using a piece of pipe with a diameter comparable to that of the shaft sleeve, drive the shaft sleeve back off the counter tapered portion of the pump shaft (6) (**Figure 22**). (**Note:** shaft pulling tools are available from Fristam Pumps)

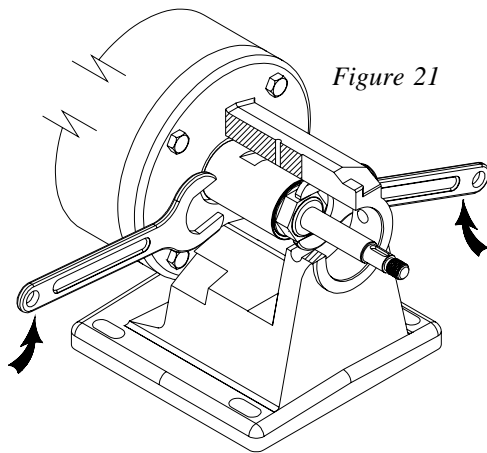


Figure 21

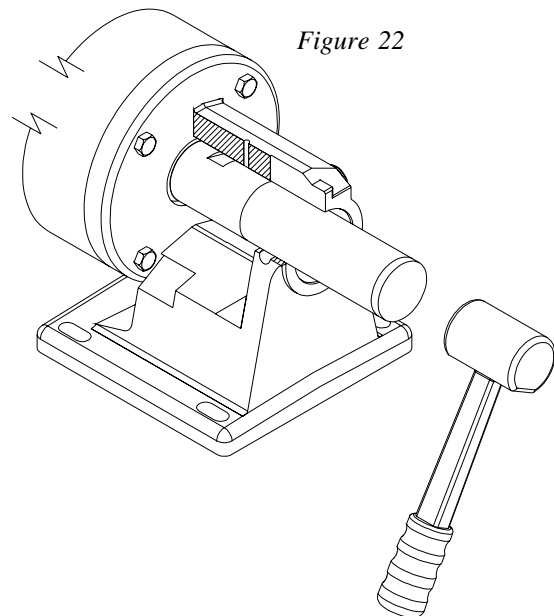
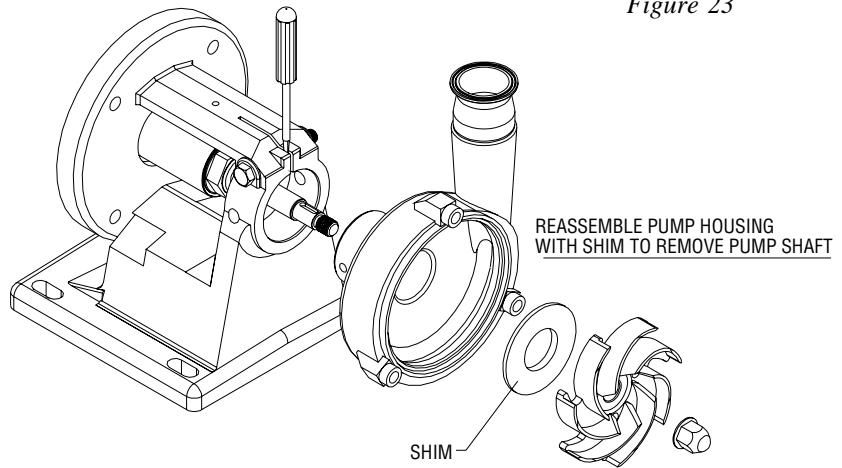


Figure 22

- c) Pull the pump shaft (6) forward.

If the pump shaft (6) will not pull off the motor shaft, the pump housing (17) and impeller (20) can be reinstalled to aid in removal (**Figure 23**). To do this, first ensure that the stationary seal (15) is not in the pump housing. Next install the pump housing onto the flange support (2). **DO NOT TIGHTEN THE FLANGE CLAMPING BOLT**



(4). Install the impeller onto the pump shaft and place a clean cloth or brass shim between the impeller and pump housing to prevent the impeller from scratching the pump housing during the shaft removal process. Thread the impeller nut (22) and impeller nut gasket (21) onto the shaft and tighten by hand. Now pull on the pump housing to loosen the pump shaft from the motor shaft. Tapping on the back of the pump housing with the soft-faced hammer may be required.

Once the pump shaft is loose, remove the impeller nut, impeller nut gasket, impeller, shim or cloth and the pump housing. Finally, pull the pump shaft and tapered sleeve (5) off the motor shaft.

**ADDITIONAL INSTRUCTIONS FOR MOTOR REPLACEMENT -**

Loosen the four motor bolts (26) and remove the motor bolts and lock washers (25). (Use the 9/16” wrench for 56C – 145TC motor frames and 3/4” wrench for 182TC - 215TC motor frames.) Remove the flange support (2) from the motor. Take care to support the weight of the motor as you remove the flange support. Stand the motor on the fan guard if possible.

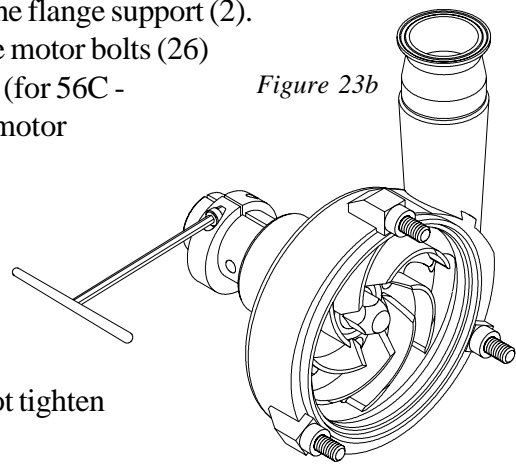
**PUMP ASSEMBLY - SINGLE FLANGE**

If you have replaced the motor, clean off the motor face of the flange support (2). Place the flange support onto the new motor and replace the motor bolts (26) and lock washers (25). Tighten the motor bolts to 20 ft.-lbs (for 56C - 145TC motor frames) and 55 ft.-lbs. (for 182TC - 215TC motor frames).

**ASSEMBLING THE PUMP SHAFT ONTO THE MOTOR SHAFT (REFERS TO FP SINGLE FLANGE MANUAL (SHAFT COLLAR))**

Note: when replacing the shaft, replace the shaft collar at the same time.

- a) Slide the new shaft collar (37) onto the pump shaft, do not tighten the shaft collar screw at this time.
- b) Slide the pump shaft and shaft collar onto the motor shaft with the hole in the pump shaft aligned with the key in the motor shaft.
- c) Tighten the shaft collar screw (36) (**Figure 23b**).

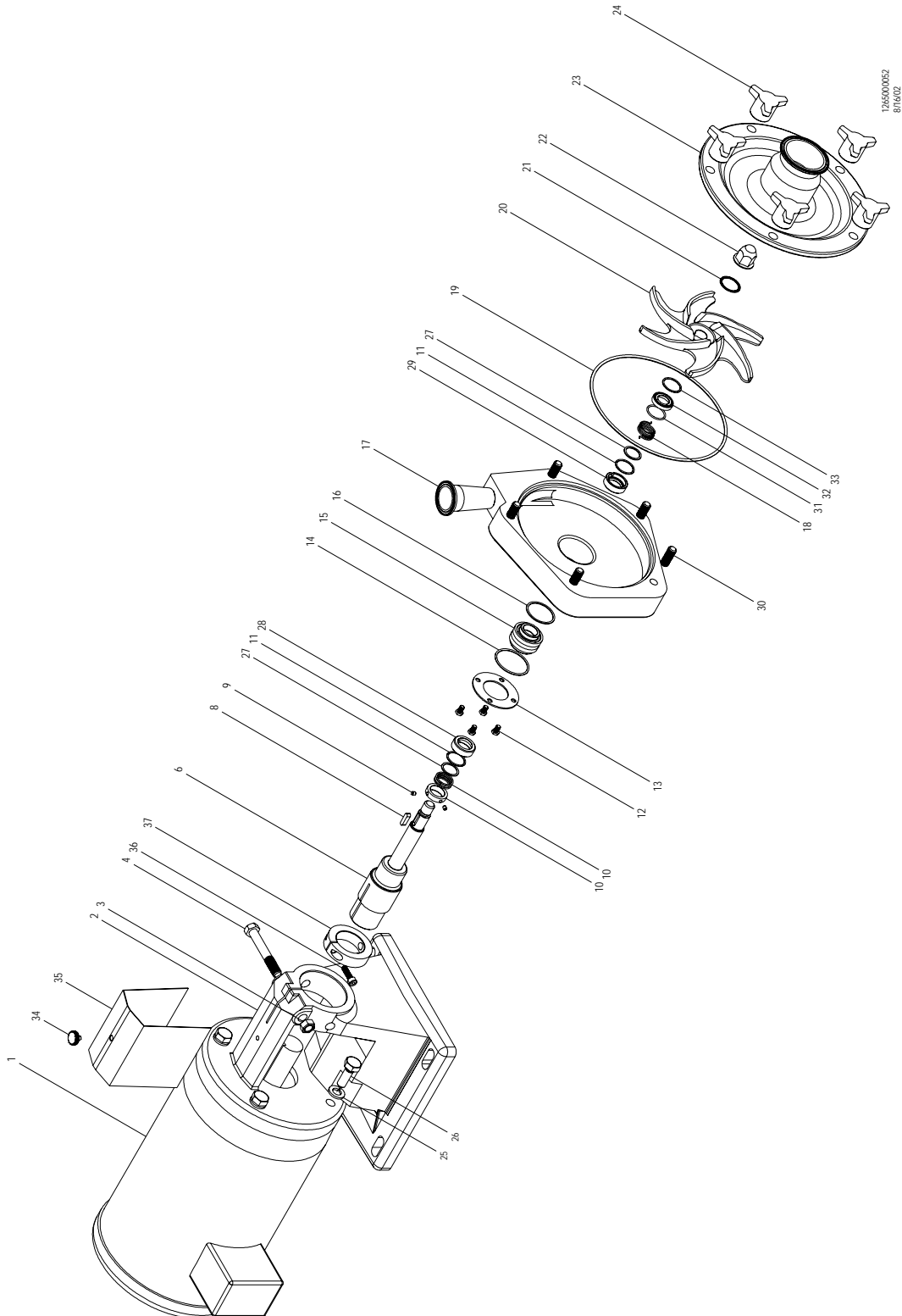


<b>Shaft collar screw</b>	<b>15 ft.-lb.</b>	<b>(for 143TC - 184 TC motor frames)</b>
<b>Shaft collar screw</b>	<b>30 ft.-lb.</b>	<b>(for 213TC - 256TC motor frames)</b>

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To set the impeller gap and complete the pump assembly, please use the FP Single Flange manual (shaft collar design) Re-order #000. Contact Fristam Pumps Marketing Department for a copy or download from the web site: <http://www.fristampumps.com/americas/literature.htm>

## FP SINGLE FLANGE EXPLODED VIEW (SHAFT COLLAR)





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