

INSTALLATION AND OPERATING INSTRUCTIONS

Operation Instructions for Lifting Mechanism

This lifting mechanism is designed to be used when servicing a Series 4300, size 20x20x19 VIL pumping unit. It is designed to lower and lift the pump rotating assembly (Shaft and impeller assembly) and to facilitate the connection of pump and motor shafts by the shaft rigid coupling.

Lifting Mechanism assembly:

See table below for bolt torque requirements.

1. The ACME Nut is to be mounted to the underside of the Slide by using a standard (1-15/16") or adjustable wrench. If the slide is threaded already, skip item 1.
2. Place the two Rail Shoulder screws through the Slide and secure them into the Base, using a 1/2" Allen wrench
3. Screw the Threaded Shaft into the ACME Nut / threaded slide all the way to the Base
4. Position [2] Teflon washers between the base and threaded shaft, to reduce friction
5. Confirm that all parts are properly tightened.
6. The lifting mechanism can now be installed on the pump.
7. Mounting of the Lifting Mechanism onto the Pump – Pre-Service

Remove the pump coupling guard, loosen all of the set screws around the mechanical seal

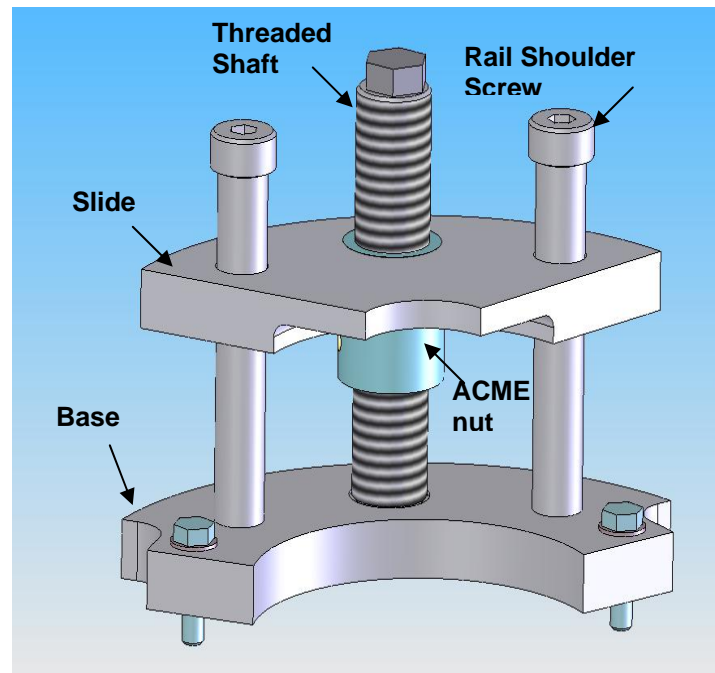
Rotate the shaft and note the pump shaft key position below the coupling. Continue rotating the shaft until the pump coupling half containing the shaft key faces away from you. (The shaft coupling half without a key showing is facing you)

Remove the [8] coupling setscrews and remove the coupling half facing you. (Without shaft keys)

NOTE: Be careful to leave the other coupling half in place

Slide the lifting mechanism into the motor bracket and adjust until the front face of the slide almost touching the shaft underneath the pump shaft split-collar. Bolt the Lifting mechanism base bolts into the tapped holes provided. All moving parts of the lifting mechanism and sliding surfaces are to be lubricated.

- a) Gradually rotate the threaded shaft [Clockwise] sufficiently for the slide to make contact with the pump shaft split-collar. Turn the threaded shaft another 1/2-turn, or so, until the second coupling half can be easily removed. Remove the second coupling half. Find and retain the shaft drive keys in a safe place for re-assembly
- b) Gradually rotate the threaded shaft [Counter-Clockwise] lowering the pump shaft, until the impeller rests on the bottom of the pump casing and the slide loses contact with the pump shaft split-ring.



8. Lifting mechanism is now ready to be removed as the pump is ready for service
9. Mounting of the Lifting Mechanism onto the Pump – After Service
 - Fit the split-collar in the groove on the pump shaft
 - Insert the Lifting Mechanism through the appropriate motor bracket window and locate on the ribs on the volute cover
 - The pump and motor shafts are rotated so that the keyways are positioned facing away from the lifting mechanism
 - Slide the lifting mechanism into the motor bracket and adjust until the front face of the slide almost touching the shaft underneath the pump shaft split-collar. Bolt the Lifting Mechanism base bolts into the tapped holes on the volute cover ribs. All moving parts of the lifting mechanism and sliding surfaces are to be lubricated.
 - Gradually rotate the threaded shaft [Clockwise], which lifts the pump shaft, until the pump and motor shaft split-rings coincide with the coupling keyways (See item 6.6). The entire movement (from bottom to top position) will not exceed ¼ ins (6mm)
 - When the desired point is reached, install the shaft drive keys and the coupling half containing the keyways (See File No: 43.806)
10. Lifting mechanism is now ready to be removed as the pump and motor shafts are now connected by one half of the coupling
11. Unbolt the lifting mechanism and slide back, out of the pump / motor bracket. Assembly the second half of the coupling to the half already connecting the shafts. (See File No: 43.806)

NOTES:

1. Proper bearing lubrication must be provided to achieve designed service. Recommended Grease: AMSOIL Synthetic GL Series multi-purpose EP grease; AMSOIL Synthetic Water Resistant Lithium Complex grease; Shell Cassida EPS 2 or similar synthetic grease.
2. The lifting mechanism can be used on any Series 4300, size 20x20x19 VIL pumping unit.
3. Store the Lifting Equipment in a dry place, entirely lubricated. Clean if necessary with WD-40 type fluid and re-lubricate.
4. Teflon washers will need replacing after extensive use. Please replace with Armstrong original parts only. (Armstrong part # 927115-100)

Bolt tightening force requirements:

Where Used	Bolt Type	Qty	Size	Force [ft lb]
Seal Gland Plate	Capscrew	4	5/8" – 11NC x 2-1/4"	90
Bearing Housing	Capscrew	4	3/8" – 16NC x 1"	20
Coupling	Setscrew	8	½" – 13NC x 6"	50
Lifting Mechanism	Capscrews	2	7/16" – 14NC x 1-3/4"	30

S. A. Armstrong Limited
 23 Bertrand Avenue
 Toronto, Ontario
 Canada, M1L 2P3
 T: (416) 755-2291
 F (Main): (416) 759-9101

Armstrong Pumps Inc.
 93 East Avenue
 North Tonawanda, New York
 U.S.A. 14120-6594
 T: (716) 693-8813
 F: (716) 693-8970

Armstrong Holden Brooke Pullen
 Wenlock Way
 Manchester
 United Kingdom, M12 5JL
 T: +44 (0) 161 223 2223
 F: +44 (0) 161 220 9660



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