

Ampco Pumps Company

Ampco ZP1+ Series (Addendum)

•Positive Displacement Pumps

•Installation and Maintenance Manual



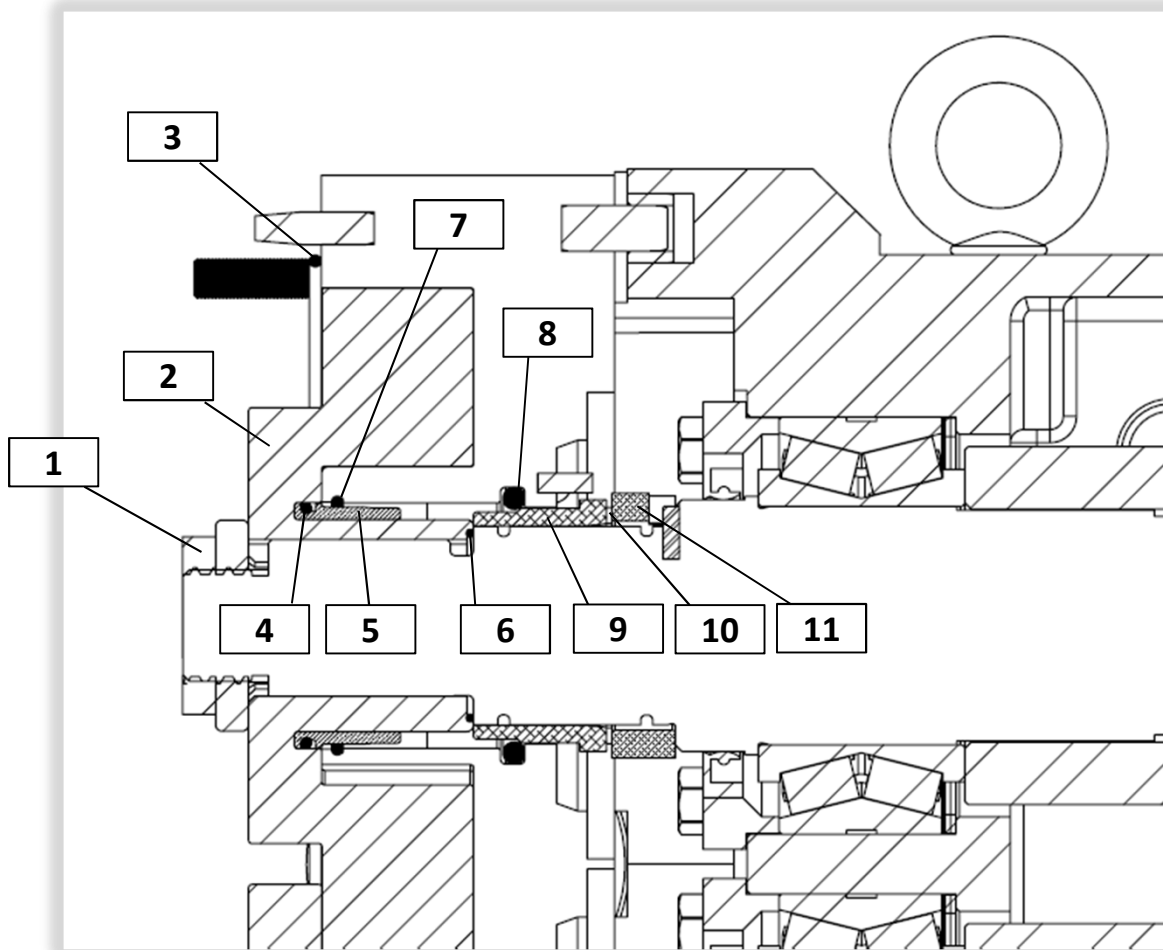


Figure 1A

	Part
1	Rotor Jam nuts
2	Rotor
3	Cover o-ring
4	Sleeve o-ring
5	Sleeve
6	Rotor o-ring
7	Main body o-ring
8	Secondary CIP o-ring
9	Secondary CIP front sleeve
10	Wave Spring
11	Secondary CIP rear sleeve

ZP1+
Assembly





ZP1+ Exploded View (front detail)

	Part
1	Rotor Jam nuts
2	Rotor
3	Cover o-ring
4	Sleeve o-ring
5	Sleeve
6	Rotor o-ring
7	Main body o-ring

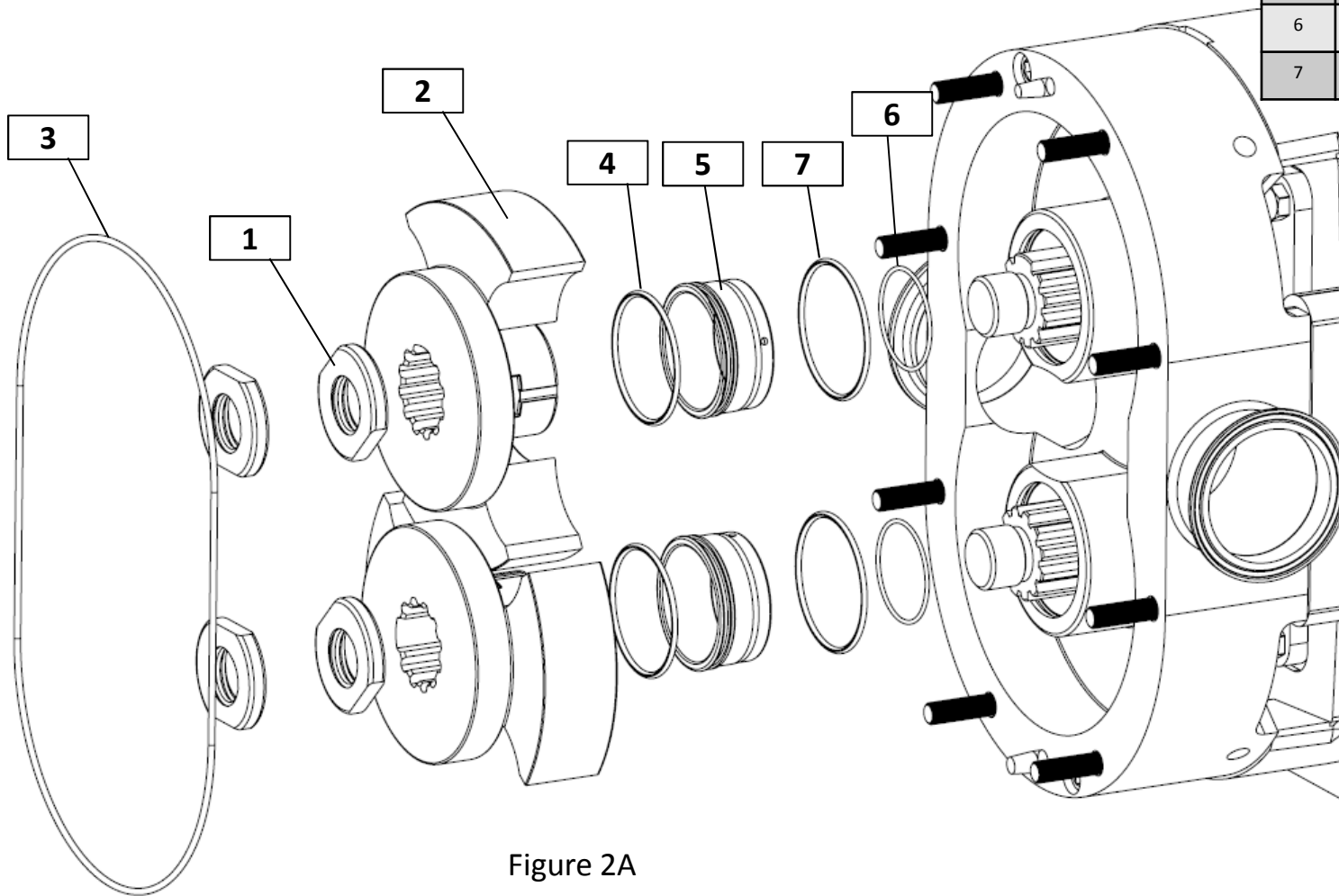


Figure 2A



ZP1+ Exploded View (rear detail)

	Part
8	Secondary CIP o-ring
9	Secondary CIP front sleeve
10	Wave spring
11	Secondary CIP rear sleeve

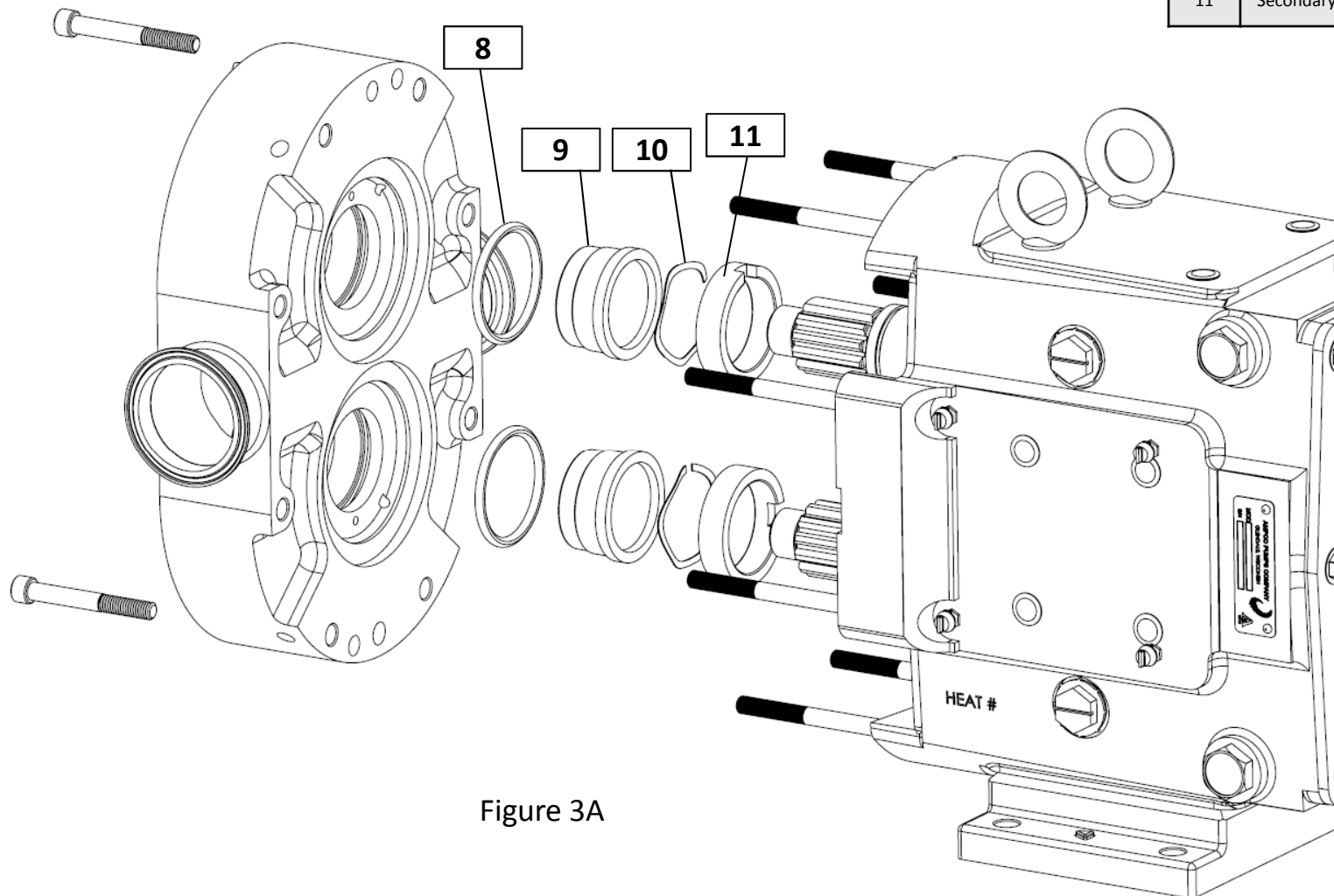


Figure 3A



Rotor in place: the secondary CIP o-ring is not engaged against the secondary CIP front sleeve. The rotor compresses the wave spring to push the sleeve back.

Rotor removed: the secondary CIP o-ring is engaged against the secondary CIP front sleeve – no leaking will occur during Rotor-out CIP. The wave spring pushes the sleeve's larger diameter forward to seal the pump body.

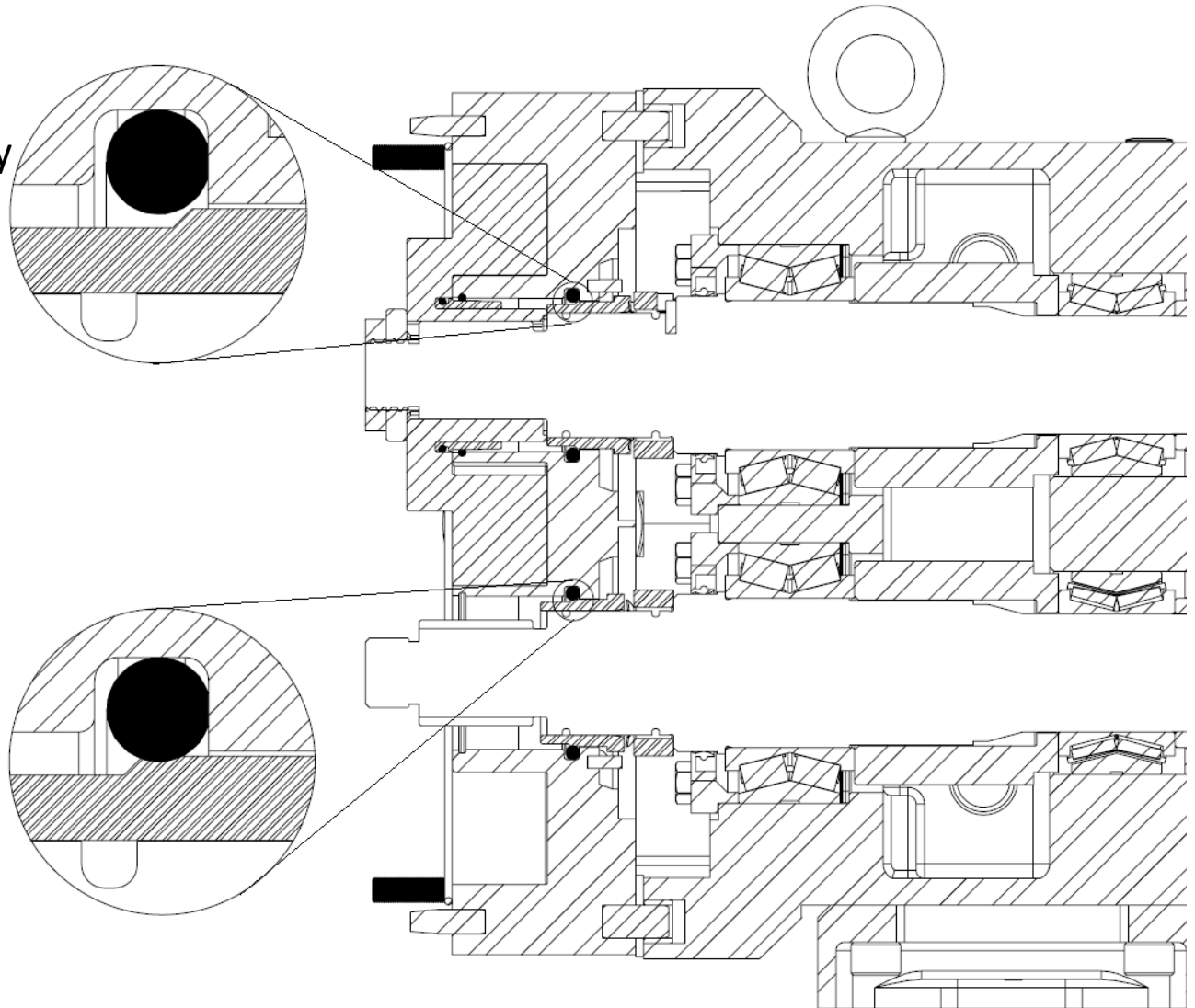


Figure 4A



O-ring Removal

1. Remove the rotor Jam nuts (Figure 2A, #1), and the rotors (Figure 2A, #2).
2. Remove the sleeves (Figure 2A, #5) from the rotor by turning them until the pin lines up in the long part of the “T” shaped slot in the rotor and pulling outward.
3. The sleeve o-ring is now exposed (Figure 2A, #4) . Replacement may not be necessary every time, but cleaning is suggested.
4. Remove the main body o-ring (Figure 2A, #7). The use of an o-ring pick is suggested.
5. Hook out the rotor o-rings (Figure 2A, #6). They will be on the shaft toward the back of the rotor’s shoulder. Two o-ring picks may be required and replacement is suggested.

Replacement

1. Replace the main body o-rings
2. Place new rotor o-rings on the major of the spline about halfway onto the spline. Leave them there for now.
3. Put the sleeves back onto the rotors by pushing down until the sleeve o-rings seat, then turn either direction until the pin engages in the “T” shaped slot.
4. Place the rotors on the shaft and push carefully ensuring the rotor o-ring will seat properly. The rotor itself will push the rotor o-rings until they seat.
5. Tighten the jam nuts.



Rear sleeve maintenance – This should be performed as needed to ensure no leaks occur from the pump body during CIP *without rotors in the body*. See figure 4A for principles of operation of rear sleeve assembly.

1. Remove the rotor Jam nuts (Figure 2A, #1), and the rotors (Figure 2A, #2). Remove the body retaining socket-head cap screws. Prize the body from the gearcase by hitting the ferrules in an alternating fashion with a soft hammer.
2. Remove the sleeves (Figure 3A, #9 & 11) from the shafts. Clean the shaft and wave spring to ensure movement is free and easy.