

OPERATOR'S MANUAL

67571-X

INCLUDING: OPERATION, INSTALLATION AND MAINTENANCE

RELEASED: 8-13-21
(REV: A)

DIGITAL CYCLE COUNTER KITS (CLOSED ELECTRICAL CONTACT TYPE) FOR DIAPHRAGM PUMPS



**READ THIS MANUAL CAREFULLY BEFORE INSTALLING,
OPERATING OR SERVICING THIS EQUIPMENT.**

It is the responsibility of the employer to place this information in the hands of the operator. Keep for future reference.

DIGITAL CYCLE COUNTER KITS

EXP Series Port Size	Metallic Fluid Section		Non - Metallic Fluid Section and Center Body
	Non - Metallic Center Body	Metallic Center Body	
1"	67571-1	67571-2	67571-3
1 1/2"	67571-4	67571-5	67571-6
2"	67571-7	67571-8	67571-9
3"	67571-9	67571-10	67571-11

GENERAL DESCRIPTION

The ARO® diaphragm pump cycle counter kits provide a sensor output each time the pump completes a cycle. This output may be used to record cycles for maintenance purposes or batching if the discharge volume of each complete cycle is known.

Some parts of the pump must be replaced with those included in the kits to enable the activation of the sensor output.

The cycle counter kit also includes the digital counter which is mounted in a fiberglass enclosure. A stainless steel mounting bracket and U-Bolt are provided in the kit. They will be used to mount the digital counter in fiberglass enclosure onto pump manifold at desired location and orientation.

Once pump parts are replaced and mounting bracket with digital counter is mounted in desired location and orientation then connect crimp wire splice.

This is done by using crimping tool and crimp wire splice which will connect the two wires coming from enclosure to the sensor that was mounted to the pump.

SPECIFICATIONS

Maximum Operating

Voltage 200 VDC

Switching Current 0.5 Amps

Digital Counter 8 LCD Digits 3.6 VDC Internal lithium battery up to 7 yrs
NEMA 4X/IP65 sealed front bezel

Material..... Polycarbonate

Temperature range.... 32° to 122° F (0° C to 50° C)

CONNECTIONS..... 22 gauge wire; wire length minimum 10" (254 mm)

Enclosure High impact-resistant, UV resistant (UL 508) & "Rust Free" NEMA 4X.
Polycarbonate,
Temperature range -40° to 80° C

U-Bolt, Mounting

Bracket & Hardware ... All Stainless Steel

Sensor

Material..... Polycarbonate

Temperature range.... -40° to 221° F (-40° C to 105° C)

PARTS LIST / 67571-X DIGITAL COUNTER KIT

PART LIST / 67571-X (COMMON PARTS)

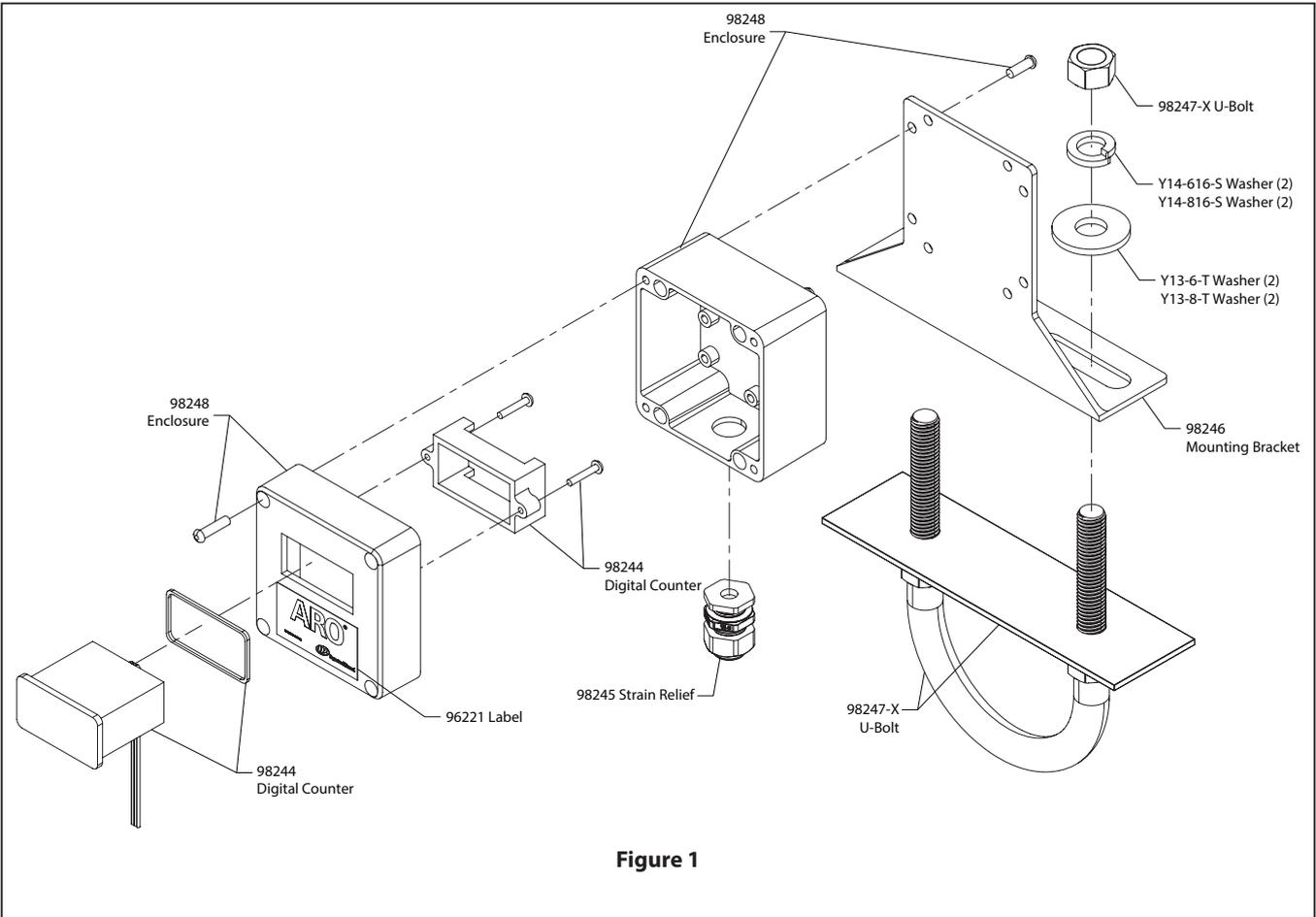
Part No.	Qty	Description	Mtl
98244	(1)	Digital Counter	[PC]
98245	(1)	Strain Relief	[NY]
98246	(1)	Mounting Bracket	[SS]
98248	(1)	Enclosure [38005 packet of screws, 4- Mounting screws, 4- Cover screws (longer)]	[PC]
98249	(1)	Crimp Wire Splice	[NY]
96221	(1)	Label	---
95276	(1)	Sensor	[PC]
94276	(1)	Grease Packing	---

MATERIAL CODE

NY	=	Nylon
PC	=	Polycarbonate
SS	=	Stainless Steel

PART LIST / 67571-X (KITS)

Kit Part No	U-Bolt Part No	Mtl	Lock Washer Part No	Mtl	Washer Part No	Mtl	Sensor Mounting	Mtl	Spool Assembly
67571-1	98247-1	[SS]	Y14-616-S	[SS]	Y13-6-T	[SS]	96581	[SS]	67394
67571-2	98247-1	[SS]	Y14-616-S	[SS]	Y13-6-T	[SS]	96583	[SS]	67398
67571-3	98247-2	[SS]	Y14-616-S	[SS]	Y13-6-T	[SS]	96581	[SS]	67394
67571-4	98247-3	[SS]	Y14-616-S	[SS]	Y13-6-T	[SS]	96581	[SS]	67394
67571-5	98247-3	[SS]	Y14-616-S	[SS]	Y13-6-T	[SS]	96583	[SS]	67398
67571-6	98247-4	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96581	[SS]	67394
67571-7	98247-4	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96582	[SS]	67395
67571-8	98247-4	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96583 / 96584	[SS]	67395
67571-9	98247-5	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96582	[SS]	67395
67571-10	98247-5	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96583 / 96584	[SS]	67395
67571-11	98247-6	[SS]	Y14-816-S	[SS]	Y13-8-T	[SS]	96582	[SS]	67395



67571-1, 67571-3, 67571-4, 67571-6 COUNTER SPOOL AND SENSOR INSTALLATION

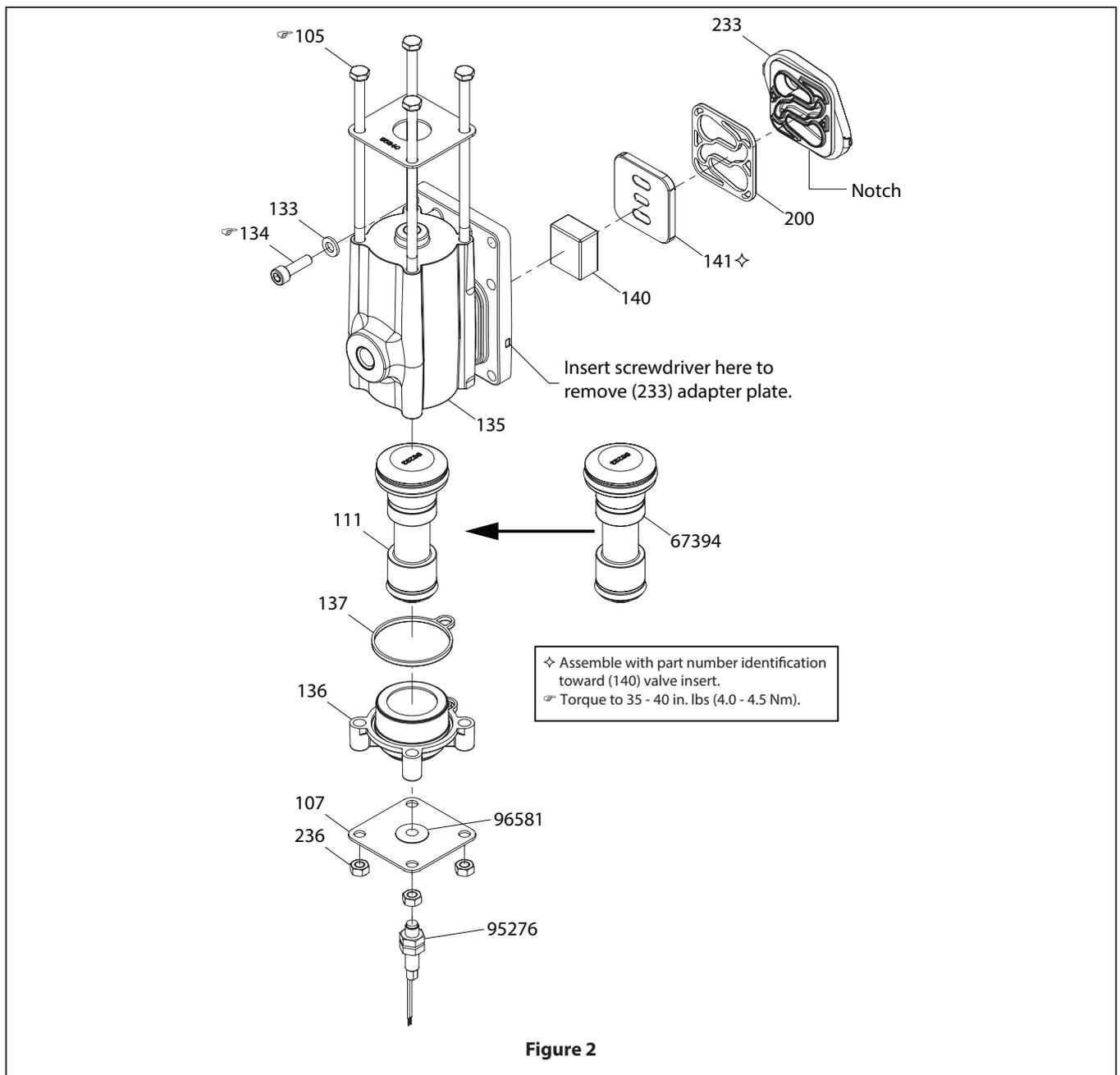
1" and 1-1/2" NON-METALLIC CENTER BODY DIAPHRAGM PUMP:

Kit	Models
67571-1	PX10R-XAX-XXX, PX10R-XCX-XXX, PX10R-XSX-XXX, PX10R-XHX-XXX, SD10R-XSX-XXX
67571-3	PX10P-XPX-XXX, PX10P-XKX-XXX, PX10E-XEX-XXX, PX10E-XNX-XXX
67571-4	PX15R-XAX-XXX, PX15R-XCX-XXX, PX15R-XSX-XXX, PX15R-XHX-XXX
67571-6	PX15P-XPX-XXX, PX15P-XKX-XXX, PX15E-XEX-XXX

NOTE: Apply Lubriplate FML-2 grease (94276) to all "O" rings, "U" cups and mating parts upon assembly. Refer to figure 2 .

1. Remove (134) screws and remove (135) valve block.
2. Insert a small flat blade screwdriver into the notch in the side of (135) valve block and push in on tab to remove (233) adapter plate, releasing (140) valve insert, (141) valve plate and (200) gasket.
3. Remove (236) nuts from the major valve and remove (107) end plate.

4. Remove (136) end cap and (111) spool and replace with 67394 spool assembly as shown.
5. Place 95276 sensor and 96581 mounting plug thru hole in (107) end plate.
6. Install (137) gasket on (136) end cap and assemble end cap and (107) end plate to (135) valve block, securing (105) screws and (236) nuts. **NOTE:** Torque (105) screws to 35 - 40 in. lbs (4.0 - 4.5 Nm).
7. Install (140) valve insert and (141) valve plate in (135) valve block. **NOTE:** Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with part number identification toward (140) valve insert.
8. Assemble (200) gasket and (233) adapter plate to (135) valve block. **NOTE:** Assemble (233) adapter plate with notched side down.
9. Attach (135) valve block to (101) motor body, using (133) washers and (134) bolts. **NOTE:** Torque to 35 - 40 in. lbs (4.0 - 4.5 Nm).



67571-7, 67571-9, 67571-11 COUNTER SPOOL AND SENSOR INSTALLATION

2" and 3" NON-METALLIC CENTER BODY DIAPHRAGM PUMP:

Kit	Models
67571-7	PX20R-XAX-XXX, PX20R-XCX-XXX, PX20R-XSX-XXX, PX20R-XHX-XXX, SD20R-XSX-XXX
67571-9	PX20P-XPX-XXX, PX20P-KKX-XXX, PX20E-XEX-XXX, PX20E-XNX-XXX, PX30R-XAX-XXX, PX30R-XCX-XXX, PX30R-XSX-XXX, PX30R-XHX-XXX
67571-11	PX30P-XPX-XXX, PX30P-KKX-XXX

NOTE: Apply Lubriplate FML-2 grease (94276) to all "O" rings, "U" cups and mating parts upon assembly. Refer to figure 3.

1. Remove (134) screws and remove (135) valve block.
2. Remove (233) adapter plate, releasing (140) valve insert, (141) valve plate and (200) gasket.
3. Remove (236) nuts from the major valve and remove (107) end plate.

4. Remove (136) end cap and (111) spool and replace with 67395 spool assembly as shown.
5. Place 95276 sensor and 96582 mounting plug thru hole in (107) end plate.
6. Install (137) "O" ring on (136) end cap and assemble end cap and (107) end plate to (135) valve block, securing with (105) screws and (236) nuts. **NOTE:** Torque (105) screws to 15 - 20 in. lbs (1.7 - 2.3 Nm).
7. Install (140) valve insert and (141) valve plate in (135) valve block. **NOTE:** Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with identification dots toward (199 and 200) gaskets.
8. Assemble (232, 243 and 244) "O" rings, (199 and 200) gaskets and (233) adapter plate to (135) valve block.
9. Attach (135) valve block and components to (101) motor body, using (133) washers and (134) bolts. **NOTE:** Torque to 40 -50 in. lbs (4.5-5.6 Nm).

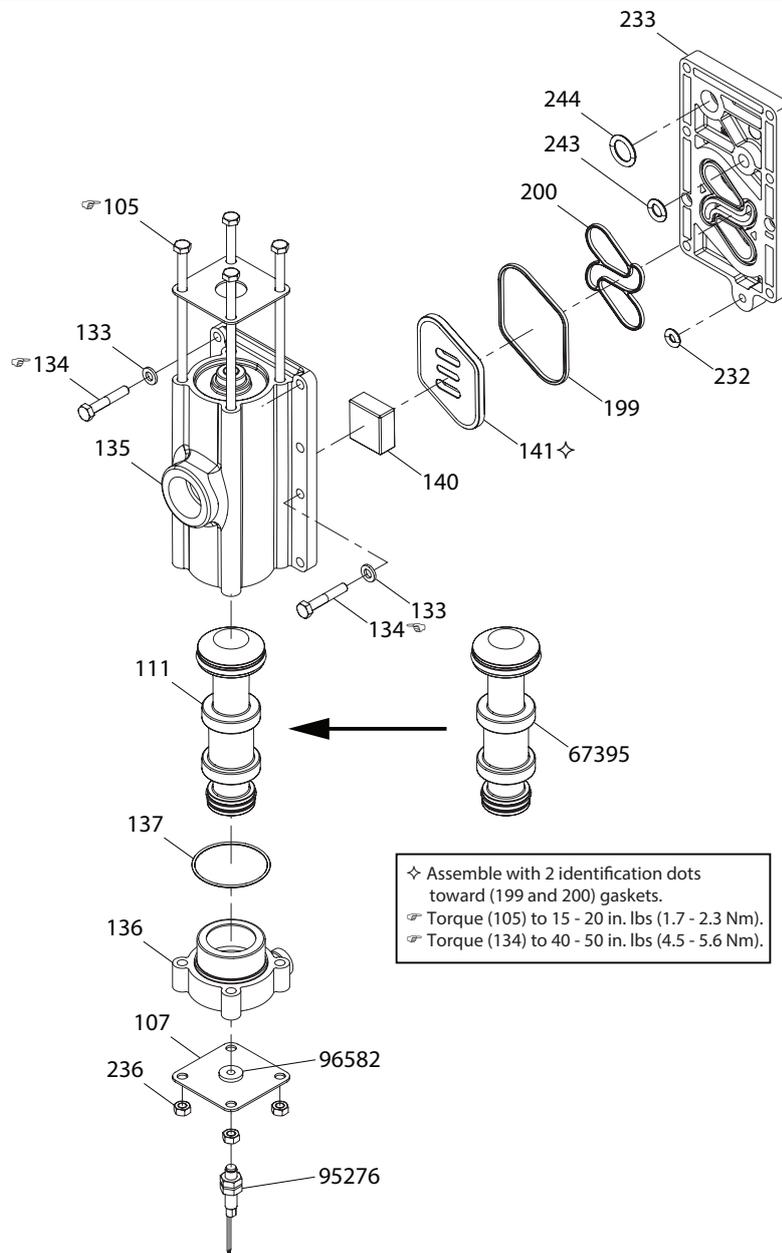


Figure 3

67571-2, 67571-5 COUNTER SPOOL AND SENSOR INSTALLATION

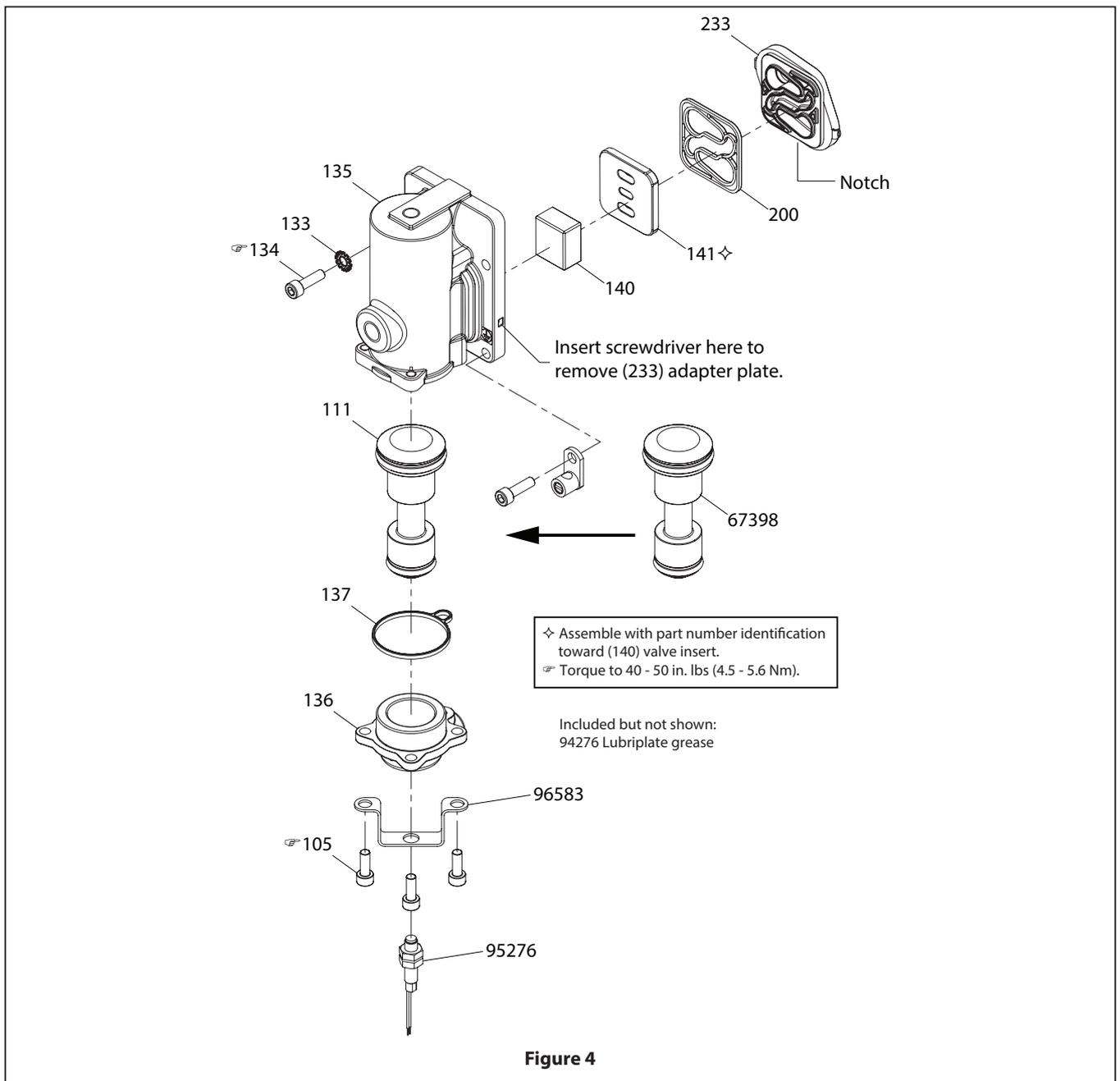
1" and 1-1/2" METALLIC CENTER BODY DIAPHRAGM PUMP

Kit	Models
67571-2	PX10A-XAX-XXX, PX10A-XCX-XXX, PX10A-XSX-XXX, PX10A-XHX-XXX, PX10S-XSX-XXX, PX10S-XHX-XXX, SD10S-XSX-XXX
67571-5	PX15A-XAX-XXX, PX15A-XCX-XXX, PX15A-XSX-XXX, PX15A-XHX-XXX, PX15S-XSX-XXX, PX15S-XHX-XXX

NOTE: Apply Lubriplate FML-2 grease (94276) to all "O" rings, "U" cups and mating parts upon assembly. Refer to figure 4.

1. Remove (134) screws and remove (135) valve block.
2. Insert a small flat blade screwdriver into the notch in the side of (135) valve block and push in on tab to remove (233) adapter plate, releasing (140) valve insert, (141) valve plate and (200) gasket.
3. Remove (105) screws, releasing (136) end cap and (137) gasket.

4. Remove (111) spool and replace with 67398 spool assembly as shown.
5. Install (137) gasket on (136) end cap and assemble end cap, 96583 bracket and 95276 sensor to (135) valve block, securing with (105) screws. **NOTE:** Torque (105) screws to 40 - 50 in. lbs (4.5 - 5.6 Nm).
6. Install (140) valve insert and (141) valve plate in (135) valve block. **NOTE:** Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with part number identification toward (140) valve insert.
7. Assemble (200) gasket and (233) adapter plate to (135) valve block. **NOTE:** Assemble (233) adapter plate with notched side down.
8. Attach (135) valve block to (101) motor body, using (133) washers and (134) bolts. **NOTE:** Torque to 40 - 50 in. lbs (4.5 - 5.6 Nm).



67571-8, 67571-10 COUNTER SPOOL AND SENSOR INSTALLATION

2" and 3" METALLIC CENTER BODY DIAPHRAGM PUMP

Kit	Models
67571-8	PX20A-XAX-XXX, PX20A-XCX-XXX, PX20A-XSX-XXX, PX20A-XHX-XXX, PX20S-XSX-XXX, PX20S-XHX-XXX, SD20S-XSX-XXX, BD20A-XAX-XXX
67571-10	PX30A-XAX-XXX, PX30A-XCX-XXX, PX30A-XSX-XXX, PX30A-XHX-XXX, PX30S-XSX-XXX, PX30S-XHX-XXX

NOTE: Apply Lubriplate FML-2 grease (94276) to all "O" rings, "U" cups and mating parts upon assembly. Refer to figure 5.

1. Remove (134) screws and remove (135) valve block and components.
2. Remove (240) screws to remove (233) adapter plate, releasing (140) valve insert, (141) valve plate, (199, 200 and 241) gaskets and (243 and 244) "O" rings.
3. Remove (105) screws, releasing (136) end cap and (137 and 242) "O" rings.

4. Remove (111) spool and replace with 67395 spool assembly as shown.
5. Install (137 and 242) "O" rings on (136) end cap and assemble end cap, 96583 or 96584 bracket and 95276 sensor to (135) valve block, securing with (105) screws. **NOTE:** Torque screws to 40 - 50 in. lbs (4.5 - 5.6 Nm).
6. Install (140) valve insert and (141) valve plate in (135) valve block. **NOTE:** Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with identification dots toward (199 and 200) gaskets.
7. Assemble (199, 200 and 241) gaskets, (243 and 244) "O" rings and (233) adapter plate to (135) valve block. **NOTE:** Assemble (233) adapter plate to (135) valve block, securing with (240) screws. **NOTE:** Torque screws to 40 - 50 in. lbs (4.5 - 5.6 Nm).
8. Attach (135) valve block to (101) motor body, using (133) washers and (134) bolts. **NOTE:** Torque to 40 - 50 in. lbs (4.5 - 5.6 Nm).

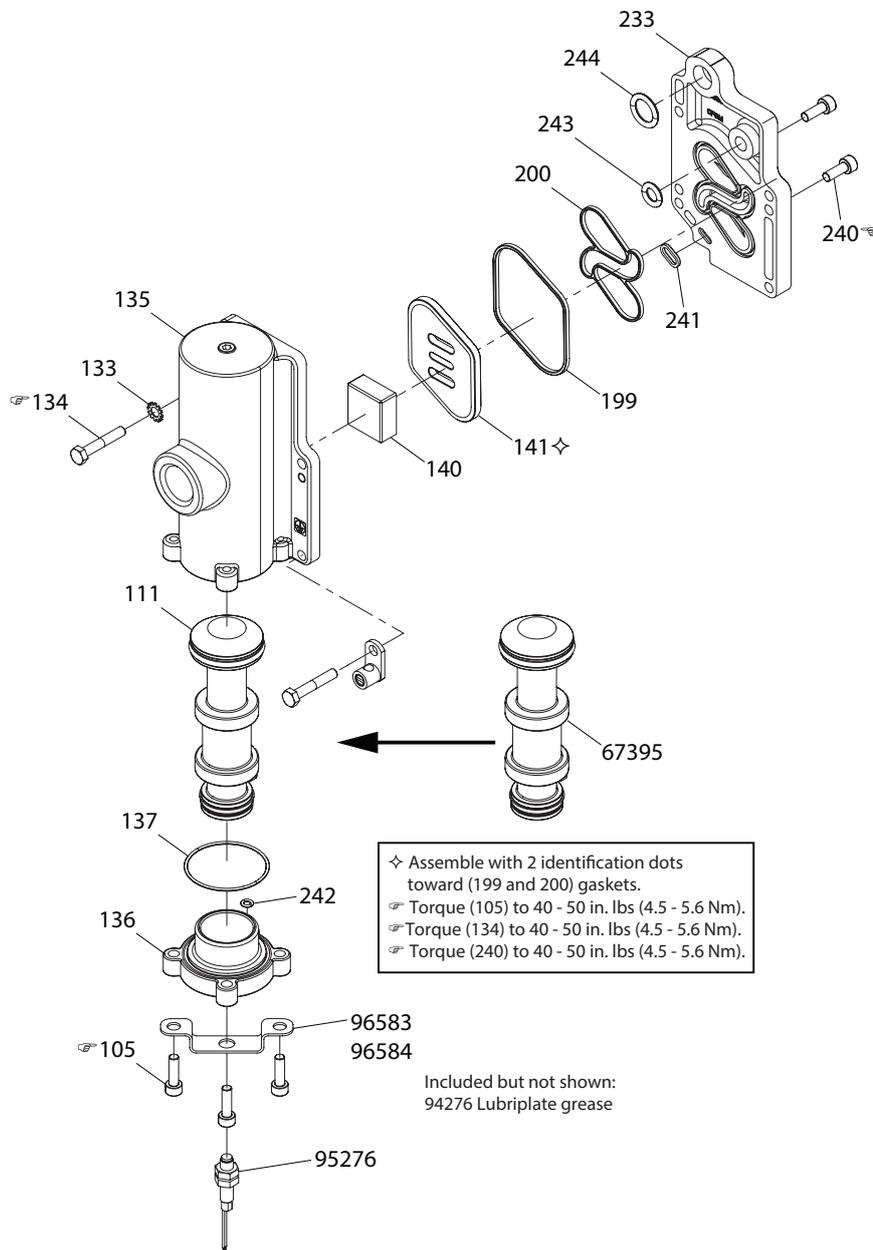
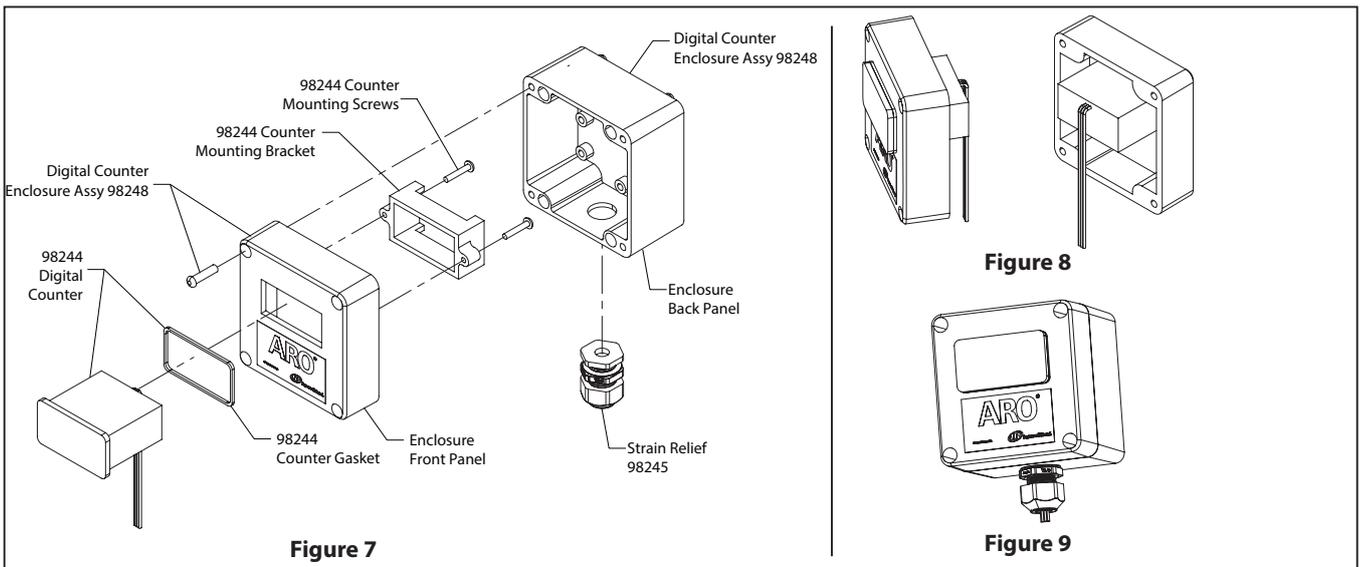
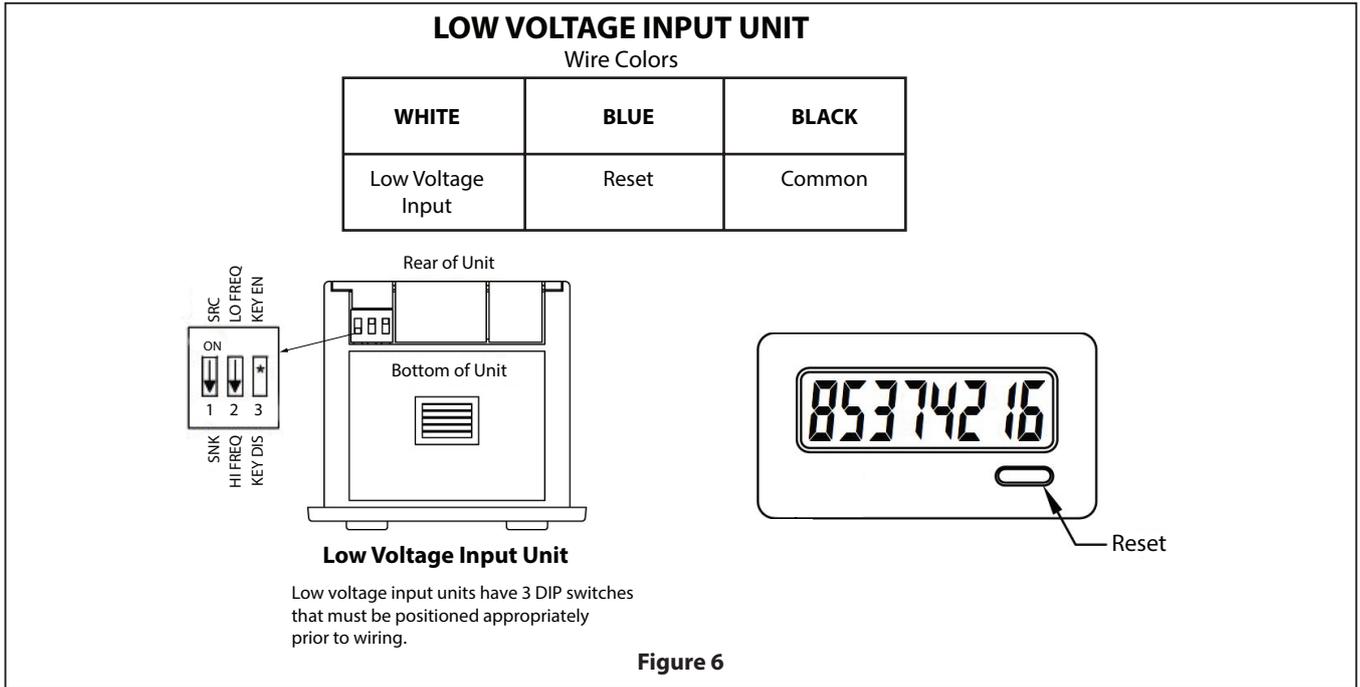


Figure 5

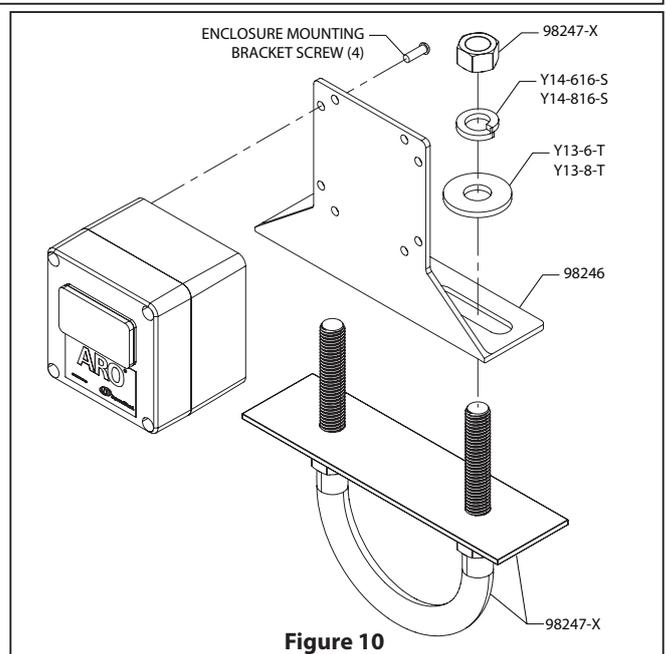
67571-X COUNTER ENCLOSURE ASSEMBLY INSTRUCTIONS

- Before assembly of Digital Counter make sure the three dip switch settings on Digital Counter (98244) are as figure 6. The (key en) dip switch setting allows the display to be reset (RST) to zero from front display as needed. If this is not desired then set dip switch to (key dis)



- Refer to figure 7. Place Digital Counter (98244) with 3 wires through gasket and hole in front panel of enclosure (98248). Push until flush with front panel. Place 3 wires through counter mounting bracket then slide counter mounting bracket until digital counter is tight and sealed onto front panel. Place counter mounting screws into counter mounting bracket. Turn counter mounting screws until snug. When complete should look like figure 8.

- Continue to refer to figure 7 as well as Fig 6. To complete Digital Counter assembly pull the black (common) and white (Low voltage input) wires through strain relief fitting (98245). Leave blue (Reset) wire inside enclosure unless being used as external reset instead of front panel reset. Place front panel of enclosure (98248) onto back enclosure and insert front panel screws until snug. When complete should look like figure 9.



4. Refer to figure 10 to install Digital Counter enclosure onto pump mounting bracket (98246). Insert enclosure mounting bracket screws and turn till snug.
5. Refer to figure 10 and figure 11 to install Digital Counter onto pump. Install U-bolt (98247-X) onto pump manifold in preferred location and orientation. Tighten U-Bolt and mounting bracket using hardware washers (Y13-6-T or Y13-8-T), lock washers (Y14-616-S or Y14-816-S) and nuts (part of U Bolt 98247-X).
6. Refer to figure 11 and 12. Install Crimp On Butt Wire Splice (98249) by inserting Sensor (95276) wire (Black) in one end of Crimp On Butt Wire Splice (98249) and insert Digital Counter (98244) wire (White) in other end of Crimp On Butt Wire Splice (98249). Using proper crimping tool continue to crimp both ends of Crimp On Butt Wire Splice (98249). Repeat this process for other two wires (both Black). Pull slightly on all wires to assure the crimp holds. This completes the Digital Counter installation onto the pump. As soon as the pump starts to cycle you will see the cycle counts start. If you want to reset to zero press front counter panel button or you can use the blue wire inside the counter enclosure with an external source. You will also need to set dip switch on counter to (key dis) (see figure 6).

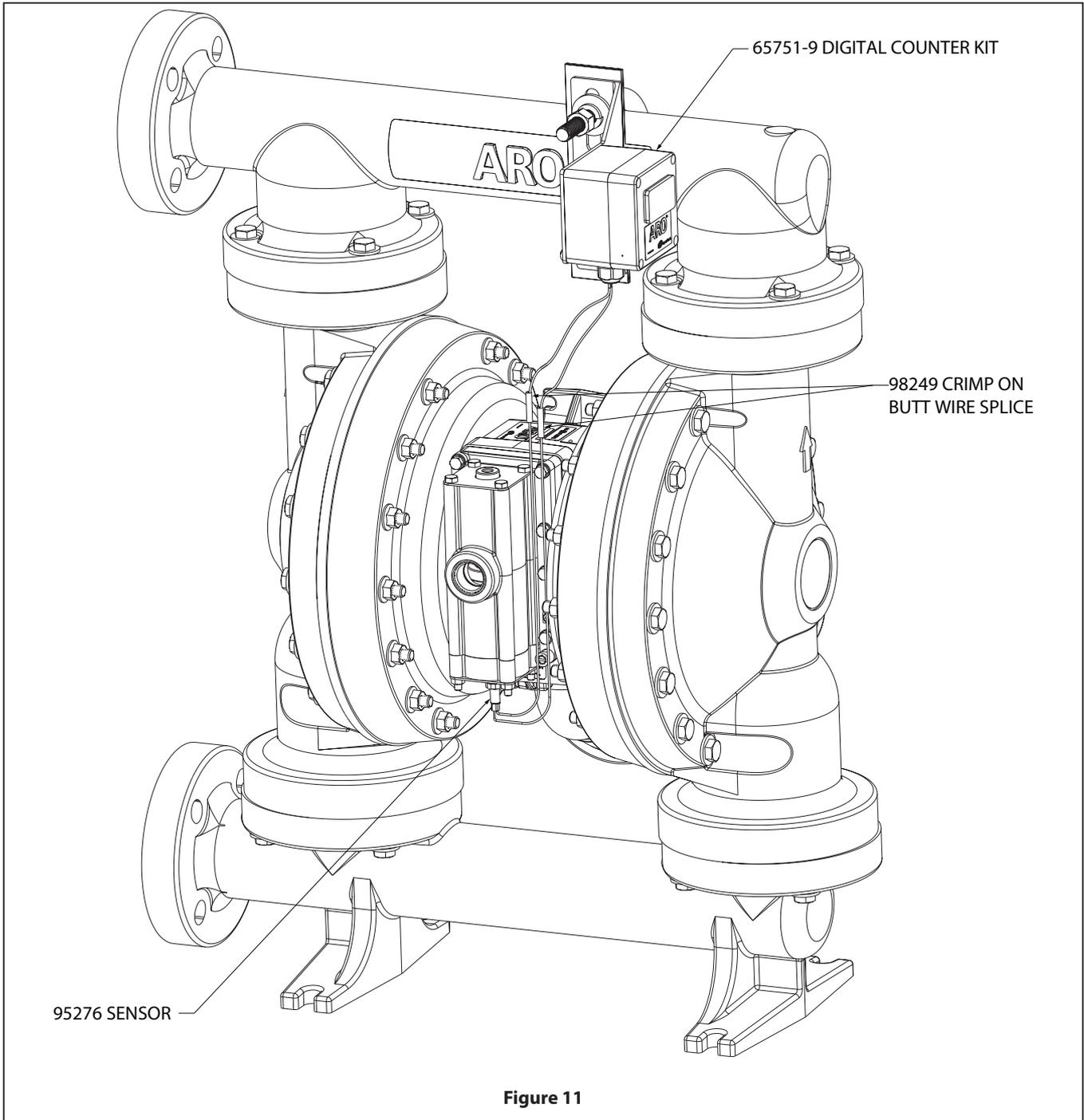


Figure 11