

PARTS LIST / PH30F-XXX-XXX-C FLUID SECTION

① 637441-XX Fluid Section Service Kits include: Balls (see Ball Option, refer to -XXX in chart below), Diaphragms (see Diaphragm Option, refer to -XXX in chart below), and items 3, 19, 70, 144, 175 and 196 (listed below) plus items 174 and 94276 Lubriplate FML-2 grease (page 6).

BALL OPTIONS PH30F-XSS-SXX-C

★ "22" (3-1/4" diameter)				★ "19" (3/16" x 5" o.d.)		
-XXX	Ball	Qty	[Mtl]	"O" Ring	Qty	[Mtl]
-XAX	94103-A	(2)	[Sp]	94115	(4)	[E]
-XCX	94103-C	(2)	[H]	Y327-350	(4)	[V]
-XTX	94103-T	(2)	[T]	Y328-350	(4)	[T]
-VXX	94103-V	(2)	[V]	Y327-350	(4)	[V]

MATERIAL CODE

[B] = Nitrile
 [C] = Carbon Steel
 [Co] = Copper
 [E] = E.P.R.
 [H] = Hytrel
 [Ny] = Nylon
 [Sp] = Santoprene
 [SS] = Stainless Steel
 [T] = PTFE
 [V] = Viton

DIAPHRAGM OPTIONS PH30F-XSS-SXX-C

-XXX	★ Service Kit -XX = (Ball) -XX = (Diaphragm)	★ "7"			★ "8"			★ "3" (1/8" x 1" o.d.)		
		Diaphragm	Qty	[Mtl]	Diaphragm	Qty	[Mtl]	"O" Ring	Qty	[Mtl]
-XXA	637441-XA	94091-A	(2)	[Sp]	-----	---	---	Y328-210	(2)	[T]
-XXC	637441-XC	94091-C	(2)	[H]	-----	---	---	Y327-210	(2)	[V]
-XXT	637441-XT	94090-T	(2)	[T]	94110-A	(2)	[Sp]	Y328-210	(2)	[T]

COMMON PARTS

Item	Description (size)	Qty	Part No.	Mtl	Item	Description (size)	Qty	Part No.	Mtl
1	Rod	(1)	94984	[C]	61	Outlet Manifold (PH30F- AXX -XXX-C)	(1)	94704-1	[SS]
5	Backup Washer	(2)	96485	[C]		(PH30F- BXX -XXX-C)	(1)	94704-2	[SS]
6	Fluid Side Washer	(2)	94803	[SS]	68	Air Cap	(1)	96483	[SS]
9	Washer (13/16" i.d. x 2" o.d. x 5/32")	(2)	Y13-12-T	[SS]	69	Air Cap	(1)	94031-2	[SS]
14	Cap Screw (3/4" - 16 x 3-1/4")	(2)	Y5-134-T	[SS]	① ② 70	Gasket	(2)	94100	[B]
15	Fluid Cap (left side)	(1)	94107	[SS]	76	Seat Plug	(2)	96484	[SS]
15a	Fluid Cap (right side)	(1)	96482	[SS]	77	Elbow (1/2" o.d. tube x 1/2 - 14 N.P.T.F. - 1)	(2)	59756-362	---
21	Seat	(2)	94113	[SS]	78	Tube (1/2" o.d. tube x 24")	(1)	94978-(③)	[Ny]
26	Screw (M12 x 1.75 - 6g x 45 mm)	(12)	94412-2	[SS]	126	Pipe Plug (1/4 - 18 N.P.T. x 13/32")	(2)	Y17-51-S	[SS]
27	Screw (M12 x 1.75 - 6g x 60 mm)	(16)	94991	[SS]	131	Screw (M10 x 1.5 - 6g x 120 mm)	(4)	94531	[C]
29	Nut (M12 x 1.75 - 6h)	(16)	95053	[SS]	① ② 144	"U" Cup (3/16" x 1-3/8" o.d.)	(2)	Y186-51	[B]
32	Leg	(2)	94703-2	[SS]	① ② 175	"O" Ring (3/32" x 1" o.d.)	(2)	Y325-117	[B]
43	Ground Lug (see page 7)	(1)	93004	[Co]	② 180	Gasket (0.406" i.d. x 0.031" thick)	(4)	94098	[Co]
60	Inlet Manifold (PH30F- AXX -XXX-C)	(1)	94216-1	[SS]	181	Roll Pin (5/32" o.d. x 3/4" long)	(4)	Y178-56-S	[SS]
	(PH30F- BXX -XXX-C)	(1)	94216-2	[SS]	① 196	Cushion	(2)	94631	[Sp]
					③	Bulk Tubing (1/2" o.d. x 100')	(1)	94978-100	[Ny]

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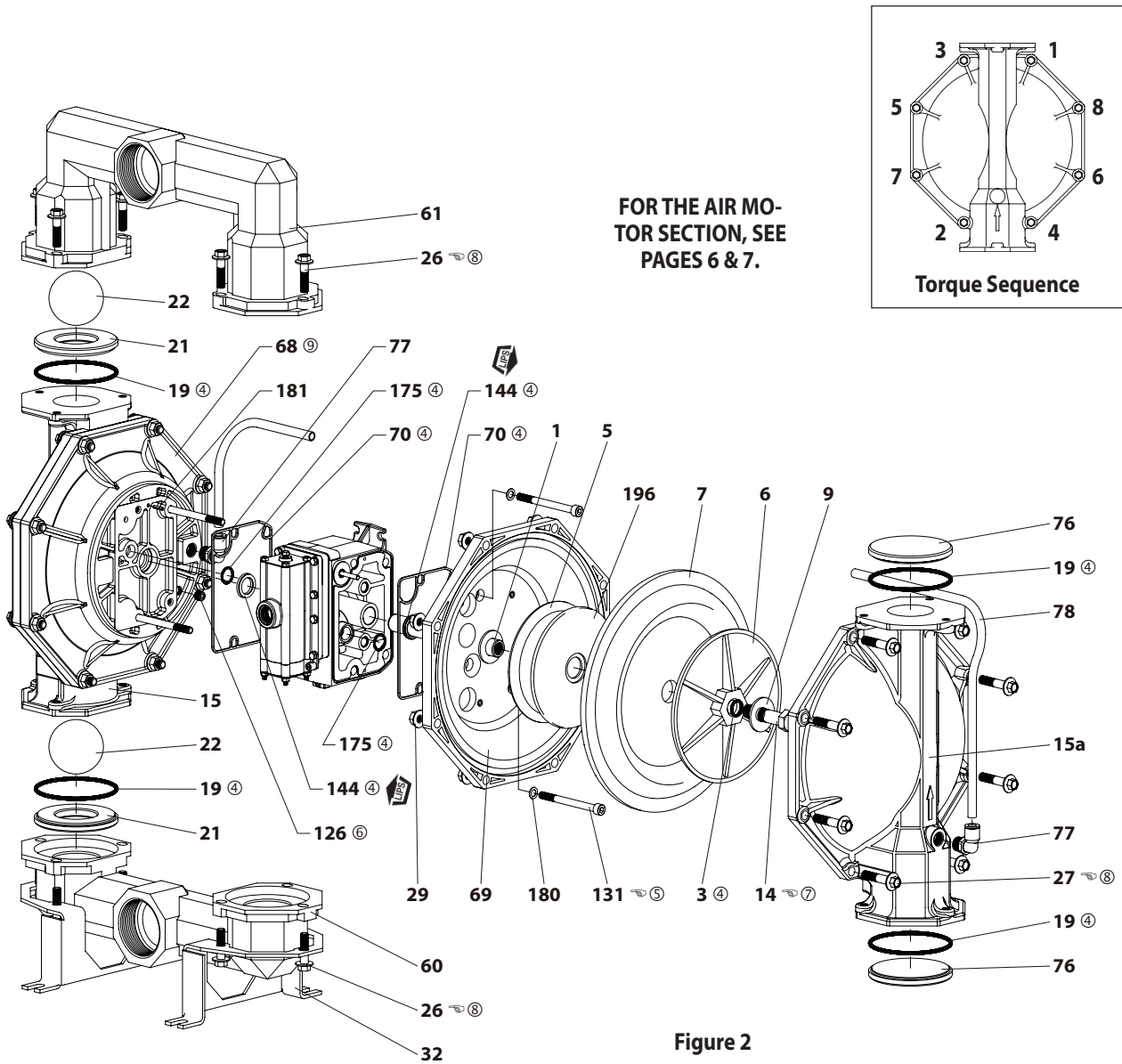
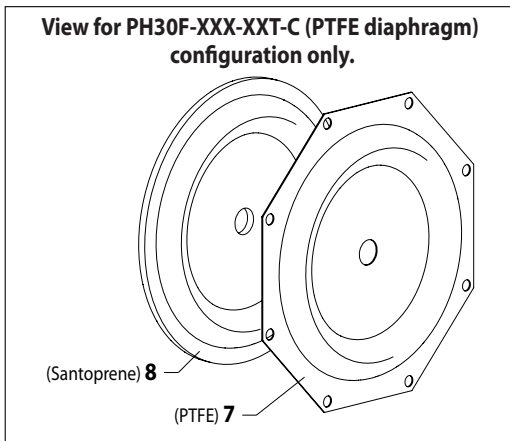


Figure 2



ASSEMBLY TORQUE REQUIREMENTS

NOTE: DO NOT OVERTIGHTEN FASTENERS.

ALL FASTENERS ARE METRIC.

- (14) Cap screw, 65 - 70 ft lbs (88.1 - 94.9 Nm).
- (26) Manifold screw, 60 - 70 ft lbs (81.4 - 94.9 Nm).
- (27) Fluid cap screw, 60 - 70 ft lbs (81.4 - 94.9 Nm).
- (131) Screw, 35 - 40 ft lbs (47.5 - 54.2 Nm).

LUBRICATION / SEALANTS

- ④ Apply Lubriplate FML-2 grease to all "O" rings, "U" cups and mating parts.
- ⑤ Apply Loctite® 262™ to threads at assembly.
- ⑥ Apply PTFE tape to threads at assembly.
- ⑦ Apply Loctite 271™ to threads.
- ⑧ Apply anti-seize compound to threads and bolt and nut flange heads which contact pump case when using stainless steel fasteners.
- ⑨ Apply 1/4" wide x 1/8" thick (approximately 46" long) expandable PTFE Joint Sealant to air cap (item 68 only) diaphragm bead groove. Use ONLY 1 wrap of sealant. DO NOT overlap seam. Fill seam with heavy duty anaerobic pipe sealant. Seam to be located between bolt positions 1 and 3 (refer to "Torque Sequence" diagram).
Lubriplate FML-2 is a white food grade petroleum grease.

PARTS LIST / PH30F-XXX-XXX-C AIR SECTION

② Indicates parts included in 637369 air section service kit shown below and items 70, 144, 175 and 180 shown on page 4.

AIR MOTOR PARTS LIST

Item	Description (size)	Qty	Part No.	Mtl	Item	Description (size)	Qty	Part No.	Mtl
101	Center Body	(1)	95667-1	[GP]	168	"O" Ring (3/32" x 5/8" o.d.)	(2)	94433	[U]
103	Bushing	(1)	94092	[D]	169	"U" Cup (1/8" x 7/8" o.d.)	(1)	Y240-9	[B]
105	Screw (M6 x 1 - 6g x 180 mm)	(4)	95921	[SS]	170	Piston Sleeve	(1)	94081	[Br]
107	End Plate	(2)	95846	[SS]	② 171	"O" Ring (3/32" x 1-1/8" o.d.)	(1)	Y325-119	[B]
111	Spool	(1)	95651	[D]	② 172	"O" Ring (1/16" x 1-1/8" o.d.)	(1)	Y325-22	[B]
118	Actuator Pin (0.250" x 2.276" long)	(2)	94083	[SS]	② 173	"O" Ring (1/16" x 1-3/8" o.d.)	(2)	Y325-26	[B]
121	Sleeve	(2)	94084	[D]	① ② 174	"O" Ring (1/8" x 1/2" o.d.)	(2)	Y325-202	[B]
127	90° Street Elbow (1-1/2 - 11-1/2 N.P.T.)	(1)	94860	[C / I]	② 176	Diaphragm (check valve)	(2)	94102	[Sp]
② 132	Gasket	(1)	94099	[B]	② 199	Track Gasket	(1)	95666	[B]
133	Washer (M6)	(7)	95931	[SS]	② 200	Gasket	(1)	95665	[B]
134	Screw (M6 x 1 - 6g x 35 mm)	(8)	95923	[SS]	201	Muffler Kit (includes item 127)	(1)	67213	
135	Valve Block	(1)	95789-2	[GP]	② 232	"O" Ring (1/8" x 1/2" o.d.)	(2)	Y325-202	[B]
136	End Cap	(1)	95790	[P]	233	Adapter Plate	(1)	95761	[P]
② 137	"O" Ring (1/16" x 2" o.d.)	(1)	Y325-32	[B]	236	Nut (M6 x 1 - 6h)	(4)	95924	[SS]
② 138	"U" Cup (3/16" x 1.792" o.d.)	(1)	95966	[B]	② 243	"O" Ring (1/8" x 5/8" o.d.)	(1)	Y325-204	[B]
② 139	"U" Cup (3/16" x 1-1/4" o.d.)	(1)	Y186-50	[B]	② 244	"O" Ring (1/8" x 7/8" o.d.)	(1)	Y325-208	[B]
140	Valve Insert	(1)	95650	(Ck)					
141	Valve Plate	(1)	95659	(Ck)	① ②	Lubriplate FML-2 Grease	(1)	94276	
② 166	Track Gasket	(1)	94026	[B]		Lubriplate Grease packets (10)		637308	
② 167	Pilot Piston (includes items 168 and 169)	(1)	67164	[D]					

① Items included in fluid section service kit, see pages 4 and 5.

MATERIAL CODE

[B] = Nitrile	[I] = Iron
[Br] = Brass	[P] = Polypropylene
[C] = Carbon Steel	[Sp] = Santoprene
[Ck] = Ceramic	[SS] = Stainless Steel
[D] = Acetal	[U] = Polyurethane
[GP] = Groundable Polypropylene	

AIR MOTOR SECTION SERVICE

Service is divided into two parts - 1. Pilot Valve, 2. Major Valve.

GENERAL REASSEMBLY NOTES:

- Air Motor Section service is continued from Fluid Section repair.
- Inspect and replace old parts with new parts as necessary. Look for deep scratches on metallic surfaces, and nicks or cuts in "O" rings.
- Take precautions to prevent cutting "O" rings upon installation.
- Lubricate "O" rings with Lubriplate FML-2 grease.
- Do not over-tighten fasteners. Refer to torque specification block on view.
- Re-torque fasteners following restart.
- SERVICE TOOLS - To aid in the installation of (168) "O" rings onto the (167) pilot piston, use tool # 204130-T, available from ARO.

PILOT VALVE DISASSEMBLY

1. A light tap on (118) actuator pin should expose the opposite (121) sleeve, (167) pilot piston and other parts.
2. Remove (170) sleeve. Inspect inner bore of sleeve for damage.

PILOT VALVE REASSEMBLY

1. Clean and lubricate parts not being replaced from service

kit.

2. Install new (171 and 172) "O" rings. Replace (170) sleeve.
3. Install new (168) "O" rings and (169) seal - Note the lip direction. Lubricate and replace (167) pilot piston.
4. Reassemble remaining parts. Replace (173 and 174) "O" rings.

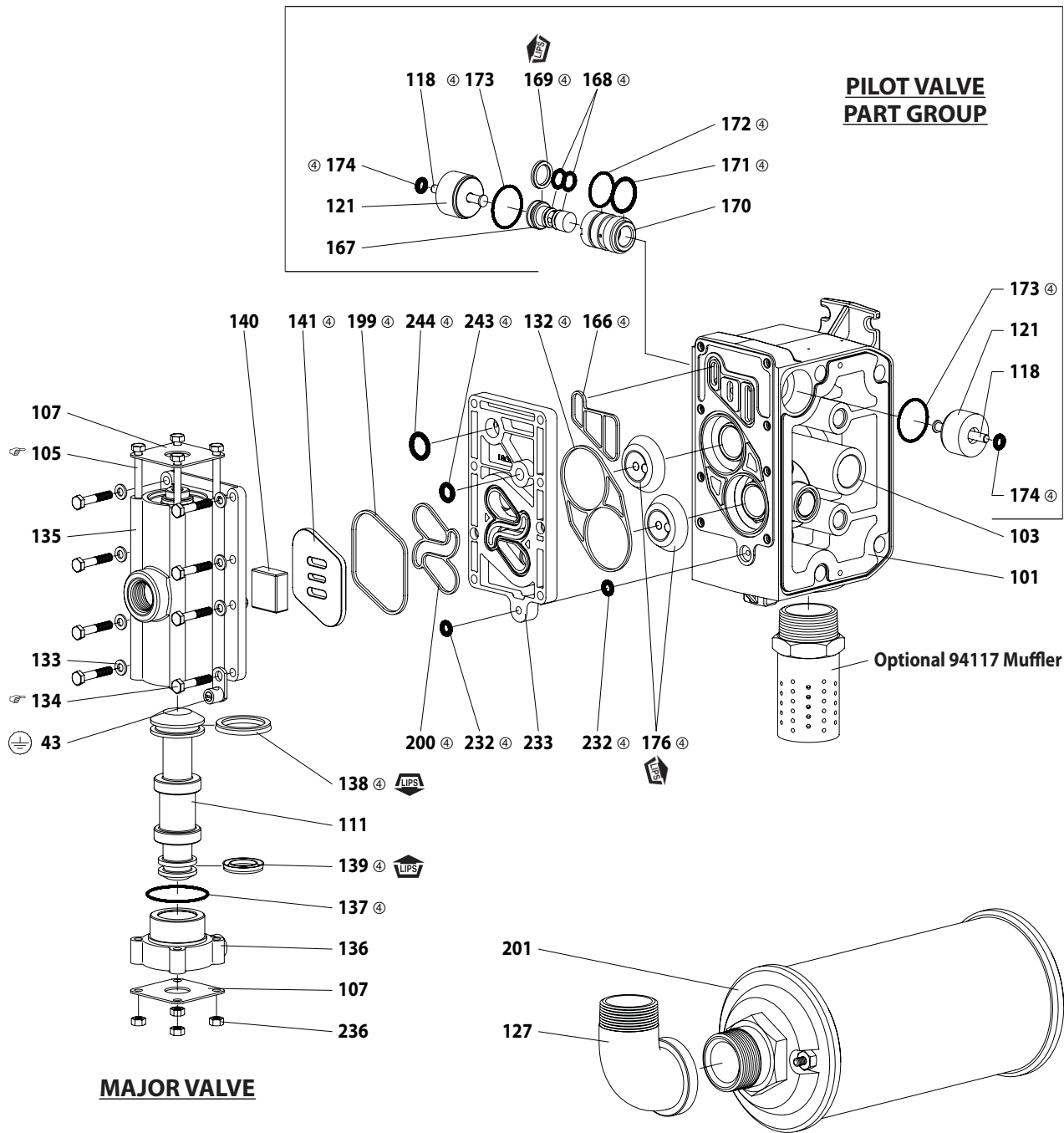
MAJOR VALVE DISASSEMBLY

1. Remove (135) valve block and (233) adapter plate, exposing (132 and 166) gaskets, (232) "O" ring and (176) checks.
2. Remove (233) adapter plate, releasing (140) valve insert, (141) valve plate, (199 and 200) gaskets and (244, 243 and 232) "O" rings.
3. Remove (136) end cap and (137) "O" ring, releasing (111) spool.

MAJOR VALVE REASSEMBLY

1. Install new (138 and 139) "U" cups on (111) spool - **LIPS MUST FACE EACH OTHER.**
2. Insert (111) spool into (135) valve block.
3. Install (137) "O" ring on (136) end cap and assemble end cap to (135) valve block, securing with (107) end plates and (105) screws.
4. Install (140) valve insert and (141) valve plate into (135) valve block. NOTE: Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with 2 identification dots toward (199 and 200) gaskets.
5. Assemble (244, 243 and 232) "O" rings, (199 and 200) gaskets and (233) adapter plate to (135) valve block.
6. Assemble (132 and 166) gaskets, (176) checks and (232) "O" ring to (101) body.
7. Assemble (135) valve block and components to (101) body, securing with (134) screws.

PARTS LIST / PH30F-XXX-XXX-C AIR SECTION



MAJOR VALVE

PILOT VALVE PART GROUP

Figure 3

ASSEMBLY TORQUE REQUIREMENTS
 NOTE: DO NOT OVERTIGHTEN FASTENERS.
 ALL FASTENERS ARE METRIC.
 (105) Screw, 15 - 20 in. lbs (1.7 - 2.3 Nm).
 (134) Screw, 40 - 50 in. lbs (4.5 - 5.6 Nm).

LUBRICATION / SEALANTS

- ④ Apply Lubriplate FML-2 grease to all "O" rings, "U" cups and mating parts.
- ⑧ Apply anti-seize compound to threads and bolt and nut flange heads which contact pump case when using stainless steel fasteners.

A replacement Major Valve Service Assembly is available separately, which includes the following:
 637374-6: 105 (4), 107 (2), 111, 132, 135, 136, 137, 138, 139, 140, 141, 166, 176 (2), 199, 200, 232 (2), 233, 236 (4), 243 and 244.