

PARTS LIST / PM20R-X-X-B02 FLUID SECTION

FLUID SECTION SERVICE KITS (637309-XX)

★ KITS INCLUDE: BALLS (See Ball Option, refer to -XX in chart below), DIAPHRAGMS (See Diaphragm Option, refer to -XX in chart below), and items 19, 70, 144, 175, (listed below) plus 174 and 94276 Lubriplate FML-2 grease (page 6).

SEAT OPTIONS PM20R-CSS-XXX-B02				BALL OPTIONS PM20R-CSS-XXX-B02			
★ "21"				★ "22" (2-1/2" dia.)			
-XXX	Seat	Qty	[Mtl]	-XXX	Gasket	Qty	[Mtl]
-AXX	94328-A	(4)	[SP]	-XAX	93358-A	(4)	[SP]
-SXX	94353	(4)	[SS]	-XTX	93358-4	(4)	[T]

NOTE: Seat options -AXX do not require item 19 "O" ring.

DIAPHRAGM OPTIONS PM20R-CSS-XXX-B02

-XXX	★ SERVICE KIT -XX = (Ball) -XX = (Diaphragm)	★ "7"			★ "8"			★ "19"		
		Diaphragm	Qty	[Mtl]	Diaphragm	Qty	[Mtl]	Gasket	Qty	[Mtl]
-XXA	637309-XA	94329-A	(2)	[SP]	-----	---	----	94356	(4)	[E]
-XXT	637309-XT	94355-T	(2)	[T]	94330-A	(2)	[SP]	Y328-237	(4)	[T]

MATERIAL CODE	
[B]	= Nitrile
[C]	= Carbon Steel
[Co]	= Copper
[E]	= E.P.R.
[SP]	= Santoprene
[SS]	= Stainless Steel
[T]	= Teflon

COMMON PARTS

Item	Description (size)	Qty	Part No.	[Mtl]	Item	Description (size)	Qty	Part No.	[Mtl]
1	Rod	(1)	94358	[C]	61	Outlet Manifold	(1)	95509	[SS]
5	Backup Washer	(2)	94357-2	[SS]	68	Air Cap	(1)	94349-1	[SS]
6	Diaphragm Washer	(2)	94357-2	[SS]	69	Air Cap	(1)	94349-2	[SS]
9	Washer	(2)	93065	[SS]	★ ✓ 70	Gasket	(2)	94100	[B]
14	Screw (5/8" - 18 x 2-1/2")	(2)	Y5-111-T	[SS]	126	Pipe Plug (1/4 - 18 N.P.T. x 7/16")	(2)	Y17-51-S	[SS]
15	Fluid Cap	(2)	95570-1	[SS]	131	Screw (M10 x 1.5 - 6g x 120 mm)	(4)	94531	[C]
26	Screw (M10 x 1.5 - 6g x 35 mm)	(8)	94409-2	[SS]	★ ✓ 144	"U" Cup (3/16" x 1-3/8" o.d.)	(2)	Y186-51	[B]
27	Screw (M10 x 1.5 - 6g x 45 mm)	(16)	94990	[SS]	★ ✓ 175	"O" Ring (3/32" x 1" o.d.)	(2)	Y325-117	[B]
29	Nut (M10 x 1.5 - 6g)	(16)	94992	[SS]	✓ 180	Washer (0.406" i.d. x 0.031" thick)	(4)	94098	[Co]
60	Inlet Manifold	(1)	95508	[SS]	181	Roll Pin (5/32" o.d. x 3/4" long)	(4)	Y178-56-S	[SS]

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COLOR CODE		
MATERIAL	DIAPHRAGM COLOR	BALL COLOR
Santoprene	Tan	Tan
Santoprene (Backup)	Green	N / A
Teflon	White	White

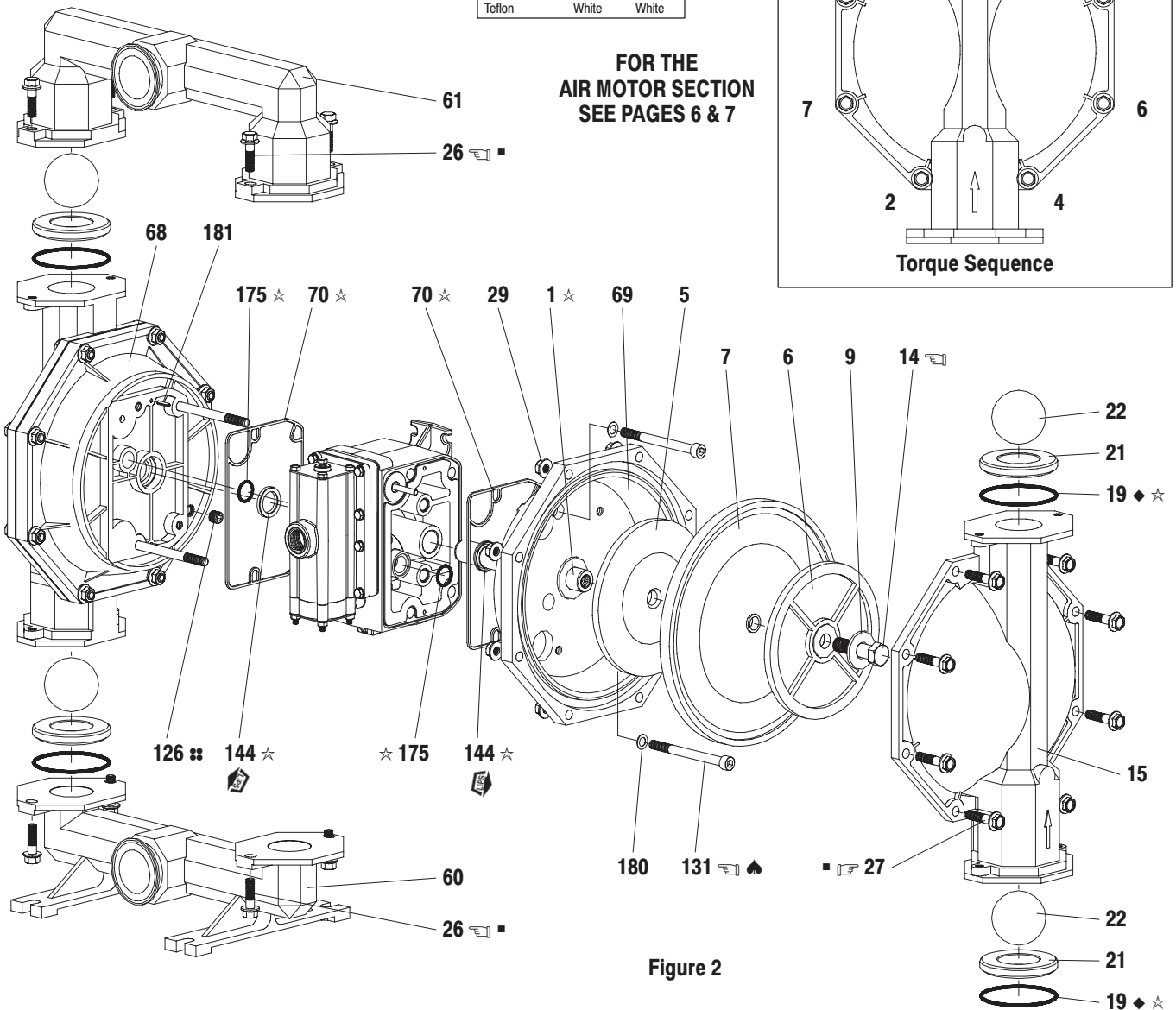
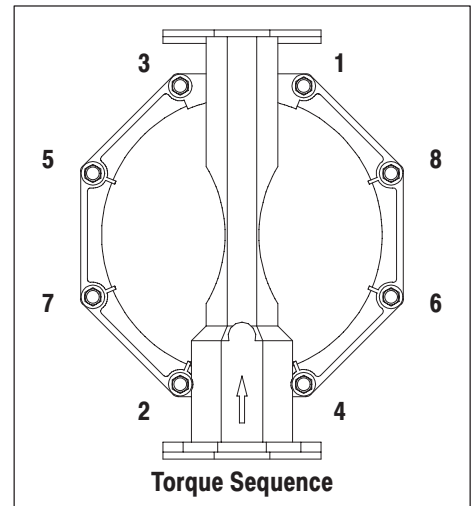


Figure 2

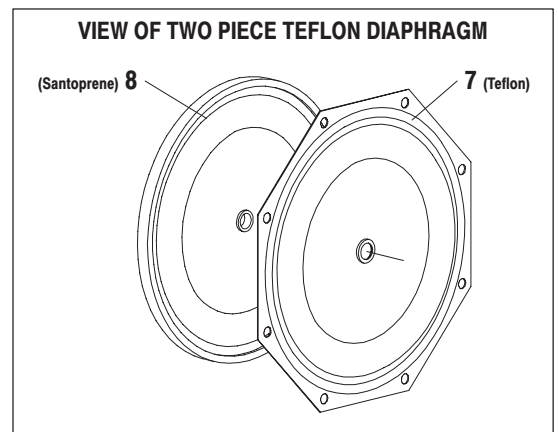
TORQUE REQUIREMENTS
 NOTE: DO NOT OVERTIGHTEN FASTENERS.
 ALL FASTENERS ARE METRIC.

(14) Diaphragm screw, apply Loctite #271 to threads, 65 - 70 ft lbs (88.1 - 94.9 Nm).
 (26 and 27) Fluid cap / manifold screw, 30 - 40 ft lbs (40.7 - 54.2 Nm).
 (131) Screw, 35 - 40 ft lbs (47.5 - 54.2 Nm).

LUBRICATION / SEALANTS

- ☆ Apply Lubriplate FML-2 grease to all "O" rings, "U" Cups & mating parts.
- ▲ Apply Loctite 242 to threads at assembly.
- :: Apply Teflon tape to threads at assembly.
- Apply anti-seize compound to threads.

- ◆ Used with PM20R-CSS-SXX-B02 models only.
- ◇ Lubriplate FML-2 is a white food grade petroleum grease.



PARTS LIST / PM20R-X-X-B02 AIR SECTION

✓ 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

Item	Description (size)	Qty	Part No.	[Mtl]
101	Center Body	(1)	95667	[P]
103	Bushing	(1)	94092	[D]
105	Screw (M6 x 1 - 6g x 180 mm)	(4)	95921	[SS]
107	End Plate	(2)	95846	[SS]
111	Spool	(1)	95651	[D]
118	Actuator Pin (0.250" x 2.276" long)	(2)	94083	[SS]
121	Sleeve	(2)	94084	[D]
✓ 132	Gasket	(1)	94099	[B]
133	Washer (M6)	(8)	95931	[SS]
134	Screw (M6 x 1 - 6g x 35 mm)	(8)	95923	[SS]
135	Valve Block	(1)	95789	[P]
136	End Cap	(1)	95790	[P]
✓ 137	"O" Ring (1/16" x 2" o.d.)	(1)	Y325-32	[B]
✓ 138	"U" Cup (3/16" x 1.792" o.d.)	(1)	95966	[B]
✓ 139	"U" Cup (3/16" x 1-1/4" o.d.)	(1)	Y186-50	[B]
140	Valve Insert	(1)	95650	[Ck]
141	Valve Plate	(1)	95659	[Ck]
✓ 166	Track Gasket	(1)	94026	[B]
✓ 167	Pilot Piston (includes 168 and 169)	(1)	67164	[D]
168	"O" Ring (3/32" x 5/8" o.d.)	(2)	94433	[U]

Item	Description (size)	Qty	Part No.	[Mtl]
169	"U" Cup (1/8" x 7/8" o.d.)	(1)	Y240-9	[B]
170	Piston Sleeve	(1)	94081	[Br]
✓ 171	"O" Ring (3/32" x 1-1/8" o.d.)	(1)	Y325-119	[B]
✓ 172	"O" Ring (1/16" x 1-1/8" o.d.)	(1)	Y325-22	[B]
✓ 173	"O" Ring (1/16" x 1-3/8" o.d.)	(2)	Y325-26	[B]
★ ✓ 174	"O" Ring (1/8" x 1/2" o.d.)	(2)	Y325-202	[B]
✓ 176	Diaphragm (check valve)	(2)	94102	[SP]
✓ 199	Track Gasket	(1)	95666	[B]
✓ 200	Gasket	(1)	95665	[B]
✓ 232	"O" Ring (1/8" x 1/2" o.d.)	(2)	Y325-202	[B]
233	Adapter Plate	(1)	95761	[P]
236	Nut (M6 x 1 - 6g)	(4)	95924	[SS]
✓ 243	"O" Ring (1/8" x 5/8" o.d.)	(1)	Y325-204	[B]
✓ 244	"O" Ring (1/8" x 7/8" o.d.)	(1)	Y325-208	[B]
★ ✓	Lubriplate FML-2 Grease	(1)	94276	
	Lubriplate Grease Packets (10)		637308	

MATERIAL CODE

[B] = Nitrile [D] = Acetal [SS] = Stainless Steel
 [Br] = Brass [P] = Polypropylene [U] = Polyurethane
 [Ck] = Ceramic [SP] = Santoprene

★ Fluid Section Service Kit parts, see page 4.

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 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) 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).
4. Reassemble remaining parts, replace (173 and 174) "O" rings.

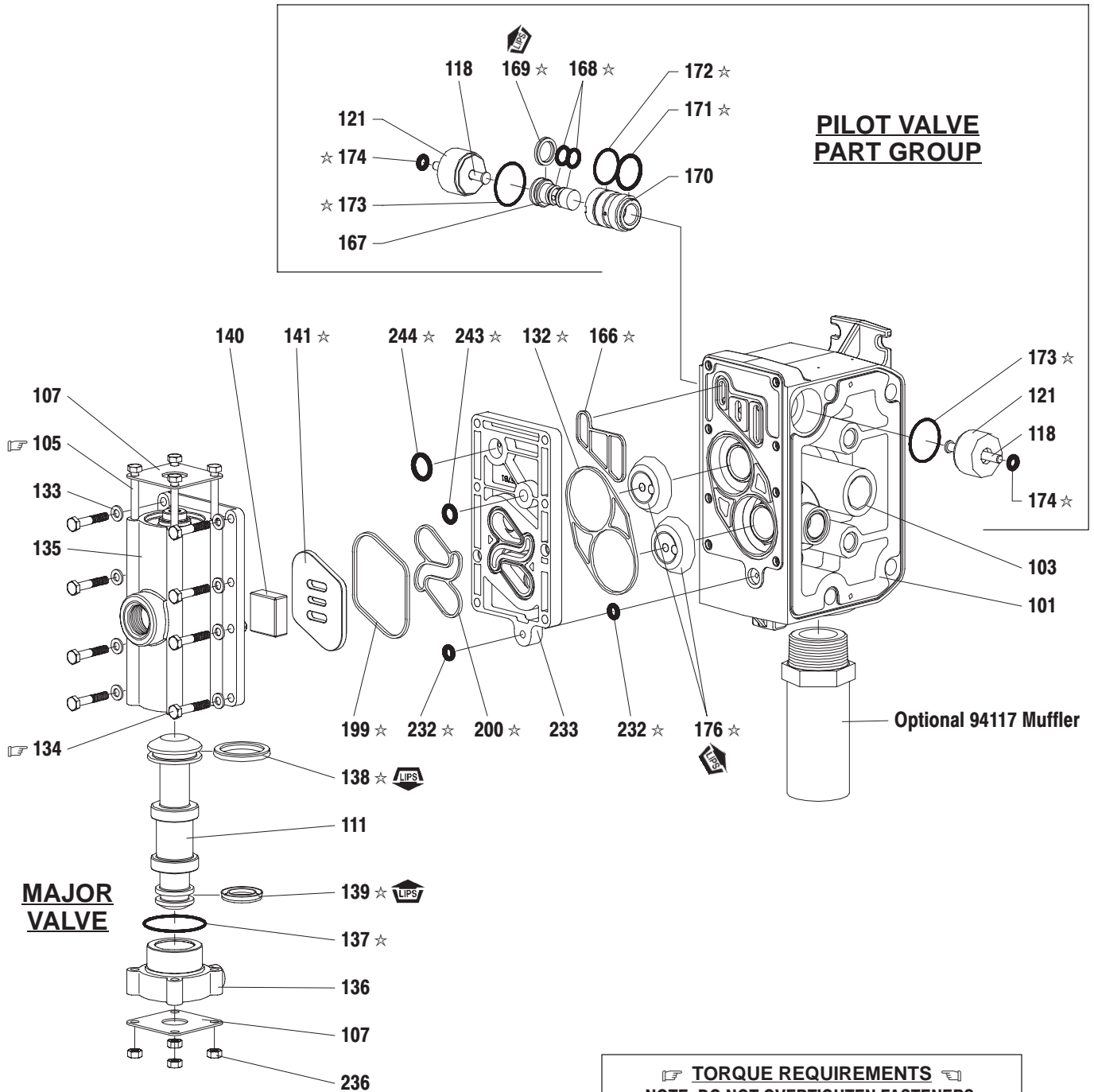
MAJOR VALVE DISASSEMBLY

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 (232, 243 and 244) "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 (232, 243 and 244) "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.

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TORQUE REQUIREMENTS
 NOTE: DO NOT OVERTIGHTEN FASTENERS.
 ALL FASTENERS ARE METRIC.
 Torque (105) Screw to 35 - 40 in. lbs (4.0 - 4.5 Nm).
 Torque (134) Screw to 35 - 40 in. lbs (4.0 - 4.5 Nm).

LUBRICATION / SEALANTS
 ☆ Apply Lubriplate FML-2 grease to "O" rings, "U" Cups & mating parts.

A 637374 Replacement Major Valve Service Assembly is available separately, which includes the following:
 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.