

**PARTS LIST / PF20X-X-X-B FLUID SECTION**

**FLUID SECTION SERVICE KITS (637310-XX)**

★ KITS INCLUDE: DIAPHRAGMS (See Diaphragm Option, refer to -XX in chart below), Flap Valve items (47), (48), (51) and (55), plus items (44), (46), (70), (75), (144) and (175) listed below, plus (174) and a (94276) Lubriplate FML-2 grease packet.

**FLAP VALVE OPTIONS PF20X-XXX-SXX-B**

-XXX	★ "47"			★ "48"			★ "51"			★ "55"		
	Bumper	Qty	[Mtl]	Flap	Qty	[Mtl]	Gasket	Qty	[Mtl]	Gasket	Qty	[Mtl]
-XAX	93197-5	(4)	[E]	93196-5	(4)	[E]	94365-1	(4)	[E]	94364-1	(4)	[E]
-XGX	93197-2	(4)	[B]	93196-2	(4)	[B]	94365-2	(4)	[B]	94364-2	(4)	[B]
-XUX	93197-5	(4)	[E]	93070	(4)	[U]	94365-1	(4)	[E]	94364-1	(4)	[E]
-XVX	93197-3	(4)	[V]	93196-3	(4)	[V]	94365-3	(4)	[V]	94364-3	(4)	[V]

**DIAPHRAGM OPTIONS PF20X-XXX-SXX-B**

-XXX	★ SERVICE KIT	★ "7"			★ "8"		
	-XX = (Flap Valve) -XX = (Diaphragm)	Diaphragm	Qty	[Mtl]	Diaphragm	Qty	[Mtl]
-XXA	637310-XA	94329-A	(2)	[SP]	-----	---	---
-XXB	637310-XB	94330-A	(2)	[SP]	-----	---	---
-XXG	637310-XG	94329-G	(2)	[B]	-----	---	---
-XXT	637310-XT	94355-T	(2)	[T]	94330-A	(2)	[SP]
-XXV	637310-XV	95344	(2)	[V]	-----	---	---

**CENTER SECTION - AIR CAP PART OPTIONS PF20X-XXX-SXX-B**

Item	Description (size)	Qty	PF20A-XXX-SXX-B		PF20S-XXX-SXX-B	
			Part No.	[Mtl]	Part No.	[Mtl]
5	Backup Washer	(2)	94357-1	[A]	94357-2	[SS]
68	Air Cap	(1)	94324-1	[A]	94349-1	[SS]
69	Air Cap	(1)	94324-2	[A]	94349-2	[SS]
126	Pipe Plug (1/4 - 18 N.P.T. x 7/16")	(2)	-----	---	Y17-51-S	[SS]
★ ✓ 175	"O" Ring (3/32" x 1" o.d.)	(2)	Y325-117	[B]	-----	---
★ ✓	(3/32" x 1-1/16" o.d.)	(2)	-----	---	Y325-118	[B]
181	Roll Pin (5/32" o.d. x 3/4" long)	(4)	-----	---	Y178-56-S	[SS]

**MATERIAL CODE**

- [A] = Aluminum
- [B] = Nitrile
- [C] = Carbon Steel
- [Co] = Copper
- [Cl] = Cast Iron
- [E] = E.P.R.
- [SP] = Santoprene
- [SS] = Stainless Steel
- [T] = Teflon
- [U] = Polyurethane
- [V] = Viton

**MANIFOLD THREAD / FLUID CAP MATERIAL OPTIONS PF20X-XXX-SXX-B**

Item	Description (size)	Qty	PF20X-XAX-SXX-B		PF20X-XCX-SXX-B		PF20X-XSX-SXX-B		PF20X-FSX-SXX-B	
			Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]	Part No.	[Mtl]
□ 6	Diaphragm Washer	(2)	94357-1	[A]	94357-2	[SS]	94357-2	[SS]	94357-2	[SS]
15	Fluid Cap	(2)	94331	[A]	94359	[C]	95560	[SS]	95560	[SS]
53	Manifold Elbow	(2)	94361	[A]	94362	[C]	95563	[SS]	95563	[SS]
60	Bottom Manifold	(1)	94327-[:]	[A]	94347-[:]	[C]	95510-[:]	[SS]	95512 ▲	[SS]
61	Top Manifold	(1)	94326-[:]	[A]	94348-[:]	[C]	95511-[:]	[SS]	95513 ▲	[SS]
63	Pipe Plug (2 - 11-1/2 N.P.T.)	(2)	Y17-128	[A]	Y17-28-C	[C]	-----	---	-----	---
	(R-2, 2 - 11 BSP)	(2)	94439-2	[A]	94439-1	[C]	-----	---	-----	---
80	Pipe Plug (1/8 - 27 N.P.T.F.)	(2)	Y227-2-L	[C]	Y227-2-L	[C]	Y17-50-S	[SS]	Y17-50-S	[SS]

☺ For N.P.T.F. models (PF20X-AXX-SXX-B) use "-1"

☺ For BSP models (PF20X-BXX-SXX-B) use "-2"

▲ Flange models

**EXTERNAL HARDWARE OPTION PF20X-XXX-SXX-B**

Item	Description (size)	Qty	PF20X-XXP-SXX-B		PF20X-XXS-SXX-B	
			Part No.	[Mtl]	Part No.	[Mtl]
26	Screw (M10 x 1.5 - 6g x 35 mm)	(20)	94409-1	[C]	94409-2	[SS]
27	Screw (M10 x 1.5 - 6g x 45 mm)	(16)	94990-1	[C]	94990	[SS]
29	Nut (M10 x 1.5 - 6g)	(16)	94992-1	[C]	94992	[SS]

**COMMON PARTS**

Item	Description (size)	Qty	Part No.	[Mtl]	Item	Description (size)	Qty	Part No.	[Mtl]
□ 1	Rod	(1)	94358	[C]	49	Seat	(4)	94366	[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]	★ 75	Plate	(4)	94620	[SS]
43	Ground Lug	(1)	93004	[Co]	131	Screw (M10 x 1.5 - 6g x 120 mm)	(4)	94531	[C]
★ 44	Screw	(8)	94408	[SS]	★ ✓ 144	"U" Cup (3/16" x 1-3/8" o.d.)	(2)	Y186-51	[B]
★ 46	Bracket	(4)	93192	[SS]	✓ 180	Washer (0.406" i.d. x 0.031" thick)	(4)	94098	[Co]

□ "Smart Parts" keep these items on hand in addition to the Service Kits for fast repair and reduction of down time.

✓ Air Motor Kit Parts, see page 6.

PARTS LIST / PF20X-X-X-B FLUID SECTION

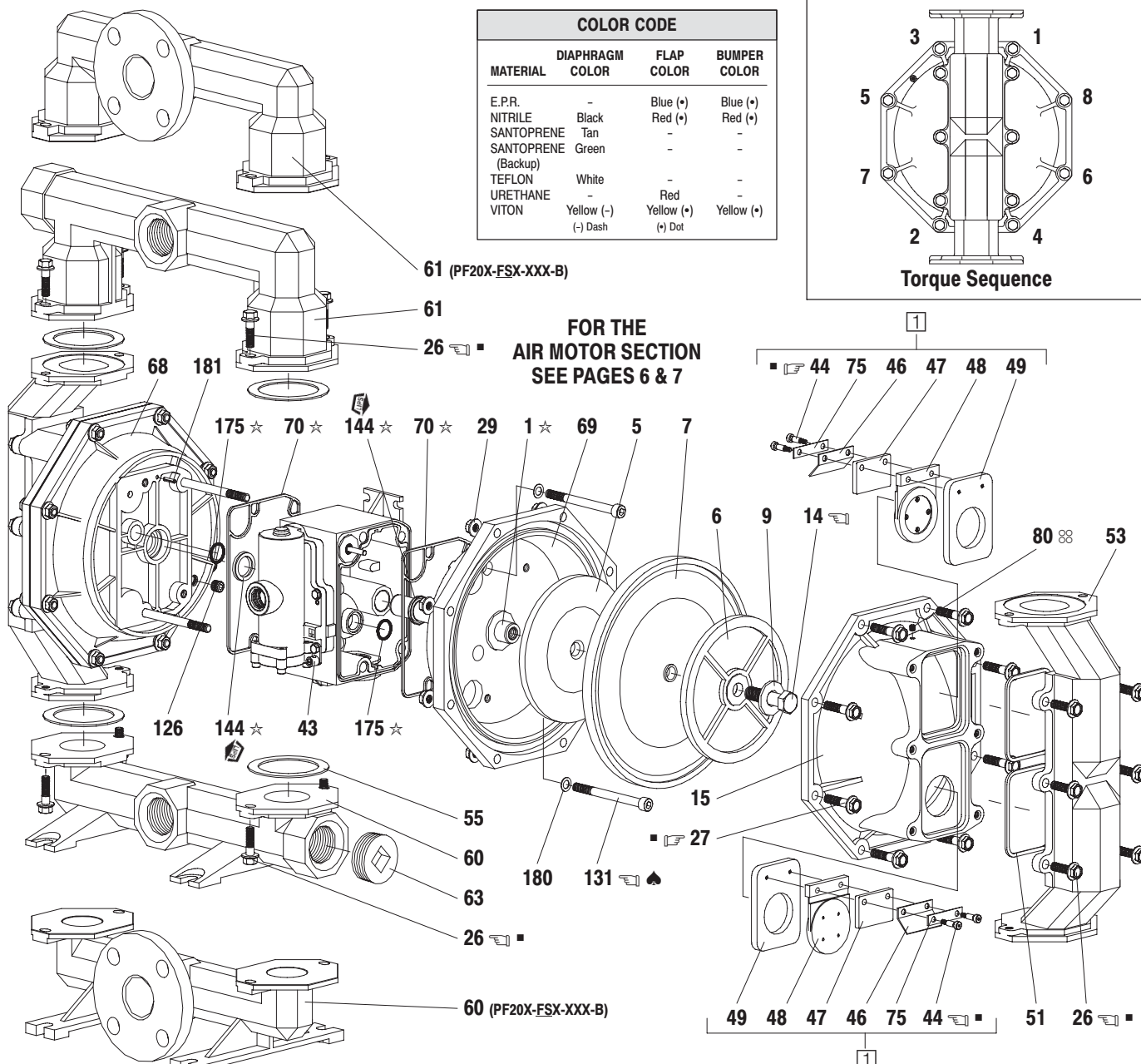


Figure 2

**TORQUE REQUIREMENTS**

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

- (14) Diaphragm screw, apply Loctite #271 to threads, torque to 65 - 70 ft lbs (88.1 - 94.9 Nm).
- (26 and 27) Fluid caps / manifold screws and (131) screw, 30 - 40 ft lbs (40.7 - 54.2 Nm).
- (44) Screw, 50 - 60 in. lbs (5.6 - 6.8 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 Loctite 503 pipe sealant.
- Apply anti-seize compound to threads when using stainless steel fasteners and stainless steel wet ends.

◇ Lubriplate FML-2 is a white food grade petroleum grease.

**PARTS LIST / PF20X-X-X-B AIR SECTION**

✓ Indicates parts included in 637421 Air Section Service Kit shown below and items (70), (144), (175), (180) shown on page 4.

**AIR MOTOR PARTS**

Item	Description (size)	Qty	Part No.	[Mtl]
101	Center Body (PF20A-X-X-B)	(1)	94028	[A]
	(PF20S-X-X-B)	(1)	94109	[SS]
103	Bushing	(1)	94092	[D]
105	Screw (M6 x 1 - 6g x 20 mm)	(4)	95887	[SS]
111	Spool	(1)	95651	[D]
118	Actuator Pin (0.250" x 2.276" long)	(2)	94083	[SS]
121	Sleeve	(2)	94084	[D]
127	90 St. Elbow (1-1/2 - 11-1/2 N.P.T.)	(1)	94860	[C / I]
128	Set Screw (1/4" - 20 x 1/4")	(2)	Y29-42-S	[SS]
✓ 132	Gasket	(1)	94099	[B]
133	Lockwasher (1/4") (PF20A-X-X-B)	(3)	Y117-416-C	[C]
	(PF20S-X-X-B)	(3)	Y14-416-T	[SS]
134	Screw (M6 x 1 - 6g x 30 mm)	(4)	96358	[SS]
135	Valve Housing (PF20A-X-X-B)	(1)	96334-1	[A]
	(PF20S-X-X-B)	(1)	96337-1	[SS]
136	Plug (PF20A-X-X-B)	(1)	96335	[A]
	(PF20S-X-X-B)	(1)	96339	[SS]
✓ 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]
✓ 146	"O" Ring • (3/32" x 1-1/16" o.d.)	(1)	Y325-118	[B]
✓ 147	"O" Ring • (1/8" x 1/2" o.d.)	(2)	Y325-202	[B]
✓ 166	Track Gasket ◆	(1)	94026	[B]

★ Fluid Section 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 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) 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.

Item	Description (size)	Qty	Part No.	[Mtl]
✓ 167	Pilot Piston (includes 168 and 169)	(1)	67164	[D]
168	"O" Ring (3/32" x 5/8" o.d.)	(2)	94433	[U]
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]
201	Muffler	(1)	94810	
233	Adapter Plate (PF20A-X-X-B)	(1)	96336	[A]
	(PF20S-X-X-B)	(1)	96338	[SS]
240	Screw (M6 x 1 - 6g x 16 mm)	(2)	95991	[SS]
✓ 241	Track Gasket	(1)	96344	[B]
✓ 242	"O" Ring (1/16" x 7/32" o.d.)	(1)	Y325-5	[B]
✓ 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	
● Used on models PF20S-XXX-SXX-B only.				
◆ Used on models PF20A-XXX-SXX-B only.				
○ Items not shown				

**MAJOR VALVE DISASSEMBLY**

1. Remove (135) valve block and (233) adapter plate, exposing (166 and 132) gaskets and (176) checks.
2. Remove (233) adapter plate, releasing (140) valve insert, (141) valve plate, (199, 200 and 241) gaskets and (243 and 244) "O" rings.
3. Remove (136) plug 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 housing.
3. Install (137 and 242) "O" rings on (136) plug and assemble plug to (135) valve housing, securing with (105) screws.
4. Install (140) valve insert, (141) valve plate, (199) gasket and (243 and 244) "O" rings into (135) valve housing. NOTE: Assemble (140) valve insert with "dished" side toward (141) valve plate. Assemble (141) valve plate with part number identification toward (140) valve insert.
5. Assemble (200 and 241) gaskets and (233) adapter plate to (135) valve housing, securing with (240) screws.
6. Assemble (132 and 166) gaskets and (176) checks to (101) center body.
7. Assemble (135) valve housing and components to (101) center body, securing with (134) screws.

**PARTS LIST / PF20X-X-X-B AIR SECTION**

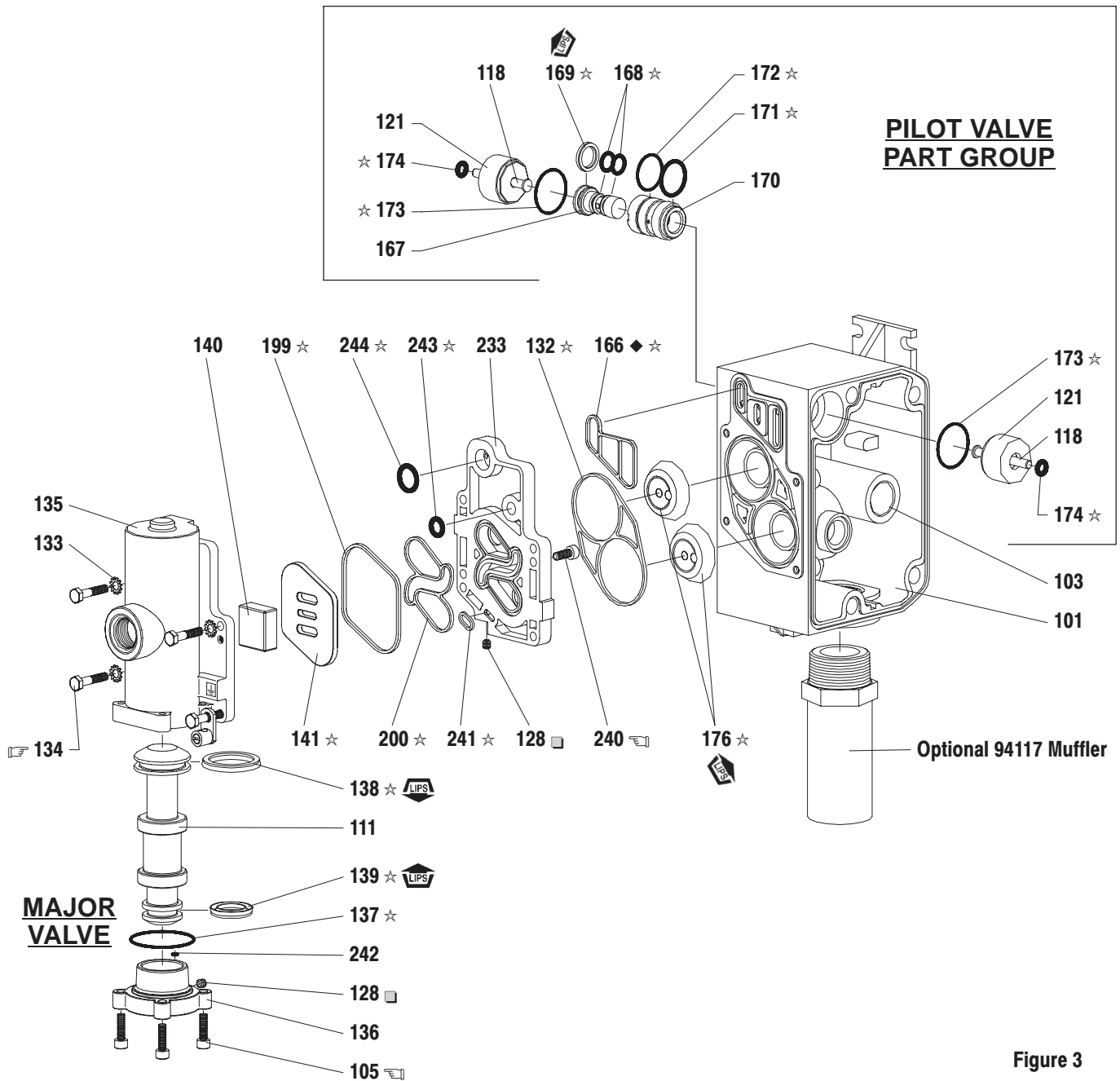


Figure 3

**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 40 - 50 in. lbs (4.5 - 5.6 Nm).
- Torque (240) Screw to 40 - 50 in. lbs (4.5 - 5.6 Nm).

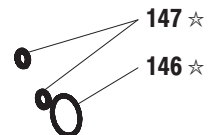
**LUBRICATION / SEALANTS**

- ★ Apply Lubriplate FML-2 grease to "O" rings, "U" Cups & mating parts.
- Apply Loctite 271 to threads at assembly.

**MATERIAL CODE**

- [A] = Aluminum
- [B] = Nitrile
- [Br] = Brass
- [C] = Carbon Steel
- [Ck] = Ceramic
- [D] = Acetal
- [I] = Iron
- [SP] = Santoprene
- [SS] = Stainless Steel
- [U] = Polyurethane

◆ Substitute these "O" rings for "166" gasket on models PF20S-XXX-XXX-B.



A replacement Major Valve Service Assembly is available separately, which includes the following:

- 637374-2 for models PF20A-XXX-SXX-B: 105 (4), 111, 128 (2), 132, 135, 136, 137, 138, 139, 140, 141, 166, 176 (2), 199, 200, 233, 240 (2), 241, 242, 243 and 244.
- 637374-4 for models PF20S-XXX-SXX-B: 105 (4), 111, 128 (2), 132, 135, 136, 137, 138, 139, 140, 141, 146, 147, 176 (2), 199, 200, 233, 240 (2), 241, 242, 243 and 244.