

OPERATOR'S MANUAL

666DXX-X-C

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

RELEASED: 5-3-88
REVISED: 6-21-10
(REV.F) IPP/PSE

2" FLAP VALVE DIAPHRAGM PUMP 1:1 RATIO (METALLIC)



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

THIS MANUAL COVERS THE FOLLOWING MODELS

MODEL	TH'D	CENTER BODY MAT'L	WETTED SIDE MATERIAL	MODEL	TH'D	CENTER BODY MAT'L	WETTED SIDE MATERIAL
666D00-XXX-C	NPT	ALUMINUM	ALUMINUM	666D20-XXX-C	BSP	ALUMINUM	ALUMINUM
666D01-XXX-C	NPT	ALUMINUM	S'STEEL	666D21-XXX-C	BSP	ALUMINUM	S'STEEL
666D02-XXX-C	NPT	ALUMINUM	CAST IRON	666D22-XXX-C	BSP	ALUMINUM	CAST IRON
666D10-XXX-C	NPT	CAST IRON	ALUMINUM	666D30-XXX-C	BSP	CAST IRON	ALUMINUM
666D11-XXX-C	NPT	CAST IRON	S'STEEL	666D31-XXX-C	BSP	CAST IRON	S'STEEL
666D12-XXX-C	NPT	CAST IRON	CAST IRON	666D32-XXX-C	BSP	CAST IRON	CAST IRON

SERVICE KITS

637118-C for Air Section repair. (See page 6.)
637146-X for Fluid Valve Section repair. (See page 4.)
637147-X for Diaphragm repair. (See page 4.)

PUMP DATA

MODELS - See Model Description Chart for "-XXX" on page 3.

PUMP TYPE - Flap Valve Check

Metallic Air Operated Double Diaphragm

MATERIAL - See Model Description Chart on page 3.

WEIGHT - ALUMINUM (Center body) 59 to 111 lbs

CAST IRON (Center body) 115 to 127 lbs

MAXIMUM AIR INLET PRESSURE - 120 p.s.i. (8 bar)

MAXIMUM OUTLET PRESSURE - 120 p.s.i (8 bar)

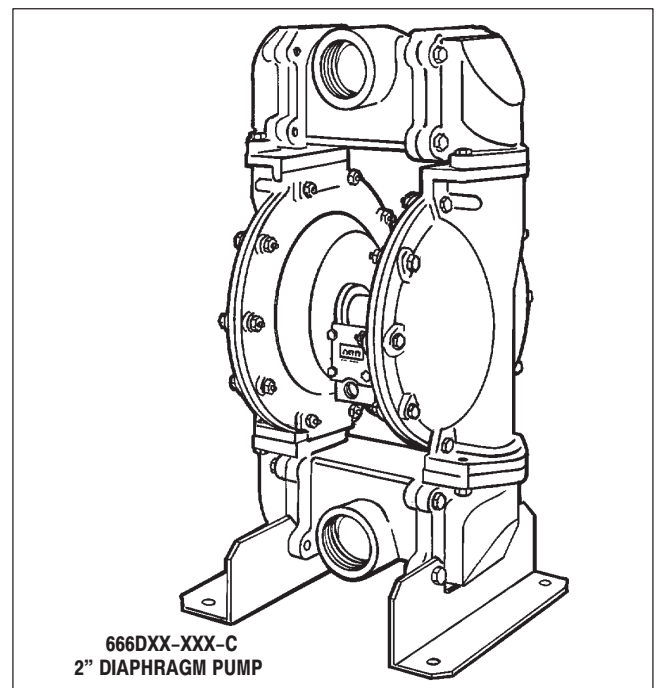
MAXIMUM FLOW RATE (FLOODED INLET) - 130 g.p.m.

MAXIMUM PARTICLE SIZE - 1-1/2" dia.

DIMENSIONAL DATA - See page 8.

NOISE LEVEL *- 77.7 db(A) @ 70 psi, 60 cycles per minute.

INSTALLATION NOTE: The Material Inlet for this pump is on the top and the Material Outlet is on the bottom.



*The pump sound pressure levels published here have been updated to an Equivalent Continuous Sound Level (L_{Aeq}) to meet the intent of ANSI S1.13-1971, CAGI-PNEUROP S5.1 using four microphone locations.

NOTICE: All possible options are shown in the chart on page 3 however certain combinations may not be recommended, consult a representative or the factory if you have questions concerning availability.

GENERAL DESCRIPTION

The ARO Diaphragm Pump offers high volume delivery even at low air pressures, easy self priming, the ability to pump various viscosity materials and the ability to pass solids (as stated in the chart above). The

pump is designed to correspond to the needs of the user by offering a wide variety of wetted parts configurations to handle almost any application. Refer to the model and option chart on page 3.

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ARO

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OPERATING AND SAFETY PRECAUTIONS

READ, UNDERSTAND, AND FOLLOW THIS INFORMATION TO AVOID INJURY AND PROPERTY DAMAGE



⚠ WARNING EXCESSIVE AIR PRESSURE. Can cause personal injury, pump damage or property damage.

- Do not exceed the maximum inlet air pressure as stated on the pump model plate.
- Be sure material hoses and other components are able to withstand fluid pressures developed by this pump. Check all hoses for damage or wear. Be certain dispensing device is clean and in proper working condition.

⚠ WARNING STATIC SPARK. Can cause explosion resulting in severe injury or death. Ground pump and pumping system.

- Use the pump grounding screw terminal provided. Use Aro Part No. 66885-1 Ground Kit or connect a suitable ground wire (12 ga. min.) to a good earth ground source.
- Secure pump, connections and all contact points to avoid vibration and generation of contact or static spark.
- Consult local building codes and electrical codes for specific grounding requirements.
- After grounding, periodically verify continuity of electrical path to ground. Test with an ohmmeter from each component (e.g., hoses, pump, clamps, container, spray gun, etc.) to ground to insure continuity. Ohmmeter should show 100 ohms or less.
- Submerge the outlet hose end, dispensing valve or device in the material being dispensed if possible. (Avoid free streaming of material being dispensed.)
- Use hoses incorporating a static wire.
- Use proper ventilation.
- Keep inflammables away from heat, open flames and sparks.
- Keep containers closed when not in use.

⚠ WARNING Pump exhaust may contain contaminants. Can cause severe injury. Pipe exhaust away from work area and personnel.

- In the event of a diaphragm rupture material can be forced out of the air exhaust muffler.
- Pipe the exhaust to a safe remote location when pumping hazardous or inflammable materials.
- Use a grounded 3/4" min. I.D. hose between the pump and the muffler.

⚠ WARNING HAZARDOUS PRESSURE. Can result in serious injury or property damage. Do not service or clean pump, hoses or dispensing valve while the system is pressurized.

- Disconnect air supply line and relieve pressure from the system by opening dispensing valve or device and/or carefully and slowly loosening and removing outlet hose or piping from pump.

⚠ WARNING HAZARDOUS MATERIALS. Can cause serious injury or property damage. Do not attempt to return a pump to the factory or service center that contains hazardous material. Safe handling practices must comply with local and national laws and safety code requirements.

- Obtain Material Safety Data Sheets on all materials from the supplier for proper handling instructions.

⚠ WARNING EXPLOSION HAZARD. Models containing aluminum wetted parts cannot be used with III.-Trichloroethane, Methylene Chloride or other Halogenated Hydrocarbon solvents which may react and explode.

- Check pump motor section, fluid caps, manifolds and all wetted parts to assure compatibility before using with solvents of this type.

⚠ CAUTION Verify the chemical compatibility of the pump wetted parts and the substance being pumped, flushed or recirculated. Chemical compatibility may change with temperature and concentration of the chemical(s) within the substances being pumped, flushed or circulated. Consult ARO Form No. 8677-P, Fluid Compatibility Guide, for information on chemical compatibility.

⚠ CAUTION Maximum temperatures are based on mechanical stress only. Certain chemicals will significantly reduce maximum safe operating temperature. Consult Fluid Compatibility Guide for chemical compatibility and temperature limits. Refer to PUMP DATA on page 1 of this manual.

⚠ CAUTION Be certain all operators of this equipment have been trained for safe working practices, understand it's limitations, and wear safety goggles/equipment when required.

⚠ CAUTION Do not use the pump for the structural support of the piping system. Be certain the system components are properly supported to prevent stress on the pump parts.

- Suction and discharge connections should be flexible connections (such as hose), not rigid piped, and should be compatible with the substance being pumped.

⚠ CAUTION Prevent unnecessary damage to the pump. Do not allow pump to operate when out of material for long periods of time.

- Disconnect air line from pump when system sits idle for long periods of time.

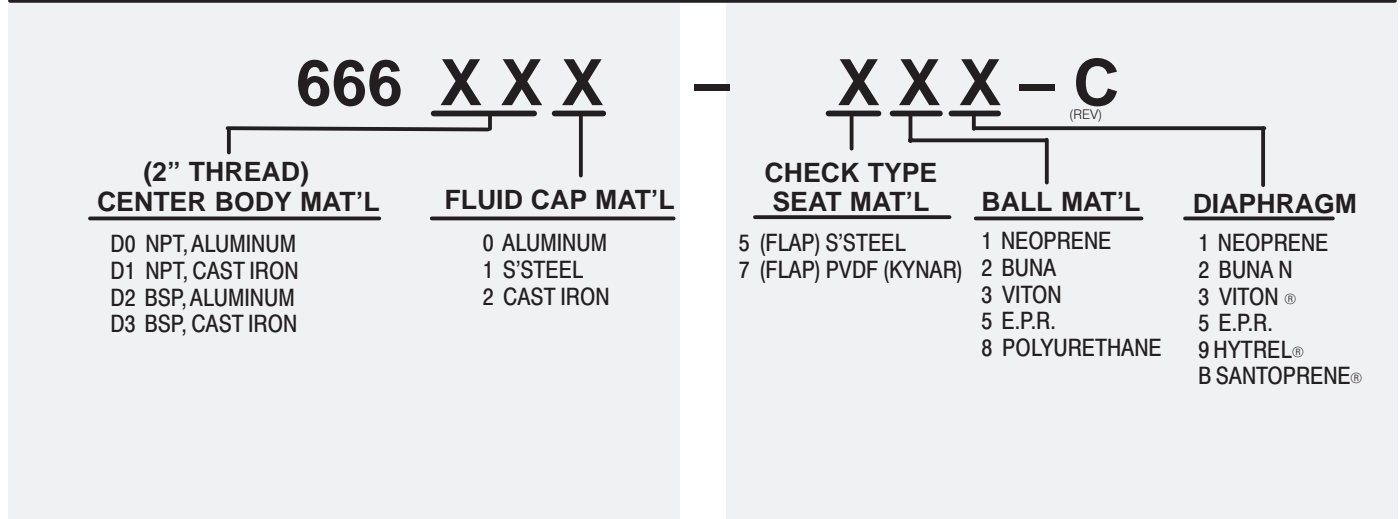
⚠ CAUTION Use only genuine ARO replacement parts to assure compatible pressure rating and longest service life.

⚠ WARNING = Hazards or unsafe practices which could result in severe personal injury, death or substantial property damage.

⚠ CAUTION = Hazards or unsafe practices which could result in minor personal injury, product or property damage.

NOTICE = Important installation, operation or maintenance information.

MODEL DESCRIPTION CHART



AIR AND LUBE REQUIREMENTS

⚠ WARNING EXCESSIVE AIR PRESSURE. Can cause pump damage, personal injury or property damage.

- A filter capable of filtering out particles larger than 50 microns should be used on the air supply. In most applications there is no lubrication required other than the "O"ring lubricant which is applied during assembly or repair.
- When lubricated air is necessary, supply the air lubricator with a good grade of SAE 90 wt. non-detergent oil and set the lubricator to a rate not to exceed one drop per minute.

OPERATING INSTRUCTIONS

- Always flush the pump with a solvent compatible with the material being pumped if the material being pumped is subject to "setting up" when not in use for a period of time.
- Disconnect the air supply from the pump if it is to be inactive for a few hours.
- The outlet material volume is governed not only by the air supply but also by the material supply available at the inlet. The material supply tubing should not be too small or restrictive. Be sure not to use hose which might collapse.
- When the diaphragm pump is used in a forced-feed (flooded inlet) situation it is recommended that a "Check Valve" be installed at the air inlet.
- Secure the diaphragm pump legs to a suitable surface to insure against damage by vibration.

MAINTENANCE

Refer to the part views and descriptions as provided on page 4 through 7 for parts identification and Service Kit information.

- Certain ARO "Smart Parts" are indicated which should be available for fast repair and reduction of down time.
- Service kits are divided to service two separate diaphragm pump functions: 1. AIR SECTION, 2. FLUID SECTION. The FLUID SECTION is divided further to match typical part MATERIAL OPTIONS. Order the VALVE SERVICE KIT for repair of all four valves, individual replacement VALVE KITS are also available which include seats.

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• Santoprene® is a registered trademark of Monsanto Company, licensed to Advanced Elastomer Systems, L.P. • Key-Lube is a trademark of Key Industries.

MAINTENANCE CONT'D

- Provide a clean work surface to protect sensitive internal moving parts from contamination from dirt and foreign matter during service disassembly and reassembly.
- Keep good records of service activity and include pump in preventive maintenance program.
- Before disassembling empty captured material in the outlet manifold by turning the pump upside down to drain material from the pump.

FLUID SECTION DISASSEMBLY

1. Remove top manifold(s).
2. Remove (22) balls, (19), (33) "O" Rings, (21) seats.
3. Remove (15) fluid caps.
4. Remove the (6) nut, (7) or (7/8) diaphragms, and (5) washers.
5. Remove (3), (4) "O"Rings.

NOTE: Do not scratch or mar the surface of (1) diaphragm rod.

FLUID SECTION REASSEMBLY

- Reassemble in reverse order.
- Clean and inspect all parts. Replace worn or damaged parts with new parts as required.
- Lubricate diaphragm rod (1) and (2) "O"ring with Key-Lube® "O"ring lube or equivalent.
- Use ARO PN/98930-T Bullet (installation tool) to aid in installation of "O"ring (2) on diaphragm rod (1).
- Be certain (7) diaphragms align properly with (15) fluid caps before making final torque adjustments on bolt and nuts to avoid twisting the diaphragm.
- Re-check torque settings after pump has been re-started and run a while.

PARTS LIST / FLUID SECTION

SEAT OPTIONS

666DXX- -XXX	"44" SCREW (8) [MTL]		"45" WASHER [MTL]		"46" BRACKET (4) [MTL]		"49" SEAT (4) [MTL]		"50" NUT (8) [MTL]	
-5XX	92982-1	[SS]	93074 (8)	[T]	93192	[SS]	93193	[SS]	Y170-4-S	[SS]
-7XX	92982-1	[SS]	93074 (16)	[T]	93192	[SS]	93202	[K]	Y170-4-S	[SS]

VALVE OPTIONS

666DXX- -XXX	SERVICE KITS -X = (Valve)	"47" BUMPER (4) [MTL]	"48" VALVE (4) [MTL]	"51" O-RING (8) [MTL]	VALVE KIT -5XX	VALVE KIT -7XX
-X1X	637146-1	93197-1	[N]	93196-1	[N]	Y325-156 [N] 61427-1 61428-1
-X2X	637146-2	93197-2	[B]	93196-2	[B]	Y325-156 [B] 61427-2 61428-2
-X3X	637146-3	93197-3	[V]	93196-3	[V]	Y327-156 [V] 61427-3 61428-3
-X5X	637146-5	93197-5	[E]	93196-5	[E]	93204 [E] 61427-5 61428-5
-X8X	637146-81	93197-1	[N]	93070	[U]	Y325-156 [B] 61427-81 -----
-X8X	637146-82	93197-2	[B]	93070	[U]	Y325-156 [B] 61427-82 -----

DIAPHRAGM OPTIONS

666DXX -XXX	SERVICE KITS -X = (Diaphragm)	"7" DIAPHRAGM (2) [MTL]	"3" O-RING (4) 5/8" O.D. [MTL]	"55" O-RING (4) 1-9/16" O.D. [MTL]
-XX1	637147-1	92755-1	[N]	Y325-16 [B] Y325-230 [B]
-XX2	637147-2	92755-2	[B]	Y325-16 [B] Y325-230 [B]
-XX3	637147-3	92755-3	[V]	Y328-16 [T] Y327-230 [V]
-XX5	637147-5	92755-5	[E]	Y328-16 [T] 92761 [E]
-XX9	637147-9	92755-9	[H]	Y328-16 [T] Y327-230 [V]
-XXB	637147-B	92755-B	[SP]	Y328-16 [T] 92761 [E]

ITEMS INCLUDED IN SERVICE KITS

VALVE & SEAT KIT
61427-X with "49" S'Stl Seat
61428-X with "49" Kynar Seat
 Single Valve Replacement, Qty's shown in ()
 "44(2), 45(2,4), 46(1), 47(1), 48(1), 50(2)"

637146-X VALVE SERVICE KIT
 Four Valve Repair-(no seats)
 "44, 45, 46, 47, 48, 50, 51"

637147-X DIAPHRAGM KIT
 "2, 3, 7, 9, 55"
 Plus 93706-1 Key-Lube Grease

WETTED COMMON PARTS

ITEM	DESCRIPTION (SIZE IN INCHES)	QTY	ALUMINUM 666DX0-XXX		STAINLESS STEEL 666DX1-XXX		CAST IRON 666DX2-XXX	
			PART NO.	[MTL]	PART NO.	[MTL]	PART NO.	[MTL]
□1	Rod	(1)	98720-1	[C]	98720-1	[C]	98720-1	[C]
✓2	"O" Ring (1 O.D.)	(1)	Y330-117	[B]	Y330-117	[B]	Y330-117	[B]
5	Plate (Air Side)	(2)	92752	[C]	92752	[C]	92752	[C]
6	Plate (Fluid Side)	(2)	92775	[SS]	92775	[SS]	92775	[SS]
✓9	Washer (5/8)	(2)	93065	[SS]	93065	[SS]	93065	[SS]
14	Screw (5/8-18 x 1-1/2)	(2)	Y5-107-K	[C]	Y5-107-T	[SS]	Y5-107-T	[SS]
15	Fluid Cap	(2)	93071	[A]	93072	[SS]	93073	[CI]
29	Nut (5/16-18)	(20)	Y12-5-C	[C]	Y12-5-C	[C]	Y12-5-C	[C]
30	Screw (3/8-16 x 1-1/2)	(4)	Y6-67-C	[C]	Y6-67-C	[C]	Y6-67-C	[C]
32	Leg	(2)	93203	[C]	93203	[C]	93203	[C]
43	Ground Lug	(1)	93004	[C]	93004	[C]	93004	[C]
52	Manifold	(2)	93195 (*)	[A]	93199 (*)	[SS]	93201 (*)	[CI]
53	Housing	(4)	93194	[A]	93198	[SS]	93200	[CI]
54	Screw (3/8-16 x 1-1/4)	(20)	Y6-66-C	[C]	Y6-66-C	[C]	Y6-66-C	[C]
124	Bolt (5/16-18 x 2)	(20)	93608	[C]	93608	[C]	93608	[C]

MATERIAL CODE

[A]=Aluminum
 [B]=Buna "N"
 [C]=Carbon Steel
 [CI]=Cast Iron
 [E]=E.P.R.
 [H]=Hytrek
 [K]=P.V.D.F. (Kynar)
 [N]=Neoprene
 [SP]=Santoprene
 [SS]=Stainless Steel
 [T]=PTFE
 [V]=Viton

* THREAD NOTE:

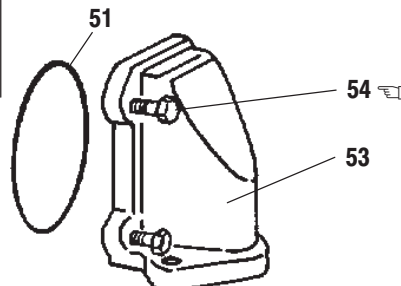
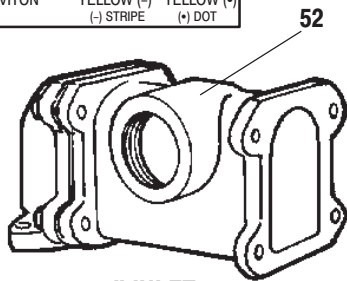
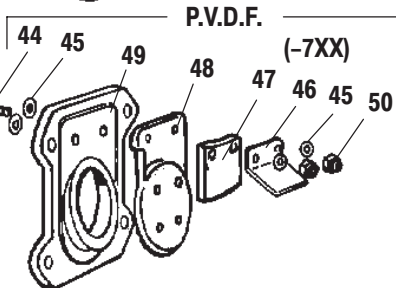
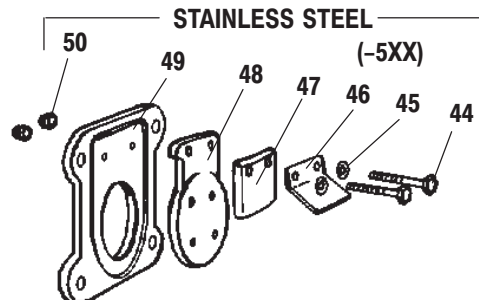
666DX0-, DX1-, DX2
 For NPT Add: "-1"
 For BSP Add: "-2"
 To the Manifold Part No.

Service Note:

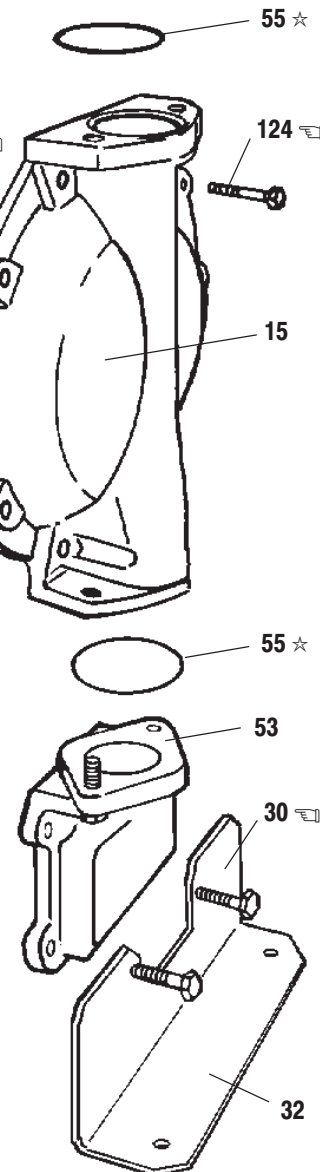
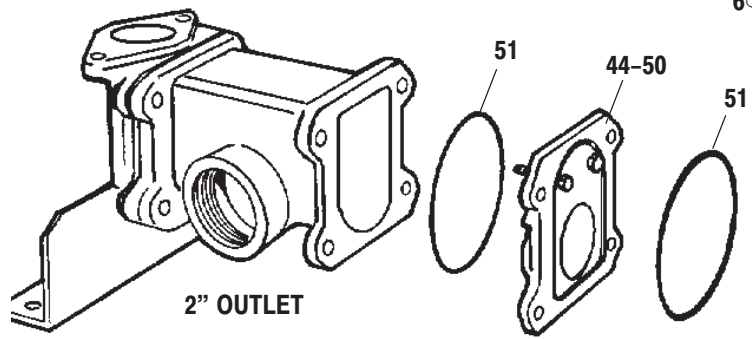
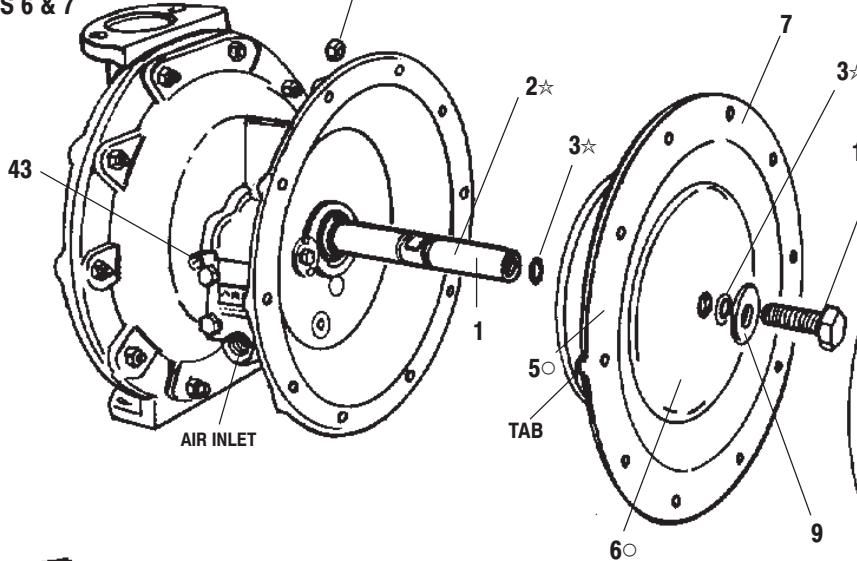
Part No. 98930-T
 Installation Tool is
 available separately for
 use with items 1 and 2.

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

COLOR CODE		
MATERIAL	DIAPHRAGM COLOR	BALL COLOR
ACETAL	N/A	ORANGE
BUNA	RED (-)	RED (+)
EPR	BLUE (-)	BLUE (+)
HYTREL	CREAM	N/A
NEOPRENE	GREEN (-)	GREEN (+)
SANTOPRENE	TAN	N/A
PTFE	WHITE	WHITE
URETHANE	N/A	RED
VITON	YELLOW (-)	YELLOW (+)
	(-) STRIPE	(+) DOT



**FOR THE
AIR MOTOR SECTION
SEE PAGES 6 & 7**



○ NOTE: Radius edge of parts (5) and (6) is against diaphragm.

TORQUE REQUIREMENTS
NOTE: DO NOT OVERTIGHTEN FASTENERS
(14) Diaphragm Bolt 65-70 ft.lbs, apply Loctite 271 to threads.
(30, 54) Manifold screws 100-140 in lbs.,
(124, 29) Fluid Cap nuts and bolts 120-140 in lbs.

LUBRICATION / SEALANTS
★ Apply Keylube to all O-rings U-Cups & mating parts

PARTS LIST / AIR SECTION

✓ Indicates parts included in 637118-C Air Section Service Kit.

SERVICE KIT NOTE: Service Kit 637118-C is a general repair kit for all 1" and larger ARO diaphragm pump air motors. It contains extra O-Rings and extra parts that may not be needed to service this model.

ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]	ITEM	DESCRIPTION (Size in Inches)	QTY	PART NO.	[MTL]
101	Motor Body (666D0X, D2X)	(1)	98725-1	[A]	□116	Spacer (666D0X, D2X)	(1)	92006	[A]
	Motor Body (666D1X, D3X)	(1)	98719-1	[CI]		Spacer (666D1X, D3X)	(1)	93048	[SS]
□102	O-Ring (1 O.D.)	(1)	Y325-24	[B]	✓117	Gasket	(1)	92004	[B/NY]
□103	Sleeve	(1)	98718-1	[BZ]	118	Pilot Rod	(1)	93309-2	[C]
✓104	Retaining Ring, TruArc (.925 I.D.)	(2)	Y145-26	[C]	✓119	O-Ring (3/4 O.D.)	(4)	93075	[U]
105	Screw/Washer (1/4-20 x 5/8)	(8)	93860	[C]	120	Spacer	(3)	115959	[Z]
106	Washer (Included With (105))	--	-----	---	121	Sleeve Bushing	(2)	98723-2	[BZ]
107	Plate	(2)	93707-1	[SS]	✓122	O-Ring (1/2 O.D.)	(2)	Y330-110	[B]
✓108	Gasket (With Notch)	(1)	92878	[B/NY]	✓123	Screw (8-32 x 3/8)	(4)	Y154-41	[C]
□109	Piston	(1)	92011	[D]	126	Plug	(1)	Y227-5	[C]
✓110	U-Cup (1-3/8 O.D.)	(1)	Y186-51	[B]	127	Elbow	(1)	Y43-5-C	[C]
□111	Spool (666D0X, D2X)	(1)	92005	[A]	128	Plug	(1)	Y17-50-C	[C]
	Spool (666D1X, D3X)	(1)	93047	[C]	201	Muffler	(1)	93139	[P]
□112	Washer (1.557 O.D.)	(5)	92877	[Z]	✓	Keylube, O-Ring Lubricant	(1)	93706-1	
✓113	O-Ring (Small) (1-1/4 O.D.)	(5)	Y325-214	[B]		10 Pak of Keylube (Available)		637175	
✓114	O-Ring (Large) (1-9/16 O.D.)	(6)	Y325-126	[B]	✓	Service Kits include: Y212-101 (2) Screws (10-32 x 1/4) used on units m ^l d between 8/90 and 4/92 to retain the pilot bushing.			
□115	Spacer	(4)	92876	[Z]					

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 Key-lube or equivalent.
- Do not over-tighten fasteners, refer to torque specification block on view.
- Re-torque fasteners following restart.

PILOT VALVE DISASSEMBLY

1. Remove (104) retaining ring.
2. Remove (123) screws, (122) "O"rings.
3. Remove (118) piston rod, (121) sleeve bushing, (119) "O"rings, and (120) spacers from the (101) motor body.
4. Remove (103) sleeve and (102) "O"ring.

PILOT VALVE REASSEMBLY

1. Replace (102) "O"ring if worn or damaged and reinstall (103) sleeve.
2. Install one of the (121) sleeve bushings, (119) "O"rings, (120) spacers, and the remaining (121) bushing.
3. Carefully push (118) pilot rod into bushings etc. and retain on each end with the two (122) "O"rings, retain with (123) screws.
4. Replace (104) retaining rings.

✓ Parts Y145-26 (1.156 I.D.) (Qty. 2) Retaining Rings are included in the Service Kit for the repair of larger pumps.

MATERIAL CODE

[A] = Aluminum	[CI] = Cast Iron	[P] = Polypropylene
[B] = Buna "N"	[D] = Acetal	[U] = Polyurethane
[BZ] = Bronze	[N] = Neoprene	[SS] = Stainless Steel
[C] = Carbon Steel	[NY] = Nylon	[Z] = Zinc

MAJOR VALVE REASSEMBLY

1. Remove (107) plate, (108) and (117) gaskets.
2. On the side opposite the air inlet, push on the inner diameter (111) spool, this will force the (109) piston out. Continue pushing the (111) spool and remove. Check for scratches and gouges.
3. Reach into the air section (exhaust side) and remove (116) spacer, (115) spacers, (113) "O"rings, (114) "O"rings, (112) washers, etc. Check for damaged "O"rings.

MAJOR VALVE REASSEMBLY

1. Replace (112) washer, (114) "O"ring, (113) "O"ring onto (115) spacer and insert etc.

NOTE: Be careful to orient spacer legs away from blocking internal ports.

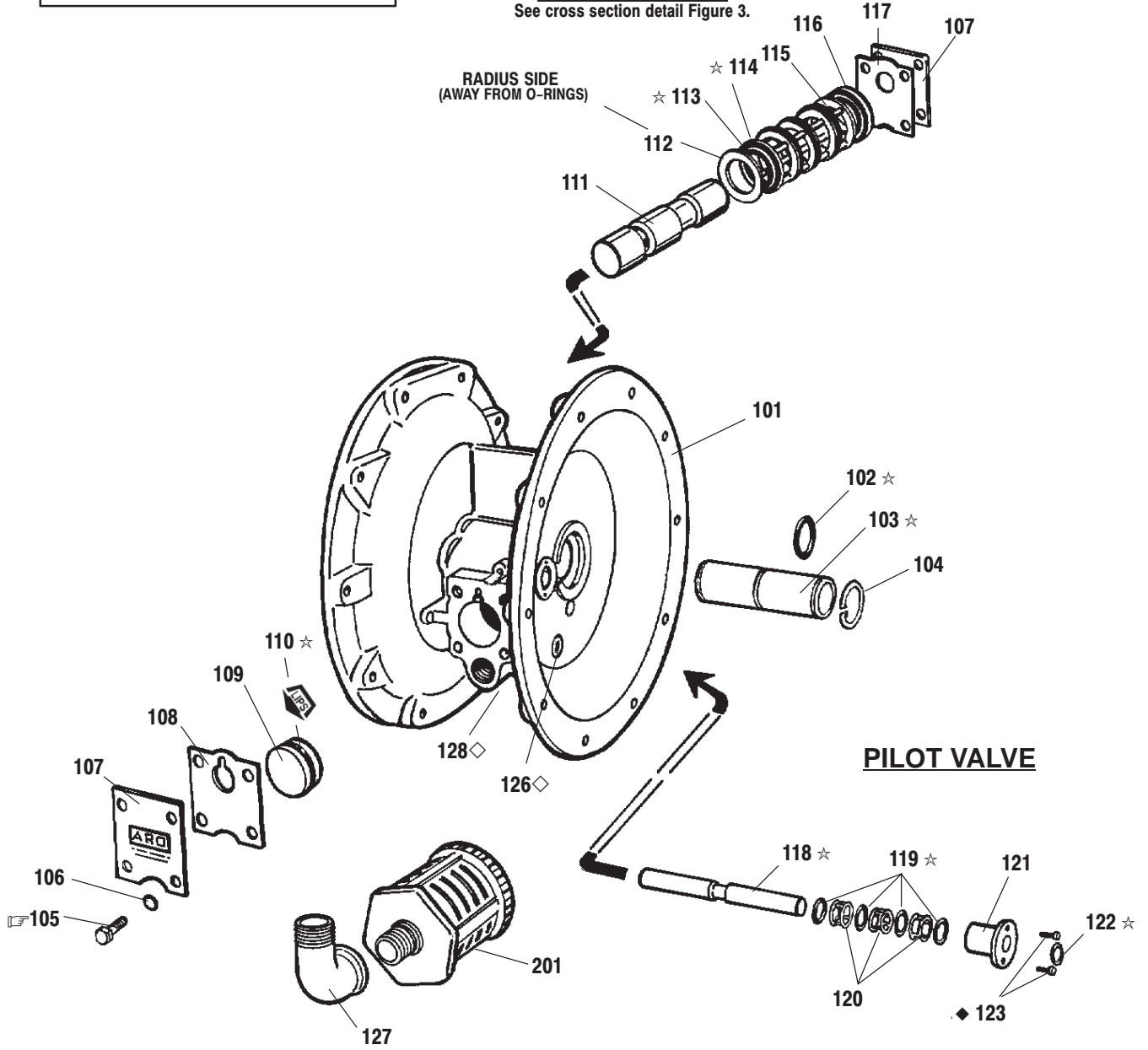
2. Lubricate and carefully insert (111) spool.
3. Install (117) gasket and (107).
4. Lubricate and install (110) packing cup and insert (109) piston into (air inlet side) cavity, the (110) packing cup lips should point outward.
5. Install (108) gasket and replace (107).

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

IMPORTANT
 BE CERTAIN TO ORIENT (115) SPACER LEGS
 AWAY FROM BLOCKING INTERNAL PORTS
 WHEN REASSEMBLING AIR SECTION.

MAJOR VALVE

See cross section detail Figure 3.



MAJOR VALVE CROSS SECTION DETAIL

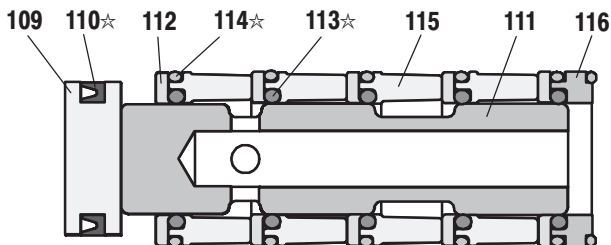


FIGURE 3

TORQUE REQUIREMENTS
 NOTE: DO NOT OVERTIGHTEN FASTENERS
 (105) 40-50 in. lbs., apply Loctite Nickel Antiseize to threads.

LUBRICATION / SEALANTS
 ☆ Apply Keylube to all O-rings, U-Cups & mating parts.
 ◆ Apply Loctite 271 to threads.
 ◇ Apply pipe sealant to threads.

TROUBLE SHOOTING

Product discharged from exhaust outlet.

- Check for diaphragm rupture.
- Check tightness of diaphragm nut.

Air bubbles in product discharge.

- Check connections of suction plumbing.
- Check "O"rings between intake manifold and fluid caps.
- Check tightness of diaphragm nut.

Low output volume, erratic flow, or no flow.

- Check air supply.
- Check for plugged outlet hose.
- Check for kinked (restrictive) outlet material hose.
- Check for kinked (restrictive) or collapsed inlet material hose.
- Check for pump cavitation – suction pipe should be sized at least as large as the inlet thread diameter of the pump for proper flow if high viscosity fluids are being pumped. Suction hose must be a non – collapsing type, capable of pulling a high vacuum.
- Check all joints on the inlet manifolds and suction connections. These must be air tight.
- Inspect the pump for solid objects lodged in the diaphragm chamber or the seat area.

DIMENSIONAL DATA

(Dimensions shown are for reference only, they are displayed in inches and millimeters (mm).)

INSTALLATION NOTE: THIS IS A DOWN-FLOWING PUMP, THE MATERIAL INLET IS ON THE TOP OF THE PUMP

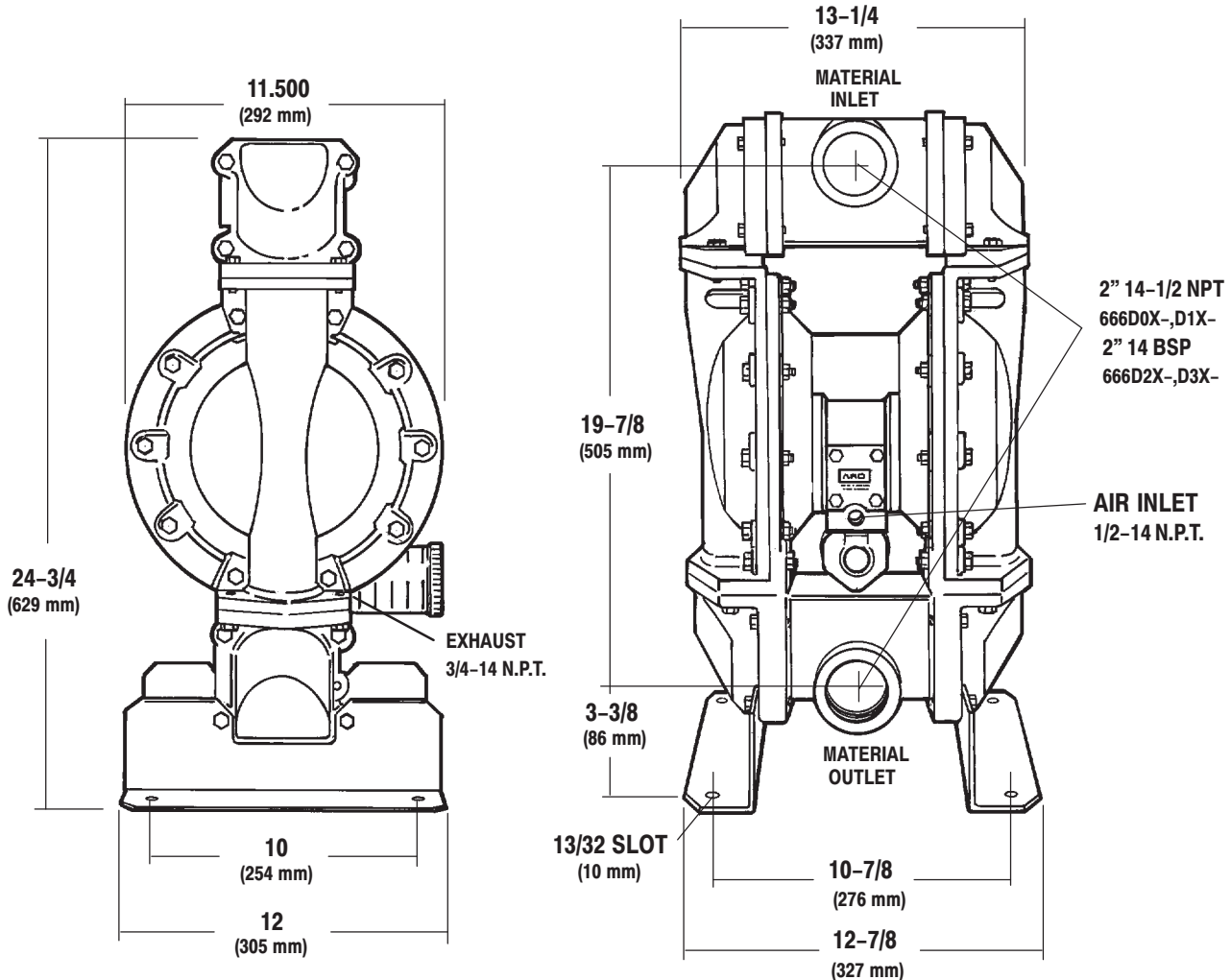


FIGURE 4