

# OPERATOR'S MANUAL

INCLUDING: OPERATION, INSTALLATION & MAINTENANCE

# 67165-X

# 67166-X

# 67277-X

## SOLENOID ACTUATED PUMP KITS FOR DIAPHRAGM PUMPS

RELEASED: 3-6-98  
REVISED: 3-7-06  
(REV. G)

### SOLENOID ACTUATED PUMP KITS

- 67165-() for 3/8" and 1/2" diaphragm pumps, as follows:  
66605X-X, PD03P-X-X, PD05P-X-X, PD05P-X-X-B, PD05R-X-X-B and PM05P-X-X-A02.
- 67166-() for 1", 1-1/2" and 2" non-metallic diaphragm pumps as follows:  
6661AX-X-C, 6661BX-X-C, 6661TX-X-C, 6661UX-X-C, 6662AX-X-C and 6662BX-X-C.
- 67166-() for 1" and 1-1/2" metallic diaphragm pumps as follows:  
66610X-X-C, 66611X-X-C, 66612X-X-C, 66613X-X-C, 66615X-X-C, 66616X-X-C, 66617X-X-C and 66618X-X-C.
- 67277-() for 2" and 3" metallic diaphragm pumps as follows:  
PD20A-X-X, PF20A-X-X, PM20A-X-X-A02, PD30A-X-X-B and PM30A-X-X-B02.

### GENERAL DESCRIPTION

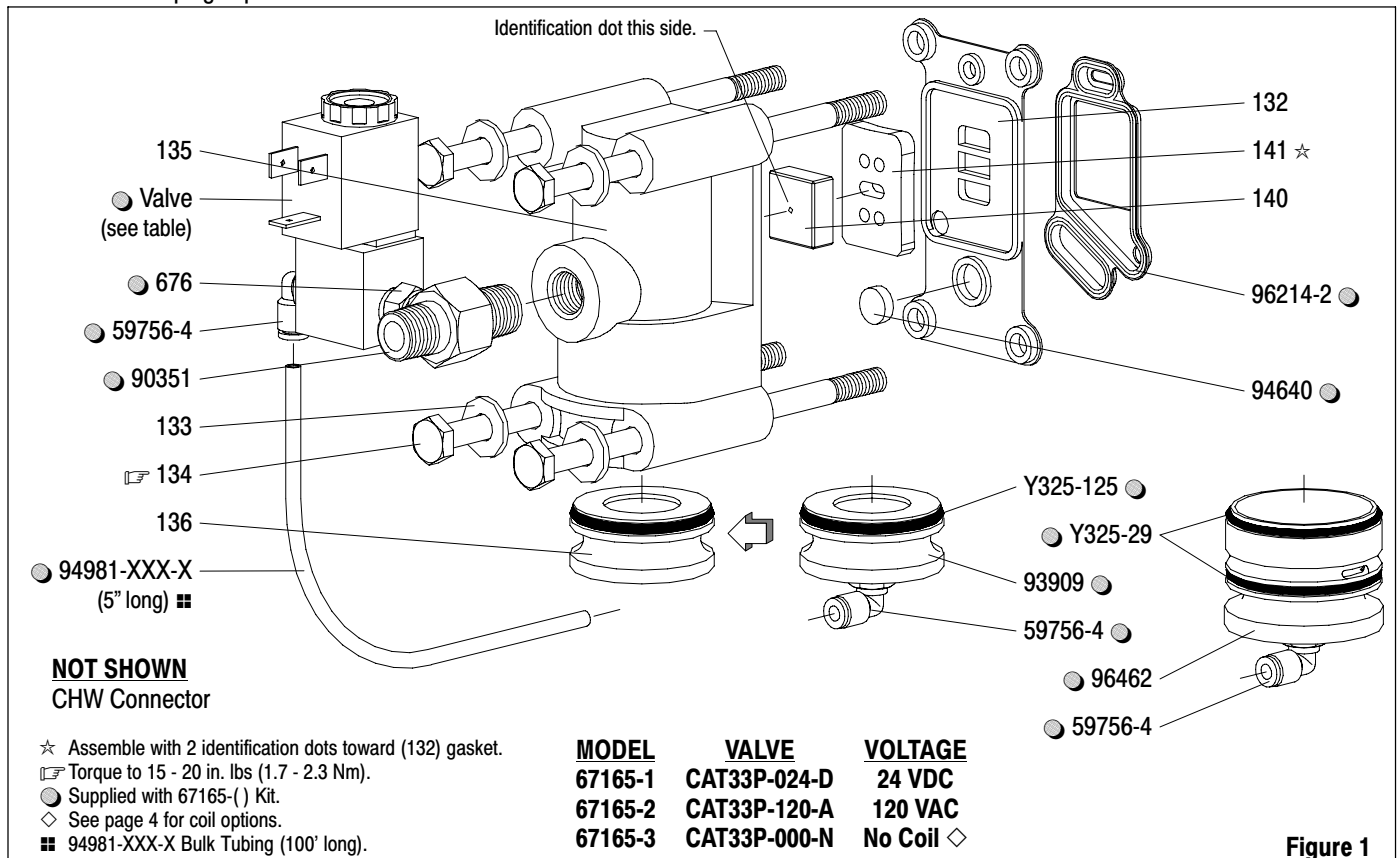
ARO solenoid actuated diaphragm pump kits allow the cycle rate of the pump to be controlled electronically. When the solenoid is energized, the pump strokes and dispenses the fluid in one chamber. When the solenoid is de-energized, the pump strokes in the opposite direction, dispensing the fluid in the other chamber. By providing continuous ON - OFF signals to the solenoid, the fluid transfer rate may be increased or decreased remotely. Some parts of the pump must be replaced with those included in these kits to enable solenoid actuation.

### 67165-() SOLENOID KIT INSTALLATION

#### 3/8" AND 1/2" DIAPHRAGM PUMPS

Refer to figure 1.

1. Remove (134) bolts from the major valve and remove (135) valve block.
2. Remove (136) plug and replace with 93909 or 96462 plug.
3. Place 94640 plug in pilot hole.
4. Attach (135) valve block to (101) motor body, using (133) washers and (134) bolts. NOTE: Torque to 15 - 20 in. lbs (1.7 - 2.3 Nm).
5. Thread CAT33P-(-)-() valve assembly into air supply port.
6. Connect CAT33P-(-)-() valve with 93909 plug, using 94981-XXX-X tube.



## 67166-( ) SOLENOID KIT INSTALLATION

### 1", 1-1/2" AND 2" NON-METALLIC DIAPHRAGM PUMPS

### 1" AND 1-1/2" METALLIC DIAPHRAGM PUMPS

Refer to figure 2.

1. Remove (105) bolts from air inlet end of (101) motor body and remove (107) leg / plate and (108) gasket.
2. Place 94641 taper plug in pilot hole of (101) motor body.
3. Replace (128) pipe plug on (101) motor body with 59756-4 fitting.

washers. NOTE: Torque to 40 - 50 in. lbs (4.5 - 5.6 Nm).

6. Connect CAT33P-( )-( ) valve with 59756-4 fitting, using 94981-XXX-X tube.

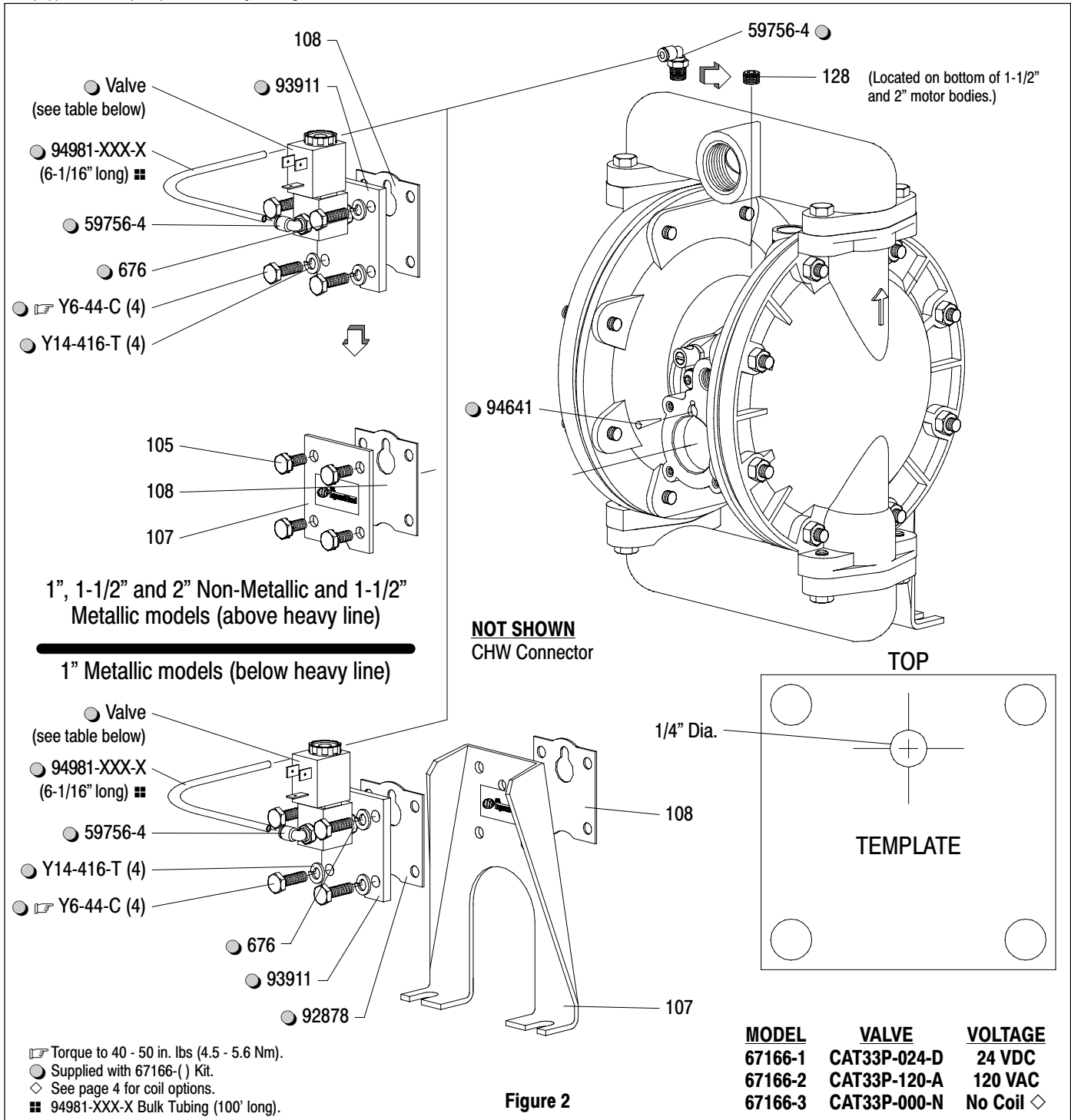
**For all others:**

**For 1" Metallic models only:**

4. Drill a 1/4" (0.250) hole in (107) leg, using the template below.
5. Attach (108) gasket, modified (107) leg, 92878 gasket and CAT33P-( )-( ) valve to (101) motor body, using Y6-44-C bolts and Y14-416-T

4. Attach (108) gasket and CAT33P-( )-( ) valve to (101) motor body, using Y6-44-C bolts and Y14-416-T washers. NOTE: Torque to 40 - 50 in. lbs (4.5 - 5.6 Nm).

5. Connect CAT33P-( )-( ) valve with 59756-4 fitting, using 94981-XXX-X tube.



**Figure 2**

## 67277-( ) SOLENOID KIT INSTALLATION

### 2" & 3" METALLIC DIAPHRAGM PUMPS

Refer to figure 3.

1. Remove (134) screws and (133) washers, and remove (135) valve block and components from (101) center body.

2. Attach 67277-( ) solenoid kit assembly to (101) center body, using (134) screws and (133) washers. NOTE: Torque screws to 40 - 50 in. lbs (4.5 - 5.6 Nm).

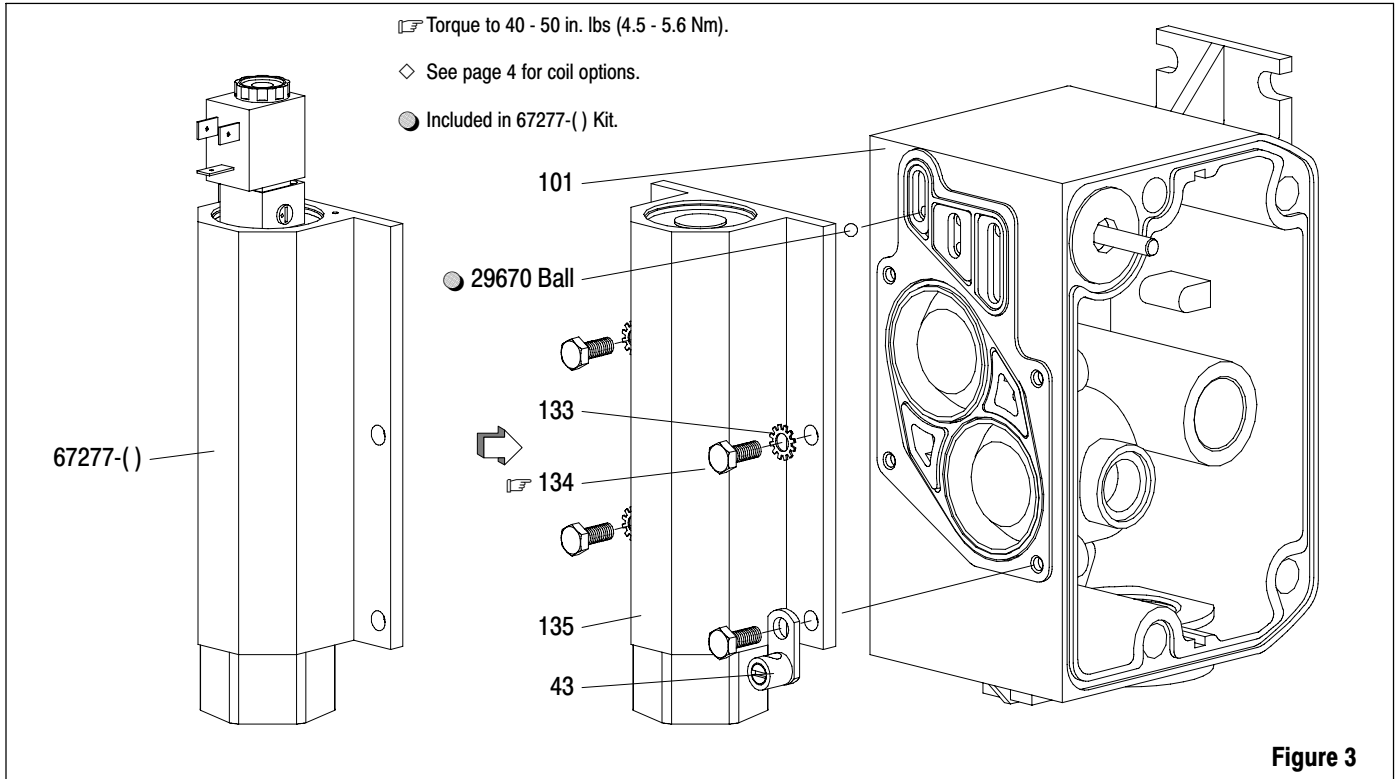
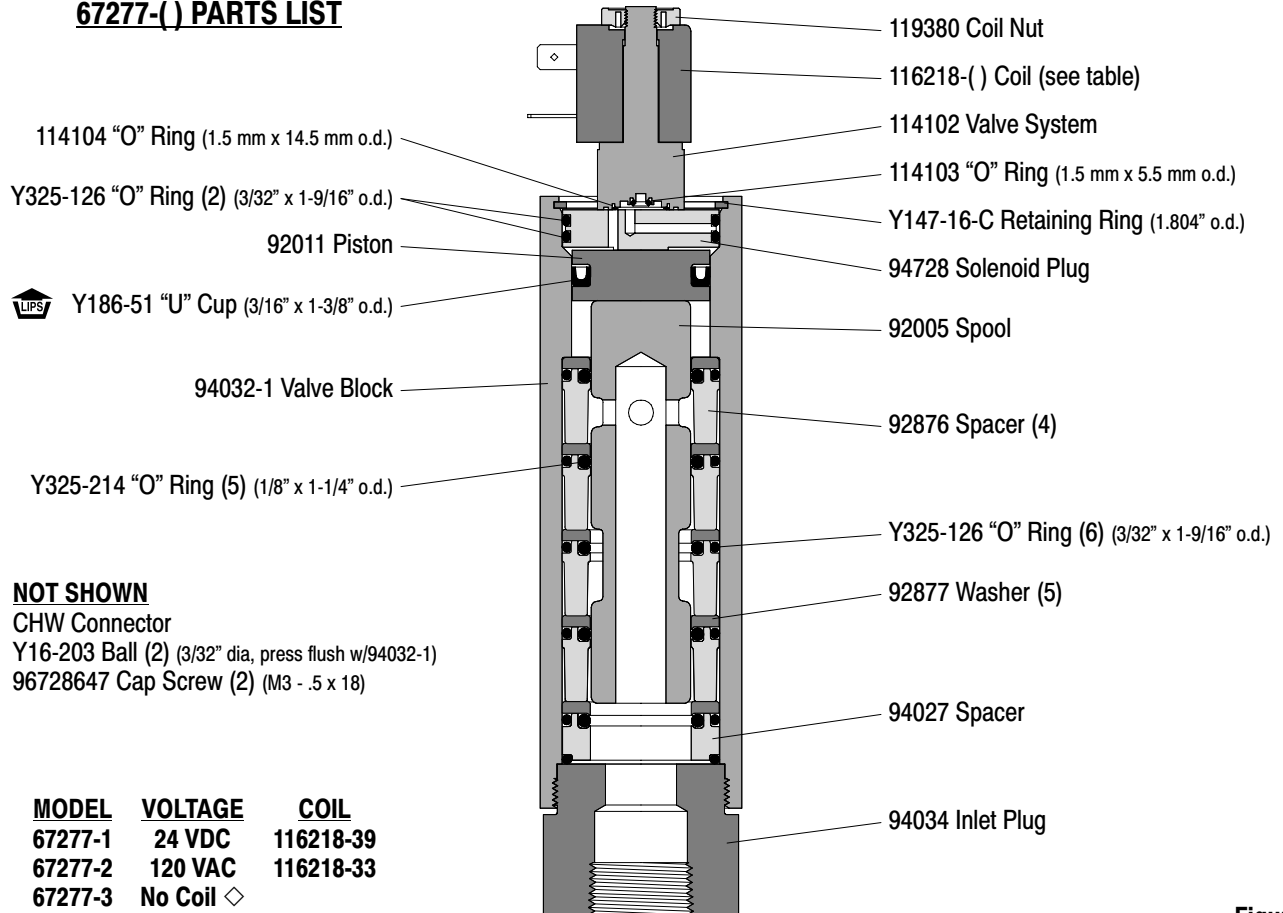


Figure 3

### 67277-( ) PARTS LIST



#### NOT SHOWN

CHW Connector  
Y16-203 Ball (2) (3/32" dia, press flush w/94032-1)  
96728647 Cap Screw (2) (M3 - .5 x 18)

MODEL	VOLTAGE	COIL
67277-1	24 VDC	116218-39
67277-2	120 VAC	116218-33
67277-3	No Coil	◇

Figure 4

## DISPLACEMENT PER CYCLE

Models	Gallons	Ounces	in. <sup>3</sup>	cc	Liters	Specific Gravity = 1.000	
						Grams	Kg
3/8" Non-Metallic - PD03P-X-X	0.022	2.815	5.082	83	0.083	83	0.083
1/2" Non-Metallic Duck Bill - 66605X-0XX	0.032	4.095	7.392	121	0.121	121	0.121
1/2" - PD05P-X-X-B, PD05B-X-X-B	0.039	4.991	9.009	148	0.148	148	0.148
1/2" - 66605X-X, PD05P-X-X, PM05P-X-X-A02	0.040	5.119	9.240	151	0.151	151	0.151
1" Non-Metallic - 6661AX-X-C, 6661BX-X-C	0.170	21.756	39.270	643	0.643	643	0.643
1" Metallic - 66610X-X-C, 66611X-X-C, 66612X-X-C, 66613X-X-C	0.160	20.476	36.960	606	0.606	605	0.605
1-1/2" Non-Metallic - 6661TX-X-C, 6661UX-X-C	0.670	85.743	154.770	2536	2.536	2534	2.534
1-1/2" Metallic - 66615X-X-C, 66616X-X-C, 66617X-X-C, 66618X-X-C	0.640	81.903	147.840	2422	2.422	2421	2.421
2" Non-Metallic - 6662AX-X-C, 6662BX-X-C	0.720	92.141	166.320	2725	2.725	2723	2.723
2" Metallic - PD20A-X-X, PF20A-X-X, PM20A-X-X-A02	1.400	179.164	323.400	5299	5.299	5296	5.296
3" Metallic - PD30A-X-X-B, PM30A-X-X-B02	2.800	358.327	646.800	10,598	10.598	10,591	10.591

2 strokes per complete cycle - 1" metallic will displace 0.080 gallons per stroke.

## COIL OPTIONS

Coil Number	50 / 60 Hz	DC
116218-31	12	
116218-33	120	
116218-35	240	
116218-37		5
116218-38	24	12
116218-39	48	24

## Free Manuals Download Website

<http://myh66.com>

<http://usermanuals.us>

<http://www.somanuals.com>

<http://www.4manuals.cc>

<http://www.manual-lib.com>

<http://www.404manual.com>

<http://www.luxmanual.com>

<http://aubethermostatmanual.com>

Golf course search by state

<http://golfingnear.com>

Email search by domain

<http://emailbydomain.com>

Auto manuals search

<http://auto.somanuals.com>

TV manuals search

<http://tv.somanuals.com>