PDQCHV 10,000

HYDROSTATIC TEST SYSTEM
MANUAL

Revised 7-2025

PDQC

Performance Data

Model Number	Maximum Pressure	Volume at 100CPM	Pressure Ratio	*Maximum C F M Required	Maximum Air Required
1 Stage					
PDQC- 10000	9700 PSI	1.00 G P M	97 TO 1	56 C F M	100 PSI

* Total required CFM to produce rated at maximum pump pressure.
This is relevant only when the system is used for continuous injection at the maximum rated pressure.
Normal testing applications require much less CFM to begin with and fall to 0 at stall pressure.

Dimensions / Weight

Stage	Length	Width	Height	Weight
1	19"	21"	44"	85 Lbs.

OPERATING INSTRUCTIONS

1.0 BEGINNING OPERATION

1.1 Lubricating the Pump Fill the lubricator to a ½" from the top. Do not fill all the way to the top. Raise the lubricator knob up and close the lubricator completely. Open the lubricator knob two full turns.

1.2 Attach a 100 psi maximum air supply

1.3 Rotate air regulator control knob anti-clockwise until handle becomes free and air gauge reads 0 psi and connect an air supply – 100 PSI maximum.

1.4 Open air supply isolation valve (if fitted)

1.5 Rotate air regulator control knob slowly clockwise until pump begins to reciprocate (pump should start at 10 to 15 PSI under normal conditions)

1.6 Rotate air regulator control knob clockwise until 25 to 30 PSI is reached on the air gauge and run pump until all air is purged out of the circuit.
When pressure testing, bleed all air out of the item being tested before pressurizing by fitting a bleed valve or vent plug at the highest point in the circuit. Care should be taken to take account of any internal cavities that may trap air inside the circuit.

1.7 Rotate air regulator control knob anti-clockwise until zero pressure is reached on air gauge

1.8 Close any vent valves once all air is purged from the system

1.9 Rotate air regulator control knob slowly clockwise until required hydraulic pressure is reached on the high pressure gauge
Note - If the object being tested is large it will take a while before the pressure builds up in the system and registers on the pressure gauge. Do not set the air driving pressure too high if unattended as this may lead to the object under test being over pressurised.

Approximate hydraulic output pressure can be preset by air drive pressure. See pump specification sheet.

Air drive pressure can be preset by closing an air line isolation valve fitted between the regulator and pump closing air stop valve and rotating air regulator valve clockwise until the required pressure is registered on air pressure gauge.

Air pressure should be set slightly below the required setting so that it can be raised to the correct setting once hydraulic pressure has built up and the pump has stalled out.
The pump can then be started and stopped by using an air stop valve as it will go to the preset output pressure each time it is started.

NO OTHER PUMPS OFFER ALL THESE ADVANTAGES

Simple operating principle – Air operated hydraulic pumps operate on the simple but efficient principle of pressure intensification through the use of differential areas. Fulfilling Boyle's Law, a larger air- driven piston delivers pressure to a proportionally lesser diameter hydraulic piston, providing fluid flow at relatively higher pressures.

High output capacity and outstanding performance provided at very low cost.

Guaranteed performance – All pumps will give years of low cost, trouble free service when properly installed and maintained to manufacturer's instruction.

Wide range of operating pressures is provided by all models.

Wide range of output capacities – Only 100 psi air pressure is required for all models to attain maximum rate of flow (see performance charts for data).

Complete flexibility – All pumps adapt to a wide variety of applications, from simple manual controls to fully automatic operation.

Automatic restart – Whenever the pump is idle, the pilot valve is designed to re-position the pump on the power stroke for the next cycle of operation.

Smooth operation – The air piston actuating valve is precision fit to close tolerances for maximum efficiency and long service life.

Both pressure and volume of flow are easily and accurately controlled by a pressure regulator installed in the air supply line.

Fluid Compatibility – Pumps can operate with almost any type fluid service (specify when ordering).

Hydraulic cylinders are constructed from aluminum-bronze, stainless steel, or carbon steel.

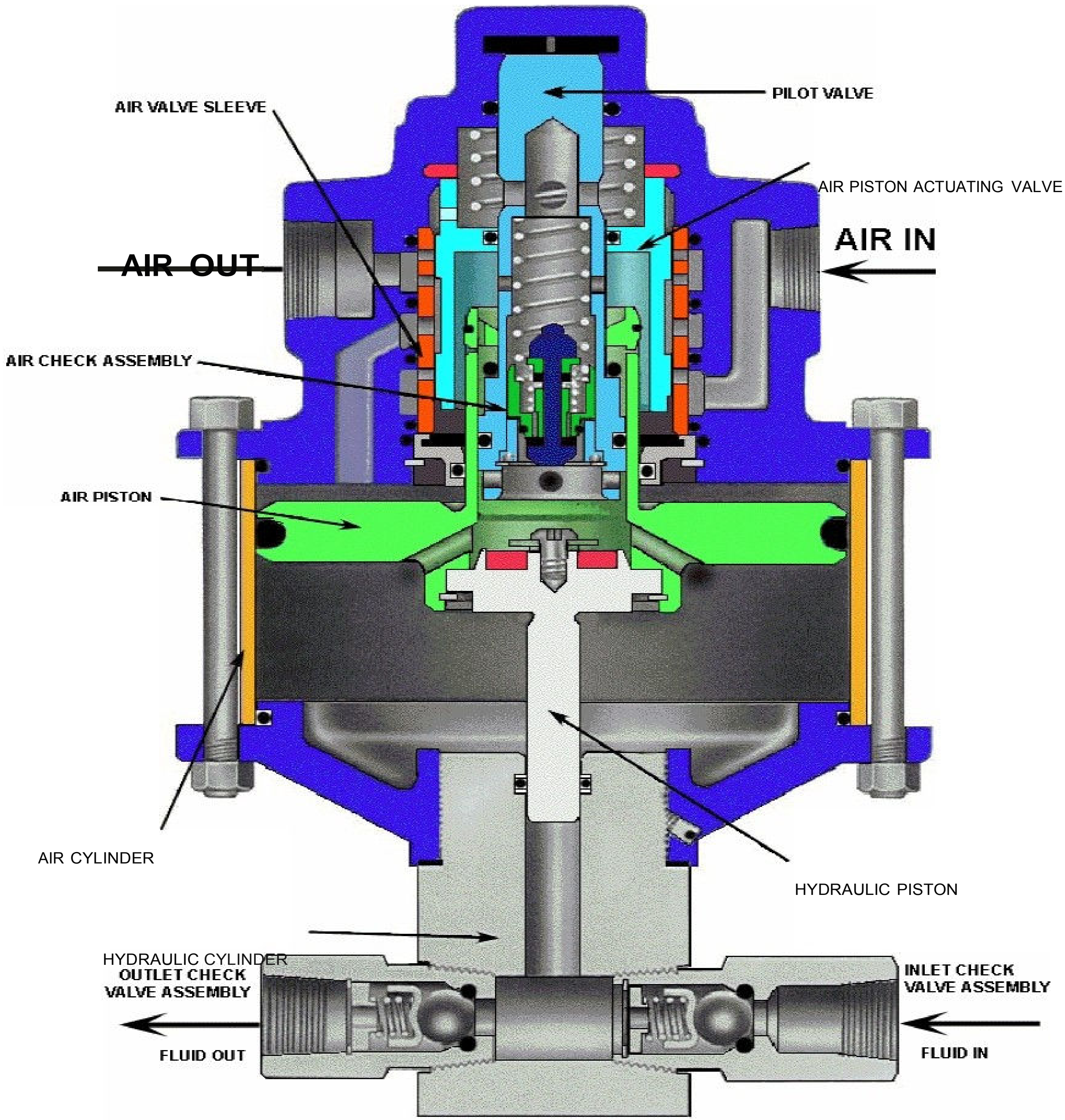
Hydraulic pistons are constructed from stainless steel, hard chrome-plated.

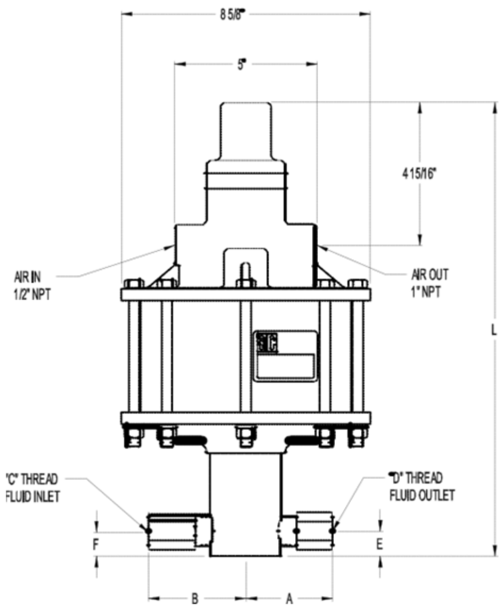
Materials incorporated in the hydraulic assembly vary depending upon type of service and pump model.

Designed for easy maintenance – Costly down time is reduced to a minimum when service is required.

Applications include static and burst testing, flow testing requiring relatively low flows at high pressures, operation of hydraulic presses, clamping, pressing, metal forming, piercing, blanking, staking, etc. Applications requiring extreme intermittent pressure and velocity commonly associated with water blasting and jetting.

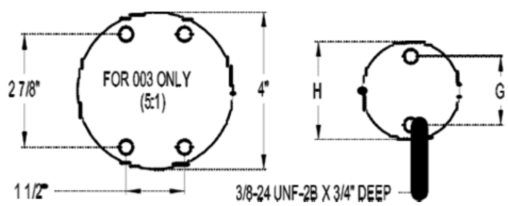
Liquid Pump Cut-a-way





All pumps have a 7" diameter air piston and a 2 ½" stroke.
When operating from 0 to rated hydraulic pressure, air consumption will be approximately 56 scfm of free air at 100 psi output. At lower air pressures and higher hydraulic pressures air consumption will be reduced proportionately to flow rates indicated.

Mounting may be in any position, vertical preferred. When mounting in an inverted position, a drain cock should be provided to drain off any liquid that may accumulate in the pilot valve air chamber.

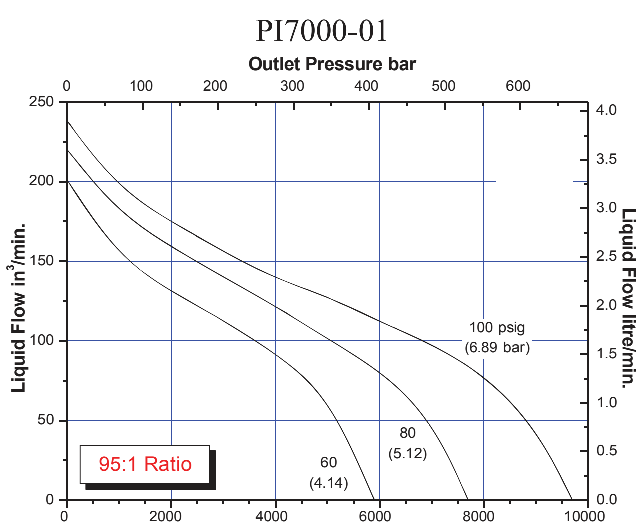


Mounting Dimensions in Inches

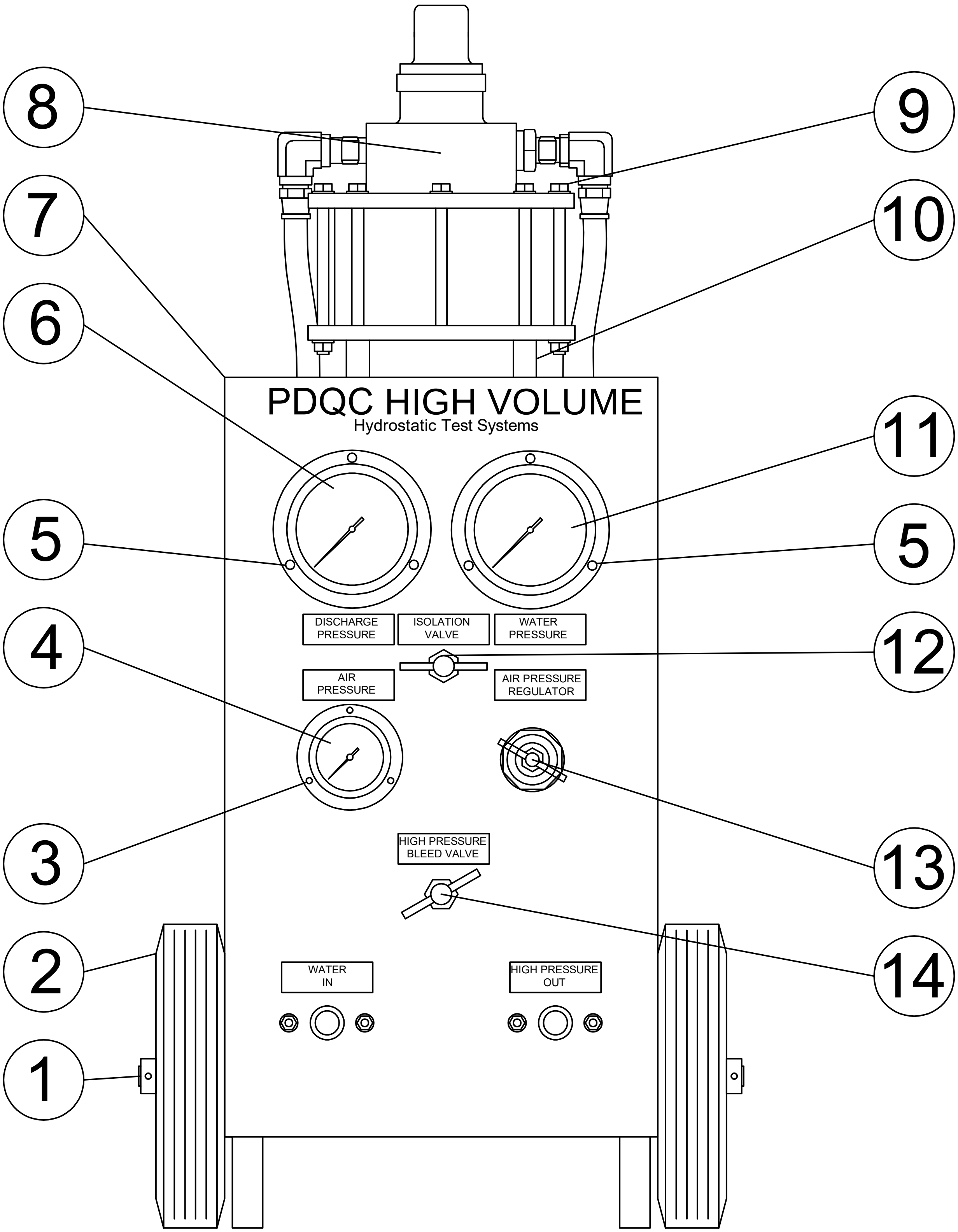
Part Number	L	A	B	NPT/HF4 (Std)		E	F	G	H
				C Thread	D Thread				
PI7000-01	15.750	3.000	3.375	1/2"	1/2"	0.875	0.875	1.750	2.500

Measurements & Approximate Air to Hydraulic Pressure

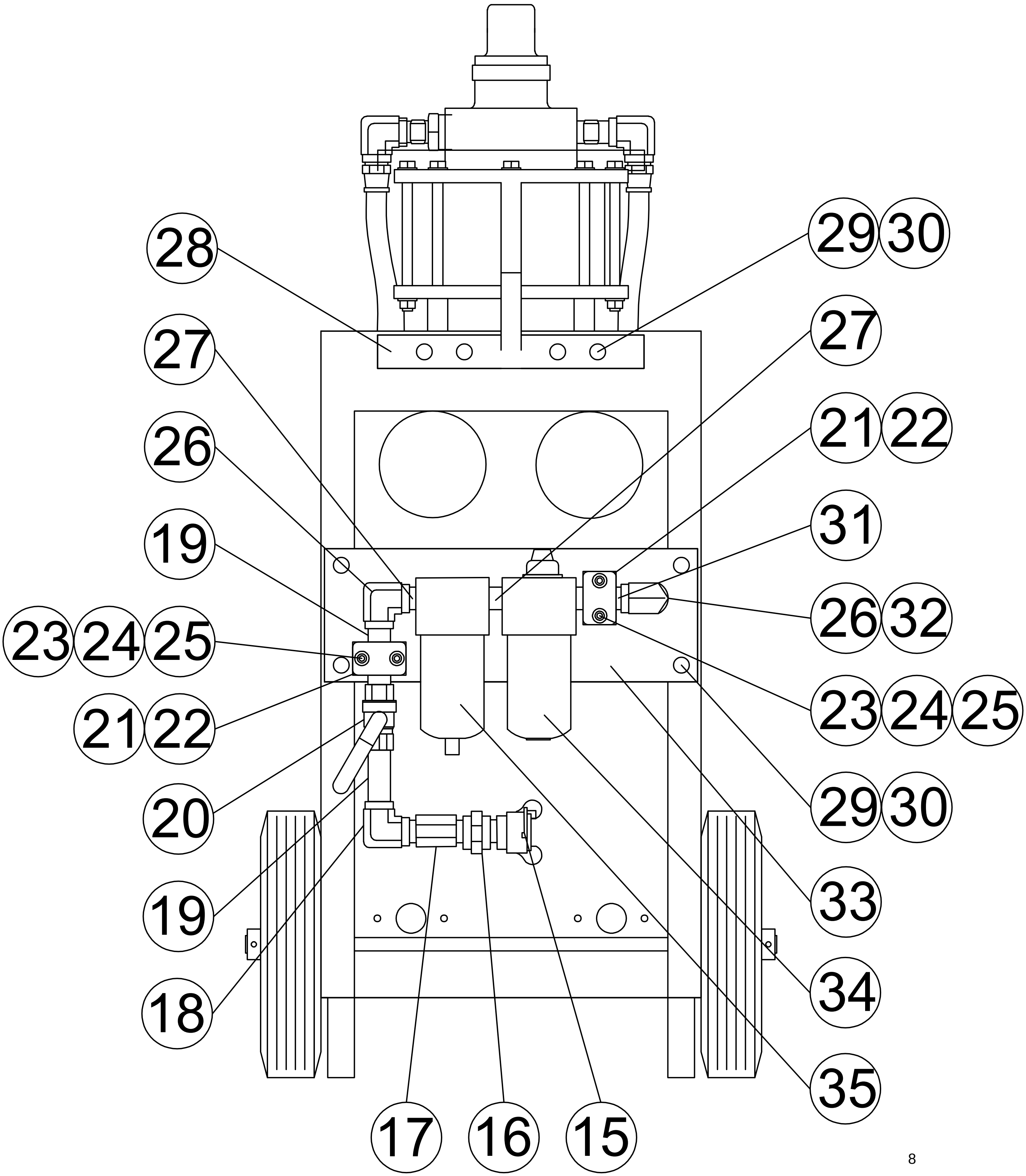
Part Number	Hydraulic Piston Diameter (in)	Hydraulic Piston Area (in2)	Volume per Stroke (in3)	Air Pressure (PSI)									
				10	20	30	40	50	60	70	80	90	100
PI7000-01	0.688	0.371	0.928	750	1750	2800	3700	4750	5900	6875	7700	8750	9700



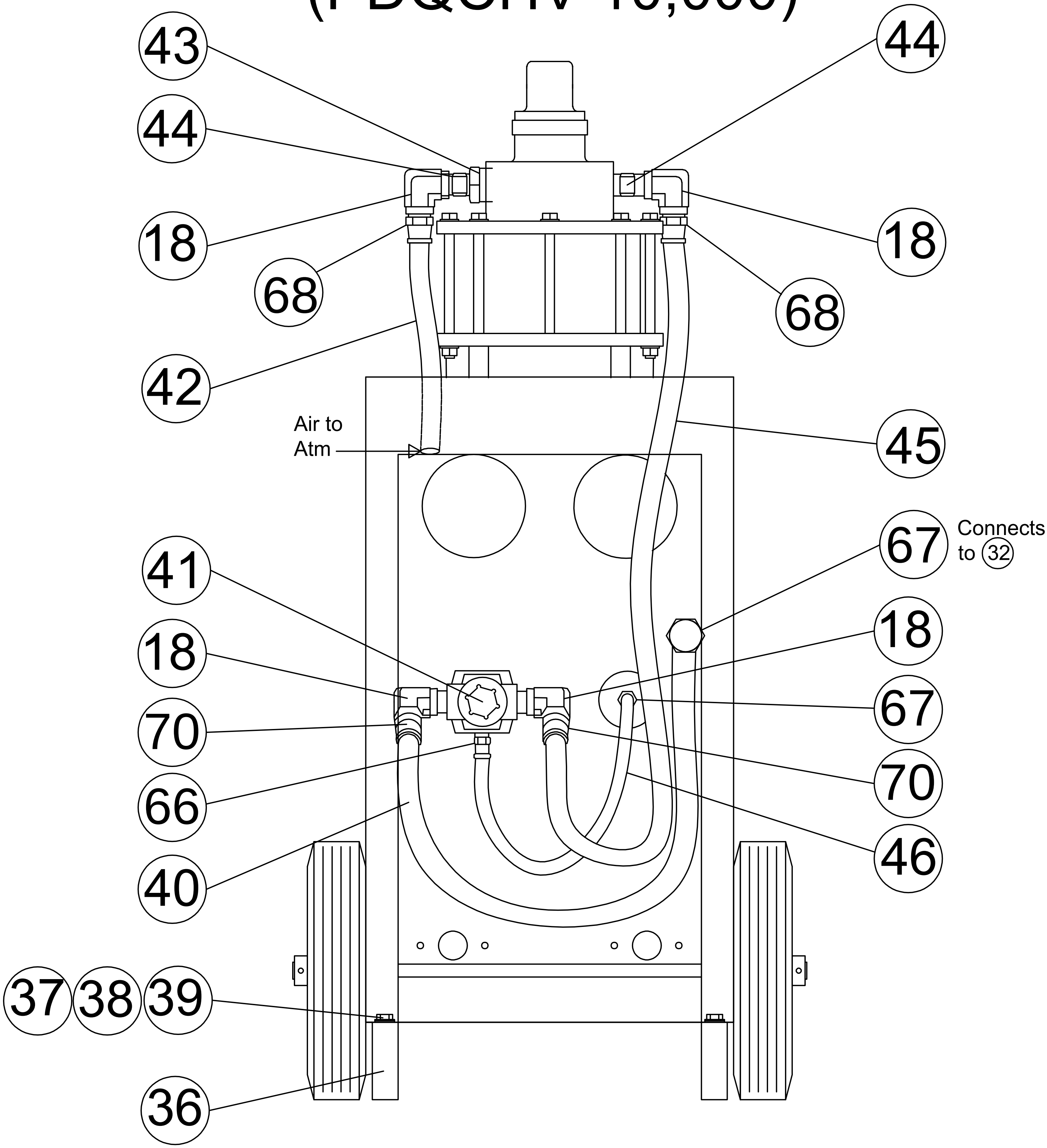
Front View
(PDQCHV 10,000)



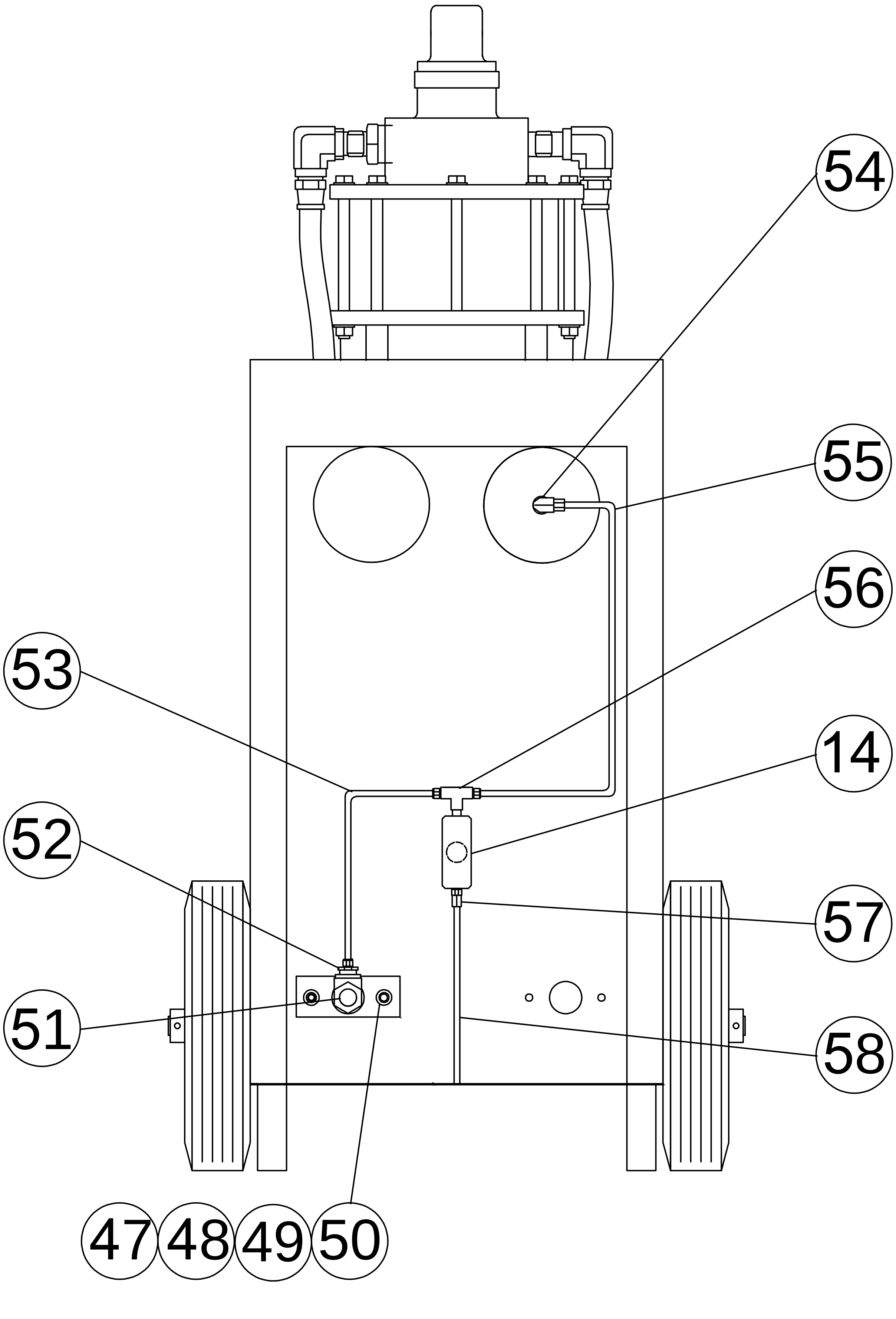
Back Panel View
(PDQCHV 10,000)



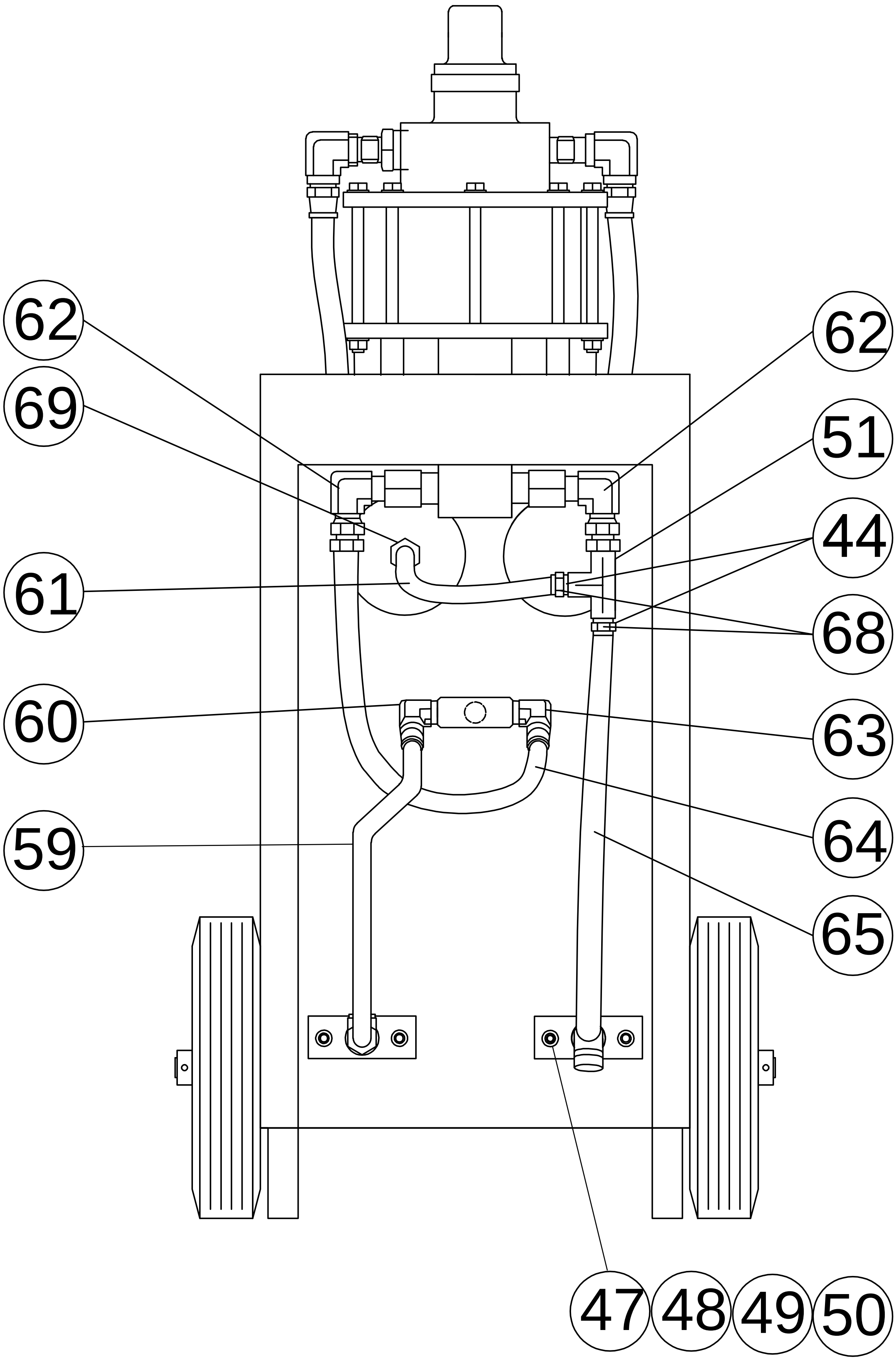
Inner Air System (PDQCHV 10,000)



Small High Pressure System (PDQCHV 10,000)



Main Water In/Out System (PDQCHV 10,000)

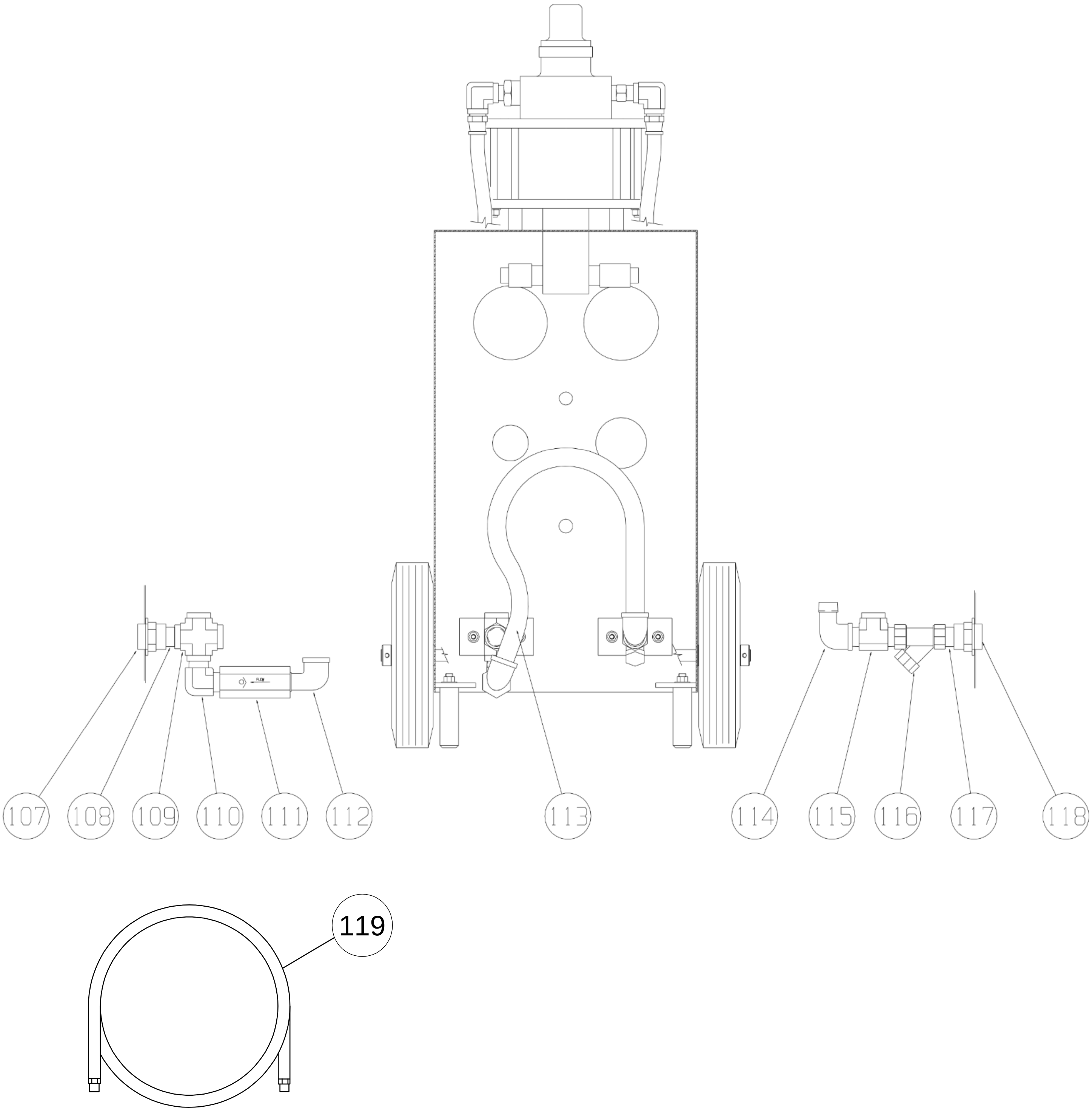


PARTS

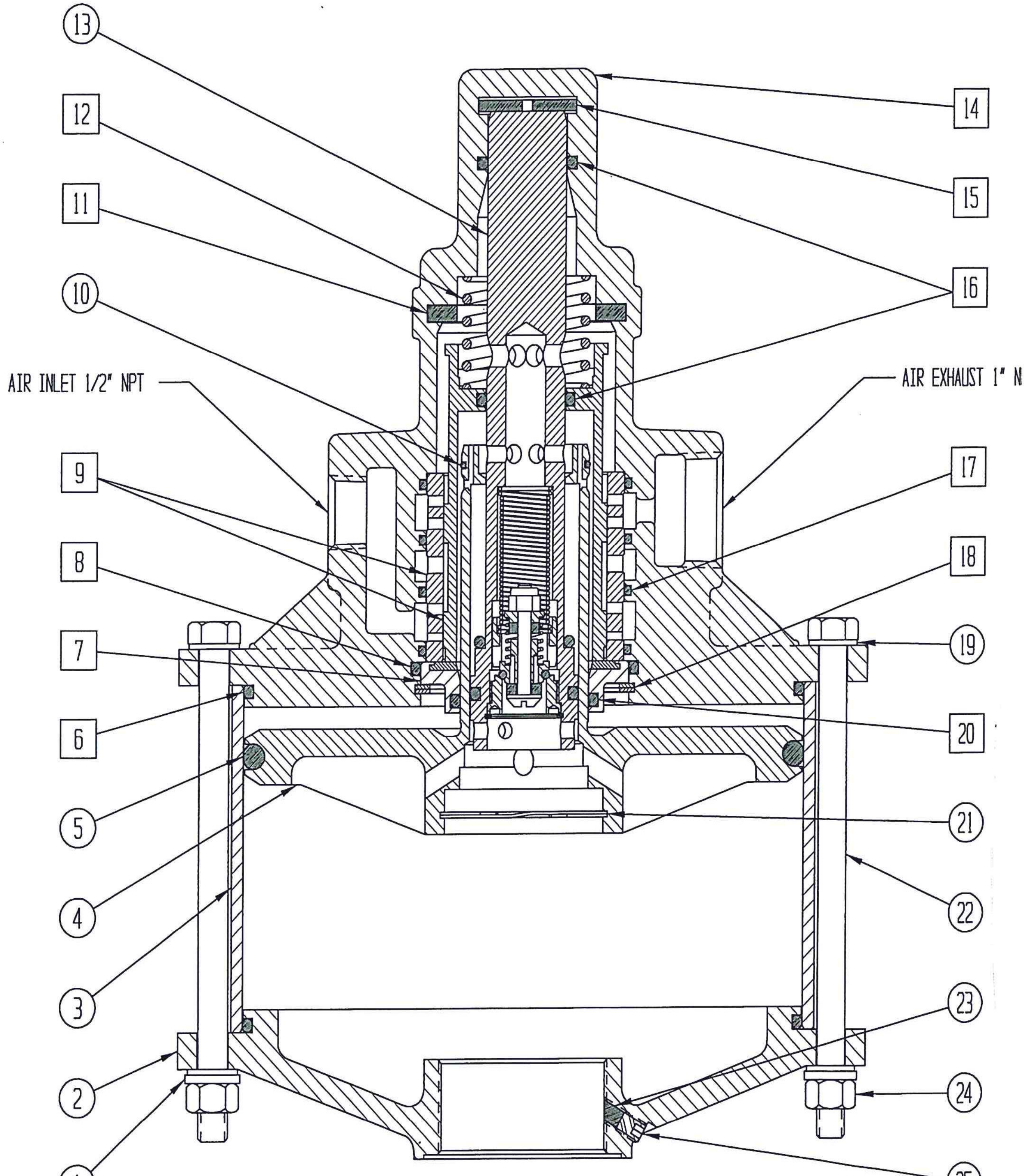
#	Description	Part #
1	Wheel Collar	PI700029
2	10” Wheel	PI700021
3	Flange Screw, 2-1/2" Gauge	PI700104
4	2-1/2" 160 psi Gauge	PI700011
5	Flange Screw, 4” Gauge	PI700103
6	4”-15k psi Gauge	PI70006
7	Cabinet	PI700151
8	10k psi Pump	PI7000-01
9	Pump Bolt 7"	PI700041
10	Pump Standoff	PI700171
11	4”-100 psi Gauge	PI700152
12	Isolation Needle Valve	PI700153
13	Regulator	PI700016
14	Bleed Needle Valve	PI700036-DM
15	3/4" Crows Foot (M)	PI700180
16	3/4" Coupling	PI700179
17	3/4" to 1/2" Bushing	PI700169
18	1/2" 90° Elbow (MxF)	PI700096
19	1/2" x 3” Nipple	PI700185
20	1/2" Ball Valve	PI700170
21	Clamp	PMI063
22	Clamp Spacer	PI700240
23	Clamp Screw	PI700192
24	Washer	PI700241
25	Locknut	PI700242
26	1/2" 90° Elbow (FxF)	PI700178
27	1" x Close Nipple	PI700176
28	Handle	PI700031
29	Handle Mounting Bolt ($\frac{1}{4}$"x$\frac{3}{4}$")	PI700023
30	Washer	PI700026
31	1/2" x 2-1/2” Nipple	PI700184
32	1/2" x 1-1/2” Nipple	PI700233
33	Back Panel	PI700238
34	Lubricator	PI700018
35	Filter	PI700099
36	Cabinet Foot	PI700239
37	Hex Jam Nut, Foot	PI700243
38	Split Lock Washer, Foot	PI700244

#	Description	Part #
39	Washer, Foot	PI700245
40	1/2" Hose (Air In To Regulator)	PI700234
41	Regulator	PI700016
42	1/2" Hose (Pump Air Out)	PI700235
43	Hex Adapter (1"x1/2")	PI700044
44	1/2" Hex Nipple	PI700168
45	1/2" Hose (Regulator To Pump)	PI700236
46	1/4" Hose (Regulator To Air Gauge)	PI700237
47	Hex Bolt	PI700023
48	Washer (Outer)	PI700026
49	Washer (Inner)	PI700026
50	Locknut	PI700027
51	1/2" Tee (FxM) Branch (F) Qty 2	PI700069
52	Adapter (1/2"NPT to 1/4" Ferrule)	PI700196
53	Bulkhead To Bleed SS Flare Tube	PI700213
54	1/4" 90° Elbow (M x F)	PI700198
55	Gauge To Bleed SS Flare Tube	PI700214
56	1/4" Tee	PI700197
57	Flareless Adapter	PI700246
58	Bleed SS Flare Tube	PI700082
59	Bulkhead to Iso. Valve 1/2" SS Tube	PI700231
60	Elbow Male Tube To Male Pipe	PI700204
61	1/2" Hose (Tee to Water Pressure Gauge)	PI700232
62	1/2" 90° Elbow (M-Thread x F Swivel)	PI700097
63	1/2" 90° Elbow (M x M)	PI700074
64	1/2" Hose (Pump Outlet to Isolation Valve)	PI700189
65	1/2" Hose (Strainer to Pump Inlet)	PI700085
66	1/4" Push On Pipe (M)	PI700182
67	1/4" Push On Pipe (F)	PI700177
68	1/2" Push On Pipe (F) 2800808C	PI700271
69	1/2" Coupling	PI700114
70	1/2" Push On Pipe (M)	PI700172

High Flow Bypass System



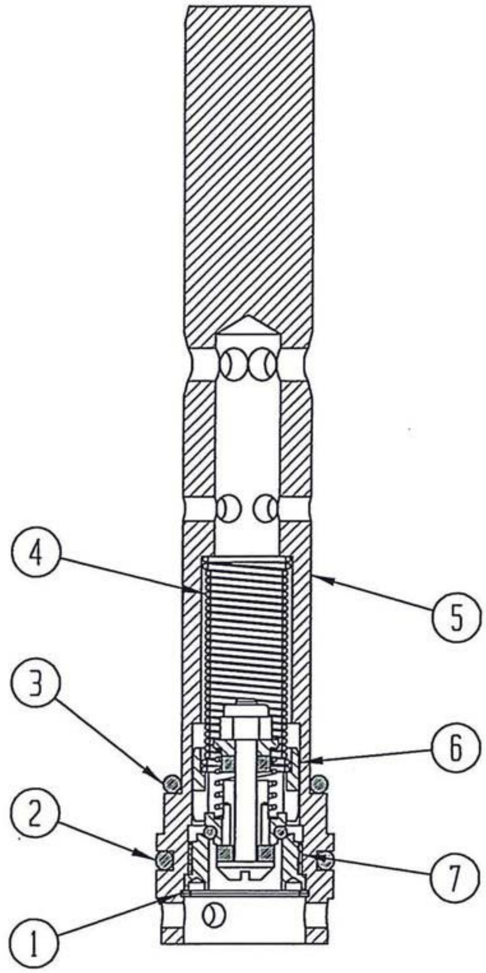
Item	Description	Part #	
	High Flow Bypass System	PDQCHV 10000	
107	Bulkhead Plate Assy., Outlet	PI700205	
108	¾" x Close SS Nipple	PI700154	
109	Cross	PI700155	
110	90° Elbow	PI700156	
111	High Flow Check Valve	PI700157	
112	90° Street Elbow	PI700158	
113	High Flow Hose Assy.	PI700163	
114	90° Street Elbow	PI700158	
115	Tee	PI700159	
116	¾" Strainer – 100m	PI700160	
117	¾" x Close Brass Nipple	PI700161	
118	Bulkhead Plate Assy., Inlet	PI700205	
119	¾" X 15' 10K PSI Hose	PI700291	


13
12
11
10
AIR INLET 1/2" NPT
9
8
7
6
5
4
3
2
1
14
15
16
AIR EXHAUST 1" N
17
18
19
20
21
22
23
24
25

PDQC AIR MOTOR PARTS

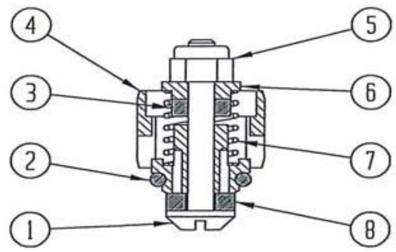
Item	Part Code	DESCRIPTION
1	PI044	WASHER-LOCK
2	PI003	END
3	PI006	CYLINDER-AIR
4	PI004	PISTON-AIR
5	PI012	O-RING
6	PI010	O-RING
7	PI007	BEARING ASSEMBLY
8	PI009	O-RING
9	PI001	APA VALVE ASSEMBLY
10	PI019	O-RING
11	PI015	BUMPER
12	PI005	SPRING
13	PI020	PILOT VALVE ASSEMBLY
14	PI022	HEAD
15	PI002	BUMPER
16	PI011	O-RING
17	PI021	O-RING
18	PI014	RETAINING RING
19	PI043	WASHER-FLAT
20	PI008	O-RING
21	PI013	RETAINING RING
22	PI017	BOLT-HEX
23	PI041	PLUG
24	PI016	NUT-HEX
25	PI018	SET SCREW-HEX SOCKET

PILOT VALUE ASSEMBLY PI020



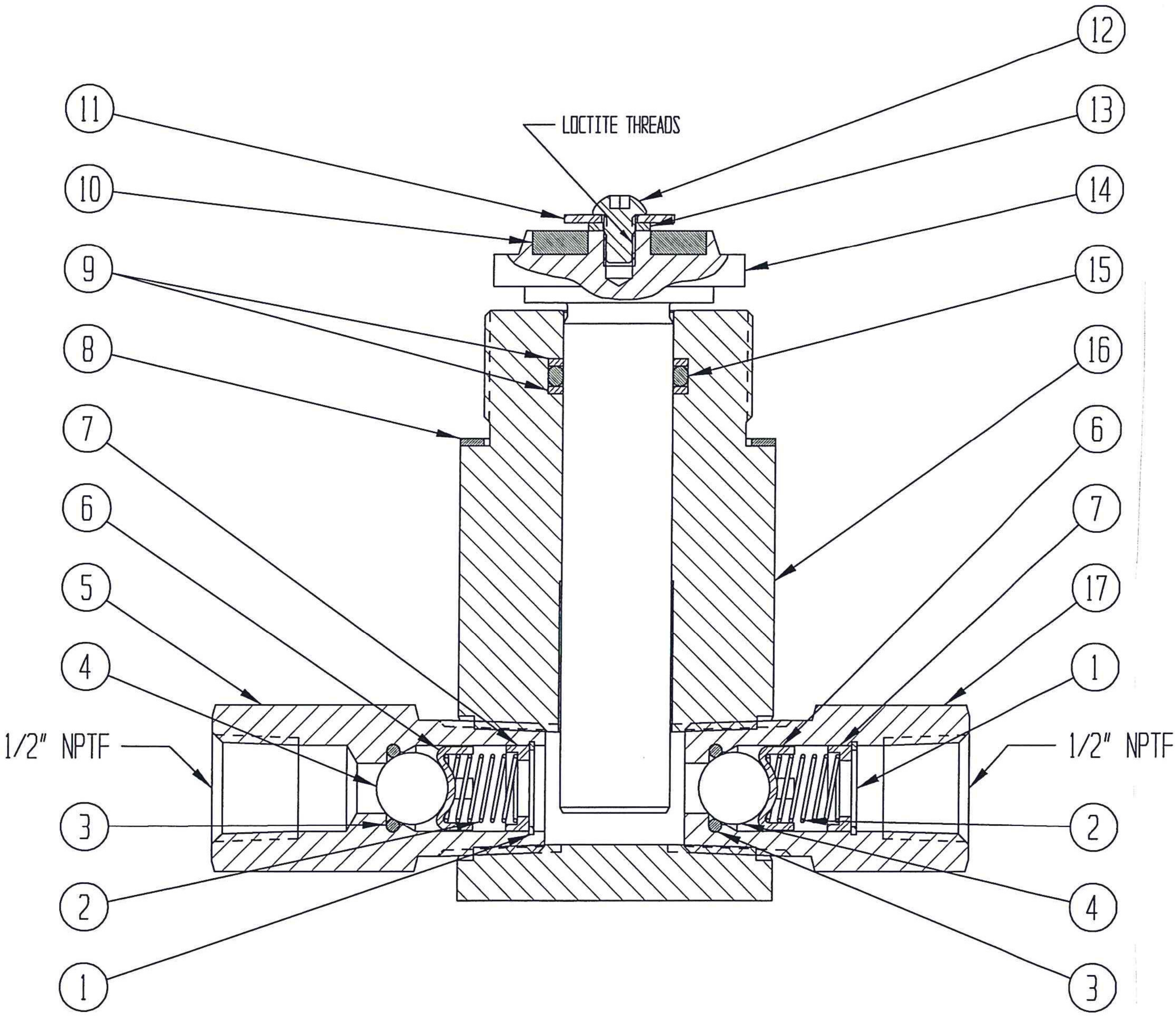
PILOT VALUE ASSEMBLY PI020		
Item	Part Number	Description
1	PI030	SPIROLOK RING
2	PI029	O RING
3	PI011	O RING
4	PI026	SPRING
5	PI023	PILOT VALVE BODY
6	PI057	CHECK VALVE ASSEMBLY
7	PI027	SEAT

CHECK VALVE ASSEMBLY PI057



CHECK VALVE ASSEMBLY PI057		
Item	Part Number	Description
1	PI038	CENTRE SCREW
2	PI036	O RING
3	PI033	WASHER
4	PI058	POPPET BODY
5	PI031	NUT
6	PI032	WASHER
7	PI034	SPRING
8	PI037	WASHER

PDQC10,000 HYDRAULIC END



PDQC10,000 HYDRAULIC END

ITEM NO	QTY	PART NO	DESCRIPTION
1	2	PI5051	RETAINING RING
2	2	PI5053	SPRING
3	2	PI5056	O-RING EPR
4	2	PI2037	CHECK BALL
5	1	PI5032	SEAT-INLET
6	2	PI5054	BALL GUIDE
7	2	PI5052	SPRING GUIDE
8	1	PI5043	GASKET
9	2	PI5026	BACK UP
10	1	PI5020	PISTON BUMPER
11	1	PI5039	FENDER WASHER
12	1		BUTTON HEAD CAP SCREW
13	1		HELICAL SPRING LOCK WASHER
14	1	PI5042	HYDRAULIC PISTON
15	1	PI5025	O-RING
16	1	PI5047	HYDRAULIC CYLINDER
17	1	PI5031	SEAT-OUTLET

Note PI5039 includes items 11, 12, and 13

PI6100 AIR MOTOR REPAIR KIT		
QTY	**PART NUMBER**	**DESCRIPTION**
1	PI012	O-RING
2	PI010	O-RING
1	PI009	O-RING
1	PI019	O-RING
1	PI015	BUMPER
2	PI011	O-RING
1	PI008	O-RING
1	PI013	RETAINING RING
1	PI026	SPRING
1	PI029	O-RING
1	PI030	RETAINING RING
1	PI057	AIR CHECK ASSEMBLY

PI6099 HYDRAULIC END REPAIR KIT		
QTY	**PART NUMBER**	**DESCRIPTION**
2	PI5051	RETAINING RING
2	PI5056	O-RING
1	PI5043	GASKET
2	PI5026	BACK UP
1	PI5020	PISTON BUMPER
1	PI5030	HELICAL SPRING LOCK
1	PI5025	O-RING