

WIDDER TOOLS



HPIC-10000-DL Hydrostatic Test Unit



PRODUCT INFORMATION AND OPERATING INSTRUCTIONS

Description: The **HPIC-10000-DL** Test Unit is a portable, air driven, hydrostatic test system. This test unit features a rugged powder coated steel body construction, and screen printed informational graphics for long-life. This unit also features our standard, stainless steel, 140 Mesh (100 Micron) water inlet filter, as well as full air filtration and lubrication. The standard Isolation Valve allows complete isolation from the pump check valve when higher system integrity is required.

**IMPORTANT: READ MANUAL CAREFULLY BEFORE OPERATING THIS TOOL.
FOLLOW ALL SAFETY PRECAUTIONS LISTED AND ALL OSHA REGULATIONS
PERTAINING TO THIS TOOL.**

SAFETY PRECAUTIONS:

1. Be sure all pressure on air and water fittings is relieved before dis-connecting any hoses or fittings
2. Wear eye protection
3. Pressurization of any materials is dangerous- follow OSHA procedures for stored energy and any pressurization cautions pertaining to the fluids used
4. This system can develop pressure up to the nameplate pressure- do not over pressure test vessels as damage can occur.
5. Do not run air pump without water input as you can damage the pump
6. Oil lubricator on air input must be filled with standard air tool oil before operating. Operating without oil voids tool warrantee

OPERATING INSTRUCTIONS:

A. Leak Test Only

1. Attach water (Front of Unit) and air input (Rear of Unit) with water and air supply turned off.
2. Attach water output to test vessel (pre-fill if necessary for faster fill).
3. Turn on input water supply at street pressure and check for any obvious hook-up leaks.
4. Bleed the system through the needle relief valve until no more water comes out.
5. Close needle valve firmly. **Do not over tighten.**
6. With Regulator opened all the way (counter clock-wise) turn on the air input valve.
7. Slowly close the regulator (clock-wise) causing the system pressure to build. The unit will stroke a few times quickly to build pressure and will slow as the system charges and fills.
8. Observe system output pressure gage carefully. **Do not over pressure test vessel.**
9. As desired pressure is approached, slow air input by backing off regulator. The system will hold this pressure within about 1% and will make-up any drop by recycling the pump.
10. Inspect pressurized system for leaks.
11. Once the leak test inspection is complete, refer to section C to shut down the system.

B. Isolated Pressure Leak Test

For tighter control of pressures, the **HPIC-10000-DL** Test Unit includes a secondary high pressure Isolation Valve. This valve is downstream from the pressurizing pump and allows the operator to isolate the pressurized test loop from the pump check valves. At high pressures, the pump check valves can leak some system pressure. Usually, this is well within test pressure drop parameters (API 6A on annex F.1.1.10 b. for example, states: "Pressure shall remain within 5% of the test pressure or 3,45 MPa (500 psi), whichever is less, during the test period.")

1. To isolate pressure, follow section A until system is pressured to desired pressure.

2. Close the Isolation Valve. **Closing the isolation valve may raise test pressure slightly as the isolation valve displaces fluid in the system.**
3. Once the isolation valve is closed, the test area is isolated from the pump and check valves.
4. Monitor pressure gage for drop in pressure over allotted time.
5. When test is complete, be sure to turn off input air, open regulator completely, crack bleed valve and re-open isolation valve. Do not store system under pressure- always be sure bleed valve is cracked and isolation valve is open.

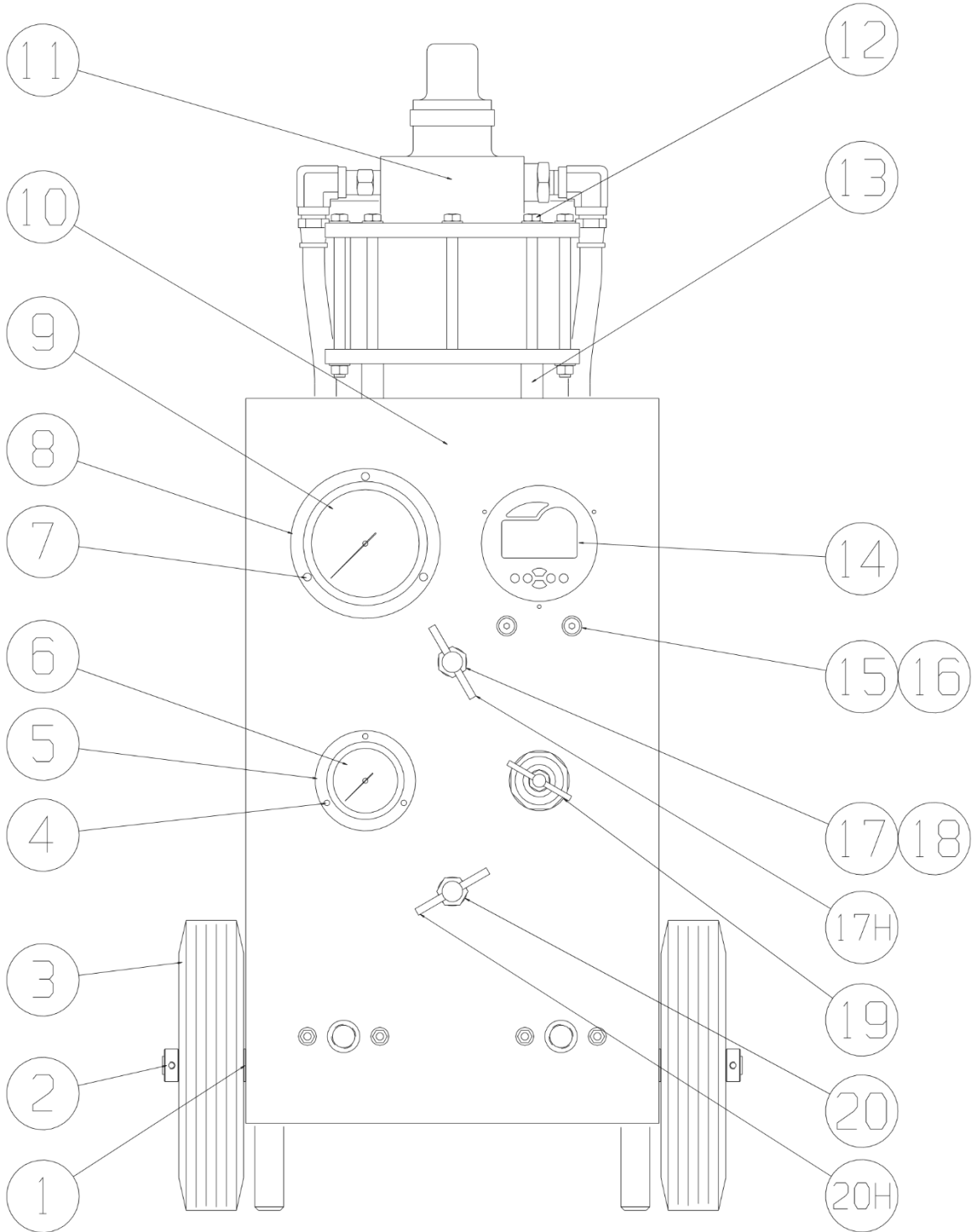
C. System Shut Down and Storage

1. Once tests and inspections are complete, shut down the system by first opening the regulator to relieve air pressure (counter clock-wise) until gage reads “0”.
2. Turn off water and air input.
3. Gently crack the needle bleed valve until output pressure drops to “0”.
4. Once all pressure gages read “0” and inputs are off, drain and disconnect test vessel.
5. To store unit, add a small amount of water displacing oil to the water input and hook-up an airline to the water input.
6. With all needle valves open, blow air through the water input. Water and air will come out the discharge side of the unit.
7. Blow off until mostly dry.

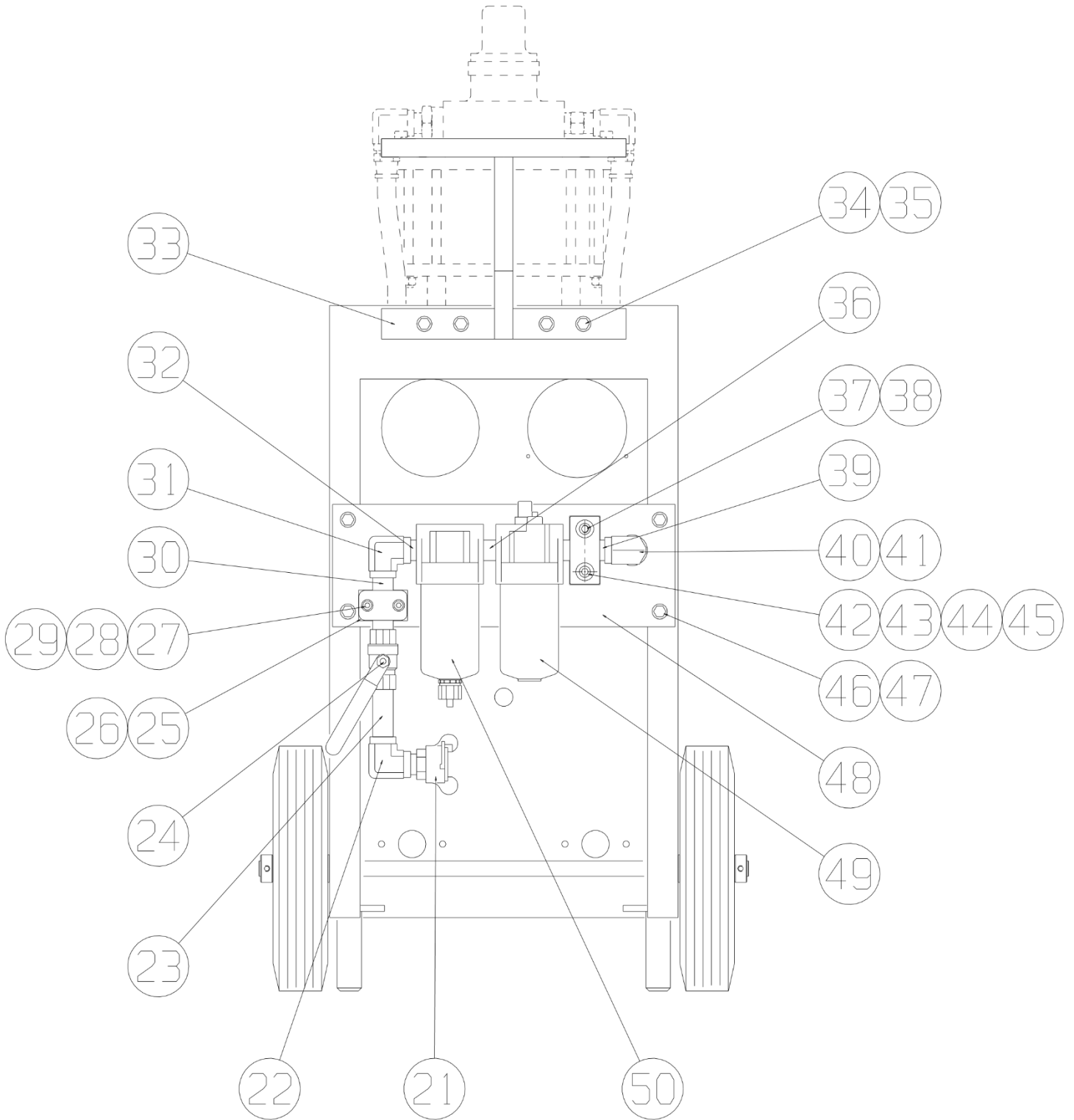
D. Digital Gage

The **HPIC-10000-DL** Test Unit is supplied with a digital gage accurate to .025% full scale and detects even tiny changes in test conditions. See enclosed manual for gage use. Because the gage is so accurate and can read down to a 1.0 PSI change in system pressure, the operator must be aware that minor pressure changes are caused by many factors including: temperature fluctuation, hose stretch, sealant settling, and material assembly movement. Vessel size is critical to this issue; a small test vessel will show dramatically more pressure change than a large one. (Note: For long term storage, remove batteries to extend life.)

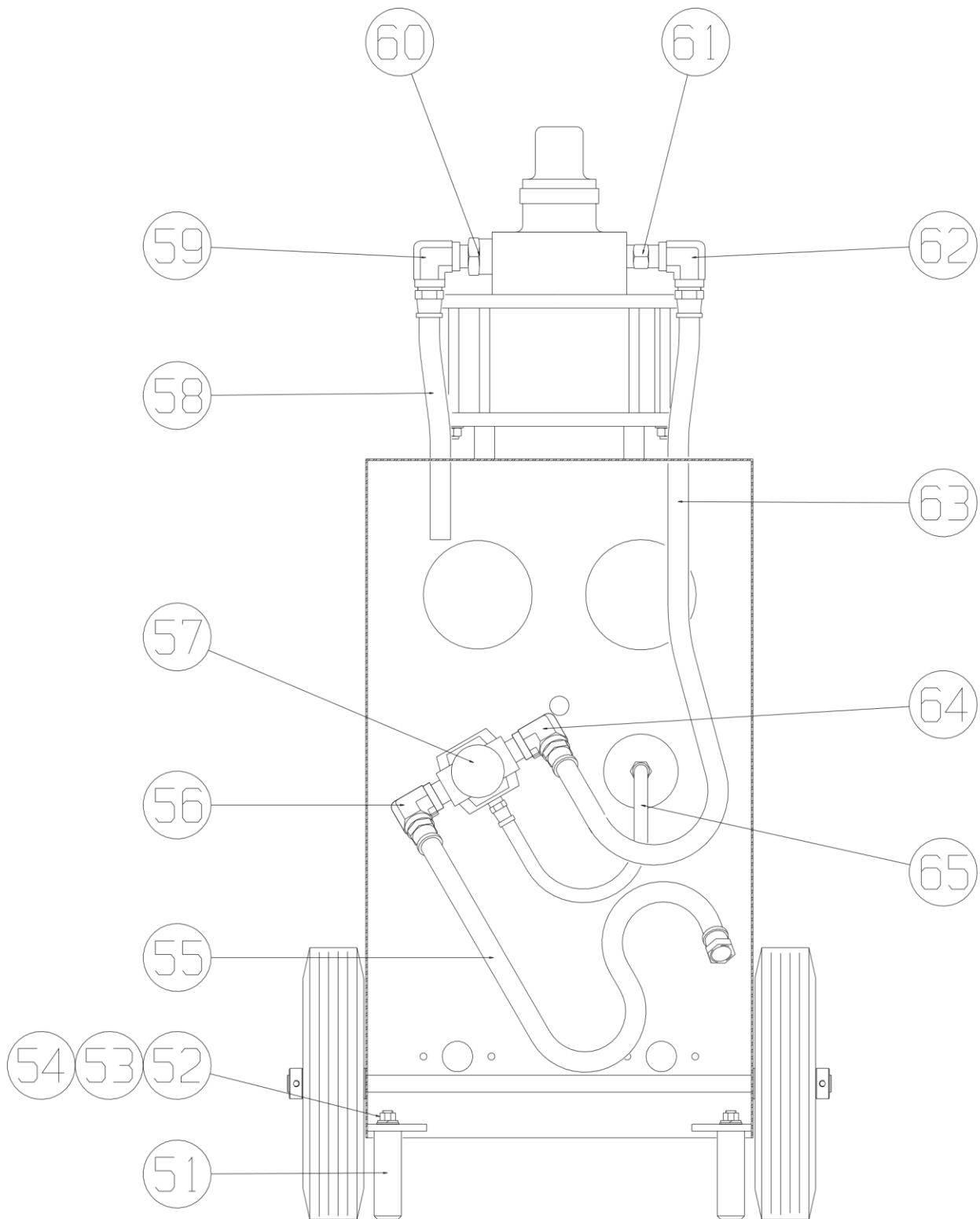
WIDDER HPIC Hydrostatic Test Pump Front View



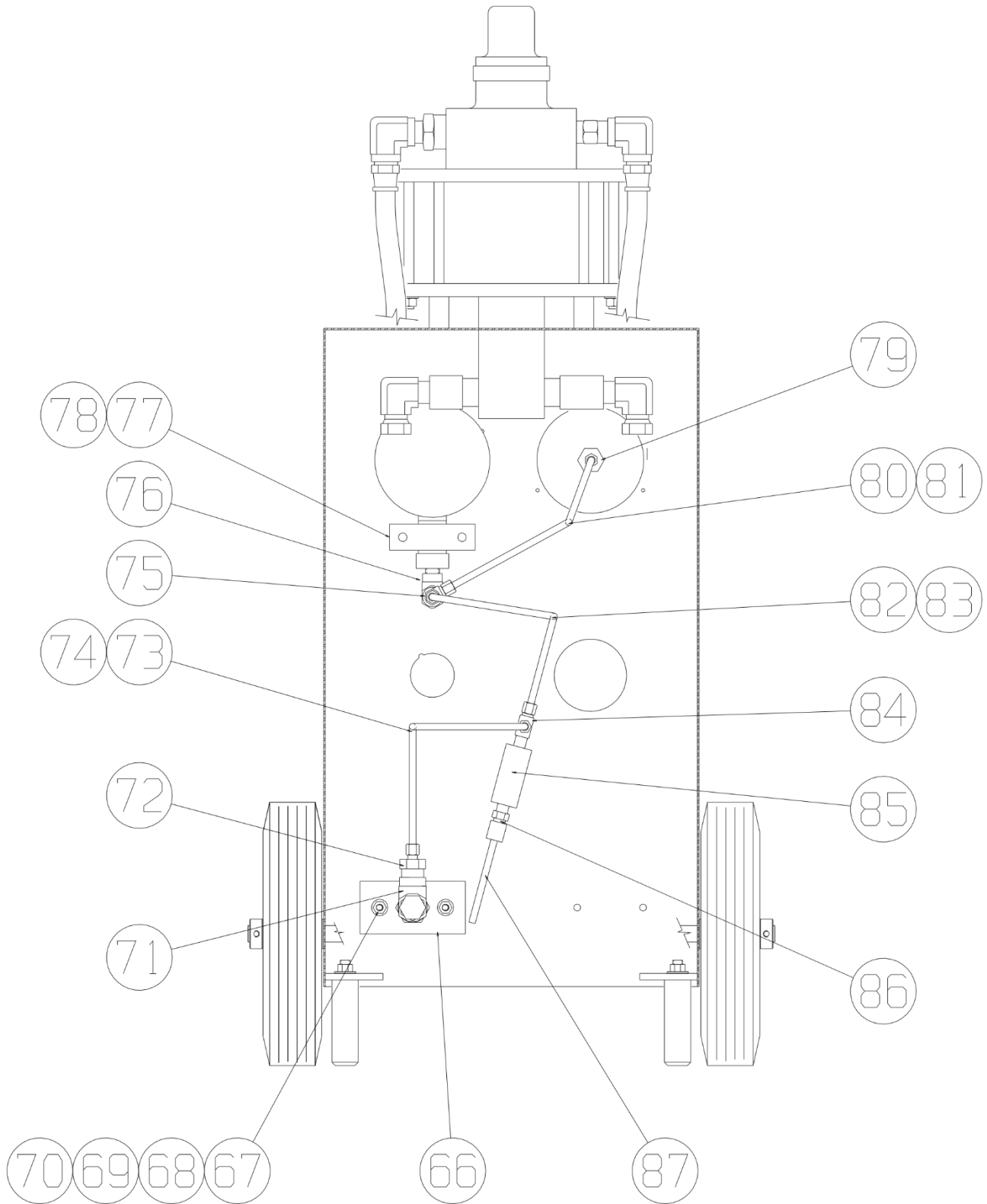
Back Panel View



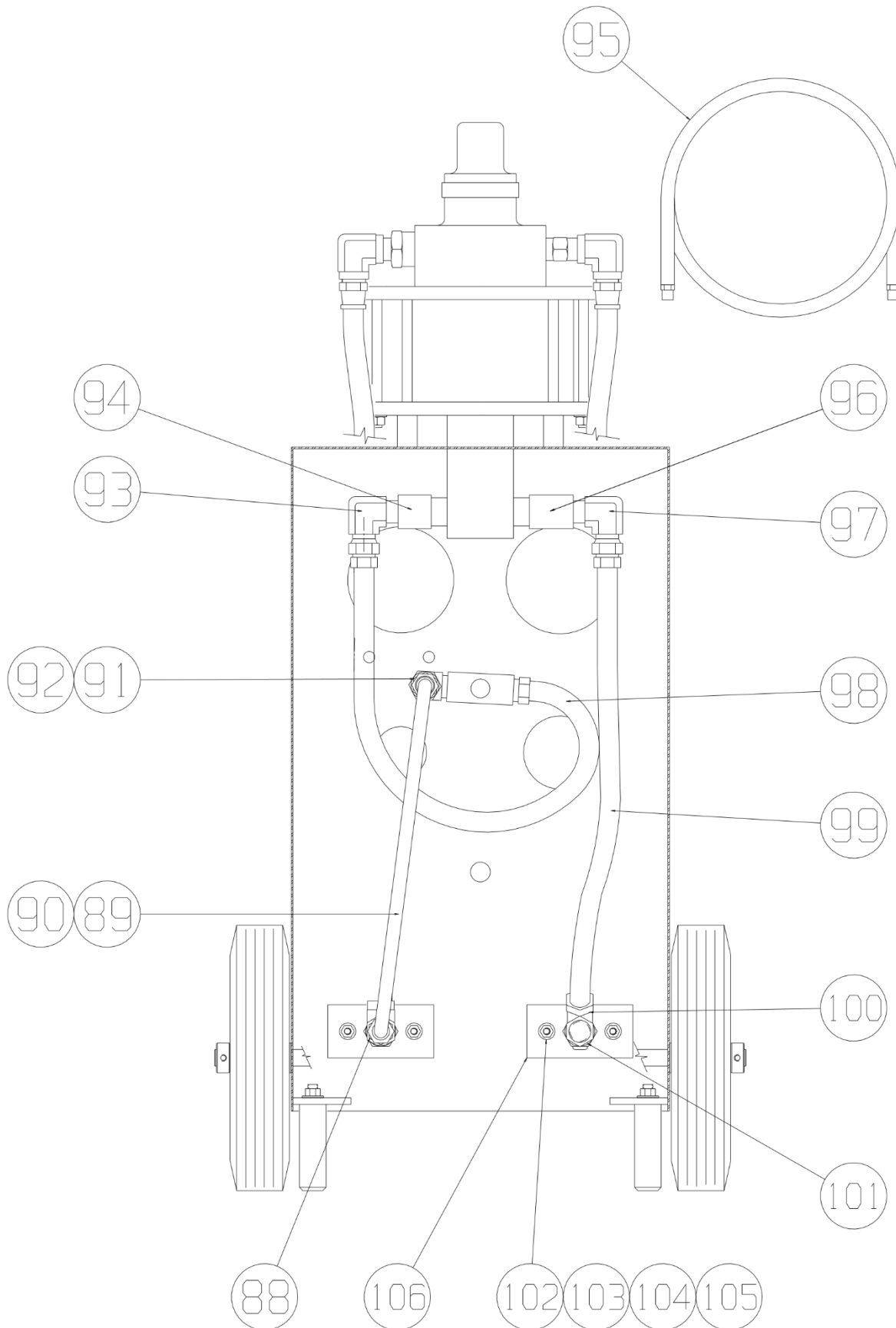
Inner Air System



Small High Pressure System



Main Water In/Out System



WIDDER HPIC Hydrostatic Test Pump

Item	Description	Part #	
Front View			
		HPIC-10000-D	HPIC-10000
1	Wheel Spacer	03-1014	03-1014
2	Wheel Collar	PI7000-29	PI7000-29
3	10" Wheel	PI7000-21	PI7000-21
4	Flange Screw, 2 ½" Gage	PI7000-20	PI7000-20
5	2 ½" Flange	PI7000-11A	PI7000-11A
6	2 ½"-160 psi Gage	PI7000-11	PI7000-11
7	Flange Screw, 4" Gage	PI7000-19	PI7000-19
8	4" Flange	PI7000-06A	PI7000-06A
9	4"-15k psi Gage	PI7000-06	PI7000-06
10	Cabinet	PI7000-38	PI7000-38
11	10k psi Pump	PI7000-01	PI7000-01
12	Pump Hex Bolt	PI7000-41	PI7000-41
13	Pump Standoff	PI7000-88	PI7000-88
14	10k psi Digital Logger Gage	PI7000-202	
15	Gage Mount Screw	PI7000-212	
16	Washer	PI7000-213	
17	Isolation Needle Valve	PI7000-216	PI7000-216
17H	Handle, Isolator Valve	PI7000-216-RH	PI7000-216-RH
18	Valve Mount Washer	PI7000-217	PI7000-217
19	Regulator	PI7000-16	PI7000-16
20	Bleed Needle Valve	PI7000-36	PI7000-36
20H	Handle, Bleed Valve	PI7000-36-RH	PI7000-36-RH

Back Panel View			
Item	Description	Part #	
		HPIC-10000-D	HPIC-10000
21	Universal Coupling	36-1010	36-1010
22	90° Elbow	PI7000-96	PI7000-96
23	½ x 3” Brass Nipple	PMI014	PMI014
24	Ball Valve	PI7000-14	PI7000-14
25	Small Clamp	PI7000-59	PI7000-59
26	Small Clamp Spacer	PI7000-61	PI7000-61
27	Small Clamp Screw	PI7000-50	PI7000-50
28	Washer	PI7000-26	PI7000-26
29	Locknut	PI7000-27	PI7000-27
30	½ x 3” Brass Nipple	PMI014	PMI014
31	90° Elbow	PI7000-96	PI7000-96
32	½ x Close Brass Nipple	PMI035	PMI035
33	Handle	PI7000-31	PI7000-31
34	Handle Mounting Bolt	PI7000-23	PI7000-23
35	Washer	PI7000-24	PI7000-24
36	½ x Close Brass Nipple	PMI035	PMI035
37	Large Clamp	PI7000-60	PI7000-60
38	Large Clamp Spacer	PI7000-62	PI7000-62
39	½ x 2-1/2” Brass Nipple	PMI037	PMI037
40	90° Elbow	PI7000-96	PI7000-96
41	1/2 x 2” Brass Nipple	PMI023	PMI023
42	Large Clamp Screw	PI7000-51	PI7000-51
43	Washer (Outer)	PI7000-54	PI7000-54
44	Washer (Inner)	PI7000-53	PI7000-53
45	Locknut	PI7000-52	PI7000-52
46	Panel Mounting Bolt	PI7000-23	PI7000-23

Item	Description	Part #	
		HPIC-10000-D	HPIC-10000
47	Washer	PI7000-26	PI7000-26
48	Back Panel	PI7000-39	PI7000-39
49	Lubricator	PI7000-18	PI7000-18
50	Filter	PI7000-17	PI7000-17
Inner Air System			
51	Foot	PI7000-33	PI7000-33
52	Hex Jam Nut, Foot	PI7000-32	PI7000-32
53	Split Lock Washer, Foot	PI7000-34	PI7000-34
54	Washer, Foot	PI7000-30	PI7000-30
55	Air In To Regulator Hose	PI7000-84	PI7000-84
56	90° Elbow	PI7000-63	PI7000-63
57	Regulator	PI7000-16	PI7000-16
58	Pump Air Out Hose	PI7000-87	PI7000-87
59	90° Elbow	PI7000-63	PI7000-63
60	Hex Adapter	PI7000-45	PI7000-45
61	Hex Nipple	PI7000-73	PI7000-73
62	90° Elbow	PI7000-63	PI7000-63
63	Regulator To Pump Hose	PI7000-86	PI7000-86
64	90° Elbow	PI7000-63	PI7000-63
65	Regulator To Air Gage Hose	PI7000-83	PI7000-83
Small High Pressure System			
66	Bulkhead Plate Assy., Outlet	PI7000-28	PI7000-28
67	Hex Bolt	PI7000-23	PI7000-23
68	Washer (Outer)	PI7000-26	PI7000-26
69	Washer (Inner)	PI7000-24	PI7000-24
70	Locknut	PI7000-27	PI7000-27
71	Tee	PI7000-69	PI7000-69
72	Flare Adapter	PI7000-93	PI7000-93
73	Bulkhead To Bleed Flare Tube	PI7000-232	PI7000-232

Item	Description	Part #	
		HPIC-10000-D	HPIC-10000
74	1/4" Flare Seal (2 per Tube)	PI7000-221	PI7000-221
75	Tee	PI7000-94	PI7000-94
76	90° Elbow	PI7000-215	PI7000-215
77	Gage Bracket, Upper	PI7000-210	
78	Gage Bracket, Lower	PI7000-211	
79	Flare Adapter	PI7000-95	PI7000-95
80	Gage To Gage Flare Tube	PI7000-230	PI7000-230
81	1/4" Flare Seal (2 Per Tube)	PI7000-221	PI7000-221
82	Gage To Bleed Flare Tube	PI7000-231	PI7000-231
83	1/4" Flare Seal (2 per Tube)	PI7000-221	PI7000-221
84	Tee	PI7000-94	PI7000-94
85	Bleed Needle Valve	PI7000-36	PI7000-36
86	Flareless Adapter	PI7000-78	PI7000-78
87	Bleed Tube	PI7000-82	PI7000-82
Main Water In/Out System			
88	Flare Adapter	PI7000-71	PI7000-71
89	Bulkhead to Iso. Valve Tube	PI7000-233	PI7000-233
90	1/2" Flare Seal (2 per Tube)	PI7000-220	PI7000-220
91	90° Elbow	PI7000-63	PI7000-63
92	Flare Adapter	PI7000-71	PI7000-71
93	90° Elbow	PI7000-74	PI7000-74
94	Check Valve, Outlet	PI7000-223	PI7000-223
95	1/2" x 15 Foot HP Hose	PI7000-89	PI7000-89
96	Check Valve, Inlet	PI7000-222	PI7000-222
97	1/2M x 1/2F SW 90	PI7000-74	PI7000-74
98	Pump Outlet Hose	PI7000-218	PI7000-218
99	Strainer To Pump In Hose	PI7000-85	PI7000-85
100	1/2" Strainer – 100m	PMI017	PMI017
101	1/2 x Close Brass Nipple	PMI035	PMI035

Item	Description	Part #	
		HPIC-10000-D	HPIC-10000
102	Hex Bolt	PI7000-23	PI7000-23
103	Washer (Outer)	PI7000-26	PI7000-26
104	Washer (Inner)	PI7000-24	PI7000-24
105	Locknut	PI7000-27	PI7000-27
106	Bulkhead Plate Assy., Inlet	PI7000-28	PI7000-28