WIDDER®TOOLS

Industrial Manufacturing Solutions

HPICAL-15000
Calibration Station

Control & Feature Overview

Industrial Manufacturing Solutions

(203) 777-5395

1. **TEST SET-UP**
    a. Be sure air and water supply lines are installed per basic set-up & installation instructions supplied with calibration station. (available at https://widdertools.com/wp-content/uploads/2017/06/HPICAL-15000-Install-Manual.pdf)
    b. Be sure Air Pressure Regulator is backed all the way off, (Counter-clockwise) and Air & Water Valves are turned to "**OFF**"(counter-clockwise).
    c. Attach system or gauge that is to be tested or calibrated to the Calibration Station using one of the following two options:

I. **MAIN TEST PORT**
    a. Remove Adapter Cap (PC-1032) from Main Test Port on the right side of the Calibration Station, and store safely.
    b. Be sure Auxiliary Plug (PC-1031) and Gland Nut (PC-1020-3) are installed in Auxiliary Test Port on top of the unit, and tightened firmly.
    c. Attach Test Hose (PC-1019) to the Main Test Port and tighten securely.
    d. Attach appropriate adapter to the **high pressure output port** of the system to be tested/calibrated. **NOTE:** *Hose end is 9/16" 'M' fitting. One adapter to ½" NPT (PC-1030) is supplied, others are available if required. ***Always use Teflon tape on NPT connections.*
    e. Plug input port on the system to be tested (this is a safety precaution)
    f. Open Calibration Station Bleed Valve at LEAST ¼ - ½ turn from closed to ensure there is no residual pressure in the system.
    g. Turn on Calibration Station Digital Gauge. (press POWER button on gauge)
    h. Zero the Calibration Station Digital Gauge (press ZERO button on gauge and hold for 3 seconds)
    i. Zero the gauge on the system to be tested (if applicable).
    j. Start Data Logging at this time (see DATA LOGGING instructions, pages 6
        i. Be sure all data on the gage is saved on a computer and deleted from the gage before starting another logging session.
        ii. Be sure the date and time are correct.
        iii. Be sure to set logging interval (or "gap") to desired amount.
        iv. The % sign on the gage should be flashing to indicate the data logging is active.
    k. Be sure water input and/or Isolation valve on system to be tested are closed or plugged tightly. ****Always use Teflon tape on NPT connections*.
    l. Close the Bleed Valve on the system to be tested tightly.

m. Close the Bleed Valve on the Calibration Station tightly.
n. Turn Calibration Station Water Valve to "**ON**"
o. Crack open the Bleed Valve on system to be tested slightly, removing as much trapped air as possible; then close tightly.
p. Crack open the Bleed Valve on Calibration Station slightly, to remove any residual trapped air, then close tightly.
q. Repeat steps "n" and "o" as required to be sure as much air as possible is removed form entire system.

II. AUXILLARY TEST PORT

a. Remove Auxiliary Plug (PC-1031) and Gland Nut (PC-1020-3) from auxiliary test port and store safely.
b. Remove Test Hose (PC-1019) from the Main Test Port and store safely, then install Adapter Cap (PC-1032) onto Main Test Port Adapter (PC-1029) and tighten firmly.
c. Attach appropriate Test Adapter to Auxiliary Test Port and tighten firmly. **NOTE:** *Calibration Station is supplied with adapter for ¼" NPT. Others are available if necessary. Ref: Test Hose end is 9/16" "M" fitting. ***Always use Teflon tape on NPT connections.*
d. Install gauge to be tested/calibrated into Test Adapter & tighten firmly. ****Always use Teflon tape on NPT connections.*
e. Close the Bleed Valve on the Calibration Station tightly.
f. Turn Calibration Station's water valve to "**ON**"
g. Crack open the Bleed Valve on Calibration Station slightly to remove any trapped air, then close tightly..
h. Repeat step "g" as required to be sure as much air as possible is removed from the system.

Once the system or gauge to be tested or calibrated is connected to the Calibration Station using one of the two above methods, follow these operation instructions, depending on what type of test you are performing:

2. **OPERATION - STANDARD CALIBRATION OR PRESSURE TEST**
    a. Ensure that Calibration Station water valve is "ON", and air pressure regulator is backed ALL THE WAY off. (Counter-clockwise)
    b. Back off Pressure Adjust Valve all the way. (Counter-clockwise)
    c. Turn Calibration Station air valve to "**ON**".
    d. Slowly increase air pressure by turning Air Pressure Regulator knob clockwise. Pump will begin building test pressure, noted on the System Pressure and Digital Logging Gauge.
    e. Slowly increase test pressure until you are **approximately 500 psi BELOW** desired test pressure.
    f. Back off the air pressure regulator all the way. (Counter-Clockwise) **NOTE:** This isolates the pump from the test system, and typically results in a slight test pressure drop as the check valves seat themselves.
    g. Use the Pressure Adjust Valve to set test pressure to the desired point. (Move clockwise to increase pressure, counter-clockwise to decrease pressure.) This adjustment valve provides **very** fine control – **adjust slowly!**
    h. Calibrate gauge **according to specific instructions for the gauge being calibrated**, using the Calibration Station to build and release pressure as required. Use pressure adjust valve for fine control. Use bleed valve (cracked open slightly, then closed firmly) and air pressure regulator (turned CW to build pressure, then backed off) for gross adjustments. (SEE PAGES – FOR SPECIFIC INSTRUCTIONS FOR THE WIDDER HPIC-10000-D CABINET/ASHCROFT GAUGE)
    i. When gauge calibration procedure is complete, turn Calibration Station Air and Water Valves to "**OFF**" and use Bleed Valve to release system pressure before disconnecting any fittings.
    j. Stop Data Logging on the Calibration Station gage and output the data to a computer according to the DATA LOGGING Instructions (pg)

3. **OPERATION – CONTINUOUS LEAK TEST**
    a. Ensure that Calibration Station Water Valve is "**ON**", and Air Pressure Regulator is backed ALL THE WAY off. (Counter-clockwise)
    b. Back off Pressure Adjust Valve all the way. (Counter-clockwise)
    c. Turn Calibration Station Air Valve to "**ON**".
    d. Slowly increase air pressure by turning Air Pressure Regulator knob clockwise. Pump will begin building test pressure, noted on the System Pressure and Digital Logging Gauge.

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e. Slowly increase test pressure until desired level is reached.
f. At this point the Calibration Station will maintain set pressure so physical leak test can be performed. If system leak is causing drop in pressure, Calibration Station will cycle on as required to try and maintain set pressure.
g. When leak test is complete, back off the Air Pressure Regulator all the way (Counter-Clockwise). Turn Calibration Station Air and Water Valves to "**OFF**". Then use Bleed Valve to release the system pressure.

Additel Digital Gage Data Logging

Press and hold the peak button to enter into the data logging menu. The screen shows idLOG (data logging) and SEt (set menu), please select the idLOG.

(1) ItC : 1. Display the date and time. 2. Set up the date and time.

(2) CAP : Memory capacity status.

(3) SEnd : Upload data.

(4) dEL : Delete all data, the password is "211".

(5) GAP : Logging interval (00001s–99999s).

(6) OFF : "on" means to start data logging, and "off" means to stop the data logging.

Remark: when capacity is full, please delete all data for logging new data.

7.9.2 To log data

(1) Set up the date and time (2) Set up the logging interval (3) Start to log

Examples: Automatic storage, the interval is 1 second:

① Set up the actual date and time(No. ItC)

② Select the gap menu option (No. GAP) and set up the logging interval as 00001S.

③ Change the logging status to "on" (No. OFF)

④ Return to main menu. The % icon should be flashing to indicated data logging is active.

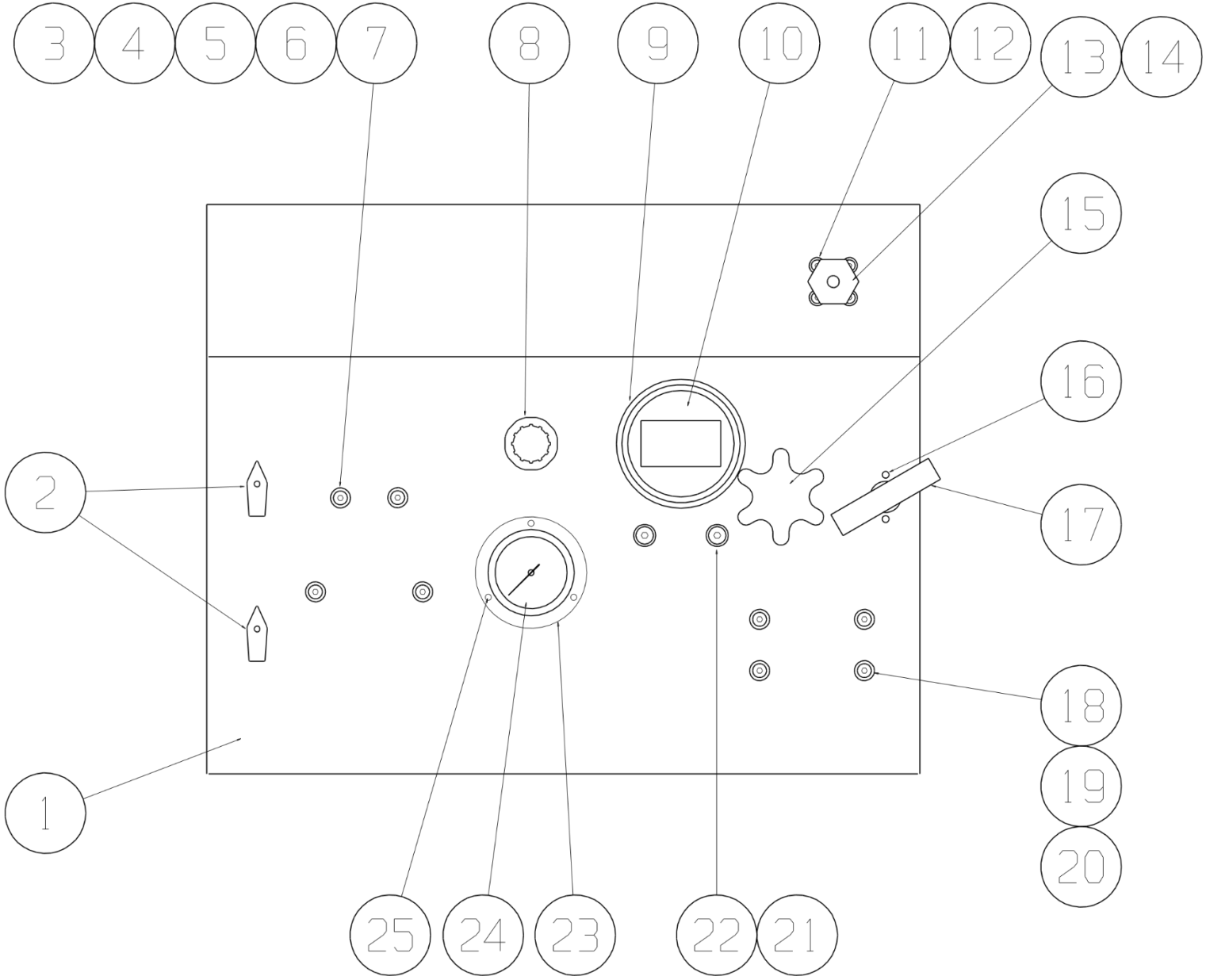
⑤ Except for the peak button, all other buttons are locked.

Ashcroft Digital Gage Calibration

(the Ashcroft Gage is found on all HPIC-10000-D Hydrostatic Test Units)

1. Press the **MENU** key on the keypad.
2. Press the ▲ (up arrow key) or ▼ (down arrow key) on the keypad until the word *CONFIG* appears.
3. Press **ENTER**.
4. Enter user password if it has been programmed.
5. Press ▲ (up arrow key) or ▼ (down arrow key) until the word *RECAL* appears.
6. Press **ENTER**.
7. The gauge will now flash between *INPUT* and unit of measure on the lower line and .00 on the top line. Apply zero pressure to the gauge.
8. Press **ENTER**. Zero pressure is now set.
9. The gauge will display full-scale pressure (10000). Apply full-scale pressure to the gauge.
10. Press **ENTER**. Full-scale pressure is now set.
11. The gauge will now display mid-scale pressure (5000). Apply mid-scale pressure to the gauge.
12. Press **ENTER**. Mid-scale pressure is now set.
13. After zero, full-scale and/or mid-scale or factory default calibration have been set, the word *SAVE* appears on the gauge display.
14. Press **ENTER** to finalize calibration.

WIDDER® HPICAL-15000 Calibration Station Parts
Top View



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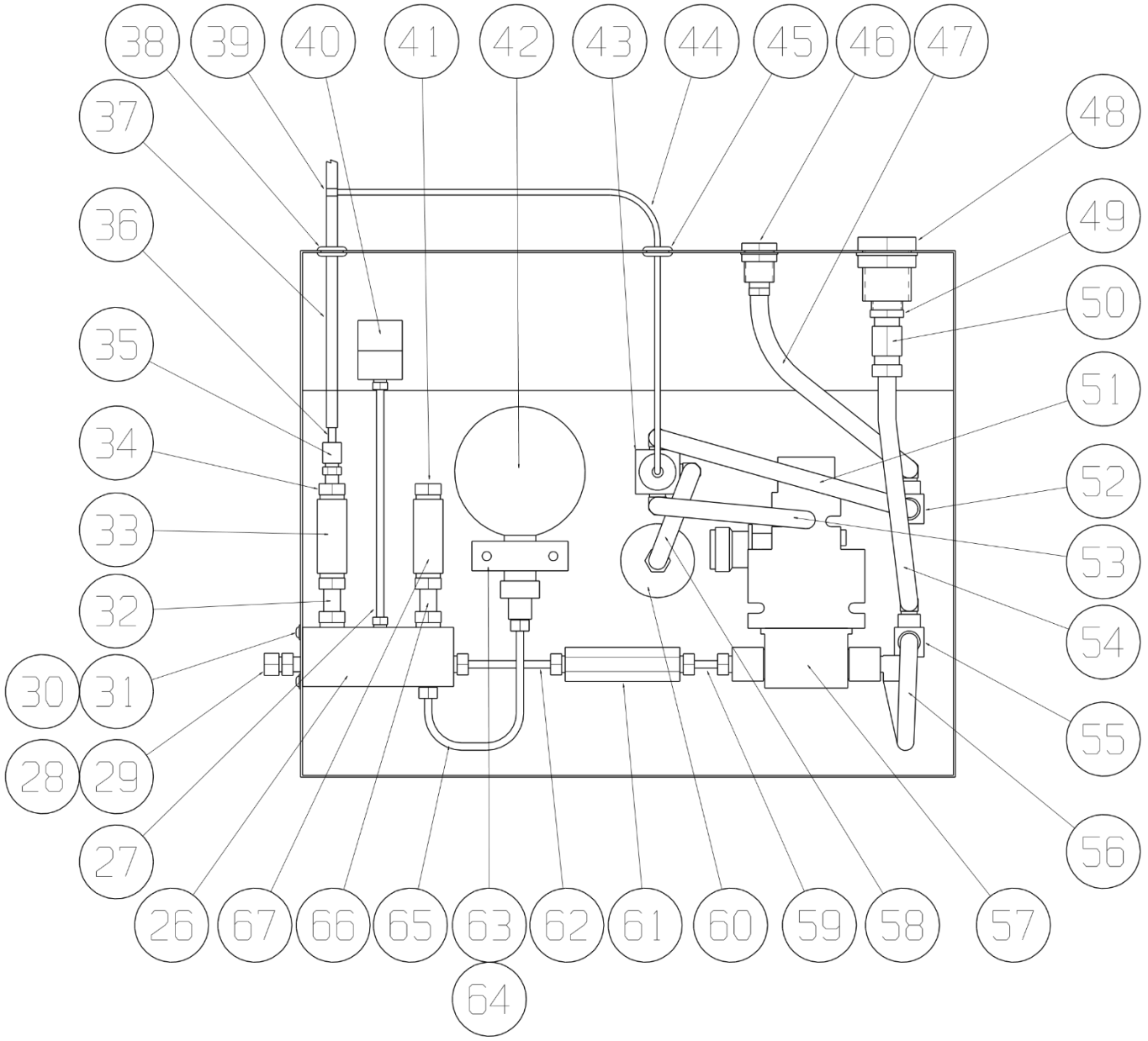
WIDDER® HPICAL-15000 Calibration Station Parts
Inside View



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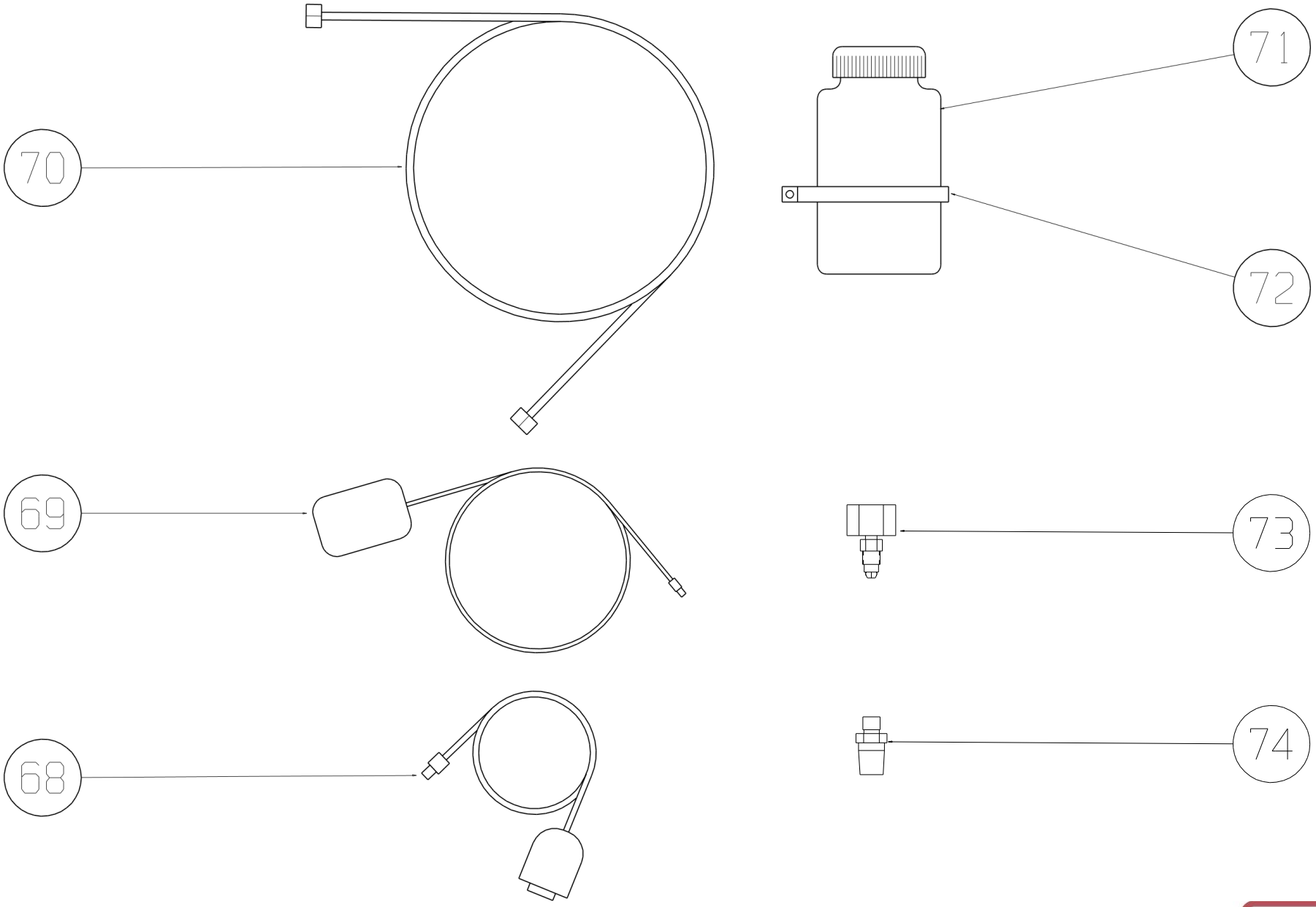
WIDDER® HPICAL-15000 Calibration Station Accessories



Item	Description	Part #
Top View		
1	Cabinet	PC-1001
2	On/Off Valves	PC-1006
3	Pump Mounting Screw	PC-1040
4	Washer (Outer)	PC-1043
5	Pump Standoff	PC-1045
6	Washer (Inner)	PC1043
7	Locknut	PI7000-27
8	Air Filter/Regulator	PC-1009
9	Gage Trim	PI7000-214P1
10	Digital Logger Gage, 15K	PC-1003
11	Aux. Port Block Mounting Screw	PC-1042
12	Washer	PC-1044
13	Auxiliary Plug	PC-1031
14	Gland Nut	PC-1020-3
15	Pressure Adjust Valve	PC-1017PA
16	Valve Mounting Screw	PC-1042
17	Bleed Valve	PC-1017BV
18	Manifold Mounting Screw	PC-1041
19	Washer	PC-1043
20	Manifold Standoff	PC-1046
21	Cap Screw	PI7000-212
22	Washer	PI7000-213
23	2 ½” Flange	PI7000-11A
24	2 ½” -160 psi Gage	PI7000-11
25	Flange Screw, 2 ½” Gage	PI7000-20

Item	Description	Part #
Inside View		
26	Manifold	PC-1004
27	Tube, Manifold to Aux. Block	PC-1016A
28	Test Port Adapter, 9/16” M	PC-1029
29	Adapter Cap	PC-1032
30	Manifold Mounting Screw	PC-1042
31	Washer	PC-1044
32	Tube, Manifold to Bleed Valve	PC-1014A
33	Bleed Valve	PC-1017BV
34	Adapter	PC-1026
35	Flareless Adapter	PI7000-78
36	Bleed Tube (St. Steel)	PI7000-82
37	Bleed Tube (Plastic)	PC-1048
38	Bleed Tube Grommet	PC-1047
39	Tee	PC-1050
40	Aux. Port Block	PC-1011
41	Plug Assy.	PC-1021A
42	Digital Logger Gage	PC-1003
43	Air Filter/Regulator	PC-1009
44	Tube, Filter Drain	PC-1049
45	Filter Drain Tube Grommet	PC-1047S
46	Air Inlet Bulkhead	PC-1008
47	Hose, Air Inlet to Valve	PC-1051A
48	Water Inlet Bulkhead	PC-1007
49	Reducer Bushing	PC-1033
50	Inline Strainer	PC-1039
51	Hose, Air Valve to Regulator	PC-1052A
52	Air On/Off Valve	PC-1006
53	Hose, Air Regulator to Pump	PC-1055A

Item	Description	Part #
54	Hose, Water Inlet to Valve	PC-1053A
55	Water On/Off Valve	PC-1006
56	Hose, Water Valve to Pump	PC-1054A
57	Pump	PC-1002
58	Hose, Air Regulator to Gage	PC-1056A
59	Tube, Pump to Check Valve	PC-1013A
60	2 ½" -160 psi Gage	PI7000-11
61	Check Valve	PC-1010
62	Tube, Check Valve to Manifold	PC-1015A
63	Digital Gage Bracket, Upper	PI7000-210
64	Digital Gage Bracket, Lower	PI7000-211
65	Tube, Manifold to Gage	PC-1012A
66	Tube, Manifold to Pressure Adj.	PC-1014A
67	Pressure Adjust Valve	PC-1017PA
Accessories		
68	Gage Data Cable	PC-1003-DC
69	Gage Power Cable	PC-1003-PA
70	Test Hose	PC-1019
71	Drain Bottle	PC-1057
72	Clamp, Drain Bottle	PC-1058
73	¼" NPT Adapter	PC-1020-1/4NPT
74	"C" Cabinet Adapter	PC-1030