



The Difference is **Precision.**

Recommended Testing for verifying device performance

Intervals of testing are to be set by the Healthcare Provider/Dealer

Test Requirements for:

Easy Comp (PM50).....	2
Easy Vac (PM60).....	3
Power Vac (PM61).....	4
Power Vac Plus (PM63).....	5
Easy Go Vac (PM65).....	6
Easy Air (PM15F).....	7
Easy Air (PM15P).....	8
1600 Series Regulators.....	9
Easy Pulse Conserving Regulators (198705).....	10
Flowmeters.....	11
Oxygen Supply Manifold (PM106).....	12
Vacuum Regulators.....	13-16
Portable Oxygen Concentrator (PM4150).....	17
Portable Oxygen Concentrator (PM4130).....	18
Medical Hose Assemblies.....	19-20
Recommended Test Equipment.....	21

TEST REQUIREMENTS FOR Easy Comp (PM50)

1. Plug device into power source.
2. Switch power to ON.
3. Attach a calibrated pressure gauge to the outlet port.
4. Set pressure to 50 psi.
5. Verify gauge accuracy is within 3% of full scale.
6. Set pressure to maximum. Turn knob on valve assembly completely clockwise.
7. Verify reading on gauge is ≥ 85 psi.
8. Power OFF device.
9. Remove pressure gauge.



TEST REQUIREMENTS FOR Easy Vac (PM60)

1. Plug device into power source.
2. Remove suction canister assembly.
3. Attach a calibrated vacuum gauge to the device inlet port.
4. Switch power to ON.
5. Set vacuum to 15 InHg on calibrated vacuum gauge.
6. Verify device gauge accuracy is within 3% of full scale.
7. Set pressure to maximum. Turn knob on valve assembly completely clockwise.
8. Verify reading on gauge is ≥ 24 InHg.
9. Switch power to OFF.
10. Reattach suction canister assembly.



TEST REQUIREMENTS FOR Power Vac (PM61)

1. Plug device into power source.
2. Remove suction canister assembly.
3. Attach a calibrated vacuum gauge to the device inlet port.
4. Switch power to ON.
5. Set vacuum to 15 InHg on calibrated vacuum gauge.
6. Verify device gauge accuracy is within 3% of full scale.
7. Set vacuum to maximum.
8. Verify reading on gauge is ≥ 24 InHg.
9. Switch power to OFF.
10. Reattach suction canister assembly.



TEST REQUIREMENTS FOR Power Vac+ (PM63)

1. Plug device into power source.
2. Remove suction canister assembly.
3. Attach a calibrated vacuum gauge to the inlet port.
4. Turn device ON.
5. Turn white, selector knob to REG position.
6. Adjust vacuum to 120 mmHG on attached calibrated vacuum gauge.
7. Verify device gauge accuracy is with +/- 6 mmHG
8. Adjust vacuum to maximum.
9. Measured vacuum shall be ≥ 10 InHg.
10. Turn selector knob to INT.
11. Adjust Vacuum until gauge reaches 100 mmHg.
12. Let device run for 2 minutes.
13. Ensure needle cycles intermittently between 0 and 100 mmHg.
14. Turn device off.
15. Reattach suction canister assembly.



TEST REQUIREMENTS FOR Easy Go Vac (PM65)

1. Plug device into power source.
2. Remove suction canister assembly.
3. Attach a calibrated vacuum gauge to filter inlet port.
4. Switch power to ON.
5. Set vacuum to 15 InHg on attached calibrated vacuum gauge.
6. Verify device gauge accuracy is within 3% of full scale.
7. Set vacuum to maximum. (Completely Clockwise).
8. Verify reading on gauge is ≥ 19 InHg.
9. Switch power to OFF.
10. Reattach suction canister assembly.



TEST REQUIREMENTS FOR Easy Air (PM15F)

1. Plug device into power source.
2. Pull out and turn regulator knob fully counterclockwise.
3. Attach a calibrated flow monitor to the outlet fitting.
4. Switch power to ON.
5. Adjust regulator knob until flow monitor reads 10 l/min.
6. Verify reading on device flow gauge is within +/- 1 l/min of flow monitor.
7. Turn regulator knob fully counterclockwise.
8. Switch power to OFF.
9. Remove flow monitor.



TEST REQUIREMENTS FOR Easy Air (PM15P)

1. Plug device into power source.
2. Pull out and turn regulator knob fully counterclockwise.
3. Attach a calibrated pressure gauge to the outlet fitting.
4. Switch power to ON.
5. Turn regulator knob until calibrated pressure gauge is at 50 psi
6. Verify device pressure gauge accuracy is within 3% of full scale.
7. If gauge does not reach 50 psi, Check the device for leaks.
8. Flow should be a minimum of 30.0 l/min.
9. Remove flow gauge.
10. Switch power to OFF.



TEST REQUIREMENTS FOR 1600 Series Regulators

1. Attach regulator to an Oxygen cylinder with a minimum of 500 psi.
2. Ensure the regulator is in the off position.
3. Slowly open cylinder.
4. Attached a calibrated flow gauge to the outlet port of the regulator.
5. Measure flow at each setting.
6. Measured flow should be within +/-10cc for settings of 125cc (1/8 l/min) or less. Verify flow is +/-10% for settings of 250cc (1/4 l/min) or greater.
7. Return the regulator to the off position.
8. Close the cylinder and remove flow gauge.
9. Remove regulator from cylinder.



TEST REQUIREMENTS FOR

Easy Pulse Conserving Regulators (198705)

1. Attach regulator to an Oxygen cylinder with a minimum of 500 psi
2. Ensure the regulator is in the off position.
3. Slowly open cylinder.
4. Attached a calibrated flow gauge to the outlet port of the regulator.
5. Set regulator to the 2 l/min Continuous setting.
6. Measured flow should be +/-10%
7. Remove the flow gauge from the outlet port of the regulator
8. Return the regulator to the off position.
9. To test the pulse settings; attach a cannula and ensure the device triggers when an inspiratory breath is taken.
10. Remove regulator from cylinder.



TEST REQUIREMENTS FOR

Flowmeters

1. Turn control knob fully clockwise to the OFF position.
2. Connect the device to the appropriate gas source. The appropriate gas and pressure are specified on the Flow Tube.
3. Verify that the Float Ball is at the bottom of the Flow Tube.
NOTE: If the Float is not resting at the bottom of the Flow Tube, the device may be leaking. Consult the Troubleshooting Guide.
4. Connect a calibrated flow measuring device to the outlet of the flowmeter.
5. Ensure the flow measuring device is set to the correct gas type. (Oxygen or Air)
6. Divide the scale into three even divisions. (Low, Middle, and High)
7. Set the flow to the Low value by aligning center of Float Ball with indicator line on the Flow Tube.
8. Ensure the accuracy of the flowmeter is within the specifications stated in the user manual.
9. Repeat step 8 & 9 for the Middle & High values.



TEST REQUIREMENTS FOR

Oxygen Supply Manifold (PM106)

1. Attach PM106 O₂ Supply Manifold to a 50 psi (+/- .25 psi) oxygen source.
2. For each of the six valves, perform the following test:
 - A. Attach one end of tubing to the tubing nipple; attach other end of tubing to a calibrated flowmeter.
 - B. Turn Control Knob to 5 l/min setting and check the flow-rate (must be 5 +/-1 l/min)
 - C. Turn knob fully open and check the flow-rate (must be equal to or greater than 18 l/min)



TEST REQUIREMENTS FOR Vacuum Regulators

Models PM3000 / PM3500

1. Connect regulator to a vacuum source capable of 21 InHg @ 100 l/min minimum.
2. Set selector on regulator to “REG” position.
3. Turn the regulator knob clockwise, then counterclockwise and ensure the gauge reaches full vacuum and it returns back to zero, ensuring a smooth correlation between turning the knob and the corresponding needle movement.
4. Connect a calibrated vacuum gauge to the inlet port.
5. Set the regulator gauge to 60 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
6. Set the regulator gauge to 140 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
7. For PM3000 only: Set the regulator gauge to 200 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
8. For PM3500 only: Set the regulator knob fully clockwise and ensure the calibrated vacuum gauge reading is 170 ± 10 mmHg.
9. Turn regulator to OFF position.
10. Disconnect regulator from vacuum source.



TEST REQUIREMENTS FOR

Vacuum Regulators

Model PM3100

1. Connect regulator to a vacuum source capable of 21 InHg @ 100 l/min minimum.
2. Set the selector on the vacuum regulator to the “REG” position.
3. Turn the regulator knob clockwise, then counterclockwise and ensure the gauge reaches full vacuum and it returns back to zero, ensuring a smooth correlation between turning the knob and the corresponding needle movement.
4. Connect a calibrated vacuum gauge to the inlet port.
5. Set the regulator gauge to 60 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
6. Set the regulator gauge to 140 mmHg and ensure the calibrated vacuum gauge is within +/- 5% of full scale.
7. Set the regulator gauge to 200 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
8. Turn regulator to OFF position.
9. Disconnect regulator from vacuum source.



TEST REQUIREMENTS FOR Vacuum Regulators

Model PM3300

1. Connect regulator to a vacuum source capable of 21 InHg @ 100 l/min minimum.
2. Set the selector on the Vacuum Regulator to the “REG” position.
3. Turn the regulator knob clockwise, then counterclockwise and ensure the gauge reaches full vacuum and also that it returns back to zero, ensuring a smooth correlation between turning the knob and the corresponding needle movement.
4. Connect a calibrated vacuum gauge to the inlet port.
5. Set the regulator gauge to 60 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
6. Set the regulator gauge to 140 mmHg and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
7. Set the regulator gauge to 200 mmHg ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
8. Disconnect the calibrated vacuum gauge.
9. Set the regulator gauge to 180 mmHg.
10. Switch to the “INT” position.
11. Timing Module should engage between 6 to 10 seconds.
12. When the device clicks “ON”, needle should return to 180 mmHg and remain steady for 14 to 18 seconds.
13. Turn Regulator to the “OFF” position.
14. Disconnect regulator from vacuum source.
15. If any of the above checks do not meet specification, troubleshoot the device and/or adjust timing.



TEST REQUIREMENTS FOR Vacuum Regulators

Model PM3400

1. Connect regulator to a vacuum source capable of 21 InHg @ 100 l/min minimum.
2. Connect a calibrated vacuum gauge to the inlet port.
3. Set the selector on the vacuum regulator to the “REG” position.
4. Turn the regulator knob clockwise, then counterclockwise and ensure the gauge reaches full vacuum and also that it returns back to zero, ensuring a smooth correlation between turning the knob and the corresponding needle movement.
5. Set the regulator gauge to 60 mmHg (8 KPa) and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
6. Set the regulator gauge to 140 mmHg (18-20 KPa) and ensure the calibrated vacuum gauge reading is within +/- 5% of full scale.
7. Turn the Vac device up to maximum (fully clockwise); verify max vac is 170 mmHg \pm 10.
8. Disconnect the calibrated vacuum gauge.
9. Place the device in the “REG” position and set the vacuum to 120 mmHg.
10. Switch to the “INT” position.
11. Timing Module should engage between 6 to 10 seconds.
12. When the device clicks “ON”, needle should return to 120 mmHg and remain steady for 14 to 18 seconds.
13. Turn Regulator to the “OFF” position.
14. Disconnect regulator from vacuum source.
15. If any of the above checks do not meet specification, troubleshoot the device and/or adjust timing.



Portable Oxygen Concentrator (PM4150)

Checking the Oxygen Purity

Put the EasyPulse POC in Test Mode

1. Ensure the POC is not plugged in and an external battery is not connected.
2. Ensure the POC is in the off position for at least 15 seconds before attempting to put into the test mode.
3. Like a combination lock, Select: 5, then 1, then 3, then off.
4. Set to any flow setting. The device will continuously pulse.
5. The alarm LED on the front will blink yellow and red while in test mode. (Steps 3 & 4 must be completed within 8 seconds)
6. Attach external power source to the POC if needed.
7. In this mode, you can go to any flow setting and test oxygen purity. The POC will pulse as if it was attached to a simulator breathing 20 breaths per minute. O₂ Concentration should be $\geq 87\%$ @ 5 l/min setting within 4 to 6 minutes.
8. To return EasyPulse POC to normal operation, select off position.

Once the device is turned to the off position, you will need to go through the above steps above to get the device back into the test mode.



Portable Oxygen Concentrator (PM4130)

Checking the Oxygen Purity

Put the EasyPulse POC in Test Mode

1. Ensure the POC is not plugged in and an external battery is not connected.
2. Ensure the POC is in the off position for at least 15 seconds before attempting to put into the test mode.
3. Like a combination lock, Select: 5, then 1, then 3, then off.
4. Set to any flow setting. The device will continuously pulse.
5. The alarm LED on the front will blink yellow and red while in test mode. (Steps 3 & 4 must be completed within 8 seconds)
6. Attach external power source to the POC if needed.
7. In this mode, you can go to any flow setting and test oxygen purity. The POC will pulse as if it was attached to a simulator breathing 20 breaths per minute. O₂ Concentration should be $\geq 87\%$ @ 5 l/min setting within 4 to 6 minutes.
8. To return EasyPulse POC to normal operation, select off position.

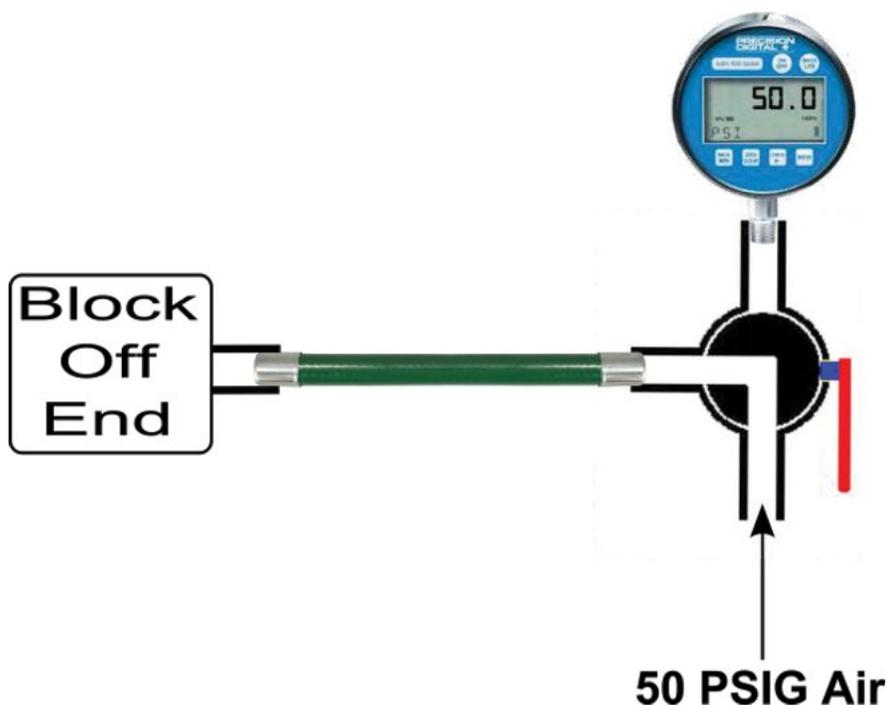
Once the device is turned to the off position, you will need to go through the above steps above to get the device back into the test mode.



TEST REQUIREMENTS FOR Medical Hose Assemblies

Part 1

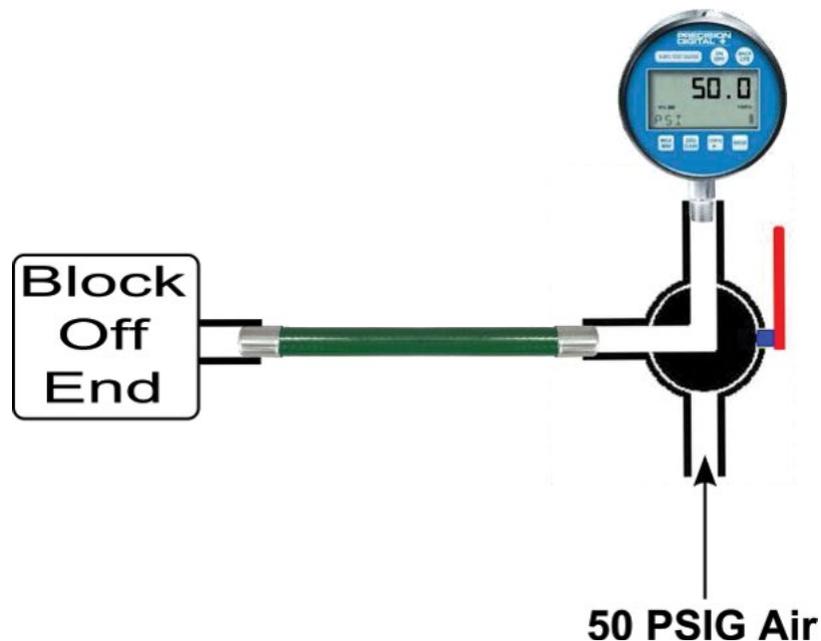
1. Using appropriate fitting(s), block off one end of Hose Assembly to be tested as illustrated.
2. Using appropriate fitting(s), connect opposite end of Hose Assembly to a 3-Way valve as illustrated.
3. Connect a pressure gauge capable of reading 50 PSIG to port of 3-Way valve as illustrated.
4. Connect the remaining port of the 3-Way valve to a 50 PSIG Air pressure source as illustrated.
5. Turn on Air pressure source.
6. Open 3-Way valve to pressurize the hose assembly.
7. Apply Oxy Tec, or equivalent, Leak Detector to each end of Hose Assembly and ensure that NO bubbles are evident.



TEST REQUIREMENTS FOR Medical Hose Assemblies

Part 2

1. With the Hose Assembly still pressurized, turn the 3-Way knob the opposite direction as illustrated.
2. Observe pressure gauge for 10 to 15 seconds.
3. The pressure should remain stable (no loss).
 - A. If the pressure drops and/or bubbles are detected, the Hose Assembly fails the leak test.
4. Disconnect \ turn off Air pressure source.
5. Remove fitting(s) connecting the Hose Assembly to the 3-Way valve.
6. Remove fitting(s) blocking opposite end of Hose Assembly.



Recommended Test Equipment



Flow Gauge/Monitor

The TSI Model 4040 Mass Flowmeter can be used for a multitude of gas flow measurement applications. Whether measuring gas flows in a laboratory or manufacturing setting, TSI general-purpose mass flowmeters provide accurate results with multiple data output options. The display versions come complete with accessories making setup and operation fast and convenient.

www.tsi.com



Vacuum Gauge

Wika 332.34 series industrial quality precision test gauges measure Vacuum within +/- 0.25% of span. Solid front, blow-out-back rugged thermoplastic case meets safety requirements of ASME B40.100. Internal parts and process connection are made of 316 stainless steel, providing excellent corrosion resistance. The dial has a reflective mirrored band with a micrometer adjustable knife-edge pointer for easy-to-read accurate pressure readings.

www.wika.com