

INOvent® Monthly Checkout

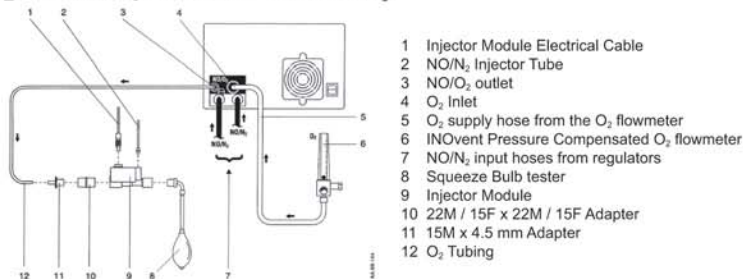
For details of this procedure reference the Operation and Maintenance Manual page 10-7 Monthly System Checkout

Important: This guide is provided for general information only and is not a substitute for the Operation and Maintenance Manual. Refer to the manual for detailed information. 24 hour Technical Support Tel. 877.566.9466

Step I: High Pressure and Low Pressure Leak Test

- Turn the INOvent delivery system ON and make sure the buzzer and speaker sound. Wait until monitor displays numeric values for NO/NO₂/O₂ (make sure manual bagging flowmeter is turned off).
- Perform high pressure leak test.
 - Inspect all gas connections, verify the white Kel F tip is in place and not damaged, then connect the regulator to the test gas cylinder.
 - Open, then close cylinder valve. Monitor pressure gauge for 30 seconds for any signs of leakage.
 - Repeat the process on the second regulator assembly.
- Perform low pressure system leak test. Assemble connectors and tubing as shown in Diagram #1.
 - Squeeze bulb tester several times. The bulb should stay collapsed for 30 seconds.

Diagram #1 (INOvent - rear view)



Note: The pressure drop leak test will not detect leaks at the cylinder valve outlet connection because of the check valve in the regulator hose. If a leak is suspected, see the O&M Manual Section 13/ Appendix B.

Step II: System Alarm Tests

- Ensure the INOmax regulator is pressurized and the cylinder valve is closed.
- Set the wall/tank oxygen flow to 15 L/min.
- Purge INOvent Delivery System.
 - Set the NO to its maximum concentration (80 ppm).
 - Cylinder gauge pressure should drop slowly to 0 psi.
 - Measured NO₂ will increase (>0.2 ppm), and then decrease as NO₂ is purged from the system.
 - "Low NO/N₂ Pressure" and the "Delivery Failure" alarms will occur.
- Perform electronic shutdown (cylinder valve should be open).
 - Decrease the wall/tank oxygen flow rate to 5 L/min.
 - Set the NO dose to 5 ppm.
 - Disconnect the injector tube from the INOvent front panel outlet.
 - Disconnect the sample line from the sample tee.
 - Hold the monitor sample line close to the NO outlet.
 - When monitored value exceeds 100 ppm, the INOvent system should shut down.
 - Reset the system by cycling the power OFF then ON, reconnect all the fittings.

Assemble connectors and tubing as shown.

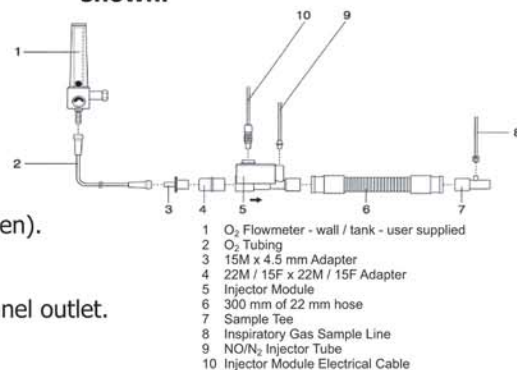


Diagram #2

Step III: Calibration and Monitoring Alarms

Assemble connectors and tubing as shown in Diagram # 2.

Obtain INOcal calibration cylinders and accessories.

- Do a low range calibration.
- Ensure oxygen flow is set to 5 L/min.
- Perform oxygen sensor high range calibration.
 - Set the "High O₂" alarm to 95%. Make sure the alarm occurs, then return alarm to its previous setting.
- Perform NO sensor high range calibration.
 - Set the "High NO" alarm below 45 ppm, make sure the "High NO" and "Low O₂" alarms occur, then return the alarm to the previous setting.
- Do an NO₂ sensor high range calibration.
 - Exit the calibration window and make sure the "High NO₂" alarm occurs.
 - Reconnect the sample line to the sample tee.
 - Go to the alarms menu and set the "Low NO" alarm to 5 ppm and confirm that the alarm occurs.
 - Return the alarm to its previous value.

Step IV: INOvent Delivery System Performance

Assemble connectors and tubing as shown in Diagram # 2.

- Set the wall/tank oxygen flow to 15 L/min.
- Set the NO doses as listed in table below and check against monitored values.

Set NO Dose	10 ppm	40 ppm
Acceptable Monitored NO Values	2-18 ppm	32-48 ppm
Acceptable Monitored NO₂ Values	<1.5 ppm	< 1.5 ppm

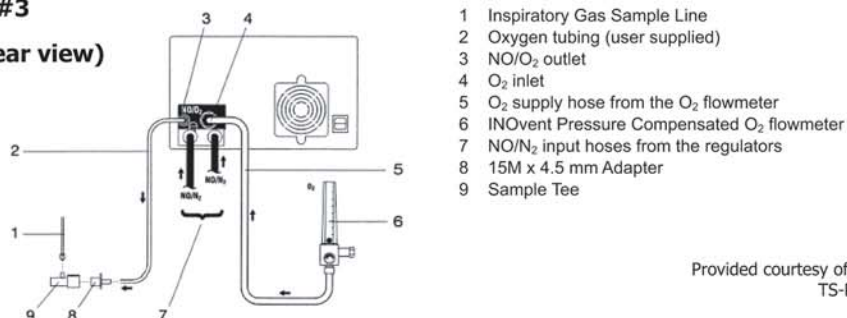
(allow 2-3 minutes at each dose to stabilize)

Step V: Manual NO Delivery Performance

Assemble connectors and tubing as shown in Diagram # 3.

- Turn the oxygen flow to the manual bagging system to (15 L/min).
 - Observe ball float rise on the front panel.
 - Be sure the NO monitored value is 20 ppm ± 8 ppm.
- Reduce the oxygen flow to 1 L/min and verify that the ball float drops.

Diagram #3
(INOvent - rear view)



Provided courtesy of INO Therapeutics
TS-PRD-0007 Rev. 3.0