Parker Hannifin Corporation
245 Township Line Road
Hatfield, PA 19440 USA
Office 215-723-4000

Matrx MDM® Nitrous Oxide/Oxygen Sedation Flowmeter Quick Start Guide

1. Pre-Check

Note: To perform these tests, gas supply cylinders or gas supply shutoff valves are required in order to isolate the gas supply form the device. Attempting to perform these tests with central pipeline supplied gas without a local shut off mechanism is not recommended.

WARNING: Proper inspection and maintenance of this device is essential to prevent gas leaks. All hoses, fittings, and connections should be inspected regularly, and all leaks should be repaired immediately.

WARNING: If precheck test cannot be executed successfully, do not use this device and contact distributor.

Failsafe Test

1	Open N_2O and O_2 gas supply
2	Set **Mixture Dial** to 50%.
3	Set **Flow Control Knob** to 5 LPM.
4	Shut off O_2 gas supply to MDM Flowmeter.
5	Confirm N_2O and O_2 flowmeter ball floats fall at the same rate.
6	If ball floats do not fall at the same rate, contact your authorized distributor for service and troubleshooting.

Total Flow Test

1	Adjust **Mixture Dial** to 50% O_2 position.
2	Adjust **Flow Control Knob** until O_2 and N_2O flowmeter tubes show approximately 5 LPM for each gas.
3	Without adjustment of the **Flow Control Knob**, adjust the **Mixture Dial** to lowest O_2 percent position, then to the 100% O_2 position.
4	While adjusting the **Mixture Dial** to various O_2 positions, total combined flowrate must be 10 LPM ±0.5 LPM.
5	If total combined flowrate is not 10 LPM ±0.5 LPM, contact your authorized distributor for service and troubleshooting.

Non-Rebreathing Valve Test

1	Turn off flowmeter by pressing the **On/Off Switch**.
2	Connect a breathing circuit to the bag tee. Disconnect the nasal hood from the rest of Breathing Circuit.
3	Blow into the inhalation line of the breathing circuit, the breathing bag should not inflate.
4	If breathing bag inflates, contact your authorized distributor for service and troubleshooting.

100% O_2 Test

1	Adjust **Mixture Dial** to 100% O_2 position, and rotate **Flow Control Knob** until 10 LPM is indicated on O_2 flowmeter tube.
2	Observe N_2O tube and ball float. The ball float may show some indication of motion, but the top of the ball float must remain below the 1 LPM mark on the tube.
3	If the N_2O ball float floats above 1 LPM, contact your authorized distributor for service and troubleshooting.

O_2 Flush Test

1	Press and hold **O_2 Flush Button**.
2	Observe that the breathing bag quickly inflates.
3	If the breathing bag does not inflate quickly, contact your authorized distributor for service and troubleshooting.

Emergency Air Intake Valve Test:

1	Turn the flowmeter off by pressing the **On/Off Switch**.
2	Connect a breathing circuit to the bag tee. Disconnect the nasal hood from the rest of breathing circuit.
3	Remove the breathing bag from the bag tee and create a seal by placing hand over the bag port on the bag tee.
4	Inhale through the breathing circuit. Air intake valve should open allowing you to breath in room air.
5	If you can not breahting in room air, contact your authorized distributor for service and troubleshooting.

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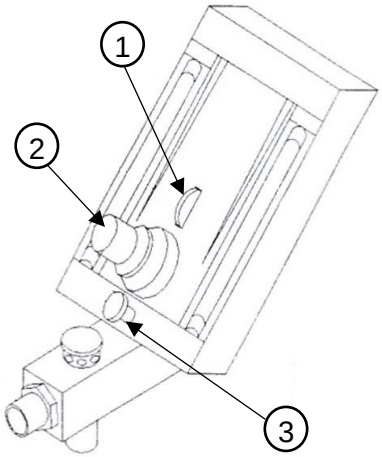
2. Operating Instructions

1	Adjust the **Mixture Dial** (1) to 100% O_2.
2	Set the desired concentration of N_2O by adjusting the **Flow Control Knob** (2) on the front of the device. It is recommended to start with a low percent of N_2O and titrate to the desired effect on the patient.
3	Before the procedure starts, if desired, press the **O_2 Flush Button** (3) to pre-fill the breathing bag (if connected) with 100% O_2 ensuring the patient's first breath is not from an empty breathing bag.
4	Place breathing circuit nasal hood on patient and instruct the patient to inhale through the nasal hood. Patient should also be instructed to exhale through the nasal hood to achieve effective scavenging.



5	When conditions call for the delivery of 100% O_2: **a)** Reduce the **Flow Control Knob** on the flowmeter to 0% N_2O. **b)** If using a directional Y valve, rotate the lever to full-face mask line. **c)** Control the desired flow of 100% O_2 through the **Flow Control Knob** on the flowmeter. **d)** Confirm delivery of 100% O_2 by monitoring locations of ball floats in the flowmeter tubes.
6	If patient shows signs or communicates conditions of over-sedation, empty the breathing bag by squeezing it and then press and hold **O_2 Flush Button** to quickly fill the breathing bag with 100% O_2.
7	At The completion of the procedure, remove the breathing circuit from the patient. Turn **Flow Control Knob** to zero. Dispose of any single use items (such as nasal hood or breathing circuit).
8	Always turn O_2 and N_2O cylinder valves OFF (for cylinder gas supple configurations) or disconnect the supply lines from the appropriate outlet stations (for pipeline gas supply configurations) to avoid unintentionally depleting source gases.

3. Cleaning

The DMDM Flowmeter must be cleaned between each use in order to prevent the spread of infections. Cleaning the device has been validated with Super Sani-Cloth™ Germicidal wipes.

WARNING: The following warning applies to the device and any device's components and accessories:

- Do not spray directly with disinfecting chemicals.
- Do not immerse in water, sanitizer, cleaning solution, or any other liquid.
- Do not sanitize or wipe the inside of the fittings, gas supply hoses, or connection ports.
- Always ensure the device and device's components and accessories are completely dry before use.

1	Disconnect and dispose of any single use breathing circuit and/or single use nasal hood (if attached). For cleaning instructions of re-useable breathing circuit and/or nasal hood refer to breathing circuit Instructions for Use.
2	Using a Super Sani-Cloth™ Germicidal wipe, thoroughly wipe down the MDM Flowmeter until all visible dirt and soil is removed. Take extra care to wipe the touch control buttons as these are the most handled areas of the device. A soft bristled brush may be used to loosen any soil that is difficult to remove.
3	Using a Super Sani-Cloth™ Germicidal wipe, thoroughly wipe down the gas supply hoses and fittings until all visible dirt and soil is removed. Do not wipe the inside of the hoses or fittings as this may deposit cleaning agents into the breathing pathway of the device.
4	The **bag port**, **breathing circuit port**, and **emergency air intake valve** should not be exposed to the cleaners or wiped to prevent moisture from entering the device. Avoid wiping and applying cleaner to the inside of the ports and the valve.

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4. Safety Information

WARNING: This product can expose you to chemicals, including lead and formaldehyde, which are known to the State of California to cause cancer, birth defects, or other reproductive harm. For more information, go to www.P65Warnings.ca.gov.

WARNING: This product contains the presence of SVHCs, phthalates/DEHPs, CMR, and EDC in excess of 0.1% weight-by-weight material composition. For more information, including precautionary measures for at risk patients, refer to full instructions for use for more information (Form 10049600-ENGLISH).

WARNING: Do not use this device for the administration of general anesthesia or as part of, or in conjunction with, a general anesthesia administration system.

WARNING: Workers exposed to excessive N_2O may suffer harmful effects. The healthcare professional is responsible for employing proper techniques, such as scavenging, room ventilation, system maintenance, and patient compliance to reduce exposure. (ACGIH recommends a Threshold Limit Value of 50 parts per million over an 8-hour time-weighted average).

WARNING: Always use clean, dry, medical grade gases and never oil or grease any part of the device.

WARNING: Do not change the connection fitting type or diameter of the supply hoses. The Diameter Indexed Safety System (DISS) is designed to prevent misconnection of N_2O and O_2 supply lines.

WARNING: To minimize the risk of fire or explosion:

- Always ensure cylinder valves are clear of dust and dirt prior to connection. One method to clear dust and dirt is to briefly "crack" the cylinder valve open to blow out any debris in the line before installing the cylinder.
- Do not discharge the gas at any person or flammable material.
- Always turn on Cylinder Valves slowly and fully.

WARNING: The user should observe the patient to prevent over sedation in the event of an O_2 failsafe malfunction or a crossed lines situation. If a patient becomes overly sedated when being delivered 100% O_2, immediately remove the mask and encourage mouth breathing. This is an indication of a failsafe malfunction or crossed lines. In this case, only deliver pure O_2 from an independent source.

WARNING: Do not modify this equipment without authorization of the manufacturer

WARNING: Do not use or replace any components or accessories, except those specified in these instructions for use and installation guide.

5. Representation

	Legal Manufacturer	Parker Hannifin Corporation Precision Fluidics Division 245 Township Line Road Hatfield, PA 19440 USA Office: (215) 723-4000
EC REP	**European Communities Authorized Representative**	EMERGO Europe Westervoortsedijk 60 6827 AT Arnhem, The Netherlands Tel: +31 70 345 8570
CE 2862	**Conformité Européenne (CE) Mark**	Compliance with conformity assessment on quality management system and technical documentation per Regulations (EU) 2017/745 for Medical Device, Annex IX Chapters I & III
CH REP	**Switzerland Authorized Representative**	Medenvoy Gotthardstrasse 28 6302 Zug Switzerland +41 41 562 01 42

Visit our website: https://www.porterinstrument.com/ for additional information. To download Full Instructions for Use: visit https://www.porterinstrument.com/dental-support Choose "Flowmeters" from the dropdown within the "Product Download" section.

Refer to 10049600-ENGLISH for complete instructions and safety information.

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Rx Only