

Matrix

by MIDMARK

Canadian

FLO-SAFE

Manifold System

Pre-Installation Kit

Installation Kit

#91307612

#91307613

Midmark

60 Vista Drive

Versailles, Ohio 45380

1-800-Midmark (1-800-643-6275)

www.midmark.com

Reference Only

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Components designed to comply with the CSA 27396.1-06

Important: Installation must be performed by qualified Technicians in accordance with local codes.

Warning: To avoid possibility of cross-connection of oxygen and nitrous oxide, FLO-SAFE components use a diameter indexing system. All oxygen tubing is 1/2" O.D. and nitrous oxide tubing 3/8" O.D. It may be necessary to transition to a larger pipe size when connecting to the distribution pipeline. When doing so maintain proper gas line identification.

Caution: When installing Zone Valve and isolation valve, protect the valve body from the heat damage by wrapping the connecting tails with wet rags during brazing.

1.1 KIT CONTAINS

The Canadian FLO-SAFE (CFS) Manifold System Installation Kit is available in two different configurations based on the zone valve mounting arrangement, being recessed or surface mount. Installation kit with recessed zone valve, p/n **91307612** consists of the following:

Description	Part No.	Qty.
Manifold Installation Kit (includes mounting plate, 100' of signal and hardware package)	40116000	1
Service Isolation Valve	30111600	1
Zone Valve Shut-off Box (Recessed)	91305653	1
Switch Box	30149300	1
Switch Box Support (NLA)	93305355	2
Bushing (NLA- No Longer Available)	93305404	1
2-20 Cable	92305263	1

Installation Kit, with surface mount zone valve, p/n **91307613** consists of the following:

Description	Part No.	Qty.
Manifold Installation Kit (includes mounting plate, 100' of signal and hardware package)	40116000	1
Service Isolation Valve	30111600	1
Zone Valve Shut-off Box (Surface)	91305652	1
Switch Box	30149300	1
Switch Box Support (NLA)	93305355	2
Bushing (NLA- No Longer Available)	93305404	1
2-20 Cable	92305263	1

1.2 INSTALLATION OF MANIFOLD MOUNTING PLATE

See Figure 1 to select a location for the manifold mounting plate. The location selected must be within 36 inches of the proposed location for the gas cylinders because 36 inch lines are provided to connect the FLO-SAFE Manifold to the cylinders. Mount the bottom edge of mounting plate 5 feet above the floor.

NOTE: UP label indicates proper orientation

1.2.1 Drywall Mounting

1. Use the mounting plate as a template. Mark locations of the four spacers on back of the four spacers on back plate and the four corner holes.
2. Drill 1" diameter clearance holes through drywall at each spacer location so mounting plate fits flush to wall.
3. Drill ¼" holes at corner holes. Insert hollow wall anchors in corner holes. Attach plate using anchors.

1.2.2 Wall Stud Mounting

1. Use mounting plate as template. Mark the upper and lower rear spacer holes.
2. Attach mounting plate to stud using wood screws.

1.2.3 Crossmember Mounting

1. Use mounting plate as a template. Mark the left, right and lower rear spacer holes.
2. Attach mounting plate using wood screws.

1.3 INSTALLATION OF THE ZONE VALVE

1. Mount Shutoff Box Assy as shown in figure 2.

Note: Do not install pressure switch assemblies or open packages at this time. Place packaged assemblies in shutoff box.

2. Run (2) four conductor signal cables from zone valve box to manifold mounting plate.
3. Feed both cables through plastic bushing at upper right corner of mounting plate.
4. Replace plaster shield in Zone valve box.

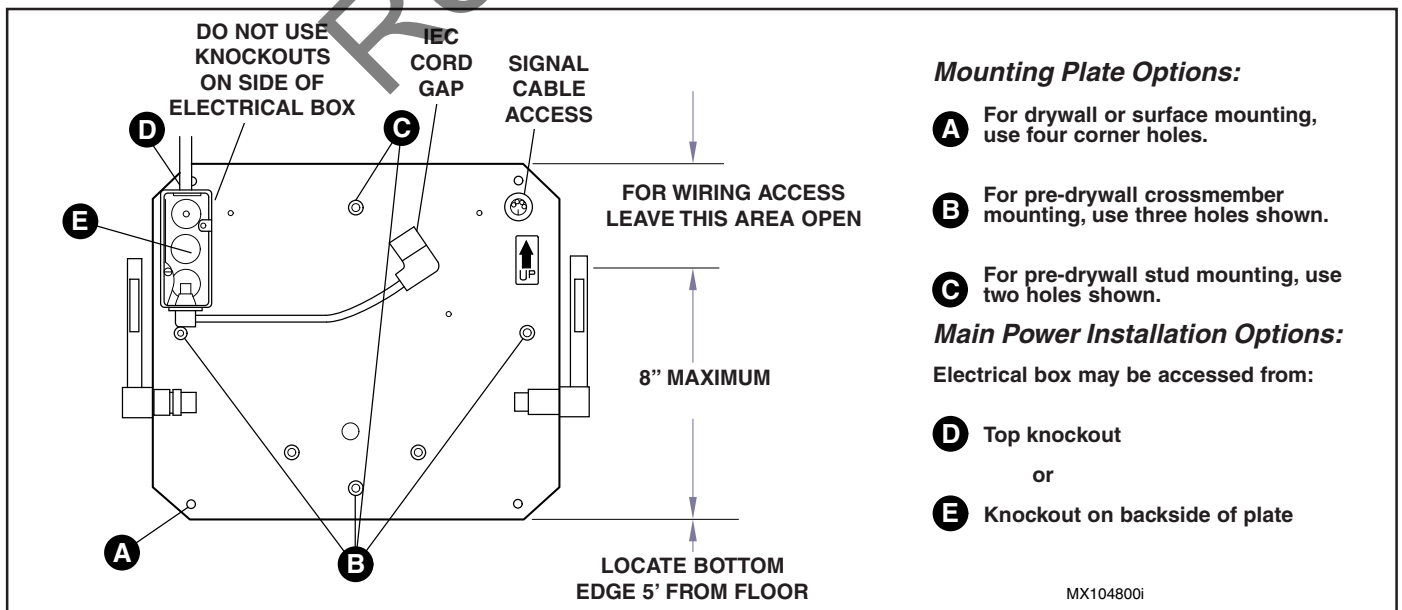


FIGURE 2. Installation Options for Manifold Mounting Plate and Main Power Installation

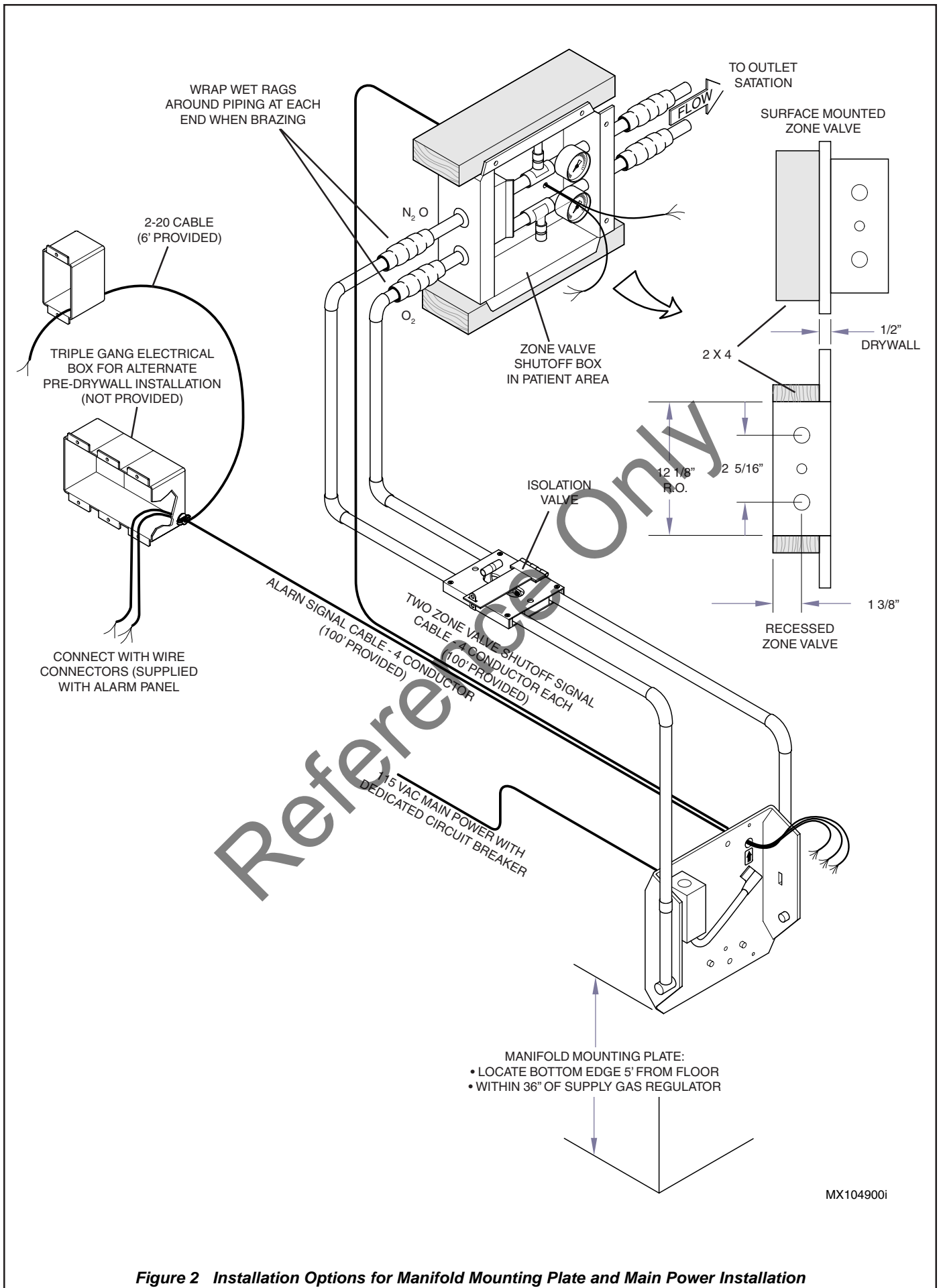


Figure 2 Installation Options for Manifold Mounting Plate and Main Power Installation

SECTION 2.0

PIPING SYSTEM

2.1 PIPING SYSTEM INSTALLATION

Install O₂ and N₂O copper tubing (shown in figure 2) as follows:

1. Leave ½" of lateral flexibility in piping at mounting plate pigtails to allow for installation of the FLO-SAFE manifold.
2. When installing Zone Valve and isolation valve, wrap wet rags around piping to prevent heat damage to the valve body. See figure 2.

Important: The following information is offered as a guide and conforms to CSA Z7396.1-06 as it applies to dental facilities and small, non-hospital based nitrous oxide/oxygen piping systems.

2.1.1 Piping Materials and Brazing Methods

1. Piping shall conform to ASTM B819, type K or L copper tubing, cleaned for oxygen service and capped prior to installation.
2. Copper to copper joints are to be brazed without the use of flux.
3. Minimum pipe sizes shall be:
 - Oxygen gas 12.5 mm (1/2" nom trade size)
 - Nitrous oxide 6.6 mm (1/4" nom trade size)
 - Vacuum 19 mm (3/4" nom trade size)

4. While brazing, purge piping system with low flow, oil-free, dry nitrogen to prevent oxide formation.

2.1.2 Testing the Piping System

After brazing, test piping:

1. Pressurize piping system to 150 psig with oil-free, dry nitrogen to leak test.
2. Allow piping system to remain pressurized at 150 psig for 24 hrs with source shutoff valve closed. Allowable pressure changes shall be those caused by ambient temperature changes.

2.1.3 Purging the Piping System

After successful completion of pressure testing, purge the piping system:

1. Blow piping system clear with oil-free dry nitrogen.
2. Purge piping systems with intermittent high flow oil free, dry nitrogen to remove any particulate matter. Flow each outlet fully until purging process produces no discoloration in a white cloth.
3. Cap piping system. No further brazing shall be performed.
4. If further brazing is required, leak test and purge must be repeated.

SECTION 3.0

ELECTRICAL CONNECTIONS

3.1 Supply Circuit Connection

All electrical connections must be made to local codes by a licensed electrician. A dedicated 15A, 115VAC, 14 gauge supply circuit is required. This must be a dedicated circuit due to the emergency system requirements, rather than the amperage demands, of the FLO-SAFE System.

To install the supply line:

1. Feed dedicated branch circuit line to Manifold Mounting Plate electrical box
 - For surface-mounted power line, use knockout on top of box.
 - For in-wall power line, use rear center knockout.

Note: Do not use side knockouts on electrical box"

2. Attach bushing of supplied Romex connector to incoming cable. Insert connector through chosen knockout and secure with connector locknut.

3. Connect supply hot line to black or brown wire using wire connector provided.
4. Connect Supply neutral line to white or blue wire using wire connector or provided.
5. Connect supply ground to ground post inside electrical box. Attach ground of Manifold power cord to same post using #6-32 nut provided.
6. Attach cover to box.
7. To facilitate future servicing, label dedicated Manifold System supply circuit at service panel.

3.2 Low Voltage Signal Cable

Provided is 300' of 4 conductor signal cable. Two equal lengths run between the Manifold Mounting Plate and Zone Valve Shutoff Box. A third length between the Manifold mounting Plate and the Alarm panel (see figure 2) Also provided is a 6' length of 2 conductor cable which connects the alarm panel to the 90 dB remote auditory alarm. Connection details found in the FLO-SAFE Manifold & Alarm System Installation & Operation Manual #10376600.

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FM 40049



145 Mid County Drive
Orchard Park, New York 14127
800 MIDMARK [643-6275] (Customer Service)
888 279 1260 (Technical Service)
www.midmark.com