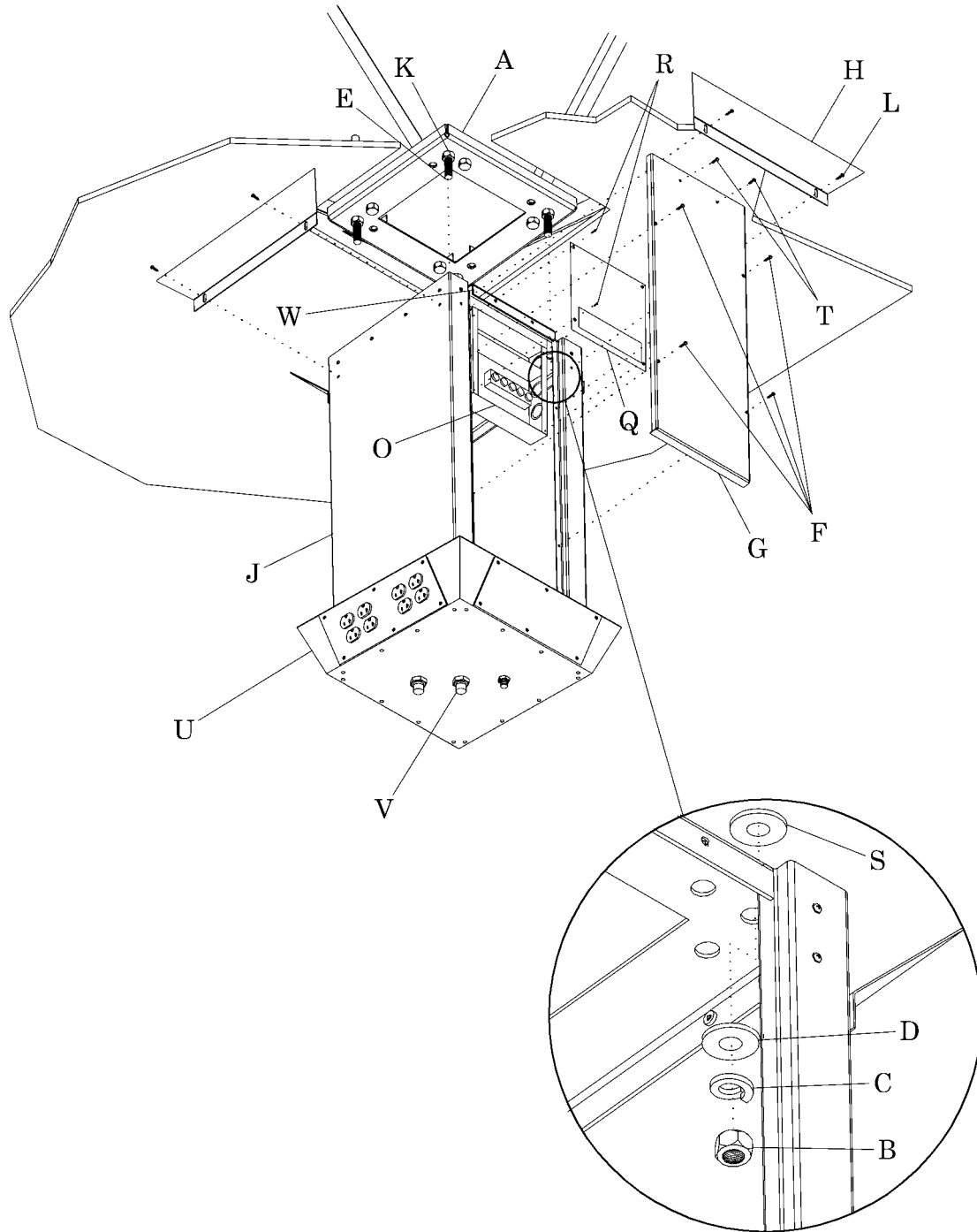


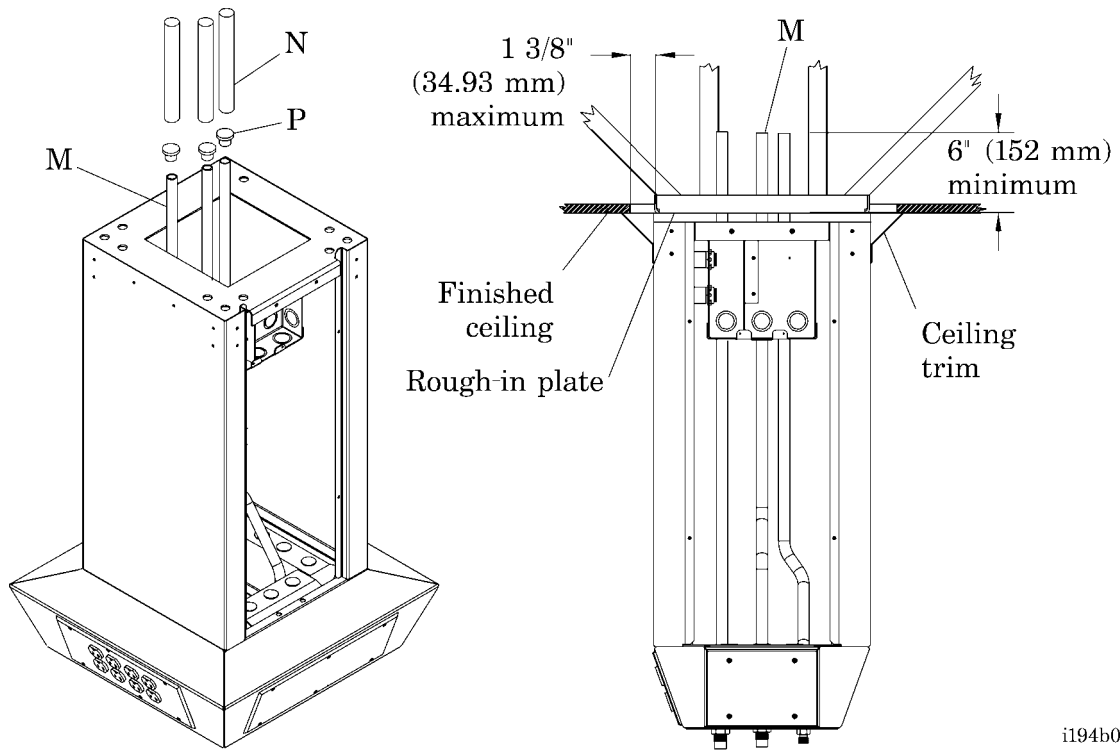


**Figure 1. Ceiling Column to Rough-in Plate Installation**



i194b001

**Figure 2. Medical Gas, Vacuum, and Electrical System Installation**



i194b002

**Table 1. Gas Labels and Color Codes for the United States**

Gas Service	Hose Color	Label
Oxygen	Green	Black lettering, green background
Nitrous oxide	Blue	White lettering, blue background
Air	Yellow	Black lettering, yellow background
Vacuum	White	Black lettering, white background
Evacuation	Purple	White lettering, purple background
Nitrogen	Black	White lettering, black background
Carbon dioxide	Gray	Gray lettering, white background
Helium	Brown	Brown lettering, white background

**Table 2. Gas Labels and Color Codes for Canada**

Gas Service	Hose Color	Label
Oxygen	White	Green lettering, white background
Nitrous oxide	Blue	White lettering, blue background
Air	Black/white	Black and white alternating lettering and background
Vacuum	Yellow	Black lettering, yellow background
Evacuation	Purple	White lettering, purple background
Nitrogen	Black	White lettering, black background
Carbon dioxide	Gray	Gray lettering, white background
Helium	Brown	Brown lettering, white background

- Using a phillips head screwdriver, loosen the four screws (F), and remove the access panel (G).

**NOTE:**

The four screws will remain with the access panel.

- Remove the plastic caps (P) from the riser tubes (M) (see figure 2 on page 3).
- Prepare the gas riser tubes (M) and facility tubes (N) for brazing according to the latest edition of the National Fire Protection Association (NFPA) 99.



**CAUTION:**

Do not damage the fittings on the bottom of the bullnose when installing the ceiling column in the lift. Equipment damage can occur.

12. Install the ceiling column (J) with a lifting device able to safely lift the ceiling column into position (see figure 1 on page 2):
  - Make sure the ceiling column (J) is stable in the lift, and the bullnose (U) is nearest the floor.
  - Make sure the ceiling column (J) is not sitting on any connectors (V).

## Installation



**WARNING:**

Follow the product manufacturer's instructions for operating the lift. Failure to do so could result in personal injury or equipment damage.

1. Following the lift manufacturer's instructions, carefully lift the ceiling column (J) up close to the rough-in plate (A).
2. Align the four washers (S) with the four holes at each corner of the ceiling column (J).
3. Make sure all the riser tubes (M) are aligned with the correct facility drops (N) (see figure 2 on page 3).

**NOTE:**

The riser tubes are labeled and color-coded for the medical gas type required on each tube. Table 1 on page 4 and table 2 on page 4 describe the color codes.

4. Lift the ceiling column (J) up until the four bolts (E) on the rough-in plate (A) are fully through the ceiling column bulkhead (W) (see figure 1 on page 2).



**WARNING:**

Do not work under an unsupported load. Doing so could result in personal injury or equipment damage.

5. If necessary, install temporary supports under the ceiling column (J) to make sure the ceiling column does not fall.
6. Install the washer (D), lockwasher (C), and nut (B) on each bolt (E).



**CAUTION:**

Make sure all four nuts are completely tightened to prevent damage to the equipment.

7. Using a ½" drive ratchet, ½" drive extension, and ¾" deep socket, make sure the four nuts (B) are tight, and the lockwasher (C) is fully collapsed.
8. Using a level, make sure the ceiling column (J) is plumb.
9. Remove the temporary supports and the lift that you used to hold the ceiling column (J).



**WARNING:**

Do not cross-connect the medical gas and/or vacuum system lines. Personal injury and equipment damage could occur.

10. Make sure the medical gas and/or vacuum systems from the ceiling column (J) are aligned with the corresponding facility gas type and/or vacuum outlet. Table 1 on page 4 and table 2 on page 4 describe the color codes.



**CAUTION:**

Do not expose the adjacent electrical wires or valves in the gas outlets to excessive heat. Equipment damage could occur.

11. Wrap a wet sponge or cloth around the riser tubes (M) and facility drops (N) beyond the joint to prevent heat conduction into the interior of the column or ceiling (see figure 2 on page 3).
12. Braze the riser tubes (M) to the facility drops (N) in accordance with the latest edition of the NFPA 99.
13. After the sponge or cloth has had time to cool, remove it from around the brazed area.
14. Test the brazed joints for leaks according to the latest edition of the NFPA 99.
15. If you find leaks during the test, do the brazing process in step 12 through step 14 until there are no leaks.
16. Using a phillips head screwdriver, remove the four screws (R) and the cover plate (Q) from the junction box (O) (see figure 1 on page 2).
17. Following all local codes and the National Electrical Code®<sup>1</sup>, use the as-built wiring diagram supplied with the ceiling column (J) to connect electrical wires to the junction box (O) as required.
18. Check the continuity of the electrical systems to the applicable codes and regulations.

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1. National Electrical Code® is a registered trademark of the National Fire Protection Association, Inc.

## Operational Test

1. Check the voltage of the electrical systems according to all of the applicable codes and regulations.
2. Verify that the correct medical gases are connected to the correct fittings (V) on the bullnose (U).

**NOTE:**

The bullnose is shown with duplex receptacle options. Refer to the as-built drawings for the configuration ordered; optional equipment varies with each order.

3. Verify that all other customer options are fully functional and installed correctly.

## Close-up

1. Install the cover plate (Q) on the junction box (O).
2. Using a phillips head screwdriver, tighten the four screws (R) installed to secure the cover plate (Q) on the junction box (O).
3. Install the access panel (G) on the ceiling column (J) as follows:
  - a. Tighten the four screws (F) to hold the access panel (G) on the ceiling column (J). Leave the access panel loose enough to align the two holes for screws (T).
  - b. Using a phillips head screwdriver, fully tighten the screws (T) in the ceiling column (J).
  - c. Using a phillips head screwdriver, fully tighten the screws (F) and the screws (T) to secure the access panel (G).
4. If necessary, remove the eight screws (L) and four pieces of the ceiling trim (H) from the shipping package.
5. Align the slots in the ceiling trim (H) with the corresponding holes in the ceiling column (J).
6. Install the two screws (L), and adjust the ceiling trim up until it touches the ceiling.
7. Using a phillips head screwdriver, tighten the two screws (L) in each piece of ceiling trim (H).

**NOTES:**

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