

**Subject: EpiCare™ Manual Telescoping Ceiling Column (P680CTL01)
Installation Instructions**

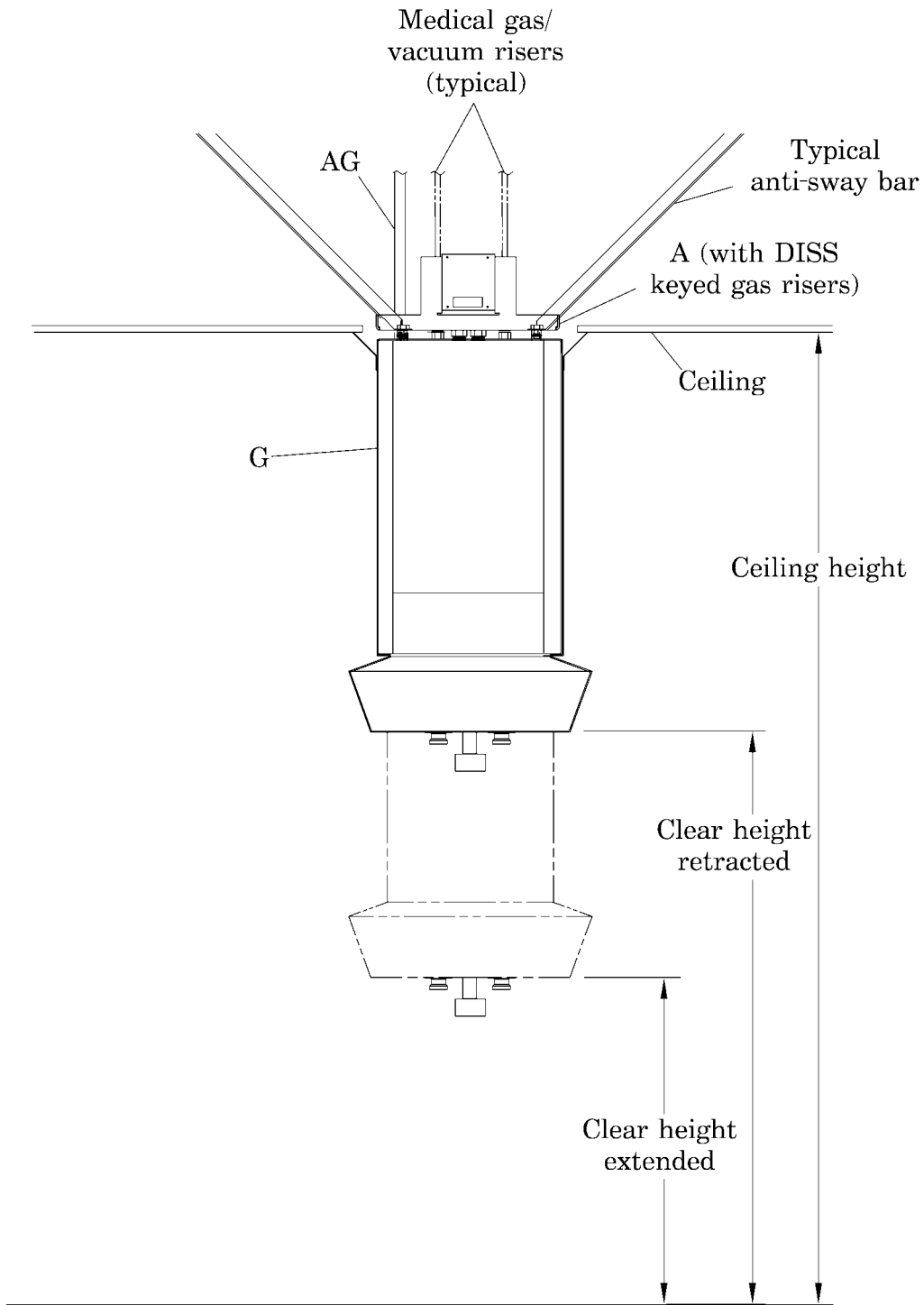
Tools required:

1/2" drive ratchet	3/4" deep socket
1/2" drive extension (6" - 8" long)	Level
Phillips head screwdriver	Portable lift
Brazing equipment and materials	Ladder
Table or raised platform	Wedge, ties, or a block

Setup

1. Make sure the rough-in plate has been installed correctly. Refer to the [EpiCare™ Telescoping Ceiling Column Rough-In \(P684TP\) Installation Instructions \(is197\)](#).
2. Make sure the manual telescoping ceiling column (G) is in the proper room for its length and that other equipment is installed around the ceiling column.

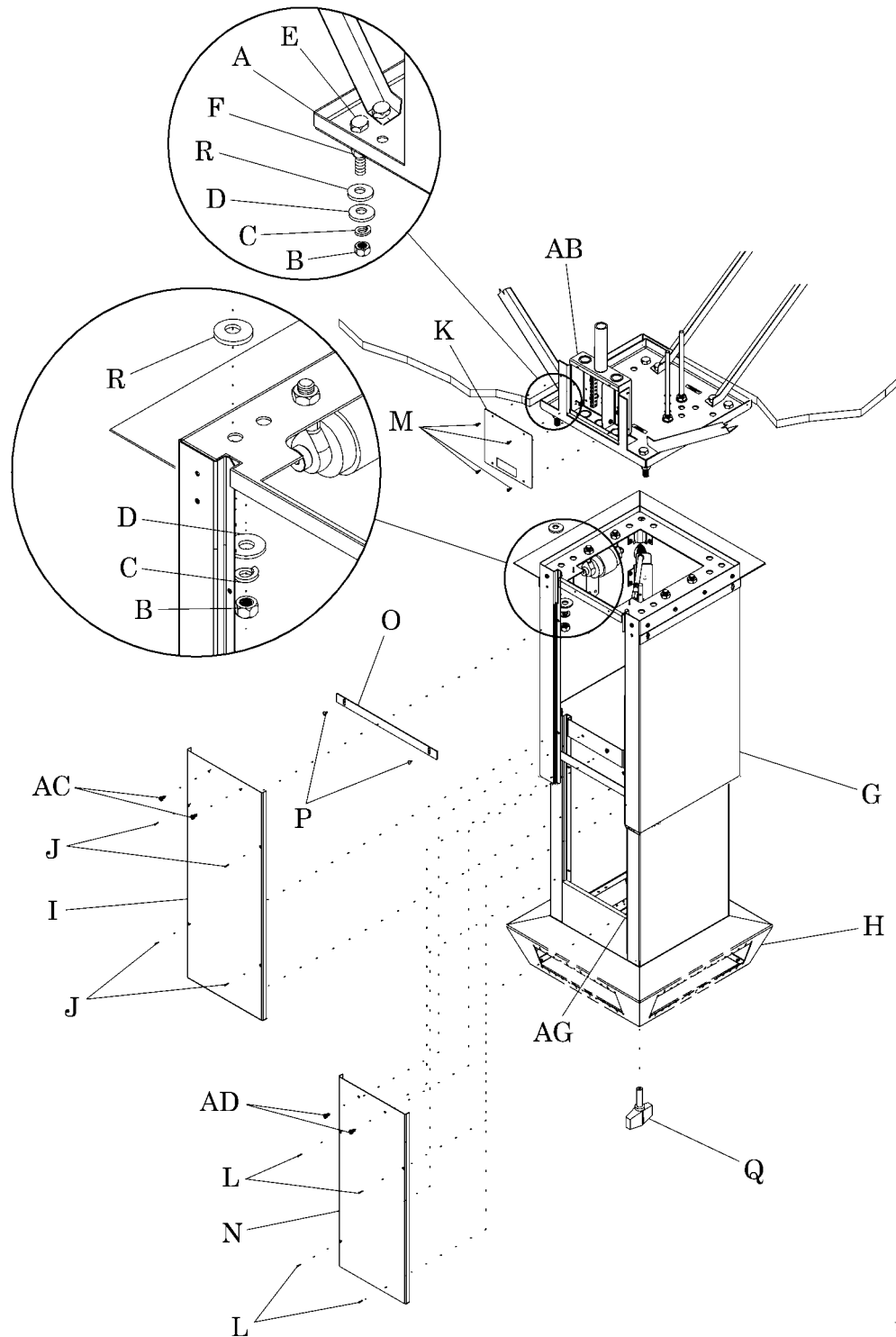
Figure 1. Setup Information



i198d004

- Remove the ceiling column (G), screws (P), and ceiling trim (O) from the shipping container (see figure 2 on page 3).

Figure 2. Installation Information



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NOTE:

The ceiling column is shipped in the upright and retracted position.

4. When determining how to position the ceiling column (G), consider the following:

NOTE:

A typical installation puts the side with the access panels opposite to the surgical area.

- Avoid interference between the access panels (I) and (N) and other equipment.
- If you need to determine the orientation of services on the bottom side of the bullnose (H), consult the as-built drawings.
- Align the access panels (I) and (N) with the label located on the rough-in plate (A).
- For the medical gas color codes used on the connections between the ceiling column (G) and the rough-in fittings, see table 1 on page 4 and table 2 on page 5.

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

5. Using a ½" drive ratchet and ¾" deep socket, remove the nut (B), lockwasher (C), washer (D), and washer (R) from the bolt (E) on the rough-in plate (A).
6. Repeat the process for the other three bolts (E). Keep the nuts, lockwashers, and washers for installation later.
7. Make sure the nut (F) remains securely tightened to the bolt (E).



WARNING:

Ensure the ceiling column is stabilized when using a table or raised platform. Failure to do so could result in personal injury or equipment damage.

8. Using a table or a raised platform, lay the ceiling column (G) on a side with the access panels (I) and (N) up, and allow the bullnose (H) to hang over the edge. Make sure the ceiling column (G) is stabilized to prevent tipping when extending the ceiling column.
9. Using a phillips head screwdriver, remove the two screws (AC) at the top of the access panel (I). Keep the screws for installation later.
10. Using a phillips head screwdriver, loosen the four screws (J) securing the access panel (I), and remove the panel.

NOTE:

The screws are secured with nylock nuts to the access panel.

11. Using a phillips head screwdriver, remove the two screws (AD) at the top of the access panel (N). Keep the screws for installation later.
12. Using a phillips head screwdriver, loosen the screws (L) securing the access panel (N), and remove the access panel.

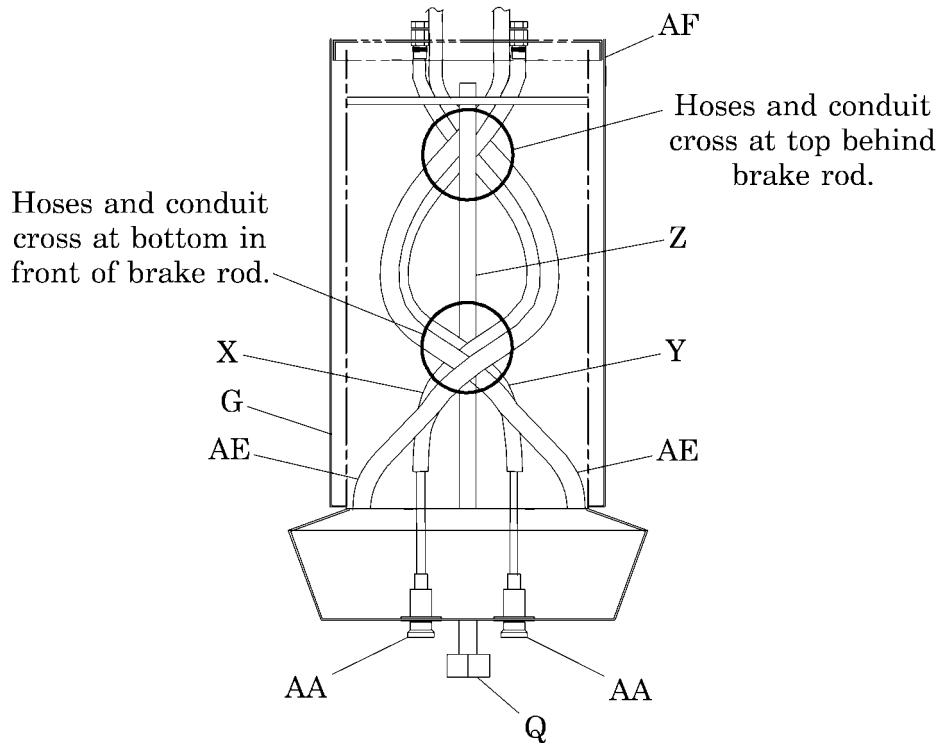


WARNING:

Keep hands and fingers away from pinching situations when retracting the ceiling column. Serious personal injury could occur.

13. After the access panels (I) and (N) are removed, turn the brake handle (Q), and retract the ceiling column (G) to approximately one half of its extended length (see figure 3 on page 6).

Figure 3. Gas Hose and Conduit Routing



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NOTE:

The brake handle is located under the bullnose. Until the brake handle is turned, the brake is engaged. If you need to adjust the height of the ceiling column, turn the brake handle to release the brake, and pull on the ceiling column. The brake system is spring loaded and will return the brake to the on position.



CAUTION:

The brake may not hold the column apart while routing the hoses or conduits with the column not mounted, causing equipment damage.

14. Make sure you put a wedge, ties, or block between the bulkhead and inner shell to prevent accidental closure of the column while you are routing the hoses.



CAUTION:

To ensure optimal performance and component life, the routing of the hoses and the conduit must be maintained as the factory arranged them.

15. Maintain the factory-arranged, clockwise, or counter-clockwise pattern of the gas hoses (X) and (Y) and the electrical conduit.
16. Pull the medical hoses, vacuum hoses, and electrical conduit out through the template (AF).
17. Pull enough hose through the template to allow connection to the DISS fittings (T) (see figure 4 on page 8).
18. Do not tear away the cardboard template until the installation is completed.
19. If necessary, temporarily secure the hose bundles (X) and (Y) with cable ties at the top of the ceiling column (G). Make sure you remove all of the cable ties that you installed.
20. Route the electrical conduit as follows:
 - a. Pull the electrical conduit (AE) out through the template (AF).
 - b. If necessary, temporarily secure the electrical conduit (AE) with cable ties at the top of the ceiling column (G). Make sure you remove all of the cable ties that you installed.
21. Install the ceiling column (G) in a lift capable of safely lifting the ceiling column into position:
 - Make sure the ceiling column (G) is stable in the lift.
 - Make sure the ceiling column (G) is not sitting on any gas connectors (AA) or electrical outlets.
 - If necessary, temporarily tie or clamp the ceiling column (G) to the lift.

Installation



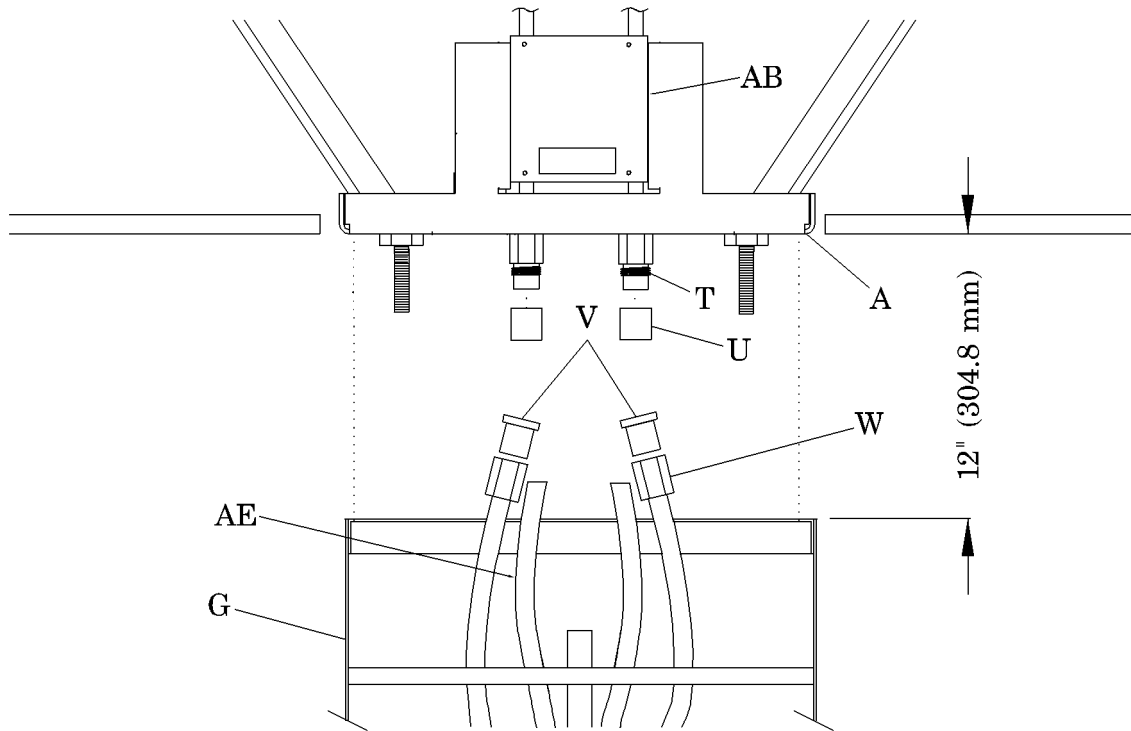
WARNING:

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

1. Following the lift manufacturer's instructions, lift the ceiling column (G) into position as follows:
 - a. Carefully lift the ceiling column (G) up to approximately 12" (30 cm) from the rough-in plate (A) (see figure 4 on page 8).

- b. Make sure there is enough room to connect the medical hose fittings (W) to the DISS fittings (T).

Figure 4. Medical Gas Tube Connections



i198b005



WARNING:

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

2. If necessary, support the ceiling column (G) on the lift.
3. Remove the caps (U) from the DISS fittings (T).
4. Remove the plastic caps (V) from the hose fittings (W).



WARNING:

Do not cross-connect the medical gas types or vacuum systems. Personal injury and equipment damage could occur.

5. Connect the fittings (W) to the correctly labeled DISS fittings (T) (see table 1 on page 4 or see table 2 on page 5). Fully tighten fittings.



WARNING:

Test the medical gas and/or vacuum systems. Failure to test these systems could result in personal injury or equipment damage.

6. Test the medical gas and/or vacuum systems in accordance with the latest edition of the National Fire Protection Association (NFPA) 99. Refer to it for the following:
 - Ensure there are no leaks at the fittings.
 - Make sure medical gas/vacuum systems have the correct flow.
 - Make sure there are no cross connections of the medical gas/vacuum system lines.
7. If there are leaks, flow, or cross connections, make adjustments, and test for leaks again.
8. Carefully tear away the cardboard template (AF) away from the hoses and conduit and discard.
9. Align the four washers (R) with the four corner holes on the ceiling column (G) (see figure 2 on page 3).



WARNING:

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

10. Following the lift manufacturer's instructions, use a portable lift to carefully lift the ceiling column (G) in alignment with four bolts (E) until the four bolts are fully through the ceiling column.
11. Install the four flat washers (D), lockwashers (C), and nuts (B) on the bolts (E), and tighten by hand only.
12. Using a ratchet and a 3/4" deep socket, tighten the nuts (B) until the lockwashers (C) are fully collapsed.
13. Using a level, make sure the ceiling column (G) is plumb.
14. If the unit is not level, level it with shims.
15. Remove the lift supports and the lift from the ceiling column (G).
16. Connect the conduit (AE) as follows (see figure 4 on page 8):
 - a. Using a phillips head screwdriver, remove the four screws (M) and the cover plate (K) from the junction box (AB) (see figure 2 on page 3).

- b. Following the wiring diagram from the as-built drawings, all local codes, and the National Electrical Code®¹, connect the wiring from the conduit (AE) with the facility wiring that is already in the junction box (AB) (see figure 4 on page 8).

Test

1. Carefully release the brake, and fully extend the ceiling column (G).
2. Make sure no hoses are in a bind or caught between the ceiling column shells.
3. If there are hoses or conduit in a bind follow these steps:
 - a. Loosen the connection that is kinked.
 - b. Twist the hose or conduit clockwise.
 - c. Tighten the connection.
4. If step 3 made the condition worse, follow these steps:
 - a. Loosen the connection that is kinked.
 - b. Twist the hose or conduit counter-clockwise.
 - c. Tighten the connection.
5. Align the two holes on the conduit barrier (AL) with the threaded holes in the bulk-head of the ceiling column (G) (see figure 2 on page 3).
6. Using a phillips head screwdriver, install the two screws (AK) securing the conduit barrier (AL).



WARNING:

Failure to perform an operational check may result in premature failure of the gas hoses, tubing, or conduit. Personal injury and equipment damage could occur.

7. Verify correct operation of the electrical components installed on the bullnose (H).
8. Verify correct operation of the medical gas/vacuum connections on the bullnose (H).
9. Follow NFPA 99, the applicable local codes, and the local regulations to test the medical gas/vacuum systems.



WARNING:

Make sure the hoses, pneumatic lines, or conduits do not get pinched or kinked. Personal injury and equipment damage could occur.

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

10. Operate the ceiling column (G) to verify the correct operation as follows:
 - a. Using the brake handle (Q), fully extend and retract the ceiling column (G) several times.
 - b. Make sure no hoses have the following:
 - Pinch points
 - Excessive pulling
 - Tugging
 - Scraping
 - Obstructions
11. If necessary, correct all conditions that were found during any of the equipment tests, and test again.

Close-up

1. Align the four holes on the cover plate (K) with the four screw holes on the junction box (AB).
2. Using a phillips head screwdriver, secure the cover plate (K) to the junction box (AB) with the four screws (M).
3. Install the access panel (N) on the ceiling column (G) as follows:
 - a. Tighten the four screws (L) to hold the access panel (N) on the ceiling column (G), but leave the access panel loose enough to align two holes for the screws (AD).
 - b. Install the two screws (AD) in the ceiling column (G).
 - c. Using a phillips head screwdriver, fully tighten the screws (AD) and (L) to secure the access panel (N).
4. Install the access panel (I) on the ceiling column (G) as follows:
 - a. Tighten the four screws (J) to hold the access panel (I) on the ceiling column (G), but leave the access panel loose enough to align the two holes for the screws (AC).
 - b. Install the two screws (AC) in the ceiling column (G).
 - c. Using a phillips head screwdriver, fully tighten the screws (AC) and (J) to secure the access panel (I).
5. In necessary, remove the screws (P) and the ceiling trim (O) from the packing material.

6. Using a phillips head screwdriver, install the ceiling trim (O) flush with the ceiling, and secure with the two screws (P).
7. Repeat step 6 for the three remaining pieces of the ceiling trim (O).