

## Subject: Power Column (P950E) and Ceiling Ring (P959/P959-01) Installation Instructions

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### Introduction

This document describes how to install the Power Column (P950E) and Ceiling Ring (P959/P959-01). Prior to installation, the appropriate facility medical gas lines and electrical raceways should have been run to the location. Refer to the as-built drawings for specific information.

Read and understand all of these instructions before you install the Power Column (P950E) and Ceiling Ring (P959/P959-01).

Tools required:	Adjustable wrench	Screwdriver
	Phillips head screwdriver	Socket wrench set
	Pliers	Drill
	Plumb bob	Level
Parts required:	(2) 50028	Jack screw
	(1) 55726	6" base cover molding
	(1) 50109	Bag assembly
	<b>and</b>	
	(2) 50047-1	Guide tube (for 8' to 8.5' (244 cm to 259 cm) ceilings)
	<b>or</b>	
	(2) 50047-2	Guide tube (for 8.5' to 9' (259 cm to 274 cm) ceilings)
	<b>or</b>	
	(2) 50047-3	Guide tube (for 9' to 9.5' (274 cm to 290 cm) ceilings)
	50109, Bag assembly, includes these items:	
	(2) 52658	Slide insert
	(6) 28293	Nut
	(6) 15338	Screw

Reference documents: *Power Column Service Manual (MAN042)*

For post-installation troubleshooting and repair, complete parts list, and accessory information, refer to the *Power Column Service Manual (MAN042)*. For issues or problems related to this product, call WittRock Healthcare Technical Support at 812.222.0373 for assistance.

## Description

The Power Column (P950E) is a modular system that provides a variety of power and gas outlets and accessory attachment locations. The Power Column (P950E) is available in two different cross-section styles:

- Classic—23" x 7" (58 cm x 18 cm)
- Narrow—15" x 7" (38 cm x 18 cm)

## Shipping Container Contents

The Power Column (P950E) is shipped in two containers. The larger container contains the main housing (A). The smaller container contains the top shroud (B), guide tubes (C), jack screws (D), cover molding (E), and parts bag (F) (see figure 1 on page 4). The top shroud (B) and guide tubes (C) come in various lengths, in accordance with the ordered specifications.

## Contractor Responsibilities



### WARNING:

When you do the installation, make sure all national, state or provincial, and local electrical and medical gas codes are followed. Failure to do so could cause injury or equipment damage.

When you do the installation, make sure these national, state or provincial, and local electrical and medical gas codes are followed:

For USA installations - National Fire Protection Association®<sup>1</sup>:

- NFPA 70: *National Electrical Code®* (NEC®) and NFPA 99: *Standard for Health Care Facilities*

For Canadian installations - Canadian Standards Association (CSA®<sup>2</sup>):

- CSA 22.1 and CSA 22.2, Parts 1 and 2: *Canadian Electrical Code—Safety Standards for Electrical Installations*

Nonflammable Medical Gas Pipeline Systems must follow:

- CSA Z7396.1: *Medical Gas Pipeline Systems - Part 1: Pipelines for Medical Gases and Vacuum*

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1. National Fire Protection Association®, National Electrical Code®, and NEC® are registered trademarks of National Fire Protection Association, Inc.

2. CSA® is a registered trademark of Canadian Standards Association, Inc.

Anaesthetic Gas Scavenging Systems must follow:

- CSA Z7396.2: *Medical Gas Pipeline Systems - Part 2: Anaesthetic Gas Scavenging Disposal Systems*
- CSA Z318.0: *Commissioning of Health Care Facilities*

The **installation contractor** shall attach each Power Column (P950E) to the ceiling by ceiling mounted rings tied to the building structure, install and anchor the base to the floor, adjust the jack screws (D), and install the base cover in accordance with these instructions (see figure 1 on page 4).

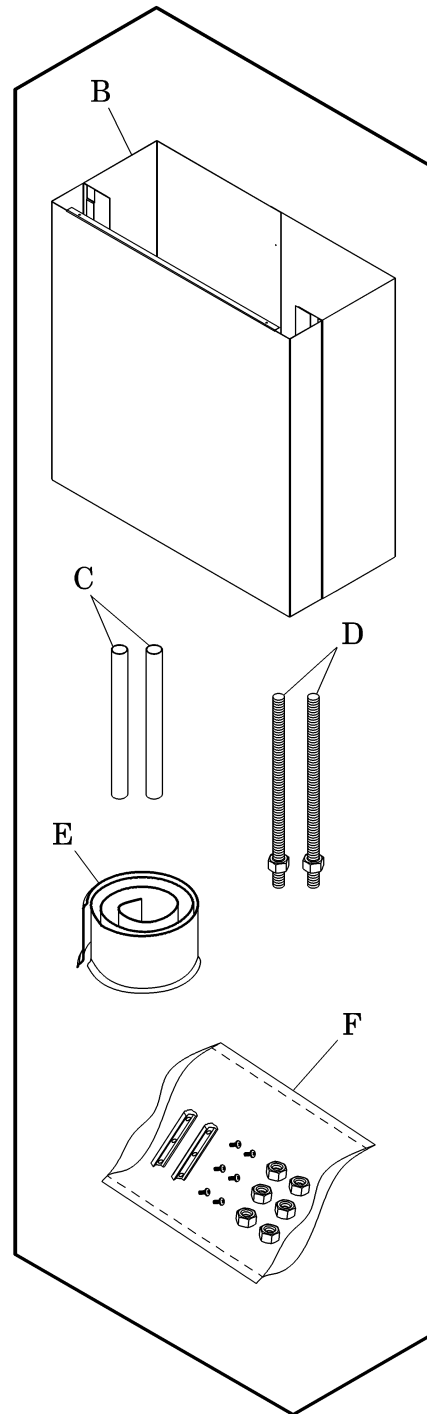
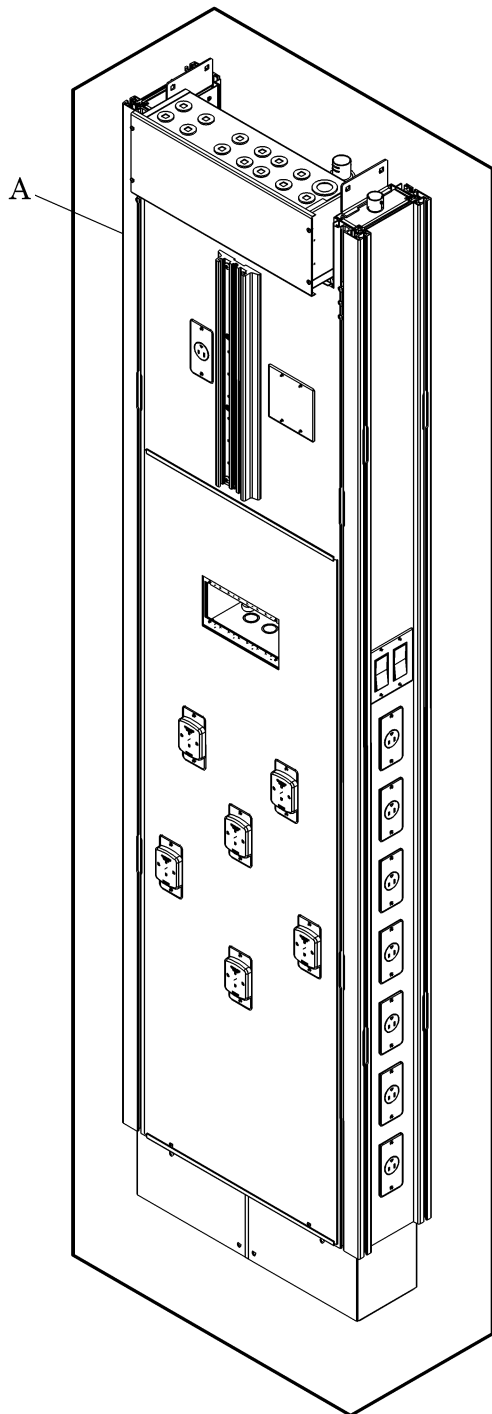
The **electrical contractor** shall furnish and install conduit and wire to connect the Power Column (P950E) to building services as shown on the shop drawing wiring diagram at the pre-wired main junction box. When the power column has an isolation power system, the electrical contractor shall install an isolation transformer in accordance with the manufacturer's instructions.

The **mechanical contractor** shall provide primary connectors to the pre-manifolded medical gas risers above the top of the Power Column (P950E). It shall be the responsibility of the mechanical contractor to perform and certify all pressure tests as required by NFPA 99 requirements (CSA Z7396 and CSA Z318 for Canada).

The **communications contractor** shall make wiring pulls through the provided conduit, and hook up and install equipment in the provided backboxes. The communications contractor shall also conduct all tests to ensure that the system operates correctly.

After hook up and installation of the Power Column (P950E), the **installation contractor** shall complete installation of shrouds and accessory equipment in accordance with the manufacturer's instructions and check out the entire installation for proper operation. Finally, the installation contractor shall remove all fingerprints and smudges from all exposed surfaces.

**Figure 1. Power Column (P950E) Packaging (Classic Style)**



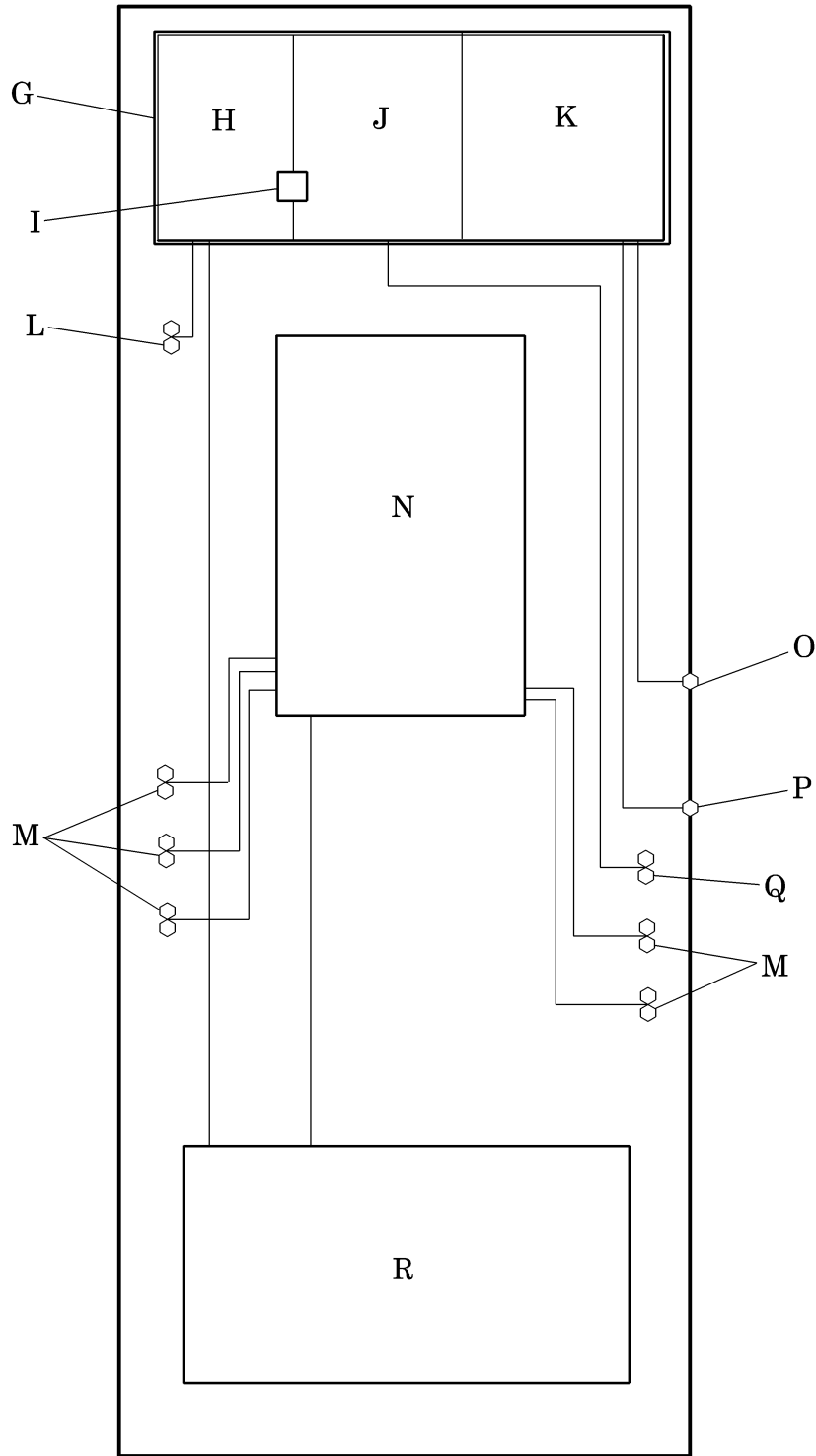
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## Reference Figures

These figures and associated tables are included in this document as reference material:

- Power Column (P950E) Electrical System Block Diagram (Classic Style) (see figure 2 on page 5) and (see table 1 on page 7)
- Power Column (P950E) Electrical System Block Diagram (Narrow Style) (see figure 3 on page 8) and (see table 2 on page 9)
- Medical Gas and Electrical Access Information (Classic Style) (see figure 4 on page 10) and (see table 3 on page 12)
- Medical Gas and Electrical Access Information (Narrow Style) (see figure 5 on page 10) and (see table 3 on page 12)
- Medical Gas and Electrical Access Dimensions (Classic Style) (see figure 6 on page 13)
- Medical Gas and Electrical Access Dimensions (Narrow Style) (see figure 7 on page 14)
- Power Column (P950E) Height Dimensions (Classic or Narrow Style) (see figure 8 on page 15), (see table 1 on page 7), and (see table 3 on page 12)

**Figure 2. Power Column (P950E) Electrical System Block Diagram (Classic Style)**



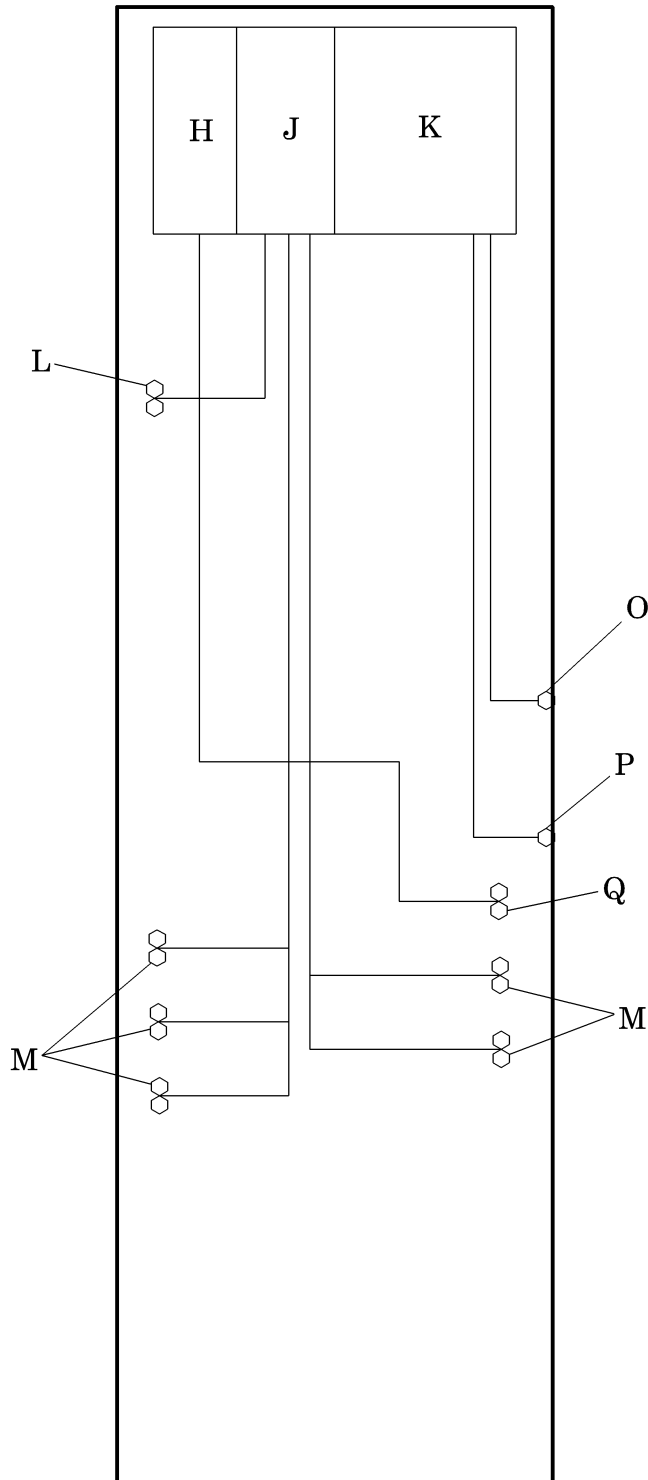
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For a description of each callout, refer to table 1 on page 7.

**Table 1: Power Column (P950E) Electrical System Block Diagram (Classic Style)**

<b>Callout Letter</b>	<b>Description</b>
G	Main junction box
H	Line voltage (normal power)
I	Ground location
J	Line voltage (emergency power)
K	Phone, low-voltage, and communication
L	Patient monitor power receptacle
M	Normal power receptacle (quantity as specified)
N	Circuit breaker panel (if specified)
O	Connection to Nurse Call provision
P	Connection to telephone provision
Q	Emergency power receptacle (quantity as specified)
R	Isolation transformer (if specified)

**Figure 3. Power Column (P950E) Electrical System Block Diagram (Narrow Style)**



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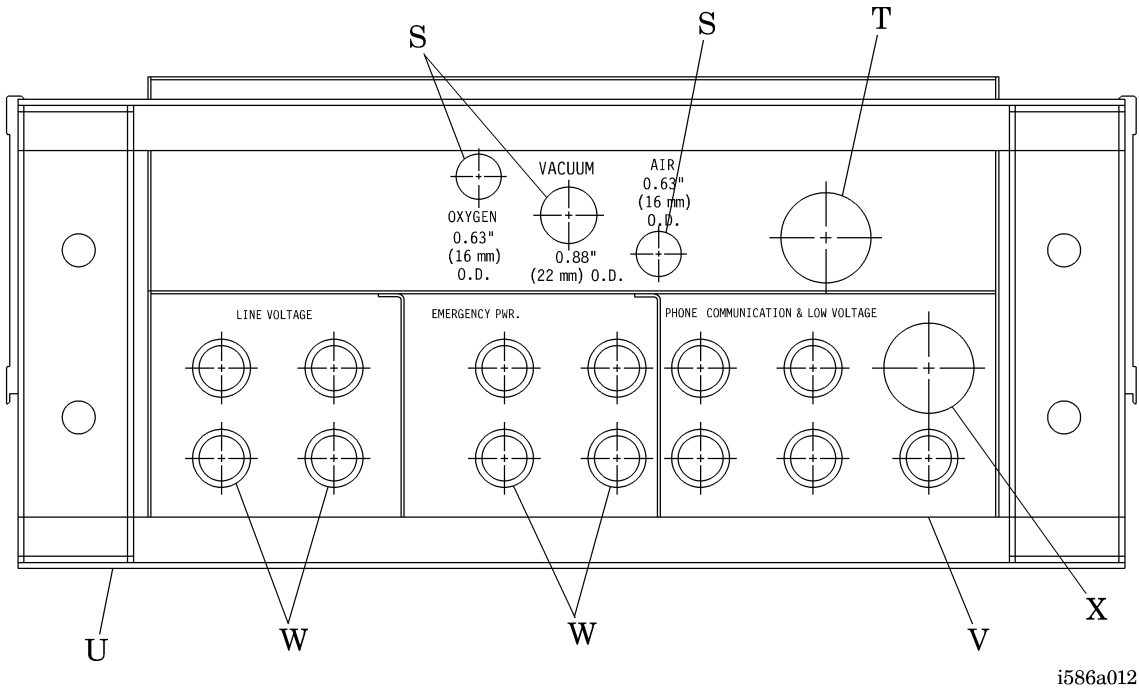
For a description of each callout, refer to table 2 on page 9.



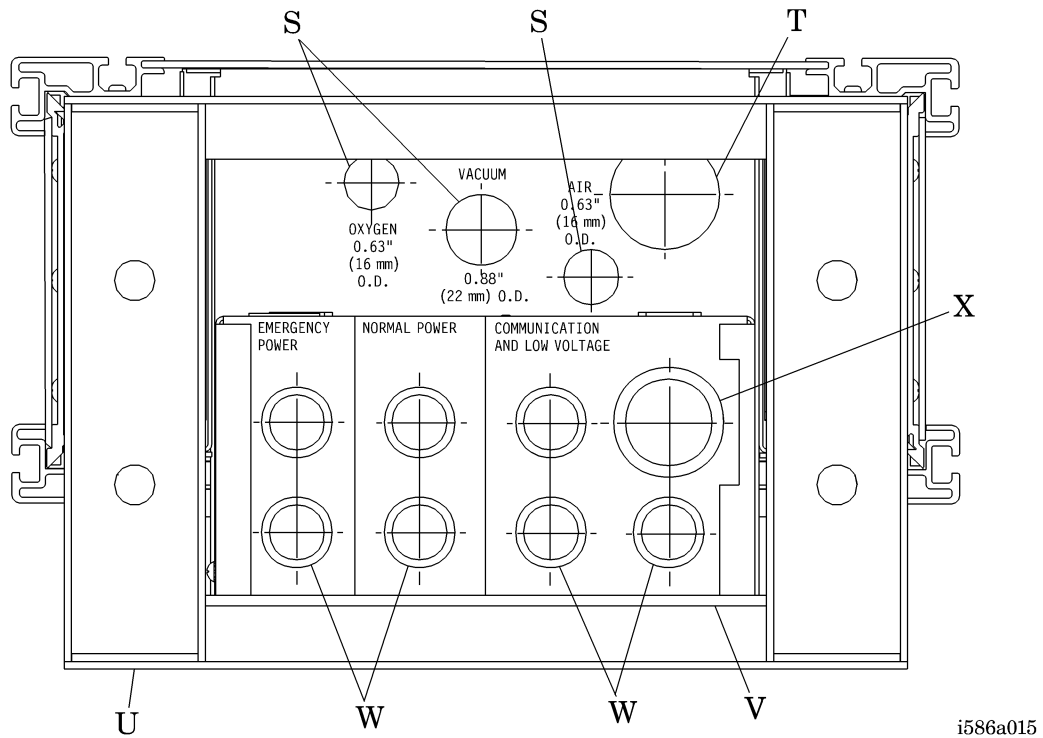
**Table 2: Power Column (P950E) Electrical System Block Diagram (Narrow Style)**

<b>Callout Letter</b>	<b>Description</b>
H	Line voltage (normal power)
J	Line voltage (emergency power)
K	Phone, low-voltage, and communication
L	Patient monitor power receptacle
M	Normal power receptacle (quantity as specified)
O	Connection to Nurse Call provision
P	Connection to telephone provision
Q	Emergency power receptacle (quantity as specified)

**Figure 4. Medical Gas and Electrical Access Information (Classic Style)**



**Figure 5. Medical Gas and Electrical Access Information (Narrow Style)**



For a description of each callout, refer to table 3 on page 11.

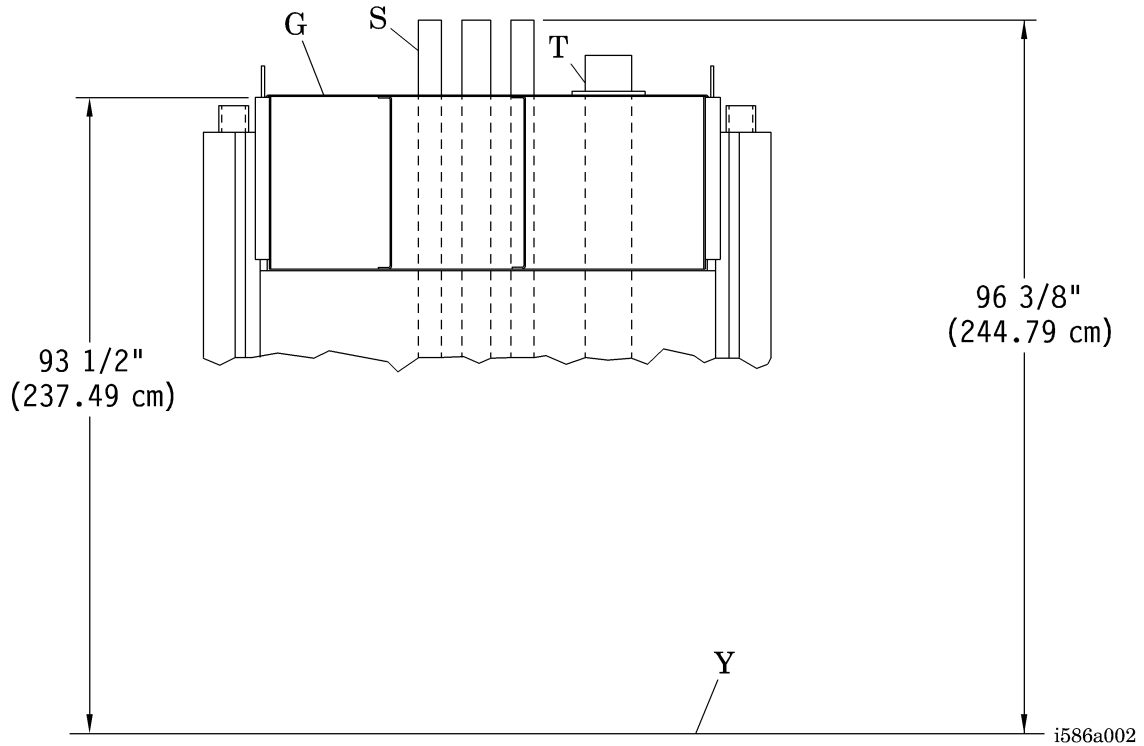
**Table 3: Medical Gas and Electrical Access Information**

<b>Callout Letter</b>	<b>Description</b>
S	Medical gas—type K copper tube
T	1 1/4" (3.18 cm) flexible conduit with couples
U	Ceiling ring
V	Power Column (P950E)
W	1/2" and 3/4" (12.70 mm and 19.05 mm) trade size concentric knockout
X	1 1/4" (3.18 cm) trade size knockout
Y	Floor
AS	Ceiling





**Figure 8. Power Column (P950E) Height Dimensions (Classic or Narrow Style)**



For a definition of each callout, refer to table 1 on page 7 and table 3 on page 11.

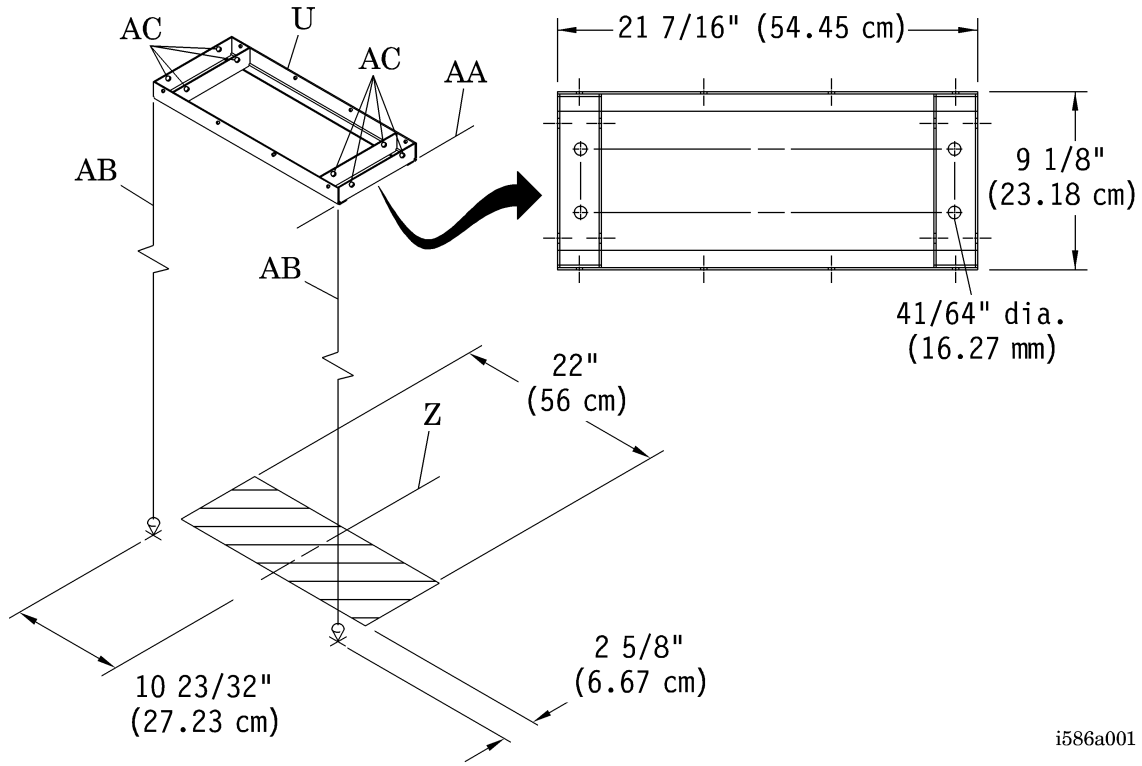
### **Pre-Installation**

1. Before installation, make sure all the parts are accounted for.
2. If an item is not present or damaged, call WittRock Healthcare Technical Support at 812.222.0373 for assistance.
3. Read all of the installation instructions.
4. Coordinate installation with the responsible people in the appropriate trades. See “Power Column (P950E) Packaging (Classic Style)” on page 4.
5. Review the architectural drawings to verify the correct location of the product.

## Install the Ceiling Ring (P959/P959-01)

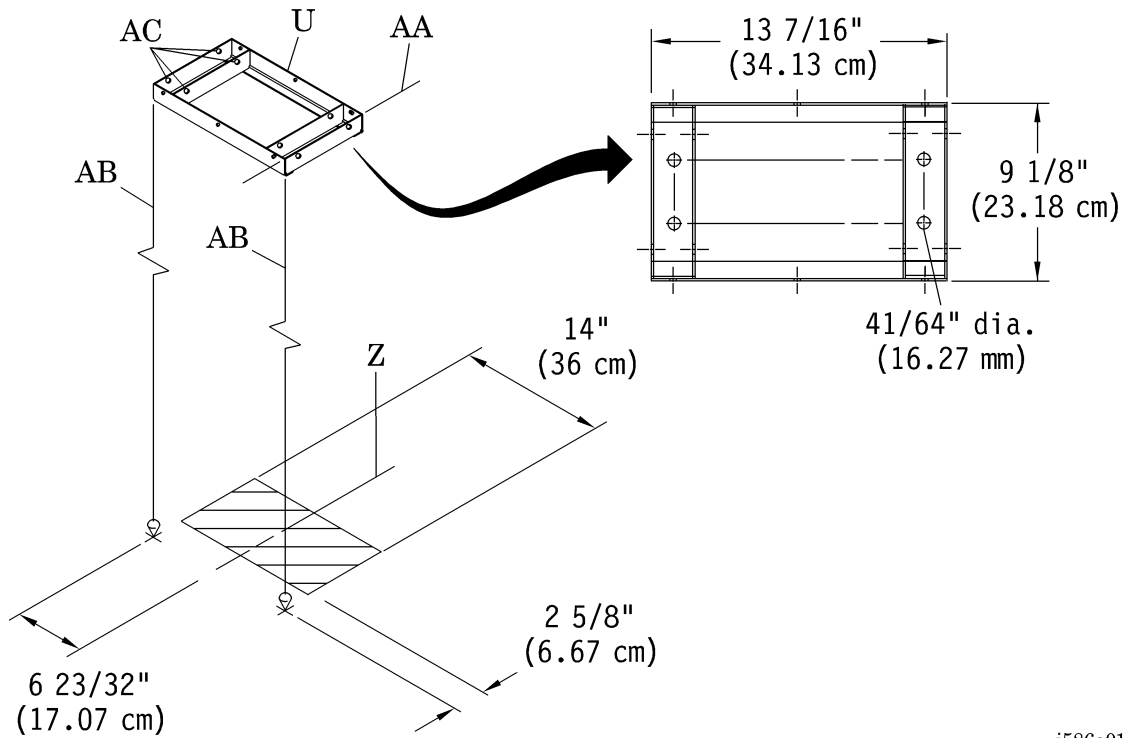
1. From the facility's plans, locate the column front face line and four corners.
2. Establish the centerline (Z) of the column:
  - On a **Classic** style Power Column (P950E), establish the centerline (Z) 11" (28 cm) from a corner point (see figure 9 on page 16).
  - On a **Narrow** style Power Column (P950E), establish the centerline (Z) 7" (18 cm) from a corner point (see figure 10 on page 16).
3. Locate the these two points on the floor:
  - 2 5/8" (6.67 cm) in front of the column face
  - On a **Classic** style Power Column (P950E) only—10 23/32" (27.23 cm) on either side of the column centerline (Z)
  - On a **Narrow** style Power Column (P950E) only—6 23/32" (17.07 cm) on either side of the column centerline (Z)
4. Drop a plumb bob from the building overhead structure to each point.
5. Determine the ceiling surface height (AA), and mark the plumb line (AB).
6. Position the ceiling ring (U) with a temporary support structure, with the corners of the ceiling ring (U) touching the plumb lines (AB) and the flat surface of the ceiling ring (U) at the ceiling surface height (AA) marked on the plumb lines (AB).
7. Adjust the temporary support structure until the ceiling ring (U) is level.
8. Install contractor-furnished structural brace between the ceiling ring (U) and the building overhead structure through the eight pre-drilled holes (AC) in the ceiling ring (U).

**Figure 9. Ceiling Ring Installation (Classic Style)**



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**Figure 10. Ceiling Ring Installation (Narrow Style)**



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9. For details on methods to brace various building structures, refer to the appropriate figure (see table 3 on page 11):

**NOTE:**

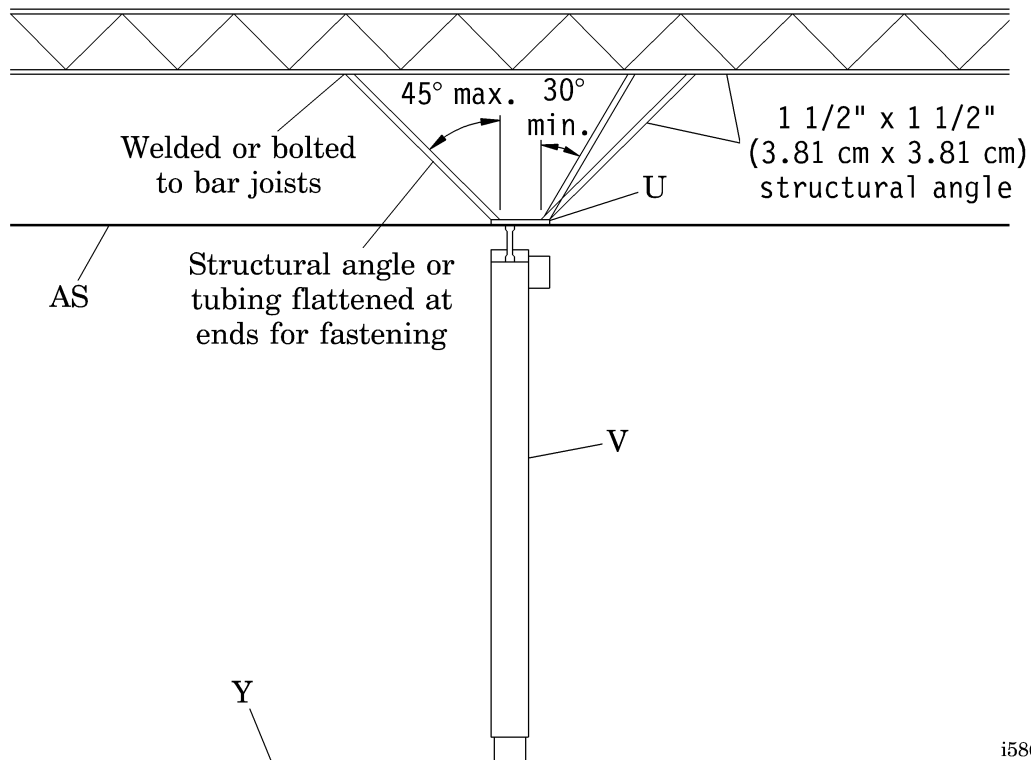
Do not obstruct the open middle area of the ceiling ring with the structural brace. This area needs to be accessible for service drops.

- For open web steel bar joist brace, refer to figure 11 on page 17.
- For double concrete tee brace, refer to figure 12 on page 18.
- For cellular steel deck with concrete brace, refer to figure 13 on page 18.
- For seismic area brace, refer to figure 14 on page 19.

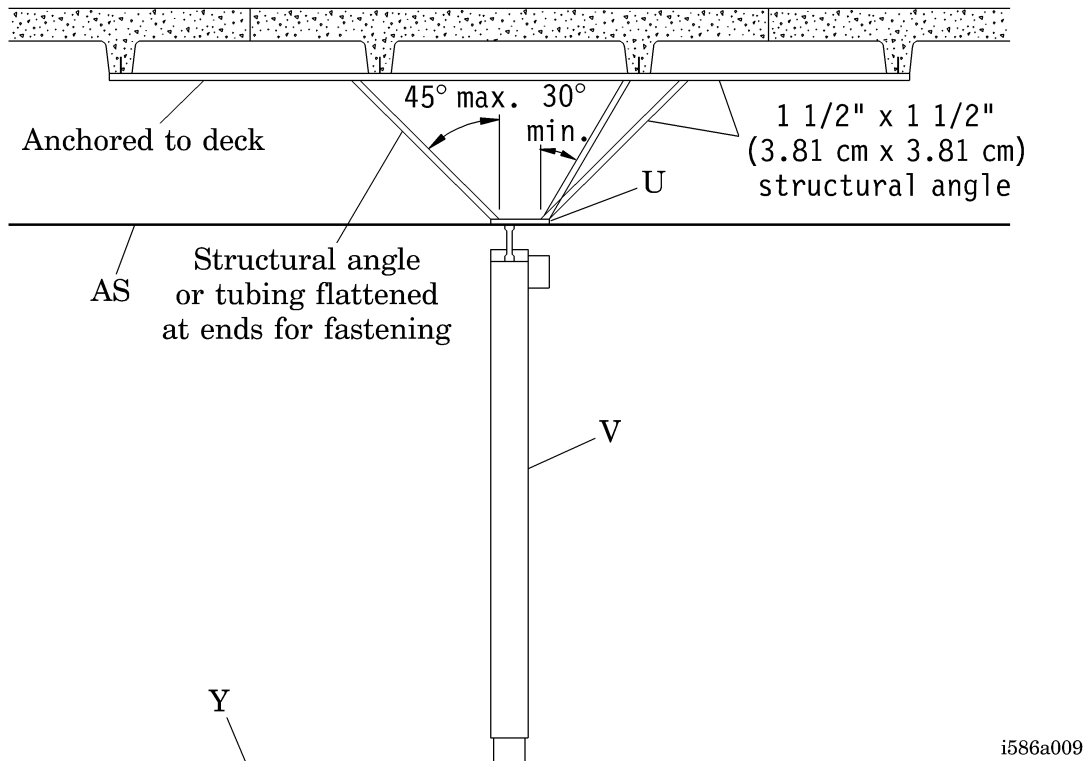
**NOTE:**

Based on ceiling height and plenum space, forces in seismic area brace will vary slightly. Optional brace and studs are supplied by others.

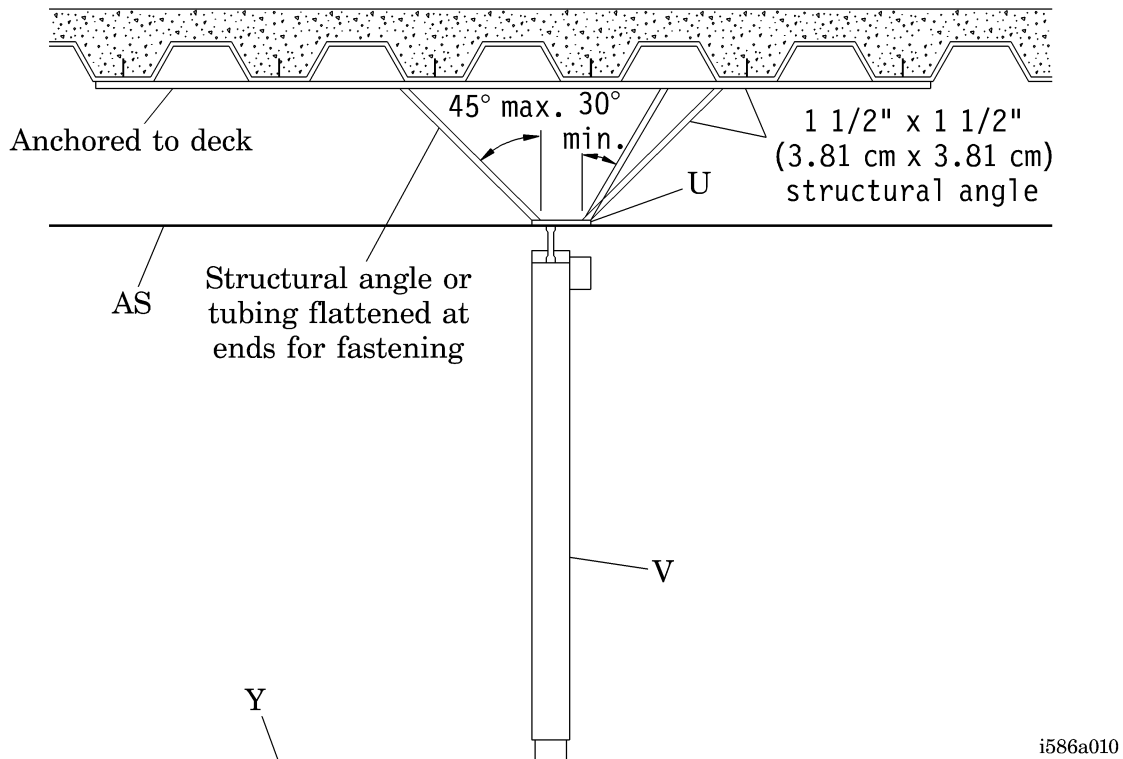
**Figure 11. Open Web Steel Bar Joist Brace**



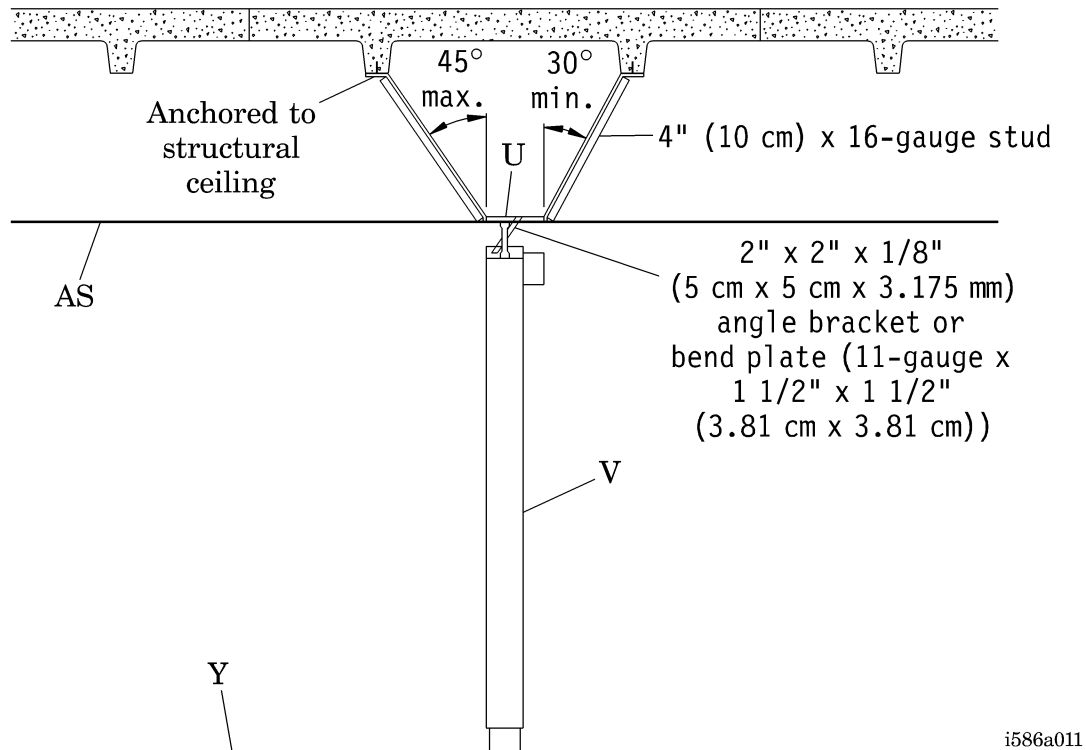
**Figure 12. Double Concrete Tee Brace**



**Figure 13. Cellular Steel Deck with Concrete Brace**



**Figure 14. Seismic Area Brace**



## Install the Power Column (P950E)

### Install the Column Structure

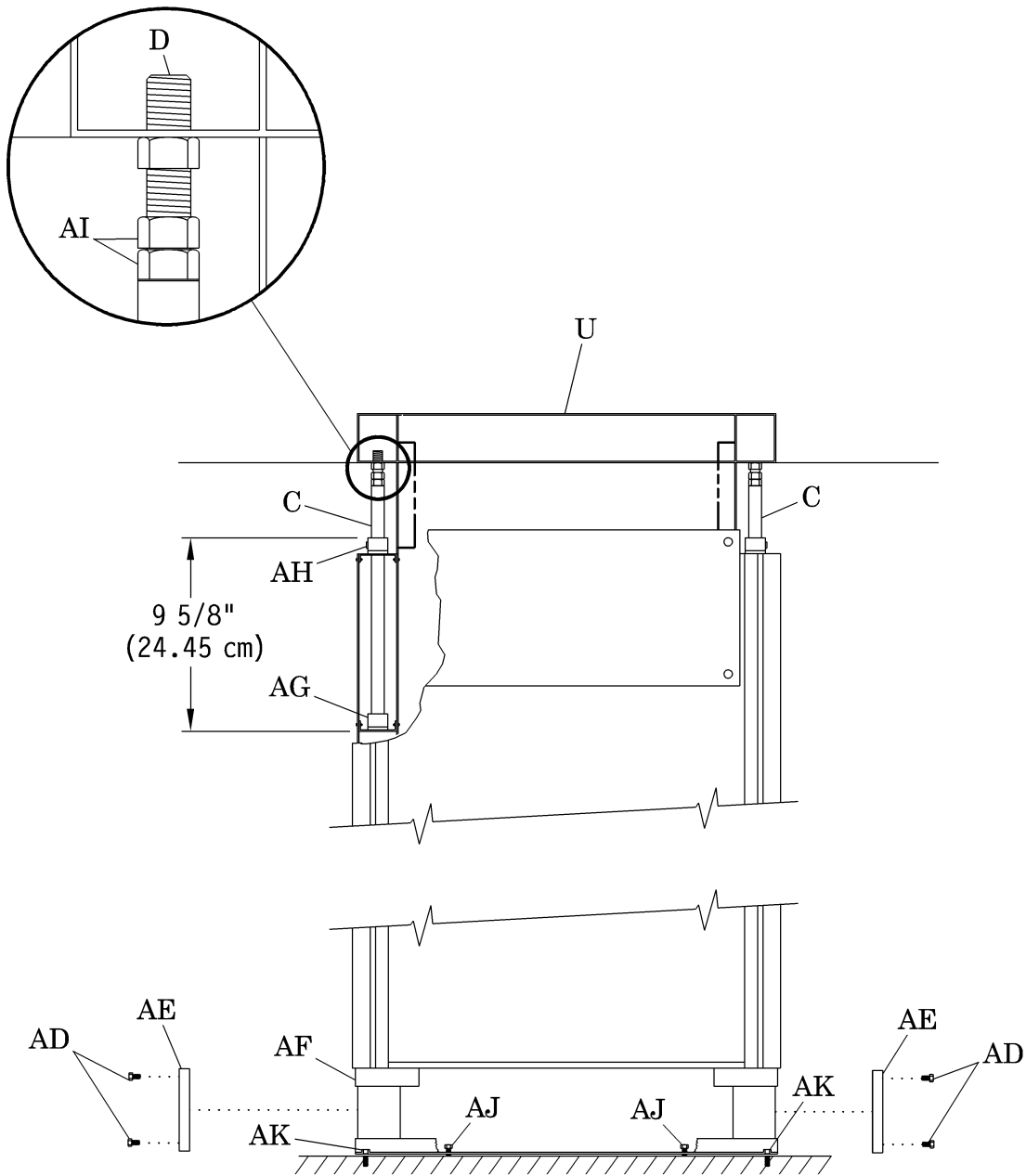
1. Remove the packing materials from the column structure, and check for damage.

**NOTE:**

The column length should be 92" (234 cm).

2. Remove the screws (AD) that secure the covers (AE) to the base (AF) of the column structure (see figure 15 on page 20).
3. Remove the covers (AE) from the base (AF).
4. Position the column structure face down so that the base (AF) is directly below the opening in the ceiling ring (U).
5. Remove the guide tubes (C) from the carton.
6. Insert the guide tubes (C) into the openings provided at the top of the column structure.
7. Make sure the guide tubes (C) are seated in the internal retaining cups (AG).
8. Measure and verify that the total length of the **inserted** guide tubes (C) is 9 5/8" (24.45 cm).

Figure 15. Power Column (P950E) Installation



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9. Tighten the set screws (AH) firmly to secure the guide tubes (C) in position.

10. Remove two jack screws (D) and four 5/8" (15.9 mm) jam nuts (AI) from the carton.
11. Thread two jam nuts (AI) on each jack screw (D) the full length.
12. Insert the long threaded portion of the jack screws (D) into the guide tubes (C).
13. Position the base (AF) of the column structure on the floor, directly below the open area of the ceiling ring (U), and lift the column structure up to the full vertical position.
14. Slide the jack screws (D) out of the guide tubes (C), and insert the jack screws (D) into the holes of the ceiling ring (U) so the welded nuts on the jack screws (D) are 1/2" (12.7 mm) from the ceiling ring (U).
15. Hold the jack screws (D) in this position, and run the bottom jam nuts (AI) down to make contact with the top of the guide tubes (C).

**NOTE:**

This will permit the column structure to stand on it's own.

16. Use the screws (AJ) to level the column structure. Adjust the screws (AJ) until the column structure is perpendicular to the floor.
17. Mark the floor for anchor locations through the 17/32" (13.5 mm) diameter holes in the base (AF).

**NOTE:**

If desired, move the base of the column structure from side to side to drill the holes in the floor.

18. Reposition the column structure, and ensure that it is perpendicular to the floor.

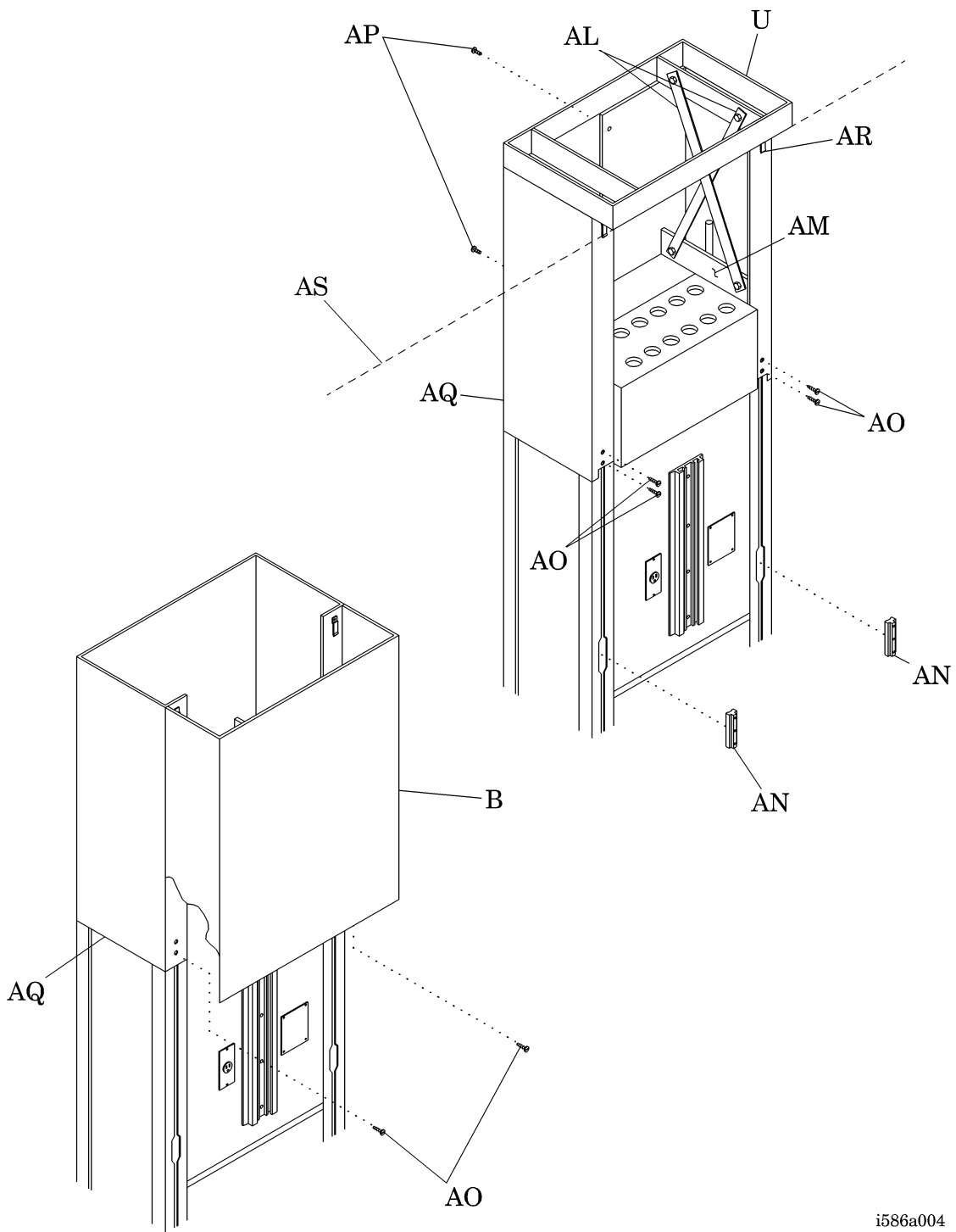


**CAUTION:**

Do not overtighten the jack screws. Column or ceiling ring distortion or damage may occur.

19. Do not permit the jack screws (D) to move while you tighten the bottom jam nuts (AI) until the jack screws (D) are firmly seated against the ceiling ring (U).
20. Lock the jam nuts (AI) in place.
21. Install the contractor-furnished floor anchor bolts (AK).
22. Install the contractor-furnished auxiliary brace (AL) between the ceiling ring (U) and the tab (AM) at the top of the column structure (see figure 16 on page 22).

**Figure 16. Shroud Assembly Installation**



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**SHOCK HAZARD:**

The potential for electrical shock exists with electrical equipment. Failure to follow facility protocol may result in death or serious personal injury.

23. Use the as-built drawings, wire the power column for your specific installation. Make connections in accordance with NFPA 70: (NEC®<sup>1</sup>) requirements (CSA C22.1 and C22.2 for Canada), and all applicable local codes.
24. Make connections to the medical gas tubes in accordance with Chapter 4 in NFPA 99 (CSA Z7396 for Canada).
25. Install the screws (AD) to secure the covers (AE) on the base (AF) of the column structure (see figure 15 on page 20).
26. Use the contractor-supplied adhesive, install the cover molding (E) (see figure 1 on page 4) around the base (AF) (see figure 15 on page 20).

**Install the Shroud Assembly**

1. Unpack the shroud carton.
2. Remove the two slide inserts (AN) and six machine screws (AO) (see figure 16 on page 22) from the bag assembly (F) (see figure 1 on page 4).
3. Remove the two sheet metal screws (AP) from the back of the wrapper halves (AQ), and separate the wrapper halves (AQ) (see figure 16 on page 22).
4. From behind the column structure, place the wrapper halves (AQ) around the column structure, and verify that the latch plate (AR) is toward the ceiling (AS).
5. Install the sheet metal screws (AP) to secure the wrapper halves (AQ).
6. Install the slide inserts (AN) into the track, and push them up so that the top two holes in the slide insert (AN) align with the holes in the wrapper halves (AQ)

**NOTE:**

The bottom hole receives the screw to attach the shroud.

7. **Start** two machine screws (AO) into each slide insert (AN) through the holes in the bottom of the wrapper halves (AQ). Do **not** tighten them yet.
8. Raise the wrapper halves (AQ) until they contact the ceiling (AS), and tighten the machine screws (AO) securely.
9. Position the top shroud (B) on its edge over the front of the wrapper halves (AQ), and slide the top shroud (B) up until it engages the open end of the latch plate (AR).

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10. Push the top shroud (B) up to the ceiling (AS).
11. Install the rest of the machine screws (AO), one in each slide insert (N), to secure the top shroud (B) to the column structure.
12. Tighten the machine screws (AO) securely.

### **Accessories**

1. Verify that all of the specified accessories are accounted for and are not damaged.
2. Install your specific accessory items in accordance with the installation instructions included with that accessory.
3. For accessory parts and information, refer to the *Power Column Service Manual* (MAN042).