Approval and Installation Booklet

Manual Retractable Ceiling Column

Order #: _____

Project Name: _____

Model Number: _____

Quantity: _____

Address: _____

Amico

The Amico Group Manufactures the Building Blocks of the Hospital

One Point of Contact
One Total Solution

Amico Corporation has been a leading manufacturer of Medical Equipment since 1974, selling its products through a global distribution channel from six manufacturing facilities in Canada and the U.S.

With a track record of exceeding expectations, Amico is dedicated to developing and manufacturing the most advanced medical equipment for the industrial and global Health Care Industry. With a wide variety of products for the medical environment, the Amico Group of Companies offer a total hospital solution.

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NOTE: Amico requires all pages to be signed and dated before fabrication begins.

Product Description

The manual retractable ceiling column shall be an Amico Alert-1 series. The retractable ceiling column shall be of the manual operated type. The column shall consist of an upper section for rigid mounting at the ceiling level and a telescopic lower section capable of being extended to a maximum of 18" (457.2 mm).

The retractable section of the column is activated by a coiled spring mechanism and can be lowered or raised at any position. The rotation of the handle will allow the column to become motionless or mobile. With the aid of an internal tracking system, the movement of the telescoping portion will glide freely up or down.

The upper and lower section shrouds are made of 16 gauge stainless steel with a #4 satin finish and are complete with removable access panel, stainless steel ceiling collar and a heavy gauge steel mounting plate. They are equipped with hose assemblies (gas specific) within the internal shell of the column and brazed type copper fittings for all medical gas connections above the ceiling line.

All electrical and medical gas services are provided to the face of the lower section by means of flexible hoses and conduits. All threaded connections comply with NFPA, CSA and DISS recommendations preventing interchanging of connections. All services are pre-assembled and factory tested. Standard dimensions are 13-9/16" X 13-9/16" (344.5 mm x 344.5 mm) for the upper section and 12" X 12" (304.8 mm x 304.8 mm) for the lower section.

NOTE: Electrical devices are pre-wired, unless otherwise stated.

Cleaning

The Amico outlets are factory cleaned for oxygen service. Exposed surfaces of the outlet may be cleaned with a mild detergent solution or wiped with a disinfectant commonly used in patient rooms that is compatible with plastics, anodized aluminium and die cast zinc.

Inspection and Testing

Medical Gas Outlets should be inspected periodically or at least once a year. The test should be in accordance with NFPA 99 “Gas and Vacuum systems,” or CSA Z7396.1 “Nonflammable Medical Gas Piping System.”

Test for Leaks: Ensure that no leaks exist, with or without the adapter inserted.

Test for Indexing: Only a mating gas specific adapter should insert smoothly into the outlet, latch and be retained.

Test for Flow:

- Gas Outlets: 120 l/min (4.2 scfm) @ 345 kPa (50 psi), maximum allowable pressure drop is 28 kPa (4 psi)
- Nitrogen Outlet: 400 l/min (14.1 scfm) @ 1,250 kPa (180 psi), maximum allowable pressure drop is 70 kPa (10 psi)
- Vacuum Outlet: 30 l/min (1.1 scfm) @ 54 kPa (16 inHg), maximum allowable pressure drop is 13 kPa (4 inHg)

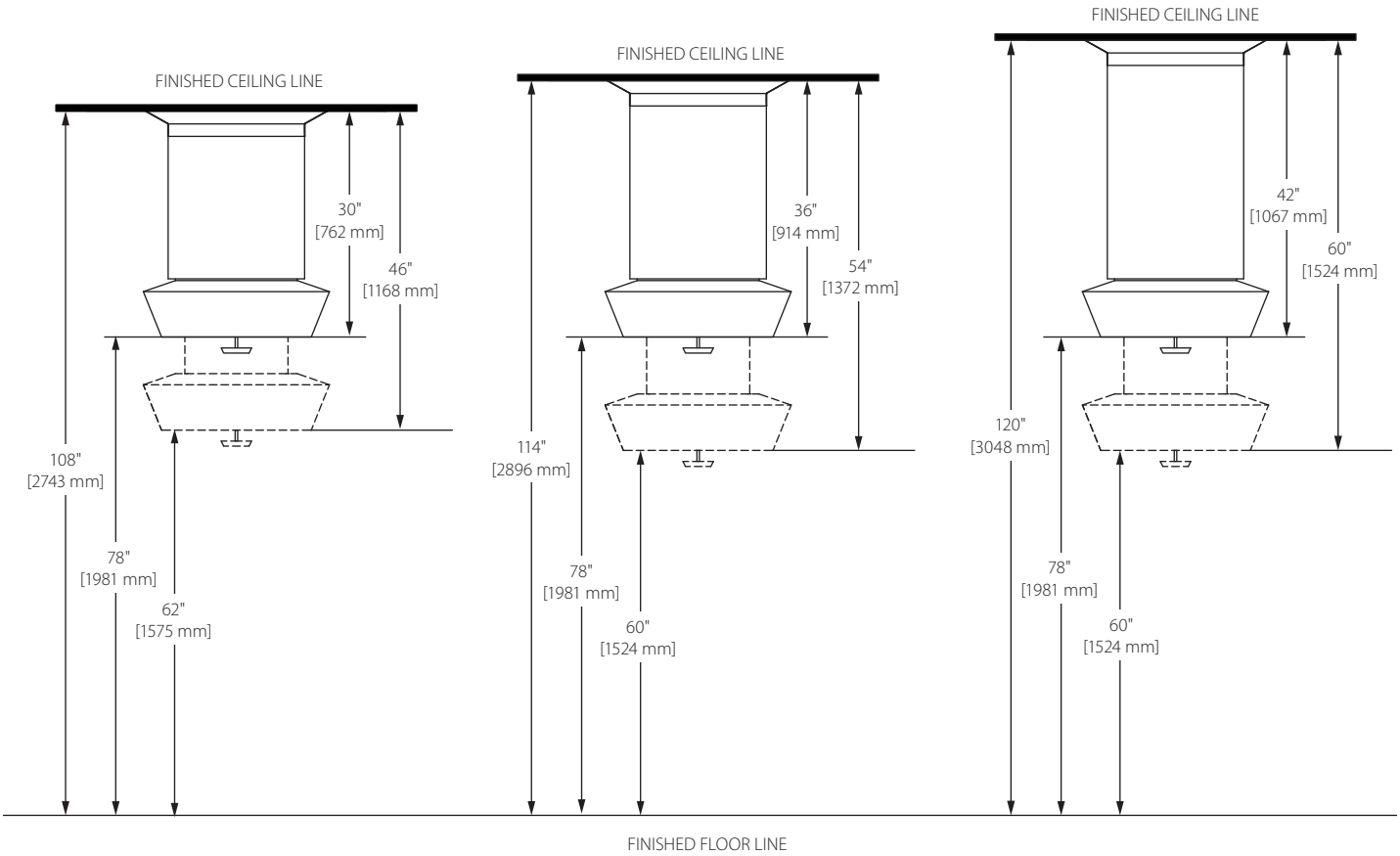
Refer to the appropriate standards for the proper way of performing the flow test.

NOTE: Amico medical gas and vacuum outlets meet and exceed these requirements at the time of manufacture. However, piping source capacity, sizing and restrictions may prevent outlets from attaining these values.

Standard Range of Column Retraction

Please Select One of the Following Options:

16" (406 mm) Retraction	18" (457 mm) Retraction	18" (457 mm) Retraction
LOW CEILING HEIGHT	**MEDIUM CEILING HEIGHT**	**HIGH CEILING HEIGHT**
☐	☐	☐
108" (2743 mm)	114" (2896 mm)	120" (3048 mm)



NOTE: Custom heights are available at an additional cost. Please contact Amico for pricing.

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Device and Accessory Chart

☐ ***DI XXX** DISS	☐ **PE** Ceiling Column Passive Evacuation (19 mm/33 mm)	☐ **E9-RED** ☐ **E10-IVORY** Duplex Receptacle 125V/20a (US/International)
Quick Connect Style Latch Valves available upon request (Check local code first)	☐ **SL** Vacuum Bottle Slide	☐ **E11-RED** ☐ **E12-IVORY** Single Receptacle 125V/20a (US/International)
Quick Connect Style Latch Valve Requested:	☐ **IV** Stainless Steel IV Hook (Duplex only)	☐ **E5-RED** ☐ **E6-IVORY** Duplex Receptacle 125V/15a (CAN/International)
☐ **GJ** Ground Jack Receptacle Single Bender (SLR-3) GREEN	☐ **DJ** ☐ **DP** DJ: Data-Telephone Communication Jack or Duplex Receptacle (Provision Only) DP:Duplex Receptacle Provision	☐ **E7-RED** ☐ **E8-IVORY** Single Receptacle 125V/15a (CAN/International)
☐ **GJ2** Ground Jack Receptacle Dual Bender (SLR-3) GREEN	☐ **TL** Twist-Lock Receptacle Hubble 23000-HG 125V/20a	☐ **E13C-RED** ☐ **E13-RED** ☐ **E14C-IVORY** ☐ **E14-IVORY** Ground Fault Circuit Interrupter (C = Canadian)
☐ **MJ** Monitor Jack Duplex (5-pin shown) Amphenol Model 10-825806-05S 97-14S-5S		

NOTES:

1. All electrical devices are Hospital Grade.
2. DISS outlets recommended per NFPA 99 current code.
3. Carbon dioxide outlets are not available in Puritan-Bennett. Nitrogen outlets are only available in DISS.
4. Passive WAGD outlets are available in DISS only.
5. * PE – Passive Evacuation for retractable ceiling columns will provide 240" (6,096 mm) length of 0.75" (19.05 mm) PVC hose for connection in ceiling.
6. Instrument Air is available in DISS only.

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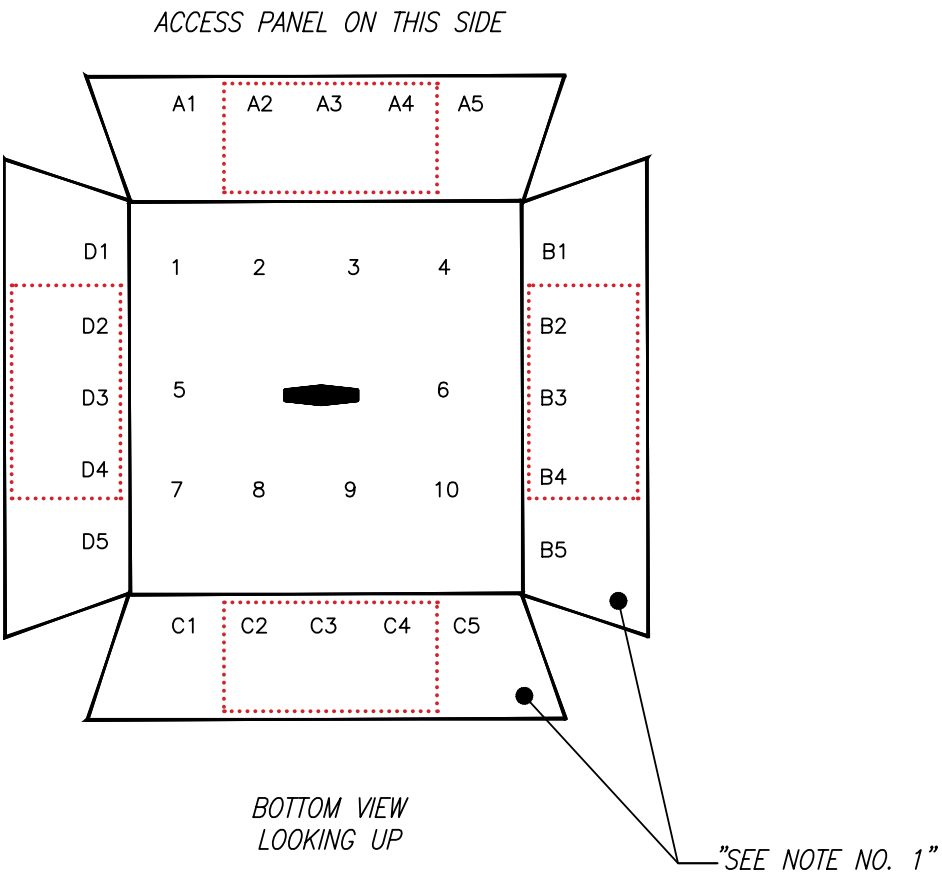
Device Placement (Bottom View)

Please populate the diagram below by indicating the locations of all required services.



Nitrogen Control Panel

- Yes (for US orders only) ☐
- No ☐

Location of Nitrogen Control Panel

- Side A ☐
- Side B ☐
- Side C ☐
- Side D ☐

Please Specify Outlet Language

- ENGLISH (NFPA) ☐
- ENGLISH (ISO) ☐
- FRENCH ☐
- SPANISH (NFPA) ☐
- SPANISH (ISO) ☐

Gas Legend

Oxygen	= O	☐
Medical Air	= A	☐
Vacuum	= V	☐
Nitrous Oxide	= 2	☐
Nitrogen	= N	☐
Carbon Dioxide	= C	☐
WAGD (NFPA)	= W	☐
AGSS (ISO)	= E	☐
Instrument Air	= I	☐

NOTES:

1. Two electrical/communication/medical gas devices cannot be placed together at any corner.
2. A maximum of 10 gas outlets are allowed on the column.
3. All electrical devices must be located within section A, B, C or D only.
4. The Nitrogen Control Panel will occupy three spaces of the bulkhead (e.g. A2 to A4). Indicated in the above drawing with red dotted lines:

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Electrical Diagram (Bottom View)

Please Select One of the Following:

☐ Amico recommended circuit schedule based on layout

☐ Custom circuit schedule – Please specify on circuit chart

Receptacle Type:

North America ☐

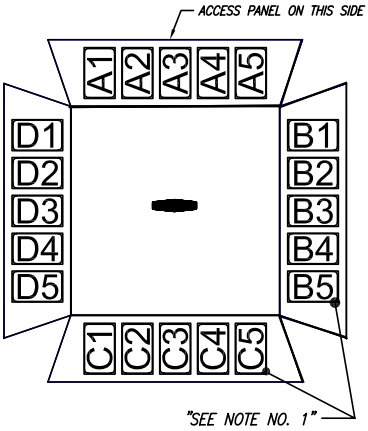
British ☐ (Simplex only)

German ☐ (Simplex only)

Input Voltage:

120V ☐

230V ☐



Circuit Chart

CIRCUIT NUMBER	CIRCUIT NUMBER
A1 *	B1 *
A2	B2
A3	B3
A4	B4
A5 *	B5 *

CIRCUIT NUMBER	CIRCUIT NUMBER
C1 *	D1 *
C2	D2
C3	D3
C4	D4
C5 *	D5 *

* SEE NOTE NO. 1

Please Select One of the Following Wiring Standards:

☐ **Standard Wiring for US/International (NFPA):**
LIVE/HOT - 12 Ga. THHN Wire Black
NEUTRAL - 12 Ga. THHN Wire White
GROUND - 10 Ga. THHN Wire Green

☐ **Standard Wiring for Canada (ISO):**
LIVE/HOT - 12 Ga. RW90 Wire Black
NEUTRAL - 12 Ga. RW90 Wire White
GROUND - 10 Ga. RW90 Wire Green

☐ **Isolated Power Wiring for US/International (NFPA):**
LIVE/HOT - 12 Ga. XHHW Wire Brown
Distinctive Color Stripe
NEUTRAL - 12 Ga. XHHW Wire Orange with
GROUND - 10 Ga. XHHW Wire Green

☐ **Isolated Power Wiring for Canada (ISO):**
LIVE/HOT - 12 Ga. RW90 XLPE Wire Brown
NEUTRAL - 12 Ga. RW90 XLPE Wire Orange
GROUND - 10 Ga. RW90 XLPE Wire Green

Please Select One of the Following Ground Pin Orientations for Receptacles:

☐ UP ☐ DOWN

NOTES:

1. Two electrical/communication/medical gas devices cannot be placed together at any corner.
2. Flex Metal Conduit 9/16" (14.28 mm), to be used for all electrical devices/provisions.
3. All conduits and wires will extend a minimum of 12" (305 mm) above finish column for connection to riser plate.
4. Line voltage devices are pre-wired. Pull strings are provided for low voltage provisions and ground jacks unless otherwise specified.
5. British or German receptacles cannot be positioned side by side e.g. A1 and A2.

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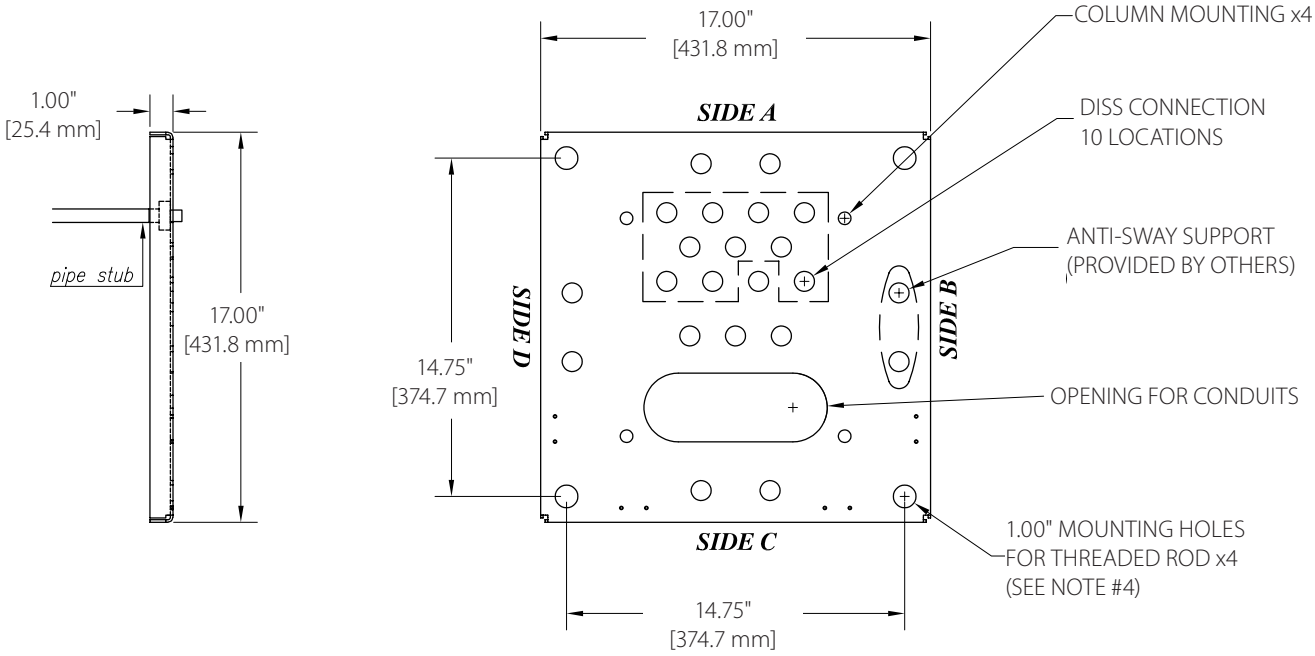
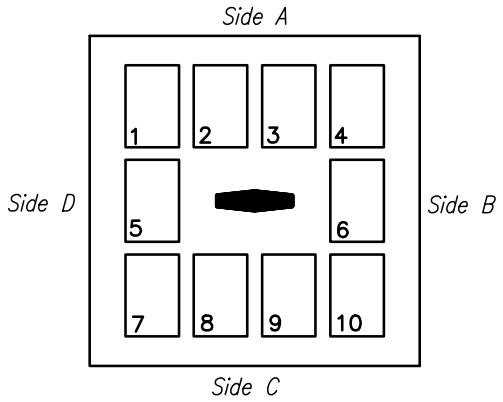
Riser Plate to Outlet Detail C - Riser

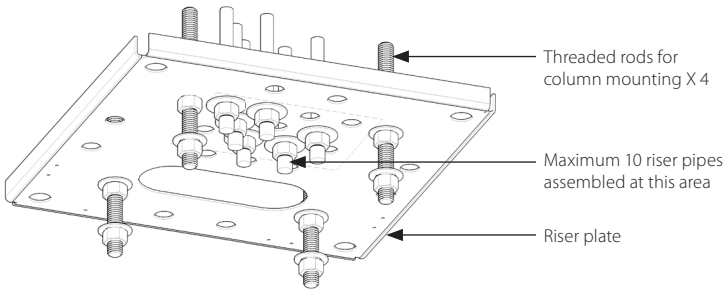
Access Panel This Side
Bottom View Looking Up





Bottom View Looking Up

Riser Plate



Bottom View Looking Up

NOTES:

1. Riser plate is completed with DISS pipe stubs, typical for each gas.
2. Pipe stubs diameters are 3/8" (9.97 mm) ID and 1/2" (12.7 mm) OD for all gases. Refer to Riser Pipe spec sheet.
3. Exact locations of gas terminations on riser plate will be determined after receiving this booklet.
4. There will be four 1/2"-13 x 8" threaded rods attached to the riser plate. Each rod contains four 1/2" nuts, four 1/2" washers and a nylon retaining washers.

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Riser Pipe Assembly

☐ **Yes** – Amico provides termination box (default)

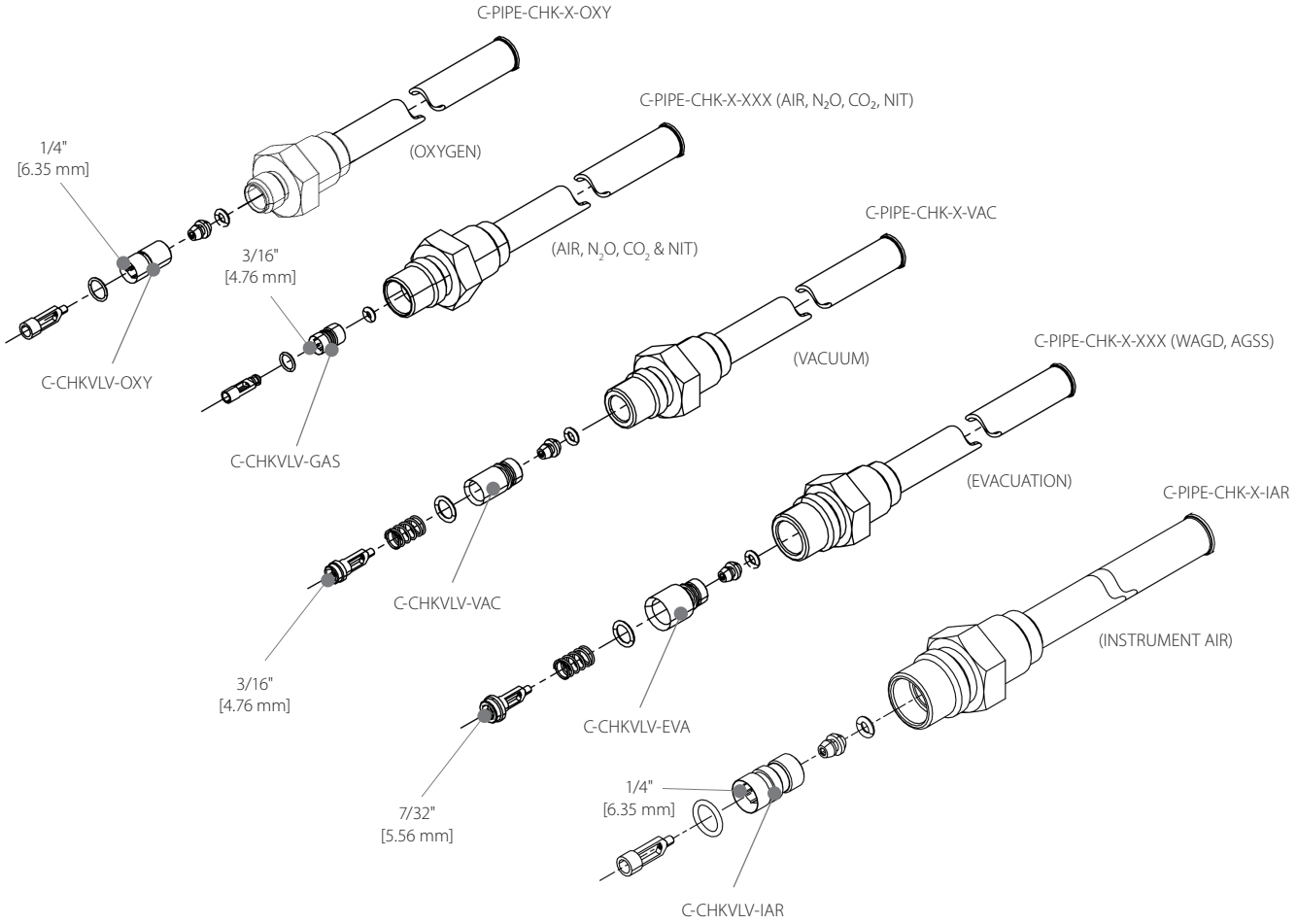
☐ **No** – Termination box will be supplied by others

NOTES:

1. "X" represents US/ISO and GAS type. e.g.: C-PIPE-CHK-U-AIR
2. 3/8" (9.97 mm) ID 1/2" (12.7 mm) OD Type "K" Copper Pipe

CAUTION:

- Before brazing the Riser, an intermittent blow-out purge is required to ensure all debris is cleared from the Pipeline System.
- Installations of the Riser should be done in accordance with NFPA 99 and CSA Z7396.1.
- Risers with demand checks should avoid excess or direct heat near the brass end.



Removable Check Steps with Allen Key:

Appropriate Allen Key size	Gas Type
1/4" (6.35 mm)	Oxygen
3/16" (4.76 mm)	Air, N2O, CO2, NIT
3/16" (4.76 mm)	Vacuum
7/32" (5.56 mm)	Evacuation
1/4" (6.35 mm)	Instrument Air

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Mounting of the Ceiling Column

NOTE: The gas hose(s) and electrical conduit(s) have been wrapped and attached to the top of the ceiling column to maximize the smooth movement of the lower telescopic portion of the ceiling column.

IMPORTANT: Remember the location of the attached electrical conduit(s) at the top of the ceiling column. Do not cut free the bundle(s) of gas hose(s) and/or electrical conduit(s) inside the ceiling column.

1. Cut the cable tie(s) holding the gas hose(s) at the top of the ceiling column and pull the gas hose(s) into the ceiling column.

NOTE: Do not cut the cable tie(s) holding the electrical conduit(s) in place at the top of the ceiling column unless there is absolutely no room for the installer to attach the conduit(s) to the appropriate junction box(es) on the riser plate.

2. Cut and remove the excess length of conduit(s) that is not required to attach to the appropriate junction box(es) (by others).

NOTE: The smooth movement of the retractable ceiling column will be affected if the above instructions are not followed.

3. Remove the four nuts and flat washers from the bottom of the riser plate and hoist the ceiling column onto the riser plate.

IMPORTANT: Ensure the open access panel of the ceiling column is aligned with the access panel label on the riser plate then secure the ceiling column into place with the four washers and nuts. ensure the ceiling column is level.

4. Attach the conduit(s) to the appropriate junction box(es) (by others) with the ceiling column fully extended. Ensure the electrical conduit(s) are coiling around the handle shaft with very little slack as it heads up towards the top of the ceiling column.

5. Attach the gas hoses to the appropriate outlets in the riser plate. Slowly retract the lower telescoping portion of the ceiling column and ensure that the electrical conduit(s) and gas hoses do not interfere with the smooth movement of the ceiling column as it retracts.

IMPORTANT: Extend and retract the lower telescoping portion of the ceiling column a few times and ensure that the electrical conduit(s) and gas hoses do not get pinched by the springs, the lower telescoping portion itself or the riser plate mounting bolts.

6. Remove the plastic film from the access plates. Attach the inner access plates onto the lower telescoping portion of the ceiling column and test the movement of the ceiling column to ensure that the movement is smooth.

7. Attach the outer access plate onto the ceiling column and remove the plastic film from the mounted ceiling column.

8. Remove the plastic film from the ceiling trim plate. attach the four ceiling trim plates at the top of the ceiling column.

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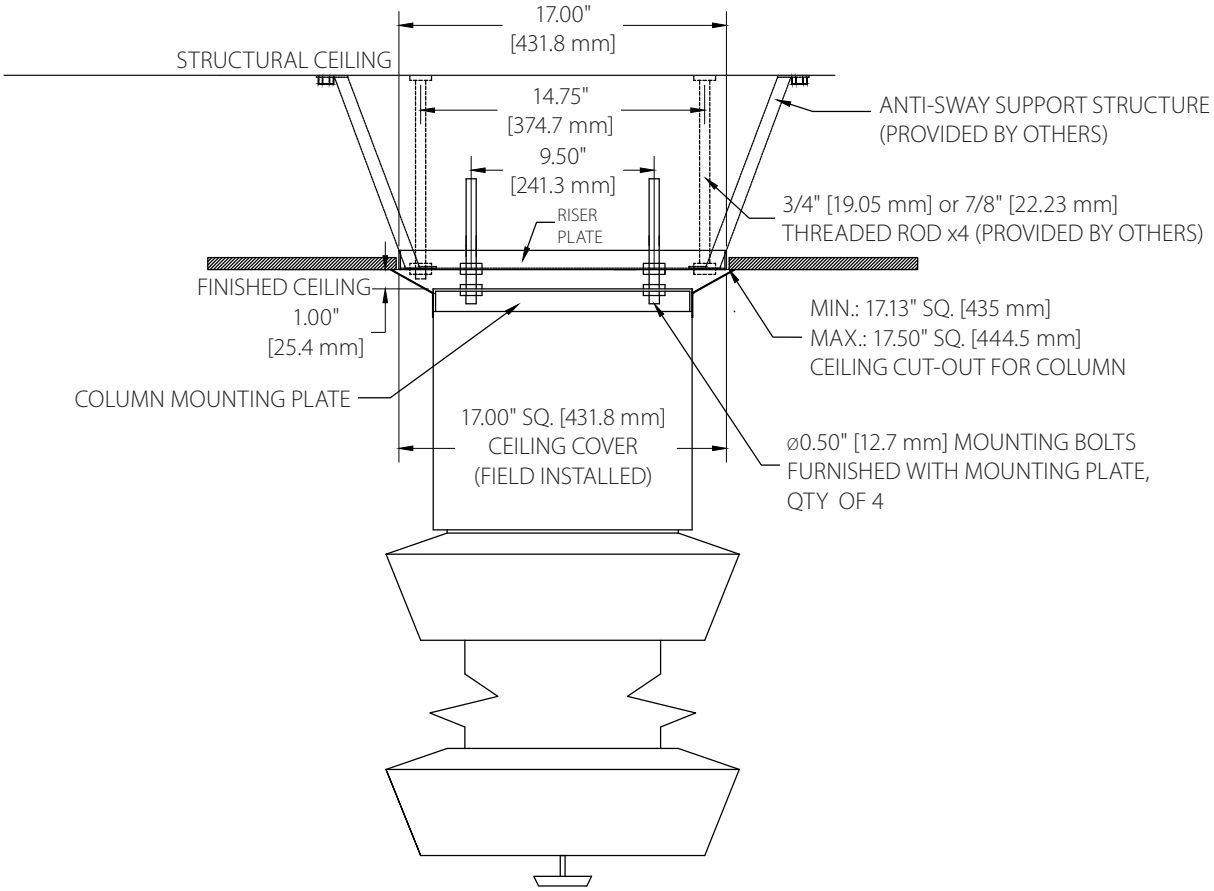
Mounting Information

NOTE: Riser plate to be installed at the finished ceiling height with appropriate mounting structure and anti-sway support. The methods of support shown are provided for information only.



NOTES:

1. All labour and material for installation of Riser to Mounting Structure supplied by others.
2. General Contractor has final responsibility for the strength and stability of the mounting structure that is supplied by others.
3. Riser plate to be mounted flush with the finished ceiling.
4. Mounting of column unit to riser plate by (4) 1/2" threaded rods, provided by Amico.
5. Space between top of Riser Plate and structural ceiling must be minimum 10" (254 mm).
6. Riser Pipe(s) extend 8" (203.2 mm) above riser plate.
7. Pre-ship of the riser assembly is available upon customer's request.

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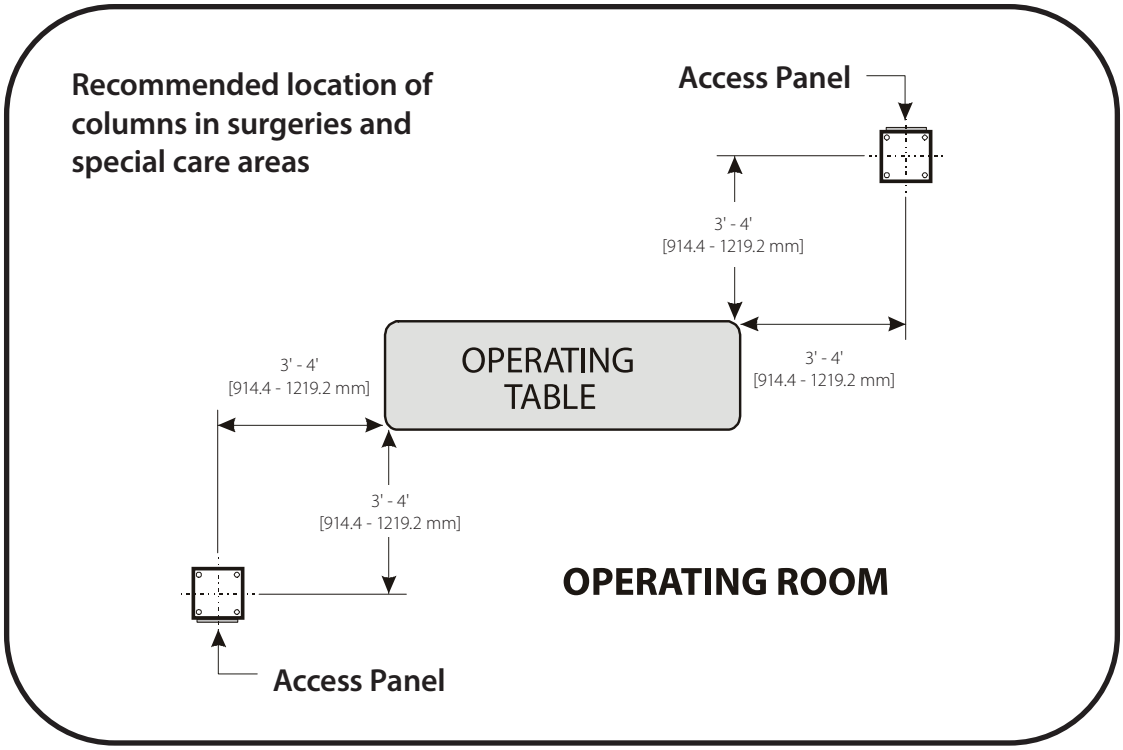
Typical Location View



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Servicing

⚠ **WARNING:** Always shut off source pressure at designated zone valves before servicing any gas outlet. The periodic inspection of gas outlets and electrical outlets is recommended to ensure proper safety and operation.

A) Gas Outlet

Inspect the gas outlet connection points for the following:

1. Proper and legible identification
2. Worn or defective engagement mechanisms
3. Leaks
4. Deformed or damaged threaded connections
5. Loose fasteners

⚠ **WARNING:** Use care when wiping down electrical outlets to prevent electrical shock.

B) Electrical

Inspect the electrical outlet connection points for the following:

1. Proper and legible identification
2. Deformation or damage
3. Discoloration

Approval Signature	Date	Phone No.

Notes

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