**Price HORD Perimeter Air Curtain System**

***Division 23 – Heating, Ventilating, and Air Conditioning***

***Section 23 37 13 – Diffusers, Registers, and Grilles***

The following specification is for a defined application. Price would be pleased to assist in developing a specification for your specific need.

**PART 1 – GENERAL**

**1.01 Section includes**:

 A. Operating Room Air Curtain System, Linear Slot Diffusers

**1.02 Related Requirements**

1. Section 01 30 00 – Administrative Requirements
2. Section 01 40 00 – Quality Requirements
3. Section 01 60 00 – Product Requirements
4. Section 01 74 21 – Construction/Demolition Waste Management and Disposal
5. Section 01 78 00 – Closeout Submittals
6. Section 01 79 00 – Demonstration and Training
7. Section 23 31 00 – HVAC Ducts and Casings
8. Section 23 32 00 – Air Plenums and Chases

**1.03 Reference Standards**

A. ASHRAE Standard 55 – Thermal Environmental Conditions for Human Occupancy; 2013

B. ASHRAE Standard 70 – Method of Testing the Performance of Air Outlets and Air Inlets; 2006

C. ASHRAE Standard 170 – Ventilation of Health Care Facilities; 2008 with Addendum

D. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes; 2013

E. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub; 2015

F. CSA Standard Z317.2-10 – Special Requirements for Heating, Ventilation, and Air-conditioning (HVAC) Systems in Health Care Facilities; 2010

G. SMACNA (SRM) – Seismic Restraint Manual Guidelines for Mechanical Systems; Sheet Metal and Air Conditioning Contractors’ National Association; 2008

H. SMACNA (SRM) – Seismic Restraint Manual Guidelines for Mechanical Systems; Sheet Metal and Air Conditioning Contractors’ National Association; 2008

**1.04 Administrative Requirements**

A. Pre-installation Meeting: Conduct a pre-installation meeting one week prior to the start of the work of this section; require attendance by all affected installers.

B. Sequencing: Ensure that utility connections are achieved in an orderly and efficient manner.

**1.05 Submittals**

A. See Section 01 30 00 – Administrative Requirements for submittal procedures.

B. Product Data: Provide data indicating configuration, general assembly, and materials used in fabrication. Include catalog performance ratings that indicate air flow, static pressure, and NC designation.

C. Shop Drawings: Indicate configuration, general assembly, and materials used in fabrication.

D. Certificates: Certify that air capacities, pressure drops, and selection procedures meet or exceed specified requirements.

E. Manufacturer's Installation Instructions: Indicate support and hanging details, installation instructions, recommendations, and service clearances required.

F. Project Record Documents: Record actual locations of units and control components.

G. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, maintenance and repair data, and parts lists. Include directions for resetting constant-volume regulators.

H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

1. See Section 01 60 00 - Product Requirements for additional provisions.

**1.06 Quality Assurance**

1. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum ten years of documented experience.
2. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

**1.07 Warranty**

1. See Section 01 78 00 - Closeout Submittals, for additional warranty requirements.
2. Price Industries warrants that, at the time of shipment, the HORD will be free from defects arising from manufacturing, workmanship, or a failure to adhere to Price Industries’ published catalog specifications and specified material. If Price Industries is notified in writing of any such defect within (1) year from the date of shipment, Price Industries will, at its sole option, repair, replace, or refund the purchase price paid by the Representative for the Product. Such remedies are the exclusive remedies available under this warranty.

**PART 2 – PRODUCTS**

**2.01** **HORD Plenum Air Curtain**

1. Basis of Design: Price Industries, Inc.
2. Hospital Operating Room Diffuser perimeter air curtain system: Model HORD
3. General:
	1. Plenum system shall be (select one):
4. Modular plenum:
5. The operating room perimeter air curtain system shall consist of separate perimeter air curtain system with modular plenums and at least one inlet per plenum.
6. Modular plenum systems shall utilize one independent plenum for each side of the system to provide a consistent curtain barrier.
7. Modular plenum corners shall overlap to avoid breaks in the air curtain.
8. Using multiple independent plenums to satisfy length requirements on any one side shall not be permitted.
9. Continuous plenum:
10. The operating room perimeter air curtain system shall be supplied as four modules of linear slot diffusers with corner sections that create a continuous plenum.
11. The supply air shall pass freely from one plenum section to another.
12. The continuous plenum system shall require a minimum of two inlets.
	1. The mounting style shall be one of the following options:
		1. Surface Mount, suitable for installation with a drywall ceiling.
		2. Tee-Bar Mount, suitable for installation with a lay-in T-bar ceiling system.
13. Perimeter Air Curtain System:
	1. Construction:
14. All horizontal and vertical plenum corners shall feature ¾ inch radii to facilitate cleaning.
15. Plenums shall be available in one-piece construction up to 10 feet long with field assembly required for longer sections.
16. The linear slot diffuser face assembly shall have two slots, engineered to discharge supply air at a 15° pattern away from the surgical zone.
17. The linear slot diffusers and mounting frames shall have plenum corner elbows that are attached using joiner flanges with integral hanger holes (Continuous plenum only)
18. A perforated equalization baffle, affixed to the diffuser face, provides uniform velocity through the fixed pattern controllers.
19. Adjustable pattern controllers shall not be permitted.
20. All diffuser face assemblies shall be secured using quarter-turn quick release fasteners and retainer cables for ease of installation and removal.
21. Diffuser face assemblies shall include two (2) stainless steel retainer cables.
	1. Plenum and mounting frame material shall be one of the following options:
		1. 14 gauge aluminum
		2. 18 gauge aluminum
		3. 20 gauge 304 stainless steel
		4. 23 gauge 304 stainless steel
	2. Plenum finish shall be one of the following options:
		1. All aluminum components shall have a white baked-on powder coat finish.
			1. The paint finish must demonstrate no degradation when tested in accordance with ASTM D1308 (covered and spot immersion) and ASTM D4752 (MEK double rub) paint durability tests.
			2. The paint film thickness shall be a minimum of 2.0 mils.
			3. The finish shall have a hardness of 2H.
			4. The finish shall withstand a minimum salt spray exposure of 1000 hours.
			5. The finish shall have an impact resistance of 80 in-lb.
		2. All aluminum components shall have a baked-on powder coat finish in a color to match a customer supplied sample.
		3. Prepared aluminum with factory cleaned mill finish.
		4. Stainless steel with 2B polished finish.
	3. Face finish shall be one of the following options:
		1. All aluminum components shall have a white baked-on powder coat finish.
			1. The paint finish must demonstrate no degradation when tested in accordance with ASTM D1308 (covered and spot immersion) and ASTM D4752 (MEK double rub) paint durability tests.
			2. The paint film thickness shall be a minimum of 2.0 mils.
			3. The finish shall have a hardness of 2H.
			4. The finish shall withstand a minimum salt spray exposure of 1000 hours.
			5. The finish shall have an impact resistance of 80 in-lb.
		2. All aluminum components shall have a baked-on powder coat finish in a color to match a customer supplied sample.
		3. Prepared aluminum with factory cleaned mill finish.
		4. Stainless steel with #4 brushed finish.
	4. Options:
		1. Plenum inlets shall include room-side removable stainless steel opposed blade dampers for airflow adjustment without removal of the diffuser face.
		2. End Cap shall be supplied with one of the following fastening methods (Modular plenum only):
			1. End cap shall be mechanically fastened.
			2. End cap shall be continuously welded.

**PART 3 – EXECUTION**

**3.01 Examination**

 A. Verify that conditions are suitable for installation.

 B. Verify that field measurements are as shown on the drawings.

**3.02 Installation**

1. Install in accordance with manufacturer’s instructions.
2. See drawings for the size(s) and locations of linear slot diffuser inlets.
3. Support components individually from structure in accordance with SMACNA (SRM).
4. Do not support components from ductwork.
5. Connect to ductwork in accordance with Section 203 31 00.

**3.03 Adjusting**

1. Ensure supply air to the air curtain system by performing pitot traverse of the main supply duct.
2. Balance outlets according to manufacturer’s recommendations.
3. Verify that field measurements are as shown on the drawings.

**3.04 Field Quality Control**

1. See Section 01 40 00 – Quality Requirements for additional requirements.

**3.05 Cleaning**

1. See Section 01 74 19 – Construction Waste Management and Disposal for additional requirements.

**3.06 Closeout Activities**

1. See Section 01 78 00 – Closeout Submittals for closeout documentation requirements.
2. See Section 01 79 00 – Demonstration and Training for additional requirements.