**Price RCD Round Cone Diffusers**

**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. **Section includes**:
1. Round Cone Diffusers
	1. **Related Requirements**
2. Section 01 30 00 – Administrative Requirements
3. Section 01 40 00 – Quality Requirements
4. Section 01 60 00 – Product Requirements
5. Section 01 74 21 – Construction/Demolition Waste Management and Disposal
6. Section 01 78 00 – Closeout Submittals
7. Section 01 79 00 – Demonstration and Training
	1. **Reference Standards**
8. All referenced standards and recommended practices in this section pertain to the most recent publication thereof, including all addenda and errata.
9. ASHRAE 70 – Method of Testing the Performance of Air Outlets and Air Inlets
10. ASTM 610 – Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces
11. ASTM 714 – Test Method for Evaluating Degree of Blistering of Paints
12. ASTM D1308 – Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Organic Finishes
13. ASTM D1654 – Standard Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments
14. ASTM D4752 – Standard Practice for Measuring MEK Resistance of Ethyl Silicate (Inorganic) Zinc-Rich Primers by Solvent Rub

**1.04 Submittals**

1. See Section 01 30 00 – Administrative Requirements for submittal procedures.
2. Product Data: Provide data indicating configuration, general assembly, and materials used in fabrication. Include catalog performance ratings that indicate airflow, static pressure and NC designation.
3. Shop Drawings: Indicate configuration, general assembly, and materials used in fabrication.
4. Project Record Documents: Record actual locations of units and control components.
5. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions (if applicable), and maintenance and repair data.
6. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
7. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

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.

**1.07 Warranty**

1. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
2. Provide 12 month manufacturer warranty from date of shipment of diffusers.

**PART 2 – PRODUCTS**

**2.01 Manufacturer**

1. Basis of Design: Price Industries, Inc.
2. Steel Round Cone Diffusers: Models RCD, RCDA
3. Aluminum Round Cone Diffusers: ARCD
4. Steel Two-Position Adjustable Round Cone Diffusers: Models RCDE
5. General:
	1. The round cone diffuser shall be supplied to deliver a 360 degree radial, horizontal airflow pattern. The cones shall be one-piece spun construction with smooth, aerodynamically designed surfaces. This contoured design shall protect the ceiling and help to prevent smudging and streaking.

**2.02 Steel Round Cone Diffusers**

1. Description:
	1. Furnish and install Price model [RCD] or [RCDA] round cone ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. Diffusers shall be heavy-gauge steel construction, and shall consist of four seamless, one-piece, spun cones that incorporate a round inlet collar of sufficient length for connecting rigid or flexible duct.
	2. The diffuser shall integrate with all duct sizes shown on the plans.
	3. An inner cone assembly shall consist of 3 cones which drop below the ceiling plane to assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck.
	4. Model RCD diffusers allow adjustment of the inner cones by repositioning screws to achieve both horizontal or vertical air patterns
	5. Model RCDA diffusers allow adjustment of the inner cones by turning the small center cone to achieve full horizontal to full vertical air pattern control.
	6. The diffuser nominal duct diameter shall be available from a minimum size of six inches to a maximum of 36 inches.
3. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.

**2.03 Aluminum Round Cone Diffusers**

1. Description:
	1. Furnish and install Price model ARCD round cone ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule.
2. Construction:
	1. Diffusers shall be aluminum construction, and shall consist of four seamless, one-piece, spun cones that incorporate a round inlet collar of sufficient length for connecting rigid or flexible duct.
	2. The diffuser shall integrate with all duct sizes shown on the plans
	3. An inner cone assembly shall consist of 3 cones which drop below the ceiling plane to assure optimal VAV air diffusion performance.
	4. Diffusers allow adjustment of the inner cones by repositioning screws to achieve both horizontal or vertical air patterns
	5. The diffuser nominal duct diameter shall be available in two inch increments from a minimum size of six inches to a maximum of 20 inches.
3. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.

**2.04 Steel Two-Position Adjustable Round Cone Diffusers**

1. Description:
	1. Furnish and install Price model RCDE round cone ceiling diffusers of sizes and mounting types designated by the plans and air distribution schedule.
	2. Diffusers shall be Fire-Rated Assemblies listed in the UL, Underwriters Laboratories Fire Resistance Directory and in the ULC,.
2. Construction:
	1. Diffusers shall be heavy-gauge steel construction, and shall consist of three seamless, one-piece, spun cones that incorporate a round inlet collar of sufficient length for connecting rigid or flexible duct.
	2. The diffuser shall integrate with all duct sizes shown on the plans.
	3. An inner cone assembly shall consist of 2 cones which drop below the ceiling plane to assure optimal VAV air diffusion performance. The inner cone assembly shall be completely removable from the diffuser face to allow for full access to any dampers or other ductwork components located near the diffuser neck.
	4. The diffuser allows adjustment of the inner cones to achieve two horizontal pattern settings
3. Paint Specification:
	1. Paint finish shall be (**select one**):
		1. Baked-on powder coat finish.
			1. The paint film thickness shall be a minimum of 2 mils.
			2. The finish shall have a hardness of 2H as tested in accordance with ASTM D3363.
			3. The finish shall pass an ASTM B117 Corrosive Environment Salt Spray Test for 1000 hours with no measurable creep, rusting or blistering as per ASTM D1654, D610 and D714.
			4. The finish shall pass an ASTM D870 Water Immersion test of a minimum of 500 hours with no measurable with no rusting or blistering as per ASTM D610 and D714.
			5. The finish shall have an impact resistance of 100 inch-pounds in accordance with ASTM D2794.
		2. All components shall have a custom finish in a color to match a customer supplied sample.
4. Mounting Frame:
	1. The diffuser mounting frame shall be suitable for surface mount or exposed duct mount applications.
5. Accessories (**select all that apply**):
	1. Damper:
		1. The diffuser shall be supplied with a steel volume control damper (**select one**):
			1. Radial opposed blade damper (VCR7)
			2. Full flow damper, duct mounted (VCR8)

**PART 3 – EXECUTION**

**3.01 Examination**

1. Verify that conditions are suitable for installation.
2. 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 diffusers.

**3.03 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.