

# CDRS25

## Round Control Damper

Class 1A Leakage



### APPLICATION

The CDRS25 "true round" control damper is designed for low to medium pressure and velocity HVAC systems to regulate air flow. It can be easily installed into round spiral ductwork. The specially designed blade-to-frame neoprene seal secured between two round blades creates a tight sealing effect for low leakage.

### STANDARD CONSTRUCTION

<b>Frame</b>	20 ga. (1.0) galvanized steel, 6" (152) long, (16 ga. (1.6) optional).
<b>Blade</b>	Two layers galvanized steel, 14 gauge (2.0) equivalent thickness
<b>Blade Seal</b>	Neoprene sandwiched between two sides of blades. Seal fully encompasses blade edge.
<b>Axle</b>	1/2" (13) diameter.
<b>Bearing</b>	Oil impregnated 304 stainless steel pressed into frame
<b>Operator Shaft</b>	1/2" (13) dia. x 6" long plated steel

### PERFORMANCE RATINGS

<b>Leakage</b>	Class 1A
<b>Velocity</b>	Up to 4000 fpm (20.3 mps)
<b>Pressure</b>	Up to 10 in. w.g. (2.5 kPa)
<b>Temperature</b>	Up to +250°F (+121°C)
<b>Airflow</b>	Both directions

### OPTIONS & ACCESSORIES

<b>Construction</b>	Stainless steel (304 & 316), and aluminum
<b>Blade Seals</b>	Silicone, Viton & EPDM
<b>Switches</b>	SP100 - blade (open/closed) position indicator
<b>Actuators</b>	Factory provided with and without built-in auxiliary switches
<b>Actuator Weather Shield</b>	RUSN4X, RUSN4X-SM & RUSN4X-L
<b>Manual Operator</b>	Locking hand quadrant



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### FEATURES

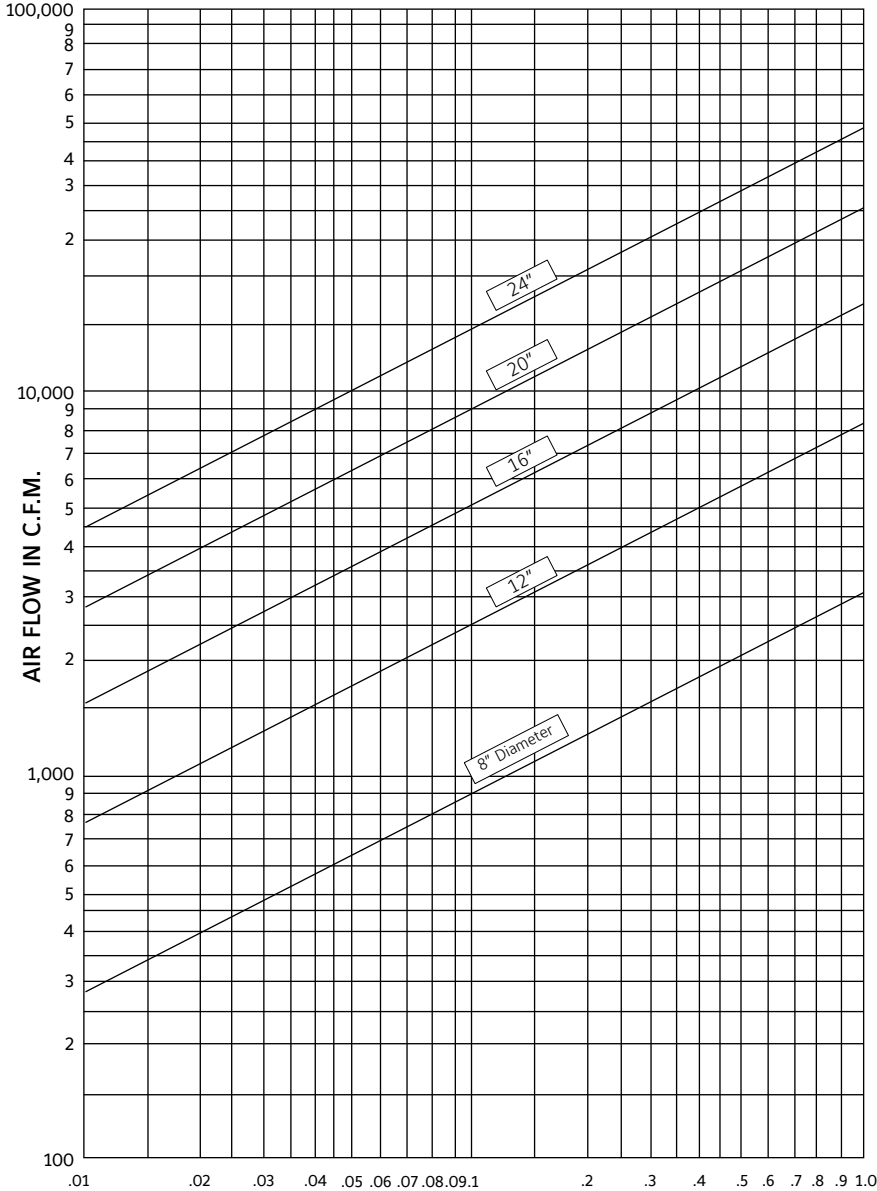
- ▶ Class 1A low leakage performance for energy savings
- ▶ Blade seals mechanically fastened for longevity
- ▶ Lower pressure drop than square-to-round transition

### DIMENSIONS

<b>Minimum diameter</b>	4" (102)
<b>Maximum diameter</b>	24" (610)

NOTE:  
- Values shown in parenthesis ( ) indicate millimeters

Static Pressure Drop Chart



**DETERMINING STATIC PRESSURE DROP**

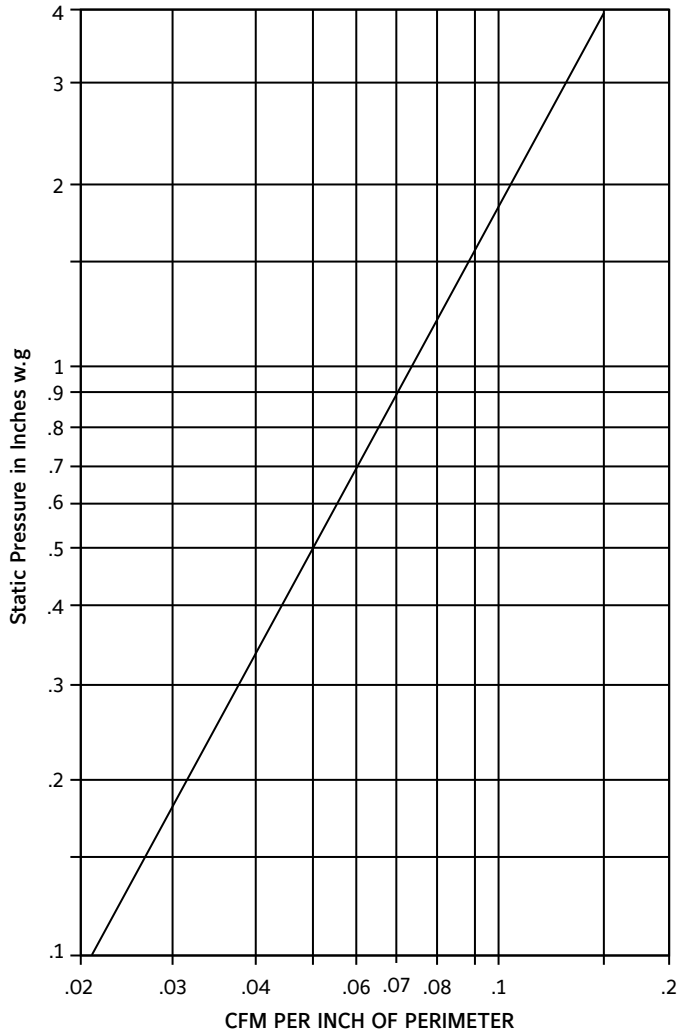
To determine static pressure drop through an open damper, enter the Damper Pressure Drop chart from the left side. Given the CFM of air flow through the damper, follow the CFM line to the diagonal line with the Damper size required, then down to the static pressure drop of the unit.

Example:

The pressure drop of an 8" damper with 700 CFM flow is .06 inches w.g.

## PERFORMANCE DATA

Leakage Chart



### DETERMINING LEAKAGE

To determine damper leakage, enter Damper Leakage chart from the left side. Given the static pressure the damper will encounter in closed position, move horizontally to diagonal line, then go straight down the chart to CFM of leakage per inch of perimeter.

#### Example:

Damper operating at 1.5" w.g. static pressure will leak .09 CFM per inch of perimeter. Total leakage on an 8" round will be  $8 \times 3.14 \times .09$  CFM per inch perimeter = 2.26 CFM leakage.

#### NOTES:

1. Ratings are based on AMCA Standard 500 using Test Set-up Apparatus Figure 5.3 (damper installed with duct upstream and downstream).
2. Static pressure and CFM are corrected to .075 lb./cu. ft. air density.

## MINIMUM TORQUE REQUIREMENTS AND MAXIMUM SYSTEM PRESSURE

Damper D (Diameter)	MIN. IN. LBS. TORQUE AT 2" w.g. OR LESS STATIC PRESSURE
4"	36
5"	40
6"	44
7"	48
8"	52
9"	56
10"	60
12"	68
14"	76
16"	84
18"	92
20"	100
22"	108
24"	116

DAMPER DIA. INCHES	MAXIMUM SYSTEM PRESSURE
24" (610)	6.0" W.G.
18" (457)	6.0" W.G.
12" (305)	8.0" W.G.
6" (152)	10.0" W.G.

## SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, round control dampers meeting the following specifications:

Dampers shall consist of a single circular blade mounted to a shaft. Inside frame surface shall be clean and smooth with no full circumference blade stops or similar inward projections.

Frames shall be 20 gauge galvanized steel and shall include rolled stiffener beads to allow easy sealing of spiral ductwork joints. Damper blade shall be double skin equivalent to 14 gauge and shall include a neoprene seal sandwiched between the two sides. Leakage through the damper in the closed position shall not exceed .15 cfm per inch of blade circumference at a pressure differential of 4" w.g. Leakage through the bearings shall be less than 1/4" cfm at 4" w.g. static pressure. Dampers shall be in all respects equivalent to Ruskin Model CDRS25.

### LINKS TO IMPORTANT DOCUMENTS

Document Title
O & M for Commercial Control Dampers
Limited Warranty Document



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