



Application

Model HCDR-250 is a heavy duty round industrial control damper with a flanged style frame. It is designed to control airflow and provide shut off in HVAC or industrial process control systems.

Ratings

Velocity

Up to 5150 fpm (26.5 m/s)

Temperature

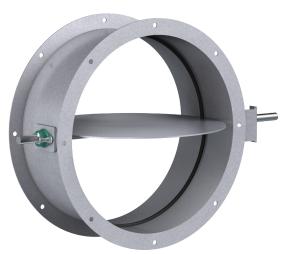
-40° to 600°F (-40° to 315°C) Consult factory for other temperatures

Pressure

Up to 13.5 in. wg (3.4 kPa) - differential pressure

Construction

	Standard	Optional		
Frame Material	Painted	304SS or 316SS		
Frame Type	Flanged channel	-		
Blade Material	Painted	304SS or 316SS		
Blade Seals	None	EPDM, Silicone, Fiberglass, or Ceramic		
Blade Stop	Pin stop	Rolled bar		
Blade Type	Round butterfly			
Axle Bearing	External bronze through 56 in. (1422 mm); External ball above 56 in. (1422 mm) diameter	External ball, Outboard bronze, Outboard ball, Outboard carbon		
Axle Material	Plated steel	303SS or 316SS		
Axle Seals	None	O-ring, Double gland		
Paint Finishes	Hi Pro Polyester	Hi Temperature Flame Control, Hi Temperature Silver, Industrial Epoxy, None		
Mounting Holes	None Parallel, Strad			



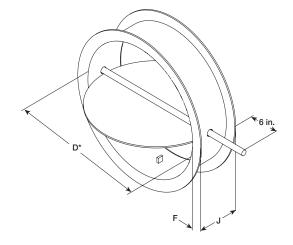
* Actual Inside Dimension

Diameter	Minimum Size	Maximum Size		
Inches	4	72		
mm	102	1829		

Features

- Wide mounting flanges can be ordered with bolt holes, customized to match your requirements.
- Rolled bar stops are required when blade seal is selected.
- Wide range of actuators available

Dimensions

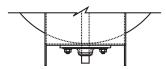


Diameter <i>D</i>		Frame Frame & Depth <i>J</i> Flange	Flange	Axle	Blade	
Inches (mm)			Width F	Diameter	Thickness	
Above	Through	Inches (mm)	Gauge (mm)	Inches (mm)	Inches (mm)	Gauge (mm)
3.99	12	6	12	1.25	0.5*	10
(101)	(305)	(152)	(2.7)	(32)	(13)	(3.5)
12	16	8	12	1.5	0.5*	0.188
(305)	(406)	(203)	(2.7)	(32)	(13)	(4.8)
16	24	8	12	1.5	0.75	0.188
(406)	(610)	(203)	(2.7)	(32)	(19)	(4.8)
24	36	8	10	2.0	0.75	0.188
(610)	(914)	(203)	(3.5)	(51)	(19)	(4.8)
36	44	8	10	2.0	1.00	0.188
(914)	(1118)	(203)	(3.5)	(51)	(25)	(4.8)
44	48	8	0.188	2.0	1.25	0.188
(1118)	(1219)	(203)	(4.8)	(51)	(32)	(4.8)
48	56	8	0.188	2.5	1.25	0.188
(1219)	(1422)	(203)	(4.8)	(64)	(32)	(4.8)
56	60	10	0.188	2.5	1.50	0.188
(1422)	(1524)	(254)	(4.8)	(64)	(38)	(4.8)
60	72	10	0.188	3	1.50	0.188
(1524)	(1829)	(254)	(4.8)	(76)	(38)	(4.8)

^{*} The axle diameter is .75 in (19mm) when outboard carbon bearings are selected for dampers 16 inches and below.

Options

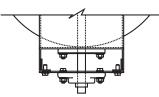
Bearing and Shaft



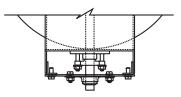
External Mounted Ball or Sleeve Bearing (Bronze Sleeve Standard, Ball Optional)



External Mounted Bronze Sleeve Bearing with O-Ring (Optional)



O-Ring Shaft Seal with Outboard Mounted Bearing (Optional)



Double Gland Stuffing Box with Outboard Mounted Bearing (Optional)

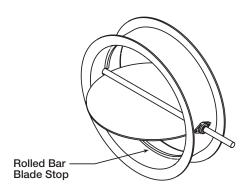
Blade Seal (Rolled Bar Blade Stops Required)

Standard - Does not include Blade Seals

Optional - EPDM Blade Seals (250°F [121°C] max.)

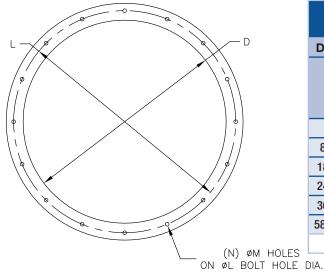
Optional - Silicone Rubber Blade Seals (400°F [204°C] max.)

Optional - Fiberglass or Ceramic Blade Seals (600°F [315°C] max.)



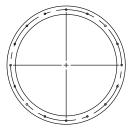
Mounting Holes

The recommended bolt hole pattern is shown in the table below. Customer must specify bolt holes that are parallel to the axle centerline or that straddle the axle centerline as shown in the diagrams below. The factory can also provide bolt hole sizes and patterns other than those shown.



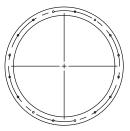
Recommended Bolt Hole Pattern (Bolt Holes Parallel to Axle Centerline)					
Diameter Inches (mm)			Mounting	Bolt	
Above	Through	Number of Holes	Hole Diameter in. (mm) N	Circle Diameter	Degrees Between Holes
4 (102)	8 (203)	4	% (9.5)	*	90
8.001 (203)	18 (457)	8	7∕16 (11)	*	45
18.001 (457)	24 (610)	12	½16 (11)	*	30
24.001 (610)	36 (914)	16	7∕16 (11)	*	22 ½
36.001 (914)	58 (1473)	24	½16 (11)	*	15
58.001 (1473)	72 (1829)	32	%6 (14)	*	11¼





Parallel on Centerline



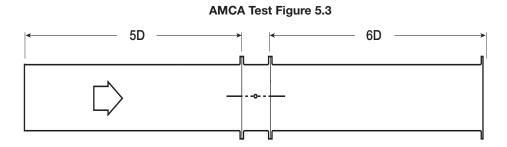


Straddle on Centerline

Performance Data

AMCA Test Figure 5.3

Figure 5.3 Illustrates a fully ducted damper. This configuration has low pressure drop because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



Pressure Drop Data

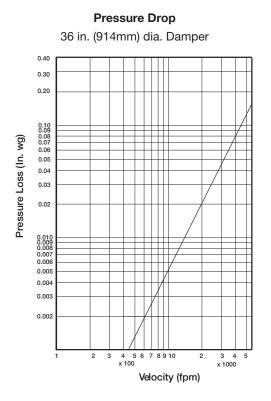
This pressure drop data was conducted in accordance with AMCA Standard 500-D using Test Figure 5.3. All data has been corrected to represent standard air at a density of 0.075 lb/ft³(1.2 kg/m³).

Actual pressure drop found in any HVAC system is a combination of many factors. This pressure drop information along with an analysis of other system influences should be used to estimate actual pressure losses for a damper installed in a given HVAC system. NOTE:

PS refers to damper with standard pin blade stop BS refers to damper with rolled bar blade stop

12 in. (305mm) dia. Damper 0.40 0.30 0.20 0.06 Pressure Loss (In. wg) 0.04 0.03 0.02 0.006 0.005 0.004 0.003 0.002 3 4 x 1000 Velocity (fpm)

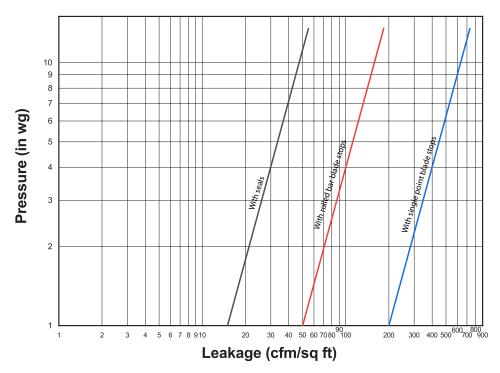
Pressure Drop



Leakage

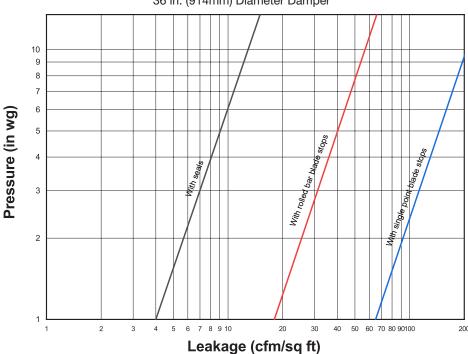
Damper leakage (with blades fully closed) varies based on the type of blade stops and low leakage seals applied. Model HCDR-250 is available with no seals (standard) or with EPDM or silicone rubber blade seals. Leakage testing was conducted in accordance with AMCA Standard 500-D and is expressed as cfm/ft² of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/ft³ (1.2 kg/m³).

Leakage12 in. (305mm) Diameter Damper



Leakage

36 in. (914mm) Diameter Damper



Installation Instructions



Heavy Duty/Industrial Damper Catalog



Heavy Duty and Industrial Product Selection Guide



Damper Interactive Selection Guide



Specifications



Warranty



