

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

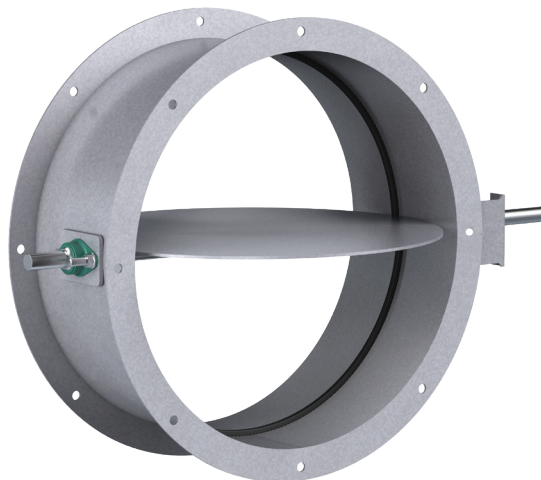
Up to 5150 fpm (26.5 m/s)

Pressure

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

Temperature

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



* Actual Inside Dimension

Construction

	Frame Material	Frame Type	Blade Material	Blade Seals	Blade Stops	Blade Type	Axle Bearing*	Axle Material*	Axle Seals	Paint Finishes
Up to 250°F										
Standard	Carbon Steel	Flanged Channel	Carbon Steel	None	Pin Stop	Round Butterfly	External Bronze through 48 in. (1219 mm); External Relubricable Ball above 48 in. (1219 mm) diameter	Plated Steel	None	Hi Pro Polyester
Optional	304SS, 316SS	-	304SS, 316SS	EPDM, Silicone	Rolled Bar	-	External Ball, Outboard Bronze, Outboard Ball	303SS or 316SS	O-ring, Double Gland	Hi Temp Flame Control, Hi Temp Silver, Industrial Epoxy, Mill Finish (304SS, 316SS)
400°F										
Standard	Carbon Steel	Flanged Channel	Carbon Steel	None	Pin Stop	Round Butterfly	External Bronze through 48 in. (1219 mm); External Relubricable Ball above 48 in. (1219 mm) diameter	Plated Steel	Double Gland	Hi Temp Silver
Optional	304SS, 316SS	-	304SS, 316SS	Silicone	Rolled Bar	-	External Ball, Outboard Bronze, Outboard Ball	303SS, 316SS	O-ring, Double Gland	Hi Temp Flame Control
600°F										
Standard	Carbon Steel	Flanged Channel	Carbon Steel	None	Pin Stop	Round Butterfly	Outboard Bronze	Plated Steel	Double Gland	Hi Temp Flame Control
Optional	304SS, 316SS	-	304SS, 316SS	Fiberglass, Ceramic	Rolled Bar	-	Outboard Carbon, Outboard Ball	303SS, 316SS	-	-

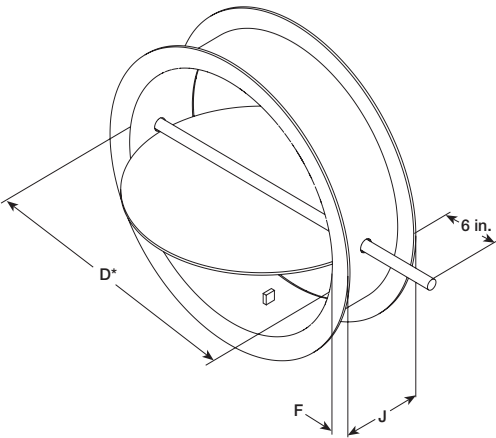
* Axle materials may change to 316SS as required for proper operation.

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

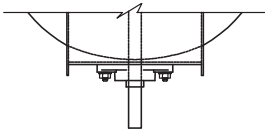


Diameter <i>D</i> Inches (mm)		Frame Depth <i>J</i> Inches (mm)	Frame & Flange Gauge (mm)	Flange Width <i>F</i> Inches (mm)	Axle Diameter Inches (mm)	Blade Thickness Gauge (mm)
Above	Through					
3.99 (101)	12 (305)	6 (152)	10 (3.5)	1.25 (32)	0.5* (13)	10 (3.5)
12 (305)	16 (406)	8 (203)	10 (3.5)	1.5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

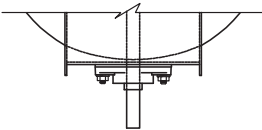
* The axle diameter is 3/4 in (19 mm) when outboard carbon bearings are selected for dampers 16 inches and below.

Options

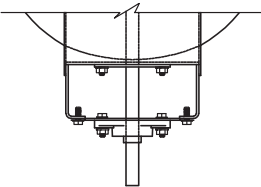
Bearing and Shaft



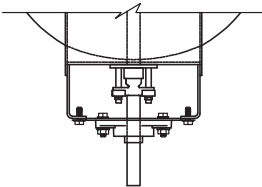
External Mounted Ball or Sleeve Bearing (Bronze Sleeve Standard, Ball Optional)



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



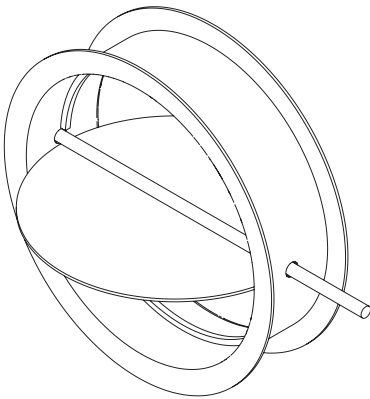
O-Ring Shaft Seal with Outboard Mounted Bearing (Optional)



Double Gland Stuffing Box with Outboard Mounted Bearing (Optional)

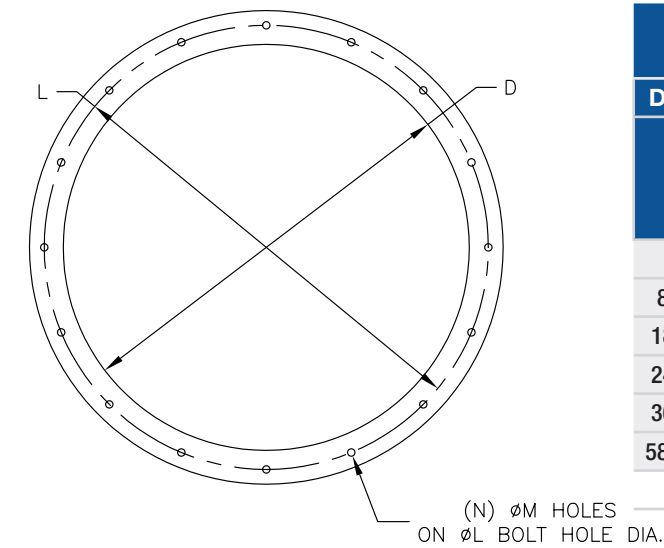
Blade Seal (Rolled Bar Blade Stops Required)

- 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.)



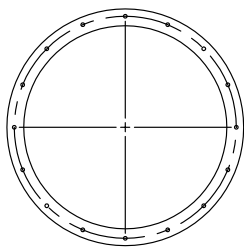
Mounting Holes

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.

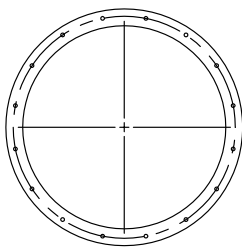


Recommended Bolt Hole Pattern (Bolt Holes Parallel to Axle Centerline)					
Diameter Inches (mm)		Number of Holes	Mounting Hole Diameter in. (mm) N	Bolt Circle Diameter (L)	Degrees Between Holes
Above	Through				
4 (102)	8 (203)	4	3⁄8 (9.5)	*	90
8.001 (203)	18 (457)	8	7⁄16 (11)	*	45
18.001 (457)	24 (610)	12	7⁄16 (11)	*	30
24.001 (610)	36 (914)	16	7⁄16 (11)	*	22½
36.001 (914)	58 (1473)	24	7⁄16 (11)	*	15
58.001 (1473)	72 (1829)	32	9⁄16 (14)	*	11¼

* Bolt Circle Diameter = Damper Diameter + Flange Height + ¼ in. (6 mm)



On Centerline

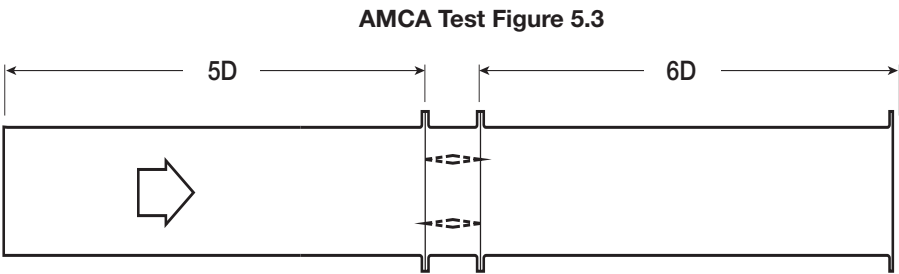


Straddle Centerline

Performance Data

AMCA Test Figure 5.3

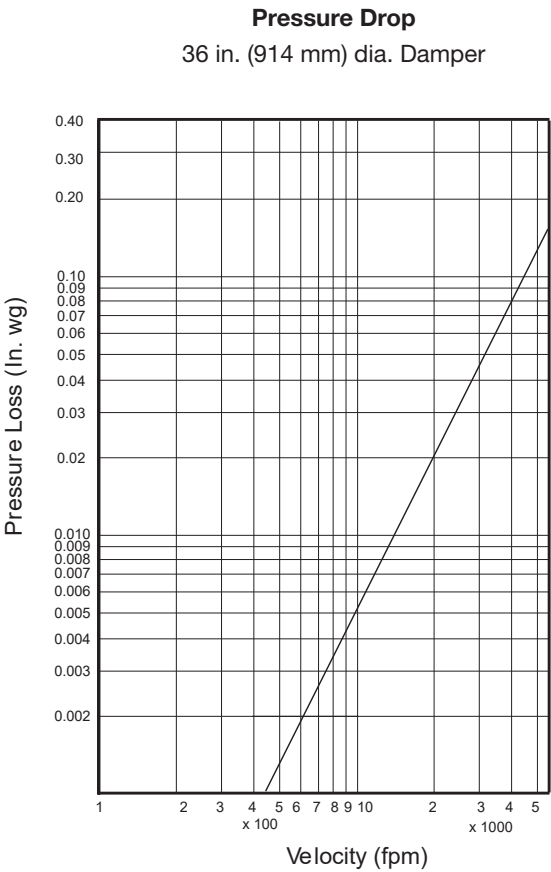
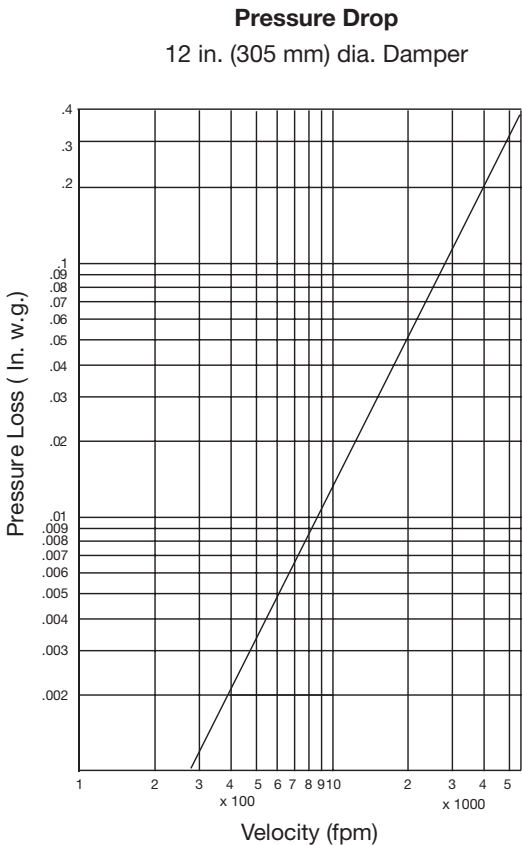
Figure 5.3 Illustrates a fully ducted damper. This configuration has low pressure drop because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



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.

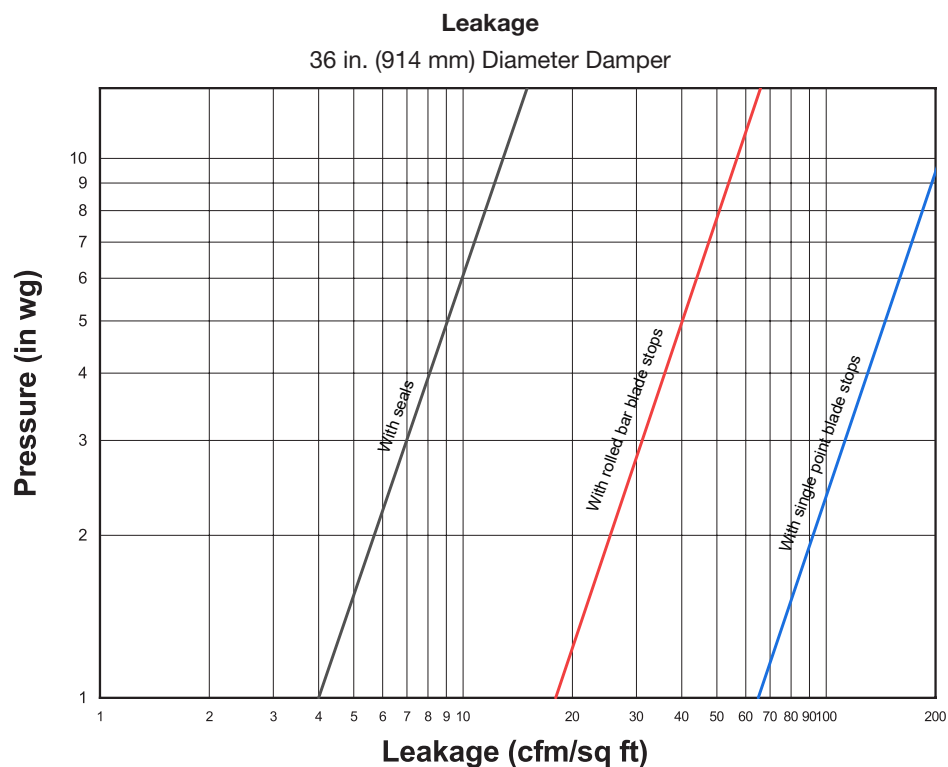
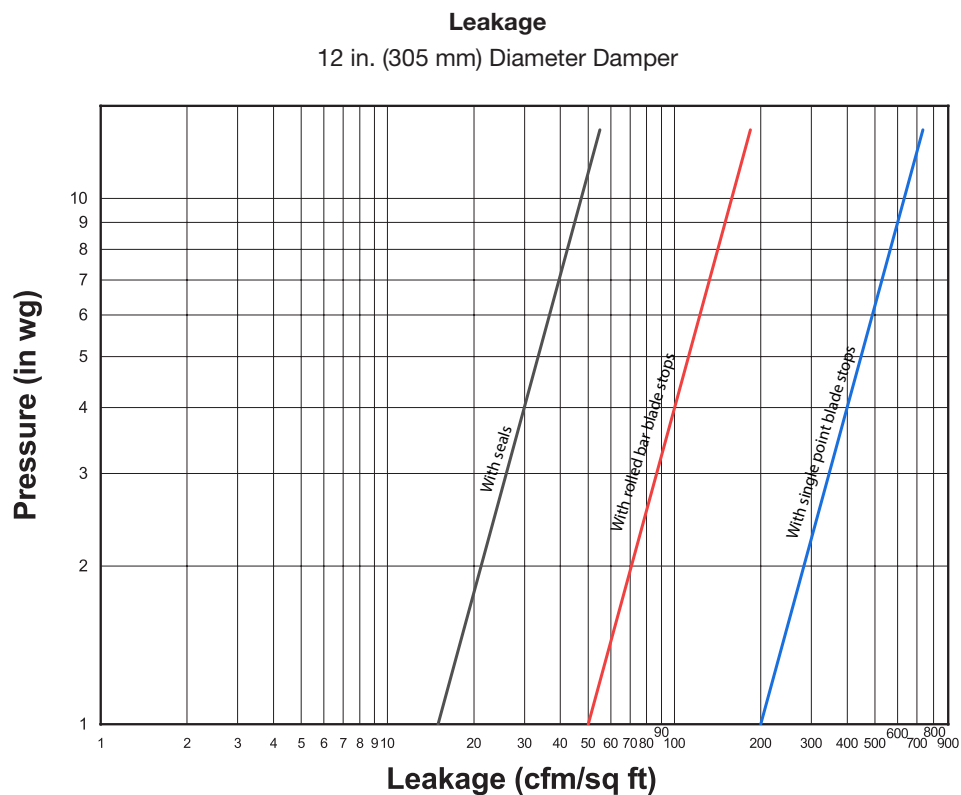


NOTE:

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

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).



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