

### Application

Model HCDR-150 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 4000 fpm (20.3 m/s)

#### Pressure

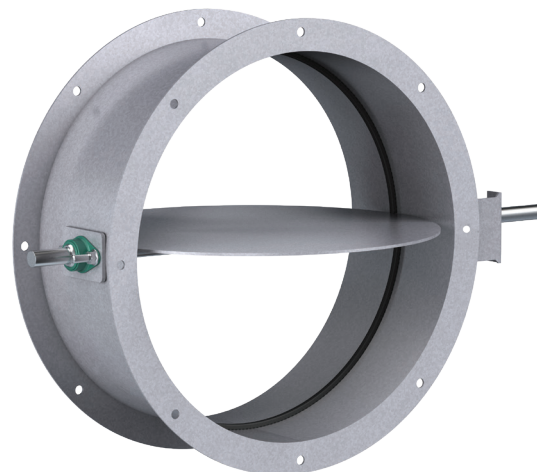
Up to 6 in. wg (1.5 kPa) - differential pressure

#### Temperature

-40° to 400°F (-40° to 204°C)

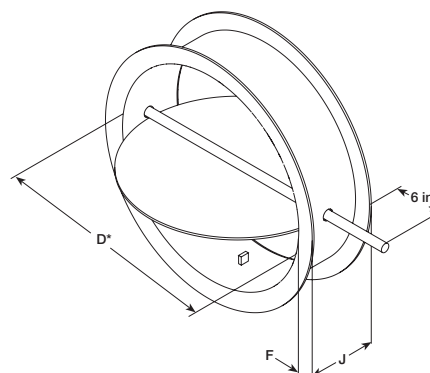
### Construction

|                       | Standard               | Optional                                                                                                   |
|-----------------------|------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Frame Material</b> | Carbon steel           | 304SS, 316SS                                                                                               |
| <b>Frame Type</b>     | Flanged channel        | -                                                                                                          |
| <b>Blade Material</b> | Carbon steel           | 304SS, 316SS                                                                                               |
| <b>Blade Seals</b>    | None                   | EPDM or Silicone                                                                                           |
| <b>Blade Stop</b>     | Pin stop               | Rolled bar                                                                                                 |
| <b>Blade Type</b>     | Round butterfly        | —                                                                                                          |
| <b>Axle Bearing</b>   | Stainless steel sleeve | External bronze                                                                                            |
| <b>Axle Material</b>  | Plated steel           | 303SS, 316SS                                                                                               |
| <b>Axle Seals</b>     | None                   | O-ring                                                                                                     |
| <b>Paint Finishes</b> | Hi Pro Polyester       | Hi Temperature Flame Control,<br>Hi Temperature Silver,<br>Industrial Epoxy,<br>Mill finish (304SS, 316SS) |
| <b>Mounting Holes</b> | None                   | On centerline,<br>Straddle centerline                                                                      |



Diameter = Actual Inside Dimension

| Diameter | Minimum Size | Maximum Size |
|----------|--------------|--------------|
| Inches   | 4            | 48           |
| mm       | 102          | 1219         |



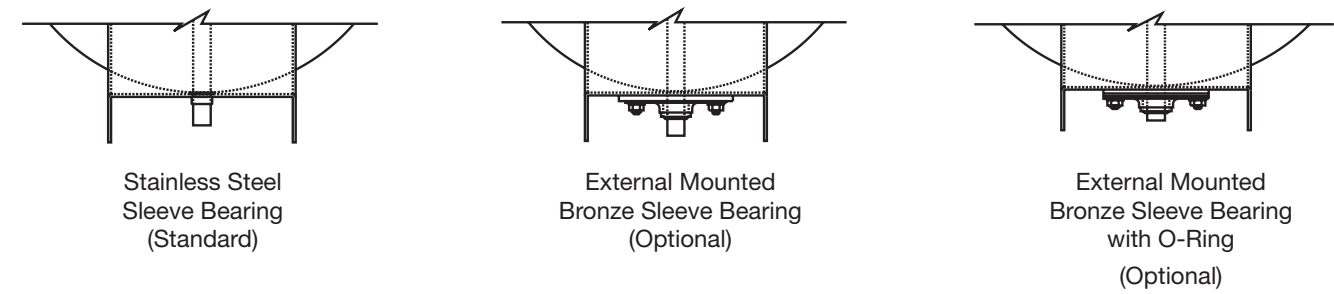
### Features

- 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.

| Diameter <i>D</i><br>Inches (mm) |              | Frame<br>Depth <i>J</i><br>Inches<br>(mm) | Frame &<br>Flange<br>Gauge<br>(mm) | Flange<br>Width <i>F</i><br>Inches<br>(mm) | Axle<br>Diameter<br>Inches<br>(mm) | Blade<br>Thickness<br>Gauge<br>(mm) |
|----------------------------------|--------------|-------------------------------------------|------------------------------------|--------------------------------------------|------------------------------------|-------------------------------------|
| Above                            | Through      |                                           |                                    |                                            |                                    |                                     |
| 3.99<br>(101)                    | 12<br>(305)  | 6<br>(152)                                | 12<br>(2.7)                        | 1¼<br>(32)                                 | ½<br>(13)                          | 12<br>(2.7)                         |
| 12<br>(305)                      | 20<br>(508)  | 8<br>(203)                                | 12<br>(2.7)                        | 1½<br>(32)                                 | ½<br>(13)                          | 12<br>(2.7)                         |
| 20<br>(508)                      | 24<br>(610)  | 8<br>(203)                                | 12<br>(2.7)                        | 1½<br>(32)                                 | ¾<br>(19)                          | 12<br>(2.7)                         |
| 24<br>(610)                      | 36<br>(914)  | 8<br>(203)                                | 10<br>(3.5)                        | 2<br>(51)                                  | ¾<br>(19)                          | 10<br>(3.5)                         |
| 36<br>(914)                      | 48<br>(1219) | 8<br>(203)                                | 10<br>(3.5)                        | 2<br>(51)                                  | 1<br>(25)                          | 10<br>(3.5)                         |

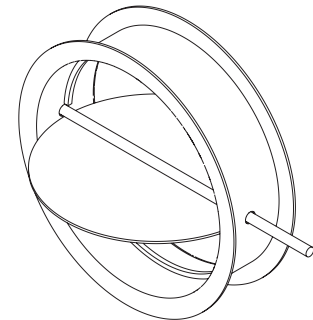
Options

Bearing and Shaft Options



Blade Seal Options (Rolled Bar Blade Stops Required)

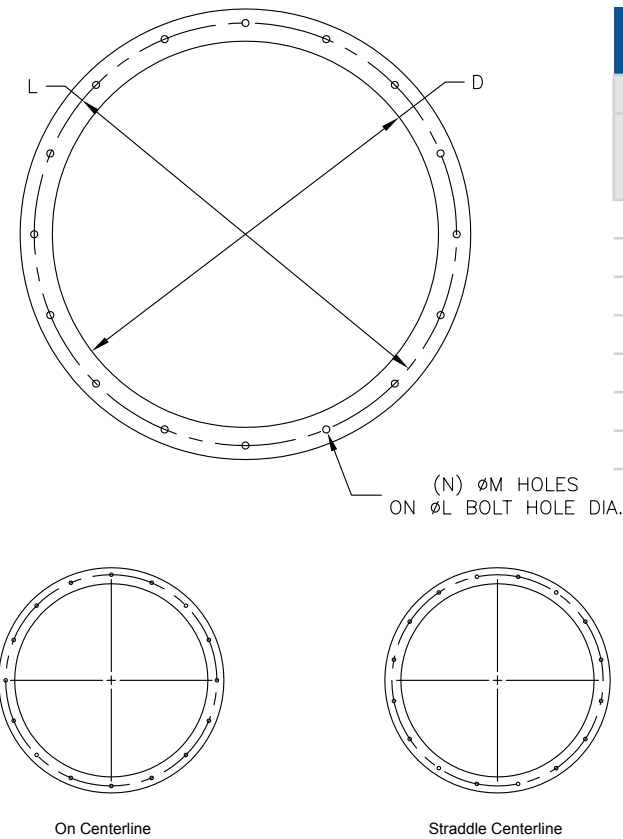
- Standard - Does not include Blade Seals
- Optional - EPDM Blade Seals (250°F [121°C] max.)
- Optional - Silicone Rubber Blade Seals (400°F [204°C] max.)



Rolled Bar Blade Stops

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.



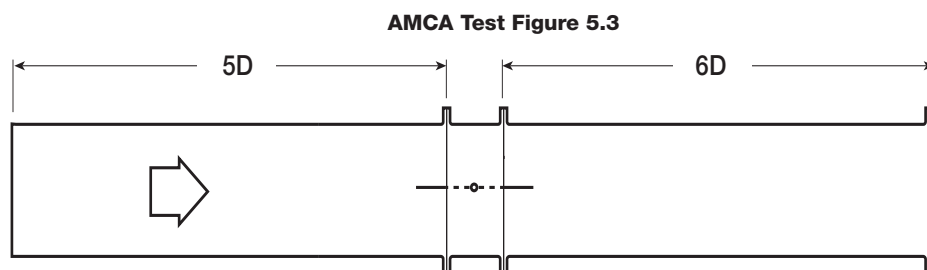
| Recommended Bolt Hole Pattern<br>(Bolt Holes Parallel to Axle Centerline) |           |                 |                                   |                        |                       |
|---------------------------------------------------------------------------|-----------|-----------------|-----------------------------------|------------------------|-----------------------|
| 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               | $\frac{3}{8}$ (9.5)               | *                      | 90                    |
| 8.001 (203)                                                               | 18 (457)  | 8               | $\frac{7}{16}$ (11)               | *                      | 45                    |
| 18.001 (457)                                                              | 24 (610)  | 12              | $\frac{7}{16}$ (11)               | *                      | 30                    |
| 24.001 (610)                                                              | 36 (914)  | 16              | $\frac{7}{16}$ (11)               | *                      | 22½                   |
| 36.001 (914)                                                              | 58 (1473) | 24              | $\frac{7}{16}$ (11)               | *                      | 15                    |
| 58.001 (1473)                                                             | 72 (1829) | 32              | $\frac{9}{16}$ (14)               | *                      | 11¼                   |

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

## 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.

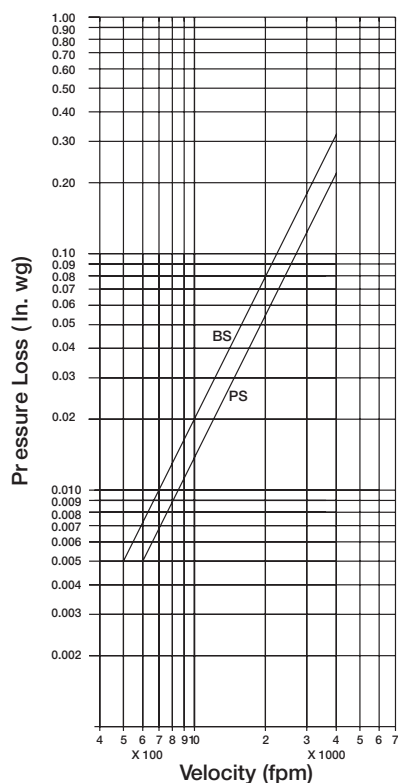


### Pressure Drop Data

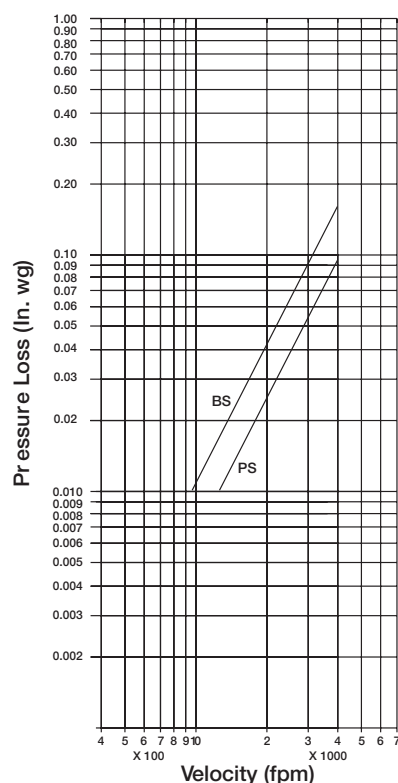
This pressure drop data was conducted in accordance with AMCA Standard 500-D using Test Figure 5.3. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.2 kg/m<sup>3</sup>).

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.

**Pressure Drop**  
12 in. (305 mm) dia. Damper



**Pressure Drop**  
36 in. (914 mm) dia. Damper



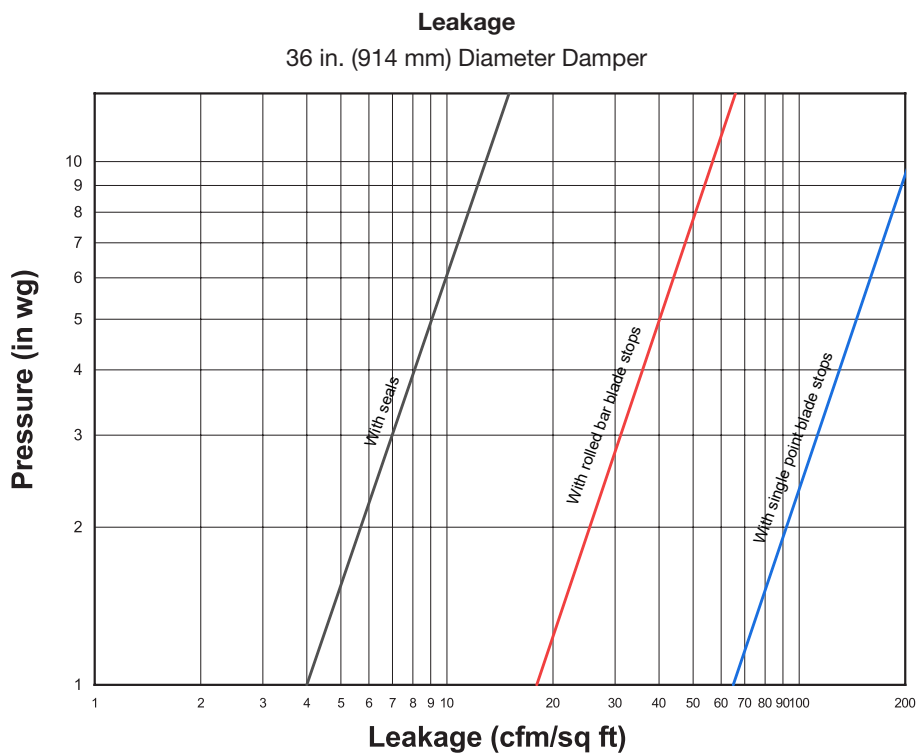
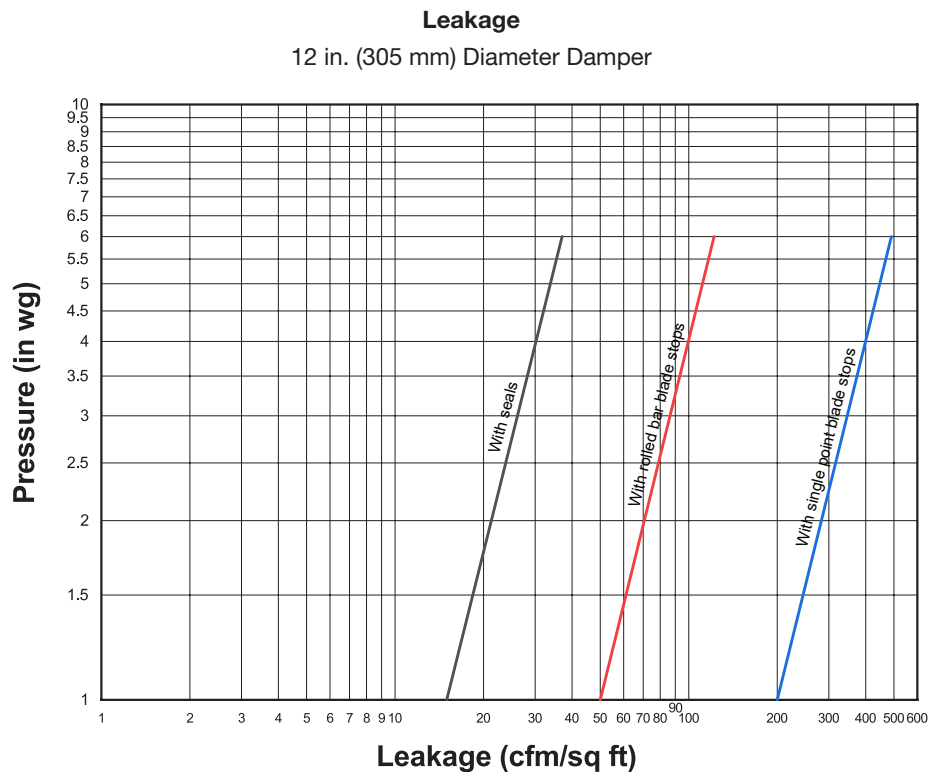
**NOTE:**

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-150 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/ft<sup>2</sup> of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.2 kg/m<sup>3</sup>).





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