

## Application

Model HCDR-152 is a heavy duty two-blade round industrial control damper with a flanged style frame. This damper provides a more precise control of the airstream through blade modulation.

A variety of optional features makes the model HCDR-152 extremely versatile, allowing its capabilities to be tailored to your application.

## Ratings

### Velocity

Up to 4000 fpm (20.3 m/s)

### Pressure

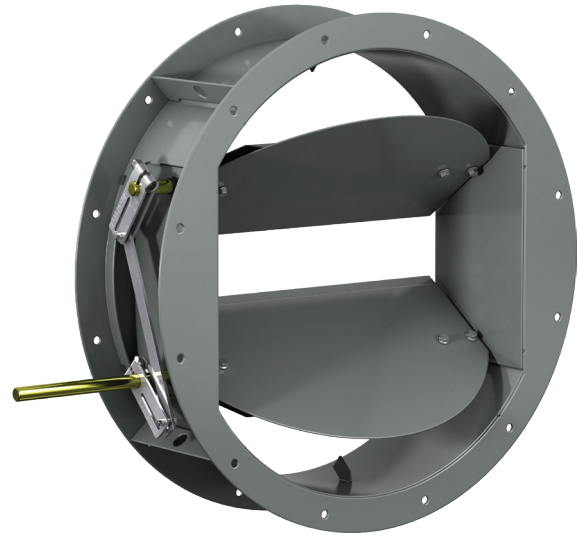
Up to 6 in. wg (1.5 kPa) differential pressure

### Temperature

-40° to 400°F (-40 to 205°C) maximum

## Construction

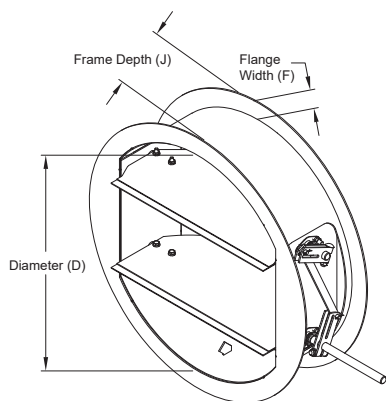
|                       | Standard               | Optional                                                                                                   |
|-----------------------|------------------------|------------------------------------------------------------------------------------------------------------|
| <b>Frame Material</b> | Carbon steel           | 304SS, 316SS                                                                                               |
| <b>Frame Type</b>     | Flanged Channel        | -                                                                                                          |
| <b>Blade Action</b>   | Opposed                | -                                                                                                          |
| <b>Blade Material</b> | Carbon steel           | 304SS, 316SS                                                                                               |
| <b>Blade Seals</b>    | None                   | EPDM, Silicone                                                                                             |
| <b>Blade Stop</b>     | Pin Stop               | Rolled Bar                                                                                                 |
| <b>Blade Type</b>     | Single Thickness       | -                                                                                                          |
| <b>Axle Bearing</b>   | Stainless steel sleeve | External Bronze                                                                                            |
| <b>Axle Material</b>  | Plated Steel           | 303SS, 316SS                                                                                               |
| <b>Linkage</b>        | Plated Steel           | 304SS, 316SS                                                                                               |
| <b>Axle Seals</b>     | None                   | O-ring                                                                                                     |
| <b>Linkage</b>        | Plated Steel           | 304SS, 316SS                                                                                               |
| <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, Straddle centerline                                                                         |



\* actual inside dimension

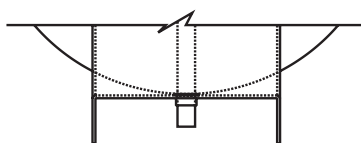
| Diameter | Minimum Size | Maximum Size |
|----------|--------------|--------------|
| Inches   | 12           | 48           |
| mm       | 305          | 1219         |

## Dimensions

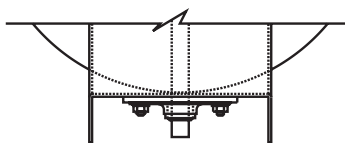


| Diameter D<br>Inches (mm) |              | Frame<br>Depth J<br>Inches<br>(mm) | Frame &<br>Flange<br>Gauge<br>(mm) | Flange<br>Width F<br>Inches<br>(mm) | Axle<br>Diameter<br>Inches<br>(mm) | Blade<br>Thickness<br>Gauge<br>(mm) |
|---------------------------|--------------|------------------------------------|------------------------------------|-------------------------------------|------------------------------------|-------------------------------------|
| Above                     | Through      |                                    |                                    |                                     |                                    |                                     |
| 0                         | 12<br>(305)  | 8<br>(203)                         | 12<br>(2.7)                        | 1 1/4<br>(32)                       | 3/4<br>(19)                        | 16<br>(1.5)                         |
| 12<br>(305)               | 20<br>(508)  | 8<br>(203)                         | 12<br>(2.7)                        | 1 1/2<br>(32)                       | 3/4<br>(19)                        | 16<br>(1.5)                         |
| 20<br>(508)               | 24<br>(610)  | 8<br>(203)                         | 10<br>(3.5)                        | 1 1/2<br>(32)                       | 3/4<br>(19)                        | 14<br>(2)                           |
| 24<br>(610)               | 36<br>(914)  | 8<br>(203)                         | 10<br>(3.5)                        | 2<br>(51)                           | 3/4<br>(19)                        | 14<br>(2)                           |
| 36<br>(914)               | 48<br>(1219) | 8<br>(203)                         | 10<br>(3.5)                        | 2<br>(51)                           | 1<br>(25)                          | 14<br>(2)                           |

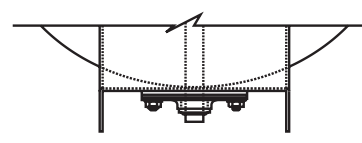
## Bearing and Shaft Options



Stainless Steel  
Sleeve Bearing  
(Standard)



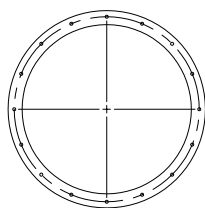
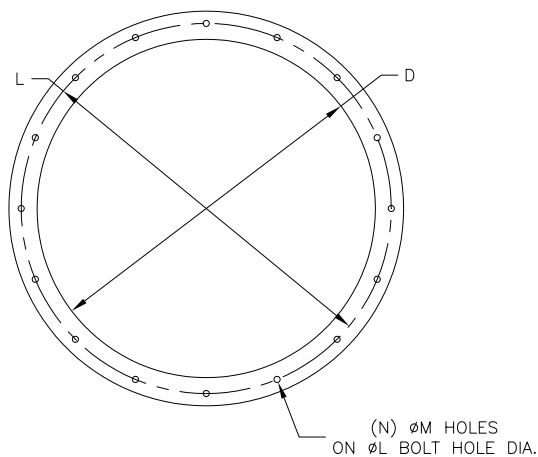
External Mounted  
Bronze Sleeve Bearing  
(Optional)



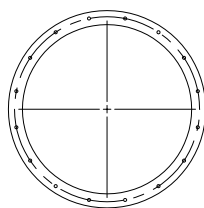
External Mounted  
Bronze Sleeve Bearing  
with O-Ring  
(Optional)

## Bolt 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.



On Centerline



Straddle Centerline

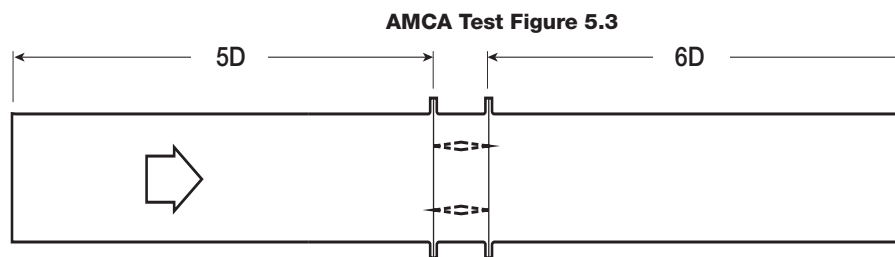
| Recommended Bolt Hole Pattern<br>(Bolt Holes Parallel to Axle Centerline) |           |                    |                                               |                                 |                             |
|---------------------------------------------------------------------------|-----------|--------------------|-----------------------------------------------|---------------------------------|-----------------------------|
| Diameter Inches (mm)                                                      |           | Number<br>of Holes | Mounting<br>Hole<br>Diameter<br>in. (mm)<br>N | Bolt<br>Circle<br>Diameter<br>L | Degrees<br>Between<br>Holes |
| Above                                                                     | Through   |                    |                                               |                                 |                             |
| 11.99 (305)                                                               | 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)                                     | *                               | 22 1/2                      |
| 36.001 (914)                                                              | 58 (1473) | 24                 | 7/16 (11)                                     | *                               | 15                          |
| 58.001 (1473)                                                             | 72 (1829) | 32                 | 9/16 (14)                                     | *                               | 11 1/4                      |

\* Bolt Circle Diameter = Damper Diameter + Flange Height + 1/4 in. (6 mm)

## Pressure Drop Data

### AMCA Test Figure 5.3

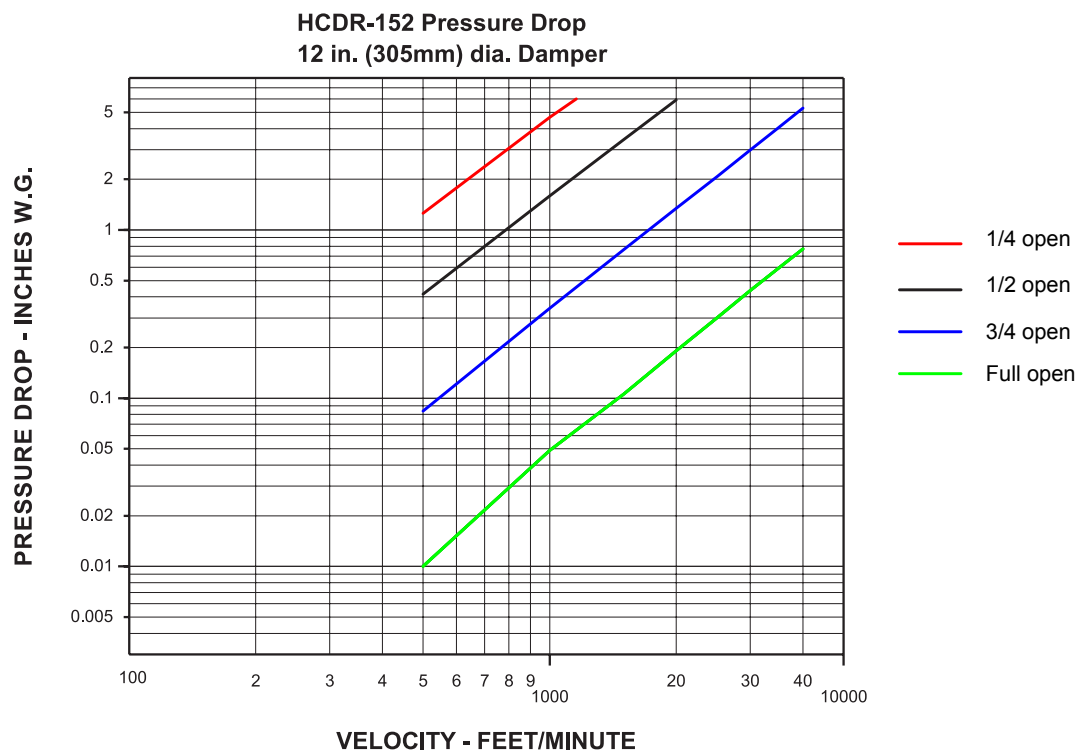
Figure 5.3 illustrates a fully ducted damper. This configuration has low pressure drop because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



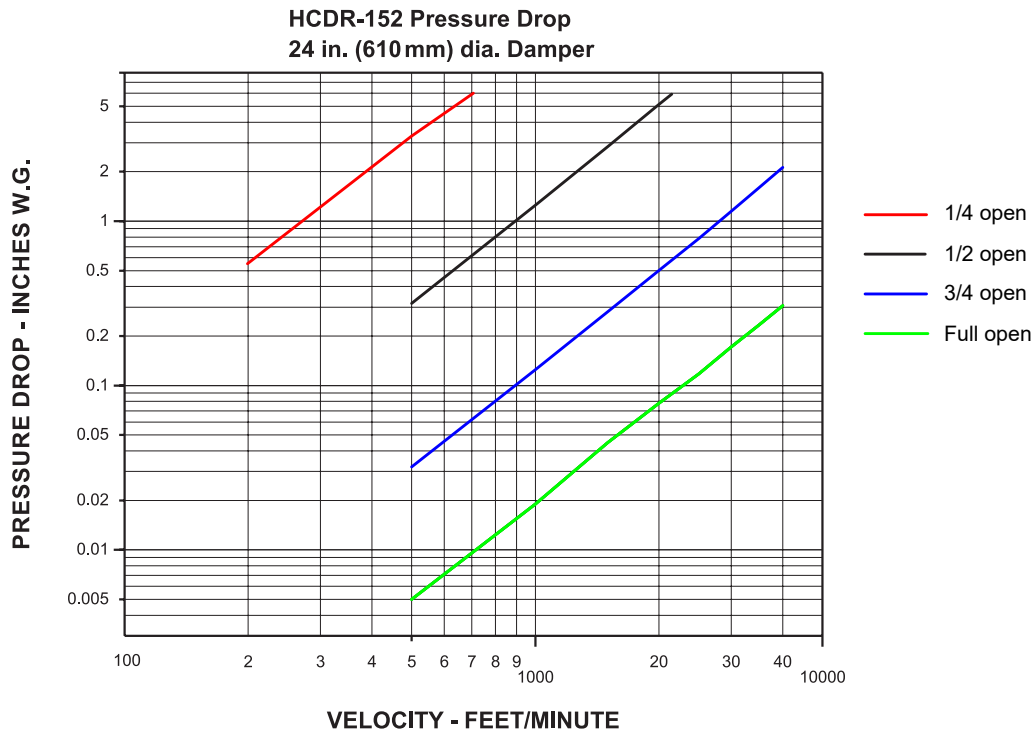
This pressure drop data was conducted in accordance with AMCA Standard 500-D using Test Figure 5.3. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.2 kg/m<sup>3</sup>).

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.

### Back to Front with the bar stops upstream

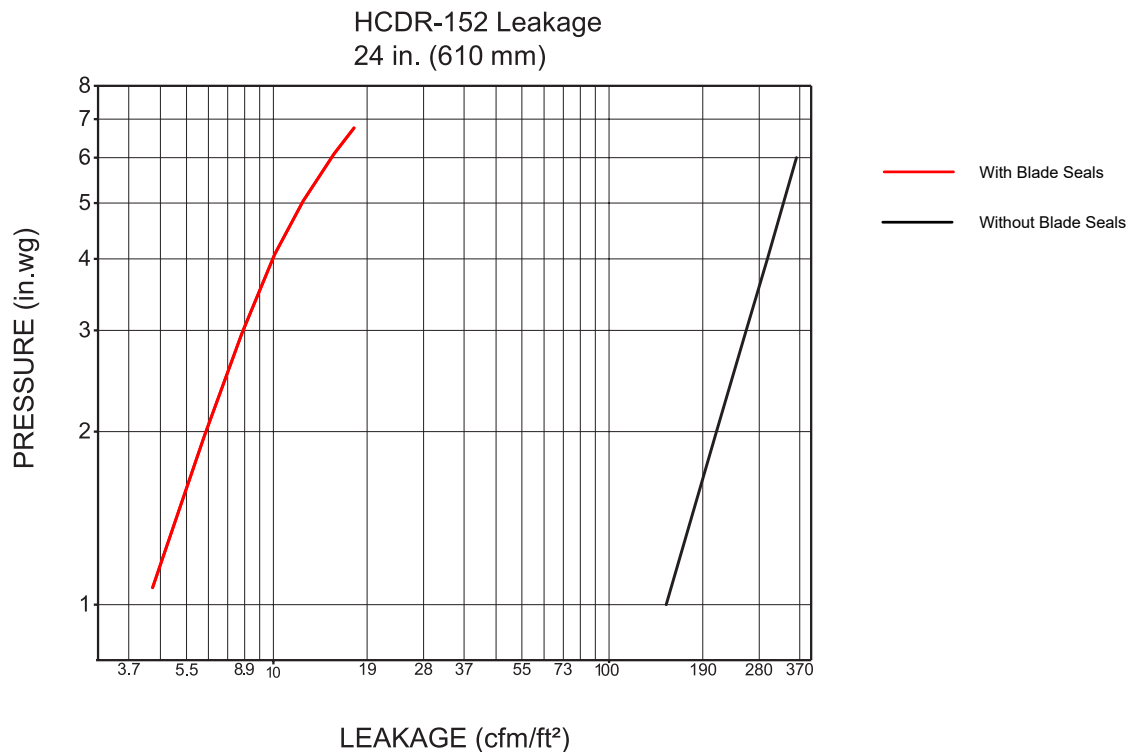


## Pressure Drop



## Leakage Data

Damper leakage (with blades fully closed) varies based on the type of blade stops and low leakage seals applied. Model HCDR-152 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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