**INDUSTRIAL CONTROL DAMPERS**

*Model HD-392 Level V Rating*

**DESIGN / APPLICATION**

Model HD-392 is a Round Industrial Air Control Damper with a single skin 10 ga to 1/4" thick steel blade. This model consists of a heavy duty flanged frame (12 ga to 3/16" plate steel) designed for direct attachment to the ductwork or equipment. HD-392 model is ideal for balancing and/or shut off HVAC applications in the industrial systems with many options to meet your needs.

**STANDARD CONSTRUCTION**

(see table below for specifics)

- Frame: Carbon steel
- Blades: Steel, welded to shaft, reinforced as required
- Axles: Plated steel
- Bearings: Bronze sleeve 200° F max
- Finish: Baked Powder Polyester
- Blade Stop: Single Point (not req’d with 1000°F blade gasket)
- Seals: None

**SIZE LIMITATIONS**

Minimum Size: 4" Diameter
Maximum Size: 60" Diameter

**RATINGS** (see page 2)

- Velocity: 6000 fpm
- Pressure: 10 in w.g.- differential pressure
- Temperature: Bronze Brg. -20°F ~ 200°F (Standard) Stainless Brg. 200°F ~ 1,000°F (Optional)

**OPTIONS**

- Rolled bar stop (1/2" x 1/4" bar thru 17", 1/2" x 1/2" bar over 17")
- Crosslinked closed cell seal with rolled bar (Max 190°F)
- Silica/Woven hi-temp, low leak, 1000° F seal
- Bolt Holes
  - one side
  - both sides
- Bearings (see page 3)
  - Type: Upgrade__________
- Hand Quadrant #
- Actuator Mounting Plate
- Stainless Steel Construction
  - 304
  - 316
  - Other__________
- Powder Coated Epoxy

**BLADE/FRAME SECTIONS**

Without Blade Seal and single point stop

With Crosslink Blade Seal and bar stop

<table>
<thead>
<tr>
<th>Diameter/ID(A)</th>
<th>Frame</th>
<th>Flange Width F</th>
<th>Axle Diameter</th>
<th>Blade Thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>Through</td>
<td>Depth D</td>
<td>Gauge</td>
<td></td>
</tr>
<tr>
<td>3.99&quot;</td>
<td>12&quot;</td>
<td>6&quot;</td>
<td>12</td>
<td>1.25&quot;</td>
</tr>
<tr>
<td>12&quot;</td>
<td>20&quot;</td>
<td>8&quot;</td>
<td>10</td>
<td>1.5&quot;</td>
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<td>32&quot;</td>
<td>8&quot;</td>
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<td>40&quot;</td>
<td>8&quot;</td>
<td>10</td>
<td>2.0&quot;</td>
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<td>8&quot;</td>
<td>10</td>
<td>2.0&quot;</td>
</tr>
<tr>
<td>54&quot;</td>
<td>60&quot;</td>
<td>8&quot;</td>
<td>3/16&quot; (thk)</td>
<td>2.0&quot;</td>
</tr>
</tbody>
</table>

**MODEL HD-392**

- Job Name:
- Location:
- Architect:
- Engineer:
- Contractor:
- DRAWN BY: CLJ
- DATE: 12-16-01
- REV. DATE: 10-19-10
- REV. NO.: 16
- APPROVED BY: BGT
- DWG. NO.: D-7
MODEL HD-392 PERFORMANCE DATA

Pressure Drop Data
The HVAC system has many factors that affect its internal pressure losses. Dampers in the system is one contributing factor. These dampers have been tested per AMCA Standard 500-D, Fig. 5.3 (ductwork upstream and downstream). There are many influences the ductwork configuration that could affect the performance below such as other objects close to the dampers, elbows or turns near the dampers, internally mounted actuators, etc. This data will assist the designer in the analysis of the system.

Leakage Data
The damper leakage shown below is per AMCA Standard 500-D. The leakage shown is without seals (standard construction) and with seals, crosslink closed cell or silica/woven. The damper is in the fully closed position.
FRAME CONSTRUCTION OPTIONS

Bolt Holes: Standard construction is no bolt holes. Optional: Bolt holes in one flange or both flanges.

If bolt holes are required, United Enertech recommends either pattern shown on the drawings below. The patterns shown below "Parallel to Axle" or "Straddle Axle" drawings should be specified when ordering. The table below also gives further details and recommendations on our standard hole patterns. Should a custom hole pattern be required, then it must be approved and sent in at time of order.

United Enertech Recommended Bolt Hole Pattern
(Bolt Holes Parallel to Axle Centerline)

<table>
<thead>
<tr>
<th>Diameter/ID (A)</th>
<th>Number of Holes</th>
<th>Diameter</th>
<th>Bolt Circle Diameter</th>
<th>Degrees Between Holes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Above</td>
<td>Through</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>58&quot; [1473]</td>
<td>60&quot; [1524]</td>
<td>32</td>
<td>9/16&quot; [14]</td>
<td>*</td>
</tr>
</tbody>
</table>

* Bolt Circle Diameter = Damper Diameter × Flange Height = 1/4" (6.35)

BEARING AND SHAFT OPTIONS

**Type 1: Bronze Bushing**
- Options:
  - O-Ring Seal

**Type 2: Stainless Steel Bushing**
- Options:
  - O-Ring Seal

**Type 3: Two Hole Pressed Steel Sealed Bearing**
- Options:
  - O-Ring Seal
  - Bearing Cover
  - Packing Gland, Steel
  - Packing Gland, SS
  - Stainless Steel Insert

**Type 4: Two Hole Cast Iron Bearing**
- Options:
  - O-Ring Seal
  - Bearing Cover
  - Packing Gland, Steel
  - Packing Gland, SS
  - High Temp (-30°F to 400°F)
  - Graphite Ultra High Temp (-132°F to 750°F) Sealed
  - Extreme High Temp (-132°F to 1000°F max) Sealed

**Type 5: Two Hole 304 Stainless Steel Bearing**
- Options:
  - Hi Temp, 400°F
  - Hi Temp graphite 750°F
  - Hi Temp graphite 1000°F
  - Bearing Cover
  - Packing Gland, Steel
  - Packing Gland, 304 SS

**Type 6: Two Hole Thermo Plastic Bearing**
- Options:
  - Bearing Cover
  - Packing Gland, Steel
  - Packing Gland, 304 SS
ACTUATOR OPTIONS

Model **HD-392** has available many operators shown below that can be factory mounted by United Enertech. Consult factory for other operators not shown.

- **Hand Quadrant #2**
- **Direct Drive Mounted Electric Actuators**
- **Pull Chain and Worm Gear**
- **Foot Mounted Actuators**
  - Such as Honeywell, Siebe/Barber Coleman
- **RCS Surepower TM**
- **Pneumatic Diaphragm**

**SPECIFICATIONS:**

Industrial Round Dampers meeting the following specifications shall be furnished and installed where shown on drawings and described in the schedule. The damper frame shall consist of heavy gauge steel (12 ga - 3/16" plate) rolled with a 1-1/4" minimum depth flange/web. The damper blade shall be of a single thickness, heavy gauge steel (10 ga<20", 21"-54"=D=3/16" plate, 1/4" thick plate > 54"). The axle shall be continuous length of 1/2" dia. up to 20", 3/4" dia. up to 40", 1" dia. up to 48", and 1.5" dia over 48". Bearings shall be of the bronze sleeve type to minimize wear. Also submitted with submittal package is the damper's performance data such as pressure drop, leakage, and temperature ratings. The damper shall be suitable for velocities up to 6000 fps at a pressure differential of 10" wg. Damper shall be United Enertech Model HD-392 or equivalent.

**ADDITIONAL INFORMATION THAT MAY BE ADDED TO SPECIFICATIONS:**

Damper shall be factory supplied with Blade Seals for low leakage. Blade Seals shall be Crosslinked Closed Cell (190°F maximum temperature) or Silica/woven Hi-temp (Up to 1000°F) (Specifier to choose one). Damper leakage for a 36" diameter damper to be less than 4 cfm/ft² at 1" w.g. and less than 8 cfm/ft² at 4" w.g. shall be submitted for approval on manufacturer's submittal data. Bearing type upgrades may be specified. See United Enertech's Bearing Chart for variations.

United Enertech
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