Application
Model SEDFD-210 is a dynamic rated multi-blade fire damper with 3V style blades. The SEDFD-210 is qualified up to 4,000 fpm (20.3 m/s) and 10 in. wg (2.5 kPa) for dynamic closure in emergency fire situations. This damper may be installed vertically (with blades running horizontal) or horizontally and is rated for airflow in either direction.

Ratings
UL 555 Fire Resistance Rating
Fire Rating: 1½ hours
Dynamic Closure Rating: Actual limits are size dependent
Maximum Velocity: 4,000 fpm (20.3 m/s)
Maximum Pressure: 10 in. wg (2.5 kPa)

<table>
<thead>
<tr>
<th>Construction</th>
<th>Standard</th>
<th>Optional</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frame Material</td>
<td>316SS</td>
<td>-</td>
</tr>
<tr>
<td>Frame Material Thickness</td>
<td>16 ga. (1.5mm)</td>
<td>-</td>
</tr>
<tr>
<td>Frame Type</td>
<td>5 in. x 1 in. (127mm x 25mm) hat channel</td>
<td>-</td>
</tr>
<tr>
<td>Blade Material</td>
<td>316SS</td>
<td>-</td>
</tr>
<tr>
<td>Blade Material Thickness</td>
<td>16 ga. (1.5mm)</td>
<td>-</td>
</tr>
<tr>
<td>Blade Type</td>
<td>3V</td>
<td>-</td>
</tr>
<tr>
<td>Linkage</td>
<td>316SS out of airstream, concealed in jamb</td>
<td>-</td>
</tr>
<tr>
<td>Axle Bearings</td>
<td>316SS</td>
<td>-</td>
</tr>
<tr>
<td>Axle Material</td>
<td>316SS</td>
<td>-</td>
</tr>
<tr>
<td>Jamb Seals</td>
<td>316SS</td>
<td>-</td>
</tr>
<tr>
<td>Closure Device</td>
<td>Fusible link- not 316SS</td>
<td>-</td>
</tr>
<tr>
<td>Closure Temperature</td>
<td>165°F (74°C)</td>
<td>212°F (100°C), 285°F (141°C), 350°F (177°C)</td>
</tr>
<tr>
<td>Actuator</td>
<td>Manual quadrant</td>
<td>-</td>
</tr>
</tbody>
</table>

*W & H dimensions furnished approximately ¼ in. (6mm) undersize. Add sleeve thickness for overall sleeved damper dimension.

Model SEDFD-210 meets the requirements for fire dampers established by:
- National Fire Protection Association
  NFPA Standards 80, 90A, & 101
- IBC International Building Codes
- CSFM California State Fire Marshal
  Fire Damper Listing (#3225-0981:103)

UL 555 Classification
R13317

Features and Options
- Frames are constructed with reinforced corners. Low profile head and sill are used on sizes less than 17 in. (432mm) high.
- Blades are reinforced with 3 longitudinal structurally designed vee’s.
- Factory installed accessories - Retaining angles
  - Grille tabs
  - OCI (Open Closed Indication Switches)*
  - POC retaining angles
  - Extra fusible links
  - Sealed Transition and sleeves
  - Sleeves
  - Test Switch (GTS-4)
  - Transition (R, C, O)

Installation instructions available at www.greenheck.com
This pressure drop testing was conducted in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent standard air at a density of \(0.075 \text{ lb/ft}^3(1.201 \text{ kg/m}^3)\).

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.

**AMCA Test Figures**

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

**Figure 5.2** Illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.

**Figure 5.5** Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.
Greenheck Fan Corporation certifies that the model SEDFD-210 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to air performance ratings only.
Damper Sizing Information

Dampers larger than maximum single section size are supplied as a factory assembly of two or more sections of equal size. The following figures show maximum damper section size and assembly configurations for multi-section dampers.

**Damper Sleeve Dimensional Data**

The drawings below and corresponding table show the position of the SEDFD-210 damper when mounted in a factory sleeve. The standard mounting locations provide enough space for the mounting of manual quadrant, controls and allow space for installation of retaining angles and duct connections.

The "A" dimension is the location of the damper mounted in a factory sleeve. The table below shows the Standard and Maximum "A" dimensions.

<table>
<thead>
<tr>
<th>in. (mm)</th>
<th>&quot;A&quot; Dimension</th>
<th>Sleeve Std</th>
<th>Sleeve Max</th>
<th>Sideplate</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Dampers (RRL)</td>
<td>7 3/16 in. (183)</td>
<td>16 (406)</td>
<td>6 3/16 (157)</td>
<td></td>
</tr>
<tr>
<td>When Height is 11 in. (279) or less with RRL, RRL/OCI, TOR, or PRV</td>
<td>12 (305)</td>
<td>16 (406)</td>
<td>12 (305)</td>
<td></td>
</tr>
</tbody>
</table>

**Specifications**

Fire Dampers meeting the following specifications shall be furnished and installed where shown on plans and/or as described in schedules. Dampers shall meet the requirements of the latest edition of NFPA 80, 90A and 101.

Dampers shall be tested, rated and labeled in accordance with the latest edition of UL Standard 555. Dampers shall have a UL 555 fire rating of 1 1/2 hours. Each damper shall be equipped with a heat responsive device which has been tested and approved for use with the damper assembly in accordance with UL 555. The heat responsive device shall have a temperature rating of (specifier select one of the following) 165°F (74°C), 212°F (100°C), 286°F (141°C), or 350°F (177°C). Dampers shall be UL labeled for use in dynamic systems. The damper shall have a dynamic closure pressure rating of 10 in. wg (2.5 kPa). Damper actuator shall be manual quadrant. Manufacturer’s submittal data shall indicate actuator space requirements around the damper. The Damper Manufacturer’s submittal data shall certify all air performance pressure drop data is licensed in accordance with the AMCA Certified Ratings Program for Test Figures 5.2, 5.3 and 5.5. Damper air performance data shall be developed in accordance with the latest edition of AMCA Standard 500-D. Damper blades shall be 16 ga. (1.5mm) 316SS 3V type with three longitudinal grooves for reinforcement. Blades shall be completely symmetrical relative to their axle pivot point, presenting identical resistance to airflow and operation in either direction through the damper (blades that are non-symmetrical relative to their axle pivot point or utilize blade stops larger than 1 1/2 in. (13mm) are unacceptable). Damper frame shall be 16 ga. (1.5mm) 316SS formed into a structural hat channel shape with reinforced corners. Bearings shall be 316SS type rotating in extruded holes in the damper frame for maximum service. Axles shall be square and positively locked into the damper blade. Jamb seals shall be stainless steel compression type. Basis of design is Greenheck Model SEDFD-210.