Bubble-Tight Dampers
HBTR Series
Zero Leakage
Bubble-Tight Construction Features

The HBTR series is a bubble-tight damper designed for isolation applications. Bubble-tight means the damper has the lowest possible leakage rating: zero. The silicone blade seal and double-gland axle seals provide bubble-tight performance.

**Common bubble-tight applications include:**
- Medical facilities
- Food processing
- Microelectronic manufacturing
- Laboratories
- Federal buildings
- Clean rooms

**Frame**
The heavy duty flanged frame is available with optional mounting holes which can be customized to match your mating flange.

**Axle Seal**
Double-gland seals are standard and prevent leakage around the damper’s axles.

**Blade**
The round, butterfly style blade is engineered to be rigid for the rated pressures.

**Blade Seals**
A silicone rubber blade seal is standard and eliminates leakage around the blade. The seal is field replaceable for easy maintenance.

Square flanges are available to obtain the same shut off for square ducts.

**Bearings**
Ball bearings with grease zerks are standard. The bearing is bolted external to the damper frame for easy access.

**Actuators**
Greenheck offers a long line of commercial and industrial actuators that can be factory mounted to the HBTR series. Fast acting, spring return actuators are recommended for most bubble tight applications. Manual operators are also available. Contact your Greenheck damper expert for more actuator information.
Bubble Tight Performance Data

Quick Reference

<table>
<thead>
<tr>
<th>Material</th>
<th>HBTR-151</th>
<th>HBTR-451</th>
<th>HBTR-551</th>
</tr>
</thead>
<tbody>
<tr>
<td>Painted Steel</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>304SS</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>316SS</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Mill Finish SS</td>
<td>○</td>
<td>▲</td>
<td>▲</td>
</tr>
<tr>
<td>Hi Pro Polyester</td>
<td>●</td>
<td>●</td>
<td>●</td>
</tr>
<tr>
<td>Industrial Epoxy</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
<tr>
<td>Epoxy</td>
<td>○</td>
<td>○</td>
<td>○</td>
</tr>
</tbody>
</table>

- Standard ○ Optional

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.
Factory Tested

Every HBTR series damper is leakage tested in accordance with AMCA 500-D figure 5.8 before it leaves the factory to ensure bubble-tight performance.

In-House Testing

State-of-the-art laboratory and testing facilities have always been important to Greenheck’s continuing business success. We have a laboratory facility devoted exclusively to the development and testing of damper and louver related products to the latest versions of AMCA, ANSI, ASHRAE, UL, Warnock-Hersey, Miami-Dade County, and other industry standards of performance.

Our Commitment

As a result of our commitment to continuous improvement, Greenheck reserves the right to change specifications without notice.

Specific Greenheck product warranties are located on greenheck.com within the product area tabs and in the Library under Warranties.