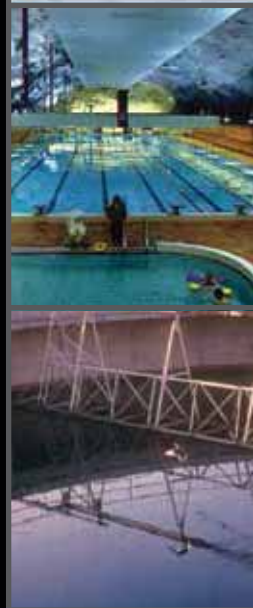
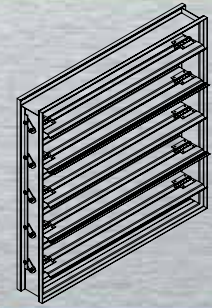


# Severe Environment Dampers

- Corrosion-Resistant
- 316 Stainless Steel



 **GREENHECK**  
Building Value in Air.

August  
2014

## Severe Environment Dampers

Greenheck was the first manufacturer to have a complete line of dampers made from all 316 stainless steel material as a standard product offering. We have over 20 models, including dynamic fire dampers, smoke dampers, combination fire smoke dampers, commercial control dampers, barometric relief dampers, industrial control dampers, and industrial backdraft dampers. This new line of severe environment dampers offers an excellent corrosion-resistant option for a variety of applications.

- Paper mills
- Wastewater treatment plants
- Natatoriums
- Laboratories
- Coastal locations
- Maritime
- Computer clean rooms



Maritime



Paper Mills



Labs



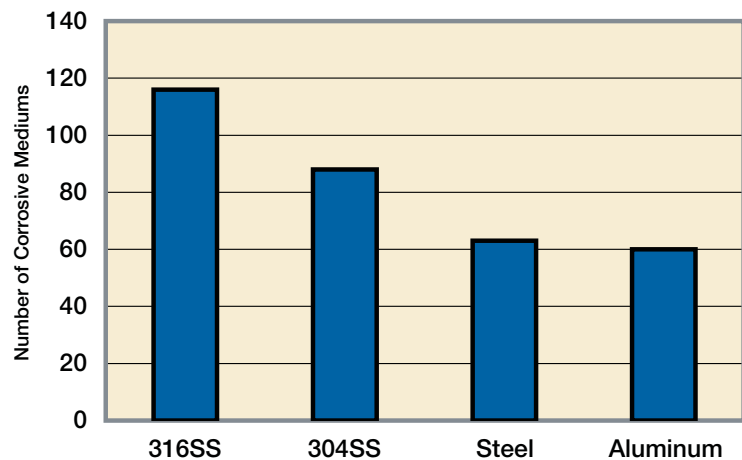
Natatoriums



Food Processing

## Materials with Excellent Corrosion Resistance

When tested against 140 different corrosive mediums, 316 stainless steel received an excellent rating for over 115 of those mediums.



## Combination Fire Smoke and Smoke Dampers

### Features:

- 316 stainless steel construction is standard (heat responsive device is UL compliant, not 316 stainless steel)
- UL 555 (fire) Classified
- UL 555S (smoke) Classified
- SEFSD-211 & SESMD-201
  - Minimum size: 8 x 6 in. (203 x 152 mm)
  - Maximum multisection size: 88 x 72 in. (2235 x 1829 mm)
  - Pressure up to 6 in. wg (1.5 kPa)
  - Velocity up to 2000 fpm (10.2 m/s)
  - Licensed to bear the AMCA Air Performance Seal
- SEFSDR-511 & SESMDR-501
  - Minimum diameter: 6 in. (152 mm)
  - Maximum diameter: 24 in. (610 mm)
  - Pressure up to 4 in. wg (1 kPa)
  - Velocity up to 3000 fpm (15.2 m/s)



SEFSD-211/SESMD-201



SEFSDR-511/SESMDR-501

### Available upon request:

- NEMA 7 housing for actuators
  - Explosion-proof enclosure
  - Aluminum housing



Greenheck Fan Corporation certifies that the models SEFSD-211 and SESMD-201 shown herein are 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 only.

### Quick Reference Combination Fire Smoke and Smoke Dampers

		SEFSD-211	SEFSDR-511	SESMD-201	SESMDR-501
Blade Profile	3V	X		X	
	Round		X		X
Closure Temperature	165°F (74°C)	X	X		
	212°F (100°C)	O	O		
	250°F (121°C)	O	O		
	286°F (141°C)	O	O		
	350°F (176°C)	O	O		
Closure Device	Fusible Link	O	X		
	RRL	X	O		
	RRL/OCI	O	O		
	TOR	O	O		
	PRV	O	O		
Accessories	Retaining Angles	O		O	
	Retaining Plate		X		
	Smoke Detector	O		O	
	Momentary Switch	O	O	O	O
	OCI	O	O	O	O
	Transformer	O	O	O	O
	GTS-1, 2, 3, 4	O	O	O	O

X = Standard O = Optional

## Fire Dampers

### Features:

- 316 stainless steel construction is standard (heat responsive device is UL compliant, not 316 stainless steel)
- Dynamic closure for use in HVAC systems that are operational in the event of a fire
- UL 555 Classified
- Pressure up to 4 in. wg (1 kPa)
- Velocity up to 2000 fpm (10.2 m/s)
- UL rated retaining angles or plates
- SEDFD-210
  - Minimum size: 8 x 6 in. (203 x 152 mm)
  - Maximum multisection size: 48 x 30 in. (1219 x 762 mm)
  - Licensed to bear the AMCA Air Performance Seal



Greenheck Fan Corporation certifies that the models SEDFD-210 shown herein are 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 only.



SEDFD-210

Quick Reference for Fire Dampers		SEDFD-210
Blade Profile	3V	X
Closure Temperature	165°F (74°C)	X
	212°F (100°C)	O
	286°F (141°C)	O
	350°F (176°C)	O
Accessories	Retaining Angles	O

X = Standard O = Optional

## Barometric Dampers

### Features:

- 316 stainless steel construction is standard
- Back pressure up to 2 in. wg (.5 kPa)
- Selectable start to open pressure from .05 to .13 in. wg (.01 to .03 kPa)
- Velocity up to 2000 fpm (10.2 m/s)
- SEBR series
  - Minimum size: 8 x 6 in. (203 x 152 mm)
  - Maximum size: 48 x 74 in. (1219 x 1880 mm)



Airflow Direction	Insert Type Flange (no flange)	Flange on Discharge	Flange on Intake
Vertical Up	SEBR-10	SEBR-11	SEBR-12
Horizontal	SEBR-30	SEBR-31	SEBR-32
Vertical Down	SEBR-40	SEBR-41	SEBR-42

## Commercial Control Dampers

### Features:

- 316 stainless steel construction is standard
- Blade styles
  - 3V (SEVCD-23): The 3V blades are fabricated from a single thickness of 316 stainless steel incorporating three structural V grooves running the length of the blade.
  - Airfoil (SEVCD-33): The airfoil blades are constructed of double skin 316 stainless steel. This blade design presents a lower resistance to airflow.
- SEVCD-23
  - Minimum size: 6 x 6 in. (152 x 152 mm)
  - Maximum multisection size: Unlimited
  - Licensed to bear the AMCA Air Performance Seal
  - Pressure up to 5 in. wg (1.2 kPa)
  - Velocity up to 3000 fpm (1.52 m/s)
- SEVCD-33
  - Minimum size: 6 x 6 in. (152 x 152 mm)
  - Maximum multisection size: Unlimited
  - Pressure rating up to 10 in. wg (2 kPa)
  - Velocity up to 4000 fpm (20.3 m/s)



SEVCD-23



SEVCD-33

### Available upon request:

- NEMA 4X housing for actuators
  - Watertight, corrosion-resistant, and dust tight indoor or outdoor enclosure
  - Plastic housing
- NEMA 7 housing for actuators
  - Explosion-proof enclosure
  - Cast aluminum housing

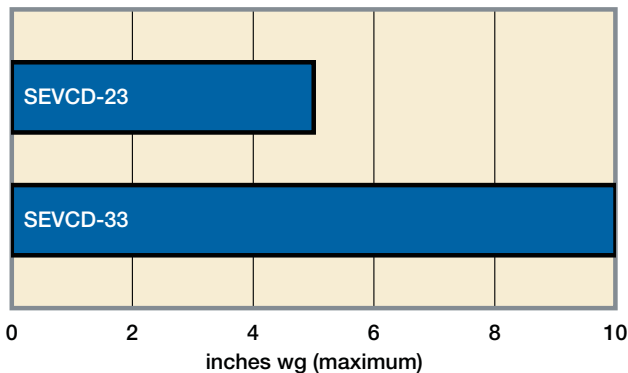


NEMA 4X

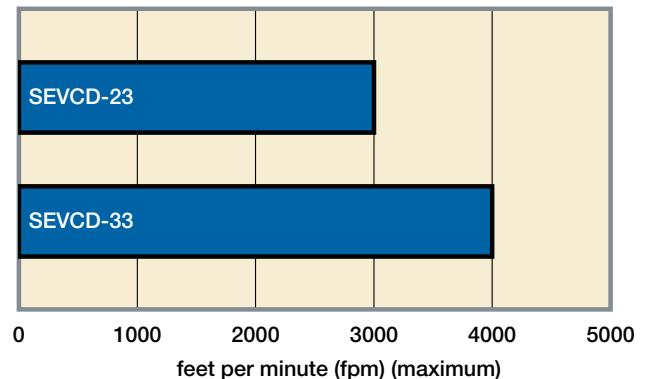


Greenheck Fan Corporation certifies that the model SEVCD-23 and SEVCD-33 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

### Pressure



### Velocity



Air leakage is based on operation between 32° and 120°F (0 and 49°C).  
 Tested for leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.5.  
 Tested for air performance in accordance with ANSI/AMCA Standard 500-D, Figures 5.2, 5.3 and 5.5.

## Torque

Data is based on a torque of 5.0 in.lb./ft<sup>2</sup> (0.56 N-m) applied to close and seat the damper during the test.

SEVCD-23	Leakage Class*		
Maximum Damper Width	1 in. wg (0.25 kPa)	4 in. wg (1 kPa)	5 in. wg (1.2 kPa)
48 in. (1219mm)	1A	1	1

## Torque

Data is based on a torque of 7.0 in.lb./ft<sup>2</sup> (0.79 N-m) applied to close and seat the damper during the test.

SEVCD-33	Leakage Class*			
Maximum Damper Width	1 in. wg (0.25 kPa)	4 in. wg (1 kPa)	8 in. wg (2 kPa)	10 in. wg (2.5 kPa)
60 in. (1524mm)	1A	1	1	1

### \*Leakage Class Definitions

The *maximum* allowable leakage is defined by AMCA as the following:

- Leakage Class 1A - 3 cfm/ft<sup>2</sup> @ 1 in. wg (Class 1A is only defined at 1 in. wg)
- Leakage Class 1 - 4 cfm/ft<sup>2</sup> @ 1 in. wg  
 - 8 cfm/ft<sup>2</sup> @ 4 in. wg  
 - 11 cfm/ft<sup>2</sup> @ 8 in. wg  
 - 12.6 cfm/ft<sup>2</sup> @ 10 in. wg



Greenheck Fan Corporation certifies that the model SEVCD-23 and SEVCD-33 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 Leakage and Air Performance ratings.

## Industrial Backdraft Dampers

### Features:

- Model HB-110, 120, 230, 240, 330 and HBR-050
- 316 stainless steel option
- Pressure up to 20 in. wg (5 kPa)
- Velocity up to 6400 fpm (32 m/s)
- Temperature -40° to 250°F (-40° to 121°C)



HB-230



HBR-050

## Industrial Control Dampers

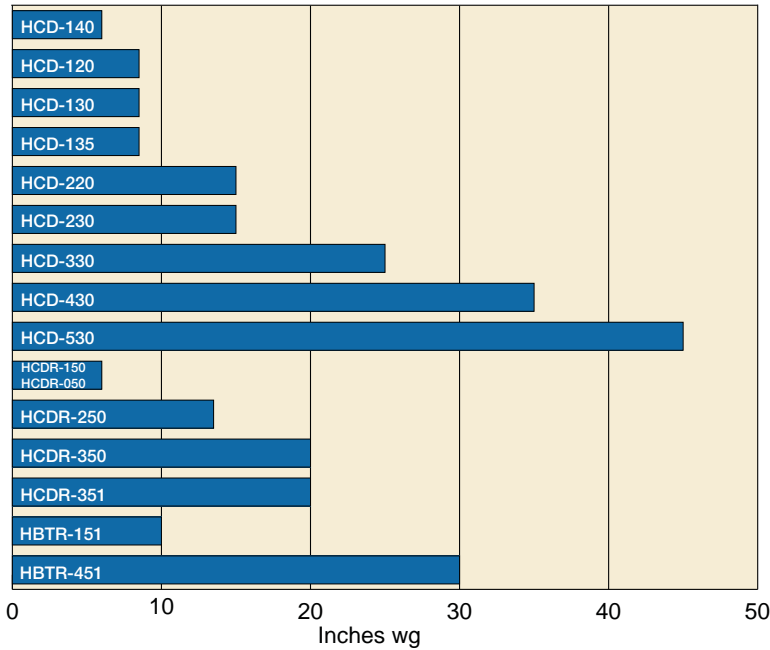
### Features:

- 316 stainless steel
  - Optional on:
    - HBTR-151, 451
    - HCD-120, 130, 140, 220, 230, 330, 430, 530
    - HCDR-050, 150, 250, 350, and 351
- Pressure rating up to 45 in. wg (11.2 kPa)
- Velocity up to 6500 fpm (33 m/s)



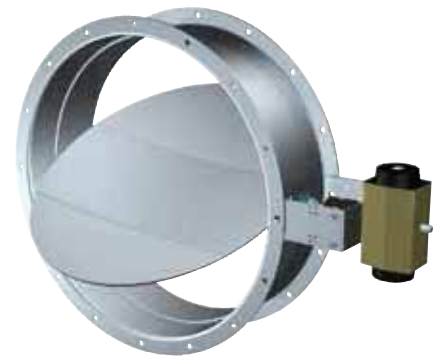
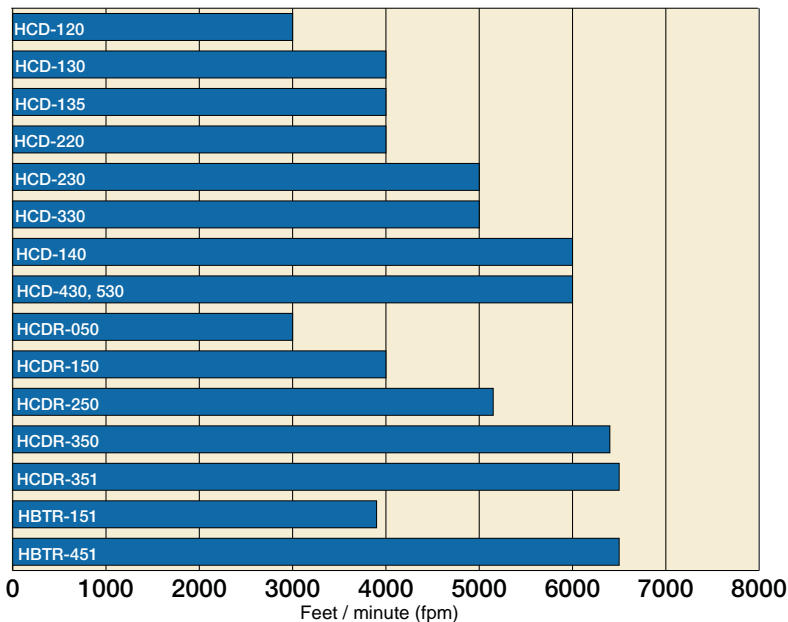
HBTR-451

### Pressure



HCD

### Velocity



HCDR

# Test Standards & Certifications

## UL 555

The UL 555 standard governs fire dampers which are intended for use where air ducts penetrate or terminate at openings in walls or partitions, in air transfer openings in partitions, and where air ducts extend through floors as specified in the Standard for Installation of Air-Conditioning and Ventilating Systems, NFPA 90A. In a fire emergency the fire damper is designed to close and prevent the spread of fire from one side of the wall or partition to the other. Testing includes cycling, salt spray, dynamic closure, fire endurance, and hose stream.



## UL 555S

The UL 555S standard governs smoke dampers which are intended to prevent the spread of smoke when HVAC systems shutdown during a fire emergency and those which control the movement of smoke within a building when the HVAC system functions in a smoke control mode. Leakage rated dampers are intended for installation in accordance with NFPA 90A. Testing includes salt spray, cycling, temperature degradation, operation while under heated airflow, and elevated temperature leakage.

## AMCA

The AMCA Certified Ratings Program seal assures you that a product line has been tested to the appropriate AMCA standards in accordance with a legal license agreement and that the manufacturer's catalogued certified ratings have been submitted to the AMCA staff for approval prior to publication.

## Enjoy Greenheck's extraordinary service, before, during and after the sale.



Greenheck offers added value to our wide selection of top performing, energy-efficient products by providing several unique Greenheck service programs.

- Our **Quick Delivery** Program ensures shipment of our in-stock products within 24 hours of placing your order. Our **Quick Build** made-to-order products can be produced in 1-3-5-10-15 or 25-day production cycles, depending upon their complexity.
- Greenheck's free **Computer Aided Product Selection** program (CAPS), rated by many as the best in the industry, helps you conveniently and efficiently select the right products for the challenge at hand.
- Greenheck has been **Green** for a long time! Our energy-saving products and ongoing corporate commitment to sustainability can help you qualify for LEED credits.
- Our **3D service** allows you to download at no charge lightweight, easy-to-use AutoDesk™ Revit™ 3D drawings for many of our ventilation products.

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## 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](http://greenheck.com) within the product area tabs and in the Library under Warranties.



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