

Model ICD-44

Thermally Broken Blade Insulated Control Damper

Application

The ICD-44 is a low leakage thermally insulated damper with extruded airfoil blades. ICD-44 features broken blade which minimized the transfer of thermal energy and reduce condensation. It's also IECC (International Energy Conservation Code) compliant with a leakage rating of 3 cfm/ft2 @ 1 in. wg (55 cmh/m2 @ .25 kPa) or less.

Note Regarding UV Lights:The dampers should not be mounted or stored in direct line of sight to UV lights.

Ratings

Pressure

Up to 8 in. wg (2kPa) pressure differential

Velocity

2,500 to 4,000 fpm (12.7 m/s - 20.3 m/s)

Leakage

Class 1A @ 1 in. wg at -40°F (Class 1A @ .25 kPa at -40°C) Class 1 @ 4 in. wg at -40°F (Class 1 @ 4 in. wg at -40°C)

Temperature

-70°F to 200°F (-56°C to 93°C)

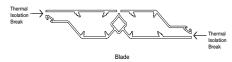
Construction

	Standard	Optional	
Frame Material	Aluminum (6063T5)		
Frame Thickness	.125 in. (3.2mm)		
Frame Type	5 in. x 1 in. (127mm x 25mm) Hat Channel	Single Flange, Reverse Flange, Quick Connect	
Blade Action	Opposed Parallel		
Blade Material	Extruded Aluminum (6063T5)		
Blade Type	Insulated Thermally Broken Airfoil		
Linkage	Plated Steel Out of Airstream 316SS		
Axle Bearings	Synthetic	-	
Axle Material	Plated Steel	316SS	
Blade Seals	Silicone	-	
Jamb Seals Stainless Steel Silico		Silicone	





*W&H dimension furnished approximately 1/4 in. (6mm) undersize.



Insulation color may vary.

Size Limitations

in	(100100)	Frame		Туре	
in. (mm) W x H		Channel, Single or Reverse Flange		Quick Connect	
Blad	e Action	Parallel	Opposed	Parallel	Opposed
Min.	Internal Mount	8 x 8 (203 x 203)	8 x 8 (203 x 203)		-
Size	External Mount	8 x 7 (203 x 178)	8 x 7 (203 x 178)	8 x 6 (203 x 152)	8 x 6 (203 x 152)
Max.	Single Section	60 in. W x 78 in. H (1524mm x 1981mm) 180 in. W x 156 in. H (4572mm x 3962mm)			x 76 in. H x 1930mm)
Size	Multi- Section				x 152 in. H x 3861mm)

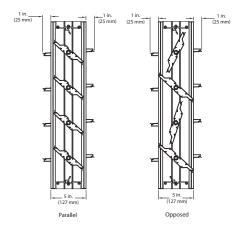
Actuator Sizing:

- Factory supplied actuator are sized for a full-open velocity of 1500 fpm (7 m/s) and fully-closed differential pressure of 2 in. wg (.5 kPa)
- Actuators supplied in the field for applications at velocities of 1500 fpm (7 m/s) or less and 2 in. wg of pressure or less shall use the following guidelines:
 - Opposed blade dampers: 7 in-lb per square foot of damper area with a minimum of 60 in-lb
 - Parallel blade dampers: 9 in-lb per square foot of damper area with a minimum of 60 in-lb
- Contact factory for actuator sizing on applications exceeding those limits

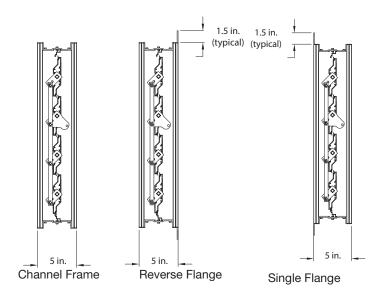
Options and Accessories

- Actuator: bracket only, manual quadrant, variety of 24V, 120V, 230V actuators
- Actuator mounting; external and external kit
- Clean wrap
- NEMA enclosures
- 120V to 24V Transformer
- Multi-Voltage Transformer

Blade Operation



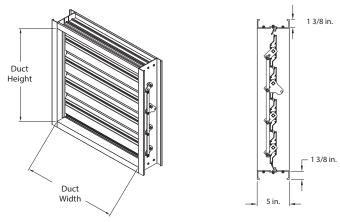
Frame/Flange Options

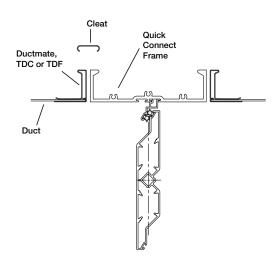


 * Width and height is based on outside dimension. W & H dimensions furnished approximately $\frac{1}{4}$ in. (6mm) undersize.

Quick Connect

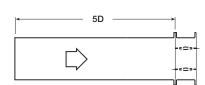
Note: When ordering the Quick Connect Frame, size is based on duct size (or inside dimension of the damper frame). Quick Connect frame is actual size.





[F ICD-44

AMCA 5.2







Greenheck Fan Corporation certifies that the model ICD-44 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, Air Performance and Energy Efficiency ratings.

12 x 12 (305mm x 305mm)		
Velocity (fpm)	Pressure Drop (in. wg)	
500	.03	
1000	.11	
1500	.25	
2000	.45	
2500	.71	
3000	1.03	
3500	1.40	
4000	1.83	

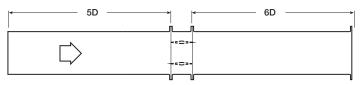
m x 610mm)
Pressure Drop (in. wg)
.02
.08
.19
.34
.53
.77
1.05
1.37

36 x 36 (914mm x 914mm)		
Velocity (fpm)	Pressure Drop (in. wg)	
500	.01	
1000	.05	
1500	.11	
2000	.21	
2500	.33	
3000	.47	
3500	.64	
4000	.84	

12 x 48 (305mm x 1219mm)	
Velocity (fpm)	Pressure Drop (in. wg)
500	.01
1000	.06
1500	.14
2000	.25
2500	.40
3000	.57
3500	.78
4000	1.02

48 x 12 (1219mm x 305mm)		
Velocity (fpm)	Pressure Drop (in. wg)	
500	.03	
1000	.14	
1500	.32	
2000	.57	
2500	.89	
3000	1.29	
3500	1.76	
4000	2.30	

AMCA 5.3



12 x 12 (305mm x 305mm)		
Velocity (fpm)	Pressure Drop (in. wg)	
500	.01	
1000	.04	
1500	.09	
2000	.17	
2500	.26	
3000	.38	
3500	.52	
4000	.67	

Velocity Pressure	
(fpm) Drop (in. wg)	
500 .01	
1000 .03	
1500 .08	
2000 .14	
2500 .22	
3000 .32	
3500 .43	
4000 .57	

Ŀ	36 x 36 (914mm x 914mm)	
	Velocity (fpm)	Pressure Drop (in. wg)
	500	.01
	1000	.02
	1500	.04
	2000	.08
	2500	.12
	3000	.18
	3500	.24
	4000	.32
	<u>-</u>	

12 x 48 (305mm x 1219mm)	
Pressure Drop (in. wg)	
.01	
.02	
.06	
.10	
.17	
.24	
.33	
.43	

48 x 12 (1219mm x 305mm)		
Velocity (fpm)	Pressure Drop (in. wg)	
500	.01	
1000	.06	
1500	.14	
2000	.25	
2500	.40	
3000	.58	
3500	.79	
4000	1.03	

AMCA 5.5



12 x 12 (305mm x 305mm)			
Velocity (fpm)	Pressure Drop (in. wg)		
500	.05		
1000	.23		
1500	.52		
2000	.93		
2500	1.44		
3000	2.08		
3500	2.83		
4000	3.70		

24 x 24 (610mm x 610mm)			
Velocity (fpm)	Pressure Drop (in. wg)		
500	.05		
1000	.21		
1500	.47		
2000	.84		
2500	1.32		
3000	1.90		
3500	2.59		
4000	3.39		

36 x 36 (914mm x 914mm)				
Velocity (fpm)	Pressure Drop (in. wg)			
500	.04			
1000	.14			
1500	.33			
2000	.58			
2500	.91			
3000	1.31			
3500	1.79			
4000	2.34			

12 x 48 (305mm x 1219mm)			
Velocity (fpm)	Pressure Drop (in. wg)		
500	.04		
1000	.18		
1500	.42		
2000	.74		
2500	1.16		
3000	1.68		
3500	2.28		
4000	2.98		

48 x 12 (1219mm x 305mm)				
Velocity (fpm)	Pressure Drop (in. wg)			
500	.05			
1000	.22			
1500	.51			
2000	.90			
2500	1.41			
3000	2.04			
3500	2.78			
4000	3.70			

Leakage

AMCA Certified Leakage Data

Air leakage is based on operation between 32°F (0°C) and 120°F (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 are based on a torque of 9.0 in. lb./ft² (1.02 N·m) applied to close and seat the damper during the test.

ICD-44	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	



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*Leakage Class Definitions

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

- Leakage Class 1A 3 cfm/ft² @ 1 in. wg (class 1A is only defined at 1 in. wg).
- Leakage Class 1
 - 4 cfm/ft2@ 1 in. wg
 - 8 cfm/ft² @ 4 in. wg
 - 11 cfm/ft2 @ 8 in. wg
 - 12.6 cfm/ft2 @ 10 in. wg

AMCA Certified Energy Efficiency Performance

Greenheck Model ICD-44 has a Thermal Efficiency Ratio of 593%.

A damper's Thermal Efficiency Ratio (E) is a comparison of the thermal performance of the tested damper with that of a standard reference damper, which is a 3V blade damper with blade and jamb seals. A damper with the same thermal efficiency as the reference damper would have an E of 0%. A damper that is twice as efficient as the reference damper would have an E of 100%.

Test Information

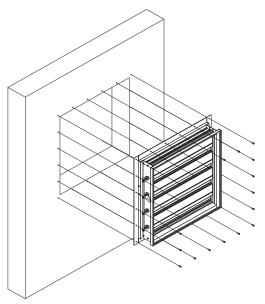
Testing was conducted on a 36 in. x 36 in. (914mm x 914mm) sample in AMCA 500-D figure 5.10 per AMCA standard 500-D's Thermal Efficiency test.

Torque

Data are based on a torque of 9.0 in.lb./ft² (0.56 N·m) applied to close and seat the damper during the test.

Plenum Wall Installation

There are applications that require mounting an ICD-44 into a plenum wall. This illustration depicts how to mount an ICD-44 into a plenum wall.

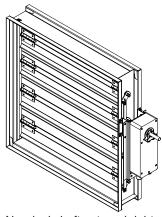


Actuator Mounting

Actuators may be installed at the factory, shipped loose with the necessary linkage and brackets for mounting, or field supplied. For more detail information on actuator mounting, click on link below or scan QR code.



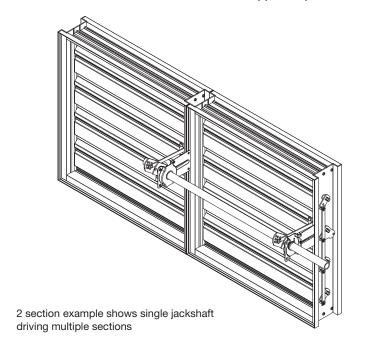
ACTUATOR MOUNTING

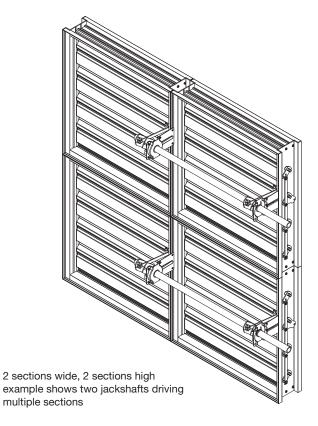


Non-jackshaft external right

Dampers larger than the maximum single section size, will be made up of a multiple of equal size sections.

NOTE: Dampers larger than 60 in. x78 in. (1524mm x 1981mm) are not intended to be structurally self supporting. Refer to IOM document #468333 for structural support requirements on multi-section assemblies.





Document Links



INSTALLATION



CATALOG



SELECTION GUIDE



SPECIFICATIONS



WARRANTY

