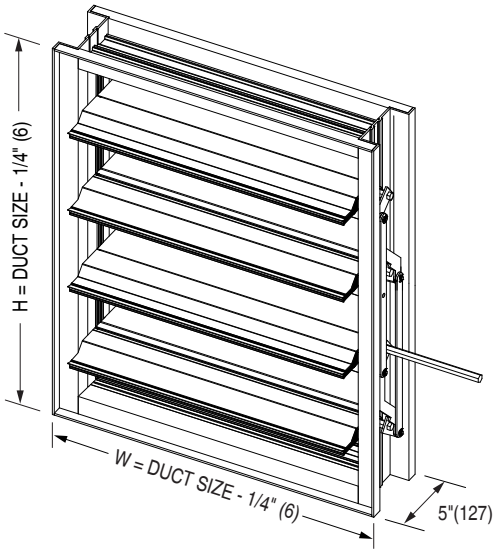
THERMALLY BROKEN CONTROL DAMPER
EXTRUDED ALUMINUM • THERMALLY BROKEN BLADES • HIGH PERFORMANCE
MODEL: 2200TB

AMCA CERTIFIED

Model 2200TB is an ultra-low leakage, high-performance thermally efficient control damper featuring extruded aluminum thermally broken insulated blades. The 2200TB is compliant with IECC (International Energy Conservation Code) with a leakage rating of 3 cfm/ft^2 @ 1" w.g. (15.2 L/s/m^2 @ 0.25 kPa) or less. This premium damper will minimize the transfer of thermal energy and reduce condensation in extreme temperature conditions.

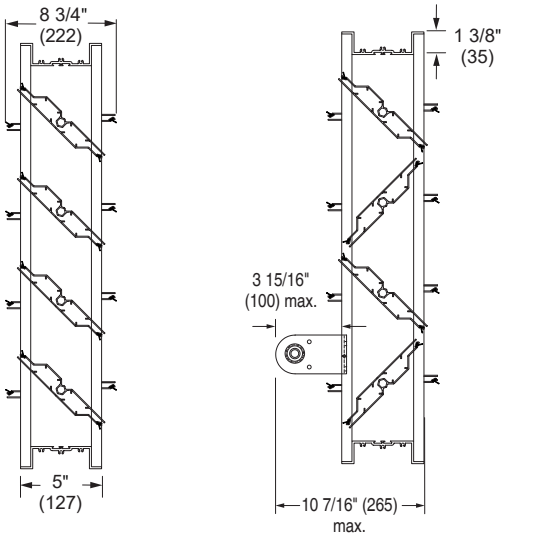


STANDARD CONSTRUCTION:

FRAME:	5" x 1 3/8" x 0.125" (127 x 35 x 3.2) extruded aluminum. Hat Channel.
BLADES:	6063-T6 extruded aluminum thermally broken airfoil. Internally insulated with polyurethane foam. (R-Value 5.0)
BLADE ACTION:	Opposed or Parallel.
LINKAGE:	Concealed side type totally enclosed within the frame and out of the air stream. Plated Steel.
BEARINGS:	1/2" (13) dia. dual action, synthetic.
AXLES:	7/16" (11) dia. plated steel, hexagonal.
DRIVE SHAFT:	6" (152) long x 1/2" (13) rigid drive shaft.
BLADE SEALS:	Silicone. Mechanically fastened.
JAMB SEALS:	Silicone. Mechanically fastened.
TEMPERATURE RANGE:	-70°F to 200°F (-57°C to 93°C).
LEAKAGE:	Class 1A @ 1" w.g. (0.25 kPa) Class 1 @ 4" w.g. (1.0 kPa)
PRESSURE:	Up to 8 in. w.g. (2 kPa) pressure differential.
VELOCITY:	Up to 4,000 fpm (20.3 m/s).

Frame Type		Quick Connect		Channel, Flange	
Blade Action		Parallel	Opposed	Parallel	Opposed
Min. Size		6" x 6" (152 x 152)	6" x 9 1/2" (152 x 241)	8" x 8" (203 x 203)	8" x 12 1/2" (203 x 318)
Max. Size	Single Section	60" x 76" (1524 x 1930)		60" x 78" (1524 x 1981)	
	Multi-Section	96" x 152" (2438 x 3861)		240" x 234" (6096 x 5944)	

❑ **PB** PARALLEL BLADE ❑ **OB** OPPOSED BLADE



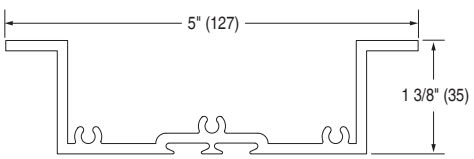
OPTIONS:

❑ SSLA Type 304 Stainless Steel Linkage/Axles
❑ Other _____ .

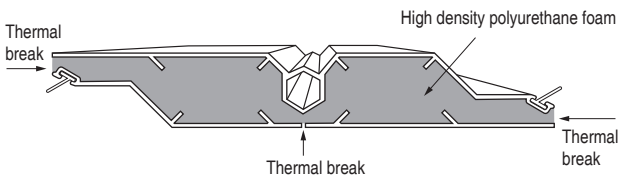
❑ HC Hat Channel Frame

Multiple section assemblies are supplied with jackshafts.

STANDARD:



INSULATED BLADE:



amca WORLDWIDE CERTIFIED RATINGS AIR PERFORMANCE EFFICIENCY AIR LEAKAGE AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC. www.amca.org

SCHEDULE TYPE:				
PROJECT:				
ENGINEER:	**DATE**	**B SERIES**	**SUPERSEDES**	**DRAWING NO.**
CONTRACTOR:	**9 - 4 - 25**	**2200**	**8 - 1 - 25**	**2200TB**

Dimensions are in inches (mm).

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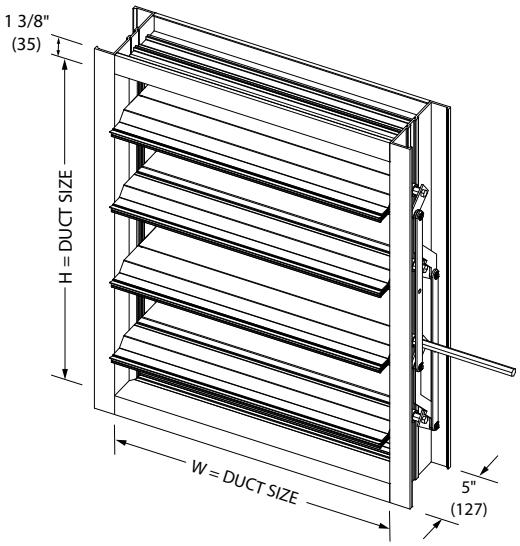
ACTUATORS:

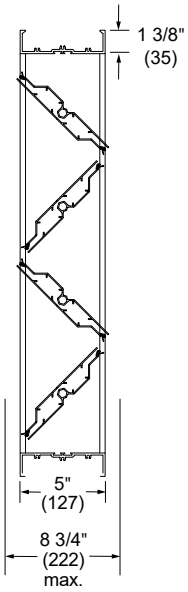
A variety of electric actuators are available, factory mounted by Nailor. Dampers ordered with the QC Quick Connect frame are suitable for external actuator mounting only. Factory actuators are sized for up to 1500 fpm (8 m/s) and 2" w.g. (498 Pa) system pressure.

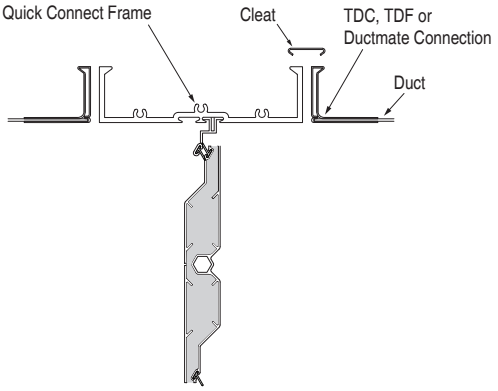
FRAME OPTIONS:

❑ QC Quick Connect Flange Frame

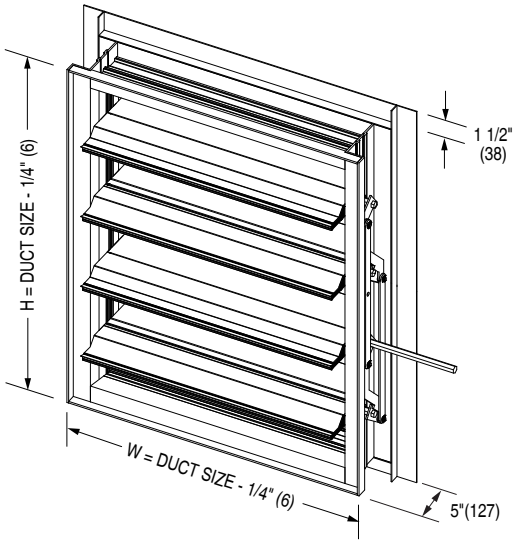
When ordering the Quick Connect Frame, the inner dimensions of the damper frame correspond to the duct size.



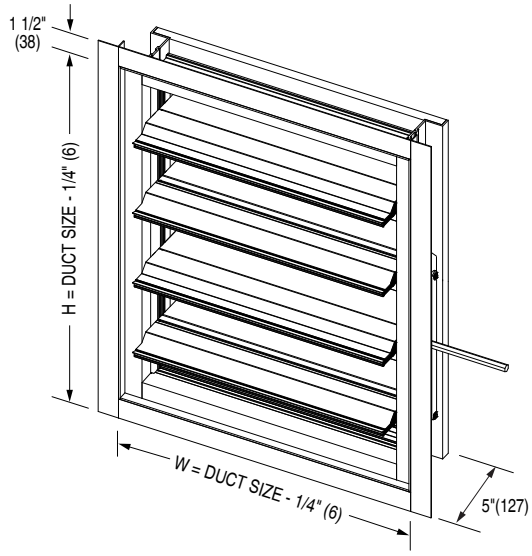




❑ FF Front Flange



❑ FR Rear Flange



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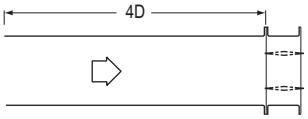
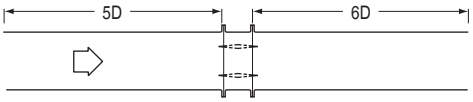
AMCA PRESSURE DROP

Dampers are tested and AMCA certified in accordance with AMCA Standard 500-D.



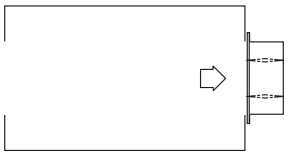
AMCA Figure 5.2 Half ducted (medium pressure drop)

12 x 12 (305 mm x 305 mm)		24 x 24 (610 mm x 610 mm)		36 x 36 (914 mm x 914 mm)		12 x 48 (305 mm x 1219 mm)		48 x 12 (1219 mm x 305 mm)	
Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)
500	.05	500	.02	500	.01	500	.01	500	.03
1000	.13	1000	.06	1000	.05	1000	.05	1000	.12
1500	.30	1500	.14	1500	.11	1500	.12	1500	.24
2000	.53	2000	.24	2000	.19	2000	.21	2000	.41
2500	.83	2500	.38	2500	.29	2500	.33	2500	.64
3000	1.21	3000	.54	3000	.42	3000	.47	3000	.91
3500	1.65	3500	.74	3500	.57	3500	.65	3500	1.23
4000	2.17	4000	.97	4000	.74	4000	.85	4000	1.57



AMCA Figure 5.3 Fully ducted (lowest pressure drop)

12 x 12 (305 mm x 305 mm)		24 x 24 (610 mm x 610 mm)		36 x 36 (914 mm x 914 mm)		12 x 48 (305 mm x 1219 mm)		48 x 12 (1219 mm x 305 mm)	
Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)
500	.006	500	.007	500	.005	500	.007	500	.01
1000	.05	1000	.03	1000	.02	1000	.009	1000	.05
1500	.12	1500	.05	1500	.04	1500	.05	1500	.10
2000	.21	2000	.09	2000	.08	2000	.10	2000	.17
2500	.34	2500	.14	2500	.12	2500	.15	2500	.26
3000	.50	3000	.20	3000	.18	3000	.21	3000	.37
3500	.69	3500	.28	3500	.24	3500	.28	3500	.51
4000	.91	4000	.37	4000	.31	4000	.39	4000	.67



AMCA Figure 5.5 Plenum mounted (highest pressure drop)

12 x 12 (305 mm x 305 mm)		24 x 24 (610 mm x 610 mm)		36 x 36 (914 mm x 914 mm)		12 x 48 (305 mm x 1219 mm)		48 x 12 (1219 mm x 305 mm)	
Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)	Velocity (fpm)	Pressure Drop (in. wg)
500	.06	500	.04	500	.04	500	.04	500	.05
1000	.19	1000	.19	1000	.16	1000	.18	1000	.19
1500	.45	1500	.43	1500	.36	1500	.42	1500	.43
2000	.81	2000	.77	2000	.65	2000	.75	2000	.76
2500	1.27	2500	1.20	2500	1.02	2500	1.16	2500	1.18
3000	1.83	3000	1.72	3000	1.48	3000	1.67	3000	1.68
3500	2.51	3500	2.35	3500	2.02	3500	2.28	3500	2.25
4000	3.29	4000	3.11	4000	2.65	4000	3.0	4000	2.91

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AMCA CERTIFIED AIR LEAKAGE

Damper Width inches (mm)	1 in. wg. (0.25 kPa)	4 in. wg. (1.0 kPa)	6 in. wg. (1.5 kPa)	8 in. wg. (2.0 kPa)
12" (305)	1 A	1	1	1
36" (914)	1 A	1	1	1
60" (1524)	1 A	1	N/A	N/A

Tested for leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.5.

LEAKAGE CLASS DEFINITIONS:

Leakage Class 1A: 3 cfm/ft^2 @ 1 in. w.g. (15 l/s/m^2 @ 0.25 kPa)
Leakage Class 1: 4 cfm/ft^2 @ 1 in. w.g. (20 l/s/m^2 @ 0.25 kPa)
8 cfm/ft^2 @ 4 in. w.g. (41 l/s/m^2 @ 1.0 kPa)
11 cfm/ft^2 @ 8 in. w.g. (56 l/s/m^2 @ 2.0 kPa)

AMCA CERTIFIED THERMAL EFFICIENCY PERFORMANCE

Model 2200TB has a Thermal Efficiency Ratio of 512%.
A dampers 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%.

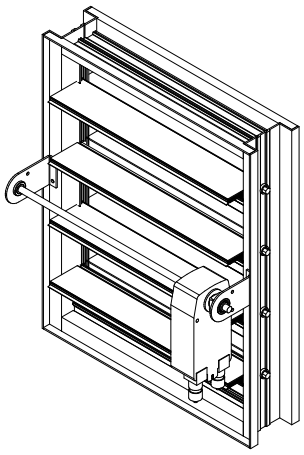
Testing was conducted in accordance with ANSI/AMCA Standard 500-D, Figure 5.10 on a 36" x 36" sample.

TORQUE

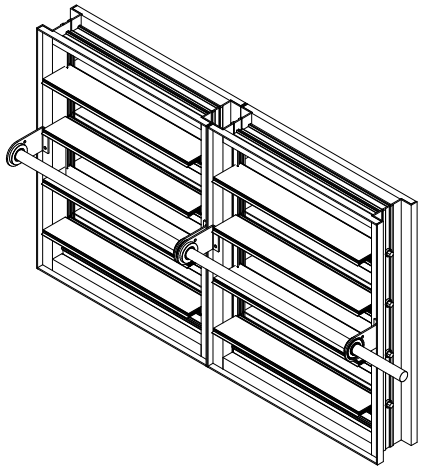
Data is based on a torque of 9.0 in.lb./ft^2 (0.56 N·m) applied to close and seat the damper during the tests.

JACKSHAFTS AND MULTIPLE SECTION DAMPERS (HC Hat Channel Frame and FF, FR Flange Frames only)

Dampers larger than the maximum single section size are made up of two or more equal size sections. Single section dampers with internal mount actuators require a jackshaft. Jackshafts are 1/2" (25) or 1" (51) diameter dependent on damper size.



Single section damper with internal mount actuator. Hat Channel frame.



Two section damper with jackshaft. External right hand drive.

Nailor Industries Inc. certifies that the model 2200TB 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.

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