

CD60GS (GENSET)

High-performance Galvanized Steel Airfoil Blade Damper
AMCA Class IA Leakage Rated



APPLICATION

The CD60GS is designed to provide maximum combustion air and pressure relief quickly for emergency generator start up to avoid damage of equipment or surrounding space. The factory mounted fast-acting 8-second spring open actuator provides optimal performance and reliability. The CD60GS also provides AMCA class 1A leakage rating of 3cfm/ft² at 1" w.g. when blades are closed to meet requirements of the International Energy Conservation Code (IECC).

STANDARD CONSTRUCTION

Frame	5" x 1" x 16 ga. (127 x 25 x 1.6) galvanized steel channel.
Blades	Galvanized steel, one piece airfoil shaped, construction of 14 gauge (2.0) equivalent strength, typically 6" (152) wide, maximum 8 5/8" wide. Parallel blade action.
Blade Seals	Santoprene blade edge seals mechanically fastened.
Jamb Seals	300 Series stainless steel cambered compression type.
Bearings	Oil impregnated, permanently lubricated, stainless steel sleeve.
Axles	7/16" (11) plated steel hex.
Linkage	Plated steel, concealed out of airstream.
Operator Shaft	1/2" (13) dia. x 6" long plated steel for single section. 1" (25) dia. jackshaft for single and multi-section assemblies.
Actuator	RUS-GEN Series with NEMA 4X enclosure. 24VAC/VDC or 120VAC (with or without built-in auxiliary switches). Damper operation is power close / spring-return open.



PERFORMANCE RATINGS

Leakage	AMCA Class IA.
Velocity	Up to 4000 fpm (20.3 m/s).
Pressure	Up to 6 in. w.g. (1.5 kPa).
Temperature	-72°F to +275°F (-58°C to +135°C).
Torque	7 in.-lb/ft ² .
Airflow	Both directions.

OPTIONS & ACCESSORIES

Frame	Front flange, rear or both sides with or without bolt holes.
Sleeve/Transition	Factory installed, with or without transitions.
Linkage & Axles	Stainless steel.
Blade Seals	Silicone -80°F to 450°F (-62°C - 232°C).
Switches	SP100 - blade (open/closed) position indicator.

FEATURES

- ▶ Class IA leakage performance saves energy
- ▶ Special fast-acting 8 second spring-return actuator tested to 40,000 cycles
- ▶ Blade seals mechanically fastened for longevity
- ▶ Shake-proof linkage for low maintenance

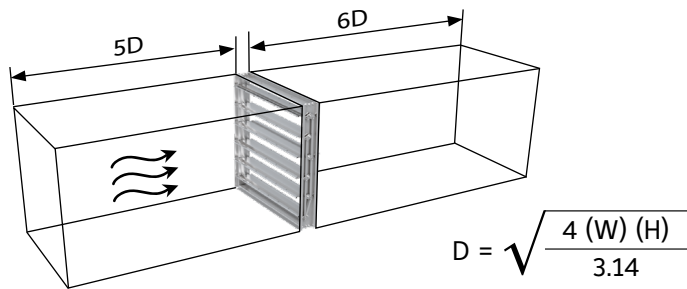
DIMENSIONS & WEIGHT

Minimum	12" x 12 3/4" (305 x 324)	
Maximum	Section:	48" x 72" (1219 x 1829)
	Assembly:	Unlimited
Weight:	7 lbs./ft ² (3.2 kg)	

Note:
Values shown in parenthesis () indicate millimeters.

PERFORMANCE DATA

Pressure Drop Data CD60GS air performance testing is performed in accordance with AMCA Standard 500-D configuration 5.3 as illustrated below. All data are corrected to standard air density of .075 lb/ft³ (1.201 kg/m³).



Ruskin company certifies that model CD60GS shown herein is licensed to bear the AMCA seal. The AMCA certified ratings seal applies to air leakage and air performance ratings. 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 program.

AMCA Figure 5.3 was established to represent a fully ducted damper with straight duct upstream and downstream. With entrance and exit losses minimized by this straight duct arrangement, this configuration has the lowest pressure drop of all three configurations.

Air Performance Data—AMCA Test Figure 5.3									
12" x 12" (305 x 305)		24" x 24" (610 x 610)		36" x 36" (914 x 914)		12" x 48" (305 x 1219)		48" x 12" (1219 x 305)	
Velocity	Pressure Drop	Velocity	Pressure Drop	Velocity	Pressure Drop	Velocity	Pressure Drop	Velocity	Pressure Drop
FPM	in. WG	FPM	in. WG	FPM	in. WG	FPM	in. WG	FPM	in. WG
499	0.02	506	0.005	517	0.005	508	0.005	509	0.01
869	0.06	998	0.03	1007	0.02	1002	0.03	1005	0.04
1417	0.17	1514	0.06	1404	0.03	1519	0.06	1523	0.08
1980	0.34	2012	0.11	1949	0.05	2019	0.10	2024	0.16
2986	0.79	2867	0.22	3004	0.12	2883	0.21	2884	0.32

Leakage Data Air Leakage testing is performed in accordance with ANSI/AMCA Standard 500-D, figure 5.5. Data are based on a torque of 7 in-lbs/ft² (.56 N.m./m²) applied to close and seat the damper during the test. Air Leakage is based on operation between 32°F - 120°F (0°C - 49°C).

CD60GS	LEAKAGE CLASS*			
	1" w.g. (0.25 kPa)	4" w.g. (1 kPa)	8" w.g. (2 kPa)	10" w.g. (2.5 kPa)
Maximum Damper Width				
48" (1219)	1A	1	N/A	N/A

*Leakage Class Definitions

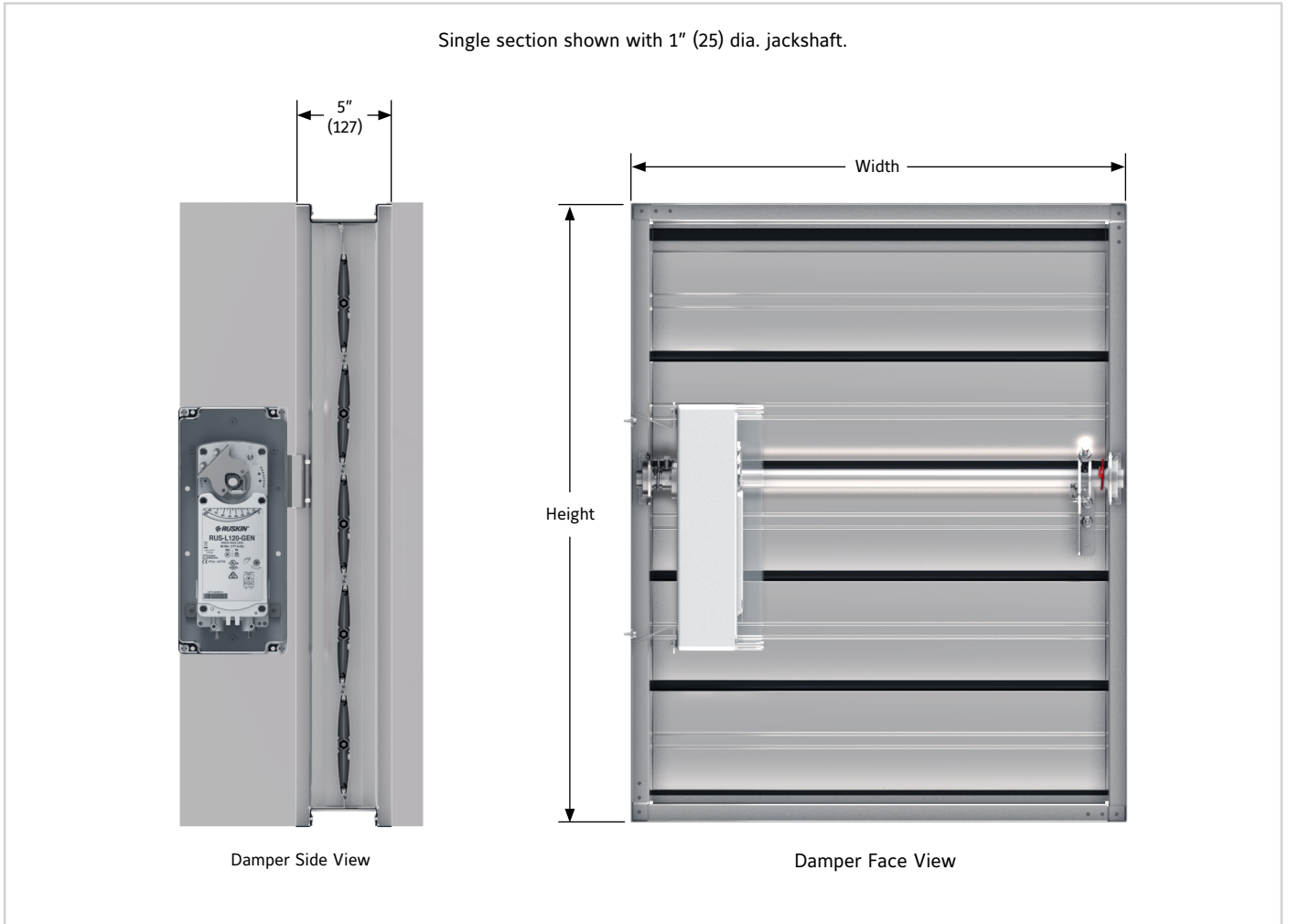
As defined by AMCA, the maximum allowable leakage is as follows:

Leakage Class 1A (is only defined @ 1" wg)

- ▶ 3 cfm/ft² (.92 cmm/m²) @ 1" wg (0.25 kPa) Leakage Class 1
- ▶ 4 cfm/ft² (1.22 cmm/m²) @ 1" wg (0.25 kPa)
- ▶ 8 cfm/ft² (2.44 cmm/m²) @ 4" wg (1 kPa)
- ▶ 11.3 cfm/ft² (3.45 cmm/m²) @ 8" wg (2 kPa)
- ▶ 12.6 cfm/ft² (3.85 cmm/m²) @ 10" wg (2.5 kPa)

DIMENSIONAL INFORMATION

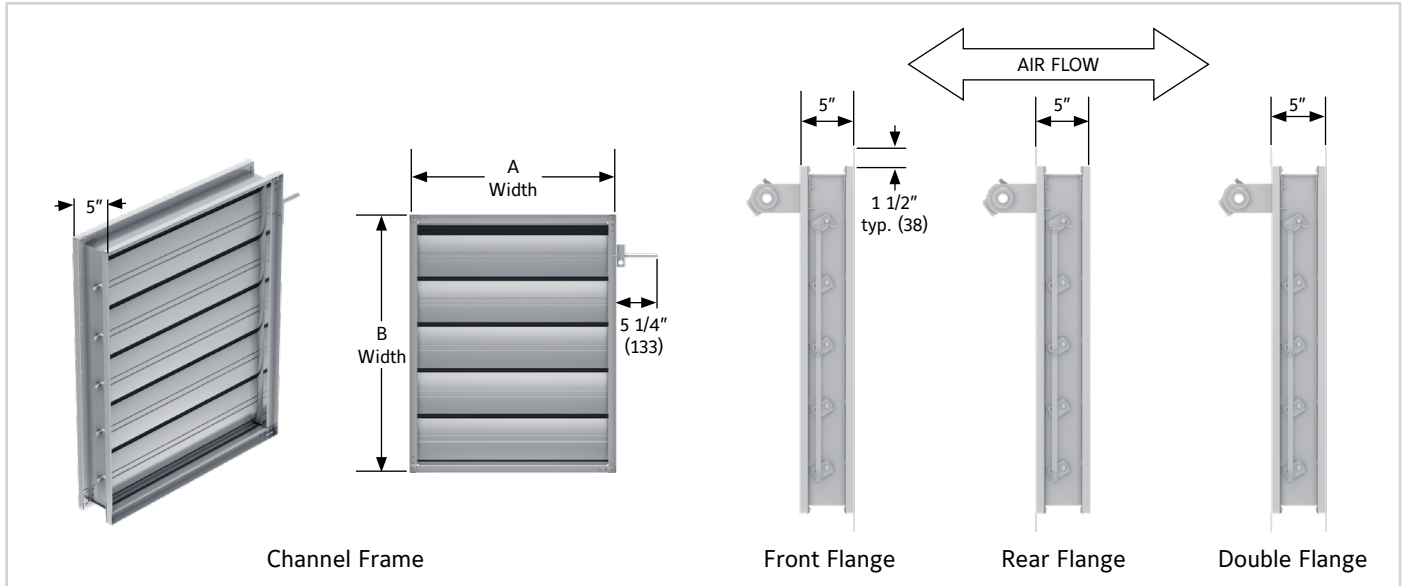
W & H dimensions are furnished with 1/4" (6) deduct standard, unless ordered actual size.



Note: Minimum damper size for internal actuator & weather enclosure is 18" X 30" (457 X 762)

CONSTRUCTION & DIMENSIONAL INFORMATION

Channel Frame and Flange Frame Options



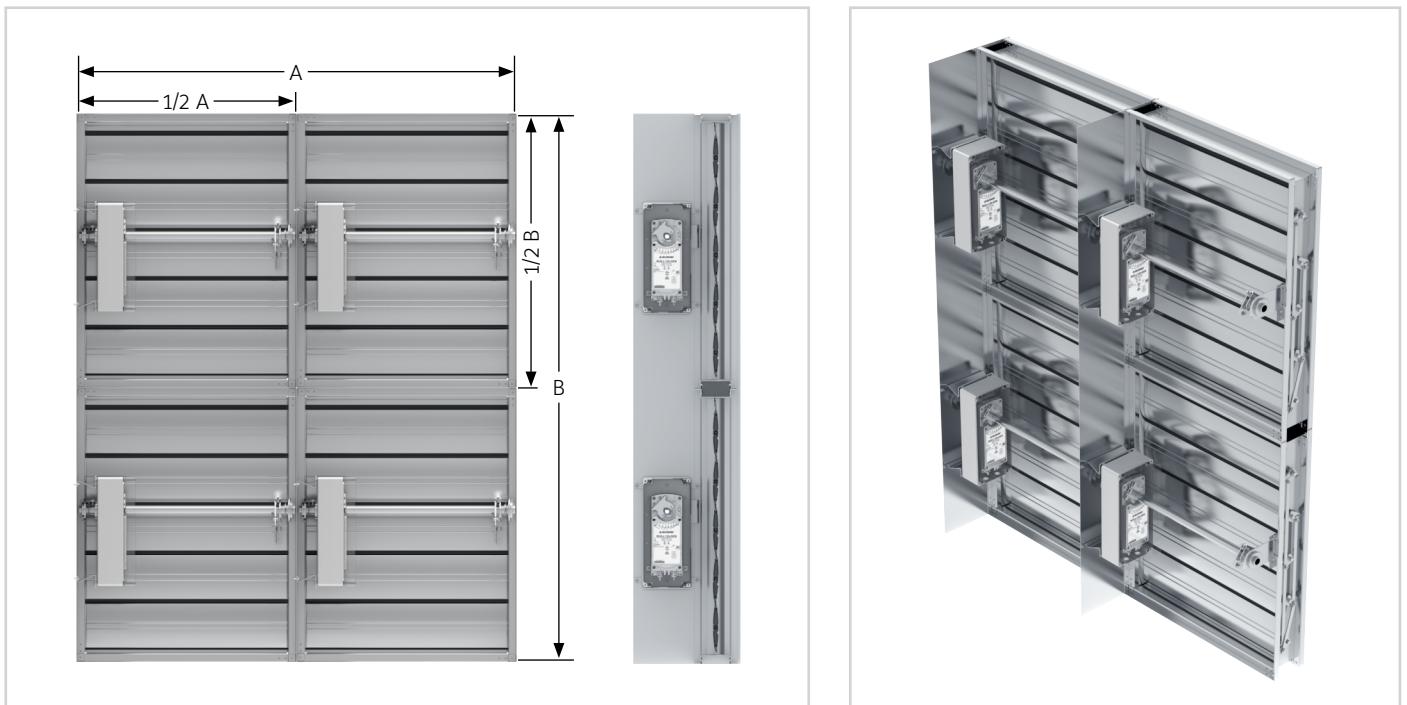
Note: Extended shaft shown installed. Shaft screwed to corner of frame for shipping.

Ruskin CD60GS is rated for airflow in either direction, but Ruskin defines the "front" of the damper as the opposite side of the jackshaft and the "rear" as the jackshaft side. Unless specifically ordered otherwise, when looking at the concealed linkage side of the damper and the bottom blade turns clockwise to open, then the "front" surface is adjacent on the right.

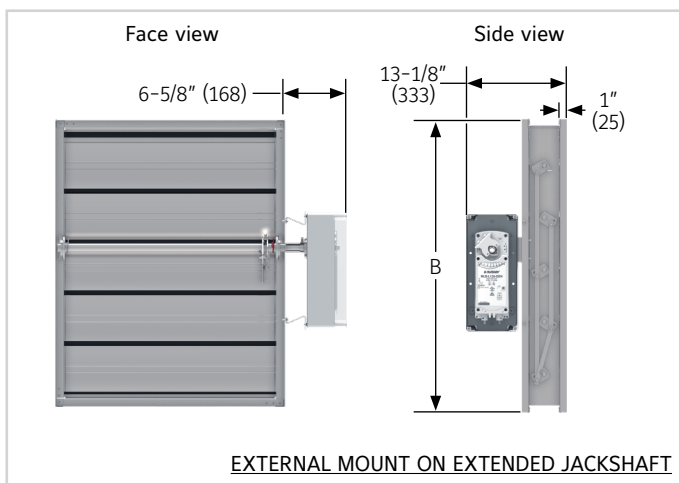
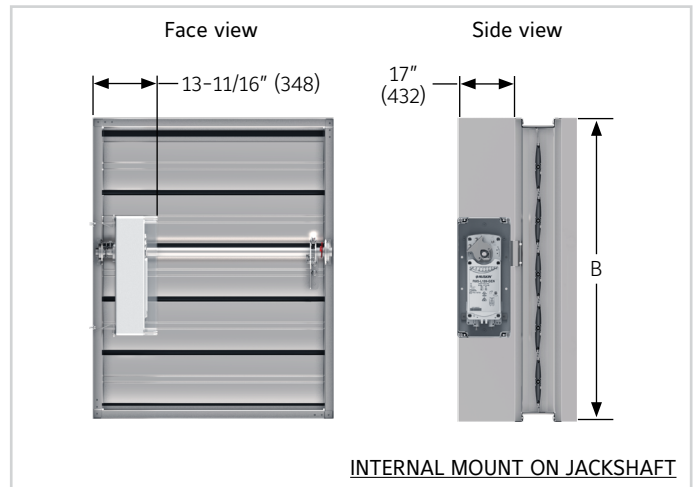
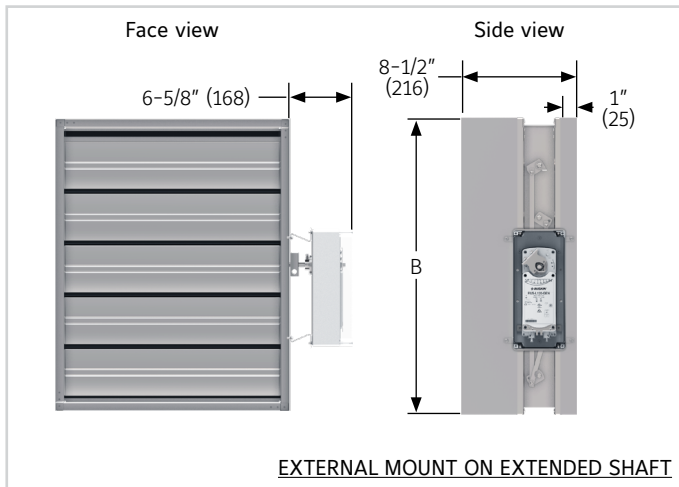
CONSTRUCTION & DIMENSIONAL INFORMATION

Multi-section Dampers

Dampers over the maximum single section size will require multiple damper sections, typically built in equal sizes. Multi-section assemblies will have independent jackshafts operation.



TYPICAL ACTUATOR MOUNTING DETAILS



SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans, low leakage airfoil control dampers meeting the following minimum construction standards. Control dampers shall be produced in an ISO9001 certified factory. Frame shall be one-piece uniframe construction of 16 ga. (1.6) galvanized steel roll formed hat channel structurally equivalent to a minimum 13 ga. (2.4) frame. Blades shall be 14 ga. (2.0) equivalent galvanized steel, rollformed airfoil type for low pressure drop and low noise generation. Blade edge seals shall be Santoprene TPV type or equivalent mechanically locked into the blade edge. Adhesive or clip-on type seals are unacceptable. Jamb seals shall be stainless steel chambered compression type to prevent leakage between blade end and damper frame. Blade end overlapping frame is unacceptable. Multiple section dampers must have factory installed jackshafts unless clearly eliminated by engineer. Bearings shall be 304 stainless steel, oil impregnated, and self-lubricating sleeve type with a 450 pound (204 kg) minimum radial crush load. Bearings shall turn in extruded holes in the damper frame. Axles shall be hexagonal positively locked into the damper blade. Linkage shall be concealed out of airstream, within the damper frame to reduce pressure drop and noise. Temperature limits shall be -72° (-58° C) to $+275^{\circ}$ F ($+135^{\circ}$ C). Submittal must include leakage, maximum air flow and maximum pressure ratings based on AMCA Publication 500. Damper shall be tested and licensed in accordance with AMCA 511 for Air Performance and Air Leakage. Damper widths from 12" to 48" (305 to 1219) wide shall not leak any greater than 3 cfm/sq.ft. at 1" w.g. (15.2 l/s-m^2 at .25 kPa). Damper shall be factory equipped with fast acting 8-second spring return electric actuator with 40,000 open/closed cycle testing, and shall be equivalent in all respects to Ruskin Model CD60GS.

i LINKS TO IMPORTANT DOCUMENTS

Document Title

O & M for Commercial Control Dampers
 SP100 and SP100FK Switch Package
 Replacement Parts Catalog
 Flange Frame Options
 Limited Warranty Document



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