

CD50GS (GENSET)

High-Performance Control Damper

Extruded Aluminum | Airfoil Blade Damper

AMCA Class IA Leakage Rated



APPLICATION

The CD50GS 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 .125" (127 x 25 x 3.2) 6063-T6 extruded aluminum.
Blades	6" (152) wide, 6063-T6 extruded aluminum airfoil. Parallel blade action.
Blade Seals	Santoprene mechanically fastened.
Jamb Seals	301 stainless steel cambered compression type.
Bearings	Lexan.
Axles	7/16" (11) plated steel hex.
Linkage	Concealed out of airstream.
Operator Shaft	1/2" (13) dia. x 6" long plated steel for single section. 1" (25) dia. jackshaft for single & multi-section assemblies.
Actuator	RUS-L-GEN 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 (see page 2).
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) with Santoprene blade seals.
Torque	7 in-lb/ft ² .
Airflow	Both directions.
R Value	1.16 (tested to ASTM C1363-2011).

HIGHLIGHTS

- ▶ Class IA Leakage performance for energy savings
- ▶ Special fast acting 8 second spring-return actuator tested to 40,000 cycles
- ▶ Mechanically fastened blade seals 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:	5 lbs./ft ² (2.3 kg)	

OPTIONS & ACCESSORIES

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

Note:
Dimensions shown in parenthesis () indicate millimeters.

PERFORMANCE DATA

Leakage Class	Leakage*			
	Required Rating		Extended Ranges (Opt.)	
	1" (0.25 kPa)	4" (1.0 kPa)	8" (2.0 kPa)	12" (3.0 kPa)
1A	3 (15.2)	N/A	N/A	N/A
1	4 (20.3)	8 (40.6)	11 (55.9)	14 (71.1)
2	10 (50.8)	20 (102)	28 (142)	35 (178)
3	40 (203)	80 (406)	112 (569)	140 (711)

Damper Width (Inches)	1 IN. W.G.	4 IN. W.G.	8 IN. W.G.
12" (305)	1A	1	2
24" (610)	1A	1	2
36" (914)	1A	1	N/A
48" (1219)	1A	1	N/A

Leakage testing conducted in accordance with AMCA Standard 500-D-98. Torque applied holding damper closed, 7 in. lbs./sq.ft. on parallel blade dampers. Air leakage is based on operation between 50°F to 104°F. All data corrected to represent standard air density 0.075 lbs/ft³.

* 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)

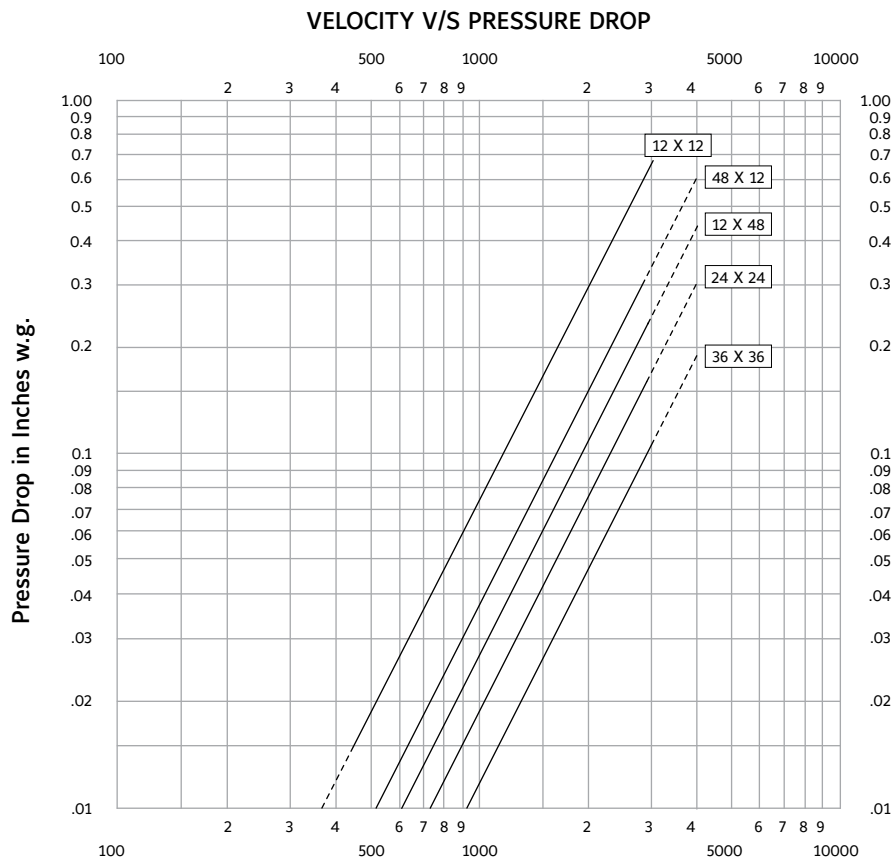
Leakage Class 1

- 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)



Face Velocity - Feet/Minute AMCA Fig. 5.3

CD50GS sizes 12 x 12, 24 x 24, 48 x 12, 12 x 48, 36 x 36 (305 x 305, 610 x 610, 1219 x 305, 305 x 1219, 914 x 914)

All data corrected to represent standard air at a density of 0.075 lbs/ft³.

SOUND RATINGS

Damper size	Damper Full Open		Damper 75% Open		Damper 50% Open		Damper 25% Open	
	CFM	NC	CFM	NC	CFM	NC	CFM	NC
12 x 12 (305 x 305)	2000	17	1500	11	1000	11	500	*
	3000	28	2250	22	1500	19	750	*
	4000	35	3000	29	2000	24	1000	*
18 x 18 (457 x 457)	2250	17	1688	10	1125	21	563	*
	4500	33	3375	26	2250	32	1125	*
	6750	43	5063	37	3375	40	1688	15
24 x 24 (610 x 610)	4000	11	3000	10	2000	26	1000	*
	8000	32	6000	30	4000	38	2000	21
	12000	43	9000	42	6000	46	3000	31

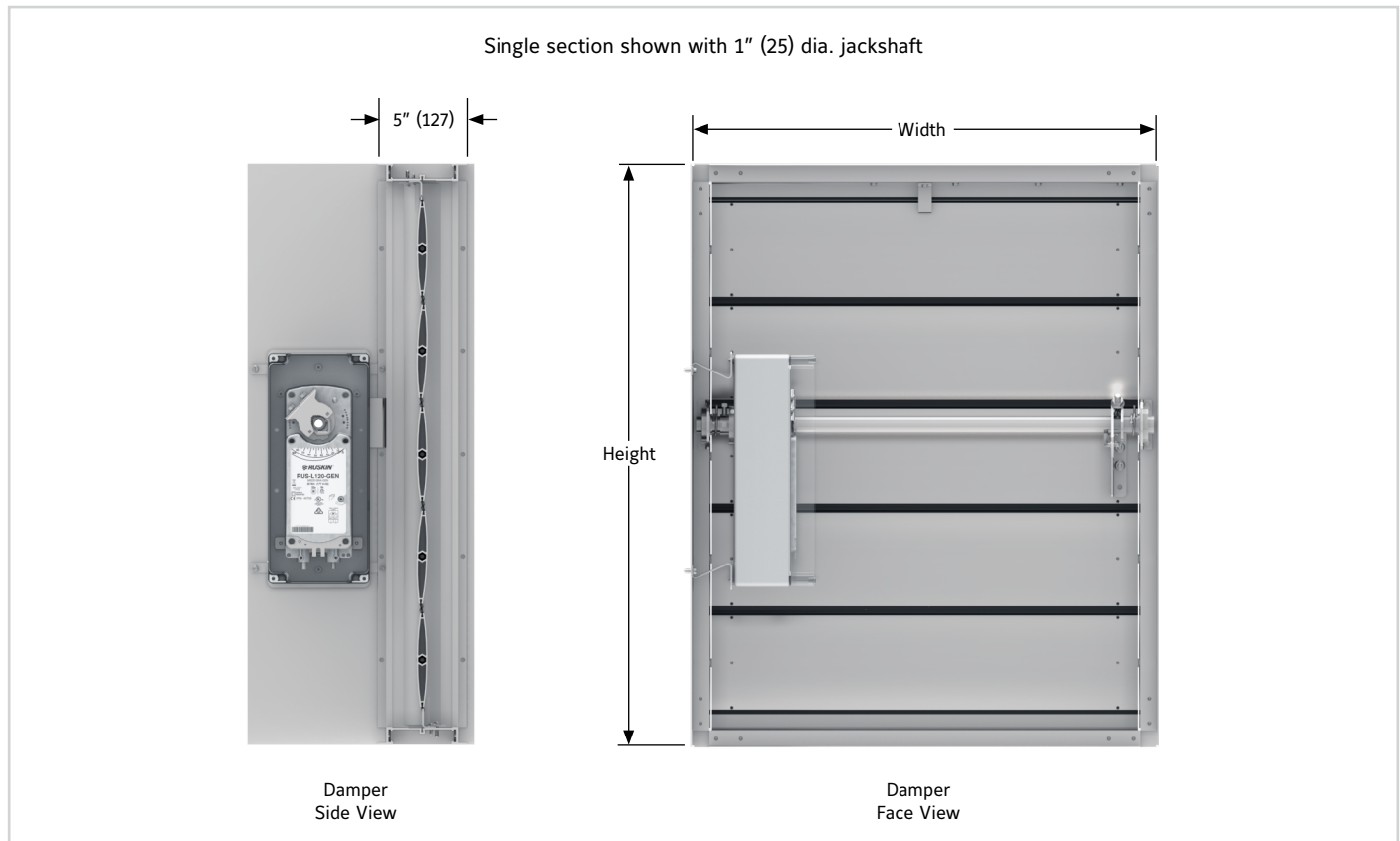
NC = Noise criteria in Decibels is based on 10db room effect and 10db of room attenuation.

* = Less than 10 NC

See ASHRAE Handbook (1977 Fundamentals, Chapter 7) for explanation of NC Ratings.

DIMENSIONAL INFORMATION

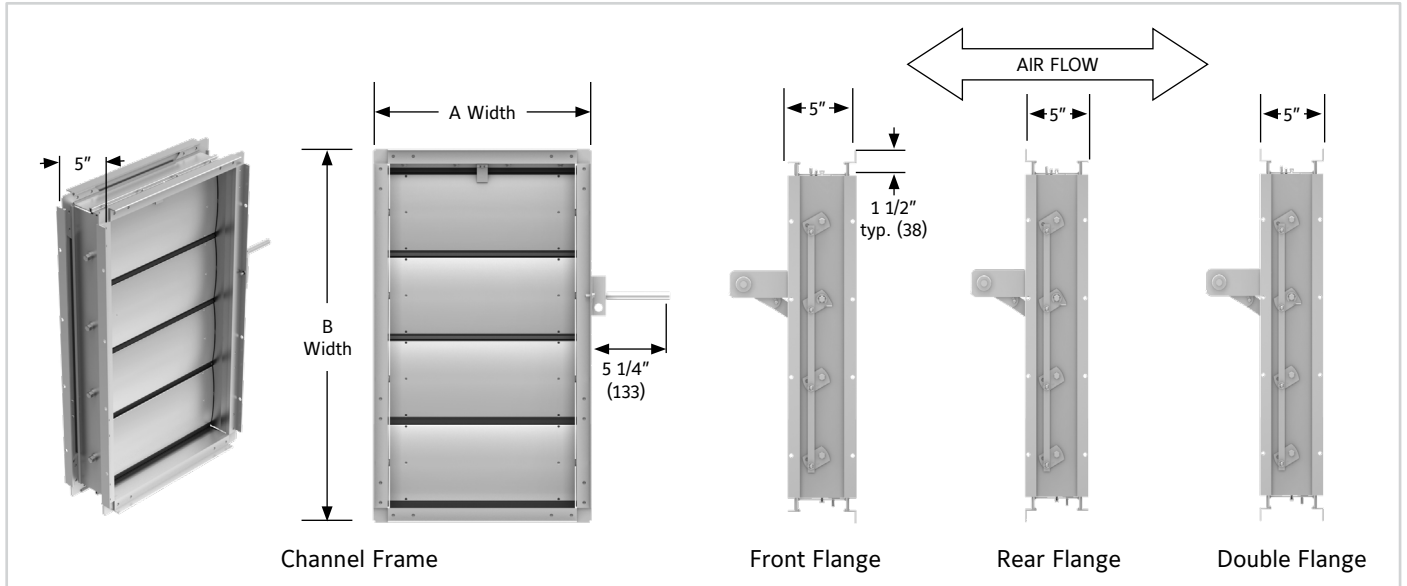
W & H dimensions are furnished with 1/4" (6) deduct standard, unless ordered actual size.



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



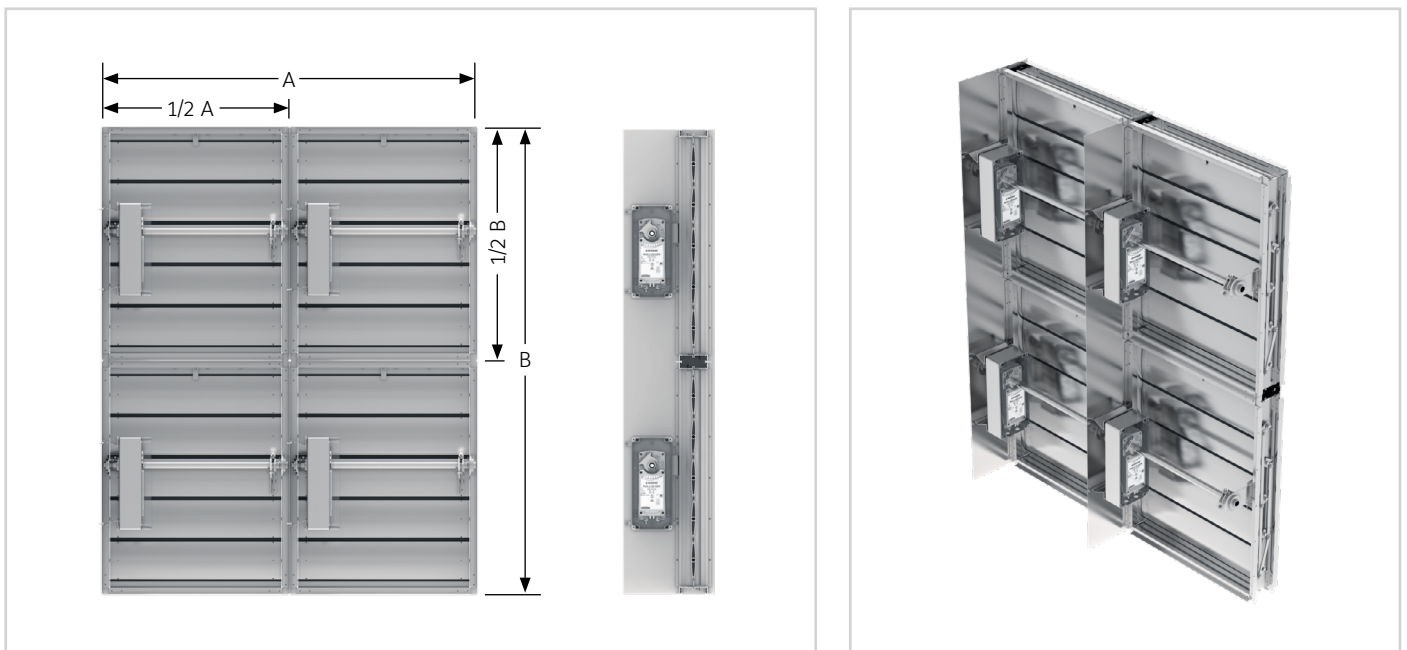
Note: Extended shaft shown installed. Shaft screwed to corner of frame for shipping.

Ruskin CD50GS 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

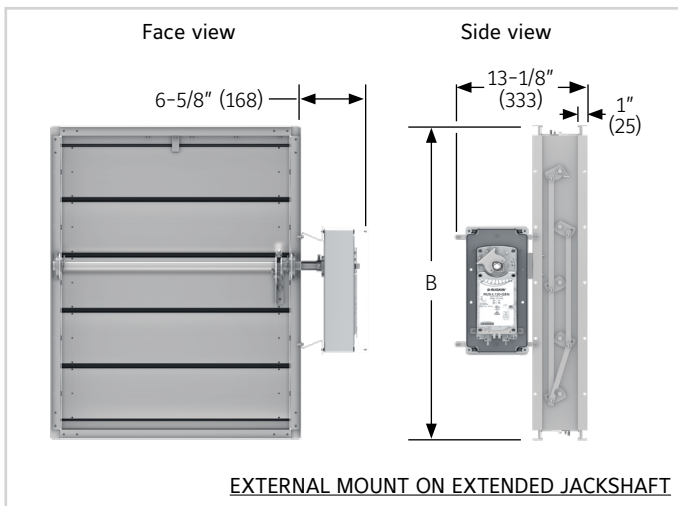
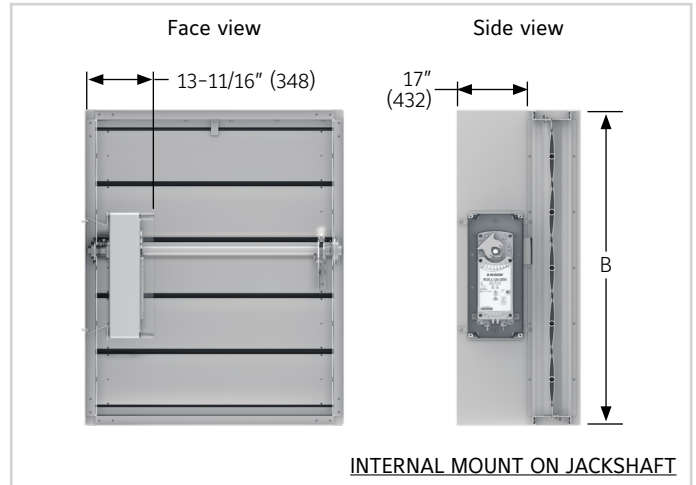
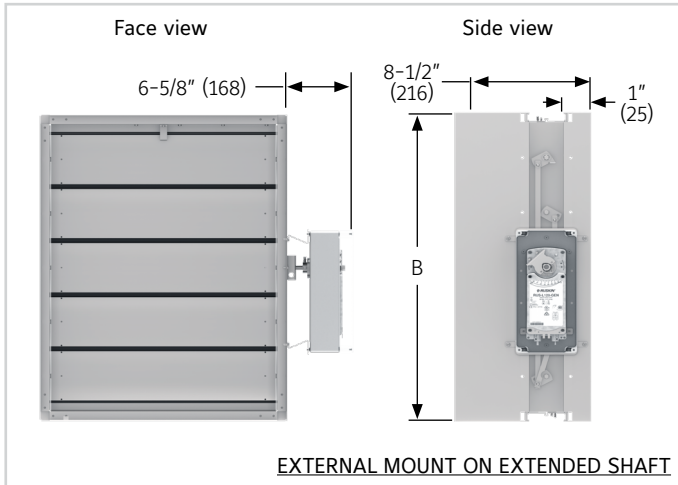
Multi-section Dampers

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



Note: Multiple section dampers are not intended to be structural supports. Additional bracing is recommended to support the damper weight and support against system pressure. Refer to Installation Instructions.

TYPICAL ACTUATOR MOUNTING DETAILS



SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans, or in accordance with schedules, Low leakage dampers shall meet the following minimum construction standards: Frames shall be 5" x 1" x .125" (minimum thickness) (127 x 25 x 3.2) 6063-T6 extruded aluminum hat channel with hat mounting flanges on both sides of the frame. Each corner shall be reinforced with two die formed internal braces and machine staked for maximum rigidity. Blades shall be airfoil type extruded aluminum (maximum 6" (152) depth) with integral structural reinforcing tube running full length of each blade.

Blade edge seals shall be extruded double edge design with inflatable pocket which enables air pressure from either direction to assist in blade to blade seal off. Blades seals shall be mechanically locked in extruded blade slots, yet shall be easily replaceable in field. Adhesive or clip-on type blade seals are not acceptable. Bearings shall be non-corrosive molded synthetic. Axles shall be hexagonal (round not acceptable) to provide positive locking connection to blades and linkage. Linkage shall be concealed in frame. 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 8 cfm sq.ft. @ 4" w.g. and a maximum of 3 CFM sq.ft. @ 1" w.g. (15.2 l/s-m² 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 in all respects equivalent to Ruskin Model CD50GS.

i LINKS TO IMPORTANT DOCUMENTS

Document Title

O & M for Commercial Control Dampers

Flange Frame Options

SP100 and SP100FK Switch Package

Replacement Parts Catalog

Limited Warranty Document



3900 Doctor Greaves Road
Grandview, MO 64030
Website: www.ruskin.com
Phone: (816) 761-7476