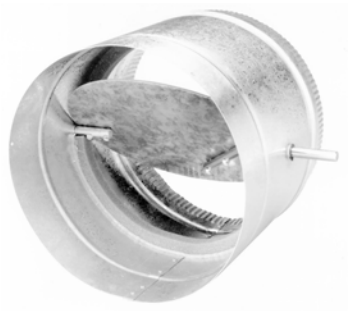
JOHNSON CONTROLS

Controls Group 507 E. Michigan Street
P.O. Box 423, Milwaukee, WI 53202
Code No. LIT-1923150

Round Control Damper



Round Damper

Description

Johnson Controls provides top quality round dampers to control air flow in Heating, Ventilating, and Air Conditioning (HVAC) systems that fit standard round ducts.

The round damper is available with seals for a low leakage control damper. The damper is easily installed in round ducts.

The round damper is available with or without a factory installed actuator.

Johnson Controls round dampers have no components that require routine scheduled maintenance.

Features

- 20 gauge galvanized sheet steel shroud
- 16 gauge and 20-gauge blades, based on diameter
- seals to reduce leakage
- formed shroud which allows easy insertion into ductwork
- one-piece construction that increases rigidity and strength
- optional factory-installed actuators that reduce installation time

RC-2000 Round Control Damper Selection Chart

Code Number	R	d	d		N
Product Family	R = Round Dampers				
Application	C = Control L = Low Leakage Control				
Material	G = Galvanized steel S = 304 Stainless steel (a)				
Diameter	04 to 22 in. in 1-Inch Increments				
Actuator (b)	B = Bracket with no actuator E = Electric non-spring return (c) M = Manual locking quadrant N = None P - Pneumatic D-3062 S = Electric spring return (c)				
Control Signals	B = Floating with 2 SPDT Auxiliary Switch E = Proportional with two SPDT auxiliary switches P = 8-13 pound spring range				
Operation	NC = Normally Closed NO = Normally Open				

(a) Low Leakage only.

(b) Based on torque requirements. RCG products use M9106 or M9206 actuators on all sizes and RLG products use M9206 or M9216 actuators on all sizes.

(c) Not available on 4- and 5- inch diameters.

Applications

Refer to standard control damper for type selected.

Accessories

Refer to *Damper Accessory Kits* and *Damper Replacement Parts*.

To Order

Specify the code number from the selection chart.

Submittal Specifications

Furnish and install round control dampers manufactured by Johnson Controls.

Damper shrouds are to be constructed of formed 20-gauge galvanized sheet steel, mechanically joined. Blade rotation not to exceed 90°.

Damper blades are to be constructed with single-piece 12- or 16-gauge galvanized steel based on size.

Damper performance shall be designed for tight shutoff. Leakage rating at 4 inches WG differential pressure shall not exceed 20 cfm. The damper without actuator must be rated to operate over a temperature range of -20 to 200°F (-29 to 93°C).

Damper sizing shall be by the designer in accordance with accepted industry practices to insure proper system performance.

Factory-installed electric and pneumatic actuators shall be available.

RCG Construction

Part	Construction
Shroud	20-gauge galvanized sheet steel
Blade	4- to 8-inch (102 yo 204 mm); 16-gauge galvanized steel, single-piece
	9- to 22-inch (229 to 559 mm); 12-gauge galvanized steel, single-piece
Shaft	4- to 8-inch (102 to 204 mm); 5/16 inch (8 mm) diameter steel (1/2 inch adaptor provided when ordered without actuator)
	9- to 22-inch (229 to 559 mm) diameter; 1/2 inch (13 mm) diameter steel
Washer	Nylon
Seal	Closed-cell polyurethane foam tape

RLG Construction

Part	Construction
Shroud	20-gauge galvanized sheet steel or 304 stainless steel
Blade	Two layers of galvanized steel 14 gauge (2mm) equivalent thickness or 304 stainless steel
Blade Arm	1/2 inch (13mm) diameter steel extending 6 inches (152mm) beyond shroud
Bearing	Stainless steel sleeve pressed into frame
Seal	Polyethelene foam seal sandwiched between two sides of blades. Seal fully encompasses blade edge.

Round Control Damper (Continued)

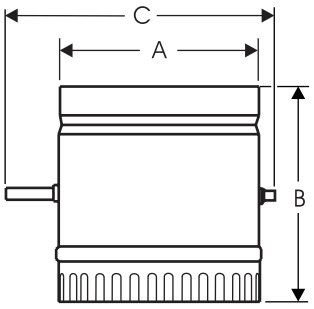
Performance Specifications:

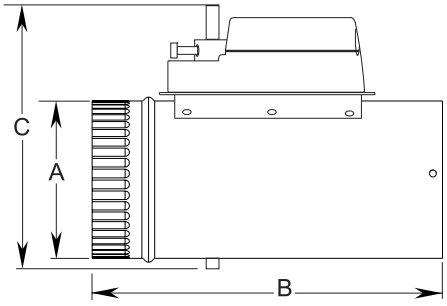
Round Control Damper			
		RCG	**RLG and RLS**
Actuator Torque Required for Closing at 1500 fpm velocity	**4 to 8 in. diameter**	5 in·lb minimum	52 in·lb minimum
	9 to 16 in. diameter	15 in·lb minimum	84 in·lb minimum
	17 to 22 in. diameter	25 in·lb minimum	116 in·lb minimum
Leakage per inch diameter	**1 inch sp.**	.82	.11
	2 inch sp.	.66	.10
	4 inch sp.	.41	.08
Pressure Drop (in w.g. at 1,000 fpm)	**8 inch**	.3	.12
	12 inch	.03	.012
	16 inch	.005	.001
	20 inch	.001	.001
Electric Actuator	M9106 or M9206: Running and breakaway torque 53 in·lb (6 N·m); M9116 or M9216: Running and breakaway torque 140 in·lb (16 N·m)		
Pneumatic Actuator	Maximum control pressure: 25 psig (175 kPa)		
Temperature Limits	**Without actuator** -20 to 180°F (-29 to 83°C)		
	With electric actuator 35 to 125°F (2 to 52°C)		
	With pneumatic actuator -20 to 150°F (-29 to 66°C)		

Approximate Weight	**Diameter, in. (mm)**	**W/o actuator lb (kg)**	**With M9106 lb (kg)**	**With M9206 lb (kg)**	**With D-3062 lb (kg)**
	4 (102)	1.1 (0.5)	3.5 (1.6)	7.5 (3.4)	3.5 (1.6)
	8 (204)	2.9 (1.32)	5.3 (2.7)	9.3 (4.2)	5.5 (2.5)
	12 (305)	8.0 (3.63)	10.4 (4.7)	14.5 (6.5)	10.5 (4.8)
	16 (406)	14.0 (6.35)	16.4 (7.4)	20.4 (9.2)	16.5 (7.5)
	20 (508)	22.5 (10.2)	24.9 (11.3)	28.9 (13.1	25/0 (11.3)
	22 (559)	26.5 (12.0)	28.9 (13.1)	32.9 (17.0)	29/0 (13.2)

Dimensions
Without Actuator, in. (mm)

A	B	C
4 (102)	6 (152)	5.63 (143)
5 (127)	6 (152)	6.63 (168)
6 (152)	6 (152)	7.63 (194)
7 (178)	6.75 (171)	8.63 (219)
8 (204)	7.75 (197)	9.63 (244)
9 (229)	9.75 (248)	11.69 (297)
10 (254)	9.75 (248)	12.69 (322)
12 (305)	11.75 (298)	14.69 (373)
14 (356)	14 (356)	16.69 (424)
16 (406)	16 (406)	18.69 (475)





Dimensions With M-9106, in. (mm)

A	B	C	D
4 (102)	6 (152)	9.5 (240)	7.3 (185)
5 (127)	6 (152)	10.5 (265)	7.3 (185)
6 (152)	6 (152)	11.5 (291)	7.28 (185)
7 (178)	6.75 (171)	12.5 (316)	7.69 (195)
8 (204)	7.75 (197)	13.5 (341)	8.19 (208)
9 (229)	9.75 (248)	14.5 (369)	N/A
10 (254)	9.75 (248)	15.5 (394)	N/A
12 (305)	11.75 (298)	16.5 (445)	N/A
14 (356)	14 (356)	19.5 (495)	N/A
16 (406)	16 (406)	21.5 (546)	N/A

Dimensions With D-3062, in. (mm)

A	B	C	D
4 (102)	6 (152)	7.13 (181)	7.28 (185)
5 (127)	6 (152)	8.13 (206)	7.28 (185)
6 (152)	6 (152)	9.13 (232)	7.28 (185)
7 (178)	6.75 (171)	10.13 (257)	7.69 (195)
8 (204)	7.75 (197)	11.13 (282)	8.19 (208)
9 (229)	9.75 (248)	13.91 (353)	14.44 (367)
10 (254)	9.75 (248)	14.44 (367)	14.44 (367)
12 (305)	11.75 (298)	16.91 (429)	15.56 (395)
14 (356)	14 (356)	18.91 (480)	16.56 (420)
16 (406)	16 (406)	20.91 (531)	17.56 (446)