

## CBDR92 HEAVY DUTY ROUND COUNTERBALANCED BACKDRAFT DAMPER

### APPLICATION

The Ruskin backdraft damper model CBDR92 is designed to prevent backflow in high velocity HVAC and industrial process systems. This highly functional "true round" backdraft damper eliminates the need for transitions when flange-mounted to round duct installations and is fitted with a counterbalance assembly that can be field-adjusted based on actual system conditions to meet required performance. The CBDR92 damper blade will start to open when subjected to a minimum static pressure of 0.25" wg (62.2 Pa)



### STANDARD CONSTRUCTION

**FRAME**

Steel channel. See table for web width and thickness.

**BLADE**

Steel, stiffened as required. See table for thickness.

**AXLE**

Continuous, plated steel angle reinforced as required. See table for diameter.

**BEARINGS**

2-bolt flange, relube ball bearings bolted to the damper frame.

**BLADE STOP**

Full circumference steel bar.

**FINISH**

Aluminum paint with some parts mill galvanized.

**MINIMUM DIAMETER (D dimension)**

6" (152) I.D.

**MAXIMUM DIAMETER (D dimension)**

44" (1118) I.D.

**MAXIMUM SYSTEM PRESSURE**

(Refer to the CBDR92 Performance Data chart shown below)

**MINIMUM OPERATING CONDITIONS**

Blade begins to open at 0.25" wg (62.2 Pa); full-open at 1200 fpm (6.10 m/s).

**MAXIMUM TEMPERATURE**

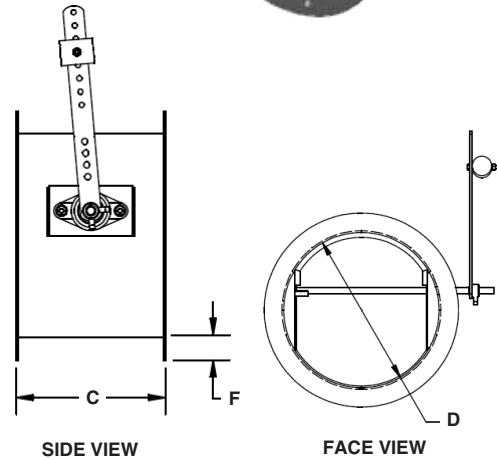
250°F (121°C) Standard. Available to 400°F (204°C) upon request.

Advise Ruskin of Maximum Design Temperature.

**SHIPPING WEIGHT**

2.13 lbs. per inch of I.D. circumference.

Dimensions in parenthesis ( ) indicate millimeters.



INSIDE DIAMETER (D)		FRAME		BLADE THICKNESS	AXLE DIAMETER
ABOVE	THROUGH	FLANGE (F)	WEB (C)		
6" & above (152)	8 3/4" (222)	1 1/4" x 10 ga.	6" x 10 ga.	10 ga.	1/2" (13)
8 3/4" (222)	11 3/4" (299)	1 1/4" x 10 ga.	9" x 10 ga.	10 ga.	3/4" (19)
11 3/4" (299)	12" (305)	1 1/2" x 10 ga.	9" x 10 ga.	10 ga.	3/4" (19)
12" (305)	14" (356)	1 1/2" x 10 ga.	9" x 10 ga.	10 ga.	3/4" (19)
14" (356)	24" (610)	1 1/2" x 1/4"	9" x 10 ga.	1/4" (6)	3/4" (19)
24" (610)	32" (813)	2" x 1/4"	9" x 1/4"	1/4" (6)	3/4" (19)
32" (813)	44" (1118)	2" x 1/4"	9" x 1/4"	1/4" (6)	1" (25)

CBDR92 PERFORMANCE DATA						
DAMPER DIAMETER (I.D.)	MAXIMUM SYSTEM BACK PRESSURE In. wg (kPa)	MAXIMUM SYSTEM VELOCITY FPM (m/s)	LEAKAGE W/O SEALS		LEAKAGE WITH SEALS	
			% OF MAX FLOW	TOTAL CFM (l/s)	% OF MAX FLOW	TOTAL CFM (l/s)
44" (1118)	13.0" (3.25)	6000 (30.5)	0.23	175 (33)	0.05	35 (17)
36" (914)	14.0" (3.50)	6000 (30.5)	0.29	125 (59)	0.07	28 (13)
24" (610)	15.0" (3.75)	6000 (30.5)	0.45	85 (40)	0.13	25 (12)
12" (305)	17.0" (4.25)	6000 (30.5)	1.06	50 (24)	0.32	15 (7)
6" (152)	17.0" (4.25)	6000 (30.5)	2.12	25 (12)	0.68	8 (4)

FRAME	BLADE	SEALS (OPT)	BEARINGS	AXLE	ACCESSORIES (OPT)
STEEL CHANNEL - SEE CONSTRUCTION TABLE	STEEL STIFFENED AS REQUIRED - SEE TABLE	NEOPRENE 250°F (121°C) BLADE SEAL	2-BOLT FLANGE RELUBE BALL BEARINGS	PLATED STEEL	ONE FLANGE BOTH FLANGES
304 SS (OPT)	304 SS (OPT)	SILICONE 400°F (204°C) BLADE SEAL	2-BOLT FLANGE STAINLESS STEEL RELUBE BALL BEARINGS (OPT)	ALUMINUM (OPT)	BOLT HOLES
316 SS (OPT)	316 SS (OPT)	EPDM 250°F (121°C) BLADE SEAL		304SS (OPT)	
ALUMINUM (OPT)	ALUMINUM (OPT)	VITON 400°F (204°C) BLADE SEAL		316SS (OPT)	

QTY.	DIMENSIONS				BOLT HOLE ORIENT.		AIRFLOW DIRECTION			COMMENTS	TAG
	D Diameter	G Bolt Circle Diam.	H No. Holes	M Hole Diam.	S Straddle	T Parallel	Horizontal	Vertical Up	Vertical Down		

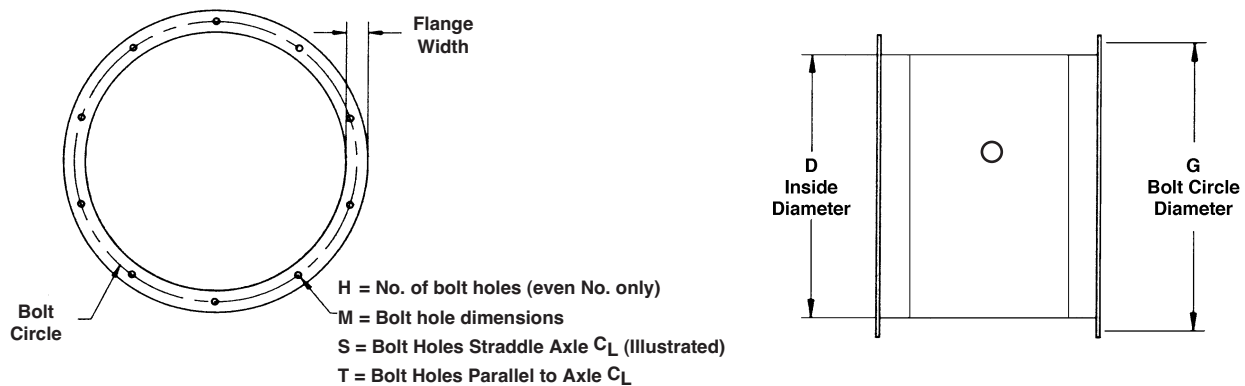
<b>JOB</b>	<b>LOCATION</b>
<b>CONTRACTOR</b>	

## SUGGESTED SPECIFICATION

Furnish and install, at locations on plans or in accordance with schedules, industrial grade round counterbalanced backdraft dampers meeting the following specifications: Damper shall be manufactured in an ISO9001 certified factory. Damper shall be butterfly type consisting of single blade secured to axle within a welded, flanged, channel frame. Frames shall be constructed of hot-rolled steel channel of 10 gage (3.5) minimum thickness with minimum 6" (152) depth and minimum 1-1/4" (31.75) flanges. Damper blade shall be constructed of hot-rolled steel of 10ga (3.5) minimum thickness and shall be a one-piece design pivoting on a 1/2" (13) minimum diameter, continuous offset-mounted plated

steel axle. Axle to be supported at each damper frame penetration by 2-bolt flange relubricable ball bearings mounted to the exterior of the damper frame. Backdraft operation of the damper shall be accommodated by use of a hot-rolled steel counterbalance arm secured to the drive axle and external to the airstream; onto which counterweights shall be attached in quantity and location as prescribed by manufacturer in order to provide proper functionality according to customer requirements. Industrial round backdraft damper shall be Ruskin model CBDR92 specifications. This damper shall be Ruskin model CBDR92.

### RUSKIN STANDARD BOLT HOLE PATTERN



Standard Bolt Circle "G" = Damper I.D. + Flange Width + 1/4"

DAMPER I.D.		H NO. OF HOLES	M HOLE/SLOT DIMENSIONS	DEGREES BETWEEN HOLES
ABOVE	THROUGH			
4" & above	6"	4	3/8"	90
6"	10"	6	3/8"	60
10"	14"	8	3/8"	45
14"	20"	10	3/8" x 1/2"	36
20"	28"	12	3/8" x 1/2"	30
28"	36"	16	3/8" x 1/2"	22 1/2
36"	42"	18	9/16" x 11/16"	20
42"	48"	20	9/16" x 11/16"	18

Ruskin can provide nonstandard bolt hole diameters and patterns to meet the requirements of your installation. Contact Ruskin for additional details.

# RUSKIN®

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