

BTR82 BUBBLE TIGHT ISOLATION DAMPER

APPLICATION

Ruskin bubble-tight isolation damper model BTR82 is designed for industrial applications in which extreme low leakage is required. Typical installations include industrial process exhaust systems, animal disease laboratories, pharmaceutical facilities, nuclear power plants, DOE facilities, military facilities and biotech labs. Each damper model BTR82 is factory tested prior to shipment for leakage performance in accordance with AMCA Standard 500-D.

STANDARD CONSTRUCTION

FRAME

304-grade stainless steel channel. See table below for web dimension and thickness.

BLADE

304-grade stainless steel stiffened as required. See table below for blade thickness.

SEAL

Silicone blade seal.

AXLE

Continuous; 304-grade stainless steel axle; angle reinforced as required. See table below for axle diameter.

BEARINGS

304-grade stainless steel sleeve bearing in 2-bolt cast housing, with integral shaft seals; bolted to frame.

FINISH

Mill.

ACTUATION

Worm gear operator with hand wheel (standard).

MINIMUM DIAMETER (D dimension)

6" (152) I.D.

MAXIMUM DIAMETER (D dimension)

36" (914) I.D.

MAXIMUM TEMPERATURE

250° (121°C)

MAXIMUM STATIC PRESSURE

10" w.g. (2.50 kPa).

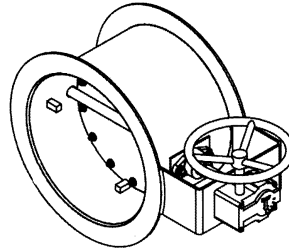
MAXIMUM VELOCITY

4,000 FPM (20.32 m/s).

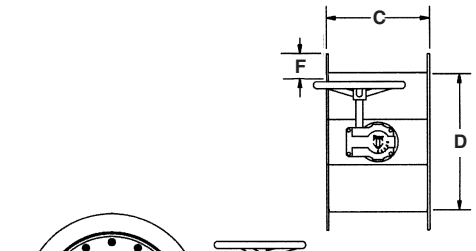
SHIPPING WEIGHT

2.36 pounds per inch of circumference.

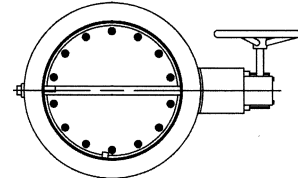
NOTE: Dimensions shown in parenthesis () indicate millimeters.



STANDARD CONSTRUCTION



SIDE VIEW



FACE VIEW

VARIATIONS

Variations to the features noted on this specification sheet are available. These variations include, but are not limited to:

- Materials of construction
- Material thickness
- Types of actuation
- Non-standard flange (F) and web (C) dimensions.
- Non-standard finishes
- Square/Rectangular flanges (See Ruskin models BTO82 and BTO92.)
- Higher pressures (See Ruskin models BTR92 and BTO92.)

Inside Diameter "D"		Frame		Blade Thickness	Axle Diameter
Above	Through	Flange (F)	Web (C)		
6" (152)	8" (203)	1 1/2" x 10 ga (38 x 3.5)	8" x 10 ga (203 x 3.5)	10 ga (3.5)	3/4" (19)
8" (203)	16" (406)	1 1/2" x 3/16" (38 x 4.8)	8" x 10 ga (203 x 3.5)	3/16" (4.8)	3/4" (19)
16" (406)	20" (508)	2" x 3/16" (51 x 4.8)	8" x 10 ga (203 x 3.5)	3/16" (4.8)	1" (25)
20" (508)	36" (914)	2" x 1/4" (51 x 6.4)	8" x 10 ga (203 x 3.5)	3/16" (4.8)	1" (25)

The damper blade seal is designed and tested for leakage performance at the specified design pressure (10" WC). Each Ruskin model BTR82 is tested for leakage in conformance to AMCA Standard 500-D.

FRAME	BLADE	BEARINGS	AXLE	ACTUATION	ACCESSORIES (OPT)
304 SS	304 SS	2-BOLT FLANGE IN CAST HOUSING WITH INTEGRAL SHAFT SEALS	304 SS	WORMGEAR OPERATOR WITH HAND WHEEL	BOLT HOLES IN ONE FLANGE
316 SS (OPT)	316 SS (OPT)		316SS (OPT)	WORMGEAR OPERATOR WITH CHAIN WHEEL(OPT)	
		OUTBOARD BEARINGS WITH SHAFT SEALS (OPT)		ELECTRIC ACTUATOR (OPT)	BOLT HOLES IN BOTH FLANGES
				PNEUMATIC ACTUATOR (OPT)	

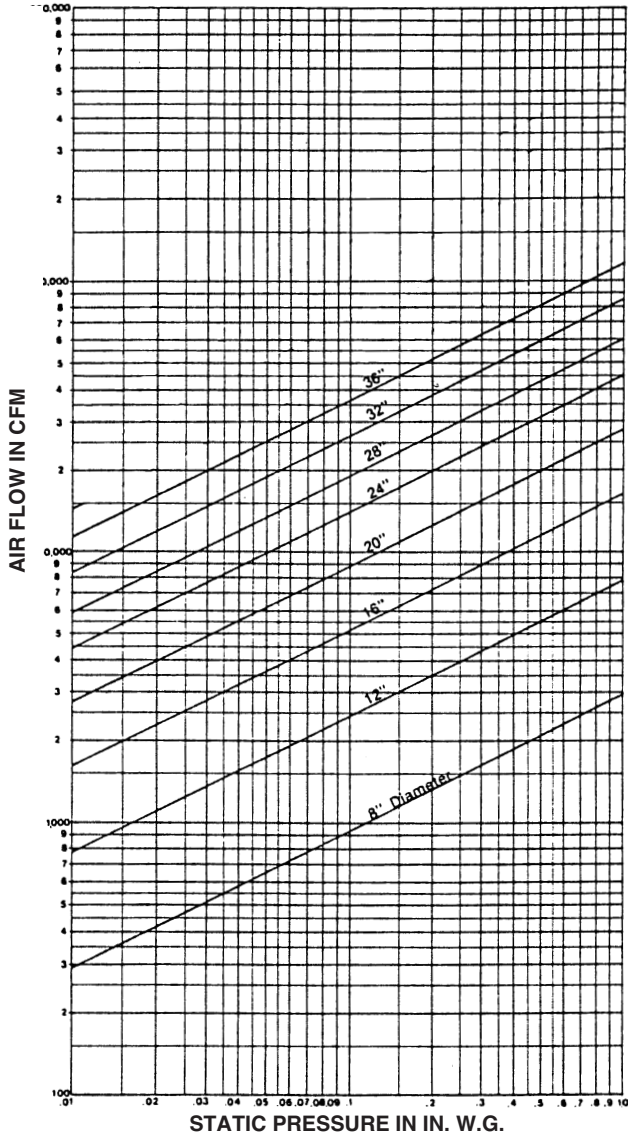
QTY.	FRAME				BOLT HOLE ORIENTATION		DESIGN PRESSURE	COMMENTS	TAG
	D-DIA.	G Bolt Circle Diam.	H No. Holes	M Hole Diam.	S Straddle	T Parallel			
JOB					LOCATION				
CONTRACTOR									

BTR82 SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, medium duty industrial grade bubbletight dampers meeting the following specifications. Dampers shall be butterfly type consisting of circular blade, mounted to axle within formed flanged frame. Frame shall be constructed of 304 stainless steel channel with a clean and smooth interior surface. Blade shall be minimum 10 ga. (3.5) thick 304 stainless steel and be complete with full circumference silicone blade seal mechanically attached to blade with full circumference retainer ring. Adhesive seals are not acceptable. Damper shaft shall be continuous 304 stainless steel

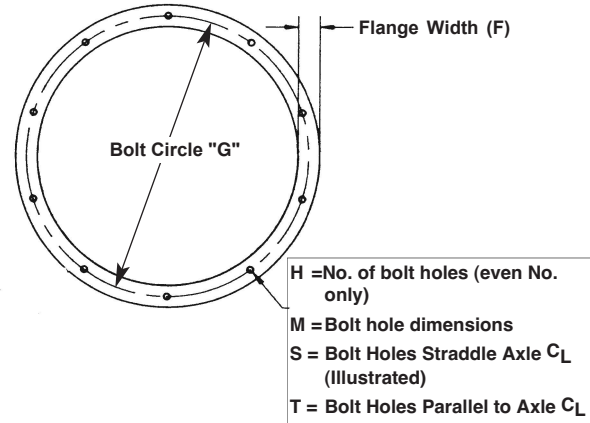
extending through the entire damper diameter. Stub type axles are not acceptable. The axle shall be supported in 2-bolt nickel plated cast flange bearings with integral shaft seals. Dampers shall be designed and tested for bubbletight leakage performance at 10" wg. pressure. Each damper shall be individually tested for leakage in conformance to AMCA Standard 500-D. Submittal data shall include pressure drop data for full range of damper sizes developed from testing in accordance with AMCA Standard 500 in an AMCA registered laboratory. Data for one size damper is not acceptable. Damper shall be Ruskin model BTR82.

BTR82 PRESSURE DROP



Performance curves based on AMCA Standard 500 using test setup apparatus figure 5.3 (damper installed with duct upstream and downstream). Static pressure and CFM are corrected to .075 lb/cu ft air density.

RUSKIN STANDARD BOLT HOLE PATTERN



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

DAMPER I.D. (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

Bolt hole pattern data shown on this sheet indicates standard construction. When clearly specified, Ruskin can provide nonstandard bolt hole sizes and patterns to meet your varying requirements.

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