

## BTO92 HEAVY DUTY OVAL BUBBLE TIGHT DAMPER

### STANDARD CONSTRUCTION

#### FRAME

Steel channel. See table below for web dimension and thickness. Stainless steel frame 6"-17" (152-432).

#### BLADE

Steel stiffened as required. See table below for blade thickness. Stainless steel blade 6"-17" (152-432).

#### SEAL

Silicone blade seal and external adjustable double packing gland shaft seals.

#### AXLE

Continuous; plated steel axle; angle reinforced as required. See table below for axle diameter. Stainless steel axle 6"-17" (152-432).

#### CONTROL SHAFT

Axle extends 6" (152) beyond frame.

#### BEARINGS

2-bolt, self-aligning relubricable ball bearings mounted outboard of the damper frame.

#### FINISH

Industrial epoxy-polyamide above 17" (432).

#### MINIMUM SIZE

6" (152) A or B dimension.

#### MAXIMUM SIZE

48" (1219) A or B dimension. Larger sizes available in multiple sections.

#### MAXIMUM TEMPERATURE

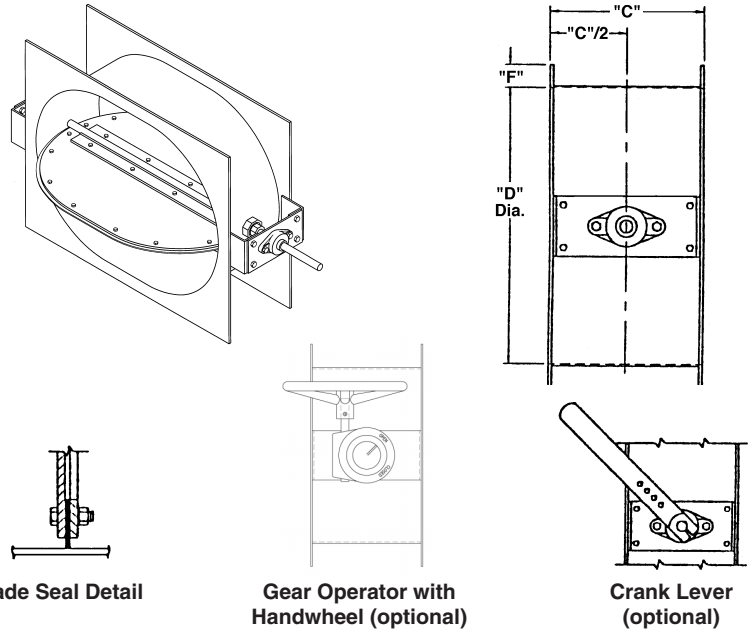
250° (121°C).

### VARIATIONS

Variations to those listed in table are available. Contact Ruskin for pricing.

- Construction using heavier material specifications
- Non-standard flange dimensions
- Round flanges

**NOTE:** Dimensions shown in parenthesis ( ) indicate millimeters.



Above	Through	Frame		Blade Thickness	Axle Diameter
		Flange (F)	Web (C)		
6" (152)	14" (356)	1 1/2" x 1/4" (38 x 6)	9" x 1/4" (229 x 6)	1/4" (6)	3/4" (19)
14" (356)	30" (762)	2" x 1/4" (51 x 6)	12" x 3/8" (304 x 10)	1/4" (6)	1" (25)
30" (762)	40" (1016)	2" x 1/4" (51 x 6)	12" x 3/8" (304 x 10)	3/8" (10)	1 1/2" (138)
40" (1016)	48" (1219)	2" x 1/4" (51 x 6)	12" x 3/8" (304 x 10)	3/8" (10)	1 1/2" (138)

The damper blade seal is designed and tested for leakage performance at the specified design pressure (typically 10" to 30" WC). Each Ruskin model BTO92 is tested for leakage in conformance to AMCA Standard 500-D-98; Section 8.2.3.2.

FRAME	BLADE	BEARINGS	AXLE	ACCESSORIES (Opt)
STEEL CHANNEL - SEE CONSTRUCTION TABLE	STEEL STIFFENED AS REQUIRED - SEE TABLE	GREASE LUBRICATED BALL BRGS MOUNTED OUTBOARD WITH SHAFT SEALS	PLATED CONTINUOUS 6" EXTENSION BEYOND FRAME	BOLT HOLES IN ONE FLANGE
304 STAINLESS STEEL (OPT ABOVE 17" (432))	304 STAINLESS STEEL (OPT ABOVE 17" (432))		304 STAINLESS STEEL (OPT ABOVE 17" (432))	BOLT HOLES IN BOTH FLANGES
				MANUAL ACTUATOR
				ELECTRIC ACTUATOR
				PNEUMATIC ACTUATOR

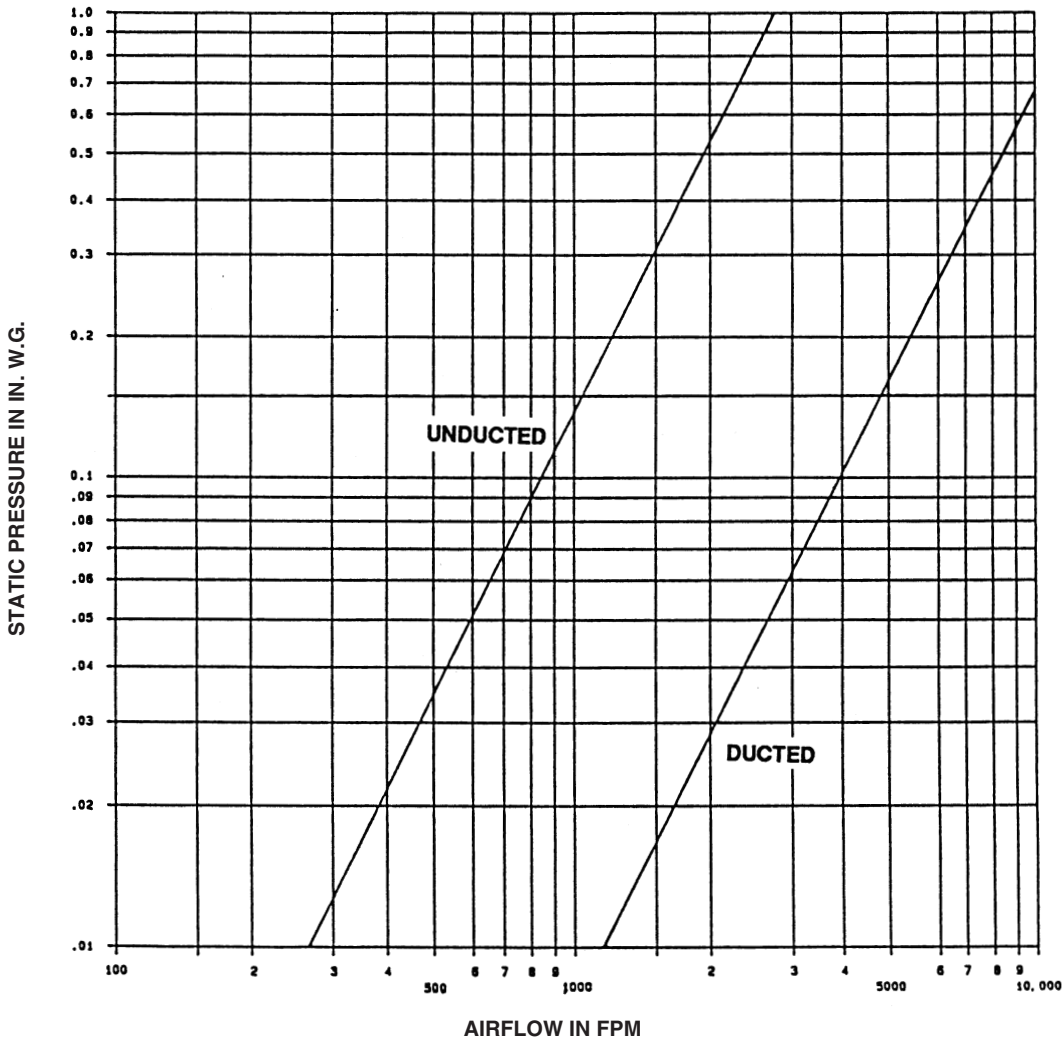
QTY.	FRAME					BOLT HOLE ORIENTATION		DESIGN PRESSURE	COMMENTS	TAG
	A Wide	B High	G Bolt Circle Diam.	H No. Holes	M Hole Diam.	S Straddle	T Parallel			
<b>JOB</b>					<b>LOCATION</b>					
<b>CONTRACTOR</b>										

## BTO92 SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, heavy duty industrial grade bubbletight dampers meeting the following specifications. Dampers shall be butterfly type consisting of oval blade, mounted to axle within formed flanged frame. Frame shall be constructed of steel channel with a clean and smooth interior surface. Blade shall be minimum 1/4 inch (6) thick 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 solid steel extending through the entire damper diameter and extending beyond damper bearing a minimum of 6 inches (152).

Stub type axles are not acceptable. The axle shall be supported in sealed, relubricable, ball bearings mounted outboard of frame and be complete with axle shaft seals. All parts not otherwise protected shall be given one coat of epoxy- polyamide coating. Dampers shall be designed and tested for bubbletight leakage performance at the specified design pressure. Each damper shall be individually tested for leakage in conformance to AMCA Standard 500-D-98; Section 8.2.3.2. Submittal data shall include pressure drop data developed from testing in accordance with AMCA Standard 500 in an AMCA registered laboratory. Damper shall be Ruskin model BTO92.

## BTO92 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.

Ratings are based on 47" x 31" (1194 x 787) rectangular damper testing using AMCA Standard 500 Test Setup Apparatus Figure 5.3 for ducted installation and Figure 5.5 for unducted installation.

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