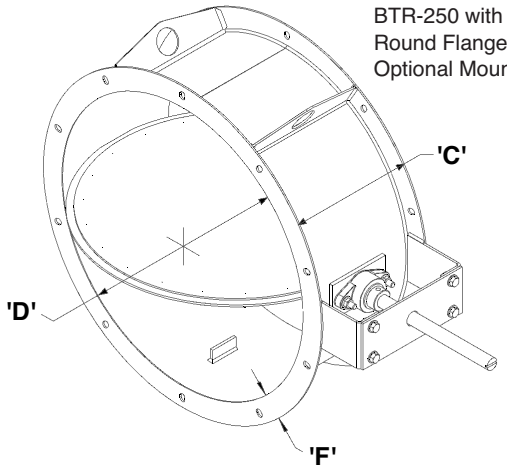
3900 Dr. Greaves Rd. • Kansas City, MO 64030 • (816) 761-7476 • FAX (816) 765-8955

MODEL BTR-250
BUBBLE TIGHT ISOLATION DAMPER

APPLICATION

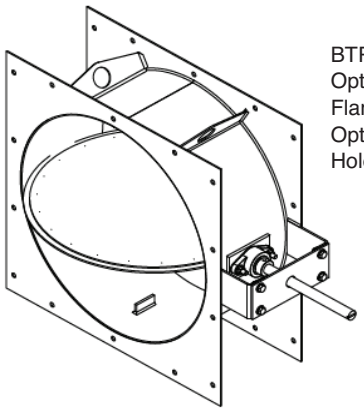
The BTR-250 is a heavy-duty isolation damper designed for containment and decontamination applications and satisfies the bubble tight leakage testing criteria of AMCA Standard 500-D. Each Ruskin model BTR-250 is tested for performance in accordance with AMCA 500-D procedures and test figure set-ups prior to shipment.



BTR-250 with Standard Round Flanges and Optional Mounting Holes

OPERATIONAL RATINGS	
Description	**BTR-250**
Leakage Rating	Bubble Tight per AMCA 500-D
Maximum Velocity	4000 FPM (20.3 m/s)
Maximum Pressure	10 in.wg. (2.5 kPa)
Temperature Range	-40°F to 250°F (-40°C to 121°C)

BTR-250 DESIGN FEATURES		
Description	**Standard**	**Optional**
Frame	Painted Steel Channel	304SS, 316SS
Flanges	Round Flanges	Square Flanges
Blade	Painted Steel; Round Center-Pivoted	304SS, 316SS
Axle	Plated Steel; Full Length	304SS, 316SS
Bearing	304SS Sleeve Bolted to Exterior of Frame	
Axle Seal	Integral with Bearing Assembly	
Blade Seal	Silicone, Mechanically Fastened to Blade	
Finish	Polyamide Epoxy	Mill (304SS, 316SS)



BTR-250 with Optional Square Flanges and Optional Mounting Holes

AVAILABLE DAMPER SIZES:

Minimum Diameter (D): 4 inches (102mm)
Maximum Diameter (D): 36 inches (914mm)

OPTIONS:

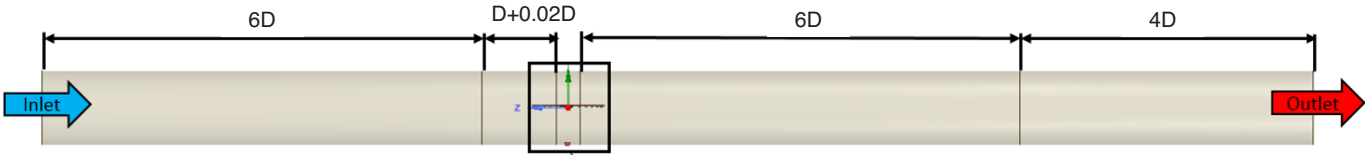
- **Square Flange** Design
- Mounting Hole Patterns in Flanges
- Factory-Supplied & Mounted Actuators and Limit Switches

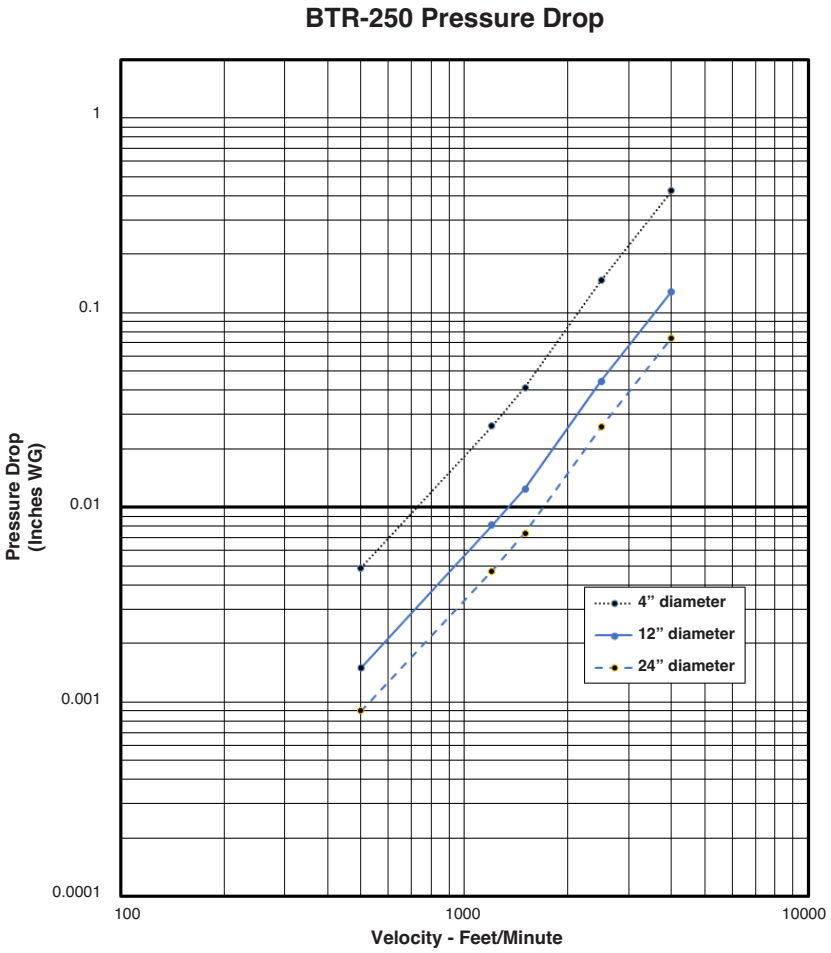
RUSKIN STANDARD CONSTRUCTION						
DIAMETER 'D' Inches (mm)		**FRAME & FLANGE Inches (mm)**			**BLADE THICKNESS Gauge (mm)**	**AXLE DIAMETER Inches (mm)**
ABOVE	**THROUGH**	**FLANGE WIDTH 'F' Inches (mm)**	**GAUGE (mm)**	**FRAME DEPTH 'C' Inches (mm)**		
≥ 4 (102)	12 (305)	1.5 (38)	12 (2.7)	6 (152)	12 (2.7)	0.50 (13)
12 (305)	24 (610)	1.5 (38)	12 (2.7)	8 (203)	12 (2.7)	0.75 (19)
24 (610)	28 (711)	2.0 (51)	10 (3.5)	8 (203)	12 (2.7)	0.75 (19)
28 (711)	36 (914)	2.0 (51)	10 (3.5)	8 (203)	12 (2.7)	1.00 (25)

PERFORMANCE DATA

PRESSURE DROP DATA; AMCA TEST FIGURE 5.3

Pressure Drop performance curves conducted in accordance with AMCA Standard 500-D using setup apparatus per Test Figure 5.3 (test damper setup with Inlet and Outlet ducts). Static pressure and CFM are corrected to represent 0.075 lb/ft3 (1.2 kg/m3) standard air density.

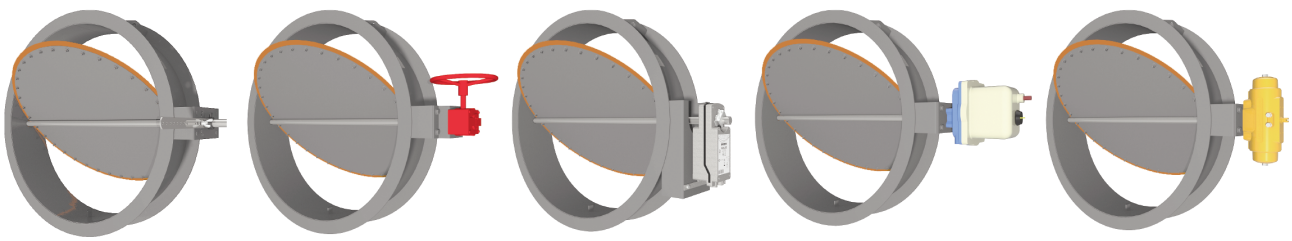




LEAKAGE PERFORMANCE

Each BTR-250 is leakage tested at 10" wg (2.5 kPa) in accordance with AMCA Standard 500-D prior to shipment to ensure performance as expected.

TYPICAL ACTUATOR MOUNTINGS (Optional)



Manual Locking Hand Quad

Manual Worm Gear with Hand Wheel

Direct-Mount Commercial Grade

Electric Quarter-Turn Rotary

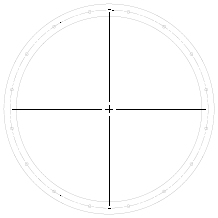
Pneumatic Quarter-Turn Rotary

MOUNTING HOLE PATTERN INFORMATION

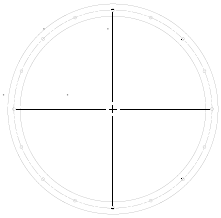
Bolt hole pattern data shown on this page for round and square flanged dampers represents standard construction. When clearly specified, Ruskin can provide non-standard hole dimensions and patterns to meet customer requirements.

RUSKIN STANDARD BOLT HOLE PATTERN
(BOLT HOLES STRADDLING AXLE CENTERLINE)

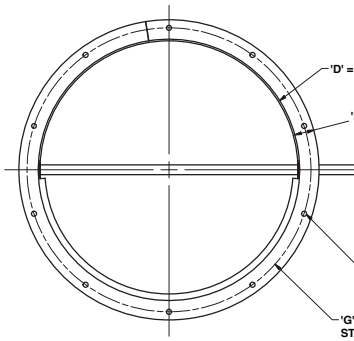
Diameter 'D' Inches (mm)		Number of Holes/Slots 'H'	Size Holes/Slots 'M'	Degrees Between Holes/ Slots	Bolt Circle Diameter 'G'
ABOVE	THROUGH				
≥ 4 (102)	6 (152)	4	3/8 [10]	90	*
6 (152)	10 (254)	6	3/8 [10]	60	*
10 (254)	14 (356)	8	3/8 [10]	45	*
14 (356)	20 (508)	10	3/8 X 1/2 [10 X 13]	36	*
20 (508)	28 (711)	12	3/8 X 1/2 [10 X 13]	30	*
28 (711)	36 (914)	16	3/8 X 1/2 [10 X 13]	22 1/2	*
* Bolt Circle Diameter = Damper Diameter (D) + Flange height (F) + 1/4 in. (6mm)					



'S' = STRADDLE AXLE

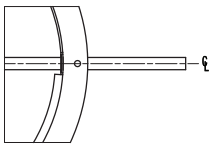


'T' = PARALLEL TO AXLE

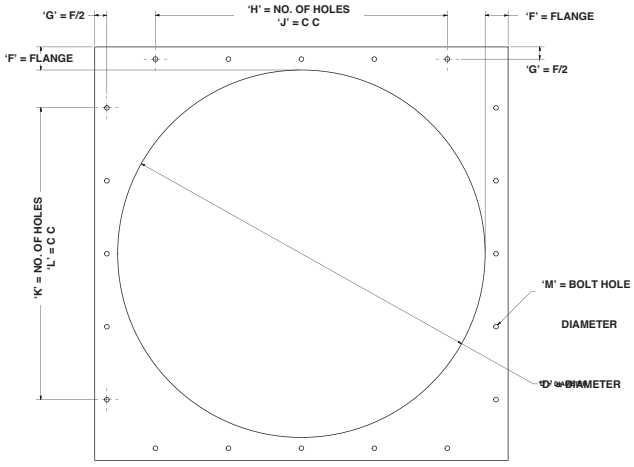


'G' = BOLT CIRCLE DIA.
STANDARD = DAMPER DIAMETER + FLANGE WIDTH + 1/4" [6 mm].
'S' = BOLT HOLES STRADDLE AXLE CENTERLINE (STANDARD) (AS SHOWN).
'T' = BOLT HOLES PARALLEL TO AXLE CENERLINE ('T' BOLT DETAIL).

FACE VIEW
"S" HOLE PATTERN



'T' BOLT DETAIL



STANDARD SQUARE FLANGE W/MOUNTING HOLES
(MOUNTING HOLES ARE OPTIONAL)
(CORNER HOLES AVAILABLE UPON REQUEST)

BTR-250 SUGGESTED SPECIFICATION

Furnish and install, at locations shown on plans or in accordance with schedules, bubble tight dampers meeting the following specifications: Damper shall be manufactured in an ISO9001 certified factory. Dampers shall be butterfly type consisting of circular blade, welded to full length axle within round, flanged frame. Frame shall have a clean, smooth interior surface. Double skin blade design shall be minimum 12ga (3.5) thick steel and be complete with solid silicone blade seal mechanically attached to blade and field replaceable.

Axle to be supported at each damper frame penetration by stainless steel sleeve bearings bolted to the damper frame and shall include axle seal integral to the bearing assembly.

Each damper shall be individually tested for leakage in accordance to AMCA Standard 500-D Bubble Tight Test at 10 in.wg (2.5 kPa) prior to shipping. Submittal data shall include Pressure Drop information based on Test Figure 5.3 Setup.

Basis of design shall be Ruskin model BTR-250.

RUSKIN

3900 Dr. Greaves Rd.
Kansas City, MO 64030
(816) 761-7476
FAX (816) 765-8955
www.ruskin.com