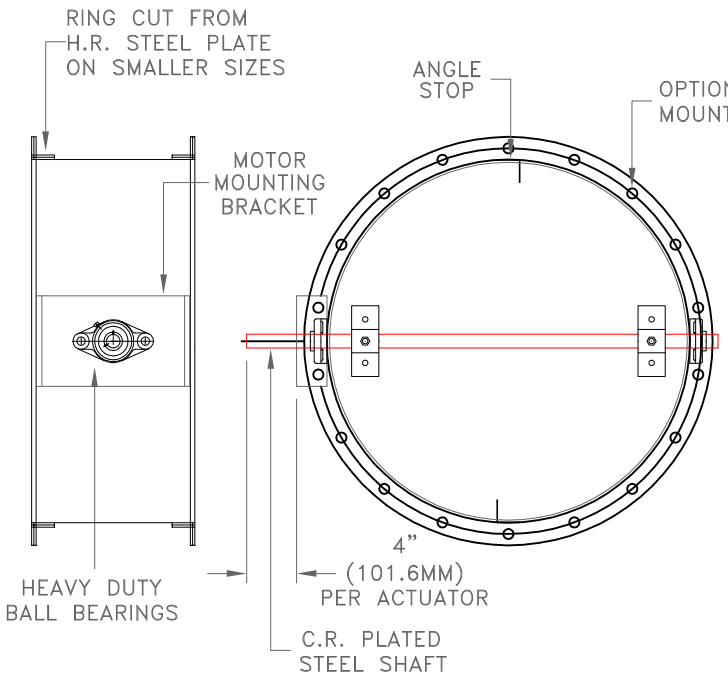


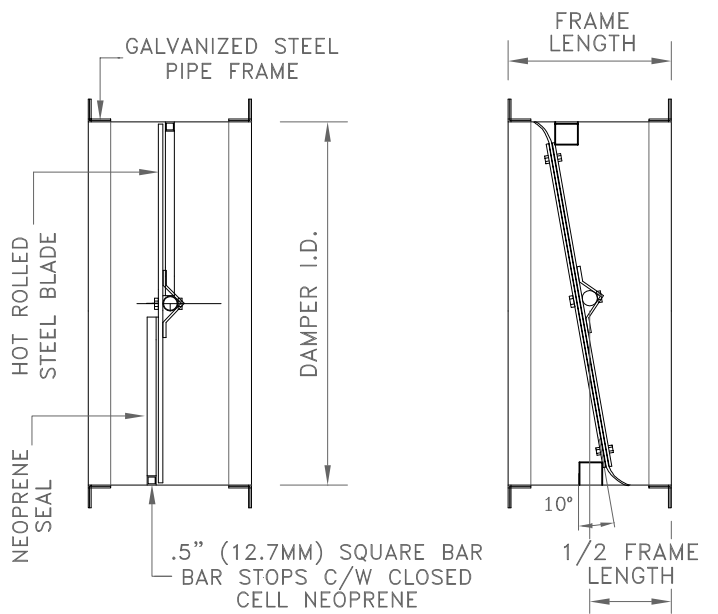


INDUSTRIAL ROUND FLANGED CONTROL DAMPER PBS-FR-MD



SIDE VIEW

END VIEW



OPTIONAL BLADE
(SECTION)
LOW TORQUE SEAL

OPTIONAL BLADE
(SECTION)
LOW LEAKAGE SEAL

STANDARD SPECIFICATIONS

- CONST. - H.R. STEEL, PIPE FRAME C/W FLANGES, WELDED ASSEMBLY
- FRAME - ROLLED H.R. STEEL, SEE SIZE/MATERIAL CHART
- FLANGES - ROLLED ANGLE FLANGES, STITCH WELDED. SEE SIZE/MATERIAL CHART
- BLADE - H.R. STEEL PLATE OR AS PER OPTIONS BELOW, SEE SIZE/MATERIAL CHART
- SEALS - NONE, OR AS PER OPTIONS BELOW
- SHAFT - C.D. PLATED STEEL, SEE SIZE/MATERIAL CHART, 4" (101.6MM) FOR ONE ACTUATOR, 8" (203.2MM) FOR TWO ACTUATORS, 12" (304.8MM) FOR THREE ACTUATORS
- BEARINGS - HEAVY DUTY BALL BEARINGS, SEE SIZE /MATERIAL CHART
- MOTOR MT. - 10 GAUGE H.R. STEEL BRACKET
- FINISH - ALUMINUM OR GALVANIZED PAINT
- SIZE - MINIMUM 6" (152.4MM) DIA. MAXIMUM 60" (1524MM) DIA.

OPTIONS

- CONST. ALUMINUM (PBA-FR-MD)
- STAINLESS STEEL (PBSS-FR-MD)
- FLANGE HOLES PLEASE SPECIFY SIZE OF HOLES, NUMBER OF HOLES AND DIAMETER OF CENTER LINES
- BEARINGS NYLON BUSHINGS
- S.S. BUSHINGS
- SEALS LOW TORQUE SEAL - CLOSED CELL NEOPRENE (-50° F. - 250° F.)
- LOW LEAKAGE NEOPRENE SANDWICH TYPE SEAL (-50° F. TO +250° F.)
- SILICONE (-60° F. TO +450° F.)
- CONTROLS HAND QUADRANT, MOTORIZED ACTUATORS

TECHNICAL NOTES

- MAX. REC. VELOCITY - SEE MAXIMUM SYSTEM CHART
- MAX. STATIC PRESSURE - SEE MAXIMUM SYSTEM CHART
- LEAKAGE - SEE AIR LEAKAGE CHART
- TORQUE - SEE TORQUE/FREE AREA CHART

THIS DAMPER IS MANUFACTURED TO INSIDE DIMENSIONS

* FOR MORE INFORMATION, CONTACT OUR FACTORY *

NOTES

APPROVAL

DATE:
PROJECT:
ENGINEER:
CUSTOMER:
DISTRIBUTOR:

PBS-FR-MD

MAXIMUM SYSTEM CHART

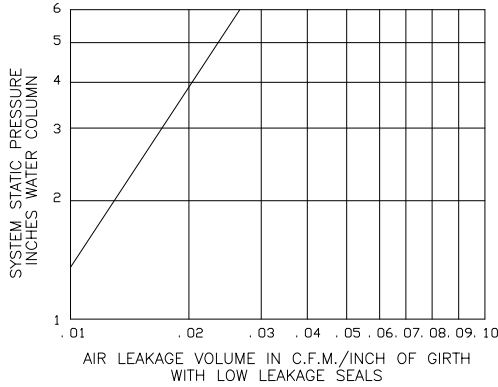
DAMPER I.D. DIAMETER	MAXIMUM SYSTEM PRESSURE	MAXIMUM SYSTEM VELOCITY
6"	16" W.G.	5000 F.P.M.
12"	16" W.G.	5000 F.P.M.
24"	14" W.G.	5000 F.P.M.
36"	12" W.G.	4500 F.P.M.
48"	12" W.G.	4000 F.P.M.
60"	12" W.G.	4000 F.P.M.



**INDUSTRIAL
ROUND FLANGED
CONTROL DAMPER
PBS-FR-MD**

SIZE/MATERIAL CHART

INSIDE DIAMETER		PIPE FRAME		BLADE THICKNESS (OR EQUAL)	SHAFT & BEARING DIAMETER
ABOVE	THROUGH	LENGTH/GA.	FLANGES		
6.00"	8.00"	12" X 10 GA.	1.5" X 0.125"	0.125"	0.50"
8.75"	12.00"	12" X 10 GA.	1.5" X 0.125"	0.125"	0.75"
12.75"	14.00"	12" X 0.125"	1.5" X 0.125"	0.250"	0.75"
15.00"	24.00"	12" X 0.125"	1.5" X 0.125"	0.250"	0.75"
25.00"	32.00"	12" X 0.250"	2.0" X 0.250"	0.250"	0.75"
33.00"	44.00"	12" X 0.250"	2.0" X 0.250"	0.250"	1.00"
45.00"	48.00"	12" X 0.250"	2.0" X 0.313"	0.250"	1.50"
49.00"	60.00"	12" X 0.250"	2.0" X 0.313"	0.250"	2.00"



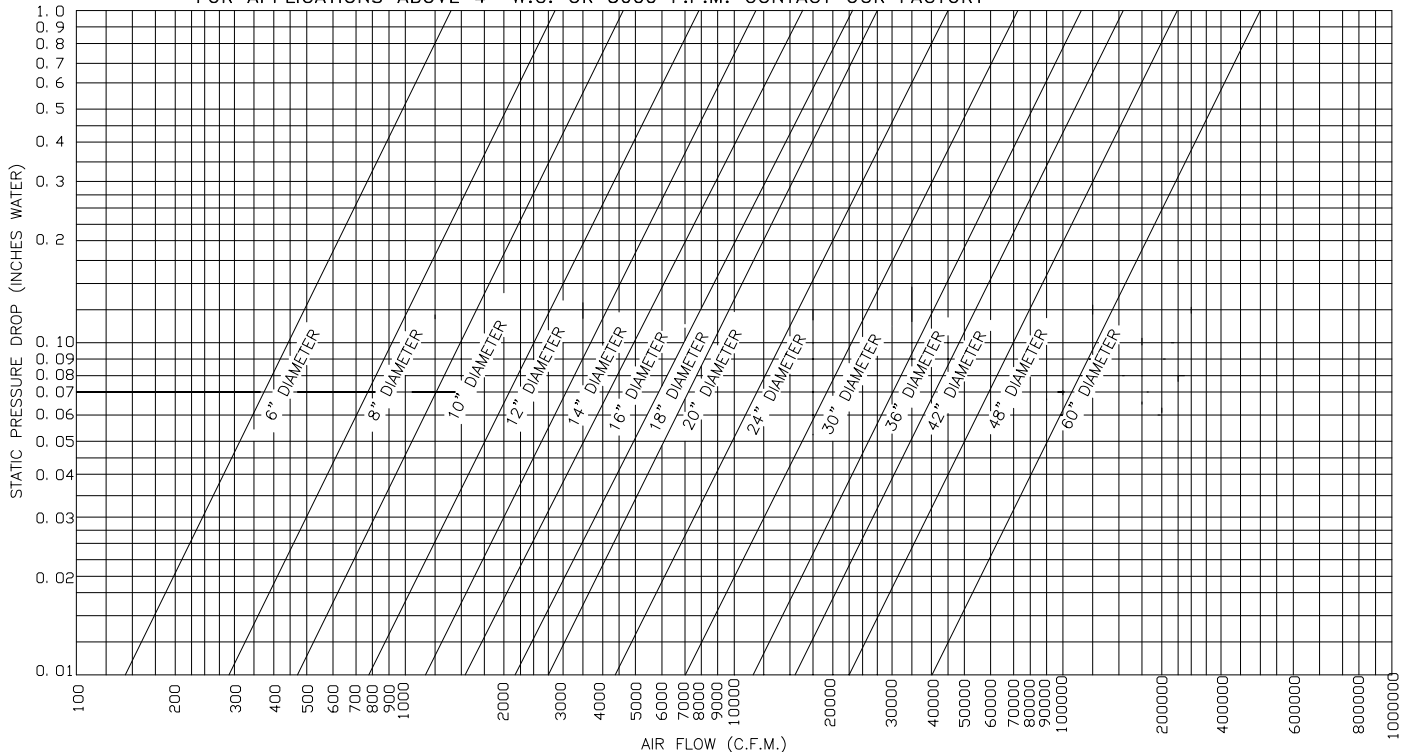
AIR LEAKAGE CHART
STANDARD AIR - 0.075 LBS

TORQUE/FREE AREA CHART

MIN. IN/LBS TORQUE REQUIRED TO OPERATE PBS-FR-MD DAMPERS WITH LOW LEAKAGE SEALS

DIA. SIZE	6"	8"	10"	12"	14"	16"	18"	20"	24"	30"	36"	42"	48"	60"
TORQUE	40	50	60	70	80	90	100	110	130	160	190	220	250	290
FREE AREA (SQUARE FEET)														
LOW TORQUE	0.10	0.22	0.36	0.56	0.81	1.10	1.43	1.81	2.68	4.33	6.31	8.74	11.39	18.36
LOW LEAKAGE	0.15	0.29	0.46	0.68	0.95	1.26	1.61	2.01	2.93	4.65	6.69	9.18	11.89	19.00

- TORQUE FIGURES ABOVE APPLY TO APPLICATIONS UNDER 2" W.G. OR 1000 F.P.M.
- FOR APPLICATIONS BETWEEN 2" AND 3" W.G. OR 1000 AND 2000 F.P.M. MULTIPLY TORQUE VALUE BY 1.5
- FOR APPLICATIONS BETWEEN 3" AND 4" W.G. OR 2500 AND 3000 F.P.M. MULTIPLY TORQUE VALUE BY 2.0
- FOR APPLICATIONS ABOVE 4" W.G. OR 3000 F.P.M. CONTACT OUR FACTORY



AIR PERFORMANCE GRAPH

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