

RUSKIN®

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AMS50 AIR MONITORING STATION

STANDARD CONSTRUCTION

FRAME

4" x 1" (102 x 25) x 6063T5 extruded aluminum hat channel with .081" (2) minimum wall thickness. Mounting flanges on both sides of frame.

BLADES

4" (102) wide, 6063T5 heavy gage extruded aluminum, airfoil shaped blades.

SEALS

Jamb seals: flexible metal compression type along control damper sides.

Blade seals: Ruskiprene seal along control damper blade edges.

BEARINGS

Molded synthetic.

LINKAGE

Galvanized steel, concealed in frame.

AXLES

1/2" (13) plated steel hex.

OPERATING TEMPERATURE

-22°F to +140°F (-30°C to +60°C) standard.

AIR STRAIGHTENER

Air straightener contained in 5" (127) long 16 gage galvanized sleeve attached to monitoring blade frame. Air straightener is 3000 series aluminum alloy honeycomb.

AVAILABLE SIZES

Minimum - .5 sq. ft.

Maximum single section - 18 sq. ft.

Maximum multiple section - unlimited size.

VELOCITY REQUIREMENTS

Minimum 400 FPM

Maximum 5000 FPM

NOTE: Dimensions shown in parenthesis () indicate millimeters.

*Orientation determined from exhaust side of damper.

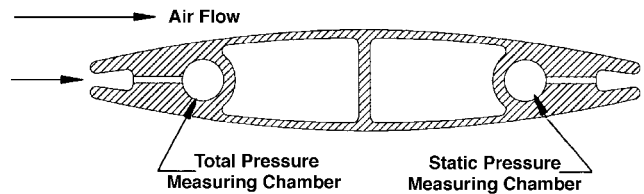
Ruskin Company certifies that the AMS50 Air Monitoring Station shown herein is licensed to bear the AMCA Certified Rating Seal - Airflow Measurement Station Performance. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 611 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air-flow measurement performance only.



APPLICATION

The AMS50 air monitoring station combines the functions of control damper and flow measurement station in one assembly. It is ideally suited for new and existing applications in ductwork, air handling units, and air plenum wall mountings. **Ruskin's AMS50 has been tested to AMCA Standard 610-93 and qualified to bear the AMCA Ratings Seal for Airflow Station Air Performance.**

AMS50 AIRFLOW SENSING BLADE



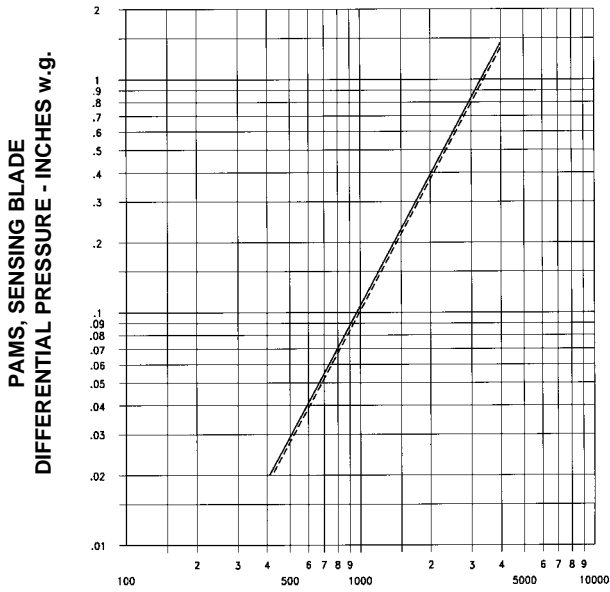
VARIATIONS

The AMS50 Air Monitoring Station is available with several options to meet your requirements.

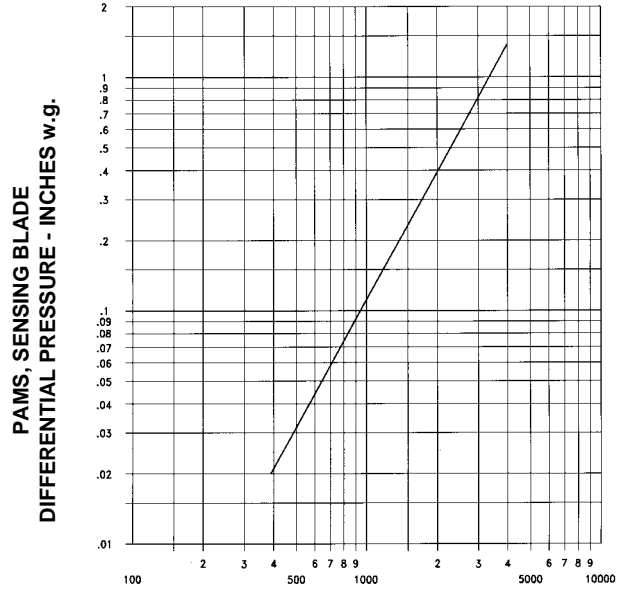
- Electric actuator
- Manual actuator
- Controller with factory calibration
- Stainless steel linkage on damper portion
- Pressure transducers

QTY.	OPENING		MOUNTING STYLE (FL or NF)	FLANGE DIM (FL STYLE ONLY)	MOTOR* MOUNT (Ext or Int L OR R)	VARIATIONS
	W	H				

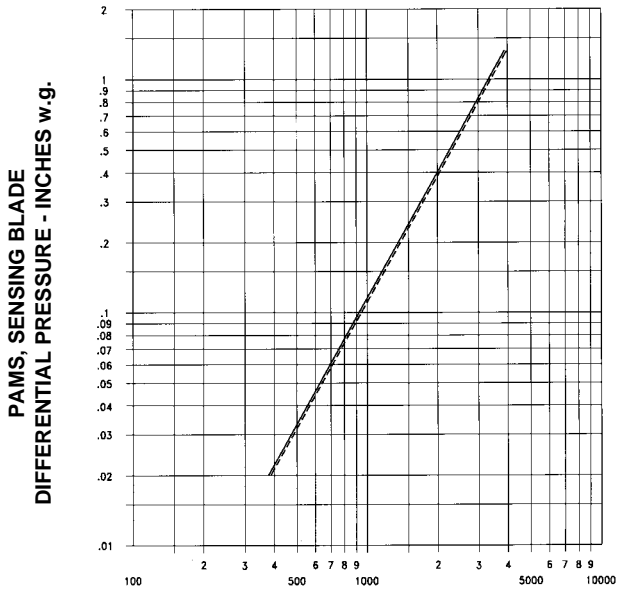
PERFORMANCE



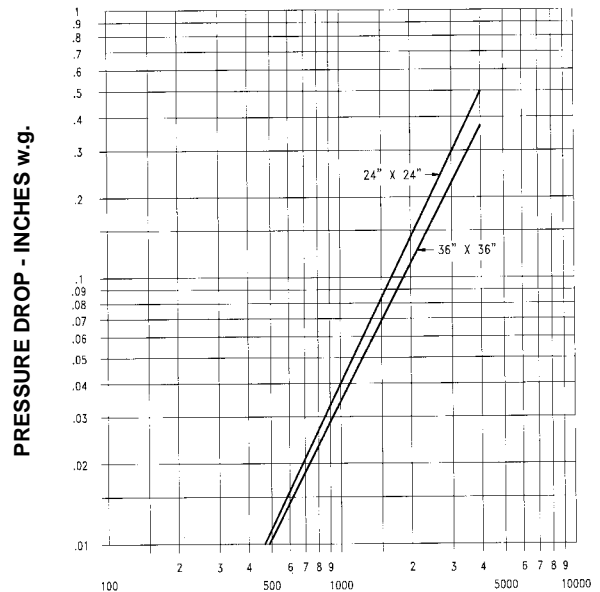
FACE VELOCITY - FEET/MINUTE
 PAMS VS. FACE VELOCITY
 AMS50 SIZE 12" X 12" (305 X 305)
 — FIG. 1 - - - - FIG. 2



FACE VELOCITY - FEET/MINUTE
 PAMS VS. FACE VELOCITY
 AMS50 SIZE 24" X 24" (610 X 610)
 (FIG. 1 & FIG. 2)



FACE VELOCITY - FEET/MINUTE
 PAMS VS. FACE VELOCITY
 AMS50 SIZE 36" X 36" (914 X 914)
 — FIG. 1 - - - - FIG. 2



FACE VELOCITY - FEET/MINUTE
 PRESSURE DROP VS. FACE VELOCITY
 AMS50 SIZES 24" X 24" (610 X 610), 36" X 36" (914 X 914)

NOTES

1. Ratings are based on AMCA Standard 610-93 Test Setup Figures 1 and 2 using differential pressure output.
2. Performance of the AMS50 will be $\pm 3\%$ of curve shown for AMCA 610-93 Test Fig. 1 or 2 applications.
3. Size and shape tested include 12" x 12", 24" x 24" and 36" x 36" (305 x 305, 610 x 610, and 914 x 914) rectangular. Rated sizes are from 0.5 square feet to 18 square feet.
4. Face velocity = $(3370) (PAMS)^{.54}$
5. Indicated volumes = (face velocity) (face area)

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OPERATION

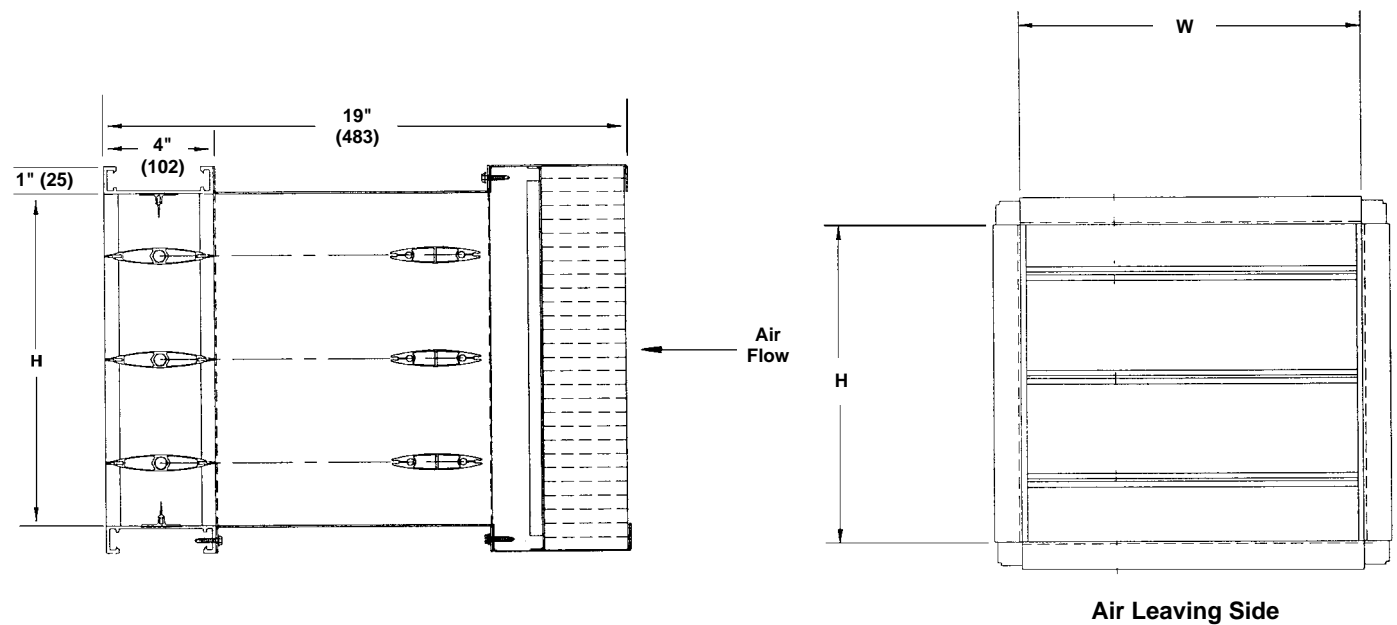
The unique design of the AMS50 incorporates a low leakage control damper with air monitoring blades and air straightener section in one assembly. The control damper is designed for modulating operation and utilizes standard blade and jamb seals for low leakage. Strategically placed airflow sensing blades measure the airstream velocity. Air tubing/piping connections provided connect the sensing blades to the customer supplied controller. Using the velocity information provided from the sensing blades, the controller will calculate a CFM value. This value would then be compared to the design CFM setpoint as determined by the particular mode of operation of the HVAC system. In normal operation, this setpoint will correspond to the minimum outside air ventilation required by the system design to meet ASHRAE Standard 62. Based on the difference between the actual CFM reading and the desired setpoint, the controller will interact with the control damper actuator to position the damper blades as necessary to ensure that the actual outside air flow meets the desired level.

SUGGESTED SPECIFICATION

Furnish and install at locations shown on the plans, or as in accordance with schedules an air monitoring station integral with outside air control damper, airflow monitoring blades, and air straightening section. The integral air monitoring station shall incorporate measuring ports built into the monitoring blades and shall control the minimum amount of outside air as recommended by ASHRAE Standard 62. Standard construction shall be 4" x 1" .081 (102 x 25) control damper frame which incorporates mounting flanges both sides. Control damper blades shall be heavy gage extruded aluminum airfoil type with Ruskiprene blade edge seals. Airflow monitoring blades shall be heavy gage anodized extruded aluminum airfoil shaped fixed in 10" (254) 16 GA (1.6) galvanized frame. Jamb seals along control damper sides shall be flexible

metal compression type. Damper linkage shall be concealed out of the airstream and located within the damper frame to reduce pressure drop and noise. The integral air monitoring station shall incorporate an air straightener section contained in a 5" (127) long 16 gage galvanized sleeve attached to the monitoring blade frame. The air straightener section shall be flanged as required by the application. Airflow monitoring station shall have tested for pressure drop in accordance with AMCA Standard 610-93 in an AMCA registered laboratory. The airflow monitoring station must bear the AMCA Certified Ratings Seal for Airflow Measurement Station Air Performance. Airflow monitoring station shall be Ruskin Model AMS50.

DIMENSIONAL INFORMATION



**"W" (width) and "H" (height) are determined by mounting style. Units for flanged style mounting are sized to the actual inside dimension (illustrated). Units for non-flanged style mounting are sized to the actual outside dimension (not illustrated).

AIR PERFORMANCE

TEST RUN	TEST SETUP FIGURE 1					TEST SETUP FIGURE 2				
	PAMS IN. W.G.	REFERENCE VOLUME CFM	REFERENCE VELOCITY FPM	INDICATED VOLUME CFM	% DEVIATION AVERAGE = 1.56	PAMS IN. W.G.	REFERENCE VOLUME CFM	REFERENCE VELOCITY FPM	INDICATED VOLUME CFM	% DEVIATION AVERAGE = -0.09
AIR PERFORMANCE SIZE: 12" x 12" (305 x 305)										
1	1.44	4021	4021	4103	2.04	1.38	4030	4030	4010	-0.50
2	0.81	3005	3005	3008	0.10	0.78	3014	3014	2947	-2.22
3	0.38	1998	1998	1999	0.05	0.37	2026	2026	1970	-2.76
4	0.11	1010	1010	1023	1.29	0.10	1011	1011	972	-3.86
5	0.06	702	702	738	5.13	0.05	695	695	668	-3.88
6	0.02	410	410	408	-0.49	0.02	406	406	408	0.49
AIR PERFORMANCE SIZE: 24" x 24" (610 x 610)										
1	1.39	15986	3997	16103	0.73	1.42	16114	4029	16290	1.09
2	0.79	12047	3012	11869	-1.48	0.78	11950	2988	11787	-1.36
3	0.35	7792	1948	7647	-1.86	0.36	7985	1996	7764	-2.77
4	0.10	3955	989	3888	-1.69	0.10	3884	971	3888	0.10
5	0.06	2769	692	2950	6.54	0.06	2858	715	2950	3.22
6	0.02	1580	395	1630	3.16	0.02	1560	390	1630	4.49
AIR PERFORMANCE SIZE: 36" x 36" (914 x 914)										
1	1.36	35270	3919	35808	1.53	1.44	35763	3974	36931	3.27
2	0.80	26957	2995	26887	-0.26	0.83	27214	3024	27427	0.78
3	0.38	17891	1988	17987	0.54	0.37	17788	1976	17730	-0.33
4	0.11	9053	1006	9209	1.72	0.10	8536	948	8747	2.47
5	0.06	6302	700	6639	5.35	0.06	6649	739	6639	-0.15
6	0.02	3468	385	3668	5.77	0.02	3659	407	3668	0.25

AIRFLOW RESISTANCE

TEST RUN	PRESS. DROP IN.W.G.	VOLUME CFM	VELOCITY FPM
AIRFLOW RESISTANCE SIZE: 24" x 24" (610 x 610)			
1	.493	15871	3968
2	.255	12002	3000
3	.109	7783	1946
4	.039	3956	989
5	.020	2771	693
6	.009	1579	395
AIRFLOW RESISTANCE SIZE: 36" x 36" (914 x 914)			
1	.367	35051	3895
2	.220	26867	2986
3	.105	17870	1986
4	.035	9054	1006
5	.019	6305	701
6	.007	3470	386

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FIGURE 1 AND 2 FOR DIFFERENTIAL PRESSURE, P.A.M.S.

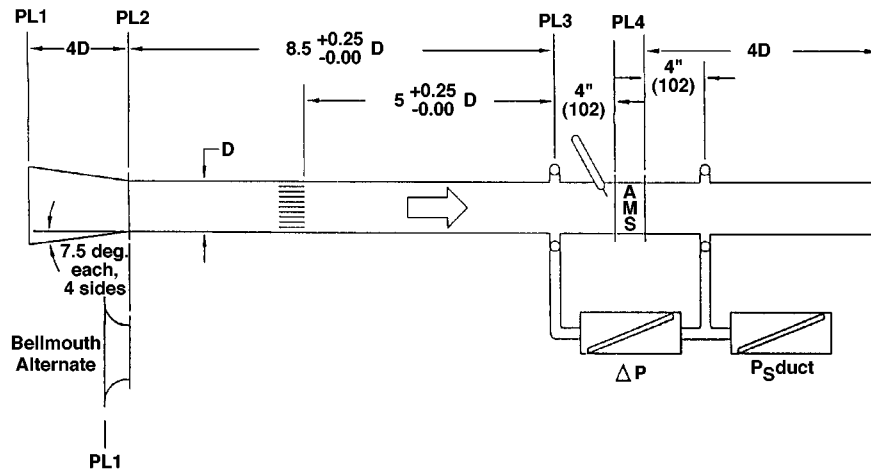


FIGURE 1 STRAIGHT RUN

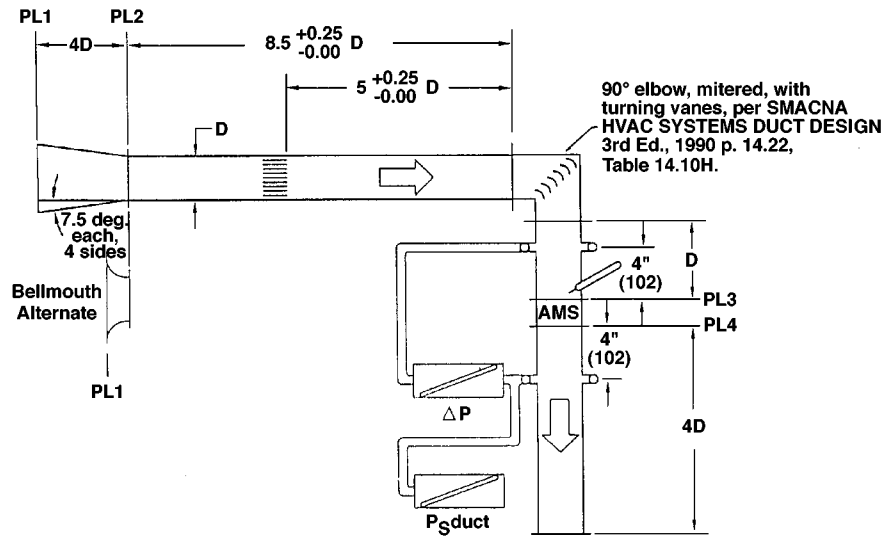
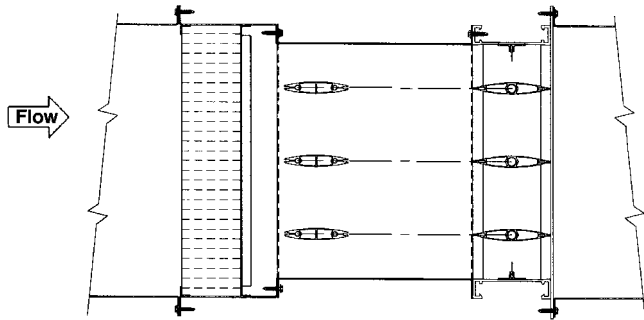
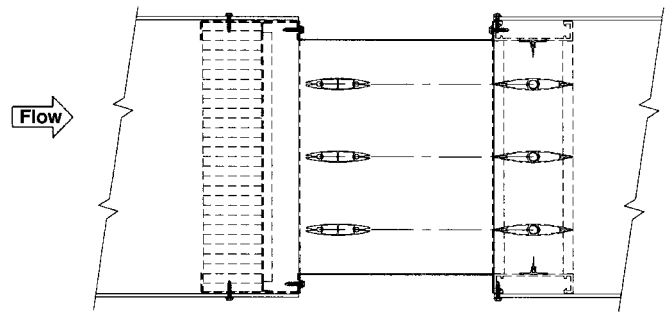


FIGURE 2 WITH 90° ELBOW

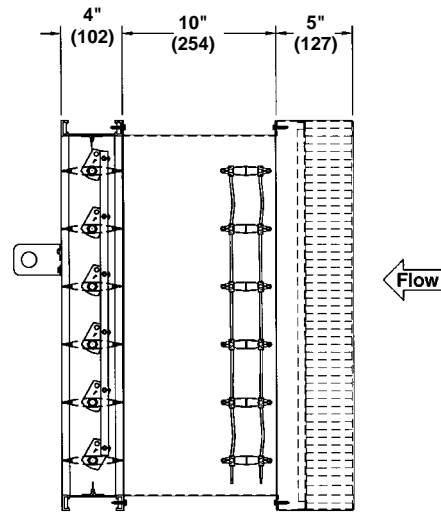
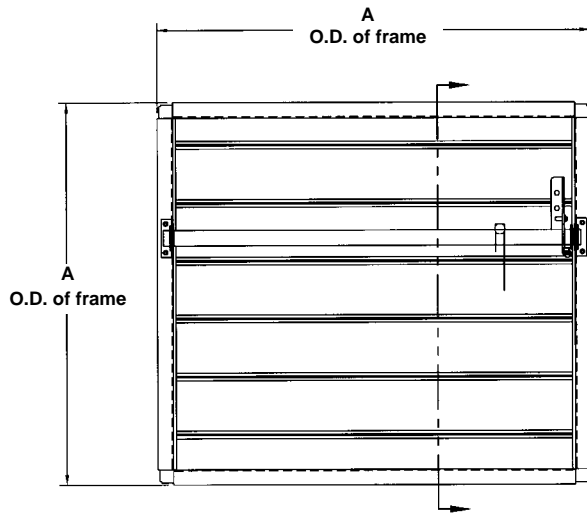
TYPICAL INSTALLATIONS



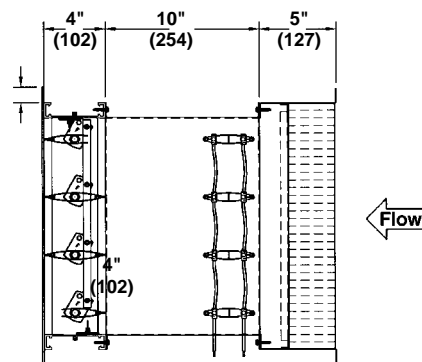
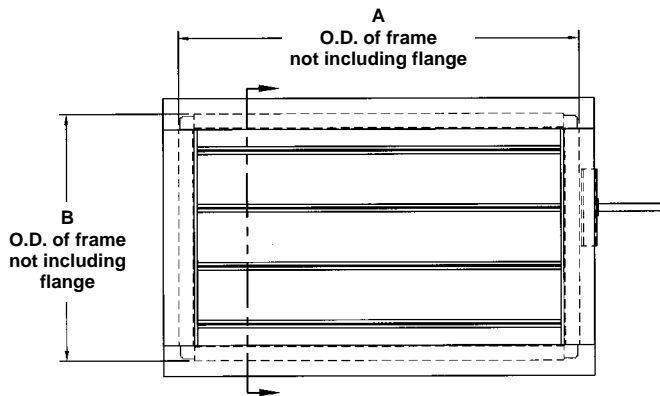
Flange Mounted to Ductwork



Slip Fit into Ductwork



AMS-50 illustrated as slip fit into ductwork and measured O.D. of frame. Damper using jackshifting for damper operation.



AMS-50 illustrated with flange mounting measured O.D. plus 1" (25) flange. Damper using extended shaft for operation.