

**Extruded Aluminum Low Leakage, Low Pressure Drop Damper –Model 604**

**Design Features** – Strong blade design that can satisfy high level system requirements (up to 8” static pressure and 3000 fpm for dampers less than 36” wide), with minimal flow through system loss, while maintaining very low leakage while in the closed position.

**STANDARD CONSTRUCTION**  
EXTRUDED ALUMINUM 6063-T5

**FRAME**

5-1/2” Deep, .125 extrude aluminum

**BLADES**

4” Wide, .081” extruded aluminum airfoil  
(Top & Bottom blade width may vary depending on damper height)

**BLADE AXLES & BEARINGS**

AXLE – 7/16” Continuous steel plated hex  
BEARING – Bronze oil impregnated

**SEALS**

Silicone blade edge & aluminum jamb seals

**LINKAGE**

Opposed Blade – Plated steel concealed inside of jamb  
Parallel Blade – Plated steel blade mounted only  
Drive blade has a 6” shaft to mount operator

**MAXIMUM SIZE**

Unlimited, with mullions, structural bracing supplied by others  
(Multi-section sizes usually require jackshaftering)

**MAXIMUM SINGLE SECTION**

60”W x 96”H

**MINIMUM SIZE**

6”W x 7”H

**UNDERSIZED**

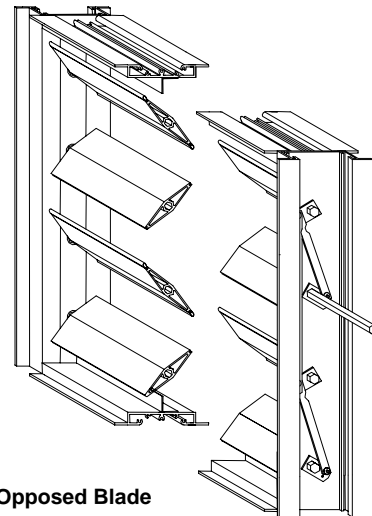
1/4” under ordered size unless specified Exact or Actual

**FINISH**

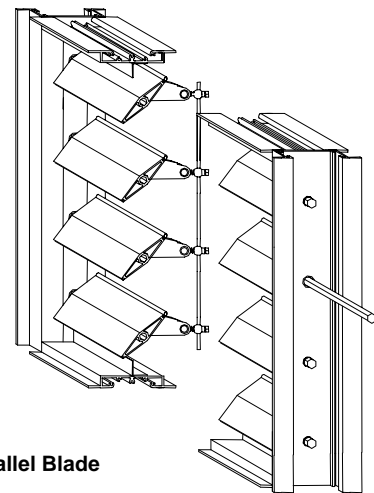
Mill

**OPERATOR**

None



Opposed Blade



Parallel Blade

**OPTIONAL CONSTRUCTION**

**FRAME** – Available in galvanized steel construction up to 10 gauge

**SPECIFIED MATERIAL** – Available in galvanized steel

**JAMB SEALS** – Stainless steel

**SLEEVE AND DUCTWORK CONNECTION** – 10 ga. to 20 ga. galvanized steel to 30” in length. – Transitions available in; round, oval, rectangular, or custom. Factory can install access door, retaining angles, and flange connections.

**FINISH** – Air-dry primer, polyurethane, epoxy, or enamel, baked epoxy or enamel, Kynar, Anodize, or Powder coat.

**OPERATOR** – Manual, electric or pneumatic, internally and externally mounted, or jackshaftered. Please consult operator listing.

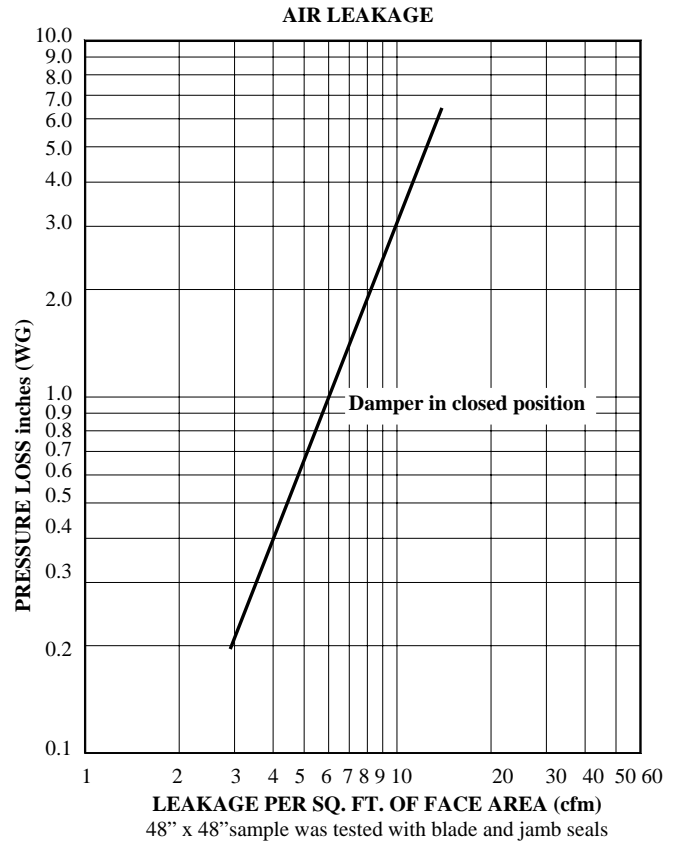
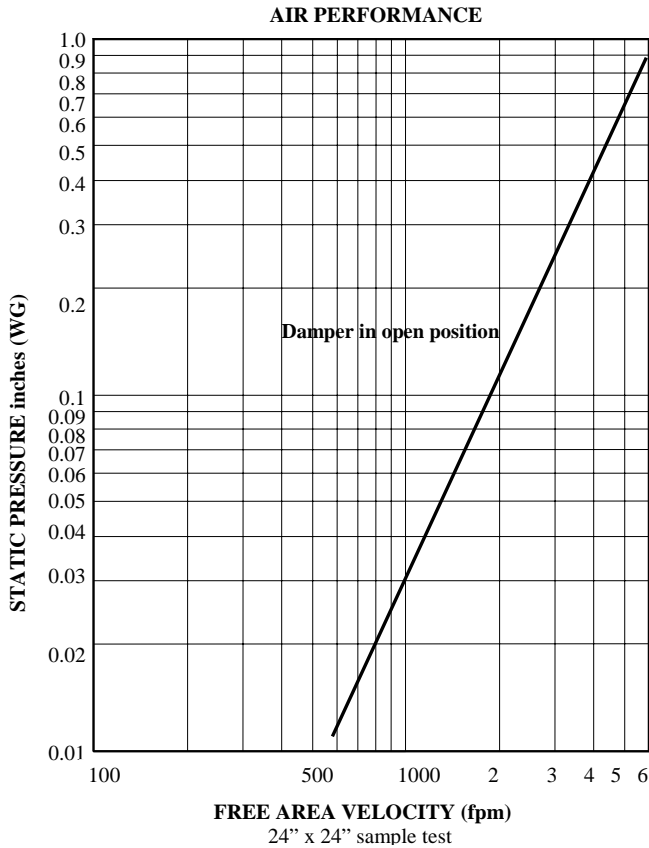
**SPECIAL PURPOSE CONSTRUCTION**

Jackshaft when required  
Security bars (mounted in sleeve)  
Face and bypass dual mixing damper configuration

\*Dampers under 11” high will be single blade only

DATE	ARCHITECT			CUSTOMER
PROJECT				
ITEM	QTY	W	H	DESCRIPTION

All tests performed at an independent laboratory and based on AMCA standard 500-D for Air Performance and Air Leakage.



**CALCULATING PRESSURE LOSS:**

Based upon a given flow rate (in CFM), the flowing pressure loss may be determined from the "air performance graph, knowing the sq. ft. of free area of the damper. Alternately, the free area may be determined based upon a volumetric flow rate and a maximum pressure loss. Utilizing the "air performance" graph.

\_\_\_\_\_ in. W.C. Max. Pressure Loss Intake or Exhaust  
 \_\_\_\_\_ FPM (Free Area Velocity From "Air Performance" Graph)  
 \_\_\_\_\_ CFM / \_\_\_\_\_ FPM Free Area Velocity = \_\_\_\_\_ Sq. Ft. Free Area

**TO MINIMIZE LEAKAGE:**

The Leakage performance of a Damper will improve with size and varies with aspect ratio. We required the worst case leak rate of three test samples to be tested in order to extrapolate leak rates for all size in a range. Leakage may always be minimized by selecting dampers as tall as possible, minimizing width. Testing was performed at an independent laboratory using test procedures based on Industry Standards for air leakage, on an 48" x 48" test sample, while applying 20 lb-in of torque to the operating shaft.

**FREE AREA CALCULATIONS IN SQ. FT.**

		WIDTH										
HEIGHT	Inches	12	16	20	24	28	32	36	40	44	48	
	12	0.58	0.81	1.03	1.26	1.49	1.72	1.95	2.17	2.40	2.63	
16	0.86	1.20	1.54	1.88	2.22	2.56	2.89	3.23	3.57	3.91		
20	1.09	1.53	1.96	2.39	2.82	3.26	3.69	4.12	4.55	4.99		
24	1.33	1.86	2.38	2.91	3.43	3.96	4.49	5.01	5.54	6.06		
28	1.61	2.25	2.89	3.52	4.16	4.80	5.43	6.07	6.71	7.34		
32	1.85	2.58	3.31	4.04	4.77	5.50	6.23	6.96	7.69	8.42		
36	2.08	2.91	3.73	4.55	5.38	6.20	7.02	7.85	8.67	9.49		
40	2.37	3.30	4.23	5.17	6.10	7.04	7.97	8.91	9.84	10.78		
44	2.60	3.63	4.66	5.68	6.71	7.74	8.77	9.80	10.82	11.85		
48	2.84	3.96	5.08	6.20	7.32	8.44	9.56	10.69	11.81	12.93		
52	3.29	4.60	5.90	7.20	8.50	9.80	11.10	12.41	13.71	15.01		
56	3.36	4.68	6.01	7.33	8.66	9.98	11.31	12.63	13.96	15.29		
60	3.59	5.01	6.43	7.85	9.27	10.68	12.10	13.52	14.94	16.36		
64	3.87	5.40	6.93	8.46	9.99	11.52	13.05	14.58	16.11	17.64		
68	4.11	5.73	7.35	8.98	10.60	12.22	13.85	15.47	17.09	18.72		
72	4.34	6.06	7.78	9.49	11.21	12.93	14.64	16.36	18.08	19.79		