ALSHARQA

VOLUME DAMPERS

AIR OUTLETS
TECHNICAL CATALOGUE

Alsharqa
Air Conditioning and Industies
المصرية الخليجية لأعمال التكييف - الشارقة
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VOLUME DAMPER

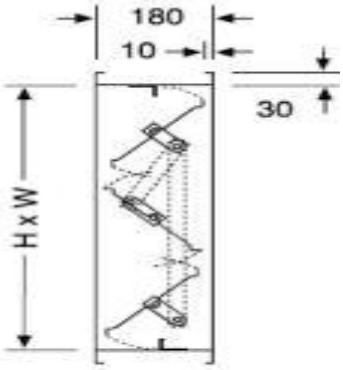
STATIC PRESSURE DROP

ALSHARQA
AIR OUTLETS

-The damper are made from extruded Aluminum .
- Opposed blade action via-Gears.
- Gears made from specific plastic temperature resistance 70^0 c .
- Galvanized steel drive arm.
- Hand locking quadrant from galvanized steel.
- Case depth 120 mm .
-Blade pitch 100mm.
- Aero foil blade .
- The damper can be power operated by electric actuator.
- Dimension X gives position of drive arm.

Types of VCD

L (mm)	W (mm)	NO . of blades	Position of drive arm X (mm)
200	204	2	52
300 400 500 600 700	304 404 504 604 704	3 4 5 6 7	252
800 900 1000	804 904 1004	8 9 10	452



Opposed Blades (OB)

pressure drop testing was conducted in accordance with AMCA Standard 500-D using Figure 5.3. All data has been corrected to represent standard air at a density of .075 lb/ft3(1.201 kg/m3).

Actual pressure drop found in any HVAC system is a combination of many factors. This pressure drop information along with an analysis of other system influences should be used to estimate actual pressure losses for a damper installed in a given HVAC system.

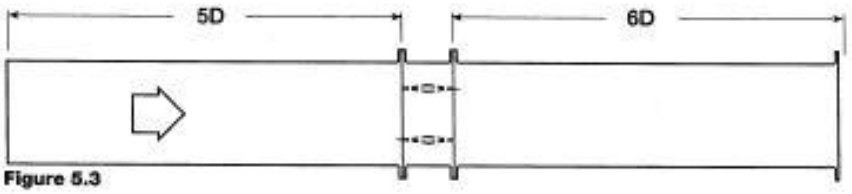


Figure 5.3

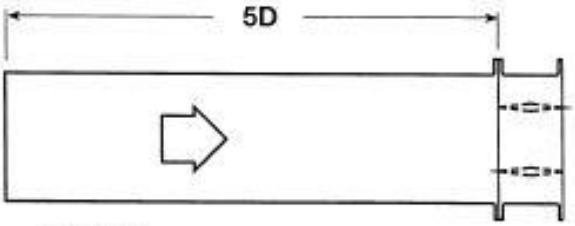


Figure 5.2

$$D \sqrt{\frac{4\,(W)\,(H)}{3.14}}$$

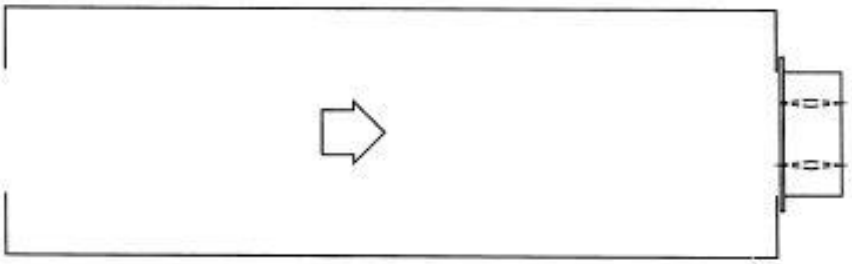


Figure 5.5

ALUMINUM AIRFOIL BLADE DAMPERS

Height Damper B Dim.	Width - Damper A Dim.							
	8	12	16	20	24	28	32	36
8	0.18	0.32	0.45	0.59	0.72	0.86	0.99	1.13
10	0.24	0.42	0.59	0.77	0.95	1.12	1.30	1.48
12	0.31	0.55	0.78	1.01	1.24	1.48	1.71	1.94
14	0.35	0.61	0.87	1.13	1.39	1.65	1.92	2.18
16	0.41	0.71	1.01	1.31	1.62	1.92	2.22	2.52
18	0.48	0.83	1.20	1.56	1.91	2.27	2.63	2.99
20	0.55	0.97	1.38	1.80	2.21	2.62	3.04	3.45
24	0.69	1.20	1.71	2.22	2.73	3.24	3.75	4.26
28	0.82	1.43	2.03	2.64	3.25	3.86	4.47	5.07
32	0.97	1.69	2.41	3.12	3.84	4.56	5.28	6.00
36	1.10	1.91	2.73	3.55	4.36	5.18	6.00	6.81
40	1.23	2.14	3.06	3.97	4.88	5.80	6.71	7.62
44	1.36	2.37	3.38	4.39	5.40	6.41	7.42	8.43
48	1.51	2.63	3.75	4.87	6.00	7.12	8.24	9.36

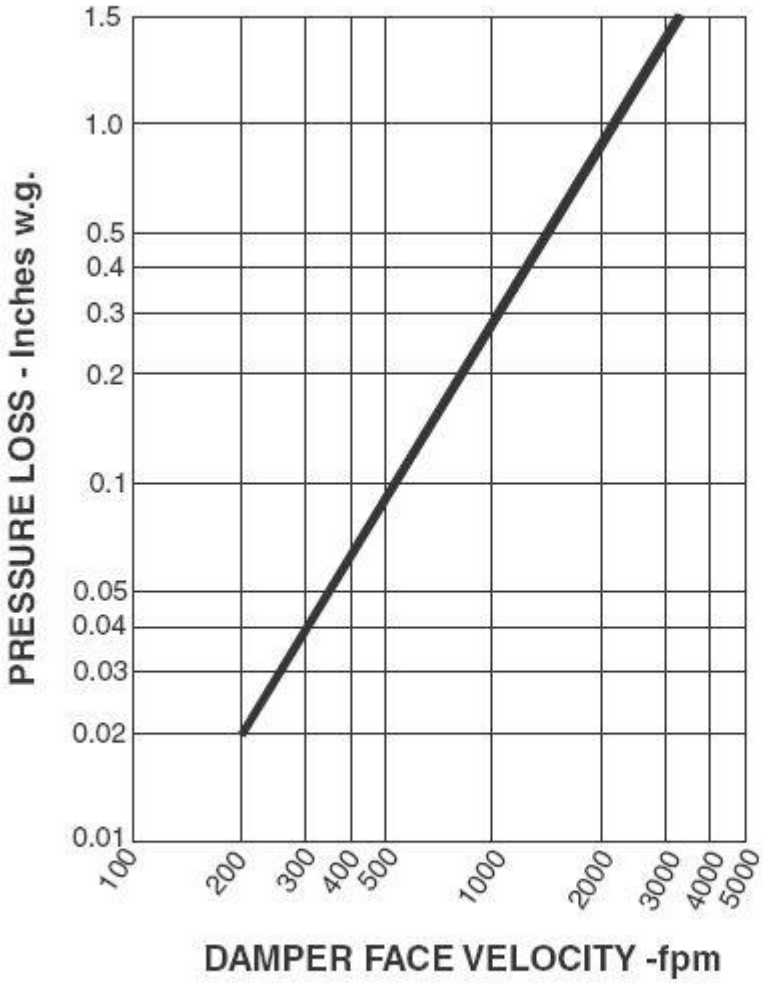
PRESSURE DROP DATA FOR ALUMINUM AIRFOIL BLADE DAMPERS

The pressure drop data in the tables below is for fully ducted dampers as represented by Figure 5.3 on page 1. For dampers not fully ducted, represented by Figure 5.2 and Figure 5.5 on page 1, use one of the correction factors from the tables at the bottom of this page.

For example, the pressure drop across a 24” x 24” (610 x 610) damper in an air system with a velocity of 1,000 FPM is .02 inches w.g. If the application more closely resembles Figure 5.2, the actual pressure drop is closer to .06 inches w.g. (.02 x 3).

IMPORTANT NOTE: Algorithmic calculations were used to determine the pressure drop and correction factors shown below. The actual pressure loss may be higher due to bad flow profiles. A bad flow profile includes an application where there is less than one duct diameter between the damper and any element. Bad flow profiles may require an increase of the correction factor by 1.5 times

Typical HVAC damper pressure drop vs flow velocity graph. Units are inches and fpm (feet per minute).



Where:

V (Velocity) = CFM/(Square ft. Damper Area)

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