

DAMPER



DONG YANG AIR-CONDITIONING Co., Ltd.

APPLICATION

- For Volume Control and Low Leakage when shut-off
- For Sub-way, Tunnel, Power Plant and Other Heavy Duty Usage

FEATURES OF DYH

- **Low Pressure Resistant Blade Shape**
Diamond shaped blade reduces the pressure drop and sound level across the damper.
- **Soft and Contact-easy Blade Seal**
Soft and contact-easy blade seal gives good contact with adjacent blade seal and this reduces leakage rates.
- **Round Shaped Stainless Steel Jamb Seal**
Stainless steel material jamb seal is shaped round and has good elasticity. This gives smooth sliding and good contact between the blades and jamb seal.
- **Good Persistence**
Constructed with SGHC(Gal'v steel) and stainless materials. Special painting and coating are also available on option.
- **Air Performance and Leakage Rate AMCA Licensed**
Ratings of leakage and pressure drop shown results from the tests based on AMCA Publication 511.

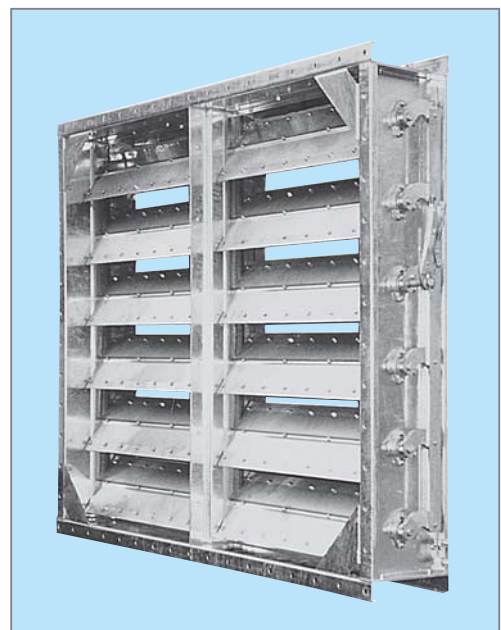


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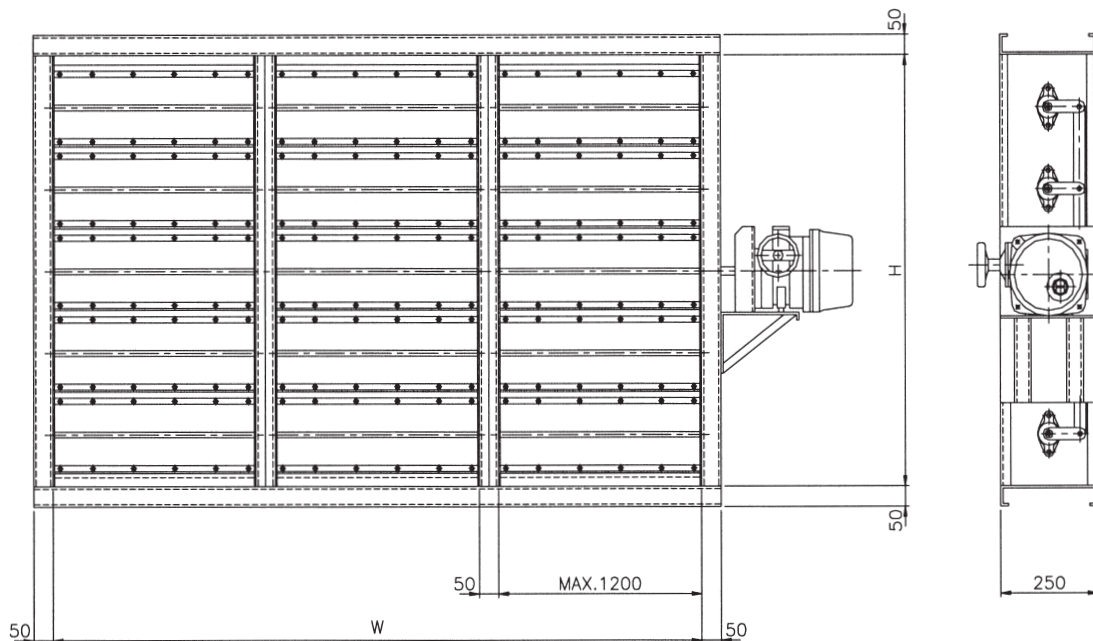
- **Use Temperature 120°C**
(For higher temperature, please contact us.)
- **Max. Pressure**
250mmAq when damper shut-off
(For higher pressure, please contact us.)

STANDARD CONSTRUCTION

- **Frame** Channel shaped steel, Gal'v steel or stainless steel 304
- **Blade** Double skinned diamond shape, Gal'v steel or stainless steel 304
- **Link** Stainless steel 304 or gal'v steel
- **Shaft** Stainless steel 304 or gal'v steel
- **Bearing** Brass sleeve bearing or ball bearing
- **Jamb seal** Stainless steel spring plate
- **Blade seal** STS or EPDM or Silicone
- **Others** Optional : STS 316 or STS 304 +
Teflon coating, Steel + PE (Polyethylene) coating



STANDARD DIMENSIONS



- Intermediate support frame will be placed at every maximum width of 1,200mm for strength.
- 50mm or different frame height for flange is available as a standard.

■ Standard Manufacturing Size

Description	Standard Dimensions	Max. Size	Min. Size
Height (H)	$200 \times \text{Number of Blade} + 30$	2,430mm	630mm
Width (W)	630mm ~ 2,997mm	2,997mm	630mm

- The largest face area of this damper is 4.5m² per set.
- Two or more dampers are assembled on the job site for dampers larger than the standard size.
For larger dampers than upper standard size, please contact us.

■ Standard Height per Number of Blades (H mm)

No. of Blade	3	4	5	6	7	8	9	10	11	12
Height (H)	630	830	1,030	1,230	1,430	1,630	1,830	2,030	2,230	2,430

- For non-standard height, we use one or two eccentric blade(s) to avoid big air blockage.

■ For Installation of Actuator

- Installation method and accessories for actuator vary with type and model of actuator.
Please contact us for installation of actuator.
- We also supply dampers with installation work of actuators.

■ Shaft for Driving

- Shaft size $\phi 20$
- Protruded length Length of shaft varies with the type and model of actuator.
Please contact us for installation of actuator.

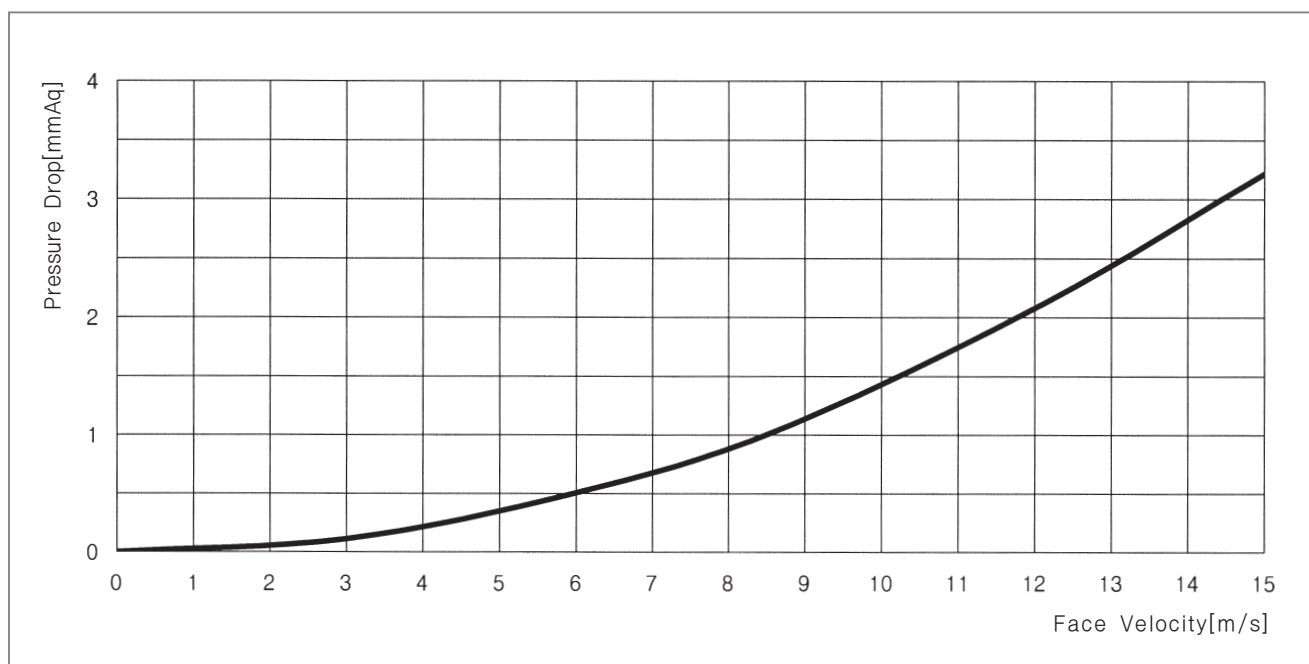
PRESSURE DROP OF DYH

■ Articles Related to the Test

- Test Standard AMCA Standard 500
- Test Set-up Figure 5.3
- Air Flow Measurement Figure 6.5
- Temperature when Testing 0°C ~ 49°C
- Tested Damper Size 305×305, 305×1,220, 610×610,
914×914, 1,220×305 (5 sets)
- Air Flow Test Mode Intake mode



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○ How to use the chart

1. Ratings on the chart is based on the size of 610×610.
2. Read ratings on the line for the dampers larger than 610mm high.

■ The Trend of Pressure Drop Across the Damper

- Dampers with higher face velocity have bigger pressure drop.
- Dampers with larger face area at a certain velocity have smaller pressure drop.
- Bigger difference between width and height makes bigger pressure drop in the dampers with same face velocity and area.

LEAKAGE PERFORMANCE OF DYH

■ Articles Related to the Test

- Test Standard AMCA Standard 500
- Test Set-up Figure 5.4
- Air Flow Measurement Figure 6.5
- Torque
Applied to Dampers Data are based on a torque of 15.88Nm/m² (11.71in-lb/ft²) applied to close and seat the damper during the test
Minimum torque: 16.76Nm/m² (12.36in-lb/ft²)
- Temp. when Testing 0°C ~ 49°C
- Tested Damper Size 305x305, 305x1,220, 610x610, 914x914, 1,220x305, 2,997x914 (6 sets)
- Ratings Selected Maximum value of two times leakage tests in each direction of air flow and back pressure



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■ Leakage Class (The AMCA Certified Ratings Seal applies only to the following leakage class for the volume control dampers.)

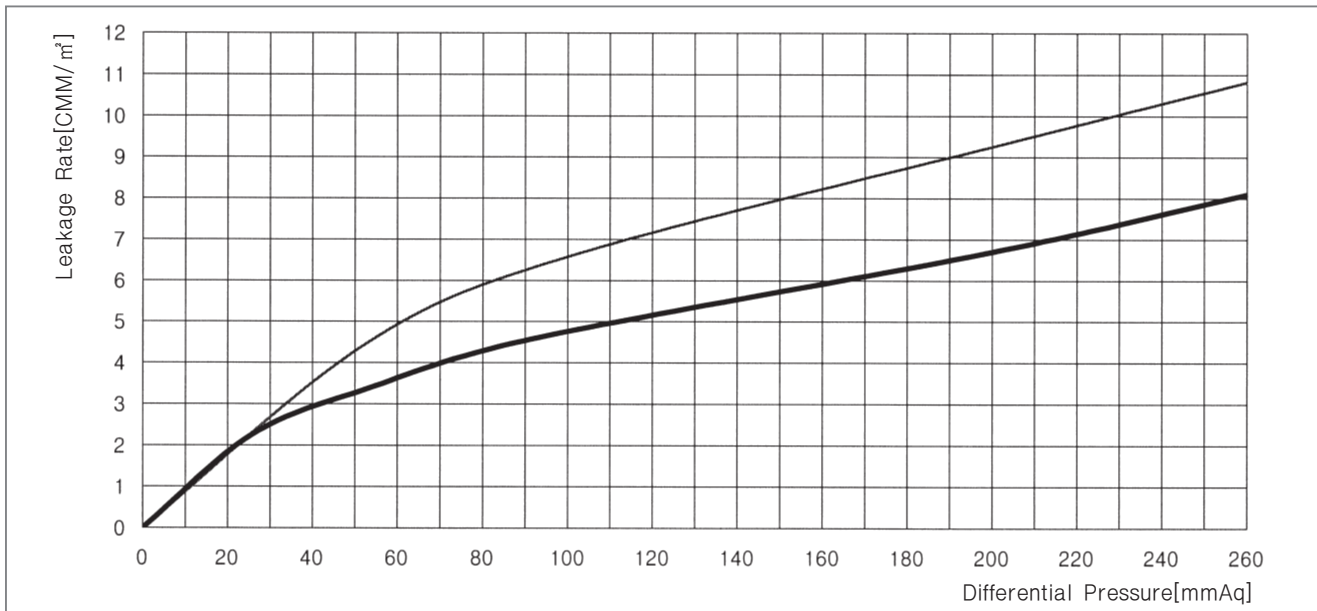
• Leakage Class of DYH by AMCA Leakage Class

Damper Width	25mmAq ΔP	100mmAq ΔP	200mmAq ΔP
24" (610mm)	2	2	2
36" (914mm)	2	2	2
118" (3,000mm)	2	2	N/A

• AMCA Leakage Classification

SI Class	Maximum Allowable Leakage, L/s/m ²		
	at 0.25 kPa	at 1.0 kPa	at X kPa
1A	15.2	N/A	N/A
1	20	41	$2\sqrt{X} \times 20$
2	51	102	$2\sqrt{X} \times 51$
3	203	406	$2\sqrt{X} \times 203$

■ Leakage Rate (The AMCA Certified Ratings Seal does not apply to the following leakage chart.)



※ Air volumes are based on the density of 1.2Kg/m³

○ How to use the chart

1. Read ratings on the **thick line** for the dampers of 914mm or higher.
2. Read ratings on the **thin line** for the smaller height dampers than 914mm.

■ The Trend of Leakage Rate Across the Damper

- Higher pressure difference across the damper gives more air leakage.
- Smaller damper at certain pressure difference across the damper has more air leakage per unit area.