

DAMPER



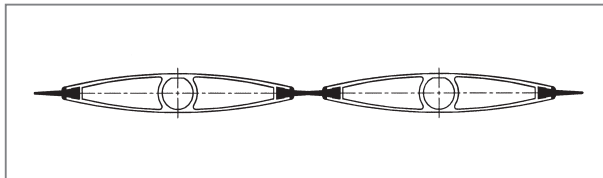
DONG YANG AIR-CONDITIONING Co., Ltd.

APPLICATION

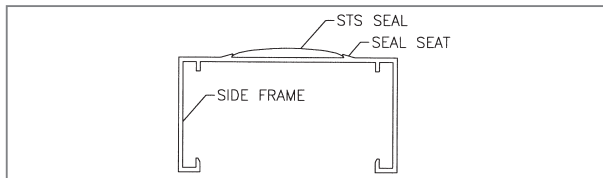
- For General Use and Proportional use of Volume Control
- For Low Leakage when Damper Shut-off
- For Air Handlers and for Duct

FEATURES OF DYKL

- **Airfoil Shaped Blade for Low Leakage and Sound**
Airfoil shaped blade apparently 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. Low leakage rate is obtained by this good contact.



- **Air Performance and Leakage Rate AMCA Licensed**
Ratings of leakage and pressure drop shown results from the tests based on AMCA Publication 511.

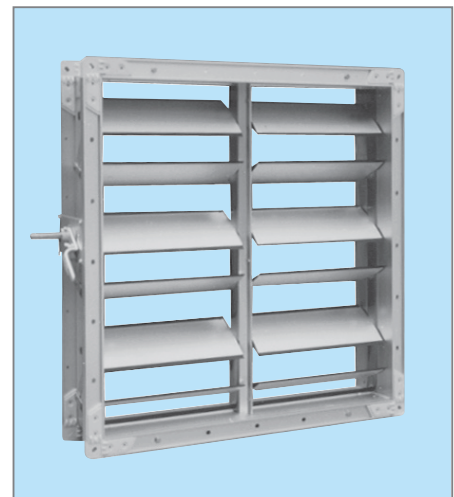
STANDARD CONSTRUCTION

- | | |
|-----------------------|---|
| ■ Frame | Channel shaped extruded aluminum |
| ■ Blade | Double skin airfoil shaped extruded aluminum |
| ■ Link | Stainless steel 304 and aluminum |
| ■ Shaft | Stainless steel 304, aluminum and zinc material |
| ■ Bearing | POM or STS304 |
| ■ Jamb seal | Stainless steel spring plate |
| ■ Blade seal | Synthetic rubber |
| ■ Corner piece | Aluminum or injection molded PC (Polycarbonate) |
| ■ Finish | Anodized aluminum |

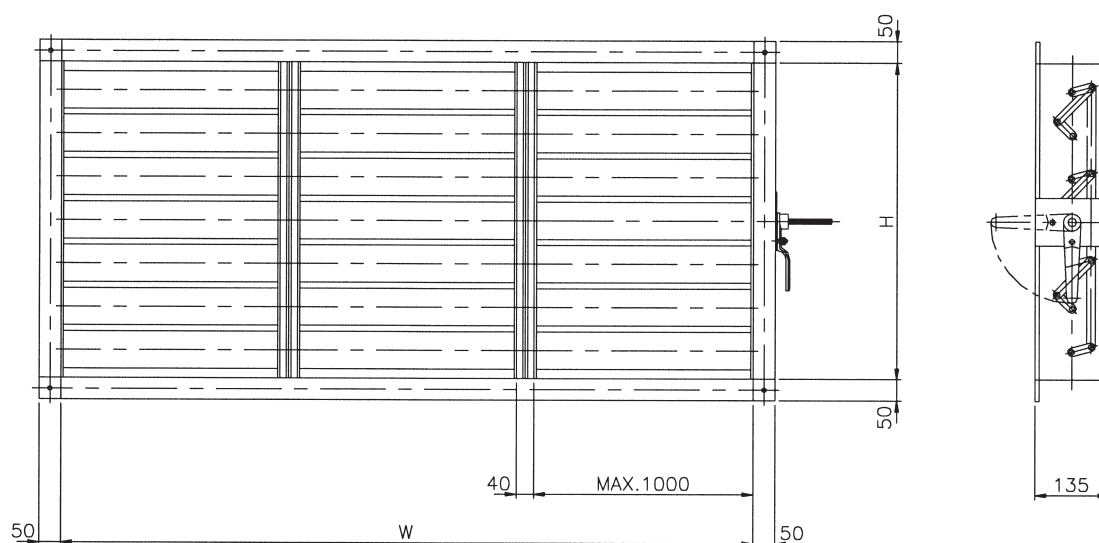


DONG YANG AIR-CONDITIONING Co., Ltd. certifies that DYKL Model shown hereon is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Program. The AMCA Certified Ratings Seal applies to air performance and air leakage ratings only.

- **Good Persistence by Using Anti-corrosive Materials**
Stainless steel, aluminum and PVC materials only are used to give good operation and to prevent corrosion after time elapsed.
- **Use Temperature 120°C (POM)**
(For higher temperature, please contact us.)
- **Max. Pressure**
200mmAq when damper shut-off
(For higher pressure please contact us.)



STANDARD DIMENSIONS



- Intermediate support frame will be placed at every maximum width of 1,000mm for strength.
- 50mm frame height for flange is standard. Please contact us for different height.

■ Standard Manufacturing Size

Description	Standard Dimensions	Max. Size	Min. Size
Height (H)	100 × Number of Blade	2,430mm	100mm
Width (W)	100mm ~ ~ 2,997mm	2,997mm	100mm

- The largest face area of this damper is 4.0m² per set.
- 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	13
Height (H)	330	430	530	630	730	830	930	1,030	1,130	1,230	1,330
No. of Blade	14	15	16	17	18	19	20	21	22	23	24
Height (H)	1,430	1,530	1,630	1,730	1,830	1,930	2,030	2,130	2,230	2,330	2,430

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

■ Two or more damper handles are used on followings cases.

- In case that the face area of damper is larger than 3.5m²
- In case that the width of damper is longer than 3,104mm
- In case that damper has three or more intermediate supports

■ Shaft for Driving

- Shaft size
Hexagonal shape, nominal dimension 12mm
- Protruded length
 - Standard protruded Length 100mm
 - For Manual and Electrical Actuator 120mm
 - For Pneumatic Actuator 150mm
 (When exceptional length is required, please contact us.)

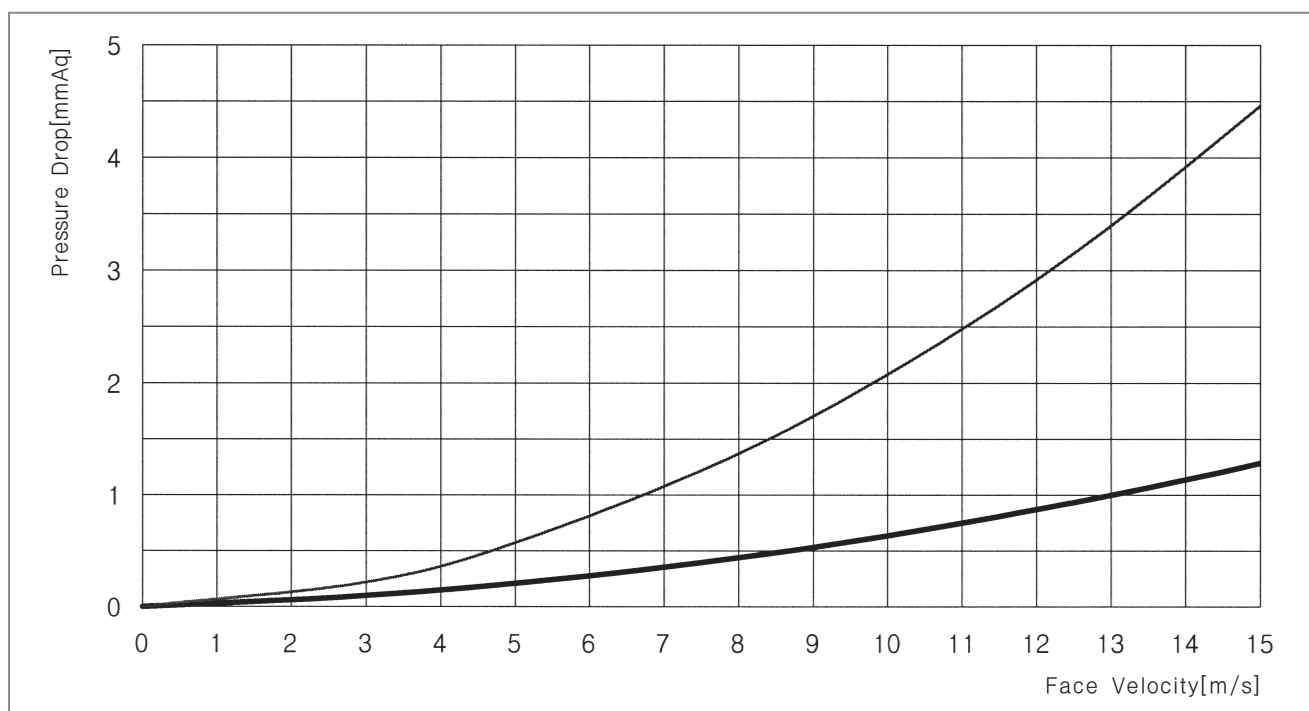
PRESSURE DROP OF DYKL

■ 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. Read ratings on the **thick line** for the dampers of 610mm or higher.
2. Read ratings on the **thin line** for the smaller height dampers than 610mm.

■ 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 DYKL

■ Articles Related to the Test

- Test Standard AMCA Standard 500
- Test Set-up Figure 5.5
- Air Flow Measurement Figure 6.5
- Torque
Applied to Dampers Data are based on a torque of 17.06Nm/m² (12.58in-lb/ft²) applied to close and seat the damper during the test
Minimum torque : 20.1Nm/m² (14.82in-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.)

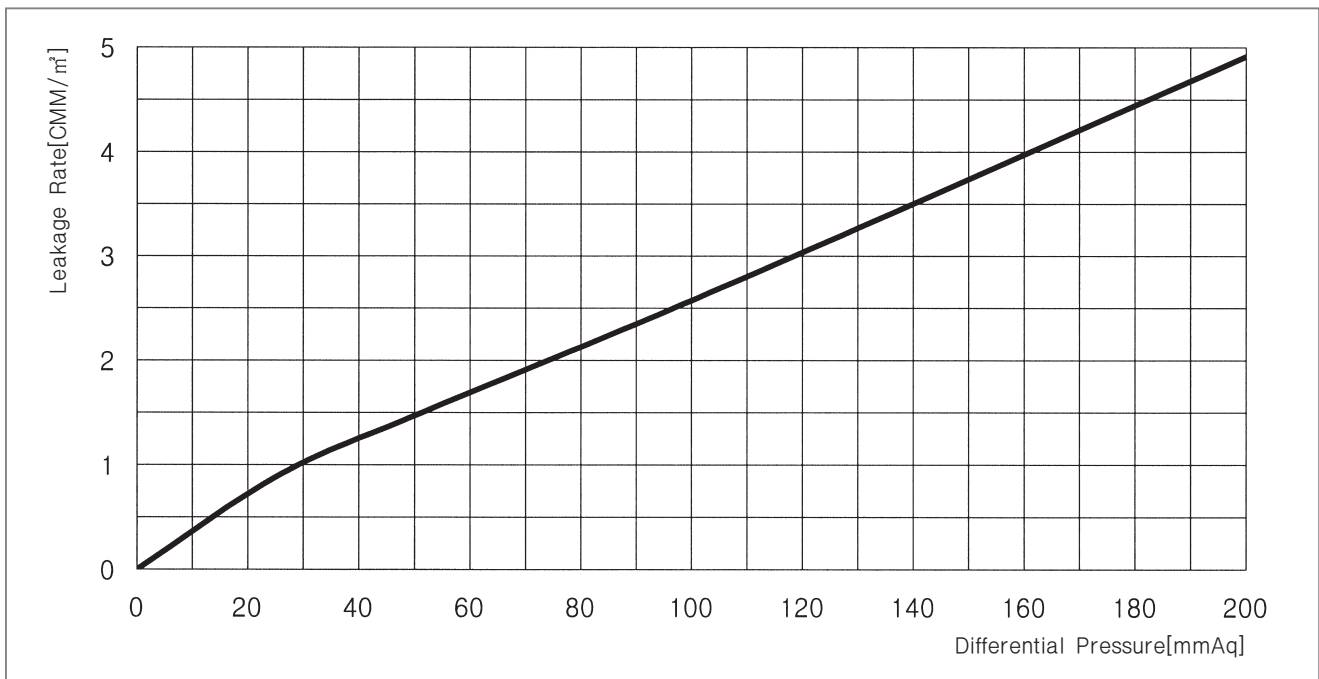
• Leakage Class of DYKL by AMCA Leakage Class

Damper Width	25mmAq ΔP	100mmAq ΔP	200mmAq ΔP
12" (305mm)	1A	1	2
24" (610mm)	1A	1	1
36" (914mm)	1A	1	2
48" (1,220mm)	1A	1	1
118" (3,000mm)	1A	1	1

• 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√x × 20
2	51	102	2√x × 51
3	203	406	2√x × 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

■ 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.