

PWII

MULTI-BLADE DAMPERS



Intended use:

PWII multi-blade dampers with backward blades are designed for air flow adjustment or closing in rectangular ventilation ducts.

Intended use

PWII multi-blade dampers with opposed blades are designed for air flow adjustment or closing in rectangular ventilation ducts. They can be installed in air handling units or in a wall. Operating temperature: -20°C to $+90^{\circ}\text{C}$, ($+50^{\circ}\text{C}$ for the actuator version).

PWII dampers have Sanitary Certificate no. HK/K/0841/03/2017.

Finish

The design of PWII-O and PWII-N dampers ensures low air resistance when open, and the design of PWII-U also guarantees tight sealing when closed.

For A x B dimensions up to 1000 x 1005 [mm], the following is the standard damper size:

- A - any dimension,
- B - x 100 mm multiple + 5 mm.

A PWII damper may be adjusted to a manual or automatic (actuator) control system. The housing is made of galvanised or stainless sheet metal. It can be powder coated.

Material

Thanks to their versatile design, PWII dampers can be made of a variety of materials.

PWII-O dampers have housings and blades (lamellas) made of galvanised steel profiles.

PWII-U dampers have housings made of galvanised steel sheet and blades (lamellas) made of aluminium profiles with edge seals.

PWII-N dampers have housings and shutters made of stainless steel sheet.

PWII-U dampers, having edge seals on lamellas, can be used in control and shut-off applications, while the other ones mainly for control.

All PWII dampers have a raised flange-shaped body (30 mm). Shutters are connected with bearings and gears made of PP polypropylene.

Drive

1. Damper with an actuator.
2. Damper with a manual mechanism.
3. Damper with an extended axis.

Special make

1. Dampers with a B dimension other than a multiple of 100 mm (max 2005).
2. Dampers with an A dimension > 1000 mm (max 2500) divided into modules not longer than 1400 mm.

Dimensions

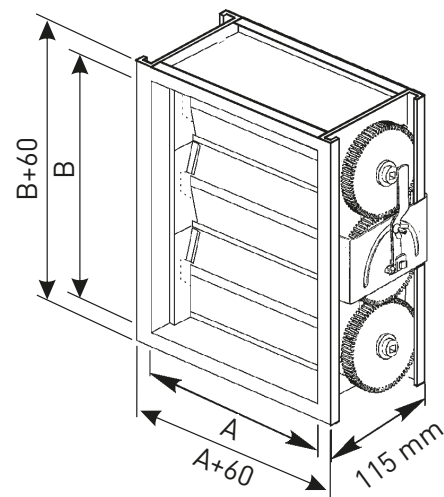


Figure 1. PWII-x damper dimensions.



Types and Characteristics of PWII-x Dampers

Table 1. Types and Characteristics of PWII-x Dampers.

PWII-x			
	PWII-O	PWII-U	PWII-N
Housing	Galvanised steel sheet		Stainless steel sheet
Blades	Blade made of galvanised sheet metal	Aluminium blade with an edge seal	Blade made of stainless sheet metal
Fitting	Profiled flange and corners		
Mechanism	External gears		
	PP bearing pads		

Dimensions

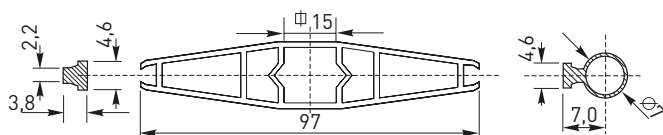


Figure 2. PWII-U.

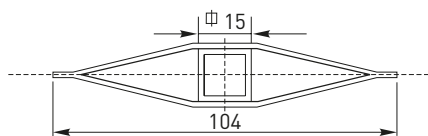


Figure 3. PWII-O, PWII-N.

Standard Dimensions

Larger dampers are divided into smaller areas for manufacturing purposes.

If you are ordering custom dampers, please specify the A x B dimensions, version and type of mechanism in accordance with the product marking scheme.



Maximum dimensions:
A ≤ 2500 [mm],
B ≤ 2005 [mm].

We can manufacture any B size within the **200–2000 [mm]** range.

Since blades are 100 [mm] wide, the recommended dimension is **B = n x 100 + 5**.

Table 2. Standard dimensions.

B height [mm]	A width [mm]							
	300	400	500	600	800	1000	1200	1400
	Outflow effective area [m²] Weight [kg]							
305	0,07	0,1	0,12	0,15	0,2	0,25	0,3	0,34
	3	3,6	4,2	4,8	6	7,2	8,5	9,7
405	0,1	0,13	0,16	0,2	0,26	0,33	0,39	0,46
	3,7	4,4	5,1	5,8	7,2	8,6	10,1	11,6
505	0,12	0,16	0,21	0,25	0,33	0,41	0,49	0,57
	7	8	9,1	10,1	12,1	14,3	17,5	19,7
605	0,15	0,2	0,25	0,3	0,39	0,49	0,59	0,69
	5	5,9	6,9	7,3	9,6	11,4	13,4	15,2
805	0,2	0,26	0,33	0,39	0,52	0,66	0,79	0,92
	6,4	7,5	8,6	9,8	12	14,2	16,6	18,9
1005	0,25	0,33	0,41	0,49	0,66	0,82	0,98	1,15
	7,7	9,1	10,4	11,7	14,4	17	19,9	23,7
1205	0,3	0,39	0,49	0,59	0,79	0,98	1,18	1,39
	9,1	10,6	12,1	13,7	16,8	19,9	23,1	16,2
1405	0,34	0,46	0,57	0,69	0,92	1,15	1,38	1,61
	1,4	12,2	13,9	15,7	19,2	22,7	26,4	29,8

General information

Marking:

- v[m/s]** – air flow velocity
- Δp [Pa]** – total pressure loss
- α [°]** – lamella setting angle
- A[m²]** – damper cross section area

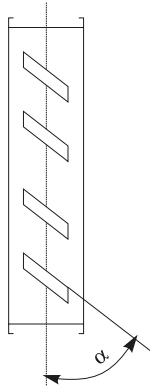


Figure 4. Lamella setting angle.

Nomogram I

Impact of the V velocity and the damper opening position on Δp pressure drop.

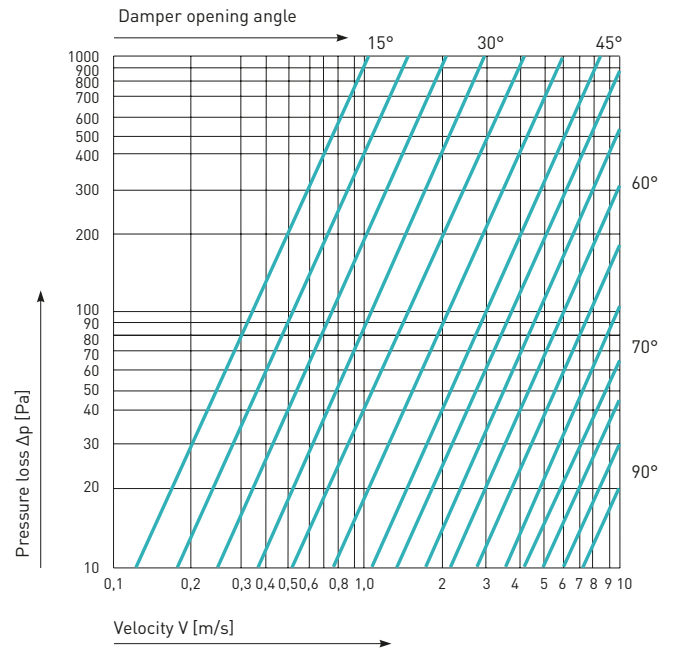


Chart 1. Nomogram I.

Nomogram II

Air leak through a closed damper.

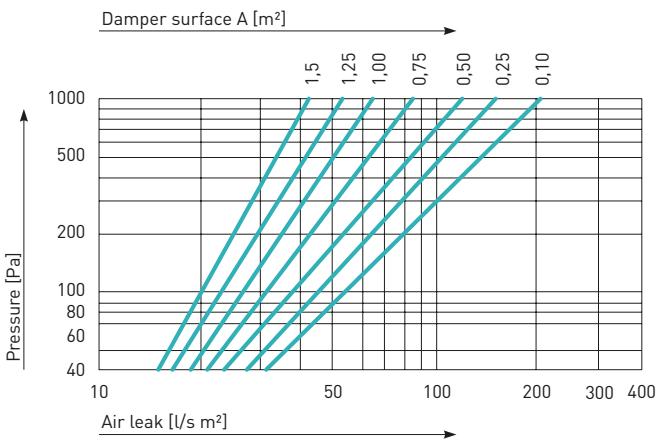
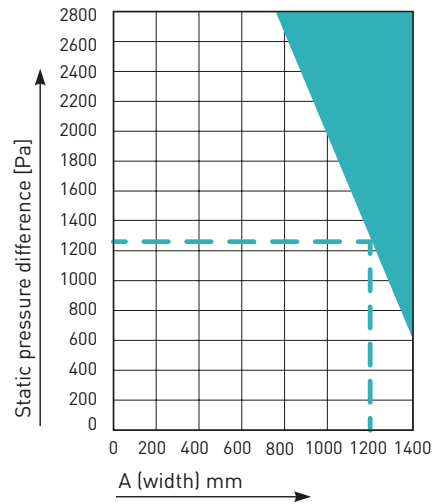


Chart 2. Nomogram II.



prohibited range for non-divided dampers

Chart 3. Acceptable pressure difference.



Nomogram II presents data for **PWII-U**, tight dampers. For other types of dampers, multiply the data from the graph by a 1.08 coefficient.

PWII – Multi-blade dampers

Upon placing an order for PWII dampers following information shall be provided:

PWII - <P> - <A> X - W<W> - T<N> - <KL>

Where:

P	version*
	U - aluminium blades with PVC seals, a housing made of galvanized sheet metal
	O - blades and housing made of galvanized sheet metal
	N - blades and housing made of stainless sheet metal
A	damper inner clearance width [mm]
B	damper inner clearance height [mm]
W	number of damper cross divisions (0 – none)*
N	drive type*
	1 - with an actuator
	2 - manual mechanism
	3 - actuator-enabled
KL	EN 1751 leakage class*/**
	AX - housing: A, closed blades: none
	A2 - housing: A, closed blades: 2

* optional values – if blank, default values will be used

** casing air leakage class to 500 [Pa]

Order example: **PWII-O-400X405-W0-T2-AX**