

4/S1
v 3.3 (en)

VENTILATION LOUVRES

FZ, AFZV, AFZM, RZ, ARZ, PZ, ZP



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Definition of symbols:

V [m ³ /h]	- Air flow	v_h [m/s]	- Average core velocity at distance h (m) from a diffuser
V_n [m ³ /h]	- Nominal air flow	Δp [Pa]	- Total pressure drop
V_{uk} [m ³ /h]	- Total air volume in motion	t_p [°C]	- Air temperature in a room
h [m]	- Distance from the ceiling to the occupied zone	t_z [°C]	- Supply air temperature
H [m]	- Room height	t_m [°C]	- Core air temperature
A, B [m]	- Distance between diffusers	Δt_z [°C]	- ($t_z - t_p$)
x [m]	- Distance from wall	Δt_L [°C]	- ($t_m - t_p$)
L [m]	- Throw distance ($x+h$)	i	- Induction V_{uk}/V
A_{ef} [m ²]	- Effective discharge area	L_{WA} [dB(A)]	- Sound power level
v_{ef} [m/s]	- Effective jet velocity		
v_L [m/s]	- Average core velocity at distance L (m) from a diffuser		
v_{Lmax} [m/s]	- Maximum core velocity at distance L (m) from a diffuser		

FZ

AFZV

FZ | AFZV

- FZ - made out of galvanized steel sheet
- AFZV - made out of aluminium profiles
- Galvanized steel mesh on the back side
- Fixing with screws

Options:

- Installation subframe
- RAL...

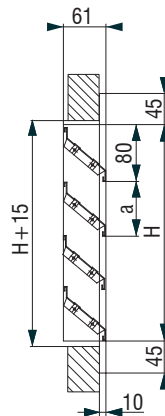
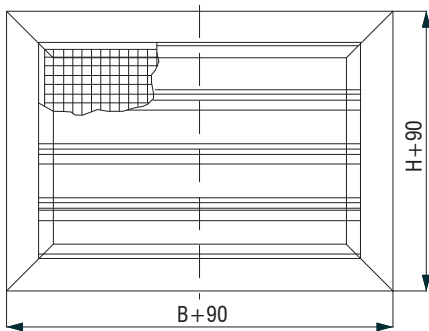
* Holes for screws are not drilled

Standard dimensions FZ, AFZV*

B	385 - 1885 mm, in increments 200mm
H	300 - 1800 mm, in increments 150mm

*all combinations B x H are possible

Free cross-section approx. 60 % of B x H



Dimension B > 1885 mm or H > 1800 mm

$$B = 2B1 + 90; H = 2H1 + 90$$

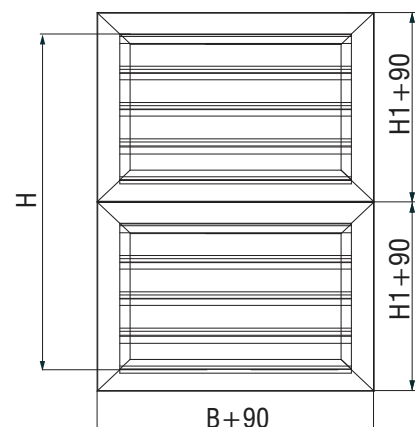
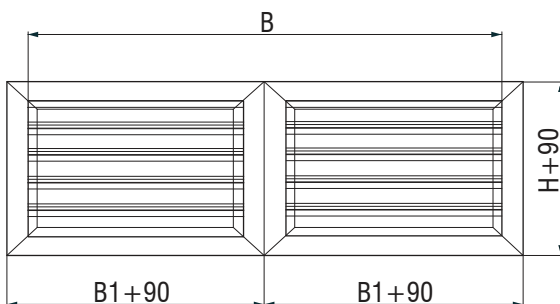
Example :

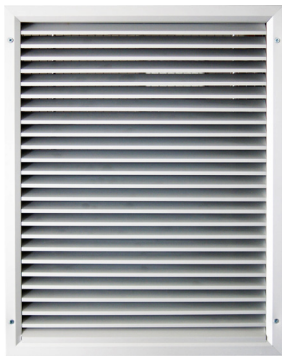
$$B = 1785 \text{ mm}$$

$$H = 3400 \text{ mm}$$

$$H = 2 H1 + 90$$

$$H1 = (H - 90)/2 = (3400 - 90)/2 = 1655$$





AFZM

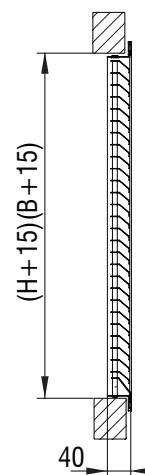
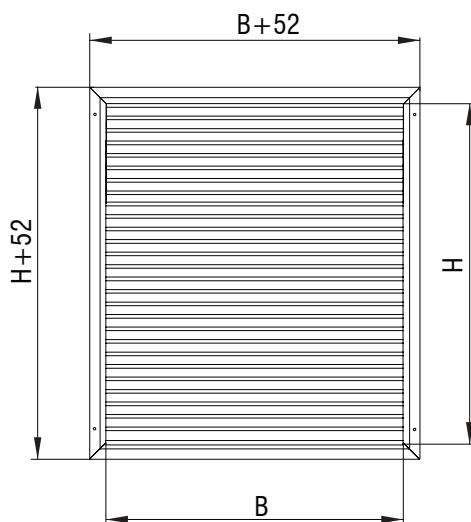
- Made out of anodized aluminium profiles
- Galvanized steel mesh on the back side
- Fixing with screws

Options:

- Installation subframe (UR)
- RAL...

Standard dimensions AFZM*	
B	297 - 1197 mm, in increments 100mm
H	197 - 497 mm, in increments 100mm

*all combinations B x H are possible



Free cross-section approx. 50 % of B x H

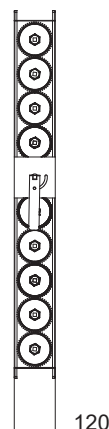
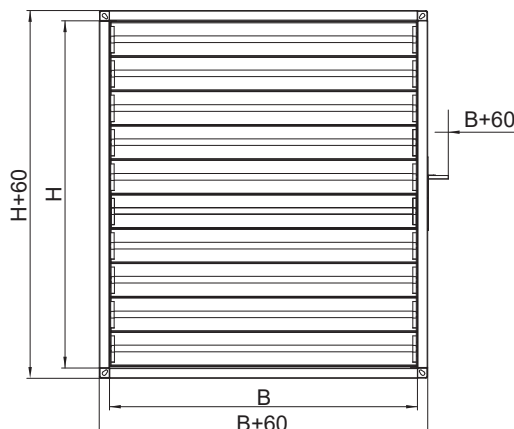


ZRZ12 / RZ12

-
- RZ - made out of galvanized steel sheet, gears and bearings made of ABS.
- Opposed damper blade operation
- $\Delta p_{max} = 1000 \text{ Pa}$; $t_{max} = 70^\circ\text{C}$

Standard dimensions RZ*	
B	200 - 1400 mm, in increments 100mm
H	200 - 1000 mm, in increments 100mm

*all combinations B x H are possible

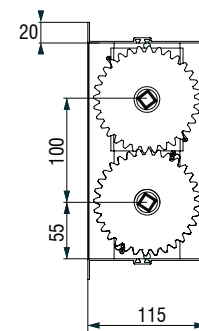
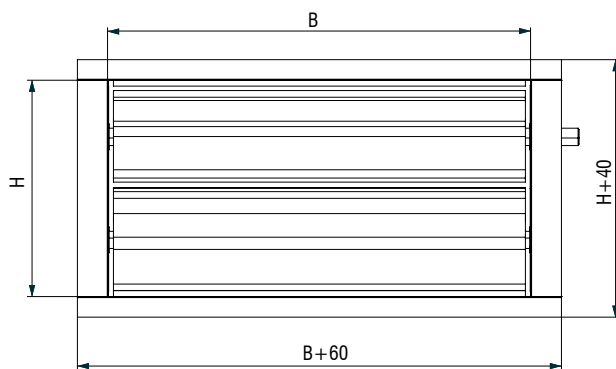


ARZ

- Made out of anodized aluminium profiles, gears and bearings made of ABS.
- Opposed damper blade operation
- Blade tip seals, made of specially profiled rubber provides excellent sealing characteristics
- $\Delta p_{\max} = 600 \text{ Pa}$; $t_{\max} = 70^\circ\text{C}$

Standard dimensions ARZ*

B	400 - 2400 mm, in increments 200mm
H	210 - 1510 mm, in increments 100mm

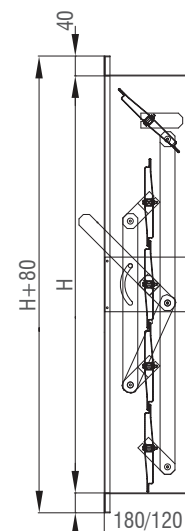
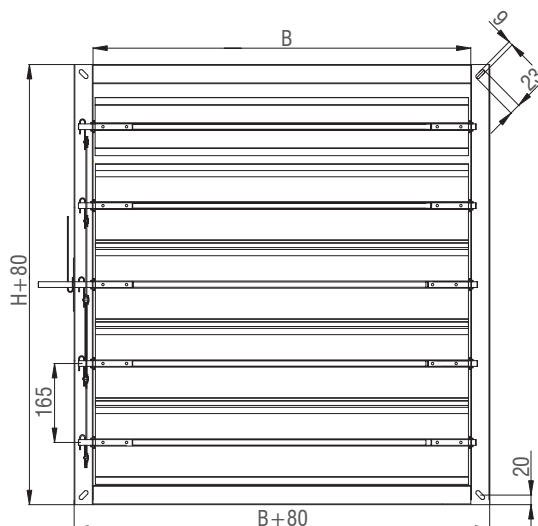

RZO

- Reinforced regulation louvre
- Made out of steel sheet profiles, reinforced damper blades out of steel profiles, brass bearings
- Frame width RZ012 - 120 mm
RZ018 - 180 mm
- Counter-rotating damper blades

Standard dimensions RZ*

B	400 - 2000 mm, in increments 200mm
H	345 - 1995 mm, in increments 195mm

*all combinations B x H are possible



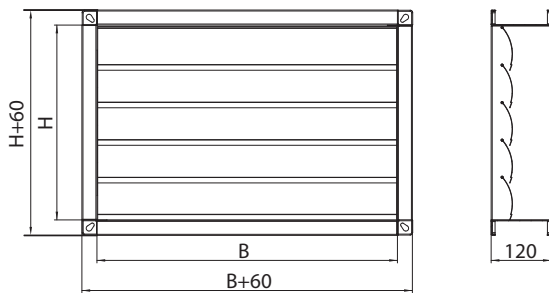


PZ

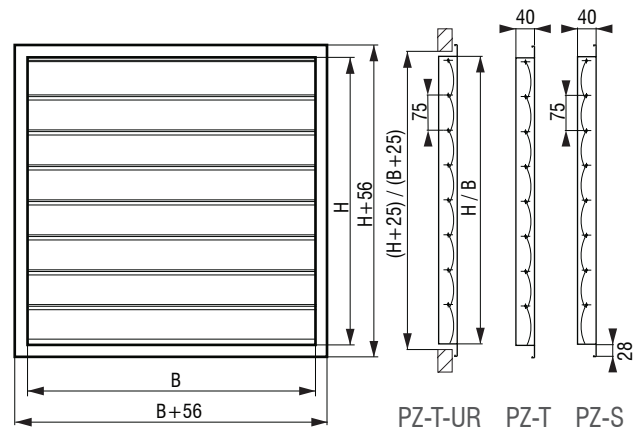
- Frame made of anodized aluminium profiles, blades made from anodized aluminium sheet.
- Duct version - frame made of galvanized steel sheet
- Wall or duct installation with screws

Options

- Overpressure (Exhaust)
- Underpressure (Supply)
- Duct type
- Discharge with square-to-cylindrical transition section
- Installation subframe



PZ-K



PZ-T-UR

PZ-T

PZ-S

Standard dimensions PZ-T, PZ-S, PZ-K*

B	200 - 1600 mm, in increments 200mm
H	240 - 1590 mm, in increments 75mm

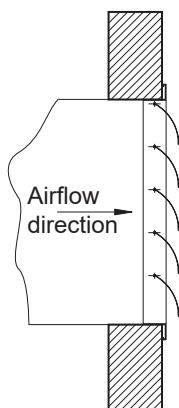
*all combinations B x H are possible

Standard dimensions PZ-T/O*

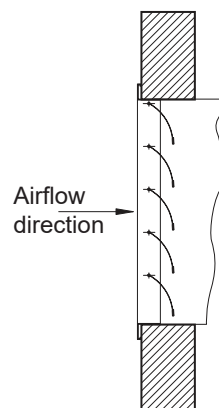
B	330 - 730 mm, in increments 50mm
øD	300 - 700 mm, in increments 50mm

*all combinations B x H are possible

OVERPRESSURE



UNDERPRESSURE




ZP

- Made of galvanized steel sheet
- Installed directly into the wall opening by anchor springs at the installation frame

Application

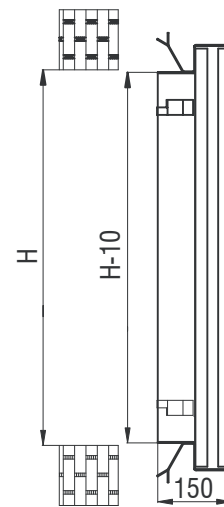
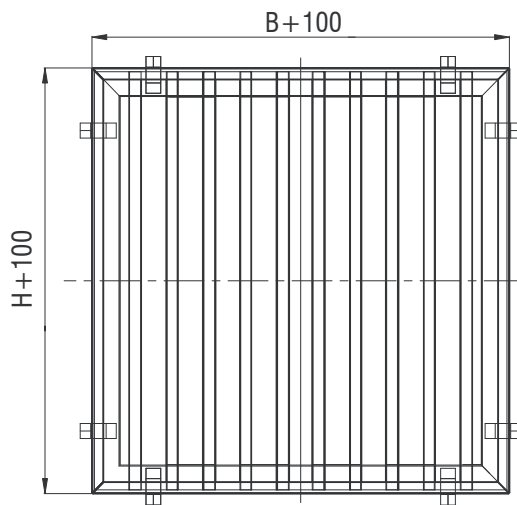
- Separation of sand from air stream
- Correct mounting position of the sand-trap louver is important
- Average efficiencies obtained by tests 80% particles 20 - 50 μm , or 50% particles 1 - 70 μm .
-

Options

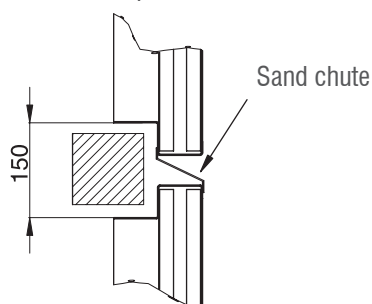
- RAL...

Standard dimensions ZP*	
B	300 - 2250 mm, in increments 150mm
H	300 - 2250 mm, in increments 150mm

*all combinations B x H are possible

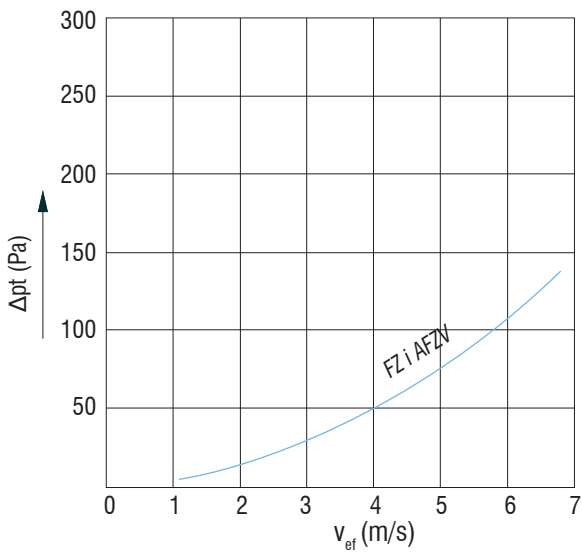


Vertical connection of two sand trap louvres

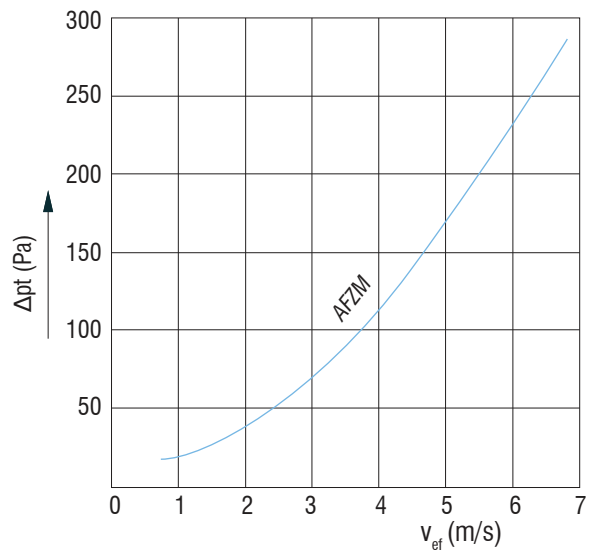


SELECTION DIAGRAMS

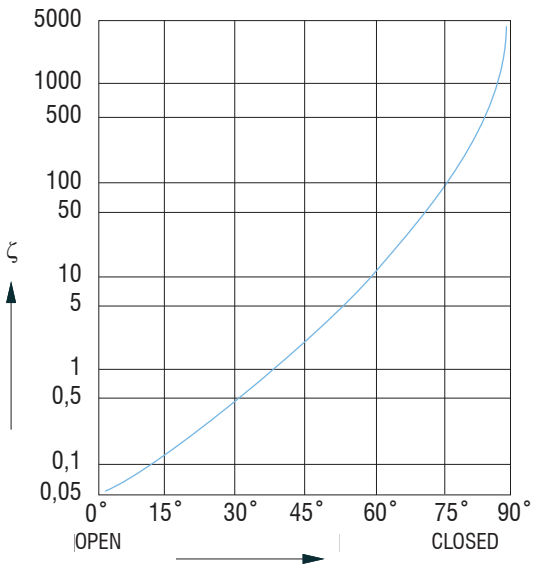
Pressure drop diagram - FZ



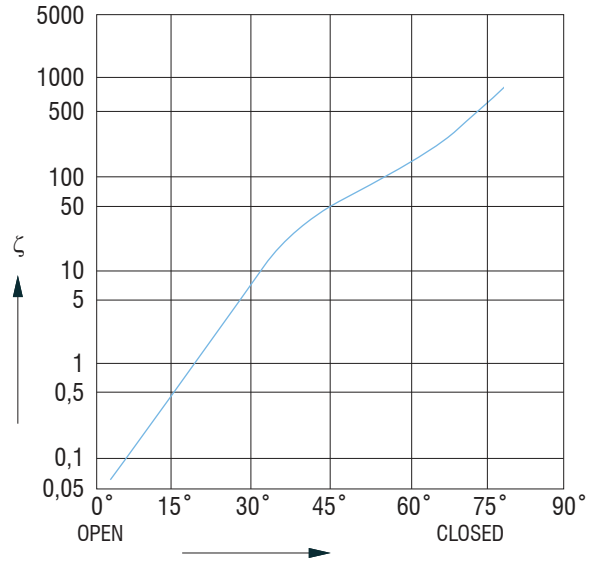
Pressure drop diagram - AFZM, AFZV



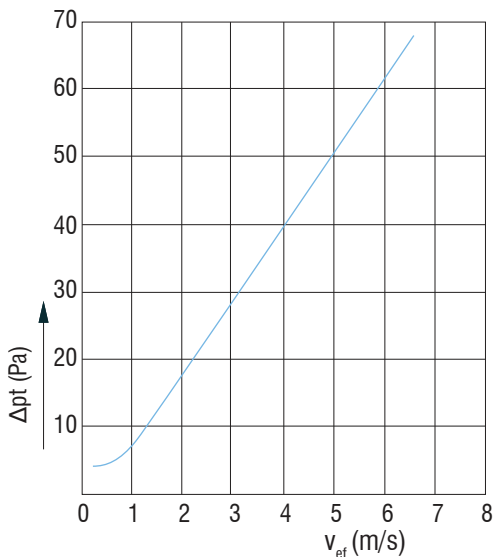
Flow resistance diagram - FZ



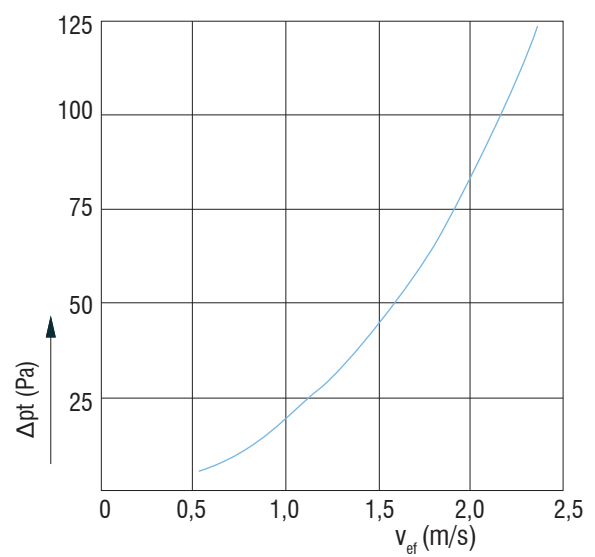
Flow resistance diagram - ARZ



Pressure drop diagram - PZ



Flow resistance diagram - ZP



ORDERING KEY

Louvre type	AFZM - 1785X1500 - UR - M²30 - OZ
	FZ, AFZV, AFZM, RZ12, RZO, ARZ, PZ-T, PZ-S, PZ-K, PZ-T/O, ZP
Dimensions	
Installation subframe (UR, IS)	
Drive (RZ, ARZ)	
	<ul style="list-style-type: none"> - R, manual - M 24, motor actuator 24 V - M 230, motor actuator 230 V
Regulation (RZ, ARZ)	
	<ul style="list-style-type: none"> - OZ (two positions) - K (continuous) - F (return spring)

* Screws are not delivered