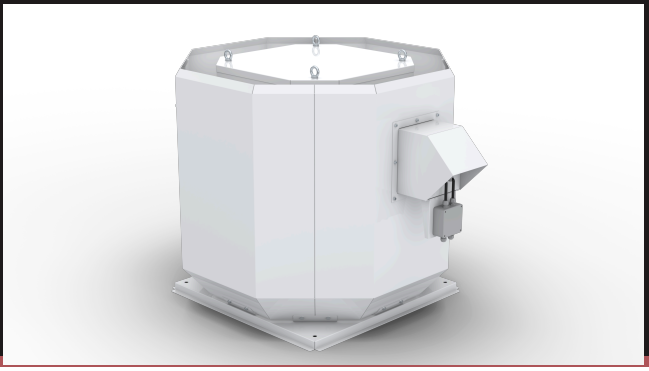
REF

ROOF EXHAUST FAN (REF)



Characteristics:
Roof exhaust fans REF are part of the smoke control system. They control the movement and accumulation of smoke and heat generated during fires.

AL | RAL | SO

version: 29/04/25

Intended use

REF fans with a radial rotor are designed for removing smoke, extract gases, and heat from buildings during a fire. These devices facilitate rescue and fire-fighting efforts, and improve the safety of people and assets in all types of buildings. They also prevent the spread of fire and smoke into zones free from fire. Suitable for various types of buildings: e.g. residential, office, hotels, public buildings, and industrial plants. They can operate as extraction fans in the following systems:

- general/domestic ventilation
- fire ventilation
- mixed ventilation [double-function, using a 2-speed motor]

Classification

REF fans have been tested in accordance with EN 12101-3 and classified according to EN 13501-4 in fire resistance class:

- $F_{400}120$
- $F_{300}60$
- $F_{200}120$

Design

- Rotor

A radial, unidirectional rotor made of steel sheet with a cast iron hub is mounted on the motor shaft. The rotor is statically and dynamically balanced in accordance with ISO 21940-11:2016, achieving a G-class of 6.3.

- Housing

The outer casing of the fan is an octagonal housing made of aluminium sheet. In the standard version, the fan housing is painted in RAL 7037 and has a thick structure. Upon the client's request, the housing can be powder-coated in any RAL colour.

- Motor

Inside the housing, an electric motor is seated on a support structure. It is an asynchronous motor, cooled by external air through an insulated cooling duct.
The motor housing has a protection class of IP 55 and insulation class of F.
The following motors are used to drive the fans:

- single speed 3-phase, up to and including 4kW [230/400V (Y)] or from 5.5kW [400/690V (D/Y)]
- 2-speed 3-phase 3000/1500 - winding combination - Dahlander [400V (YY/Y)] and 1500/1000 - winding combination - 2 windings - [400(Y)/400(Y)]

Motors with the following power rating: 0.18-22kW and rotational speed 750-3000rpm.
For proper fan operation, the frequency on the converter should not be lower than 25Hz.

Installation

The fans can be vertically mounted outside the building. The design of the fan allows it to be mounted on the base of a roof and a square masonry plinth. An example of how REF fans can be installed is shown in Figure 21.

Dimensions

REF roof-mounted fans are available in 7 sizes with the following, nominal diameters: 315, 355, 400, 500, 630, 710 and 800mm.

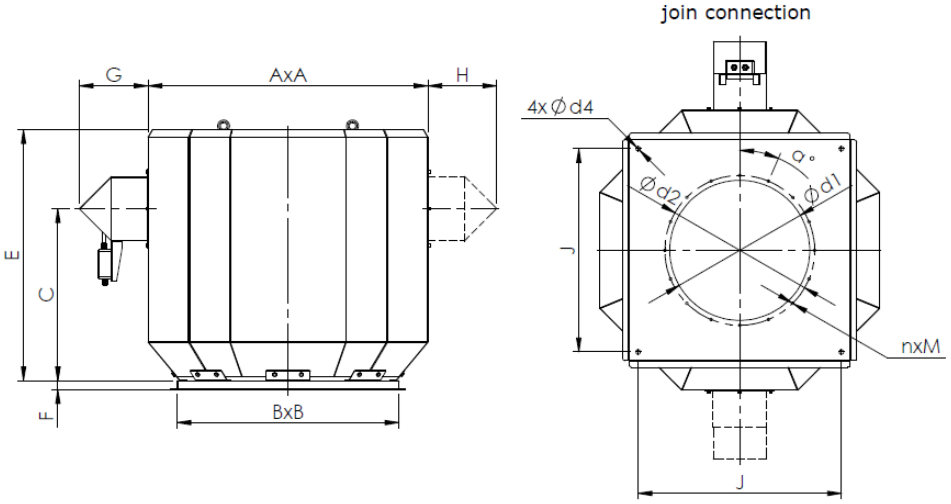


Figure 1. REF roof-mounted smoke extraction fan

Table 1. Dimensions of REF fans

Type	A [mm]	B [mm]	C [mm]	E [mm]	F [mm]	G [mm]	H [mm]	J [mm]	d1 [mm]	d2 [mm]	d4 [mm]	nxM	α [°]
REF 315	650	560	484	682	30	322	x	475	315	356	12.5	8xM8	45,0
REF 355	750	710	530	730	30	299	x	625	355	395	12.5	8xM8	45,0
REF 400	840	710	588	790	30	272	x	625	400	438	12.5	12xM8	30,0
REF 500	1000	1000	740	940	40	256	x	915	500	541	20	12xM8	30,0
REF 630	1260	1000	900	1130	40	310	310	915	630	674	20	16xM10	22,5
REF 710	1350	1160	955	1185	40	290	290	1075	710	751	20	16xM10	22,5
REF 800	1400	1160	1054	1282	40	332	332	1075	800	837	20	24xM10	15,0

'ORZEŁ' roof-mounted smoke extraction fan - REF 315

Table 2. Parameters of REF 315 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
315/750-0,18/ F400	750	0,18	0,93	230/400	66	56	$F_{400}120$	①
315/1000-0,37/ F400	1000	0,37	1,14	230/400	72	56	$F_{400}120$	①
315/1500-0,55/ F400	1500	0,55	1,39	230/400	79	57	$F_{400}120$	①
315/1500/750-0,5/0,1/ F400	1500/750	0,5/0,1	1,28/0,57	400/400	79/66	57	$F_{400}120$	②
315/1500/1000-0,55/0,18/F400	1500/1000	0,55/0,18	1,62/0,73	400/400	79/72	56	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

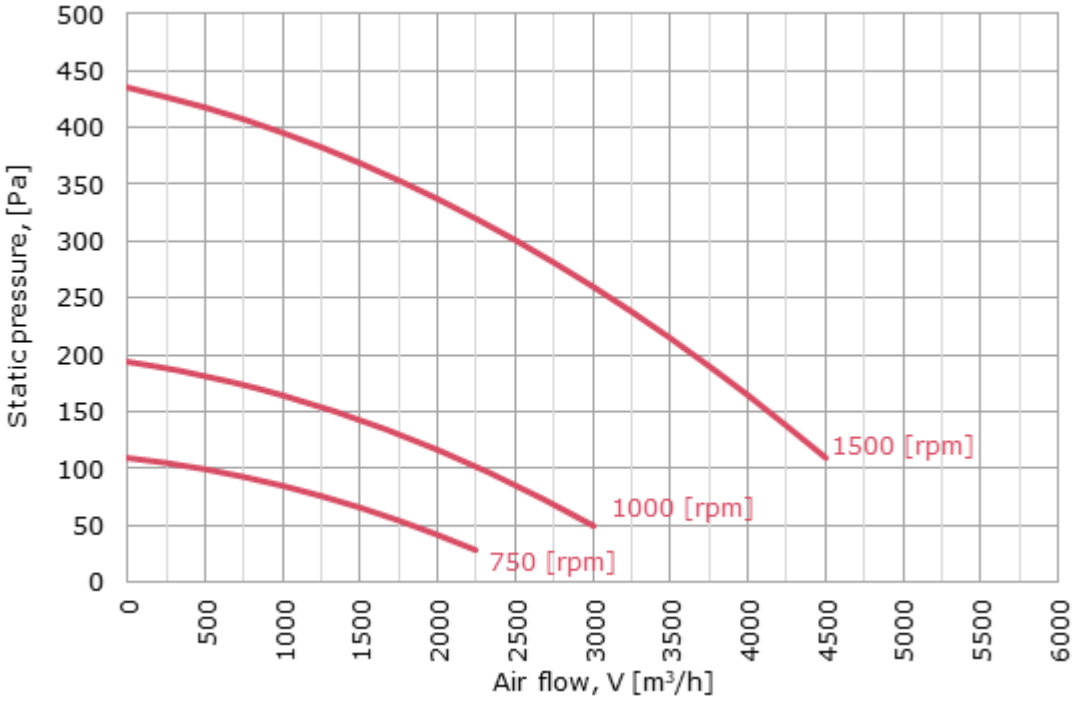


*Chart 1. Performance characteristics for REF smoke extraction fans with a nominal diameter of 315 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 355

Table 3. Parameters of REF 355 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
355/750-0,18/ F400	750	0,18	0,93	230/400	70	67	$F_{400}120$	①
355/1000-0,37/ F400	1000	0.37	1.14	230/400	76	67	$F_{400}120$	①
355/1500-1,1/ F400	1500	1,10	2,50	230/400	85	71	$F_{400}120$	①
355/3000-4/ F400	3000	4	7.9	400/400	95	89	$F_{400}120$	①
355/1500/750-1,0/0,22/ F400	1500/750	1,0/0,22	2,4/1,25	400/400	85/70	71	$F_{400}120$	②
355/1500/1000-1,1/0,38/ F400	1500/1000	1,1/0,38	2,65/1,33	400/400	85/76	74	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

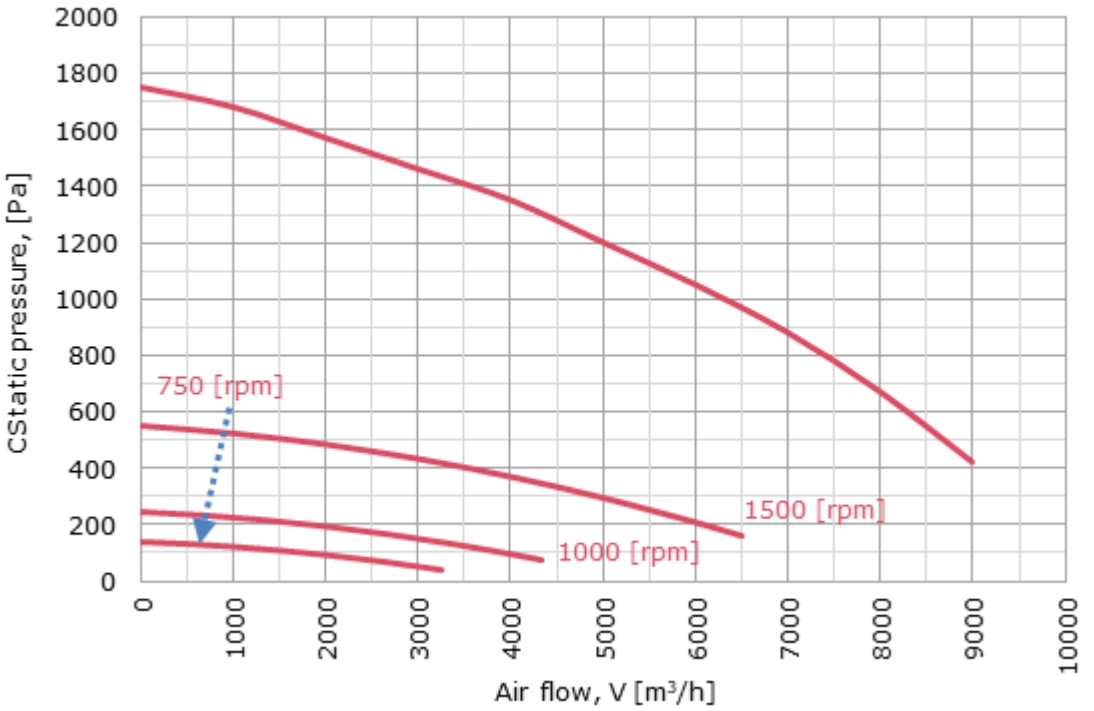


*Chart 2. Performance characteristics for REF smoke extraction fans with a nominal diameter of 355 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 400

Table 4. Parameters of REF 400 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
400/750-0,37/ F400	750	0,37	1,34	230/ 400	75	74	$F_{400}120$	①
400/1000-0,55/ F400	1000	0,55	1,65	230/ 400	82	76	$F_{400}120$	①
400/1500-1,5/ F400	1500	1,50	3,30	230/ 400	90	80	$F_{400}120$	①
400/1500/ 750-1,5/0,33/ F400	1500/ 750	1,5/ 0,33	3,3/ 1,8	400/ 400	90/ 75	80	$F_{400}120$	②
400/1500/ 1000-1,7/0,6/ F400	1500/ 1000	1,7/ 0,6	3,9/ 2,5	400/ 400	90/ 82	85	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

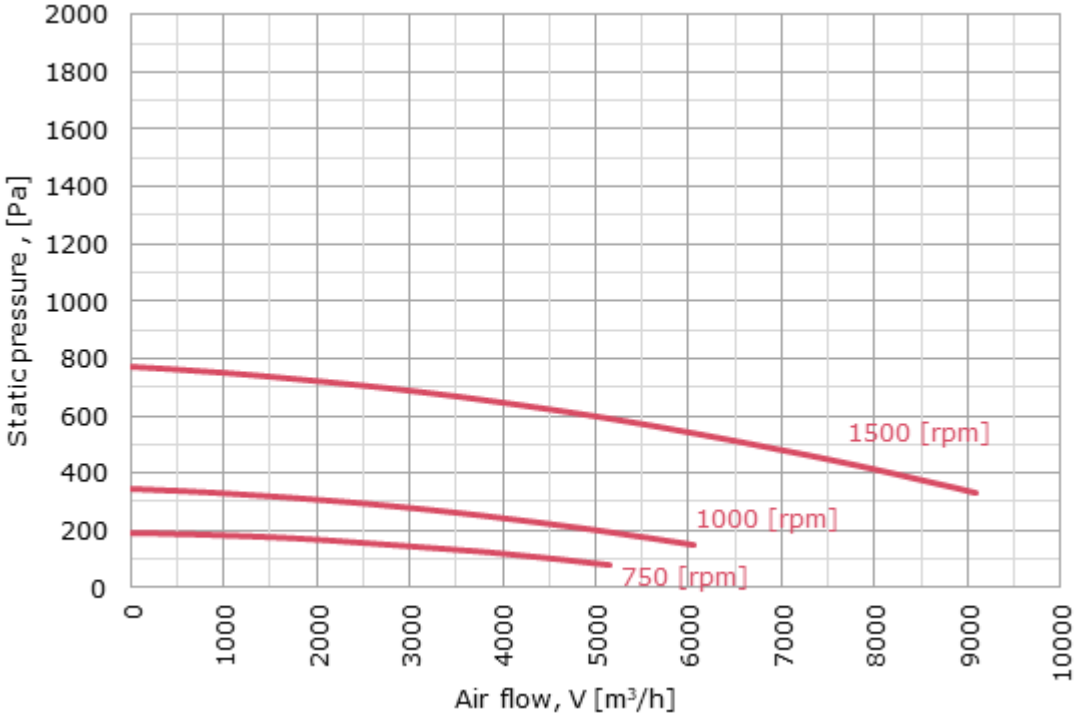


*Chart 3. Performance characteristics for REF smoke extraction fans with a nominal diameter of 400 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 500

Table 5. Parameters of REF 500 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
500/750-0,55/ F400	750	0,55	1,74	230/ 400	76	131	$F_{400}120$	①
500/1000-1,1/ F400	1000	1,10	2,90	230/ 400	84	134	$F_{400}120$	①
500/1500-4/ F400	1500	4,00	8,20	230/ 400	96	147	$F_{400}120$	①
500/1500/ 750-4,7/1,1/ F400	1500/ 750	4,7/ 1,1	9,6/ 4,75	400/ 400	96/ 76	159	$F_{400}120$	②
500/1500/ 1000-3,9/1,2/ F400	1500/ 1000	3,9/ 1,2	8,2/ 3,4	400/ 400	96/ 84	159	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

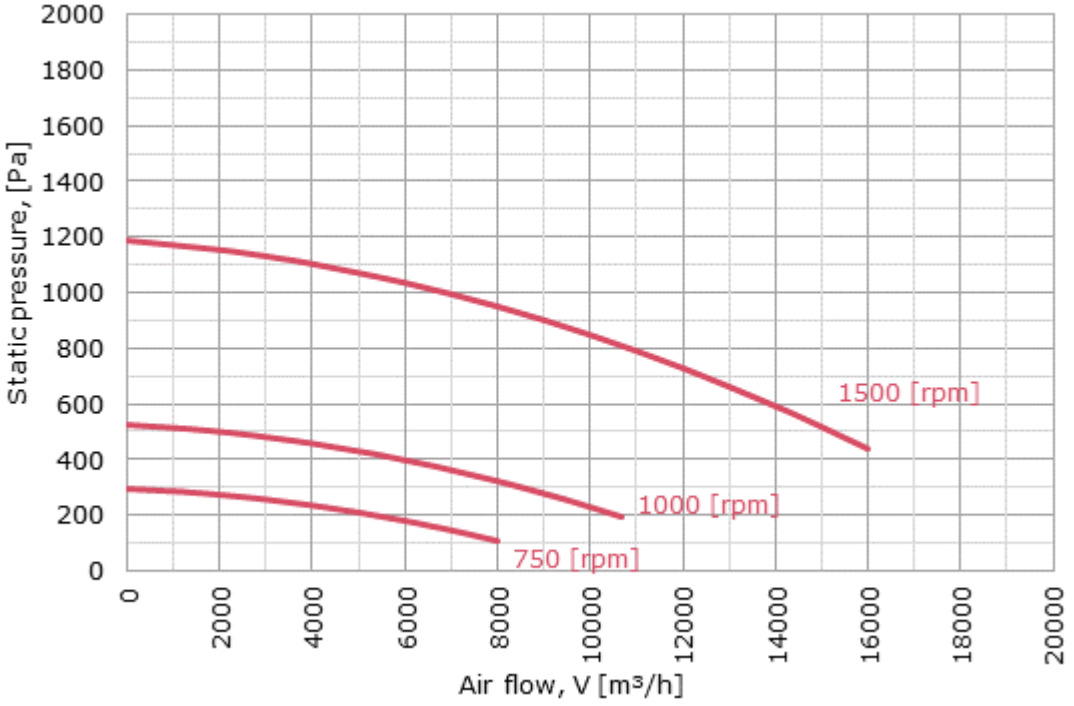


*Chart 4. Performance characteristics for REF smoke extraction fans with a nominal diameter of 500 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 630 Type 1

Table 6. Paramters of REF 630 type 1 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
630/750-1,5/ F400	750	1,5	4,7	230/400	83	245	$F_{400}120$	①
630/1000-4/ F400	1000	4,0	9,1	230/400	90	259	$F_{400}120$	①
630/1500-11/ F400	1500	11,0	21,0	400/400	101	300	$F_{400}120$	①
630/1500/750-14/3,3/ F400	1500/750	14/3,3	32,5/10,4	400/400	101/83	308	$F_{400}120$	②
630/1500/1000-12/3,7/ F400	1500/1000	12/3,7	24,5/9,4	400/400	101/90	309	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

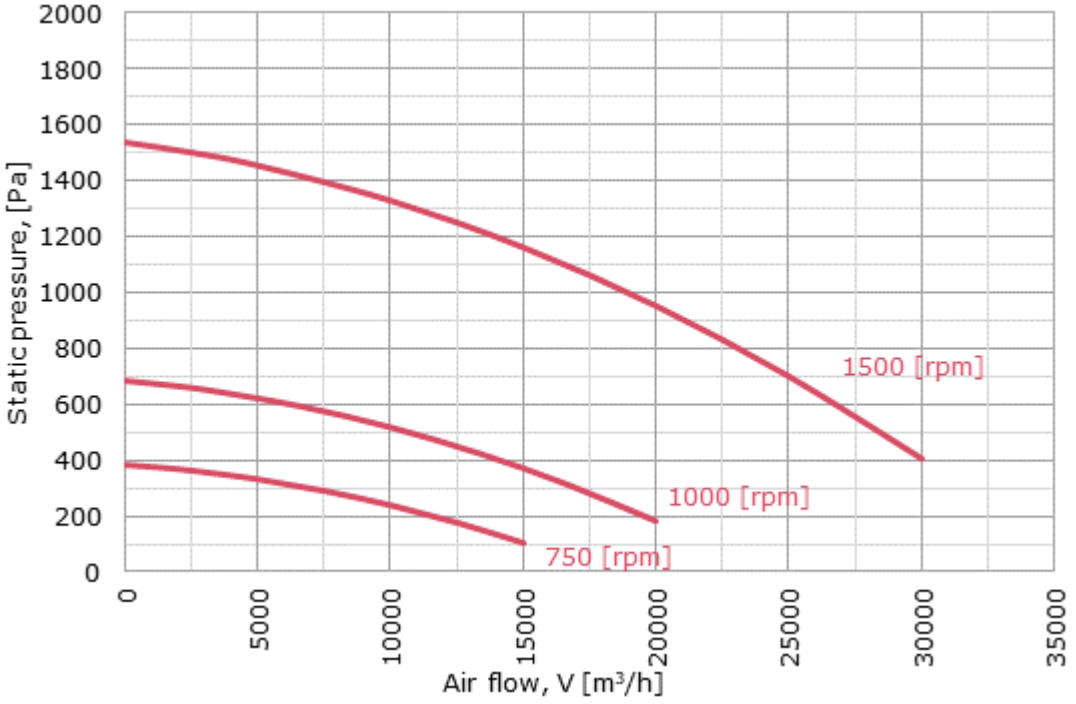


*Chart 5. Performance characteristics for REF smoke extraction fans with a nominal diameter of 630 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 630 Type 2

Table 7. Parameters of REF 630 type 2 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
630/750-2,2/ F400	750	2,2	6,6	230/400	88	263	$F_{400}120$	①
630/1000-5,5/ F400	1000	5,5	12,1	230/400	93	274	$F_{400}120$	①
630/1500-18,5/ F400	1500	18,5	35,0	400/400	105	389	$F_{400}120$	①
630/1500/750-18,5/ 5,5/ F400	1500/750	18,5/5,5	37/15,4	400/400	105/88	404	$F_{400}120$	②
630/1500/1000-19/ 6,5/ F400	1500/1000	19/6,5	38/16,5	400/400	105/93	399	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

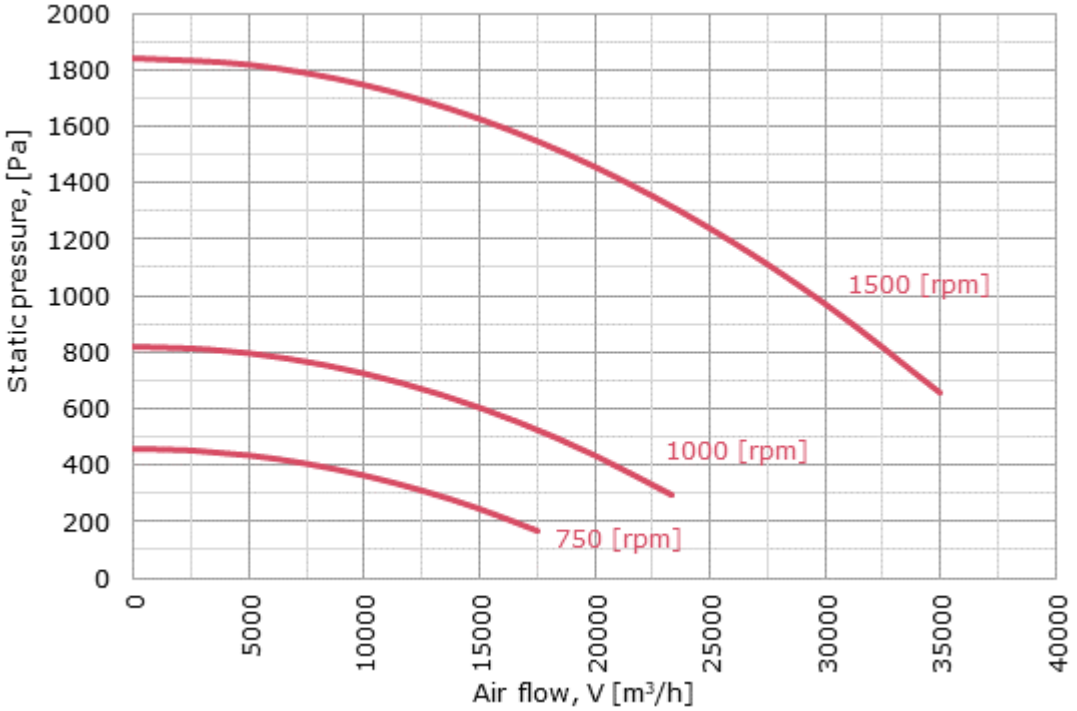


*Chart 6. Performance characteristics for REF smoke extraction fans with a nominal diameter of 630 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 710 Type 1

Table 8. Parameters of REF 710 type 1 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
710/750-2,2/ F400	750	2,2	6,6	230/ 400	89	290	$F_{400}120$	①
710/1000-5,5/ F400	1000	5,5	12,1	400/ 690	95	301	$F_{400}120$	①
710/1500-18,5/F400	1500	18,5	35,0	400/ 690	101	415	$F_{400}120$	①
710/ 1500/750-18/ 5,5/ F400	1500/ 750	18,5/ 5,5	37/ 15,4	400/ 400	101/ 89	430	$F_{400}120$	②
710/1500/ 1000-19/6,5/ F400	1500/ 1000	19/ 6,5	38/ 16,5	400/ 400	101/ 95	425	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

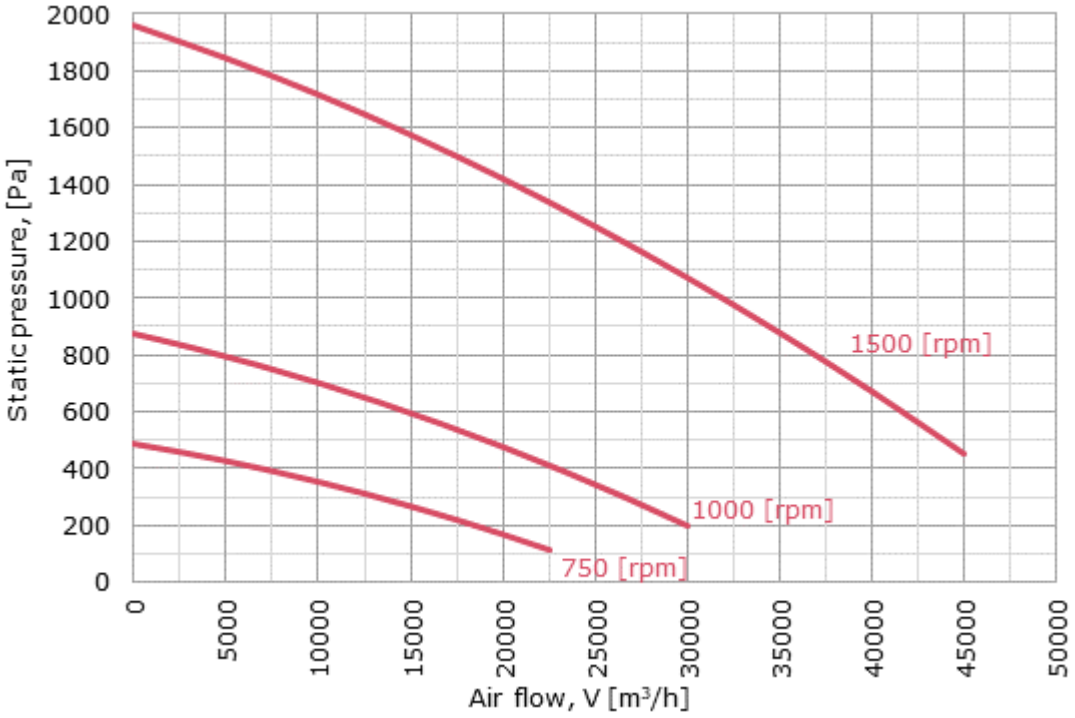


*Chart 7. Performance characteristics for REF smoke extraction fans with a nominal diameter of 710 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

'ORZEŁ' roof-mounted smoke extraction fan - REF 710 Type 2

Table 9. Parameters of REF 710 type 2 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
710/750-3/ F400	750	3,0	8,7	230/400	93	304	$F_{400}120$	①
710/1000-7,5/ F400	1000	7,5	16,8	400/690	98	349	$F_{400}120$	①
710/1500-22/ F400	1500	22,0	41,5	400/690	106	436	$F_{400}120$	①
710/1500/750-28/7,5/ F400	1500/750	28/7,5	53/21	400/400	106/93	486	$F_{400}120$	②
710/1500/1000-26/9,5/ F400	1500/1000	26/9,5	52/23	400/400	106/98	501	$F_{400}120$	②

LEGEND

① – single-speed motor

② – two-speed motor

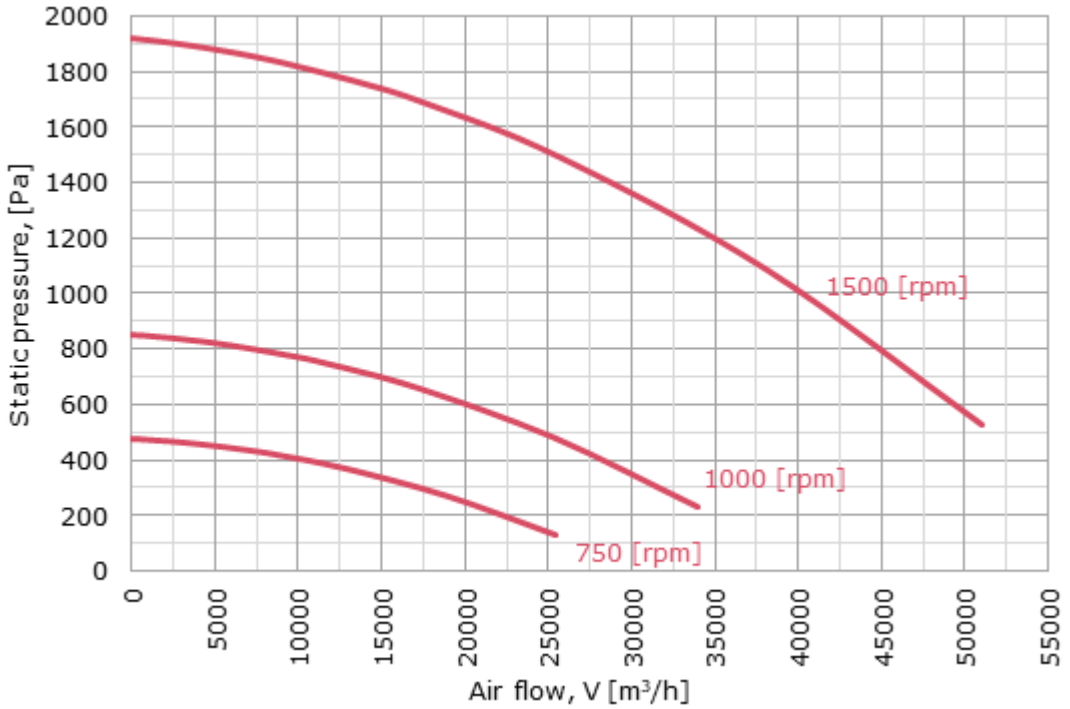


*Chart 8. Performance characteristics for REF smoke extraction fans with a nominal diameter of 710 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

‘ORZEŁ’ roof-mounted smoke extraction fan - REF 800

Table 10. Parameters of REF 800 fans

REF fan	Rotational speed, n [rpm]	Engine powe, P [kW]	Current intensity, I [A]	Supply voltage, U [V]	Acoustic power level, Lwa [dB(A)]	Weight, M [kg]	Fire resistance rating	Motor type
800/750-4/ F400	750	4	10,5	230/400	95	361	$F_{400}120$	①
800/1000-11/ F400	1000	11	23,5	400/690	100	407	$F_{400}120$	①

LEGEND

① – single-speed motor

② – two-speed motor

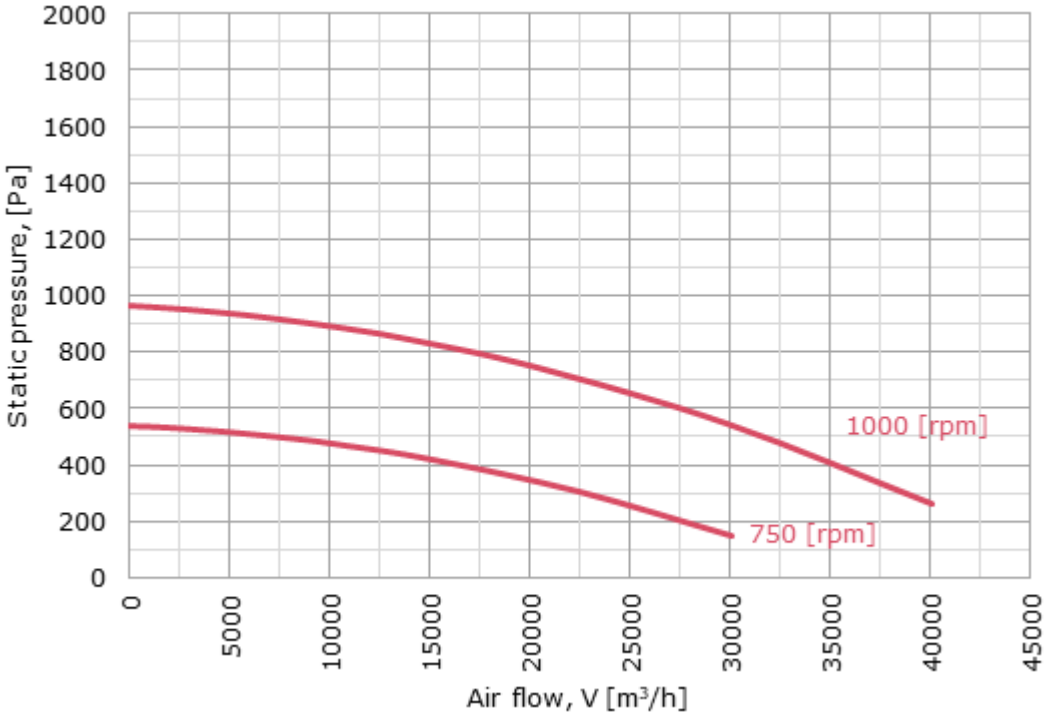


*Chart 9. Performance characteristics for REF smoke extraction fans with a nominal diameter of 800 [mm]***

* Acoustic power at the mouth of the unit is determined for the highest capacity of the unit

** Flow characteristics are designated t=20ºC and ρ=1.2kg/m^3

Additional accessories for REF roof-mounted smoke extraction fans

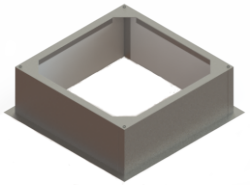


Figure 2. PDT-R insulated roof base

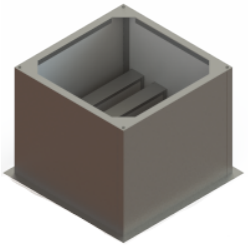


Figure 3. PDTK-R damping roof base

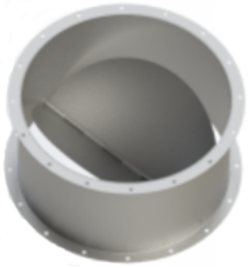


Figure 4. KZS-R self-operating check valve

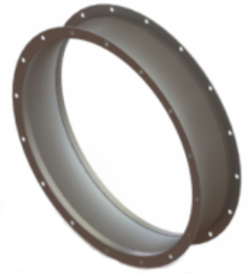


Figure 5. KEK-R expansion joint

Figure 6. PK-R mounting flange

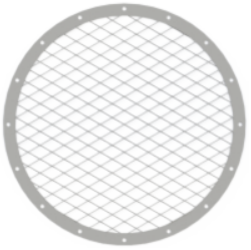


Figure 7. SOW-R screening net

Figure 8. TL-C-R duct silencer

Figure 9. TL- CN-R duct silencer with core

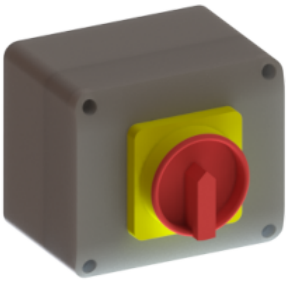


Figure 10. WB-R service switch

PDT-R insulated roof base

- Intended use:

The insulated roof base is designed for vertical mounting of the REF roof-mounted smoke extraction fan.

- Design:

The roof base is made of galvanised steel sheet. The insulation is a 50mm-thick, stone wool slab.

- Installation:

The insulated roof base is fitted to the vertical plinth. The fan is mounted on the base using four screws of different diameters, depending on the size of the fan.

- Dimensions:

Four sizes of insulated square roof bases are available, each with an exact height of 350mm.

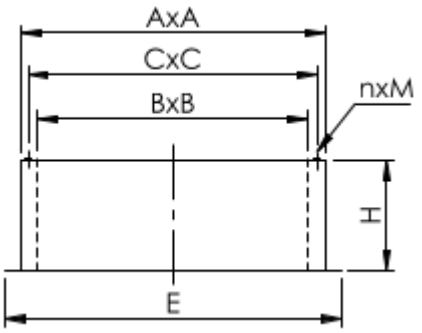


Figure 11. PDT-R insulated roof base dimensions

Table 11. PDT-R insulated roof base parameters

Type	A [mm]	B [mm]	C [mm]	E [mm]	H [mm]	n x M [mm]	Wieght [kg]	Designed for
PDT-R 525 x 525 / 350	525	419	475	625	350	4 x M8	19	REF-315
PDT-R 675 x 675 / 350	675	569	625	775	350	4 x M8	25	REF-400, REF-355
PDT-R 965 x 965 / 350	965	858	915	1065	350	4 x M12	42	REF-630, REF-500
PDT-R 1125 x 1125 / 350	1125	1018	1075	1225	350	4 x M16	60	REF-800, REF-710

PDTK-R damping roof base

- Intended use:

The damping roof base is designed for vertical mounting of the REF smoke extraction fan.

- Design:

The roof base is made of steel sheet. The insulation and internal damping spheres are made of 50mm-thick, stone wool slab.

- Installation:

The damping roof base is fitted to the vertical plinth. The fan is mounted on the base using four screws of different diameters, depending on the size of the fan.

- Dimensions:

Four sizes of damping square roof bases are available: two with a height of 800mm for fans with diameters of 315, 355, and 400; and two with a height of 1000mm for fans with diameters of 500, 630, 710, and 800mm.

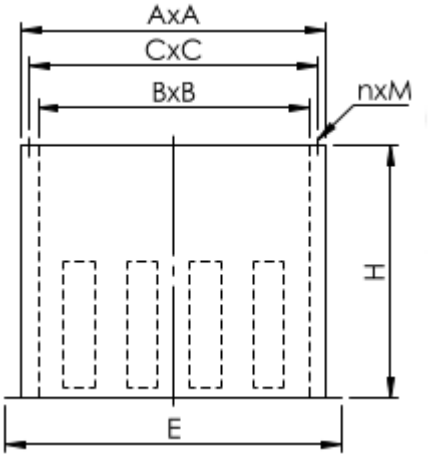


Figure 12. PDTK-R damping roof base dimensions

Table 12. PDTK-R damping roof base parameters

Type	A [mm]	B [mm]	C [mm]	E [mm]	H [mm]	n x M [mm]	Weight [kg]	Designed for
PDTK-R 525 x 525 / 800	525	419	475	625	800	4 x M8	44	REF-315
PDTK-R 675 x 675 / 800	675	569	625	775	800	4 x M8	58	REF-400, REF-355
PDTK-R 965 x 965 / 1000	965	858	915	1065	1000	4 x M12	135	REF-630, REF-500
PDTK-R 1125 x 1125 / 1000	1125	1018	1075	1225	1000	4 x M16	192	REF-800, REF-710

KZS-R self-operating check valve

- Intended use:

The self-operating check valve is designed to prevent the entry of outside air into the building when the REF smoke extraction fan on the roof is not in operation. This reduces heat loss during winter periods and stops uncontrolled air circulation.

- Design:

The check valve housing is made of steel sheet.

- Installation:

Holes are made in the flange of the check valve, enabling it to be screwed directly to a fan or to any other component of the installation.

- Dimensions:

There are seven sizes available.

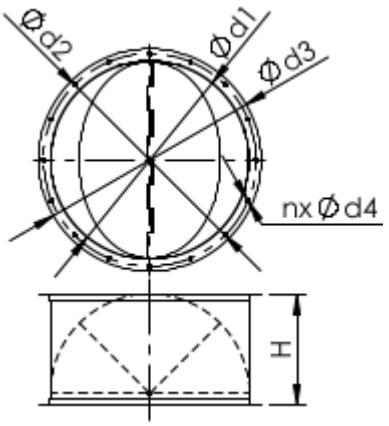


Figure 13. KZS-R self-operating check valve dimensions

Table 13. KZS-R self-operating check valve parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
KZS-R 315	315	356	380	8 x Ø 10	4	190	REF-315
KZS-R 355	355	395	420	8 x Ø 10	4.3	210	REF-355
KZS-R 400	400	440	460	8 x Ø10	5	260	REF-400
KZS-R 500	500	541	565	12 x Ø 10	8	290	REF-500
KZS-R 630	630	674	705	16 x Ø 12	12	350	REF-630
KZS-R 710	710	751	780	16 x Ø 12	14.5	390	REF-710
KZS-R 800	800	837	875	24 x Ø 12	18	440	REF-800

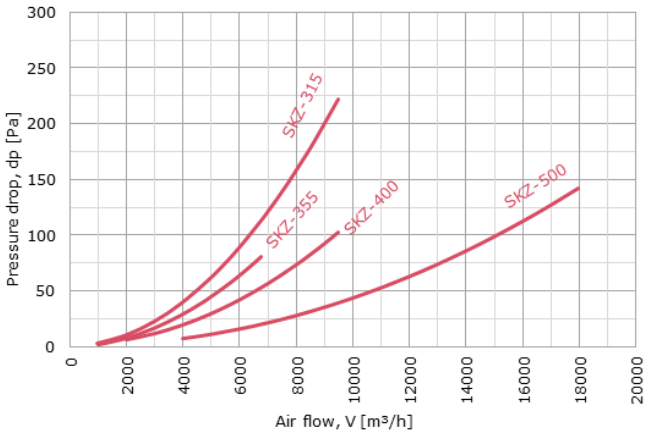


Chart 10. KZS-R 315,355,400,500 resistance characteristics

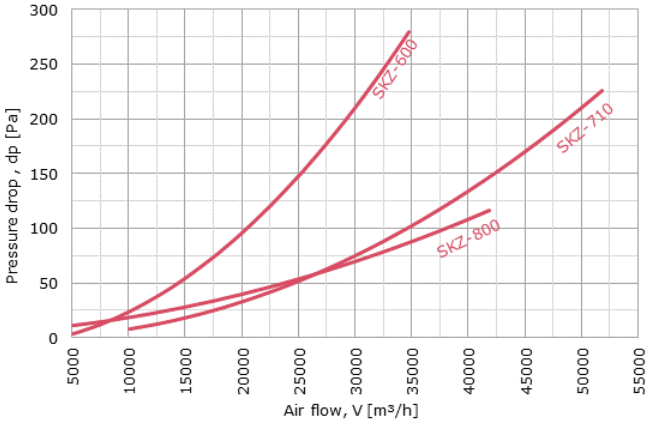


Chart 11. KZS-R 630,710,800 resistance characteristics

KEK-R expansion joint

- Intended use:

The expansion joint is designed to eliminate the transmission of fan-generated ventilation system vibrations.
It acts as a vibration-compensator.

- Design:

The expansion joint has a layered construction. On both sides of the expansion joint, there is a flange with a drilling corresponding to a hole in the fan flange.
The special silicone-coated glass fabric provides a fire resistance of 400° for 120 min. The expansion joint is weatherproof.

- Installation:

The expansion joint is installed in the ventilation system using provided-mounting flanges (2 flanges per 1 expansion joint) and screws. The contact surfaces between the fan and its flange should be sealed with high-temperature silicone.

- Dimensions:

There are seven sizes available. The expansion joint is 150mm long. The expansion joint must not carry any axial load.

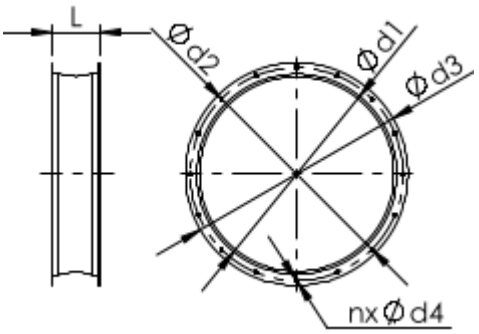


Figure 14. KEK-R expansion joint dimensions

Table 14. KZS-R self-operating check valve parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
KZS-R 315	315	356	380	8 x Ø 10	4	190	REF-315
KZS-R 355	355	395	420	8 x Ø 10	4.3	210	REF-355
KZS-R 400	400	440	460	8 x Ø10	5	260	REF-400
KZS-R 500	500	541	565	12 x Ø 10	8	290	REF-500
KZS-R 630	630	674	705	16 x Ø 12	12	350	REF-630
KZS-R 710	710	751	780	16 x Ø 12	14.5	390	REF-710
KZS-R 800	800	837	875	24 x Ø 12	18	440	REF-800

PK-R mounting flange

- Intended use:

The mounting flange is designed for the installation of expansion joints located on the roof-mounted smoke extraction fan.

- Design:

The mounting flange is made of galvanised steel sheet 2÷3mm thick, and the flange width is 65÷75mm, depending on the size of the flange diameter.

- Installation:

The mounting flange is fitted directly to the fan and/or the check valve. Its drilling corresponds to the fan flange.

- Dimensions:

The mounting flanges are available in seven sizes.

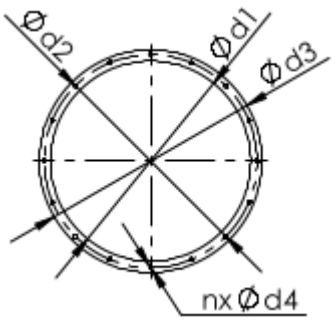


Figure 15. PK-R mounting flange dimensions

Table 15. PK-R mounting flange parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
PK-R-315	315	356	380	8 x Ø 10	0.5	2	REF-315
PK-R-355	355	395	420	8 x Ø 10	0.6	2	REF-355
PK-R-400	400	440	460	8 x Ø10	0.7	2	REF-400
PK-R-500	500	541	565	12 x Ø 10	1.2	3	REF-500
PK-R-630	630	674	705	16 x Ø 12	1.7	3	REF-630
PK-R-710	710	751	780	16 x Ø 12	1.8	3	REF-710
PK-R-800	800	837	875	24 x Ø 12	2.2	3	REF-800

SOW-R screening net

- Intended use:

To keep foreign objects from entering the installation, a screening net has been installed to protect the REF smoke extraction fan.

- Design:

The screening net is made of galvanised steel sheet and galvanised mesh. Its flange is made of galvanised steel sheet 2÷3mm thick.

- Installation:

The screening net is mounted with a flange to the fan housing.

- Dimensions:

There are seven sizes available.

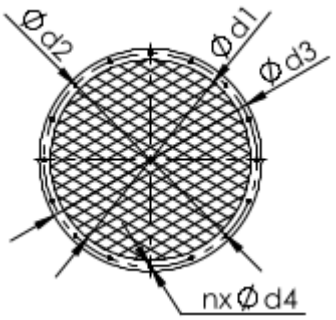


Figure 16. SOW-R screening net dimensions

Table 16. SOW-R screening net parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
SOW-R 315	315	356	380	8 x Ø 10	0,7	2	REF-315
SOW-R 355	355	395	420	8 x Ø 10	0,8	2	REF-355
SOW-R 400	400	440	460	8 x Ø10	0,9	2	REF-400
SOW-R 500	500	541	565	12 x Ø 10	1,6	3	REF-500

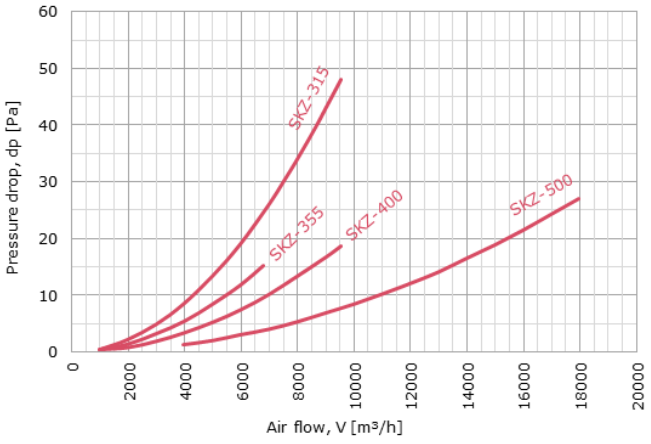


Chart 12. SOW-R 315,355,400,500 resistance characteristics

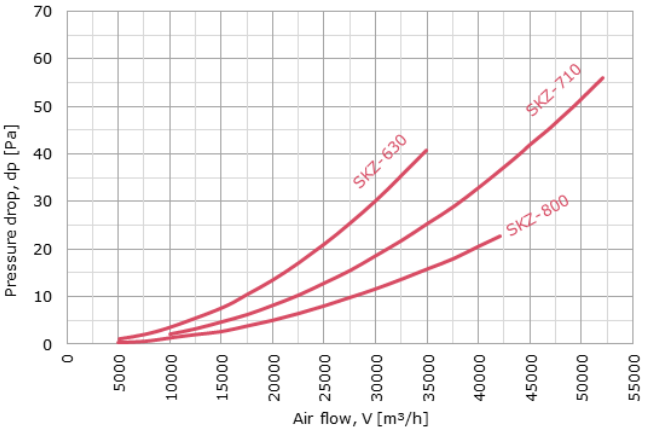


Chart 13. SOW-R 630,710,800 resistance characteristics

TL-C-R duct silencer

- Intended use:

The duct silencer is designed to reduce fan noise, suitable for mounting to circular fans and ventilation ducts.
TLC silencers are delivered without an inner core.

- Design:

The housing is made of galvanised steel sheet. Acoustic material in the form of non-combustible mineral wool covered with perforated sheeting.

- Installation:

Threaded holes in the silencer allow direct mounting of other fittings. Optional connection flanges may be required when connecting directly to the fan.

- Dimensions:

There are seven sizes available.

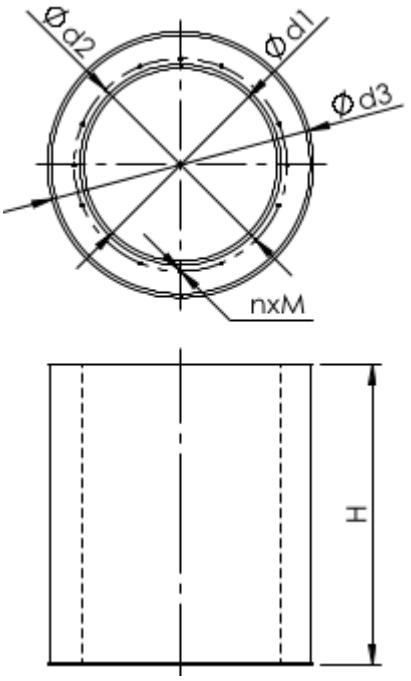


Figure 17. TL-C-R duct silencer dimensions

Table 17. TL-C-R duct silencer parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
TLC-R-315	315	356	515	8 x Ø 8	32	950	REF-315
TLC-R-355	355	395	555	8 x Ø 8	37	950	REF-355
TLC -R-400	400	440	600	8 x Ø 8	50	950	REF-400
TLC -R-500	500	541	700	12 x Ø 8	58	950	REF-500
TLC -R-630	630	674	830	16 x Ø 10	71	950	REF-630
TLC -R-710	710	751	910	16 x Ø 10	107	1400	REF-710
TLC -R-800	800	837	1000	24 x Ø 10	129	1400	REF-800

TL-CN-R duct silencer with core

- Intended use:

The duct silencer is designed to reduce fan noise, suitable for mounting to circular fans and ventilation ducts.
TL-CN-R silencers are supplied with an inner core to increase the attenuation capacity.

- Design:

The housing is made of galvanised steel sheet. Acoustic material in the form of non-combustible mineral wool. The inner core is made of sound-absorbing material in a perforated steel sheet housing.

- Installation:

Threaded holes in the duct silencer allow direct mounting of other accessories. Optional connection flanges may be required when connecting directly to the fan.

- Dimensions:

There are seven sizes available

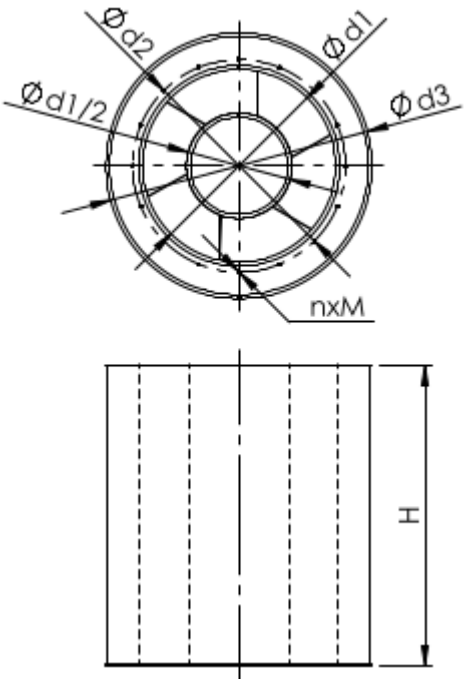


Figure 18. TL-CN-R duct silencer with core dimensions

Table 18. TL-CN-R duct silencer with core parameters

Type	d1 [mm]	d2 [mm]	d3 [mm]	n x d4 [mm]	Weight [kg]	H [mm]	Designed for
TLCN-R 315	315	356	515	8 x Ø 8	37	950	REF-315
TLCN-R 355	355	395	555	8 x Ø 8	43	950	REF-355
TLCN-R 400	400	440	600	8 x Ø 8	56	950	REF-400
TLCN-R 500	500	541	700	12 x Ø 8	64	950	REF-500
TLCN-R 630	630	674	830	16 x Ø 10	79	950	REF-630
TLCN-R 710	710	751	910	16 x Ø 10	118	1400	REF-710
TLCN-R 800	800	837	1000	24 x Ø 10	140	1400	REF-800

WB-R service switch

- Intended use:

The service switch is used to stop the fans before service or maintenance work is carried out. A 3-pole service switch is designed for fans supplied with 230/400V. 6-pole switches are designed both for fans supplied with 400/690V and for 2-speed fans.

- Design:

The service switch is made of plastic.

- Installation:

Using four screws with different diameters, depending on the size of the switch.

- Dimensions:

There are five sizes available

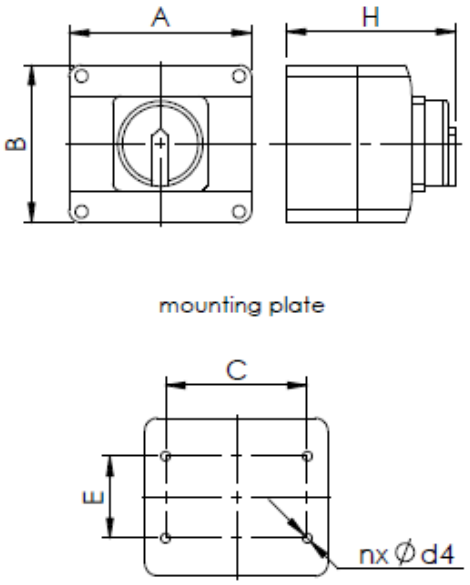


Figure 19. WB-R service switch dimensions

Table 19. WB-R service switch parameters

Type	A [mm]	B [mm]	C [mm]	E [mm]	H [mm]	nxd4 [mm]	Weight [kg]	Designed for
WB-R-16-3	90	90	67	48	95	4xØ 4,2	0,3	REF-315, 355, 400, 500 (I-speed), 630 (1,5; 4; 2,2 kW), 710 (2,2; 3 kW), 800 (4kW),
WB-R-16-6	90	90	67	48	95	4xØ 4,2	0,3	REF-315, 355, 400, 500 (II-speed), 630, 710 (5,5kW)
WB-R-25-6	116	100	90	52	128	4xØ 4,2	0,4	REF-630-I (II-speed), 630, 710, 800 (11 kW)
WB-R-40-6	116	100	90	52	108	4xØ 6	0,5	REF-630-II (II-speed), 630, 710 (18,5 kW)
WB-R-63-6	170	105	105	95	185	4xØ 6	0,9	REF-710 (II-speed), (22kW)

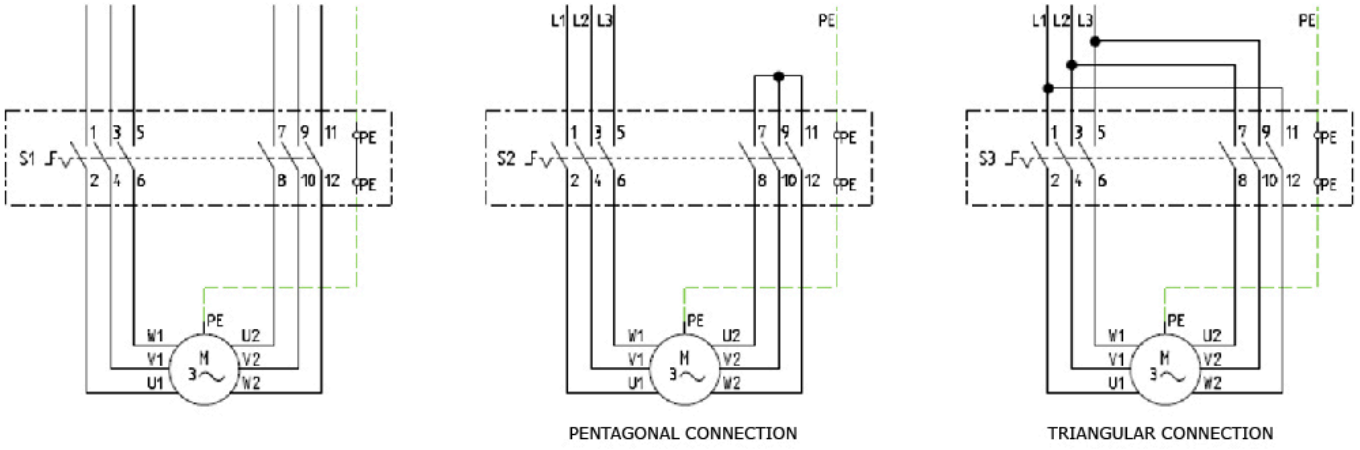


Figure 20. WB-R service switch wiring diagrams

Installation example of an REF roof-mounted smoke extraction fan

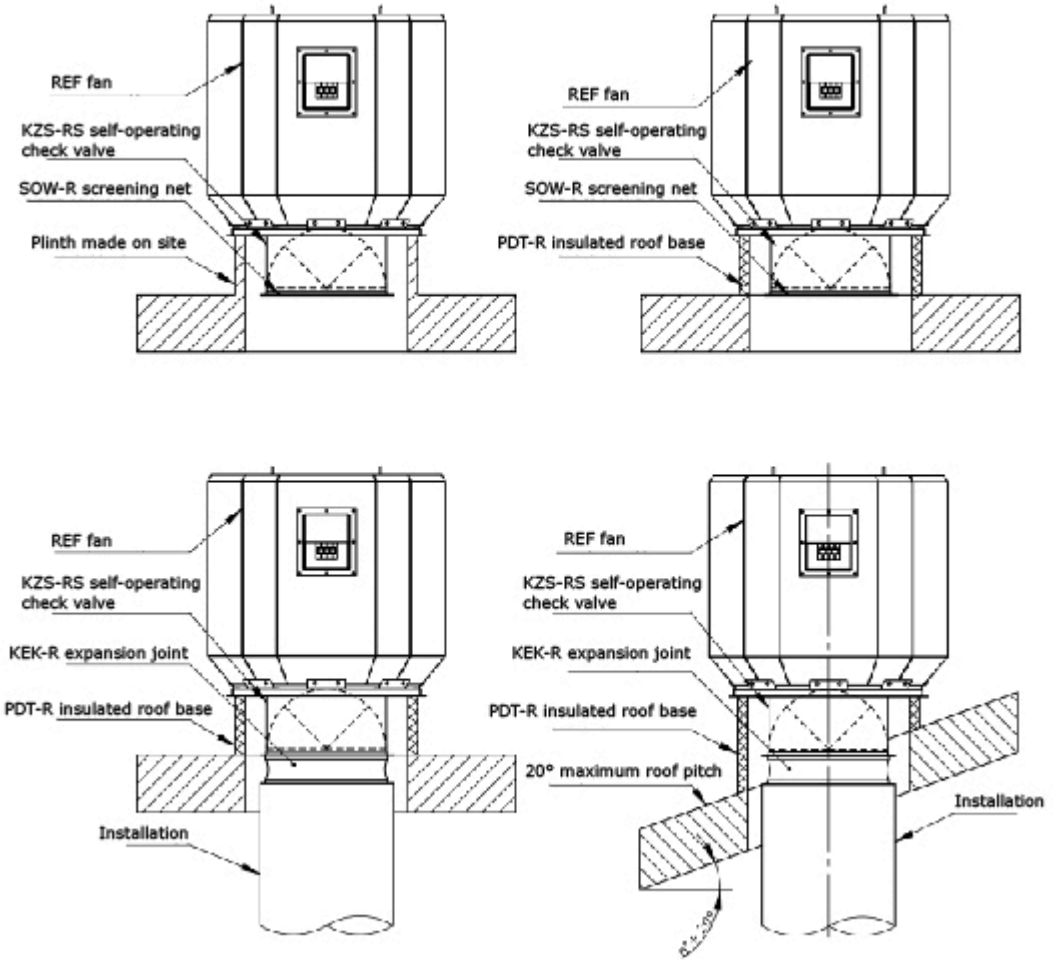


Figure 21. REF roof-mounted smoke extraction fan

REF - Roof exhaust fan (REF)

When ordering, please provide information in accordance with the following pattern:

REF Orzeł <D> - <O> - <M> - <F> - <RAL>

Where:

D	Fan diameter
O	Motor rotational speed
	750- 750 rpm
	1000- 1000 rpm
	1500- 1500 rpm
	3000- 3000 rpm
M	Engine power
F	Fire resistance rating: F400, F300, F200
	F400- fire resistance 400°C/120 min
	F300- fire resistance 300°C/60 min
	F200- fire resistance 200°C/120 min
RAL	Colour as per RAL (for SL finishing)
	none- RAL 7001
	RAL- colour according to the RAL Colour Chart

Fan accessories:

PDT-R	Insulated roof base
PDTK-R	Damping roof base
KEK-R	Expansion joint
PK-R	Mounting flange
SOW-R	Screening net
KZS-R	Self-operating check valve
TL-C-R	Duct silencer
TL-CN-R	Duct silencer with core
WB-R	Service switch

Sample order:

REF 315-1500-0,55-F400 - RAL 9001
PDTK-R-315
KZS-R-315
WB-R