WOLF

Technology for life.

Roof Extract Fans DV
Ventilation Hoods DLH
Smoke Extract Fans ER

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Summary ..... Seite

Roof Extract Fans DV

Technical Description

Fan range DV 30

The fans of the range DV 30, for **horizontal discharge**, are suitable for discharging slightly polluted but not aggressive air or vapours from - 20°C to app. + 40°C. The rectangular casing, made of galvanised sheet steel, has two opposite mounted discharge outlets protected from the weather with an aerodynamically shaped grille, which provide for horizontally directed, swirl-free air discharge.
All roof fans are equipped with an isolator switch ready for connection.

Fan range DV 40–125

The fans of the range DV 40 - 125, for **vertical discharge**, are suitable for discharging slightly polluted but not aggressive air or vapours from - 20°C to app. + 40°C. The stylish casing and the base plate are made of galvanised sheet steel. The centrifugal impeller with backward curved blades is made of highly resistant aluminium. The exhaust air, due to the V-casing design, is rejected vertically far from the roof.
All roof fans are equipped with an isolator switch ready for connection.

Motors

Well tried and tested integral drive motors are used. Noise-tested, maintenance-free deep-groove ball bearings give the motor long life. To avoid overheating, every motor is equipped with thermal contacts. This thermal protection has to be effective in operation in order to enable the user to claim for warranty in the case of break down. Please follow the instructions of the wiring diagram for connecting the thermal contacts correctly.

Roof Extract Fans DV

Summary data sheet

A full fan line: 36 standardised sizes

Performance range: 445 up to 34 550m³/h

Roof fan type DV	Voltage V	Flow rate $\dot{V}_{max}$ m³/h	Speed min⁻¹	Max. absorbed power kW	Full load current A	Control units* 1-step	2-step	5-step	step-less	Sound power L_{WA} $\dot{V}_{max}$ dB	Wiring diagram No.	Weight kg
30-22-2E	230	680	2370	0,11	0,46	E1-16	-	E5-1	ES-3	72	507	5,5
30-22-4E	230	445	1400	0,04	0,17	E1-16	-	E5-1	ES-3	64	507	5,0
30-25-2E	230	1250	2020	0,16	0,68	E1-16	-	E5-1	ES-3	77	507	6,5
30-25-4E	230	800	1390	0,06	0,28	E1-16	-	E5-1	ES-3	66	507	6,0
40-28-4/4	3x400ΔY	1730/1570	1420/1260	0,13/0,09	0,40/0,16	D1	DS	D5-1	-	71/68	515	23
40-28-4E	230	1690	1380	0,16	0,76	E1-16	-	E5-1	ES-3	70	508	22
40-28-6E	230	1120	910	0,08	0,34	E1-16	E2-6	E5-1	ES-3	59	508	22
40-31-4/4	3x400ΔY	2440/2010	1340/1070	0,19/0,13	0,43/0,22	D1	DS	D5-1	-	71/66	515	23
40-31-4E	230	2550	1420	0,23	1,2	E1-16	-	E5-1	ES-3	72	508	23
40-31-6E	230	1670	920	0,12	0,54	E1-16	E2-6	E5-1	ES-3	61	508	23
56-35-4/4	3x400ΔY	3470/2910	1340/1080	0,35/0,22	0,75/0,39	D1	DS	D5-1	-	77/72	515	35
56-35-4E	230	3470	1340	0,40	1,9	E1-16	-	E5-3	ES-3	77	508	35
56-35-6E	230	2380	930	0,15	0,72	E1-16	-	E5-1	ES-3	67	508	35
56-40-4/4	3x400ΔY	4830/4250	1400/1190	0,58/0,44	1,35/0,74	D1	DS	D5-3	-	80/77	515	40
56-40-6/6	3x400ΔY	3100/2520	890/690	0,22/0,13	0,55/0,23	D1	DS	D5-1	-	69/63	515	37
56-40-4E	230	4340	1220	0,52	2,3	-	-	E5-3	-	77	509	40
56-40-6E	230	3100	890	0,20	0,91	E1-16	-	E5-1	ES-3	69	508	37
56-45-4/4	3x400ΔY	6800/6130	1420/1250	0,95/0,76	2,30/1,30	D1	DS	D5-7	-	83/80	515	44
56-45-6/6	3x400ΔY	4190/3060	860/600	0,30/0,17	0,67/0,32	D1	DS	D5-1	-	70/62	515	44
56-45-4E	230	6450	1330	0,95	4,4	-	-	E5-7	-	82	509	44
56-45-6E	230	4150	850	0,31	1,4	E1-16	-	E5-1	ES-3	70	508	44
71-50-4/4	3x400ΔY	9150/7740	1350/1100	1,60/1,05	3,20/1,80	D1	DS	D5-7	-	85/80	515	73
71-50-6/6	3x400ΔY	6250/5430	930/780	0,52/0,38	1,30/0,69	D1	DS	D5-3	-	75/71	515	64
71-50-4E	230	8660	1260	1,45	6,3	-	-	E5-7	-	84	509	72
71-50-6E	230	6100	900	0,54	2,6	-	-	E5-3	-	75	509	64
71-56-4/4	3x400ΔY	12580/9950	1270/960	2,40/1,46	4,30/2,4	D1	DS	D5-12	-	86/80	516	82
71-56-6/6	3x400ΔY	8990/7790	920/770	0,82/0,59	2,10/1,1	D1	DS	D5-7	-	78/74	515	71
90-63-6/6	3x400ΔY	12500/10300	900/700	1,30/0,88	2,9/1,7	D1	DS	D5-7	-	81/76	515	119
90-71-6/6	3x400ΔY	16850/13640	880/680	2,50/1,50	5,0/2,8	D1	DS	D5-12	-	85/79	516	139
90-75-6 *	3x400Δ	20000	870	3,4	6,5	-	-	-	-	86	502	140
90-75-8	3x400Y	15000	650	1,6	3,3	D1	-	D5-7	-	78	534	135
90-75-6/12	3x400YY/Y	20000/10000	950/480	4,4/0,7	8,7/2,6	-	-	-	-	88/70	551	166
125-80-6 *	3x400Δ	24800	945	5,2	10,2	-	-	-	-	90	549	215
125-80-8	3x400Δ	17600	660	2,0	4,4	D1	-	D5-12	-	81	537	206
125-80-6/12	3x400YY/Y	24800/12470	960/480	5,5/0,85	11,0/3,3	-	-	-	-	90/72	551	215
125-90-6 *	3x400Y	34550	940	8,8	16,4	-	-	-	-	94	549	238

* Fan not speed controlled

Safety Guards

All roof extract fans are supplied with a discharge-side mesh safety guard in accordance with DIN EN 294. The inlet side is not fitted with a standard guard, because it is normal practice to attach other system parts to the side. However, if the unit is installed in such a way that accidental contact with the impeller is possible, an additional inlet guard has to be fitted acc. to DIN EN 294! The fans may only be put into operation if all necessary protection devices are fitted and made effective (see maintenance instructions)! The safety guards are to be executed acc. to DIN EN 292 – 1, chapter 3.22 "Separating safety devices" and DIN EN 292 – 2, chapter 4 "Technical protection measures".

Safety instructions

Transport, fitting, electrical connection, start up, and maintenance are to be executed following to the instructions given with the manual and by respecting the actual standards, guide lines, and safety rules.

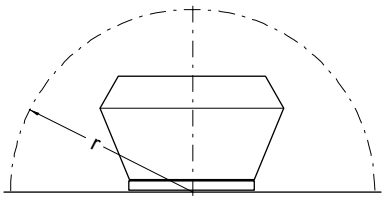
Performance data

The performance curves are obtained using an inlet side test chamber in accordance with DIN 24 163-2 "Fans, performance tests, standard test equipment". The performance grids show the effective pressure increase Δp_{fa} (Pressure increase obtained from the fan in free-field conditions) as a function of the flow volume $\dot{V}_L$.
Reference media density: ρ_1 = 1.15 kg/m³. The roof fans comply with the tolerances of Class 2 of DIN 24 166 "Fans, Technical Specifications".

Sound Data

Measurement and evaluation of noise levels are in accordance with DIN 45 635 - 38 "Sound measurements on machines; fans". In the technical data the A-weighted sound power level at maximum flow rate is given.

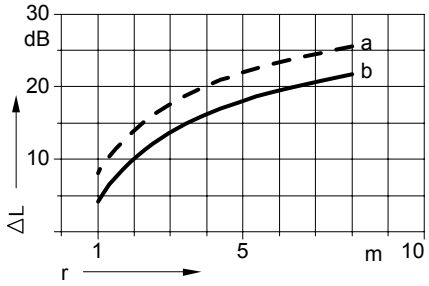
The computer aided data collection and evaluation enables to obtain highly reliable data precision. In the curves the emission value of the A-sound-power level L_{WA} is given, having the same value for intake (L_{WA3}) as for the discharge (L_{WA8}).
For more exact calculations when determining the required attenuation, the sound power level in the octave bands is important.



$L_{Woct\ 3/8} = L_{WA} + L_{Wrel\ 3/8}$

The relative sound power levels for inlet and discharge sides, at various duty points, can be read from the corresponding tables.

Because conditions in the operating environment are usually far from ideal for measurement and can vary greatly, a determination of the A-sound-pressure level at any distance is only possible with great uncertainty.



$L_{PA} \approx L_{WA} - \Delta L$

The diagram on the left side supplies the correction value "Δ_L" in function of the distance "r" from the fan centre. Under ideal conditions, with a clear hemisphere of sound propagation, curve "a" is valid. However, curve "b" is recommended for practical estimates. The calculation of the intake sound-power level is only possible if the exact noise parameters of the connected room are known (see VDI 2081!).

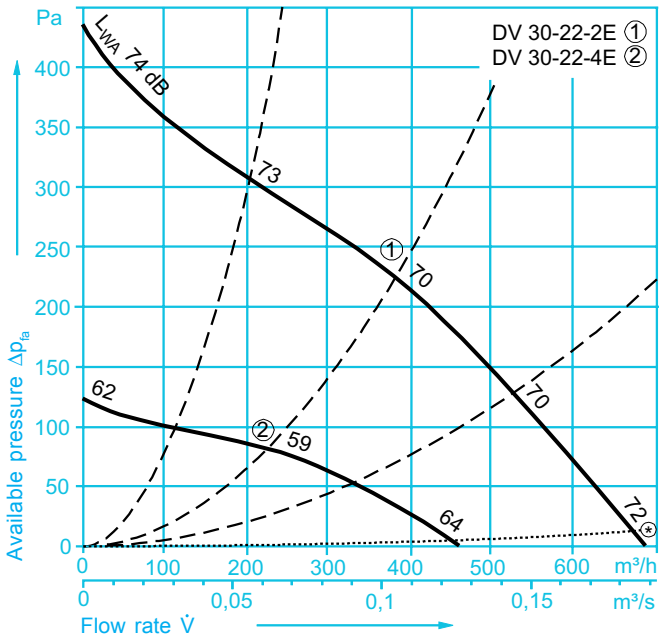
Influence of the back draught damper

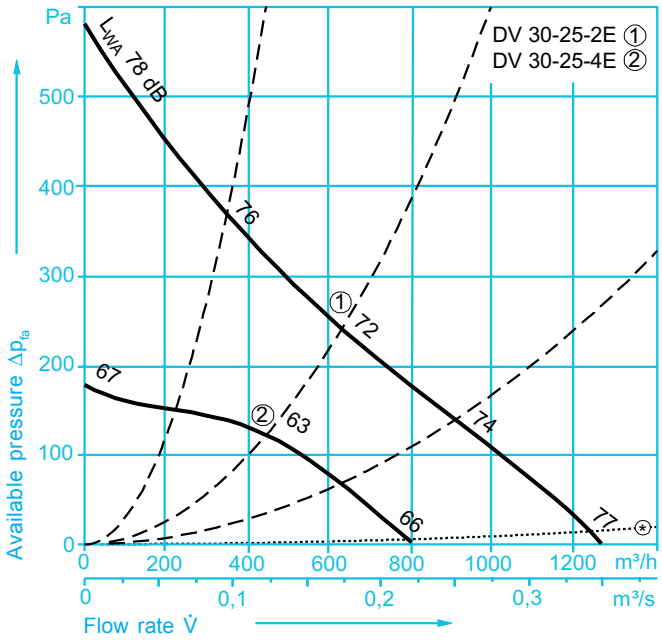
Due to turbulences generated by the back draught damper the sound data for intake and discharge may increase by app. 3 dB at discharge when a damper is fitted.
It is recommended to provide a duct section between fan and damper because under this configuration the indicated pressure drops are applicable.
If the damper is directly fitted to the fan higher pressure losses have to be expected.

Roof Extract Fans DV

Performance Data DV 30

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1-step	2-step	5-step	step-less	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A					L_{WA} $\dot{V}_{max}$ dB	No.	kg
30-22-2E	230	680	2370	0,11	0,46	E1-16	-	E5-1	ES-3	72	507	5,5
30-22-4E	230	445	1400	0,04	0,17	E1-16	-	E5-1	ES-3	64	507	5,0
30-25-2E	230	1250	2020	0,16	0,68	E1-16	-	E5-1	ES-3	77	507	6,5
30-25-4E	230	800	1390	0,06	0,28	E1-16	-	E5-1	ES-3	66	507	6,0





⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

Average Values	values in dB at mid frequencies 63	125	250	500	1000	2000	4000	8000 Hz
Silencer upstand ZDS..-0028 16 dB	2	5	8	12	18	22	20	15 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	750	900	1000	m³/h
Silencer upstand ZDS..-0028	22	30	40	Pa

Intake($L_{Wrel3} = L_{Woct3} - L_{WA3}$)

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 30-22									
0,3 $\dot{V}_{max}$	9	9	5	-2	-11	-18	-22	-31	dB
0,6 $\dot{V}_{max}$	9	7	4	-2	-10	-16	-20	-28	dB
$\dot{V}_{max}$	7	4	2	-1	-9	-12	-16	-22	dB
DV 30-25									
0,3 $\dot{V}_{max}$	9	9	5	-2	-11	-18	-22	-31	dB
0,6 $\dot{V}_{max}$	9	7	4	-2	-10	-16	-20	-28	dB
$\dot{V}_{max}$	7	4	2	-1	-9	-12	-16	-22	dB

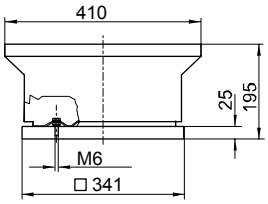
Discharge ($L_{Wrel8} = L_{Woct8} - L_{WA8}$)

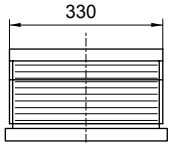
Relative sound power level L_{Wrel8} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	-7	-3	0	-3	-6	-7	-14	-24	dB
0,6 $\dot{V}_{max}$	-7	-4	-2	-3	-6	-7	-13	-23	dB
$\dot{V}_{max}$	-11	-5	-4	-4	-5	-7	-12	-21	dB
0,3 $\dot{V}_{max}$	-7	-3	0	-3	-6	-7	-14	-24	dB
0,6 $\dot{V}_{max}$	-7	-4	-2	-3	-6	-7	-13	-23	dB
$\dot{V}_{max}$	-11	-5	-4	-4	-5	-7	-12	-21	dB

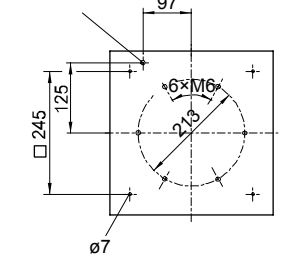
Roof Extract Fans DV

Dimensions DV 30

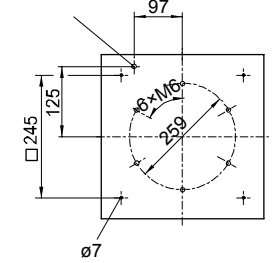




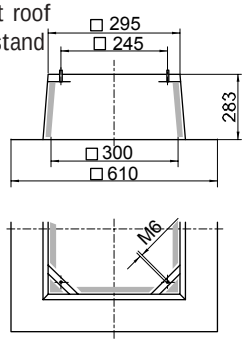
DV 30-22



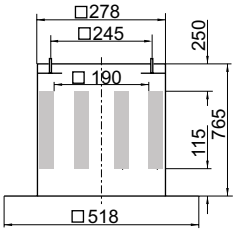
DV 30-25



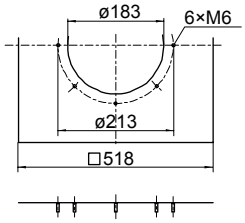
ZBS 20-0031
Flat roof upstand



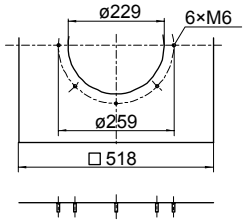
ZDS 20-0028
Silencer upstand



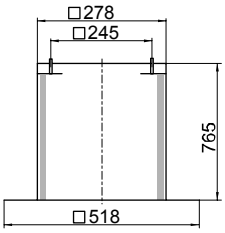
ZBU 01-0028-18
Connecting plate



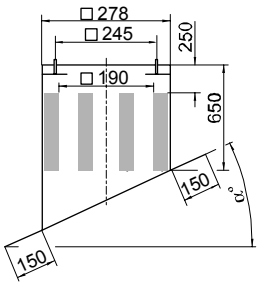
ZBU 01-0028-22
Connecting plate

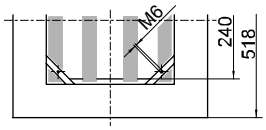


ZBS 23-0031
Flat roof upstand high

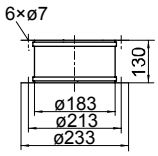


ZDS 09-0028-#
Silencer upstand for inclined roof

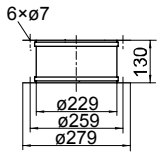




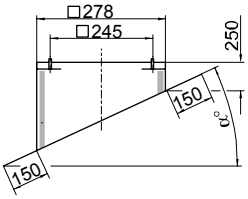
ZKF 01-0180
Intake flexible connection

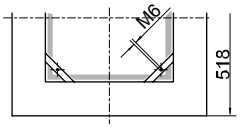


ZKF 13-0225
Intake flexible connection

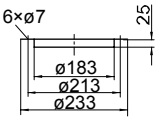


ZBS 09-0031-#
Upstand für inclined roof





ZKF 01-0180
Mating flange



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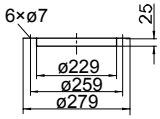
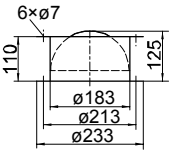
Mating flange

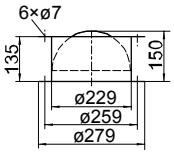


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering
ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)

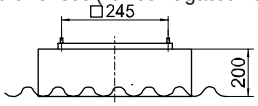
ZLK 01-0180
Automatic back draught damper

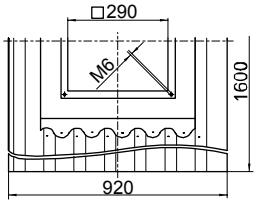


ZLK 03-0225
Automatic back draught damper



ZBS 11-0031
Soaker sheet (for corrugated roof)

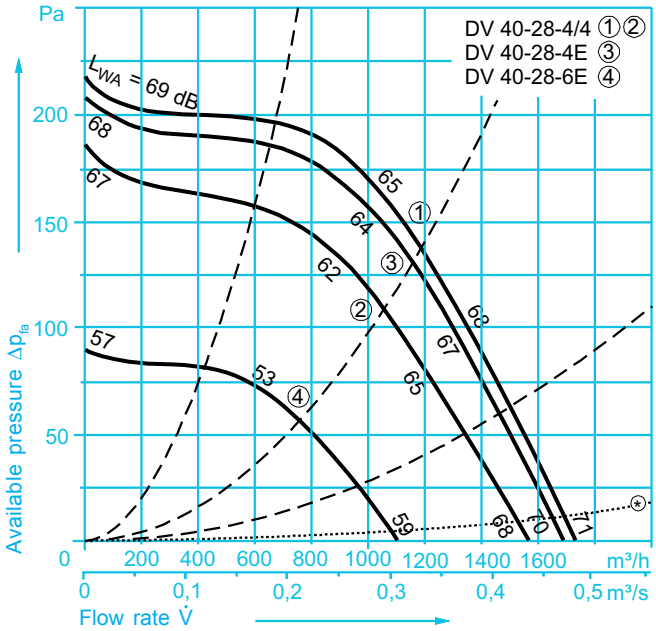


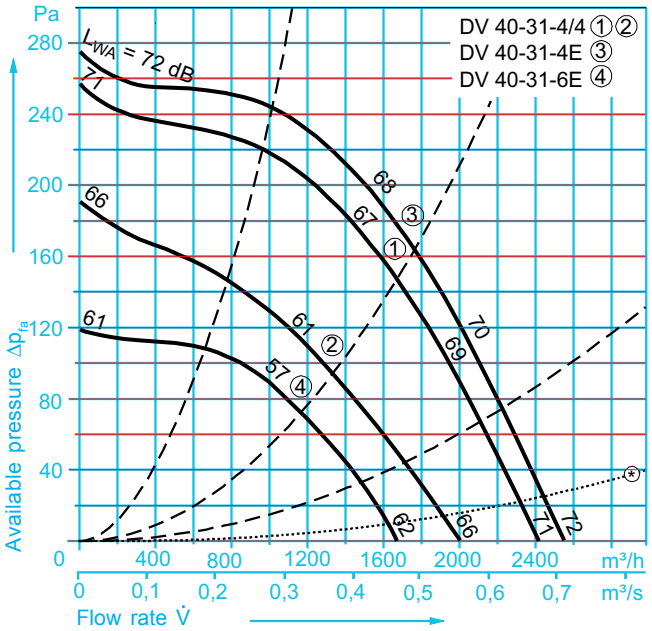


Roof Extract Fans DV

Performance Data DV 40

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1- step	2- step	5- step	step-less	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A					L_{WA} $\dot{V}_{max}$ dB	No.	kg
40-28-4/4	3x400ΔY	1730/1570	1420/1260	0,13/0,09	0,40/0,16	D1	DS	D5-1	-	71/68	515	23
40-28-4E	230	1690	1380	0,16	0,76	E1-16	-	E5-1	ES-3	70	508	22
40-28-6E	230	1120	910	0,08	0,34	E1-16	E2-6	E5-1	ES-3	59	508	22
40-31-4/4	3x400ΔY	2440/2010	1340/1070	0,19/0,13	0,43/0,22	D1	DS	D5-1	-	71/66	515	23
40-31-4E	230	2550	1420	0,23	1,2	E1-16	-	E5-1	ES-3	72	508	23
40-31-6E	230	1670	920	0,12	0,54	E1-16	E2-6	E5-1	ES-3	61	508	23





⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

	Average Values	values in dB at mid frequencies 63	125	250	500	1000	2000	4000	8000 Hz
Discharge silencer ZDH 20-0250 11 dB		0	3	5	15	22	20	13	14 dB
Silencer upstand ZDS..-0040 16 dB		3	5	8	13	19	23	21	15 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	1500	2000	3000	4000	m³/h
Silencer upstand ZDS..-0040	25	40	100	170	Pa

Intake (L_{Wrel3} = L_{Woct3} - L_{WA3})

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 40-28									
0,3 $\dot{V}_{max}$	12	13	0	-6	-10	-11	-18	-32	dB
0,6 $\dot{V}_{max}$	11	10	-1	-5	-7	-9	-15	-29	dB
$\dot{V}_{max}$	4	11	-1	-5	-7	-10	-17	-30	dB
DV 40-31									
0,3 $\dot{V}_{max}$	13	14	-2	-6	-11	-12	-16	-29	dB
0,6 $\dot{V}_{max}$	8	13	-3	-6	-10	-11	-16	-28	dB
$\dot{V}_{max}$	2	12	-3	-5	-8	-11	-16	-28	dB

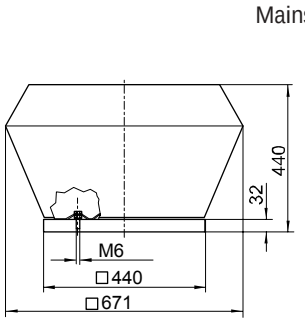
Discharge (L_{Wrel8} = L_{Woct8} - L_{WA8})

Relative sound power level L_{Wrel3} at mid frequencies f_m

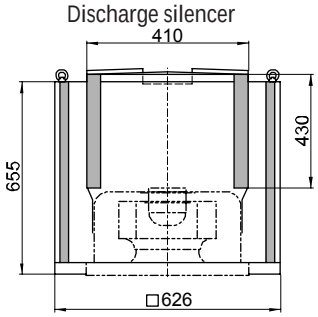
Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	5	0	-1	-5	-5	-6	-13	-22	dB
0,6 $\dot{V}_{max}$	-4	-3	-3	-4	-5	-7	-13	-22	dB
$\dot{V}_{max}$	-9	-2	-2	-4	-5	-7	-13	-25	dB
0,3 $\dot{V}_{max}$	3	2	0	-5	-6	-7	-13	-20	dB
0,6 $\dot{V}_{max}$	-5	1	-1	-5	-6	-7	-12	-21	dB
$\dot{V}_{max}$	-10	1	-1	-4	-5	-7	-12	-22	dB

Dimensions DV 40

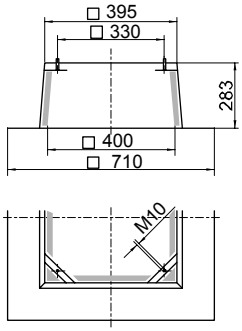
DV 40



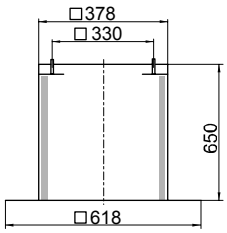
ZDH 20-0250
Discharge silencer



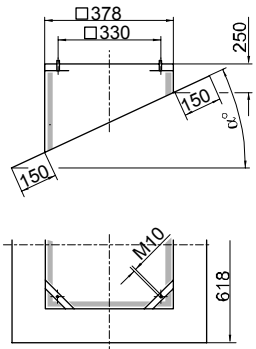
ZBS 20-0040
Flat roof upstand



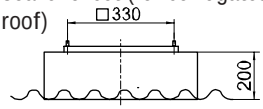
ZBS 23-0040
Flat roof upstand high

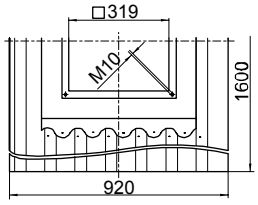


ZBS 09-0040-#
Upstand for inclined roof

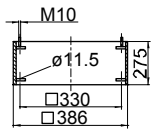


ZBS 11-0040
Soaker sheet (for corrugated roof)

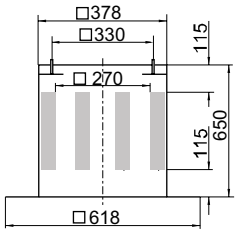




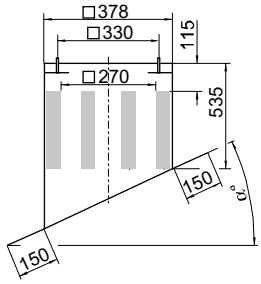
ZKK 20-0040
Intermediate piece

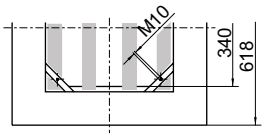


ZDS 20-0040
Silencer upstand



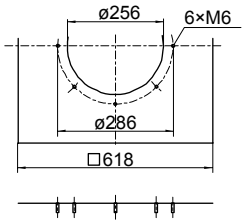
ZDS 09-0040-#
Silencer upstand for inclined roof



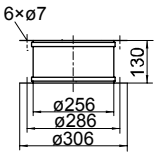


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)
When using damper ZLK and upstand silencer ZDS the damper has to be fitted by using a plate ZBU below silencer upstand.
When fitting damper to fan an intermediate piece ZKK must be added.

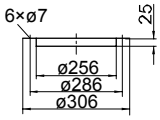
ZBU 01-0040-25
Connecting plate



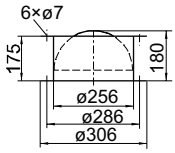
ZKE 11-0250
Intake flexible connection



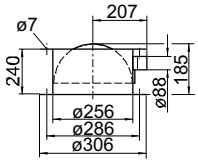
ZKF 11-0250
Mating flange



ZLK 01-0250
Automatic back draught damper



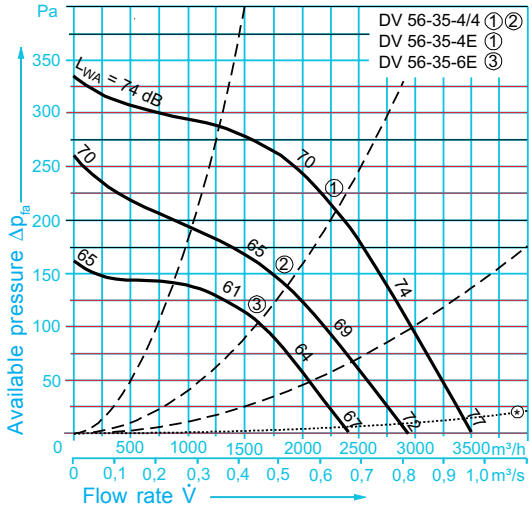
ZLK 21-0250
Damper with actuator

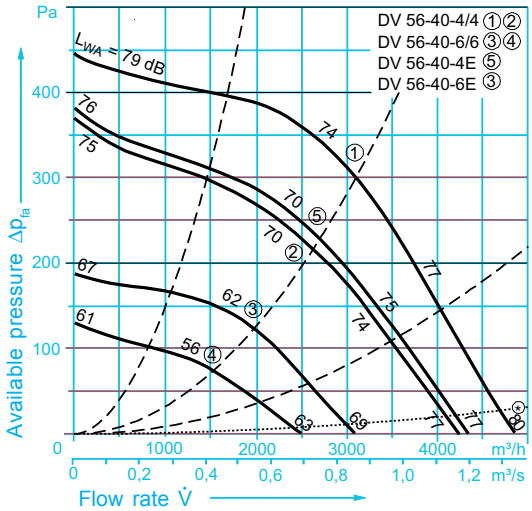


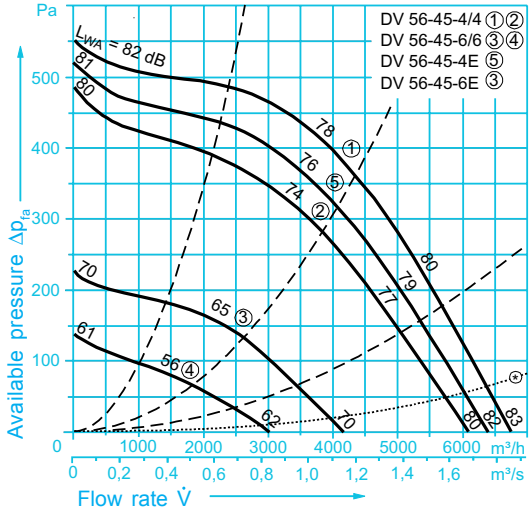
Roof Extract Fans DV

Performance Data DV 56

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1-	2-	5-	step-	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A	step	step	step	less	L_{WA} $\dot{V}_{max}$ dB	No.	kg
56-35-4/4	3x400ΔY	3470/2910	1340/1080	0,35/0,22	0,75/0,39	D1	DS	D5-1	-	77/72	515	35
56-35-4E	230	3470	1340	0,40	1,9	E1-16	-	E5-3	ES-3	77	508	35
56-35-6E	230	2380	930	0,15	0,72	E1-16	-	E5-1	ES-3	67	508	35
56-40-4/4	3x400ΔY	4830/4250	1400/1190	0,58/0,44	1,35/0,74	D1	DS	D5-3	-	80/77	515	40
56-40-6/6	3x400ΔY	3100/2520	890/690	0,22/0,13	0,55/0,23	D1	DS	D5-1	-	69/63	515	37
56-40-4E	230	4340	1220	0,52	2,3	-	-	E5-3	-	77	509	40
56-40-6E	230	3100	890	0,20	0,91	E1-16	-	E5-1	ES-3	69	508	37
56-45-4/4	3x400ΔY	6800/6130	1420/1250	0,95/0,76	2,30/1,30	D1	DS	D5-7	-	83/80	515	44
56-45-6/6	3x400ΔY	4190/3060	860/600	0,30/0,17	0,67/0,32	D1	DS	D5-1	-	70/62	515	44
56-45-4E	230	6450	1330	0,95	4,4	-	-	E5-7	-	82	509	44
56-45-6E	230	4150	850	0,31	1,4	E1-16	-	E5-1	ES-3	70	508	44







⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

	Average Values	values in dB at mid frequencies 63	125	250	500	1000	2000	4000	8000 Hz
Discharge silencer ZDH 20-0355	11 dB	0	3	5	15	22	20	13	14 dB
Silencer upstand ZDS..-0056	16 dB	3	5	8	12	18	21	20	15 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	3000	4000	6000	8000	m³/h
Silencer upstand ZDS..-0056	25	42	80	160	Pa

Intake ($L_{Wrel3} = L_{Woct3} - L_{WA3}$)

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 56-35									
0,3 $\dot{V}_{max}$	16	12	1	-3	-11	-15	-19	-28	dB
0,6 $\dot{V}_{max}$	11	11	1	-3	-10	-11	-16	-26	dB
$\dot{V}_{max}$	8	11	1	-2	-10	-11	-19	-25	dB
DV 56-40									
0,3 $\dot{V}_{max}$	12	12	1	-3	-10	-15	-18	-28	dB
0,6 $\dot{V}_{max}$	11	11	0	-4	-8	-12	-16	-24	dB
$\dot{V}_{max}$	7	10	1	-3	-8	-12	-19	-20	dB
DV 56-45									
0,3 $\dot{V}_{max}$	12	13	-1	-6	-11	-15	-19	-27	dB
0,6 $\dot{V}_{max}$	5	13	0	-6	-11	-14	-16	-25	dB
$\dot{V}_{max}$	1	13	0	-5	-11	-14	-19	-20	dB

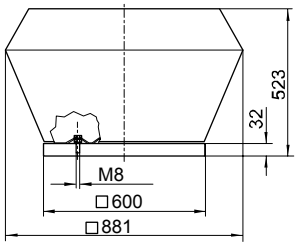
Discharge ($L_{Wrel8} = L_{Woct8} - L_{WA8}$)

Relative sound power level L_{Wrel8} at mid frequencies f_m

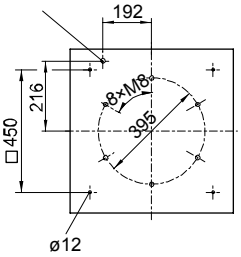
Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	4	1	-1	-4	-4	-8	-12	-21	dB
0,6 $\dot{V}_{max}$	-3	-1	-3	-4	-5	-6	-12	-20	dB
$\dot{V}_{max}$	-6	0	-3	-4	-5	-6	-15	-21	dB
0,3 $\dot{V}_{max}$	5	2	0	-4	-4	-9	-13	-19	dB
0,6 $\dot{V}_{max}$	0	1	-1	-5	-5	-7	-11	-18	dB
$\dot{V}_{max}$	-4	1	0	-4	-5	-8	-12	-15	dB
0,3 $\dot{V}_{max}$	5	3	-1	-4	-5	-9	-12	-17	dB
0,6 $\dot{V}_{max}$	-2	2	0	-5	-6	-8	-10	-17	dB
$\dot{V}_{max}$	-6	2	0	-4	-5	-8	-13	-15	dB

Dimensions DV 56

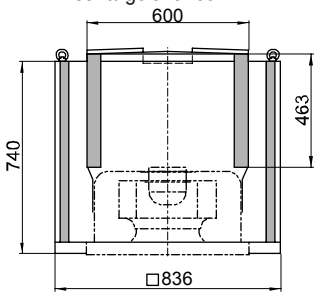
DV 56



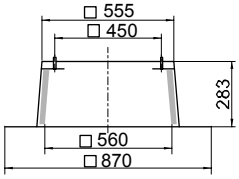
Mains lead

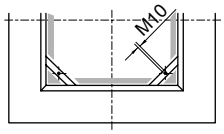


ZDH 20-0355
Discharge silencer

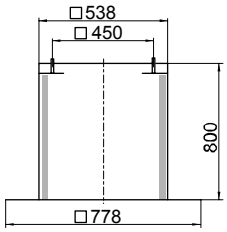


ZBS 20-0056
Flat roof upstand

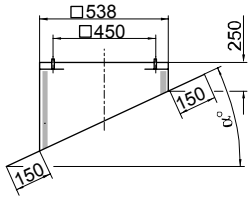


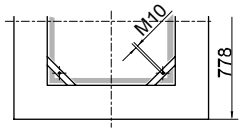


ZBS 23-0056
Flat roof upstand high

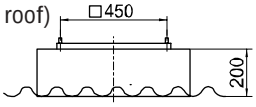


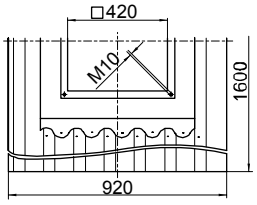
ZBS 09-0056-#
Upstand for inclined roof



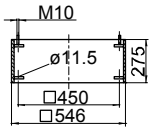


ZBS 11-0056
Soaker sheet (for corrugated roof)

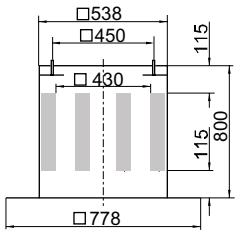




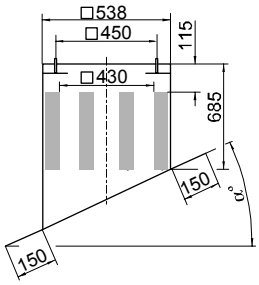
ZKK 20-056
Intermediate piece

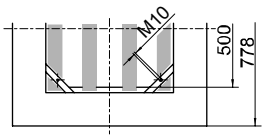


ZDS 20-0056
Silencer upstand



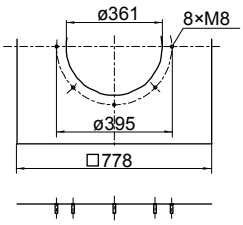
ZDS 09-0056-#
Silencer upstand for inclined roof



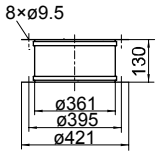


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)
When using damper ZLK and upstand silencer ZDS the damper has to be fitted by using a plate ZBU below silencer upstand.
When fitting damper to fan an intermediate piece ZKK must be added.

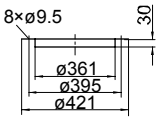
ZBU 01-0056-35
Connecting plate



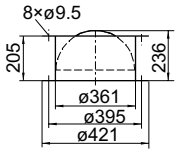
ZKE 11-0355
Intake flexible connection



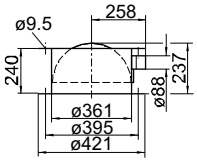
ZKF 11-0355
Mating flange



ZLK 01-0355
Automatic back draught damper



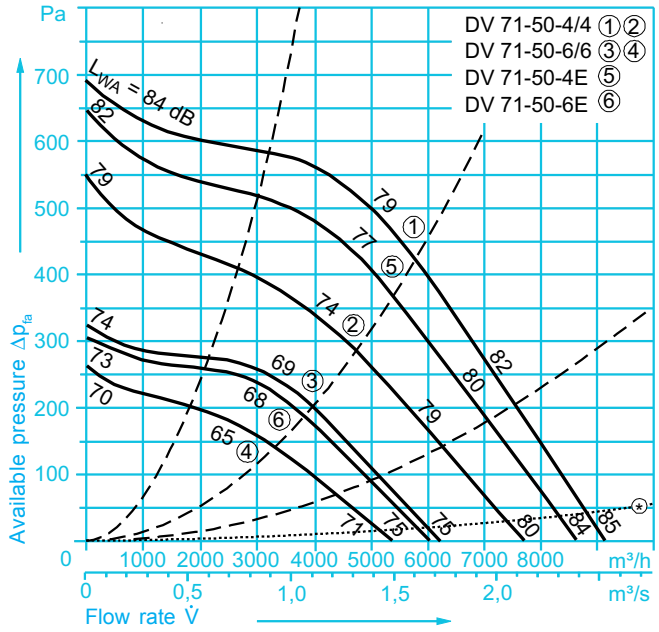
ZLK 21-0355
Automatic back draught damper

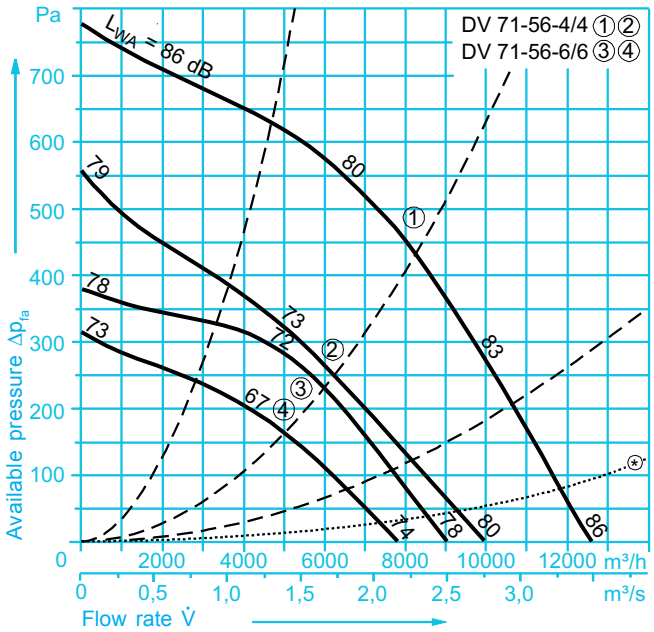


Roof Extract Fans DV

Performance Data DV 71

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1-step	2-step	5-step	step-less	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A					L_{WA} $\dot{V}_{max}$ dB	No.	kg
71-50-4/4	3x400ΔY	9150/7740	1350/1100	1,60/1,05	3,20/1,80	D1	DS	D5-7	-	85/80	515	73
71-50-6/6	3x400ΔY	6250/5430	930/780	0,52/0,38	1,30/0,69	D1	DS	D5-3	-	75/71	515	64
71-50-4E	230	8660	1260	1,45	6,3	-	-	E5-7	-	84	509	72
71-50-6E	230	6100	900	0,54	2,6	-	-	E5-3	-	75	509	64
71-56-4/4	3x400ΔY	12580/9950	1270/960	2,40/1,46	4,30/2,4	D1	DS	D5-12	-	86/80	516	82
71-56-6/6	3x400ΔY	8990/7790	920/770	0,82/0,59	2,10/1,1	D1	DS	D5-7	-	78/74	515	71





⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

Average Values	values in dB at mid frequencies 63	125	250	500	1000	2000	4000	8000 Hz
Discharge silencer ZDH 20-0450 11 dB	0	5	7	15	21	20	16	17 dB
Silencer upstand ZDS..-0071 17 dB	3	5	9	13	20	25	22	17 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	5000	8000	10000	12000 m³/h
Silencer upstand ZDS..-0071	25	60	95	110 Pa

Intake ($L_{Wrel3} = L_{Woct3} - L_{WA3}$)

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 71-50									
0,3 $\dot{V}_{max}$	15	9	2	-3	-9	-13	-14	-19	dB
0,6 $\dot{V}_{max}$	11	7	1	-3	-8	-11	-12	-15	dB
$\dot{V}_{max}$	7	6	1	-3	-8	-11	-12	-12	dB
DV 71-56									
0,3 $\dot{V}_{max}$	13	9	4	-3	-9	-14	-15	-22	dB
0,6 $\dot{V}_{max}$	7	9	4	-4	-8	-12	-14	-18	dB
$\dot{V}_{max}$	4	9	3	-3	-8	-12	-14	-15	dB

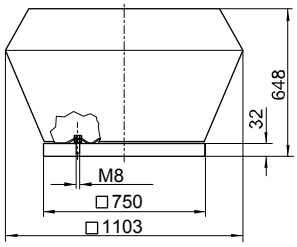
Discharge ($L_{Wrel8} = L_{Woct8} - L_{WA8}$)

Relative sound power level L_{Wrel8} at mid frequencies f_m

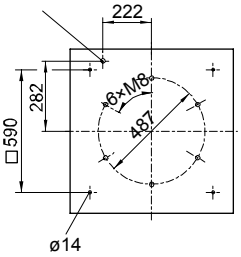
Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	6	5	1	-4	-5	-9	-12	-18	dB
0,6 $\dot{V}_{max}$	1	5	0	-5	-6	-8	-10	-16	dB
$\dot{V}_{max}$	-2	4	1	-3	-6	-10	-12	-14	dB
0,3 $\dot{V}_{max}$	8	5	0	-4	-5	-9	-13	-19	dB
0,6 $\dot{V}_{max}$	-1	7	-1	-4	-5	-8	-11	-18	dB
$\dot{V}_{max}$	-4	6	-1	-3	-5	-9	-14	-16	dB

Dimensions DV 71

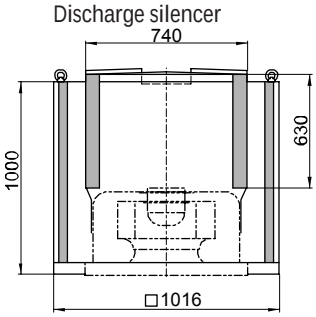
DV 71



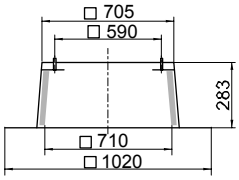
Mains lead

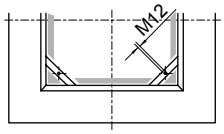


ZDH 20-0450
Discharge silencer

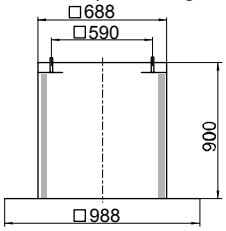


ZBS 20-0071
Flat roof upstand

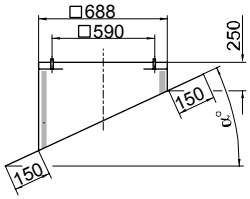


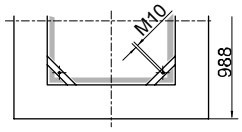


ZBS 23-0071
Flat roof upstand high

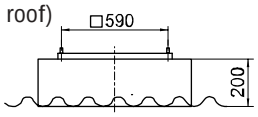


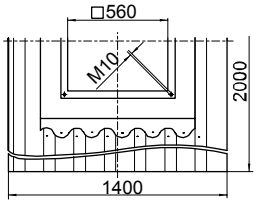
ZBS 09-0071-#
Upstand for inclined roof



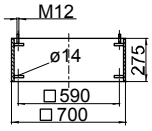


ZBS 11-0071
Soaker sheet (for corrugated roof)

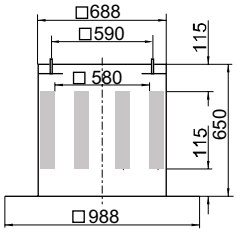




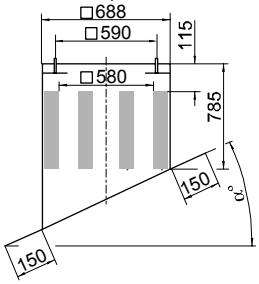
ZKK 20-0071
Intermediate piece

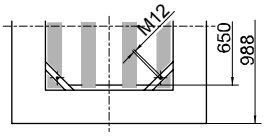


ZDS 20-0071
Silencer upstand



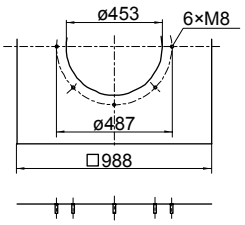
ZDS 09-0071-#
Silencer upstand for inclined roof



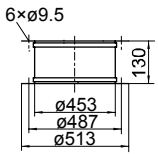


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)
When using damper ZLK and upstand silencer ZDS the damper has to be fitted by using a plate ZBU below silencer upstand.
When fitting damper to fan an intermediate piece ZKK must be added.

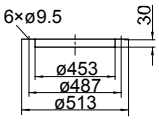
ZBU 01-0071-45
Connecting plate



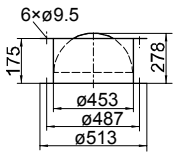
ZKE 11-0450
Intake flexible connection



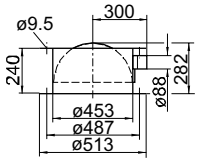
ZKF 11-0450
Mating flange



ZLK 01-0450
Automatic back draught damper



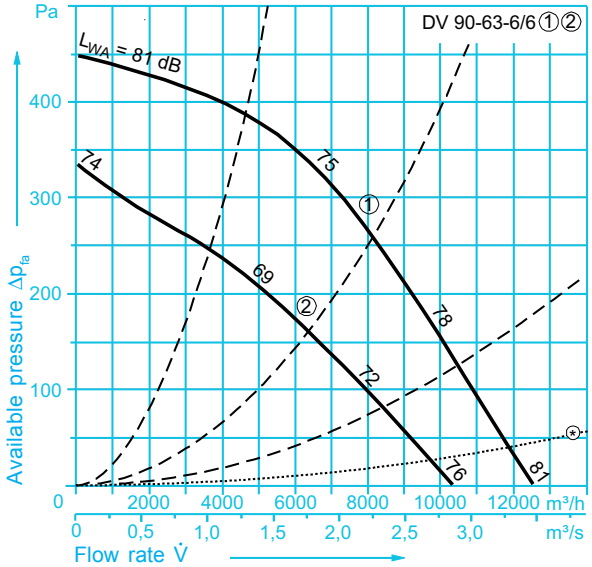
ZLK 21-0450
Damper with actuator

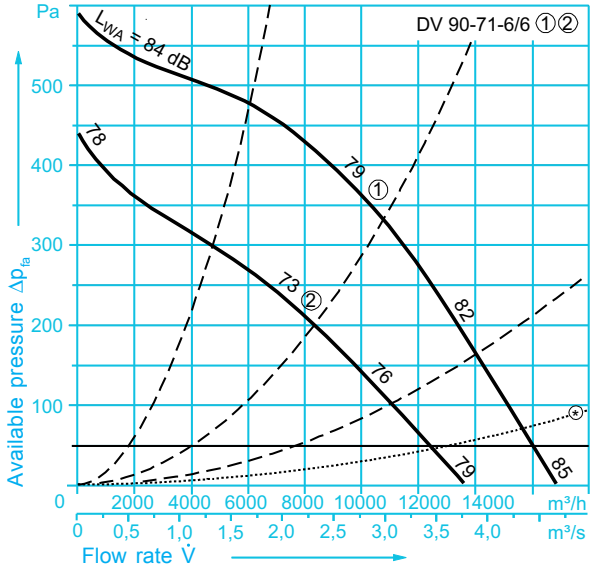


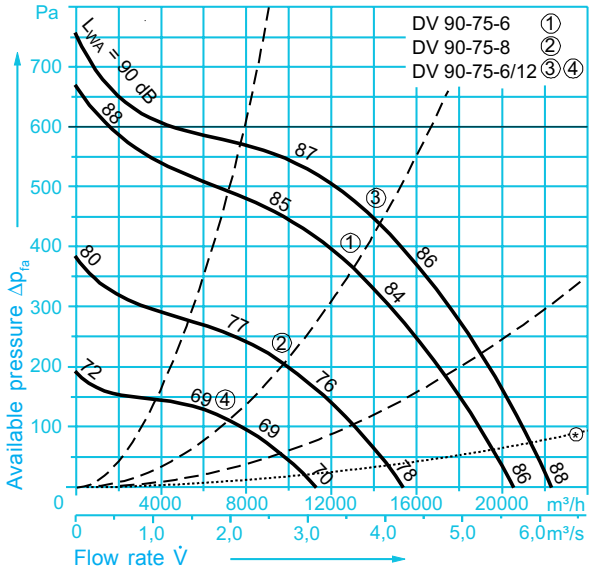
Roof Extract Fans DV

Performance Data DV 90

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1-step	2-step	5-step	step-less	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A					L_{WA} $\dot{V}_{max}$ dB	No.	kg
90-63-6/6	3x400ΔY	12500/10300	900/700	1,30/0,88	2,9/1,7	D1	DS	D5-7	-	81/76	515	119
90-71-6/6	3x400ΔY	16850/13640	880/680	2,50/1,50	5,0/2,8	D1	DS	D5-12	-	85/79	516	139
90-75-6 *	3x400Δ	20000	870	3,4	6,5	-	-	-	-	86	502	140
90-75-8	3x400Y	15000	650	1,6	3,3	D1	-	D5-7	-	78	534	135
90-75-6/12	3x400YY/Y	20000/10000	950/480	4,4/0,7	8,7/2,6	-	-	-	-	88/70	551	166







⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

	Average Values	values in dB at mid frequencies 63	125	250	500	1000	2000	4000	8000 Hz
Discharge silencer ZDH 20-0560	11 dB	4	8	5	13	17	18	18	17 dB
Silencer upstand ZDS..-090	15 dB	2	5	8	11	17	21	19	13 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	10000	15000	20000	30000 m³/h
Silencer upstand ZDS..-0090	20	40	80	180 Pa

Intake ($L_{Wrel3} = L_{Woct3} - L_{WA3}$)

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 90-63									
0,3 $\dot{V}_{max}$	17	7	3	-4	-8	-12	-14	-21	dB
0,6 $\dot{V}_{max}$	15	8	3	-4	-8	-11	-14	-20	dB
$\dot{V}_{max}$	13	8	4	-3	-8	-12	-15	-23	dB
DV 90-71									
0,3 $\dot{V}_{max}$	15	7	3	-4	-6	-11	-13	-20	dB
0,6 $\dot{V}_{max}$	13	7	3	-4	-7	-11	-12	-19	dB
$\dot{V}_{max}$	10	7	4	-4	-8	-11	-12	-19	dB
DV 90-75									
0,3 $\dot{V}_{max}$	15	7	3	-4	-6	-11	-13	-20	dB
0,6 $\dot{V}_{max}$	13	7	3	-4	-7	-11	-12	19	dB
$\dot{V}_{max}$	10	7	4	-4	-8	-11	-12	-19	dB

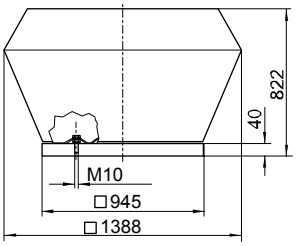
Discharge ($L_{Wrel8} = L_{Woct8} - L_{WA8}$)

Relative sound power level L_{Wrel8} at mid frequencies f_{mm}

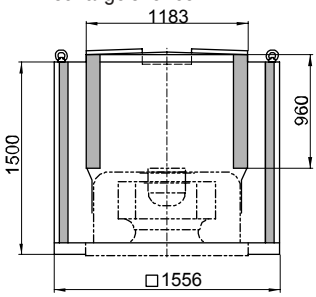
Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	9	7	-2	-1	-6	-10	-14	-21	dB
0,6 $\dot{V}_{max}$	9	8	-1	-3	-6	-8	-12	-21	dB
$\dot{V}_{max}$	6	7	-1	-1	-7	-9	-13	-24	dB
0,3 $\dot{V}_{max}$	8	9	-3	-2	-7	-9	-13	-18	dB
0,6 $\dot{V}_{max}$	10	9	-3	-3	-6	-9	-12	-18	dB
$\dot{V}_{max}$	7	9	-2	-2	-7	-9	-13	-19	dB
0,3 $\dot{V}_{max}$	8	4	-1	-5	-8	-8	-8	-12	dB
0,6 $\dot{V}_{max}$	9	2	-3	-5	-7	-7	-8	-14	dB
$\dot{V}_{max}$	12	6	0	-4	-7	-8	-12	-17	dB

Dimensions DV 90

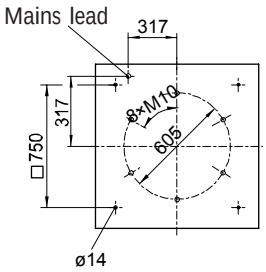
DV 90



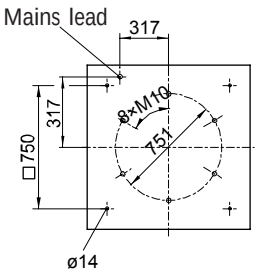
ZDH 20-0560
Discharge silencer



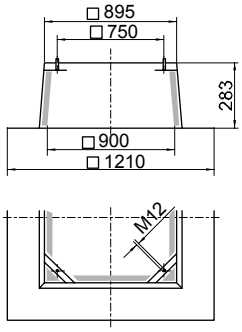
DV 90-63 / DV 90-71



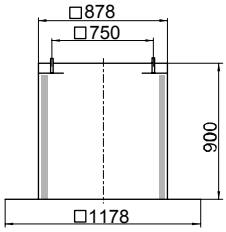
DV 90-75



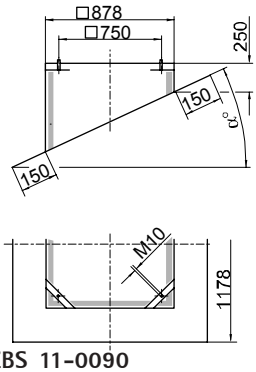
ZBS 01-0090
Flat roof upstand



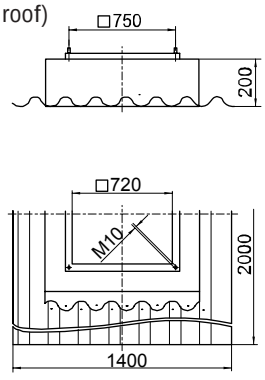
ZBS 23-0090
Flat roof upstand high



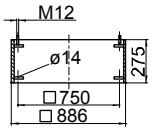
ZBS 09-0090-#
Upstand for inclined roof



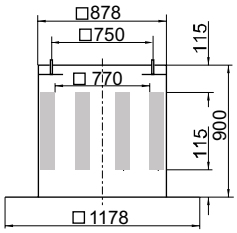
ZBS 11-0090
Soaker sheet (for corrugated roof)



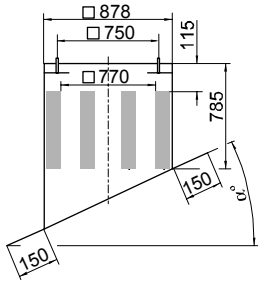
ZKK 20-0090
Intermediate piece



ZDS 20-0090
Silencer upstand

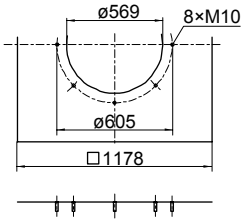


ZDS 09-0090-#
Silencer upstand for inclined roof

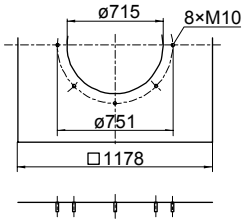


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)
When using damper ZLK and upstand silencer ZDS the damper has to be fitted by using a plate ZBU below silencer upstand.
When fitting damper to fan an intermediate piece ZKK must be added.

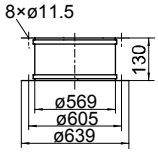
ZBU 01-0090-56
Connecting plate



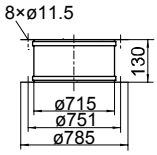
ZBU 01-0090-71
Connecting plate



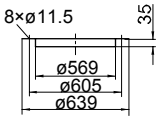
ZKE 11-0560
Intake flexible connection



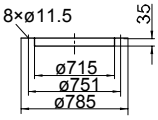
ZKE 11-0710
Intake flexible connection



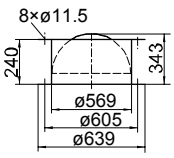
ZKF 11-0560
Mating flange



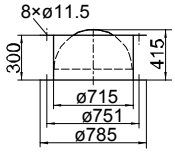
ZKF 11-0710
Mating flange



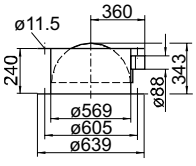
ZLK 01-0560
Automatic back draught damper



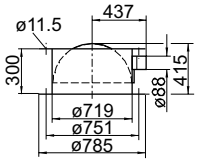
ZLK 01-0710
Automatic back draught damper



ZLK 21-0560
Damper with actuator



ZLK 21-0710
Damper with actuator

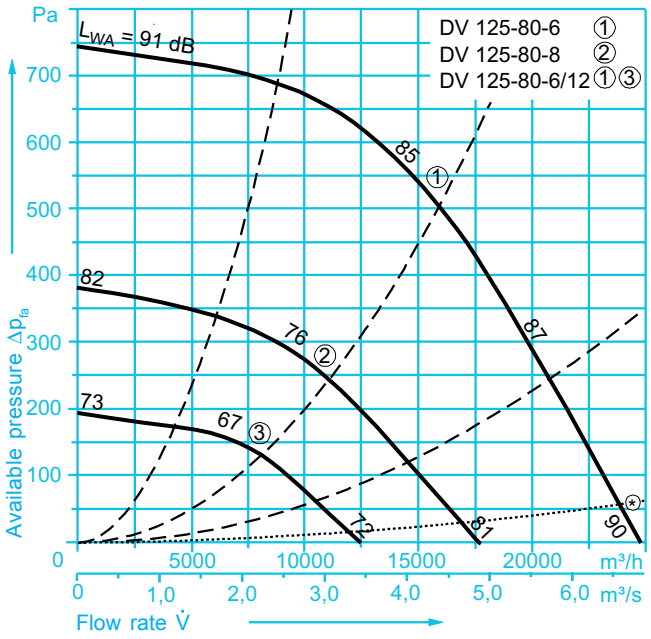


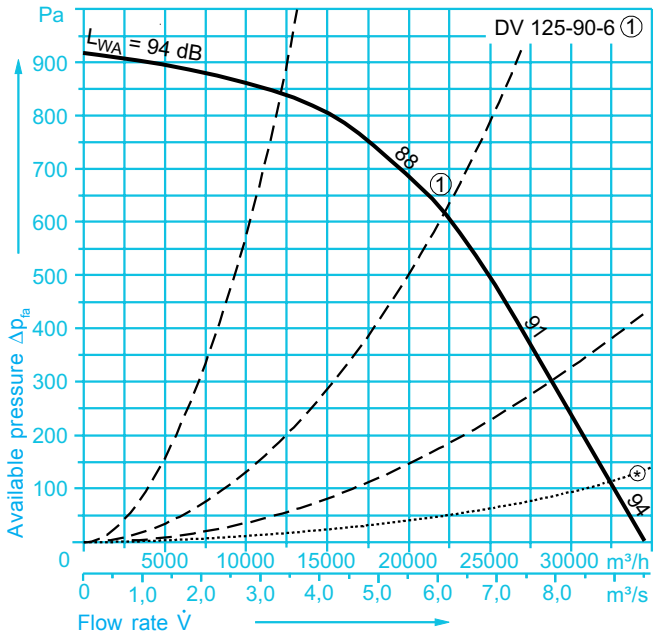
Roof Extract Fans DV

Performance Data DV 125

Roof fan	Voltage	Flow rate	Speed	Absorbed power	Full load current	Control units* 1-step	2-step	5-step	step-less	Sound power	Wiring diagram	Weight
Type DV	V	$\dot{V}_{max}$ m³/h	min⁻¹	max kW	A					L_{WA} $\dot{V}_{max}$ dB	No.	kg
125-80-6 *	3x400Δ	24800	945	5,2	10,2	-	-	-	-	90	549	215
125-80-8	3x400Δ	17600	660	2,0	4,4	D1	-	D5-12	-	81	537	206
125-80-6/12	3x400YY/Y	24800/12470	960/480	5,5/0,85	11,0/3,3	-	-	-	-	90/72	551	215
125-90-6 *	3x400Y	34550	940	8,8	16,4	-	-	-	-	94	549	238

* Fan not speed controlled





⊛ Pressure drop in the back draught damper
- Frequency 50 Hz
- Media density1,15 kg/m³

Attenuation values

	Average Values	63	125	250	500	1000	2000	4000	8000 Hz
Discharge silencer									
ZDH 20-0710	11 dB	4	8	5	13	17	18	18	17 dB
Silencer upstand									
ZDS..-0125	16 dB	3	6	8	14	20	25	23	11 dB

Pressure loss

Pressure loss p_A through silencer upstand, at flow rates of	17000	20000	25000	30000	40000	m³/h
Silencer upstand						
ZDS..-0125	20	30	40	65	110	Pa

Intake ($L_{Wrel3} = L_{Woct3} - L_{WA3}$)

Relative sound power level L_{Wrel3} at mid frequencies f_m

Duty point	63	125	250	500	1000	2000	4000	8000	Hz
DV 125-80									
0,3 $\dot{V}_{max}$	15	7	3	-4	-6	-11	-13	-20	dB
0,6 $\dot{V}_{max}$	13	7	3	-4	-7	-11	-12	-19	dB
$\dot{V}_{max}$	10	7	4	-4	-8	-11	-12	-19	dB
DV 125-90									
0,3 $\dot{V}_{max}$	15	7	3	-4	-6	-11	-13	-20	dB
0,6 $\dot{V}_{max}$	13	7	3	-4	-7	-11	-12	-19	dB
$\dot{V}_{max}$	10	7	4	-4	-8	-11	-12	-19	dB

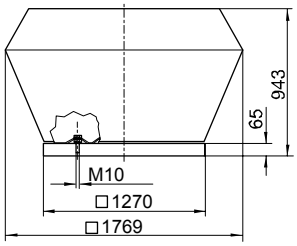
Discharge ($L_{Wrel8} = L_{Woct8} - L_{WA8}$)

Relative sound power level L_{Wrel8} at mid frequencies f_m

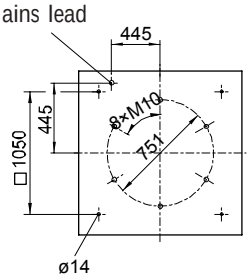
Duty point	63	125	250	500	1000	2000	4000	8000	Hz
0,3 $\dot{V}_{max}$	8	9	-3	-2	-7	-9	-13	-18	dB
0,6 $\dot{V}_{max}$	10	9	-3	-3	-6	-9	-12	-18	dB
$\dot{V}_{max}$	7	9	-2	-2	-7	-9	-13	-19	dB
0,3 $\dot{V}_{max}$	8	9	-3	-2	-7	-9	-13	-18	dB
0,6 $\dot{V}_{max}$	10	9	-3	-3	-6	-9	-12	-18	dB
$\dot{V}_{max}$	7	9	-2	-2	-7	-9	-13	-19	dB

Dimensions DV 125

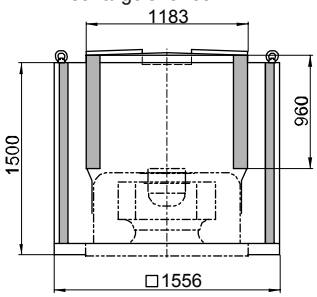
DV 125



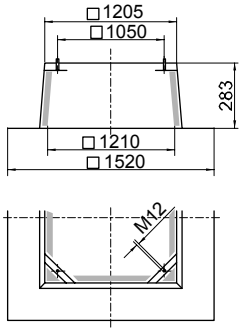
Mains lead



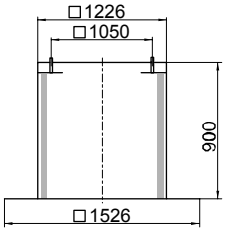
ZDH 20-0710
Discharge silencer



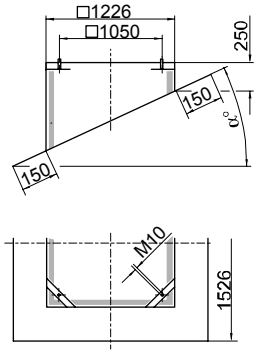
ZBS 20-0125
Flat roof upstand



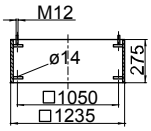
ZBS 23-0125
Flat roof upstand high



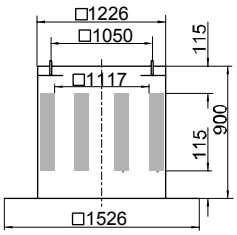
ZBS 09-0125-#
Upstand for inclined roof



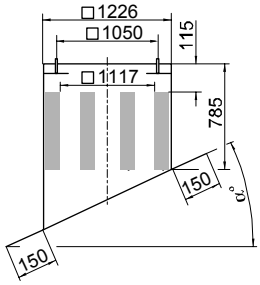
ZKK 20-0125
Intermediate piece



ZDS 20-0125
Silencer upstand



ZDS 09-0125-#
Silencer upstand for inclined roof

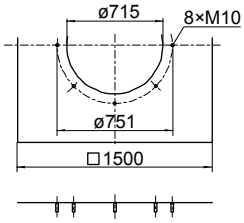


= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)

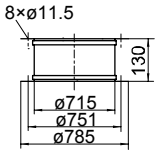
When using damper ZLK and upstand silencer ZDS the damper has to be fitted by using a plate ZBU below silencer upstand.

When fitting damper to fan an intermediate piece ZKK must be added.

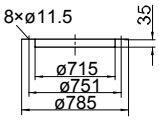
ZBU 01-0125-71
Connecting plate



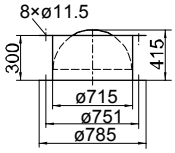
ZKE 11-0710
Intake flexible connection



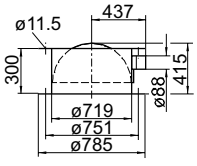
ZKF 11-0710
Mating flange



ZLK 01-0710
Automatic back draught damper



ZLK 21-0710
Damper with actuator



Roof Extract Fans DV

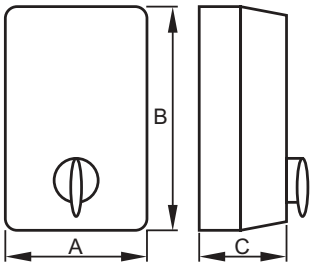
Motor Protection Units

Technical Data:

Type	Main Voltage	Control voltage	Max. rating	Max. Current	Weight	Protection
D1	400 V	230 V	3 kW	-	0,9 kg	IP 54
DS	400 V	230 V	4 kW	-	0,9 kg	IP 54
D5-1	400 V	230 V	-	1 A	4,5 kg	IP 40
D5-3	400 V	230 V	-	2 A	7,0 kg	IP 20
D5-7	400 V	230 V	-	4 A	9,0 kg	IP 20
D5-12	400 V	230 V	-	7 A	19,0 kg	IP 20
E5-1	230 V	-	-	1,5 A	1,0 kg	IP 40
E5-3	230 V	-	-	3 A	4,0 kg	IP 40

Dimensions:

Type	A	B	C
D1	105	170	135
DS	105	170	135
D5-1	150	200	175
D5-3	230	310	185
D5-7	230	310	185
D5-12	230	310	185
E5-1	105	170	135
E5-3	150	200	175

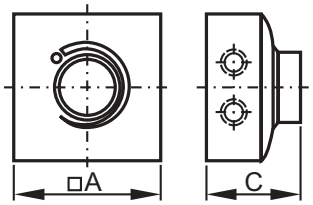


Technical Data:

Type	Voltage	max. Current	Weight	Protection
ES-3	230 V	2,5 A	0,6 kg	IP 44

Dimensions:

Type	A	B
ES-3	80	65

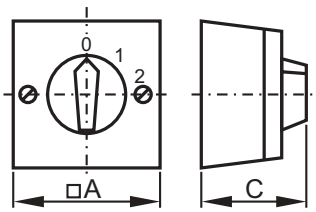


Technical Data:

Type	Voltage	max. Current	Weight	Protection
E2-6	230 V	6 A	0,15 kg	IP 54

Dimensions:

Type	A	B
ES-3	80	77

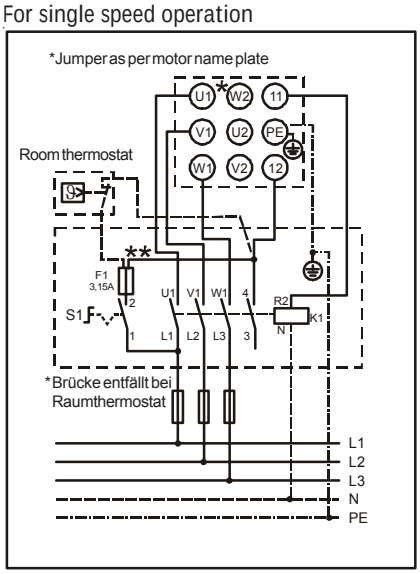


Roof Extract Fans DV

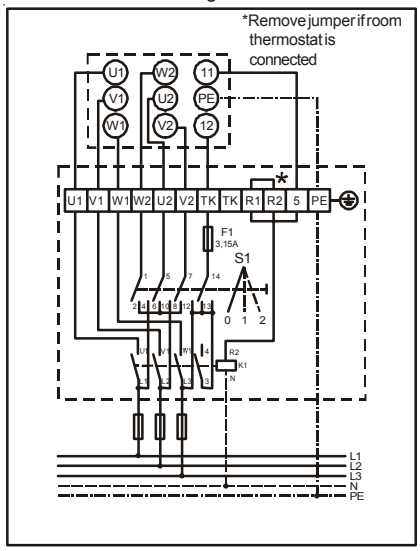
Diagrams for Control Switches
Diagrams for Isolator Switches

Tapping for thermo-contacts T or 11/12 respectively

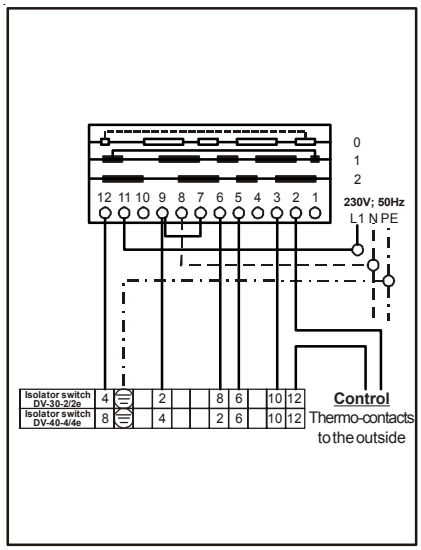
On/Off – Switch D1
For single speed operation



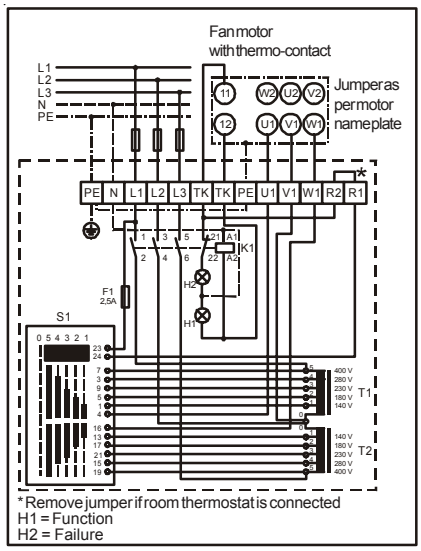
2-step-switch DS
For star/delta winding



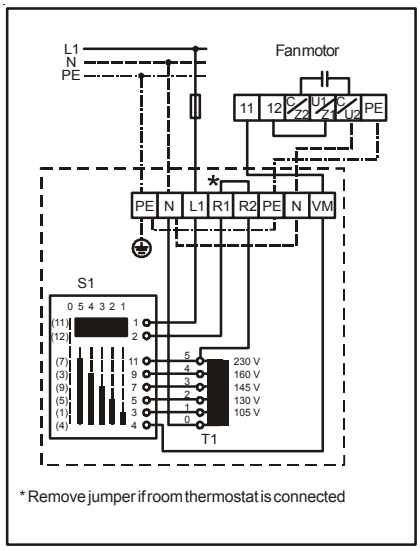
2-step-switch



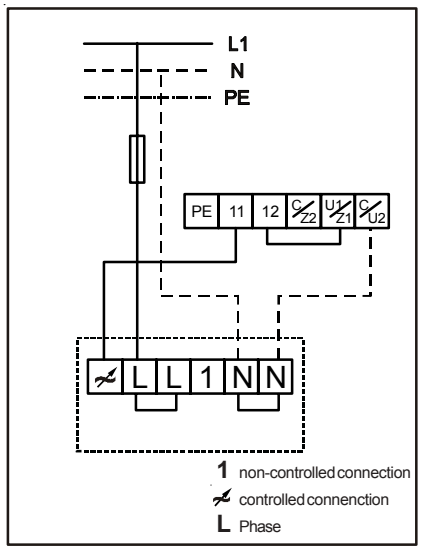
5-step-switch
D5-1, D5-3, D5-7, D5-12



5-step-switch
E5-1, E5-3

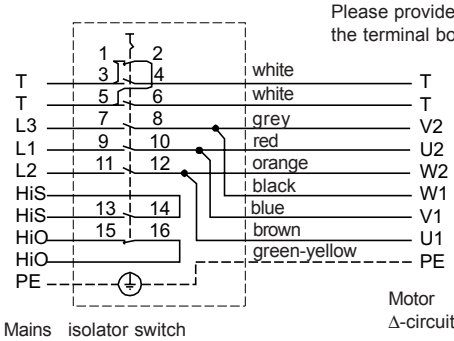


Step-less controller
ES-3 (phase cutting)



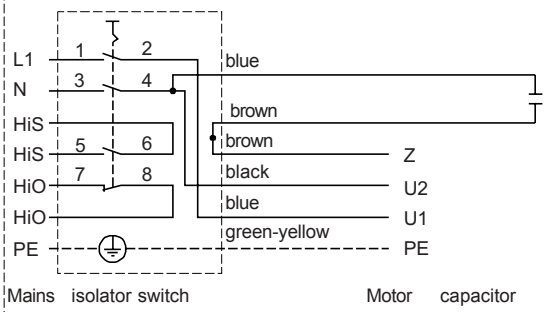
Diagrams for isolator switches

Isolator switch ESH 21/23-0030-35 / ESH 21/23-0075-35
for 3-phase motors, 1 speed, with thermo-contact, Δ-connection



17-09-04 502

Isolator switch ESH 21/23-0030-22
for single-phase AC-motors, with capacitor, thermo-contacts integrated in the motor winding



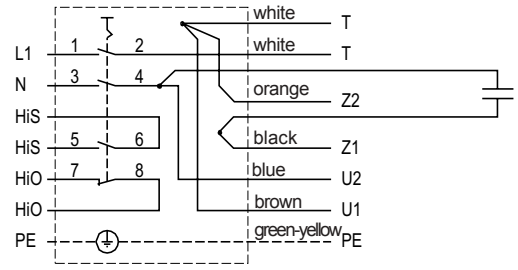
17-09-04 507

Roof Extract Fans DV

Diagrams for Isolator Switches

Tapping for thermo contacts T or 11/12 respectively

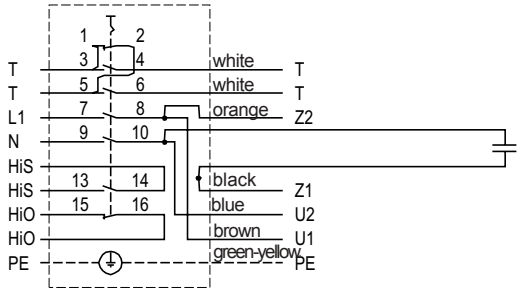
Isolator switch ESH 21/23-0030-22
for single-phase AC-motors, with capacitor, thermo-contacts and motor winding in serial circuit



Mains isolator switch Motor cpacitor

17-09-04 508

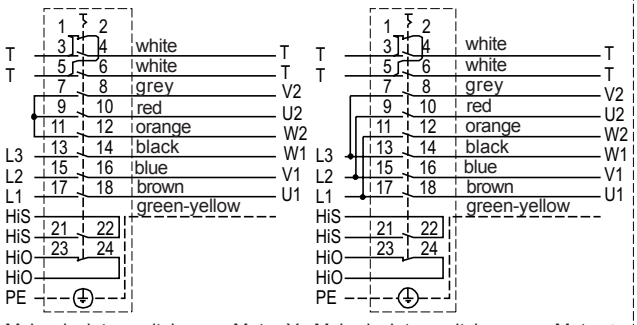
Isolator switch ESH 21/23-0030-25
for single-phase AC-motors, with capacitor and thermo-contacts



Mains isolator switch Motor capacitor

17-09-04 509

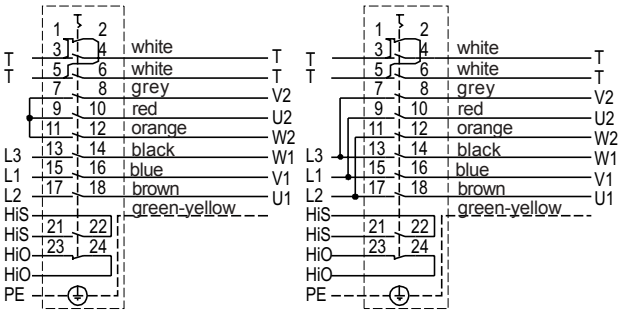
Isolator switch ESH 21/23-0030-65 / ESH 21/23-0075-65
for 3-phase motors, 2-speed, Y/Δ-connection, with thermo-contacts



Mains isolator switch lower speed Motor Y Mains isolator switch higher speed Motor Δ

17-09-04 515

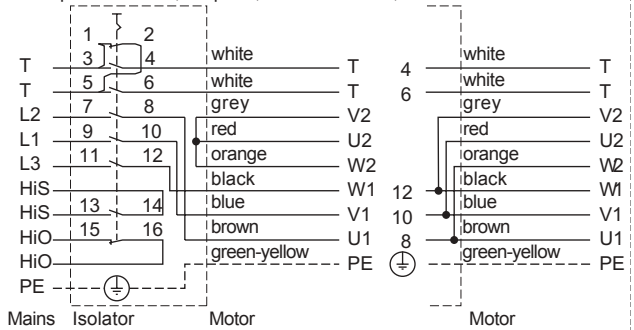
Isolator switch ESH 21/23-0030-65 / ESH 21/23-0075-65
for 3-phase motors, 2-speed, Y/Δ-connection, with thermo-contacts



Mains isolator switch lower speed Motor Y Mains isolator switch higher speed Motor Δ

21-09-04 516

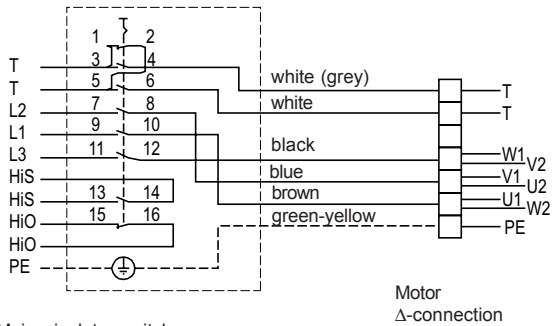
Isolator switch ESH 21/23-0030-35
for 3-phase motors, 1 speed, Y/Δ-connection, with thermo-contacts



Mains Isolator Motor Y-Connection 400 V Motor Connection 230 V

05-08-02 527

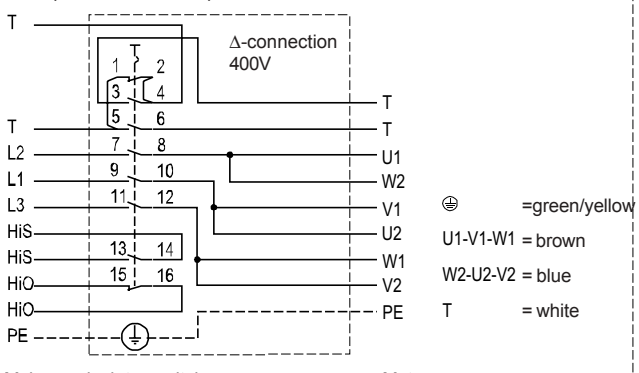
Isolator switch ESH 21/23-0030-35
for 3-phase motors, 2 speed, Δ-connection, with thermo-contacts



Mains isolator switch Motor Δ-connection 400V

17-09-04 537

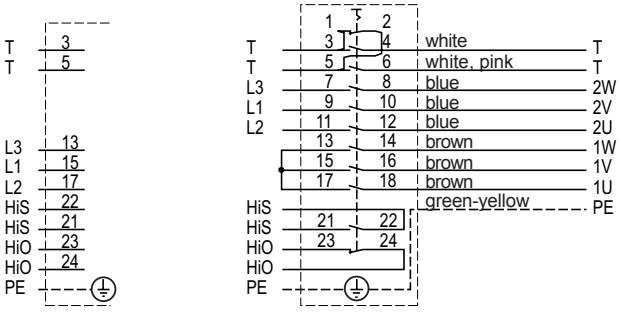
Isolator switch ESH 21/23-0030-35 / ESH 21/23-0075-35
for 3-phase motors, 1 speed, Y/Δ-connection, with thermo-contacts



Mains isolator switch Motor

17-09-04 549

Isolator switch ESH 21/23-0030-65 / ESH 21/23-0075-65
for 3-phase motors, 2 speed, Dahlander circuit Y/YY,
with thermo-contacts



Mains lower speed Mains isolator switch higher speed Motor

17-09-04 551

Roof Extract Fans DV

DigiPro Control Unit

Description

The control unit DigiPro is a system for controlling and monitoring a ventilation installation. DigiPro is fully set and ready for connection.
The smallest unit is equipped with a manual control panel and a second part serving as master controller.
These components are connected by bus (eBus) in a 2-wire technology.
There up to 32 units can be integrated in the same bus-system (with always one master or group unit).
2 master units are available for the control and monitoring of exhaust fans and other units equipped with a **230V or 400V fan motor**, 2-speed or continuous speed variation.

Master unit **FAE** 230V-2,2kW for continuous fan speed control
Master unit **FAZ** 400V – 2,2 kW for 2 speed control

The handling of the unit is simple. The control parameters are set making it ready for connection and operation.
There is no programming necessary.
If communication with mobile phone is required an ISDN-interface can be added.
In case of operational troubles messages can be mailed to the phone, fax or to a PC, providing a constant monitoring of the ventilation installation.
Further on a LON-Interface is available for integrating it into a LON-field-bus-system thus overcoming system limits in a building.

- Stylish casing made of cast aluminium; fitted outside fan unit
- Integrated isolator switch
- Input: 4 x trouble messages
- Output: 1 relay connection 230VH“, Relay exit potential free, 1 analogue output
- Power electronics for motor speed control
- Integrated motor temperature monitoring
- Address can be set with DIP-switch
- Short motor circuit recognition
- Radio noise suppression integrated (230V~ execution)
- 2-wire bus for system integration

Standart functions

- universal controller for exhaust units
- pre-programmed unit specially set for every application
- customised and extendable for growing installations
- motor protection by thermo-contacts
- several monitoring tasks available including fire detection

In and out tapping

	Trouble in (digital)	**Signal in** (analogue)	**Command in/out** (digital)	**Command continuous** (anal)
1	Filter control	Free	Damper open/close	Air mix damper (0 to 10V)
2	Fire detection	Free	Free	
3	Air flow ctrl (KG)			
4	thermo-contact			

Technical Data

Protection:	IP54
Feed voltage; Rating FAE:	230V~ ±10% / 50 Hz / 2,2kW
Feed voltage; Rating FAZ:	400V~ ±10% / 50 Hz / 2,2kW
Sourrounding conditions:	Temperature: -20 bis +50°C Air humidity 0 bis 95%
Storage temperature:	-25 bis + 65°C
Operation altitude:	max. 2000m
Wire section for tapping:	max. 2,5mm² (coloured plugs coded)
Input digital:	4x 24V=
Output digital:	1x relay 230V~ /2A / AC3
Output analogue:	1x 0..10V DC
Motor connection to FAE:	0-230V~ / 50Hz / max. 11,5A / continuous speed control, max. 2,2kW for common motor ctrl.
motor connection to FAZ:	400V~ / 50Hz / max. 3x6,5A / 2-speed control, max. 2,2kW for common motor control.
Feed fuses:	10/16 A (not included)
Dimensions L x B x H:	33,7 cm x 21,7 cm x 12,2 cm

Remark:

Exhaust air management (e.g. under- or over pressure, exhaust air in function of supply air or parallel operation with supply air) is only possible in connection with a master unit of a supply air fan. An independent control with DigiPro is not possible.

Roof Extract Fans DV

Sample Specification

Roof Extract Fan DV 30

with swirl free horizontally directed discharge, for maximum gas medium temperatures up to +40°C.
Stylish casing and base frame with inlet cone, manufactured from galvanised sheet steel.
Inlet flange in accordance with DIN 24 155- 2.
Discharge outlets protected from the weather with an aerodynamically shaped grille.
Centrifugal impeller with backward curved blades, mounted on the rotor of a variable speed integral external rotor motor, protected to IP 44.
Motor protection is through direct switching of thermo-contacts in the motor winding, supplied ready to connect.
Dynamically balanced, installed vibration free, totally maintenance free.

Roof Extract Fan DV 40 – 125

Suitable for maximum gas medium temperatures up to +40°C.
Stylish V-shape casing made of galvanized sheet steel.
Base frame made of galvanized sheet steel for being fitted to upstand, large overhung for implementing roof isolation material.
Inlet flange in accordance with DIN 24 155- 2.
Guard in discharge section. High performance centrifugal impeller with backward curved blades fitted on the rotor of an integrated motor.
Motor fully maintenance free, vibration free mounted, thermo-contacts for complete motor protection.
The roof fan is ready for fitting, isolator switch easily accessible under weather cowl.

Fan type	DV	=	
Flow rate	$\dot{V}$	=	m^3/h
Pressure increase	Δp_{fa}	=	Pa
Temp. of gas medium	t	=	°C
Speed	n	=	1/min
Shaft power	max. P_1	=	kW
Max. absorbed current	max. I	=	A
voltage/ frequency	U / f	=	V / Hz
A-Sound power level	L_{WA}	=	dB
Weight	G	=	kg
Dimensions		=	mm

Accessories (at extra cost)

Flat roof upstand – made of galvanized sheet steel (ZBS 20)
Flat roof upstand high – made of galvanized sheet steel (ZBS 23)
Upstand for inclined roof– made of aluminium (ZBS 09)
Silencer upstand – made of galvanized sheet steel (ZDS 20)
Silencer upstand for inclined roof– made of aluminium (ZDS 09)
Discharge silencer ZDH 20 (for DV 40 – 125)
Soaker sheet for corrugated roof ZBS 11 – made of GRP (up tp size 90)
Base plate for tube connection (ZBU 11)
Flexible connection ZKE 11
Mating flange ZKF 11
Back draught damper ZLK
Actuated back draught damper ZLK 21 (sizes DV 40 to 125)
Intermediate piece ZKK 20 (sizes DV 40 to 125)
Inlet guard ZSG 04
Switches and controls

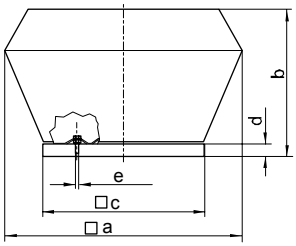
Summary ..... Page

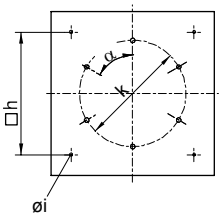
Roof Ventilation Hoods DLH

Description

Rain protection cowl made of galvanized sheet steel. Base frame with aerodynamic cone made of galvanized sheet steel.
Roof ventilation hoods are suitable for the use as weather proof ventilation opening in a roof or as the final element - intake or outlet - in ventilation and exhaust air systems.
The occurring pressure losses are to be checked with the diagrams below.

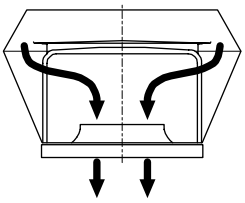
Dimensions

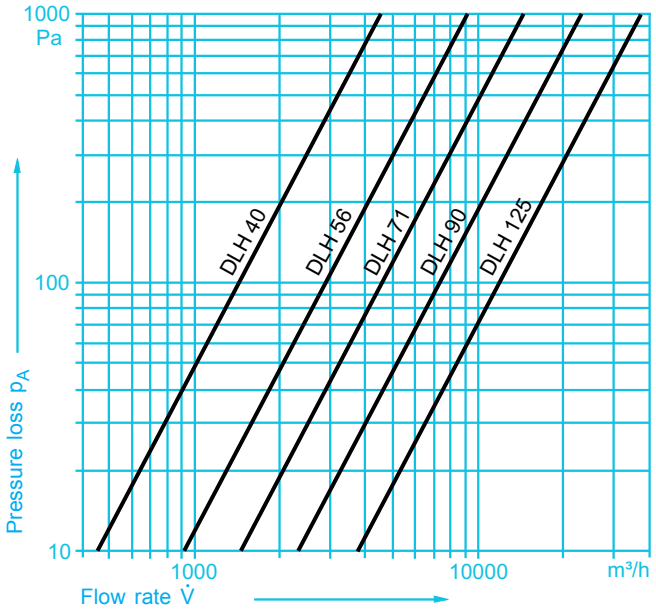




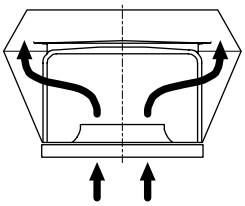
	a	b	c	d	e	h	i	k
DLH 40	671	440	440	32	6×M6	330	12	286
DLH 56	881	523	600	32	8×M8	450	12	395
DLH 71	1103	648	750	32	6×M8	590	14	487
DLH 90	1388	822	940	40	8×M10	750	14	605
DLH 125	1769	933	1270	65	8×M10	1050	14	751

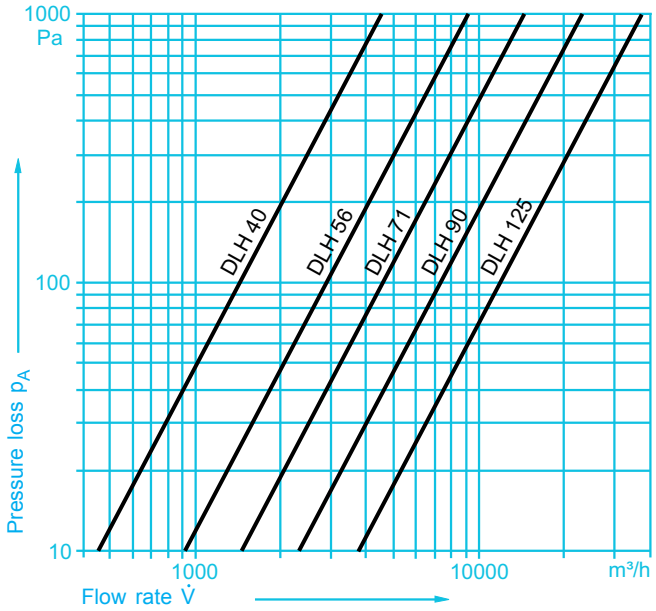
Pressure loss air intake



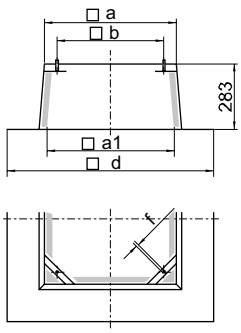


Pressure loss air discharge



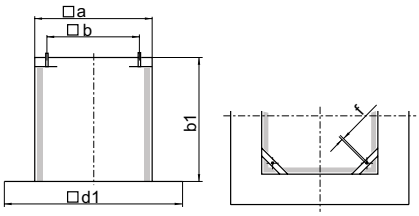


Dimensions accessories

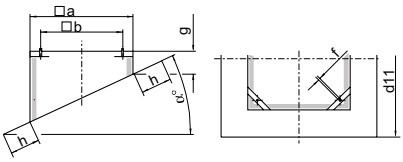


ZBS 20-	a	a1	b	d	f	kg
0040	395	400	330	710	M10	8
0056	**555**	**560**	**450**	**870**	**M10**	**10**
0071	705	710	590	1020	M12	16
0090	895	900	750	1210	M12	25
0125	1205	1210	1050	1520	M12	34

Roof Ventilation Hoods DLH Dimensions

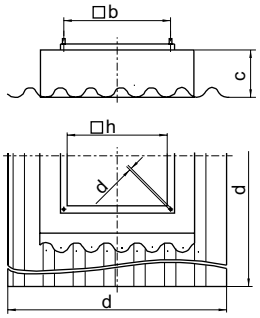


ZBS 23-	a	b	b1	d1	f	kg
0040	378	330	650	618	M10	12
0056	538	450	800	778	M10	14
0071	688	590	900	988	M12	20
0090	878	750	900	1178	M12	32
0125	1226	1050	900	1526	M12	40

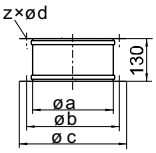


ZBS 09-	a	b	d11	f	g	h	kg
0040-#	378	330	618	M10	250	150	5
0056-#	538	450	778	M10	250	150	6
0071-#	688	590	988	M12	250	150	9
0090-#	878	750	1178	M12	250	150	13
0125-#	1226	1050	1526	M12	250	150	18

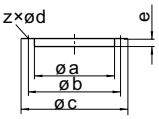
= inclination up to 45° possible within 5° steps. Indicate inclination with type when ordering ZBS 09-0031-05 (od. 10, 15, 20, 25, 30, 35, 40, 45)



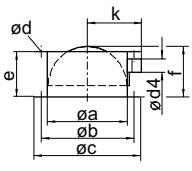
ZBS 11-	□b	c	d	f	g	□h
0040	330	200	920	M10	1600	322
0056	450	200	920	M10	1600	400
0071	450	200	1400	M12	2000	560
0090	750	200	1400	M12	2000	715



	ZKE	a	b	c	z x Ød
DLH 40	11-0250	256	286	306	6 x Ø7
DLH 56	11-0355	361	395	421	8 x Ø9,5
DLH 71	11-0450	453	487	513	6 x Ø9,5
DLH 90	11-0560	569	605	639	8 x Ø11,5
DLH 125	11-0710	715	751	785	8 x Ø11,5



	ZKF	a	b	c	e	z x Ød
DLH 40	11-0250	256	286	306	25	6 x Ø7
DLH 56	11-0355	361	395	421	30	8 x Ø9,5
DLH 71	11-0450	453	487	513	30	6 x Ø9,5
DLH 90	11-0560	569	605	639	35	8 x Ø11,5
DLH 125	11-0710	715	751	785	35	8 x Ø11,5



	ZLK	a	b	c	Ø d4	e	f	k	z x Ød
DLH 40	21-0250	256	286	306	88	240	185	207	6 x Ø7
DLH 56	21-0355	361	395	421	88	240	237	258	8 x Ø9,5
DLH 71	21-0450	453	487	513	88	240	282	300	6 x Ø9,5
DLH 90	21-0560	569	605	639	88	240	343	360	8 x Ø11,5
DLH 125	21-0710	715	751	785	88	300	415	437	8 x Ø11,5

Smoke Extract Fans ER

Description

Description

Air discharge vertical and swirl free.
Casing made of aluminium.
Base frame and mechanically stressed parts made of galvanized sheet steel.
Impeller made of steel, welded and coated.
Motor separated from air stream.
Casing side parts removable, centre parts to be swivelled (up to size 7190).
Ready for connection; free cable lead, protected by a steel tube.
Fixing bracket for isolator switch or connection box as a standard.
Isolator switch as an option (loose for fitting on site)

Smoke-extract roof fans of the lines RDM 56 and RDM 57 are provided for eliminating heat and smoke in case of fire especially in the first phase with usually high smoke content. They have to keep the escape ways smoke free, reduce damages, and ease fire fighting actions.

They fulfil the actual requirements for ”Mechanical Extract Devices (MA)“

RDM 56–, +400°C – 120 min
The fans of the range RDM 56 do respond to the requirements of the category 1,2, and 3 according to EN 12101-3.
They have been certified by the DIBt with certificate N° Z-78.1-26

RDM 57–, +600°C – 120min
The fans of the range RDM 57 correspond to the requirements of the category 1,2, 3, and 4 according to EN 12101-3.
They have been certified by the DIBt with certificate N° Z-78.1-27

The fans have been tested by the research and test laboratory of the chair for home improvement and construction techniques at the University of Munich and have subsequently been certified by the DIBt, Berlin.
Certificates can be provided on request.

The roof extract fans comply with the tolerances of Class 2 of DIN 24 166 ”Fans, Technical Specifications“.

The smoke extract roof fans are equipped with IEC standard motors B5, protection class IP 55 and heat class F.

Attention!
In case of fire the motor must not be electrically ”protected“. All high temperature and high current securities have to be bridged, i.e. to be put out of order.

Smoke Extract Fans ER

Summary Data Sheet

A full fan line: 23 standard sizes

Performance range: 3300 up to 57200 m³/h

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weight	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
2528-2D-11	3.300	950	230/400 Δ/Y	2845	1.10	4.15/2.40	39	0055-32
2531-4D-10	2.200	270	230/400 Δ/Y	1395	0.55	2.51/1.45	35	0055-32
3535-4D-10	3.370	320	230/400 Δ/Y	1395	0.55	2.51/1.45	44	0055-32
3540-4D-10	4.700	440	230/400 Δ/Y	1395	0.55	2.51/1.45	50	0055-32
3545-4D-13	5.750	570	230/400 Δ/Y	1410	1.1	4.6/2.65	55	0055-32
3545-HD-10	3.700 /1.900	215/50	400 Y/YY	935/425	0.3/0.075	1.0/0.44	55	0075-62
4550-4D-16	9.450	650	230/400 Δ/Y	1420	2.20	8.50/4.90	87	0055-32
4550-HD-14	6.200 /3.000	280/70	400 Y/YY	965/460	0.55/0.12	2.0/0.88	82	0075-62
4556-4D-17	11.400	800	230/400 Δ/Y	1420	3.0	11.1/6.4	100	0055-32
4556-6D-13	7.300	320	230/400 Δ/Y	915	0.75	3.65/2.1	94	0055-32
4556-HD-16	7.300/3.750	320/100	400 Y/YY	940/460	1.1/0.18	2.85/1.09	103	0075-62
5663-6D-16	11.900	470	230/400 Δ/Y	925	1.5	6.75/3.9	181	0055-32
5663-HD-19	11.900/5.900	470/130	400 Y/YY	955/450	1.8/0.45	5.1/2.0	199	0075-62
5671-6D-21	14.500	620	230/400 Δ/Y	950	3	12.5/7.2	190	0055-32
5671-HD-24	14.500/7.400	620/160	400 Y/YY	965/480	3.3/0.7	6.8/2.5	216	0075-62
7180-6D-24	25.000	780	400/690 Δ/Y	950	5.5	12.8/7.4	288	0075-62
7180-8D-21	18.800	440	230/400 Δ/Y	700	2.2	9.9/5.7	300	0055-32
7180-HD-28	25.000/12.000	780/180	400 Y/YY	975/485	6.2/1.3	12.5/4.1	348	0075-62
7190-6D-28	33.500	980	230/400 Δ/Y	960	9.0	19.4/11.2	297	0110-62
7190-HD-26	33.500/15.800	980/240	400 Y/YY	975/485	9.0/2.0	18.5/6.2	390	0110-62
9090-4D-31	51.900	2000	400/690 Δ/Y	1460	22	41.5/24.1	590	0220-62
9090-ID-34	57.200/38.200	2.200/1.000	400 Y/Y	1470/980	26/9.5	49.0/20.0	640	0300-62
9090-GD-34	57.200/28.800	2.200/590	400 Y/YY	1470/732	28/7.5	52.0/20.5	640	0300-62

Important Remarks

Safety Guards

All roof extract fans are supplied with a discharge-side mesh safety guard in accordance with DIN EN 294. The inlet side is not fitted with a standard guard, because it is normal practice to connect other system parts to this end. **However, if the unit is installed in such a way that accidental contact with the impeller is possible, an additional inlet guard has to be fitted acc. to DIN EN 294!** The fans may only be put into operation if all necessary protection devices are fitted and made effective (see maintenance instructions)! The safety guards are to be executed acc. to DIN EN 292 – 1, chapter 3.22 "Separating safety devices" and DIN EN 292 – 2, chapter 4 "Technical protection measures".

Safety instructions

Transport, fitting, electrical connection, start up, and maintenance are to be executed following the instructions given in the manual and by respecting the actual standards, guide lines, and safety rules. Please take care of the special – heat protected – cable lead when installing smoke extract fans.

Performance data

The performance curves are obtained using an inlet side test chamber in accordance with DIN 24 163-2 "Fans, performance tests, standard test equipment". The performance grids show the effective pressure increase Δp_{fa} (Pressure increase obtained from the fan in free-field conditions) as a function of the flow volume $\dot{V}_L$.
Reference media density: ρ_1 = 1.15 kg/m³. The roof fans comply with the tolerances of Class 2 of DIN 24 166 "Fans, Technical Specifications".

Sound Data

Measurement and evaluation of noise levels are in accordance with DIN 45 635 - 38 “Sound measurements on machines; fans”. In the technical data the A-weighted sound power level at maximum flow rate is given.

The computer aided data collection and evaluation enables to obtain highly reliable data precision. In the curves the emission value of the A-sound-power level L_{WA} is given, having the same value for intake (L_{WA3}) as for the discharge (L_{WA8}).
For more exact calculations when determining the required attenuation, the sound power level in the octave bands is important.

$$L_{Woct\ 3/8} = L_{WA} + L_{Wrel\ 3/8}$$

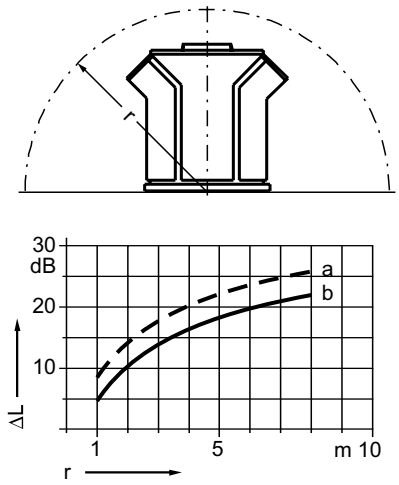
The relative sound power levels for inlet and discharge sides, at various duty points, can be read from the corresponding tables.

Calculation of the sound pressure level

Because conditions in the operating environment are usually far from ideal for measurement and can vary greatly, a determination of the A-sound-pressure level at any distance is only possible with great uncertainty.

$$L_{PA} \approx L_{WA} - \Delta L$$

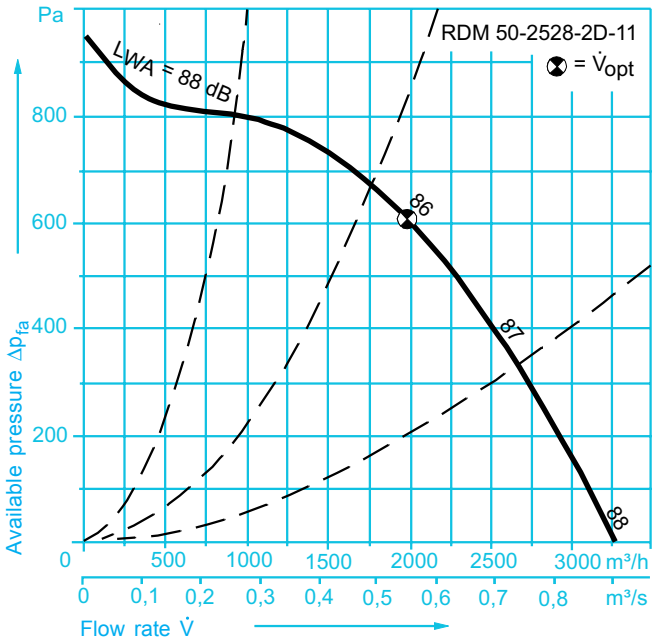
The diagram below supplies the correction value ”Δ L“ in function of the distance ”r“ from the fan centre. Under ideal conditions, with a clear hemisphere of sound propagation, curve ”a“ is valid. However, curve ”b“ is recommended for practical estimates. The calculation of the intake sound-power level is only possible if the exact noise parameters of the connected room are known (see VDI 2081!).

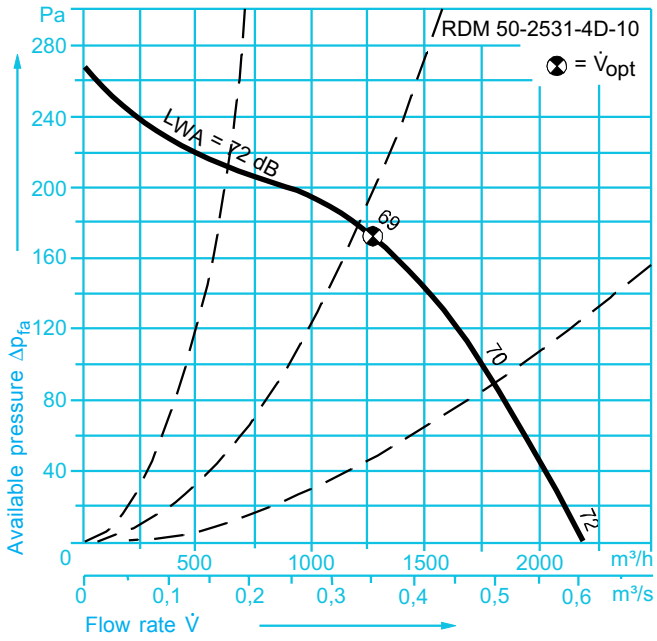


Smoke Extract Fans ER

Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
2528-2D-11	3.300	950	230/400 Δ/Y	2845	1.10	4.15/2.40	39	0055-32
2531-4D-10	2.200	270	230/400 Δ/Y	1395	0.55	2.51/1.45	35	0055-32





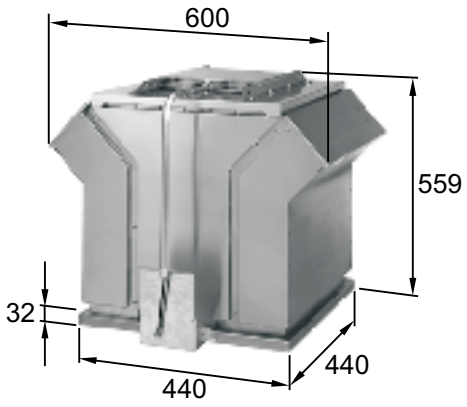
In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38.
Reference media density: ρ_1 = 1.15 kg/m³.

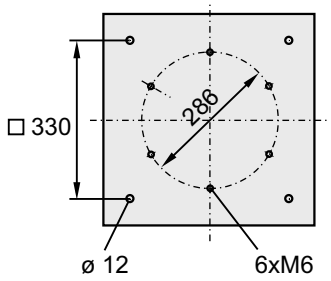
Intake										Discharge									
Relative sound power level L_{WRel3} at octave mid frequencies f_m										Relative sound power level L_{WRel3} at octave mid frequencies f_m									
RDM 56/57-2528; -2531										RDM 56/57-2528; -2531									
2-poles										2-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	16	12	3	-4	-13	-17	-20	-27	dB	$0.5\dot{V}_{opt}$	-5	0	0	-2	-5	-8	-12	-19	dB
$\dot{V}_{opt}$	1	1	6	-3	-12	-14	-15	-24	dB	$\dot{V}_{opt}$	-8	-6	-1	-3	-6	-8	-9	-17	dB
$\dot{V}_{max}$	-2	-4	5	-3	-12	-16	-15	-19	dB	$\dot{V}_{max}$	-9	-8	-3	-2	-6	-8	-8	-15	dB
4-poles										4-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	13	12	2	-3	-10	-14	-19	-27	dB	$0.5\dot{V}_{opt}$	-2	0	-2	-3	-5	-8	-13	-21	dB
$\dot{V}_{opt}$	9	12	1	-3	-10	-13	-18	-27	dB	$\dot{V}_{opt}$	-5	-0	-2	-3	-5	-7	-13	-21	dB
$\dot{V}_{max}$	4	10	1	-2	-10	-13	-15	-23	dB	$\dot{V}_{max}$	-10	-1	-4	-3	-5	-6	-12	-19	dB

Dimensions

Dimensions

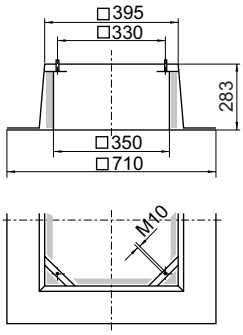
RDM 56/57 2528-2D-11
RDM 56/57 2531-4D-10



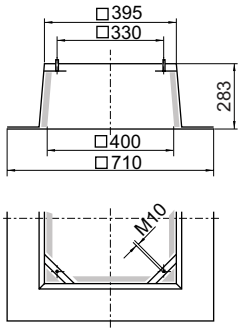


Flat roof upstand

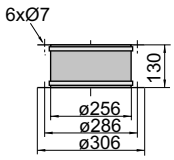
ZBS 03-0040
(600°C)



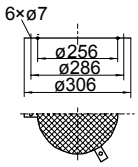
ZBS 20-0040
For RDM56 only, when connected to duct



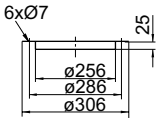
Flexible connection at intake
ZKE 30-0250 (600°C)



Inlet guard
ZSG 04-0250

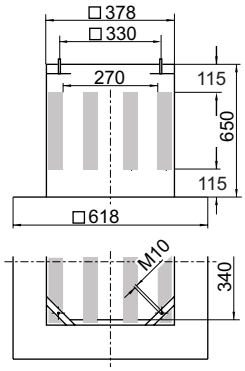


Mating flange
ZKF 11-0250 (600°C)



Silencer upstand ZDS 32-0040 (600°C)

Robust casing of coated sheet steel. ZDS 32-0400 with removable baffles.



Average attenuation L_{WA} 16 dB

Attenuation in dB at mid frequencies in Hz

63 Hz	**3 dB**	1000 Hz	**19 dB**
125 Hz	**5 dB**	2000 Hz	**23 dB**
250 Hz	**8 dB**	4000 Hz	**21 dB**
500 Hz	**13dB**	8000 Hz	**15 dB**

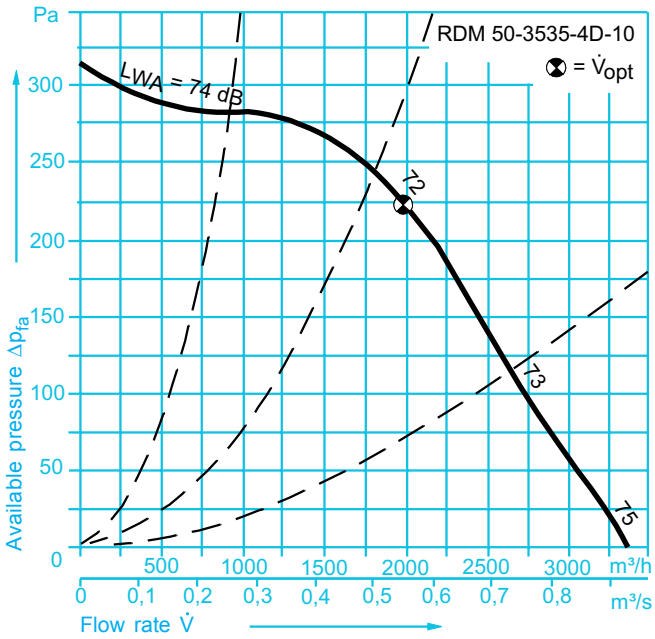
Pressure loss p_A through silencer upstand
In Pa, at flow rates in m³/h

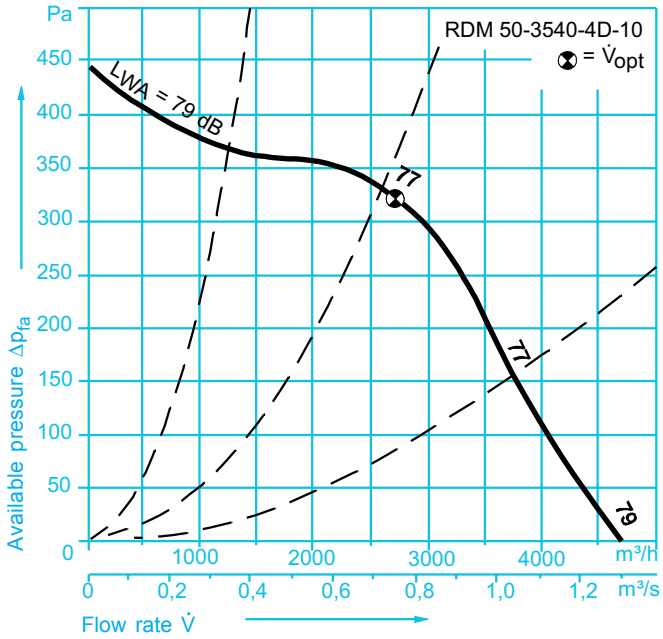
m³/h	**Pa**
1500	**25**
2000	**40**
3000	**100**
4000	**170**

Smoke Extract Fans ER

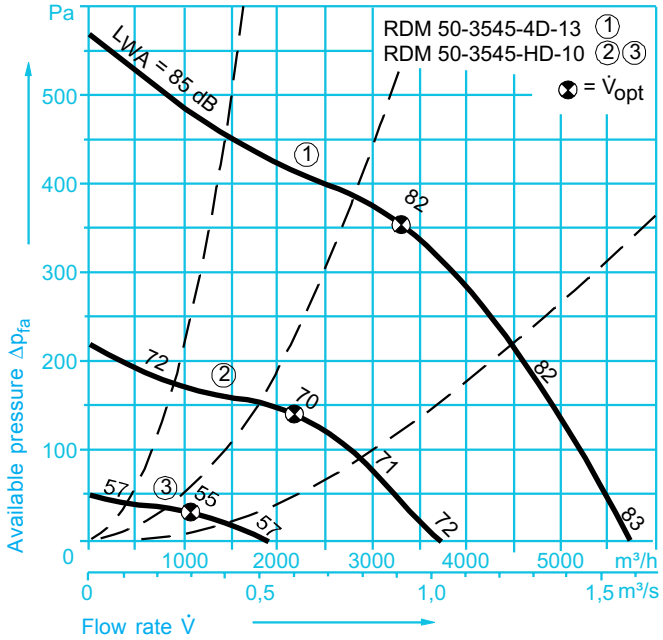
Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
3535-4D-10	3.370	320	230/400 Δ/Y	1395	0.55	2.51/1.45	44	0055-32
3540-4D-10	4.700	440	230/400 Δ/Y	1395	0.55	2.51/1.45	50	0055-32
3545-4D-13	5.750	570	230/400 Δ/Y	1410	1.1	4.6/2.65	55	0055-32
3545-HD-10	3.700 /1.900	215/50	400 Y/YY	935/425	0.3/0.075	1.0/0.44	55	0075-62





In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38. Reference media density: ρ_1 = 1.15 kg/m³.



Intake

Relative sound power level L_{WrelI3} at octave mid frequencies f_m

RDM 56/57-3535; -3540; -3545									
4-poles									
Duty Point	63	125	250	500	1000	2000	4000	8000	Hz
0.5V̇opt	13	11	2	-2	-11	-16	-21	-27	dB
V̇opt	9	11	1	-2	-11	-16	-20	-24	dB
V̇max	6	9	2	-1	-12	-17	-19	-21	dB
6-poles									
Duty Point	63	125	250	500	1000	2000	4000	8000	Hz
0.5V̇opt	16	10	1	-1	-10	-16	-22	-27	dB
V̇opt	14	11	2	-2	-11	-17	-22	-29	dB
V̇max	11	13	3	-1	-12	-17	-21	-29	dB

Discharge

Relative sound power level L_{WrelI3} at octave mid frequencies f_m

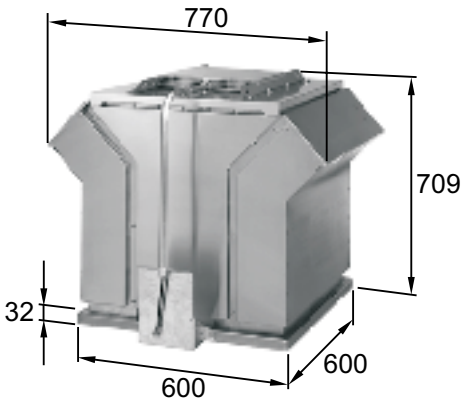
RDM 56/57-3535; -3540; -3545									
4-poles									
Duty Point	63	125	250	500	1000	2000	4000	8000	Hz
0.5V̇opt	-3	4	-1	-4	-6	-7	-12	-20	dB
V̇opt	-6	4	-1	-4	-6	-7	-12	-19	dB
V̇max	10	4	-1	-3	-6	-7	-13	-17	dB
6-poles									
Duty Point	63	125	250	500	1000	2000	4000	8000	Hz
0.5V̇opt	1	6	0	-3	-6	-9	-16	-25	dB
V̇opt	-1	6	0	-4	-6	-9	-15	-25	dB
V̇max	-1	6	1	-3	-6	-8	-13	-25	dB

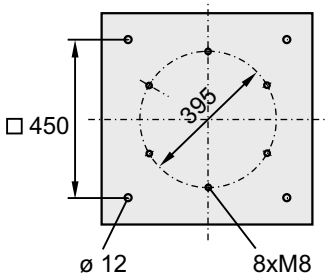
Smoke Extract Fans ER

Dimensions

Dimensions

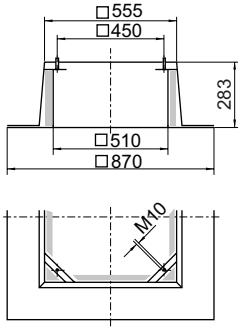
RDM 56/57 3535-4D-10
RDM 56/57 3540-4D-10
RDM 56/57 3545-4D-13
RDM 56/57 3540-HD-10



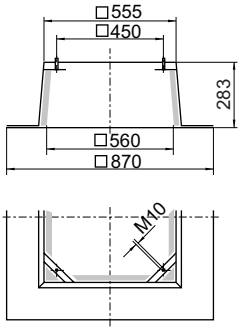


Flat roof upstand

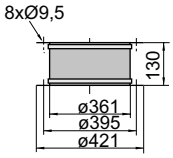
ZBS 03-0056
(600°C)



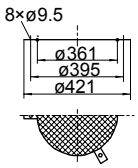
ZBS 20-0056
For RDM56 only, when connected to duct



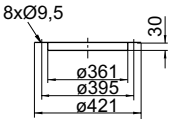
Flexible connection at intake
ZKE 30-0355 (600°C)



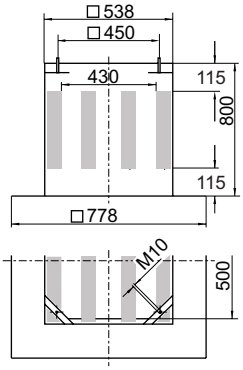
Inlet guard
ZSG 04-0355



Mating flange
ZKF 11-0355 (600°C)



Silencer upstand ZDS 32-0056
(600°C)
with removable baffles



Average attenuation L_{WA} 16 dB

Attenuation in dB at mid frequencies in Hz

63 Hz	3 dB	1000 Hz	18 dB
125 Hz	5 dB	2000 Hz	21 dB
250 Hz	8 dB	4000 Hz	20 dB
500 Hz	12dB	8000 Hz	15 dB

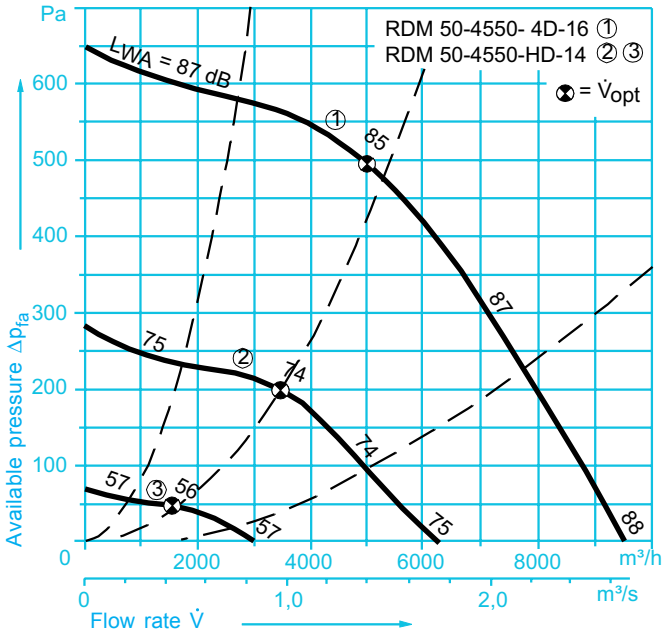
Pressure loss p_A through silencer upstand
In Pa, at flow rates in m³/h

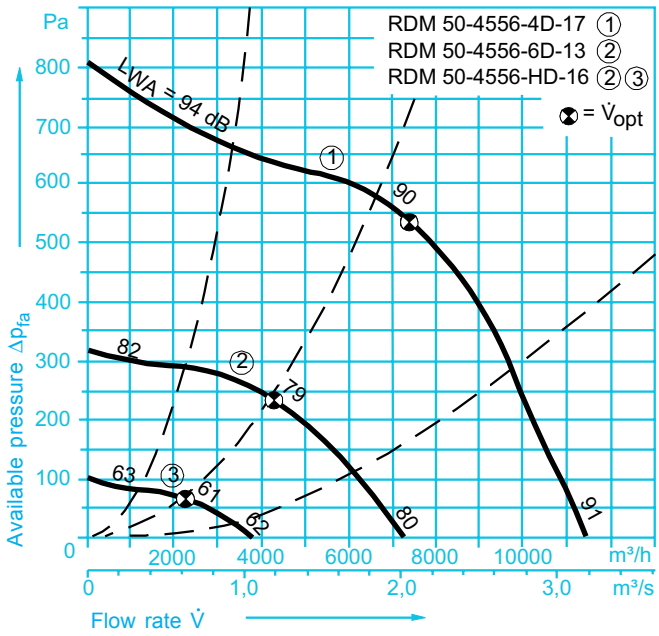
m³/h	Pa
3000	25
4000	42
6000	80
8000	160

Smoke Extract Fans ER

Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
4550-4D-16	9.450	650	230/400 Δ/Y	1420	2.20	8.50/4.90	87	0055-32
4550-HD-14	6.200 /3.000	280/70	400 Y/YY	965/460	0.55/0.12	2.0/0.88	82	0075-62
4556-4D-17	11.400	800	230/400 Δ/Y	1420	3.0	11.1/6.4	100	0055-32
4556-6D-13	7.300	320	230/400 Δ/Y	915	0.75	3.65/2.1	94	0055-32
4556-HD-16	7.300/3.750	320/100	400 Y/YY	940/460	1.1/0.18	2.85/1.09	103	0075-62





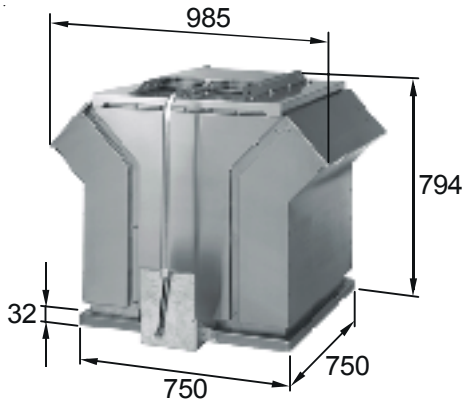
In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38. Reference media density: ρ_1 = 1.15 kg/m³.

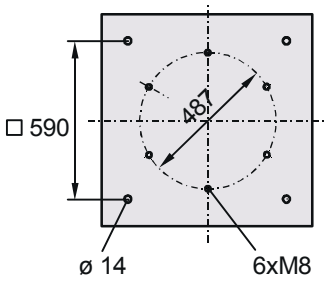
Intake										Discharge									
Relative sound power level L_{WRel3} at octave mid frequencies f_m										Relative sound power level L_{WRel3} at octave mid frequencies f_m									
RDM 56/57-4550; - 4556										RDM 56/57-4550; -4556									
4-poles										4-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	14	10	1	-2	-11	-14	-15	-22	dB	$0.5\dot{V}_{opt}$	1	5	0	-4	-5	-9	-13	-20	dB
$\dot{V}_{opt}$	9	12	0	-3	-11	-15	-15	-21	dB	$\dot{V}_{opt}$	-4	8	-1	-5	-6	-9	-12	-19	dB
$\dot{V}_{max}$	3	9	1	-2	-12	-16	-16	-12	dB	$\dot{V}_{max}$	-8	8	-2	-4	-6	-9	-15	-12	dB
6-poles										6-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	15	11	1	-2	-11	-15	-16	-23	dB	$0.5\dot{V}_{opt}$	2	4	1	-4	-5	-7	-13	-22	dB
$\dot{V}_{opt}$	11	13	-1	-4	-12	-16	-17	-25	dB	$\dot{V}_{opt}$	0	4	0	-4	-6	-8	-13	-22	dB
$\dot{V}_{max}$	7	15	3	-1	-10	-14	-12	-21	dB	$\dot{V}_{max}$	-4	6	1	-3	-6	-8	-12	-22	dB

Dimensions

Dimensions

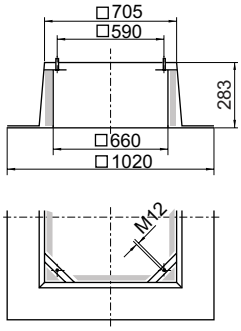
RDM 56/57 4550-4D-16
RDM 56/57 4550-HD-14
RDM 56/57 4556-4D-17
RDM 56/57 4556-6D-13
RDM 56/57 4556-HD-16



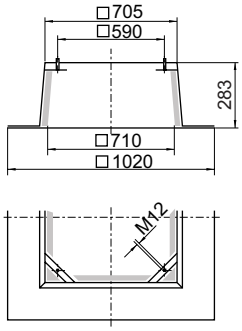


Flat roof upstand

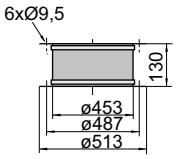
ZBS 03-0071
(600°C)



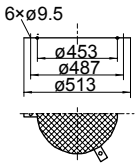
ZBS 20-0071
For RDM56 only , when connected to duct



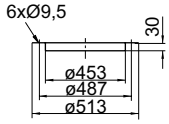
Flexible connection at intake
ZKE 30-0450 (600°C)



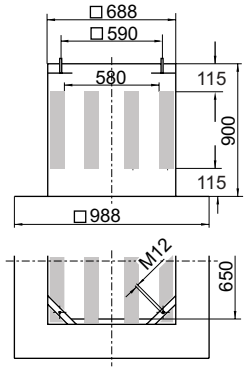
Inlet guard
ZSG 04-0450



Mating flange
ZKF 11-0450 (600°C)



Silencer upstand ZDS 32-0071
(600°C)



Average attenuation L_{WA} 17 dB

Attenuation in dB at mid frequencies in Hz

63 Hz	3 dB	1000 Hz	20 dB
125 Hz	5 dB	2000 Hz	25 dB
250 Hz	9 dB	4000 Hz	22 dB
500 Hz	13dB	8000 Hz	17 dB

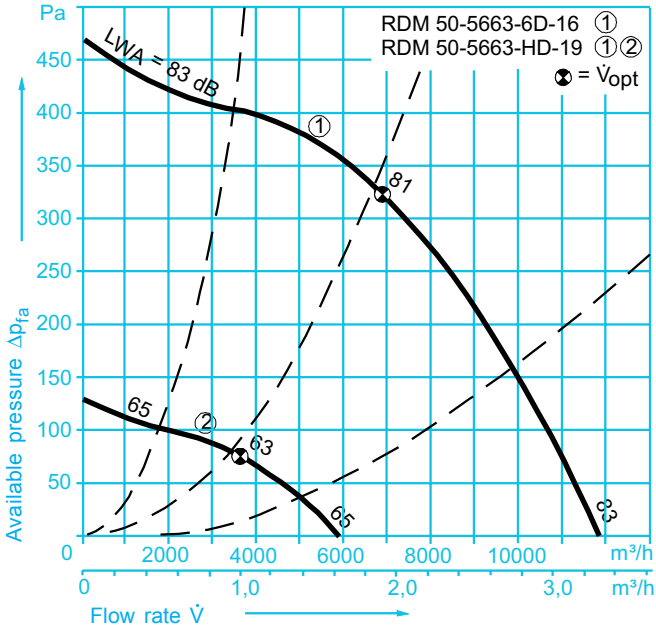
Pressure loss p_A through silencer upstand
In Pa, at flow rates in m³/h

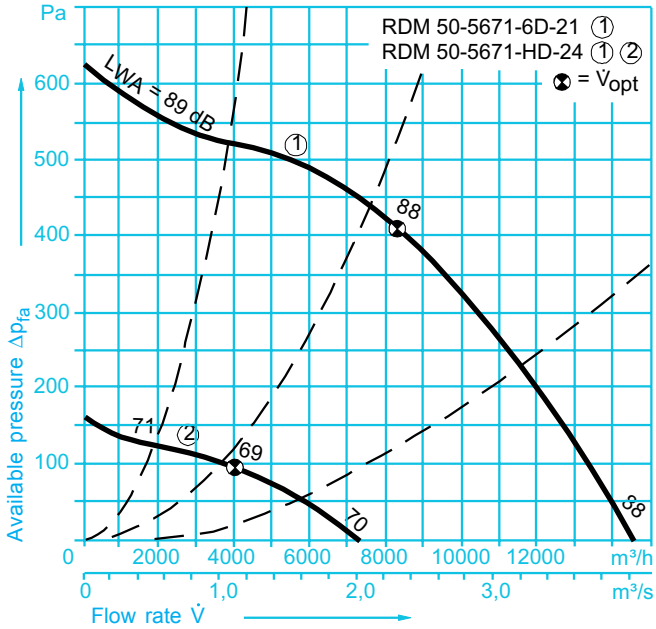
m³/h	Pa
5000	25
8000	60
10000	95
12000	110

Smoke Extract Fans ER

Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
5663-6D-16	11.900	470	230/400 Δ/Y	925	1.5	6.75/3.9	181	0055-32
5663-HD-19	11.900/5.900	470/130	400 Y/YY	955/450	1.8/0.45	5.1/2.0	199	0075-62
5671-6D-21	14.500	620	230/400 Δ/Y	950	3	12.5/7.2	190	0055-32
5671-HD-24	14.500/7.400	620/160	400 Y/YY	965/480	3.3/0.7	6.8/2.5	216	0075-62





In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38. Reference media density: ρ_1 = 1.15 kg/m³.

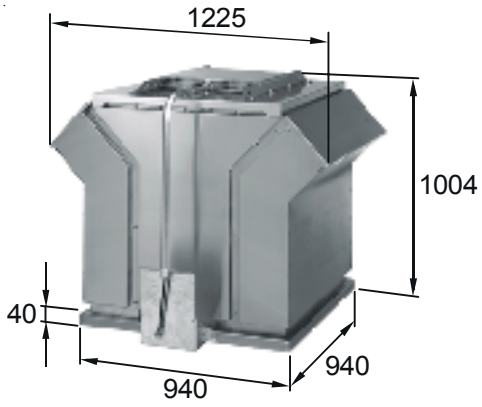
Intake										Discharge									
Relative sound power level L_{Wrel3} at octave mid frequencies f_m										Relative sound power level L_{Wrel3} at octave mid frequencies f_m									
RDM 56/57-5663; -5671										RDM 56/57-5663; -5671									
6-poles										6-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	14	11	1	-2	-9	-14	-16	-23	dB	$0.5\dot{V}_{opt}$	2	3	0	-3	-5	-8	-13	-21	dB
$\dot{V}_{opt}$	11	12	-1	-4	-10	-15	-16	-22	dB	$\dot{V}_{opt}$	1	3	-1	-4	-5	-8	-12	-19	dB
$\dot{V}_{max}$	7	13	1	-2	-9	-13	-10	-15	dB	$\dot{V}_{max}$	-3	4	-1	-4	-6	-8	-11	-16	dB

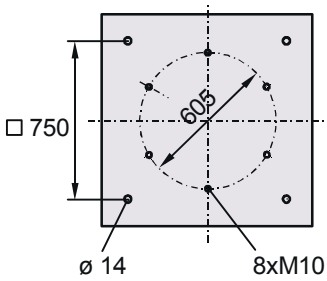
Smoke Extract Fans ER

Dimensions

Dimensions

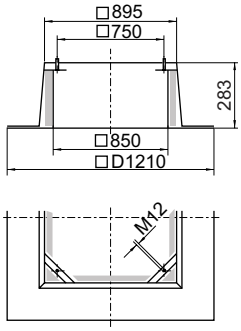
RDM 56/57 5663-6D-16
RDM 56/57 5663-HD-19
RDM 56/57 5671-6D-21
RDM 56/57 5671-HD-24



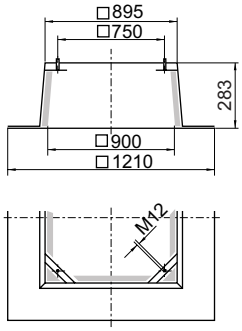


Flat roof upstand

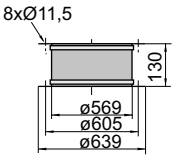
ZBS 03-0090
(600°C)



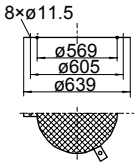
ZBS 20-0090
For RDM56 only , when connected to duct



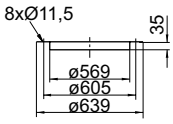
Flexible connection at intake
ZKE 30-0560 (600°C)



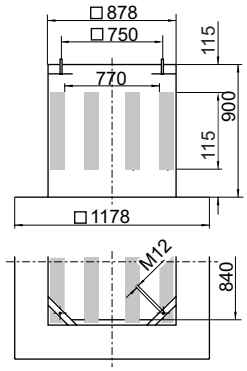
Inlet guard
ZSG 04-0560



Mating flange
ZKF 11-0560 (600°C)



Silencer upstand ZDS 32-0090
(600°C)



Average attenuation L_{WA} 15 dB

Attenuation in dB at mid frequencies in Hz

63 Hz	2 dB	1000 Hz	17 dB
125 Hz	5 dB	2000 Hz	21 dB
250 Hz	8 dB	4000 Hz	19 dB
500 Hz	11dB	8000 Hz	13 dB

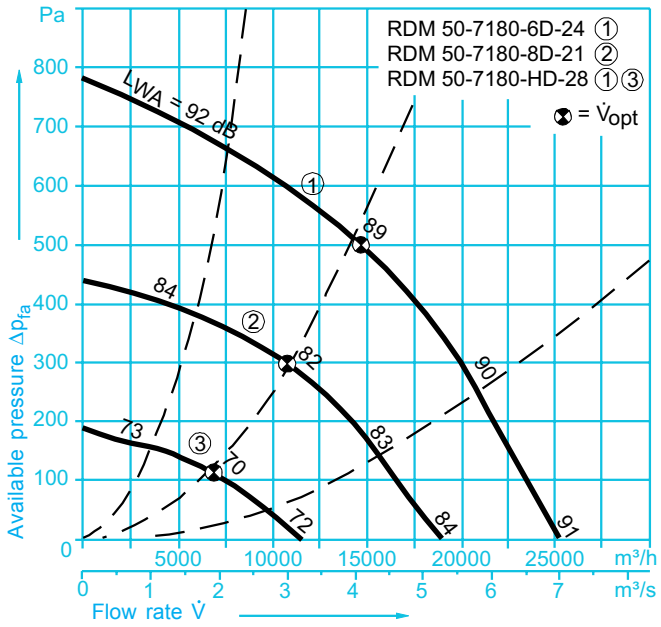
Pressure loss p_A through silencer upstand
In Pa, at flow rates in m³/h

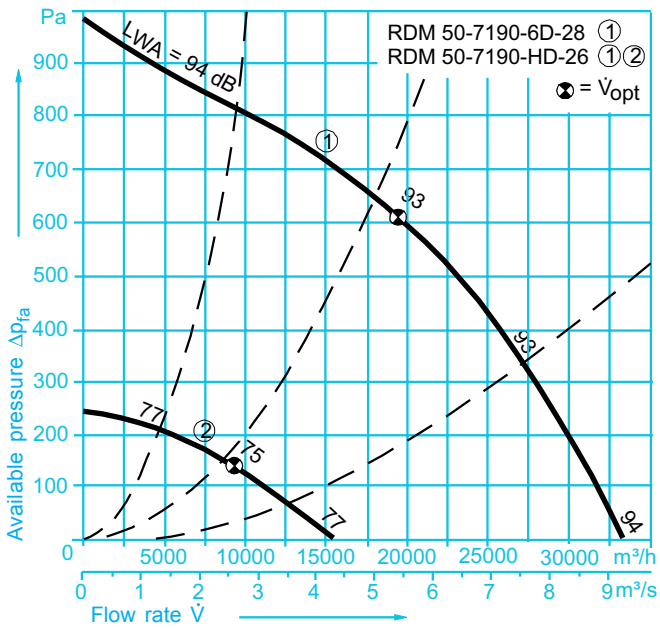
m³/h	Pa
10000	20
15000	40
20000	80
30000	180

Smoke Extract Fans ER

Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
7180-6D-24	25.000	780	400/690 Δ/Y	950	5.5	12.8/7.4	288	0075-62
7180-8D-21	18.800	440	230/400 Δ/Y	700	2.2	9.9/5.7	300	0055-32
7180-HD-28	25.000/12.000	780/180	400 Y/YY	975/485	6.2/1.3	12.5/4.1	348	0075-62
7190-6D-28	33.500	980	230/400 Δ/Y	960	9.0	19.4/11.2	297	0110-62
7190-HD-26	33.500/15.800	980/240	400 Y/YY	975/485	9.0/2.0	18.5/6.2	390	0110-62





In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38. Reference media density: ρ_1 = 1.15 kg/m³.

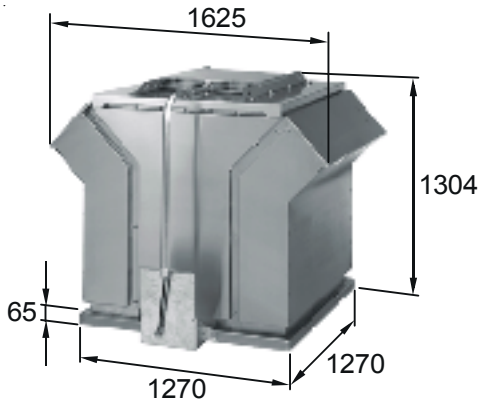
Intake										Discharge									
Relative sound power level L_{WRel3} at octave mid frequencies f_m										Relative sound power level L_{WRel3} at octave mid frequencies f_m									
RDM 56/57-7180; -7190										**RDM 56/57-7180; -7190**									
6-poles										**6-poles**									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	**Duty point**	63	125	250	500	1000	2000	4000	8000	Hz
0.5$\dot{V}_{opt}$	15	11	1	-2	-10	-14	-16	-23	dB	**0.5$\dot{V}_{opt}$**	2	4	1	-4	-5	-8	-13	-21	dB
$\dot{V}_{opt}$	11	13	-1	-4	-11	-15	-17	-23	dB	**$\dot{V}_{opt}$**	1	4	0	-4	-6	-8	-13	-21	dB
$\dot{V}_{max}$	7	14	3	-1	-10	-13	-12	-19	dB	**$\dot{V}_{max}$**	-3	4	0	-3	-6	-8	-12	-20	dB
8-poles										**8-poles**									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	**Duty point**	63	125	250	500	1000	2000	4000	8000	Hz
0.5$\dot{V}_{opt}$	15	5	1	-2	-8	-14	-17	-24	dB	**0.5$\dot{V}_{opt}$**	3	1	-1	-3	-6	-8	-15	-23	dB
$\dot{V}_{opt}$	15	4	0	-3	-7	-13	-15	-24	dB	**$\dot{V}_{opt}$**	3	0	-2	-3	-5	-8	-14	-23	dB
$\dot{V}_{max}$	15	3	1	-3	-9	-14	-13	-25	dB	**$\dot{V}_{max}$**	3	2	0	-3	-6	-9	-10	-23	dB

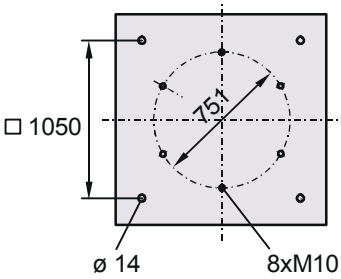
Smoke Extract Fans ER

Dimensions

Dimensions

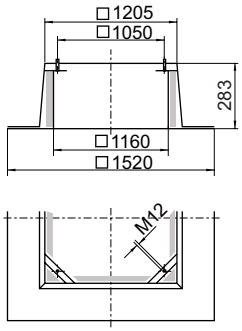
RDM 56/57 7180-6D-24
RDM 56/57 7180-8D-21
RDM 56/57 7180-HD-28
RDM 56/57 7190-6D-28
RDM 56/57 7190-HD-26



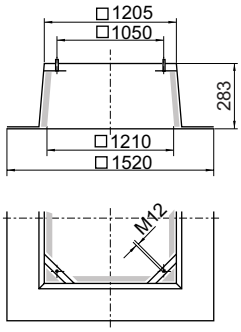


Flat roof upstand

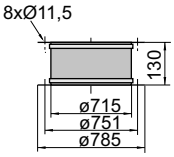
ZBS 03-0125
(600°C)



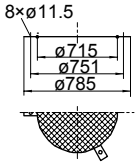
ZBS 20-0125
For RDM56 only , when connected to duct



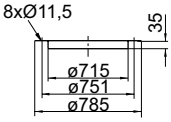
Flexible connection at intake
ZKE 30-0710 (600°C)



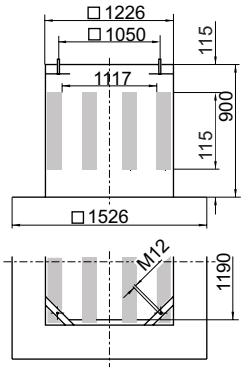
Inlet guard
ZSG 04-0710



Mating flange
ZKF 11-0710 (600°C)



Silencer upstand ZDS 32-0125
(600°C)



Average attenuation L_{WA} 16 dB

Attenuation in dB at mid frequencies in Hz

63 Hz	3 dB	1000 Hz	20 dB
125 Hz	6 dB	2000 Hz	25 dB
250 Hz	8 dB	4000 Hz	23 dB
500 Hz	14dB	8000 Hz	11 dB

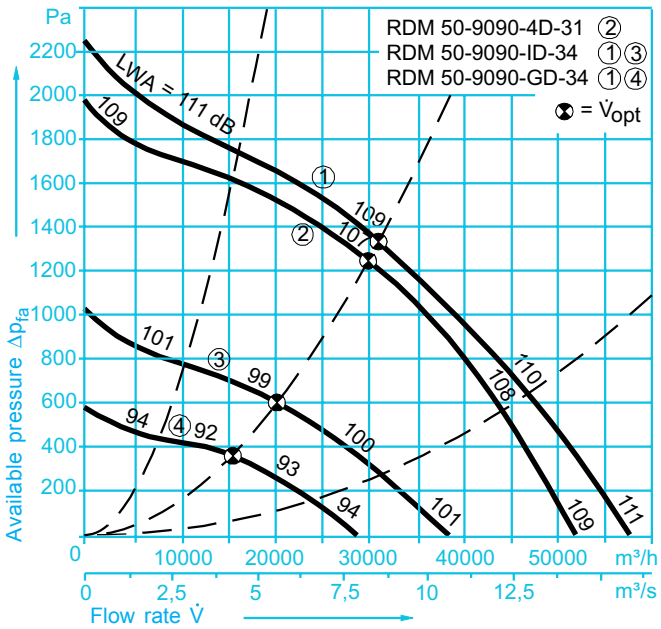
Pressure loss p_A through silencer upstand
In Pa, at flow rates in m³/h

m³/h	Pa
17000	20
20000	30
25000	40
30000	65
40000	110

Smoke Extract Fans ER

Technical Data

Smoke extract fan ER	Flow rate	Available pressure	Voltage	Speed	Motor rating	Rated current	Weights	Isolator switch
RDM 56/57-	m³/h	Pa	V	1/min	kW	A	kg	ESH 23
9090-4D-31	51.900	2000	400/690 Δ/Y	1460	22	41.5/24.1	590	0220-62
9090-ID-34	57.200/38.200	2.200/1.000	400 Y/Y	1470/980	26/9.5	49.0/20.0	640	0300-62
9090-GD-34	57.200/28.800	2.200/590	400 Y/YY	1470/732	28/7.5	52.0/20.5	640	0300-62



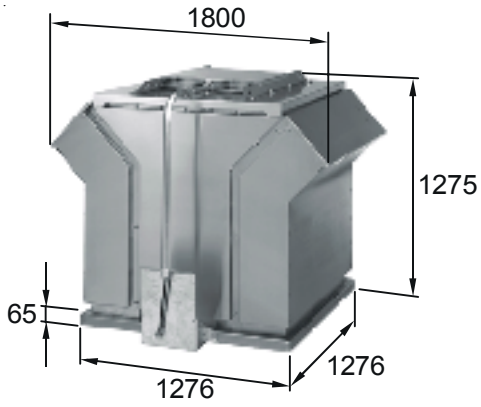
In the curves the A-weighted sound power level is L_{WA} (=L_{WA3} =L_{WA8}) acc. to DIN 45635-38. Reference media density: ρ_1 = 1.15 kg/m³.

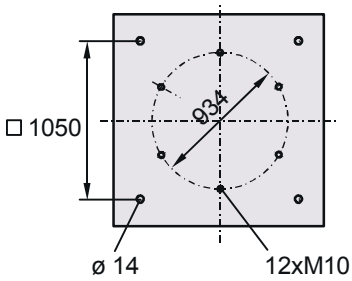
Intake										Discharge									
Relative sound power level L_{WRel3} at octave mid frequencies f_m										Relative sound power level L_{WRel3} at octave mid frequencies f_m									
RDM 56/57-9090										RDM 56/57-9090									
4-poles										4-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	15	11	1	-2	-10	-14	-16	-23	dB	$0.5\dot{V}_{opt}$	2	4	1	-4	-5	-8	-13	-21	dB
$\dot{V}_{opt}$	11	13	-1	-4	-11	-15	-17	-23	dB	$\dot{V}_{opt}$	1	4	0	-4	-6	-8	-13	-21	dB
$\dot{V}_{max}$	7	14	3	-1	-10	-13	-12	-19	dB	$\dot{V}_{max}$	-3	4	0	-3	-6	-8	-12	-20	dB
6-poles										6-poles									
Duty point	63	125	250	500	1000	2000	4000	8000	Hz	Duty point	63	125	250	500	1000	2000	4000	8000	Hz
$0.5\dot{V}_{opt}$	15	11	1	-2	-10	-14	-16	-23	dB	$0.5\dot{V}_{opt}$	2	4	1	-4	-5	-8	-13	-21	dB
$\dot{V}_{opt}$	11	13	-1	-4	-11	-15	-17	-23	dB	$\dot{V}_{opt}$	1	4	0	-4	-6	-8	-13	-21	dB
$\dot{V}_{max}$	7	14	3	-1	-10	-13	-12	-19	dB	$\dot{V}_{max}$	-3	4	0	-3	-6	-8	-12	-20	dB

Dimensions

Dimensions

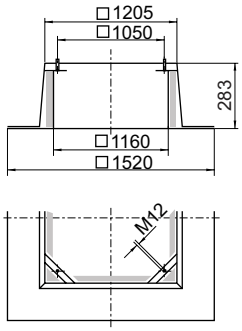
RDM 56/57 9090-4D-31
RDM 56/57 9090-ID-34
RDM 56/57 9090-GD-34



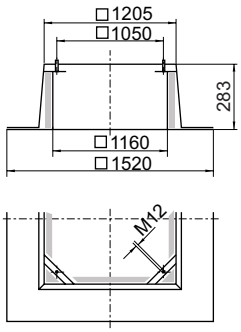


Flat roof upstand

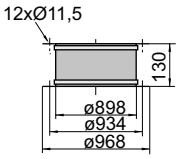
ZBS 33-0125 (600°C)
for RDM 57



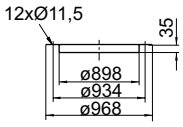
ZBS 31-0125 (400°C)
for RDM 56



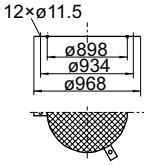
Flexible connection at intake
ZKE 33-0900 (600°C)



Mating flange
ZKF 11-0900 (600°C)

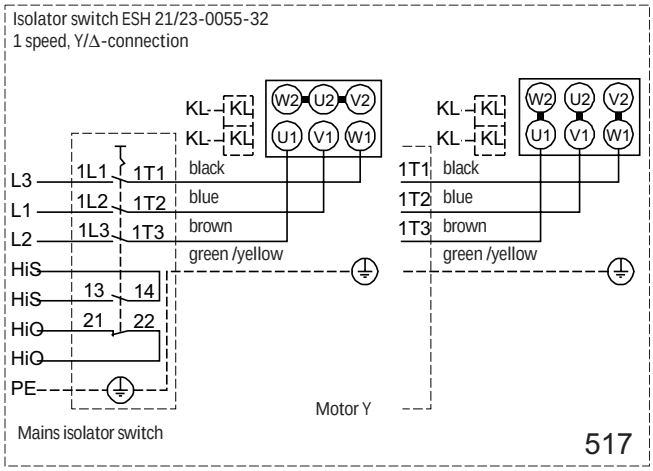


Inlet guard
ZSG 04-0900

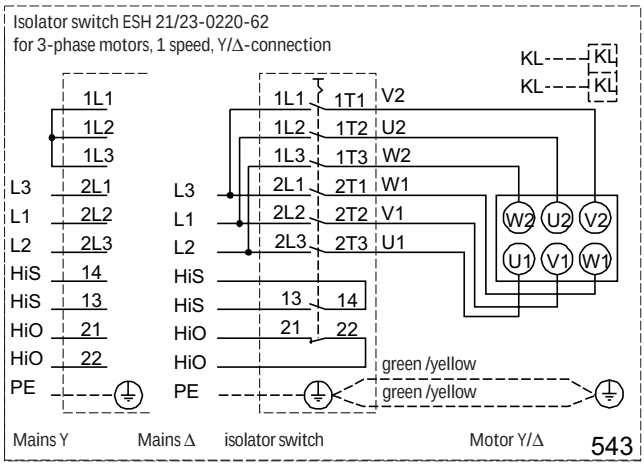


Isolator switches

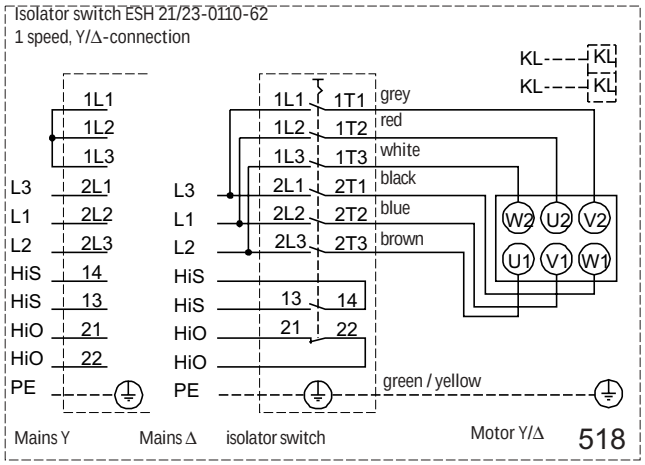
Isolator switch ESH 23-0055-32 for
ER 2528-2D-11, ER 2531-4D-10
ER 3535-4D-10, ER 3540-4D-10, ER 3545-4D-13
ER 4550-ED-16, ER 4556-4D-17, ER 4556-6D-13
ER 5663-6D-16, ER 5671-6D-21
ER 7180-8D-21



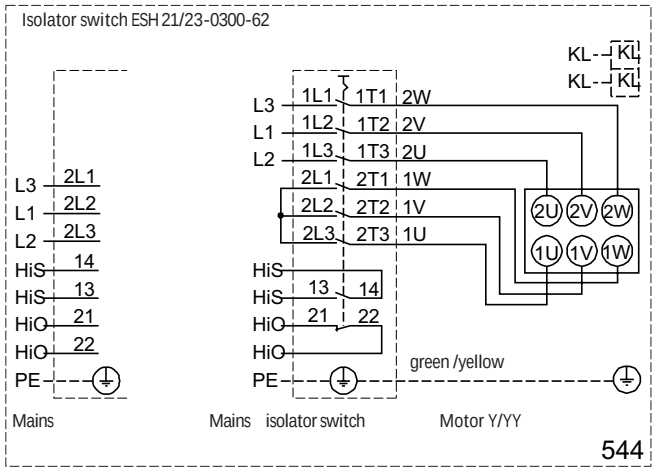
Isolator switch ESH 23-0220-62 for
ER 990-4D-31



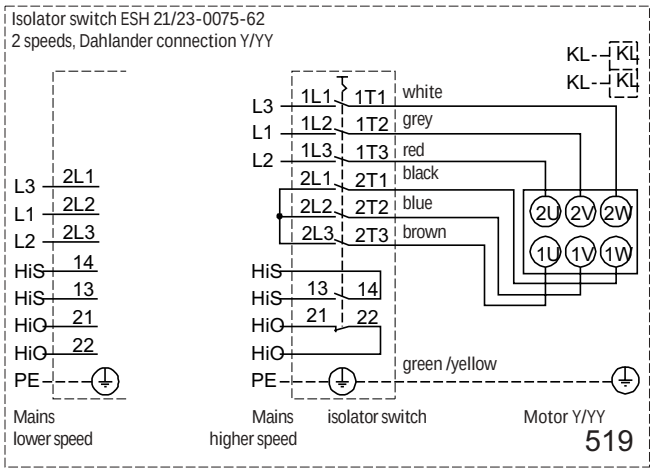
Isolator switch ESH 23-0110-62 for
ER 7190-HD-26, ER 7190-6D-28



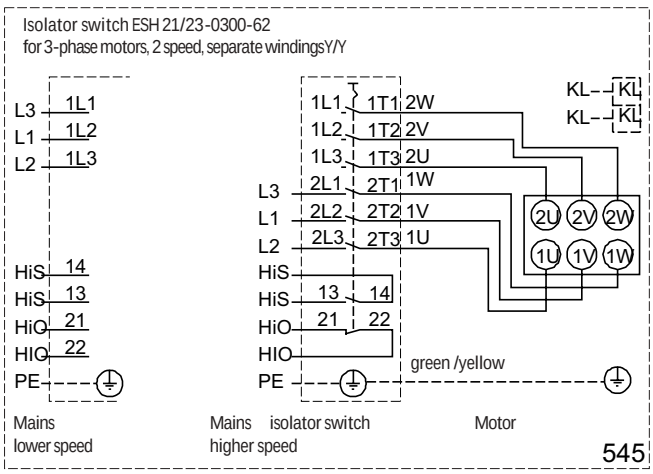
Isolator switch ESH 23-0300-62 for
ER 9090-GD-34



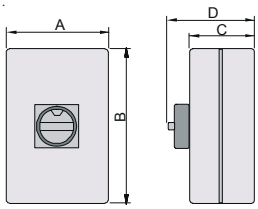
Isolator switch ESH 23-0075-62 for
ER 3545-HD-10,
ER 4550-HD-14, ER 4556-HD-16
ER 5663-HD-19, ER 5671-HD-24
ER 7180-6D-24, ER 7180-HD-28



Isolator switch ESH 23-0300-62 for
ER 9090-ID-34



Isolator switch ESH 23



ESH 23	A	B	C	D
0055-32	85	120	90	107
0075-62	100	190	93	110
0110-62	100	190	93	110
0220-62	145	250	107	124
0300-62	200	300	172	222

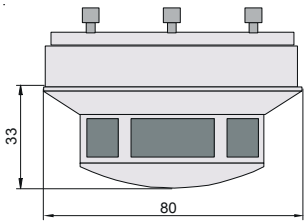
Execution
Clear grey plastic casing (ESH 23-0300-62 in sheet steel) for fitting on the wall. Protection IP 66. Black handle for positions "0" and "I". Cover coupling with integrated locking device.
Clear tapping arrangement. Every switch is equipped with a wiring diagram.
Function
The isolator switch is installed for isolating the smoke extract fan from the mains safely on site in case of checking, cleaning, or maintenance works. So accidents by uncontrolled switching on can be avoided and service operations will be eased.
Every isolator switch is provided with potential free contacts (1 open, 1 closed)

Smoke detector switch panel EBG (on request)

Execution
Robust coated sheet steel casing, protection IP 66, (when cooling fan and air filter IP 43) are integrated. Surrounding temperature up to +40°C.
Signals and buttons arranged on the front door.
Function
The switch panel will fulfil the following task in case of fire:
- bridge the motor protection
- start the fan into highest possible speed (e.g. 2 speed motor)

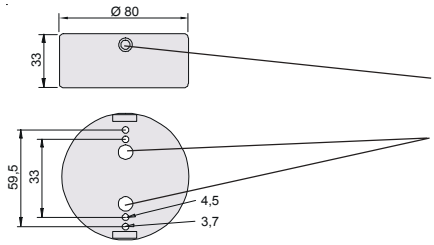
The switch panel is made for reaction to a signal coming from the optical smoke detector EBS 02. A button is provided for manual start from the panel.

Optical smoke detector EBS 02



The optical smoke detector recognizes early smouldering as well as open fire with smoke generation. It is working following the principle of scattered light. Light emitter end sensor are placed in the sample chamber in a way that the emitter beam cannot directly hit the sensor. Only the light scattered by smoke (Tyndall-effect) reaches the sensor and generates an electrical signal. The electronic evaluation system of EBS 02 controls the smoke measuring chamber additionally with regard to if dust deposit may false the signal. Strong dirt accumulation or a failure in function are optically shown by EBS 02. A long range alarm threshold value check assures that a sufficiently wide opening between basic signal and alarm signal will be maintained, until the maximum dirt accumulation is reached. The alarm threshold signal is set acc. to EN 54-7. An additional temperature sensor generates an alarm when a temperature above 70°C is reached. A relay contact will inside opens at alarm or current failure.
Execution
The smoke detector is of protection class IP 42acc. to DIN VDE 0470 and equipped with a LED light signalising operational readiness.
The smoke detector EBS 02 may exclusively be connected to the electronic switch panel EBG.

Mounting plate for optical smoke detector ZES 01

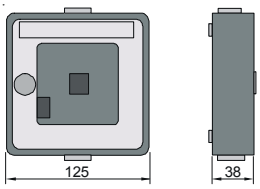


Fitting base for simple surface mounting of the optical smoke detector EBS 02. Designed for dry rooms and for the maximum cable diameter of 9 mm. Weight app. 45 g.

Cable Ø max. 9 mm.

Cable passage by breaking out.
Cable Ø max. 9 mm.

Manual switch ESH 31



The manual switch ESH 31 is made for starting the smoke extract installation by hand. The actual state of operation is indicated.
Execution
The manual switch ESH 31 is made for being surface mounted. The casing made of plastic has an orange colour. Protection class IP 20.
The unit is equipped with 2 buttons, switching voltage 24V, switching current 1A.

Sample specification Smoke Extract fans ER

Item.	Pcs.		Single price	Total price

RDM 56-2528 ./. 9090, suitable for maximum temperatures up to 400 °C - 120 minutes.
RDM 57-2528 ./. 9090, suitable for maximum temperatures up to 600 °C - 120 minutes.

Smoke extract fan
Air discharge vertical and swirl free. Tested and certified acc. to EN 12101-3 and certified by DIBt under the codes Z-78.1-26/Z-78.1-27.

Stylish and fully closed casing made of aluminium.
Feed cable from the front and protected by a tube.
Fixing bracket for isolator switch or connection box to be fixed at the base frame.
Base frame for upstand fitting with wide overhung for integrating isolating material on roof.
Discharge to be protected against weather by integrated back draught dampers closing at standstill of the fan.
Centrifugal impeller with backward curved blades made of steel, welded and coated.
All mechanically stressed parts made of galvanized sheet steel, motor separated from air stream and cooled by outside air. Motor cabinet additionally thermally isolated.
The roof fans comply with the tolerances of Class 2 of DIN 24 166 "Fans, Technical Specifications".

Fan type	.....
Flow rate	..... m3/h
Pressure increase	..... Pa
Temp. of gas medium	..... °C
Speed	..... 1/min
Motor rating	..... kW
Voltage/frequency	..... V/Hz
A-Sound power level	..... dB
Weight	..... kg
Dimensions	..... mm

Accessories (at extra cost)

Flat roof upstand ZBS
Flat roof upstand ZBS 20 (only RDM 56, for duct connection, up to size 7190)
Silencer upstand ZDS 32 (up to size 7190)
Flexible Connection ZKE
Mating flange ZKF

Isolator switch
Smoke detector switch panel (on request)
Optical smoke detector
Mounting plate for smoke detector
Manual switch

Wolf GmbH, Postfach 1380, D-84048 Mainburg, Tel.: 087 51 / 74-0, Fax: 087 51 / 74-1600, Internet: www.wolf-heiztechnik.de
Part no.: 48 00 135