

Wolter Fan Systems


Product Overview

wolter 
Air in Motion. **Wolter Fans**

Technical description

Fan type code

TYE 05 280	
TYE	Impeller diameter 200 ... 1000
05	Casing version 00 ... 07 B = Mounting block
280	Numbers of inlet E = Single inlet Z = Double inlet
	Radial fan
	Impeller type H = Backward curved blade T = Forward curved blade A = Aerofoil curve blade



Shaped inlets

The aerodynamically shaped inlets are bolted in and guarantee a perfect inlet stream onto the impeller.

Inlets for the type **AYZ** and **HYZ/HYE** are made of steel with powder coated. Inlets for the type **TYZ/TYE** are formed on the side plate are made of galvanized sheet metal.

Shafts

All precision shafts are trued and have a smooth finish. Both shaft ends have as a standard feature diameters complying with DIN 748, sheet 1 and a groove (DIN 6885, sheet 1) with locking spring. A wax coating provides protection against corrosion of this precision engineered shaft.

Bearings

The low noise precision ball bearings are designed for a theoretical life of at least 20.000 working hours. Limiting values for speed and power are indicated on the characteristic curves and should not be exceeded. Long term quality is safeguarded when general assembly and service guidelines for V-belt drives are adhered to.

TYZ 200 to 710 of version 00 to 05

TYE 280-710 of version 04 to 05

HYZ 200 to 250 of version 00 to 05

HYE 280-710 of version 04 to 05

The grooved ball bearings in the harmonic strut housings are completely sealed and maintenance free. Unavoidable alignment errors in the sheet metal casing are compensated by the spherical outer ring. The insulating rubber rings absorbing vibration and structure-born noise are temperature and chemical resistant and electrical conductors. The rugged sealing rings and the inner rings of the bearings are galvanized. The flexible bearing cage is made from polyamide.

The bearing is attached to the shaft by means of an eccentric tension ring. In order to guarantee the bearing seat is free from play and to avoid corrosion of the tension ring it is sealed with a liquid synthetic.

TYZ / TYE 280 to 1000 of version 06 to 07

HYZ 280 to 710 of version 04 to 05

HYZ / HYE 280 to 1400 of version 06 to 07

AYZ 280 to 1000 of version 06 to 07

The grooved ball bearings in the rugged cast-iron casings are completely sealed and maintenance free. Unavoidable alignment errors are compensated by the spherical outer ring. The one-piece bearing housing conforms to DIN 626 Part 213 (ISO 3228) and allows full utilization of the carrying capacity of the mounted regulating bearing.

All housings are equipped with lubricating bore holes for the possibility of secondary lubrication. As protection the lubricating bore holes are closed with a synthetic stopper.

For corrosion reasons the rugged sealing rings and the bearing inner ring are galvanized. The flexible bearing cage is made of polyamide.

The bearing is attached to the shaft by means of an eccentric tension ring. In order to guarantee the bearing fit is free from play and to avoid corrosion of the tension ring it is sealed with a liquid synthetic.

Centre Frequency Hz	63	125	250	500	1000	2000	4000	8000
A-Weighted Adjustment dB(A)	-25.5	-15.5	-8.5	-3	0	+1	+1	-1

Technical description

Sound levels

In order to make possible an assessment of sound projection adequate to the human ear the A-assessed description of sound levels according to AMCA 301 has been chosen.

The ascertaining of the sound power level follows the enveloping surfaces method according to AMCA 301.

The sound power levels shown on each performance curve, LwiA, refer to the overall sound power "A-Weighted" levels. The computed sound power levels were converted into A-Weighted levels using adjustments to the octave band spectrum as follows:

- The overall sound pressure levels, LpiA, can be calculated from the overall sound power levels as follows:

1) Free Field Conditions: $L_{piA} = L_{wiA} - (20 \log_{10} d) - 11$

2) Room Conditions: $L_{piA} = L_{wiA} - (20 \log_{10} d) - 7$

Where: d = distance from fan in meters.

Performance curves

- The performance curves have been established using the outlet test method in the test chamber according to AMCA 210, mounting position B (free inlet, ducted outlet).

The curves indicate as a function of the volume flow:

- the total pressure increase Δp_{tot} for constant speed (heavy black lines)
- constant lines of shaft power P_w (red Lines)
- constant lines of sound power level LwiA (blue lines)

All values relate to an air density:

$\rho_1 = 1,2 \text{ kg/m}^3 \text{ at } 20^\circ\text{C}$

- The dynamic pressure p_{d2} and the flow speed c_2 respectively stated in the diagrams refer to the flange cross section of the outlet connection pieces.

Motor power

The powers (P_w) provided on the performance curve are the internal powers required by the ventilator and do not include the mechanical losses. To compute the total required shaft input power, the internal power must be divided by the mechanical efficiency:

$$P_s = P_w / \eta_m$$

where: P_s = total required shaft input power

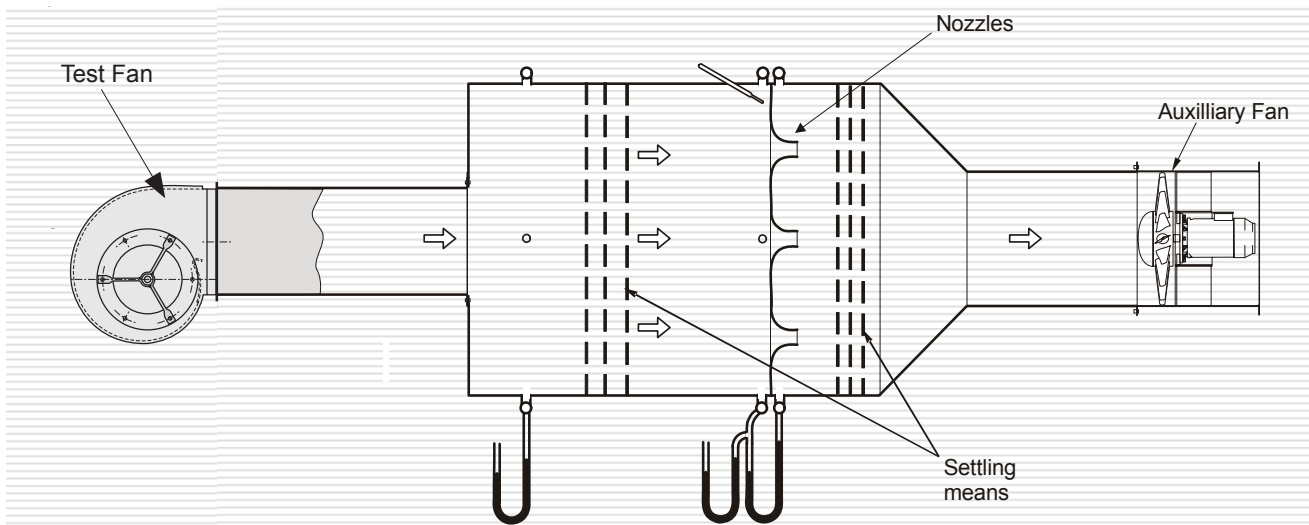
η_m = mechanical efficiency

The mechanical efficiency is provided as follow:

Way of ventilator driving	η_m
Electric motor directly driven	1
Coupling directly driven	0,98
V-belt driven	0,95

The performance curves provided in this catalogue were measured according to AMCA 210 (ISO 5801) in a test chamber.

The sketch below shows the principle set up of the test chamber.



AMCA 210 Figure 12
ISO 5801 Figure 73b

Technical description

General information

This range of **Wolter** fans is the result of many years of research and development. The efficiency of all the fans is guaranteed through specific volume figures at maximum pressure differentials. Excellent performance and minimal noise levels are the features of this new fan range.

These centrifugal fans are designed for the conveyance of clean air and non-aggressive steam and gases at a temperature range from -30°C to +80°C (22°F to 176°F)

Type: HYZ/HYE (backward curved), TYZ/TYE (forward curved) and AYZ (aerofoil curved).

Computer design allows for interchange-ability of components which ultimately provides an economy product.

Component dimensions are in accordance with DIN 323 section R 20 which means that the nominal size corresponds with the outside diameter of the impeller.

Fan casings

The machine folded scroll is made of galvanized sheet metal. Predrilled holes are located in the side plates to fix mounting frames. It provides for easy installation.

The outlet flanges are in accordance with international standards DIN 24193 sheet 2.

Versions of casing

High performance centrifugal fan with folded galvanized scroll as standard,









Impellers

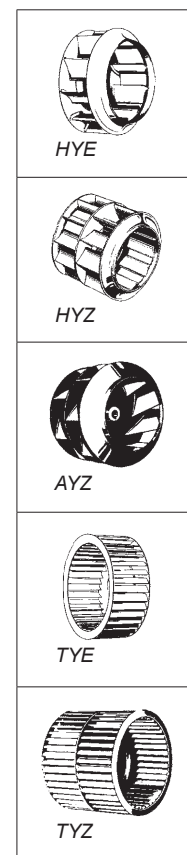
The torsion-resistant impellers guarantee a high standard of technology regarding volume flows and processing. The impellers with the shaft are statically and dynamically balanced on precision machines according to quality standard Q 2.5 of VDI 2060.

The stable aerofoil and backward curved impeller of the **AYZ** and **HYZ/HYE** range are made of steel with powder coated.

The forward curved impellers of the **TYZ/TYE** range are made of galvanized steel.

All impeller series guarantee highest peripheral speed. The aero dynamical design stands for the precision of these modern high efficiency impellers.

Version		size range	Description
00		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	without accessories
01		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	with standard outlet flange
02		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	without outlet flange, with removable feet
03		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	with standard outlet flange and removable feet
04		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	without outlet flange, with galvanized rectangular frame
05		TYE/TYZ 200 ... 710 HYE/HYZ 200 ... 710 AYZ 280 ... 710	with standard outlet flange, with galvanized rectangular frame
06		TYE/TYZ 710 ... 1000 HYE/HYZ 710 ... 1400 AYZ 710 ... 1000	without outlet flange, with welded rectangular frame
07		TYE/TYZ 710 ... 1000 HYE/HYZ 710 ... 1400 AYZ 710 ... 1000	with standard outlet flange with welded rectangular frame



Dimensions TYZ, HYZ, AYZ



TYZ



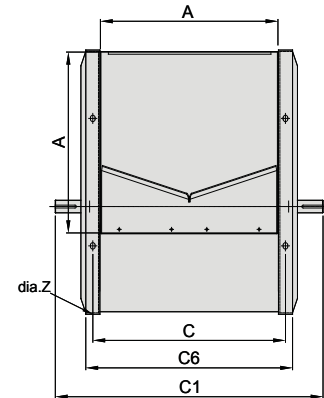
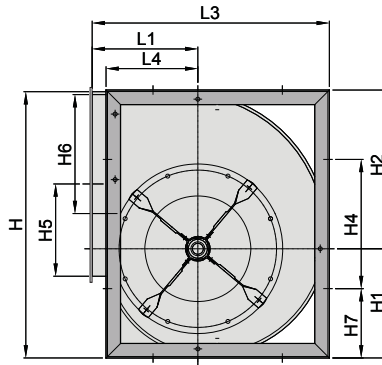
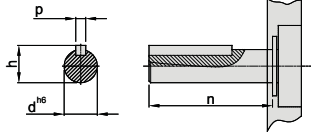
HYZ



AYZ

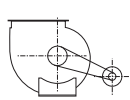


TYZ 05 HYZ 05 AYZ 05



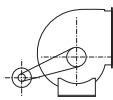
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	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	361	391	417	-	-	-	-	391	557	-	-	-	-	421	25	195.5	-
315	404	434	460	-	-	-	-	434	640	-	-	-	-	464	25	217	-
355	453	493	509	-	-	-	-	493	700	-	-	-	-	533	30	241.5	-
400	507	547	560	-	-	-	-	547	760	-	-	-	-	587	30	168.5	-
450	569	609	625	-	-	-	-	609	845	-	-	-	-	649	35	199.5	-
500	638	678	694	-	-	-	-	678	915	-	-	-	-	718	35	209	-
560	715	765	771	-	-	-	-	765	1000	-	-	-	-	815	40	247.5	-
630	801	851	857	-	-	-	-	851	1090	-	-	-	-	901	45	265.5	-

Size	f	fx125	f1x125	H	H1	H2	H3	H4	H5	H6	H7	h	L	L1	L2	L3	L4	L5	n	p	ØZ
	[mm]			[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	-	-	-	518	211	307	-	280	122	180	119	28	280	215	251	466	181	76	77	8	13
315	-	-	-	578	235	343	-	280	138	202	149	28	280	236	282	518	198	100	88	8	13
355	-	-	-	655	266	389	-	355	156	227	150	33	355	261	317	578	231	97	84	8	13
400	100	-	-	736	301	436	-	355	178	254	190	33	355	290	361	651	252	129	86	8	13
450	100	-	-	827	336	491	-	530	202	285	149	38	530	322	404	726	277	76	98	10	13
500	125	-	-	918	375	543	-	530	219	319	194	38	530	352	448	800	302	110	98	10	13
560	125	-	-	1030	420	610	-	530	245	358	250	43	530	390	503	893	342	158	92	12	13
630	150	-	-	1157	472	685	-	530	278	400	314	48	530	434	565	999	381	208	95	14	13

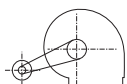


RD 0

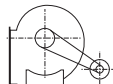
RD = clockwise



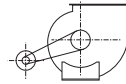
RD 90



RD 180

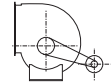


RD 270

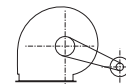


LG 0

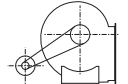
LG = anti-clockwise / rotation anti-horaire



LG 90



LG 180

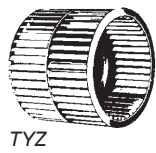


LG 270

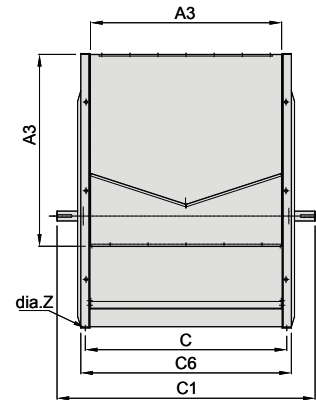
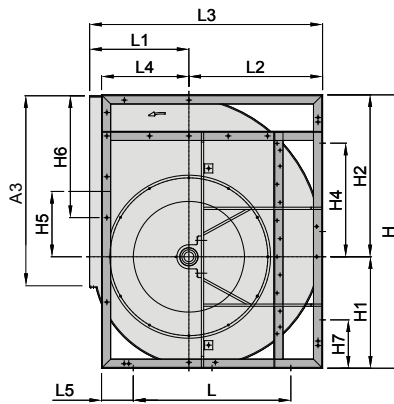
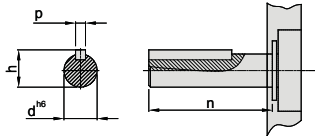
The direction of rotation is defined by vue on the side of drive.

We reserve the right to alter measurements without notice in case of technical improvements.

Dimensions TYZ, HYZ, AYZ



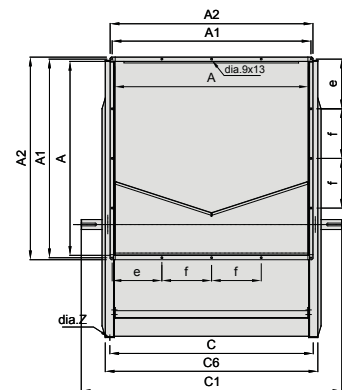
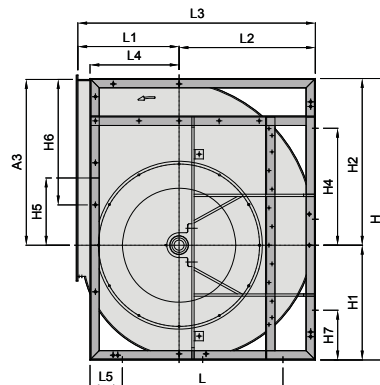
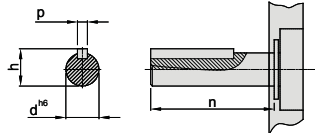
TYZ 06 HYZ 06 AYZ 06



size	A	A1	A2	A3	B	B1	B2	C	C1	C2	C3	C4	C5	C6	d	e	e1
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	898	-	-	898	-	-	-	948	1290	-	-	-	-	998	60	-	-
800	1007	-	-	1007	-	-	-	1057	1450	-	-	-	-	1107	60	-	-
900	1130	-	-	1130	-	-	-	1180	1570	-	-	-	-	1250	60	-	-
1000	1267	-	-	1267	-	-	-	1317	1700	-	-	-	-	1387	60	-	-

size	fx125	f1x125	H	H1	H2	H3	H4	H5	H6	H7	h	L	L1	L2	L3	L4	L5	n	p	ØZ
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	-	-	1303	527	765	-	630	316	-	337	64	630	485	636	1121	422	214	-	18	17
800	-	-	1468	595	862	-	710	359	-	379	64	710	535	715	1250	466	236	-	18	17
900	-	-	1648	666	971	-	800	406	-	424	64	800	604	804	1408	515	260	-	18	17
1000	-	-	1810	733	1066	-	900	433	-	455	64	900	657	884	1541	578	281	-	18	17

TYZ 07 HYZ 07 AYZ 07



Size	A	A1	A2	A3	B	B1	B2	C	C1	C2	C3	C4	C5	C6	d	e	f
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	898	928	954	898	-	-	-	948	1290	-	-	-	-	998	60	264	200
800	1007	1037	1063	1007	-	-	-	1057	1450	-	-	-	-	1107	60	268.5	250
900	1130	1160	1186	1130	-	-	-	1180	1570	-	-	-	-	1250	60	280	300
1000	1267	1297	1323	1267	-	-	-	1317	1700	-	-	-	-	1387	60	298.5	350

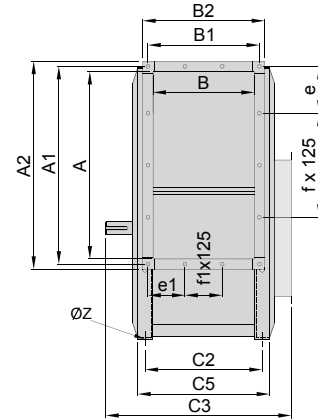
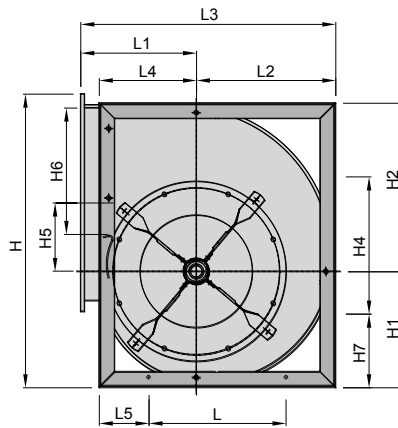
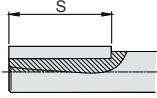
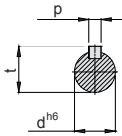
Size	fx125	f1x125	H	H1	H2	H3	H4	H5	H6	H7	h	L	L1	L2	L3	L4	L5	n	p	ØZ
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	-	-	1303	527	765	-	630	316	-	337	64	630	485	636	1121	422	214	146	18	17
800	-	-	1468	595	862	-	710	359	-	379	64	710	535	715	1250	466	236	172	18	17
900	-	-	1648	666	971	-	800	406	-	424	64	800	604	804	1408	515	260	160	18	17
1000	-	-	1810	733	1066	-	900	433	-	455	64	900	657	884	1541	578	281	157	18	17

We reserve the right to alter measurements without notice in case of technical improvements

Dimensions TYE, HYE

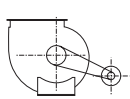


TYE 05 HYE 05

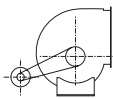


Size	A	A1	A2	A3	B	B1	B2	C	C1	C2	C3	C4	C5	C6	d	e	e1
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	361	391	417	-	197	227	253	-	-	391	405	-	257	-	25	-	-
315	404	434	460	-	223	253	279	-	-	434	440	-	283	-	25	-	-
355	453	483	509	-	247	277	303	-	-	493	470	-	318	-	30	-	-
400	507	537	563	-	274	304	330	-	-	547	497	-	338	-	30	168.5	-
450	569	599	625	-	308	338	364	-	-	609	556	-	368	-	35	199.5	-
500	638	658	684	-	344	374	400	-	-	678	592	-	404	-	35	204	-
560	715	745	771	-	383	413	439	-	-	765	640	-	468	-	40	247.5	-
630	801	831	857	-	432	462	488	-	-	851	690	-	512	-	45	265.5	-

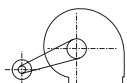
Size	F	fx125	f1x125	H	H1	H2	H3	H4	H5	H6	H7	L	L1	L2	L3	L4	L5	S	t	p	ØZ
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	-	-	-	518	211	307	307	280	122	214	119	280	215	251	466	181	76	50	28	8	13
315	-	-	-	578	235	343	343	280	138	240	149	280	236	282	518	198	100	60	28	8	13
355	-	-	-	655	266	389	389	355	156	270	150	355	261	317	578	231	97	60	33	8	13
400	-	-	-	736	301	436	436	355	178	311	190	355	290	361	651	252	129	60	33	8	13
450	-	-	-	827	336	491	491	530	202	358	149	530	322	404	726	277	76	70	38	10	13
500	-	-	-	918	375	543	543	530	219	379	194	530	352	448	800	302	110	70	38	10	13
560	-	-	-	1030	420	610	610	530	245	424	250	530	390	503	893	342	158	70	43	12	13
630	-	-	-	1157	472	685	685	530	278	481	314	530	434	565	999	381	208	70	48	14	13



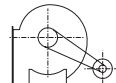
RD 0
RD = clockwise



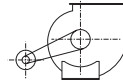
RD 90



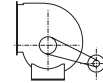
RD 180



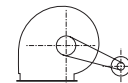
RD 270



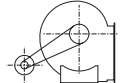
LG 0



LG 90



LG 180



LG 270

LG = anti-clockwise / rotation anti-horaire

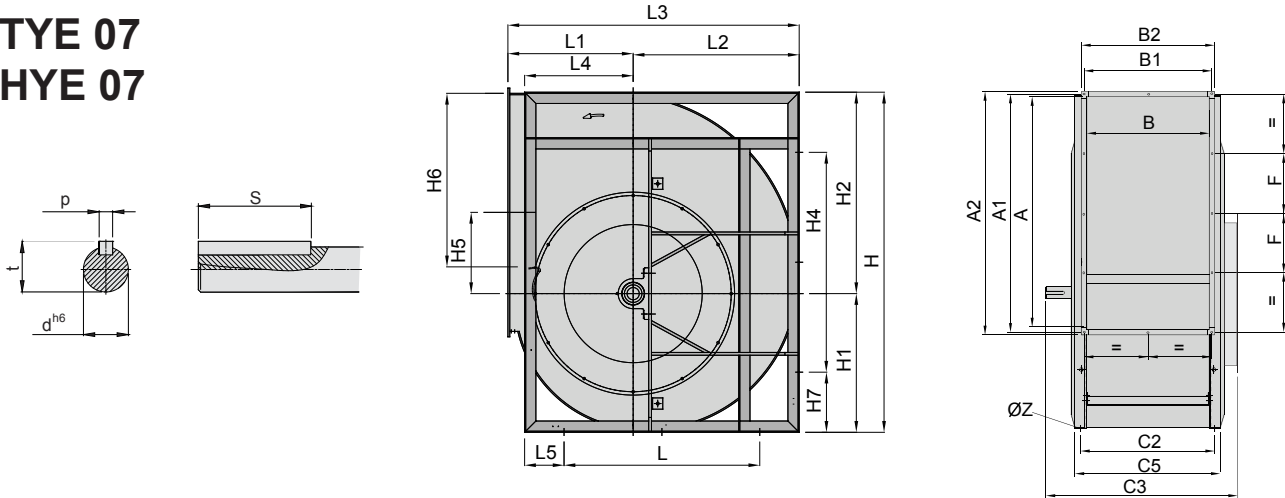
The direction of rotation is defined by vue on the side of drive.

We reserve the right to alter measurements without notice in case of technical improvements

Dimensions TYE, HYE

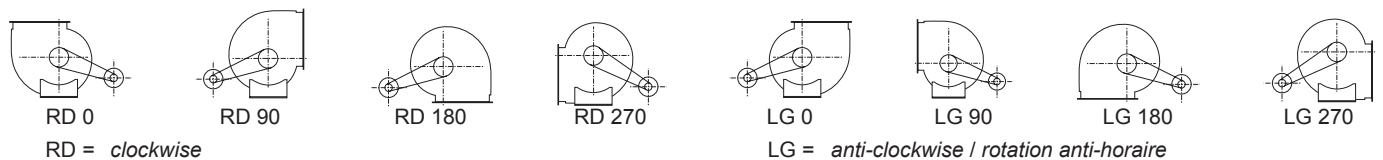


TYE 07 HYE 07



Size	A	A1	A2	B	B1	B2	C	C1	C2	C3	C4	C5	C6	d	e	e1	F
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	898	928	954	478	508	534	-	-	518	736	-	568	-	60	-	-	200
800	1007	1037	1063	533	563	589	-	-	570	788	-	620	-	60	-	-	250
900	1130	1160	1186	595	625	651	-	-	632	867	-	702	-	65	-	-	300
1000	1267	1297	1323	663	693	719	-	-	713	950	-	783	-	65	-	-	350
1120	1421	1478	1526	722	777	825	-	-	782	1135	-	842	-	65	-	-	400
1250	1588	1638	1688	800	850	900	-	-	880	1218	-	950	-	70	-	-	450
1400	1744	1826	1876	900	952	1002	-	-	980	1337	-	1050	-	80	-	-	500

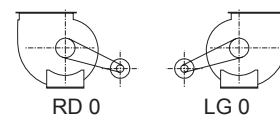
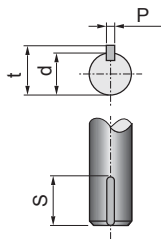
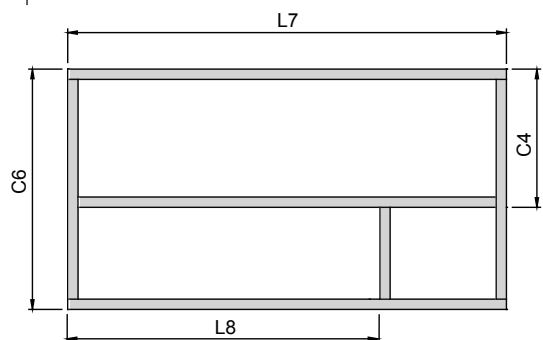
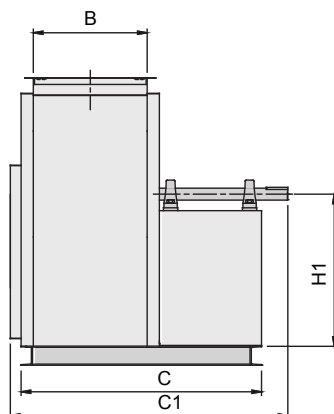
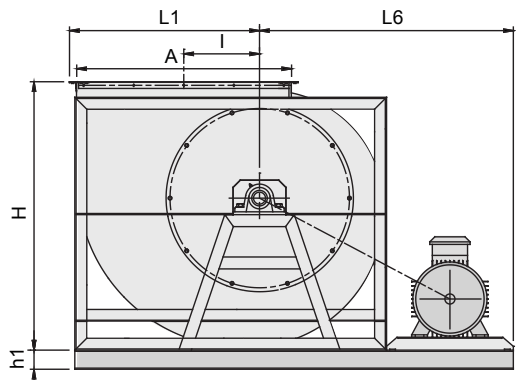
Size	fx125	f1x125	H	H1	H2	H3	H4	H5	H6	H7	L	L1	L2	L3	L4	L5	S	t	P	ØZ
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
710	-	-	1303	527	772	-	630	316	558	337	630	485	636	1121	422	214	90	64	18	17
800	-	-	1468	595	869	-	710	359	639	379	710	535	715	1250	466	236	90	64	18	17
900	-	-	1648	666	978	-	800	406	694	424	800	604	804	1408	515	260	100	69	18	17
1000	-	-	1810	733	1075	-	900	433	772	455	900	657	884	1541	578	281	100	69	18	17
1120	-	-	2033	830	1203	-	1000	482	876	617	1200	758	990	1748	640	235	140	69	18	17
1250	-	-	2270	925	1345	-	1120	539	978	685	1350	840	1110	1950	715	238	140	74,5	20	17
1400	-	-	2535	1033	1502	-	1250	620	1098	767	1500	920	1240	2160	810	275	140	85	22	17



The direction of rotation is defined by vue on the side of drive.

We reserve the right to alter measurements without notice in case of technical improvements

Dimensions TYEB, HYEB



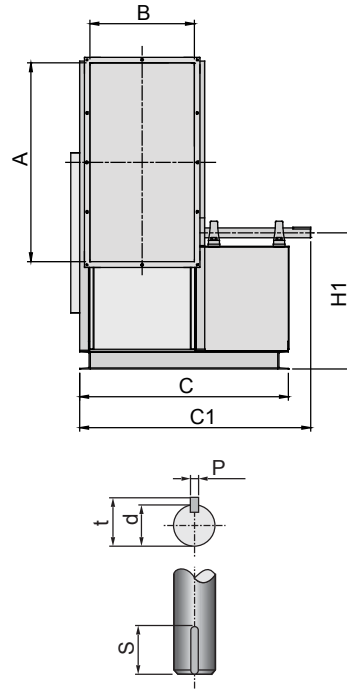
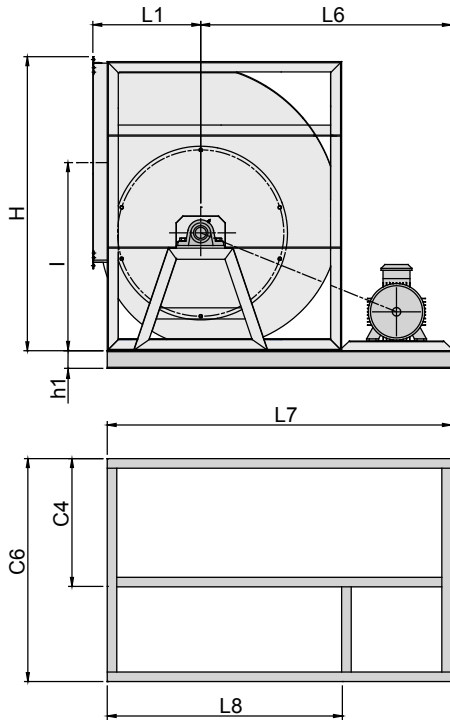
TYEB 280-1000 / 0°
HYEB 280-1400 / 0°

Basic frame and motor slide are included in the fan unit

Size	A	B	C	C1	C4	C6	H	H1	h1	I	L1	L6	L7	L8	p	S	t	d
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	361	197	530	590	257	530	466	301	50	122	330	711	1013	518	8	40	28	25
315	404	223	556	612	283	556	518	332	50	138	368	733	1073	578	8	40	28	25
355	453	247	627	697	327	627	578	367	50	157	411	767	1150	655	8	50	33	30
400	507	274	654	724	354	654	651	411	50	178	460	835	1266	736	8	50	33	30
450	569	308	728	816	388	728	726	454	50	202	514	871	1357	827	10	70	38	35
500	638	344	764	850	424	764	800	528	80	219	561	910	1448	918	10	70	38	35
560	715	383	855	945	483	855	893	583	80	246	631	1057	1660	1030	12	90	43	40
630	801	432	904	994	532	904	999	645	80	278	707	1109	1787	1157	12	90	43	40
710	898	478	1005	1115	578	1005	1121	716	80	316	793	1168	1933	1303	14	90	48,5	45
800	1007	533	1060	1170	633	1060	1250	795	80	359	890	1292	2154	1468	14	90	48,5	45
900	1130	595	1191	1313	715	1191	1408	904	100	406	999	1363	2334	1648	16	100	58,5	55
1000	1267	663	1259	1381	783	1259	1541	984	100	433	1094	1430	2496	1810	16	100	58,5	55
1120	1421	722	1399	1557	890	1399	1768	1117	120	507	1203	1518	2682	2052	18	120	69	65
1250	1588	800	1565	1740	968	1565	1950	1230	120	539	1345	1705	3038	2270	20	140	74,5	70
1400	1744	900	1751	1910	1053	1751	2160	1360	120	620	1502	1921	3433	2511	22	140	85	80

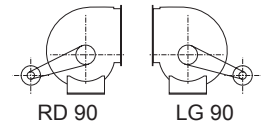
We reserve the right to alter measurements without notice in case of technical improvements

Dimensions TYEB, HYEB



TYEB 280-1000 / 90°
HYEB 280-1400 / 90°

Basic frame and motor slide are included in the fan unit



Size	A	B	C	C1	C4	C6	H	H1	h1	I	L1	L6	L7	L8	p	S	t	d
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
280	361	197	530	590	257	530	581	266	50	338	215	746	927	432	8	40	28	25
315	404	223	556	612	283	556	641	288	50	376	236	777	975	480	8	40	28	25
355	453	247	627	697	327	627	718	322	50	429	261	812	1043	548	8	50	33	30
400	507	274	654	724	354	654	799	355	50	483	290	891	1143	613	8	50	33	30
450	569	308	728	816	388	728	890	391	50	543	322	934	1211	681	10	70	38	35
500	638	344	764	850	424	764	1011	460	80	599	352	978	1280	750	10	70	38	35
560	715	383	855	945	483	855	1123	507	80	673	390	1133	1475	845	12	90	43	40
630	801	432	904	994	532	904	1250	559	80	757	434	1195	1576	946	12	90	43	40
710	898	478	1005	1115	578	1005	1396	618	80	854	485	1266	1688	1058	14	90	48,5	45
800	1007	533	1060	1170	633	1060	1561	686	80	965	535	1401	1867	1181	14	90	48,5	45
900	1130	595	1191	1313	715	1191	1761	777	100	1083	604	1490	2005	1319	16	100	58,5	55
1000	1267	663	1259	1381	783	1259	1923	844	100	1177	657	1570	2148	1462	16	100	58,5	55
1120	1421	722	1399	1557	890	1399	2153	961	120	1323	758	1627	2305	1675	18	120	69	65
1250	1588	800	1565	1740	968	1565	2390	1057	120	1476	840	1772	2612	1825	20	140	74,5	70
1400	1744	900	1751	1910	1053	1751	2642	1153	120	1563	920	1887	2917	1975	22	140	85	80

We reserve the right to alter measurements without notice in case of technical improvements

Technical description

Impeller

The centrifugal plug fan impellers are made of aluminum material with backward curve blades. The impeller is aerodynamically designed for high efficiency and low power consumption. The maximum tip speed of the impeller is 70m/s. The impellers are optimized for stable performance and low noise and balanced according to G2.5 to DIN ISO 1940/1. The impeller has a GG-hub with taper-lock bush. The blades are made of powder coated steel or GI sheet steel.

Inlet Cone

The inlet cone is made of powder coated or GI sheet steel. The inlet cone allows a uniform and stable airflow into the impeller assuring cataloged performance.

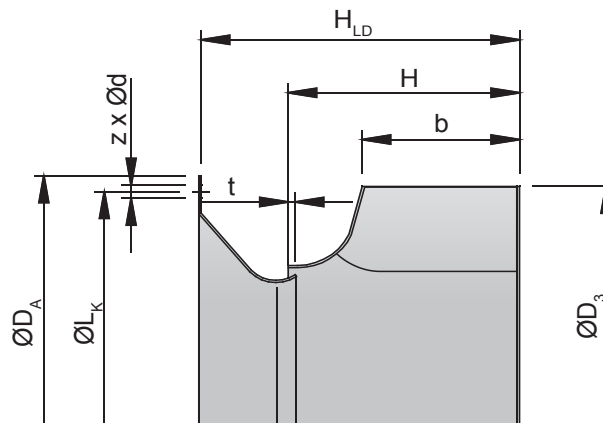
Overlap

The inlet cone is made of powder coated or GI sheet steel. The inlet cone allows a uniform and stable airflow into the impeller assuring cataloged performance.

The overlap distance is determined by empirical and airflow tests which take into account the aerodynamic characteristics of the impeller.

Assembly

The complete assembly consists of the motor, impeller and inlet cone. The mounting base is manufactured from galvanized steel sheet.



Size	b [mm]	H [mm]	ØD _A [mm]	ØD ₃ [mm]	ØL _k [mm]	t [mm]	z x Ød [mm]	H _{LD} [mm]	n _{max} [1/min]
250	80	118	280	257	259	5	6 x 7	158	4500
280	89	133	307	289	286	5,5	6 x 7	179,5	4300
315	100	146	348	324	320	5	6 x 7	200,5	4000
355	112	162	382	365	356	6	6 x 9	223,5	3500
400	126	185	422	410	395	7	8 x 9	253	2900
450	142	210	464	460	438	8	8 x 12	282	2900
500	159	235	515	517	487	8	8 x 12	317	2500
560	178	262	564	578	541	9	8 x 12	357	2200
630	199	293	638	648	605	10	8 x 12	401,5	1900
710	224	328	710	728	674	12	8 x 14	450	1600
800	252	368	785	818	751	14	8 x 14	506,5	1400
900	282	413	875	917	837	16	8 x 14	563,5	1250
1000	316	462	970	1012	934	18	8 x 14	629	960

Technical description

Delivery Options

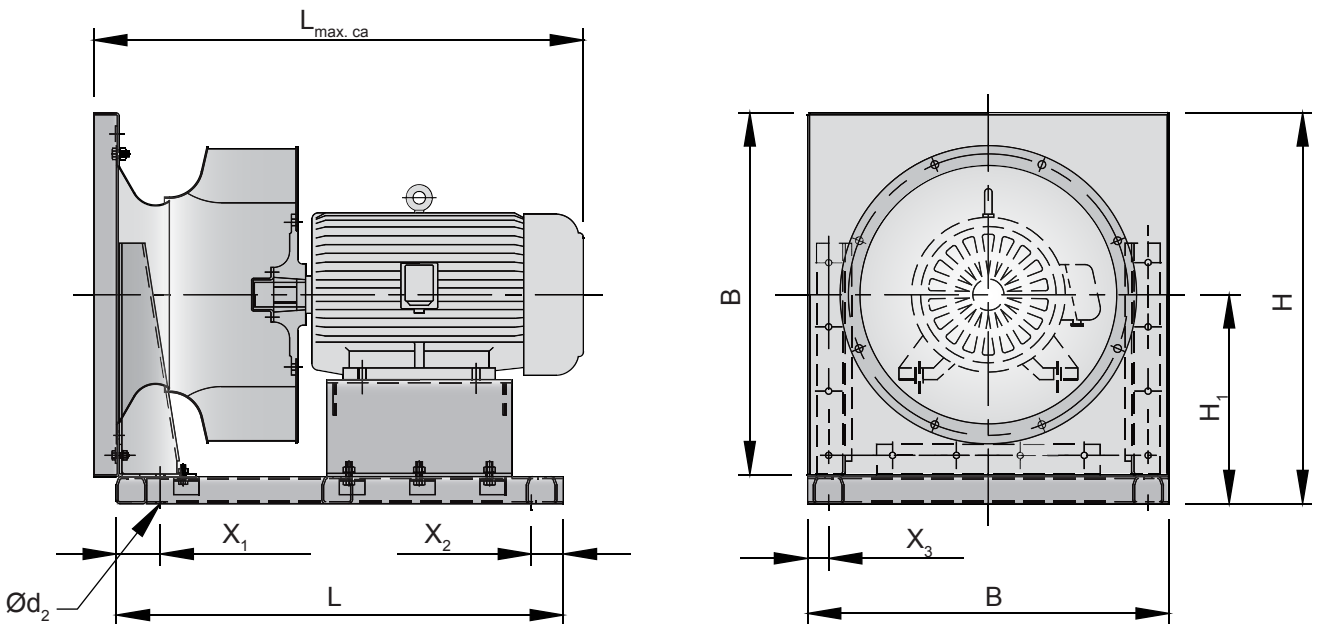
There are 3 different options:

- a) Impeller with inlet cone
- b) Impeller with inlet cone + Mounting assembly
- c) Impeller with inlet cone + Mounting assembly + Motor

Accessories

The following accessories are available:

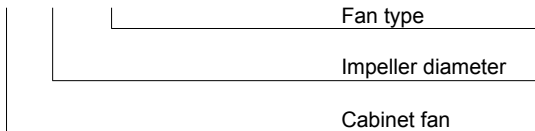
- 1) Elastic Flexible connectors
- 2) Damper
- 3) Adjustable sliding (mechanical type) for air volume regulation and control



Size	B	H	H1	L	$L_{max. ca}$	X_1	X_2	X_3	$\varnothing d_2$
PF	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
250	376	414	226	475	610	60	40	24,5	14
280	400	438	238	475	610	60	40	24,5	14
315	430	468	253	520	660	60	40	24,5	14
355	462	500	269	533	680	60	40	25	14
400	502	540	289	586	740	60	40	25	14
450	566	608	325	700	780	69	50	33	14
500	612	654	348	760	800	80	50	31	14
560	688	744	400	870	950	100	50	38	18
630	768	824	440	920	990	100	50	39	18
710	850	935	510	1000	1090	100	50	50	18
800	940	1020	550	1100	1220	100	100	50	20
900	1044	1154	632	1200	1291	100	100	60	20
1000	1140	1250	680	1320	1486	100	100	60	20

Fan type code

KB 500 / TYZ 280



Relative octave sound power level, A-weighted

f_m [Hz]			L_{WA}	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
4-pol	L_{WA6rel} [dB(A)]	Outlet side	0	-16	-14	-8	-5	-6	-7	-17
	L_{WA5rel} [dB(A)]	Inlet side	-6	-19	-21	-12	-11	-13	-15	-24
	L_{WA2rel} [dB(A)]	Casing	-25	-30	-32	-34	-32	-37	-42	-49
6-pol	L_{WA6rel} [dB(A)]	Outlet side	0	-13	-13	-7	-6	-5	-7	-15
	L_{WA5rel} [dB(A)]	Inlet side	-6	-21	-21	-13	-12	-12	-13	-20
	L_{WA2rel} [dB(A)]	Casing	-25	-34	-34	-29	-32	-34	-39	-46

Design features

Casing

- > frame made of extruded aluminium profiles, joined together by either plastic or aluminium corners
- > side panels made of galvanised sheet metal with optional epoxy coating
- > panels are insulated to ensure low noise levels
- > optional access door on service side
- > weatherproof version with aluminium side plates and weather-hood available

Fans

- > Cabinets with belt-driven fans are fitted with double-inlet forward- (TRZ) or backward-curved (HRZ) fans. For a more detailed description of these fans, please refer to our catalogue M08.
- > Cabinets with direct-driven fans are fitted with DRS-type fans with 100% speed-controllable external rotor motors. For a more detailed description of these fans, please refer to the section „Direct-driven Centrifugal Fans“ on page 222ff.

Installation and maintenance

- > Interchangeable side panels allow easy installation
- > low-maintenance operation
- > electrical connection via waterproof terminal box

The following ancillary equipment is available:

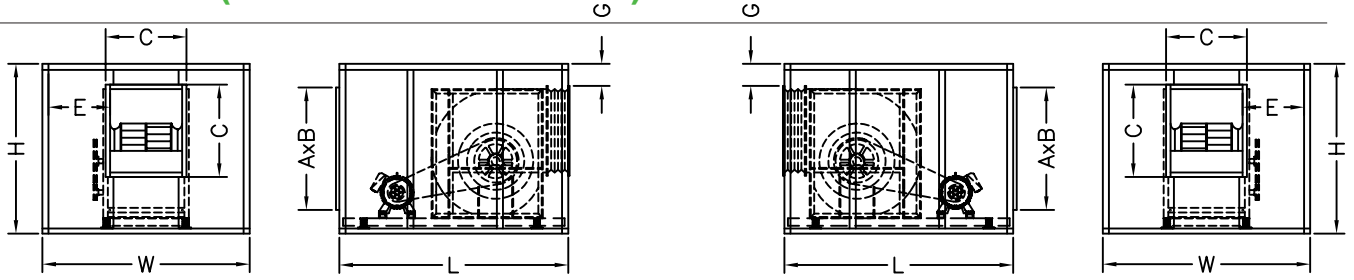
Flexible connection

The flexible connection consists of two galvanised flanges, assembled with gas-tight canvas. Please note that the dimensions of inlet and outlet flexible connectors for a respective cabinet fan can differ.

Inlet and outlet flanges

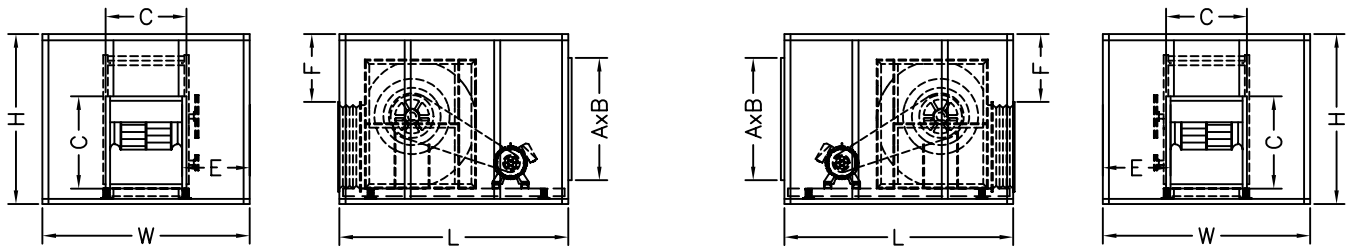
Galvanised matching flanges for inlet and outlet sides are available.

Cabinet Fan (INSIDE ISOLATOR)



CLOCKWISE TOP HORIZONTAL (CW 90°)
MOTOR POSITION Z

COUNTER CLOCKWISE TOP HORIZONTAL (CCW 90°)
MOTOR POSITION W



CLOCKWISE TOP HORIZONTAL (CW 270°)
MOTOR POSITION W

COUNTER CLOCKWISE BOTTOM HORIZONTAL (CCW 270°)
MOTOR POSITION Z

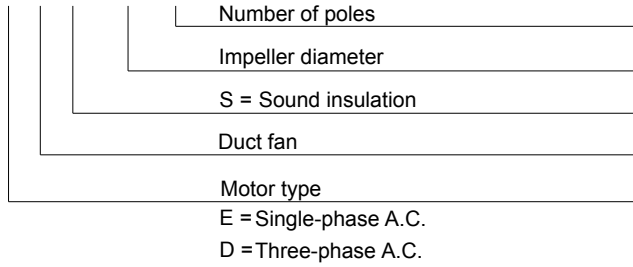
OVERALL DIMENSIONS (mm.)

MODEL (KB)	L	W	H	A x B	□ CxC	E	F	G
180	995	680	680	578x263	229x229	225	247	88
200	995	680	680	578x263	256x256	212	220	67
225	1310	680	680	578x263	288x288	196	188	50
250	1310	680	995	578x263	322x322	196	469	330
280	1310	995	995	578x893	361x361	317	430	273
315	1310	995	995	578x893	404x404	295	387	221
355	1310	1310	995	1210x578	453x453	428	338	136
400	1310	1310	995	1210x578	507x507	401	284	55
450	1310	1310	1310	1210x893	569x569	370	537	279
500	1625	1310	1310	1210x893	638x638	336	468	188
560	1625	1625	1310	1525x893	715x715	455	391	76
630	1625	1625	1625	1525x893	801x801	412	620	264
710	2255	1940	1625	1840x893	898x898	521	523	118
800	2255	1940	1940	1840x893	1007x1007	466	729	268
900	2450	2255	1940	2155x1525	1130x1130	562	784	241
1000	2450	2255	2255	2155x1525	1267x1267	494	606	88

NOTE : SERVICE DOOR LOCATE AT DRIVE SIDE OF FAN.

Fan type code

D K N S 225 - 4

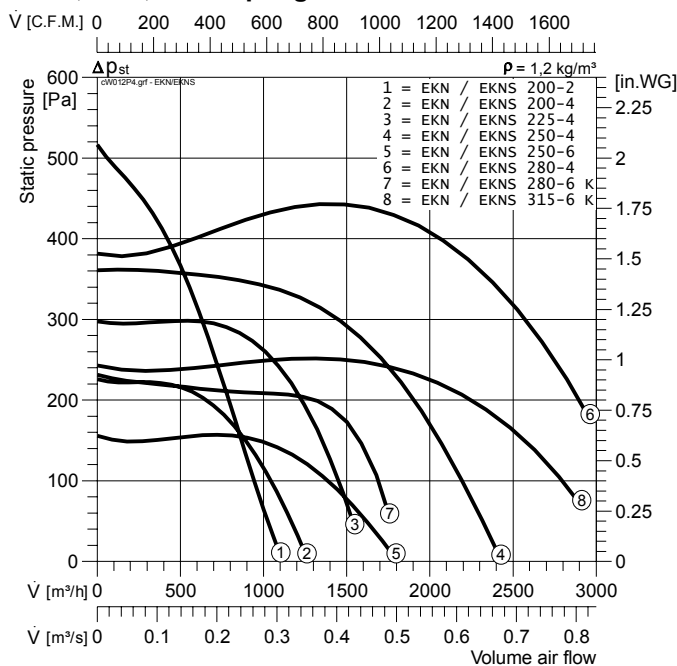


Relative octave sound power level A-weighted

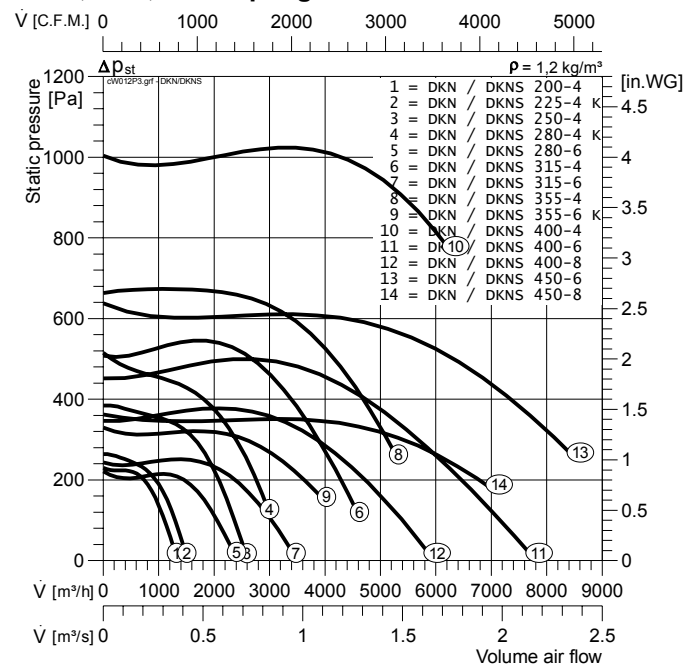
f _M [Hz]		L _{WA}	125Hz	250Hz	500Hz	1kHz	2kHz	4kHz	8kHz
4-pol	L _{WA6rel} [dB(A)] <i>Outlet side</i>	0	-16	-14	-8	-5	-6	-7	-17
	L _{WA5rel} [dB(A)] <i>Inlet side</i>	-6	-13	-15	-6	-5	-7	-9	-18
	L _{WA2rel} [dB(A)] <i>Casing EKN/DKN</i>	-17	-5	-7	-9	-7	-12	-17	-24
	L _{WA2rel} [dB(A)] <i>Casing EKNS/DKNS</i>	-25	-30	-32	-34	-32	-37	-42	-49
6-pol	L _{WA6rel} [dB(A)] <i>Outlet side</i>	0	-22	-13	-7	-6	-5	-7	-15
	L _{WA5rel} [dB(A)] <i>Inlet side</i>	-6	-17	-15	-7	-6	-6	-7	-14
	L _{WA2rel} [dB(A)] <i>Casing EKN/DKN</i>	-17	-10	-9	-4	-7	-9	-14	-21
	L _{WA2rel} [dB(A)] <i>Casing EKNS/DKNS</i>	-25	-34	-34	-29	-32	-34	-39	-46

Quick selection

230 V, 1AC, 2- 4- 6-polig



400 V, 3AC, 4- 6- 8-polig



Technical description

Advantages

- > easy installation via 20 mm standard flange
- > fans can be installed in any position
- > 100% speed controllable by auto transformer or electronic controller
- > motor protection by thermal contacts as standard (Explosion-proof motors with PTC thermistors)
- > extremely low starting currents
- > compact design

Design features

Duct fans combine the advantages of axial fans, straight airflow and easy installation, with those of centrifugal fans, such as high pressure stability, low noise level and high efficiency.

Casing

- > EKN, DKN - Casing made of galvanised sheet steel formed as a rectangular air duct, with standard tube flanges (20 mm width) at inlet and outlet sides.
- > EKNS, DKNS - aluminium profile and plastic corners made from reinforced polyamide. Panels are made from galvanised sheet steel with sound absorbing insulation made of clad fibre glass.

Impeller

Forward-curved centrifugal impellers made of sheet steel or plastic.

The impellers are fitted directly onto the rotor of the external rotor motor. The motorized impellers are balanced at two levels according to G 2.5 (DIN ISO 1940).

Electrical connection

The motors are wired to an external terminal box.

Fan performance curves

The performance curves of these fans have been established using a test chamber according to DIN 24 163, mounting position D (connected at both sides). The curves indicate the static pressure increase p_{st} as a function of the volume flow. The dynamic pressure increase p_{d2} shown in the performance curves refers to the flange cross-sectional area of the fan housing.

Sound levels

The figures given in the performance curves represent the A-weighted sound power levels L_{WA6} in decibel at the outlet side in duct systems. The A-weighted sound power level at the inlet side L_{WA5} , according to DIN 45 635, part 38, can be calculated via the relative sound power levels or can be obtained by the following approximation calculation:

$$L_{WA5} \approx L_{WA6} - 6 \text{ dB(A)}$$

The A-weighted sound power level radiated from the casing L_{WA2} , according to DIN 45 635, part 38, can be calculated via the relative sound power levels (see below) or is obtained approximately as follows:

$$L_{WA2} \approx L_{WA6} - 17 \text{ dB(A)} \text{ - for EKN or DKN}$$

$$L_{WA2} \approx L_{WA6} - 25 \text{ dB(A)} \text{ - for EKNS or DKNS}$$

The A-weighted sound pressure level L_{PA} at a distance of 1 metre is obtained approximately by deducting 7 dB(A) from the A-weighted sound power level.:

$$L_{PA(1m)} \approx L_{WA2} - 7 \text{ dB(A)}$$

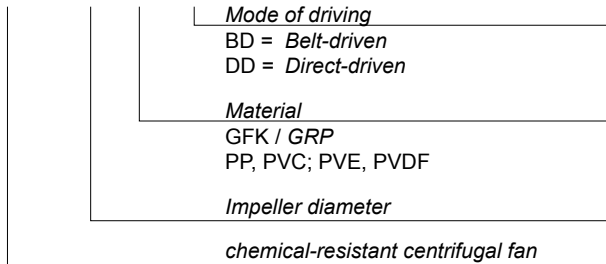
It is important to note that reflexion and environmental characteristics as well as resonant frequencies influence the sound pressure levels in different ways. In order to avoid structure-borne noise transfer to a connected duct system we recommend the use of flexible connections EVK/EVKN (see page 28). The A-weighted octave sound power level is important for the choice of suitable sound attenuators. It is obtained as follows:

$$L_{WAokt} = L_{WA6} + L_{WArel}$$

The relative A-weighted octave sound power level L_{WArel} at octave medium frequency can be taken from the table on the preceding page. These levels have been established at $0.5 \times V_{max}$.

Fan type code

CHEM 160 PP BD



CHEMICAL RESISTANT PLASTIC FAN

CHEMCO = chemical resistant plastic fan

Role

Chemco has played a leading role in the manufacturing of equipment made from anti-corrosive and chemical resistant plastics. These equipment are most suitable for use in the ventilation & noise control systems, clean rooms engineering, plating equipment, laboratory sinks & containers, scrub-bers, tank constructions as well as custom design systems.

Experience

The years of experience and know-how in the areas of plastics, its designing capability enables Chemco to develop a complete range of anti-corrosive fans. The fans are specially designed for high efficiency, reliability, with superior corrosion resistance quality. They are also developed to give trouble-free service, and are economical in use.

Application

Chemco corrosive resistant plastic fans are specially developed to handle heavy corrosive fumes, vapours, contaminated air and aggressive gases. Such fans are suitable for use in the test laboratory, hospital, food industry, electronic industry, chemical and electroplating industry, clean rooms engineering etc. They are also suitable for air conditioning application in the building industry.

Quality

Chemco supply a complete range of highly quality and efficient radial tip backward curve fans, which offer an excellent performance with a low noise level. All fans drive and accessories are produced to strict quality standards. Only the best quality materials are used and all fans are tested and rated in accordance with DIN 24163 and ISO 58001.

Products and Performance

Chemco centrifugal fans and roof fans with horizontal or vertical outlet have performance capacity of up to 100,000 Cmh and operating at a static pressure of up to 4000 Pa.

Thermoplastic materials such as PP, PE, PVC, PVDF or GRP that offer the best guarantee to resist most chemicals are available.

Sound Level

In order to make possible an assessment of sound projection adequate to human ear the A-assessed description of sound level according to DIN 45635 has been chosen.

The ascertaining of the sound power level follows the enveloping surfaces method according to DIN 45635 section 38 or the channel technique DIN 45635, section 9.

Standard Models and Designs

Model CHEM 125DD to 180DD

- With direct drive
- Plastic injection moulded casing with PP as standard.
- Casing suitable for dual rotations mounted on the galvanised steel support comes with flanged standard motor
- Impeller mounted overhung on the motor shaft.
- Fan base with angle support

Model CHEM 125BD to 180BD

- With belt drive.
- Plastic injection moulded casing with PP as standard.
- Casing suitable for dual rotations mounted on the galvanised steel support come with aluminium cast flanged-on twin bearing housing.
- Impeller fixed overhung on the shaft.
- Fan base with channel support include motor mounting plate

All CHEM125 to CHEM180 casing and impeller can be of any thermoplastic material blended with composites to overcome high temperature, UV or Electrostatic Discharge protection to suit customer's requirements.

Model CHEM 250DD to 400DD

- With direct drive
- Vacuum formed plastic casing or Glass-Reinforced Plastic (GRP/FRP) casing
- Casing mounted on the galvanised steel support comes with flanged standard motor.
- Impeller mounted overhung on the motor shaft.
- Fan base with angle support

Model CHEM 250BD to 400BD

- With belt drive.
- Vacuum formed plastic casing or Glass-Reinforced Plastic (GRP/FRP) casing
- Casing mounted on galvanised steel support comes with aluminium cast flanged-on twin bearing housing.
- Impeller fixed overhung on the shaft.
- Fan base with channel support include motor mounting plate

Model CHEM 450DD to 710DD

- With direct drive.
- Casing in plastic mechanically welded construction or Glass-Reinforced Plastic (GRP/FRP)
- Casing mounted on galvanised steel support come with foot mounted standard motor.
- Impeller mounted overhung on the motor shaft.
- Fan base with channel support

Model CHEM 450BD to 1250BD

- With belt drive.
- Casing in plastic mechanically welded construction or Glass-Reinforced Plastic (GRP/FRP)
- Casing mounted on galvanised steel support frame come with "pedestal" mounted self-aligning ball bearing units.
- Impeller fixed overhung on shaft.
- Fan base with channel support include motor mounting plate

All CHEM 250 to CHEM1250 impeller come with PP as standard. The fan casing usually of GRP/FRP material, good for chemical resistance, can also be blended with composites to overcoming high temperature, flame retardant, UV or Electrostatic Discharge protection to suit customer's requirements.

Technical description

Chemical Resistant Centrifugal Plastic Fan Design

Casing

The fan casing is constructed from thermoplastic such as PP, PVC, PE, PVDF or Glass reinforced plastic -Vinyl ester grade (GRP or FRP). The fan casing is built to a true volute form and has high efficiency inlet cone to give an even distribution of air over the full width of the runner.

The smaller range of casing, model **CHEM 125 - 180** are completely plastic injection moulded suitable for dual rotation at any position. The plastic injection moulded backplate or inlet cover can be easily removed for changing of rotation, maintenance and services. Fans casing with outlet flange come with chemical resistant seal to prevent air leakage. Casing usually with PP as standard

The **CHEM 200 to 400** casing usually of GRP construction or vacuum-formed and automatic machine welded. The plastic injection moulded backplate can be easily removed for maintenance and services. Thermoplastic fans casing with outlet flange come with chemical resistant seal to prevent air leakage. The GRP fans casing come with round straight outlet suitable for direct connection to flexible connector.

For larger range of fans (Models **CHEM 450-CHEM 1250**), the casing is usually of GRP construction as standard or by mechanically machine welded as when required.

Chemco fan casing is extremely rigid with adequate thickness, properly stiffened to ensure it is free of vibration or drumming during operation. The casing is also constructed in a way that no metal parts are situated in the airflow to eliminate the risk of corrosion. Casing can be of GRP or any thermoplastic material blended with composites to overcoming high temperature, flame retardant resistant, ultraviolet or Electrostatic Discharge protection to suit customer's requirements.

The inlet and outlet are of standard diameter sizes, which can be easily connected together with flexible connector during installation.

All casings can be fitted with drain outlets at the lowest point of the scrolls. This is to facilitate the drainage of condensation build-up or rainwater when installed in the open.

Radial Tip Backward Curve Impellers

Chemco fan impellers are of single inlet Single width (SISW) type. Impellers are of precision plastic injection moulded design with cast-in metal hub (Models CHEM 125 - CHEM 315) or mechanically welded construction (Models CHEM 400 - CHEM 1250) to highest quality standard with excellent aerodynamic properties.

Impeller is usually of PP however, depending on the type of applications; impeller can be made of PA, PC, PVC or PVDF. Impeller can be thermoplastic material blended with composites to overcoming high temperature, flame retardant resistant, ultraviolet or Electrostatic Discharge protection to suit customer's requirements. Each impeller is statically and dynamically balanced in two planes in accordance with Q2.5 of VDI 2060 or Grade G2.5 of BS 5625 Part 1 (1979). The hubs are designed for use with taper-bushes and are made of high-grade cast plates to guarantee high reliability at the high peripheral speeds.

Fan Base and Support

The fan supporting steel stands and fan bases are manufactured from heavy gauge mild steel and are hot dipped galvanised to provide maximum protection in the most adverse condition. Special surface treatment can be done on request. Fans can be rotated to suit different discharge directions.

Standard Colour

All PP - Equivalent to PANTONE Warm Grey 1C,

All GRP - Equivalent to PANTONE 430

Other colour as optional required.

Safety Features

All drive-belts, pulleys, projecting set screws, keys and other rotating parts have heavy-duty perforated sheet as protective guards to meet safety requirement. All fans are labelled with nameplate securely attached on each fan showing the serial and model number, fan & drive duties, rotation of flow and date of manufacture.

Drive shaft and bearing

All precision solid shafts complying to DIN 17210 - C45 are trued and have a smooth finish. Both shaft ends have as standard feature diameters complying with DIN 748, Sheet 1 and grooved to DIN 6885, Sheet 1. The shafts are chemical resistant coated with protective cover to prevent corrosion. Upon requested, stainless steel shaft can also be provided.

CHEM 125 to CHEM 400 belt driven fans come with flange mounted aluminium cast bearing housings type. The drive shaft is fitted with two standards anti-friction grooved balls bearing unit with acid proof seal. This design ensures trouble-free service, silent operation and minimum vibration.

For CHEM 450 and above, the drive shafts are mounted on fan pedestal with cast iron housing of plummer block units. These bearings are of self-aligning heavy-duty ball or spherical roller type.

Drives

Standard pulley drive with taper bush type, accurately balanced and conform to ISO 4183-1980 standards. All Vee belts are conform to ISO 4148. Belt section is selected with correct ratings and tensioning to ensure prolonged usage.

Motor

Depending on the application, standard electric driven motor of IP44, IP45, IP54 or IP55 can be supplied upon request.

For direct driven fans, motor are usually of B5 flange mounting and for belt driven fans, motor are of B3 foot mounting. All motors are totally enclosed and fan cooled complying with BS 2613. The motors are single/three phase, 50/60 Hz suitable for 240/415 or 220/380 volts standards. All other voltage can be supplied upon request.

Tropicalisation

Motor windings are coated with resin varnishes, which make the motor suitable for tropical atmospheres. Additional treatment can be carried out where motors are required to operate in severe tropical environments.

Flameproof

All fans mounted with flameproof motors are suitable in the following areas:

- 1) BS 4683 Part II certified for Groups IIa and IIb
- 2) BS 4683 Part IV designated EXE and are suitable for use in Zone 1 areas for group IIa and IIb.
- 3) BS 5000 Part 16 and BS 4683 Part III designated type EXN and suitable for use in Zone 2 areas.

Flameproof areas zone 1 and 2, when installed in non-explosion hazardous area for temperature categories T1-T3, but only under the following conditions:

- a) the maximum allowed revolutions must be reduced by 20%
- b) the allowed drive power P_w should be reduced by 30%
- c) only fans with horizontal shafts are to be used
- d) fans must be equipped with guards to prevent foreign particulars falling in or being sucked in.

Inspection Door/Cover

For servicing and inspection purposes. For model CHEM 450 and above, an inspection cover can be included upon request. This cover is complies in general with safety and accident prevention regulations, as it can only be opened by using tools.

Chemical-Resistant Centrifugal Fan



Accessories

- Anti-vibration spring mounting
- Condense water drain socket and plug
- Motor, motor guard, slide rails, belt guard, belt drive
- Bearing, bearing and shaft cover
- Fan and motor support base frame
- Inlet flanges, Inlet sleeve with clamping bands
- Splinter protection cover.

Optional

- Full range of colour matching
- Flame Retardant
- High Temperature
- Electrostatic Discharge - Anti-static, Static dissipative or Conductive
- Ultra Violet

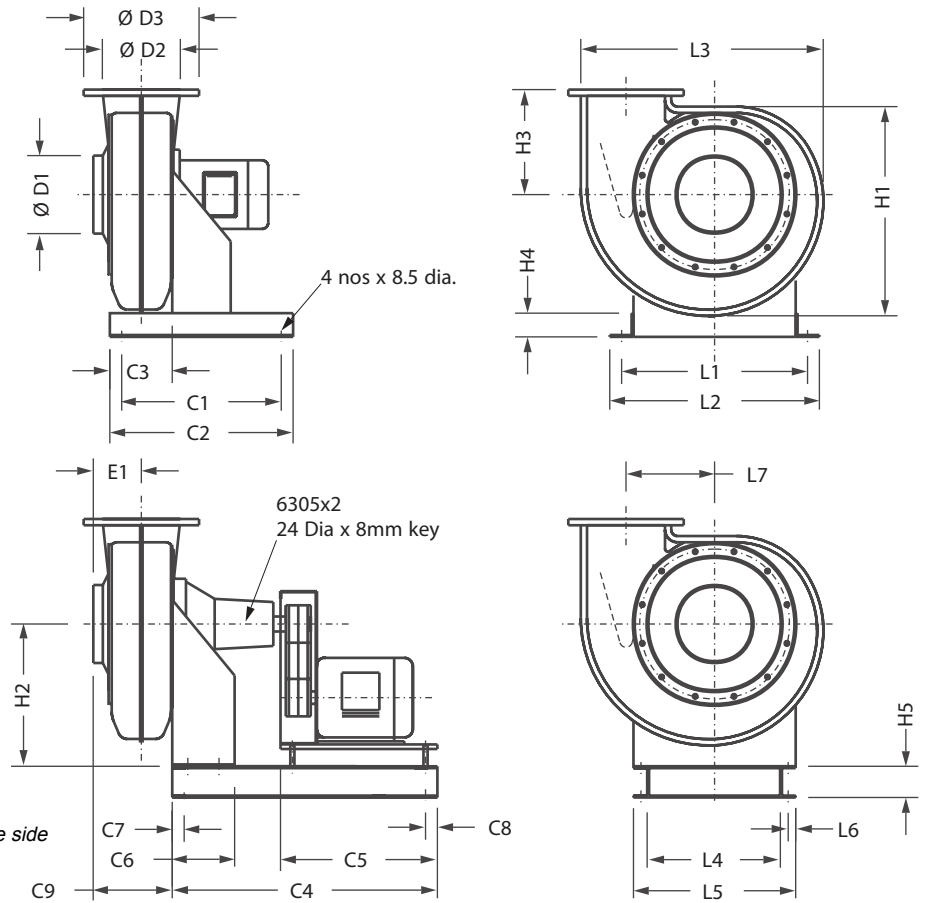
Thermal and Chemical resistant

The temperature of the air and gases must not exceed that specified for the materials:

Material	max. Temp. [°C]
PVC	60
PP	80
GFK	100
PVDF	120

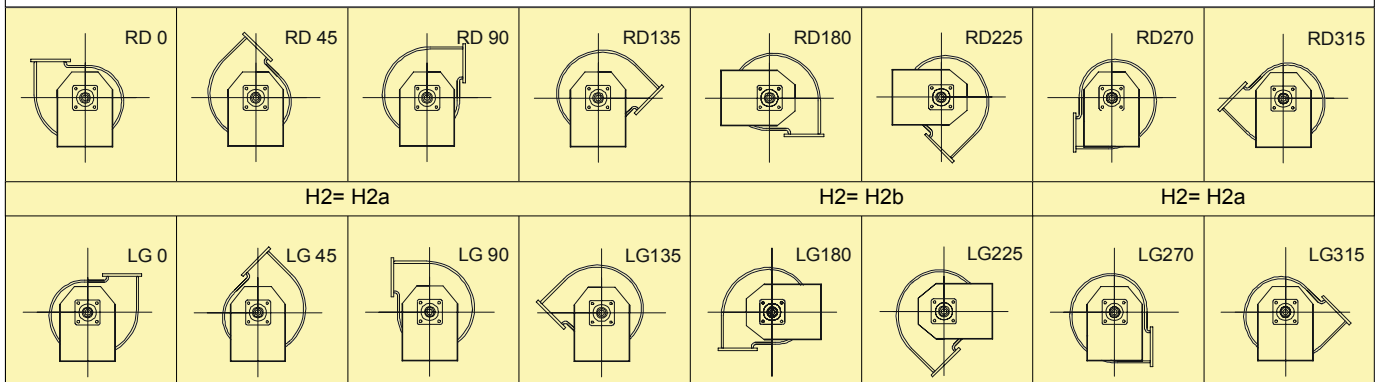
Please contact our local sales engineers for detailed list of Chemical Application Information.

CHEM 125-400 PP

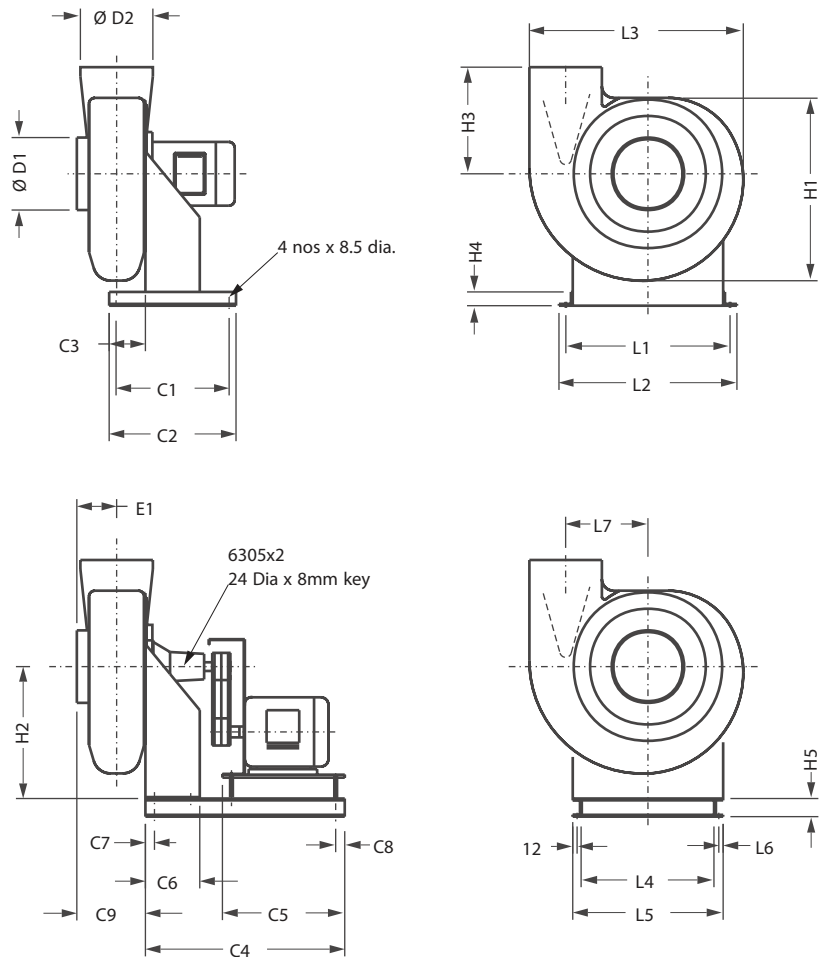


The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	D1 (mm)	D2 (mm)	D3 (mm)	C1 (mm)	C2 (mm)	C3 (mm)	C4 (mm)	C5 (mm)	C6 (mm)	C7 (mm)	C8 (mm)	C9 (mm)	E1 (mm)	H1 (mm)
125	125	125	185	256	294	100	425	251	100	19	19	127	77	335
160	160	160	220	282	320	100	475	300	128	19	19	162	99	429
180	180	180	240	312	350	100	550	338	150	19	19	188	114	483
200	200	200	260	312	350	100	550	338	150	25	25	203	124	537
250	250	250	310	300	350	100	600	400	150	25	25	249	160	661
315	315	315	375	350	400	125	650	450	150	25	25	314	202	833
400	400	400	480	400	450	150	650	450	150	25	25	321	201	898
Size	H2a (mm)	H2b (mm)	H3 (mm)	H4 (mm)	H5 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	L7 (mm)	G (kg)	
125	228	308	168	38	50	298	336	389	210	260	12	142	18	
160	291	396	215	38	50	370	408	497	282	332	12	182	32	
180	327	440	242	38	50	411	449	560	323	373	12	204	38	
200	364	500	269	38	50	453	491	622	365	415	12	227	43	
250	454	633	337	50	75	568	618	768	442	518	19	284	52	
315	530	720	424	50	75	659	709	967	533	609	19	358	78	
400	557	750	458	50	75	721	771	1043	595	671	19	356	108	



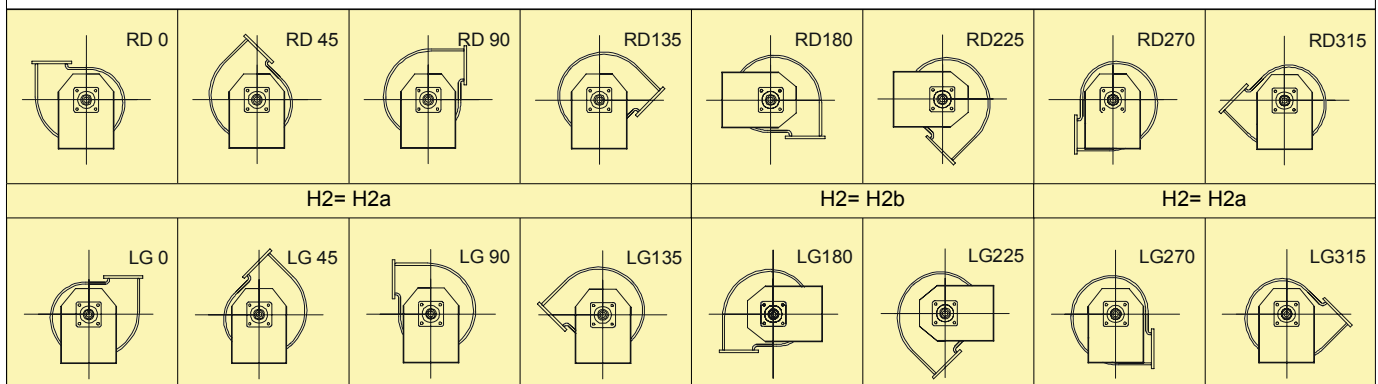
CHEM 200-400 GRP



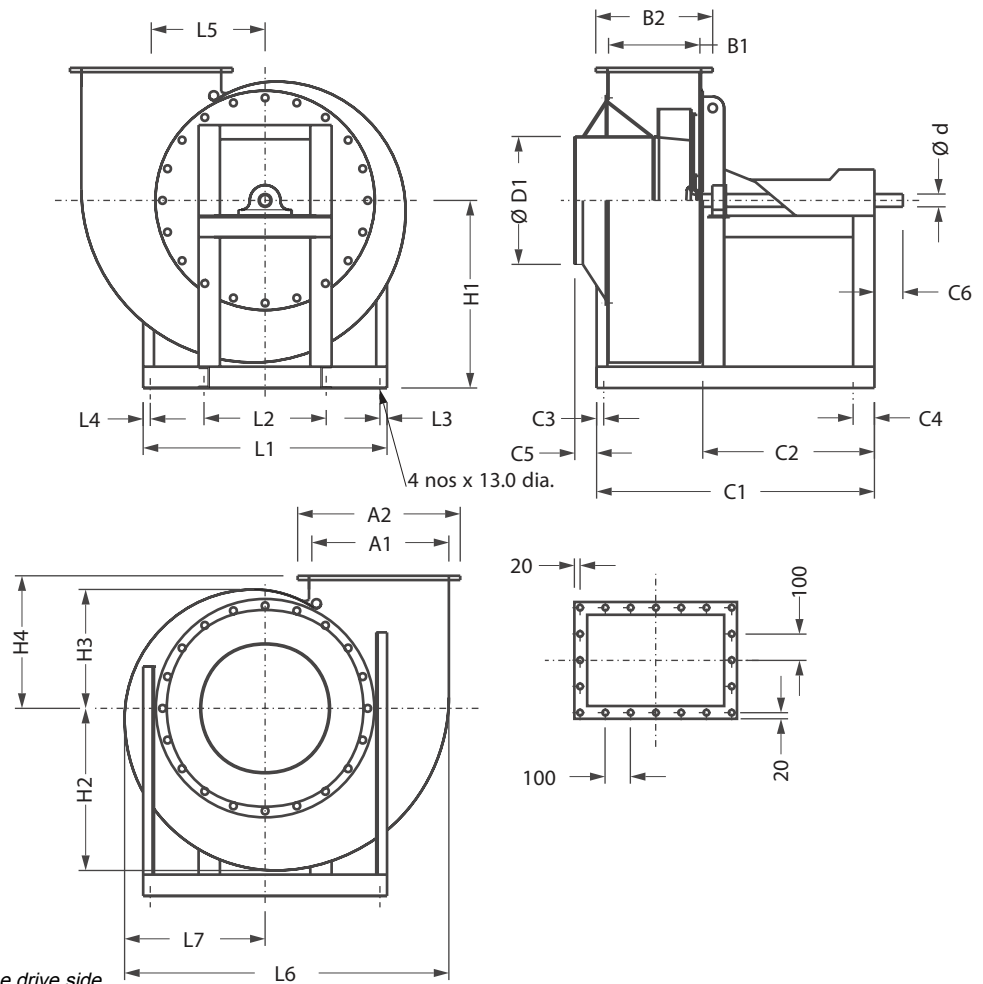
The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	D1 (mm)	D2 (mm)	D3 (mm)	C1 (mm)	C2 (mm)	C3 (mm)	C4 (mm)	C5 (mm)	C6 (mm)	C7 (mm)	C8 (mm)	C9 (mm)	E1 (mm)	H1 (mm)
200	200	200	na	312	350	100	550	338	150	25	25	189	110	504
250	250	250	na	300	350	100	600	400	150	25	25	210	121	631
315	315	315	na	350	400	125	650	450	150	25	25	245	142	795
400	400	400	na	400	450	150	650	450	150	25	25	285	166	858

Size	H2a (mm)	H2b (mm)	H3 (mm)	H4 (mm)	H5 (mm)	L1 (mm)	L2 (mm)	L3 (mm)	L4 (mm)	L5 (mm)	L6 (mm)	L7 (mm)	G (kg)
200	364	500	294	38	50	453	491	590	365	415	12	227	43
250	454	633	371	50	75	568	618	737	442	518	19	284	52
315	530	720	464	50	75	659	709	930	533	609	19	358	78
400	557	750	508	50	75	721	771	1003	595	671	19	356	108



CHEM 450-710 PP

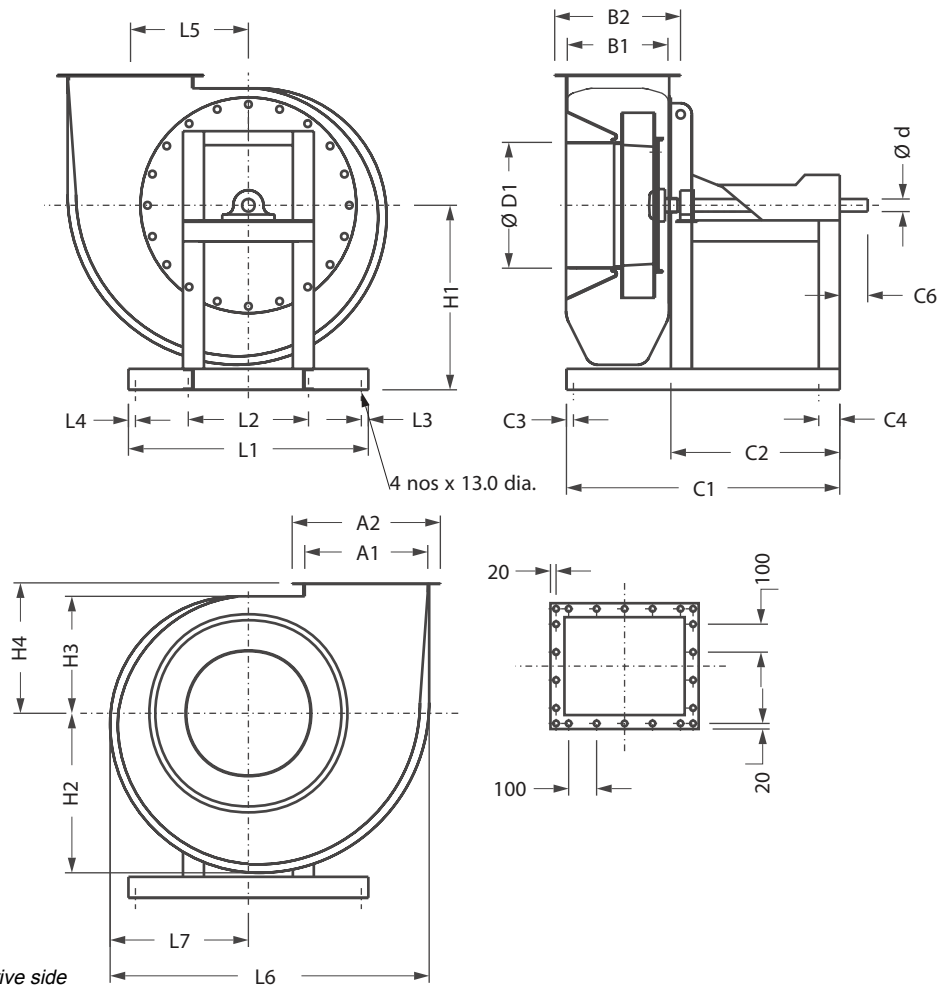


The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	A1 [mm]	A2 [mm]	B1 [mm]	B2 [mm]	C1 [mm]	C2 [mm]	C3 [mm]	C4 [mm]	C5 [mm]	C6 [mm]	D1 [mm]	d [mm]	H1a [mm]	H1b [mm]
450	482	572	321	411	977	604	19	75	76	100	450	45	685	598
500	536	626	357	447	1013	604	19	75	88	100	500	45	783	633
560	600	700	400	500	1058	604	19	75	104	100	560	45	870	709
630	675	775	450	550	1184	677	19	75	121	125	630	60	939	775
710	761	881	507	627	1332	761	19	75	137	125	710	60	1030	900
Size	H1c [mm]	H1d [mm]	H1e [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	G (kg)
450	TBA	800	700	571	418	466	858	430	25	25	400	1141	494	156
500	TBA	911	786	634	465	518	970	482	25	25	445	1268	549	188
560	TBA	1005	879	710	521	580	1090	429	25	25	498	1420	615	228
630	TBA	1128	950	799	586	653	1222	507	25	25	561	1597	692	248
710	TBA	1250	1110	900	660	736	1273	573	25	25	632	1800	780	280

H1= H1a		H1= H1b		H1= H1c		H1= H1d	H1= H1e

CHEM 450-710 GRP

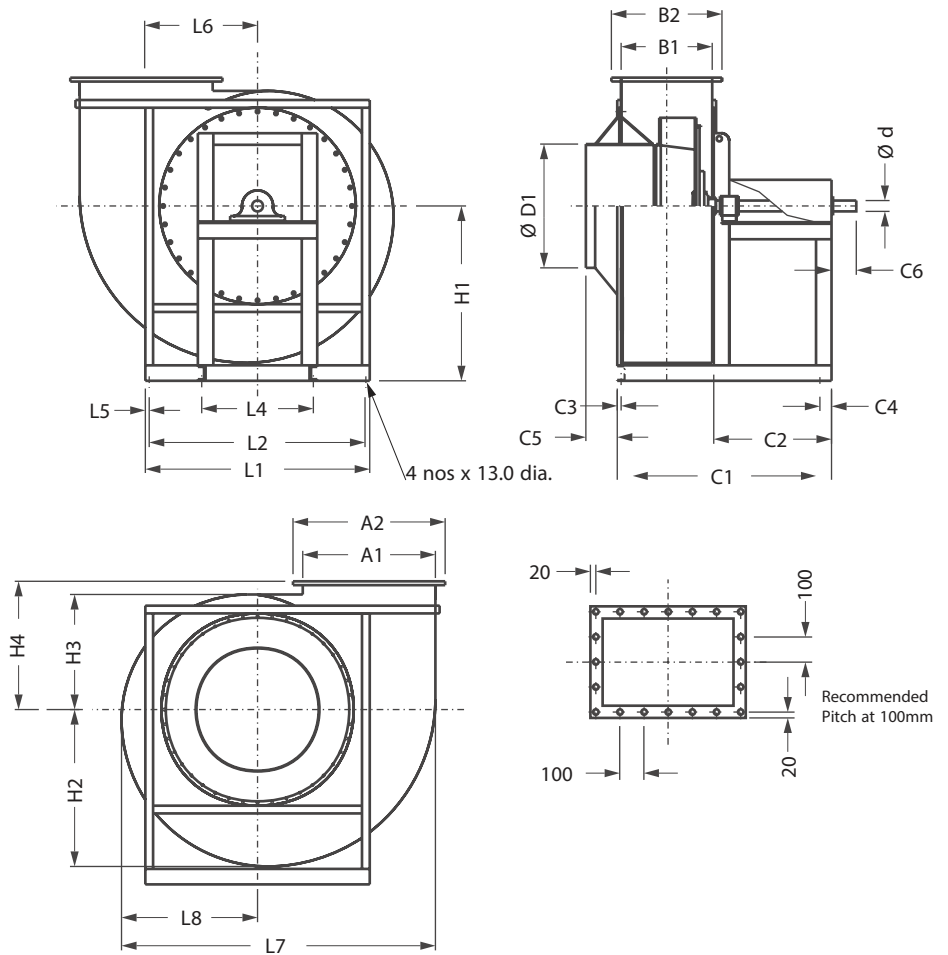


The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	A1	A2	B1	B2	C1	C2	C3	C4	C5	C6	D1	d	H1a	H1b
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]
450	440	530	360	450	977	604	19	75		100	450	45	685	598
500	490	590	400	500	1013	604	19	75		100	500	45	783	633
560	550	650	450	550	1058	604	19	75		125	560	45	870	709
630	620	720	505	605	1184	677	19	75		125	630	60	939	775
710	710	810	580	680	1332	761	19	75		125	710	60	1030	900
Size	H1c	H1d	H1e	H2	H3	H4	L1	L2	L3	L4	L5	L6	L7	G
	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	[mm]	(kg)
450	TBA	800	700	571	418	467	858	430	25	25	448	1210	494	156
500	TBA	911	786	634	465	518	970	482	25	25	570	1360	549	188
560	TBA	1005	879	710	521	580	1090	429	25	25	630	1520	615	228
630	TBA	1128	950	799	586	653	1222	507	25	25	705	1720	692	248
710	TBA	1250	1110	900	660	736	1273	573	25	25	795	1930	780	280

H1= H1a		H1= H1b		H1= H1c		H1= H1d	H1= H1e

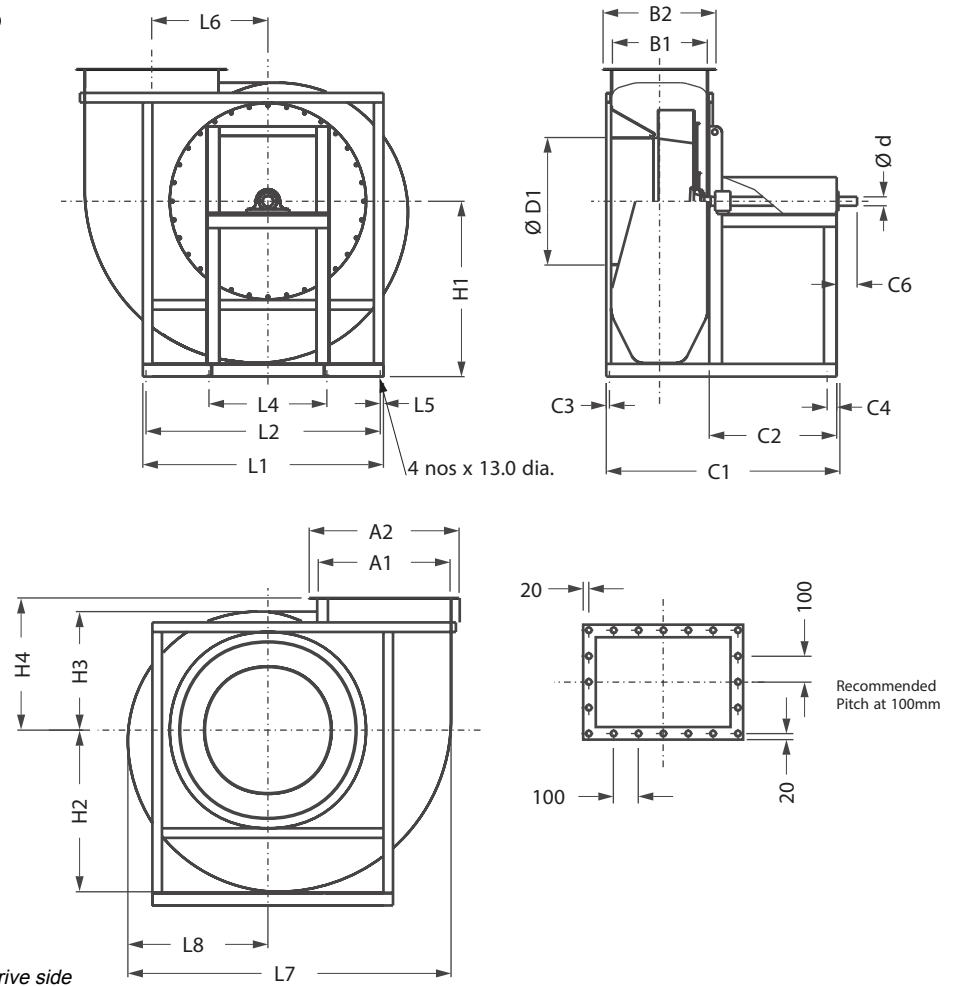
CHEM 800-1250 PP



The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	A1 [mm]	A2 [mm]	B1 [mm]	B2 [mm]	C1 [mm]	C2 [mm]	C3 [mm]	C4 [mm]	C5 [mm]	C6 [mm]	D1 [mm]	d [mm]	H1a [mm]	H1b [mm]	
800	857	983	589	715	1385	761	25	75	203	160	800	70	1130	1000	
900	964	1090	643	769	1711	1000	25	75	203	160	900	70	1278	1105	
1000	1066	1192	714	854	1797	1000	25	75	203	160	1000	70	1375	1200	
1120	1192	1332	840	940	1875	1000	25	75	245	200	1120	80	1550	1350	
1250	1330	1480	893	1043	1969	1000	25	75	273	200	1250	80	1700	1500	
Size	H1c [mm]	H1d [mm]	H1e [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	G (kg)	
800	TBA	1280	1230	1014	744	829	1450	1400	721	25	729	2029	879	420	
900	TBA	1428	1362	1141	837	933	1632	1582	818	25	821	2282	989	500	
1000	TBA	1560	1500	1268	930	1037	1813	1763	914	25	896	2536	1099	625	
1120	TBA	1760	1600	1420	1041	1161	2030	1980	1030	25	1003	2840	1231	722	
1250	TBA	1935	1800	1585	1162	1296	2100	2050	1140	25	1120	3170	1373	859	
RD 0		RD 45		RD 90		RD135		RD180		RD225		RD270		RD315	
H1= H1a			H1= H1b			H1= H1c			H1= H1d			H1= H1e			
LG 0		LG 45		LG 90		LG135		LG180		LG225		LG270		LG315	

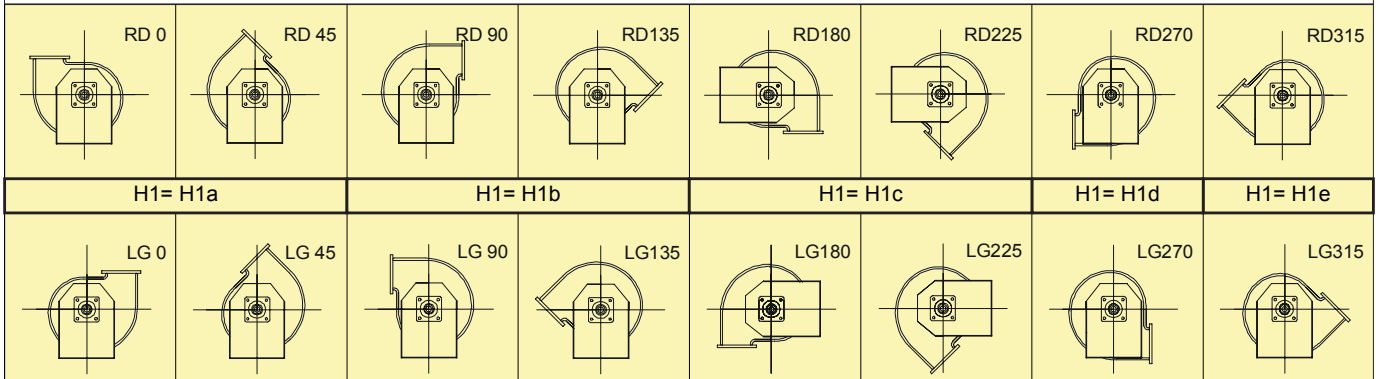
CHEM 800-1250 GRP



The direction of rotation is as viewed from the drive side
 G = Barefan weight approximatly

Size	A1 [mm]	A2 [mm]	B1 [mm]	B2 [mm]	C1 [mm]	C2 [mm]	C3 [mm]	C4 [mm]	C5 [mm]	C6 [mm]	D1 [mm]	d [mm]	H1a [mm]	H1b [mm]
800	830	940	590	700	1417	761	25	75		160	800	70	1130	1000
900	935	1065	666	796	1756	1000	25	75		160	900	70	1278	1105
1000	1034	1176	744	886	1833	1000	25	75		160	1000	70	1375	1200
1120	1160	1302	820	962	1896	1000	25	75		200	1120	80	1550	1350
1250	1291	1439	917	1065	1991	1000	25	75		200	1250	80	1700	1500

Size	H1c [mm]	H1d [mm]	H1e [mm]	H2 [mm]	H3 [mm]	H4 [mm]	L1 [mm]	L2 [mm]	L4 [mm]	L5 [mm]	L6 [mm]	L7 [mm]	L8 [mm]	G (kg)
800	TBA	1280	1230	1014	744	829	1450	1400	721	25	729	2029	879	420
900	TBA	1428	1362	1141	837	933	1632	1582	818	25	821	2282	989	500
1000	TBA	1560	1500	1268	930	1037	1813	1763	914	25	912	2536	1099	625
1120	TBA	1760	1600	1420	1041	1161	2030	1980	1030	25	1021	2840	1231	722
1250	TBA	1935	1800	1585	1162	1296	2100	2050	1140	25	1140	3170	1373	859



Fan type code

AXV-AL 450-7 /26° LH-2 SU 400°C
 BXV-PP 450-5 /25° LH-2 SU

Smoke extract fan
 400°C/120min, 300°C/120min

Air flow and form of running
 S, D, SU, SO, DU, DO

Number of poles

Casing version
 SH = Short-cased
 LH1 = Long-cased

Pitch angle

AXV: impeller-ø and number of blades
 BXV: impeller-ø, hub-ø and number of blades

315...1600 - 150, 250 - 3, 5, 6, 7, 10, 14

Axial impeller blade type, material



Technical description

Design features

Types and duty range

Wolter Axial flow fans can be used for various applications in ventilation and process air technology. Standard diameters range from 315 to 1600mm, with airflow rates of up to 200.000 m³/h at static pressure increases of up to 1.500 Pa. Higher pressures can be achieved by using contra-rotating multi-stage fans.

Smoke spill operation

The AXV range of axial fans is designed and tested to operate at standard temperatures as well as at elevated temperatures of 300°C for 60 (F300) and 120 minutes and 400°C for at least 120 minutes (F400), according to DIN EN ISO 12101, part 3. The following fan curves are valid for standard temperatures and 300°/60(120) minutes operation. To select a fan for 400°C/120 minutes operation, please contact our technical support.

Casing

Fan casings are hot-dip galvanised. Flanges are rolled, the pitch circles of holes are in accordance with DIN 24 154, R2.

- >LH - Long-cased axial fan, with external terminal box
- >SH - Short-cased axial fan

If motors require additional lubrication, tubes and grease-nipples are fitted to the outside of the fan casing. An inspection hole, closed by a rubber plug, allows to control the direction of rotation.

Impellers

AXV impellers, hubs and blades are made off pressure-cast aluminium alloy, the aerodynamical profile guarantees high efficiency and low noise levels. The pitch angle is adjustable during standstill. The variable number of blades expands the performance range.

Motor

Wolter uses closed squirrel cage motors according to IEC 34, if required also in accordance with EPACT. Standard motors are class F with IP 55 protection class. Multi speed versions with 2 or 3 speeds (Dahlander circuit or separate windings) are also available, as well as explosion-proof versions or specific industrial executions such as marine-type fans. The motor bearings have a L 10 life.

Forms of running

Wolter AXV/BXV axial flow fans are available for all forms of running. The above chart shows all standard forms of running. Please indicate the required configuration when ordering. Without specific instructions, fans will be delivered in configuration S. Arrows outside the fan casing indicates the correct direction of rotation and airflow.

Fan performance curves

The performance curves for these fan types have been established in mounting position D (according to DIN 24 163, part 1, duct connected to inlet and outlet sides) and represent the total pressure increase p_t as a function of the volume flow. The dynamic pressure p_{d2} refers to the flange cross-sectional area at the of the fan.

Sound levels

The sound levels are in accordance to DIN 45 635, section 38. The performance curves show the unweighted total sound power levels L_W . The octave sound power level is important for the selection of suitable sound attenuators. It is calculated as follows:

$$L_{WOKt} = L_W + L_{Wrel}$$

The relative octave sound power level L_{Wrel} at octave medium frequency can be taken from the tables. The A-weighted octave sound power level is obtained by applying the A-filter (see page 7):

$$L_{WAOKt} = L_{WOKt} + L_{WrelA}$$

The A-weighted sound power level L_{WA} is obtained by logarithmic addition of all A-weighted octave sound power levels (see page 7). The sound power level on suction and outlet sides are approximately equal.

$$L_{W5} \approx L_{W6}, L_{WA5} \approx L_{WA6}, L_{WA5} \approx L_{WA} - 3$$

The sound power level radiated from the casing, L_{Wz} , according to DIN 45 635, part 38, is calculated by the following approximation formula:

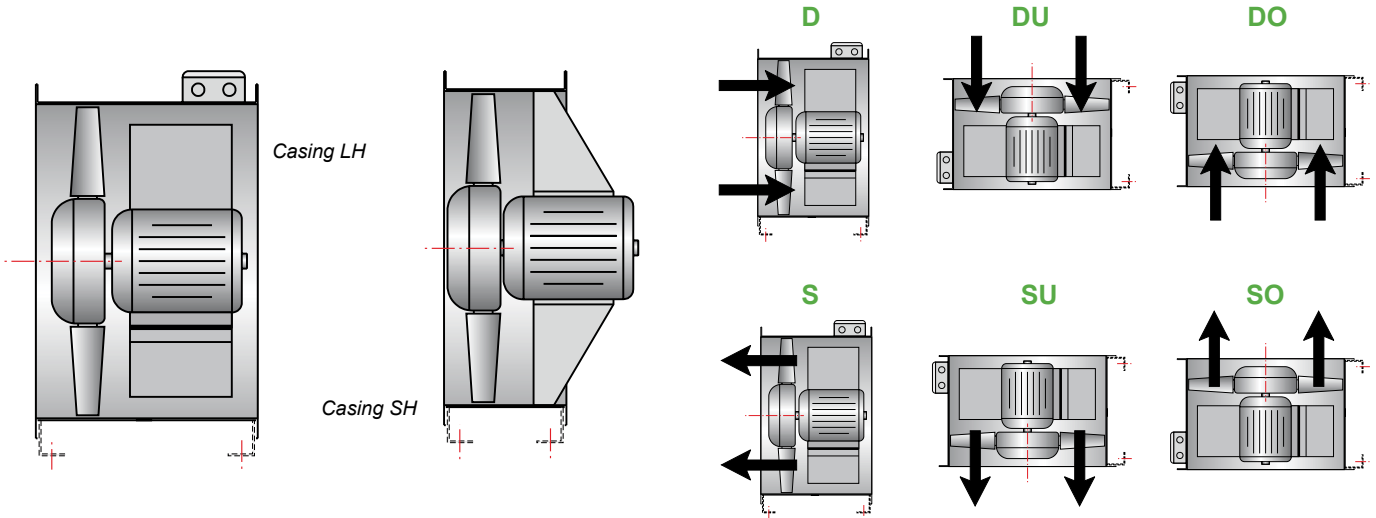
$$L_{Wz} = L_W - 15 \text{ dB(A)}$$

The A-weighted sound pressure level L_{pa} at a distance of 1 metre is calculated approximately by deducting 7 dB(A) from the A-weighted sound power level L_{WA} . It is important to note that reflexion and environmental characteristics as well as resonant frequencies influence the sound pressure levels in different ways.

Ordering designations

When ordering, please provide the following information:

- > fan type code (see opposite page), casing version and form of running
- > duty required at standard air temperature (air volume in m³/h at static pressure in Pa)
- > motor power rating in kW
- > electrical supply
- > required ancillary equipment



Selection example

Required duty point

- > Volume flow : 3,8 m³/s
- > Static pressure: 50 Pa

In order to calculate the total pressure, please add velocity pressure to static pressure (90 Pa dynamic pressure + 50 Pa static pressure = 140 Pa total pressure)

- > Fan speed: 1.440 1/min (4-pole)

Using the fan curve

Having chosen a fan with adequate performance range for the required duty point, plot volume flow and pressure.

At the point of intersection, the following data can be read:

- > Motor speed or number of poles 1.440 1/min - 4-pole
- > Pitch angle: 20 degrees
- > Fan efficiency: 58 %
- > Sound power level: 87 dB

Calculation of motor power

There are two possibilities to calculate the motor power:

- 1) Calculation of absorbed power in duty point

$$P_L \text{ [kW]} = \frac{\dot{V} \text{ [m}^3\text{/s]} \cdot \Delta p_t \text{ [Pa]}}{\eta \text{ [%]} \cdot 10} = \frac{3,8 \text{ m}^3\text{/s} \cdot 140 \text{ Pa}}{58 \cdot 10} = 0,91 \text{ kW}$$

Motor power: 1,1 kW

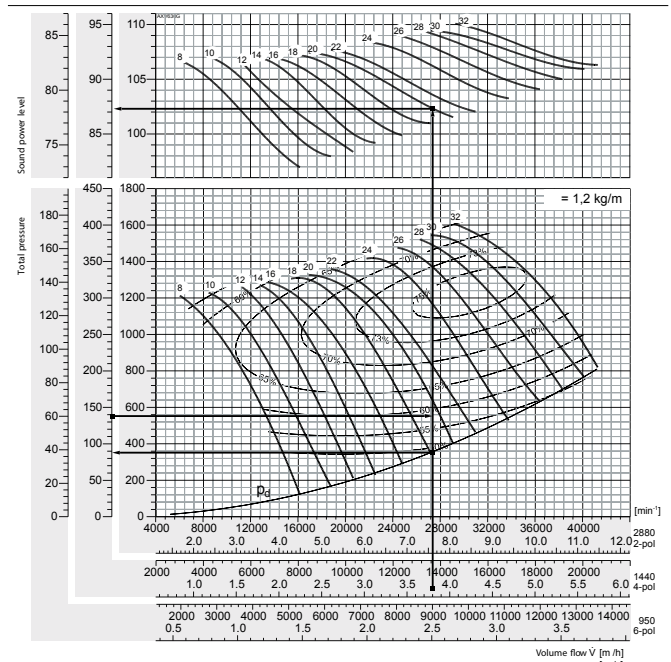
- 2) Calculation according to peak absorbed power, see table below the fan curve: 1,24 kW

Motor power: 1,5 kW

The given peak absorbed power is the maximum shaft absorbed power over the whole pitch angle curve in.

The calculation of sound levels in the duty point is described on page 7.

Performance curve 50 Hz AXV 630-7



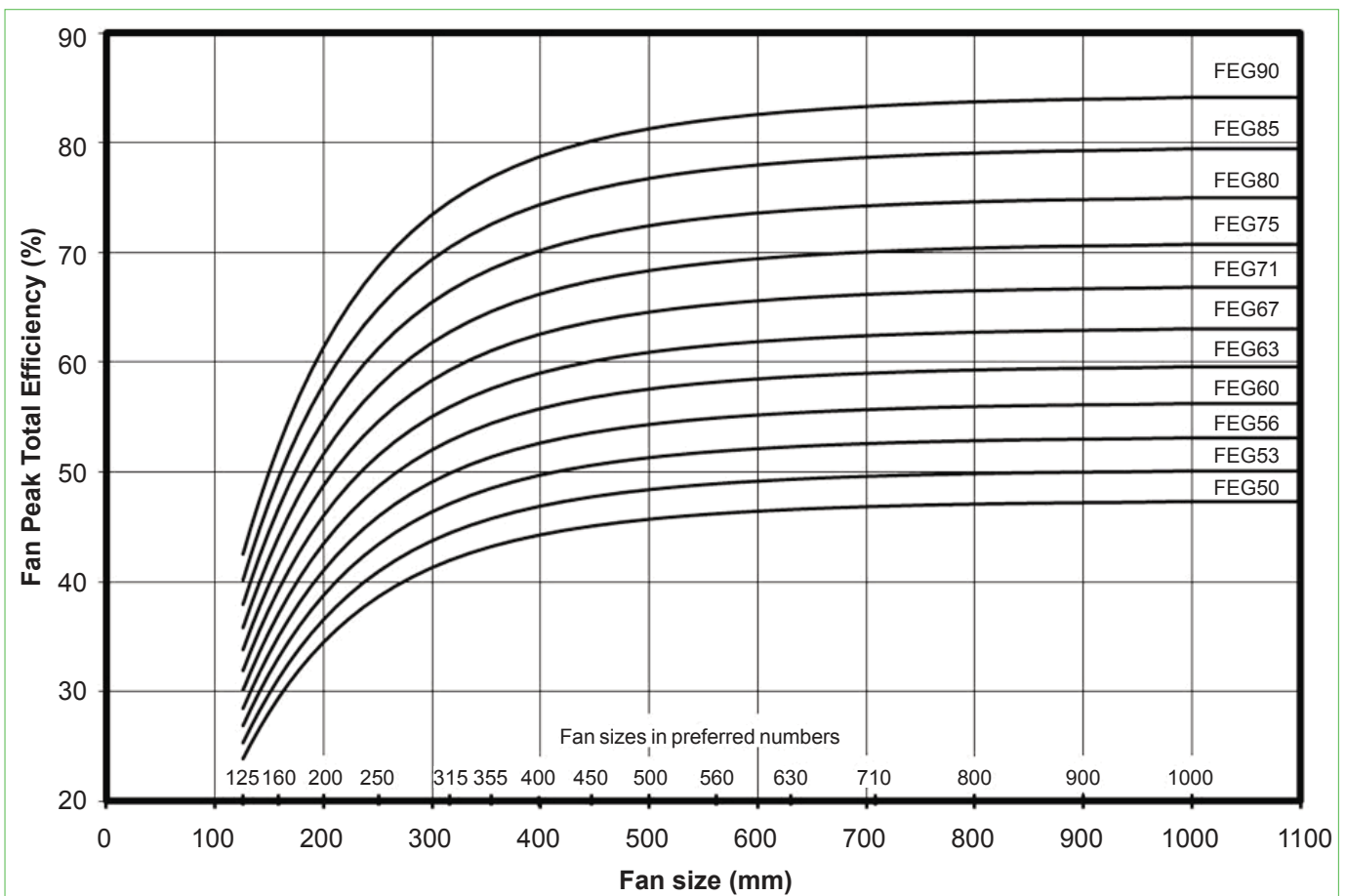
n [min ⁻¹]	Peak absorbed power [kW]												relative frequency spectra Lh dB(Okt)								
	8	10	12	14	16	18	20	22	24	26	28	30	32	63	125	250	500	1k	2k	4k	8k
950 motor	0,15	0,20	0,25	0,28	0,29	0,33	0,36	0,40	0,47	0,55	0,61	0,64	0,71	-3	-5	-7	-7	-8	-12	-18	-24
1440 motor	0,53	0,69	0,88	0,96	1,02	1,15	1,24	1,41	1,65	1,90	2,11	2,22	2,47	-5	-6	-5	-6	-7	-10	-15	-21
2880 motor	4,24	5,52	7,04	7,68	8,16	9,20	9,92	11,3	13,2	15,2	16,9	17,8	19,8	-5	-10	-7	-5	-7	-8	-12	-18



Certified FEGs are determined in accordance with AMCA 205-10 Energy Efficiency Classification for fans. In conjunction with AMCA 211-05 (Rev. 3/11) Certified Ratings Program, Product Rating Manual for Fan Air Performance. This classification is based on fan peak (optimum) total efficiency for a given fan speed, fan size and application category. For the purpose of energy classification, the peak efficiency can be determined at a speed not higher than the maximum design speed of the fan.

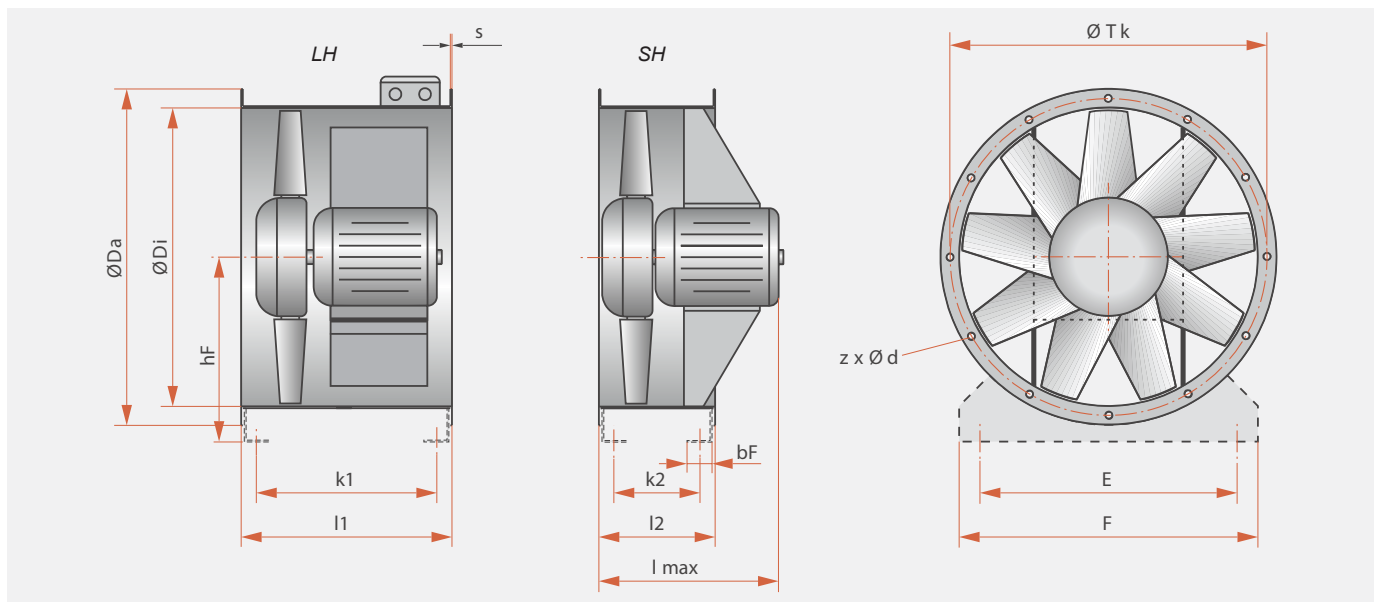
The AMCA Certified Ratings Seal applies to the Fan Efficiency Grade (FEG) for AXV series Axial Fan model AXV 315 to AXV 1800 as shown in the table below.

Fan Model No.	Fan Speed (rpm)	Fan Outlet Area (m ²)	Fan Efficiency Grades (FEG)	Fan Model No.	Fan Speed (rpm)	Fan Outlet Area (m ²)	Fan Efficiency Grade(FEG)
AXV 315-7	2880/1440/960	0,0804	FEG50	AXV 800-9	1440/960/720	0,5001	FEG67
AXV 355-7	2880/1440/960	0,1012	FEG63	AXV 900-10	1440/960/720	0,6333	FEG63
AXV 400-7	2880/1440/960	0,1269	FEG67	AXV 1000-10	1440/960/720	0,7980	FEG71
AXV 450-7	2880/1440/960	0,1590	FEG63	AXV 1120-12	1440/960/720	0,9940	FEG63
AXV 500-7	2880/1440/960	0,2003	FEG71	AXV 1250-12	1440/960/720	1,2272	FEG63
AXV 560-9	2880/1440/960	0,2516	FEG67	AXV 1400-12	960/720/576	1,5394	FEG56
AXV 630-9	2880/1440/960	0,3167	FEG63	AXV 1600-12	960/720/576	2,0283	FEG56
AXV 710-9	1440/960/720	0,3982	FEG67	AXV 1800-14	960/720/576	2,5447	FEG56



Dimensions

AXV, BXV

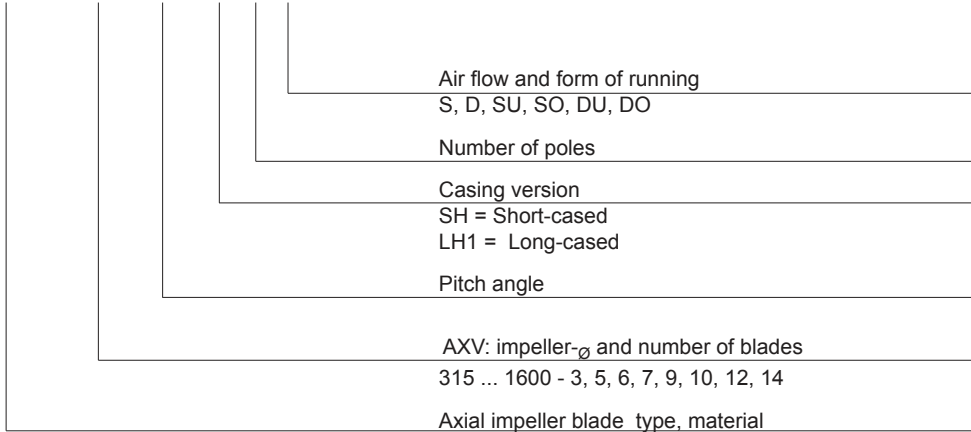


Model size	Da [mm]	Di [mm]	hF [mm]	z x d [mm]	Tk [mm]	E [mm]	F [mm]	bF [mm]
315	398	320	205	8 x 12	366	265	315	60
355	438	359	225	8 x 12	405	305	355	60
400	484	401	250	12 x 12	448	350	400	60
450	534	450	280	12 x 12	497	400	450	60
500	584	504	315	12 x 12	551	440	500	70
560	664	565	345	16 x 14	629	500	560	70
630	734	634	400	16 x 14	698	570	630	70
710	814	711	450	16 x 14	775	650	710	70
800	904	797	500	12* x 14	861	730	800	80
900	1004	894	580	12* x 14	958	830	900	80
1000	1105	1003	630	12* x 14	1067	930	990	80
1120	1245	1125	690	16* x 18	1200	1050	1110	100
1250	1370	1250	750	16* x 18	1337	1180	1240	100
1400	1525	1405	830	16* x 18	1475	1330	1390	100
1600	1725	1605	930	20* x 18	1675	1530	1590	100
1800	1950	1810	1120	20* x 18	1900	1660	1800	100

Model size	LH/1				LH/2				SH			
	s [mm]	k1 [mm]	l1 [mm]	motor max.	s [mm]	k1 [mm]	l1 [mm]	motor max.	s [mm]	k2 [mm]	l2 [mm]	lmax [mm]
315	2	356	420	80					2	161	225	350
355	2	356	420	80					2	161	225	350
400	2	371	435	90					2	161	225	400
450	2	371	435	112					2	161	225	500
500	2	396	470	112					2	151	225	600
560	2	396	470	112	3	624	700	160	3	224	300	750
630	2	396	470	112	3	624	700	160	3	224	300	750
710	2,5	395	470	112	2,5	490	565	132	2,5	225	300	600
800	2,5	385	470	112	3	614	700	160	3	214	300	750
900	3	479	565	132	4	612	700	160	4	212	300	750
1000	3	479	565	132	4	692	780	180	4	262	350	800
1120	4	592	700	160	4	892	1000	200	4	242	350	800
1250	4	592	700	160	4	892	1000	225	4	242	350	800
1400					4	892	1000	225	4	242	350	800
1600					4	892	1000	280	4	242	350	800
1800					4	1290	1400	315	4			

Fan type code

AXV-BD 450-7 /26° LH-2 SU



Technical description

Wolter Belt Driven Axial Fan

The **Wolter** range of Belt driven fans are designed for application that required motor to be isolated from the airstreams. It is specially developed to meet the need for an axial fan:

- > where it can handle heavy corrosive fumes, hot air and gas, saturated and dust-laden atmospheres, which may normally detriment the life of the fan motor
- > where air temperature in the system airstreams is critical
- > where fan speed can be adjusted by changing the pulley drive to achieve performance
- > where a requirement of twin motors mounting
- > where fan motors must be outside the air stream

Quality

The complete range of Belt driven axial fans, drives and accessories are produced to strict quality standards and tested in accordance with other internationally standards.

Noise

To obtain the sound spectrum in the octave band mid-frequencies 63 Hz to 8000 Hz, the constants figure shown at the right side of the performance chart should be subtracting from the 'overall' sound power level (dBW) of the fan selected. The sound power level (dBW) and sound pressure level (dB) data appear in the fan curves are taken at a distance of three fans diameter.

Test method is in accordance with ISO 5801, AMCA 300. In-duct tests Method. The method of test is similar to the actual flow fan. However, the noise levels are +3dB to +5dB greater than that determines by Free Field or Reverberant Field testing

Product & Performance

The Wolter Belt driven axial fans' diameter cover fifteen sizes - 315 to 1600. Fan capacity up to 200,000 cubic meter per Hour and operating at a static pressure of up to 1500 Pascal (Pa).

These belt driven axial flow fans can be fitted with guide vanes or multi-staged to increase performance. Fan size above 1600 can be supplied upon request.

The fans are fully tested and complied to: ISO 5801 and AMCA 210 for aerodynamic performance

Fan Casing

The standard fans casing are constructed from heavy gauge steel plate, hot dipped galvanized after manufactured to AS1650. The standard casing is of long type covering completely both the impeller and motor.

Fans sizes up to 630mm comes with screwed-on mounting feet. All casings are rolled and flanged simultaneously. Mounting feet for sizes 710mm and above are optional. All casing above size 710 comes with inspection door.

The fan drive unit and shaft housing are completely enclosed with heavy gauge hot dipped galvanised after manufactured.

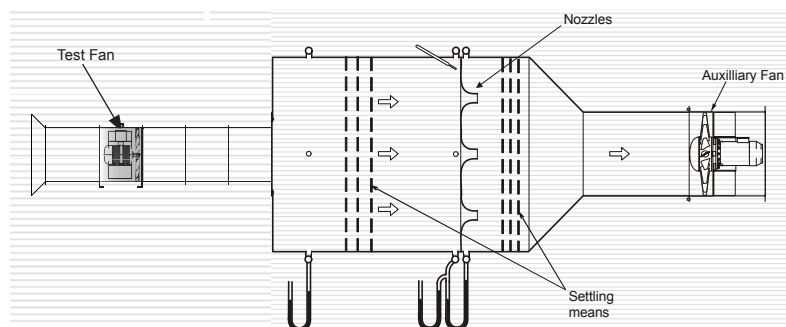
Fan Impeller

The Belt driven axial fans impellers are of non overloading characteristics with aerodynamically shaped aerofoil blade constructed of high strength die-cast aluminium alloy similar to those axial impeller.

The maximum absorbed power for the selected pitch angle can read from the top right-hand corner of the charts. The peak absorbed power is shown in both kW and HP. However, for fans with fully enclosed guard, the performance can be obtained by **adding 6°** to the pitch angle reading.

Safety Features

All fans are labelled with name plate securely attached on each fan showing the serial and model number, fan and drive duties, rotation of flow and date of manufacture. All belts, pulleys, projecting set screws, keys and other rotating external parts are properly guarded conforming to safety standards in accordance with Factory Act requirements.



AMCA 210 Figure 12
ISO 5801 Figure 73b

Shaft and Bearing Housing

The pedestal housing with two-bearing seating is machined at one setting. Misalignment of the bearings is thus avoided.

The shaft is of solid type, specially selected, turned, ground and polished steel to give tight, accurate bearing and hub fit. The shaft is oversized to prevent deflection and oscillation.

The two anti-friction bearings, double shielded and prepacked with lithium-base Alvania No.3 greased. Fully enclosed, sealed-for-life and therefore do not require maintenance. Bearing which is not grease packed will be provided with grease nipple brought to the outside casing with copper tubing.

Similar to those axial impeller, the number of blades can be varied to obtain maximum efficiency when operating at a relatively low pressure:

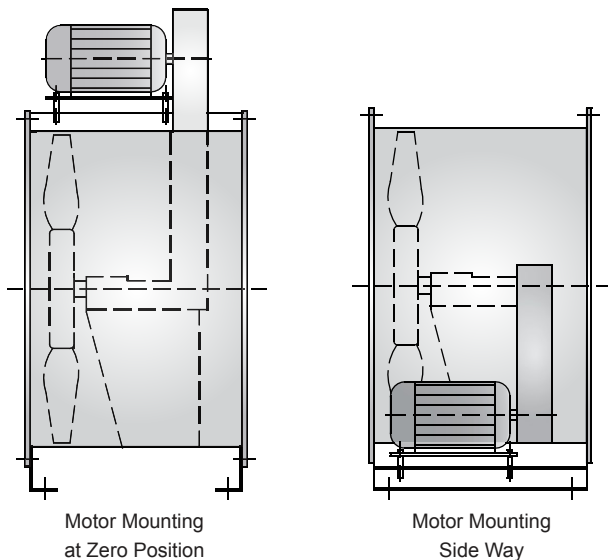
Fan Blades Variation (Solidities) Twin Motors Mounting

Belt driven fan with twin motor can be mounted in difference position to suit the site condition. Position as illustrated.

Multi-stage Belt Driven Axial Flow Fans

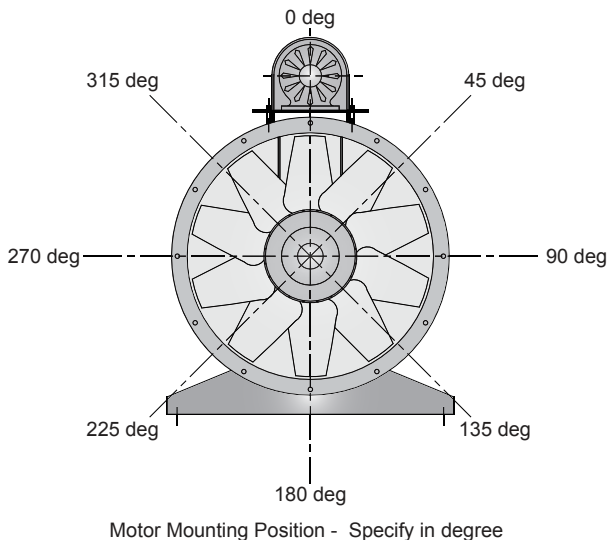
The multi-stage axial flow fans comprising two or more single stage fans connected in series.

The contra-rotating multi-stage fans can develop 2.5 to 3 times higher pressures than a single stage fan of equal in size and speed. The first stage impeller usually mounted with right-hand blade and the second stage impeller will rotate in contra directions.



Twin motors mounting

Belt driven fan with twin motor can be mounted in difference position to suit the site condition. Position as illustrated.



Motor

Standard motor come with B3 foot mounted, supported on motor mounting plate outside the fan casing with stud to adjust alignment and tensioning. Large motor are placed on side way.

However, for larger frame motor, a grease nipple will be fitted to the outside the casing to facilitate lubrication.

Electrical wires are connected directly to the motor terminal box complying with BS 4999 Part 20: 1972 for dust and weatherproof conditions. WOLTER Belt driven axial flow fan motors are squirrel-cage induction type, totally enclosed and air stream rated. Complied with IEC publication number 34-1, AS 1359, BS 3979: 1966, BS 5000 part99 (BS 2613), the relevant part of BS 4999, and are maximum continuously rated. They are also CSA approved. Insulation to Class F with Class B temperature rise (80°C) complying with BS 2757. For continuous operation in higher ambient. Class H insulation winding rated 250 °C for 2 hrs (emergency) or 250 °C for 1 hrs (normal) is used.

Minimum IP54 enclosure as standard suitably for operation in ambient temperature of minus 10°C to plus 40°C. However, IP55 will be supplied for fully weatherproof and against harmful deposits of dust application.

The fan motor is fitted with anti-friction bearing, double shielded and pre-packed with lithium-base Alvania No.3 greased. Frame sizes up to D180 are fully enclosed, sealed-for-life and therefore do not require maintenance. Motor for uses in temperatures up to 200 deg C are fitted with C3 fit bearings.

Details information on 'Degrees of Protection', 'Type of Insulation', and 'Wiring Connections' are available for easy references

Electrical Features

The motor is suitable for 220/380 volts, 50Hz supply as standard. Fans can be supplied single phase 50Hz depending upon motor size and temperature required. All motor selected are suitable for direct on line starting.

All motors have an integral terminal box. The correct cable selection is important, particularly when wiring the fans at the higher temperatures. Starting current will be about seven times full load current for direct-on-line starting and 2 to 2.5 times full load currents for star-delta starting

Tropicalisation

Motor windings are coated with resin varnishes which make the motor suitable for tropical atmospheres. Additional treatment can be carried out where motors are required to operate in severe tropical environments.

Thermal Protection Motor

Thermal protection in the form of thermistors can be incorporated in any of the squirrel-cage induction motor on request.

Wolter Axial Fan for Corrosive Atmosphere

Beside aluminium alloy impellers, WOLTER also has a full range of "P" ranges of glass reinforced polypropylene (PP) impellers. These impellers are designed to give maximum volume flow with minimum noise and power consumption. Impellers of PP are flame retardant, certify under UL94 rating V-0, and good in chemical resistance.

For application where heavy corrosive atmospheres are to be handled, Wolter Belt driven fans can be supplied with any of the following systems, depending on the requirement.

System 1

Stainless steel casing with die cast aluminium alloy impellers. Fan range from 315 to 1600 diameters.

System 2

Stainless steel casing with injection moulded polypropylene impeller. Fan range from 315 to 1000 diameters.

System 3

Steel casing with additional protective layer of epoxy paint to all galvanised surfaces. Come with die cast aluminium alloy impellers. Fan range from 315 to 1600 diameters.

System 4

Steel casing with additional protective layer of epoxy paint to all galvanised surfaces. Come with injection moulded polypropylene impellers. Fan range from 315 to 1000 diameters.

Technical description

WOLTER Hazardous Location Fans

Wolter hazardous Belt driven axial fan coupled with comprehensive range of motors for specific application. The fans motors are fully Certified by SAA & Dept. of Mines to suit non-sparking, Flame proof, dust ignition proof, and increased safety applications. To enable correct selection of fan type, full details of gas groups and zones should be supplied in the enquiry with any specification details.

Hazardous axial fans with 'long' casing are supplied with an inspection door for wiring to be taken direct through a special certify safety proof conduit to the motor terminal box. Short casing is wired directly to motor terminal box.

All standard fans impellers come with aluminium blade unless otherwise specific. The impeller can be of polypropylene to handle exhaust air, which contains combustible dusts, fibres, flying and explosive gas/ air mixtures.

Fan Code & Application

Code Ex 'd' I

- Flameproof Motors for Industrial use
- Certified by SAA for Class 1 Zone 1
- Approved for used in Underground Coal & Shale Mine by : Gas Group I
- NSW. Dept. Minerals & Energy Coalfields Div.
- Qld. Dept. Mines
- Approved by various International stds.for use in underground Coal Mining.

Code Ex 'd' IU

- Flameproof Motors for Industrial and Underground Mining use.
- Manufactured in accordance with IEC Standards and tested in accordance & comply to Australia Standard AS2380.2 1991.
- Certified by SAA for Class 1 Zone 1and Gas Groups IIA & IIB T5 SAA Ex 1415
- Approved for used in Underground coal mines by NSW. Dept. Minerals & Energy and Qld.Dept. Mines.

Code Ex 'e'

- Increased Safety motors
- Certified by SAA for Class 1 Zone 1and Gas Groups IIA, IIB & IIC
- T3 SAA Ex 1041X - AS2380 / AS1359

Code D.I.P.

- Dust Ignition Proof motors
- Certified by SAA for Class 11 Division 1&2
- T4 SAA Ex 959 - AS2236 1985

Code Ex 'n

- Non Sparking Motors
- Certified by SAA for Class 1 Zone 2 and Gas Groups IIA, IIB & IIC
- T4 SAA Ex 87 - AS2380.9 1991

Compliance to Standard

All motors suitable for use in Hazardous areas are manufacture/modified in strict accordance with the conditions required in the relevant Australian Standards & the issued certificate of Compliance and are fully tested before delivered by motor manufacturer.

More detail information on selection of motor for use in hazardous areas, zonal and temperature classification can be supplied upon requested.

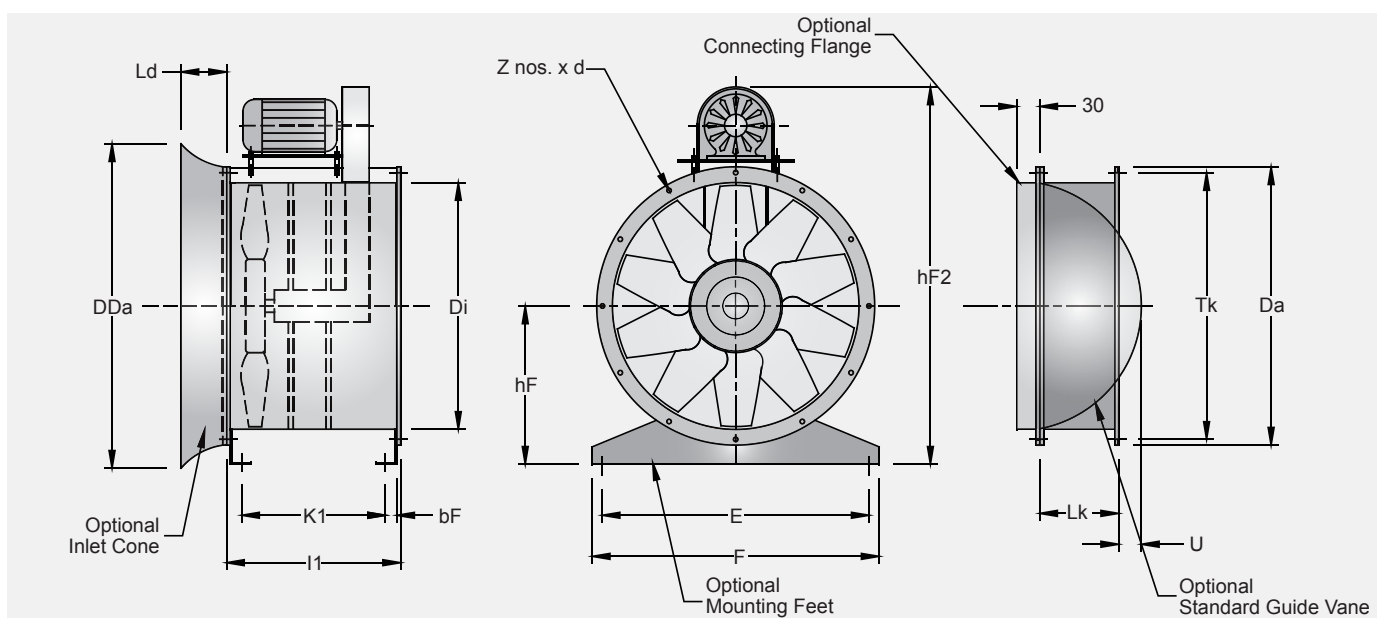
Accessories

- Anti-vibration spring mountings
- Dampers
- Cone inlets
- Connection spigots
- Cylindrical attenuators
- Flexible Connectors
- Guide vanes
- Mounting feet
- Mounting Plates
- Wire guards

Catalogue, dimensions and detail information on specification and performance are available upon requested.

Dimensions

AXV Belt Driven



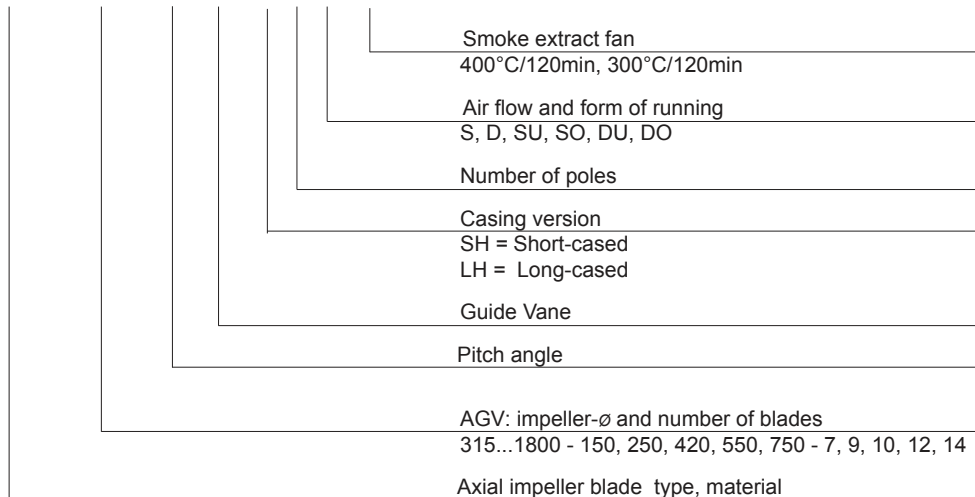
Model size	Da [mm]	Di [mm]	hF [mm]	hF2 (max) [mm]	z x d [mm]	Tk [mm]	E [mm]	F [mm]	bF [mm]
315	398	320	205	700	8 x 10	366	265	315	60
355	438	359	225	750	8 x 10	405	305	355	60
400	484	401	250	810	12 x 10	448	350	400	60
450	534	450	280	860	12 x 10	497	400	450	60
500	584	504	315	1041	12 x 10	551	440	500	70
560	664	565	345	1094	16 x 12	629	500	560	70
630	734	634	400	1246	16 x 12	698	570	630	70
710	814	711	450	1454	16 x 12	775	650	710	70
800	904	797	500	1544	12* x 12	861	730	800	80
900	1004	894	580	1746	12* x 12	958	830	900	80
1000	1105	1003	630	1821	12* x 12	1067	930	990	80
1120	1245	1125	690	1990	12* x 12	1200	1050	1110	100
1250	1370	1250	750	2175	12* x 12	1337	1180	1240	100
1400	1525	1405	830	2362	16* x 14	1475	1330	1390	100
1600	1725	1605	930	2550	16* x 14	1675	1530	1590	100

Model size	LH/1				LH/2				DDa [mm]	Ld [mm]	Lk [mm]	U [mm]
	s [mm]	k1 [mm]	l1 [mm]	motor max.	s [mm]	k1 [mm]	l1 [mm]	motor max.				
315	2	356	420	80					426	165	250	-
355	2	356	420	80					435	165	250	-
400	2	371	435	90					507	165	250	-
450	2	371	435	112					555	165	250	15
500	2	396	470	112					617	165	250	45
560	2	396	470	112	3	624	700	160	667	165	250	80
630	2	396	470	112	3	624	700	160	757	165	250	120
710	2,5	395	470	112	2,5	490	565	132	816	170	350	60
800	2,5	385	470	112	3	614	700	160	915	250	350	110
900	3	479	565	132	4	612	700	160	1015	250	350	170
1000	3	479	565	132	4	692	780	180	1115	250	350	225
1120	4	592	700	160	4	892	1000	200	1243	250	350	255
1250	4	592	700	160	4	892	1000	225	1364	250	400	375
1400					4	892	1000	225	1523	250	400	450
1600					4	892	1000	280	1723	250	400	550

* Subject to alteration reserved.

Fan type code

AXV-AL 450-7 /26°-GV LH-2 SU 400°C



Technical description

Design features

Types and duty range

Wolter **AXV-GV** fan is the AXV Axial flow fan with guide vane, it can be used for various applications in ventilation and process air technology. Standard diameters range from 315 to 1600mm, with airflow rates of up to 200.000 m³/h at static pressure increases of up to 1.500 Pa. Higher pressures can be achieved by using contra-rotating multi-stage fans.

Smoke spill operation

The AXV-GV range of axial fans is designed and tested to operate at standard temperatures as well as at elevated temperatures of 300°C for 60 (F300) and 120 minutes and 400°C for at least 120 minutes (F400), according to DIN EN ISO 12101, part 3. The following fan curves are valid for standard temperatures and 300°/60(120) minutes operation. To select a fan for 400°C/120 minutes operation, please contact our technical support.

Casing

Fan casings, are hot-dip galvanised. Flanges are rolled, the pitch circles of holes are in accordance with DIN 24 154, R2.

- > LH - Long-cased axial fan, with external terminal box
- > SH - Short-cased axial fan

If motors require additional lubrication, tubes and grease-nipples are fitted to the outside of the fan casing. An inspection hole, closed by a rubber plug, allows to control the direction of rotation.

Impellers

AGV impeller, hubs and blades are made off pressure-cast aluminium alloy, the aerodynamical profile guarantees high efficiency and low noise levels. The pitch angle is adjustable during standstill. The variable number of blades expands the performance range.

Motor

Wolter uses closed squirrel cage motors according to IEC 34, if required also in accordance with EPACT. Standard motors are class F with IP 55 protection class. Multi speed versions with 2 or 3 speeds (Dahlander circuit or separate windings) are also available, as well as explosion-proof versions or specific industrial executions such as marine-type fans. The motor bearings have a L 10 life.

Forms of running

Wolter AXV-GV axial flow fans are available for all forms of running. The above chart shows all standard forms of running. Please indicate the required configuration when ordering. Without specific instructions, fans will be delivered in configuration D. Arrows outside the fan casing indicates the correct direction of rotation and airflow.

Fan performance curves

The performance curves for these fan types have been established in mounting position D (according to DIN 24 163, part 1, and BS 848, part 1 standard, duct connected to inlet and outlet sides) and represent the total pressure increase p_t as a function of the volume flow. The dynamic pressure p_{d2} refers to the flange cross-sectional area at the of the fan.

Sound levels

The sound levels are in accordance to DIN 45 635, section 38 and BS 848 part 2 standard. The performance curves show the unweighted total sound power levels L_w . The octave sound power level is important for the selection of suitable sound attenuators. It is calculated as follows:

$$L_{WOKt} = L_w + L_{Wrel}$$

The relative octave sound power level L_{Wrel} at octave medium frequency can be taken from the tables. The A-weighted octave sound power level is obtained by applying the A-filter (see page 7):

$$L_{WAOKt} = L_{WOKt} + L_{WrelA}$$

The A-weighted sound power level L_{WA} is obtained by logarithmic addition of all A-weighted octave sound power levels (see page 7). The sound power level on suction and outlet sides are approximately equal.

$$L_{W5} \approx L_{W6}, L_{WA5} \approx L_{WA6}, L_{WA5} \approx L_{WA} - 3$$

The sound power level radiated from the casing, L_{W2} , according to DIN 45 635, part 38, is calculated by the following approximation formula:

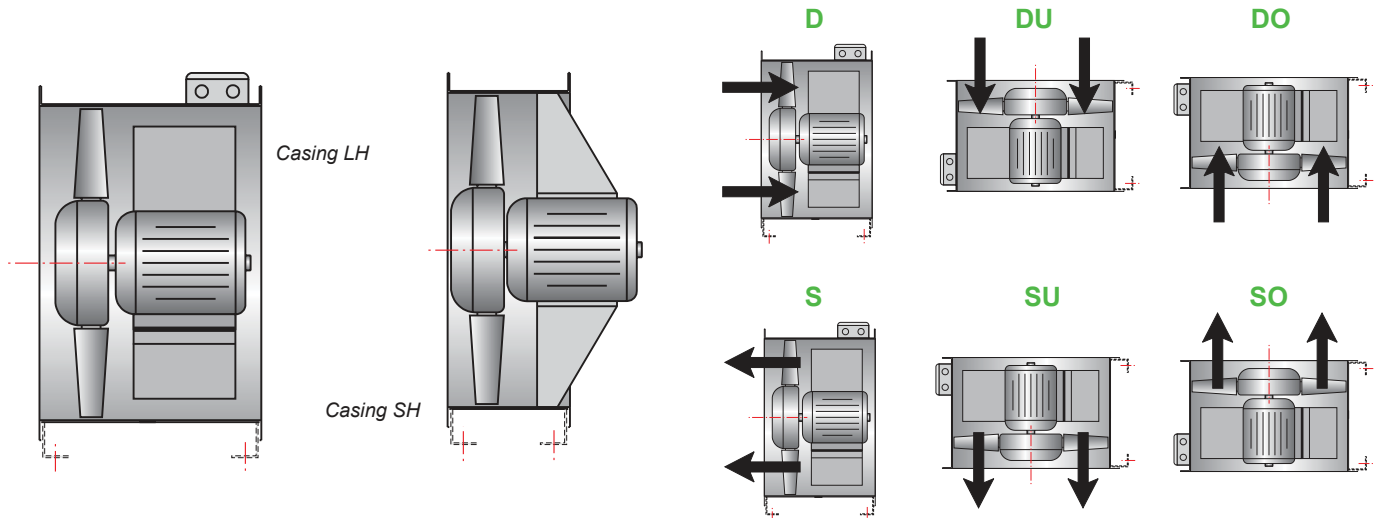
$$L_{W2} = L_w - 15 \text{ dB(A)}$$

The A-weighted sound pressure level L_{PA} at a distance of 1 metre is calculated approximately by deducting 7 dB(A) from the A-weighted sound power level L_{WA} . It is important to note that reflexion and environmental characteristics as well as resonant frequencies influence the sound pressure levels in different ways.

Ordering designations

When ordering, please provide the following information:

- > fan type code (see opposite page), casing version and form of running
- > duty required at standard air temperature (air volume in m³/h at static pressure in Pa)
- > motor power rating in kW
- > electrical supply
- > required ancillary equipment



Selection example

Required duty point

- > Volume flow : 3,8 m³/s
- > Static pressure: 50 Pa

In order to calculate the total pressure, please add velocity pressure to static pressure (90 Pa dynamic pressure + 50 Pa static pressure = 140 Pa total pressure)

- > Fan speed: 1.440 1/min (4-pole)

Using the fan curve

Having chosen a fan with adequate performance range for the required duty point, plot volume flow and pressure.

At the point of intersection, the following data can be read:

- > Motor speed or number of poles 1.440 1/min - 4-pole
- > Pitch angle: 20 degrees
- > Fan efficiency: 58 %
- > Sound power level: 87 dB

Calculation of motor power:

There are two possibilities to calculate the motor power:

- 1) Calculation of absorbed power in duty point

$$P_L \text{ [kW]} = \frac{\dot{V} \text{ [m}^3\text{/s]} \cdot \Delta p_t \text{ [Pa]}}{\eta \text{ [%]} \cdot 10} = \frac{3,8 \text{ m}^3\text{/s} \cdot 140 \text{ Pa}}{58 \cdot 10} = 0,91 \text{ kW}$$

Motor power: 1,1 kW

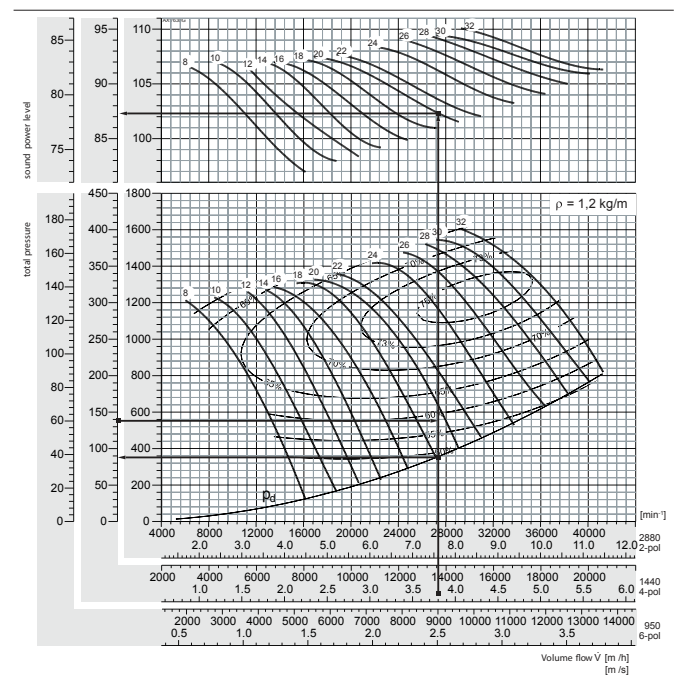
- 2) Calculation according to peak absorbed power, see table below the fan curve: 1,24 kW

Motor power: 1,5 kW

The given peak absorbed power is the maximum shaft absorbed power over the whole pitch angle curve in.

The calculation of sound levels in the duty point is described on page 7.

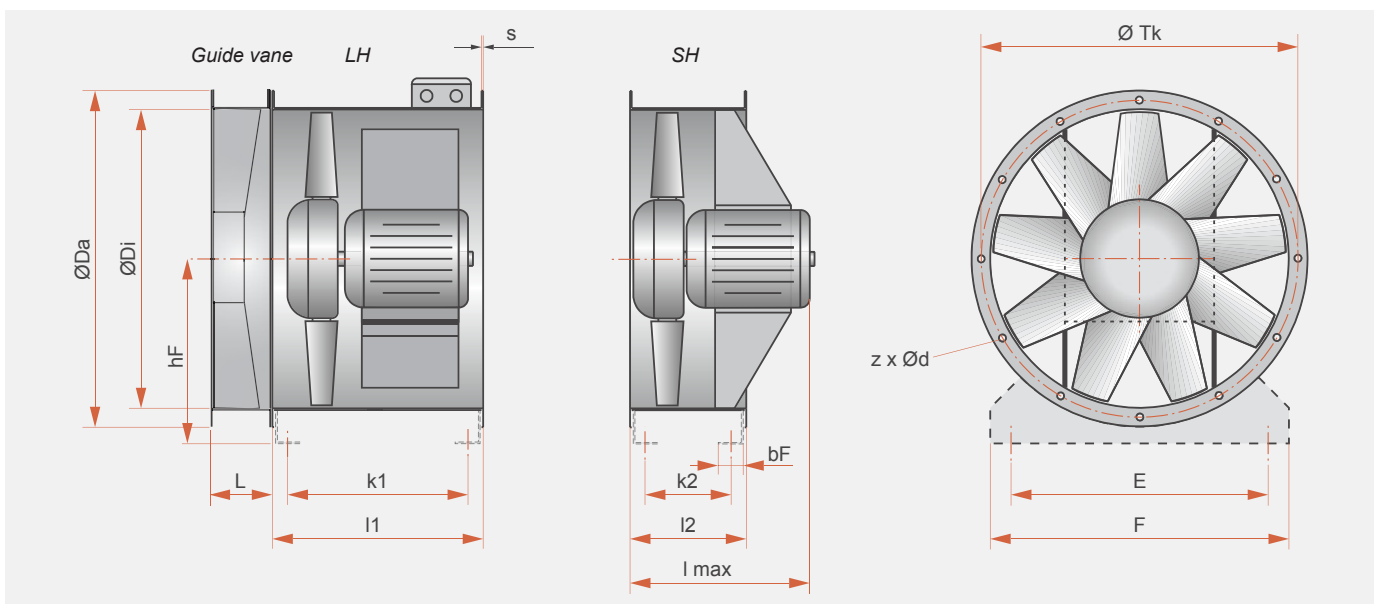
Performance curve **50 Hz AXV 630-7**



n [min ⁻¹]	max. Aufnahmeleistung P _{max} Peak absorbed power [kW]													relative frequency spectrum ΔL in dB/Okt							
	8	10	12	14	16	18	20	22	24	26	28	30	32	Pitch angle [°]							
950	0,15	0,20	0,25	0,28	0,29	0,33	0,38	0,40	0,47	0,55	0,61	0,64	0,71	Oktavb.-Mittendr. / Octave b. midfr. [Hz]							
motor	0,37						5,5		1,1					-3	-5	-7	-7	-8	-12	-18	-24
1440	0,53	0,69	0,88	0,96	1,02	1,15	1,24	1,41	1,65	1,90	2,11	2,22	2,47								
motor	0,55	1,1				1,5	2,2		3,0					-5	-6	-5	-6	-7	-10	-15	-21
2880	4,24	5,52	7,04	7,68	8,16	9,20	9,92	11,3	13,2	15,2	16,9	17,8	19,8								
motor	5,5	7,5	11,0				15,0		18,5					-5	-10	-7	-5	-7	-8	-12	-18

Dimensions

AXV Guide Vane



Size	Da [mm]	Di [mm]	hF [mm]	L [mm]	z x d [mm]	Tk [mm]	E [mm]	F [mm]	bF [mm]
315	398	320	205	152	8 x 12	366	265	315	60
355	438	359	225	152	8 x 12	405	305	355	60
400	484	401	250	152	12 x 12	448	350	400	60
450	534	450	280	152	12 x 12	497	400	450	60
500	584	504	315	152	12 x 12	551	440	500	70
560	664	565	345	152	16 x 14	629	500	560	70
630	734	634	400	152	16 x 14	698	570	630	70
710	814	711	450	190	16 x 14	775	650	710	70
800	904	797	500	190	12* x 14	861	730	800	80
900	1004	894	580	200	12* x 14	958	830	900	80
1000	1105	1003	630	200	12* x 14	1067	930	990	80
1120	1245	1125	690	240	16* x 18	1200	1050	1110	100
1250	1370	1250	750	240	16* x 18	1337	1180	1240	100
1400	1525	1405	830	260	16* x 18	1475	1330	1390	100
1600	1725	1605	930	260	20* x 18	1675	1530	1590	100

Size	LH/1				LH/2				SH			
	s [mm]	k1 [mm]	l1 [mm]	motor max.	s [mm]	k1 [mm]	l1 [mm]	motor max.	s [mm]	k2 [mm]	l2 [mm]	lmax [mm]
315	2	356	420	80					2	161	225	350
355	2	356	420	80					2	161	225	350
400	2	371	435	90					2	161	225	400
450	2	371	435	112					2	161	225	500
500	2	396	470	112					2	151	225	600
560	2	396	470	112	3	624	700	160	3	224	300	750
630	2	396	470	112	3	624	700	160	3	224	300	750
710	2,5	395	470	112	2,5	490	565	132	2,5	225	300	600
800	2,5	385	470	112	3	614	700	160	3	214	300	750
900	3	479	565	132	4	612	700	160	4	212	300	750
1000	3	479	565	132	4	692	780	180	4	262	350	800
1120	4	592	700	160	4	892	1000	200	4	242	350	800
1250	4	592	700	160	4	892	1000	225	4	242	350	800
1400					4	892	1000	225	4	242	350	800
1600					4	892	1000	280	4	242	350	800

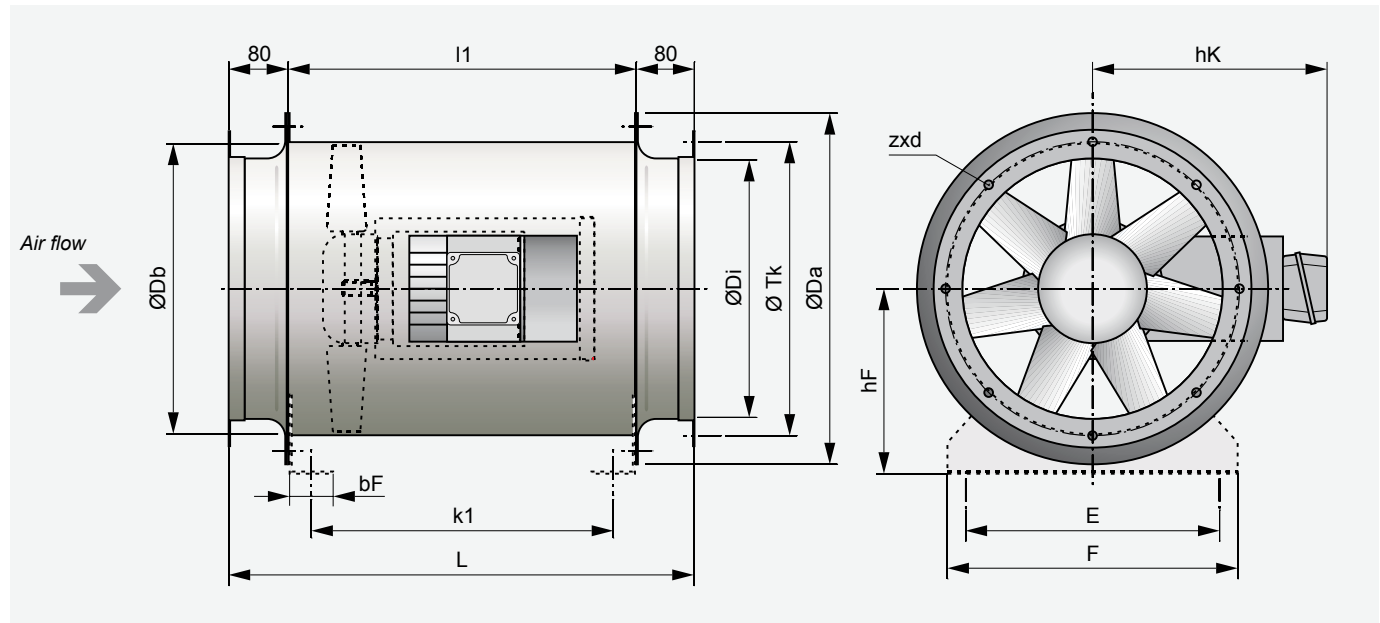
Bifurcated Axial Fan

AXV-BIF

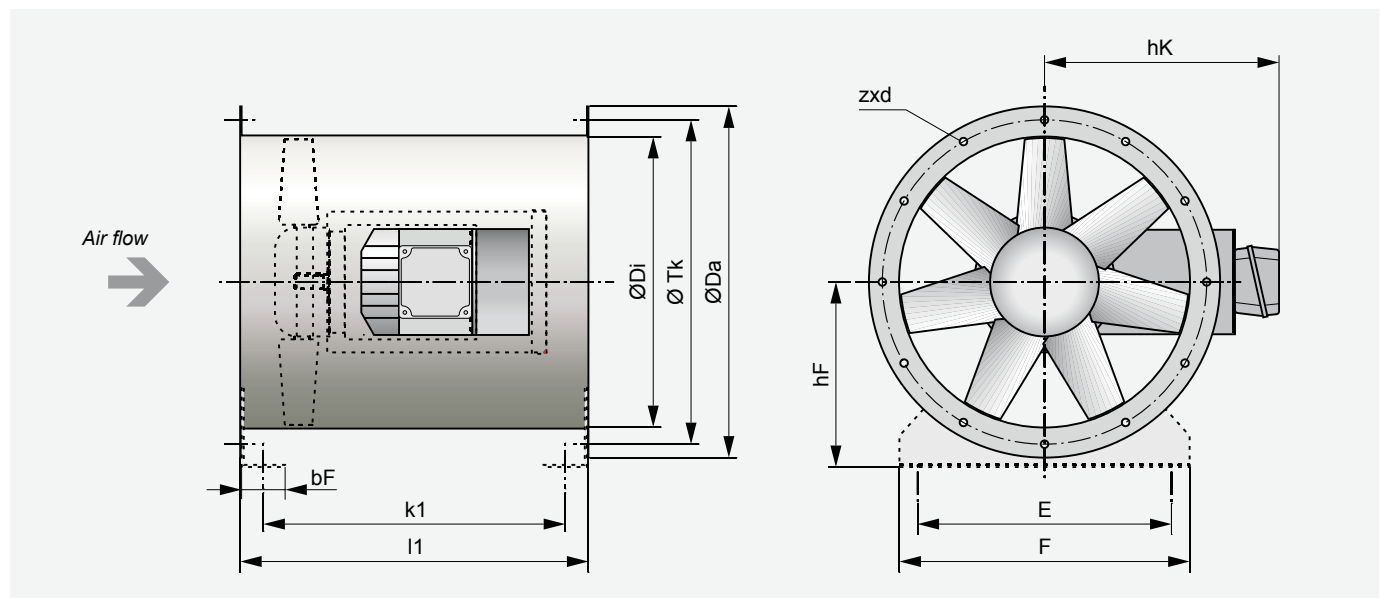


Special casing

Fan selection upon request only!



Size	ØDa [mm]	ØDb [mm]	ØDi [mm]	ØTk [mm]	E [mm]	F [mm]	zxd	hF [mm]	bF [mm]	k1 [mm]	l1 [mm]	L [mm]	hK [mm]	Motor max.	Art.Nr.:
AXV-BIF 355	484	400	355	405	350	400	8xØ12	250	60	415	480	640	324	90(2.2 kW)	303718
AXV-BIF 400L	534	450	400	448	400	450	12xØ12	280	60	415	480	640	331	90(2.2 kW)	303715
AXV-BIF 500	664	560	500	551	500	560	12xØ12	345	70	624	700	860	410	132(5.5 kW)	303721



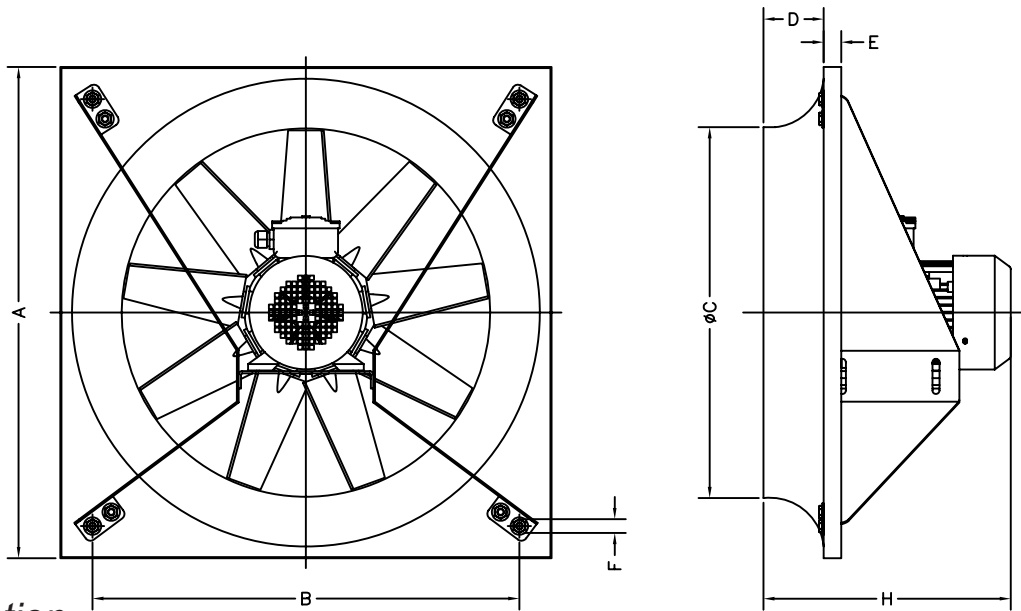
Size	ØDa [mm]	ØDi [mm]	ØTk [mm]	E [mm]	F [mm]	zxd	hF [mm]	bF [mm]	k1 [mm]	l1 [mm]	hK [mm]	Motor max.	Art.Nr.:
AXV-BIF 400S	484	400	448	350	400	12x12	250	60	415	480	324	90 (2.2 kW)	303719
AXV-BIF 450	534	450	497	400	450	12x12	280	60	415	480	331	90 (2.2 kW)	303720
AXV-BIF 560	664	560	629	500	560	16x14	345	70	624	700	410	132 (7.5 kW)	303721
AXV-BIF 630	734	630	698	570	630	16x14	400	70	624	700	435	100 (2.2 kW)	303722
AXV-BIF 800	904	800	861	730	800	12* x14	500	80	614	700	504	112 (4.0 kW)	303716
AXV-BIF1000	1105	1000	1067	930	990	12* x14	630	80	692	780		160 (15.0kW)	303724

Wall Mounted Fan

AXV-PM (High Pressure)



PROPELLER FAN



Construction

Direct drive type, casing is produced in mild steel or galvanised steel,
 The impeller having manually adjustable pitch blades is made of
 PPG : (Glass reinforced polypropylene)
 ALU : (Pressure cast aluminium)

Finish

Painting or galvanised after manufacture are normal finishes on all parts.

Motors

Totally enclosed Class "F" motor, to a min. IP55 protection a fitted as standard. Standard motor up to 2.2 kW are usually supplied on D.O.L. starting, motor 3.0 kW and above are star/delta starting.

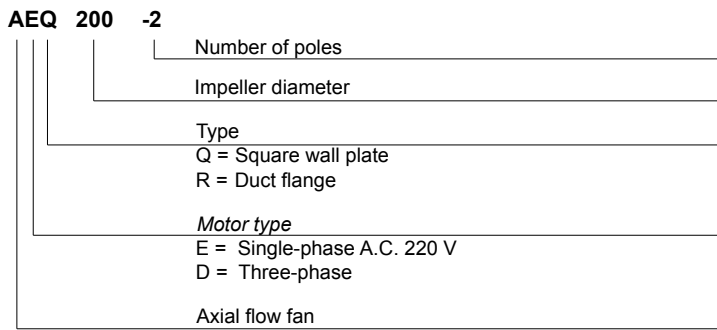
FAN MODEL	PRODUCT CODE	A	B	C	D	E	ØF	H	MOTOR FRAME	FAN SPEED (RPM)
AXV-PM 315	FAX38031500111	450	350	410	80	30	10	305	71 TO 90	980 AND 1450 (rpm.)
AXV-PM 355	FAX38035500211	500	400	460	80	30	10	330	71 TO 90	
AXV-PM 400	FAX38040000311	540	430	500	80	30	10	360	71 TO 90	
AXV-PM 450	FAX38045000411	600	490	560	90	30	10	410	71 TO 90	
AXV-PM 500	FAX38050000511	670	560	640	90	30	10	445	71 TO 90	
AXV-PM 560	FAX38056000611	740	630	710	90	30	12	460	71 TO 100	
AXV-PM 630	FAX38063000711	840	730	810	105	40	12	640	80 TO 132	750 AND 980 (rpm.)
AXV-PM 710	FAX38071000811	940	830	910	105	40	12	485	80 TO 112	
AXV-PM 800	FAX38080000911	1050	920	1000	110	50	14	580	90 TO 132	
AXV-PM 900	FAX38090001011	1120	970	1020	110	50	14	580	100 TO 160M	
AXV-PM 1000	FAX38100001111	1250	1120	1200	120	70	14	715	100 TO 160M	

Wall Mounted Fan

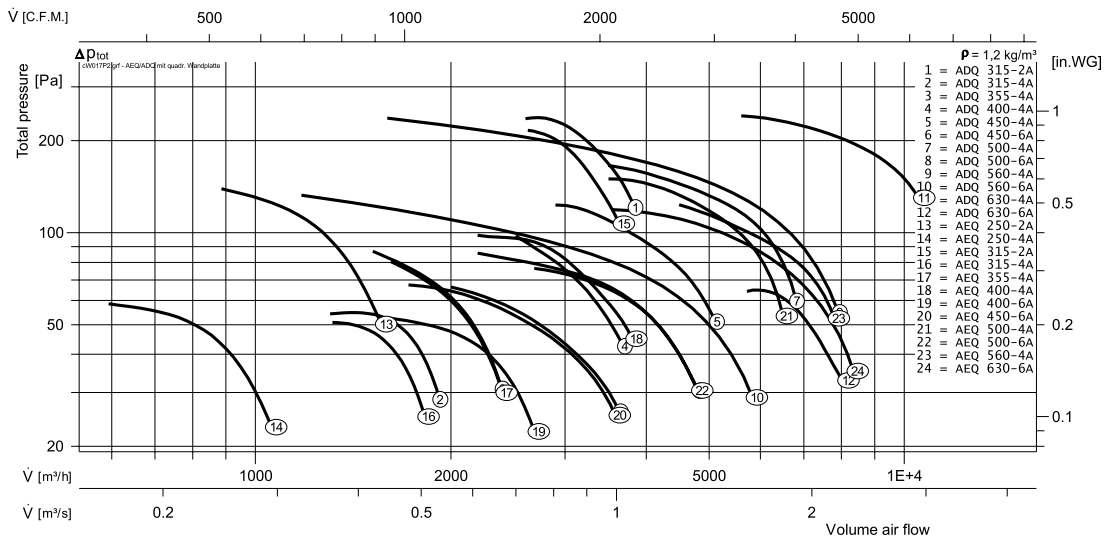
AEQ, ADQ (Medium Pressure)



Fan type code



Quick selection



Technical description

Advantages

- > low installation depth
- > ideal for many applications in air-conditioning and cooling
- > 100 % speed controllable by transformers or electronic controls
- > motor protection by thermal contacts as standard
- > easy installation in any position

Design features

The high efficiency axial fans are used where large air volumes must be conveyed against low to medium pressures.

There are two housing versions available:

- > Fans mounted on a square plate with inlet cone (AEQ/ADQ) are used for general ventilation, air-conditioning and cooling applications
- > Fans with round casings (AER/ADR) are used in ducted systems of air conditioning, cooling and drying applications

Casing

The casings are made of powder-coated sheet steel.

Impeller

The axial fans have aerodynamically moulded blades made from galvanised and painted sheet steel. The blades are mounted directly onto the external rotor motor. The motorised impeller is balanced in two planes according to quality level G 2.5 (DIN ISO 1940).

Electrical connection

The motors are connected to an external terminal box in protection class IP44.

Fan performance curves

The performance curves for these fans have been established in mounting position A (free inlet, free outlet) and indicate the static pressure increase Δp_s as a function of the volume flow (measured with inlet cone and without protection guards).

Noise levels

The fan curve gives the A-weighted sound power level L_{WA6} on the outlet side in decibel. The A-weighted sound power level at the inlet side L_{WA5} is identical to L_{WA6} .

The A-weighted sound power level radiated from the casing (L_{WA2}) according to DIN 45 635, part 38, is obtained approximately as follows:
 $L_{WA2} \approx L_{WA6} - 8 \text{ dB}$ (for AER or ADR).

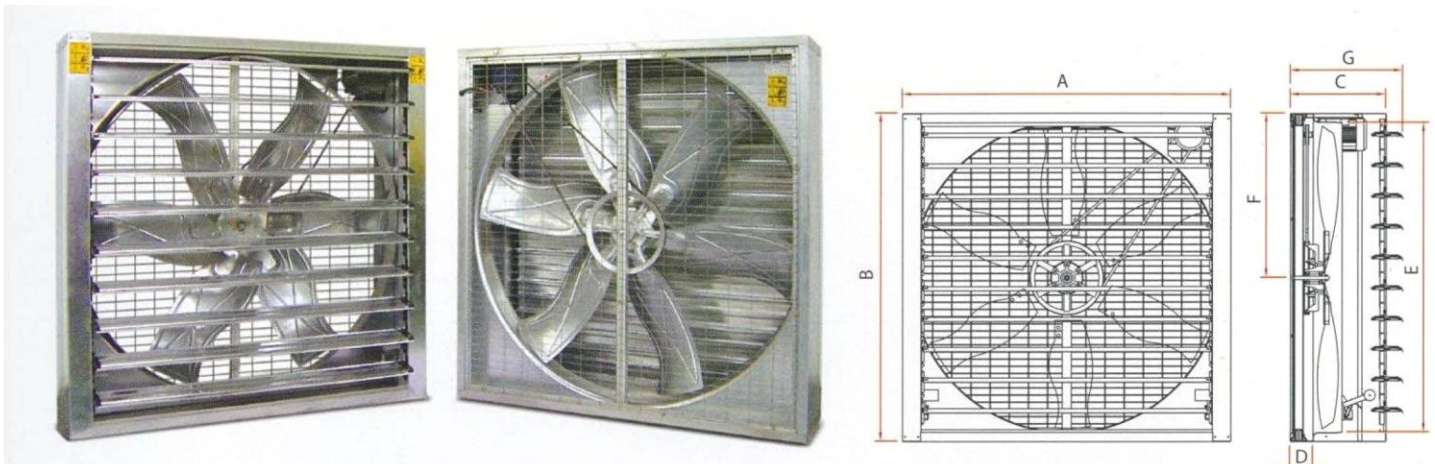
The A-weighted sound pressure level L_{PA} at a distance of 1 metre is obtained approximately by deducting 7 dB(A) from the A-weighted sound power level:

$$L_{PA(1m)} \approx L_{WA2} - 7 \text{ dB}$$

It is important to note that reflexion and environmental characteristics as well as resonant frequencies influence the sound pressure levels in different ways. The A-weighted octave sound power level is important for the choice of suitable sound attenuators. It is obtained as follows:

$$L_{WAokt} = L_{WA6} + L_{WArel}$$

The relative A-weighted octave sound power level L_{WArel} at octave medium frequency can be taken from the following tables. These levels have been established at $0.8 \times V_{max}$



Series C

Dimension (mm)									
MODEL	Diameter	A	B	C	D	E	F	G	Kg
AF-30C	762	950	950	400	120	787.4	475	469	45
AF-36C	914	1082	1082	400	125	940	541	469	54
AF-50C	1270	1370	1370	400	97	1300	685	469	85

AF-

Diameter 30 inch
Diameter 36 inch
Diameter 50 inch

E : Type Economic
N : Type Non shutter

C : Type complete with shutter

50

C

3

S

S : Stainless Steel impeller
G : Galvanize impeller

0 : No motor

1 : Single Phase motor

3 : Three Phase motor

Performance Data

Air Volume m ³ /h						
Series	KW	0 Pa	10 Pa	20 Pa	30 Pa	40 Pa
AF-30	0.37	15600	15150	14300	14000	13450
	0.55	16250	15620	14920	14450	13950
AF-36	0.37	19800	19200	18400	17850	16900
	0.55	22300	21600	20500	19900	18700
AF-50	0.75	36600	34800	33000	31250	29800
	1.10	40850	39360	37825	36280	34500

Technical description



GENERAL FEATURES:

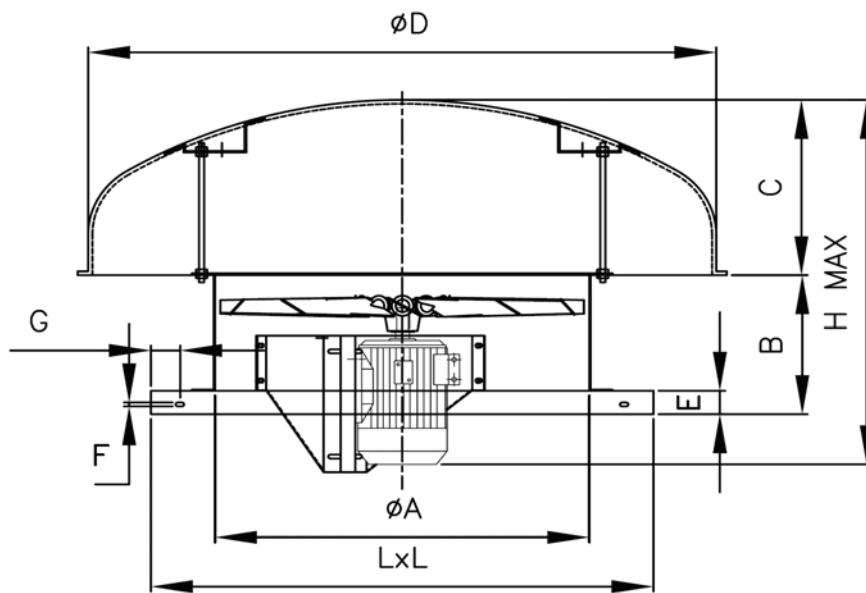
Range includes 9 different types from \varnothing 400 to \varnothing 1000, provided with single phase 4 pole motors and with three phase 4,6 and 8 pole motors. Air-flow from 900 m³/h to 41,000m³/h.

APPLICATIONS:

- Designed for roof installation, and suitable for:
- General ventilation in buildings, shops and industry.
- Smoke extraction.

MANUFACTURING FEATURES:

- Roof cowl made of fiber fiberglass or stainless steel.
- Roof base support and bird protection guard epoxy powder coat finishing.
- Variable pitch angle polyamide impeller reinforced with fibreglass and Aluminium.
- Squirrel cage asynchronous standard motor, IP-55 protection and rated class F insulation. Standard voltages 230V 50Hz for single phase motors, 230/400V 50Hz and for three phase, motors up to 4kw and 400/690V 50Hz for higher powers.



Dimension (mm.)

Model	ØA	B	C	ØD	E	F	G	LxL	H
RF AXV 400 / RF BXV 400	400	200	300	850	40	10	50	600x600	580
RF AXV 450 / RF BXV 450	450	200	300	850	40	10	50	660x660	620
RF AXV 500 / RF BXV 500	500	236	300	850	40	10	50	730x730	655
RF AXV 560 / RF BXV 560	560	236	400	1120	50	10	60	810x810	670
RF AXV 630 / RF BXV 630	630	236	400	1120	50	12	60	900x900	765
RF AXV 710 / RF BXV 710	710	300	400	1120	50	12	60	990x990	780
RF AXV 800 / RF BXV 800	800	315	450	1500	60	12	70	1100x1100	790
RF AXV 900 / RF BXV 900	900	355	450	1500	60	12	70	1200x1200	845
RF AXV 1000 / RF BXV 1000	1000	400	645	1800	60	12	70	1300x1300	875

Fan type code

RVS 225 -2/2 E	<i>Motor type</i>
	E = Single-phase A.C.
	D = Three-phase A.C.
	<i>Number of poles</i>
	<i>Impeller diameter</i>
	<i>With built-in sound attenuation hood</i>
	<i>Discharge orientation</i>
	H = horizontal discharge
	V = vertical discharge
	<i>Roof fan</i>



Technical description

Types and design features

Wolter roof fan units are suitable for mounting on different roof types. There are two versions available:

- > **Type RH with horizontal discharge**
for the exhaust of mildly polluted air
- > **Type RV with vertical discharge**
for the exhaust of more heavily polluted air

Casing

- RH** up to size 500, the cowl is made of salt-water proof aluminium, from size 560 onwards, the cowl is manufactured from galvanised sheet steel
- RV** housing is made of salt-water proof aluminium
- RVS** with built-in sound attenuation hood

Impeller

The backward-curved impellers are mounted directly onto the rotor of the external rotor motors. The motorised impeller unit is balanced in two plains according to G 2,5 (DIN ISO 1940.)

Motor

Speed controllable external rotor motor, protection class IP44 (up to size 310L) or IP54 (from size 355), moisture-proof impregnation, thermal contacts mounted in motor winding.

Electrical connection

The motors are connected to a terminal box of protection class IP54, easily accessible after disassembly of the cowl.

Installation

All fans are delivered ready for installation and are packed in separate boxes or crates. We recommend the use of matching Wolter roof sockets. If other roof sockets are used, dimensions given in our catalogue should be followed to achieve proper sealing and avoid air-leakage.

Fan performance curves

The performance curves for these roof fans have been tested according to DIN 24 163. The curves indicate the static pressure increase Δp_{st} (static, free outlet) as a function of the volume flow. The reference air density is 1,2 kg/m³.

Sound levels

The sound data was measured according to DIN 45 635, part 38. The figures shown in the performance curves are the **A-weighted sound power levels (L_{WA})** in dB(A). They are equal to the **free outlet sound power level L_{WA5}** .

The catalogue data is valid for RH-type fans. In order to obtain the noise levels of RV series fans, reduce listed noise levels by **2 dB(A)**. The free inlet sound power level L_{WA5} can be calculated by the following approximation formula:

$$L_{WA5} = L_{WA} - 3 \text{ dB}$$

If sound protection measures require exact calculation, it is important to know the the sound power level of the octave band:

$$L_{Wokt} = L_{WA} + L_{Wrel}$$

The A-weighted sound pressure level at the outlet side can only be approximated, since environmental conditions will affect noise levels.

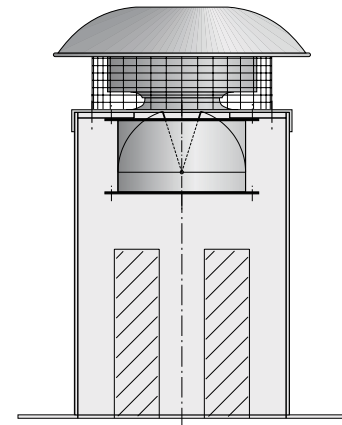
$$L_{PA} = L_{WA} - \Delta L$$

The actual noise levels will vary, depending on system characteristics such as reflexion, resonant frequencies or structure-borne noise transfer.

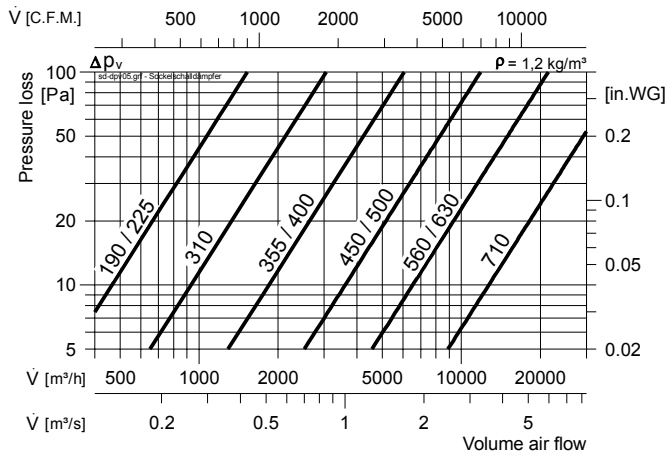
Socket silencer SD

A socket silencer can be used instead of the flat roof socket for mounting the fan. It reduces the sound propagation on the suction side.

When a socket silencer is used, additional pressure loss has to be taken into account. These can be found in the following diagram.



Pressure losses

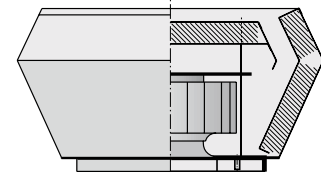


Attenuation capacity

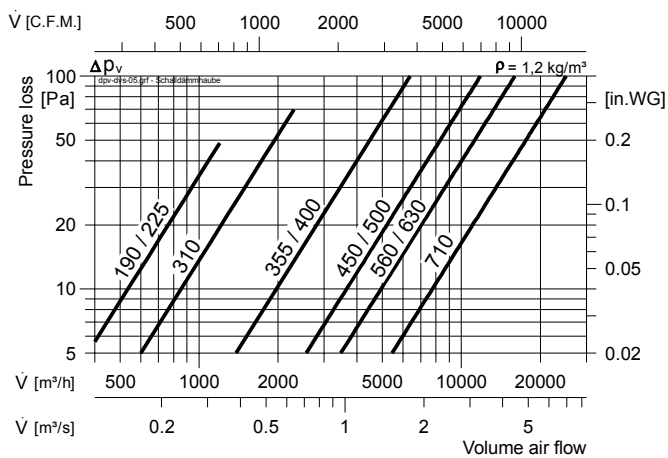
Typ SD	Attenuation [dB] at medium frequency [Hz]						
	125	250	500	1k	2k	4k	8k
190 / 225	5	8	12	18	22	20	14
310K / 310L	5	8	12	19	23	21	15
355 / 400	5	8	12	19	21	21	15
450 / 500	5	8	13	20	22	21	15
560 / 630	5	7	12	18	21	20	14
710	5	7	11	18	20	19	13

Insulated sound attenuation cowl LVS

In order to reduce the sound emissions radiated from the roof fan, the use of a RVS attenuation cowl is recommended. Compared to the non-attenuated roof fan cowl (RV), the RVS cowl has slightly higher pressure losses, these additional losses are shown in the following diagram.



Pressure losses



Attenuation capacity

Typ RVS / RHS	Attenuation [dB] at medium frequency [Hz]						
	125	250	500	1k	2k	4k	8k
190 / 225	5	8	12	16	20	17	13
310K / 310L	5	8	12	17	20	17	14
355 / 400	5	8	11	16	19	16	13
450 / 500	5	8	12	17	20	17	14
560 / 630	5	8	11	16	19	16	13
710	5	7	10	16	18	16	12

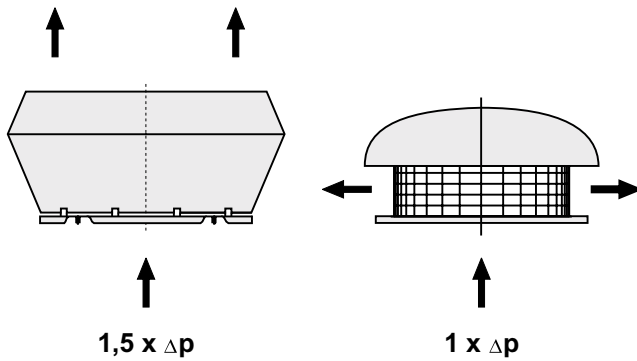
Centrifugal Roof Fan



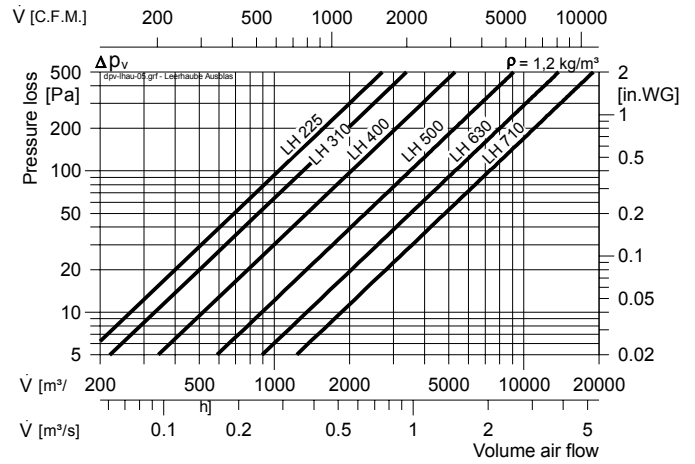
Roof cowl without motor LH / LV

The empty roof cowl can be used to close a ducted system on the inlet or outlet side. Depending on the direction of air flow, it has different pressure losses.

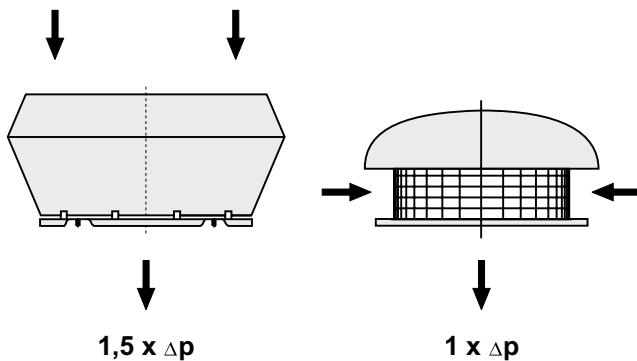
Outlet cowl



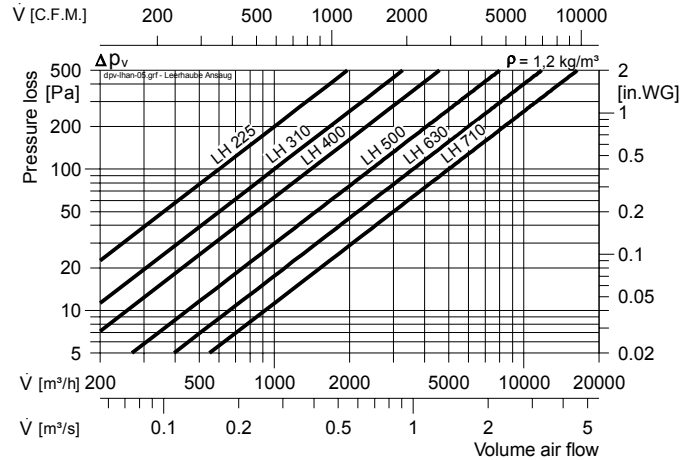
Pressure losses



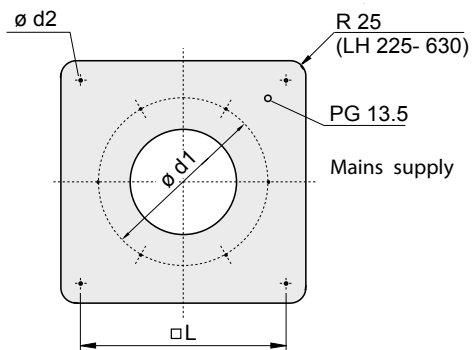
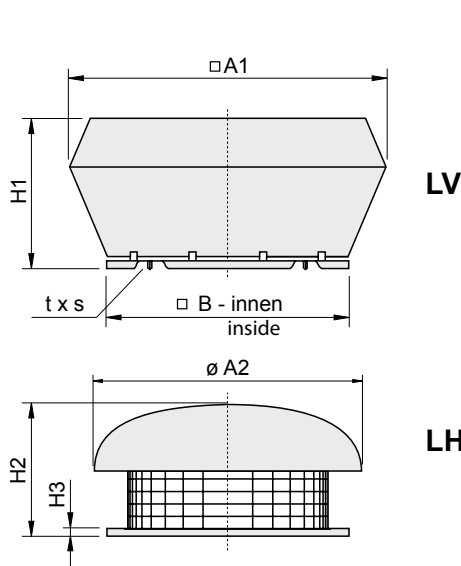
Inlet cowl



Pressure losses



Dimensions



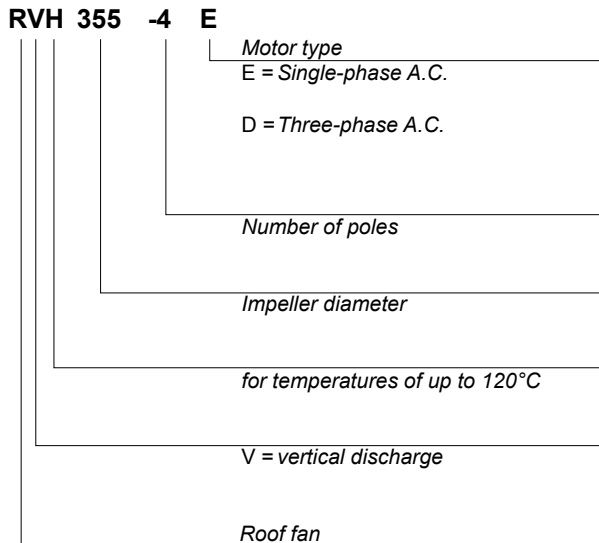
size	A1 [mm]	A2 [mm]	H1 [mm]	H2 [mm]	H3 [mm]	B [mm]	L [mm]	d1 [mm]	d2 [mm]	t x s
225	370	370	170	140	30	335	245	213	10	6xM6
310	560	550	330	260	30	435	330	286	10	6xM6
400	720	720	400	340	30	595	450	438	12	6xM6
500	900	820	450	390	30	665	535	438	12	6xM6
630	1150	1100	570	460	30	939	750	605	14	8xM8
710	1350	-	680	-	40	1035	840	674	14	8xM8

Centrifugal Roof Fan

with motor out of air stream



Fan type code



Technical description

Design features

Wolter roof fan units are suitable for mounting on different roof types. As the motor is out of the air stream, **RVH series fans can be operated at temperatures of up to 120°C** (80°C if speed-controlled motors are used, 50°C for sizes RVH 800 and above.)

Casing

Discharge and motor cowl are made of salt-water proof aluminium. The base plate with its integrated inlet cone is made of galvanised sheet steel.

Impeller

The backward-curved impellers are made of aluminium and are balanced statically and dynamically according to G 6.3 of (DIN ISO 1940).

Motors

Standard IEC motor in frame type IMB5, protection class IP55, 1~230V/50Hz or 3~400V/50Hz, insulation class F. Motors of fans up to size 500 are suitable for transformer-type speed control.

Electrical connection

The motor terminal box is easily accessible after removal of the fan cowl. The motor has to be connected according to the provided wiring diagram in accordance with locally applicable regulations.

Installation

All fans are delivered ready for installation and are packed in separate boxes or crates. We recommend the use of matching Wolter roof sockets. If other roof sockets are used, dimensions given in our catalogue should be followed to achieve proper sealing and avoid air-leakage.

Fan performance curves

The performance curves for these roof fans have been tested according to DIN 24 163. The curves indicate the static pressure increase p_{st} (static, free outlet) as a function of the volume flow. The reference air density is 1,2 kg/m³.

Sound levels

The sound data was measured according to DIN 45 635, part 38. The figures shown in the performance curves are the **A-weighted sound power levels (L_{WA})** in dB(A). They are equal to the **free outlet sound power level L_{WAB}** .

The free inlet **sound power level L_{WAS}** can be calculated by the following approximation formula:

$$L_{WAS} = L_{WA} - 3 \text{ dB}$$

If sound protection measures require exact calculation, it is important to know the the sound power level of the octave band:

$$L_{Wokt} = L_{WA} + L_{Wrel}$$

The A-weighted sound pressure level at the outlet side can only be approximated, since environmental conditions will affect noise levels.

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

The actual noise levels will vary, depending on system characteristics such as reflexion, resonant frequencies or structure-borne noise transfer.

General information

General and useful information for longitudinal tunnel ventilation

Longitudinal ventilation is a system without ducts in which the whole required volume flow moves through the Tunnel at constant velocity from one end to the other. Tunnels in greater length than about 200 m or subject to rush-hour congestion, axial Jet Fans are used to provide positive longitudinal ventilation. The principle of the Jet Fans with open inlet and outlet is specially designed for maximum efficiency in this condition rather than when operating against pressure.

In practice they are mounted in the space between the maximum height gauge and the tunnel roof, repeating at intervals of 100 m more or less depending of the lines and fan thrust. They blow in the same direction as the traffic (normally one way) though they are capable of reverse in emergency. They are particularly well suited to cut- and over tunnels with flat roofs, a line of axial fans in parallel across the whole width of the tunnel will occupy minimum headroom and provide the necessary thrust with minimum power.

The fact that the tunnel itself is used as the airway gives the longitudinal system notable economy both in first cost and energy consumption. However, the volume flow and air velocity must increase in proportion to the length, which therefore limited to about 1 km for roads with heavy traffic, corresponding to an average air velocity around 8 m/s.

To get the right airflow-volume rate for a good ventilation it is necessary to make the exact calculation on enquired air volume on some specific details, which are to be clarified before. Some of the informations depending of regional rules or special different rules in different countries.

Following data for calculation tunnel ventilation are required:

- CO-content of outdoor air
- permissible CO-concentration
- number of cars general
- number of civil cars
- numbers of trucks
- average CO-emission per car
- permissible visibility limit factor on Diesel smoke
- average traffic density in Tunnel
- max. traffic density in tunnel
- altitude tunnel
- gradient in tunnel length
- length of the tunnel
- number of lanes
- traffic direction in tunnel uni-directional or two directions
- traffic speed in tunnel
- is congested traffic to consider
- is smoke extract to consider
- in emergency smoke extract temperature and time
- tunnel dimension in profile

To be able for a quick around calculation on polluted air it is helpful to follow the formula as:

for CO-emission

$$C_g = \frac{C_e \cdot L \cdot n}{V}$$

where:

- C_g = permissible Co-concentration [ppm]
- C_e = Co-emission of cars [cm³/s/m]
- D_g = Diesel-content [mg/m³]
- D_e = Diesel-entry [mg/s/m]
- L = length of tunnel [m]
- n = number of lanes
- V = exhaust rate of polluted air [m³/s]

Tunnel thrust requirements

After airflow calculation it is necessary to calculate the required thrust by the fans to overcome the resistance on following steps:

- 1) Inlet and outlet loss of the tunnel, which is generally assumed to be about 1,5 times the tunnel air dynamic pressure.

- 2) The friction of tunnel surface with the loss associated to the suspended fittings and road direction signs.

to calculate as:

$$\Delta p_s = \frac{\rho}{2} \cdot v_T^2 \cdot f \cdot \frac{L}{D_H}$$

where

- Δp_s = pressure loss [Pa]
- v_T = tunnel velocity [m/s]
- L = length of the tunnel [m]
- D_H = hydraulic diameter [m] (circular equivalent to tunnel cross section)
- f = friction factor
- ρ = air density [kg/m³]

The value of "f" is generally taken as 0,025, but possibly can vary from 0,02 to 0,04, depending on the surface roughness and physical obstructions.

- 3) Traffic drag or assistance. There will be a drag resistance where the traffic speed is lower than the average tunnel velocity in uni-directional. In a two-way tunnel the traffic speed in the opposite direction to the tunnel-air-velocity must be also considered.

- 4) Wind, temperature and barometric pressure difference between tunnel entry and exit must be considered.

On following formula the total thrust can be calculated:

$$\text{Total thrust} = P \times A_T \text{ [N]}$$

where

- P = summary of pressures according to item 1 to 4 above [Pa]
- A_T = tunnel area [m²]

This given total thrust will be developed by a number of fans in a tunnel and is the sum of the individual fan thrusts. Fans may be located in parallel groups, but should be spaced ten or more tunnel diameter apart lengthways, to ensure that one fan does not affect the other. Also, the spacing can be taken as: spacing [m] = fan dynamic pressure [Pa] / 10

The mounted fans in the tunnel will be off-loading by ten tunnel-air velocity which will reduce the thrust available. The effect of this can be calculated, but it is generally to say, the higher the outlet velocity, the less is the fall in thrust. Anyway, a high outlet velocity fan has lower rating of Newtons per Kilowatt,

Further more factors can also influence the thrust effect:

- a) The distance apart of adjusted fans. Ideally greater than 2 x D centres
- b) The distance between successive fans down the length of the tunnel. Ideally equal to or greater than 10 x tunnel diameters.
- c) How close the first fan is mounted to the tunnel entry portal.
- d) How close the last fan is mounted to the exit portal

Jet Fan Range

The Wolter Jet Fans are high efficiency tunnel fans either for one direction or truly reversible.

A wide performance range of thrust is available from eight sizes, all impellers are with adjustable pitch-angles.

Our standard Jet Fans achieve a thrust performance up to 2200 N.

Reverse

A uni-directional fan will still reach performance of 50 to 60% of the main thrust.

The truly reversible Jet Fan, with our special designed blade profile gives 100 % thrust in both directions.

Efficiency

The purpose designed impellers have unique blade profiles and are fitted with streamlined fairings and motor supports for high efficiency and thrust.

A wide range of diameters allow to select the optimum fan for each project.

Performance Testing

Our range of Jet Fans are tested according to the latest ISO test methods. The thrust, airflow and sound power levels have been measured for a range of sizes, blade angles and in the forward and reverse directions.

Jet Fans for longitudinal tunnel ventilation

General:

Our wide range on Jet Fans is particularly developed for longitudinal tunnel ventilation, e.g. road tunnels, subways, railway tunnels. All are available for uni-directional and truly reversible. Our special designed impellers with a new aerodynamic blade profile are of high efficiency, low noise and excellent thrust combined with low power consumption. All sizes are tested on a DIN-standard test rig which is in accordance to BSI and AMCA as well. A fully test report will be part of each supplied fan.

Construction

Sizes:

Our standard range has 6 diameters from 560 mm up to 1250 mm. Special sizes can be provided.

Impellers:

Blades and hubs will be manufactured in cast-aluminium. All impellers are with adjustable pitchangle. X-ray inspections can be made.

Motors:

Our motors are completely shut, with pad-mounting and manufactured in accordance to IEC 34. The standard insulation will be Class F. Higher classes for emergency operation at 250°C for 60 min are available. The motor bearings have a L 10 life of at least 20.000 hours i. e. an average life of 100.000 hours when calculated in accordance with ISO 281.

Casings:

Ducts are manufactured from mild steel from 3 to 6 mm thickness, depending on size. Motor-support-arms are welded or screwed with the duct and the complete construction will be hot dip galvanized.

Silencers:

For the standard silencers galvanized steel is used for the exterior casing and perforated galvanized steel for the inside. Flanges on both ends are formed for direct coupling to the main case. A special designed bell-mouth-inlet made of glass-fiber material is fixed to both ends. The length of the silencer is either one or two times of the fan diameter.

Finish:

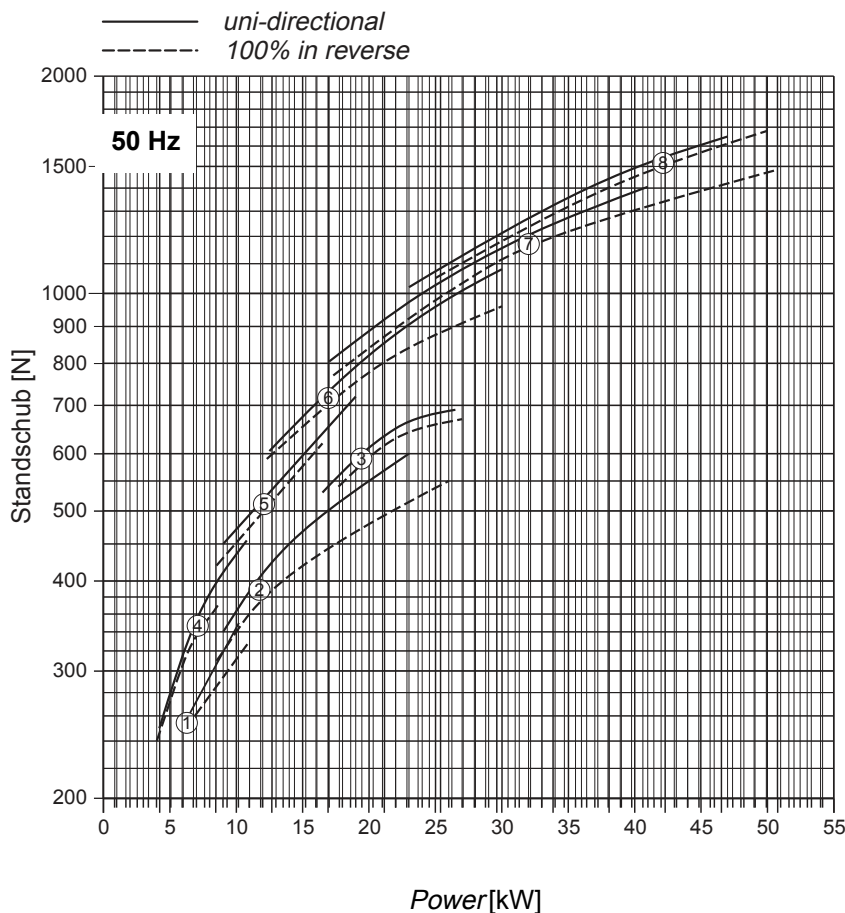
Three levels of finish are available:

- 1) Standard finish:
Steel parts as described above in item "construction", impeller unpainted and motor according to manufacture's standard painting.
- 2) External paint finish:
Epoxy-paint-system on all external parts of fan and silencers; color in accordance to RAL-system
- 3) Internal and external paint finish:
Epoxy-paint-system, casings inside and outside in a 3 coat-system, in-line coat of silencer in perforated stainless steel and not painted.

Mounting:

Our Jet Fans are provided with mounting feet and may be supported rigidly or by the use of antivibration mountings. The feet may be bolted directly to the tunnel or alternatively to our base-frame-system, which is designed to the different tunnelprofiles.

Relationship thrust ./ power kW



Nr.	Size [mm]	Speed [1/min]
1	560	2900
2	630	2900
3	710	2900
4	800	1450
5	900	1450
6	1000	1450
7	1120	1450
8	1250	1450

Measured by air density: 1,2 kg/m³

Performance data

50 Hz

uni-directional range

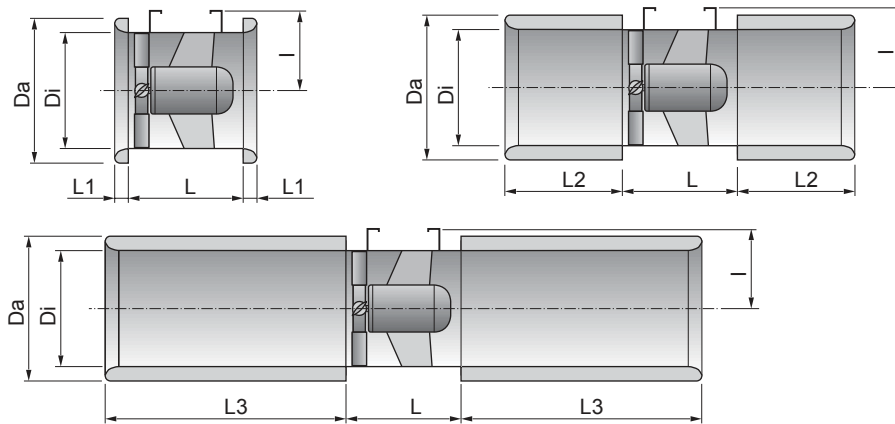
Size [mm]	Schub Thrust [N]	\dot{V} air volume [m ³ /s]	c_2 outlet - v [m/s]	n speed [1/min]	P_L power abs, [kW]	P_M motorpower [kW]	L_w [dB]	$L_{P10m/45^*}$ [dB]
560	220	6,9	28,3	2880	6,2	7,5	96	61
	240	8,2	33,3		10,7	11	100	65
630	300	9,1	29,2	2880	8,4	11	96	62
	590	13,5	43,1		23,1	30	104	70
710	500	12,9	32,8	2880	16,7	18,5	101	68
	730	15,2	38,4		26,5	30	104	71
800	230	10,5	20,9	1440	3,9	5,5	86	54
	450	13,8	27,5		10,9	11	93	61
900	440	15,8	24,8	1440	8,8	11	90	58
	720	19,3	30,2		19,8	22	97	65
1000	560	19,9	25,3	1440	12,6	15	93	61
	1100	26,2	33,4		30	30	100	68
1120	800	18,1	25,8	1440	16,7	18,5	98	66
	1600	37,2	37,8		56,5	65	103	71
1250	1050	34,2	27,9	1440	24,9	30	101	69
	2100	48,6	39,6		73,1	75	105	73




truly reversible range 50 Hz

50 Hz

Size [mm]	Schub Thrust [N]	\dot{V} air volume [m ³ /s]	c_2 outlet - v [m/s]	n speed [1/min]	P_L power abs, [kW]	P_M motorpower [kW]	L_w [dB]	$L_{P10m/45^*}$ [dB]
560	240	6,9	28,4	2880	6,5	7,5	98	64
	330	8,2	33,2		10,9	11	100	66
630	290	8,7	27,9	2880	8,1	9,5	98	65
	550	12,1	38,7		25,9	27	105	72
710	540	13,7	34,5	2880	17,4	18,5	103	71
	930	16,9	42,8		38,8	40	108	76
800	240	10,5	21,1	1440	4,1	5,5	89	55
	360	13,1	26,1		8,5	9,5	96	62
900	420	15,5	24,4	1440	8,7	9,5	94	60
	605	18,6	29,3		16,5	18,5	100	66
1000	600	20,4	25,9	1440	12,5	15	96	64
	960	27,7	35,2		30,7	32	105	73
1120	760	26,1	26,5	1440	16,9	18,5	101	69
	1500	35,4	35,8		50,6	55	105	73
1250	1020	33,4	27,1	1440	23,7	27	107	75
	2050	45,9	37,2		72,4	75	113	81

Please note: sound pressure level measured at 10 m distance under 45 degrees, free field, silencer length 1 x fan diameter



Size	L [mm]	Di [mm]	Da [mm]	I [mm]	L1 [mm]	 [kg]	L2 [mm]	 [kg]	L3 [mm]	 [kg]
560	620	560	710	365	80	225	640	290	1200	390
630	620	630	780	400	80	250	710	340	1340	450
710	740	710	860	450	100	400	810	495	1520	690
800	740	800	1000	510	100	320	900	430	1700	640
900	780	900	1100	560	120	380	1020	525	1920	790
1000	850	1000	1200	610	140	620	1140	860	2140	1170
1120	910	1120	1320	710	160	740	1280	920	2400	1340
1250	910	1250	1450	800	160	830	1410	1100	2660	1550

Product description

Our jet fans have been specially developed for use in modern car park ventilation systems. The rotors are statically and dynamically balanced at the factory, and manufacture is subject to the strictest intermediate and end checks and is certified in accordance with DIN/EN/ISO 9001.

Conditions of use

The air should correspond to tender specifications, as the corresponding components are determined for this. If these are not listed in more detail, then the following applies:

The jet fans of the JF series are suitable for the conveyance of

- clean air
- air containing car exhaust emissions
- air which has little dust and grease content
- gases and vapours which are non-explosive and only slightly aggressive in nature
- media up to a maximum air density of 1.3 kg/m³
- flow volumes at temperatures ranging from - 30°C to +40°C (except 300°C/1 h temperature rated fans during emergency smoke exhaust operation)
- media up to a max. humidity of 95%

Conditions of fitting

The fans are not designated for any types of usage other than those cited here, and any such use shall be considered as improper usage!



In particular, we especially draw your attention to the following points. Non-compliance can either result in considerable material damage or personal injury, or that the demanded fan output values are not attained.

The fan may not be operated without the necessary safety fittings. For this reason, the guide vanes (on all JF jet fans) and protective screens (on JFUO/JFUjet fans) on the fan inlet and outlet must be fitted at all times during operation in order to prevent access to rotating parts.

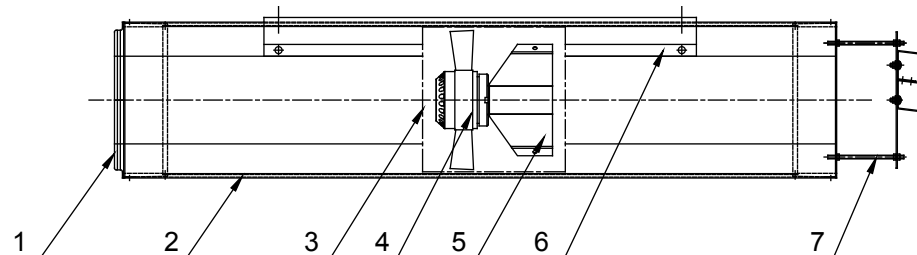
In order to avoid any damage to the fan and specially to the rotor blades, you must prevent the possibility of loose parts being sucked in by the fan or of other items being able to find their way into the fan.

The fitting notes regarding inlet and outlet flow conditions are to be observed (see 5.1.1).

Product description

Construction

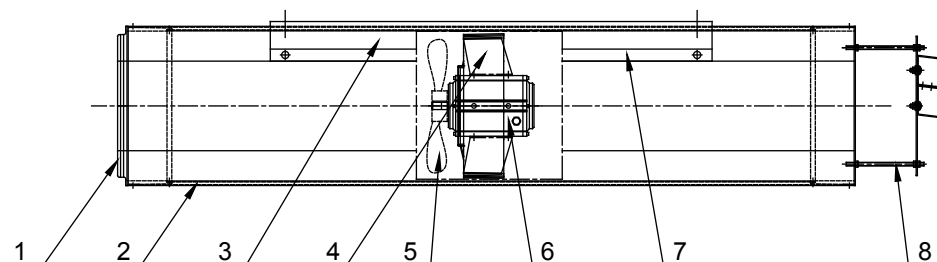
JFU 250/...-AE series



The jet fan consists of the following main parts:

- (1) Inlet protective screen
- (2) Sound attenuating housing
- (3) Motor-fan-assembly unit (removeable type)
- (4) Rotor motor with welded impeller
- (5) Motor support
- (6) Ceiling mounting brackets
- (7) Guide vane

JFUO/JFRO series



The jet fan consists of the following main parts:

- (1) Inlet protective screen (JFUO) or guide vane (JFRO, see (8))
- (2) Sound attenuating housing
- (3) Bar for removal of motor-fan-assembly (L type only)
- (4) Motor-fan-assembly designed as slide-in tube
- (5) Fan impeller
- (6) Electric motor
- (7) Ceiling mounting brackets
- (8) Guide vane

Functional description

The jet fan is designed for installation on the ceiling of over- and underground car parks with free-suction and free-blowing operating condition. It draws air from the surrounding on the suction side through the rotating impeller and conveys this air in axial direction to the outlet side. This high-velocity airstream induces a secondary airflow downstream of the fan outlet and is used to mix and convey the air and the contained car exhaust emissions in the car park. In normal applications, the jet fan is not a stand-alone product, but part of a complete jet fan ventilation system including other jet fans, sensors, control equipment, and main exhaust and/or supply fans.

If the jet fan has been supplied as a temperature rated execution (Model designation JF .. - ... - ... - .. - .. -300°), it may also be used to convey smoke for emergency smoke extract applications and will withstand temperatures of up to 300°C for a duration of up to 1 hour.

The motor is positioned in the air flow and is cooled by the flow.

Control and regulation of the jet fan is carried out by an external control unit. This does not form part of the jet fan itself. The corresponding operating instructions are to be consulted with regard to the control unit's operation.

Technical Data

» **Range:**

Wolter Jet Fans are available in Unidirectional sizes 200, 250, 300, 315, 355, and 370 and fully-reversible sizes 250, 300, and 370.

» **Impeller:**

Impellers with pitch adjustable blades are made of injection-moulded aluminium and pre-set for the required duty except the ventilation JFU series is of sheet metal blade. They are class Q6.3 balanced in accordance with VDI 2060 / ISO1940/1-1986.

» **Airflow direction:**

Discharge guide vanes allow to adjust the airflow direction according to architectural requirements.

» **Temperature Rating:**

All fans can be manufactured to correspond to F200 and F300 requirements for smoke-extract applications.

» **Motor / Isolator Switch:**

All motors are 2/4-pole in Dahlander connection, designed for 400V 50Hz but except the ventilation JFU series are of 2 pole or 4 pole designed for 230V 50Hz. Upon request, it can be made to 2/4 pole as well. Protection class IP55 according to IEC34-5 except the JFU series is of IP54 protection class. Motors are connected to an outside junction box or lockable isolator switch for 40°C standard temperature or 300°C/1h.

» **Housing:**

All fan casings are manufactured as one integral sound attenuator of 1220mm or 2250mm length and except the ventilation JFU series of 1220mm length. All casings are oval-shaped in order to minimise headroom obstruction. The fan-motor-assembly is designed as a slide-in tube which can easily be fitted and retracted through the attenuator inlet. In case of servicing or pitch angle adjustment it is therefore possible to simply pull out the fan unit without dismantling the complete attenuator from the ceiling. Rigid mounted brackets are fitted as standard.

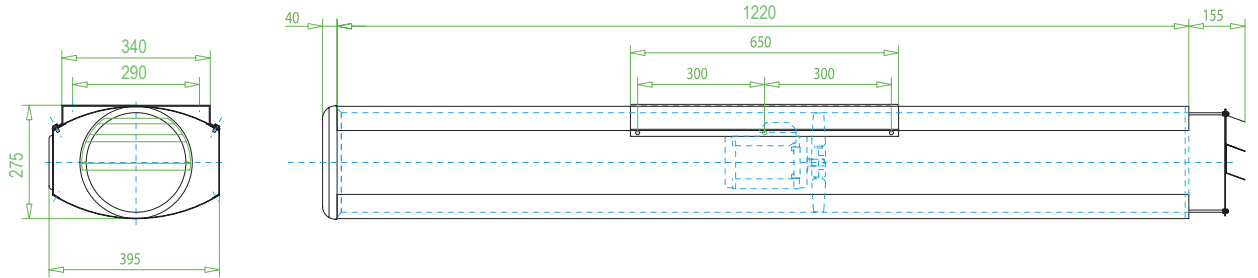
Performance

Fan Type	Motor Power [kw]	Nominal Current [A]	Fan Speed [1/min]	Volume Flow [m³/s]	Thrust [N]	Sound Pressure [dB(A) 3m/45°]	Weight [kg]
Impulse Jet Fan JFUO, Uni-directional, 300°C/2h, casing length 2250mm							
JFUO 250/250L-300°	0.75/0.15	1.9/0.65	2800/1400	0.80/0.40	16/4	50/39	86
JFUO 300/250L-300°	1.3/0.30	3.3/0.8	2800/1400	1.31/0.66	42/11	53/43	108
JFUO 300/300L-300°	1.3/0.30	3.3/0.8	2800/1400	1.45/0.74	32/8	54/44	108
JFUO 370/315L-300°	2.0/0.5	4.8/1.3	2800/1400	2.02/1.02	63/18	63/49	142
JFUO 370/355L-300°	2.0/0.5	4.8/1.3	2800/1400	2.50/1.25	75/19	70/54	142
JFUO 370/370L-300°	2.4/0.6	5.3/1.4	2800/1400	2.80/1.40	82/21	72/56	153
Impulse Jet Fan JFRO, full reversible, 300°C/2h, casing length 2250mm							
JFRO 250/250L-300°	0.75/0.15	1.9/0.65	2800/1400	0.75/0.38	14/4	49/38	86
JFRO 300/300L-300°	1.3/0.3	3.3/0.8	2800/1400	1.35/0.68	27/7	54/44	108
JFRO 370/370L-300°	2.4/0.6	5.3/1.4	2800/1400	2.63/1.30	72/18	68/52	150
Impulse Jet Fan JFUO, Uni-directional, 300°C/2h, casing length 1220mm							
JFUO 250/250S-300°	0.75/0.15	1.9/0.65	2800/1400	0.80/0.40	16/4	53/42	65
JFUO 300/250S-300°	1.3/0.30	3.3/0.8	2800/1400	1.31/0.66	42/11	56/46	78
JFUO 300/300S-300°	1.3/0.3	3.3/0.8	2800/1400	1.45/0.74	32/8	57/47	78
JFUO 370/315S-300°	2.0/0.5	4.8/1.3	2800/1400	2.02/1.02	63/18	63/49	99
JFUO 370/355S-300°	2.0/0.5	4.8/1.3	2800/1400	2.50/1.25	75/19	73/57	96
JFUO 370/370S-300°	2.4/0.6	5.3/1.4	2800/1400	2.80/1.40	82/21	74/58	102
Impulse Jet Fan JFRO, full reversible, 300°C/2h, casing length 1220mm							
JFRO 250/250S-300°	0.75/0.15	1.9/0.65	2800/1400	0.75/0.38	14/4	52/41	65
JFRO 300/300S-300°	1.3/0.3	3.3/0.8	2800/1400	1.35/0.68	27/7	57/47	78
JFRO 370/370S-300°	2.4/0.6	5.3/1.45	2800/1400	2.63/1.30	72/18	71/55	102

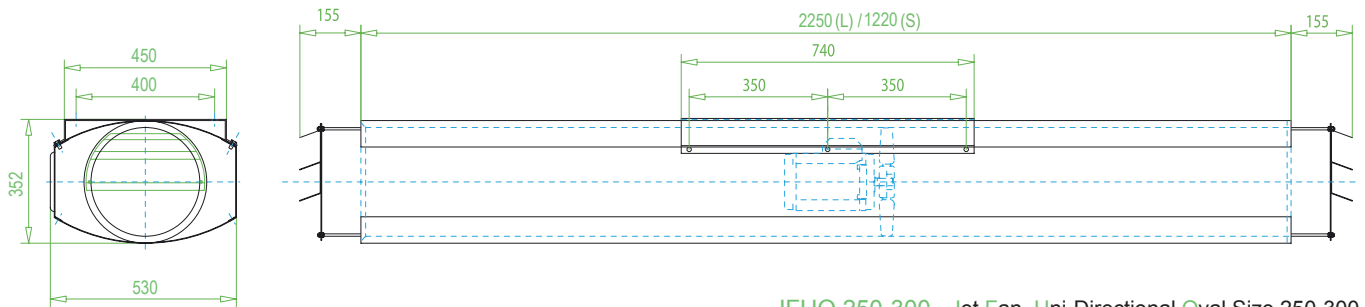
Performance

Fan Type	Motor Power [kw]	Nominal Current [A]	Fan Speed [1/min]	Volume Flow [m ³ /s]	Thrust [N]	Sound Pressure [dB(A) 3m/45°]	Weight [kg]
Impulse Jet Fan JFU, Uni-directional, 40°C, casing length 1220mm							
JFU 250/200AE-40°	0.35/0.26	1.52/1.1	2650/2280	0.53/0.47	11/9	54/50	31
JFU 250/250AE-40°	0.35/0.26	1.52/1.1	2650/2280	0.59/0.52	9/7	54/50	30
JFU 300/300AE-40°	0.14	0.63	1390	0.46	4	48	70
JFU 370/370AE-40°	0.17	0.75	1395	0.76	7	52	92
Impulse Jet Fan JFUO, Uni-directional, 40°C, casing length 2250mm							
JFUO 250/250L-40°	0.55/0.11	1.7/0.4	2800/1400	0.80/0.40	16/4	50/39	86
JFUO 300/250L-40°	1.1/0.25	3.1/0.6	2800/1400	1.31/0.66	42/11	53/43	105
JFUO 300/300L-40°	1.1/0.25	3.1/0.6	2800/1400	1.45/0.74	32/8	54/44	105
JFUO 370/315L-40°	2.0/0.5	4.8/1.1	2800/1400	2.02/1.02	63/18	63/49	139
JFUO 370/355L-40°	2.0/0.5	4.8/1.1	2800/1400	2.50/1.25	75/19	70/54	139
JFUO 370/370L-40°	2.0/0.5	4.8/1.1	2800/1400	2.70/1.35	80/20	72/56	145
Impulse Jet Fan JFRO, full reversible, 40°C, casing length 2250mm							
JFRO 250/250L-40°	0.55/0.11	1.7/0.4	2800/1400	0.75/0.38	14/4	49/38	86
JFRO 300/300L-40°	1.1/0.3	3.1/0.6	2800/1400	1.35/0.68	27/7	54/44	105
JFRO 370/370L-40°	2.0/0.5	4.8/1.1	2800/1400	2.50/1.25	70/18	67/51	145
Impulse Jet Fan JFUO, Uni-directional, 40°C, casing length 1220mm							
JFUO 250/250S-40°	0.55/0.11	1.7/0.4	2800/1400	0.80/0.40	16/4	53/42	65
JFUO 300/250S-40°	1.1/0.25	3.1/0.6	2800/1400	1.31/0.66	42/11	56/46	78
JFUO 300/300S-40°	1.1/0.25	3.1/0.6	2800/1400	1.45/0.74	32/8	57/47	78
JFUO 370/315S-40°	2.0/0.5	4.8/1.1	2800/1400	2.02/1.02	63/18	66/52	99
JFUO 370/355S-40°	2.0/0.5	4.8/1.1	2800/1400	2.50/1.25	75/19	73/57	96
JFUO 370/370S-40°	2.0/0.5	4.8/1.1	2800/1400	2.70/1.35	80/20	75/59	102
Impulse Jet Fan JFRO, full reversible, 40°C, casing length 1220mm							
JFRO 250/250S-40°	0.55/0.11	1.7/0.4	2800/1400	0.75/0.38	14/4	52/41	65
JFRO 300/300S-40°	1.1/0.3	3.1/0.6	2800/1400	1.35/0.68	27/7	57/47	78
JFRO 370/370S-40°	2.0/0.5	4.8/1.1	2800/1400	2.50/1.25	70/18	71/55	102

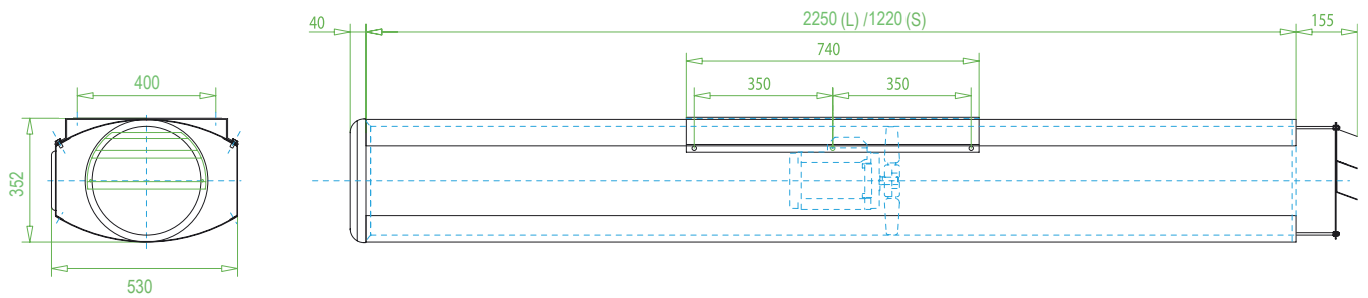
JFU 180-200-250AE - Jet Fan Uni-Directional Oval Size 180-200-250



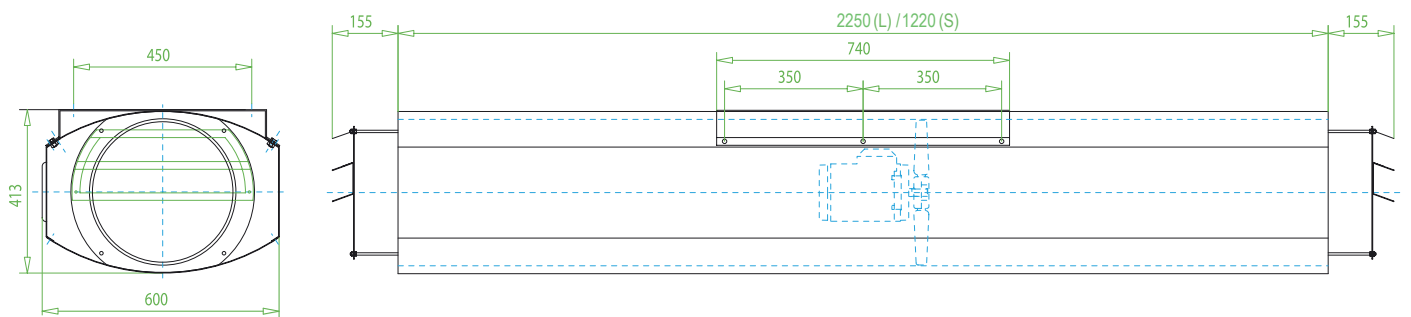
JFRO 300 - Jet Fan Fully Reversible Oval Size 300



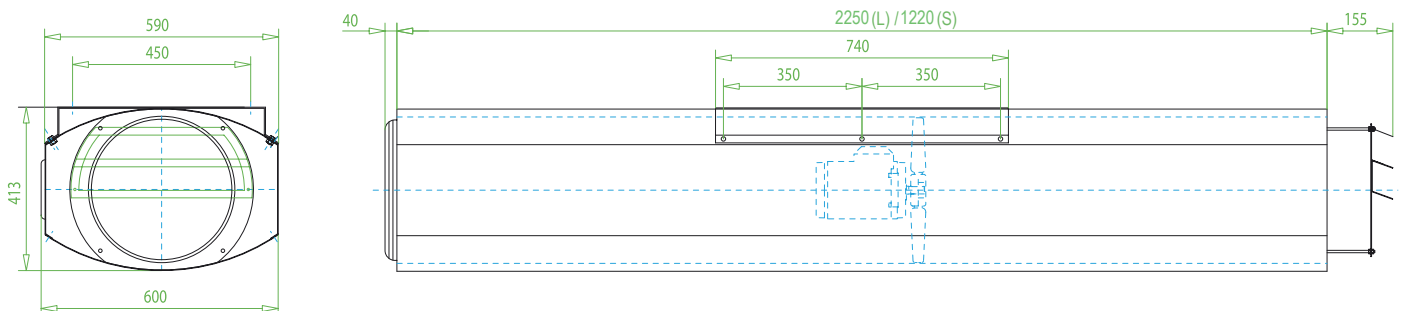
JFUO 250-300 - Jet Fan Uni-Directional Oval Size 250-300



JFRO 370 - Jet Fan Fully Reversible Oval Size 370



JFUO 315-355-370 - Jet Fan Uni-Directional Oval Size 315-355-370



Wolter Induction Fan

Manufactured to cover all profile requirements in relevant specifications and incorporated with high efficient EC motors that are generally maintenance-free.

A new registered design feature of the WOLTER Induction Fan helps reduce energy costs by nearly 60% compare to conventional motor. Moreover, it allows a 120% increase in the amount of airflow through induction to guarantee ventilation in every corner of the area.

Technical Information

- **Impeller:**

Impellers of high quality aluminum sheet with fixed pitch angle. They are class Q2.5 balanced in accordance with VDI 2060 / ISO1940/1-1986.

- **EC Motor / Isolator Switch:**

The unit comes with five EC motorized impellers to give a high volume flow and induction capability. Mounted with wire guard and equipped with 3 different speeds (high, medium, and low) to suit the respective site requirements in unidirectional airflow direction. Four speed type as optional. Motors are connected to an external terminal box. Protection class E is IP55 according to IEC34-5 with 1/3 of the heat loss compared to those normally incurred by a conventional AC or 3-phase motor. Each induction fan unit has a starting current lower than 1A under high speed mode.



- **Housing:**

The low profile fan housing of the induction fan is manufactured as one integral unit to minimise headroom obstruction. The overall low profile height of the unit is 298 mm. They do not significantly obstruct headroom heights within the compartment or car park space. Isolator switches, speed control, alarm function, lockable isolator switch can be fitted as optional extras.

- **Fan inlet and outlet cone:**

The inlet and outlet cones are manufactured from precision injection-moulded casted aluminium. The J Series comes with 3, 4, 5, 6 or 8 fan units of modular design. The inlet cone comes with rotor unit. The aerodynamically shaped outlet comes with built-in guide vanes unit to give maximum air performance at low noise and a smooth velocity profile. Each individual motor unit/outlet cone can be easily removed to facilitate routine servicing. Therefore, it is not necessary to dismantle the entire fan from the ceiling for revision or maintenance purpose.

- **Protective screen:**

Inlet protective screen comply with BS3042 finger proof requirements. The screen is fitted to the motor side as appropriate in accordance to CE requirements. Protective screen shall be of low carbon steel wire or rod with powder coating.

- **Airflow direction:**

Discharge vanes allow the adjustment of the airflow in 8 directions to match the mounting brackets at various angles.



Technical Data

(Power Supply 50Hz 210V ~ 260V)

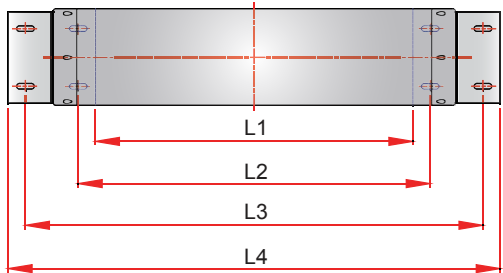
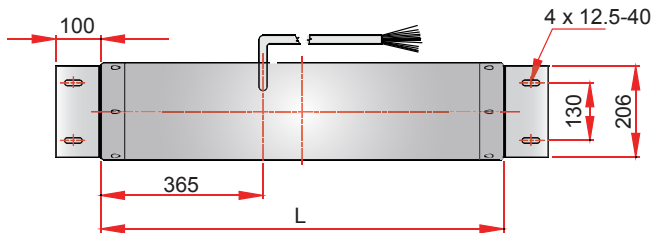
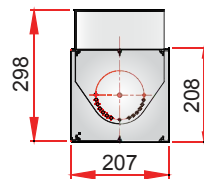
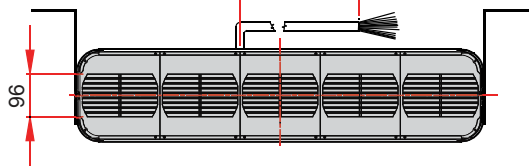
Model	Fan Speed [1/min]	Power [W]	Running Current [A]	Starting Current [A]	Volume Flow [m3/h]	Velocity at Max Volume [m/s]	Velocity at Free Flow [m/s]	Sound Pressure [dB(A)] 1,5m/45°	Weight [kg]
J5	*2260	41	0,30	0,48	1360	9,36	8,32	55 ~ 57	11
	2160	35	0,26	0,42	1310	8,75	7,95	53 ~ 56	
	1850	24	0,19	0,30	1170	8,05	7,18	51 ~ 53	
	1600	18	0,14	0,22	1010	6,90	6,21	46 ~ 48	
J7	*2260	52	0,42	0,67	1820	9,36	8,32	56 ~ 58	14
	2160	46	0,38	0,61	1750	8,75	7,95	54 ~ 57	
	1850	33	0,26	0,42	1570	8,05	7,18	52 ~ 54	
	1600	25	0,20	0,32	1350	6,90	6,21	47 ~ 49	
J9	*2260	66	0,52	0,83	2230	9,36	8,32	59 ~ 61	17
	2160	58	0,47	0,75	2140	8,75	7,95	57 ~ 60	
	1850	40	0,33	0,43	1900	8,05	7,18	55 ~ 57	
	1600	29	0,26	0,34	1660	6,90	6,21	50 ~ 52	
J11	*2260	80	0,62	0,99	2670	9,36	8,32	62 ~ 64	20
	2160	70	0,52	0,90	2560	8,75	7,95	60 ~ 63	
	1850	48	0,39	0,62	2280	8,05	7,18	58 ~ 61	
	1600	35	0,29	0,42	1990	6,90	6,21	53 ~ 55	
J15	*2260	110	0,84	1,34	3560	9,36	8,32	65 ~ 67	27
	2160	97	0,76	1,22	3420	8,75	7,95	64 ~ 66	
	1850	67	0,54	0,86	3040	8,05	7,18	61 ~ 63	
	1600	48	0,40	0,64	2650	6,90	6,21	56 ~ 58	

Note: 1, The volume flow indicated above is measured in chamber at 0 static pressure, other values are measured at free flow;
 2, The sound pressure dB(A) is measured at the distance of 1,5m at 45 degree from the outlet;
 3, Fan speed 2260 (1/min) as option.



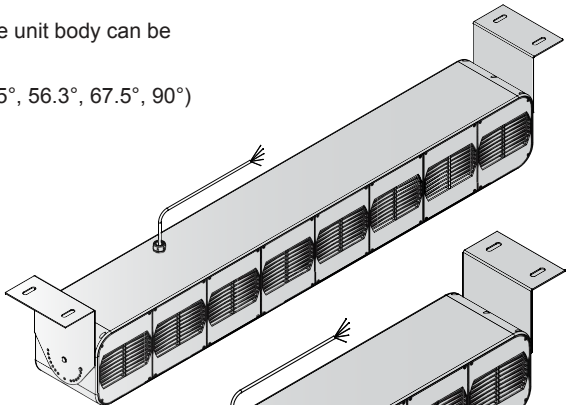
Approx. 1 Meter as standard
Different wire length optional.

The mounting angle of the unit body can be adjusted in 8 steps.
(0°, 11.3°, 22.5°, 33.8°, 45°, 56.3°, 67.5°, 90°)

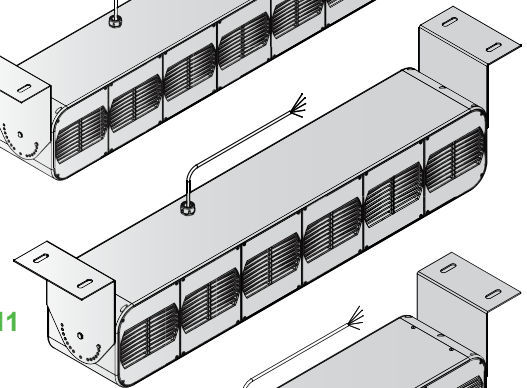


Model	L	L1	L2	L3	L4
-	[mm]	[mm]	[mm]	[mm]	[mm]
J5	548	354	432	670	748
J7	730	535	613	851	930
J9	910	718	798	1037	1117
J11	1090	899	979	1218	1298
J15	1452	1260	1340	1580	1660

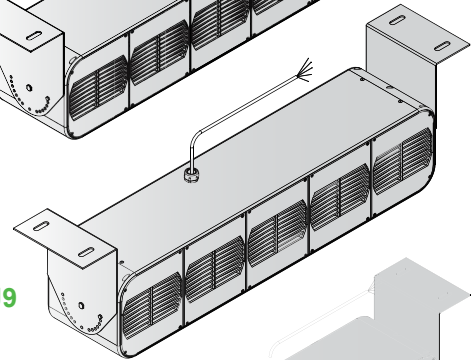
J15



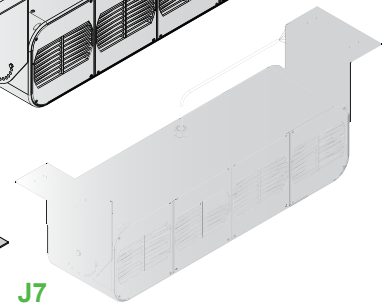
J11



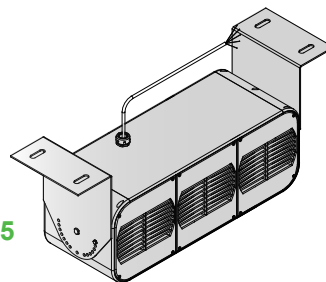
J9



J7



J5



Medium Pressure

MN (Direct drive)

Air Volume 8-800 m3/min
 Static Pressure 79-440 mmH2O
 Impeller Dia (mm) 220-1000



MNb (Belt drive)

Air Volume 10-4400 m3/min
 Static Pressure 50-1000 mmH2O
 Impeller Dia (mm) 400-2000

MO (Direct drive)

Air Volume 8-630 m3/min
 Static Pressure 93-425 mmH2O
 Impeller Dia (mm) 250-1000

MOB (Belt drive)

Air Volume 10-4400 m3/min
 Static Pressure 50-1000 mmH2O
 Impeller Dia (mm) 400-2000

MP (Direct drive)

Air Volume 6.3-90 m3/min
 Static Pressure 200-500 mmH2O
 Impeller Dia (mm) 350-500

MR (Direct drive)

Air Volume 45-900 m3/min
 Static Pressure 180-570 mmH2O
 Impeller Dia (mm) 630-1100

High Pressure

TFE - TFF - TFG

Air Volume 2-315 m3/min
 Static Pressure 250-1825 mmH2O
 Impeller Dia (mm) 350-900



TFEb - TFFb - TFGb (Belt Drive)

Air Volume 8-400 m3/min
 Static Pressure 500-1500 mmH2O
 Impeller Dia (mm) 630-1100



TRF - TRG - TRH

Air Volume 12-800 m3/min
 Static Pressure 500-1950 mmH2O
 Impeller Dia (mm) 500-1000



TRFb - TRGb - TRHb (Belt Drive)

Air Volume 8-400 m3/min
 Static Pressure 500-1500 mmH2O
 Impeller Dia (mm) 630-1100



Performance Test



Low Pressure

LP (Direct drive)

Air Volume 3-335 m3/min
 Static Pressure 13-215 mmH2O
 Impeller Dia (mm) 160-1000



LPb (Belt drive)

Air Volume 26-6200 m3/min
 Static Pressure 30-450 mmH2O
 Impeller Dia (mm) 400-2000



LR (Direct drive)

Air Volume 22-1600 m3/min
 Static Pressure 37-390 mmH2O
 Impeller Dia (mm) 350-1000

LRb (Belt drive)

Air Volume 26-6200 m3/min
 Static Pressure 30-450 mmH2O
 Impeller Dia (mm) 400-2000



LRDb

Air Volume 50-6000 m3/min
 Static Pressure 20-350 mmH2O
 Impeller Dia (mm) 500-1400

Open Blade

CA (Direct drive)

Air Volume 8-125 m3/min
 Static Pressure 93-372 mmH2O
 Impeller Dia (mm) 220-450



CAb-CRb (Belt drive)

Air Volume 10-2000 m3/min
 Static Pressure 50-500 mmH2O
 Impeller Dia (mm) 560-2000



CQ (Direct drive)

Air Volume 45-315 m3/min
 Static Pressure 185-322 mmH2O
 Impeller Dia (mm) 630-900

CF, CG, CG (Direct drive)

Air Volume 3-900 m3/min
 Static Pressure 460-1300 mmH2O
 Impeller Dia (mm) 500-1000



CFb, CGb (Belt drive)

Air Volume 2-350 m3/min
 Static Pressure 140-1000 mmH2O
 Impeller Dia (mm) 500-1000

Belt Drive & Special Blower



Special coupling



Stainless blower



Standard painting



OEM. blower

Duct Tubular Ventilation Fan

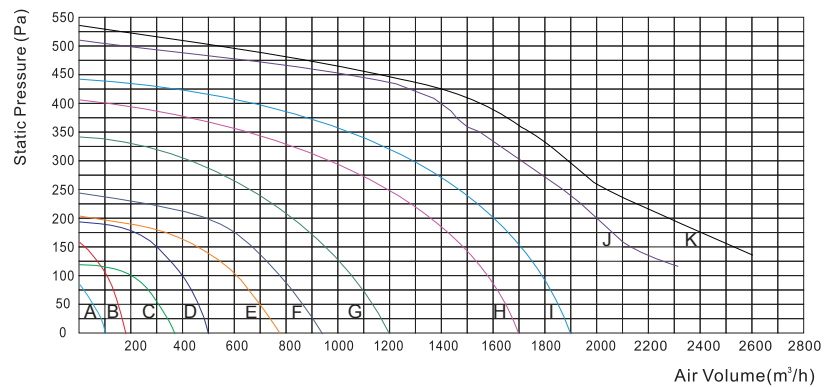
Model : DVF

- Inline Cabinet Design
- Easy to install and more space-saving
- Super Low noise with cabinet
- Use for Air supply and exhaust
- Forward Blade size 120 – 280 mm
- Casing and impeller made from steel with anticorrosive color
- Completed with thermal fuse to cut electric off when motor has High temperature
- Air volume = 100 - 2600 m³/h ,(60-1530 cfm)



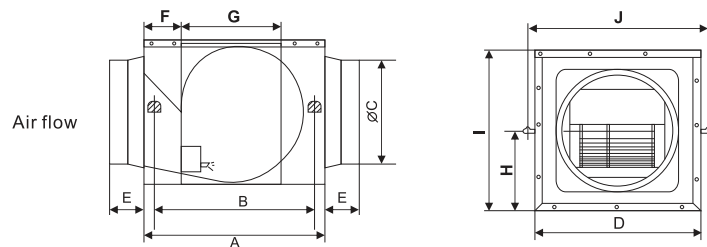
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B: DVF-12018	I: DVF-25190
C: DVF-15036	J: DVF-28231
D: DVF-18050	K: DVF-28260
E: DVF-18077	
F: DVF-20092	
G: DVF-23120	

PERFORMANCE CURVE



DVF

Dimension



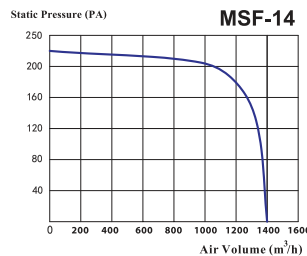
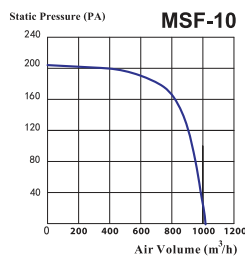
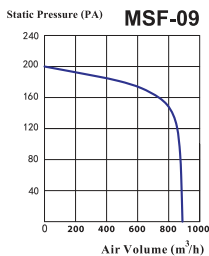
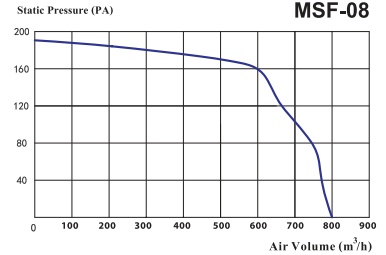
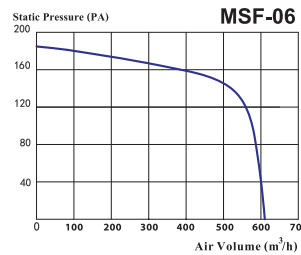
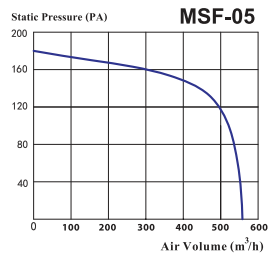
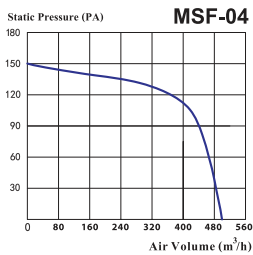
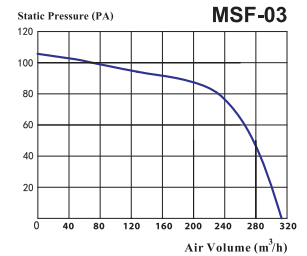
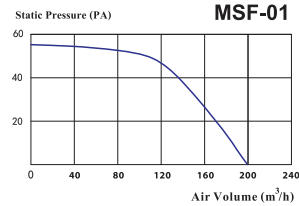
Model	Rated Voltage/ Frequency/ Phase	Impeller Diameter (mm)	Power (W)	Rotating Speed (R.P.M.)	Air Volume (m ³ /h)	Static Pressure (Pa)	Noise (dB)	Dimension (mm)										Duct Size (mm)
								A	B	C	D	E	F	G	H	I	J	
DVF-12010	1/220/50	120	20	960	100	80	20	340	298	95	240	65	68	210	100	200	285	ø100
DVF-12018	1/220/50	120	37	1350	180	163	23	340	298	95	240	65	68	210	100	200	285	ø100
DVF-15036	1/220/50	150	55	1240	360	116	27	340	298	150	240	75	53	230	120	240	285	ø150
DVF-18050	1/220/50	180	125	1360	500	191	29	390	348	150	270	75	58	265	140	280	315	ø150
DVF-18077	1/220/50	180	157	1249	770	204	35	420	378	200	340	65	64	265	140	280	385	ø200
DVF-20092	1/220/50	200	187	1250	920	249	37	490	448	200	370	65	58	304	160	320	415	ø200
DVF-23120	1/220/50	230	275	1270	1200	348	41	520	478	200	400	65	74	344	182.5	365	445	ø200
DVF-25170	1/220/50	250	405	1040	1700	404	43	590	548	250	400	75	74	364	190	380	445	ø250
DVF-25190	1/220/50	250	535	1200	1900	440	46	590	548	250	400	75	74	364	190	380	445	ø250
DVF-28231	1/220/50	280	780	1370	2310	518	46	660	618	250	480	75	107	375	210	420	525	ø250
DVF-28260	3/380/50	280	800	1380	2600	536	46	660	618	250	480	75	107	375	210	420	525	ø250

Mini Sirocco Fan

Model : MSF

- Small size easy to installed
- Suitable for Long pipe and multi suction Point
- Install in long tube for increase airflow
- Casing made from steel with anticorrosive colour
- Forward Blade impeller size 100 – 200 mm
- Completed with thermal fuse to cut electric off when motor has High temperature
- Duct diameter= 100 – 200 mm
- High air volume 165 – 1200 m³/h ,(97-706 cfm)

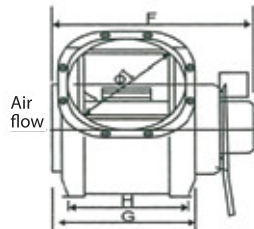
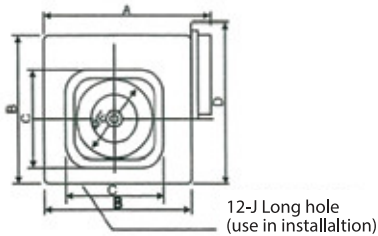
PERFORMANCE CURVE



MSF



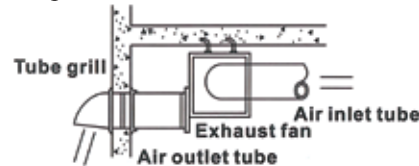
Dimension



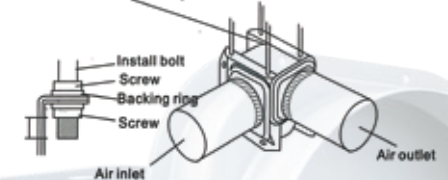
Installation Guide



Sling installation



Horizontal install the body



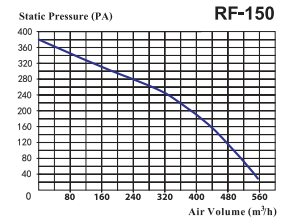
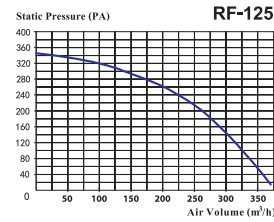
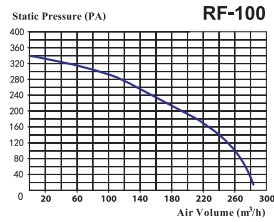
Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise@1m dB(A)	Dimension (mm)									
							A	B	C	D	E	F	G	H	I	J long holep
MSF-01	100	1/220/50	20	1200	165	43	216	180	95	95	104	142	205	130	175	17 x 7
MSF-03	150	1/220/50	40	910	300	42	298	250	145	145	142	179	278	160	215	19 x 9
MSF-04	150	1/220/50	58	1140	450	49	298	250	145	145	142	179	278	160	215	19 x 9
MSF-05	180	1/220/50	80	700	500	47	350	300	198	198	190	235	360	235	280	21 x 11
MSF-06	180	1/220/50	92	800	600	48	350	300	198	198	190	235	360	235	280	21 x 11
MSF-08	180	1/220/50	123	1000	700	48	350	300	198	198	190	235	360	235	280	21 x 11
MSF-09	180	1/220/50	150	1100	800	53	350	300	198	198	190	235	360	235	280	21 x 11
MSF-10	180	1/220/50	160	1200	900	54	350	300	198	198	190	235	360	235	280	21 x 11
MSF-14	200	1/220/50	285	1100	1200	65	350	300	198	198	190	235	360	235	280	21 x 11

Rectangular Duct Fan

Model : RF

- New Slim Casing design suitable for low depth ceiling
- Suitable for Long pipe and multi suction Point
- Install in long tube for increase Pressure
- Casing made from steel with anticorrosive color
- Forward Blade impeller size 140 mm
- External rotor motor IP44
- Complete with thermal fuse to cut electric of when motor has high temperature
- Duct diameter= 100 – 150 mm
- Air volume 270 – 500 m³/h , (159-294cfm)

PERFORMANCE CURVE



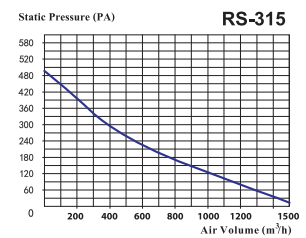
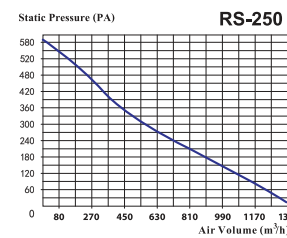
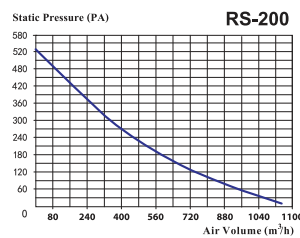
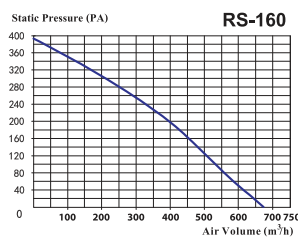
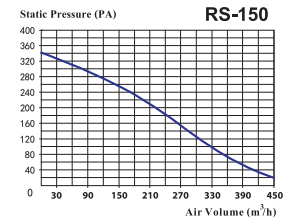
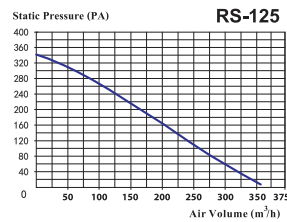
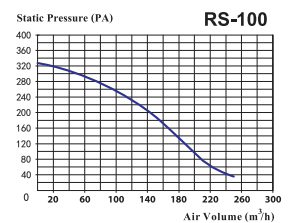
Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise @1m dB(A)	Dimension (mm)						
							A	B	C	D	E	F	G
RF-100	140	1/220/50	103	2,700	270	61	100	250	350	160	227	272	122
RF-125	140	1/220/50	113	2,550	390	65	125	250	350	160	227	272	152
RF-150	140	1/220/50	162	2,500	500	67	150	250	350	160	227	272	172

Circular Duct Fan

Model : RS

- New Inline tube fan design
- Inline inlet and outlet Easy to install
- Suitable for Long pipe and multi suction Point
- Casing made from steel with anticorrosive colour
- Backward Blade impeller size 190 – 250 mm
- External rotor motor IP44
- Complete with thermal fuse to cut electric of when motor has high temperature
- Duct diameter= 100 – 315 mm
- Air volume 248 – 1500 m³/h ,(146-882cfm)

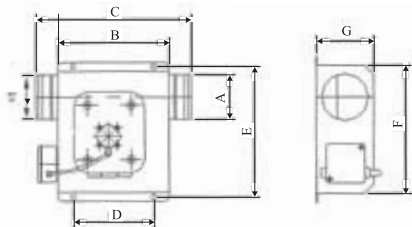
PERFORMANCE CURVE



Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise @1m dB(A)	Dimension (mm)				
							A	B	C	D	E
RS-100	190	1/220/50	77	2,366	248	55	100	242	20	186	15
RS-125	190	1/220/50	88	2,380	360	55	125	243	25	189	22
RS-150	190	1/220/50	88	2,380	450	57	150	271	20	193	20
RS-160	220	1/220/50	127	2,480	580	59	160	345	27	228	27
RS-200	250	1/220/50	178	2,445	1030	61	200	345	27	228	29
RS-250	250	1/220/50	181	2,550	1180	63	250	345	27	228	29
RS-315	250	1/220/50	163	2,625	1500	65	315	400	27	259	29

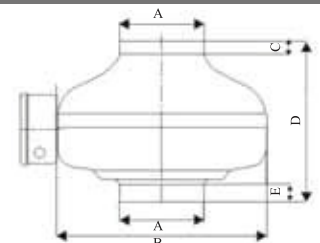
RF

Dimension



RS

Dimension



Ceiling Mount Types

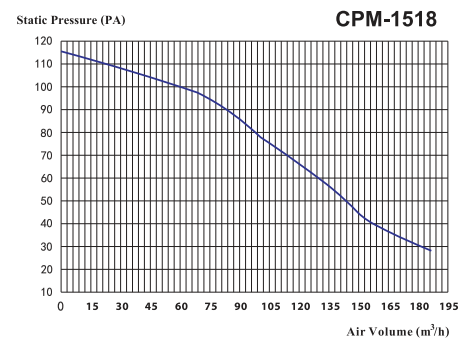
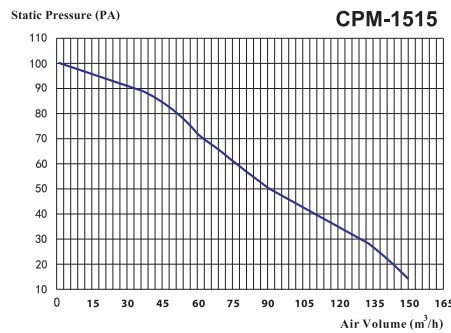
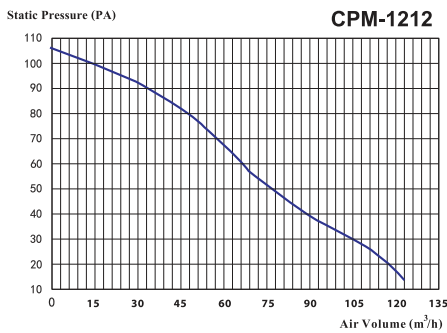
Model : CPM

- New design with Super Low noise
- Forward Blade size 120 – 180 mm
- Casing made from steel with anticorrosive color
- Louver made from ABS
- Maintenance free for ball bearing

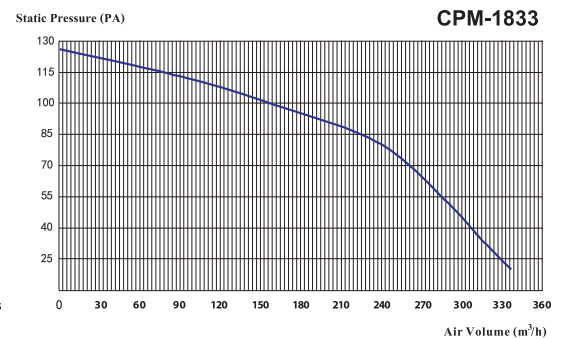
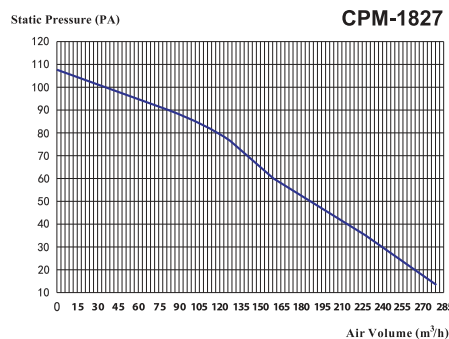
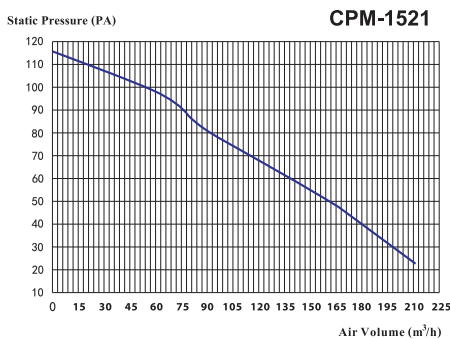
- Wind shield for anti-back spin of Air flow
- Completed with thermal fuse to cut electric off when motor has High temperature
- Air volume 120-330 m³/h , (70-194 cfm)

ENERGY SAVING

PERFORMANCE CURVE



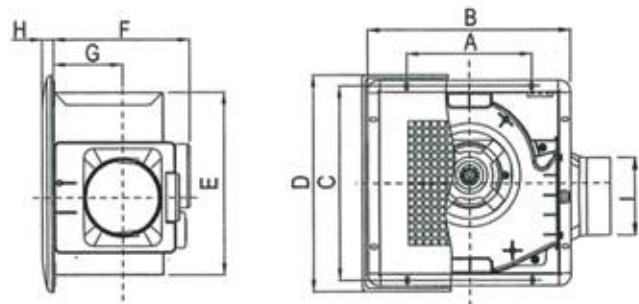
Low-Noise Half Metal Ventilating Fan



CPM



Dimension



Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise@1m dB(A)	Dimension (mm)									
							A	B	C	D	E	F	G	H	I	Louver size
CPM-1212	120	1/220/50	18	1500	120	33	110	234	220	234	205	184	88	13	98	229
CPM-1515	150	1/220/50	16	1200	150	34	160	259	245	286	230	174	88	13	98	254
CPM-1518	150	1/220/50	21	1300	180	38	160	259	245	286	230	174	88	13	98	254
CPM-1521	150	1/220/50	26	1300	210	40	160	259	245	286	230	174	88	13	98	254
CPM-1827	180	1/220/50	27	1030	270	36	140	289	275	301	260	234	117	13	148	279
CPM 1833	180	1/220/50	37	1100	330	37	140	289	275	301	260	234	117	13	148	279

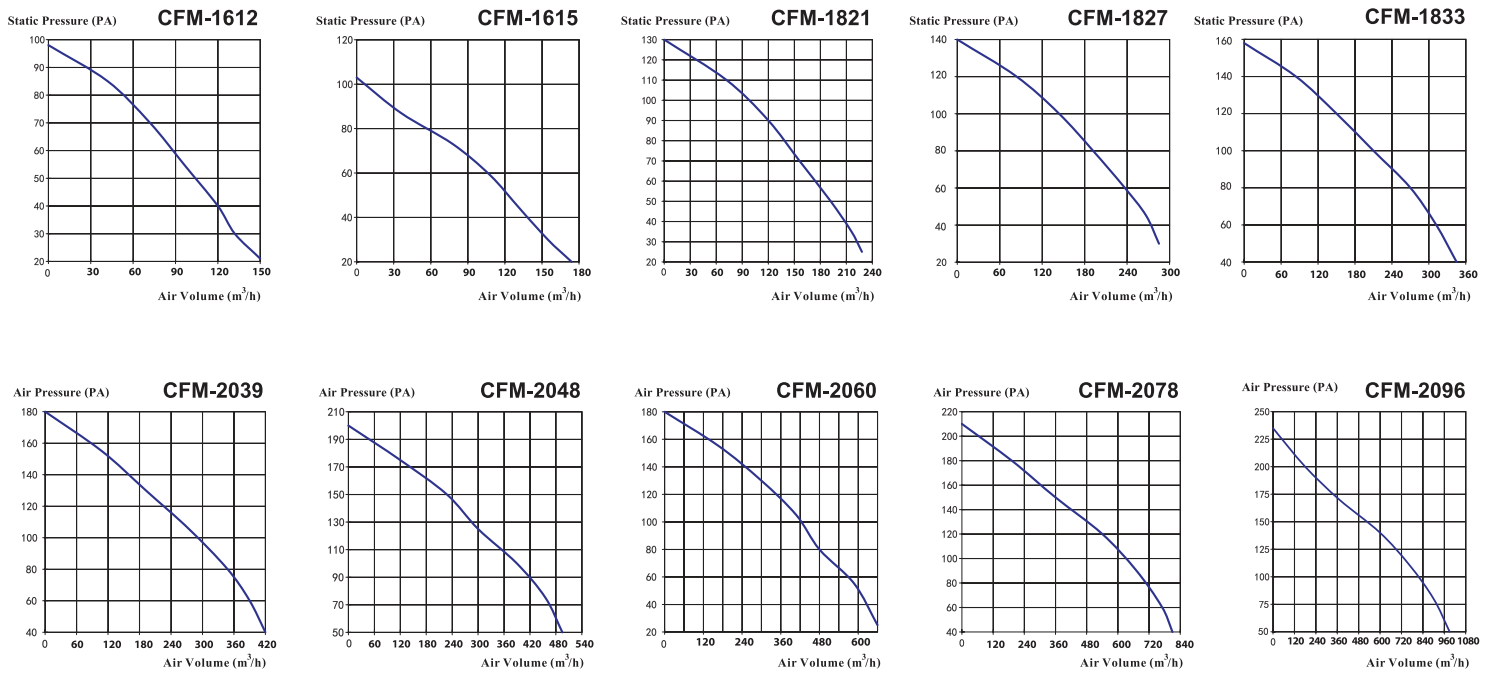
Ceiling Mount Types

Model : CFM

- New design with Super Low noise
 - Forward Blade size 150 – 200 mm
 - Casing and Louver made from steel with anticorrosive color
 - Maintenance free for ball bearing
 - Single wind shield for anti-back spin of Air flow
 - Completed with thermal fuse to cut electric off when motor has High temperature
- air volume 120-960 m³/h , (70-565 cfm)

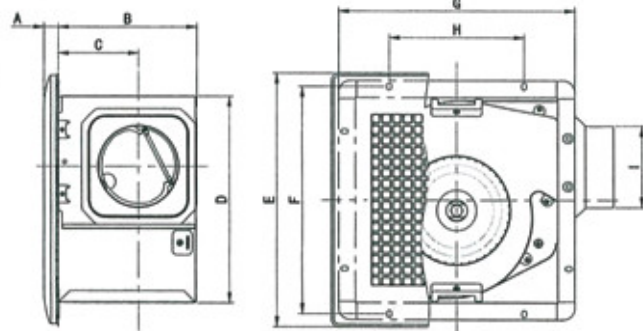
ENERGY SAVING

PERFORMANCE CURVE



CFM

Dimension



Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise@1m dB(A)	Dimension (mm)									
							A	B	C	D	E	F	G	H	I	Louver size
CFM-1612	150	1/220/50	16	690	120	34	17	163	95	241	297	266	280	160	98	305
CFM-1615	150	1/220/50	19	780	150	37	17	163	95	241	297	266	280	160	98	305
CFM-1821	180	1/220/50	26	520	210	38	17	188	106	281	346	317	336	180	123	356
CFM-1827	180	1/220/50	32	640	270	41	17	188	106	281	346	317	336	180	123	356
CFM-1833	180	1/220/50	37	735	330	45	17	188	106	281	346	317	336	180	123	356
CFM-2039	200	1/220/50	45	600	390	42	17	228	115	311	370	336	350	200	148	381
CFM-2048	200	1/220/50	68	738	480	46	17	228	115	311	370	336	350	200	148	381
CFM-2060	200	1/220/50	98	760	600	46	17	228	115	311	370	336	350	200	148	381
CFM-2078	200	1/220/50	147	820	780	46	17	228	115	311	370	336	350	200	148	381
CFM-2096	200	1/220/50	172	970	960	50	17	228	115	311	370	336	350	200	148	381

Standard Ventilation Schedule

Application icons :



WHEN YOU SELECT THE MODEL AND NUMBER OF VENTILATING FAN, THE REQUIRED AIR VOLUME IS CONSIDERED.

No. of ventilating fan =	Room size (m) x Necessary frequency of ventilation per hour (n)	
	Air volume of ventilating CMH* *CMH=(m ³ /h)	
Type of building and room		Necessary frequency of ventilation per hour (n)
COMPANY	Office	6
	Conference Room	12
FACTORY	Office	6
	Painting Room	20
SCHOOL	Laboratory, Auditorium, Classroom	6
	Teaching room	15
	Gymnasium	8
	Toilet	12
HOSPITAL	Waiting room	10
	Clinic, Ward	6
	Operating room	15
HOUSE	Kitchen	15
	Bathroom, Toilet	10
	Living room, Bedroom	6
PHOTO STUDIO	Darkroom	10
RESTAURANT/BAR	Restaurant	6
	Kitchen	20
HOTEL	Dinning hall	8
	Hallway	5
	Kitchen	15
	Toilet	5
	Laundry	15

Specification and standard

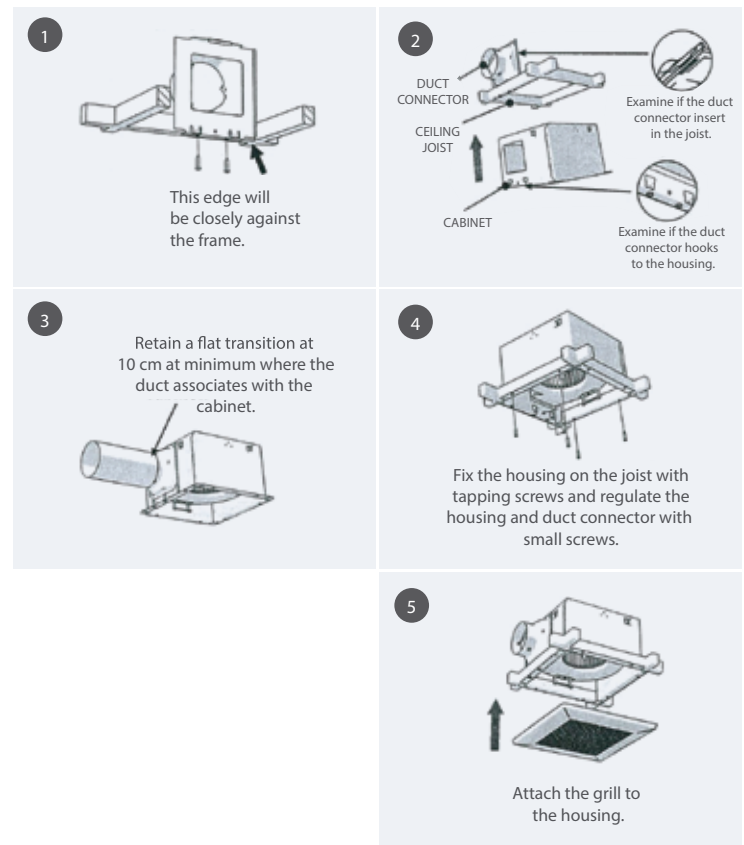
- Silence and complete with thermal fuse to cut electric off when motor has high temperature high efficiency impeller.
- The diameter of the rotor is large. The amount of high winds and around slowly to silence.
- Mask made form ABS plastic is a beautiful
- Casing mad form steel with anticorrosive
- Ball bearing for smoother and durable operation and long life
- Warranty 3 years

Usability and Specification of Wolter Fans

- Papidly decreasing remove smell
- Heat transfer , exhaust hot air and bring in fresh air
- Remove dust , blow out and small flying particles indoor
- Absorbing moisture and balancing the humidity
- Increasing oxygen , remove smell and tobacco , make you feel more comfortable

INSTALLATION

1. Install the duct connector in the ceiling joist with the screws like what the illustration shows.
2. Install the housing in the ceiling joist and connect the housing with the duct connector.
3. Position the housing in the joist with tapping screws. Fix it and duct connector with small screws.
4. Connect the duct with the duct connector and tighten with adhesive tape. Hang suspension duct to avoid external pressure.
5. Attach the grill with the housing.
6. wire the fan and install the multi-pole switch to regulate the fan.



Wall Mount Types

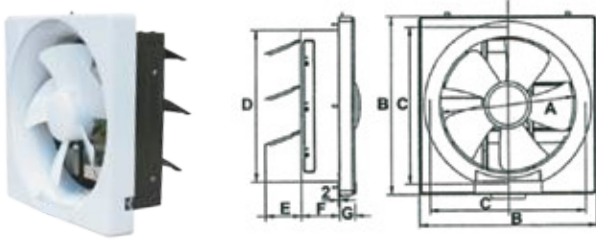
Model : WMS / WMS (c) with louver

- Modern design
- High Efficiency Blade size 150-300 mm
- casing made from High grade PP
- Automatic shutter louver series
- Luxury Louver (WMS C with Louver)
- completed with thermal fuse to cut electric off when motor has High temperature
- Air volume = 270 - 1,110 m³/h (159-653 cfm)



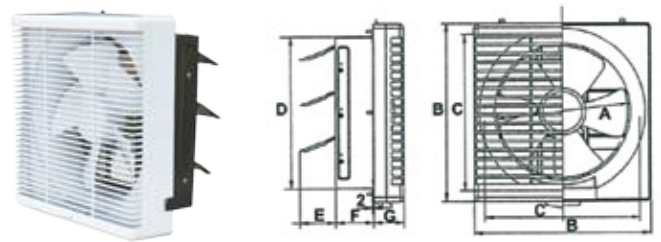
WMS

Dimension



WMS (c) with louver

Dimension



Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise@1m dB(A)	Dimension (mm)						
							A	B	C	D	E	F	G
WMS-15B	150	1/220/50	18	1520	270	38	150	244	210	193	66	78	30
WMS-15B(C)													63
WMS-20B	200	1/220/50	22	1150	492	41	200	294	260	243	84	67	30
WMS-20B(C)													62
WMS-25B	250	1/220/50	30	1200	750	43	250	344	310	293	68	75	30
WMS-25B(C)													59
WMS-30B	300	1/220/50	35	1120	1110	49	300	401	360	343	82	82	32
WMS-30B(C)													60

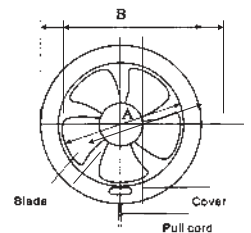
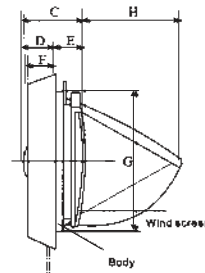
Window Mount Types

Model : WMR

- Modern design
- High Efficiency Blade size 150 – 200 mm
- casing made from High grade PP
- Cord-operated shutter series
- Completed with thermal fuse to cut electric off when motor has High temperature
- Air volume 192-276 m³/h , (113-162 cfm)

WMR

Dimension



Model	Impeller (Ømm)	Voltage (Ph/V/Hz)	Power (watt)	Speed (rpm)	Volume (m ³ /h)	Noise@1m dB(A)	Dimension (mm)							
							A	B	C	D	E	F	G	H
WMR-15C	150	1/220/50	19	1980	258	45	150	208	85	44	41	40	177	130
WMR-20C	200	1/220/50	23	1920	384	49	200	272	100	44	48	43	238	180



Spring Isolators FSD

Versions

SNA The spring is assembled between a top and a bottom load plate with in mould locking-nut. The load plate is manufactured from highly durable and rigid glass-reinforced nylon

Both upper and lower load plate can easily be installed and are interchangeable. They either have a mould-in central locking nut or two bolting holes for attachment to the supporting structure.

Corrosion protection: Springs are nickel-plated with an epoxy colour code for easy identification.

Resonance frequency: approx. 3,5 Hz \pm 210 min⁻¹

SD steel spring vibration isolators consist of two spring elements with M10 internal thread and a cylindrical screw spring designed according to DIN EN10270-1: 2001.

Height adjustment is done via a threaded rod M10 with three nuts and three locking washers for level adjustment and weight distribution.

Corrosion protection: optional, either galvanised or cathodolysis coated.

Resonance frequency: approx. 3 Hz \pm 180 min⁻¹

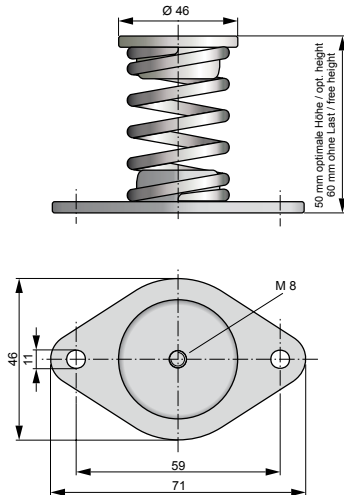
Advantages

Construction height, diameter and connection thread are identical for all types, which guarantees exchangeability.

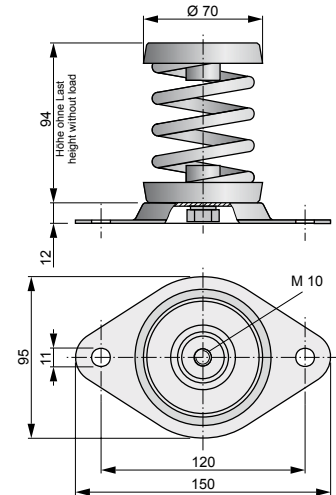
As a result of the open construction, the source is connected to the foundation point only via the spring. The spring element can oscillate in the horizontal plane without restriction.

The spring is clearly visible, which allows checking of its condition without dismantling. The distance between spring coils is visible under load

SNA



SD




Version	Type	Art. Nr	pieces/set	Farbe colour code	Last load [N]	deflection [mm]	spring constant [N/mm]	spring dia. [mm]	spring ht. [mm]
SNA	FSD15-28			Brown	110 - 280	10~25	11,1	45	60
	FSDA 3		1	Orange	160 - 410	10~25	16,2	45	60
	FSDA 3/1		4						
	FSDA 4		1	Beige	280 - 710	10~25	28,2	45	60
	FSDA 4/1		4						
FSDA 4/2		6							
SD	FSD 4	210201	1		475 - 1200	15~38	31,64	70	94
	FSD 4/1	210200	4						
	FSD 4/2	210250	6						
	FSD 5	210301	1		720 - 1700	15~35	48,07	70	94
	FSD 5/1	210300	4						
	FSD 5/2	210350	6						
	FSD 6	210302	1		1130 - 2700	15-36	75,56	70	94
	FSD 6/1	210550	4						
	FSD 6/2	210400	6						
	FSD 7	210303	1		1810 - 3800	15-31	121,03	70	94
FSD 7/1	210500	4							
FSD 7/2	210450	6							

We move **air.**

Your requirements - our fans:
individual solutions.



Technology from 



WOLTER VENTILATION INDUSTRIAL FAN