



Chemical Resistant Plastic Fans

Direct Drive

JCH 11.5

Your expert partner for ventilation and air-conditioning.

» **New:**
Inducing Fans

» **New:**
Fume Jet

» **New:**
Turbo Pressure Chemical Resistant Centrifugal Fans

» Chemco Fans

» Mix-Flow Fans

» Axial Flow Fans for Smoke Extract 400°C/2h

» Centrifugal Fans

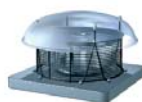
» Tube Fans

» Duct Fans

» Roof Fans

» Air-extract Boxes

» Car-Park Jet Fans



Chemco – Your Expert Partner

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CHEMCO = chemical resistant plastic fan

Role

Chemco has played a leading role in the manufacture of equipment made from anti-corrosive and chemical resistant plastics. Chemco fans are specially designed for high efficiency and reliability and have a superior corrosion resistance quality. They are also developed to give trouble-free service, and are economical in use.

Quality

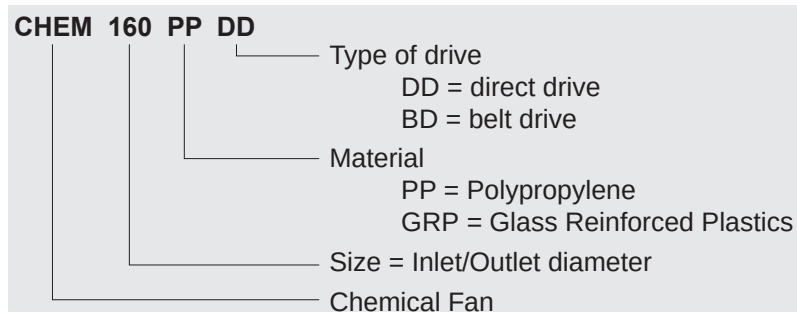
Chemco supply a complete range of highly quality and efficient radial tip backward curve fans, which offer an excellent performance with a low noise level. All fans drives and accessories are produced to strict quality standards. Only the best quality materials are used and all fans are tested and rated in accordance with DIN 24163 and ISO 5801.

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.

Fan Type Code



Chemical Resistant Plastic Centrifugal 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 fan sizes, model **CHEM 75 - 315** are completely plastic injection moulded and suitable for dual rotation at any position. The plastic injection moulded backplate or inlet cover can be easily removed for changing of rotation, and for maintenance purposes. The **CHEM 125 - 200** fan casing with outlet flange is fitted with a chemical resistant seal to prevent air leakage. The **CHEM 75 - 110 & CHEM 250 - 315** casings have circular plain outlet spigots suitable for direct connection to similar sized duct via flexible connection sleeve. Standard casing material is Polypropylene (PP).

The **CHEM 400** casing is of GRP construction. The GRP fan casing has circular plain inlet/outlet spigots suitable for direct connection with flexible connector to similar sized duct.

Radial Tip Backward Curve Impellers

Chemco fan impellers are a Single Inlet Single Width (SISW) type. Impellers are of precision plastic injection moulded design with cast-in metal hub and mechanically welded to highest quality standard with excellent aerodynamic properties.

Standard impellers are of PP however, depending on the type of applications, impellers can be made of PE, PC, PVC or PVDF. Impellers can also be supplied in a thermoplastic material blended with composites to ensure reliable perform in situations such as 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. The hubs are designed for use with taper-bushes and are made of high-grade cast metal to guarantee reliability at high peripheral speeds.

Fan Base and Support

Fan support stands are precision manufactured from heavy gauge steel. Corrosion prevention is achieved by zinc plating and powder coating as standard but galvanising and stainless steel options are also available. The design of the support stand allows rotation of the fan casing to achieve different discharge directions.

Motor

All motors are Totally Enclosed and Fan Cooled. Standard protection rating is IP55 but can be upgraded to IP56, IP66 or IP68 in stainless steel, upon request. The motors are single/three phase, 50/60 Hz suitable for 240/415 volts.

Electrical Switchgear

Chem 75 - 110 single-phase fans are supplied with 1m electrical cable.

Chem 125 - 400 fans are supplied with wiring to an integral weatherproof isolator.

Explosion Proof

Explosion proof motors can be supplied upon request.

Standard Colour

All PP - Equivalent to PANTONE Warm Grey 1C,

All GRP - Equivalent to PANTONE 430

Identification

All fans are labelled with nameplate securely attached showing the model number, serial number, drive duty, direction of rotation and date of manufacture.

Accessories

- Anti-vibration rubber or spring mounts
- Condensate water drain nipple (standard 25dia on Chem 125 - 400)
- Shower-proof motor cover
- Inlet/Outlet flexible connection sleeves, flanges and duct connection options
- Adjustable-pitch roof brackets and mounting options
- Speed control phase inverters

Optional (minimum quantities may apply)

- Full range of colours
- Flame Retardant construction
- Construction suitable for High Temperature
- Anti-static casings and impellers
- Ultra Violet protection
- Frequency Inverter Speed Controller

Thermal and Chemical Resistance

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

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

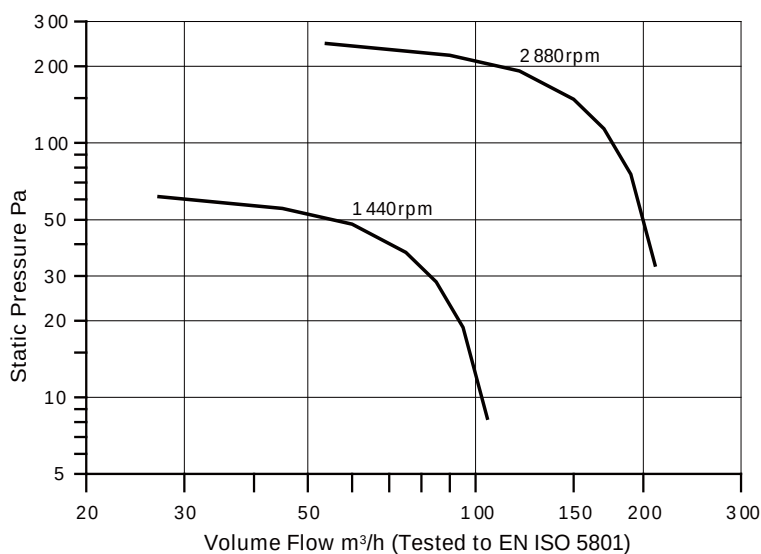
Please contact our sales engineers for chemical resistance information.

Drive Arrangement

Chemco fans are supplied in Direct Drive arrangement.

Belt Drive arrangements are available upon request.

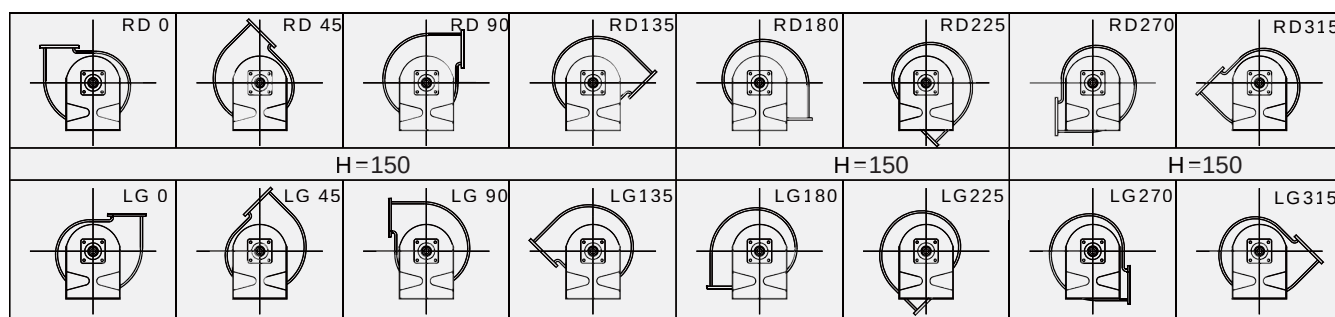
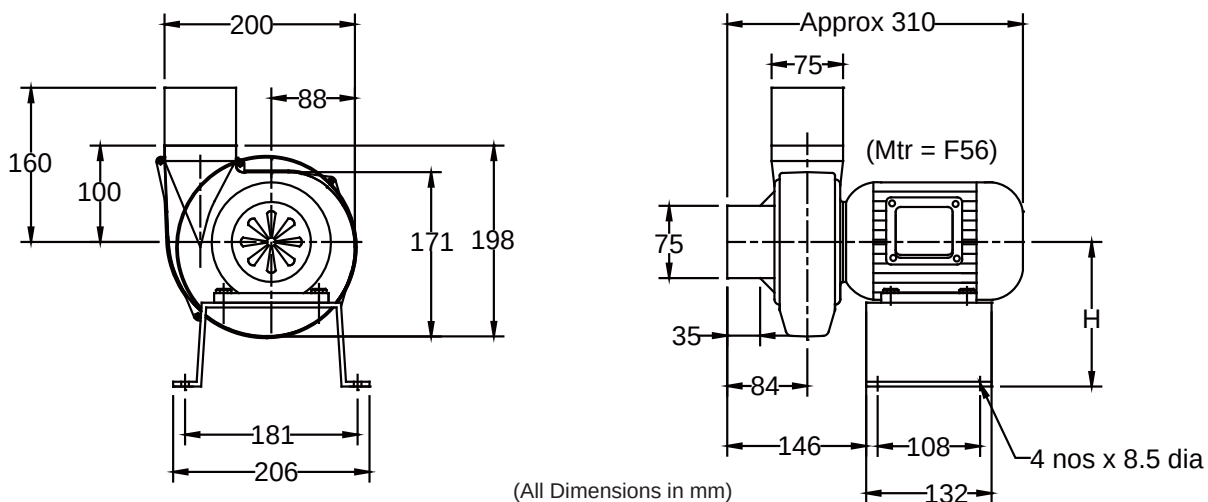
CHEM 75R



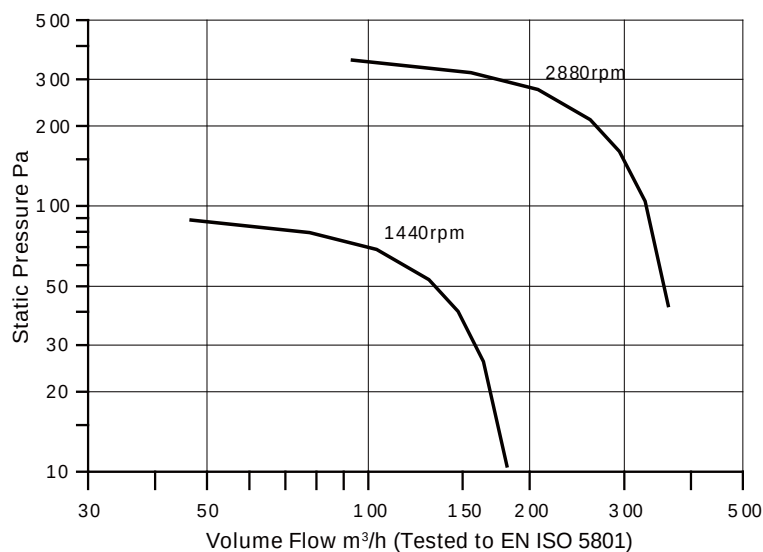
Performance Data

CHEM 75R		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.05	0.05	0.11	0.11
Ia	A	0.4	0.1	1.2	0.3
$\dot{V}_{max}$	m³/h	105	105	210	210
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	34	34	48	48
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1
)	kg	5.2	5.2	5.2	5.2

Dimensional Data



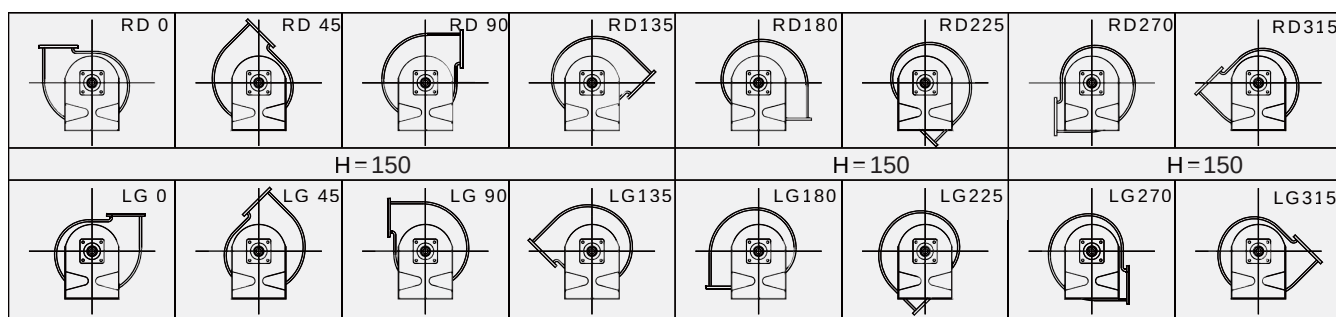
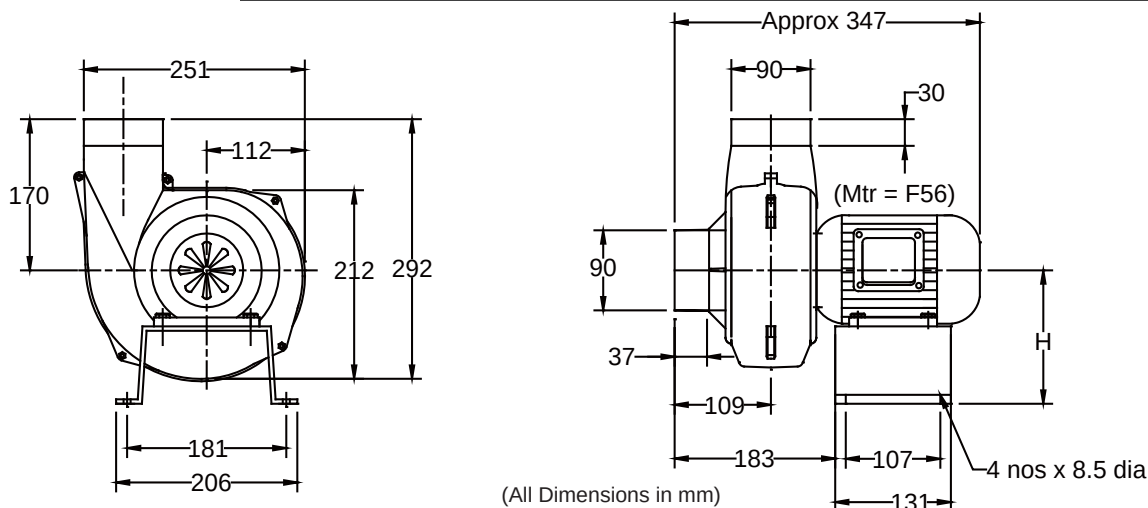
CHEM 90R



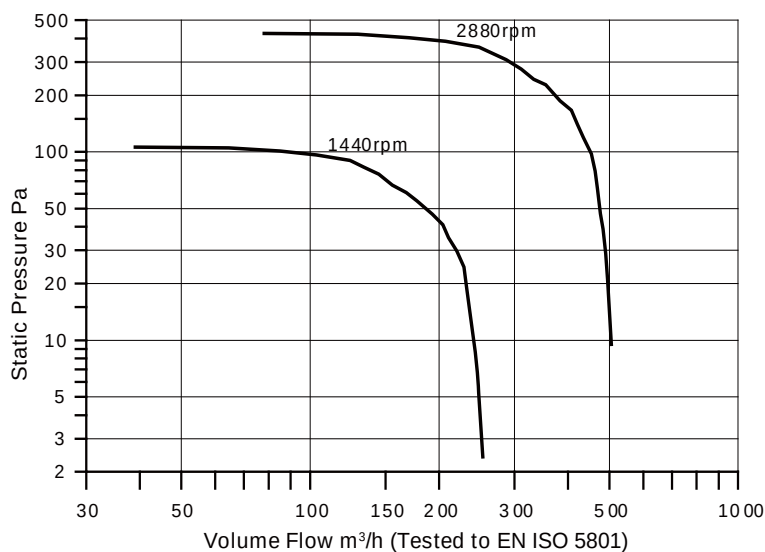
Performance Data

CHEM 90R		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.05	0.05	0.11	0.11
I _a	A	0.4	0.1	1.2	0.3
$\dot{V}_{max}$	m ³ /h	181	181	363	363
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	37	37	51	51
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq Invertor (page II)	-	-	F1S/F1	-	F1S/F1
)	kg	5.4	5.4	5.4	5.4

Dimensional Data



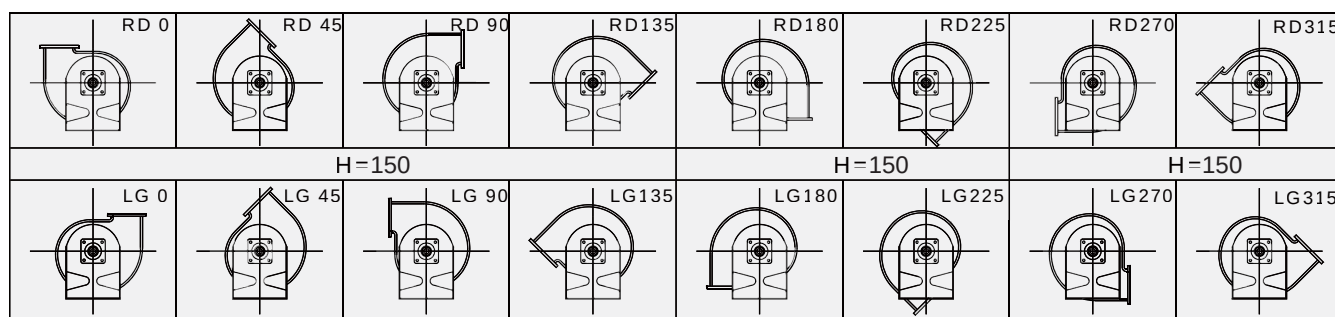
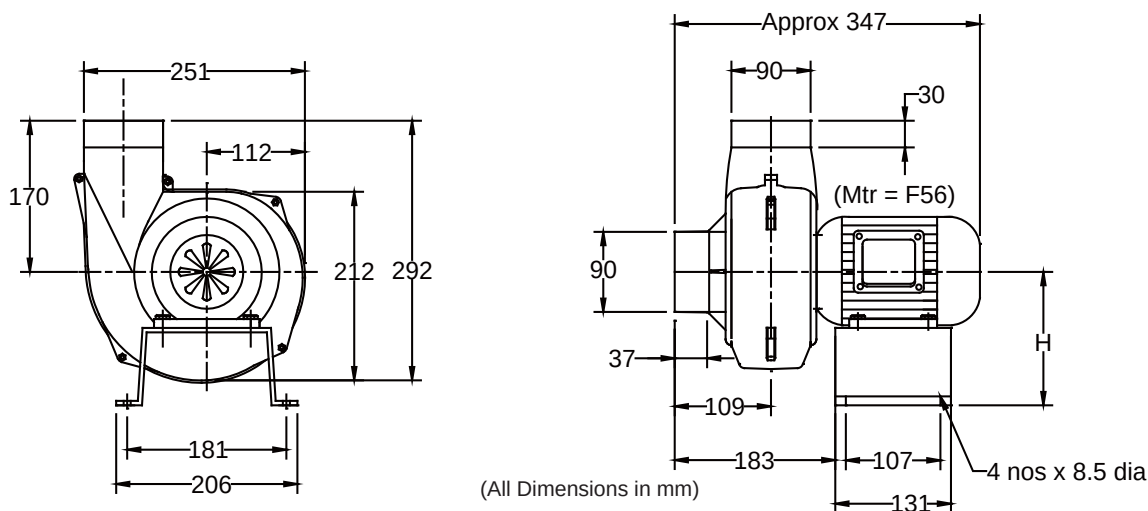
CHEM 90FC



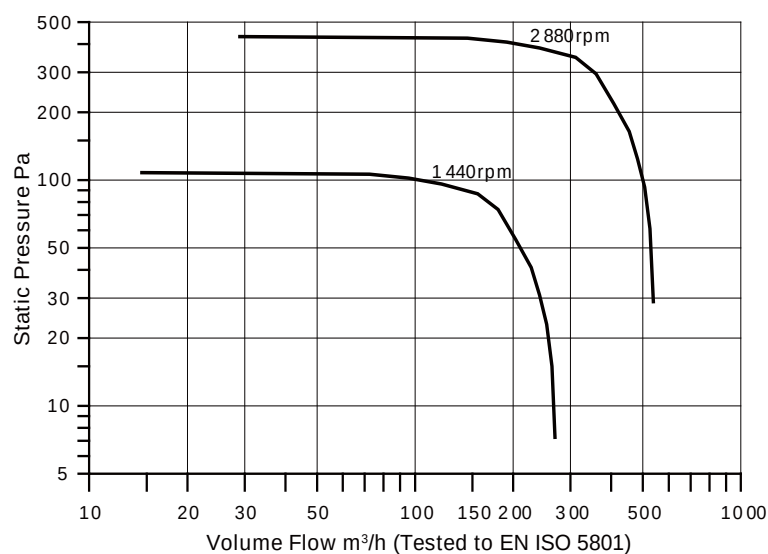
Performance Data

CHEM 90FC		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.05	0.05	0.11	0.11
Ia	A	0.4	0.1	1.2	0.3
$\dot{V}_{max}$	m³/h	256	256	511	511
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	37	37	51	51
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1
)	kg	5.4	5.4	5.4	5.4

Dimensional Data



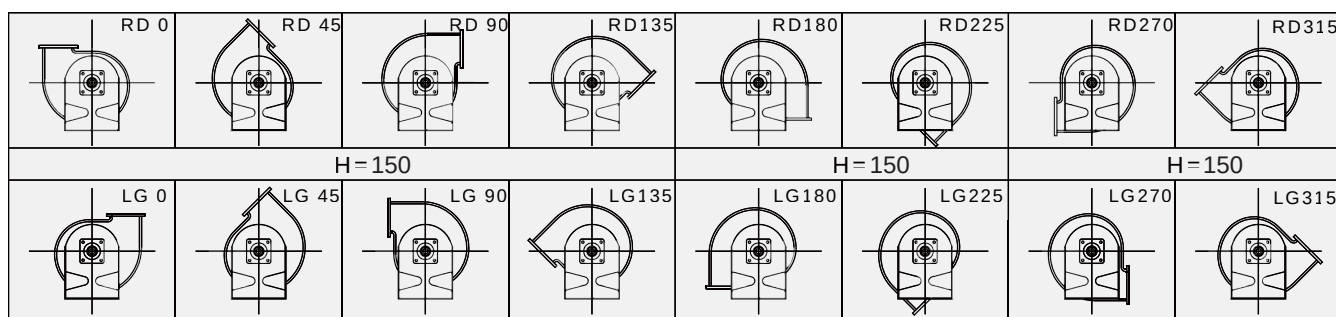
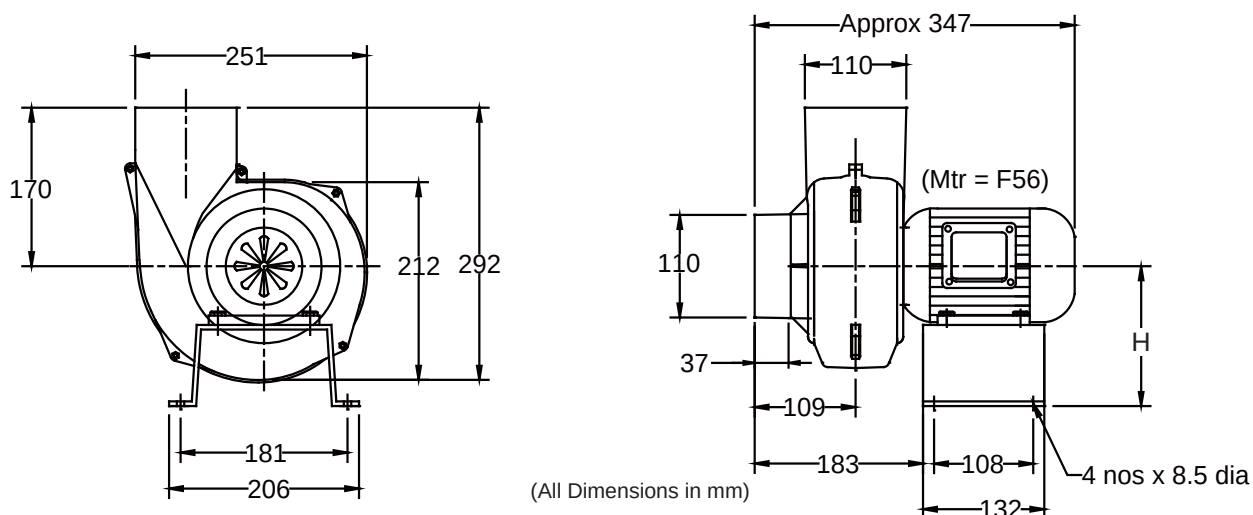
CHEM 110FC



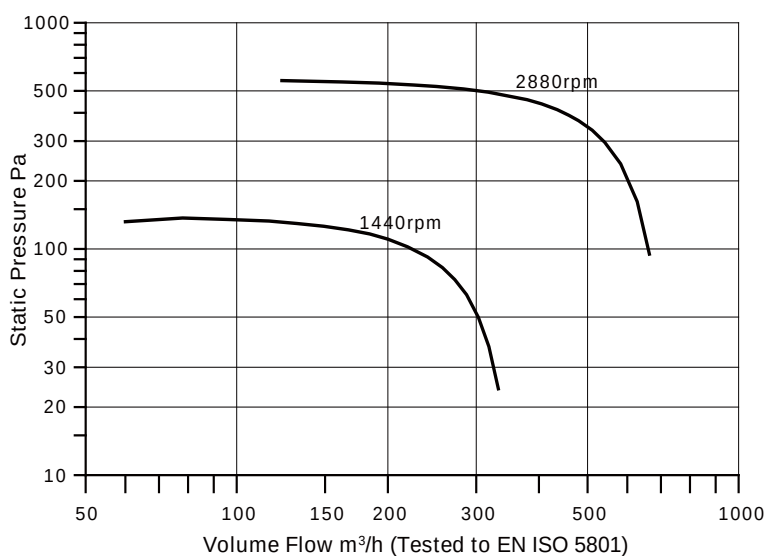
Performance Data

CHEM 110FC		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.05	0.05	0.11	0.11
Ia	A	0.4	0.1	1.2	0.3
$\dot{V}_{max}$	m³/h	279	279	558	558
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	43	43	57	57
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq Invertor (page II)	-	-	F1S/F1	-	F1S/F1
)	kg	5.6	5.6	5.6	5.6

Dimensional Data



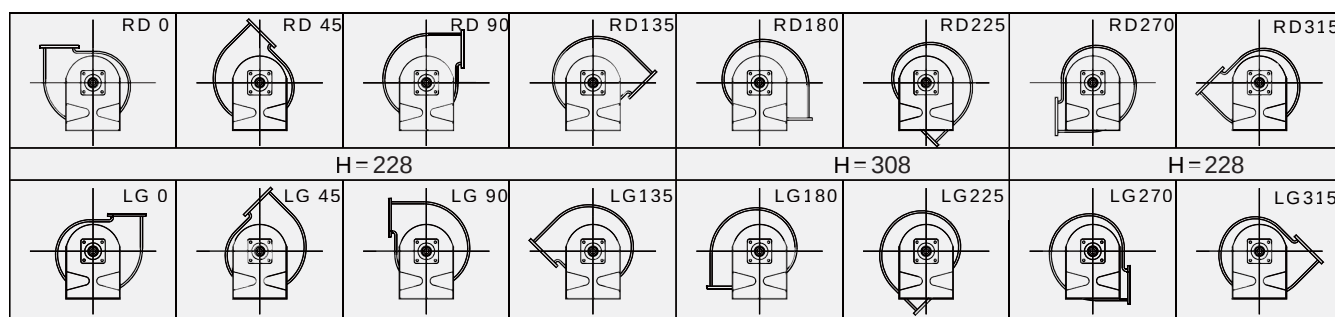
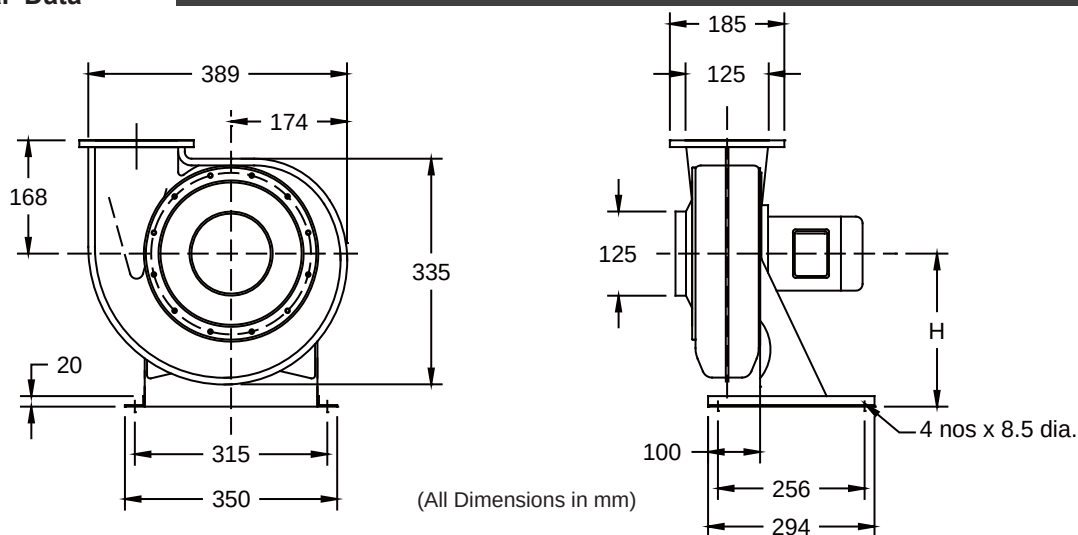
CHEM 125



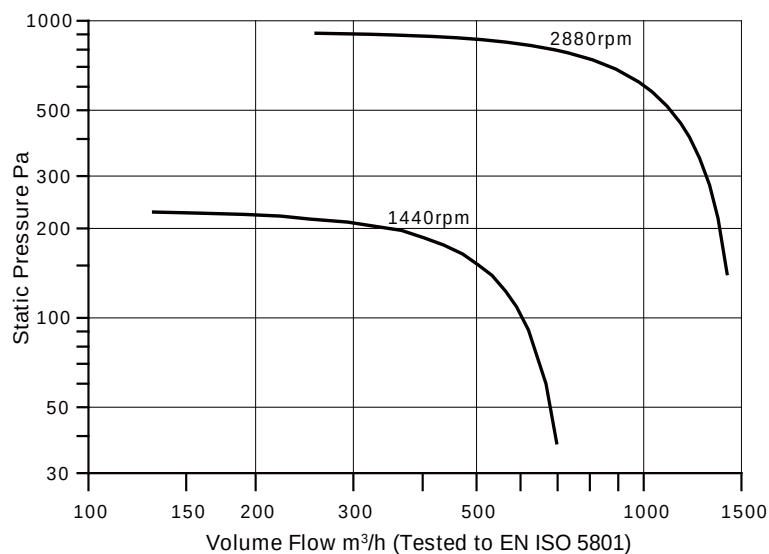
Performance Data

CHEM 125		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.25	0.25	0.37	0.37
Ia	A	2.4	0.64	3.6	0.88
$\dot{V}_{max}$	m³/h	333	333	664	664
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	44	44	58	58
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1
)	kg	18	18	18	18

Dimensional Data



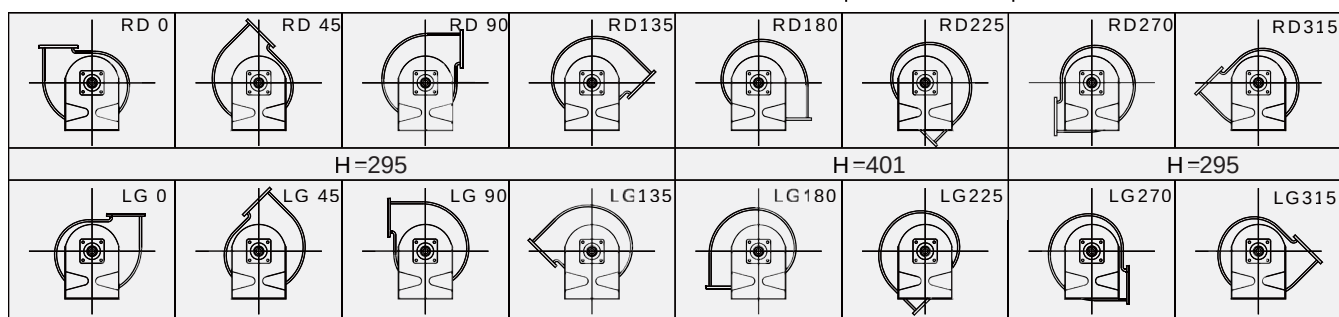
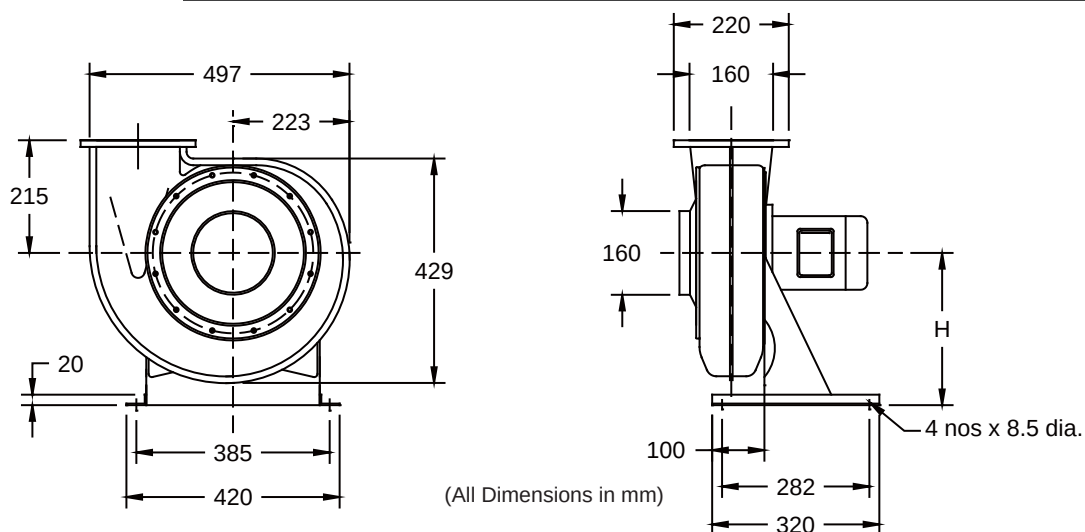
CHEM 160



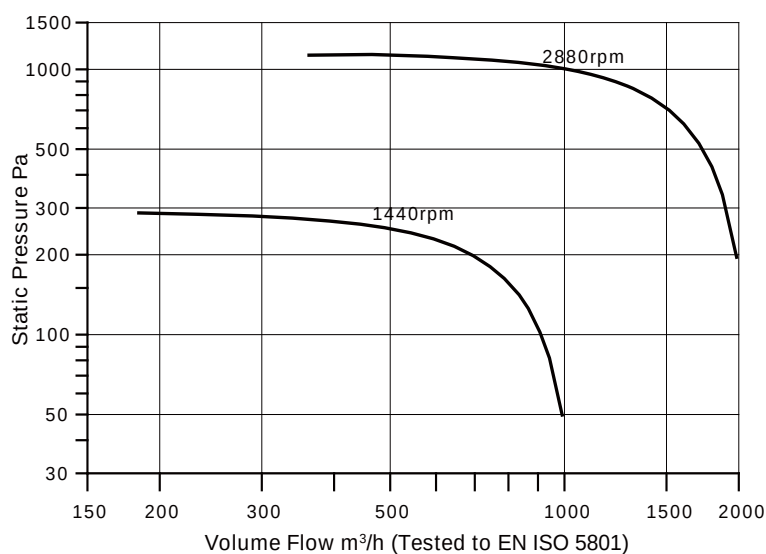
Performance Data

CHEM 160		1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400
f	Hz	50	50	50	50
Phase	~	1	3	1	3
P	kW	0.25	0.25	0.55	0.55
Ia	A	1.6	0.64	4.5	1.4
$\dot{V}_{max}$	m³/h	696	696	1413	1413
n	min ⁻¹	1440	1440	2880	2880
L _w	dB(A)	49	49	60	60
4	Enclosure	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1
)	kg	32	32	32	32

Dimensional Data



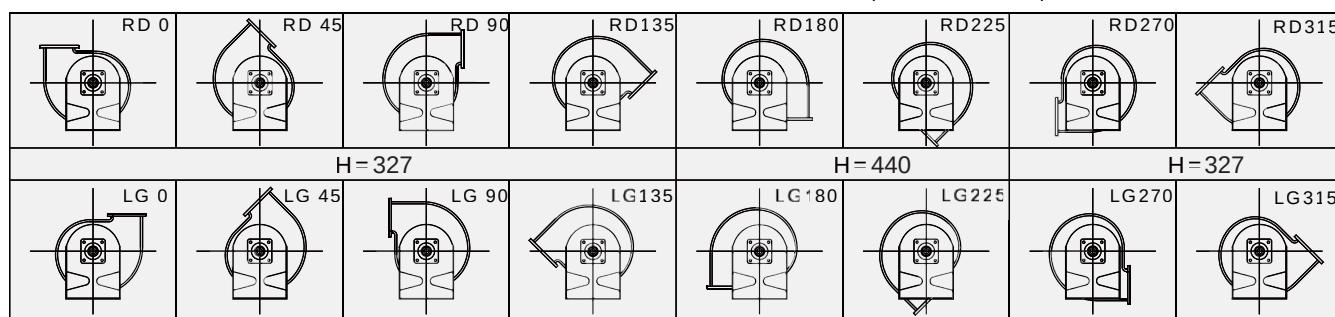
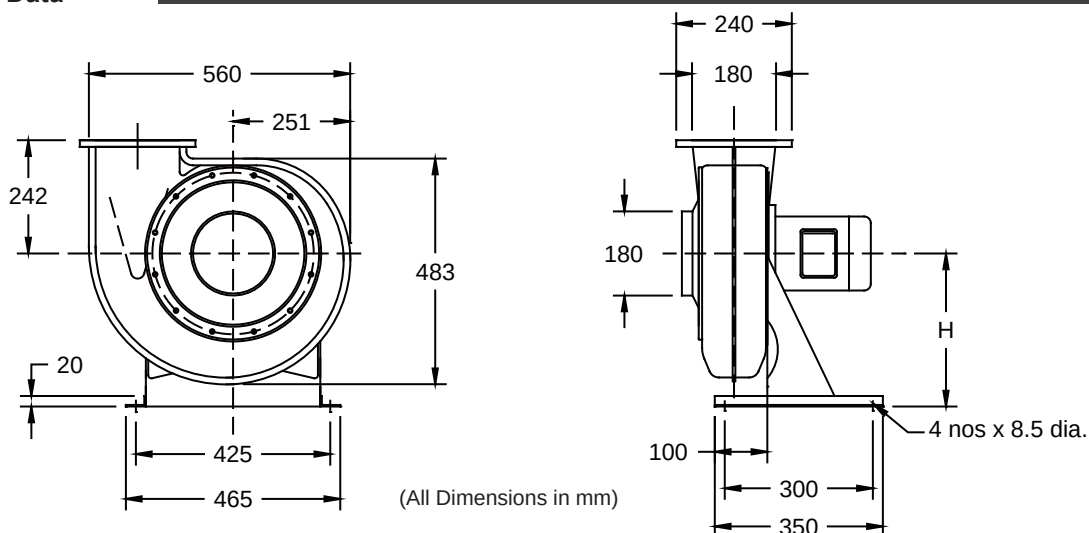
CHEM 180



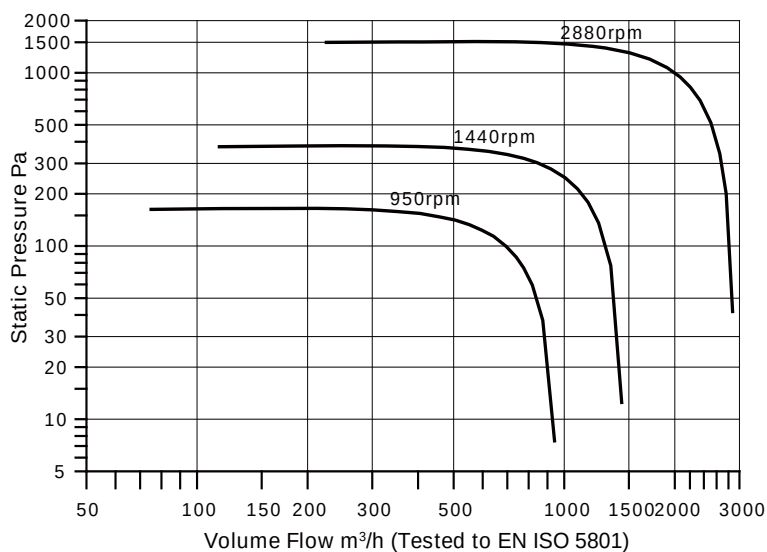
Performance Data

CHEM 180		950rpm	950rpm	1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400	230	400
f	Hz	50	50	50	50	50	50
Phase	~	1	3	1	3	1	3
P	kW	0.25	0.25	0.25	0.25	1.1	1.1
Ia	A	2.6	0.73	2.4	0.64	9.5	2.46
$\dot{V}_{max}$	m³/h	650	650	991	991	1983	1983
n	min ⁻¹	950	950	1440	1440	2880	2880
L _w	dB(A)	43	43	52	52	63	63
4	Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1	-	F2S/F2
)	kg	33	33	33	33	38	38

Dimensional Data



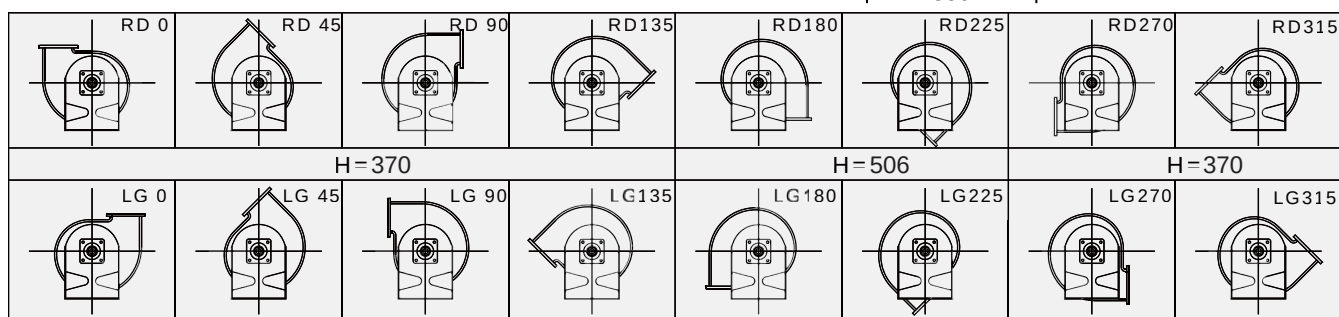
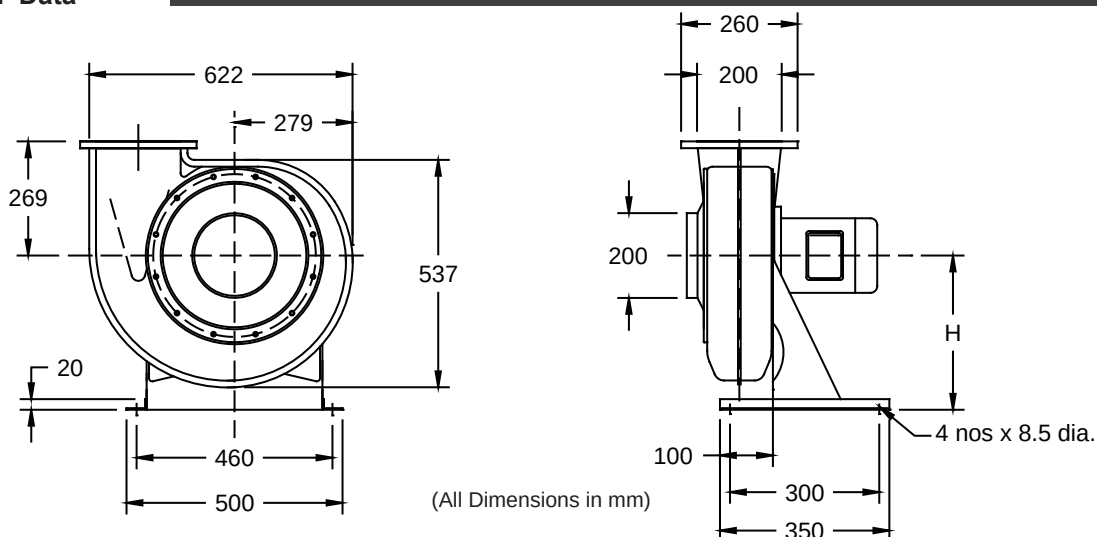
CHEM 200



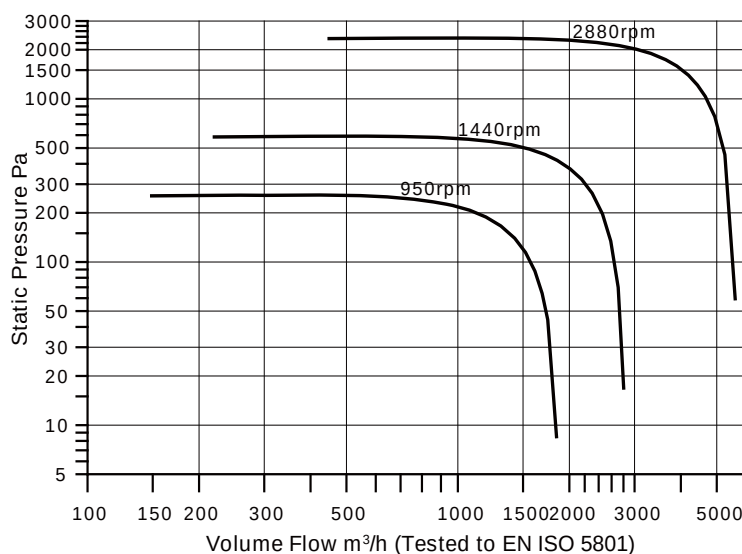
Performance Data

CHEM 200		950rpm	950rpm	1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400	230	400
f	Hz	50	50	50	50	50	50
Phase	~	1	3	1	3	1	3
P	kW	0.25	0.25	0.37	0.37	1.5	1.5
Ia	A	2.6	1.27	3.2	1.21	11	3.18
$\dot{V}_{max}$	m³/h	950	950	1438	1438	2870	2870
n	min⁻¹	950	950	1440	1440	2880	2880
L _w	dB(A)	44	44	53	53	70	70
4	Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Freq Invertor (page II)	-	-	F1S/F1	-	F1S/F1	-	F2S/F2
)	kg	34	34	34	34	43	43

Dimensional Data



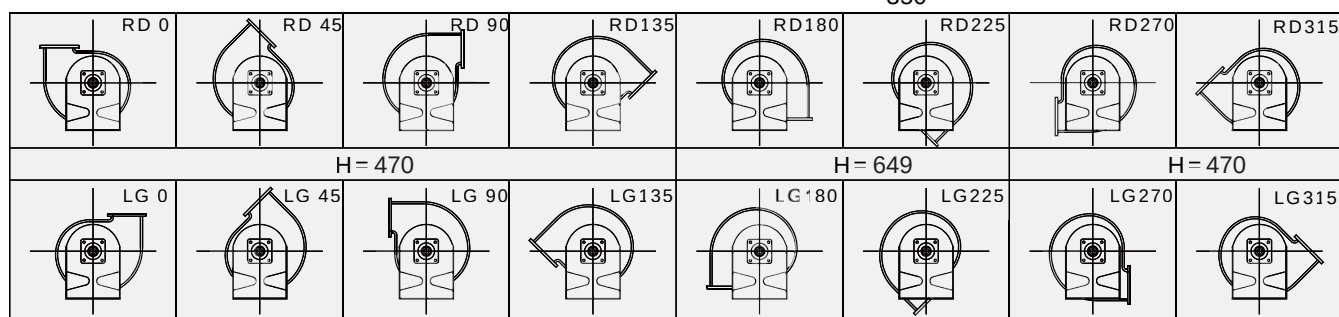
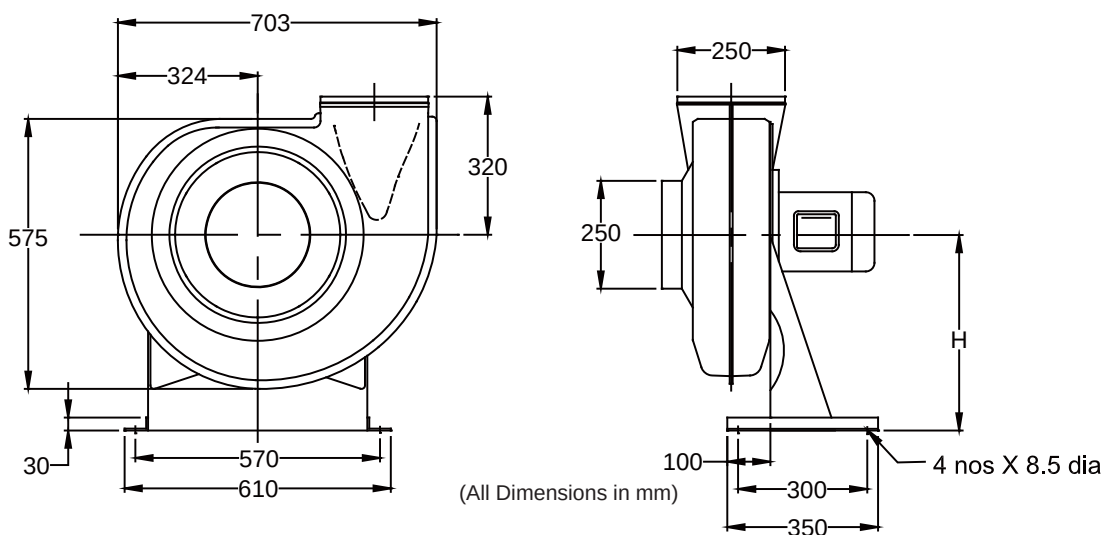
CHEM 250

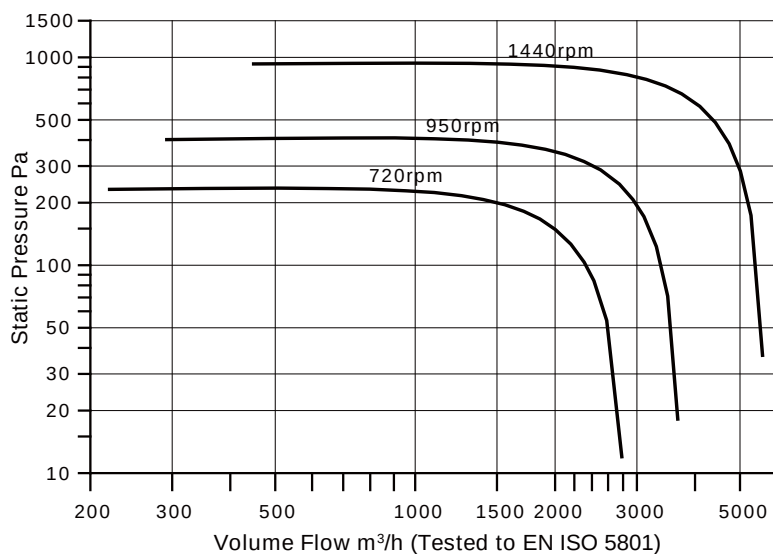


Performance Data

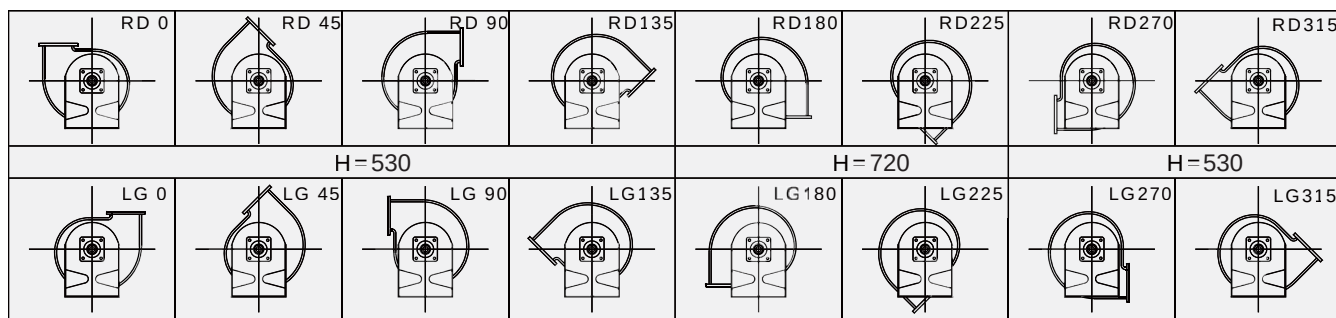
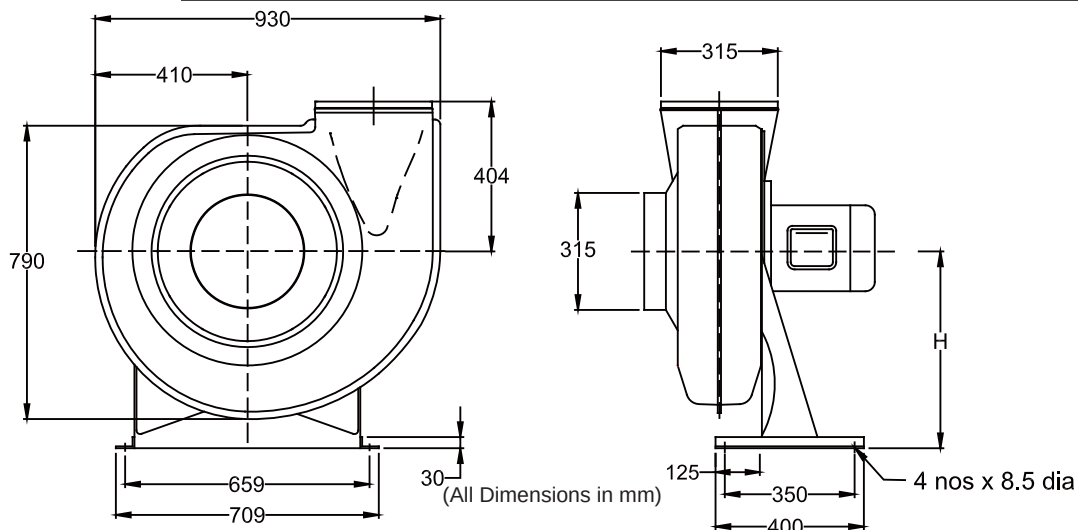
CHEM 250		950rpm	950rpm	1440rpm	1440rpm	2880rpm	2880rpm
U	V	230	400	230	400	400	400
f	Hz	50	50	50	50	50	50
Phase	~	1	3	1	3	3	3
P	kW	0.37	0.37	0.75	0.75	4.0	5.5
Ia	A	3.5	1.27	5.6	1.99	7.36	11.1
$\dot{V}_{max}$	m³/h	1849	1849	2804	2804	3930	5609
n	min ⁻¹	950	950	1440	1440	2880	2880
L _w	dB(A)	50	50	62	62	73	73
4	Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	-	F1S/F1	-	F1S/F1	F4	F5
)	kg	38	38	38	38	50	58

Dimensional Data

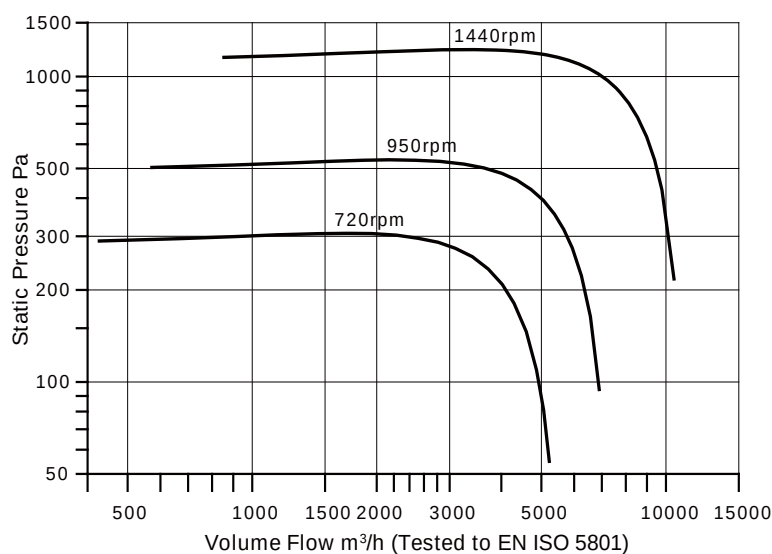


CHEM 315

Performance Data

CHEM 315		720rpm	950rpm	950rpm	1440rpm	1440rpm	1440rpm	1440rpm
U	V	400	230	400	230	400	230	400
f	Hz	50	50	50	50	50	50	50
Phase	~	3	1	3	1	3	1	3
P	kW	0.37	0.75	0.75	1.5	1.5	2.2	2.2
Ia	A	1.42	6	2.16	10.5	3.66	14.5	5.08
$\dot{V}_{max}$	m³/h	2804	3699	3699	4000	4000	5609	5609
n	min⁻¹	720	950	950	1440	1440	1440	1440
L _w	dB(A)	52	58	58	67	67	67	67
4	Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	F1S/F1	-	F1S/F1	-	F2S/F2	-	F3S/F3
)	kg	61	61	61	66	66	78	78

Dimensional Data


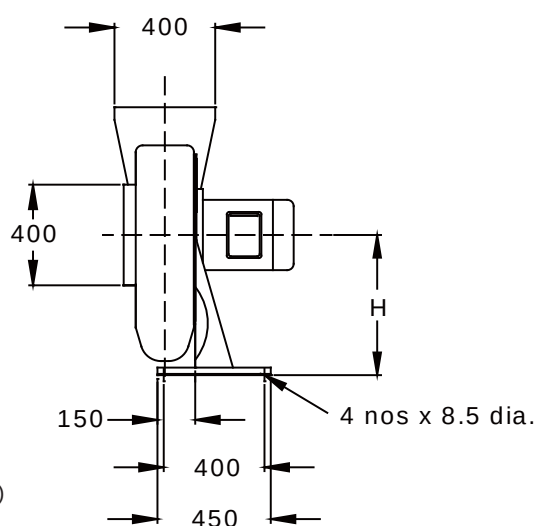
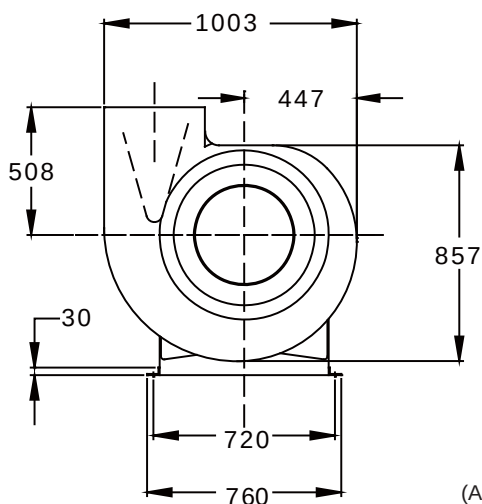
CHEM 400



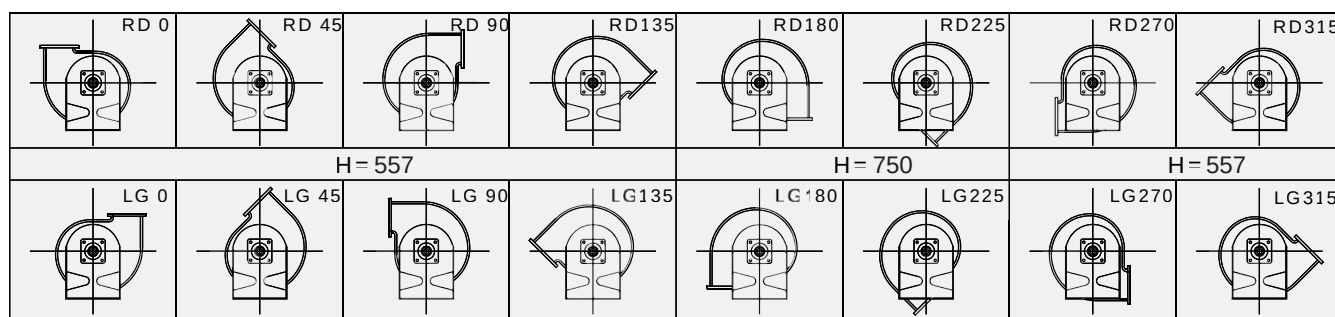
Performance Data

CHEM 400		720rpm	950rpm	950rpm	950rpm	950rpm	950rpm	1440rpm	1440rpm	1440rpm
U	V	400	230	400	230	400	400	400	400	400
f	Hz	50	50	50	50	50	50	50	50	50
Phase	~	3	1	3	1	3	3	3	3	3
P	kW	0.75	1.1	1.1	1.5	1.5	2.2	4.0	5.5	7.5
I _a	A	2.53	7.2	3.31	10	4	5.53	8.03	12	15.2
$\dot{V}_{max}$	m³/h	5225	3400	3400	5520	5520	6900	4972	9215	10450
n	min ⁻¹	720	950	950	950	950	950	1440	1440	1440
L _w	dB(A)	61	67	67	67	67	67	73	73	73
4	Enclosure	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC	TEFC
Freq	Invertor (page II)	F1S/F1	-	F2S/F2	-	F2S/F2	F3S/F3	F4	F5	F6
)	kg	95	90	90	98	98	106	108	127	142

Dimensional Data



(All Dimensions in mm)



Fan Type Code

RF G 150

Baugröße size
150

Motorversion motor version
E = Einphasenwechselstrom . single phase AC
G = Einphasengleichstrom . . . single phase DC

Rohrventilator inline tube fan

Features and Construction

Tube fans of series RFE and RFG are axial flow fans with integrated guide fan. Both sides of the fan can be fitted to circular duct and be fixed with fast clamps.

Housing

The housing is made of injection mould black PP. The series is designed in a way that by putting on a flange on each side of the housing the actual size becomes the next smaller size.

The fans have protection class IP 44.

Motors

RFE - These fans have a single phase motor.

RFG - These fans are driven by electronically commutated DC-motors with low power consumption.

Control Unit

RFE - For simple controls a step switch is sufficient. More finetuned control can be achieved by standard controllers for single phase AC.

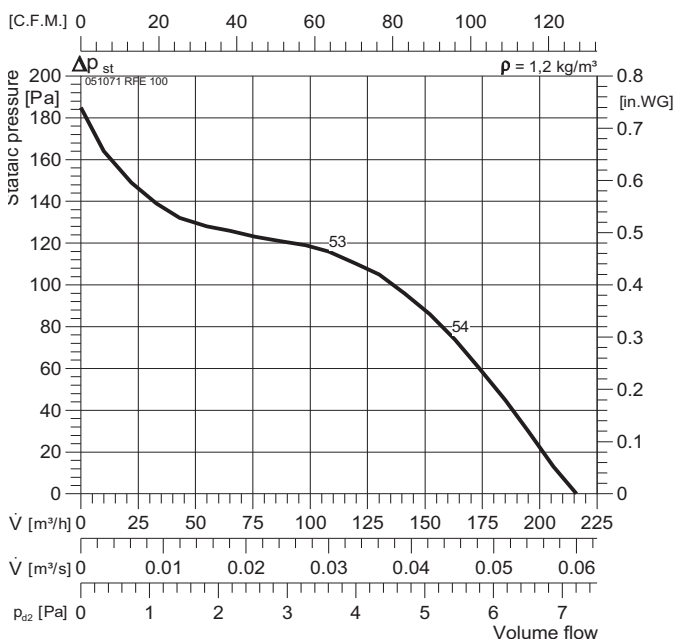
Fan Performance Curves

The performance curves in this catalogue have been established using the inlet test method in the test chamber according to DIN 24 163, mounting position B. The curves indicate the static pressure increase Δp_{st} as a function of the volume flow.

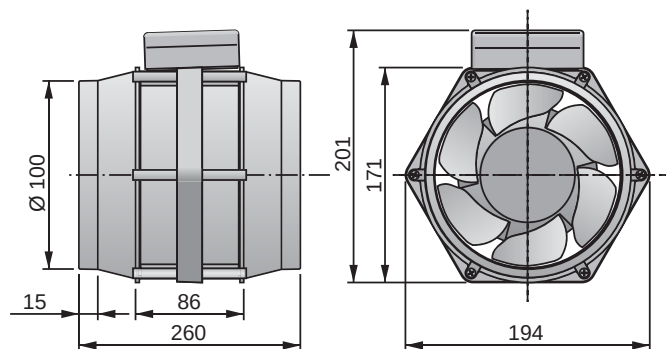
Mounting

The RF-type inline tube fans are directly mounted into circular duct, fixed by fast clamps. Due to the very low height, the RFG is ideal for use in false ceilings.

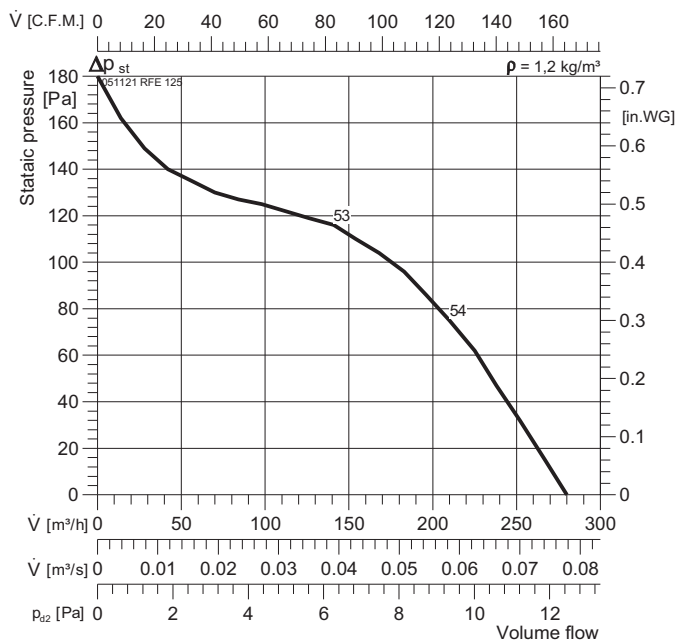
RFE 100



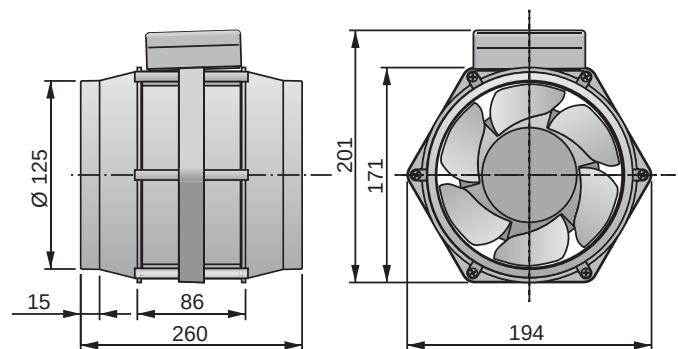
Typ : RFE 100	4 IP54	Δ dB	L_{WA2}	L_{WA5}	L_{WA6}
ArtNr : 051071	5 E18	$L_{WA \text{ tot}}$	-13	2	0
) : 1,9 kg	- GS 1	125 Hz	-21	-15	-15
U : 230 V 50 Hz	. FWG-4	250 Hz	-19	-7	-7
P ₁ : 0,035 kW	3 NE 0,5	500 Hz	-19	-3	-7
I _N : 0,15 A	* RPE 02	1 kHz	-20	-4	-5
n : 2800 min ⁻¹		2 kHz	-23	-4	-7
C _{400V} : 1 μ F		4 kHz	-27	-12	-13
t _R : 40 °C		8 kHz	-36	-20	-22



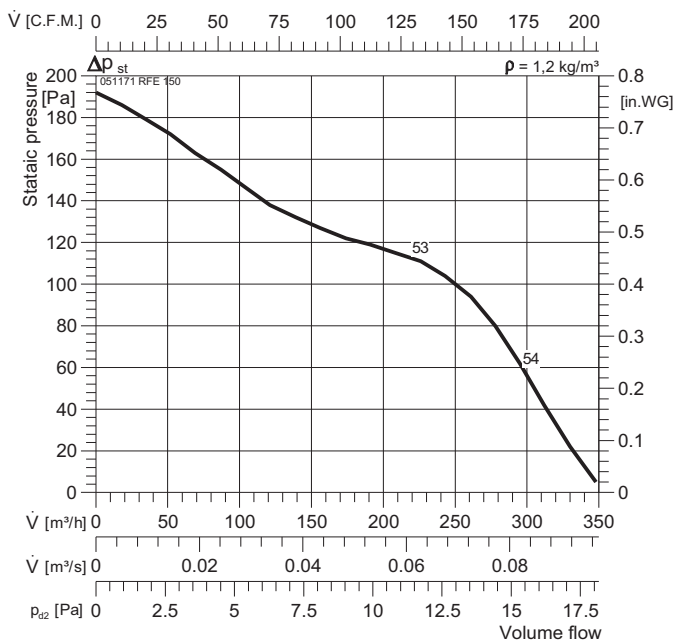
RFE 125



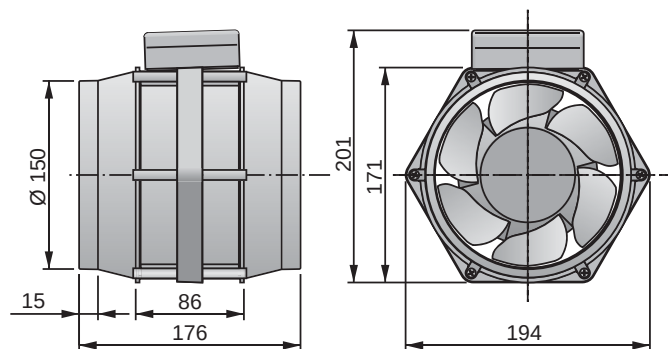
Typ : RFE 125	4	IP54	Δ dB	L_{WA2}	L_{WA5}	L_{WA6}
ArtNr : 051121	5	E18	$L_{WA \text{ tot}}$	-13	2	0
) : 1,9 kg	-	GS 1	125 Hz	-21	-15	-15
U : 230 V 50 Hz	.	FWG-4	250 Hz	-19	-7	-7
P_1 : 0,035 kW	3	NE 0,5	500 Hz	-19	-3	-7
I_N : 0,15 A	*	RPE 02	1 kHz	-20	-4	-5
n : 2800 min ⁻¹			2 kHz	-23	-4	-7
C_{400V} : 1 μ F			4 kHz	-27	-12	-13
t_R : 40 °C			8 kHz	-36	-20	-22



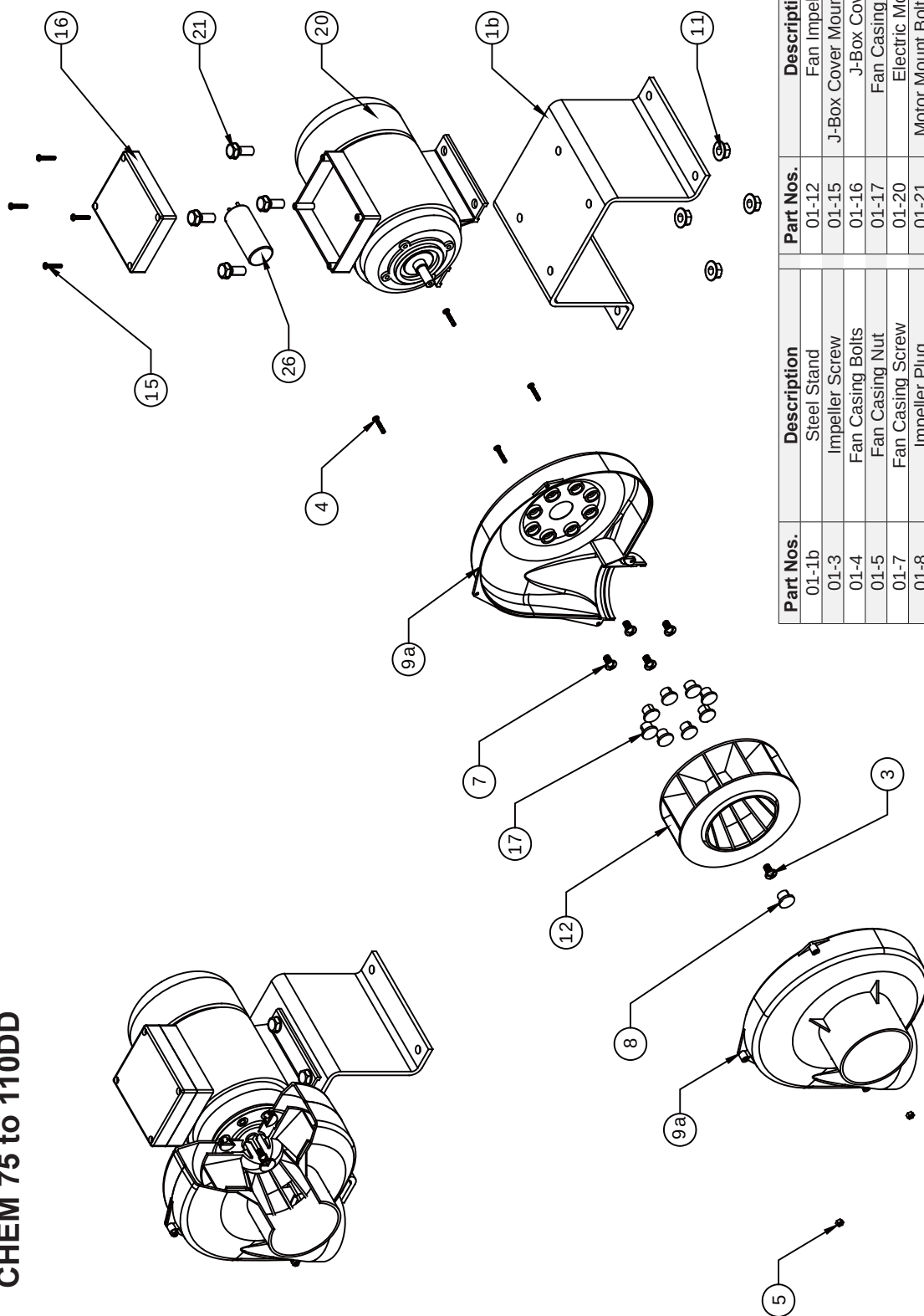
RFE 150



Typ : RFE 150	4	IP54	Δ dB	L_{WA2}	L_{WA5}	L_{WA6}
ArtNr : 051171	5	E18	$L_{WA \text{ tot}}$	-13	2	0
) : 1,9 kg	-	GS 1	125 Hz	-21	-15	-15
U : 230 V 50 Hz	.	FWG-4	250 Hz	-19	-7	-7
P_1 : 0,035 kW	3	NE 0,5	500 Hz	-19	-3	-7
I_N : 0,15 A	*	RPE 02	1 kHz	-20	-4	-5
n : 2800 min ⁻¹			2 kHz	-23	-4	-7
C_{400V} : 1 μ F			4 kHz	-27	-12	-13
t_R : 40 °C			8 kHz	-36	-20	-22

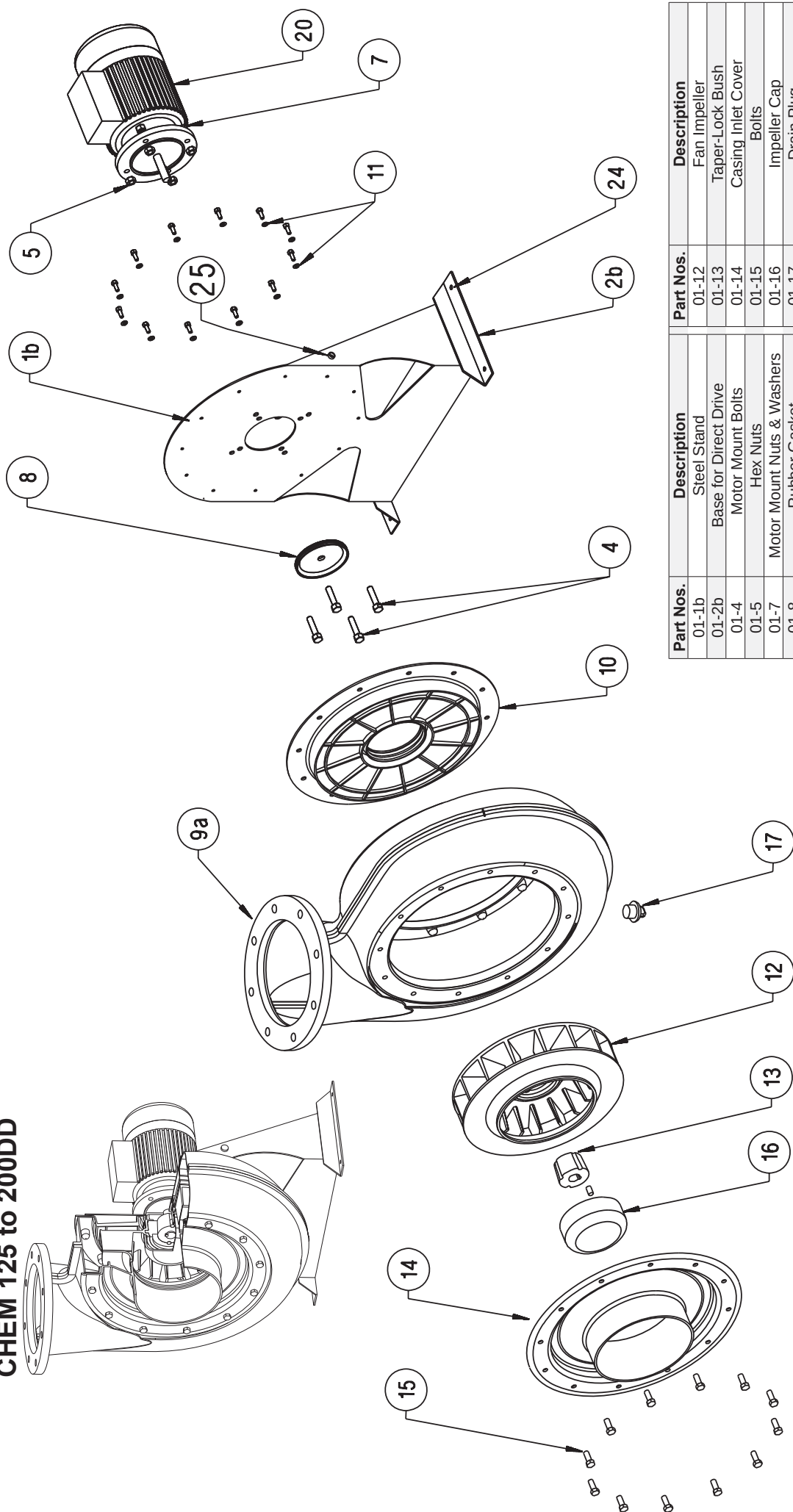


CHEM 75 to 110DD



Part Nos.	Description	Part Nos.	Description
01-1b	Steel Stand	01-12	Fan Impeller
01-3	Impeller Screw	01-15	J-Box Cover Mounting Screw
01-4	Fan Casing Bolts	01-16	J-Box Cover
01-5	Fan Casing Nut	01-17	Fan Casing Plug
01-7	Fan Casing Screw	01-20	Electric Motor
01-8	Impeller Plug	01-21	Motor Mount Bolt & Washer
01-9a	Fan Casing (PP Type)	01-26	Capacitor
01-11	Motor Mount Nut & Washer		

CHEM 125 to 200DD



Part Nos.	Description	Part Nos.	Description
01-1b	Steel Stand	01-12	Fan Impeller
01-2b	Base for Direct Drive	01-13	Taper-Lock Bush
01-4	Motor Mount Bolts	01-14	Casing Inlet Cover
01-5	Hex Nuts	01-15	Bolts
01-7	Motor Mount Nuts & Washers	01-16	Impeller Cap
01-8	Rubber Gasket	01-17	Drain Plug
01-9a	Fan Casing (PP Type)	01-20	Electric Motor
01-10	Casing Back Cover	01-24	Mounting Holes
01-11	Screws & Washers	01-25	Hoisting Holes

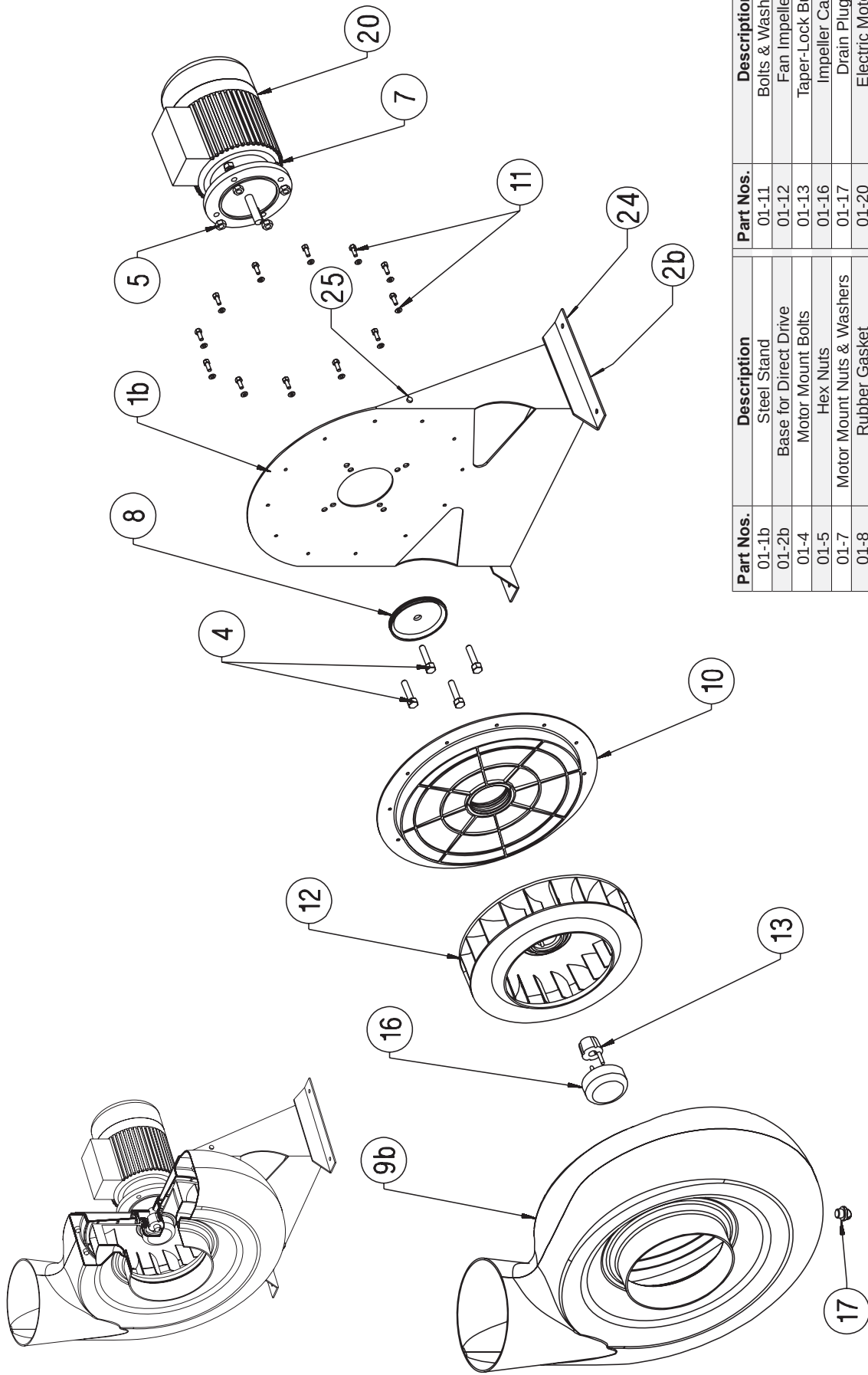
Exploded view diagram of a fan assembly. The diagram includes the following components and callouts:

- 1: Motor housing
- 1b: Motor mounting flange
- 2: Motor mounting flange (alternative view)
- 3: Motor mounting flange (alternative view)
- 4: Motor mounting flange (alternative view)
- 5: Motor mounting flange (alternative view)
- 6: Motor mounting flange (alternative view)
- 7: Motor mounting flange (alternative view)
- 8: Motor mounting flange (alternative view)
- 9a: Motor mounting flange (alternative view)
- 10: Motor mounting flange (alternative view)
- 11: Motor mounting flange (alternative view)
- 12: Motor mounting flange (alternative view)
- 13: Motor mounting flange (alternative view)
- 14: Motor mounting flange (alternative view)
- 15: Motor mounting flange (alternative view)
- 16: Motor mounting flange (alternative view)
- 17: Motor mounting flange (alternative view)
- 18: Motor mounting flange (alternative view)
- 19: Motor mounting flange (alternative view)
- 20: Motor mounting flange (alternative view)
- 21: Motor mounting flange (alternative view)
- 22: Motor mounting flange (alternative view)
- 23: Motor mounting flange (alternative view)
- 24: Motor mounting flange (alternative view)
- 25: Motor mounting flange (alternative view)

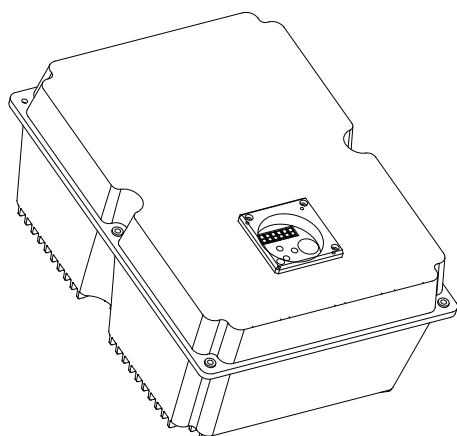
Partial assembly view at the bottom left shows the motor, fan cage, and fan blades.

Part Nos.	Description	Part Nos.	Description
01-1b	Steel Stand	01-11	Bolts & Washers
01-2b	Base for Direct Drive	01-12	Fan Impeller
01-4	Motor Mount Bolts	01-13	Taper-Lock Bush
01-5	Hex Nuts	01-16	Impeller Cap
01-7	Motor Mount Nuts & Washers	01-17	Drain Plug
01-8	Rubber Gasket	01-20	Electric Motor
01-9a	Fan Casing (PP Type)	01-24	Mounting Holes
01-10	Casing Back Cover	01-25	Hoisting Holes

CHEM 400DD



Part Nos.	Description	Part Nos.	Description
01-1b	Steel Stand	01-11	Bolts & Washers
01-2b	Base for Direct Drive	01-12	Fan Impeller
01-4	Motor Mount Bolts	01-13	Taper-Lock Bush
01-5	Hex Nuts	01-16	Impeller Cap
01-7	Motor Mount Nuts & Washers	01-17	Drain Plug
01-8	Rubber Gasket	01-20	Electric Motor
01-9b	Fan Casing (GRP Type)	01-24	Mounting Holes
01-10	Casing Back Cover	01-25	Hoisting Holes



Chemco frequency inverters were specially developed to conform with the exacting safety standards CE and UL.

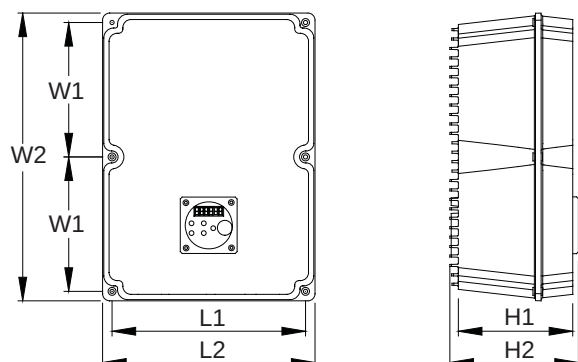
Continued product development results in additional advantages such as; energy efficiency, user-friendly design, and the availability of a world-wide service network.

What can you expect from a Chemco frequency inverter:

- Conformity to global standards, specifications and certifications
- An open and flexible drive platform
- A broad product range geared to the needs of the market
- Simple operation and configuration
- Optimised control and data management
- Outstanding product reliability

Plus extensive advanced technology functions like:

- SLV- Vector Control and V/f Control (fully programmable)
- Online Autotuning and automatic slip compensation for outstanding speed stability
- Soft PWM function for reduced motor noise
- OEC technology for maximum power savings
- Active current limiting (tripless operation)
- Automatic restart after power failures
- Flexible control units and intuitive configuration and setup



All dimensions in mm

Designation (Output For 3 phase Only)	Application motor (kW)	Rated Output Current[A]	L1	L2	W1	W2	H1	H2	Supply voltage
(F1S) WR75M1	0,75	4,0	205	225	142,5	305	121	136	1/N AC 230V
(F2S) W1R5M1	1,5	7,0	205	225	142,5	305	121	136	1/N AC 230V
(F3S) W2R2M1	2,2	10	205	225	142,5	305	121	136	1/N AC 230V
(F1) WR75M3	0,75	2,5	205	225	142,5	305	121	136	3 AC 400V
(F2) W1R5M3	1,5	3,7	205	225	142,5	305	121	136	3 AC 400V
(F3) W2R2M3	2,2	5	205	225	142,5	305	121	136	3 AC 400V
(F4) W4RG3	4,0	9,5	205	225	142,5	305	121	136	3 AC 400V
(F5) W5R5G3	5,5	14,5	205	225	142,5	305	121	136	3 AC 400V
(F6) W7R5G3	7,5	16	205	225	142,5	305	121	136	3 AC 400V

Frequency Inverter		3-phase 400V Class
Rated Input Voltage		1 ~ 220V, 3 ~ 380, 460, 660V, $\pm 20\%$; 50/60 Hz $\pm 5\%$
Rated Output Voltage		3 ~ 220 ... 660 V (corresponding to input voltage)
Output Frequency Range		0,5 ... 650 Hz
Frequency Accuracy (at 25 °C ± 10 °C)		Analogue setting: $\pm 0,25\%$, digital setting: $\pm 0,01\%$
Frequency Setting Resolution		Analogue setting: Maximum frequency/100, digital setting: 0,1 Hz
V/f Characteristics		V/f control, V/f variable (constant torque, reduced torque)
Overload Capacity		150 % for 60 s
Acceleration / Deceleration time		0,1 - 6553 s
Starting Torque		100 % at 6 Hz
Input	Intelligent Input Terminal	2 kOhm input impedance
	Functions	FW(Forward), RV(Reverse), SPD1-SPD3(Multispeed command), JG(Jogging), DB(External DC braking), 2CH(Second accel./decel.), FRS(Free-run stop), EXT(External trip), USP(Unattended start protection), OH(Overheat error), AT(Analog input selection), RS(Reset), PTC(Thermistor input), PID(PID On/Off), PIDC(PID reset), UP/DWN(Remote-controlled accel./decel.), UDC(Remote controlled data clearing), OPE(Operator control), EMR(Safety stop), NO(Not selected)
Output	Intelligent Output Terminal	Analogue voltage, analogue current
	Functions	RUN(run signal), FA(Frequency arrival- over-frequency), AL(Alarm Signal), SPE(Speed Equal), SPNE(Speed Not Equal), SPO(Speed Over), SPNO(Speed Not Over), SPA(Speed Arrive), SPNA(Speed Not Arrive), DIR(Output Direction), SPZ(Zero Speed), Stalling(Output While Stalling), Power-Limit(Output Power Limit), Acc(Under Acceleration Status), Dec(Under Deceleration Status)
Serial port		RS485
Protection		Overcurrent, overvoltage, undervoltage, overload, overheat, ground fault protection at startup, input overvoltage, EEPROM error, CPU error, USP error, Thermistor error, external trip, Safety stop
Environmental Conditions	Temperature / humidity	-10 ... +50 °C (carrier derating required for ambient temperature higher than 40 °C), no freezing / 20 ... 90 % humidity (non condensing)
	Vibration / Installation	0,5G, 10...55 Hz / altitude 1000 m or less, indoors, no corrosive gases or dust
Protection class		IP20

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