

DIDW CENTRIFUGAL FANS DIRECT DRIVE & BELT DRIVEN



FAT SERIES

FanAir India Pvt. Ltd.

FAT Series Double Inlet Double Width Centrifugal Fan

With forward curved wheel



FanAir India Pvt Ltd

certifies that the FAT series: version L, F - model 7x7 to 18x 18 shown herein is licensed to bear the AMCA seal. The ratings shown are based on tests and procedures performed in accordance with AMCA publication 211 and AMCA publication 311 and comply with the requirements of the AMCA certified ratings program.

FAT SERIES

DIDW CENTRIFUGAL FANS - FORWARD WHEEL

FAT Series is a Double Inlet Double Width (DIDW) centrifugal blower with forward curved wheel. These fans are suitable for supply and exhaust application in commercial & industrial (HVAC) systems.

These impeller are statically & dynamically balanced.

TYPE

The FAT series is available in Type L - with Leg and Type F - with Frame as shown in Fig. 1 :-

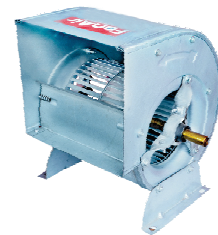
Fan Sizes : 7-7 to 18-18

Air Volume : upto 10200 CMH

Total Press : up to 600 Pa

Type L This type are supplied with mounting feet and can be mounted in three different fan orientation.	
Type F This type has a frame on both side of the fans which gives better strength and rigidity. Possibilities of mounting in four different fan orientation.	

Fig. 1



FAT TWIN FAN

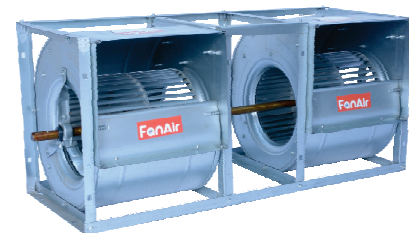
FAT series is also available in twin fan version, with two double inlet fans mounted on the same shaft. To select for twin fans, use the curves of single fan with the following factors :-

Volume	x 2
Absorbed Power	x 2.15
Speed	x 1.05
Noise	+ 3 dB

This series is available in type L2 and F2 as shown in fig. 2 :-

Type L2 Size: 7-7 to 18-18 Vol.: Upto 20400 CMH Static Pres.: 500 Pa	
Type F2 Size: 7-7 to 18-18 Vol.: Upto 20400 CMH Static Pres.: 500 Pa	

Fig. 2

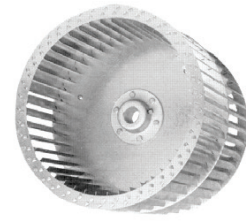


Performance of FAT TWIN fan are not AMCA Licensed

TECHNICAL SPECIFICATION

WHEEL

The wheel of FAT series is made of galvanised sheet steel forward curved blades. To obtain a maximum efficiency & low noise level, these **wheel** are specially profiled. A die cast aluminium hub with a precisely machined bore a key way is fitted to the wheel plates. The wheel is statically and dynamically balanced.



HOUSING

The housing is manufactured in galvanized sheet steel with the housing fixed to the side plates by using pittsburg lock for sizes.



FRAME

For type "L" leg is made of GI sheet which is manufactured by the process of punching and bending in a way that ensures correct dimensions and also maximum rigidity in its class. For type "F" frames are of GI sheet angle in which GI sheet is sheared, bend and spot welded to form a rigid frame to provide strength and stability to the fan.

SHAFT

Shafts are manufactured from EN8 carbon with key ways at both ends and at the centre for hub of wheel. All dimensional tolerances of the shaft are fully checked to ensure a precision fit. All shafts are then coated with an anti corrosion varnish after assembly.



BEARINGS

All bearings used are deep groove ball bearing type sealed at both side. The bearings are self-aligning with an eccentric locking collar for clamping onto the shaft and each bearing sits in side a moulded rubber housing.

All the bearings are lubricated for life and maintenance-free under normal operating conditions.



FAN ROTATION AND DISCHARGE

The rotation and discharge of the fan is in accordance with AMCA Standard 99-16.

The direction of rotation is determined from the drive side of the fan [refer Fig. 3] :-

CW - clockwise rotation
CCW - counter-clockwise rotation

	90°	180°	270°	360°
CW				
CCW				

Fig. 3 - Fan rotation and discharge

MOTOR POSITION

The position of the motor for belt drive centrifugal fan is in accordance with Location of motor is determined by facing the drive side of fan and designating the positions by letters W, X, Y, or Z. (Fig. 4)

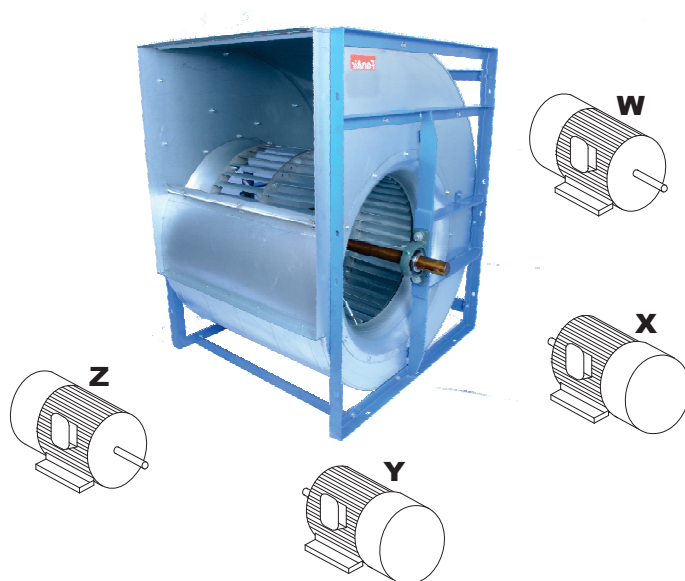


Fig. 4 - Motor Position

MOTOR SELECTION

The power curves shown on each performance graph represent the absorbed power at the shaft of the fan measured in KW. To determine the power of the motor to be installed, a correction factor as shown in Fig.5 should be applied to compensate for transmission losses.

For conversion to horsepower (HP) use multiplying factor 1.34.

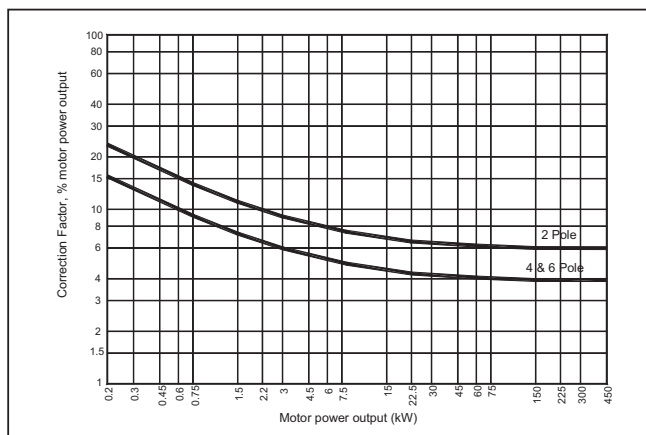


Fig. 5 – Recommended for compensation

DYNAMIC PRESSURE

The dynamic pressure and outlet air velocity shown on each curved are calculated on the full air discharge area, i.e. ducted outlet conditions.

With free outlet conditions, the velocity pressure is higher. To determine this new value, multiply the velocity pressure of the ducted outlet obtained from the fan curve by the following correction factor "K".

Fan performances calculated with this correction factors are not licensed by AMCA International.

PERFORMANCE

The performance data shown on each diagram has been tested and measured in accordance to AMCA Standard 210.

Ratings are referred to the standard air density with the total pressure as a function of the air volume, using logarithmic scales.

It is essential that, the same installation type and test standard are used at all times, when comparing fan.

FAT 7x7 to 10x10 [K = 3.2]

KAT 12x12 to 18x18 [K = 2.6]

NOISE

The **Noise** level shown on each diagram refer to the sound power "A-weighted" and the data on the inlet side has been measured in accordance with AMCA Standard 300 configuration "B". The noise level of the fans are determined as follows:

Sound power level - ("A" scale) : $L_w(A)$ as catalogue

Octave band spectrum: $L_w = L_w(A) + L_w \text{ rel. dB}$

Sound pressure level :

A) Free field

$$L_p(A) = L_w(A) - (20 \log_{10} d) - 11$$

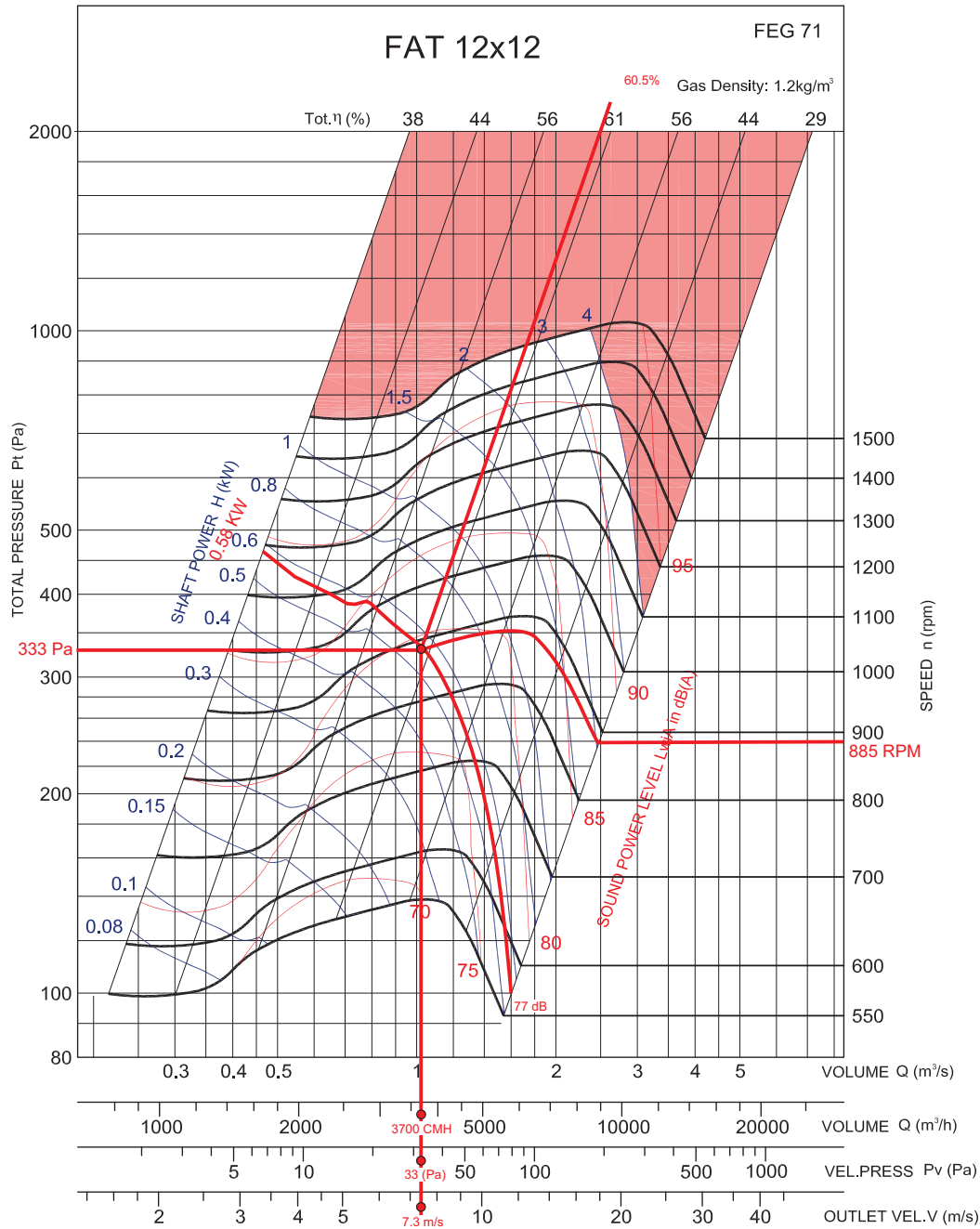
B) Room conditions

$$L_p(A) = L_w(A) - (20 \log_{10} d) - 8$$

Where d = distance from fan (m)

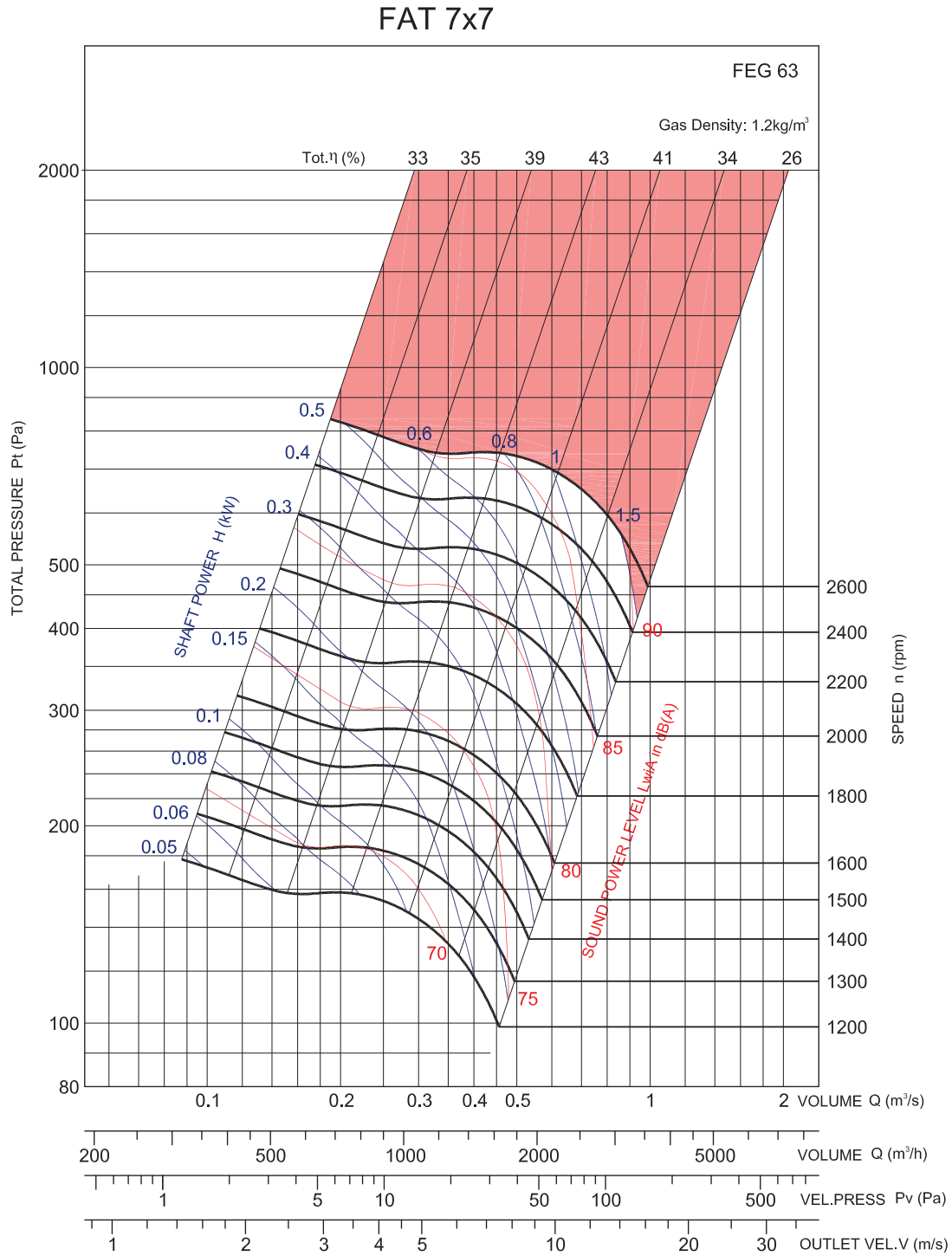
Volume Flow Rate 'Q' = 3700 CMH (Q)
 Static Pressure = 300 Pa
 Dynamic Pressure = 33 Pa
 Shaft Power (H) = 0.58 kW
 Sound Power Level Lw(A) = 77 dB(A)

Outlet Velocity (V) = 7.3 m/s
 Total Pressure (Pv) = 333 Pa
 Fan Speed = 885 RPM
 Total Efficiency (η) = 60.5%



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet Lw(A) sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

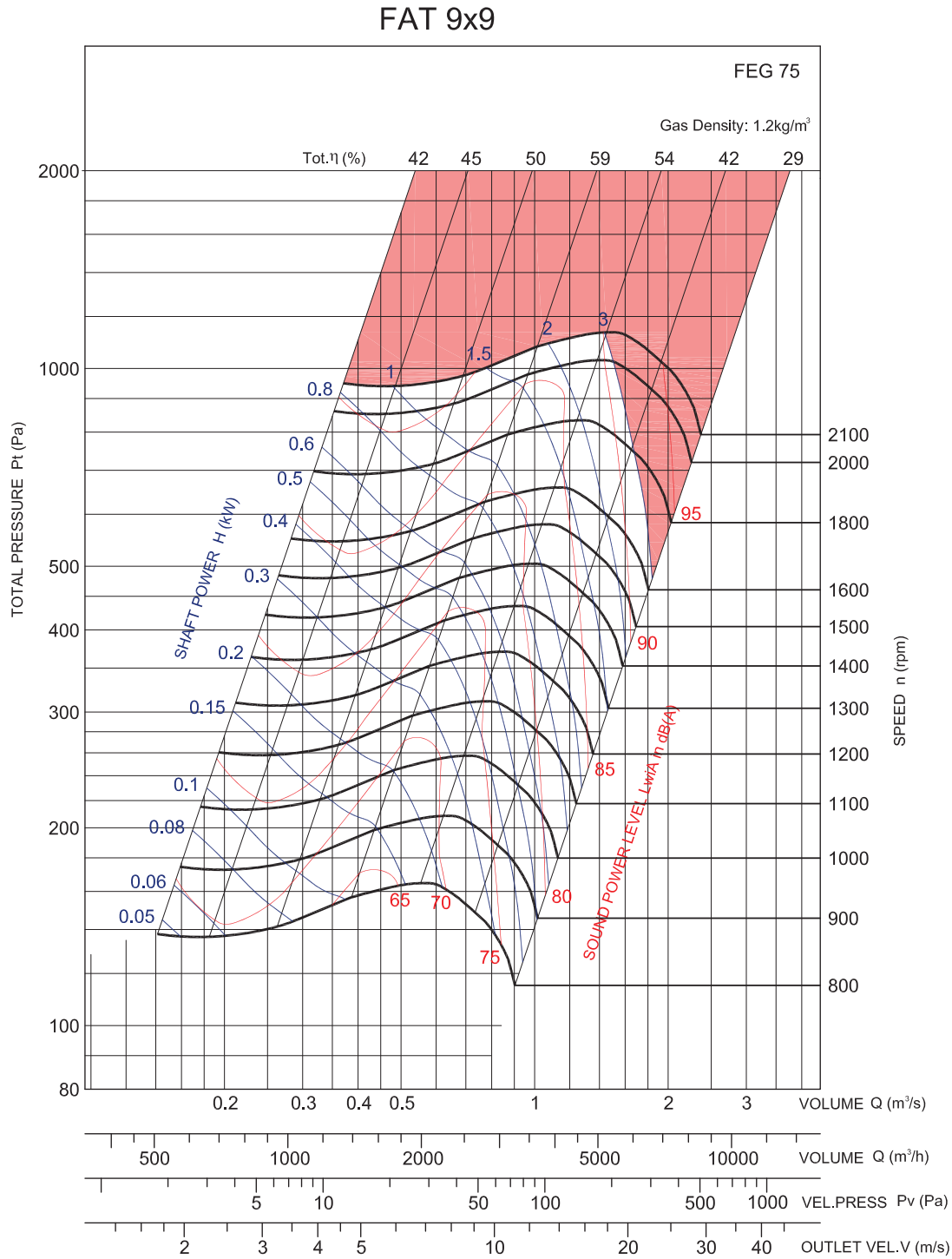


Fan Efficiency Grade :- FEG63



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.



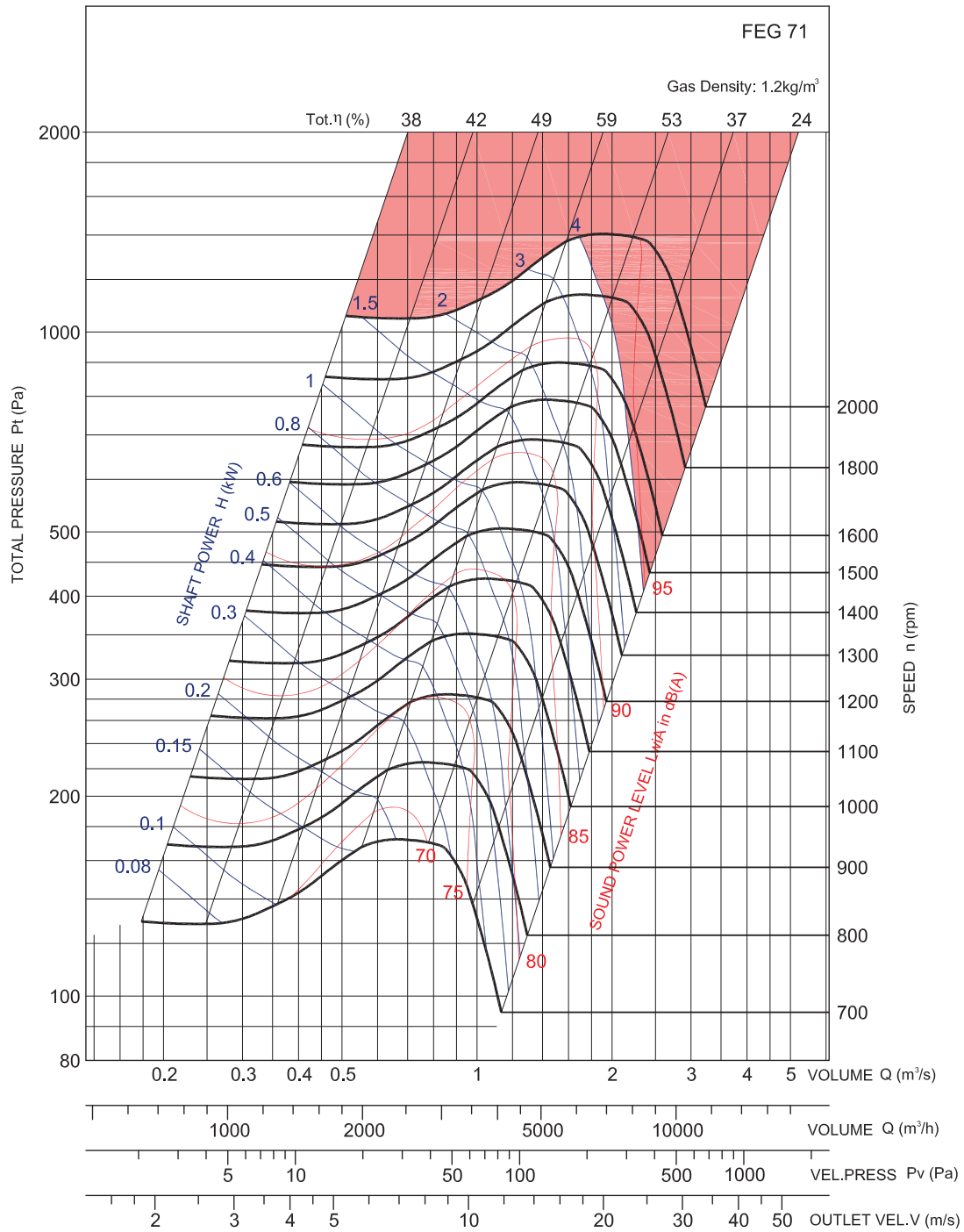
Fan Efficiency Grade :- FEG75



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

FAT 10x10



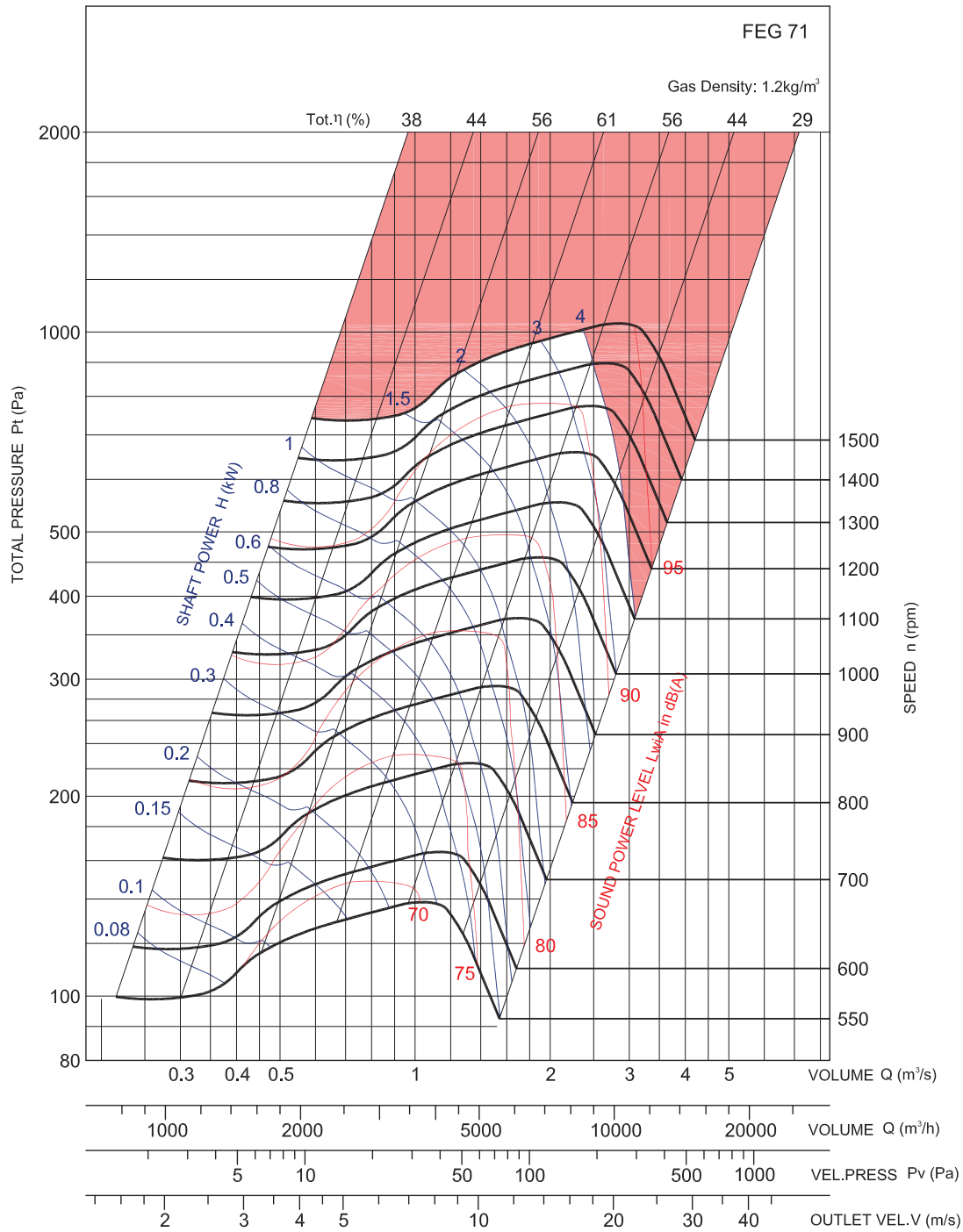
Fan Efficiency Grade :- FEG71



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

FAT 12x12



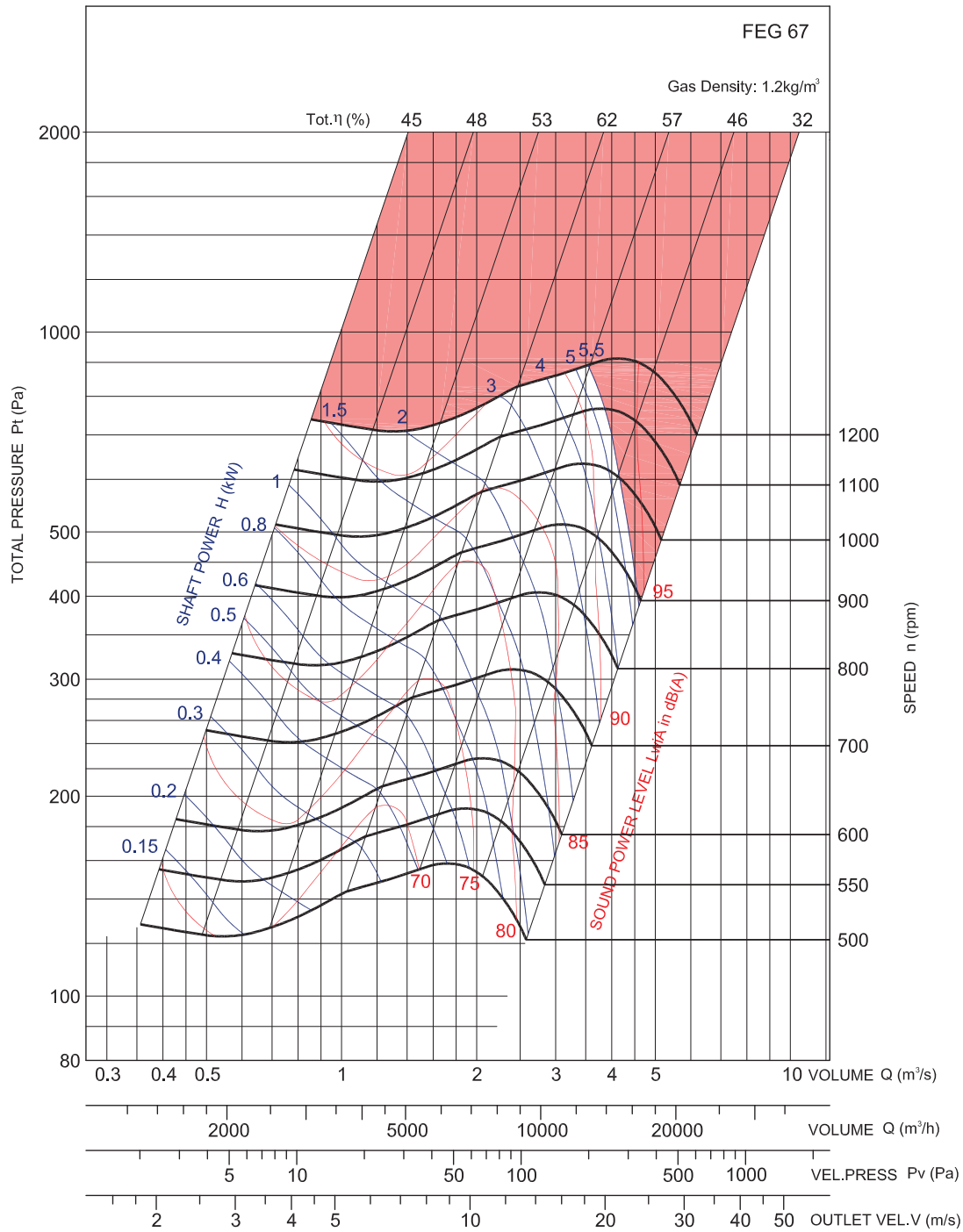
Fan Efficiency Grade :- FEG71



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

FAT 15x15



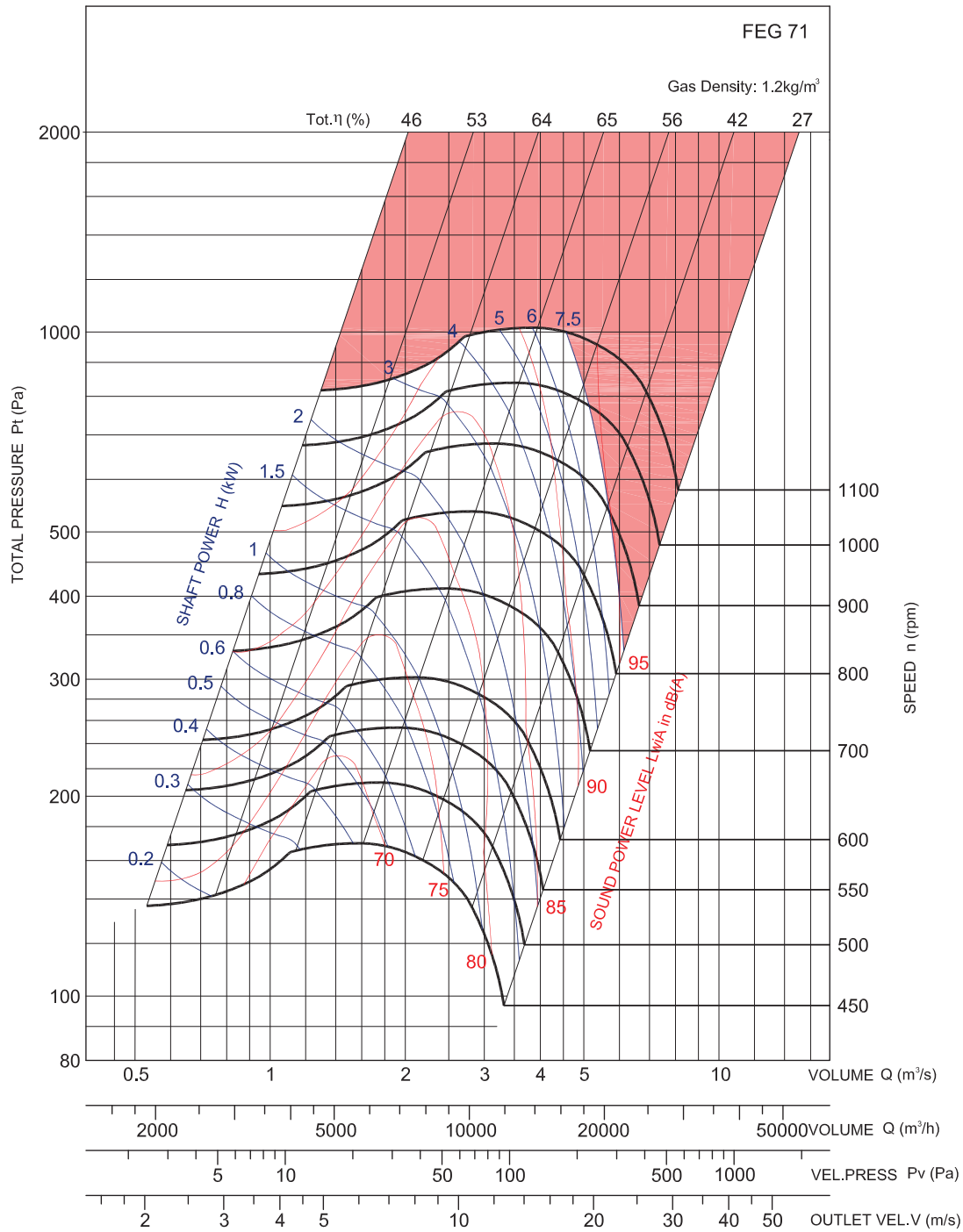
Fan Efficiency Grade :- FEG67



Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

FAT 18x18



Fan Efficiency Grade :- FEG71

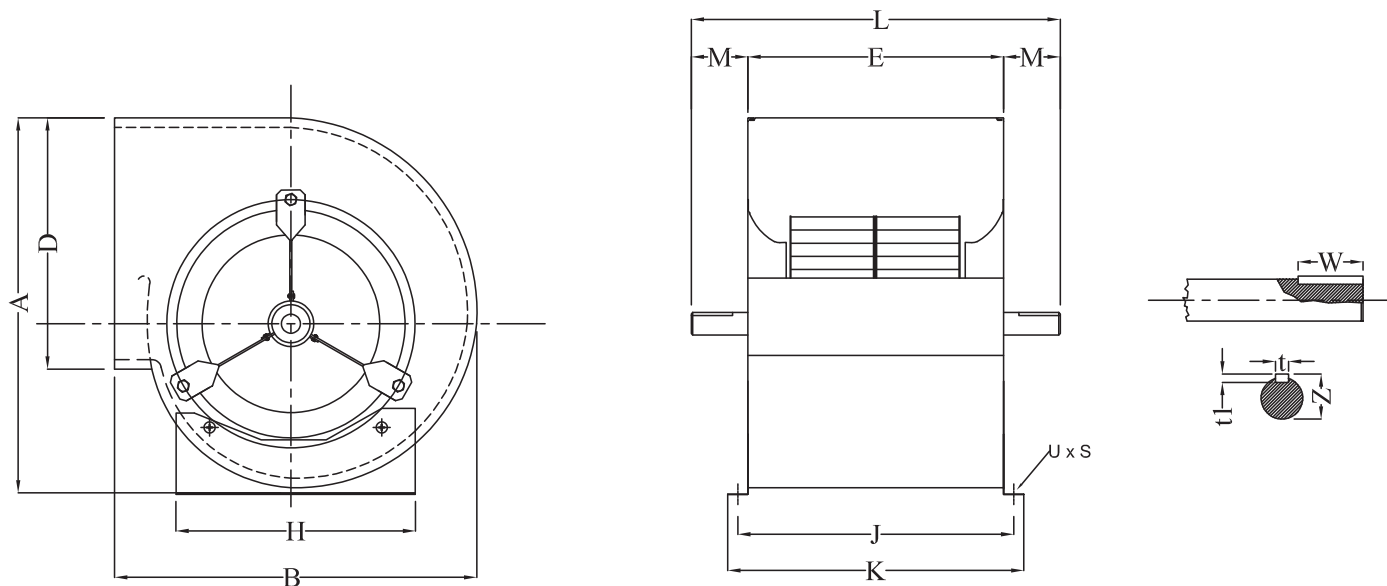


Notes:

1. Performance certified is for Installation Type B : Free inlet & ducted outlet.
2. Power rating (kW) does not include transmission losses.
3. Performance ratings do not include the effects of appurtenances (accessories).
4. Values shown are for inlet L_{wA} sound power levels for Installation Type B: Free inlet, ducted outlet.
5. The A-weighted sound ratings shown have been calculated per AMCA International Standard 301.

Dimension :

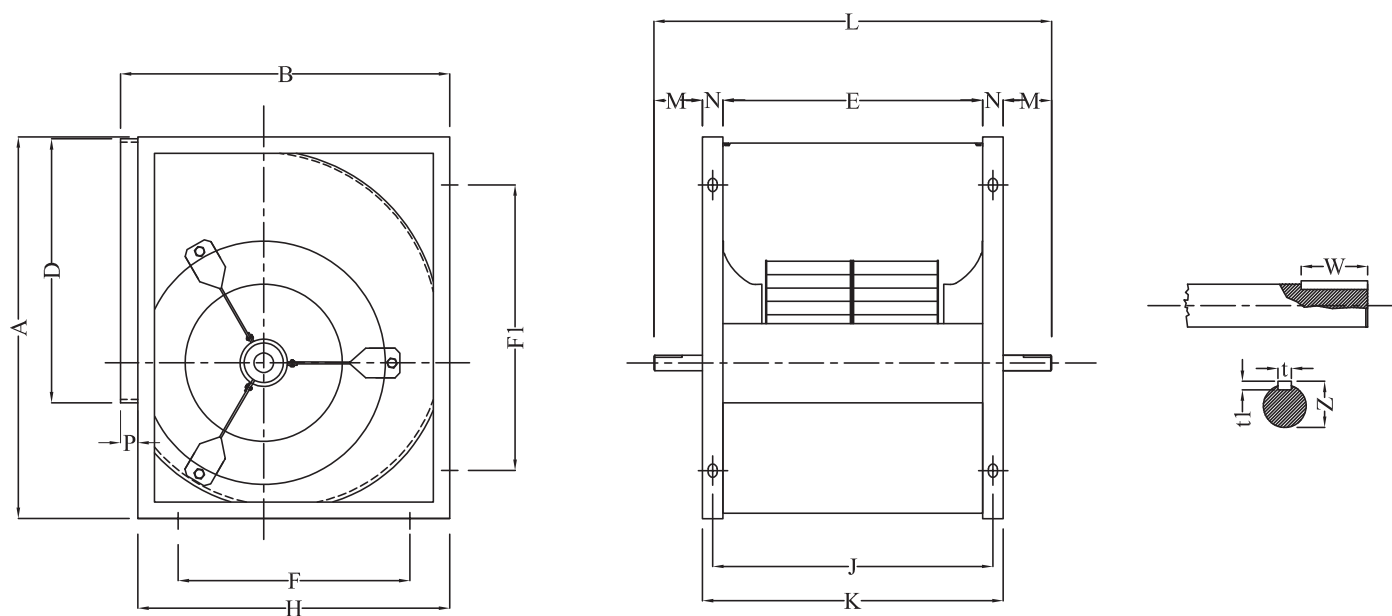
FAT 'L'



FAT 7x7 - 18x18 'L'

Model	A	B	D	E	H	J	K	L	M	t	t1	W	φd	Z	Uxs
7X7	355	312	230	248	201	273	298	360	56	6	6	30	20	22.5	11*16
9X9	400	377	275	295	250	320	345	385	45	6	6	20	20	22.5	11*16
10X10	452	430	290	330	300	355	380	430	50	6	6	28	20	22.5	11*16
12X12	527	495	350	395	400	420	445	510	57.5	6	6	28	25	28	11*16
15X15	620	568	406	476	502	501	526	610	67	8	8	8	25	28	11*16
18X18	754	687	476	552	603	577	602	690	69	8	8	8	25	28	11*16

All dimensions are in mm.

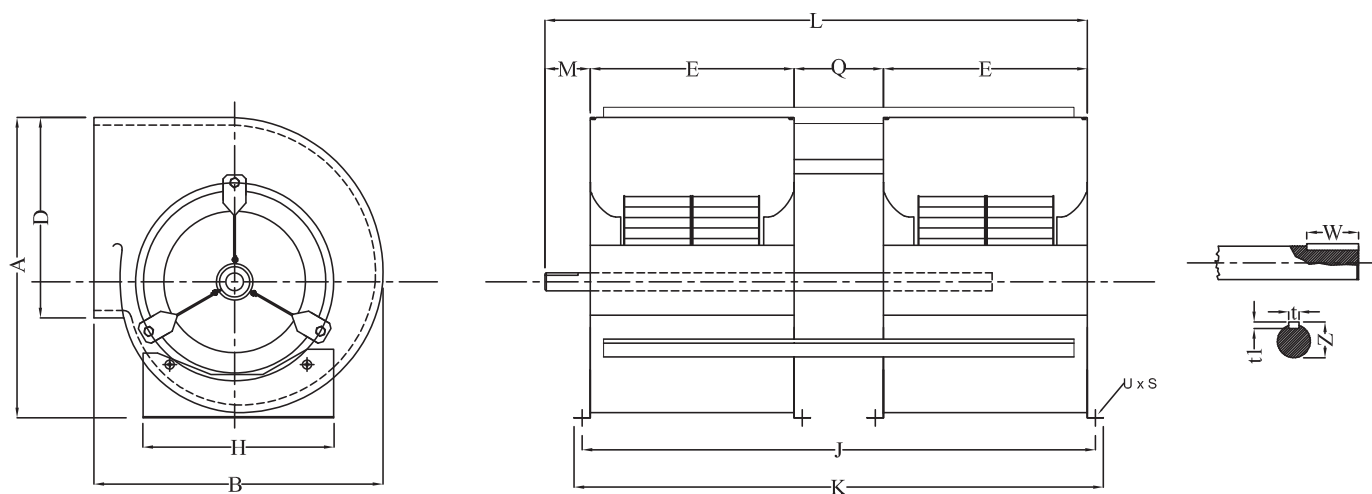
Dimension :
FAT 'F'

FAT 7x7 - 18x18 'F'

Model	A	B	D	E	F	F1	H	J	K	L	M	N	P	t	t1	W	φd	Z	Uxs
7X7	337	321	230	248	136	262	286	278	308	425	59	30	35	6	6	30	20	22.5	11*16
9X9	403	395	275	295	160	303	360	325	355	470	58	30	35	6	6	30	20	22.5	11*16
10X10	455	435	290	330	200	355	400	360	390	515	63	30	35	6	6	30	20	22.5	11*16
12X12	532	510	350	395	275	432	475	425	455	600	73	30	35	6	6	40	25	28	11*16
15X15	620	571	406	476	336	520	536	516	556	670	57	40	35	8	8	40	25	28	11*16
18X18	752	700	476	552	460	652	660	592	632	765	67	40	40	8	8	40	25	28	11*16

All dimensions are in mm.

Dimension :

FAT 'L2'



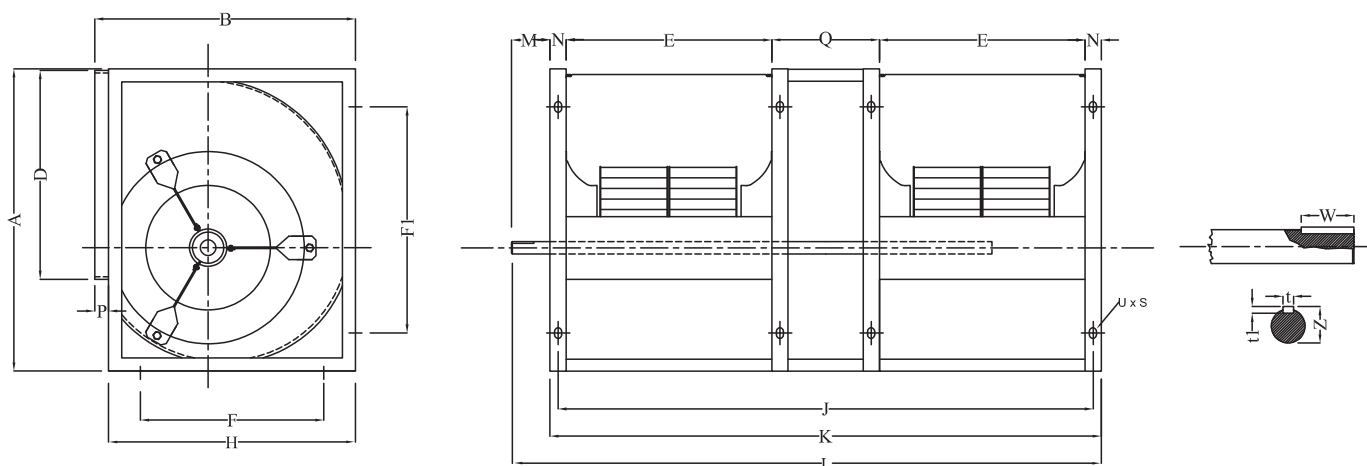
FAT 7x7 - 18x18 'L2'

Model	A	B	D	E	H	J	K	L	M	Q	t	t1	W	φd	Z	Uxs
7X7	355	312	230	248	201	707	732	802	90	186	6	6	60	20	20	11*16
9X9	400	377	275	295	250	845	870	940	90	230	6	6	60	20	20	11*16
	400	377	275	295	250	845	870	950	100	230	6	6	60	25	28	11*16
10X10	452	430	290	330	300	939	964	1034	90	254	6	6	60	25	28	11*16
	455	430	290	330	300	939	964	1044	100	254	6	6	70	30	33	11*16
12X12	527	495	350	395	400	1135	1160	1260	120	320	6	6	90	30	33	11*16
15X15	620	568	406	476	502	1357	1382	1492	120	380	8	8	90	30	33	11*16
	620	568	406	476	502	1357	1382	1507	135	380	8	8	90	35	38	11*16
18X18	754	687	476	552	603	1594	1619	1729	120	465	8	8	90	35	38	11*16
	754	687	476	552	603	1594	1619	1744	135	465	8	8	90	40	43	11*16

All dimensions are in mm.

Dimension :

FAT 'F2'



FAT 7x7 - 18x18 'F2'

Model	A	B	D	E	F	F1	H	J	K	L	M	N	P	Q	t	t1	W	φd	Z	Uxs
7X7	337	321	230	248	136	262	286	712	742	812	70	30	35	186	6	6	60	20	22.5	11*16
9X9	403	395	275	295	160	303	360	850	880	950	70	30	35	230	6	6	60	20	22.5	11*16
	403	395	275	295	160	303	360	850	880	960	80	30	35	230	6	6	60	25	28	11*16
10X10	455	435	290	330	200	355	400	944	974	1044	70	30	35	254	6	6	60	25	28	11*16
	455	435	290	330	200	355	400	944	974	1054	80	30	35	254	6	6	70	30	33	11*16
12X12	532	510	350	395	275	432	475	1140	1170	1270	100	30	35	320	6	6	90	30	33	11*16
15X15	620	571	406	476	336	520	536	1372	1412	1512	100	40	35	380	8	8	90	30	33	11*16
	620	571	406	476	336	520	536	1372	1412	1527	115	40	35	380	8	8	90	35	38	11*16
18X18	752	700	476	552	460	652	660	1609	1649	1749	100	40	40	465	8	8	90	35	38	11*16
	752	700	476	552	460	652	660	1609	1649	1764	115	40	40	465	8	8	90	40	43	11*16

All dimensions are in mm.

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FanAir India Pvt. Ltd.

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