Precise Air Management

Jetfoil - Tunnel Fans

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FläktWoods

Jet Fans and Accessories

Fläkt Woods is the industry leader in air movement technology, providing innovative solutions worldwide. Our extensive knowledge of design and applications is based on over 100 years of experience in tunnels, buildings, industry and original equipment manufacturers. Fläkt Woods' global coverage reaches over 100 countries and is supported by an extensive distribution network.

Our expertise in tunnel ventilation applications covers road & rail tunnels, metros, tunnel construction and wind tunnels. Fläkt Woods' products have been successfully used in underground projects throughout the world and our Jet Fan product range is unrivalled in its technology, innovation and efficiency.

Ventilation

Ventilation is required for safety and to maintain acceptable temperatures and comfort.

Pollution emitted by trains and road vehicles must be removed to provide an acceptable and safe environment. The heat from a train may need to be removed by forced ventilation in order to ensure that the temperature is acceptable to both people and equipment. In the case of a fire, smoke must be removed in order to enable safe escape and to assist access to fight the fire. The normal ventilation principles are to dilute pollution and to increase visibility by removal of particles.

In an emergency the smoke is controlled by creating sufficient air velocity to drive it away from the fire. Depending on the control strategy, the smoke can then be extracted. In rail and metro systems it is common to create a safe haven by pressuristation of the non-incident tunnel.

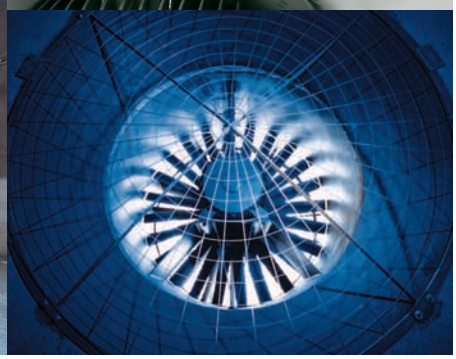
The Jetfoil Fan Range

General Information

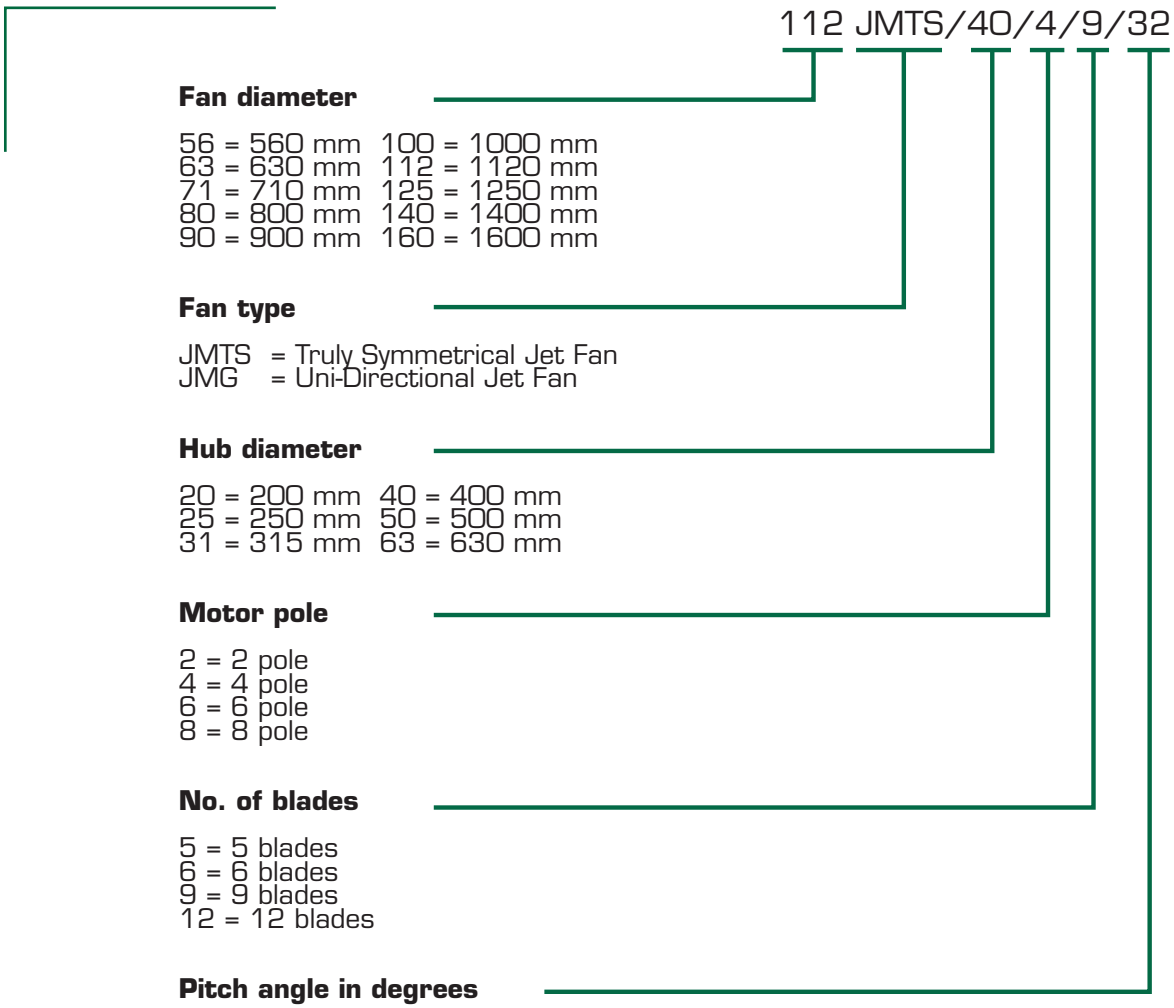
- ø560 - ø1600 mm
- Thrust up to 3500N
- ø800 mm up to 3000 rpm, ø1250 mm up to 1800 rpm and ø1600 mm up to 1200 rpm
- Fully adjustable die cast aluminium impellers in uni-directional and truly reversible configurations; X-ray inspection
- Mild steel casing - hot dipped galvanised after manufacture, painted or all stainless steel construction
- Silencers fitted where required
- Motor protection IP55
- High thrust performance
- Emergency ventilation options up to 400°C/2 hours
- Truly reversible fans provide 100% thrust reversibility. Uni-directional fans give approximately 40% thrust for emergency use only, in the reverse mode with increased noise level.

Applications

- Longitudinal ventilation of road tunnels
- Emergency ventilation - smoke control
- Mine ventilation
- Hangar/large area ventilation



Fan Codes



Fan Selector

Fan Selector is the selection software for all the Fläkt Woods Fan Group products: Axial Flow Fans (among which Jet Fans for Tunnels), Centrifugal fans, Boxed Fans, Roof Extract units, Plate mounted fans.

The Fan Selector allows you to choose fans which fit your required application.

How to Register, easy as 1, 2, 3!

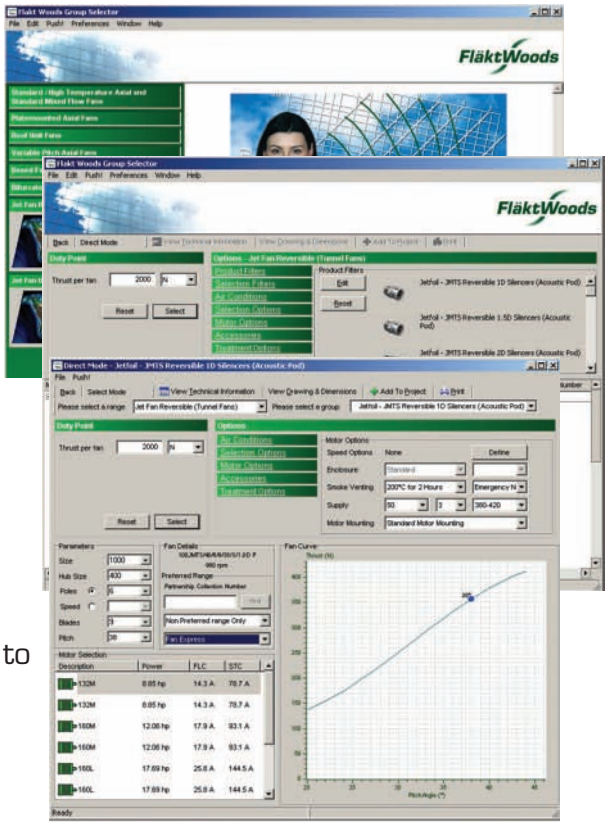
All you need to do to register your details on-line is to follow the simple instructions shown below.

1) Click on the site link to start the process: http://fanselector.flaktwoods.com/signup/

2) All you need to do is to fill in the fields that have red text labels, but if you wish to complete more of the form, this would be helpful.

3) Once you have entered your details, just click the "Register" button at the bottom of the registration page to submit your request.

Fan Selector



User Account Set-up

Once a user account has been created, our automatic registration system will send you an e-mail confirming your user name and password. Note: your username will be your e-mail address, so if you have a personal address this would be better than a general one (as this will allow you to personalise our software). The account set-up process normally completed between 24-48 hours after your initial password confirmation.

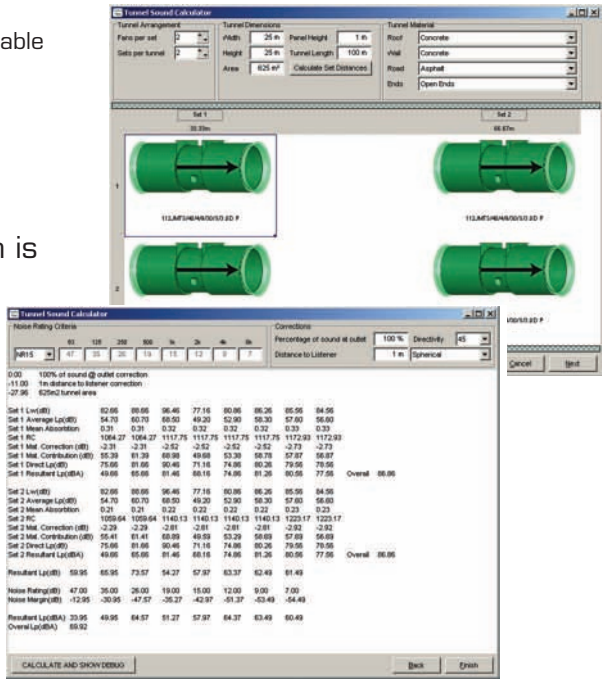
Desktop CD

Should you prefer to use the Desktop version of the software (which is locally installed onto your computer's hard drive), then this is available on request. All you need to do is to advise your full postal address and we would be happy to mail a CD to you.

Link to the On-Line Fan Selector:
http://fanselector.flaktwoods.com

1. After logging in, the first screen displayed allows the selection of axial fans, identify and click 'select' to continue.
2. The next screen displays the various types of axial fans, therefore it is necessary to filter the selection by clicking 'product filter' and 'edit'.
3. The desired thrust can be input to identify suitable fans. Other filters can be adjusted so the desired fan is identified.
4. Each fan can be highlighted and technical information made available

Sound Level Calculation



The Fan Selector also has the capability of calculating the installed noise levels of the jet fans. When the desired fan is selected and added to a project it is possible to access the tunnel design feature.

By inputting the tunnel arrangement, dimensions, materials and air direction and selecting the noise rating criteria on the next screen, a list of the sound levels is displayed.

Please note; this function is for guidance only and does not give any commitment on the exact acoustic parameters

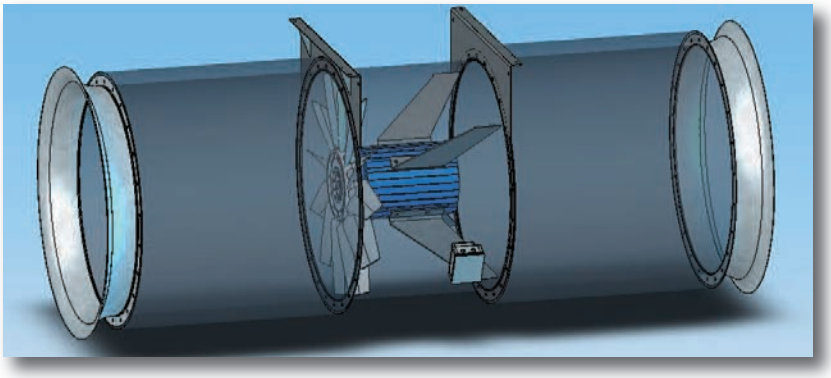
Jetfoil Standard Range

Range includes:

- 10 diameters - 560 mm to 1600 mm
- Swept back arm design for improved performance and noise reduction
- Zinc galvanised or stainless steel casing
- IP55 Motor Protection
- Low installed noise levels
- High Energy Efficiency

Options:

- Option of a silencer with or without acoustic pod
- Mounting frame to ensure secure installation
- Epoxy paint



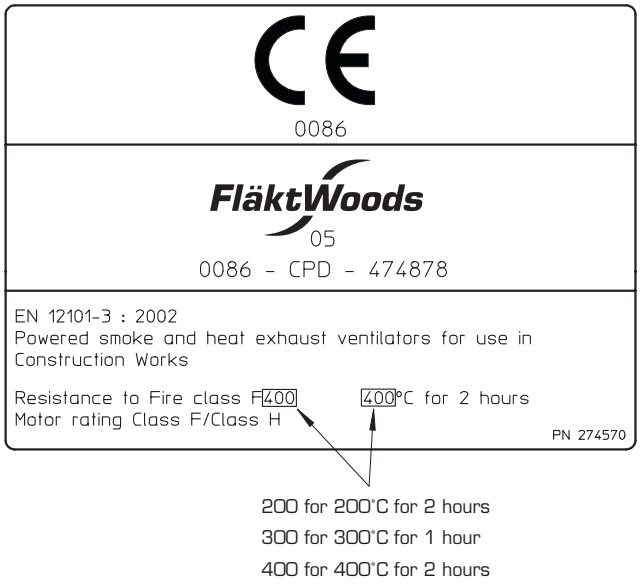
High Temperature Range

Range includes:

- 10 diameters - 560 to 1600 mm
- 300/2 or 400/2 operation
- 50 Hz or 60 Hz supply
- HT Approved and certified motors
- Additional impeller locking feature

Options:

- Epoxy paint on top of galvanised finish
- Bolt-on Silencers
- Accessories

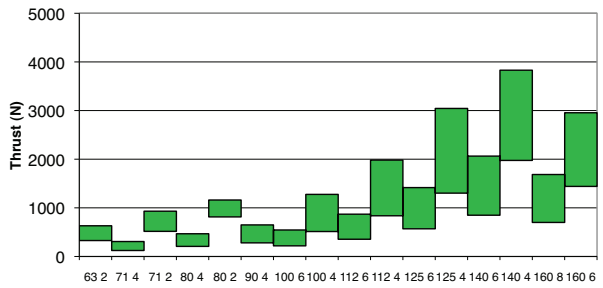


Fan label in accordance with CE marking directive EN12101-3

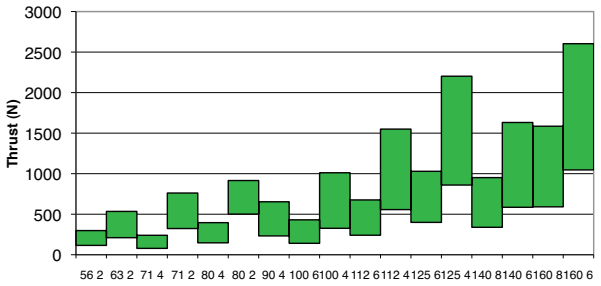
Performance Range – with 1D Silencers

300/2 - Range

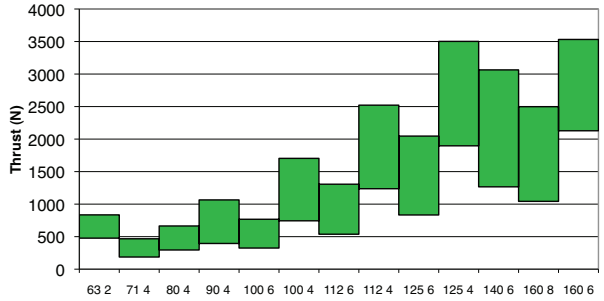
300/2 Unidirectional 50Hz



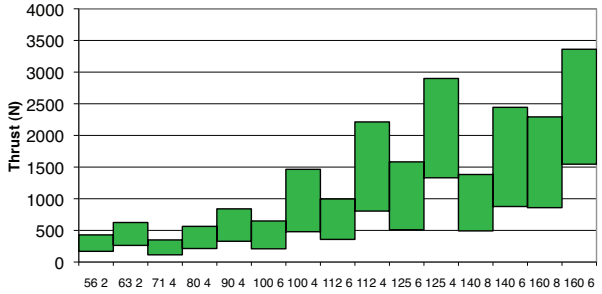
300/2 Reversible 50Hz



300/2 Unidirectional 60Hz

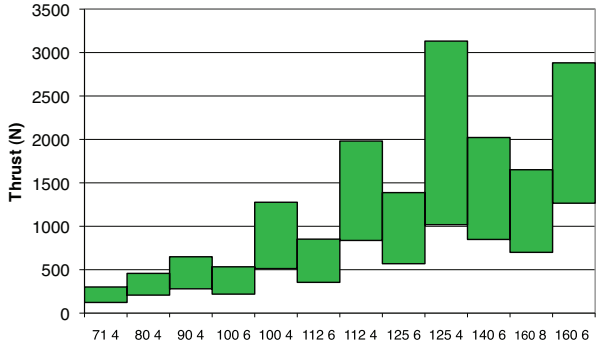


300/2 Reversible 60Hz

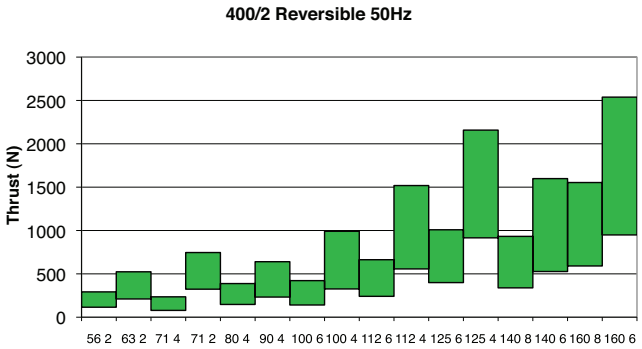


400/2 - Range

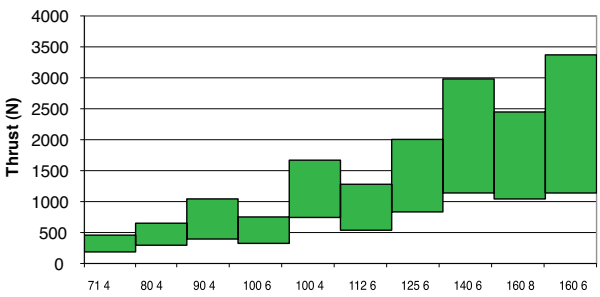
400/2 Unidirectional 50Hz



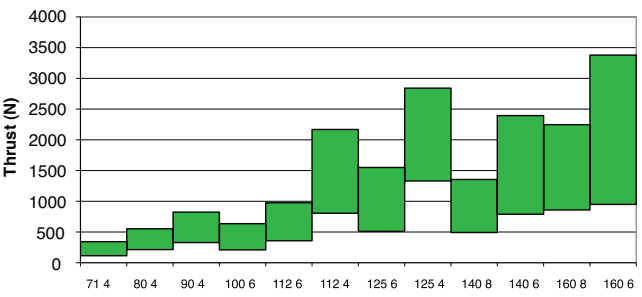
400/2 Reversible 50Hz



400/2 Unidirectional 60Hz



400/2 Reversible 60Hz



Higher thrust levels available, please enquire for further information

50Hz Unidirectional Range 300/2H

Fan type	Motor Pole Speed	Blade angle	Thrust N	Outlet Velocity m/s	Absorbed Power kW	Motor Power kW	Nominal Current A	Sound power LwA	Sound Pressure in free field, 45°, 10m dB(A)
63JMG	2	20	324	29.4	9.2	11.04	20.2	104	73
	2	24	419	33.5	12.6	12.65	23.3	106	75
	2	29	529	37.6	17.6	18	32.6	97	66
	2	32	592	39.8	21.1	22.2	40.4	98	67
	2	36	672	42.4	26.1	27	49.8	99	68
71JMG	2	22	575	34.8	17.8	18	32.6	100	69
	2	25	672	37.6	21.6	22.2	40.4	101	70
	2	28	772	40.3	26.5	27	49.8	101	70
	2	34	943	44.6	38.9	40	74.6	103	72
80JMG	4	27	289	21.9	4.62	4.8	9.2	87	56
	4	32	355	24.3	6.4	6.6	12.6	89	58
	4	36	408	26	8.2	8.63	16.3	91	60
	4	40	457	27.5	9.8	11.04	21	93	62
100JMG	4	26	661	26.5	12.7	13.2	25.4	97	66
	4	31	819	29.5	17.7	18	35	99	68
	4	38	1038	33.2	26.4	27	49.8	101	70
	4	40	1088	34	28.7	33	65	102	71
112JMG	4	21	878	27.2	16.7	17.3	33.1	92	61
	4	27	1176	31.5	26.8	27	49.8	95	64
	4	31	1378	34.1	34.8	36	67	96	65
	4	34	1532	36	41.6	42.55	77.7	98	67
	4	37	1687	37.8	49.0	49.5	94.8	99	68
	4	40	1826	39.3	56.9	63.3	110	100	69
125JMG	4	20	1289	29.6	33.9	34.5	63.8	99	68
	4	24	1665	33.6	46.7	49.5	94.8	100	69
	4	28	2021	37	61.2	63.3	110	101	70
	4	33	2438	40.7	82.4	86.3	154	103	72
140JMG	6	26	1141	24.9	21.8	22.2	42.7	95	64
	6	33	1500	28.5	34.5	36	66.2	98	67
	6	37	1710	30.4	42.8	44.4	79.9	100	69
	6	40	1868	31.8	49.8	51.8	92.3	101	70
160JMG	6	20	1253	22.8	24.7	26.4	49.7	98	67
	6	25	1606	25.8	34.6	36	66.2	99	68
	6	31	2087	29.4	51.6	51.8	92.3	101	70

50Hz Truly Reversible Range 300/2H

Fan type	Motor Pole Speed	Blade angle	Thrust N	Outlet Velocity m/s	Absorbed Power kW	Motor Power kW	Nominal Current A	Sound power LwA	Sound Pressure in forward direction in free field, 45°, 10m dB(A)
56JMTS	2	22	133	21.2	3.3	3.6	6.93	94	63
	2	30	211	26.7	6.4	6.6	12.3	95	64
	2	35	260	29.7	8.8	9	16.4	97	66
	2	40	304	32.1	12.2	12.65	23.3	101	70
63JMTS	2	20	177	21.8	4.4	4.6	9.3	93	62
	2	24	229	24.8	6.5	6.6	12.3	95	64
	2	28	290	27.8	8.8	9	16.4	96	65
	2	32	354	30.8	11.9	12.65	23.3	98	67
	2	37	425	33.7	17.2	18	32.6	99	68
	2	40	466	35.3	20.7	22.2	40.4	100	69
71JMTS	2	20	320	25.9	8.1	8.25	15.5	100	69
	2	24	415	29.5	12.1	12.65	23.3	100	69
	2	28	516	32.9	17.4	18	32.6	101	70
	2	33	660	37.3	26.3	27	49.8	103	72
	2	35	698	38.3	30.9	33	58.8	104	73
80JMTS	4	30	259	20.7	4.6	4.8	9.2	90	59
	4	35	324	23.2	6.6	6.6	12.6	92	61
	4	40	374	24.9	8.9	9	17	94	63
	4	44	395	25.6	10.8	11.04	21	95	64
90JMTS	4	35	534	26.4	12.4	13.2	25.4	90	59
	4	40	617	28.4	17.0	17.3	33.1	92	61
	4	43	648	29.1	19.6	20.35	39.5	93	62
100JMTS	4	29	566	24.5	12.1	13.2	25.4	100	69
	4	34	704	27.3	17.1	17.3	33.1	101	70
	4	39	896	30.8	26.1	27	49.8	104	73
	4	44	1011	32.8	31.1	33	65	106	75
112JMTS	4	30	1023	29.4	25.4	27	49.8	97	66
	4	33	1180	31.6	32.0	33	65	98	67
	4	37	1356	33.9	42.6	44.4	79.3	100	69
	4	41	1495	35.6	53.7	54	95.1	102	71
	4	44	1551	36.2	61.2	63.3	110	103	72
125JMTS	4	25	1074	27	26.4	27	49.8	101	70
	4	28	1300	29.7	33.9	34.5	63.8	102	71
	4	31	1546	32.4	43.9	44.4	79.3	104	73
	4	33	1715	34.1	52.1	54	95.1	104	73
	4	36	1960	36.5	65.7	66	115	105	74
	4	40	2251	39.1	83.6	86.3	154	107	76
140JMTS	6	32	1186	25.3	25.7	26.4	49.7	99	68
	6	36	1393	27.5	34.4	36	66.2	100	69
	6	40	1555	29	44.1	44.4	79.9	102	71
	6	43	1631	29.7	50.9	51.8	92.3	103	72
160JMTS	6	23	1234	22.6	25.3	26.4	49.7	100	69
	6	27	1571	25.5	34.7	36	66.2	101	70
	6	30	1856	27.7	43.3	44.4	79.9	101	70
	6	32	2048	29.1	50.0	51.8	92.3	102	71

60Hz Unidirectional Range 300/2H

Fan type	Motor Pole Speed	Blade angle	Thrust N	Outlet Velocity m/s	Absorbed Power kW	Motor Power kW	Nominal Current A	Sound power LwA	Sound Pressure in free field, 45° , 10m dB(A)
71JMG	4	23	222	21.6	4.1	4.32	7.61	98	67
	4	30	307	25.4	6.6	6.93	12.9	99	68
	4	35	368	27.8	9.0	9.78	16.3	101	70
	4	40	427	30	11.5	12.1	20.2	105	74
80JMG	4	25	378	25	6.8	6.93	12.9	91	60
	4	30	472	28	9.6	9.78	16.3	93	62
	4	35	568	30.7	13.1	13.8	22.3	95	64
	4	40	640	32.6	16.7	19.6	32.8	97	66
90JMG	4	25	526	26.3	13.3	13.8	22.3	89	58
	4	29	644	29	18.1	19.6	32.8	91	60
	4	34	806	32.5	25.9	28.8	46.9	93	62
100JMG	4	20	744	28.1	18.0	19.6	32.8	101	70
	4	25	1012	32.8	26.7	28.8	46.9	102	71
	4	31	1312	37.3	39.1	39.6	66.3	104	73
	4	37	1586	41	53.9	58.3	96.7	106	75
112JMG	4	20	1237	32.3	27.4	28.8	46.9	96	65
	4	25	1606	36.9	41.7	43.2	68.8	98	67
	4	31	2039	41.5	62.6	63.6	97	101	70
	4	34	2207	43.2	74.8	75.6	115	102	71
	4	39	2580	46.7	97.5	97.8	150	104	73
125JMG	6	26	974	25.7	19.4	20.4	32	95	64
	6	32	1256	29.2	28.9	30	50	98	67
	6	39	1565	32.6	42.2	43.2	68.1	100	69
125JMG	4	20	1897	35.9	59.6	63.6	97	103	72
	4	22	2176	38.4	70.6	72.5	110	104	73
	4	26	2714	42.9	94.4	97.8	150	105	74
140JMG	6	20	1266	26.2	24.3	25.2	41.6	97	66
	6	27	1796	31.2	42.7	43.2	68.1	100	69
	6	29	1950	32.5	48.8	50.4	79.3	101	70
	6	32	2184	34.4	58.9	61	94.9	102	71
160JMG	6	21	1967	28.6	47.5	50.4	79.3	103	72
	6	24	2284	30.8	58.0	61	94.9	104	73

60Hz Truly Reversible Range 300/2H

Fan type	Motor Pole Speed	Blade angle	Thrust N	Outlet Velocity m/s	Absorbed Power kW	Motor Power kW	Nominal Current A	Sound power LwA	Sound Pressure in forward direction in free field, 45°, 10m dB(A)
56JMTS	2	21	182	24.8	5.5	5.52	9.66	98	67
	2	24	225	27.6	7.2	7.25	11.6	98	67
	2	27	269	30.2	9.2	9.35	15.4	98	67
	2	30	310	32.4	11.5	12.6	20	99	68
	2	33	354	34.6	13.9	14.4	23	100	69
	2	40	398	36.7	21.9	25.2	39.4	105	74
63JMTS	2	25	362	31.1	12.5	12.6	20	99	68
	2	27	402	32.8	14.6	15	23.9	100	69
	2	31	495	36.4	19.8	20.4	32.2	102	71
	2	35	588	39.6	26.7	27.5	44.6	103	72
	2	40	656	41.9	36.9	39.6	61.8	104	73
71JMTS	4	30	207	20.9	4.3	4.32	7.61	90	59
	4	33	239	22.4	5.5	5.76	9.75	91	60
	4	36	271	23.9	6.9	7.56	12.7	93	62
80JMTS	4	25	285	21.7	5.6	5.76	9.75	93	62
	4	32	419	26.4	9.4	9.78	16.3	94	63
	4	37	508	29	13.1	13.8	22.3	97	66
	4	44	564	30.6	19.0	19.6	32.8	99	68
90JMTS	4	27	489	25.3	11.8	12.1	20.2	91	60
	4	30	578	27.5	14.9	15	25.6	92	61
	4	33	667	29.6	18.9	19.60	32.8	94	63
	4	39	818	32.7	28.4	28.8	46.9	96	65
	4	44	885	34.1	36.0	39.6	66.3	98	67
100JMTS	4	28	792	29	19.8	20.4	34.4	104	73
	4	32	993	32.5	28.0	28.8	46.9	105	74
	4	37	1242	36.3	41.1	41.4	65.6	107	76
	4	40	1332	37.6	49.3	50.4	77.9	108	77
	4	44	1501	39.9	55.2	58.3	96.7	110	79
112 JMTS	6	28	1241	32.4	40.2	41.4	65.6	107	76
	6	31	1438	34.9	49.4	50.4	77.9	108	77
	6	35	1693	37.8	63.2	63.6	97	109	78
	6	37	1813	39.2	71.7	72.5	110	110	79
	6	40	1980	40.9	87.8	97.8	150	112	81
125JMTS	6	28	936	25.2	19.4	20.4	32	97	66
	6	31	1083	27.1	24.2	25.2	41.6	98	67
	6	34	1227	28.9	29.6	30	50	100	69
	6	40	1466	31.6	41.8	43.2	68.1	102	71
	6	44	1544	32.4	50.0	50.4	79.3	103	72
140JMTS	6	26	1293	26.5	29.2	30	50	101	70
	6	30	1627	29.7	40.2	43.2	68.1	102	71
	6	35	2034	33.2	58.8	61	94.9	104	73
160JMTS	6	22	1736	26.8	41.5	43.2	68.1	104	73
	6	24	1957	28.5	49.4	50.4	79.3	105	74
	6	26	2209	30.3	57.8	61	94.9	105	74

HT Certification

Emergency, High Temperature, Smoke Extract Fans fall within the scope of the EU Construction Products Directive.

EC Certificate

EC-CERTIFICATE OF CONFORMITY

0086 - CPD - 474878

JM HT Aerofoil

as detailed on the Supplementary Information Sheet

produced and placed on the market by

Fläkt Woods Limited

Axial Way, Colchester, Essex, C04 5ZD

EN 12101-3: 2002

The implementation of the Construction Products Directive and the publication of the product specific standard, EN 12101-3 have made it a mandatory requirement for smoke control fans sold into the European Union to carry a CE Mark from April 1st, 2005. The CE mark may only be affixed after successful completion of testing, auditing of factory production control and the issue of a certificate by accredited independent authorities.

This procedure is intended to prevent fan failures during an emergency smoke situation, where a fan failure can ultimately lead to the loss of life. Fläkt Woods fully endorse the concept that, in such a safety critical application, only fully verified and certified products should be specified. This made the decision to test and certify this core product range all the more easier.

The decision was made to embark on a major testing programme in conjunction with BSRIA, a leading authority in building research. Using the expertise of Fläkt Woods and BSRIA's new state of the art High Temperature test rig, the Jet Fan range was successfully tested in compliance with this demanding new legislation with minimum complications.

This investment resulted in Fläkt Woods being able to offer a British Standards Institution Certified, CE marked Jet Fan product for use at 400°C/2 hours from 560mm to 1600mm, together with a comprehensive range of approved accessories.

Fläkt Woods have enhanced their position as the foremost provider of specialist products for emergency high temperature smoke control by becoming the first fan manufacturer in the world to be able to apply CE marking to these safety critical products.

CE marking was then obtained from BSI for the JM HT fan range for additional 200°C and 300°C temperature categories, ensuring that Fläkt Woods has one of the most comprehensive range of products available in the Single European Market.

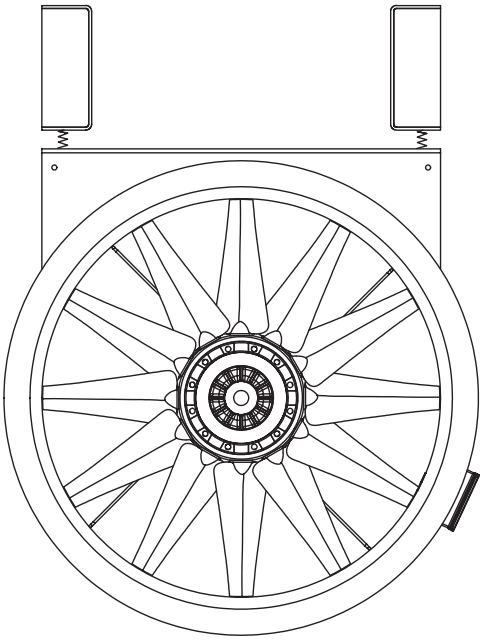
Other Accessories

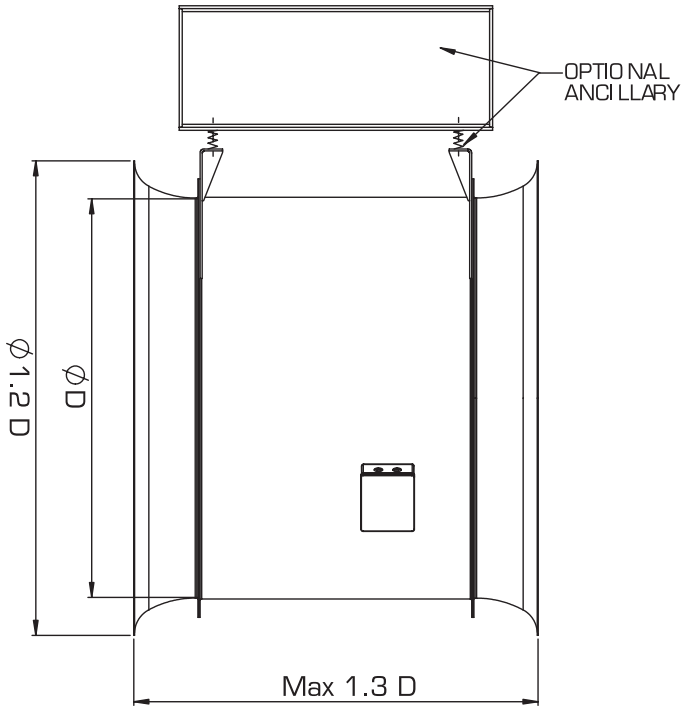
Jet Fan Silencer		**Acoustic pod**	
Mounting feet		**Guards**	
Bellmouth Inlet		**Spring Vibration Isolators**	

Outline Drawings

It is recommended that a Fläkt Woods frame accompany the jet fan to ensure a secure installation. Anti-vibration mounts are available for soft mounting installations.

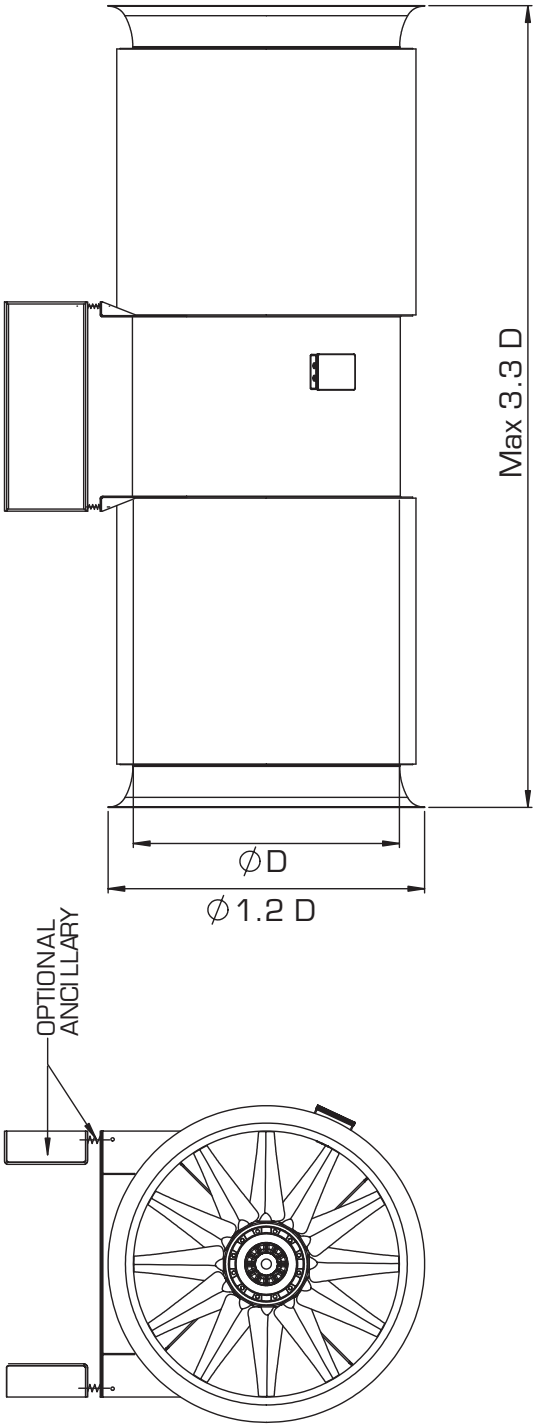
Base Fan – No Silencers



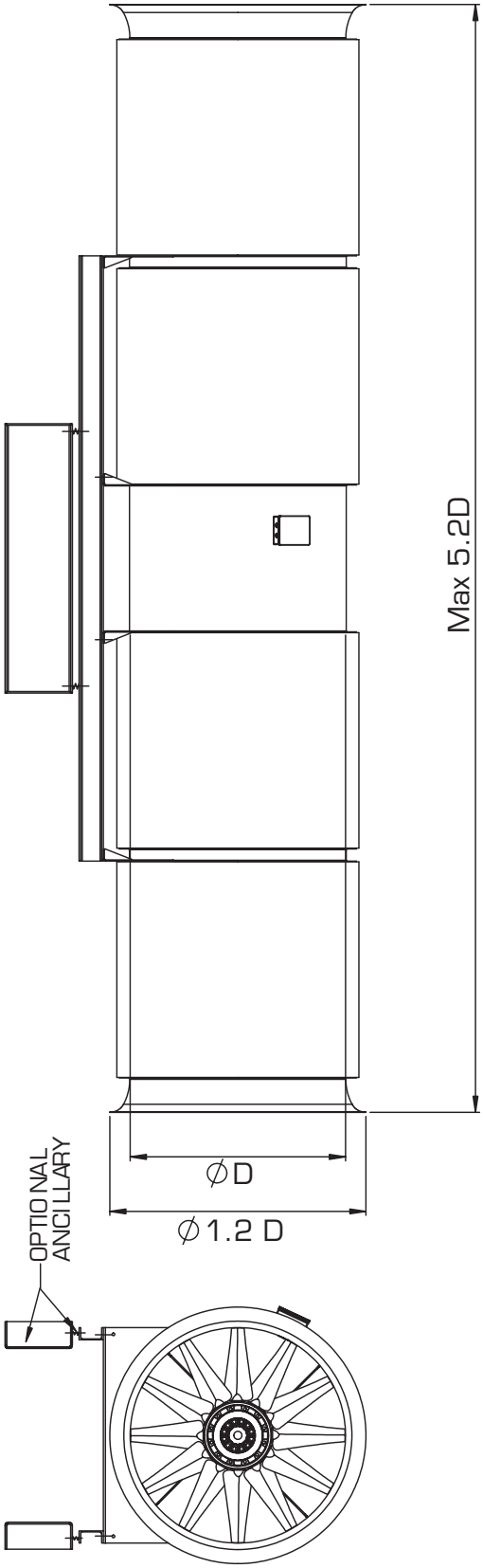


Outline Drawings

Jet Fan with 1D Silencers



Jet Fan with 2D Silencers



Sample Project Tunnel & Metro Reference List

Road

Country	Project
Algeria	Algerian Road Tunnel
Australia	Mitcham Frankston Freeway
Australia	M5 East Tunnel
Australia	Lane Cove
Austria	Wske Tunnel
Belgium	Gare De Namur
China	Hu Rong Su Tunnel
China	Chong Qin Fang Dou Shan
China	Sky Pier (Tunnel 1)
China	Hu Nan Jia Hou Yan
China	Hu Nan Xue Feng Shan Tunnel
Croatia	Tunnel Trsat
Croatia	Tunnel Skurinje
Croatia	Sveti Rok 2
Croatia	Mala Kapela
Croatia	Veliki Glozac
Croatia	Tunnel Bisko
Croatia	Tunnel Mravince
Croatia	Tunnel Strazina
Croatia	Cardak
Croatia	Brezovica
Croatia	Sveta Tri Krajla
Croatia	Mala Kapela
Dubai	Dubai International Airport
Finland	Kehu Project
Finland	Hakamaentie/Kivihaka Tunnel
Finland	Vuoli Tunnel
Greece	Egnatia Odos-Panagia-Grevena
Greece	Eftaxias
Hong Kong	Route 8
Hong Kong	Sky Plaza
Hong Kong	Lantau Airport & Railway
India	DAMEL
India	C Doctor
Italy	Seiano Tunnel
Italy	Montenegrone Project
Italy	Martignano
Italy	Gran Sasso
Italy	Mongrando Tunnel
Italy	Gra Salva Candida
Italy	Cesena Tunnel
Italy	Valsassina Tunnel
Italy	Spezia
Italy	Lonato Tunnel
Italy	Ronco Tunnel
Italy	Val Badia Tunnel
Italy	Marinasco Tunnel
Malaysia	SMART
New Zealand	JHT New Zealand
Norway	E18 - Bjorvika Tunneln
Norway	Norway Road Tunnel
Norway	Mesta As
Poland	Rondo Tunnel
Portugal	Tunnel Do Rossio
Puerto Rico	Tven Urbana
Qatar	New Doha International Airport
Qatar	NDIA Free Trade Zone
Saudi Arabia	Jamarat Bridge Phase II
Saudi Arabia	Jamarat Bridge Basement
Saudi Arabia	King Khalid Road Tunnel
Serbia	Vrmac Tunnel
Singapore	Singapore Metro Link
Sweden	Arlandabanan, Stockholm
Switzerland	Biasca Tunnel
Taiwan	Pinglin
UK	A3 Hindhead Tunnel
UK	Bell Common Tunnel
UK	Holmesdale Tunnel
UK	Limehouse Link
UK	Terminal 5 - Coach Station
UK	T5 - Taxi Bridge
UK	Blackwall Tunnel
UK	New Tyne Crossing
Yemen	Sayhut-Nishtun Road Project

Rail/Metro

Country	Project
Australia	Parramatta Rail Link
Austria	U3 Station Erdberg
Austria	U2/1 Schottenring
Austria	River City
Austria	U1 Unterwerk
Austria	U2 Messe
Austria	U4 Schottenring
Austria	Vienna Metro - Gross
Austria	Vienna Metro - Leoup
Brazil	Sao Paulo Metro Line 4
Canada	TTC Shepherd
Canada	TTC Petrofit
Canada	Montreal STCUM
China	Guangzhou Metro
Denmark	Copenhagen Metro
Dubai	Dubai Light Railway
Greece	Attiko Metro - Elliniko Ext.
Greece	Egnatio Odos Driscos Tunnel
Greece	Attiko Metro, Athens
Hong Kong	TKO South Hong Kong
Hong Kong	Beacon Hill Tunnel
Hong Kong	Lok Ma Chau
Hong Kong	Penny's Bay Line
Hungary	Budapest Metro Line 2
Hungary	Budapest Metro Line 4
India	Delhi Metro Phase II
India	Delhi Metro
India	DMRC Phase 1 (Mc1b)
Iran	Mashhad Metro
Italy	Passante Ferroviario Di Torino
Italy	Torino Di Bologna
Italy	Nodo Di Bologna
Italy	Passante Ferroviario
Italy	Turin Metro
Italy	Turin Metro Lot 6c Project
Italy	Rome Rail Station
Italy	Avigliana
Italy	Alifana Metro
Italy	Milan Metro
New Zealand	Britomart Project
New Zealand	Otira Rail Tunnel
Portugal	Lisbon Metro
Romania	Bucharest Metro
Singapore	CCL2
Singapore	CCL3
Singapore	CCL4
Singapore	CCL5
Singapore	KPE Expressway
Singapore	North East Line
Taiwan	Nankang Extension Project
Taiwan	KMRT
Turkey	Adana Metro
UK	Bank Station
UK	Channel Tunnel Rail Link
UK	Cooling the Tube
UK	Docklands Light Railway
UK	Jubilee Line Extension
UK	Liverpool Street Station
UK	T5 Track Transit
UK	Woolwich Arsenal Extension
Venezuela	Valencia Metro