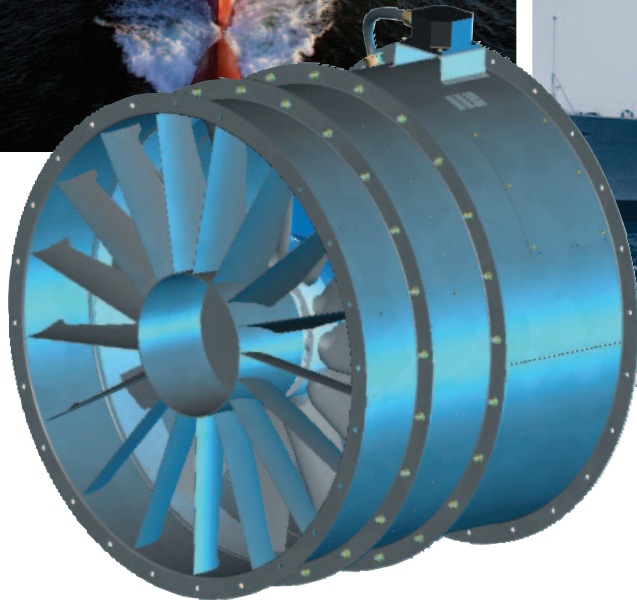


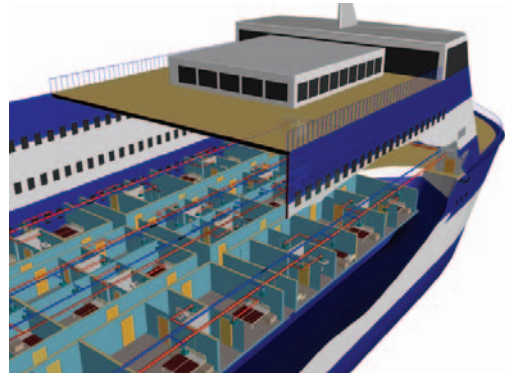
JM Marine Axial Fans & Accessories



Marine Applications

Fläkt started delivering products for marine applications to passenger ships in 1937. Woods started making fans almost 100 years ago and is a respected leader in the field of axial flow fans.

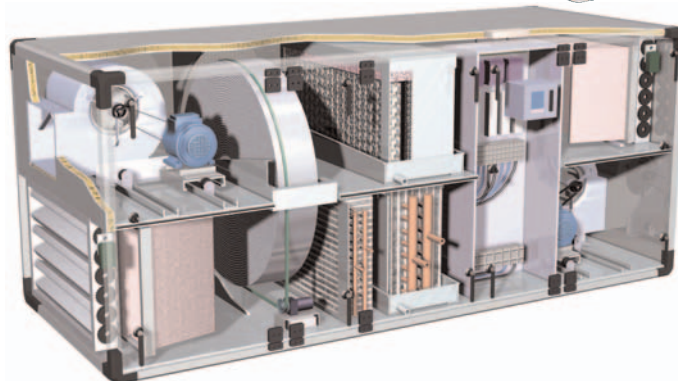
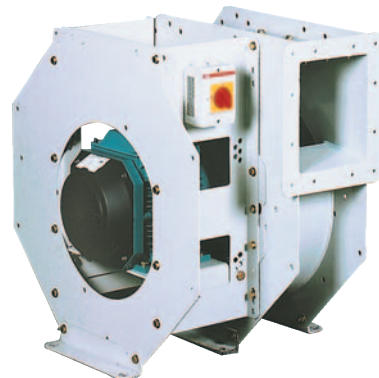
The merger into Fläkt Woods in the beginning of 2002, created a market leader within Marine HVAC with a wide range of quality products for the Marine and Offshore Industries.



Fläkt Woods has long experience of marine applications and the high demands they place on HVAC products and systems. These products must reliably provide the highest quality of indoor climate, regardless of the extreme environmental conditions or the climate zone where the vessels are operating.

Fläkt Woods has all the products needed to build a complete HVAC system and to create ventilation and comfort in cabins as well as public and service spaces. Our product range comprises air handling units, air terminal devices, ducts, fans and regotermes, all developed and manufactured especially for Marine applications.

We have references on board most kinds of vessels from cruise ships and ferries to cargo and navy ships. Fläkt Woods supplies spare parts, utilizing Fläkt Woods global network for any HVAC system to ensure each vessel throughlife accessibility and profitability.



Outline Drawing Dimensions

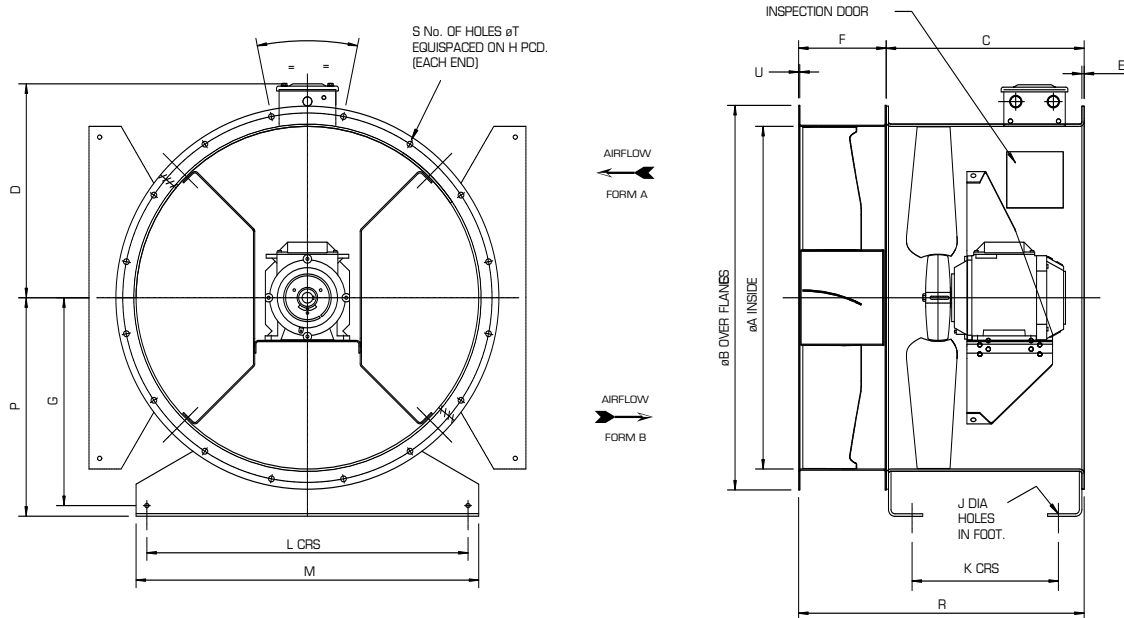
Fan Size	Motor Range	Pole	No. of Blades	B			C	D	E	F	G	H	J	K	L	M	N	P	R	S	T	U	Max Fan Mass (kg) without Guide Vane
				A	GV	Fan																	
40J.M.Mar/16/...	71 - 80	2 & 4	5	400	480	480	375	283	6	208	225	450	10	278	350	400	-	250	583	6	12	3	41
45J.M.Mar/20/...	71 - 80	2 & 4	6	450	530	530	375	338	6	224	255	500	10	275	400	450	-	280	599	8	12	3	48
50J.M.Mar/20/...	90 - 112	2 & 4	6	450	530	530	520	338	6	224	255	500	10	423	400	450	-	280	744	8	12	3	82
	71 - 112	2 & 4	6	500	590	594	520	338	6	235	290	560	10	613	450	500	-	315	755	12	12	3	90
56J.M.Mar/20/...	71 - 112	2 & 4	6	560	650	654	520	368	6	225	330	620	10	413	510	560	-	355	745	12	12	3	96
63J.M.Mar/25/...	71 - 112	2 & 4	9	630	720	724	520	403	6	252	375	690	10	413	580	630	-	400	772	12	12	3	114
	132	2 & 4	9	630	720	724	620	440	6	252	375	690	10	528	580	630	-	400	872	12	12	3	153
71J.M.Mar/25/4/9/...	160	2 & 4	9	630	720	724	725	440	6	252	375	690	10	633	580	630	-	400	977	12	12	3	207
	80 - 112	4	9	710	-	804	520	443	6	-	418	770	10	398	660	710	-	440	-	16	12	-	122
71J.M.Mar/31/2/9/...	132	4	9	710	-	804	620	480	6	-	418	770	12	498	660	710	-	440	-	16	12	-	162
	132	2	9	710	800	804	725	480	6	260	418	770	12	603	660	710	-	440	985	16	12	3	184
80J.M.Mar/25/...	160	2	9	710	800	804	800	480	6	260	418	770	12	678	660	710	-	440	1060	16	12	3	236
	80 - 112	4 & 6	9	800	910	894	520	488	6	234	485	860	10	398	750	800	-	510	754	16	12	3	132
90J.M.Mar/25/...	132	4 & 6	9	800	910	894	620	525	6	234	485	860	12	498	750	800	-	510	854	16	12	3	174
	160	4 & 6	9	800	910	894	725	525	6	234	485	860	12	603	750	800	-	510	959	16	12	3	231
100J.M.Mar/25/...	100 - 112	4 & 6	9	900	1010	1006	520	488	6	230	491	970	10	438	850	900	-	518	750	16	15	3	143
	132	4 & 6	9	900	1010	1006	620	525	6	230	491	970	12	538	850	900	-	518	850	16	15	3	188
100J.M.Mar/25/...	160	4 & 6	9	900	1010	1006	725	525	6	230	491	970	12	643	850	900	-	518	955	16	15	3	246
	100 - 112	4 & 6	9	1000	-	1106	520	488	6	-	547	1070	10	438	950	1000	-	574	-	16	15	-	154
132	132	4 & 6	9	1000	-	1106	620	525	6	-	547	1070	12	538	950	1000	-	574	-	16	15	-	201
	160	4 & 6	9	1000	-	1106	725	525	6	-	547	1070	12	643	950	1000	-	574	-	16	15	-	260
100J.M.Mar/31/...	132	4 & 6	9	1000	-	1106	725	525	6	-	547	1070	12	643	950	1000	-	574	-	16	15	-	228
100J.M.Mar/40/...	160	4 & 6	9	1000	-	1106	800	525	6	-	547	1070	12	718	950	1000	-	574	-	16	15	-	283
	132 - 180	4 & 6	9	1000	1138	1106	350	597	6	406	547	1070	12	758	950	1000	490	574	1246	16	15	5	367
112J.M.Mar/40/...	200 - 225	4 & 6	9	1000	1138	1106	350	687	6	406	547	1070	12	898	950	1000	630	574	1386	16	15	5	601
	160 - 180	4 & 6	9	1120	1258	1258	350	656	6	400	685	1190	14	698	1070	1120	490	710	1240	20	15	5	405
125J.M.Mar/50/...	200 - 225	4 & 6	9	1120	1258	1258	350	756	6	400	685	1190	14	838	1070	1120	630	710	1380	20	15	5	530
	160 - 180	4 & 6	12	1250	1388	1388	350	711	6	368	750	1320	14	698	1150	1250	490	800	1208	20	15	5	493
200 - 225	200 - 225	4 & 6	12	1250	1388	1388	350	811	6	368	750	1320	14	838	1150	1250	630	800	1348	20	15	5	593
	250	4 & 6	12	1250	1388	1388	350	811	6	368	750	1320	14	888	1150	1250	680	800	1398	20	15	5	705
140J.M.Mar/50/...	280	4 & 6	12	1250	1388	1388	425	811	6	368	750	1320	14	1113	1150	1250	830	800	1623	20	15	5	1110
	160 - 180	4 & 6	12	1400	1538	1538	350	786	6	329	850	1470	14	698	1300	1400	490	900	1169	20	15	5	541
160J.M.Mar/50/...	200 - 225	4 & 6	12	1400	1538	1538	350	886	6	329	850	1470	14	838	1300	1400	630	900	1309	20	15	5	623
	250	4 & 6	12	1400	1538	1538	350	886	6	329	850	1470	14	938	1300	1400	730	900	1409	20	15	5	798
160J.M.Mar/50/...	280	4 & 6	12	1400	1538	1538	425	886	6	329	850	1470	14	1113	1300	1400	830	900	1584	20	15	5	1165
	160 - 180	6 & 8	12	1600	1760	1760	350	886	6	322	950	1680	14	698	1500	1600	490	1000	1162	24	20	5	619
200 - 225	200 - 225	6 & 8	12	1600	1760	1760	350	986	6	322	950	1680	14	838	1500	1600	630	1000	1302	24	20	5	704
	250	6 & 8	12	1600	1760	1760	350	986	6	322	950	1680	14	838	1500	1600	630	1000	1302	24	20	5	1008
280	280	6 & 8	12	1600	1760	1760	425	986	6	322	950	1680	14	1113	1500	1600	830	1000	1577	24	20	5	1041

All dimensions in mm

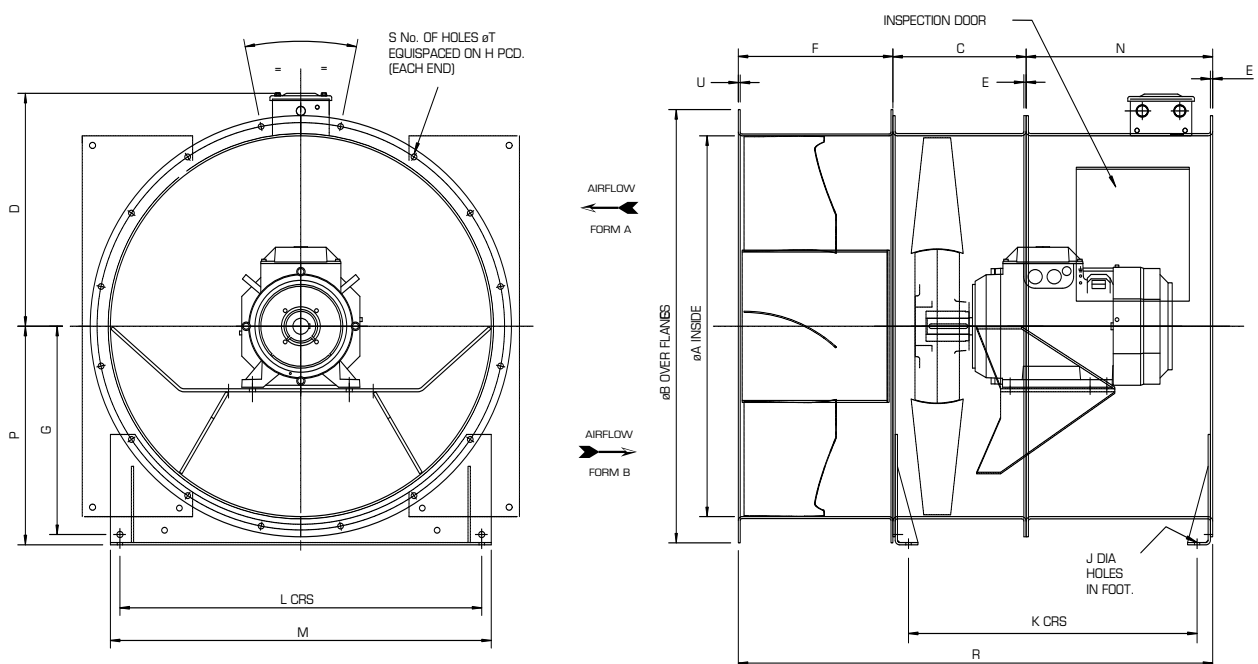
ATEX & Hazardous Area Range Coverage (J.M.Mar.ATEX & J.M.Mar.Haz)

Outline Drawings

One-piece duct
400 – 1000 mm Fan Ø (160 – 315 mm Hub Ø)



Two-piece duct
1000 – 1600 mm Fan Ø (400 – 500 mm Hub Ø)



The JM Marine Axial Fan Range

- Range consists of 13 diameters from 400 mm to 1600 mm
- 6 mm thick casing & inspection doors
- 50 Hz or 60 Hz supply
- Marine certified foot-mounted ABB or Marelli motors
- 2 fan speeds per diameter (achieved by 2 motor pole variations)
- Vertical & horizontal mounting
- Minimum of 65 % volume flow in reverse form⁽¹⁾

Options

- Isolator in lieu of Terminal Box⁽²⁾
- Facility to add Shock Pulse Measurement equipment (holes in duct & tapped motor holes)⁽²⁾
- Epoxy paint on top of galvanised finish
- Hazardous Area (Available for 500, 630 – 1600 mm Ø)

Fans intended for applications within potentially explosive marine environments

- EExd Motor
- Certified conduits & glands
- Increased safety Terminal Box
- Anti-Spark track
- Additional Impeller locking feature

- ATEX (Available for 500, 630 – 1600 mm Ø)
Same as Hazardous Area but with increased tip gap

Fans intended for hazardous area applications that are fully compliant with the ATEX European Standard

- Bolt-on Guide Vane
- Accessories

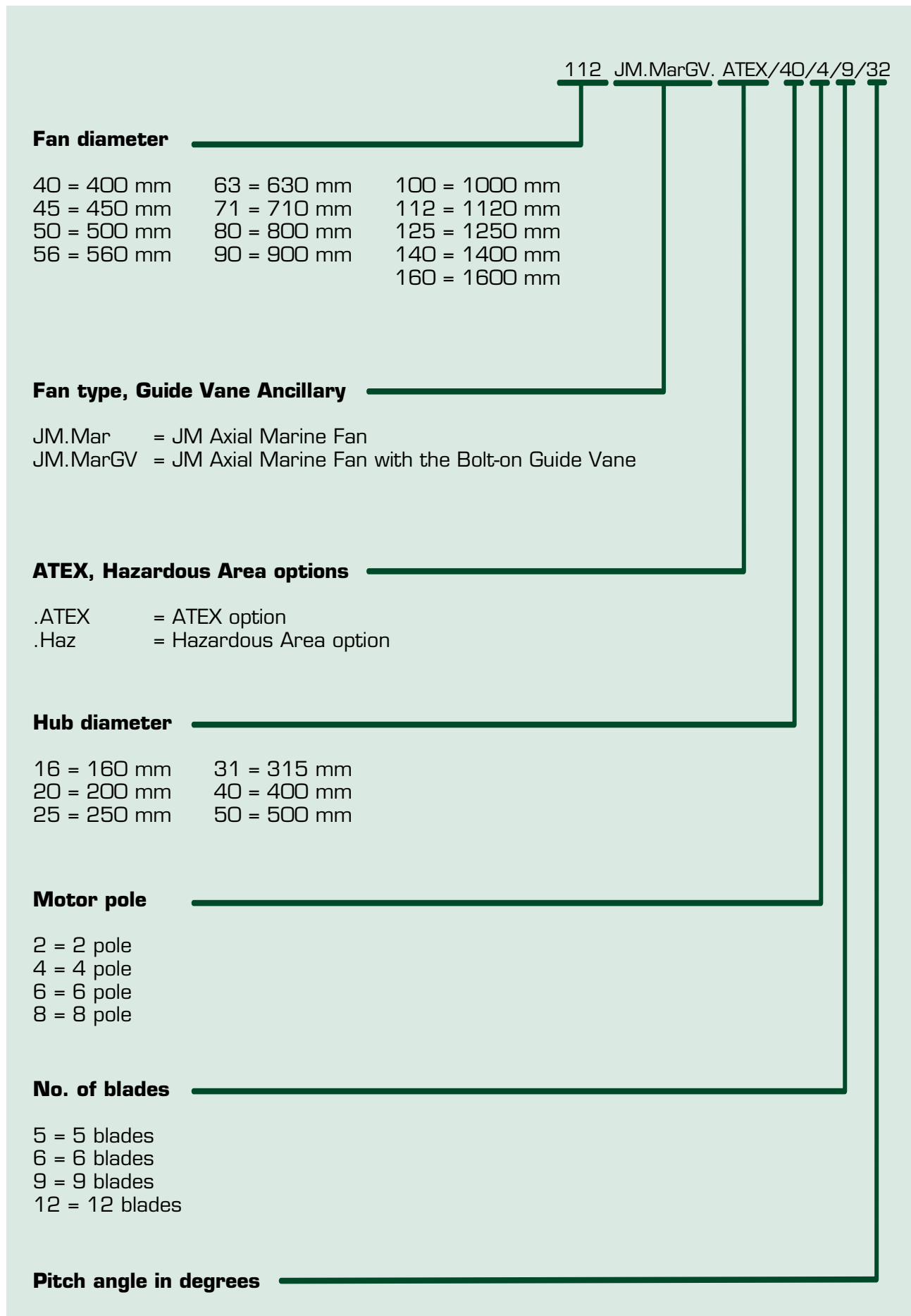
The ABB logo consists of the letters 'ABB' in a bold, red, sans-serif font.

MarelliMotori

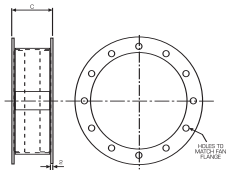
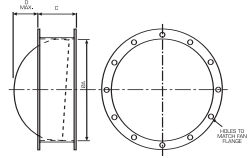
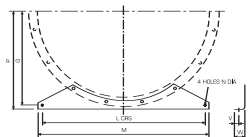
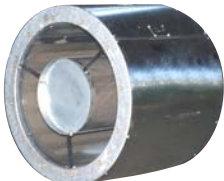
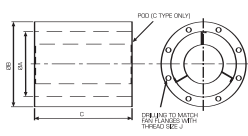
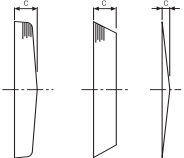
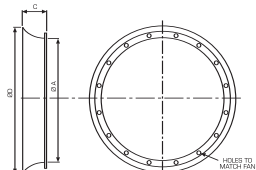
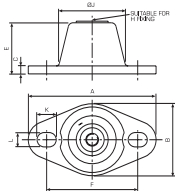
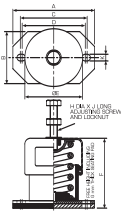
⁽¹⁾ Non reversible when Guide Vane option is chosen

⁽²⁾ Not available with ATEX or Hazardous Area fans

Fan Codes



Other Accessories

Matching Flanges & Flexible connector		
Damper		
Mounting feet		
Cylindrical Silencers		
Guards		
Bellmouth Inlet		
Rubber Anti Vibration Mounts		
Spring Anti Vibration Mounts		

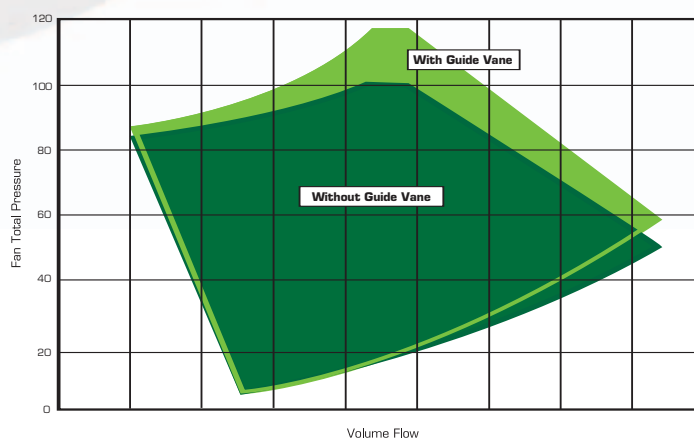
Bolt-on Guide Vane Ancillary

A range of 13 Guide Vanes are available for the Standard, ATEX and Hazardous Area ranges.

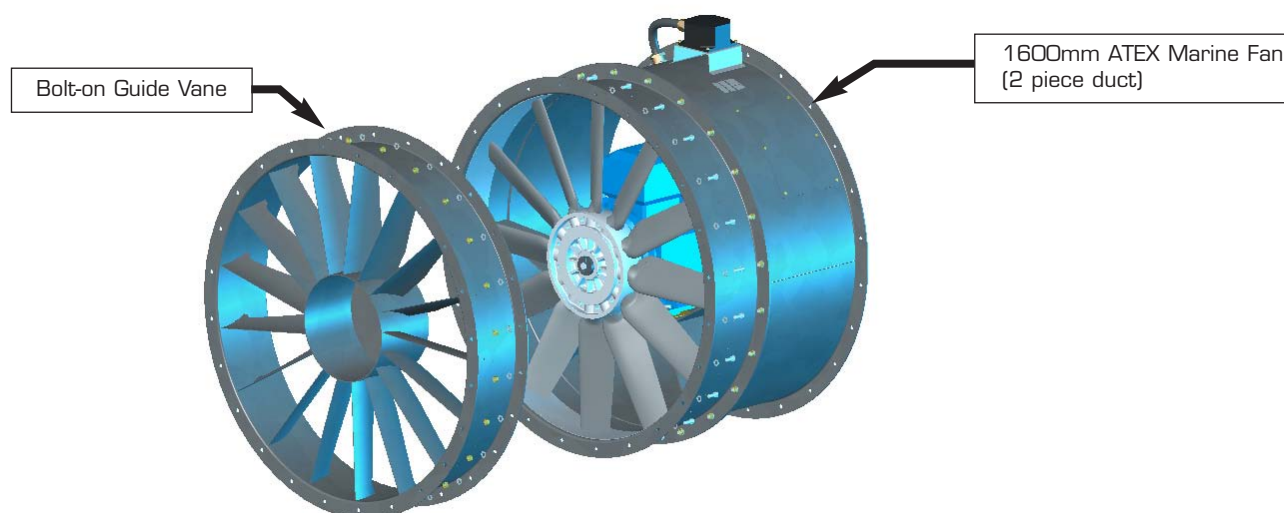
The Guide Vane units increase the useful pressure by reducing the vortex at the fan's outlet.

Example of pressure improvement

Fan Code	Max Total Pressure Improvement
40JM/16/2/5	115%
45JM/20/2/6	115%
50JM/20/2/6	115%
56JM/20/2/6	115%
63JM/25/2/9	117%
71JM/31/2/9	117%
80JM/25/4/9	113%
90JM/25/4/9	111%
100JM/40/4/9	117%
112JM/40/4/9	114.50%
125JM/50/4/12	115.50%
140JM/50/4/12	112.50%
160JM/50/6/12	111%



Make your fan more efficient without increasing the diameter...



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. Tick the relevant box – A choice of two motor manufacturers is available for the marine fan range: ABB or Marelli. When happy with your selection click 'Accept'.
4. The desired volume flow and pressure can be input to identify suitable fans. Other filters can be adjusted so the desired fan is identified.
5. Each fan can be highlighted and technical information made available, including dimensional drawings.

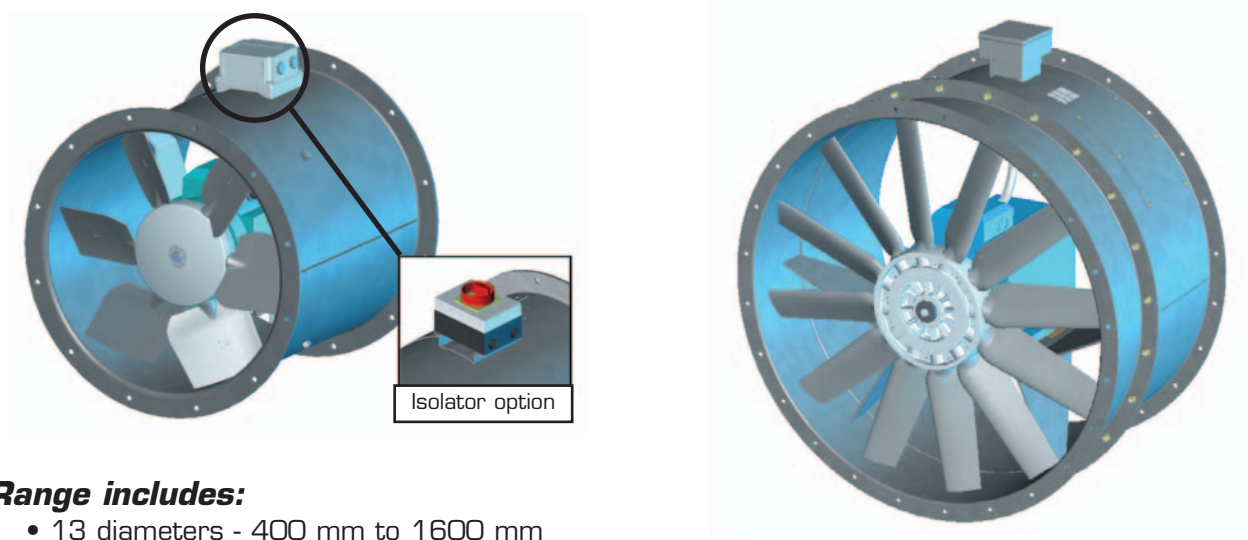
The screenshot displays the Flakt Woods Group Selector software interface, which is used for selecting axial fans. The interface is divided into several sections:

- Product Filters - Microsoft Internet Explorer:** A list of fan models and motor options. The 'JM Marine (ABB Motors)' and 'JM Marine (Marelli Motors)' options are checked.
- Standard / High Temperature Axial and Standard Mixed Flow Fans:** A section with a 'Select' button and a 'Direct Mode' button.
- Platemounted Axial Fans:** A section with a 'Select' button.
- Roof Unit Fans:** A section with a 'Select' button.
- Boxed Fans:** A section with a 'Select' button.
- Bifurcated:** A section with a 'Select' button.
- Direct Mode - JM Marine (ABB Motors):** A detailed configuration screen for the selected fan. It includes:
 - Requested Duty point:** Volume flow (Q) of 30.14 m³/s, Static Pressure (P2) of 301.58 Pa, and Pressure (P1) of 0.00 Pa.
 - Options:** Air Conditions, Selection Options, Motor Options, and Accessories.
 - Motor Options:** Speed Options, Enclosure (Standard), Smoke Venting (Non Smoke Venting), Supply (50), and Motor Mounting (Standard Motor Mounting).
 - Parameters:** Size (1600), Hub Size, Poles, Speed, Blades, and Pitch (25).
 - Fan Details:** 160JM.Mar/50.8/12/25, 720 rpm.
 - Motor Selection Table:**

Description	Power	FLC	STC
225SMB	29.49 hp	47.0 A	272.6 A
225SMC	40.21 hp	65.0 A	403.0 A
250SMB	49.6 hp	77.0 A	523.6 A
280SMA	49.6 hp	77.0 A	523.6 A
 - Fan Curve:** A graph showing Static Pressure (Pa) vs. Volume Flow (m³/s) with efficiency contours (55%, 60%, 65%, 70%, 75%).

Standard Range

1 piece construction on 400–1000 mm 2 piece construction on 1000–1600 mm

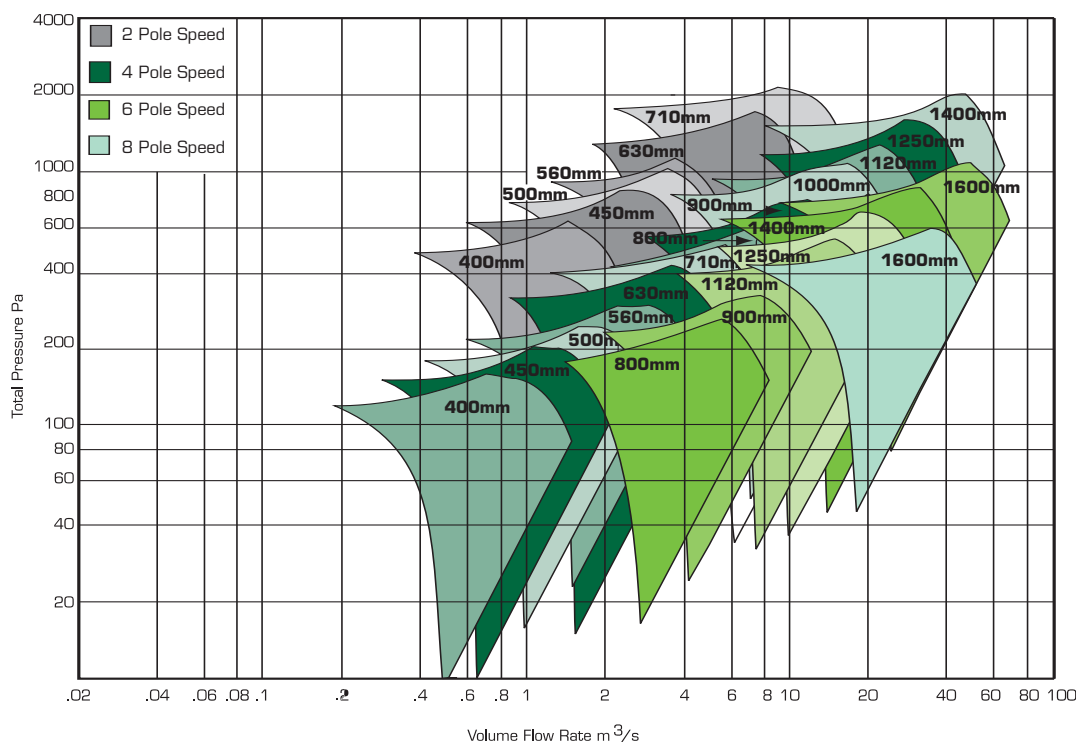


Range includes:

- 13 diameters - 400 mm to 1600 mm
- 6 mm thick casing
- Inspection doors
- 50 Hz or 60 Hz supply
- Marine certified foot-mounted ABB or Marelli motors
- 2 fan speeds per diameter (achieved by 2 motor pole variations)
- Vertical & horizontal mounting

Options:

- Isolator in lieu of Terminal Box
- Facility to add Shock Pulse Measurement equipment (holes in duct & tapped motor holes)
- Epoxy paint on top of galvanised finish
- Bolt-on Guide Vane



ATEX

As from July 1st, 2003 the ATEX Directive requires products to be used within the European Economic Area in potentially explosive environments to be ATEX compliant. The new directive covers equipment used in petro-chemical plants, chemicals, pharmaceuticals, battery rooms, and other areas where a potentially explosive atmosphere may be present. Potential explosive hazards include gases, vapours, mists and dust. The specific mixture being handled categorises the features each product must include. For more information visit www.flaktwoods.com/atex

ATEX

Many marine applications are hazardous and would be covered by the requirements of ATEX if shore based. As a responsible fan manufacturer, Fläkt Woods offers clients an ATEX compliant marine product range for hazardous area applications in addition to a non-ATEX compliant Hazardous Area Range.

Our ATEX certified product range is suitable for the following classifications only:

Ex II 2 G c IIB T4



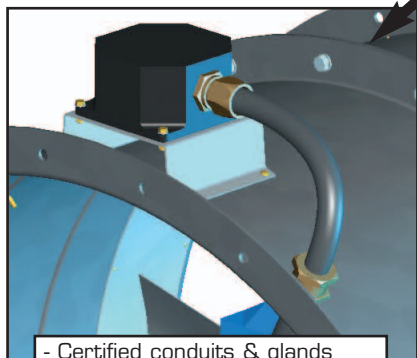
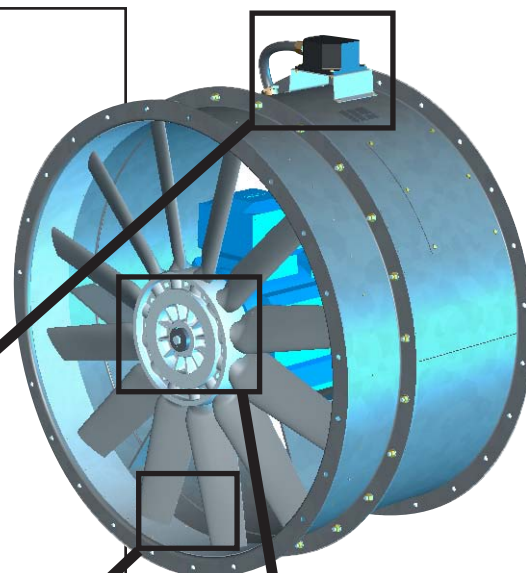
ATEX Range & Hazardous Areas Range

Range includes:

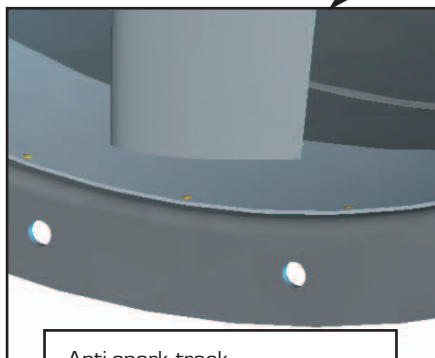
- 10 diameters - 500, 630 to 1600 mm
- 6 mm thick casing
- Inspection doors
- 50 Hz or 60 Hz supply
- Marine EExd foot-mounted ABB or Marelli motors
- EExe T/Box & approved conduits & glands
- Additional impeller locking feature
- Anti-spark track
- Increased tip gap*
- 2 fan speeds per diameter (achieved by 2 motor pole variations)
- Vertical & horizontal mounting

Options:

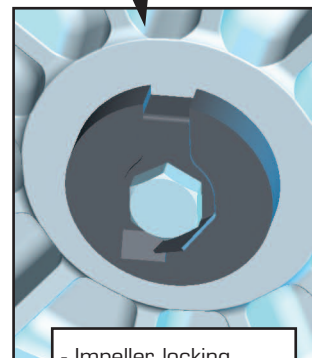
- Epoxy paint on top of galvanised finish
- Bolt-on Guide Vane
- Accessories



- Certified conduits & glands
- EExe terminal box
- EExd motor



- Anti-spark track
- Increased tip gap (ATEX only)



- Impeller locking feature

* Applies to ATEX range only - Hazardous Area fans have a standard tip gap; this range is not certified by ATEX.

We Bring Air to Life



Fläkt Woods Group provides a full range of products and solutions for buildings ventilation, air treatment and industrial air movement

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www.flaktwoods.co.uk

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