

## A guide to fans for industry



AIRTREND Limited  
Predstavništvo u Beogradu  
Kumanovska 14, 11000 Beograd  
Tel: 011/3836886, 3085740  
Faks: 011/3444113  
e-mail: gobrid@eunet.rs  
web: www.airtrend.rs

**FläktWoods**

# Focused solutions for industrial applications

Modern industrial processes demand specific and specialist requirements for high performance ventilation equipment.

Fläkt Woods air movement technology is used widely in industrial plants and factories for ventilation of workspaces, as vital components in high technology manufacturing facilities, and for maintaining delicate environments within close tolerance levels in petro-chemical and pharmaceutical plants. Common industrial applications, where Fläkt Woods' products are relied on, include air conveyors, dust collection and material/particulate movement.

Fläkt Woods is a leading supplier of fans to some specialist applications such as car washing plants, pulp and paper manufacturers, mechanical vapour compression in evaporation and distillation processes, textile machinery and glass process manufacture.

Fläkt Woods also has unrivalled experience in the supply of state-of-the-art fans for cooling applications, including low noise high performance fans for refrigeration, condensing and electro-mechanical applications.

Fläkt Woods has arguably the finest market-led design and engineering team in the world and some of the most sophisticated research facilities in the industry.

Design facilities include CAD techniques incorporating computational fluid dynamics, solid modelling and finite element analysis, which allows a component to be put under operational stress prior to commitment to manufacture.

Customers maintain confidence in our ability to work in many different materials and our highly trained, dedicated and motivated team work to ensure total quality is continually met.



## JM Aerofoil • 315 - 1600mm Ø • 65m<sup>3</sup>/s • Static pressure up to 2000 Pa



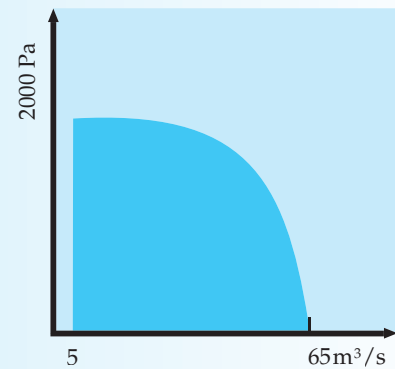
### Applications

- General ventilation and extraction
- Cooling and refrigeration
- Electro-mechanical cooling
- Environmental control - crop storage
- Petrochemical process ventilation
- Emergency ventilation options up to 400°C/2 hours
- Pressure testing

### General information

- 800mm up to 2900 rpm; 1400mm up to 1450 rpm and 1600mm up to 960 rpm
- Fully adjustable die cast aluminium impellers; X-ray inspection
- Long and short mild steel casing variants - hot dipped galvanised after manufacture or stainless steel
- Tested to ISO 5801
- Motor protection IP55
- High energy efficiency - AMCA Certified
- Low installed noise levels
- Multiple blade configurations for optimum performance to duty
- Multi-stage available for higher pressure development
- Bifurcated variants for continuous operation up to 200°C
- Explosion proof options in accordance with ATEX directive

### Performance



## Axipal 3i • 315 - 1250mm Ø • 40m<sup>3</sup>/s • Static pressure up to 2000 Pa



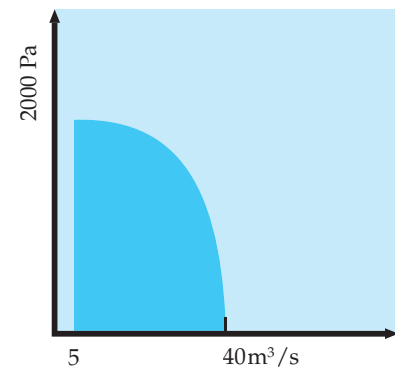
### Applications

- General ventilation and extraction
- Cooling and refrigeration
- Electro-mechanical cooling
- Engine and equipment cooling

### General information

- 800mm up to 2900 rpm; 1250mm up to 960 rpm
- Fully adjustable glass-filled polypropylene impeller blades - pressed steel hub and clamp-plate
- Long and wall-mounted mild steel casing variants - painted after manufacture or galvanised options
- Tested to ISO 5801
- Motor protection IP55
- Option of safety switch to ISO 12499
- High energy efficiency - low noise design
- Multiple blade configurations for optimum performance to duty
- Unique impeller design features for optimum performance

### Performance



## Axicient and Large JM • up to 4000mm Ø • 400m<sup>3</sup>/s • Total pressure up to 4000 Pa



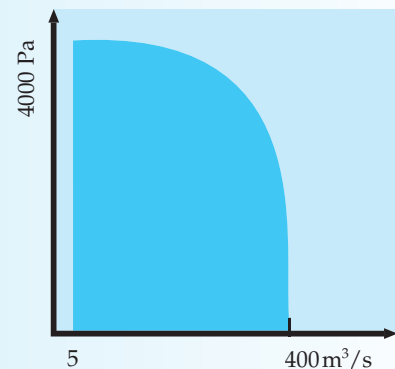
### Applications

- Transverse and semi-transverse ventilation of road, rail and metro systems
- Emergency ventilation - smoke control
- Industrial process ventilation
- Wind tunnels

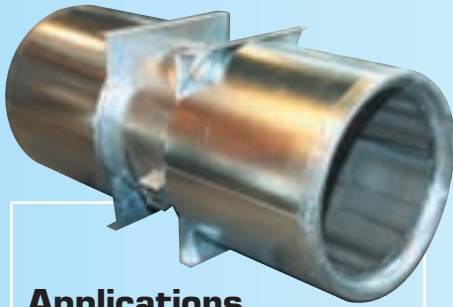
### General information

- Controllable blades in motion, adjustable blades at rest, and speed control options available
- Aluminium aerofoil blades in unidirectional and fully reversible configurations. Long and compact casing/diffuser variants - hot dip galvanised after manufacture or paint to order
- Tested to ISO 5801
- Motor protection IP55
- High performance - AMCA Certified
- Emergency ventilation at 250°C/2 hours with options up to 400°C/2 hours
- Low energy consumption designs, low lifetime costing
- Reliable, proven long life design

### Performance



## Axijet - Jetfoils • 400 - 1600mm Ø • Thrust up to 3500N (50 Hz) • Thrust up to 3900N (60 Hz)



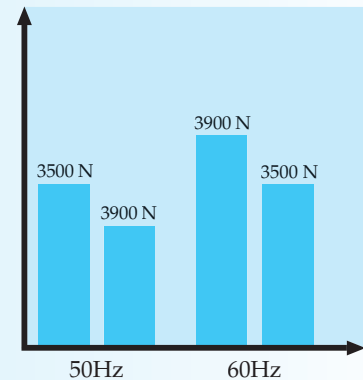
### Applications

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

### General information

- 710mm up to 3600 rpm; 1000mm up to 1750 rpm and 1600mm up to 1100 rpm
- Fully adjustable die cast aluminium impellers in uni-directional and fully reversible configurations; X-ray inspection
- Mild steel casing - hot dipped galvanised after manufacture, painted or all stainless steel construction
- Integral silencers fitted where required
- Motor protection IP55
- High thrust performance
- Emergency ventilation options up to 400°C/2 hours

### Performance



## Axico Anti-stall • 630 - 1800mm Ø • 110m<sup>3</sup>/s • Static pressure up to 3000 Pa



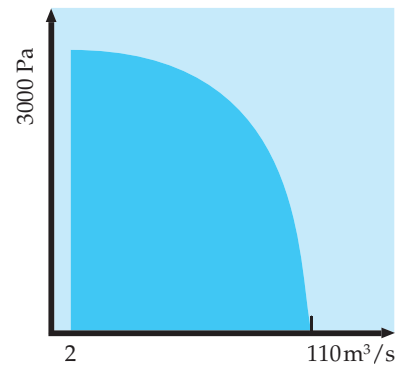
### Applications

- Wind tunnels
- Painting plants
- Clean rooms
- Offshore and marine
- Textile ventilation
- Glass manufacture

### General information

- Variable-pitch-in motion fan
- Suitable for temperature from -15°C to +40°C
- Standard 4 pole or 6 pole footmounted motor
- Low vibration level
- Options of painted or galvanised finish
- Motor protection rating IP55
- Alternative drive arrangements available
- Large installer user base
- Pneumatic/electro-mechanical actuation options

### Performance



## JM Portable Coolers • 400 and 500mm Ø • Air throw up to 25m • Adjustable discharge angle



### Applications

- Industrial specification portable cooler for local process ventilation
- Man cooling applications

### General information

- 500mm up to 2910 rpm
- Die cast aluminium impellers; X-ray inspection
- Mild steel casing and cradle - hot dipped galvanised after manufacture
- Option of 100-110v; 1 phase supply for site work
- Isolator fitted
- Motor protection IP55

### Performance

Air throw, up to 25m @ 1.25 m/s velocity



## Aerofoil Climafan • 500 - 1000mm Ø • 13.5m<sup>3</sup>/s • Static pressure up to 850 Pa



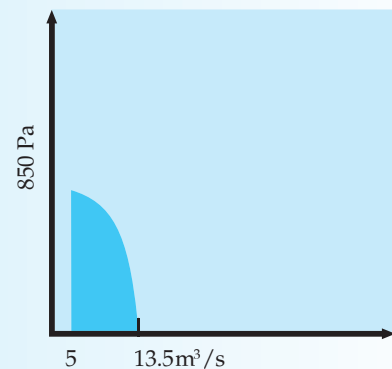
### Applications

- Heat transfer - cooling and refrigeration
- Livestock ventilation
- Crop storage/cooling
- Food industry

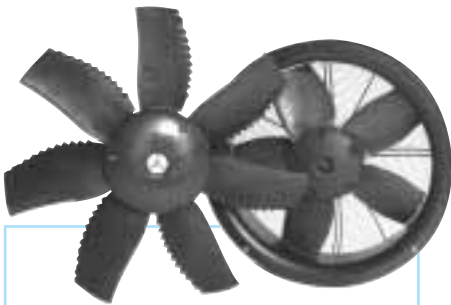
### General information

- Fully adjustable glass-filled polypropylene impeller blades - die cast aluminium hub and clamp-plate
- Long; Short and plate-mounted mild steel casing variants - hot dipped galvanised after manufacture
- Motor protection IP55
- High energy efficiency
- Low installed noise levels
- Compact but flexible design to suit most customer configurations
- Stainless steel options
- -40°C to +65°C ambient options

### Performance



## Compac Climafan • 560 - 800mm Ø • 6.5m<sup>3</sup>/s • Pressure up to 200 Pa



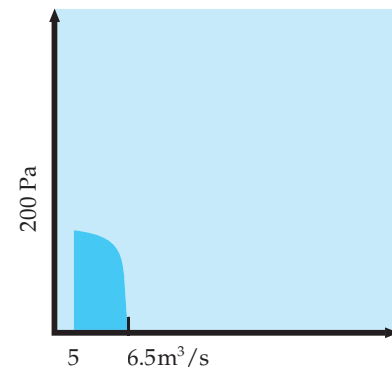
### Applications

- Heat transfer - cooling and refrigeration

### General information

- Fixed geometry, asymmetrically spaced blades in glass filled polypropylene.
- Guard and mild steel cased variants - painted after manufacture
- Option of crenellated blades for lower noise characteristics
- Motor protection up to IP67
- High energy efficiency
- Very low installed noise levels
- Exceptionally compact design with option of unique integrated motor and impeller

### Performance



## 2100 Series • 315 - 710mm Ø • 4.1m<sup>3</sup>/s • Static pressure up to 300 Pa



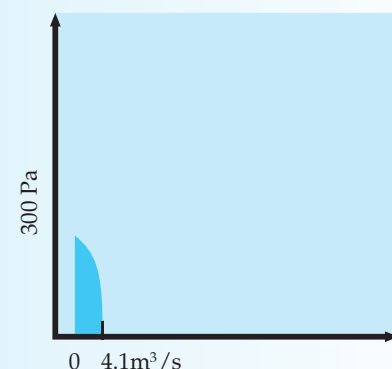
### Applications

- Heat transfer - cooling and refrigeration
- Livestock ventilation

### General information

- 500mm up to 1450 rpm; 710mm up to 960 rpm
- Fixed geometry impellers in glass filled polypropylene or clad mild steel.
- Guard and plate-mounted mild steel cased variants - painted after manufacture
- Multiple configurations, general purpose fan range
- Motor protection IP55

### Performance



## Centripal EU • 355 - 1400mm Ø • 40m<sup>3</sup>/s • Static pressure up to 20000 Pa



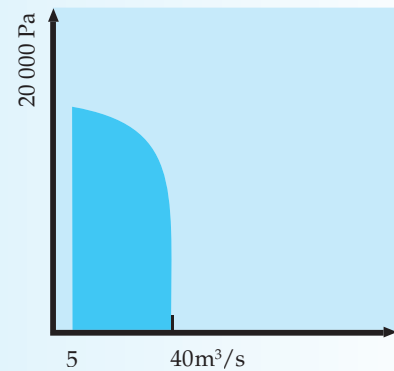
### Applications

- Boiler and furnace ventilation
- Pneumatic conveying
- Glass-works process ventilation
- Dust and fume extraction
- Textile machinery and process ventilation
- Timber industry applications (pulp and paper)
- Dehumidification

### General information

- 11 impeller widths to optimise performance
- 6 fixed geometry impeller types for all applications
- Mild steel painted or hot dipped galvanised after manufacture or stainless steel construction
- Outlet configurations at every 45°
- Direct or belt drive as standard
- Motor protection IP55
- Option of safety switch to ISO 12499
- High energy efficiency - over 80%
- Option of coupling drive
- Standardised design to minimise despatch lead times from manufacture
- Detachable section to allow impeller to be removed in situ
- Suitable for 350°C continuous operation as standard

### Performance



## Europal • 800 - 2500mm Ø • 100m<sup>3</sup>/s • Static pressure up to 26000 Pa



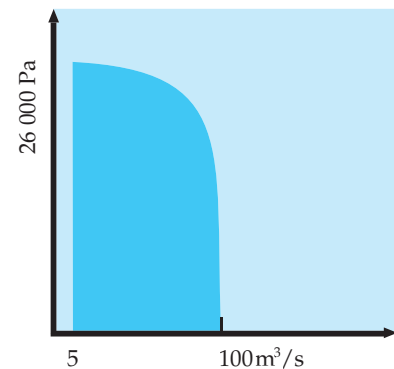
### Applications

- Boiler and furnace ventilation
- Steel works processing
- Glass-works process ventilation
- Dust and fume extraction
- Fluid bed dryers

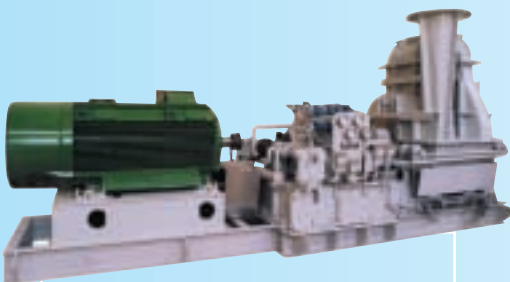
### General information

- 10 impeller widths to optimise performance to duty
- 4 fixed geometry impeller types for most applications
- Mild steel painted or hot dipped galvanised after manufacture or stainless steel construction
- Outlet configurations at every 45°
- Belt or coupling drive
- Motor protection IP55
- High energy efficiency - over 85%
- High aerodynamic range
- Option of reinforced impellers for particulate handling
- Special shafts, bearings and seals available
- Suitable for 350°C continuous operation as standard

### Performance



## Technopal • up to 5000mm Ø • 1000m<sup>3</sup>/s • Static pressure up to 100000 Pa



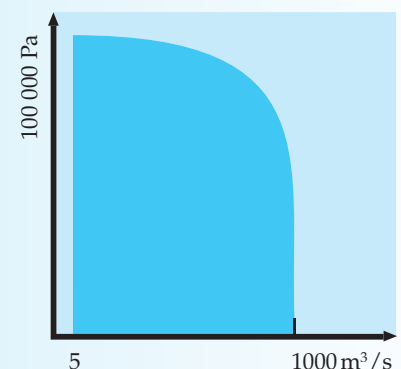
### Applications

- Cement works - conveying/processing
- Power stations - induced draft fans
- Steel works processing
- Petrochemical plants

### General information

- Designed and manufactured in accordance with customer specifications
- Large installed base
- Proven technical performance and reliable design
- Expert product support team

### Performance



## Compostie Technology • Designed to customer duty • Unique fixed impeller geometrics for higher rotational speed



### Applications

- Mobile ventilation and cooling; traction, buses etc.

### General information

- Carbon fibre impellers - 8 times lighter than steel and higher resistance to fatigue
- Mild steel casing - hot dipped galvanised after manufacture, or stainless steel construction
- Able to withstand multiple start/stop cycles with reduced inertia
- Motor protection IP55
- High energy efficiency
- Clean air applications
- Design and application flexibility
- Low vibration forces

### Performance

For performance details please enquire

## Centrimaster GT • 140 - 1400mm Ø • 50m<sup>3</sup>/s • Static pressure up to 3300 Pa



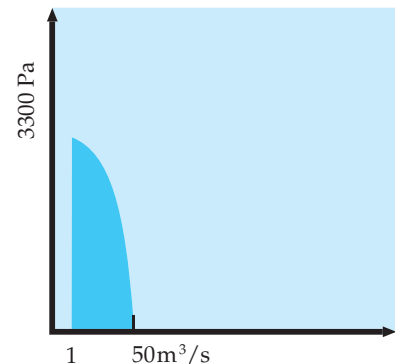
### Applications

- Light industry
- Air Handling Manufacture
- Clean Air Ventilation
- Process supply fans
- Marine applications
- Heat transfer

### General information

- Two types of fan impeller offer forward curved (GTLF) or backward curved (GTLB/GTHB) blades
- Single inlet can be either direct or belt drive. Double inlet belt driven only
- Smoke extraction (400°C/2h)
- Robust yet lightweight construction
- Air contact parts available in stainless steel

### Performance



## Mixed Flow Fans • Both direct and belt drives available



### Applications

- Traction, marine and offshore applications
- Wind generator cooling
- Equipment cooling

### General information

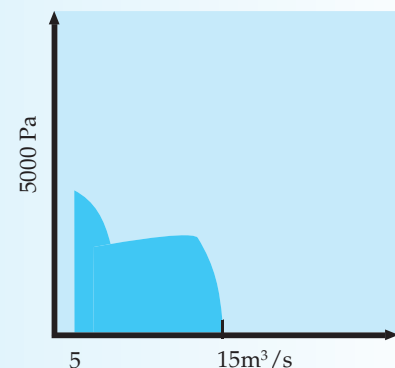
#### Direct Drive

- 400 - 1000mm impeller diameter
- Volume flow up to 15 m<sup>3</sup>/s
- Static pressures up to 5000 Pa
- Unique mixed flow fixed impeller geometry
- Mild steel hot dipped galvanised after manufacture or stainless steel construction
- Motor protection IP55
- High energy efficiency - over 80%

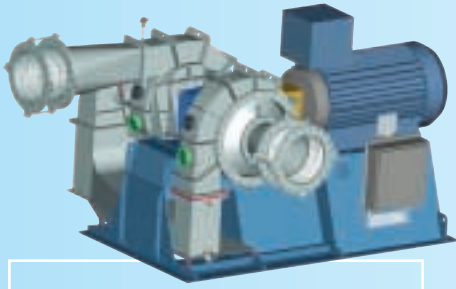
#### Belt Drive

- 250 - 1000mm diameter
- Volume flow up to 40 m<sup>3</sup>/s
- Stainless steel constructions
- Motor protection IP55
- Explosion proof construction

### Performance



# ComVel™ Compressor • Volume flow 2 - 7m<sup>3</sup>/s • Pressure up to 130000 Pa • 200 - 1000kW



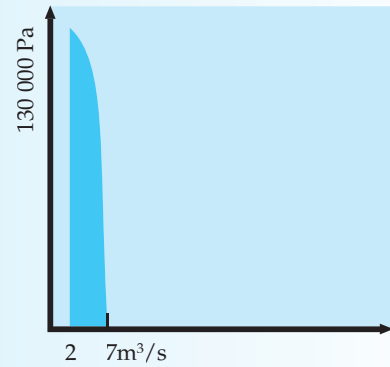
## Applications

- Biological waste water treatment
- Fluidised bed boilers
- Flotation processes
- Pressurised air systems
- Desulphurisation processes
- Power plants
- Chemical industry
- Mineral wool production

## General information

- Supply voltages 400 - 690 V ± 10%
- High efficiency gives low life cycle cost
- Excellent controllability maintaining high efficiency throughout the operating range
- Compact design and large air flow per unit leads to modest space requirement
- Zero leakage and spark resistant design available upon request
- Great resistance against corrosive gases due to composite impeller material
- Easy to service due to unique design features
- Oil free and non-pulsating air flow
- Simple noise attenuation

## Performance



# ExVel Compressors • Volume flow 1.5 - 95m<sup>3</sup>/s • Pressure up to 65000 Pa • 2500kW



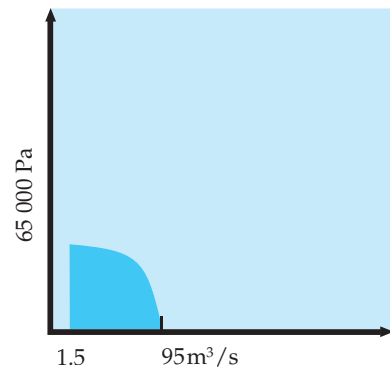
## Applications

- Mechanical vapour recompression
- Fluidised bed boilers
- Flotation processes
- Mineral wool production
- Power plants
- Vacuum systems
- Chemical industry
- Pulp and paper industry
- Pressurised air system, etc.

## General information

- Low energy consumption
- Excellent overall economy
- Maintenance friendly design
- Robust design
- Minimum footprint
- Fabricated casing design allows the use of any weldable material
- Zero leakage shaft seal design available
- Pre-engineered components save design and engineering costs for custom product

## Performance



# Impellers



## Applications

- Car wash
- Oven blowers
- Street cleaning machines
- Industrial AHUs manufacturers
- Food industry
- Motor manufacturers (cooling of the motors, directly mounted on the shaft)
- Dryers
- Vacuum applications

## General information

Fläkt Woods can supply impellers/inlet cones for use in specific OEM applications

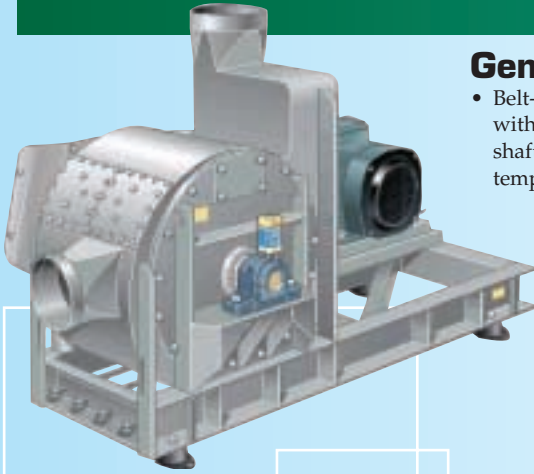
- High build quality
- High efficiency options
- Full customer support
- Proven mechanical and performance designs
- Ancillary components such as anti-spark available
- Stainless steel options

## Performance

For performance details please enquire



## HD



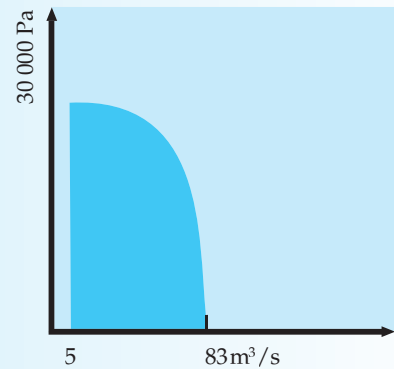
### Applications

- For transport of clean gases under high pressure and in moderate flows

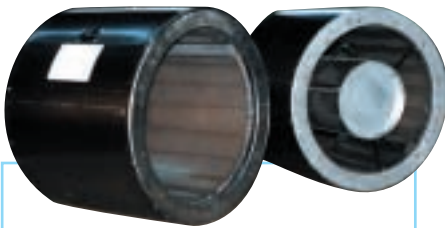
### General information

- Belt-driven two-stage centrifugal fans with the impellers on one single shaft. Maximum operating temperature 100°C

### Performance



## Silencers • Available in both Splitter or Cylindrical types



### Applications

- All process ventilation
- Integrated designs

### General information

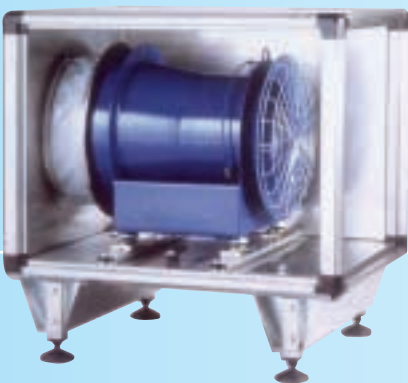
#### Splitter

- Standard height from 300-1500mm to lengths 600-2400mm
- Suitable for temperatures from -40°C to 200°C
- Low resistance to airflow options available

#### Cylindrical

- Suitable for pressures up to 1000Pa (for higher please enquire)
- Optional Melinex lining prevents fibre migration
- Suitable for temperatures from -40°C to 200°C
- Variants for up to 400°C emergency ventilation available
- Fully welded options

## JM AXIAD - FACD • 500 - 1000mm Ø



### Applications

- Applications where a low outlet velocity is required.
- Air handling units
- Increased efficiency applications

### General information

- A compact fan for incorporating into air handling units
- The diffuser reduces the air velocity which also reduces the dynamic pressure
- The advantage of integrating the inlet and diffuser into the fan casing is a shorter fan which allows a reduction in the length of the air handling units fan section
- FACD is available in the same finishes as the JM axial hot dipped galvanised, as standard, painted and different grades of stainless steel
- Lower running costs

### Performance

For performance details please enquire

# After Markets and Services



## Replacements and Spares

An efficient organisation is in place to provide you with a full service concept, to replace damaged fans or parts of our own installed base, as well as those of competitors.



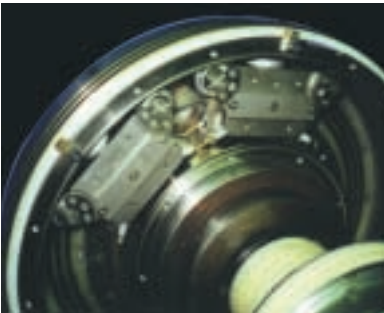
## Commissioning

The Commissioning consists of checking fan installation and settings before start-up. This allows the opportunity for the end-user/customer to gain product knowledge and experience from our site specialists.



## Expertise and repair on-site or in our workshop

A diagnosis is made by trained and qualified technicians who recommend repairs and can carry them out on site, whenever possible, or in our appointed workshops.



## Balancing - ACBS

Balancing operation on site to reach minimal vibration levels. A patented system ACBS (Active Control Balancing System) ensures the fans optimal mechanical liability while in operation.



## Seminars

A variety of personalised seminars are available. Courses can be attended either on site (during the commissioning period) or separately in classrooms.



## Site/Workshop measurements

Preventive measurements (vibration, aerodynamics and acoustics) are taken while the fan is in operation. Measurement results are used to control the actual fan operating conditions and/or to define any upgrades together with the customer.



### **Standardised accessories**

Components and spare parts (bearings, motors, dampers, frequency converters, softstarters, remote controls, emergency buttons etc) are available whatever the origin of the fan.



### **Acoustic modernisation**

Study and optimisation of existing installations to comply with environmental laws and customer specifications.



### **Global turnkey solutions**

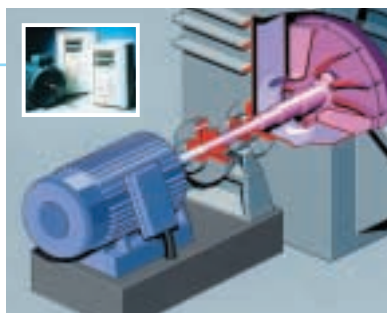
We offer turnkey solutions for projects such as:

- fan performance modifications
- fan efficiency improvements
- noise attenuation
- fan troubleshooting
- corrosion or erosion solutions
- extreme conditions (ie high operating temperature or high tip speed)
- higher efficiency motor replacement



### **Hermit Crab® upgrading**

The replacement of an impeller - whatever its origin - by a Fläkt Woods design impeller. The flexibility of this concept enables us to define the optimal solution for the end-user customer (productivity improvement, energy savings, erosion resistant solution, build-up solution) in order to minimise the capital cost and to offer short delivery and assembly times.



### **Shaft line maintenance**

Global shaft line maintenance (fan, motor, frequency converter). This intervention can be integrated in the predictive, preventive and curative maintenance programme of every process fan.