RHF FANS LTD

Better thinking, better solutions

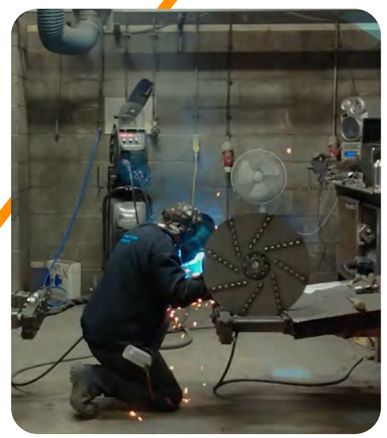
AXIAL FAN SOLUTIONS

One of the UK's leading manufacturers and suppliers of industrial Axial Fans

AXIAL FANS, DESIGNED & BUILT TO DELIVER BETTER PERFORMANCE

RHF Fans Limited has revolutionised the design of axial fans by simplifying their complex structures into modular components. Our advanced manufacturing process employs cutting-edge laser and CNC technology at every stage–from precision steel cutting to seamless cylinder welding, flange spinning, and punching. The flanged casings are formed using a CNC spinning and punching machine. A key innovation is our unique tabbing technique, significantly reducing fabrication and assembly time while ensuring unparalleled accuracy and quality in every product.

In the following pages, a detailed specification of our extensive axial range is given with performance curves and complete sound data. Motor and electrical information will allow you to make your own selection and general operating/maintenance construction will aid the installation dimensions and details of both fans and ancillary equipment are provided.



FAN SPECIFICATION

RHF axial fans are available in a number of formats.

LONG AND SHORT CASED	250 – 2000 MM DIAMETER
BELT DRIVEN	250 – 2000 MM DIAMETER
BIFURCATED NORMAL AND HIGH TEMPERATURE FANS	250 – 2000 MM DIAMETER
RECIRCULATION PLUG TYPE FANS	TO CLIENT SPECIFICATION

IMPELLERS

To achieve optimal efficiency low levels and minimal power many combinations of hubs and blades are available. The duty is obtained by the factory or on-site and achieved by setting the blade pitch over a wide range of angles. Pressure variation is achieved by use of full or partial solidity impellers.

RHF Fans provide a range of fully adjustable pressure diecast aluminium alloy impellers. Polypropylene impellers are also available depending upon the speed and application involved and customer preference.

Mild steel and stainless steel impellers can be offered where corrosion or high-temperature gases are being handled. Smoke extract fans are fitted with steel impellers because of the reduced strength of aluminium at high temperatures. The impellers are mounted on the motor shaft and are locked securely by a screw and spring washer. All impellers are balanced to ensure minimum vibration during running.

FINISH

After manufacture, the casings are degreased, primed and finished with a top quality paint. A galvanised, epoxy, high temperature or special paint finish is applied per specification.

All fans are fitted with a name plate, direction of rotation and airflow arrows.

LONG & SHORT
CASED AXIAL FLOW FANS

Recommended for non hostile air, maximum operating temperature is 40°C.

Casings are provided as either long (LCA) or short (SCA) for all diameters 250 -2000 mm. All casings are rolled using heavy-gauge mild steel, and the flanges are roll formed from the casing body and punched a CNC machine. The steel is cold, rigid concentric casing and provides a high-quality finish.

LONG

The casing covers the impeller and motor, and it is supplied with an adjustable motor platform. A large access door (optional) allows internal viewing and access for maintenance.

SHORT

The short case axle is more compact with the impeller enclosed and the motor projecting outside the casing.

ARRANGEMENTS

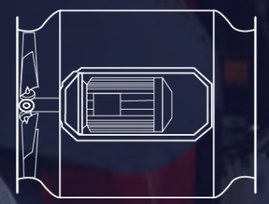
Contra-rotating impellers are available to achieve greater pressures.

BIFURCATED
AXIAL FANS

The fan is direct drive and is designed to enable the fan to operate under hostile conditions that would typically be terminal to the satisfactory operation of the motor. The air may be hot, dust-laden, or contain dangerous fumes or gases.

A complete range of fans is manufactured from 250 mm to 1250 mm in diameter. Types of Bifurcated fans are available in each size. The standard temperature version will handle gases up to 60° C, and the high temperature version can withstand temperatures up to 200° C. Brass anti-spark features can be fitted if required.

Casings are rolled using heavy-gauge mild steel. The Flanges are rolled, formed from the casing body, and punched using our machine. A flange-mounted motor is supported within the funnel bifurcation and is isolated from the airstream as external ventilation maintains adequate motor cooling. In high-temperature applications, a cooling disc is fitted, and special thermal insulation is used to protect the motor further.



ARRANGEMENTS

Parallel casings are used in lower pressure conditions and are limited to the frame size shown on the dimensional data (page ref) high pressures that require swollen cases are used to allow larger motor frame sizes to be fitted.

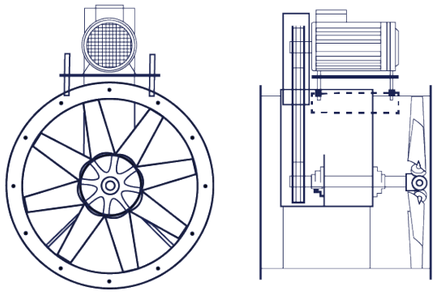
BELT DRIVEN AXIALS

RHF axial fans are available in a number of formats.

They are recommended where the nature of the air being handled can be detrimental to the satisfactory operation of the motor. The air may be dust or moisture laden or high temperature, so adjusting the fan's speed may be necessary by altering the pulley ratio.

The range of sizes varies from 250 to 2000 mm in diameter.

Casings are rolled using heavy-gauge mild steel, and the flanges are formed from the casing body and punched on a CNC flanging/punching machine. The impeller is directly keyed into the shaft of the unit and driven through Vee belts enclosed within a tunnel, isolating them from the airstream. External lubrication points are provided to regrease the bearings. The foot-mounted motor is carried on an adjustable platform support outside the casing. The standard bearing arrangement is suitable for operation in air temperatures from -10° C to +90° C. We can supply high-temperature bearings to operate up to +150° C.



BELT DRIVES AND GUARDS

Adequate belt suspension is provided by adjustment of the external motor support platform. A steel metal guard encloses the external motor puller while the shaft pulley and Vee belts are protected within the tunnel.

ARRANGEMENTS

Fans can also be provided with run and standby motors in a dual drive arrangement, both fully belted to allow intermediate changeover if necessary. The fans can also run in series with contra-rotating impellers to achieve greater pressures.

ANCILLARIES

Are available for all sizes of fan.

MATCHING FLANGES

Matching flanges and flat bar flanges can be supplied.

FAN DIAMETER (mm)	SPIGOT LENGTH (mm)
250 -380	50
485 - 760	65
965 - 1220	70

CASING FEET

Manufactured from mild steel and can be either pressured to form a foot or supplied as a plate for vertical mounting.

ANTI-VIBRATION MOUNTS

Rubber compression mounting selected for each fan has been developed to provide a high degree of vibration attenuation. They are produced from high-grade oil-resistant rubber compound and are available from stock.

When using a mount to support a fan, it is recommended that flexible connections are used to connect adjacent ductwork. The fan's location requires a spring-type AV mount with higher isolation.

SILENCERS

Two types of attenuators are available, either straight-through or pod type, and can be supplied to 2 lengths.

1 D equivalent to the fan diameter.
2 D equivalent to two fan diameters.

The attenuators are all constructed from galvanised mild steel, which are drilled to suit the fan flange. An inner perforated case retains the acoustic material. Special finishes can be supplied to withstand high-temperature corrosion and saturated atmospheres.

FLEXIBLE CONNECTIONS

As standard, flexible connections are manufactured from neo pre-coated fibreglass with a maximum working temperature of 90°C. They are supplied in sleeve form and are a standard 100 mm long. We can supply aluminised glass for temperatures up to 200°C, and red silicon for temperatures up to 300°C at an extra cost. A flexible range on both ends is available.

STARTERS

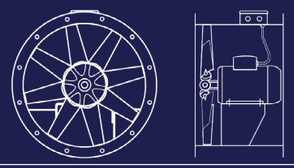
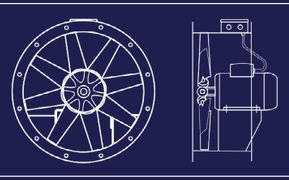
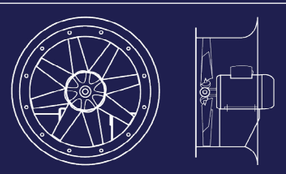
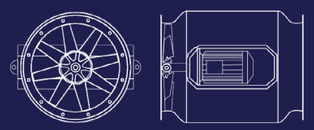
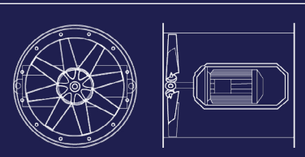
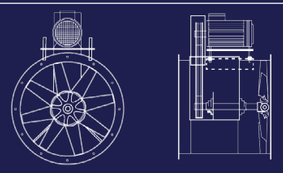
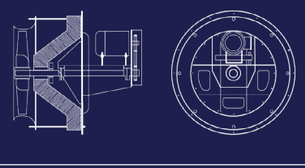
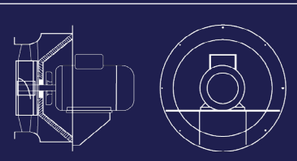
The simplest way to start a motor is to connect the main supply directly to the motor (DOL). The starting current is high, but it is the preferred method. If the starting current exceeds the supply limit, Star Delta starting can be used, which reduces the SC to 30% of the value of the direct online. All fans should be connected to a starter with overloads to the full current rating of the motor. It is also good practice for an isolator to be included in the line.

SPARK MINIMISING

A brass ring surrounding the impeller can be fitted to the casing to minimise the risk of sparking and hazardous conditions.

GUARDS

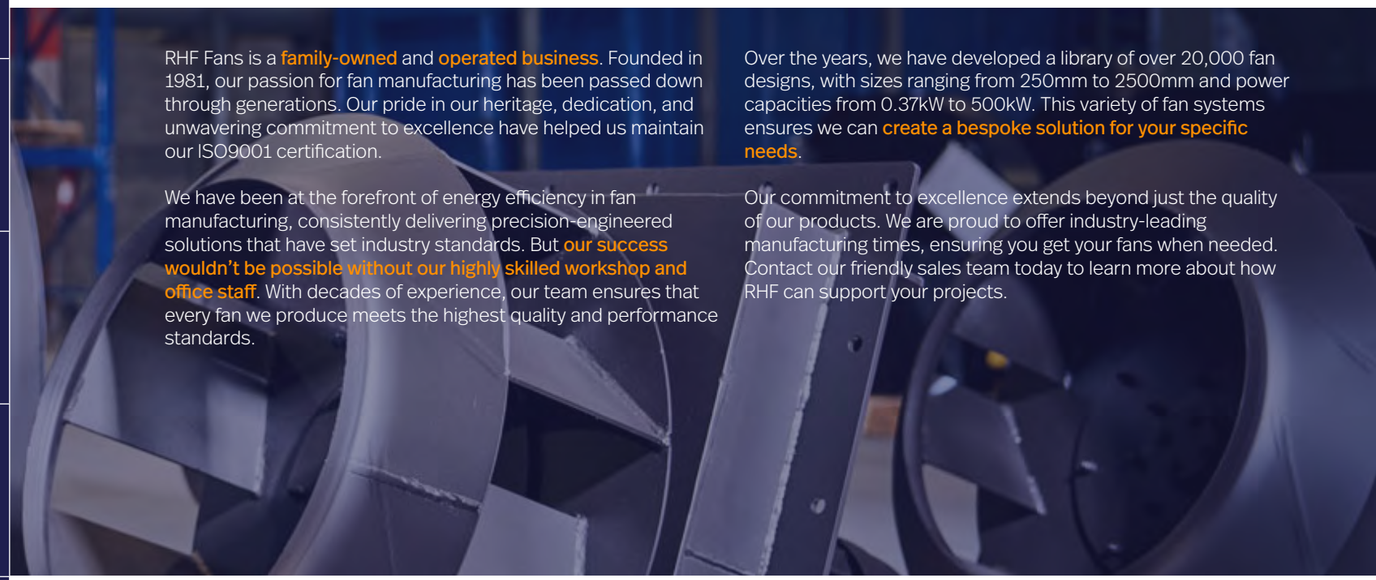
Impeller or motor side guards can be supplied for fitting directly to the fan inlet or discharge. Construction is either from heavy gauge wire mesh or sheet steel.

PRODUCT	CONFIGURATION	FEATURES
Long-cased Axial		• Impeller directly mounted onto the motor shaft. • Motor sits on an adjustable platform. • Impeller and motor are completely contained within the casing. • Casing is flanged at both ends. • Can be supplied with optional inlet bellmouths and guards.
Short-cased Axial		• Impeller directly mounted onto the motor shaft. • Motor sits on an adjustable platform. • Impeller is contained within the casing. • The end of the motor and supports protrude past the end of the casing. • Casing is flanged at both ends. • Can be supplied with optional inlet bellmouths and guards. • Can be supplied without a terminal box.
Short-cased Axial with Bellmouth		• Cost reduction over standard casing with additional bellmouth, that mustbe bolted on. • This can also be applied to long cased fans. • Maximum air temperature is 70°C (motor dependant).
Bifurcated HD		• Motor sits within a tunnel isolating it from temperature andcontaminants. • Tunnel passes through the casing, allowing unrestricted air movement formotor cooling. • Impeller is mounted onto a precision machines extension shaft, which inturn is mounted onto the motor shaft. • Shaft seals are fitted to prevent ingress of dust and minimise air leakageinto motor tunnel*. ung impellor which protrudes from casing. Shaft directly coupled to motor by flexible coupling. Higher temperatures available.
Bifurcated LD		• Motor sits within a tunnel isolating it from temperature andcontaminants. • This fan is cheaper but less efficient than the Bifurcated HD fan. • Tunnel passes through the casing, allowing unrestricted air movement formotor cooling. • This fan consists of a cylindrical casing, which is less expensive than theHD type. • Shaft seals are fitted to prevent ingress of dust and minimise air leakageinto motor tunnel*. • The flow losses encountered with this design are naturally higher thanthose experienced with the HD type, due to greater restriction of freearea.
Belt Driven		• Motor sits outside the casing. • Impeller is driven by vee belt drive through a shaft and bearings, both arelocated inside a tunnel isolating them from the airstream. • Impeller is mounted onto a precision machined shaft. • Maximum temperature for this arrangement is 110°C.
Belt Driven Plug Fan		• Impeller type stainless fabricated reversible aerofoil section blade. • Impeller track with inlet and outlet bellmouth / made from 6mmstainless steel. • Insulated section 150mm deep with bolt on pedestal. • Used on a furnace application. • Maximum air temperature is 650°C.
Direct Driven Plug Fan		• Impeller type stainless fabricated plate blade. • Impeller track with inlet and outlet bellmouth / made from 3mmstainless steel. • Insulated section 25mm deep. • Maximum air temperature is 300°C.

*Shaft seals are not gas tight and can be affected by condensation, corrosivechemicals, or abrasive materials. Speak to sales if special seals are required.

ABOUT RHF FANS

RHF Fans is a technology-led manufacturer of centrifugal and axial industrial fans with over 40 years of experience.



RHF Fans is a family-owned and operated business. Founded in 1981, our passion for fan manufacturing has been passed down through generations. Our pride in our heritage, dedication, and unwavering commitment to excellence have helped us maintain our ISO9001 certification.

We have been at the forefront of energy efficiency in fan manufacturing, consistently delivering precision-engineered solutions that have set industry standards. But our success wouldn't be possible without our highly skilled workshop and office staff. With decades of experience, our team ensures that every fan we produce meets the highest quality and performance standards.

Over the years, we have developed a library of over 20,000 fan designs, with sizes ranging from 250mm to 2500mm and power capacities from 0.37kW to 500kW. This variety of fan systems ensures we can create a bespoke solution for your specific needs.

Our commitment to excellence extends beyond just the quality of our products. We are proud to offer industry-leading manufacturing times, ensuring you get your fans when needed. Contact our friendly sales team today to learn more about how RHF can support your projects.

THE UK'S LEADING EXPERTS & MANUFACTURERS OF CENTRIFUGAL & AXIAL FANS

CENTRIFUGAL FANS

Our wide range of axial fans includes both cased, belt drive and bifurcated variants.

SPECIAL DESIGN FANS

Our special design fans have more advanced configurations to suit specific customer applications.

SERVICE & MAINTENANCE

At RHF Fans, we believe in removing the hassle of fan maintenance.

A SALES TEAM WITH A PERSONAL TOUCH

I started my career with RHF Fans, concentrating on axial fans every day, and have provided thousands of solutions for customers worldwide over the last 20+ years. Our range remains extremely large with superb lead times, and for what other manufacturers would call “specials”, are to us ... at a press of a button.
Please get in touch, myself or a member of the team will be more than happy to help with your enquiries.

Mark Higgins, Sales Director

Better thinking, better solutions

RHF FANS LTD

www.rhf-fans.co.uk

+44161 776 6400

sales@rhf-fans.co.uk

2 Ferrous Way
Irlam
Manchester
United Kingdom
M44 5FS