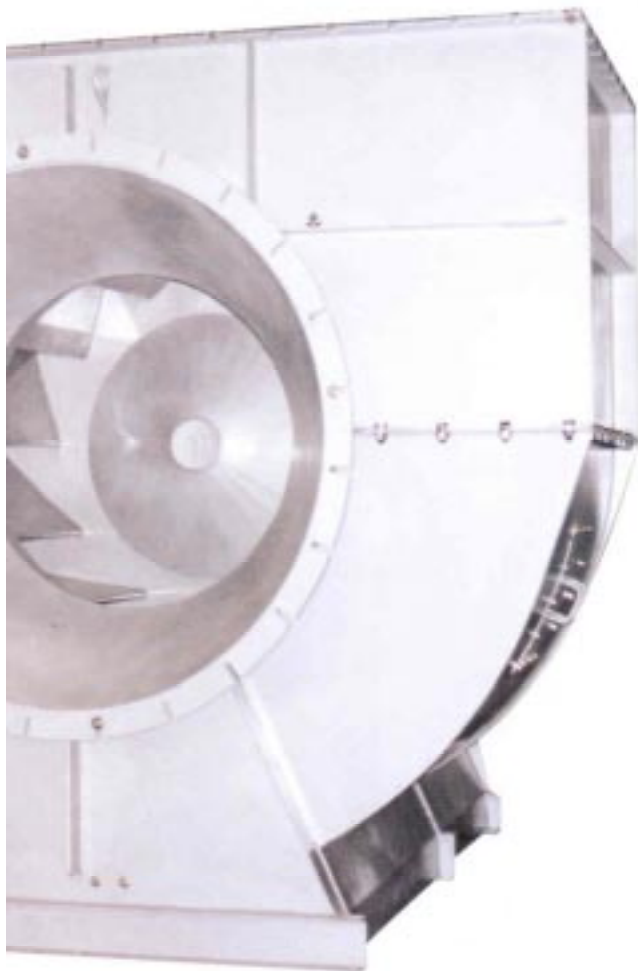


Presentation



Europal is a range of adapted industrial centrifugal fans with a standardised design.

*The concept **EUROPAL***

Oriented towards user needs, the Europal range was designed on the basis of non dimensioned standardised criteria. Europal is optimised for design, operating and service requirements.

The Europal range covers flow rates up to 100 m³/s for pressures reaching 26 kPa.

With impeller diameters ranging from 800 to 2,500 mm, broader series for large flow rates and narrower series for high pressures, the Europal range of industrial centrifugal fans is not restricted to standard dimensions.

Adaptable, Europal will meet all specification requirements:

Powerful computing resources were used in order to meet all possible requirements:

- Complete, tailor-made and adapted products in minimum time,
- Scaled interface and dimensional drawings available with the initial technical proposal, facilitating the implementation of the fan,
- Variants optimising the global installation.

The ISO 9001 certification of our quality system confirms our commitment to a global quality policy.

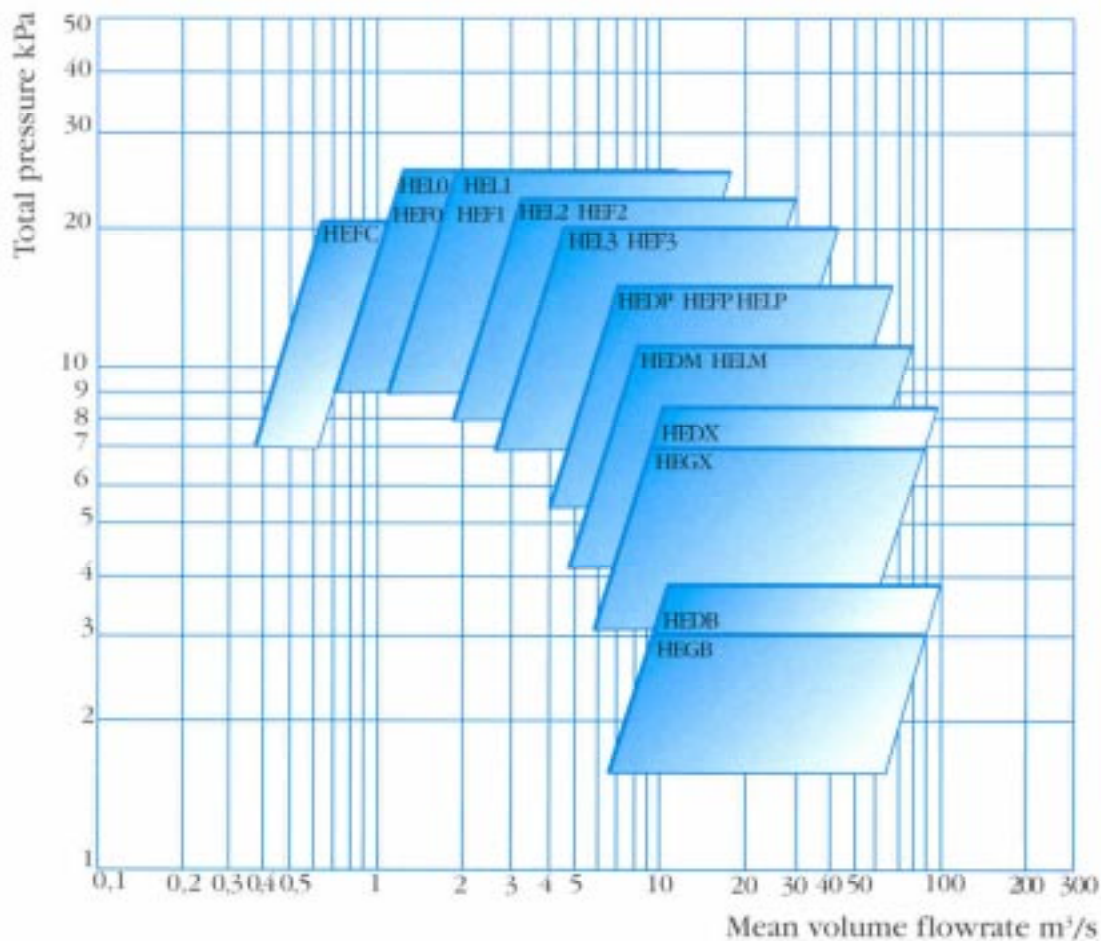
Aerualics are selected according to the conditions in which the fan will operate.

The following criteria are in particular taken into account:

- Fluid conveyed,
- Operating temperatures,
- Mechanical and aerualic conditions sought,
- Efficiency,
- Operating stability,
- Power absorbed,
- Environment,
- Noise pollution requirements,
- Aerualic profiles, and,
- The different impeller sizes.

The specific solution finally selected is not restricted to a standardised range as the program tailors the diameter, impeller size and rotation speed to the specified requirements.

The diagram below represents the aerualic ranges covered by Europal fans.



Blades

The type of blades used is determined by the type of fluid conveyed, the fan's operating conditions and the performance levels required.

HED :



Airfoil blades tilted backwards designed for clean dry air. This profile provides optimum efficiency for high flow rates.

HEF :



Curved blades tilted backwards designed for dust laden air. This profile provides optimum efficiency at high pressure levels.

HEG et HEL :



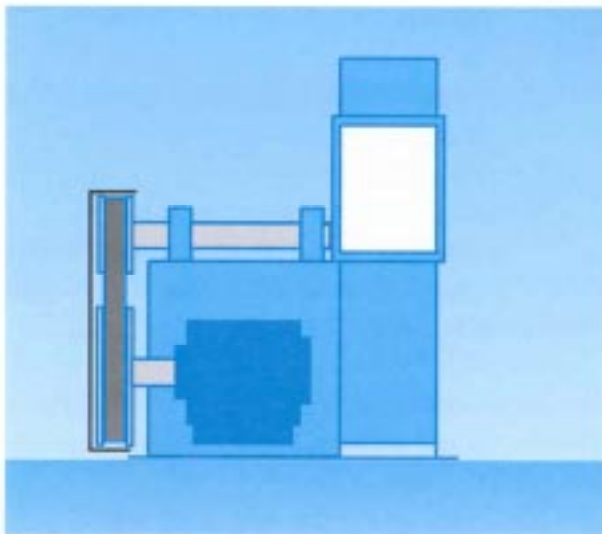
Flat sectioned blades tilted backwards. These blades are designed with a simple shape and are easy to protect, which solves delicate problems such as corrosion, erosion, clogging...

Configurations

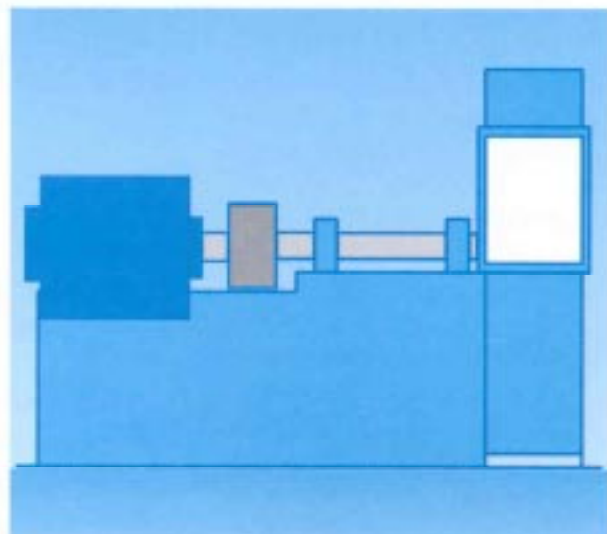
The mechanical part of the fan is designed according to the type of configuration used so that it is perfectly adapted to the specification requirements (service life, lubricating intervals, safety coefficient, ...)

Two configurations are available:

- Belt drive:
for versatile use up to 250 kW and continuous gas temperatures reaching 350°C (cooling impeller fitted on the shaft).
- Direct drive:
for applications up to 800 kW. The rotor is connected to the motor via a semi-flexible coupling sleeve. Adapted to continuous gas temperatures reaching 350°C (cooling impeller fitted on the shaft).



S1
Belt drive



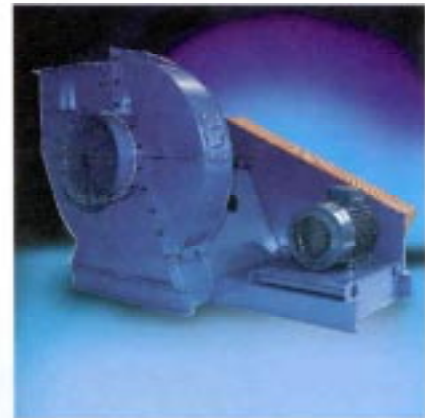
S8
Coupling drive

In order to facilitate the implementation of the fan, the configurations can be designed to allow for inlet boxes on the inlet side or 2 level baseframes adapted to ducts made in the civil engineering works.

Orientations

The static parts are designed according to the project's specific requirements (no restrictions concerning the location of the outlet side of the fan). Each of Europol's characteristics can be adapted to any situation, which avoids the use of expensive connecting parts resulting in increased pressure drops.

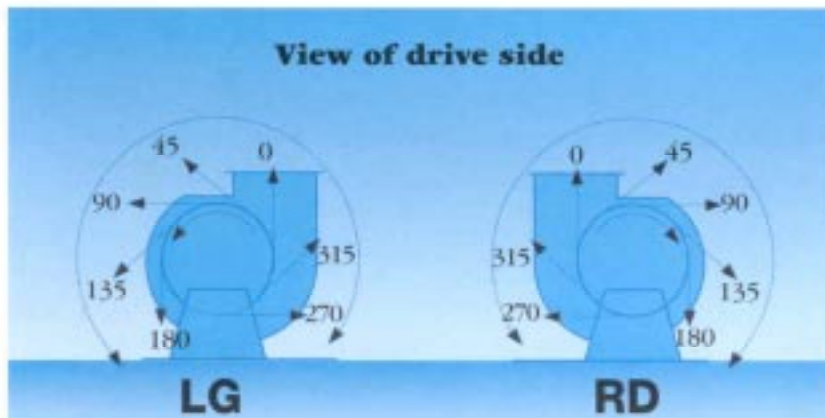
Basic construction:



Europol arrangement S1

- One-piece chassis integrated in the casing and fitted on mountings, quick and easy to install, ensuring optimum rigidity.
- Patented inlet cone accelerating the fluid.
- Impeller with integrated hub, balanced dynamically on two planes in compliance with the NF-E-90-600 standard.
- Casing ensuring the perfect diffusion of the airflow at the impeller outlet.
- Shaft line with sole-plate type bearings and circular sealing surfaces designed for a minimum service life of 25,000 hours at the maximum speed. Roller bearings mounted on taper-lock sleeves enabling quick and easy maintenance without removing the casing, the inlet cone or the impeller.
- Operation at continuous temperatures reaching 350°C.

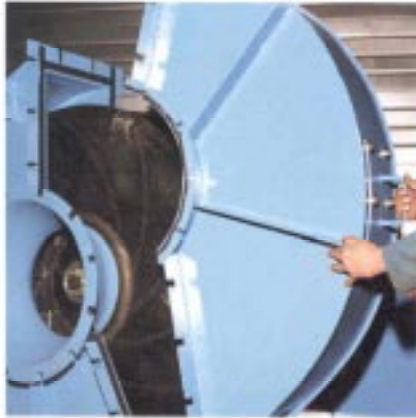
View of drive side



Construction

As for the aeramics, which are selected according to the operating conditions, the materials' quality, thicknesses, the bearing alignment and the bearings are also adapted to each individual case. A multitude of accessories and options are designed and included in the initial technical proposal. An integrated detailed proposal means that the implementation of equipment, control systems, etc..., can be envisaged at project level.

Other equipment:



- Removable casing sections enabling impeller maintenance without removing ducts (for most orientations)
- Impeller inspection door.
- Casing drain preventing the accumulation of water.
- Removable transmission protection case in one-piece, as required by safety standard NF-E-51-190. Immediate access to pulleys and belts. Hole allowing the shaft rotation speed to be measured without disassembly.



Europal configuration S1

- Brass plate fitted to leadthrough, reinforcing impeller shaft seal.



Specific adaptations for solutions estimated immediately:

- Impeller and casing with selected materials and thicknesses.
- Service life of bearings according to requirements.
- Shaft line with oil bearings.
- Special sealing
- Sand blasted sheeting, special or reinforced coating.
- Anti-spark construction
- Wearing plates on impeller and casing
- Thermal treatment of the impeller.
- Continuous welding of the structure.
- Insulatable casing.
- Specific inspections (die penetrant testing, X-ray inspections, ...) and manufacturer's files.
- Flexible mountings.

Accessories

Various adaptations are possible in the initial technical proposal:

- Inlet counter-flanges and outlet counter-flanges conforming to Eurovent standards.
- Safety wire guards
- Flexible sleeves at inlet side and/or at outlet side with deflectors.
- Silencer on inlet side and/or on outlet side.
- Filter on inlet side.
- Piezometer
- Non-return mechanism
- Motor
- Vibration and temperature control unit and sensor
- Rotation control, ...

Control

The aeraulic curves provided indicate the respective operating points required.

- Gyropal guide vanes on inlet side with servo motor control
- Damper on outlet side or inlet boxes and damper on inlet side.
- Speed control (variable speed motor)

Tests

With a capacity of 2,500 kW, our test facility is used to carry out rotation tests on all Europal industrial centrifugal fans, and to measure the aeraulic and acoustic characteristics of the whole range.



View of the test station.



Europal Configuration S8



Gyropal guide vane



Speed control (variable speed motor)

Proposal



Cover page

Technical sheet

Detailed power and
acoustic pressure
spectrum

Dimensional drawing
(inlet/outlet connection
dimensions including
the accessories and floor
lay-out)

Interface drawing

Curves
Flow rate control via
guide vanes

Codification

HE D P _1250_ S1 LG 315 ADX EPOXY

Coating (Standard, Epoxy, ...)

Material (ADX, stainless steel, ...)

Angle 0° to 360°

Orientation LG - RD

Configuration S1 - S8

Size 800 to 2500 mm

Width B, X, M, P, 3, 2, 1, 0

Type of blade D, G, F, L

EUROPAL[®]