

# Centrifugal fans





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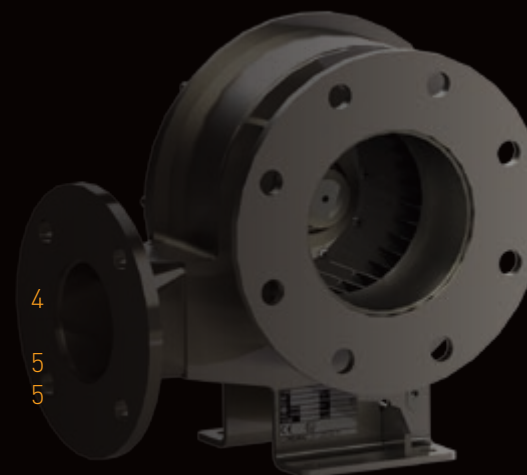
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# Introduction

## Combimac

Combimac is a wholly independent, middle size company, established in the year 1919 and located in the north east part of the Netherlands, in the town of Emmen. As a supplier of electrical prime movers, Combimac has for many years been a prominent market leader, deriving its leading position from the following product groups:

- Special electric motors
- Industrial and special fans

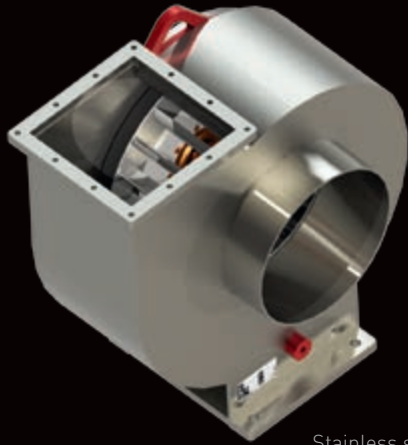
Combimac's keyword is knowledge and quality control. Indeed It is quality that dominates the company's entire production process, from design up to delivery and beyond in after sales.

All necessary monitoring is carried out by Combimac in the company's own laboratory, this being the only way of achieving absolute accuracy. All work is carried out to established quality procedures and standards. In short, Combimac aims for perfection striving to attain continuous quality.

Thanks to the high quality standards, proven over many years, Combimac has become an established subcontractor for many companies. Combimac's fans, installed in various industrial installations world-wide, live up to the highest reputation.



# Centrifugal fans



Stainless steel fan

## Program

Combimac centrifugal fan program offers centrifugal fans for the movement of air, fumes and gasses under a variety of conditions. The centrifugal fan program contains:

- Direct drive fans
- Indirect drive fans
- Custom build fans

These different type of centrifugal fans cover a wide area of flow and pressure levels. To suit the needs of various applications. Combimac is able to offer:

- Low pressure fans
- Medium pressure fans
- High pressure fans

## Design

Combimac centrifugal fans, known for their high quality level and proven reliability, are used in various systems by a wide range of customers and end-users. Combimac is able to design and manufacture centrifugal fans for specific conditions set. As a result of the vast experience and expertise gained over many years of designing and manufacturing fans and fan systems, Combimac is able to be of help to offer adequate solutions. All necessary design capabilities are in house and Combimac is a fully equipped machining factory. Actual production is carried out in a modern workshop, including several up to date CNC machines.



Shock proof fan unit

# Fan types

## Materials

The delivery program of Combimac provides the following standard of materials:

- cast iron fans
- aluminium fans
- steel welded fans

In addition to their standard range of fans, Combimac are well-equipped to manufacture custom-built fans and fan systems to suit individual customer applications and requirements. In order to meet these requirements Combimac can offer fans manufactured from the following materials:

- stainless steel
- non-ferro materials
- exotic materials

## Ranges

COMBIMAC designs and manufactures a wide range of centrifugal fans, including the following types:

- centrifugal fans
- circulation fans
- material handling fans
- high temperature fans
- low pressure fans
- middle pressure fans
- high pressure fans
- ATEX fans



High temperature fan

## Standard fans

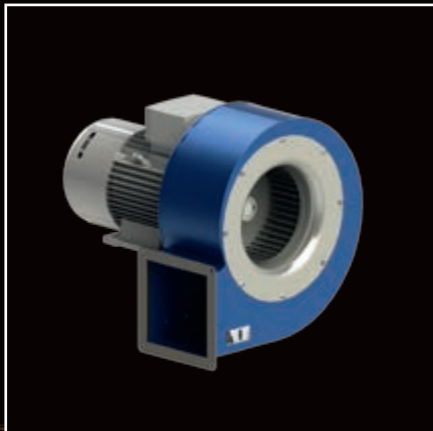
Combimac's standard centrifugal fan program provides both direct driven and indirect driven centrifugal fans. Direct drive motors have the impeller directly mounted on the motor shaft, whereas indirect drive fans are provided with V-belt drive. This V-belt drive allows for higher impeller speeds, hence higher flow and pressure levels as a result.



Direct drive



Low pressure



Medium pressure



High pressure



Indirect drive

The Combimac direct and indirect driven centrifugal fan program covers the following flow and pressure areas: low, medium and high pressure, as defined in:

- ISO 13348: Industrial fans - tolerances, methods of conversion and technical data presentation
- ISO 5167-1: measurement of fluid flow by means of pressure differential devices inserted in circular cross-section conduits running full.

# Special fan units

## Custom build

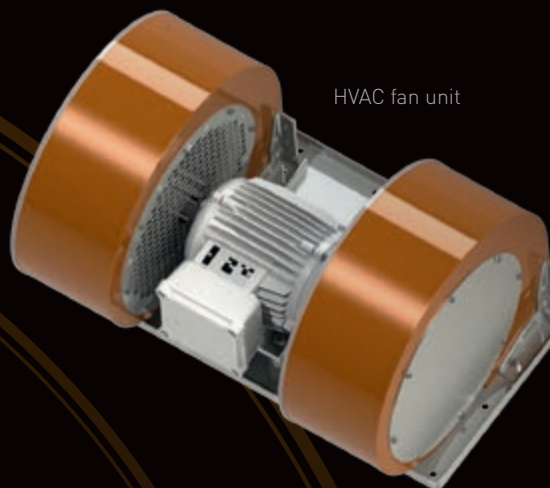
Throughout the years a variety of fans and fan systems have been build, to meet very specific demands. Examples of specific special fans units, which during the history have been build are:

- lime transport fan with easy access doors for cleaning
- NBC fan units with brush and brushless DC motor drive
- double stage fans for very high pressure
- fan units without motors for existing drives
- portable fan units
- filtration fan units for combustions plants
- stainless steel design with special inert gas seal

## Applications

The experience and expertise gained in many fields of operation over the years of manufacturing, has resulted in centrifugal fans and fan systems for specific applications, Combimac is able to offer centrifugal fans suitable for the following equipment and systems:

- industrial furnaces
- boiler installations
- NBC-systems
- lime injection systems
- yarn waste processing
- bottle-filling systems
- biogas installations
- fume cleansing systems



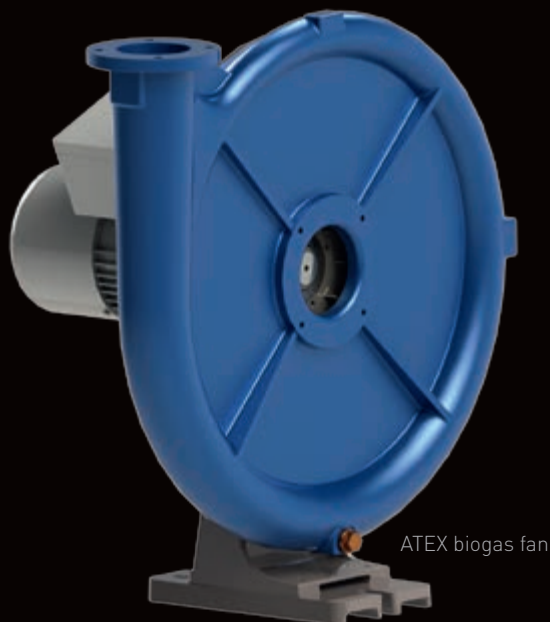
HVAC fan unit



NBC fan



# ATEX



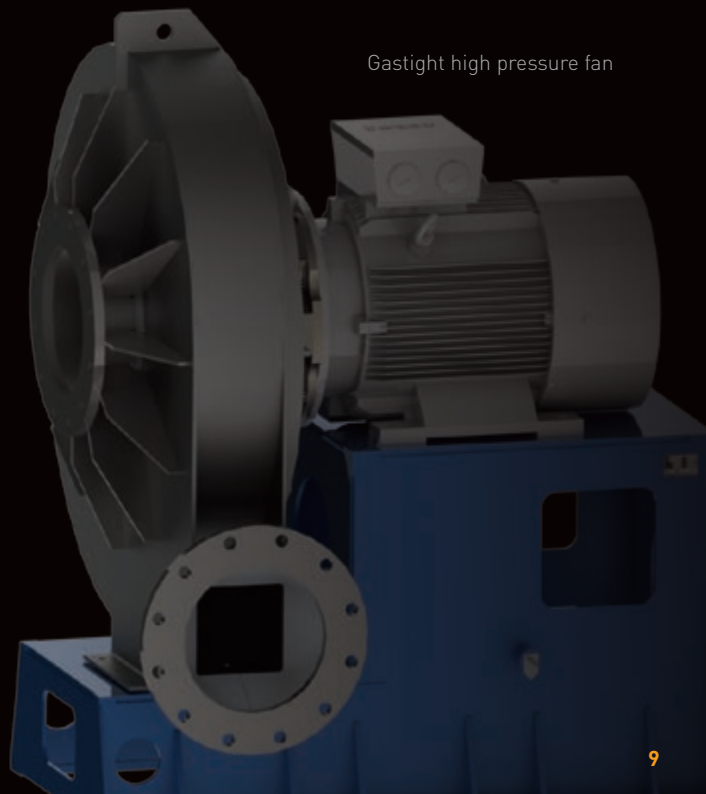
## Fans in accordance with ATEX 2014/34/EU

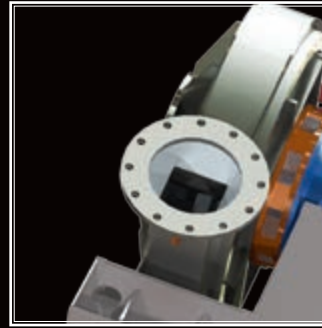
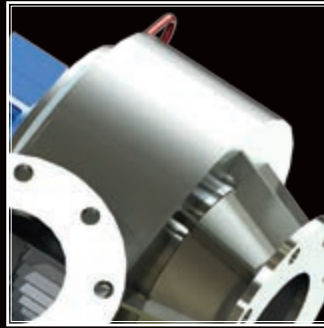
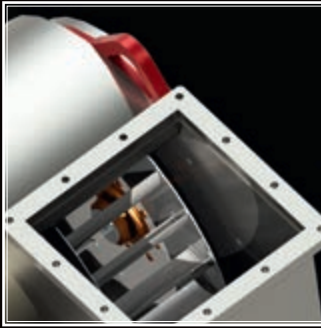
Combimac, designer and manufacturer of ATEX centrifugal fans, is able to supply centrifugal fans in accordance with ATEX 2014/34/EU directive, as laid down in the applicable standard ISO 80079-36/37 being "Non-electrical equipment for potentially explosive atmospheres", suitable for Zone II or Zone I (upon request)

## Documentation

COMBIMAC supply the following documentation with their ATEX-fans:

- Manufacturers Declaration (EC Directive 2006/42/EC)
- Declaration of Conformity (EC Directive 2014/34/EU)
- Installation / Instruction manual
- Electric motor type certificate (EC Directive 2014/34/EU)
- Fan pressure test certificate (for gastight executions)





## Quality Assurance and Control

At Combimac, we operate strictly in accordance with the procedures laid down in our quality manual. This ensures that we achieve constant and guaranteed high quality levels in our products, which are also extensively tested in our computerized laboratory. The complete logistics within the factory are computer supported, providing an efficient production flow and an optimised use of existing labour and machining capacities. The majority of the testing- and measuring equipment is fully computer controlled, thereby providing easily accessible test data. All these factors contribute towards full product traceability at competitive prices and advantageous delivery times.







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