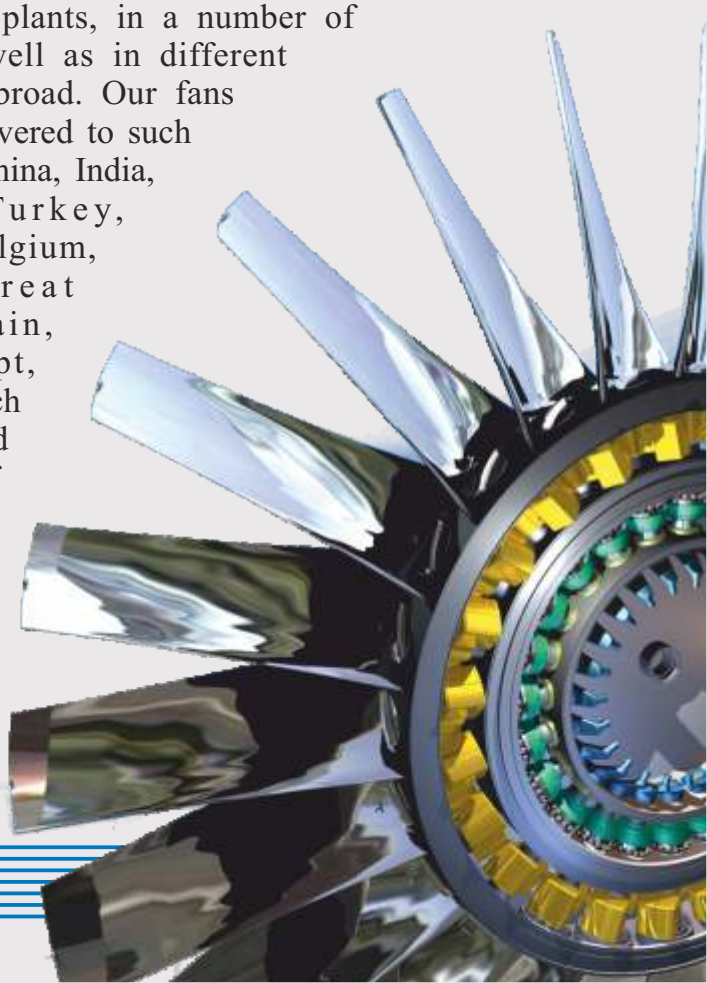
FAWENT S.A.
FABRYKA WENTYLATORÓW

Fabryka Wentylatorów FAWENT S.A. is the largest Polish manufacturer of heavy duty industrial fans. The company was established in 1951. Our company specializes in production of large size fans designed for power industry in particular. Over 60 years of experience and regular development of the design and technology thanks to our own designing and research offices, test stands, specialist equipment, design software, strength and stress analysis, finite element analysis, 3D modelling, licences acquired from companies from western part of Europe, close cooperation with scientific institutions and universities allowed our company to become an acclaimed fan supplier on the Polish and European market. This is confirmed by many rewards, distinctions and certificates obtained.

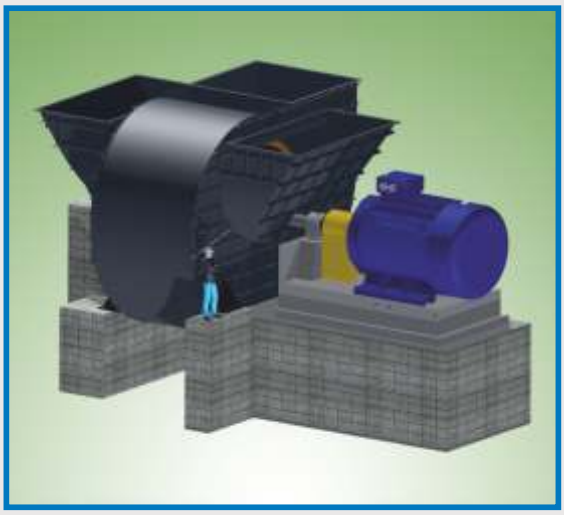
Our fans have found application in all the Polish power plants, in a number of factories as well as in different installations abroad. Our fans have been delivered to such countries as China, India, Bulgaria, Turkey, Germany, Belgium, Sweden, Great Britain, Spain, France, Egypt, Slovakia, Czech Republic and the countries of former Soviet Union and Yugoslavia.



SCOPE OF PRODUCTION

FAWENT manufactures both axial and centrifugal industrial fans which find application in industry branches such as: power industry (primary air, secondary air, induced draught, flue gas recirculation, de-NOx and FGD systems etc.), steel, mining, chemical, food, cement, wood industries etc.

We can produce a wide range of fans – from 5kW to **10MW** motor rated power with the impeller size up to **7000mm.**



TECHNICAL SOLUTIONS

The adjustment of performance can be realized in various ways: inlet guide vanes (controlled through a pneumatic or an electric actuator), variable speed (usage of a frequency inverter), variable pitch (concerns axial fans) – impeller blade angle adjusted during fan operation through a hydraulic (most applications) or a mechanical actuator.

The fans are executed from carbon, high-alloy, acid resistant, heat-resisting steel as well as aluminium. Precision of co-acting fan parts is ensured by their detailed inspection at all manufacturing phases.
Welded joints are tested by using magnetic-particle, penetrant, ultrasonic or radiographic inspections.

Along with the fans, we supply our clients with the fan auxiliary equipment like drive motors, silencers, sound and heat insulation, flexible connections, vibration and temperature monitoring, service platforms, oil supply units, anti-vibration mountings etc.

Fans manufactured at FAWENT have quality certificates and documents confirming their accordance with CE requirements, WE declaration of conformity, measurement cards, balancing reports, material certificates according to EU directives.

MACHINERY

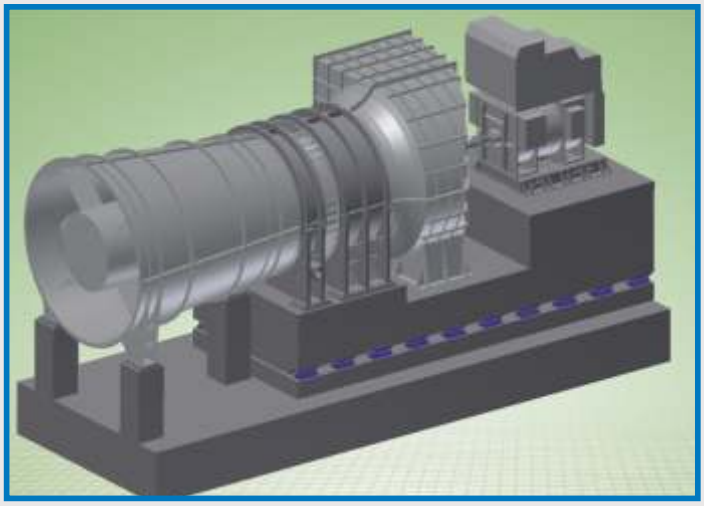
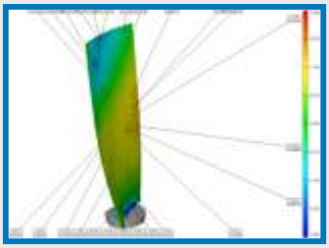
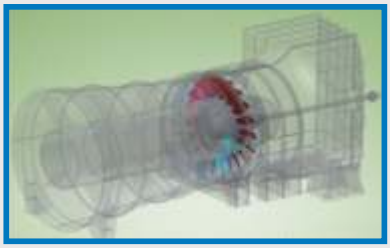
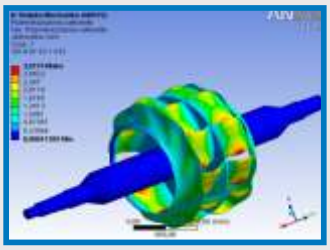
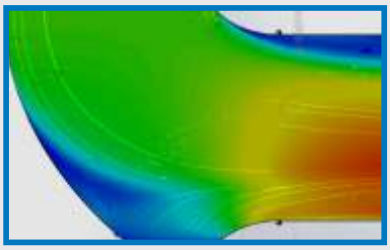
The company is equipped with assorted machinery allowing us to execute most fan elements within our premises as well as to provide other services for our clients. The workshop consists of five large covered production halls of total capacity ~10 000m^2.

TRIAL ASSEMBLY

Both the rotating and static parts of the fans are manufactured at our workshop. While the fan components are finished, we always carry out trial assembly of every fan. This activity ensures an easy and reliable erection of the fans on site.

SOFTWARE AND RESEARCH

We use specialist software to support the designing process - stress and finite element analysis as well as 3D modeling.

We have our own research laboratory where we carry out model testing of fans and verification of control hydraulic actuators.



SPECIAL DESIGN

FAWENT is a manufacturer of fans requiring special design. Such fans can be executed from heat-resisting materials and can force fluid of temperature up to 500°C. They find application in a number of different types of installations.



We use special linings, padding welds or anti-wear spraying which significantly elongate lifetime of fan parts. Furthermore such materials are suitable for temperature up to 600°C what allows to use these fans in a wide variety of applications.

We produce explosion proof fans according to Directive ATEX 94/9/WE and EN-14986 standard.

CENTRIFUGAL FANS

They are used in a number of industry branches. We provide a wide range of sizes of centrifugal fans. In case of special applications, the fans can be designed for temperature up to 500°C or be manufactured from stainless/acid-resistant steel and be coated with anti-wear material.



They are also used as general purpose fans in various technological processes to provide pressure increase up to 25 000 Pa.

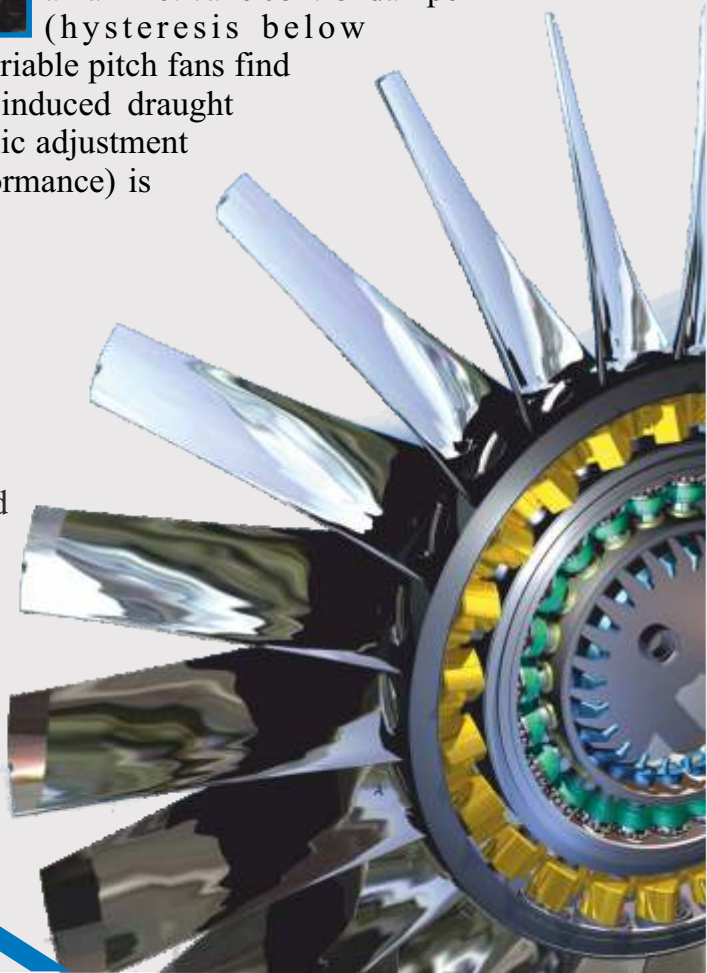
Centrifugal conveying fans are intended for pneumatic conveyance of tiny solids and are recommended for wood, textile, food, chemical and ceramic industries. The conveying fans are more immune to dust deposition on the impeller and to erosion.



AXIAL FANS

General application fans are mostly used in ventilating applications in rooms, dryers, cold stores etc. However, they can be used in other induced-forced draught installations.


Flue gas axial fans are mainly used in the steam boiler applications.
In case of fans with fixed impeller blades, the performance control is realized by the axial inlet vane control damper (hysteresis below 0,5%) which is adjusted automatically by an actuator. Variable pitch fans find application mostly at power plants as forced draught, induced draught or FGD booster fans. The fans are equipped with hydraulic adjustment units. The blade angle (and simultaneously the fan performance) is controlled while the fan is in operation.



MINE FANS

Centrifugal mine fans are designed for drawing air of temperature up to 60°C, out of underground mines.

The casing in the bottom part is made of ferroconcrete, yet the upper part is made of steel. Between the inlet ducts and the fan inlet boxes, there is installed the reversion system consisting of special arrangement of flaps.

Fawent as the first company in Poland manufactured axial variable pitch fans for the Polish coal mining industry - Zakład Górniczy JANINA in Libiąż.

The fans have been designed and executed to comply with anti-explosive requirements - ATEX Ex1 M2.

The impeller diameter is 3150mm while the motor rated power is 1200kW.

An axial fan weight is much less than the weight of an equivalent centrifugal fan. This kind of design does not require the complicated system of reversion channels and dampers. The fan ensures less power consumption comparing to a centrifugal fan with an inlet damper. The flow reversion (forcing the air into the pit shaft) is realized by rotating the impeller blades by ca. 180° with simultaneous reversal of the motor rotation direction. It takes less than 10 minutes to provide the mine with reverse flow of air.

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One of the most important achievments of our company was delivery and installation of our largest axial fan in Institute of Aviation in Warszaw. The impeller diamater of the fan is 7000mm, while the volume flow is 1800Nm3/s. The control of the fan is realized hydraulically by means of variable pitch of impeller blades and simultaneously by means of variable speed through a frequency inverter.

The motor rated power is 5600kW, maximum speed is 400min^{-1}.