



FEEL THE

POWER



EFSAN Makina Energy and Fan Systems has developed in finding system solutions in the industrial fan production and technology field. Our company, which possesses advanced technology and equipment, offers complete units, industrial fans, motors, control systems, sound insulation services according to need.

We provide all kinds of services to our customers, such product assembly, commissioning, maintenance, repair, and online control systems. We offer our estimable customers, comprehensive possibilities and solutions with its wide product range in special product options, production and development of radial fans with our professional and expert staff using our advanced and developing high technology.

The founder of Efsan Makina worked in leading companies in the industrial fan sector in Germany and established his own company called Proaid Lufttechnik e.K in Germany in 2004. The purpose of establishment of Proaid Lufttechnik e.K was to provide support services for process engineering. It has started to make its own production since 2009. It has exported directly to Germany, Switzerland, Austria, Denmark, Netherlands, Iran, Brazil, Singapore, China, India, South Korea and Russia.

EFSAN Makina was established in 2014 to manufacture industrial fans and turbo compressors and to prove itself in domestic and foreign markets. As EFSAN Makina, we are here to provide you with our technical knowledge, experience, expert staff, advanced technology and engineering we have in our sector.

Our vision:

Our vision is an innovative approach guiding its work in line with the wishes of its customers, keeping the quality, efficiency and savings at the highest level with its technical knowledge and high technological opportunities, approaching the framework of respect for the environment, nature and society, valuing human resources and employees, and supporting the continuous development and training of both itself and its employees.

Our Mission:

It is to meet the expectations and requirements of our current customers from us fully and on time, to provide them with quality products and services, to achieve all our goals with our reliable, competitive, innovative and customer-oriented structure, and to keep customer satisfaction and our goals always at the highest level.



- Chemical Industry

- Pharmaceutical Industry

- Power Plants

- Petrochemical Industry

- Reactor Facilities

- Iron and Casting Industry

- Wood Industry

- Lime, Cement and Gypsum Industry

- Paper Industry

- Mills and Water Treatment Plants

- Industrial Ovens

- General System Builders and Manufacturers



“High Quality”

“Quality is not a coincidence,
it is always the result of a wise effort.”
John Ruskin

As Efsan Makina, our principles in production are high quality and high performance are among the most important criteria we adopt as a principle in our production. This issue also plays a critical role in the long-term company success.

Quality is the comprehensive realization of our customers' expectations and needs for our company. Quality is ensured by considering customer expectations and needs and complying with them at an early stage.

Quality perception begins with the mindset and behavior of each employee. The prerequisites for quality are a shared vision and the will of each employee to achieve it. Therefore, all our employees are a part of our quality system. Thoughts and ideas on improving our business processes and products make a very important contribution to the success of the company.

Our Quality Policy

To provide safe, effective and quality materials to our customers, to serve with products with approved quality standards.

To ensure and increase the satisfaction of our customers with our product quality, technical support and after-sales services aimed at customer satisfaction.

To ensure the participation of all our employees in our continuous development with the conscious participation of our employees with high motivation and determination to succeed.

To continuously improve all processes that affect the success of our company and the quality of our products, To always be a leading company in the sectors it works with and to maintain it with its quality and service understanding.

To continuously improve the Quality Management System, to ensure the continuation of standard requirements, to fully comply with official and legal requirements.



Quality is not a goal to be achieved, but a process that needs continuous improvement and continuity.

Quality is to purchase our products with customers' money.

Quality is compliance with standards.

Quality is the ability of a good or service to meet customer expectations and requirements.

Quality is timelines.





professional

superior service quality

customer-oriented

flexible

fast

precision manufacturing

advanced technology

competitive



Every customer who buys a product expects the manufacturer to show its support and quality immediately in case of any problem. The EFSAN Makina Service Package covers the entire life cycle of the delivered equipment from the installation and commissioning of the machines to the regular maintenance and post-repair operations. Companies focused on customer-oriented machine production need one thing above all else: to provide the service that our customers need and to always have service teams dedicated to quality ready for you, and this is in the quality policy of EFSAN Makina.

Our services are respectively;

- Technical consultancy,
- Assembly,
- Commissioning,
- Care,
- Balance,
- Flow pressure measurements,
- Sound and vibration measurements,
- Spare parts supply,
- It covers all of the optimal system adjustment studies and similar operations.

Our services are based on two basic ideas / while flexibility and customer focus are on one side, precision production, sense of responsibility and the use of extensive technological know-how are the other considerations.



You can call us 24 hours a day,
365 days a year.

24/7 Hotline:
0(258) 264 00 76

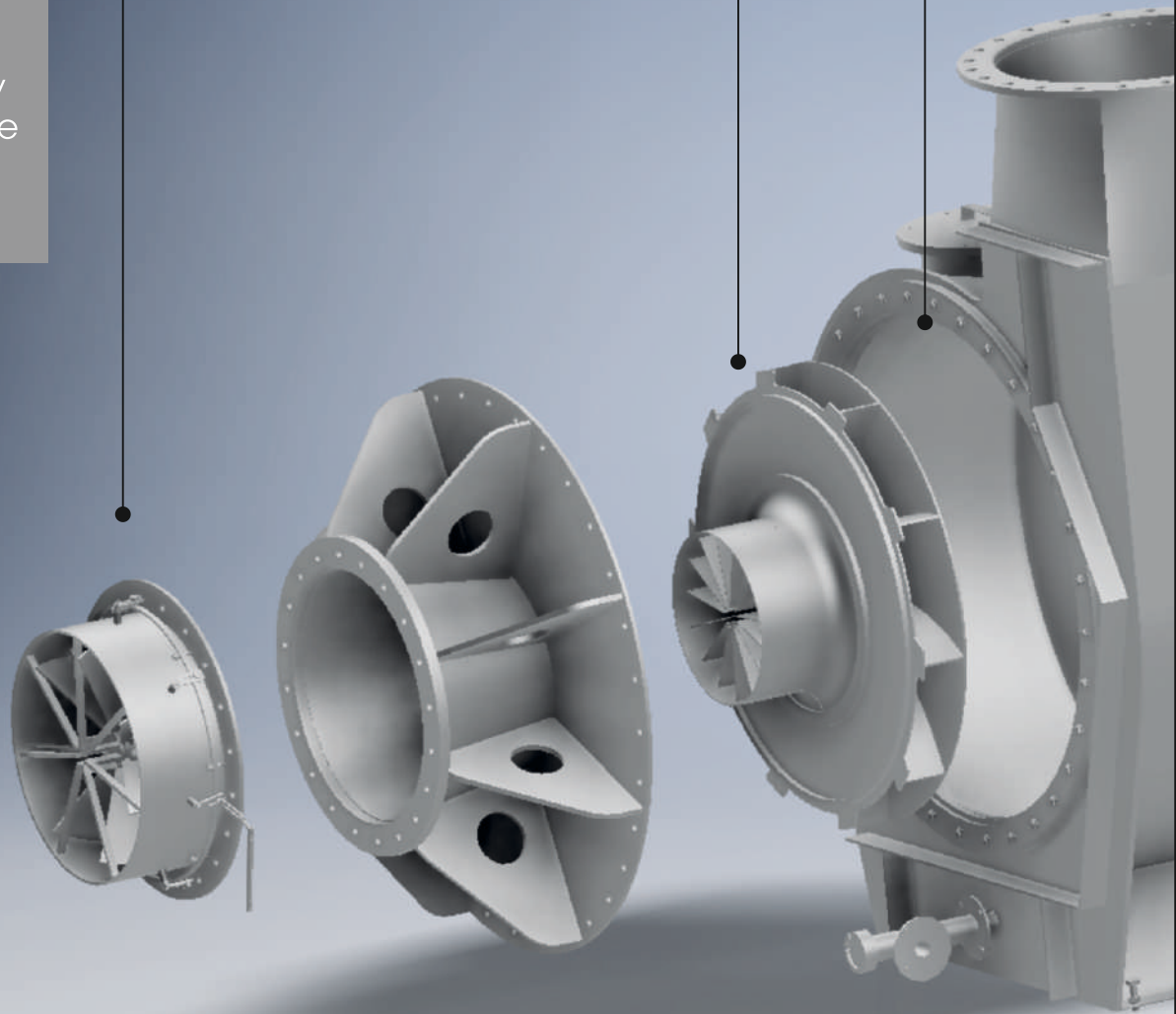
WHAT IS A FAN?

Devices that provide air flow by creating a pressure difference are called fans.

• Variable Blade Entry Damper

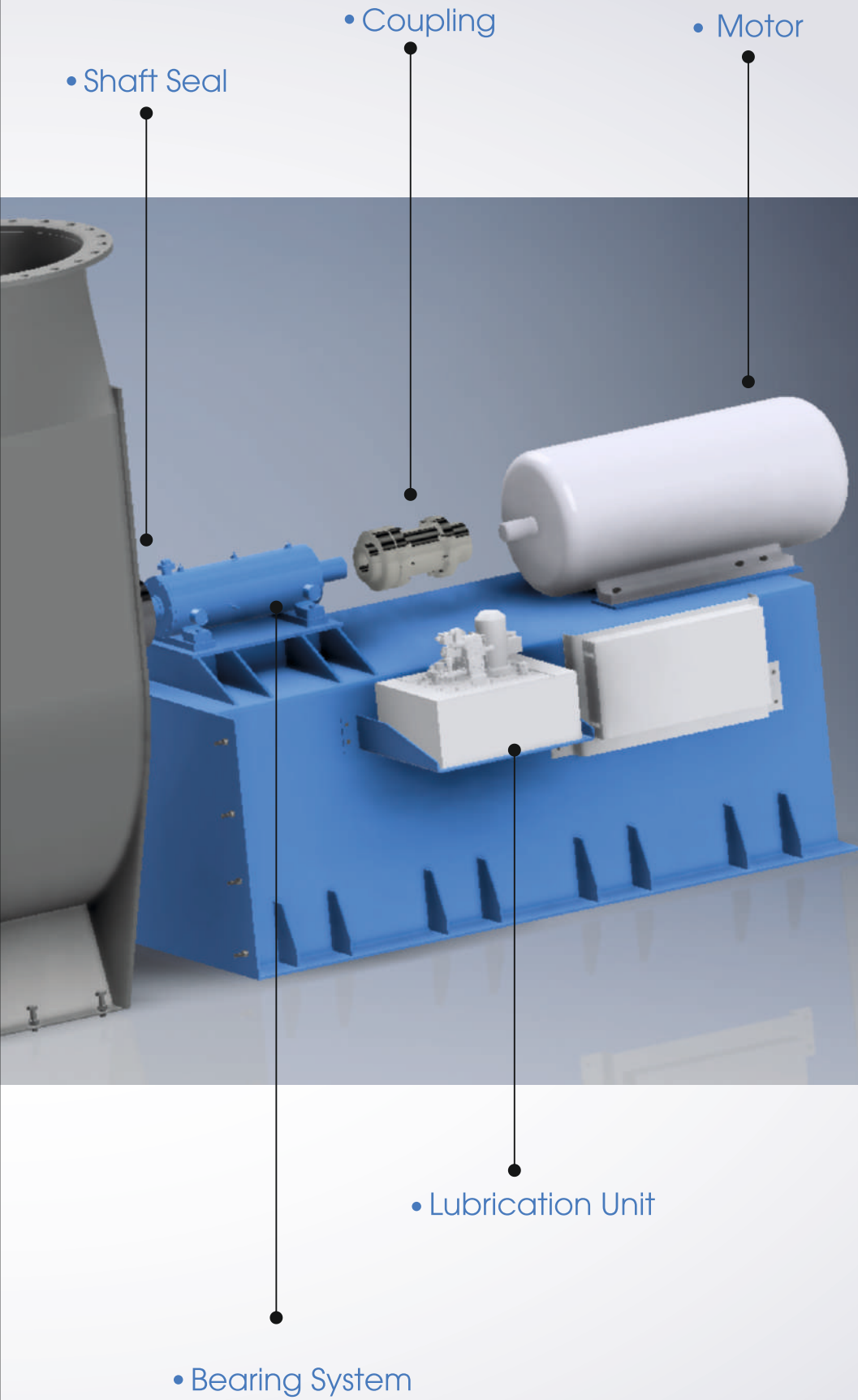
• Rotor

• Housing



USE FIELDS AND PURPOSES

- They are the fans preferred to be used in large factories and industrial companies.
- Radial fans are produced as low, medium and high pressure.
- You can clean your harmful substances with a product that will operate at high speed with different pressure systems.
- Industrial type fans eliminate the bad air in the environment and ensure the formation of fresh air.
- Not only does it eliminate bad weather. It allows chemicals and gases to escape. Thus, working individuals feel more secure and their productivity increases.
- It will be your biggest assistant in the process of cleaning harmful substances such as dust, light sawdust, particles, thrush and powder waste in your business.
- It is a system solution that must be used in industrial sectors.
- It is a process product that provides an efficient working environment and a quality production.



WHAT IS A COMPRESSOR?
They are motorized machinery used to compress air or other gases to pressures higher than atmospheric pressure.



Precise Analysis

Customized

System design;

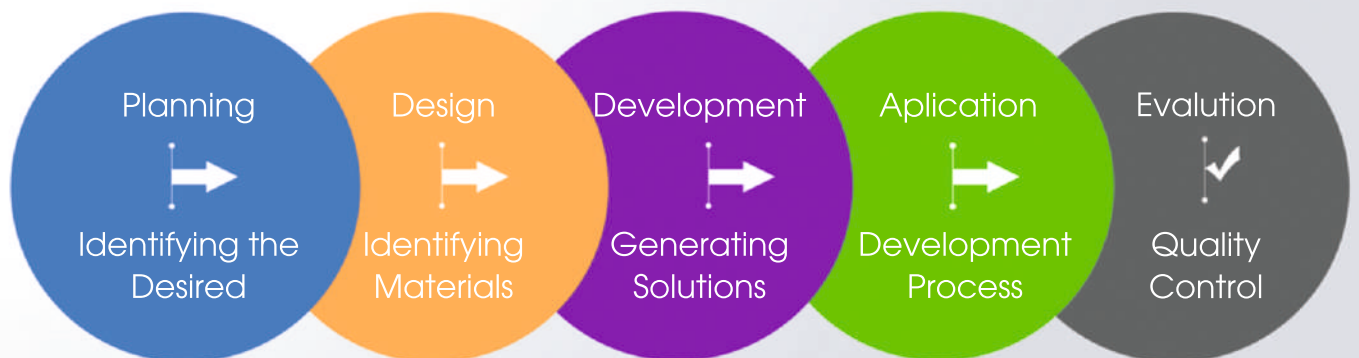
Projects relate to the applications that an organization in the manufacturing or service sector would like to develop. The aim in system design projects is to combine technical knowledge with the system structure, to solve the concrete problems of the organizations in the field of business management with an appropriate approach and to provide development. As Efsan Makina, we design a system project suitable for your facility and your needs within the framework of the conditions we have determined together with you, and then we start working on it.

Our experienced system planning engineers will provide bespoke system planning solutions according to customers' current environments, suitable requirements.



Concepts!

You can always reap the fruits of the customer-oriented joint solutions we have developed together. As soon as we determine every detail concerning the project jointly with you, work begins as soon as possible and reliable systems and system components designed according to all the conditions you need are realized for you.



All processes are reviewed for an effective result.



Production Planning with Efsan Makina is "Trust Planning" at every stage.

'Production' at Efsan Makina;

"Production" comes first among the subjects that will contribute significantly to the superiority of the business in the markets in which it competes.

The subject of production contributes to the competitive success of the enterprise at different levels.

It is seen that the competitive power of the business increases as the contribution level of the production subject to the business strategy increases.

It is to design the desired product according to the customer's demand, to carry out detailed studies with the knowledge of the expert staff and to make the product ready for the use of the customer. It is always our first goal to prove the quality of the product we produce to the customer in the long term and to keep customer satisfaction at the highest level in terms of quality, time and cost.

HIGH STANDARDS!

All our manufactures must always meet high standards. As Efsan Makina, our principle has always been to achieve the highest quality standards in our productions. The systems and system units we have built are a solution part of our customers' integrated production facilities. As a result of this, our productions can be seamlessly compatible with the technological environment of our customers in order to ensure uninterrupted production and operation. As Efsan Makina, we can easily fulfill this responsibility.

Production Planning;

It is the planning of time.

It is the planning of system products suitable for the structure of the facility.

It is the planning of the quality product.

Customer-related cost planning.

In addition to equipment production, it is the planning of security, settlement, physical environment and other parameters.

It is the planning of when the raw material will become the final product.



We are SURE in
our products!

- Fluid flow up to 1.800.00 m³/h capacity,
- Able to obtain pressure difference up to 45 kPa in a single stage
- Efficiency values up to 90%
- Ability to use drive motor powers of up to 8,000 kW
- Ability to use fan rotors up to 4 meters in diameter
- Ability to reach rotor peripheral speeds up to 300 m/s
- To be compatible with ambient operating conditions between -180 °C and 1200 °C
- To be compatible with ambient working conditions between 0.4 bar and 200 bar



Process Engineering

Process engineering deals with the design of the process to be used in the manufacture of the product. A series of six steps is applied in the design of the processes to be used.

- Defining product structure and specifications
- Evaluation of the manufacturability of each component
- Listing of different processes
- valuation of alternative process costs
- Determining the order of operations
- Preparing process documents



RADIAL FANS

EFSAN Makina radial fans are also suitable for robust designs, and heavy duty conditions. Our company can offer solutions suitable for special projects in terms of high pressure gas tight and corrosion resistant designs for the majority of applications in the chemical and petrochemical industries. Since the solutions we propose are reliable in terms of high safety and quality standards, they can be easily applied mostly to environmentally hazardous substances or potentially explosive components.

Our applications are as follows:

- Process gas fans
- Exhaust gas fans,
- Dusty environment fans
- Smoke gas fans,
- Fresh air fans



RADIAL COMPRESSORS

Our radial gearbox compressor range serves as single-stage and multi-stage system solutions and can create a pressure difference of up to 1.5 times the atmospheric pressure. In our one-piece (Integral) product, the turbine rotor is mounted directly on the high-speed transmission shaft. In alternative versions, intermediate bearings are used. Low-capacity radial compressor types are generally used in chemical processing plants or refineries to return some of the flue gas to the process.



VACUUM/CONDENSING FANS

- We are a company that offers centrifugal fan solutions for the mechanical of recompression steam used in evaporation units. These fans can reach rotor speeds of up to 300 m/s in a vacuum environment with their durable design.
- Vacuum resistant body design can be made up to 0.025 bar,
- Maximum efficiency can be obtained with high speed,
- Wear resistant seals are used,
- It is possible to arrange the connections of the fans in series or parallel for higher volume flows at higher temperature differences,
- There is a special bearing system that is balanced and absorbs vibration with automatic speed adjustment.



0, 1 and 2 ZONE FANS (Ex-Proof Fans) (FANS RESISTANT AGAINST EXPLOSION AND RISK OF EXPLOSION)

0 ZONE FANS

It is used for the transport of permanently explosive gases (discharge of gases in tank tanks or in pharmaceutical operations involving explosive gases such as acetone in waste gas plants).

ZONE 1 and 2 FANS

Our 1st and 2nd zone fan segments are used to transport explosive gases.

Security Features

At the system;

Area :

1, 2, 21, 22

Around the system;

Area :

1, 2, 21, 22

Explosion groups and temperature categories of gas-air mixtures:

Zone 1 and 2 :

IIA, IIB and IIC, T1-T4

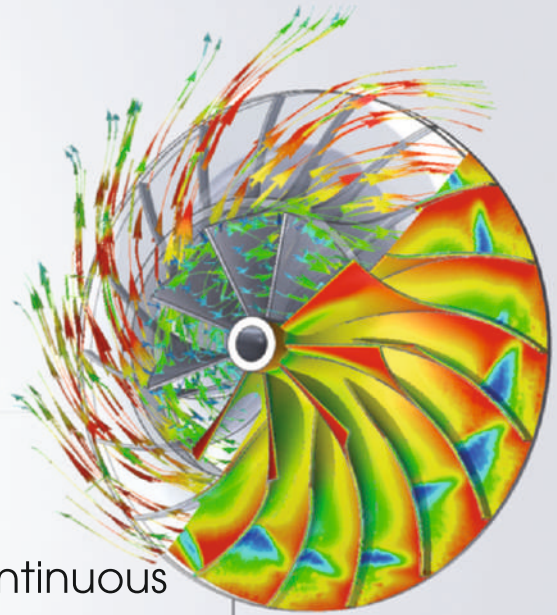


Research & Development (R&D)

Our company constantly invests in applied research and development activities within the company as one of the driving forces of the quality-conscious market. In addition to system solutions, we also focus on materials research, flow simulations and measurement engineering techniques.



Continuous Improvement!



Quality and continuous **i m p r o v e m e n t** are our priorities.

One of the main subjects of our R&D activities is turbine blades with flow optimization based on CFD (**C**omputerized **F**luid **D**ynamics).





Success always makes the difference...

**FELL THE
DIFFERENCE**

**With
Performance
Power;**

As EFSAN Makina, our company has high standards. After every success we have achieved, we set new goals for ourselves and add new ones to our successes. Technology, economy, ecology, durability and safety are all the results of our success-oriented approach. Our products and components are produced in a quality that will withstand all kinds of conditions, together with having a high level of performance.

**With its
Perfect
Appearance;**

Our struggle to achieve excellence encompasses all operational processes such as continuous learning, employee development and participation, immediate and transparent decision-making, as well as comprehensive service orientation.

**With the
Quality of
Qualified
Staff;**

Our employees are the foundation of our company's success and the quality of our products. Our training standards, our continuous internal and external training efforts, social responsibility and our ideal working environment enable us to reach high standards in the development of our products and services.

With its
**Flexible
Structure;**

We produce smart system solutions for you, which contribute to the simple and complex structure of our customers and are designed by taking into account customer requests.

With the
Understanding
of **Security;**

As EFSAN Makina, our system components provide assurance to our customers in many ways. Our systems and components are fail-safe and have a long lifespan. In addition, our systems and system components provide the highest safety standards even in the most sensitive operating environments.



With
**Compatibility
Potential;**

EFSAN Makina system solutions are designed to be fully compatible with all standard process environments in the market. While integrating our system components into internal systems, we also rely on our experience in machine programming.

With
**Occupational
Health
and Safety
Sensitivity;**

The health and safety of our employees in the workplace, as well as environmental awareness, form the basis of our internal responsibility. EFSAN Makina has set high standards in all these matters and applies them.

Our References



Westlake
Vinnolit



安阳市龙泉化工有限公司
Anyang Longquan Chemical Co., Ltd



MICHELIN



Nestlé

DIEFFENBACHER
MOVE FORWARD. TOGETHER.



BILFINGER

**uni
per**

Honeywell
UOP

Our References



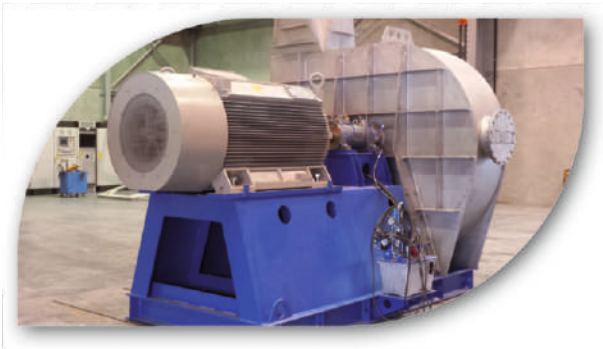
Jungbunzlauer



P&G

What is *‘Mechanical Vapor Recompression’*?

The Mechanical vapor recompression is a thermal separation process, which consists of evaporation and condensation. The goal is to reduce energy consumption in the evaporation of liquids, first introduced in the development of multi-stage systems, than the use of thermal vapor recompressors and resulting in using mechanical vapor compression. Due to the mechanical vapor recompression the primary energy consumption will be reduced, which results also in reducing the operational costs and thus the environmental impact. The higher investment costs for a version with mechanical vapor recompression will be charged off after a short period of operation.



In mechanical vapor compression the generated vapor (saturated steam) from the evaporator will be boost by using a MVR-Fan to a higher pressure level and fed back as heating steam to the evaporator again. Thus the fan operates as a heat pump.

Field of application of different fan types

Regarding traditional MVR systems, a conventional radial fan with oil unit and variable speed motor is used. These units could handle volume flows up to 400,000 m³/h and saturated steam temperature increases about 6.5°C. For applications which require a higher temperature difference, two or three centrifugal fans will be connected in series.

For small and laboratory equipment we use a belt-driven solution that is also equipped with a variable speed motor. Thus, the optimum fan speed can be set for each operating point. Performance limits for this type of fan are a flow rate of 15,000 m³/h and a saturated steam temperature rise of about 8° C.

Advantages of using a centrifugal fan

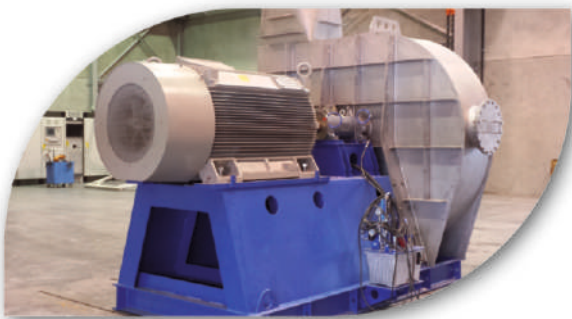
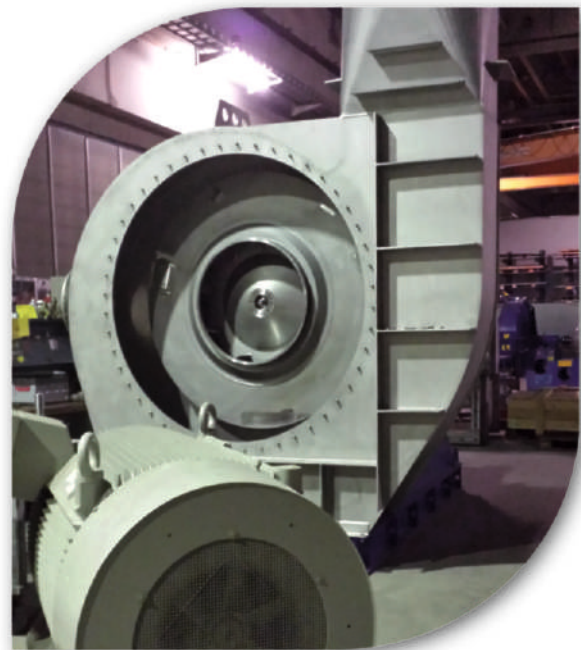
- Low investment and operating costs
- Simple rugged construction
- Use of standard materials and components
- Insensitive against droplets
- Simple start-up and shut-down within the plant operation
- Inexpensive spare parts

Requirements for MVR Centrifugal Fan

- High impeller tip speed (up to 300 m/s)
- Impeller geometry with high numeral pressure and high efficiency
- Pressure – resistant casing design (aprox. 0,1 to 1,5 bar abs.)
- Welded design made out of stainless steel
- Reliable fan bearing design
- Speed - control range down to approximately 50% of rated speed

Was ist ‚Mechanische Brüdenverdichtung‘?

Die Mechanische Brüdenverdichtung ist ein thermische Trennverfahren, welches sich aus Verdampfung und Kondensation zusammen setzt. Das Ziel, den Energieverbrauch bei der Eindampfung von Flüssigkeiten zu reduzieren, führte im Laufe der Entwicklung zunächst zu mehrstufigen Anlagen, zum Einsatz von thermischen Brüdenkompressoren und schließlich zur mechanischen Brüdenkompression. Durch die mechanische Brüdenkompression wird der Verbrauch an Primärenergie gesenkt, die Betriebskosten und somit auch die Umweltbelastung verringert. Die höheren Investitionskosten für eine Ausführung mit mechanischer Brüdenverdichtung amortisieren sich schon nach einer kurzen Betriebsdauer.



Bei der mechanischen Brüdenkompression wird der entstehende Brüden (Satttdampf) eines Verdampfers mit Hilfe eines Ventilators auf einen höheren Druck verdichtet und als Heizdampf dem Verdampfer wieder zugeführt. Der Ventilator arbeitet somit als Wärmepumpe.

Einsatzbereiche verschiedener Ven- tilatorbauarten

Bei den traditionellen MVR-Anlagen kommt ein konventioneller Radialventilator mit Ölanlage und drehzahlgeregeltem Motor zum Einsatz. Damit lassen sich Volumenströme bis 400.000 m³/h und Sattdampf Temperaturerhöhungen bis ca. 6,5°C realisieren. Für Anwendungen, die eine höhere Temperaturdifferenz verlangen, werden zwei- oder drei Radialventilatoren in Serie geschaltet.

Für Klein- und Laboranlagen setzen wir auf eine riemengetriebene Lösung, die zusätzlich mit einem drehzahlgeregelten Motor ausgestattet ist. Somit lässt sich für jeden Betriebspunkt die optimale Ventilatorleistung einstellen. Leistungsgrenzen für diese Ausführung liegen bei einem Volumenstrom von 15.000 m³/h und einer Sattdampf Temperaturerhöhung von ca. 8° C Einsat.

Vorteile beim Einsatz eines Ra- dialventilators

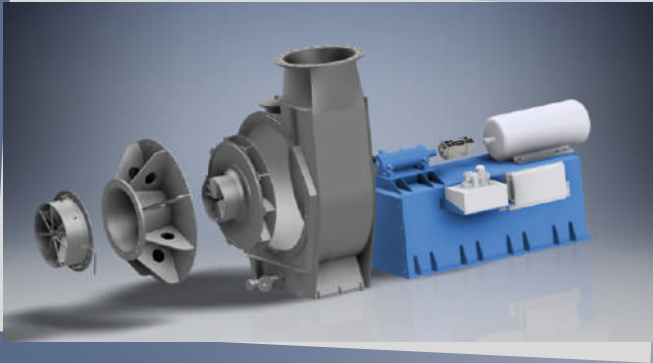
- Geringe Anschaffungs- und Betriebskosten
- Einfacher robuster Aufbau
- Einsatz von Standardmaterialien und -bauteilen
- Unempfindlich gegen Tropfenschlag
- Einfaches An- und Abfahren innerhalb des Anlagenbetriebs
- Kostengünstige Ersatzteile

Anforderungen an den Radial- ventilator

- Hohe Laufrad - Umfangsgeschwindigkeiten (ca. 300 m/s)
- Laufradgeometrie mit guter Druckziffer und gutem Wirkungsgrad
- Druckfeste Gehäuseausführung (ca. 0,1 bis 1,5 bar abs.)
- Ausführung Schweißkonstruktion Edelstahl
- Betriebssichere Ventilator-Lagerung
- Großer Drehzahl-Regelbereich bis ca. 50% der Nenndrehzahl



CONTACT



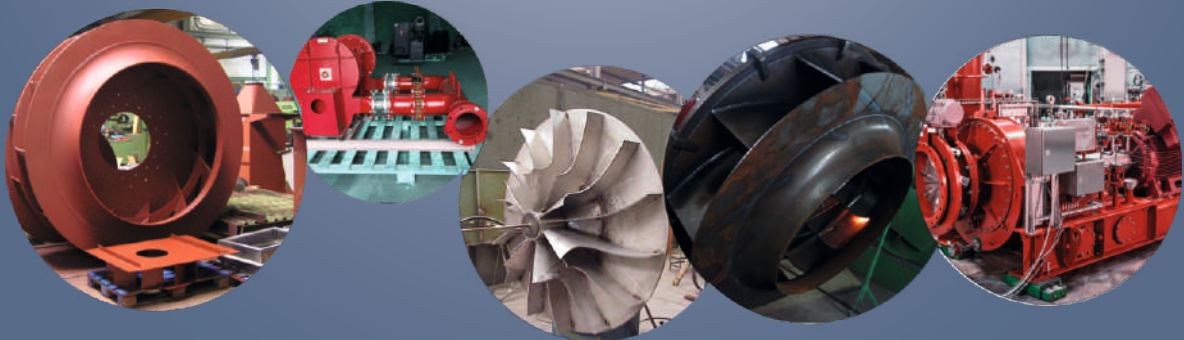
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