

# Industrial Fans

Heavy Duty Centrifugal Fans. Custom Designed & Standard

# History & Technology

**The origins of TLT-Turbo started way back in the 19th century in the year 1827 when the company Dinglerwerke was created.**

Since 1827, TLT-Turbo has undergone many exciting innovations, mergers and changes.

The origins of the centrifugal fan at TLT-Turbo began with the Ventilator department of Deutsche Babcock AG in Oberhausen, which only manufactured fans for the company's own power plant division. After the merger of the Ventilator department into TLT-Turbo, their operations covered all its industrial applications worldwide.

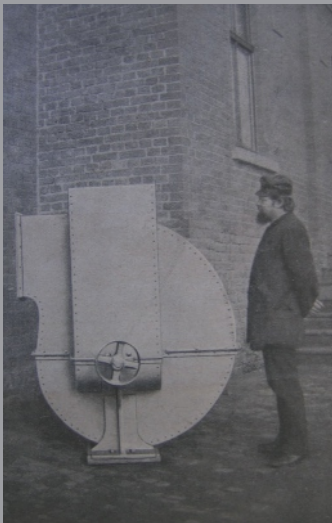
In 1970, the merger of the fan group Buettner-Schilde-Haas brought extensive knowledge to the group. The very first fabricated centrifugal fan had been built in the 19th century by Benno Schilde. Originally, fans were constructed of cast iron, which was extremely cost-intensive. Schilde replaced this with his own newly developed design made of sheet steel.

In 1996, KK&K's Ventilator department in Frankenthal was also incorporated into TLT-Turbo. With this extensive expertise in centrifugal fans, TLT-Turbo has been able to continually satisfy industry's ever more stringent and demanding requirements for fans over the years.

**Based on decades of development and experience we have created a blower programme with guaranteed versatility in industrial use.**

**Particular emphasis was placed on the following criteria:**

- ▶ Low operating costs
- ▶ Low failure rate – even under difficult conditions
- ▶ Long service life
- ▶ Good sound insulation



*Benno Schilde in front of his first centrifugal fan in 1878.*





# Centrifugal fans for almost every application

TLT-Turbo's sophisticated range of products, field-proven to perform optimally in international markets and in challenging operating environments, showcases our capability and expertise. The high standard of quality of TLT-Turbo's products is a result of utilizing the latest technology and offers an optimal solution for every application.

In 1979, TLT-Turbo granted one of its first licenses to China. Further licenses were subsequently granted to the USA, India and South Korea. The granting of these licenses has led to the establishment of strong, long-standing relationships with our local partners and clients in these countries.



*LD booster fans downstream of a gasometer in a steel mill. The housings are made gas-tight because of the high proportion of CO gas in the extracted gas.*

# Industrial Fans



We offer fans in a variety of different series and sizes. This enables us to cover the diverse and unique requirements of various industries.

Our programme can be subdivided into two broad areas:

- ▶ Standard
- ▶ Custom Designed

Both the standard and custom designed fans offer various diameters of impellers, and the custom designed programme also offers varying wheel widths.

With the standard models, each nominal size has its own fixed housing dimensions, whereas with the custom designed models, housing dimensions are always matched to the impeller.



To minimize noise, we can create sophisticated soundproofing solutions.

For high availability deployments with dusty media, we have a selection of different modern wear-protection types in our range.

For corrosive media we have stainless steel and rubber linings as ready solutions.

We also supply gas tight fans for the promotion of e.g. toxic gases.

We also offer solutions for weight and inertial reduction, such as, *inter alia* scalloping or hollow shaft.

This diversity means that we can supply fans to a variety of industries:

- ▶ Steel industry
- ▶ Power plants
- ▶ Cement industry
- ▶ Petrochemicals
- ▶ Industrial applications including fertilizer, mining, dairy, timber, and many more.





*Impeller with welded composite armour plate.*



#### **The rotor of a sintering fan**

On bearings with a separate oil supply, the impeller is bolted to the hollow shaft.

The hollow shaft is used for both weight reduction and to reduce the moment of inertia. This increases the margin between normal operating speed and critical speed. Two cones, one on either side, protect the bolts that connect the shaft to the impeller from the aggressive medium.



*Impeller with screw-on wear protection.*

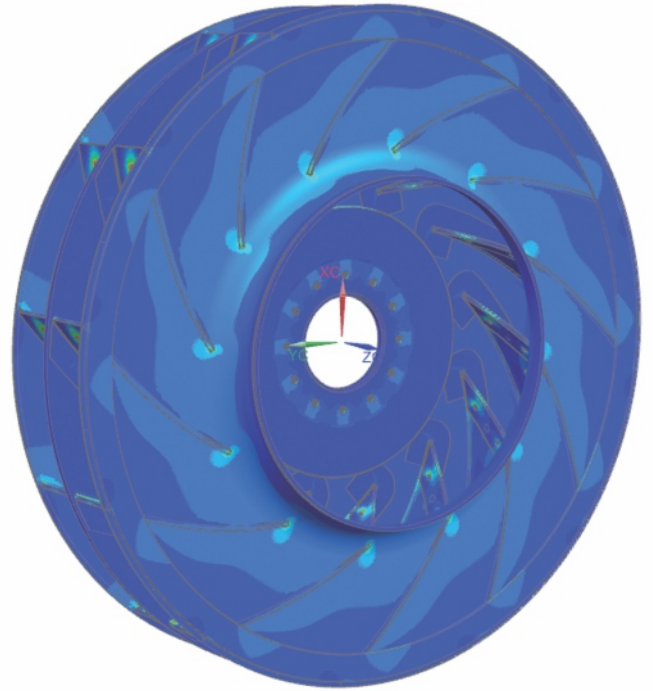


#### **Impellers with wear protection**

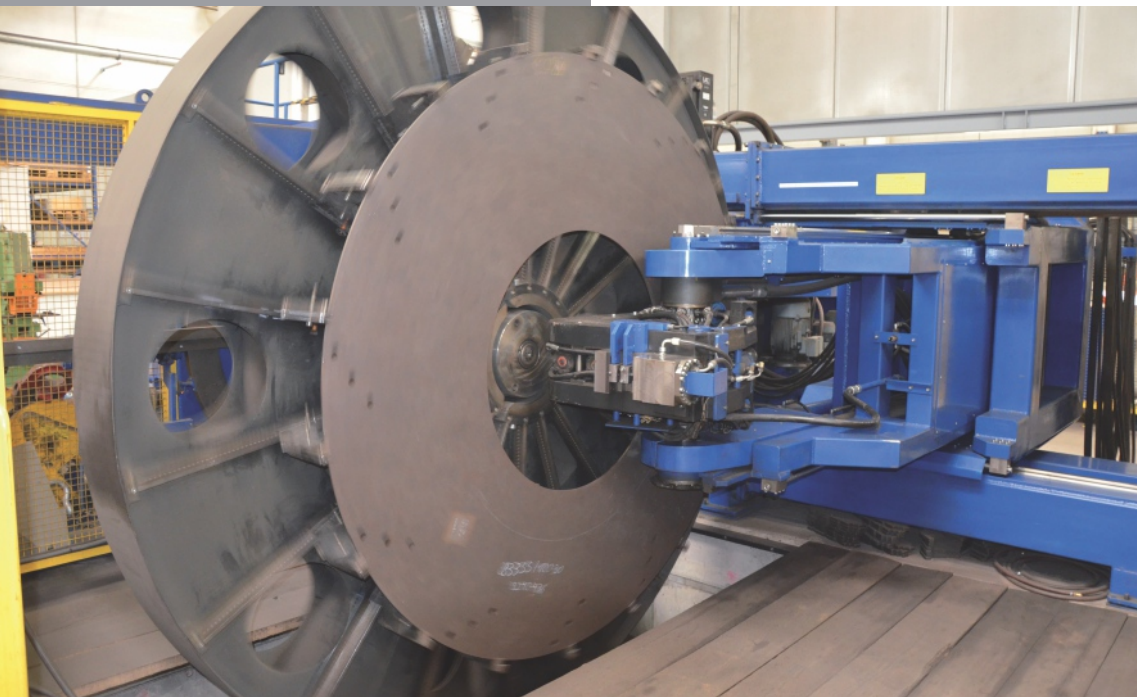
**Material:** Highly wear-resistant high-chromium high-carbon Fe-based alloys (various manufacturers).

# Centrifugal Fans

Among our computational tools, TLT-Turbo uses FEA for its strength calculations and CFD for numerical flow simulation. This helps to ensure the high quality of our products.



*Graphical representation of a FEA calculation for a centrifugal impeller.*



*This flange bending machine uses cold forming to press the various radii on impeller cover plates and suction nozzles.*



# The Latest Technology for the Highest Quality



Weight is saved by cutting off from hubdisc (scalloping).

It is always advantageous to keep the weight low because this achieves a greater margin between normal operating speed and critical speed.

TLT-Turbo has one of the largest balancing benches, which can balance impellers and rotors up to a diameter of 4500 mm (177 in) and a weight of 20,000 kg (44,000 lbs).



Germany . China . South Africa . USA . India  
Australia . Austria . Chile . Hungary . Russia . South Korea



○ Business Location with Manufacturing and Service Workshop

● Business Location

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