Tunnel Systems . Design & Supply
System Components . Engineering Support
We have over 100 years of experience in ventilation technology and have been developing, manufacturing and constructing axial flow and centrifugal fans and systems for more than 40 years. The experience has naturally been incorporated into and further developed in the design, manufacturing and installation of complete integrated ventilation systems for road, metro and rail tunnels.

We are your partner for smoke extraction and have the ability to provide clear visibility for escape routes.

Smoke is the big danger for people in an underground tunnel. In the case of fire our Metro and Tunnel fans provide smokefree emergency exit routes. Fan series tested according to EN 12101-3 give tunnel operators the security they desire. Specially selected materials, highly heat-resistant motors and design precision from TLT-Turbo associate „your“ security with high economic efficiency. Excellent aerodynamic features guarantee low power consumption and installation cost.

They also help to keep the acoustic noise low. These fans may be used in tunnel sections as jet fans with free inlet and outlet as well as in premises as axial fans in ducted installations.

Tunnel Fans

The tunnel axial fan is a unidirectional fan with a hydraulic blade adjustment system during operation or fixed blades adjustable during standstill. The fan can be used for fresh air respectively exhaust air and smoke gas. The fan consists of the fan casing (3 casing ducts), the impeller with a rotating nose fairing and the built-in motor. The fan can be installed horizontally or vertically. Various accessories like inlet nozzle, diffuser, shock absorbers, dampers etc. are available.

Technical data
- Capacity: 20 to 200 m³/s
- Temperature: up to +400°C/120 min.
- Total pressure: up to 3500 Pa
- Motor power: up to 500 kW

Typical unit dimensions
- Impeller diameter: 1.4 to 2.8 m
- Length: 1.4 to 2.8 m

Features
- Unidirectional or 100% reversibility
- High efficiency
- Flexible design standard
- Various accessories available
- F400 tested acc. to EN12101/0.5
- In (hot dipped galvanized) steel with powder coating or painted

Scope of supply
- Ex works or including transport to site
- Installation
- Start up
- Commissioning

Metro Fans

The metro fan is an unidirectional or reversible fan (depending on the blade profile). Fresh air can be supplied to the Metro system for cooling or air regeneration and polluted air or smoke can be extracted.

The fan consists of the fan casing (3 casing ducts), the impeller with a rotating nose fairing and the built-in motor. The fan can be installed horizontally or vertically. Various accessories like inlet nozzle, diffuser, shock absorbers, dampers etc. are available.

Technical data
- Capacity: 50 to 350 m³/s
- Temperature: up to +600°C/120 min.
- Total pressure: up to 8000 Pa
- Motor power: up to 2500 kW

Typical unit dimensions
- Impeller diameter: 1.8 to 3.5 m
- Length: 1.6 to 3.5 m

Features
- Hydraulic blade adjustment
- High efficiency
- Flexible design standard
- Various accessories available
- F400 tested acc. to EN 12101/0
- In (hot dipped galvanized) steel with powder coating or painted

Scope of supply
- Ex works or including transport to site
- Installation
- Start up
- Commissioning
Jet Fan
The jet fan or impulse fan consists of one impeller (usually reversible by change of motor direction), the electrical motor, the casing, two tubular silencers with inlet nozzles and the support to fix the fan to the ceiling. The fan is designed for pushing an air column inside a large void (e.g. tunnel) by impulse exchange. Therefore the jet fan has a free inlet and outlet with no duct connections.

Overpressure Fan
The overpressure fan is a unidirectional fan and can be used for escape tunnels. The fan consists of the fan casing, the impeller and the built-in motor. The fan can be equipped with an anti-stall device. Various accessories like inlet nozzle, diffuser, shock absorbers, dampers etc. are available.

Jet Fans TAS
**Technical data**
- Thrust from 350N up to 1800N
- Motor power from 11kW up to 55kW

**Typical unit dimensions**
- Impeller diameter 560 to 1250mm
- Max. outer diameter 1500mm
- Length from 1000 to 7000mm

**Features**
- 100% Reversibility
- F200, F300, F400 tested acc. to EN 12101/3
- In (hot dipped galvanized) steel with powder coating or painted, or in stainless steel acc. to customer’s spec.
- Low maintenance

**Scope of supply**
- Ex works or including transport to site
- Installation
- Start up
- Commissioning

Overpressure Fan
**Technical data**
- Capacity 0,5 to 40 m³/s
- Total pressure up to 1600 Pa
- Motor power up to 160 kW

**Typical unit dimensions**
- Impeller diameter 500 to 1250mm
- Length from 540mm to 340mm

**Features**
- In (hot dipped galvanized) steel with powder coating or painted, or in stainless steel acc. to customer’s spec.
- Low maintenance

**Scope of supply**
- Ex works or including transport to site
- Installation
- Start up
- Commissioning

System Components

Dampers
- Use of fluidic optimized dampers with low resistance and low turbulences on the damper blades.
- Very precise adjustability of the blade angle
- Low noise emission
- Temperature resistant

Silencers
- (Absorption splitters)
- Mineral fibre insulation protected by perforated sheets with trickle protection
- Low pressure losses (by semicircular upstream cap)
- Silencing on a wide frequency range

Experience
- Safety in ventilation design
- Pressure loss calculation
- Exact flowcharts for control system
- Optimised system to reduce civil costs

FEM / CFD
- Safety in the design of high temperature fans
- Drive system / Local control panel
- Certified motors for high temperature are applied for a safe operation in case of fire also in combination with softstarters and frequency inverters.
- Appropriate technology for local and remote control.
- Local control cabinet (e.g. for maintenance purposes).
- Optimization of existing plants with regard to operating performance and energy consumption.

Engineering Support

A Passion for Solutions.
Customized solutions means turning innovative ideas into reality.
Above all there is the quality of our products. Our efficient and modern production process and highly qualified staff guarantee highest possible quality. Research and development continue optimising our products.

Our customers take profit especially from the high operational safety and efficiency of our fans and systems. TLT-Turbo hold all important national and international quality certificates. Each and every fan undergoes an intensive test run before leaving our factory. We not only want to be good but also efficient. We not only want to be up to our customers expectations but think ahead.

Also in future we will care for TLT products to hold a worldwide top technological position.

Our quality assurance system guarantees the same high quality level for all products with regard to material, working process, technology and functionality as well as to application and operational safety. Product quality is decisively influenced during its development already. This is why our quality assurance already starts at that stage. Our staff understand quality as being an integral part of their daily work. Important part of their task is the daily control of our quality assurance system and its update if necessary. Only this way can our permanent quality be guaranteed. Our quality management acc. to DIN ISO EN 9001 guarantees that all material processed and all parts, components, products and systems produced completely fulfil all stringent requirements at any time. We of course abide to all national and international standards and laws as well as to all contractual obligations.

More security by quality assurance.

Contact.
Application Tunnel- and Metrosystems.
A Passion for Solutions.

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

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