



Mining Auxiliary & Booster Fans

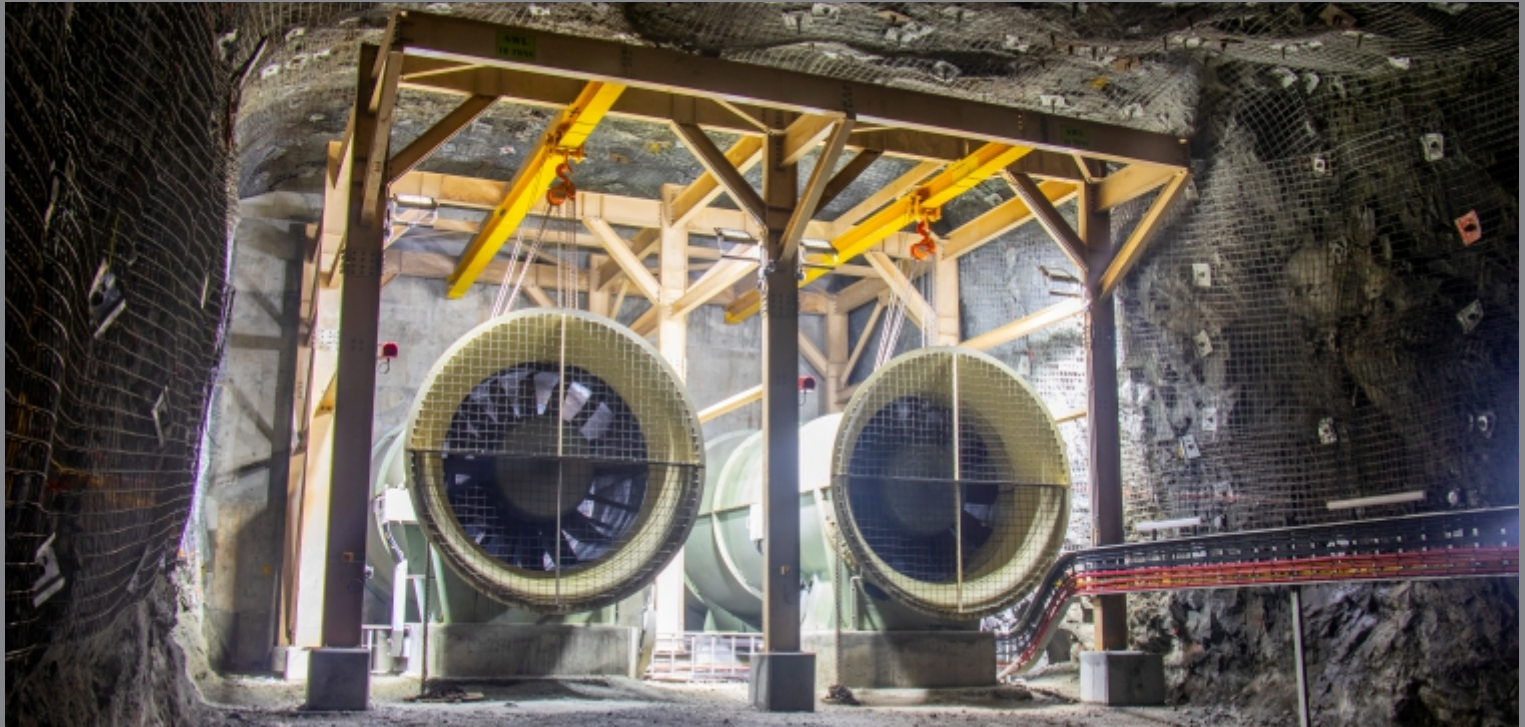
Quiet. Efficient. Durable.

Substantially Reduce Operating Cost

Lower Power Usage: TLT-Turbo fans have total efficiencies higher than 80% for most operating point requirements. This means that for a given ducting distance or static pressure, less power is needed, thus reducing operating costs.

Longer Reach: Our fans are designed to maximize pressure capability from a given motor power, allowing the fan to manage flow delivery for longer duct length and reducing the number of fans required, thus reducing operating costs.

Higher Mean Time Between Failure (MTBF): An anti-vibration motor mounting system increases operating life and MTBF. Our design allows for easy motor replacement and reducing repair costs, thus reducing operating costs.



What Makes TLT-Turbo Auxiliary & Booster Fans Unique?

Performance Features	Impact & Benefit
Total fan efficiency at duty points up to 86%	Impact: Operating costs are lowered by ensuring minimum use of power to achieve performance requirements. Benefit: Cost saving.
Wide range of duty points above 80% total fan efficiency including multi-stage configurations	Impact: Virtually unlimited duty points within operating regimes meeting optimal performance requirements. Benefit: Cost saving, freedom to design ventilation to suit clients needs.
All fan performance characteristics tested in ISO 5801 certified test columns	Impact: Fan data can be trusted as verified and can be used for ventilation models as provided. Certified raw test data and a certificate can be provided. Benefit: Fans perform as advertised and clients get what they need.
Fan balancing and vibration tested against ISO 1464:2003 specifications and vibrations are kept to a minimum	Impact: Low vibration levels are critical for MTBF on motor bearings. Benefit: Longer product life.
Both broadband and resonant silencer are supplied	Impact: Reduced noise levels to meet client's regulatory OHS requirements. Benefit: Improved working environment.

Design Innovation for Optimal Performance & Versatility

Design Features

Robust engineered design for harsh underground mining conditions

Motor mounting struts allow for unique fully symmetrical motor mounting configurations and adaptors to various motor frames

Modular standardized & versatile barrel design

Machined track barrels mounted separately to motor barrel ensures tight tolerance on blade tip clearance

High strength steel alloy blades used in fans up to 1016 mm / 40" (2-pole motors)

True aerofoil shaped stator blades

Aerodynamic fairings inlet & tail cones

Benefits

- ▶ Improved durability
- ▶ Ensure long Mean Time Between Failure (MTBF)
- ▶ Increase stiffness
- ▶ Minimize drag
- ▶ Minimize vibration in radial and axial directions
- ▶ Provide alternate terminal box positions
- ▶ Minimizing downstream repair costs
- ▶ Maximized efficiency
- ▶ Optimal performance
- ▶ Impact resistant
- ▶ Corrosion resistant
- ▶ Optimize fan efficiency and static pressure recovery
- ▶ Reduce noise
- ▶ Optimize fan efficiency
- ▶ Reduce noise
- ▶ Minimize outlet turbulence

This is what our customers actually saved

Many of our customers turn to our fans specifically to reduce their operating costs – and succeed. Here are just three examples out of many, as certified by independent measurement and verification experts. Contact us for more references and figures.

Before	23.4 MW	Before	3.65 MW	Before	1.226 MW
	12.6 MW		2.24 MW		0.7 MW
▶ 872 fans: 762 mm/45 kW		▶ 140 fans: 762 mm/45 kW		▶ 36 fans: 762 mm/45 kW	
▶ Savings: 10.8 MW (46%)		▶ Savings: 1.41 MW (39%)		▶ Savings: 526 kW (43%)	

Technical Details

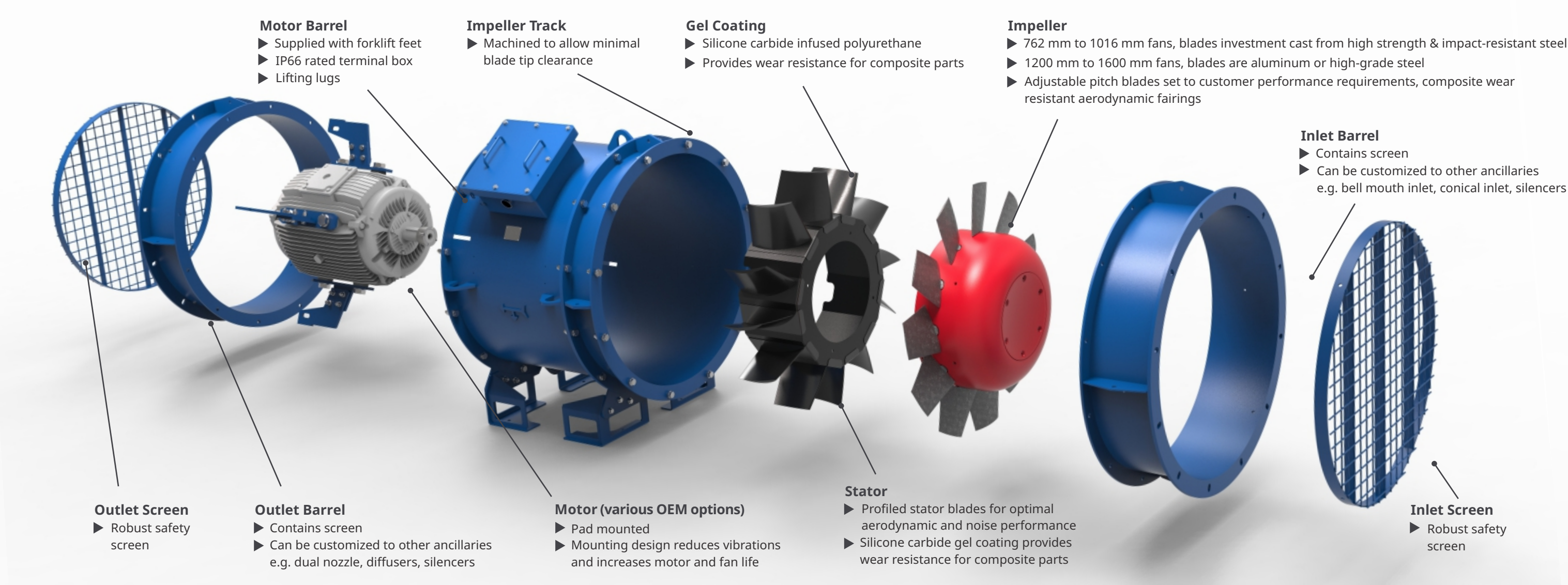
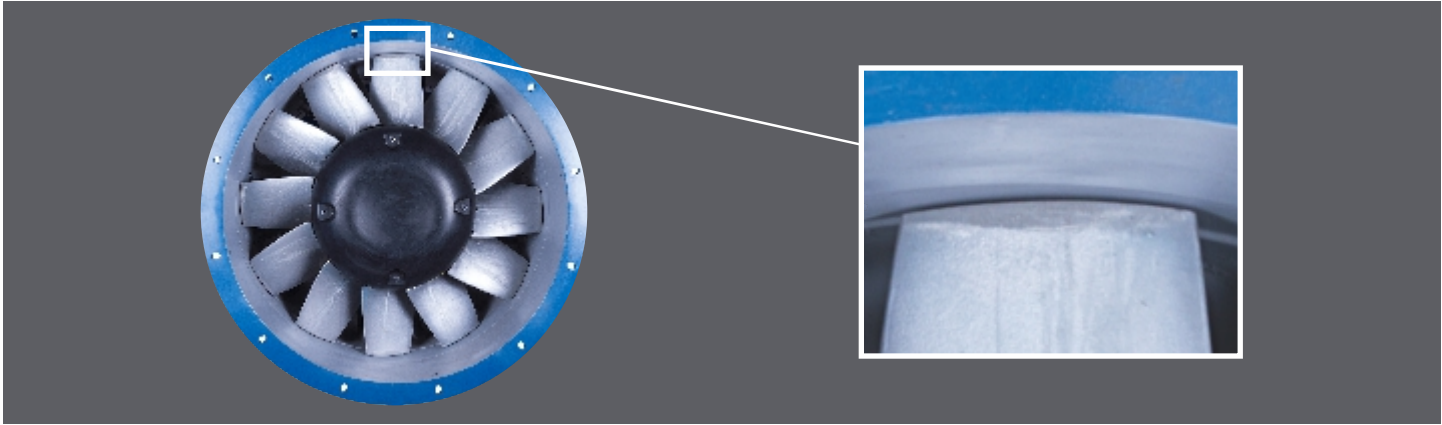
Model [AP50]	Size mm	Motor Poles	Motor Power		Flow Rate m³/s	Static Pressure kPa	Total Pressure kPa	Max. Total Efficiency
			kW	hp				
MC 762	762	2	15 – 45	20 – 60	6.5 – 14.5	0.72 – 2.38	0.90 – 2.70	85.9%
MC 915	915	2	22 – 75	30 – 100	9 – 20.5	0.90 – 3.35	1.10 – 3.75	84.5%
MC 1016	1016	2, 4	45 – 110	60 – 150	11 – 26.5	0.30 – 3.67	0.40 – 3.80	86.6%
MC 1200	1200	4	30 – 75	40 – 100	16 – 34	0.70 – 1.65	0.90 – 2.00	84.3%
MC 1400	1400	4	37 – 185	50 – 250	25 – 56	0.50 – 2.34	0.85 – 2.80	85.9%
MC 1600	1600	4	75 – 280	100 – 375	40 – 91	0.50 – 2.37	0.95 – 3.20	85%

- Frequency: 50 Hz | Air density at sea level: 1.2 kg/m³
- Only upper and lower boundaries for 80% and above total efficiency performance bubble are listed.
- Static pressure capability is indicated by a single fan of that size. For fans in series pressure is additive.
- Various optimal duty points are achieved through:
 - Adjustable blade pitch
 - Different impeller hub sizes per fan size
 - Different number of blades per impeller
 - Multistage fan configurations, up to 3 stages

High Efficiency, Low Operating Cost

A well-engineered product using the latest technology has led to optimized manufacturing processes against the backdrop of an ISO 9001:2015 certified manufacturing facility. This ensures high quality workmanship which translates not only to longer lasting products, but also to a product range with a track record of lower downstream repair and maintenance costs.

An established manufacturing process results in repeatable fan performance characteristics. Items such as the machined impeller track, allowing low blade tip clearances, contribute to making our fan range one of the most efficient on the global market.



Measured Performance

Performance cloud @ 1.2 kg/m³ air density, with operating points >80% total fan efficiency of fan range for sizes 762 mm to 1600 mm and series configurations of up to 3 stages.

MC 762

- ▶ Diameter: 762 mm / 30"
- ▶ Volume Flow: 6.0 to 14.5 m³/s
- ▶ Total Pressure: 0.9 kPa to 8.0 kPa

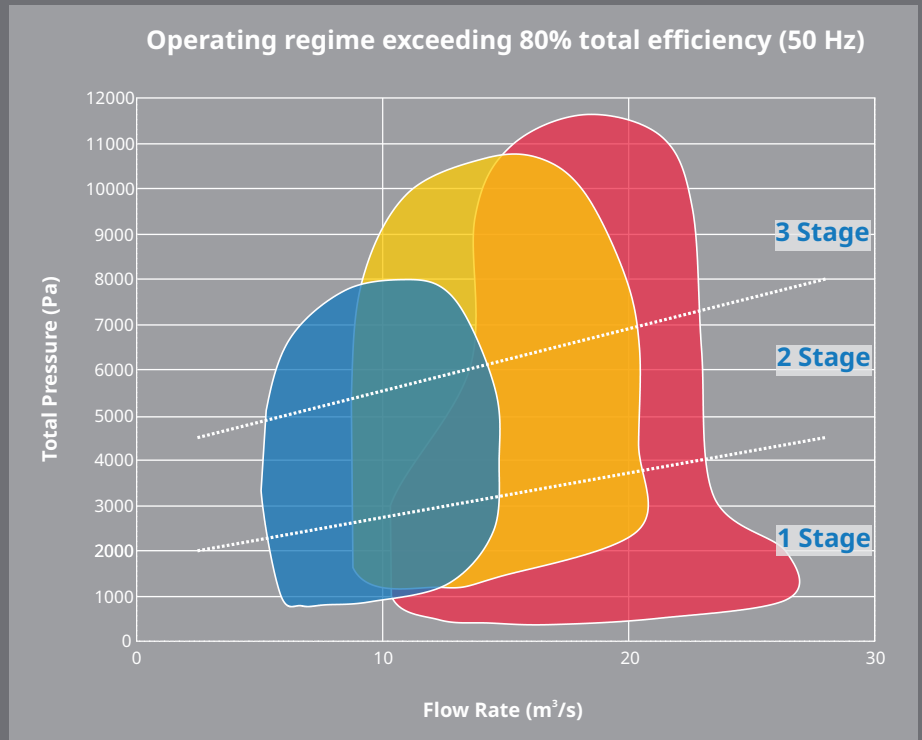
MC 915

- ▶ Diameter: 915 mm / 36"
- ▶ Volume Flow: 9.0 to 20.5 m³/s
- ▶ Total Pressure: 1.1 kPa to 10.8 kPa

MC 1016

- ▶ Diameter: 1016 mm / 40"
- ▶ Volume Flow: 11.0 to 26.5 m³/s
- ▶ Total Pressure: 0.4 kPa to 11.6 kPa

- MC 762 (2 pole)
- MC 915 (2 pole)
- MC 1016 (2, 4 pole)



MC 1200

- ▶ Diameter: 1200 mm / 48"
- ▶ Volume Flow: 12.0 to 34.0 m³/s
- ▶ Total Pressure: 0.5 kPa to 5.5 kPa

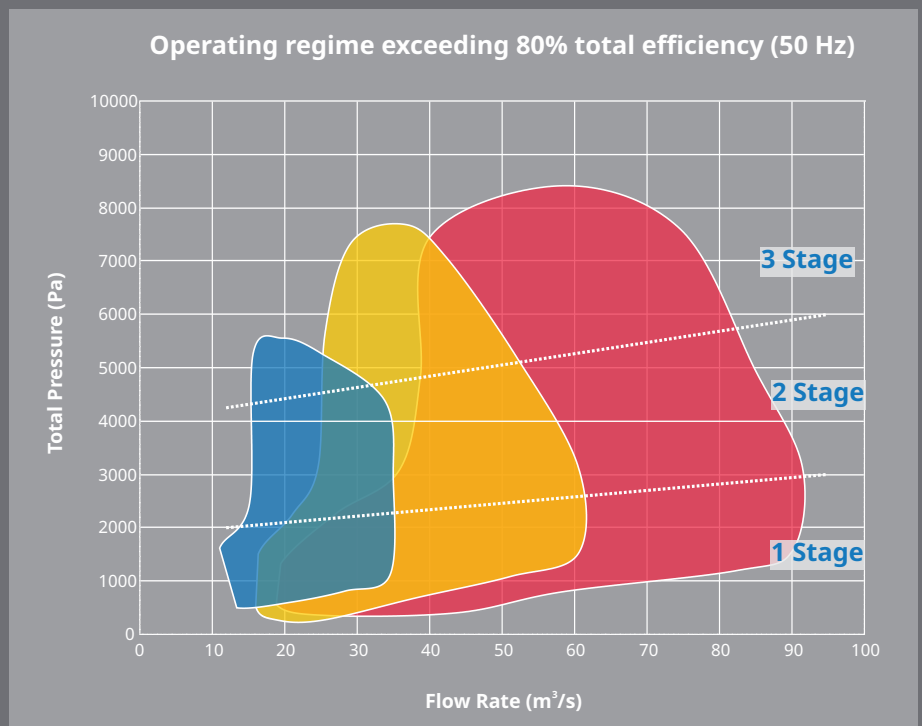
MC 1400

- ▶ Diameter: 1400 mm / 55"
- ▶ Volume Flow: 16.0 to 61.0 m³/s
- ▶ Total Pressure: 0.4 kPa to 7.6 kPa

MC 1600

- ▶ Diameter: 1600 mm / 63"
- ▶ Volume Flow: 20.0 to 91.0 m³/s
- ▶ Total Pressure: 0.4 kPa to 8.3 kPa

- MC 1200 (4 pole)
- MC 1400 (4 pole)
- MC 1600 (4 pole)



Why Are Our Fans More Efficient?

Simple Answer, Complex Endeavour: High-precision Manufacturing

Our manufacturing process involves several innovations and patented procedures. These enable us to not only easily adapt the design to individual customer needs, but also to achieve a higher grade of manufacturing precision – the precondition for efficient operation even under toughest conditions underground.



Multiple barrel sections enable modular design to meet customers' individual needs, while keeping assembly time and cost low.



Impeller track machined close to 100% circularity – a key process for high efficiency.



The moulding and fine-tuning of our composite parts (stators, impellers and cones) involves meticulous manual procedures.



A freshly painted MC1016 housing leaving the paint booth.



The motor mounting is welded into the fan motor barrel.



A naked MC762 unit without impeller, ready to be mounted into the housing.



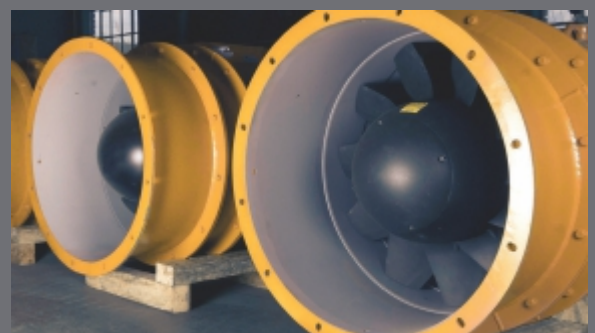
After final assembly, fans are tested according to the ISO 5801 testing standard.



An MC1016 prior to mounting into the testing station.



A 1200 mm high-pressure variable-pitch impeller on the balancing machine.



All tests successfully passed and ready to ship: MC762 fans before transport.

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



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and Service Workshop

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TLT-Turbo (Sichuan) Co., Ltd.
TLT-Turbo Africa (Pty) Ltd.
TLT-Turbo Inc.
TLT-Turbo India (Pty) Ltd.

● Business Location

TLT-Turbo Branch Australia, Adelaide
TLT-Turbo Branch Korea, Seoul
TLT-Turbo Branch South America, Santiago de Chile
TLT-Turbo Rep. Office Austria, Vienna
TLT-Turbo Rep. Office China, Beijing
TLT-Turbo Rep. Office Hungary, Budapest
TLT-Turbo Rep. Office Russia, Moscow



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