Systemair Tunnel Fans

Systemair Tunnel Fans are developed in Germany for a good reason:

With the incorporation of Matthews & Yates in 2007, Systemair Germany began concentrating on ventilation systems for metro, road and train tunnels.

Since then, our factory in Windischbuch has become a Centre of Competence and is therefore responsible for the research and development of the axial fans range for the Systemair group.

Highest efficiency, outstanding quality and absolute reliability are the benchmarks that are followed.

To be able to meet these guidelines for the future, we have the most modern laboratory for research and development of axial fans in Europe.

In addition to a test chamber in accordance with ISO 5801 for volumes up to 30,000m³/h resp. max 1500Pa we are able to test fans on an AMCA 210-7 test chamber for up to 130,000m³/h resp. max. 3000Pa.

Axial fans up to size 2240mm, can be tested on 2 inlet tube test rigs according AMCA 210-7. All testing equipment can be used independently of the weather conditions in our research and development center, which was newly built in 2013.

Our Jet Fans are tested and optimized according to the high requirements of the DIN EN ISO 13350. On request, we are able offer you the possibility to attend the testing of your fans. Relax and lean back in our high tech conference room while watching the fan running through safety glass. The recorded data can be watched easily on big TFT screens mirrored from the lab - in real time.

The Jet Fans assembly hall, also newly built in 2013, has an area of 760m². The assembly is done by experienced workers who are following the highest quality standards. When assembly is completed, the fans are tested in the final inspection area. This ensures that the fans are fault free and meet the required performance levels. Last but not least it guarantees the reliable operation at site.

Take advantage of decades of knowledge in the M.R.T. business. It would be a pleasure for our engineers to give you support for the fan selection and optimization of the ventilation system. If needed, we are also able to do CFD simulations in house.

For further information about MRT division, please visit: www.systemair.com/Global/Solutions/Tunnel-and-Metro/
Systemair is working in accordance with the following standards:

Quality:
DIN 24166: Technical terms of delivery for fans.

CE-marking:
The CE marking is a mandatory conformity mark in the European Economic Area. By affixing the CE marking, the manufacturer asserts that the item meets all the essential requirements of the relevant European Directive(s).

Testing:
ISO 5801: "Industrial fans, performance testing..."
DIN 24163: "Fans, performance testing..."
AMCA 210-99: "Laboratory methods of testing fans for aerodynamic performance rating"
EN 12101-3: "Smoke and heat control systems - powered smoke and heat exhauste..."
ISO 13350: Performance testing of Jet fans
EN certificates on www.systemair.com

• As per EC Machinery Directive 98/37/EEC Annex IIA, fans for ventilation...the following harmonized standards are used:
  - EN 60 204-1: "Safety of machinery - electrical equipment, general requirements"
  - EN 292-1: "Safety of machinery, design" EN ISO 12100.2011-3
  - EN 294: "Safety of machinery, safety distances" EN ISO 13857.2008-06
  - EN 60 034-1: "Rotating electric machinery, ratings and performance"

• As per EC Low Voltage Directive 73/23/EEC and 93/68/EEC the following harmonized standards are used:
  - EN 60 204-1: "Safety of machinery - electrical equipment, general requirements"
  - EN 60 034-5: "Rotating electric machinery, protection classification"

• As per EMC-directive 89/336/EEC and EMC-directive 93/68/EEC the following harmonized standards are used:
  - EN 61000-6-1 and 6-2: Electromagnetic compatibility
Jet Fans truly reversible

with 1D silencers (recommended selection; other capacities on request)

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Lower sound levels, different sizes and increased performances on request;

1) 400V 50Hz; all motors AOM rated 2) approx. figures 45°, 10m ³⁾ only F250/F300 4⁾ sound datas only applicable without ancillaries

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Models & Specification Jet Fans AJ

Impellers

- **TR** 100% reversible; pitch adjustable at stand-still
- **G** unidirectional; pitch adjustable at stand-still on request

Configuration

Axial fan with silencers mounted on both sides. Standard length 1D. Silencers length 1,5D and 2D on request.

Temperatures

- F200 according DIN EN 12101-3 (K)
- F300 according DIN EN 12101-3 (B)
- F400 according DIN EN 12101-3 (F)

Material

**Impeller**
- Hub: die cast aluminium with integrated steel keyway
- Blades: die cast aluminium, x-rayed according ASTM 155 on request

**Casing**
- Steel (S235JRG2) or
- Stainless steel (1.4301, 1.4404, 1.4571)

**Silencer with integrated inlet cone**
- Housing pregalvanized sheet metal (S235JRG2) + inner layer of perforated sheet metal (1.4301)
- Housing stainless steel (1.4301, 1.4404, 1.4571) + inner layer of perforated sheet metal (1.4301)

Surface treatment

- Hot dip galvanized sheet steel (S235JRG2), standard
- Powder coating or
- Painting
Accessories

**Mounting devices**
Made of steel (S235JRG2) or stainless steel (1.4301, 1.4404, 1.4571)
Feet or brackets for easy mounting at the tunnel vault or to a mounting frame.
Special designs on request.

**Vibration control**
Vibration control on fan casing for a fast detection of changing conditions. Immediate maintenance prevents a bigger damage and therefore increased operating costs.

**Vibration attenuator**
For an active and passive absorption of vibrations and structure-borne sound.

**Protection guard**
Protects the impeller from damage caused by bigger sized objects.

**Guide vanes**
Made of galvanized steel for an optimized airflow direction.

**Safety rope**
To prevent the fan from falling on the road in case of broken mounting.

Additional accessories on request.
References

**Metro- and Railway Tunnel**
- Patamonas, Greece
- Metro Catania, Italy
- Metro Paterno, Italy
- TAV Barbarolo, Italy
- LRT Line 2 Manila
- Metro Taipei Xian, Taiwan
- Kaoshing MRT, Taiwan
- MRT 348 Taipei, Taiwan
- Metro Istanbul, Turkey
- Metro Copenhagen, Denmark
- Mecca Inner Ring Road, Saudi Arabia
- Taif Conference Palace Underpass, Saudi Arabia
- Riva del Garda, Italy
- Monte Cucno, Italy
- Pedelombara Section A, Italy
- Quinta Grande, Ribeira Brava, Madeira, Portugal
- Lorong Kuda, Kuala Lumpur, Malaysia
- Hardangerbrua, Norway
- Vangsbyporten, Norway
- E6 Eidsvoll, Norway
- Marienburg, Norway
- Lainberg, Austria
- Passauer, Austria
- Fidelombara, Italy
- Amoreiras-Maques, Portugal
- Madeira, Portugal
- Achzu, Krasnodar, Russia
- Melide, Switzerland
- Marj Al Hamam - Jabal Arafat, Syria
- Ham Boa, Taiwan
- Golden Mountain II, Taiwan
- Mahmutby, Istanbul, Turkey
- Wadi Mu'diqli, United Arab Emirates

**Road Tunnel**
- Adelaide Crafters, Australia
- Leopold II, Brussels, Belgium
- Stara Trazevic, Bosnia-Herzegovina
- Taarnby, Denmark
- Airport Dubai, United Arab Emirates
- Dartford Crossing, England
- A38 Saltash, England
- Koumaria-S2, Greece
- Egnatia Route, Greece
- Cheung Ching, Hong Kong
- Australia
- Belgium
- Bosnia-Herzegovina
- Denmark
- Dubai
- England
- Greece
- Hong Kong