Tunnel Fans

Jet Fans

systemair

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/

CFD Simulation

Systemair is working in accordance with the following standards:

Quality:
ISO 9001: Quality management system, monitored by TÜV Süd. Certificate on www.systemair.com.

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:**

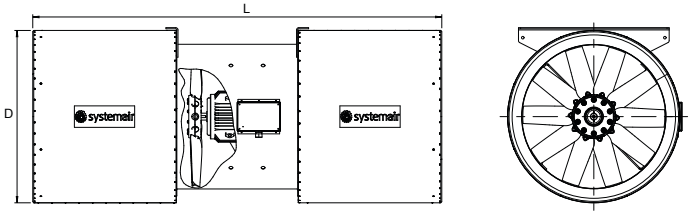
- EN 61000-6-1 and 6-2: Electromagnetic compatibility

Jet Fans truly reversible

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

Fan					Motor [1)]		Noise level [2, 4)]
Impeller Diameter [mm]	Type	Length [L]	Diameter [D]	Thrust [N]	Power [kW]	Pole	Soundpressure in freefield [dB(A)]
560	AJ - TR	1930	709	190	5,9	2	63
				230	8,2		66
				300	12		70
630	AJ - TR	2240	780	345	15	2	69
				395	18,5		70
				480	22		72
710[3)]	AJ - TR	2410	860	445	15	2	70
				547	22		71
				670	30		74
				745	34		75
710	AJ - TR	2410	860	350	15	2	70
				488	22		71
				578	30		73
				662	34		74
800	AJ - TR	2400	1000	269	5,5	4	58
				318	7,5		61
				368	10		64
900	AJ - TR	2950	1100	475	11	4	59
				520	13		60
				620	18,5		62
1000	AJ - TR	3150	1200	725	18,5	4	72
				810	22		73
				960	30		75
1120	AJ - TR	3234	1320	920	22	4	68
				1320	45		72
				1470	55		73
1250	AJ - TR	3600	1450	1355	37	4	71
				1745	55		74
				2035	75		78
1400	AJ - TR	3600	1600	1300	37	6	69
				1550	45		72
				1650	55		73
1600	AJ - TR	4300	1800	1450	37	6	70
				1530	45		72
				1670	55		73

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



Models & Specification Jet Fans AJ

AJ 1120 unit with customized fixing bracket and deflectors.

Temperatures

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

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 lenght 1,5D and 2D on request.

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

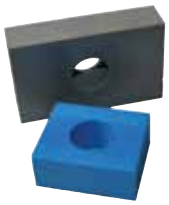
Accessories

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 maintainance prevents a bigger damage and therefore increased operating costs.



Vibration attenuator

For an active and passive absorbtion 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 Linie 2 Manila	Philippines
Metro Taipei Xian	Taiwan
Kaoshing MRT	Taiwan
MRT 348 Taipei	Taiwan
Metro Istanbul	Turkey
Metro Copenhagen	Denmark

Road Tunnel

Adelaide Crafters	Australia
Leopold II, Brüssel	Belgium
Stara Trazevic	Bosnia-Herzegovina
Taarnby	Denmark
Airport Dubai	Dubai
Dartford Crossing	England
A38 Saltash	England
Koumaria-S2	Greece
Egnatia Route	Greece
Cheung Ching	Hong Kong
Mecca Inner Ring Road	Saudi Arabia
Taif Conference Palace Underpass	Saudi Arabia
Riva del Garda	Italy
Monte Cuneo	Italy
A32	Italy
Pedelombarda Section A	Italy
Quinta Grande, Ribeira Brava	Madeira
Lorong Kuda, Kuala Lumpur	Malaysia
Hardangerbrua	Norway
Vagsbyporten	Norway
E6 Eidsvoll	Norway
Marienburg	Norway
Lainberg	Austria
Passuer	Austria
Lissabon	Portugal
Amoreieas-Marques	Portugal
Madeira	Portugal
Achzu, Krasnodar	Russia
Melide	Switzerland
Mari Al Haman - Jabal Arafat	Syria
Ham Boa	Taiwan
Golden Mountain II	Taiwan
Mahmutby, Istanbul	Turkey
Wadi Muddiq	United Arab Emirates

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Systemair GmbH · October 2015 · E1605