

## Direct-driven, Single-inlet Centrifugal Fans



The type GT CENTRIMASTER direct driven, single-inlet centrifugal fans cover air flows up to 7 m<sup>3</sup>/s and pressure rises up to 2.000 Pa. The fan series consists of centrifugal fans available with two types of impeller:

- Impeller with forward-curved blades for the GTLF fans.
- Impeller with backward-curved blades for the GTLB fans.

## Versions

Besides the normal version, the fans are also available in a spark-proof version. The smoke extraction version of GT has been tested by the French CTICM institute and by the Russian VNIPO institute.

CTICM has tested the fans for +400 °C, 2 hours and the tests cover GTLB-1-025-071 as well as GTLF-1-031-050. VNIPO has tested the fans for +400 °C, 2 hours and for +600 °C, 1 hour and the tests cover all single inlet GT-fans.

The fans in the spark-proof version conform to the provisions of German Standard VDMA 24 169 3.1 – 3.2 and 3.4.

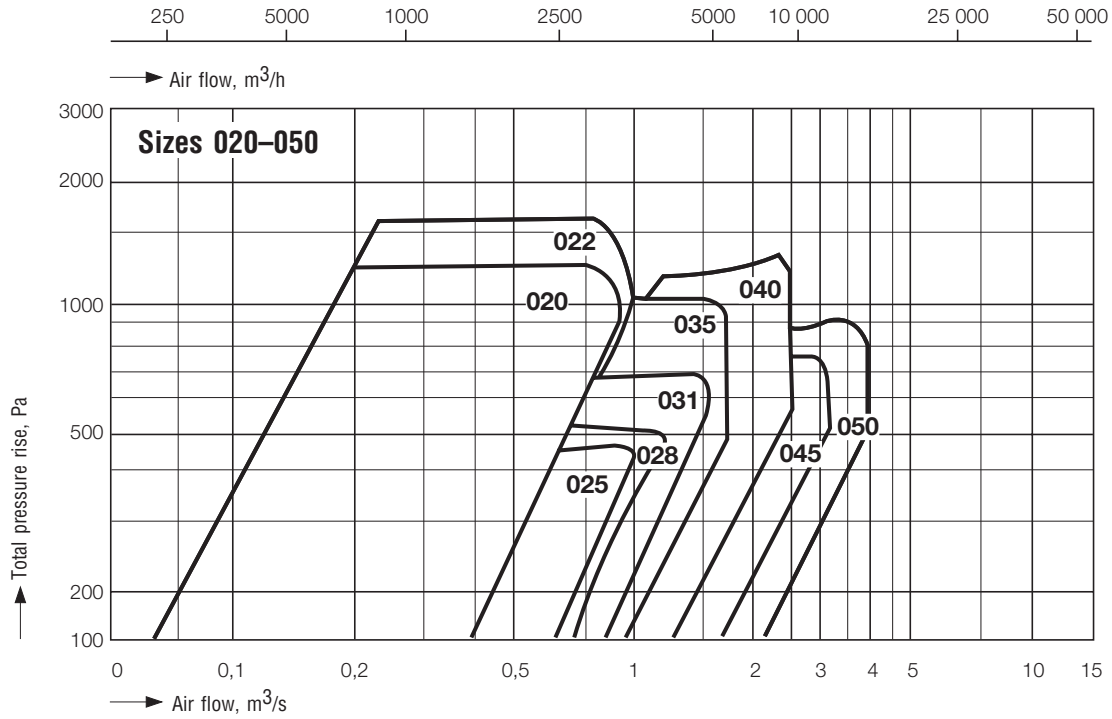
The inlet cone is made of brass and in the GTLF fans the inlet is fitted with a brass band.

The single-inlet fans are rated for continuous operation at temperatures up to +80 °C if the inlet of the fan is connected to the ducting. If the motor is exposed to the air stream, i.e. on a free inlet fan, the ambient temperature must not exceed +40 °C. Motors for higher temperatures are available to special order.

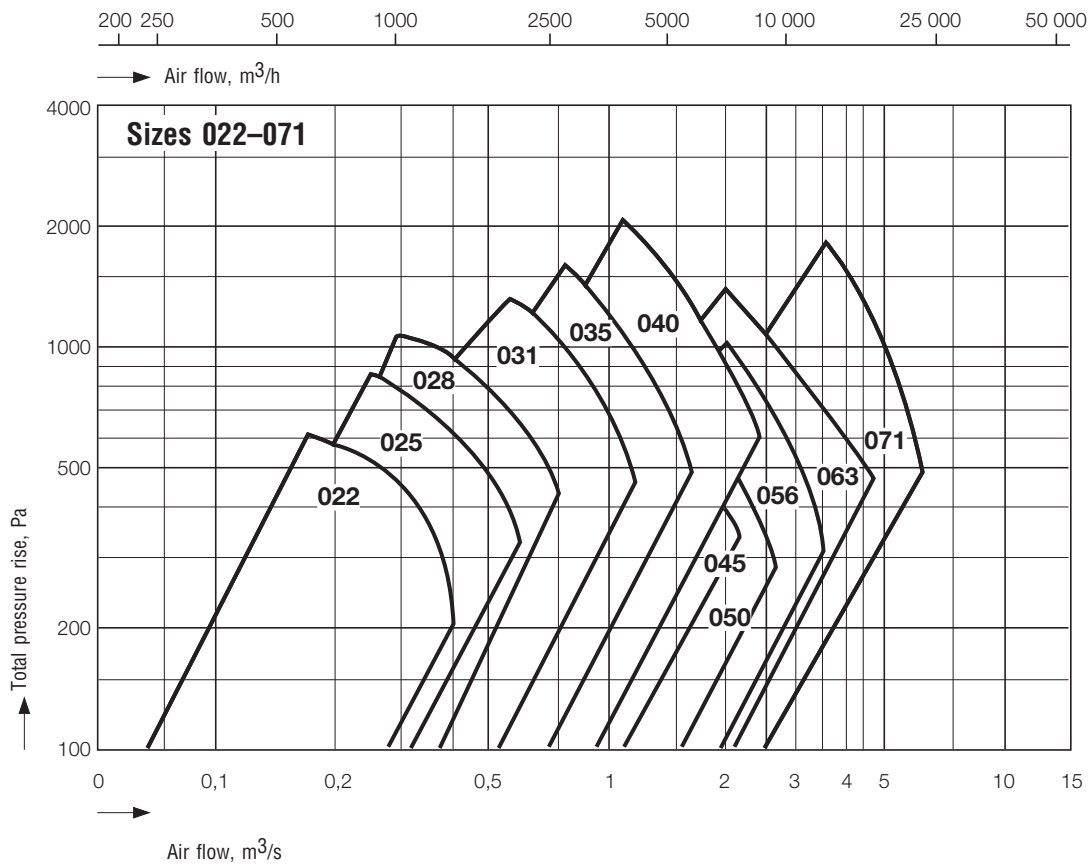


# General Survey Charts

## GTLF-1-



## GTLB-1-



# Design

## Fan Casing

The fan casing is made of Sendzimir galvanised sheet steel. The casing side plates are stamped in one piece and the inlets are deep-pressed in the end walls. The fan casing is jointed by the "Pittsburg folding method" which produces tight, strong joints. This jointing method and the deep-pressed inlets guarantee a stable design and high, consistent quality. The fan tongue has been specially designed to offer optimised aerodynamic properties.



Pittsburg



Tongue of the GTLB fans.

## Fan Inlet

The design of the fan inlet is of vital importance to high fan efficiency and a low level of sound generated by the fan. On the size GTLF fans, the inlet is directly deep-pressed into the end walls. On the GTLB fans the inlet must be deeper and must also extend into the impeller with a certain amount of overlap and a small, accurately predetermined radial gap.

The inlet cones of the GTLB fans are deep-drawn in one piece and are fitted to end walls of GTLF fans. This means that the GTLB fans have a "double inlet" that gives the fan casing additional rigidity.

## Fan Impellers

The fan impellers with backward-curved blades (GTLB) are made of sheet steel and welded, coated with 60 mm thick epoxy powder, (colour: AM 8043, dark grey). The fan impellers with forward-curved blades (GTLF) are made of Sendzimir galvanised sheet steel. The impellers of the size 035–071 GTLB fans are dynamically balanced to an accuracy to ISO 1940–1973 G 2.5 at the maximum speed. The impeller of the size 022–031 GTLB fans and all sizes of GTLF fans are dynamically balanced to accuracy according to ISO Standard 1940–1973 G 6.3 at the maximum speed.



Fan impeller of the type GTLB fans



Fan impeller of the type GTLF fans

# Materials and Finish, Motor – Tolerances and Quality

## Materials and Finish

The GX fans in the standard version meet the provisions of Environmental Class M2.

- Fan casing: Sendzimir galvanised sheet steel, (275 g/ m<sup>2</sup> thick zinc)
- Inlet cone: Sendzimir galvanised sheet steel in the normal version. Brass in the spark-proof version.
- Shaft: Centreless-ground steel with anti-corrosion protection.
- Fan impeller: GTLB: Sheet steel, welded, coated with 60 mm epoxy powder and baked, colour: AM8043, dark grey.  
GTLF: Sendzimir galvanised steel.

## Motor

The GT fans are normally supplied with the motor mounted. This enables the fan to be trial run prior to dispatch and ABB can assume undivided warranty liability.

Detailed motor data is tabulated in separate tables. See under Motor Data.

## Tolerances

The particulars in the charts are given with the tolerances specified in the DIN 24 166 Standard, Class 2.

DIN 24166	Tolerance Class		
	1	2	3
Air flow qv:	±2.5%	±5.0%	±10.0%
Pressure rise, Δp <sub>t</sub> :	±2.5%	±5.0%	±10,0%
Shaft power demand*, P:	+3.0%	+5.0%	+16.0%
Efficiency**, h:	-2.0%	-5.0%	-
A-weighted sound power level*, L <sub>WA</sub> :	+3 dB	+4 dB	+6 dB

\* Negative tolerance permissible

\*\* Positive tolerance permissible

## ISO 9001 and ISO 14001 Quality

ABB Fans has received quality management certification in accordance with ISO 9001. We document our quality management responsibility at every stage of our business activities from the product development to production, procurement and marketing.

We have received environmental management certification in accordance with ISO 14001. We aim to minimise the impact of our business activities and our products on the environment.

