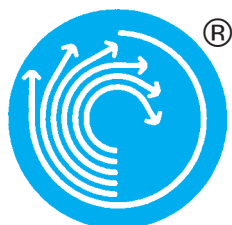


ATZAF

**DOUBLE INLET AIRFOIL BLADED BACKWARD CURVED
CENTRIFUGAL FANS**



comefri



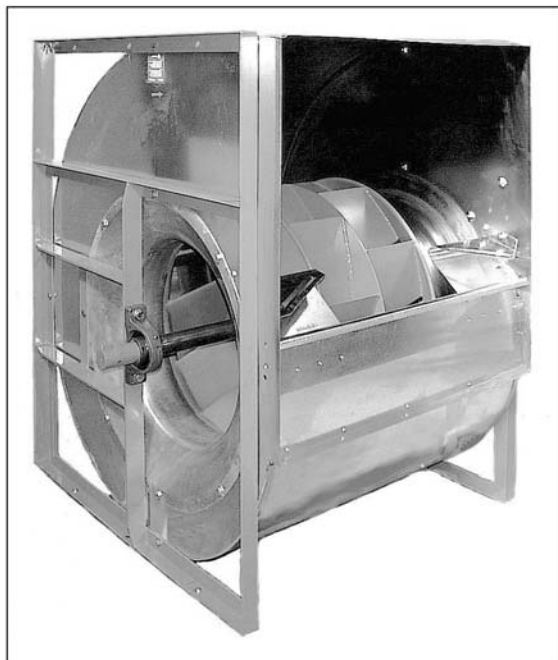
CO.ME.FRI. certifies that the Double Inlet Centrifugal Fans with Airfoil Backward Curved Blades – ATZAF shown herein are licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and comply with the requirements of the AMCA Certified Ratings Program.

The CO.ME.FRI. Test Laboratory is AMCA Accredited Laboratory of the Air Movement and Control Association.

Contents

Page

1. Standard ATZAF fans range	2
2. Technical details	2
2.1 Housing	2
2.2 Airfoil impeller	3
2.3 Shafts	3
2.4 Bearings	3
3. Labelling of fan components	4

**Fig. 1****Fig. 2**

1. Standard ATZAF fans range

Comefri's ATZAF double inlet centrifugal fan with Airfoil blades series cover a size range from 12 to 49. All fans within this range have the following characteristics:

- optimally engineered for HVAC applications;
- high quality, compact design;
- class I and class II versions available (as per AMCA operating limits specification 99-2408-69);
- high efficiency;
- low power consumption;
- quiet operation;
- all fans are fully performance tested and certified in Comefri's own state-of-the-art laboratory in accordance with DIN, ISO, BS and AMCA standards.

2. Technical details

2.1. Housing

All fan housings from size 12 to 40 are manufactured in galvanized sheet steel (Fig. 1). From sizes 12 to 18, the fan sideplates are spot welded to the scroll housing. From sizes 20 to 40 the fan sideplates are locked to the scroll housing through a Pittsburgh seam (Fig. 2) which ensures a high quality air tight seal, as well as a structurally reinforced housing.

The design of the inlet cones is of vital importance for the fan performance and sound levels. They have been engineered to guarantee an optimal airflow path through the wheel and thus very high performance levels are achieved.

The inlet cones are manufactured in galvanized sheet steel and are bolted onto the housing sideplates.

A series of standard holes are located on the sideplates to allow the installation of frames or mounting base.

These holes are positioned in such a way that several standard accessories can be attached with the necessary fixing screws.

Housings for sizes 44 and 49 are manufactured in black steel sheet, reinforced with steel stiffeners, completely welded and painted with an anticorrosive synthetic paint. The inlet cones are also manufactured in black steel sheet and painted.


Fig. 3

2.2. Airfoil impeller

This high performance impeller is manufactured in corrosion resistant steel, with backward curved, true airfoil shaped blades, welded into position (Fig. 3). All wheels are coated with an anticorrosive primer and a final layer of epoxy paint and are balanced, both statically and dynamically, to an accuracy grade of $G = 2.5$ in accordance to DIN ISO 1940-1 and ANSI S2.19 – 1989.

The impellers from size 28-28 T1 to 49-49 T1 and from size 12-12 T2 to 49-49 T2 are secured to the shaft via a steel hub. Aluminium hubs are used from size 12-12 R to 28-28 R and from size 12-12 T1 to 25-25 T1.

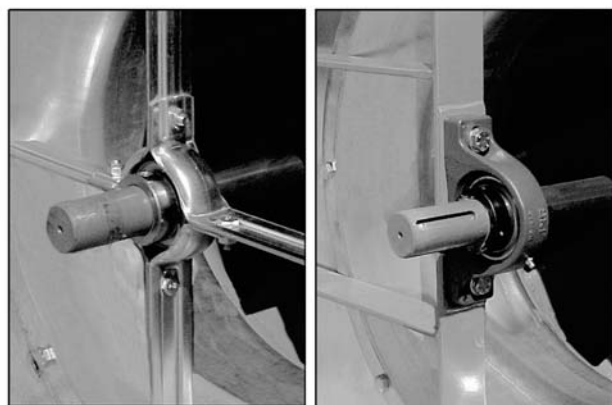
The hub bore is precision machined and incorporates a keyway and locking screw.

2.3. Shafts

All shafts are designed with a high safety factor and with the first critical speed well in excess of the maximum fan speed.

Made with hardened steel, the shafts are precision ground and polished, and include keyways for the wheel hub and sheaves.

All shafts are coated with a protective paint for added corrosion protection prior to shipping.


Fig. 4
Fig. 5

2.4. Bearings

From size 12-12 R to 28-28 R, bearings are self-aligning, single row, deep groove ball type (Fig. 4).

From size 12-12 T1 to 36-36 T1, size 44-44 T1 and from size 12-12 T2 to 18-18 T2, bearings are self-aligning, single row, deep groove ball type, in pillow block cast iron housings (Fig. 5).

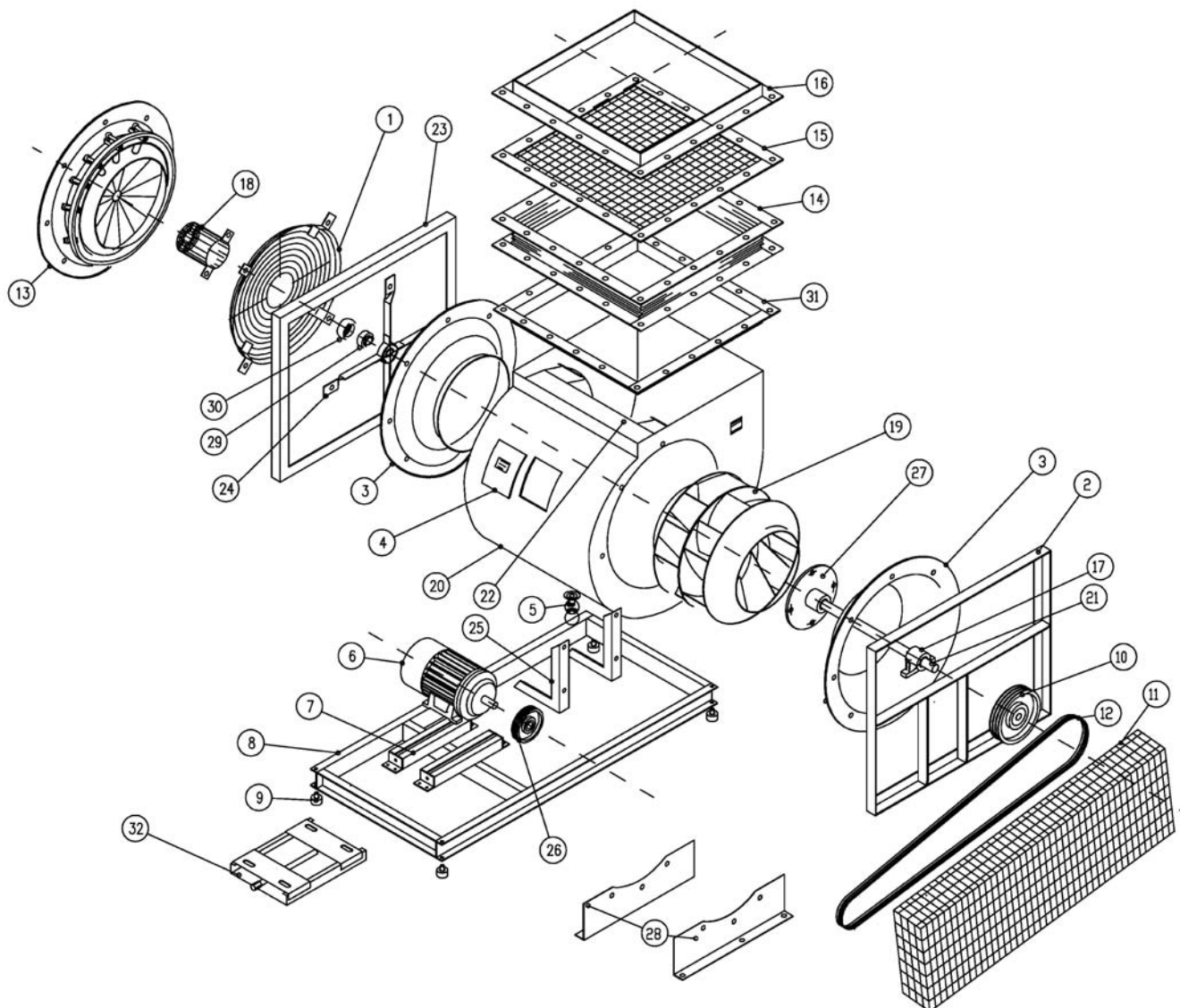
Size 40-40 T1, size 49-49 T1 and from size 20-20 T2 to 49-49 T2 bearings are double row roller bearings in pillow block split cast iron housings (Fig. 6).

All bearings have been selected to guarantee a minimum L_{50} life time of 200,000 hours (as per AFBMA standards).

R-framed fans have the bearings mounted in a rubber interliner, which in turn, fits in a sturdy three-arm or four-arm spider bracket (Fig. 4). These bearings are permanently lubricated and sealed for the life time of the fan. T1 and T2 fans have the pillow block bearings mounted on a flat iron bar, welded to the T frame (Fig. 5, 6). These bearings are complete with re-lubrication fitting already installed.

Operating temperatures range from -4°F to $+176^{\circ}\text{F}$ (-20°C to $+80^{\circ}\text{C}$) for all blowers.


Fig. 6

3. Labelling of fan components


1 - INLET GUARD	17 - BEARING
2 - T FRAME	18 - SHAFT GUARD
3 - INLET CONE	19 - WHEEL
4 - INSPECTION DOOR	20 - HOUSING
5 - DRAIN PLUG	21 - SHAFT
6 - MOTOR	22 - CUT OFF
7 - MOTOR RAILS	23 - R FRAME
8 - BASE FRAME	24 - BEARING BRACKET
9 - ANTIVIBRATION MOUNTING	25 - GUARD MOUNT
10 - FAN PULLEY	26 - MOTOR PULLEY
11 - BELT GUARD	27 - HUB
12 - BELTS	28 - FEET
13 - INLET VANE CONTROL	29 - BEARING
14 - OUTLET FLEXIBLE CONNECTION	30 - RUBBER BUSH
15 - OUTLET GUARD	31 - OUTLET FLANGE
16 - OUTLET COUNTERFLANGE	32 - MOTOR BASE PLATE

COMEFRI reserves the right to make any dimensional design changes which are part of their improvement programme. Necessary corrections are updated on our AEOLUS PLUS selection program.

COMEFRI behält sich sämtliche Änderungen vor, die dem technischen Fortschritt dienen. Notwendige Korrekturen der Katalogdaten werden in unserem Auswahlprogramm AEOLUS PLUS berücksichtigt.

Comefri se réserve la possibilité d'apporter des modifications de dimensions sans aucun préavis ceci parce que ces informations font parties d'un programme interne de développement du produit. Les éventuelles variations et/ou corrections seront ajournés dans notre programme de sélection AEOLUS PLUS.

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