

TANDEM[®]Blade

Doing more with less energy



cofimco

DOING MORE WITH LESS ENERGY

Nowadays, the main target of modern heat exchangers manufacturers is to maximize performance and reduce costs: in typical application as Process Air Coolers, Air Cooled Condenser and Cooling Towers, axial fans play a key function in the achievement of these targets.

Cofimco extensive research, the application of aerodynamic concepts to fan blades through Computational Fluid Dynamic Analysis (CFD simulation) and laboratory tests have resulted in the development of a new innovative design to answer the market requirements: the TANDEM®Blade.

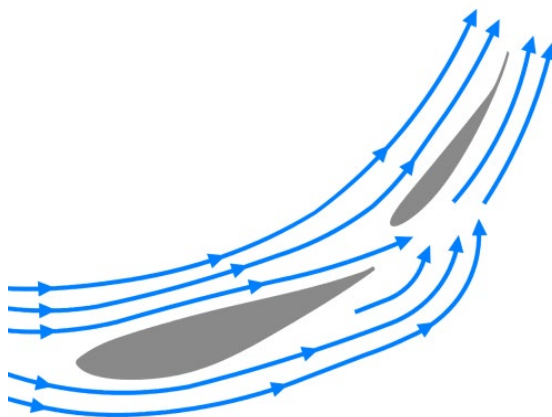
TANDEM®Blade is designed to noticeably improve the rotor efficiency and reduce the power consumption.

Its design represents a great innovation in improving axial fans performance and as a consequence creates an increased cooling efficiency.

INNOVATIVE DESIGN

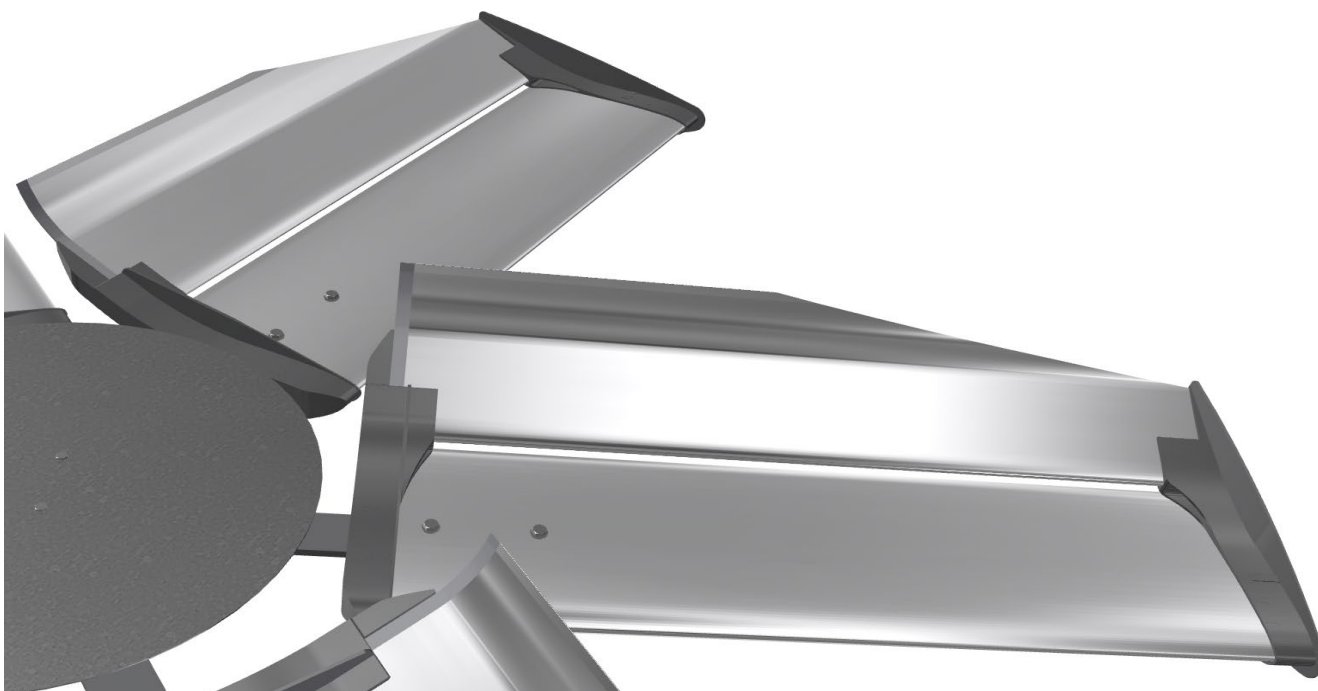
TANDEM®Blade is the combination of 2 airfoils held together with special tip and root caps which main feature is the creation of a low pressure area that delays the separation of the flow around the airfoil.

The shape and size of all blade components have been determined by means of FEM analysis along with extensive laboratory tests to reflect the highest loads which might act on the blades while also taking into account the influence of temperature, humidity and aging.



MANY USERS HAVE ALREADY INCREASED THEIR PERFORMANCE

Since its introduction into the market, the TANDEM®Blade has been highly in demand thanks to the immediate and concrete advantages that the innovative technology can bring to the plants.



ENERGY SAVING CONCEPT

Thanks to the innovative design, TANDEM®Blade can reduce fan power absorption up to 20% compared to the traditional airfoils, keeping same cooling capacity. As a result, the return of investment is immediate and the low energy consumption stands for reduced CO₂ emissions.



COOLING INCREASE

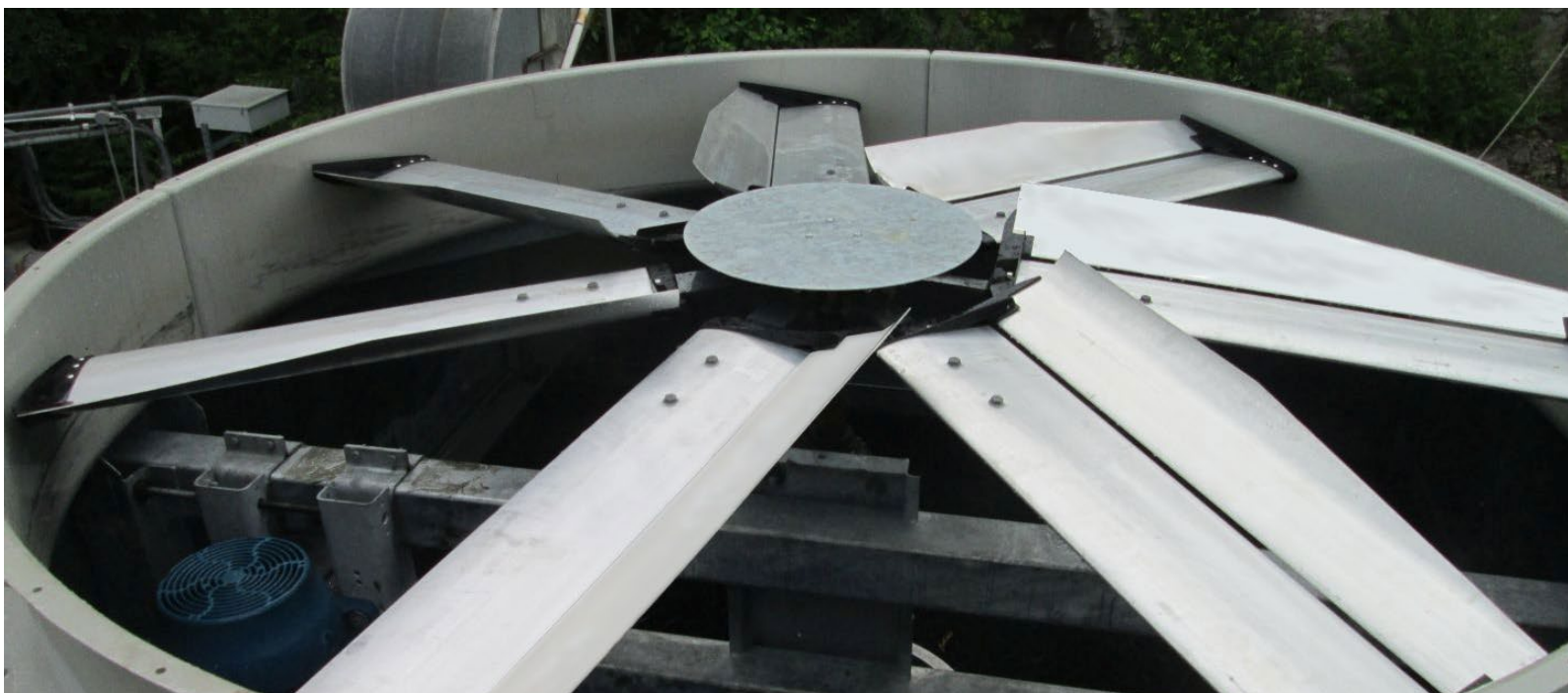
If the target is increasing the cooling capacity, TANDEM®Blade is the right product to maximize cooling performance by increasing air flow (even to 15% by keeping to same power consumption!).

NOISE LEVEL REDUCED

TANDEM®Blade stall angle of attack is very high. For this reason, the fans equipped with TANDEM®Blade can operate at slow tip speed as 20 m/s (3950 ft/min), significantly reducing the noise.

LOW VIBRATION

TANDEM®Blades exploit FLEXI Blade technology, the Cofimco patented blade design, with a flexible connection between the airfoil and hub, that reduces the vibrations transmitted to the drive system and supporting structure which increase their life.





EASY INSTALLATION AND SETTING

Cofimco TANDEM®Blade are installed on the B series hub, one by one. Only two bolts per blade are required for the blade fastening. This feature, together with the low weight, makes TANDEM®Blade easy to install and set.

DIAMETERS AND NUMBER OF BLADES

TANDEM®Blade is available in three airfoil sizes, 20TD, 30TD and 40TD. The blades are mounted on the Cofimco B Series fans with manual or auto-variable pitch, and on G series fans for larger diameters. TANDEM®Blades are available in diameters from 8 ft up to 34 ft (10,3 m), in standard and reverse mounting types.

The B hub is available in two different sizes, B3 and B6, which mount a quantity from 4 to 8 blades. The G hub is available in different diameters according to requirements. Connection to the driving shaft can be provided through either a cylindrical bore or tapered bushing.

CERTIFIED TO STANDARD ATEX 2014-34-EU

Cofimco fans are available also for application in Atex area, zone II 2G/D c IIC Tx.





ADVANTAGES OF COFIMCO TANDEM® BLADE

Cofimco TANDEM® Blade allows a large series of advantages thanks to its innovative design and the use of FLEXI Blade technology.

- ▶ Huge increase of the airflow by keeping the same power consumption
- ▶ Maximal energy saving and CO₂ reduction by keeping same airflow
- ▶ High stall angle of attack allowing fan to operate as slow as 20m/s, which produces a reduction in noise.
- ▶ Reduced vibrations and loads on fan drive system and supporting structure
- ▶ Increased life of fan drive components
- ▶ Suitable for with VFD motor
- ▶ Light design
- ▶ Easy installation and pitch setting
- ▶ Compliant to ATEX Normative 2014-34-EU for zone II 2G/D c IIC Tx
- ▶ Patented design

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