

# WINDER

**Impellers with higher efficiency  
and less sound level**



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## Impellers with higher efficiency and less sound level

With the WINDER design we have developed a new blades' generation. The S.N.C. is the result of three different research lines. Firstly, we get higher performance due to the sickle blades, secondly, due to the winglet applied at the end of the blade we debug turbulences and thirdly, in order to reduce the sound level we designed a serrated profile at the rear of the blades.

The S.N.C. blade compared with the traditional ones gets better performance in airflow and pressure; decreasing the power needs and sound levels about 15%.

The new impeller will be applied to all our axial product range from Ø 560 mm. Given an exclusive range of products and the possibility to offer unique solutions.

### R+D+I

Our technical department is using for the designs and advanced applications the Computational Fluid Dynamic (CFD) and Finite Element Analysis (FEA).

Those systems get us pre-designed units, like Winder ones, to delimitate the first steps to check mechanical resistance avoiding possible mechanical failures and to pre-define fluid dynamics performance.

These first data are exported to our laboratory to test, check and validate the final design.

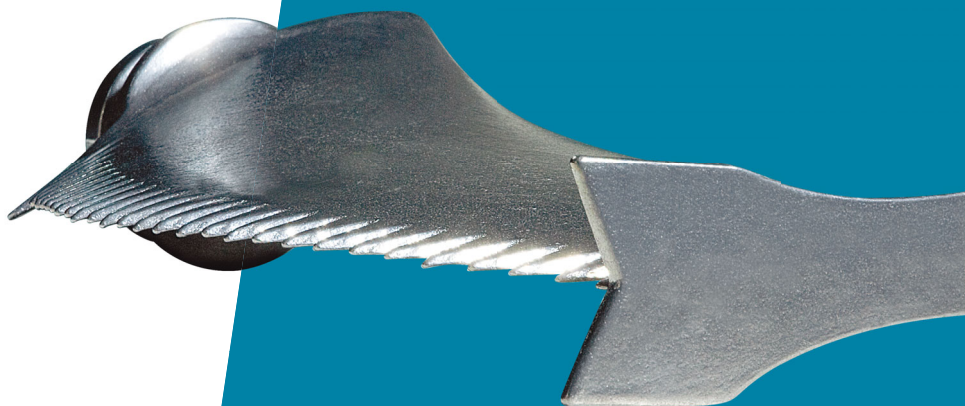
### Acoustic

WINDER is equipped with the latest technologies for measuring noise under the norm AMCA 300 (BS848 part 2).

### Laboratory

It is a long process where our R&D department develops new prototypes, tests them in our own laboratory so that we can finally offer them in our catalogue once we are sure that they guarantee the level of quality that our costumers and the market are expecting.

Our Laboratory tests all acoustic, electrical and fluid dynamics performance of all fans within two cameras and nozzle entrance test for fans up to 1.600 mm in diameter, 150.000 m<sup>3</sup>/h and 3.000 pa of static pressure following the international standards, ISO 5801:1997, BS 848-1:1980 and ANSI / AMCA 210-85:1985.



## ■ General characteristics



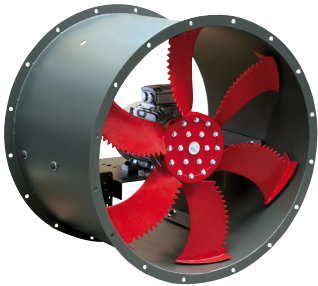
### AXIAL WINDER (from Ø 560 mm)

- Up to diameter 630 frame of PP reinforced with fiber glass. The frame of bigger diameters are made from galvanized steel.
- High efficiency impellers made of aluminium according the SERRATED NOVOVENT CONCEPT and the MULTIFLOW NOVOVENT SYSTEM. Dynamically balanced.
- All the models include epoxy painted grill.
- Motors class F, up to 750W protection IP65, the others IP55.
- Working temperature: -30°C to 70°C.
- Airflow: motor - impeller.



### AXITUB WINDER (from Ø 560 mm)

- Casing made from galvanized steel.
- High efficiency impellers made of aluminium according the SERRATED NOVOVENT CONCEPT and the MULTIFLOW NOVOVENT SYSTEM. Dynamically balanced.
- Motors class F, up to 750 W protection IP65, the others IP55.
- Working temperature: -30°C to 70°C.
- Airflow: motor - impeller.



### AXITUB PIROS WINDER (from Ø 560 mm)

- Casing made from galvanised steel. With inspection door.
- High efficiency impellers, made of aluminium according the SERRATED NOVOVENT CONCEPT and the MULTIFLOW NOVOVENT SYSTEM. Dynamically balanced.
- Three phase motor, class H, IP55, certified according EN12101-3 and Ex 3G Eex nA IIA T3.
- Working temperature: (S1) -20 +40°C; (S2) 400°C 2h.
- Adjustable motor support, fixed to the housing by 4 points.
- Airflow: motor - impeller.



### PIROS BOX WINDER (from Ø 560 mm)

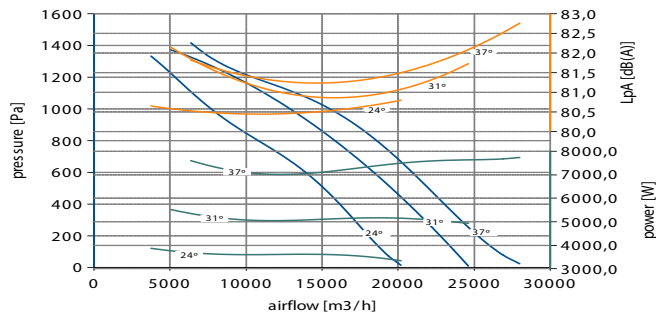
- Box made from galvanised metal sheet, with rock wool of 50 mm class M0.
- High efficiency impellers, made of aluminium according the SERRATED NOVOVENT CONCEPT and the MULTIFLOW NOVOVENT SYSTEM. Dynamically balanced.
- Three phase motor, class H, IP55, certified according EN12101-3 and Ex 3G Eex nA IIA T3.
- Working temperature: (S1) -20 +40°C; (S2) 400°C 2h.
- Adjustable motor support, fixed to the housing by 4 points.
- Airflow: motor - impeller.

### On request, available with the following options

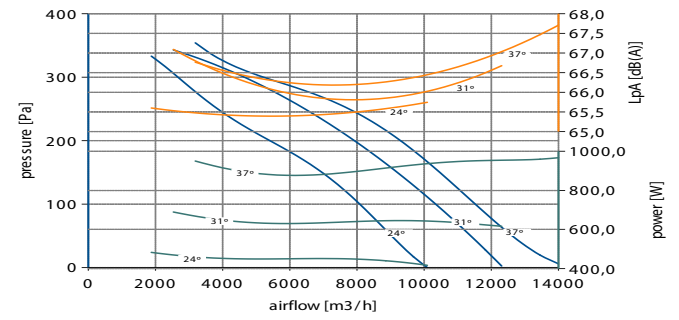
AXIAL WINDER	AXITUB WINDER	AXITUB PIROS WINDER	PIROS BOX WINDER	
•	•			Different tensions, speed and frequencies, 2 speed motors
•	•	•	•	Another configuration with different performance
•	•	•	•	Airflow: impeller - motor
	•	•		Available in stainless steel
	•	•		Available short cased
		•	•	For max. temperature of 300°C 2h, 400°C 2h

# Characteristics curves

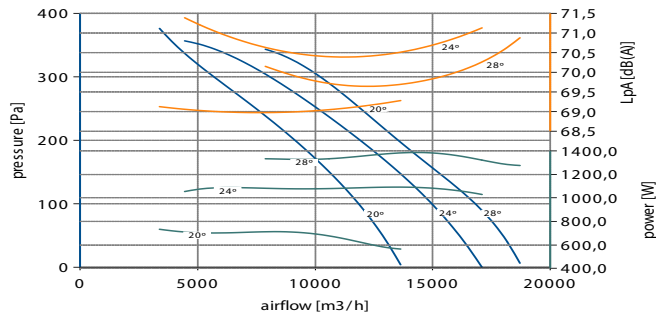
WINDER 2-560T



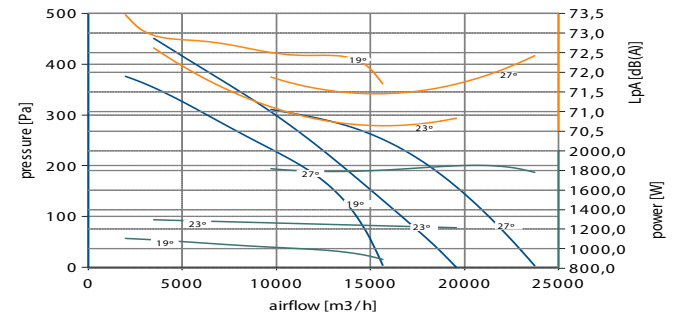
WINDER 4-560T



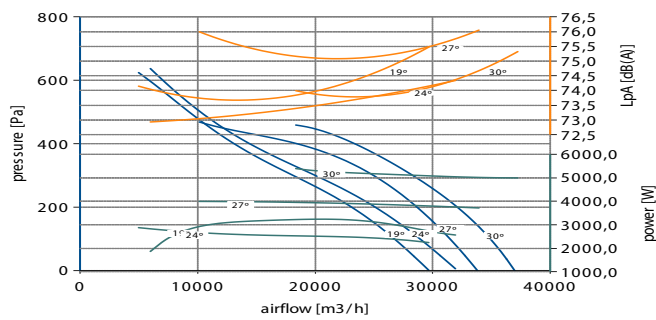
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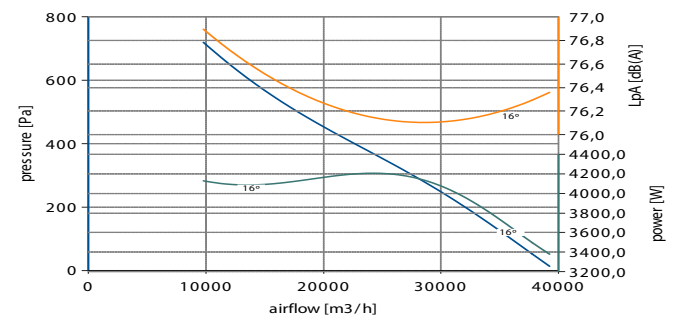
WINDER 4-710T



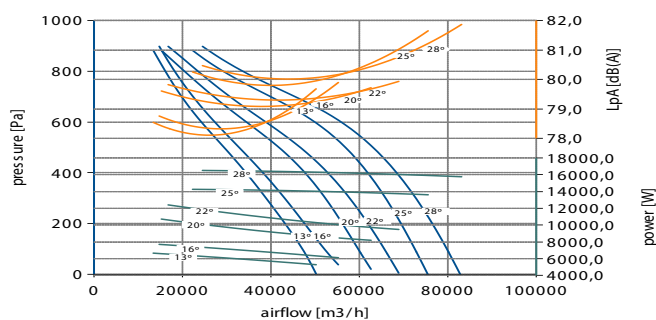
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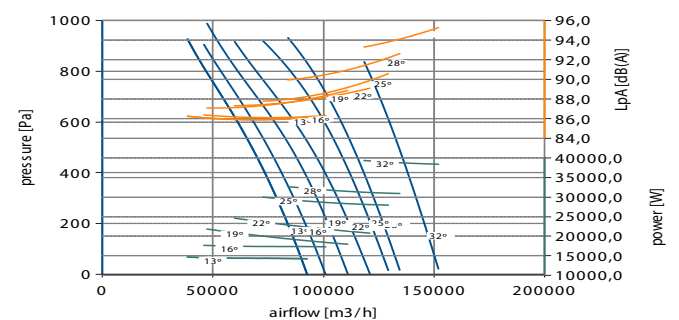
WINDER 4-900T



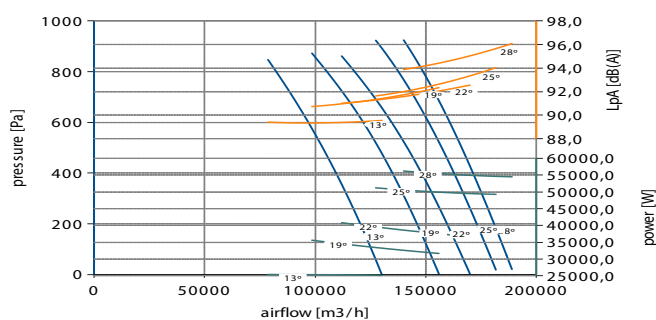
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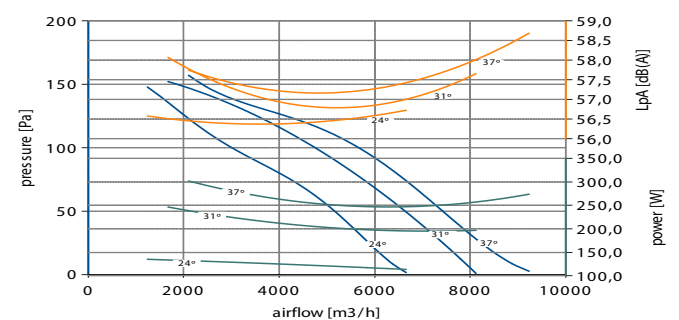
WINDER 4-1250T



WINDER 4-1400T

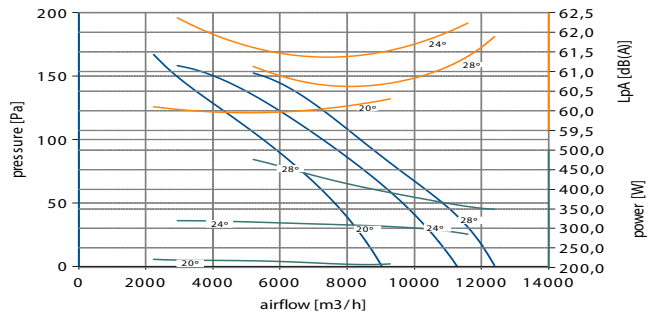


WINDER 6-560T

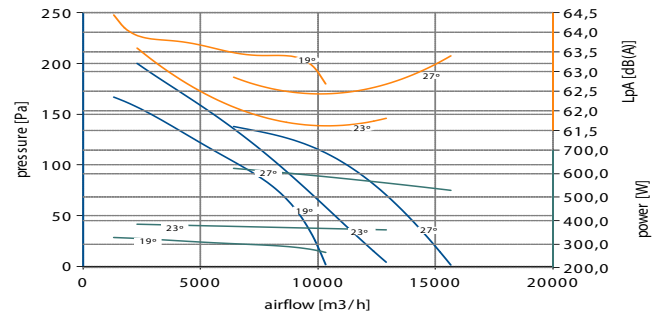


# Characteristics curves

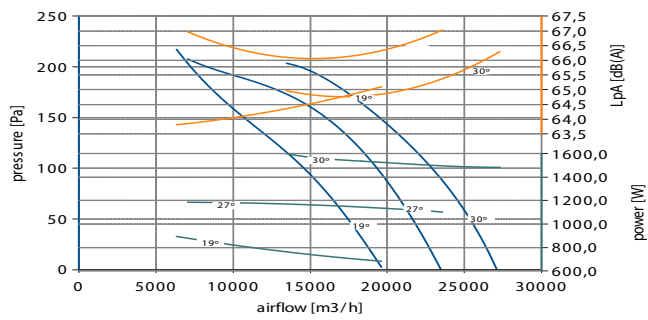
WINDER 6-630T



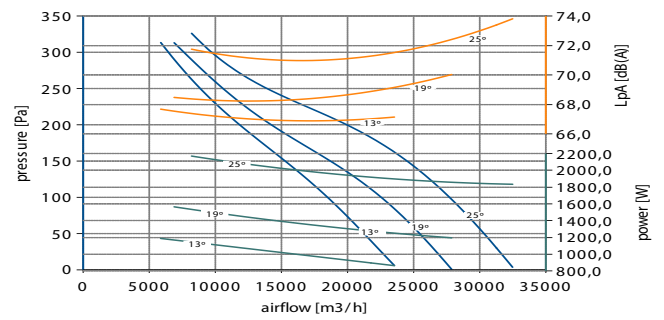
WINDER 6-710T



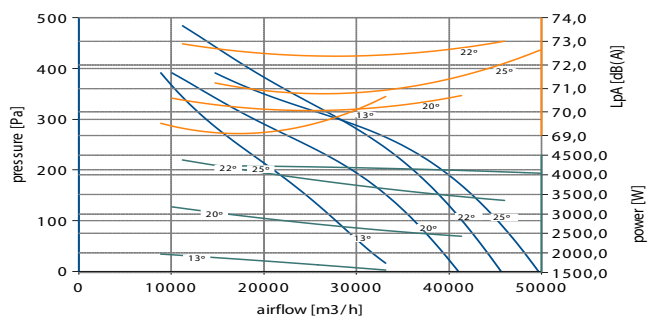
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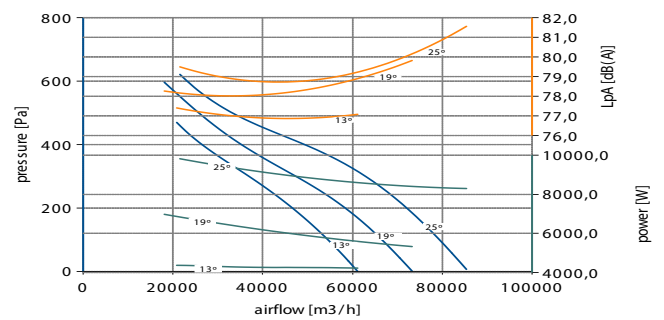
WINDER 6-900T



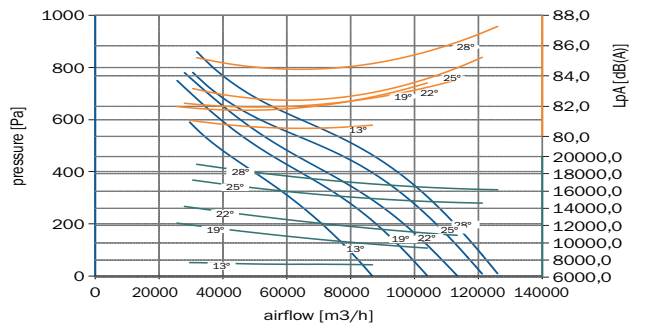
WINDER 6-1000T



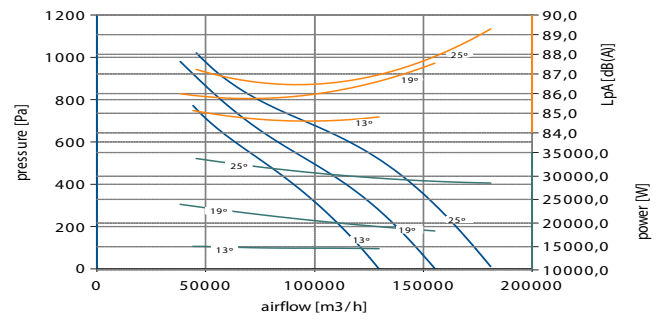
WINDER 6-1250T



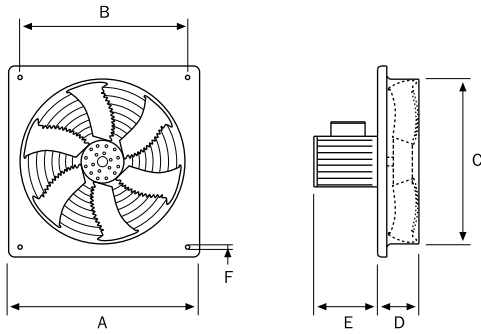
WINDER 6-1400T



WINDER 6-1600T



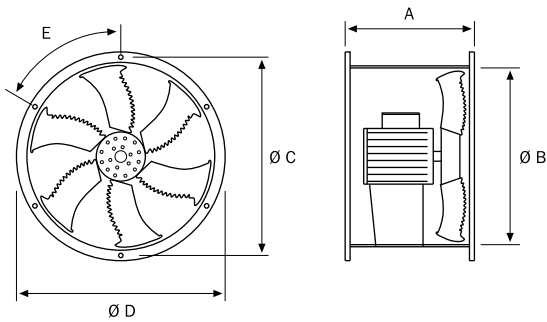
## ■ Dimensions (mm)



### AXIAL WINDER

∅	A	B	C	D	E	F	Kg <sup>1</sup>
<b>560</b>	725	675	565	115	359	10,50	24
<b>630</b>	800	730	635	140	374	10,50	38
<b>710</b>	850	800	710	110	433	11,00	44
<b>800</b>	970	910	803	175	530	15,00	124
<b>900</b>	1.070	1.010	914	197	640	14,50	178
<b>1000</b>	1.200	1.140	1.003	205	725	12,00	193

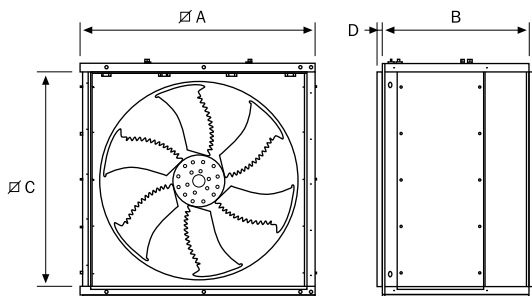
<sup>1</sup> Version with powerful motor



### AXITUB WINDER / AXITUB PIROS WINDER

∅	A	∅ B	∅ C	∅ D	E	Kg <sup>1</sup>
<b>560</b>	400	565	620	648	12 x 30	55
<b>630</b>	400	640	690	720	12 x 30	84
<b>710</b>	500	720	770	800	12 x 30	90
<b>800</b>	600	807	860	900	16 x 22,5	130
<b>900</b>	700	910	970	1.010	16 x 22,5	204
<b>1000</b>	700	1.010	1.070	1.110	16 x 22,5	221
<b>1250</b>	900	1.265	1.315	1.355	16 x 22,5	268

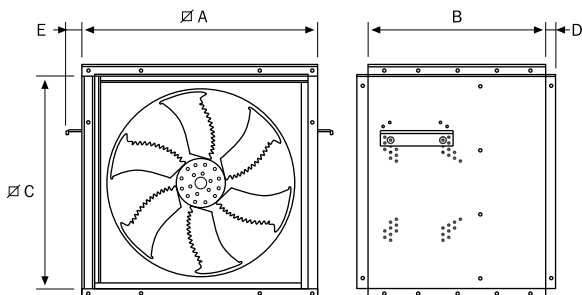
<sup>1</sup> Version with powerful motor



### PIROS BOX WINDER

∅	A	B	C	D	E	Kg <sup>1</sup>
<b>560</b>	695	530	630	30	40	96
<b>630</b>	790	600	725	30	40	96

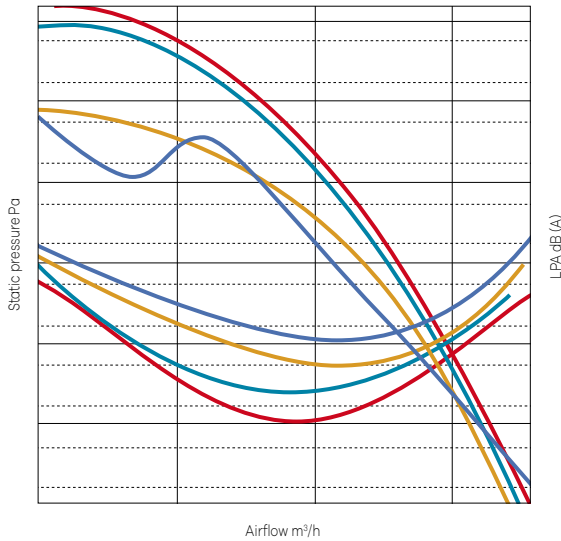
<sup>1</sup> Version with powerful motor



∅	A	B	C	D	Kg <sup>1</sup>
<b>710</b>	873	650	800	30	151
<b>800</b>	971	650	850	30	151
<b>900</b>	1.071	750	970	30	272
<b>1000</b>	1.203	750	1.070	30	272
<b>1250</b>	1.490	940	1.380	30	330

<sup>1</sup> Version with powerful motor

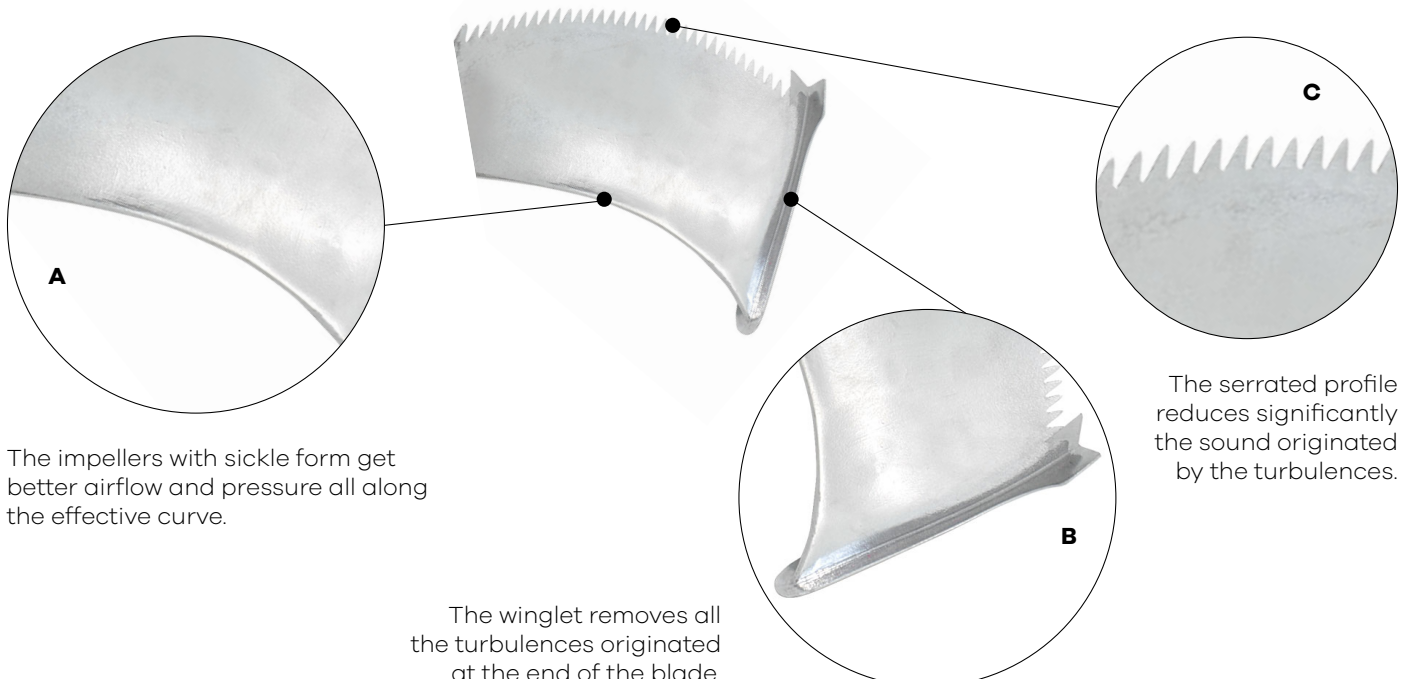
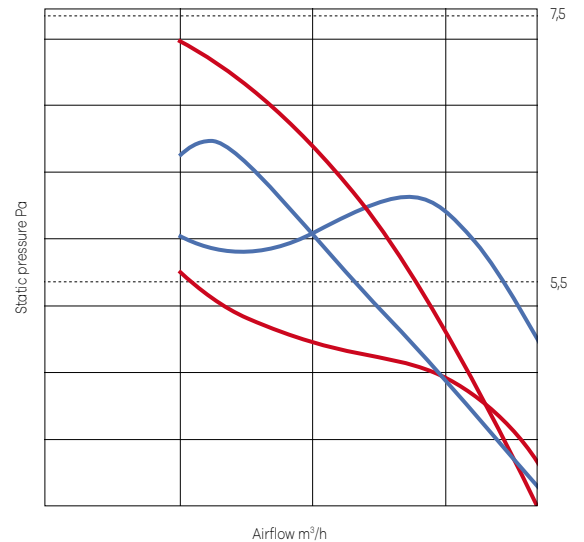
## Advantages WINDER impellers versus traditional ones



- Conventional impeller
- Impeller with sickle form
- Impeller with sickle form with winglet
- Impeller with sickle form with winglet and serrated profile (WINDER)

### Better performances, less power needs

This graph shows a comparison between winder model and conventional fan using the same diameter and similar performance. Winder solution is able to provide more airflow with less consumption. Winder needs a 5,5 kW motor meanwhile conventional fan needs 7,5 kW motor as illustrated.



The impellers with sickle form get better airflow and pressure all along the effective curve.

The winglet removes all the turbulences originated at the end of the blade.

The serrated profile reduces significantly the sound originated by the turbulences.



We manufacture innovative solutions

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