fenoplástica LIGHTS ELECTRICS | NOVOVENT GROUP

WINDER

Impellers with higher efficiency and less sound level

ErP ACCORDING

MBS

SWC

WINDER

Impellers with higher efficiency and less sound level

With the WINDER design we have developed a new blades' generation. The SWC 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 SWC 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

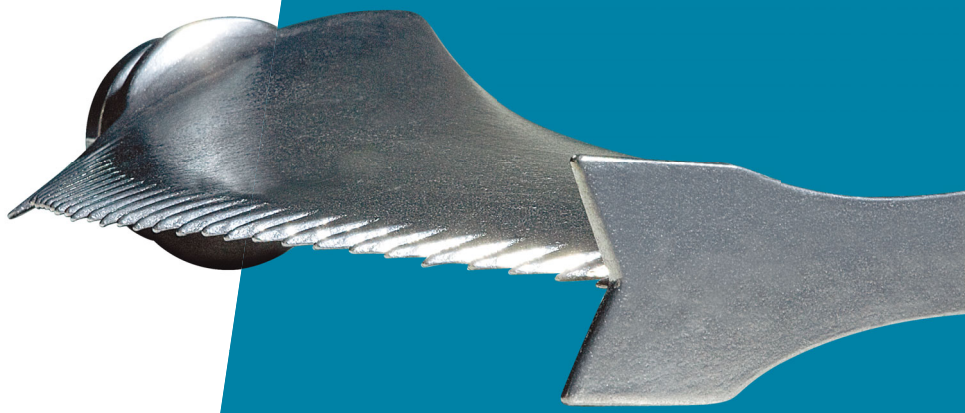
Our technical department is using for the designs and advanced applications the Computational Fluid Dynamic (CFD) and Finite Element Analysis (FEA).
Those systems get us pre-designed units, like Winder ones, to delimitate the first steps to check mechanical resistance avoiding possible mechanical failures 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^3/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.



FNP GROUP
fenoplástica LIGHTS & ELECTRICS | NOVOVENT

We manufacture
innovative solutions

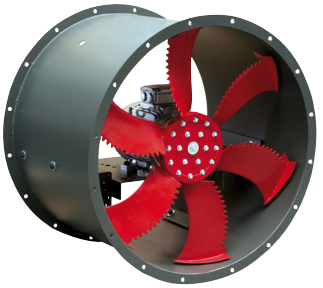
General characteristics

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 WINDER CONCEPT and the MULTIFLOW BLADE 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 galvanizeed steel.
- High efficiency impellers made of aluminium according the SERRATED WINDER CONCEPT and the MULTIFLOW BLADE 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 WINDER CONCEPT and the MULTIFLOW BLADE 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)

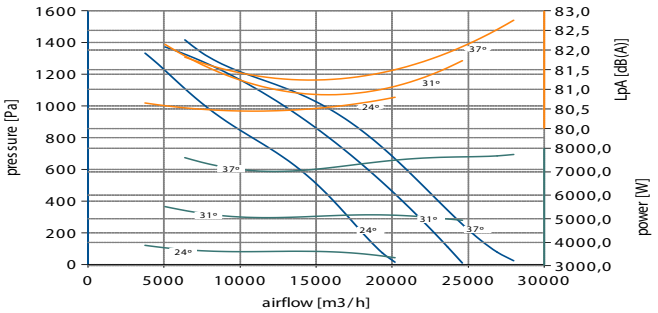
- Box made from galvanised metal sheet, with rock wool of 50 mm class M0.
- High efficiency impellers, made of aluminium according the SERRATED WINDER CONCEPT and the MULTIFLOW BLADE SYSTEM. Dynamically balanced.
- Three phase motor, class H, IP55, certified according EN12101-3 and Ex 3G Eex nA IIA T3.
- 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

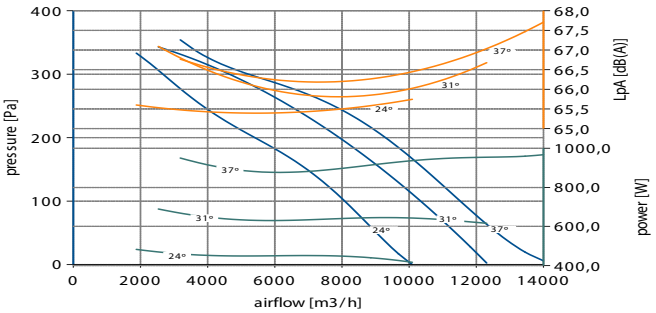
AXIAL WINDER	AXITUB WINDER	AXITUB PIROS WINDER	PIROS BOX WINDER	
•	•			Different tensions, speed and frequencies, 2 speed motors
•	•	•	•	Another configuration with different performance
•	•	•	•	Airflow: impeller - motor
	•	•		Available in stainless steel
	•	•		Available short cased
		•	•	For max. temperature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

Characteristics curves

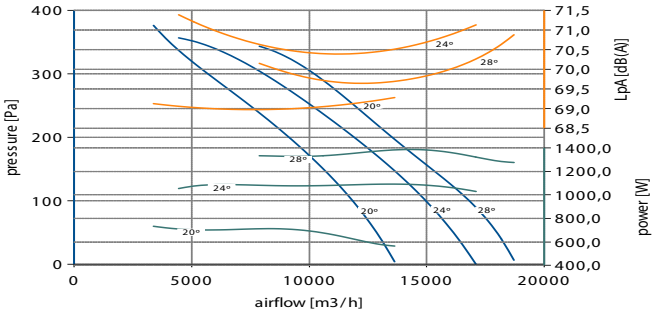
WINDER 2-560T



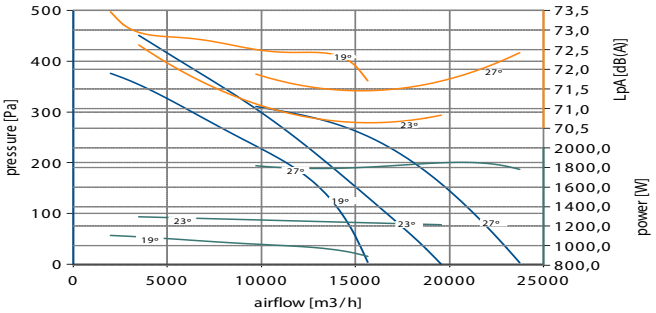
WINDER 4-560T



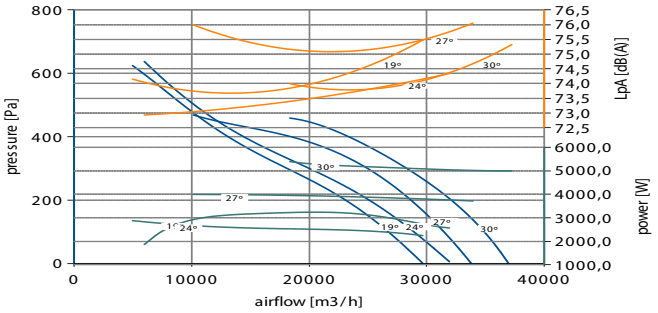
WINDER 4-630T



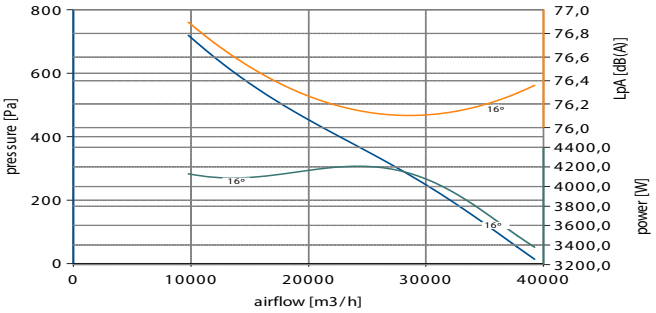
WINDER 4-710T



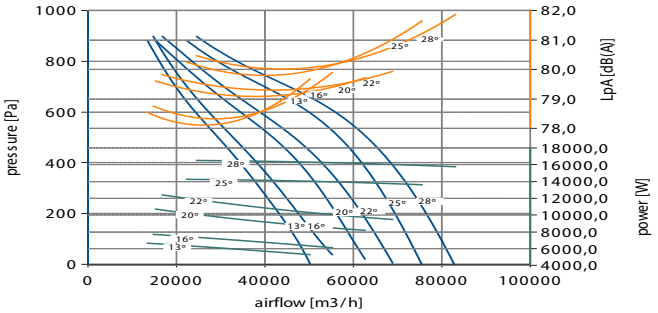
WINDER 4-800T



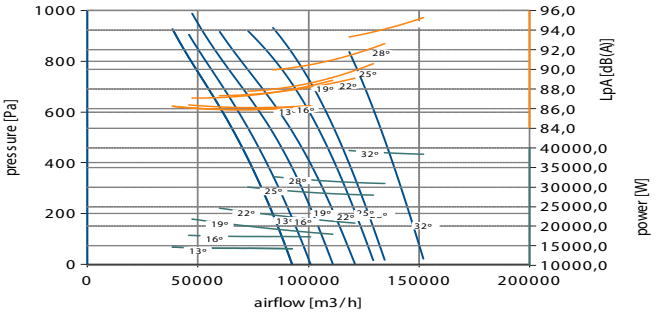
WINDER 4-900T



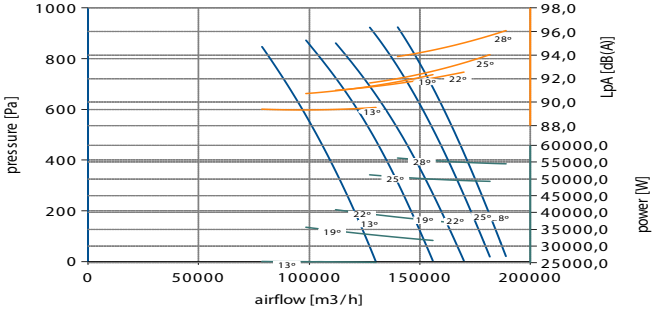
WINDER 4-1000T



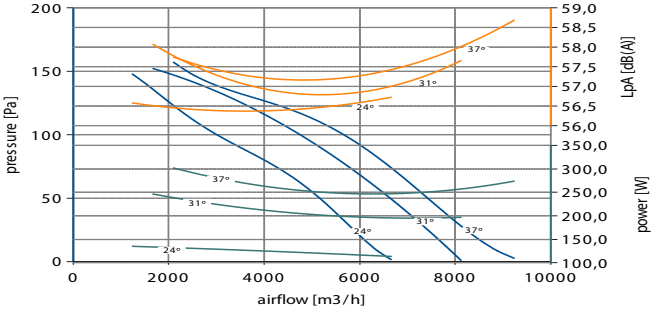
WINDER 4-1250T



WINDER 4-1400T

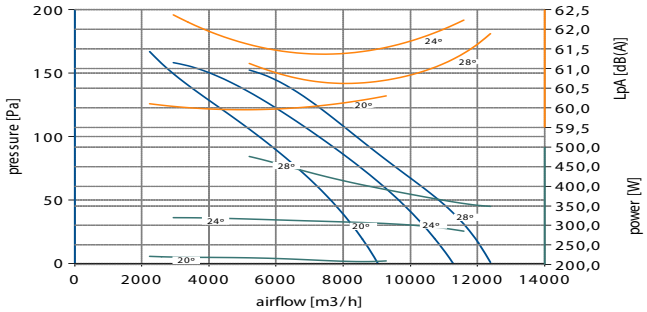


WINDER 6-560T

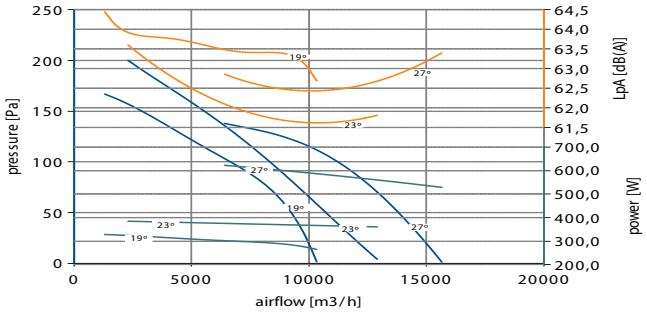


Characteristics curves

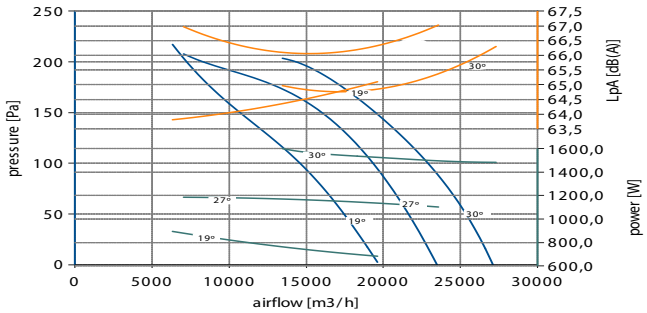
WINDER 6-630T



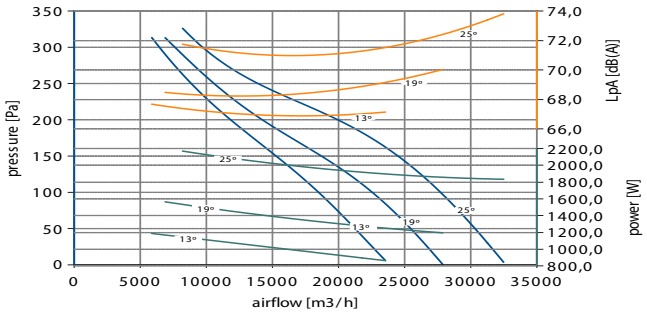
WINDER 6-710T



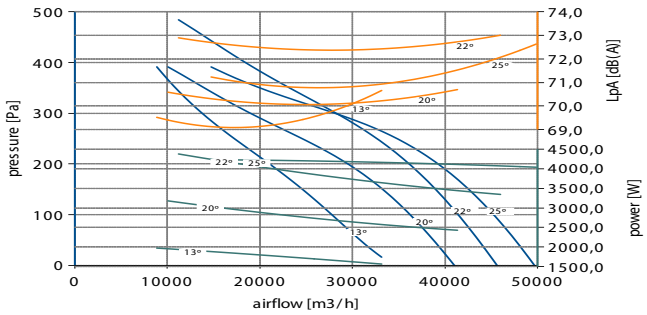
WINDER 6-800T



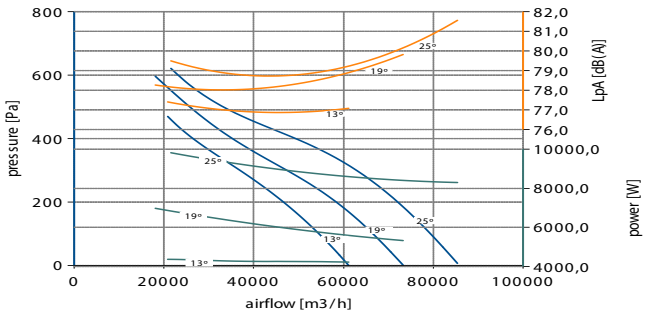
WINDER 6-900T



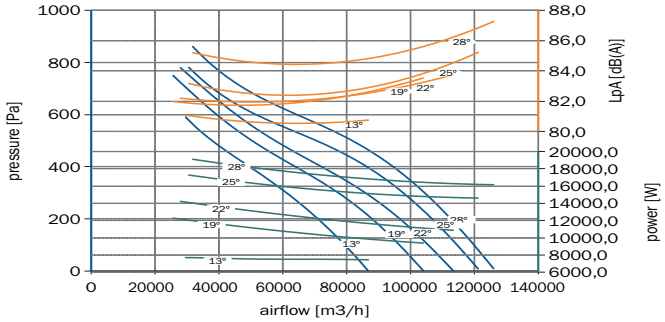
WINDER 6-1000T



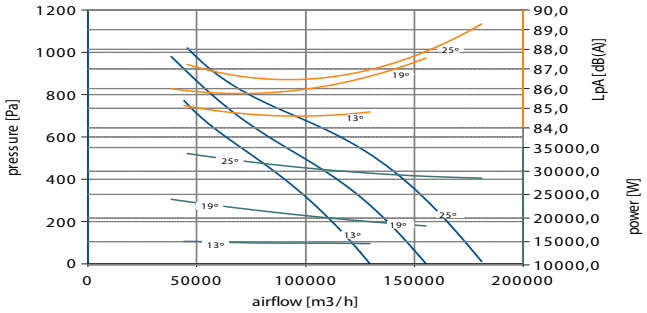
WINDER 6-1250T



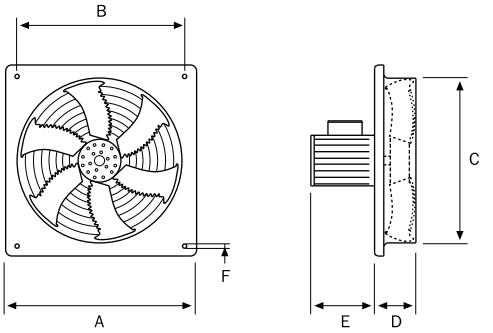
WINDER 6-1400T



WINDER 6-1600T



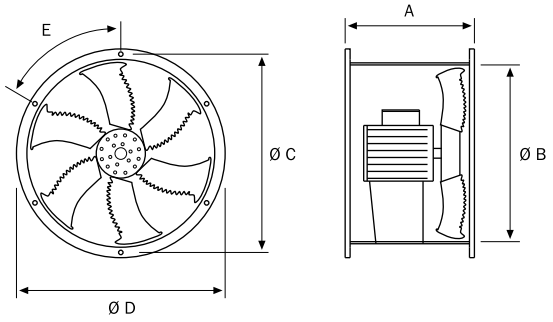
Dimensions (mm)



AXIAL WINDER

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

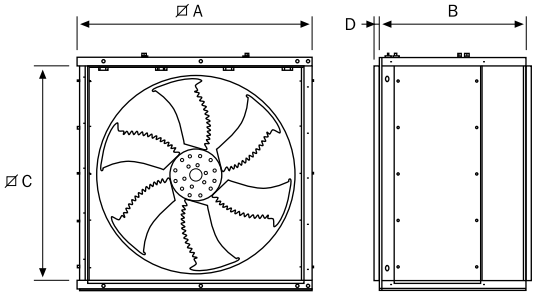
[1] Version with powerful motor



AXITUB WINDER / AXITUB PIROS WINDER

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

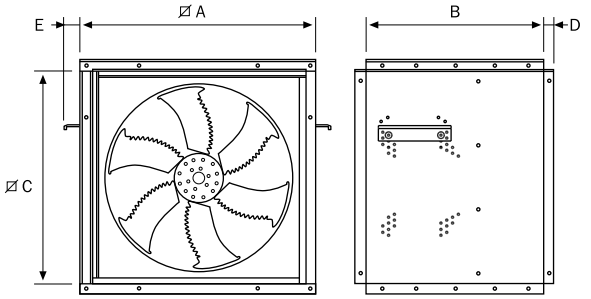
[1] Version with powerful motor



PIROS BOX WINDER

Ø	A	B	C	D	E	Kg[1]
560	695	530	630	30	40	96
630	790	600	725	30	40	96

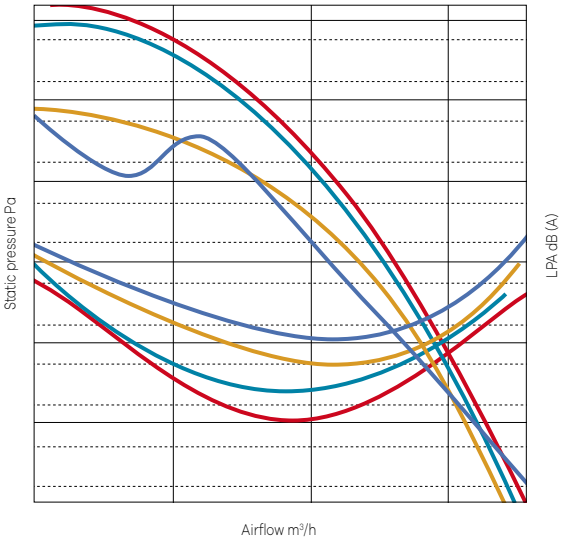
[1] Version with powerful motor



Ø	A	B	C	D	Kg[1]
710	873	650	800	30	151
800	971	650	850	30	151
900	1.071	750	970	30	272
1000	1.203	750	1.070	30	272
1250	1.490	940	1.380	30	330

[1] 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 with less sound level

On this graph, we can be observed the advantages of the winder impellers versus the traditional ones. The **sickle form from the blade** (A) will enable better performances.

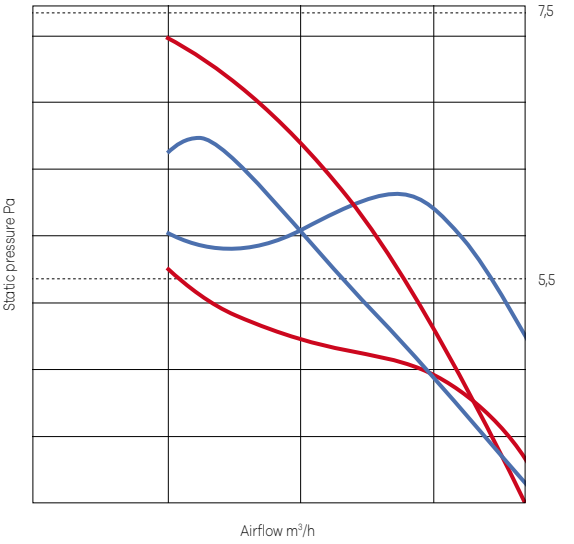
If we add to the sickle blade the **winglet** (B) we will get a high reduction in turbulences.

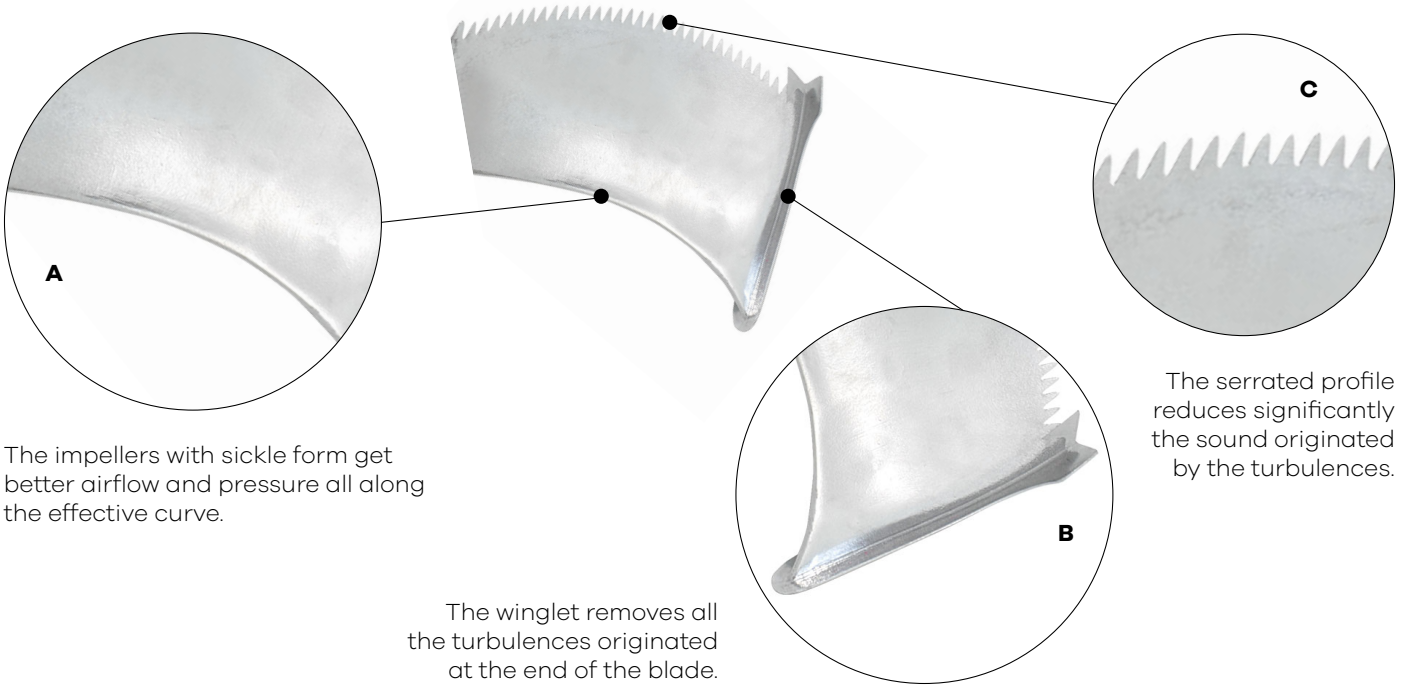
And finally, adding the serrated **profile** (C) we still increasing the performance and we reduce significantly the sound level.

The combination of the winglet, the **serrated profile** and the sickle form gets a better performance in airflow and pressure, decreasing the sound level.

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.

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Group

We manufacture innovative solutions

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