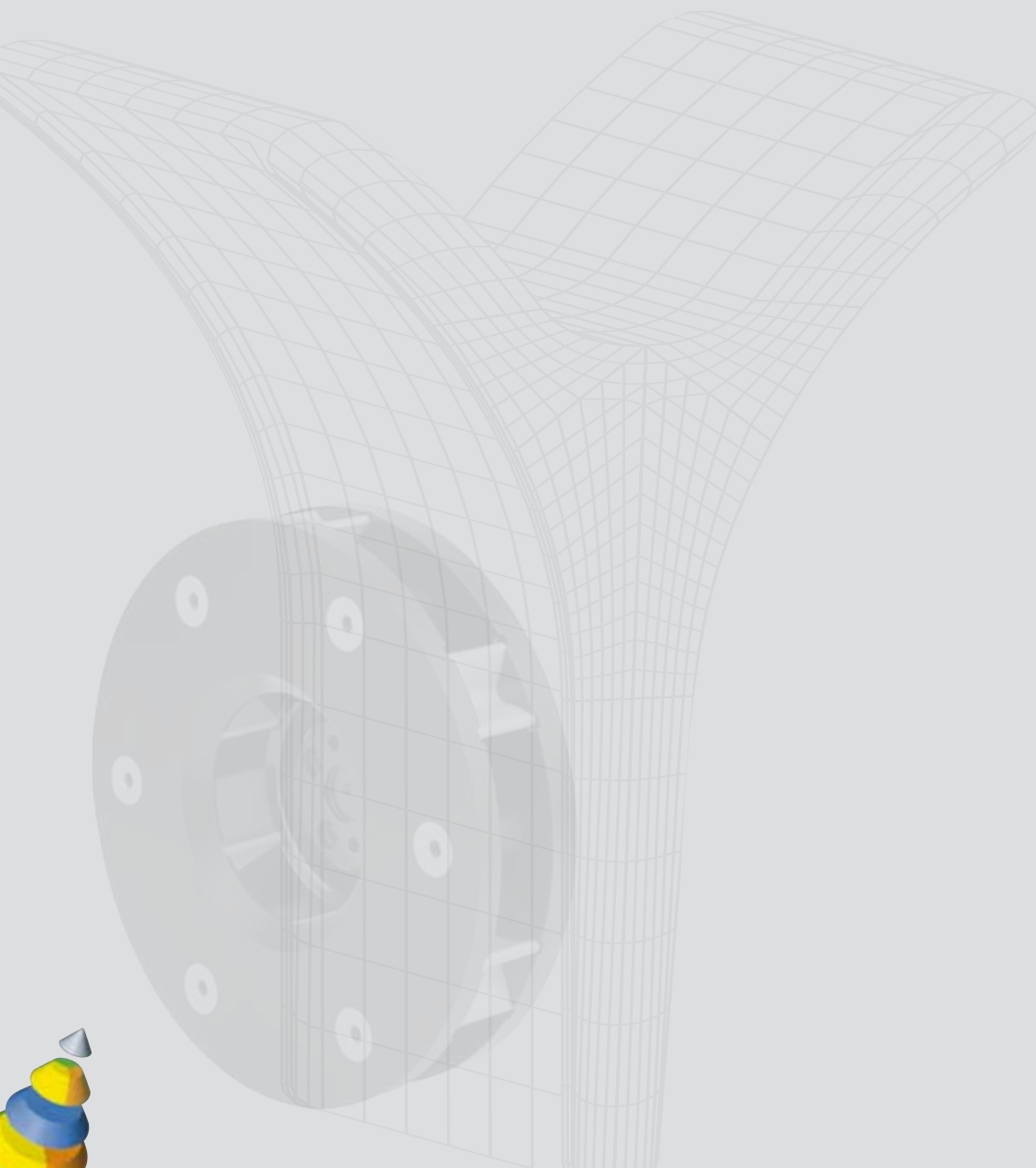
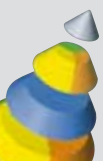


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*finding a better way ...*










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*Long Life  
Turbines*



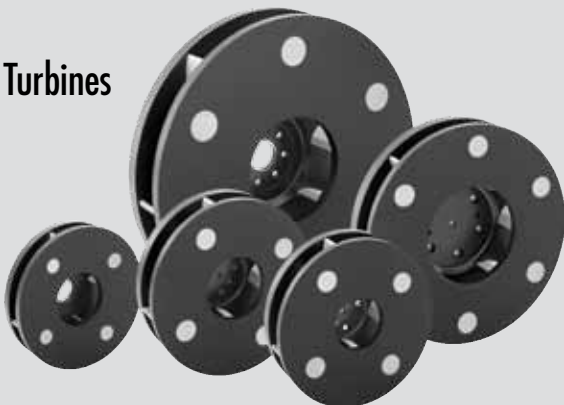
# *Rutten®-Turbines, world leading for over 20 years in the area of Long Life Shotblasting Turbines*

-  *Increased abrasive projection speed*
-  *Exceptional wear resistance*
-  *Reduction of energy consumption*
-  *Extreme long service life*
-  *Adaptable blast pattern*
-  *Improved shotblasting results*
-  *Reduced shot consumption*
-  *Very low consumption of spare parts*
-  *Reversible turbines, blast pattern regulator and pre-accelerator (Gamma-Y®-Turbine)*

## *Marked increase in projection speed*

The very fluid movement of the abrasive allows greatly increased throughput. This dramatically benefits certain applications, such as the continuous blasting of plates which allows you to obtain a faster process speed and therefore increase your throughput. Given a similar rotation speed and identical blast wheel diameter, C-Turbines provide an extra 24 % up to 30 %, Gamma-Y®-Turbines produce a 25 % higher abrasive projection speed. Thanks to this increased speed and the fluidity of the outflow, the shotblasting quality and capacity are noticeably enhanced. The media impact energy media increases up to 70 % against conventional blast wheels.

**C - Turbines**

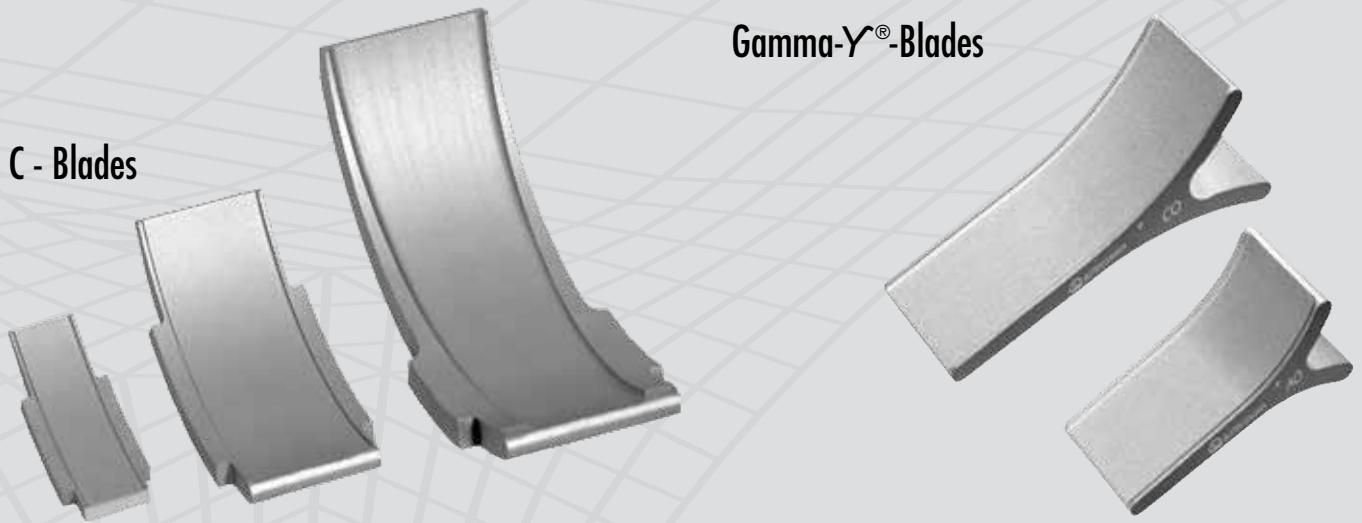


**Gamma-Y®-Turbines**



▶ **Exceptional Wear-Resistance**

Thanks to the use of extremely strong alloys, Ruten turbines are proven to have wear resistance 8 times greater than the service life of conventional blast wheels. Ruten's constant aim has been to further improve this performance: Gamma-Y®-Turbines, equipped with active double bladings, will make it possible to attain useful service lives from 8 to 16 times those of conventional blast wheels.

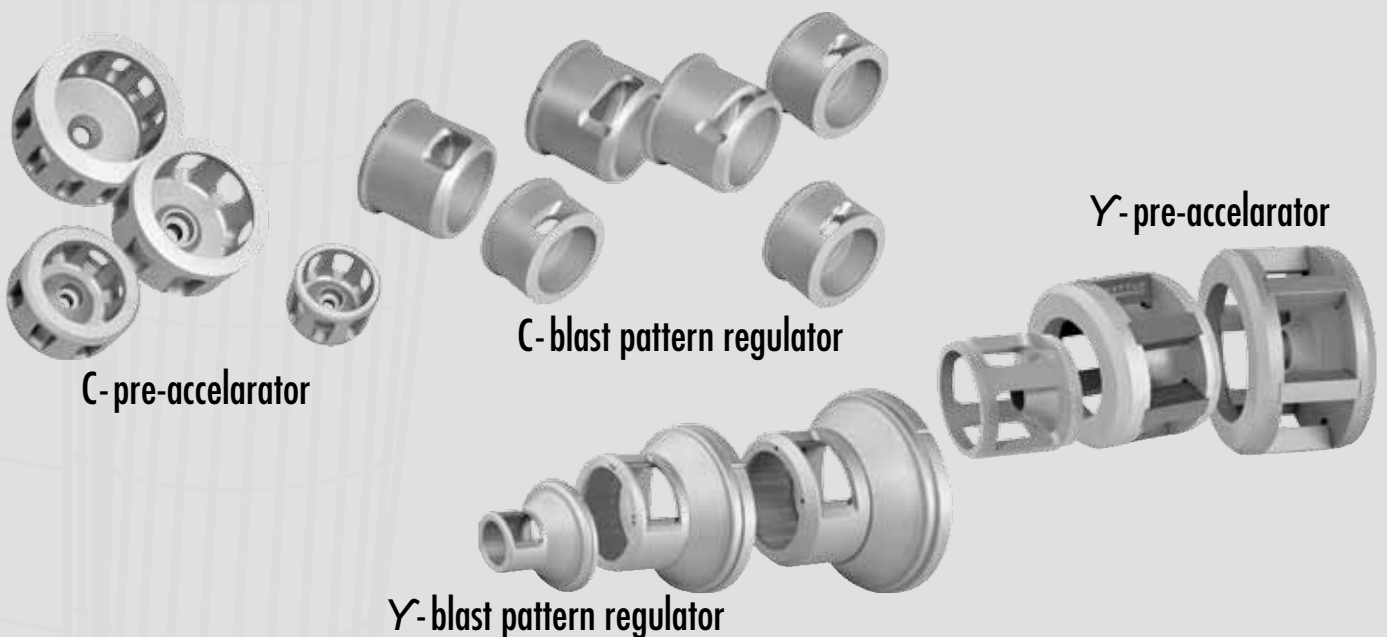


▶ **Reduction of energy consumption**

The use of high-strength alloys and surface treatment of the blades (in conjunction with a drastic reduction in the abrasive impact on the blade root) lead to a marked increase in shot-blasting speed. Due to the turbine discs extending to the outside diameter of the Gamma blades there is a significant increase of the blasting angle. This leads to energy savings in the order of 10 % (Gamma-Y®-Turbine) and accordingly 15 % (C-Turbine).

▶ **Designed for extremely long service life: pre-accelerator and blast pattern regulator made of composite metal**

To achieve our objective to increase the service life of materials for shotblasting, the blast pattern regulator and the pre-accelerator are made of two materials. The wear zones of the blast pattern regulator are fitted with high-strength alloy bars. For the same reason, the pre-accelerator arms are replaced by changeable wear pieces also made of high-strength alloy. The service life of these parts is comparable to the life of the Gamma-Y®-Blades.



## ▶ Adapting the blast pattern to the client's applications

Precise knowledge of projection kinematics allows us to offer blast pattern regulators with a calibrated opening that varies according to the particular applications. There are calibrated openings for every turbine type: it is thus possible to spread the abrasive spray over a large surface (sheet-metal shotblasting and metal construction), or to the contrary, to concentrate it as with shotpeening or shotblasting rolling mill cylinders.

The blast pattern regulators are entirely machined from highly abrasion-resistant steel. Wear zones are equipped with extra-hard alloy barrettes. The choice of this barrettes defines the blast pattern.

## C - Turbines

### Strongly Concentrated Blast

- Laminating

### Focused Blast

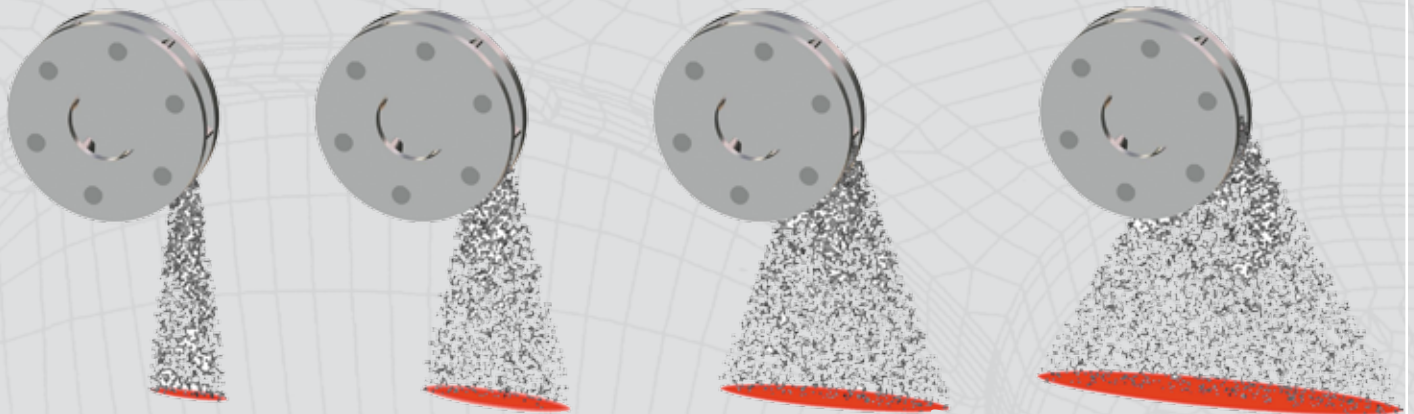
- Shotpeening
- Hardening Blasting

### Normal Blast

- Foundries
- Metal Construction

### Wide Blast

- Radiating Plates



## Gamma-Y<sup>®</sup>-Turbines

### Concentrated Blast

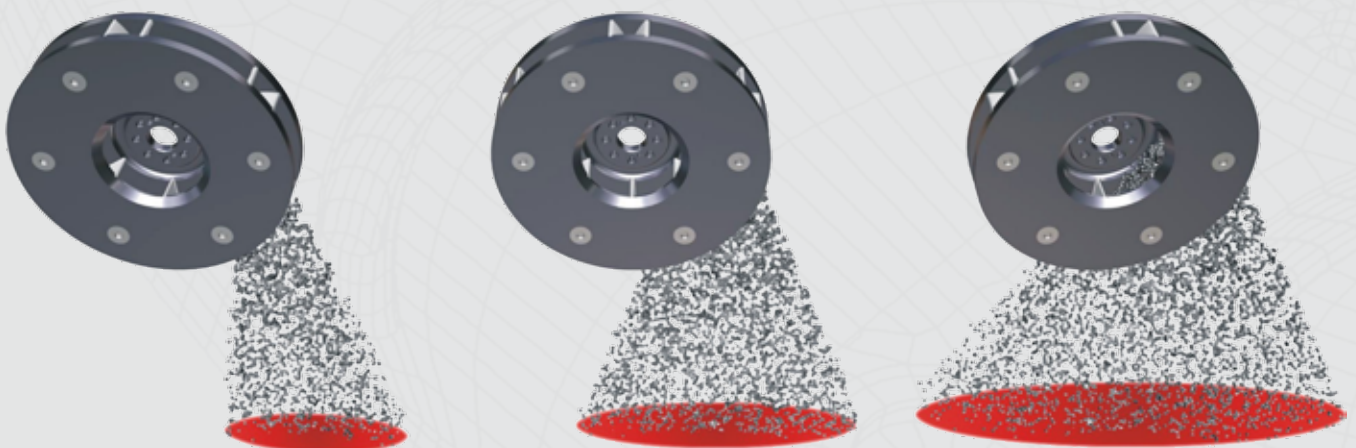
- Shotpeening
- Rolling mill rolls

### Normal Blast

- Foundries
- Metal Construction
- Common

### Wide Blast

- Radiating plates

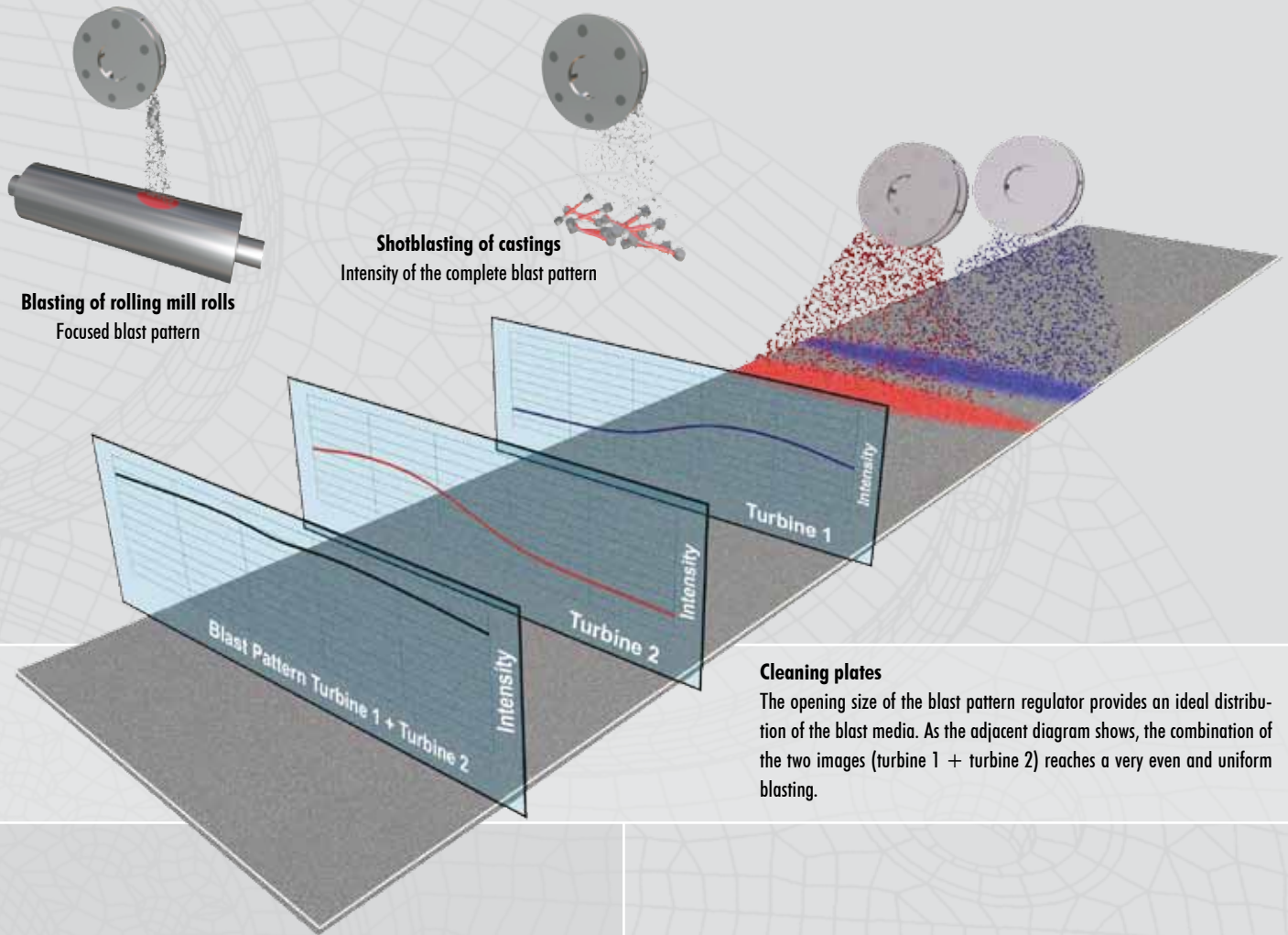


## ▶ Reduced shot consumption

For equal power consumed, a reduction of the power to weight ratio results in an increase in the projection speed. From experience, we know that a projection speed that is superior to those practiced by conventional blast wheels (+10 up to 15%) which markedly improves the quality as well as the capacity of the blasting process.

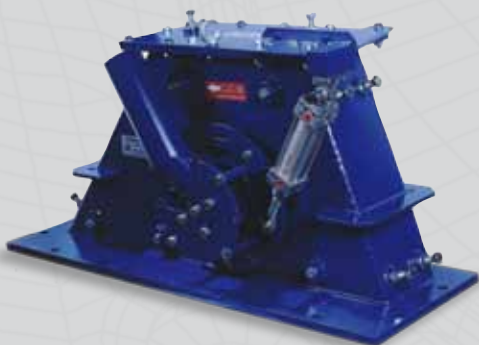


## Application Examples



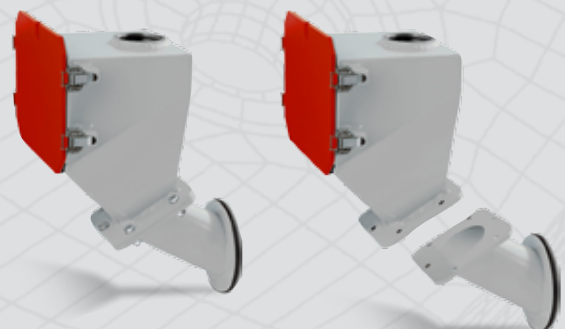
## Special applications, Housing with motor control of the blast pattern regulator

In some applications it is imperative to adjust the shot according to the required impact strength. This is especially the case with turbine shotblasting systems, in which the widths of the components to be treated are very different. This special version of the drive is only available with turbines Y-400 and Y-520.



## Supply filter

As for all turbines, the intrusion of foreign bodies such as nuts and bolts or pieces of metal constitutes a real damage risk and can even lead to the complete destruction of the turbine. This filter reduces the risk of this eventuality. It is placed above the turbine, between the supply valve and the spout. Cleaning is easy; just undo the front cover to access the filtering sieve and proceed with the cleaning.



## ▶ Innovation in the service of maintenance

The housings may be assembled with the motor direct coupled or with a bearing housing in the event that turbine rotation speeds are different from the synchronism speeds. The housing are complete with treated armour plating which is easily disassembled. When direct coupled, the motors are somewhat transformed. Each motor is equipped with a special seal on the turbine side.

Development of new turbines must take the housings into consideration, as it is an essential component of the overall equipment. In this regard, development efforts have focused on the "ease" of assembly and disassembly of the turbines.

As the example below demonstrates, the housings permit assembly and disassembly of the turbines from the upper cover. Obviously, the turbines may also be assembled or disassembled from the underneath, but the ability to access them from the upper cover is a real advantage. It makes it unnecessary, for example, to go into the machine body for a quick maintenance intervention and thus definitively eliminates this kind of nuisance.

### Turbine Models



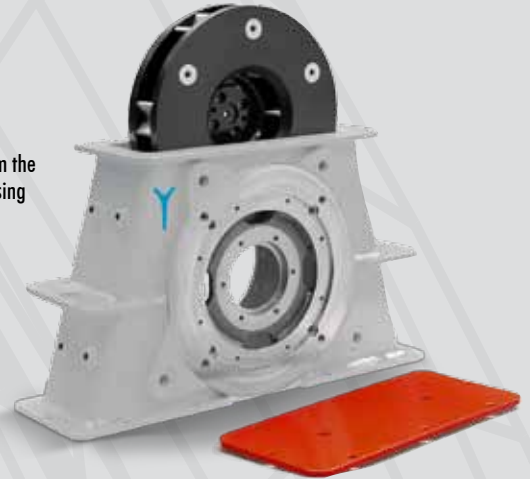
Turbine, driven directly

#### Quick and easy interventions

Assembly and disassembly of the turbines from the upper cover or from the lower side of the housing

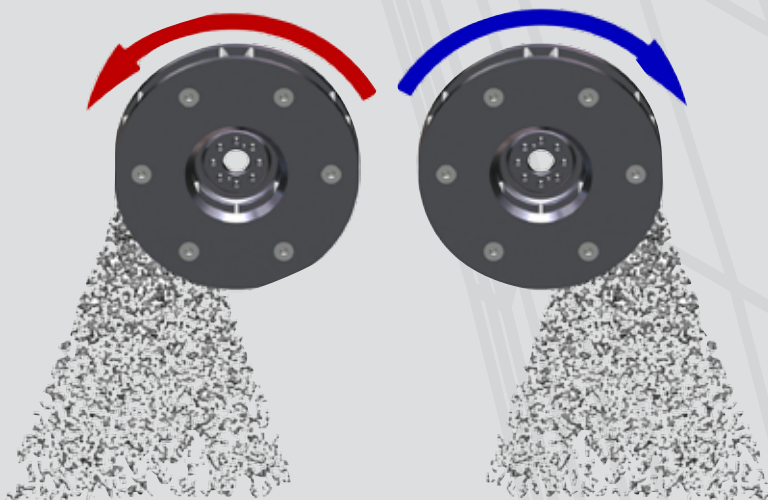


Turbine, driven indirectly



## ▶ The turbine for two-way rotation: The Gamma-Y®-Turbine

There are several specific applications better suited to a two-way rotation. Often these involve very broad-sweeping shotblasting where the change in rotation, accompanied by motorized adjustment of the blast pattern regulator, facilitates exceptional coverage of the surface to be treated. These two-way rotation turbines may of course be equipped with manually adjustable blast pattern regulators if the regulators in direction are infrequent.

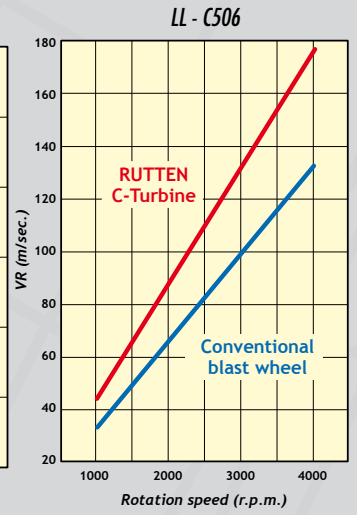
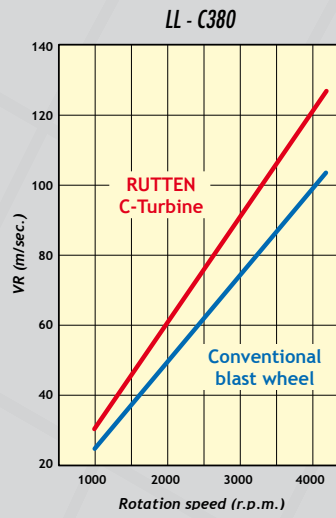
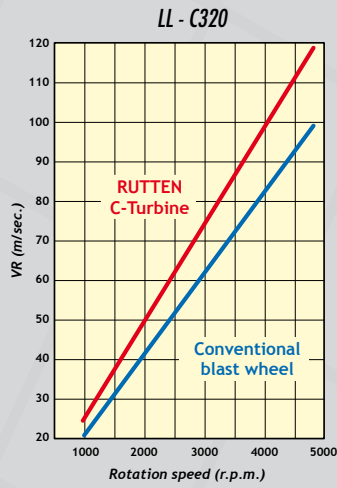
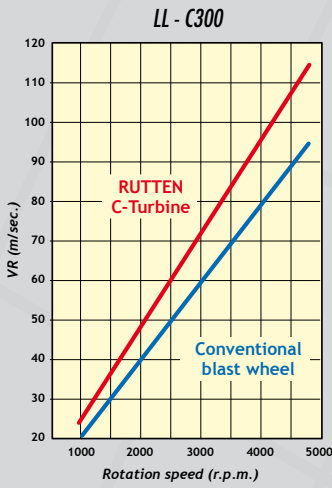


*The Gamma-Y®-Turbines are completely reversible, including blast pattern regulator and pre-accelerator, providing in this way for:*

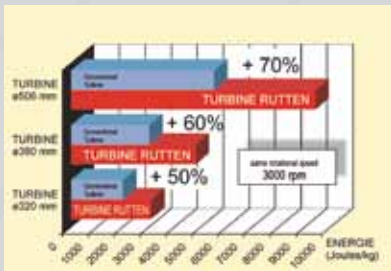
- A reduction in stock
- The possibility of reversing the direction of the rotation to extend the blast pattern
- Complete elimination of the risks of incorrect assembly
- The possibility, during maintenance operation, of exchange of the turbines on wheel machines with left and right turbines

## Parameter of the Ruten Long Life C-Turbine

Projection speed of the media



Compared impact energy for 1kg media projected



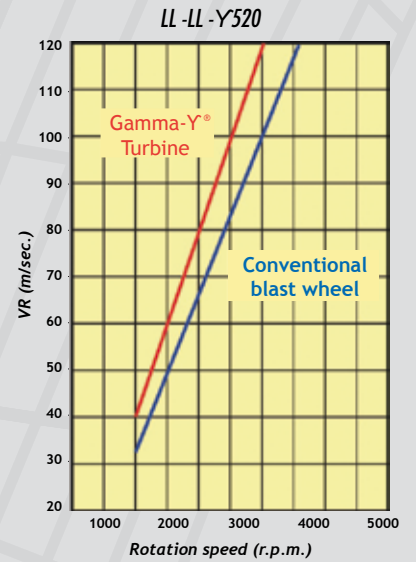
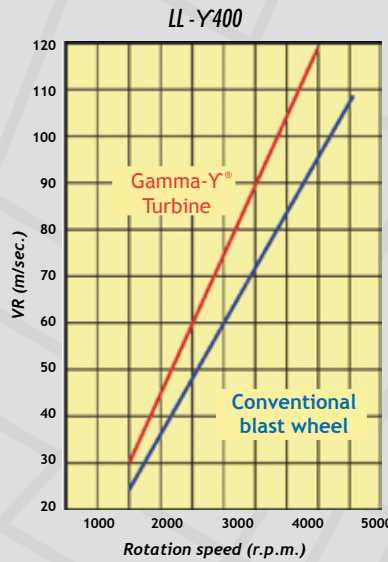
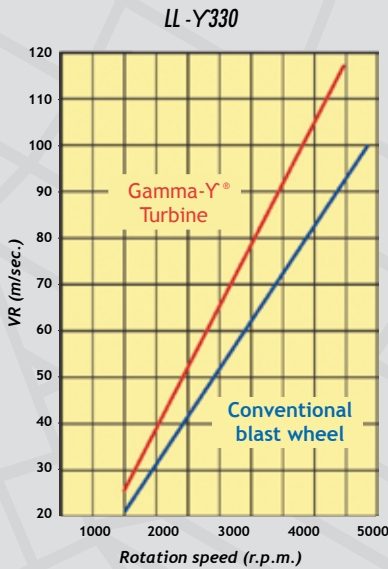
Technical Data

Model	Turbine Ø in mm	Blade width in mm	Number of blades	rpm maximum	Maximum power in KW
LL - C240	240	50	4 to 8	7.000	5.5
LL - C300	300	80	4 to 6	5.000	25
LL - C320	320	80	4 to 6	5.000	30
LL - C380	380	80	6 to 8	4.400	50
LL - C506	506	110	6 to 8	4.000	90

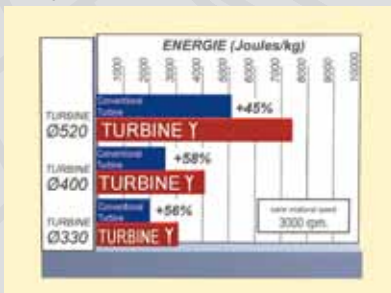
effective 02/2011

## Parameter of the Ruten Long Life Gamma-Y®-Turbine

Projection speed of the media



Compared impact energy for 1kg media projected



Technical Data

Model	Turbine Ø in mm	Blade width in mm	Number of blades	rpm maximum	Maximum power in KW
LL - Y330	330	80	4 to 6	4.500	18.5
LL - Y400	380	80	6 to 8	4.000	37
LL - Y520	520	110	6 to 8	3.900	90

effective 02/2011





- D** RÖSLER Oberflächentechnik GmbH · Werk Memmelsdorf  
Vorstadt 1 · D-96190 Untermerzsbach  
Tel.: +49/9533/924-0 · Fax: +49/9533/924-300 · rosler-de@rosler.com
- RÖSLER Oberflächentechnik GmbH · Werk Hausen  
Hausen 1 · D-96231 Bad Staffelstein  
Tel.: +49/9533/924-0 · Fax: +49/9533/924-300 · rosler-de@rosler.com
- USA** RÖSLER Metal Finishing USA, L.L.C.  
1551 Denso Road · USA-Battle Creek · MI 49037  
Tel.: +1/269/4413000 · Fax: +1/269/4413001 · rosler-us@rosler.com
- F** RÖSLER France  
Z.I. de la Fontaine d'Azon · B.P. 513 – St. Clément · F-89105 Sens Cedex  
Tel.: +33/3/86647979 · Fax: +33/3/86655194 · rosler-fr@rosler.com
- I** RÖSLER Italiana S.r.l.  
Via E. Vittorini 10/12 · I-20049 Concorezzo (MI)  
Tel.: +39/039/611521 · Fax: +39/039/6115232 · info@rosler.it
- CH** RÖSLER Schweiz AG  
Staffelbachstraße 189 · Postfach 81 · CH-5054 Kirchleerau  
Tel.: +41/62/7385500 · Fax: +41/62/7385580 · info@rosler.ch
- GB** RÖSLER UK  
Unity Grove, School Lane · Knowsley Business Park · GB-Prescot, Merseyside L34 9GT  
Tel.: +44/151/4820444 · Fax: +44/151/4824400 · rosler-uk@rosler.com
- E** RÖSLER International GmbH & Co. KG  
Sucursal en España · Polg. Ind. Cova Solera C/Roma, 7 · E-08191 Rubí (Barcelona)  
Tel.: +34/93/5885585 · Fax: +34/93/5883209 · rosler-es@rosler.com
- NL** RÖSLER Benelux B.V.  
Reggestraat 18 · NL-5347 JG Oss · Postbus 829 · NL-5340 AV Oss  
Tel.: +31/412/646600 · Fax: +31/412/646046 · rosler-nl@rosler.com
- B** RÖSLER Benelux B.V.  
Avenue de Ramelot 6 · Zoning Industriel · B-1480 Tubize (Saintes)  
Tel.: +32/2/3610200 · Fax: +32/2/3612831 · rosler-be@rosler.com
- A** RÖSLER Oberflächentechnik GmbH  
Hetmanekgasse 15 · A-1230 Wien  
Tel.: +43/1/6985180-0 · Fax: +43/1/6985182 · rosler-at@rosler.com
- RO** RÖSLER Romania SRL  
Str. Horia Closca si Crisan 17-19 · RO -075100 Otopeni/ILFOV  
Tel.: +40/21/352 4416 · Fax: +40/21/352 4935 · rosler-ro@rosler.com
- RUS** RÖSLER Russland  
40 Bolshaya Semenovskaya Str., bldg. 1, office 413 · 107023 Moscow  
Tel. / Fax: +7 / 495 / 665 63 32 · Mob.: +7 / 495 / 505 23 15 · rosler-ru@rosler.com
- BR** RÖSLER do Brasil LTDA  
Estrada dos Galdinos 35 · Jd. Barbacena · 06700-000 - Cotia · São Paulo - Brasil  
Tel.: +55/11/46123844 · Fax: +55/11/46123845 · rosler@rosler.com.br
- ZA** RÖSLER S.A. Surface Technologies  
P.O. Box 7949 · 66 Regency Drive · Route 21 Corporate Park · Irene Ext. 31 · ZA-0046 Centurion  
Tel.: +27/12/345 2215 · Fax: +27/12/345 3731 · rosler-za@rosler.com
- CN** RÖSLER – BEIJING  
Office 11N, Tower A, Beijing Fu Hua Mansion · No. 8, Chaoyangmen North Avenue  
Dong Cheng District · Beijing 100027 P.R. China  
Tel.: +86/10/6554 73 86 · +86/10/6554 73 89 · Fax: +86/10/6554 73 87 · rosler-cn@rosler.com
- IND** RÖSLER SurfaceTech Pvt. Ltd.  
No.9, I Main Road, M.L.A Layout · R.T. Nagar · IND-Bangalore 560 032  
Tel.: +91/80 23534445 · Fax: +91/80 23339165 · rosler-in@rosler.com

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