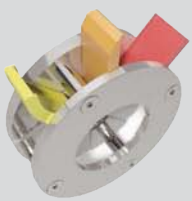
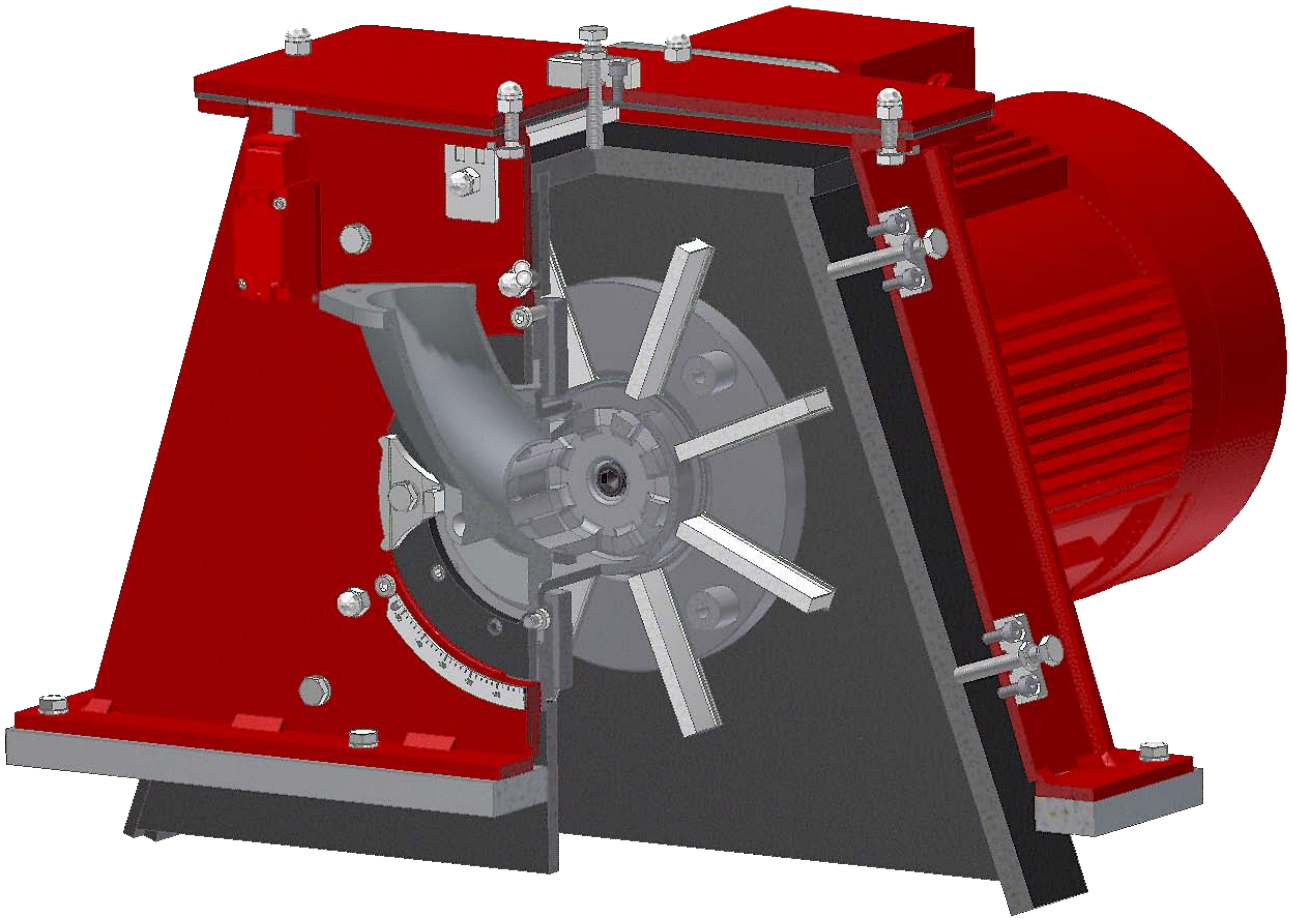




## LONG-LIFE MULTI-OPTION SM@RT WHEEL



# SPECIFICATION SHEET

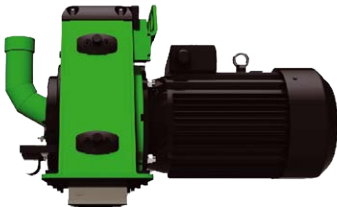


## ir LONG-LIFE MULTI-OPTION WHEEL



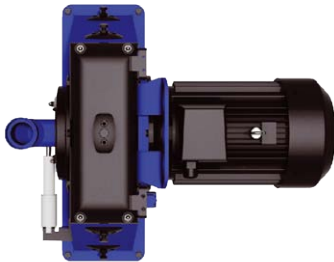
### MULTI-OPTION CHARACTERISTICS

- 3 quality levels (Basic, Standard, Superior)
- Multi-technology options
- Universality of parts



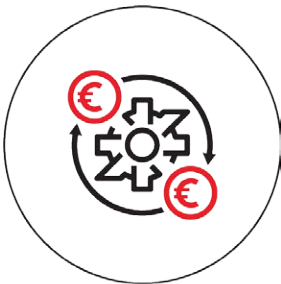
### CUSTOMER-DEFINED CHARACTERISTIC

- Increased speed of abrasive
- Improved shot blast/peen results
- Blast pattern is adaptable
- Reversibility



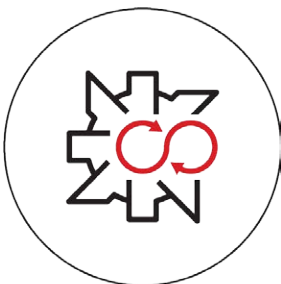
### SPECIAL APPLICATIONS

- Module with rotating control cage
- Supply filter
- Trolley
- QR code
- Sensors system
- Vibrations sensor
- Regulation abrasive flow valve



### OPERATING COSTS

- Extreme long service life
- Exceptional wear resistance
- Improved lifetime

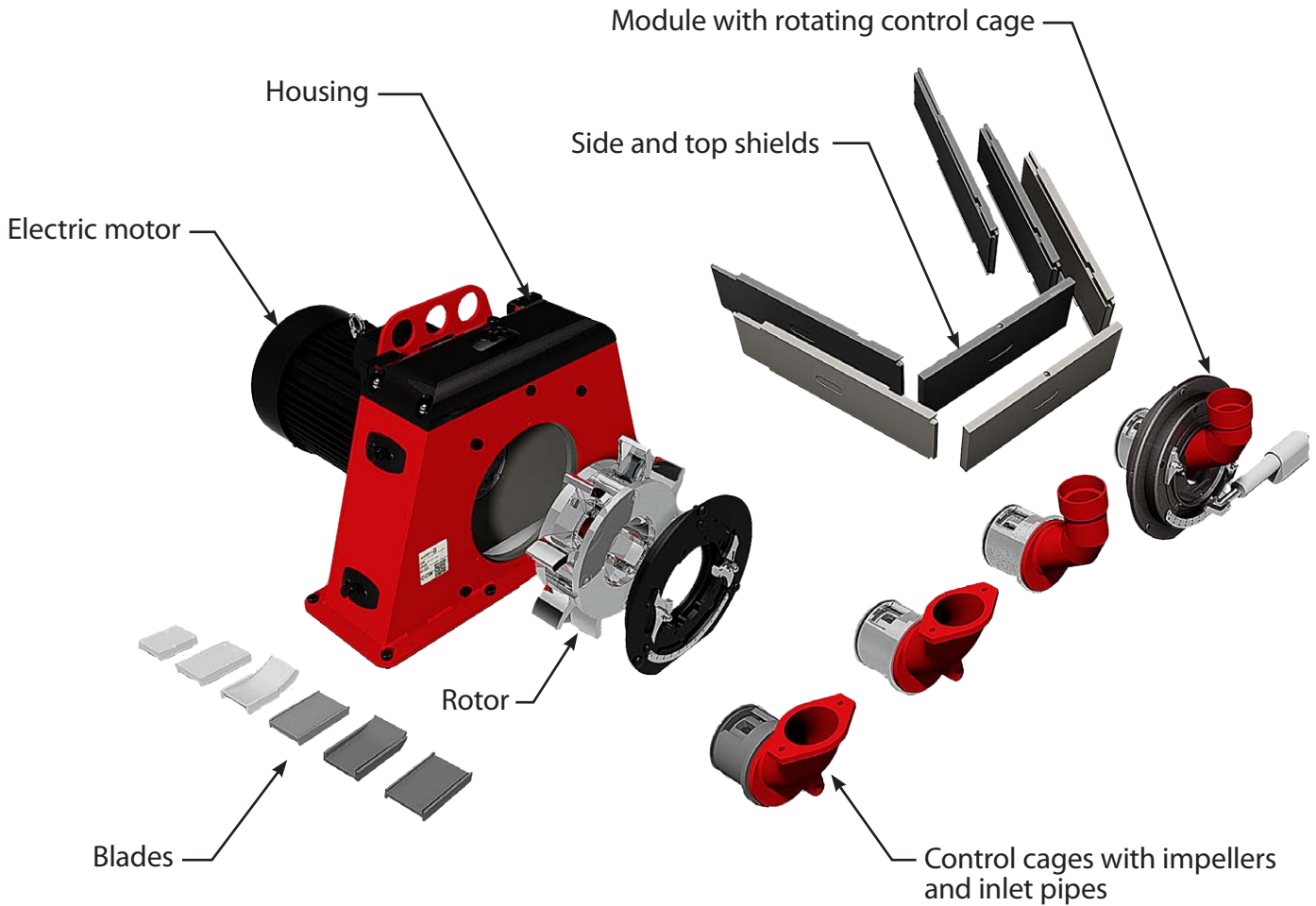


### LONG-LIFE WEAR RESISTANCE

- Reduced energy consumption
- Reduced shot consumption
- Competitive prices of wheel and spare parts
- Quick change, easy maintenance and access to parts
- Reduced wear, vibrations and noise level
- Reduced processing time



## EXPLODED VIEW AND SPECS



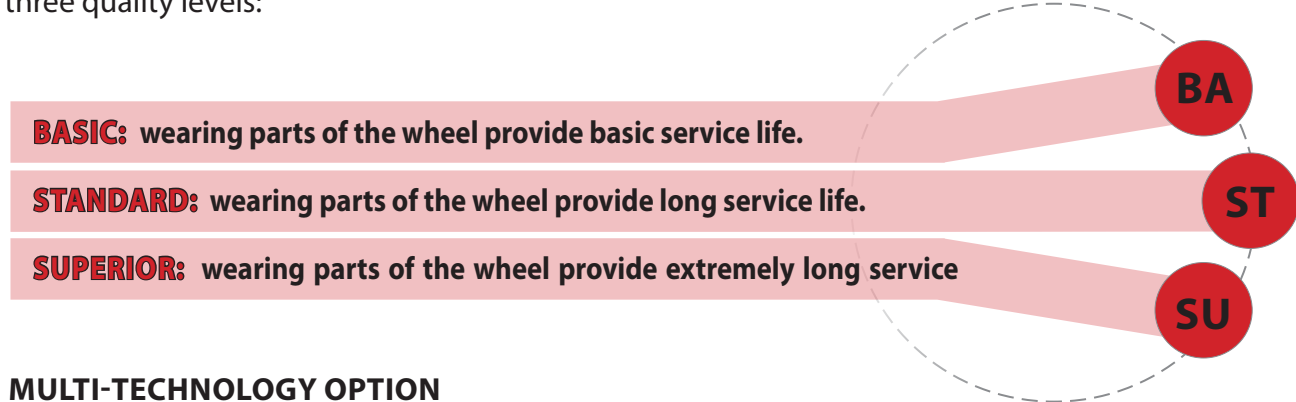
Characteristics				Electric Motor Power											Blades				Control cage with impeller (narrow jet)					
Wheel dimensions	Number of blades	D (rotor diameter)	B (width of blades)	kW (IE2 or IE3, motor with flange type B5)											i (straight)		r (curved)		OCR	TC (+ inlet pipe)				
in.		in.	in.	5.5	7.5	11	15	18.5	22	30	37	45	55	75	90	Cast	OCR	TC	OCR	TC	OCR	TC		
12 <sup>5</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	12 <sup>5</sup> / <sub>8</sub>	1 <sup>1</sup> / <sub>8</sub>																					
5 <sup>5</sup> / <sub>8</sub>		12 <sup>7</sup> / <sub>8</sub>	2 <sup>5</sup> / <sub>8</sub>																					
		15																						
19 <sup>5</sup> / <sub>8</sub>		14 <sup>3</sup> / <sub>4</sub>																						
	17 <sup>3</sup> / <sub>4</sub>	3 <sup>3</sup> / <sub>8</sub>																						
	19 <sup>5</sup> / <sub>8</sub>																							



## ir MULTI-OPTION CHARACTERISTICS

### 3 QUALITY LEVELS

The basis of the **ir sm@rt wheel** is the same regardless of the quality level. The main difference is in the service life time of the wearing components. The structure of quality level is a set of all wearing parts, providing a certain service life of the wheel without maintenance. You can choose one of the three quality levels:



### MULTI-TECHNOLOGY OPTION

**ir sm@rt wheel** design allows the installation of many different types of blades, impellers, control cages and shields. This enables you to put together a wheel that will best suit technical characteristic, service life and price. All parts are interchangeable and compatible.

### UNIVERSALITY OF PARTS

**ir sm@rt wheel** offers you a large selection of components, different according to quality and technical characteristics. All parts are interchangeable, which means for example: straight **i blade** made from wear resistant cast steel can be later replaced with curved **r blade** made from tungsten carbide, which enables up to 30 % higher outlet speed and 8 to 16 times longer service life.

Control cage and impeller				Other				Sensors			Accessories							
Hardened	Control cage with impeller (normal jet)		Control cage with impeller (wide jet)	Shields	Inlet pipe	Rotating control cage	ir-sm@rt			Abrasive valve	Angle of the wheel							
	Cast	OCR	TC (+inlet pipe hardened)				OCR	OCR Extended	TC			TC Extended	Cast of welded	Hardened steel steek	Electric actuator	Shields with sensors	Blades with sensors	QR code

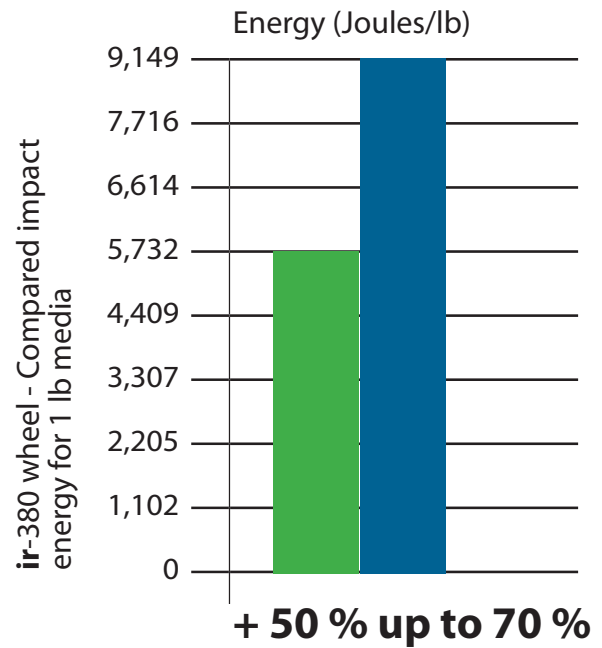
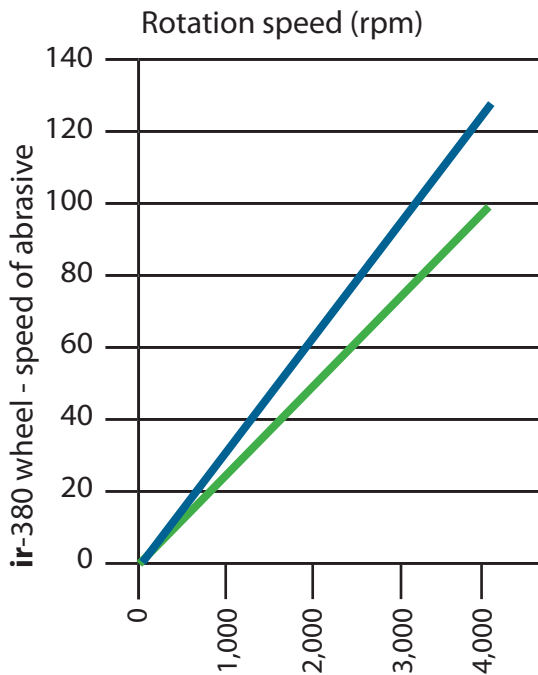
Blades, OCR cast control cage and impeller, OCR shields; package SUPERIOR: TC blades, TC control cage and Impeller, TC shields.



## CUSTOMER-DEFINED CHARACTERISTIC

### INCREASED SPEED OF ABRASIVE, IMPROVED SHOT BLAST/PEEN RESULTS

By choosing different types of blades you can change the outlet speed of abrasive. Curved **r blade** can provide outlet speed which is 27 to 30 % higher than of straight **i blades** . Shorter straight blades provide lower outlet speed, but higher mass flow at the same of motor power.



### BLAST PATTERN IS ADAPTABLE TO CUSTOMER APPLICATION'S

Blast pattern can be adjusted for different purposes: blasting of work pieces, constructions, shot peening, etc. Desired blast pattern can be achieved by changing the geometry of control cage. Achieved results are significantly better and this also means energy savings.

#### FOCUSED BLAST

- Laminating
- Shot peening
- Rolling mill rods



#### NORMAL BLAST

- Foundries
- Metal construction
- Common



#### WIDE BLAST

- Steel plates
- Wide flat structures





## SPECIAL APPLICATIONS

### MODULE WITH ROTATING CONTROL CAGE



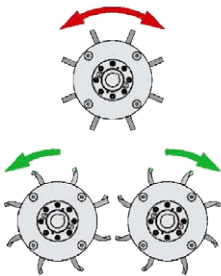
In machines where wheels blast different types of work pieces that are dimensionally quite different, is possible to equip the wheel with a module with rotating control cage

### SENSOR SYSTEMS



It has been developed to control the wearing state of the wheel, to reduce the amount of spare parts for user, for quality assurance and quality control of the shot blasting process.

### REVERSIBILITY



Rotor is suitable for rotation in both directions, but you need to be especially careful with curved blades, because you need to set them in the right direction.

### SUPPLY FILTER



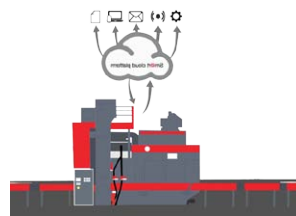
Filter has an installed steel mesh protecting the wheel from entering of parts that can damage wheel. Filter is mounted between the supply valve and inlet pipe. Maintenance of the filter is very easy. You just need to remove the front cover and remove larger particles.

### REGULATION ABRASIVE FLOW VALVE



Machine regulation abrasive flow valve enables controlled constant flow of abrasive (without hysteresis). Base valve has manually set of stroke from 0 % to 100 %. The valve in case of interruption of electrical power or compressed air closes automatically. The basic version of the valve can be upgraded with an automatic module to control the flow of abrasive.

### SM@RT CLOUD PLATFORM



The Sm@rt Cloud Platform enables you to monitor and optimize the performance of the shot blaster, the dust collector, and the blast wheel.

It collects data – such as hours counter, current and historical alarms, and much more – and it reduces the abrasive and energy consumption of the machine by monitoring and adjusting its parameter for optimal efficiency.

It also provides an easy access to the machine documentation (user manual, service book, and video instruction) and has a spare parts ordering platform to facilitate the upkeep of the machine and avoid production interruptions.



## LONG-LIFE WEAR RESISTANCE

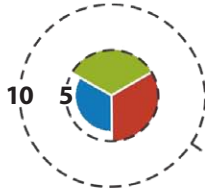
### EXTREME LONG SERVICE LIFE, EXCEPTIONAL WEAR RESISTANCE. IMPROVED LIFETIME

In the **BA Basic quality level** wearing parts are made of high-quality wear resistant cast steel that provide basic service life.

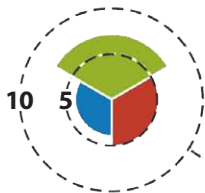
In the **ST Standard quality level** the blades, control cage and impeller are made from tool steel. Service interval is extended for 2 to 3 times.

In the **SU Superior quality level** the blades are made from tungsten carbide, while the impeller, control cage and shields are made from segments of tungsten carbide and the base which is high quality tool steel. The inlet pipe is also special having higher hardness. The service interval of wearing parts is extended from 8 to 16 times.

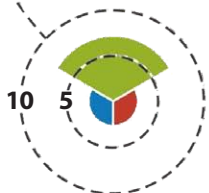
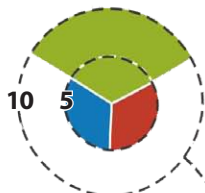
Tool steel **i** Blade-short



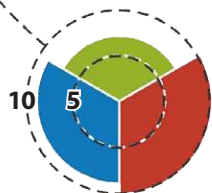
Tool steel **i** Blade



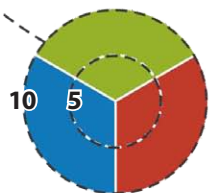
Tool steel **r** Blade



Wear resistant steel **i** blade



Tungsten carbide **i** blade



Tungsten carbide **r** blade

#### LEGEND

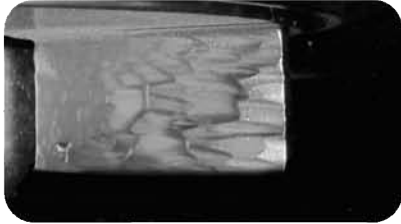
- Speed of abrasive
- Service life
- Price of part



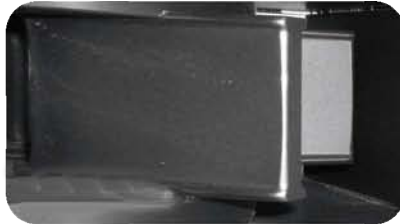
## LONG-LIFE WEAR RESISTANCE (CONT'D)

### COMPARISON OF BLADE WEAR ON VARIOUS MATERIALS

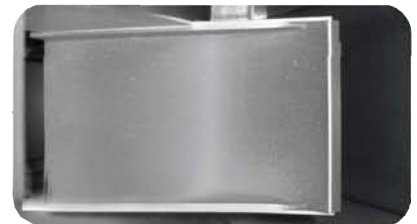
WEAR RESISTANT CAST STEEL



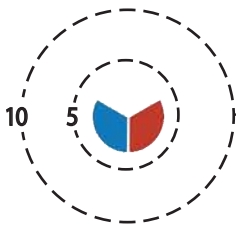
TOOL STEEL



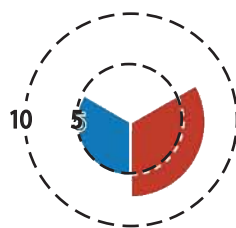
TUNGSTEN CARBIDE



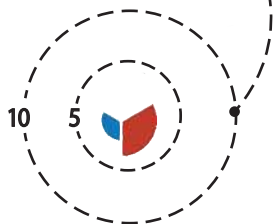
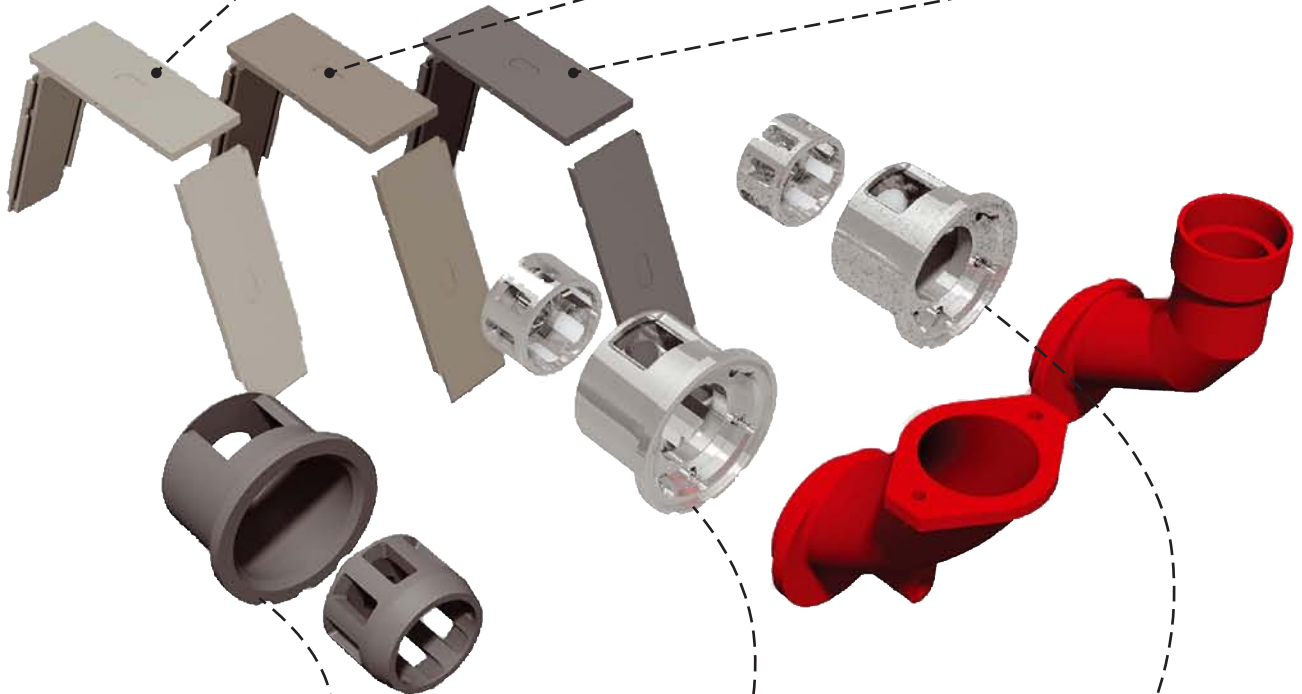
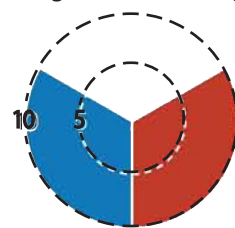
Tool steel | Blade-short



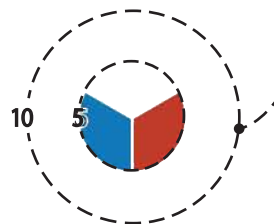
Tool steel



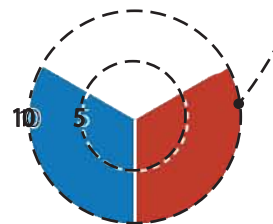
Wear resistant cast steel covered with tungsten carbide segments



Impeller, control cage-wear resistant cast steel



Impeller, control cage-tool steel



Impeller, control cage-tungsten carbide





## OPERATING COSTS

### REDUCED ENERGY CONSUMPTION

The energy consumption is reduced up to 10 %-25 %\* with optimal design of internal elements, use of quality materials, reduced friction at sealing of rotor using non-contact centrifugal seal as well as electrical motors with high efficiency.

### REDUCED SHOT CONSUMPTION

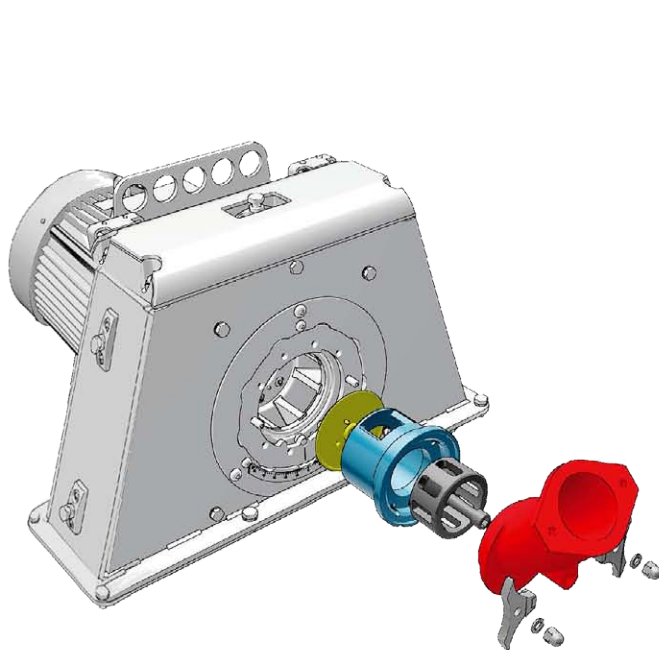
Reduced shot consumption is achieved by using the high-quality sm@rt wheel materials, consistency of the hot spot zone, and increased speed of the shot allowing flexibility of the blasting, peening process. Cost savings is up to 25 % on your media costs!\*

### COMPETITIVE PRICES OF WHEEL AND SPARE PARTS

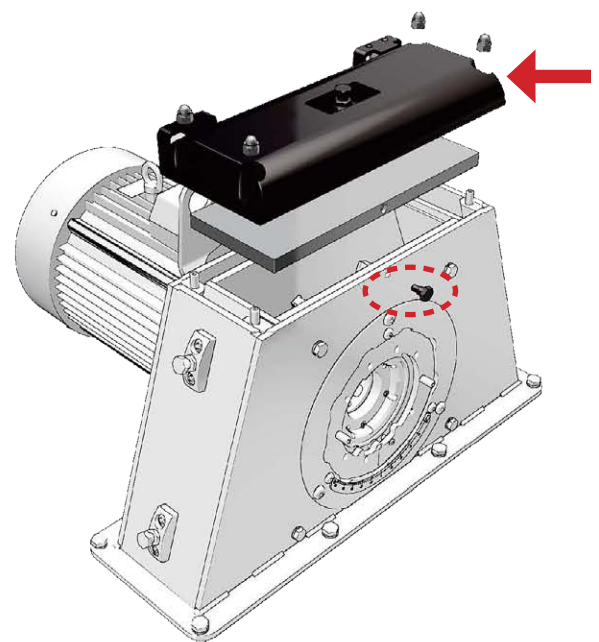
We offer the best ratio between price/quality and efficiency. Our technician can also help you in modernization of your existing shot blast machine with our new ir sm@rt wheel.

### QUICK CHANGE, EASY MAINTENANCE AND ACCESS TO PARTS

Wheel design allows a quick change of the most wearing parts such as blades, control cage, impeller and inlet pipe (app. 15 minutes). Front side of the wheel is covered with an additional flange of greater diameter, which serves to facilitate an access to internal parts and to remove the rotor. The change of trapezoid shields and the electric motor is also quick and easy.



**1** Remove the inlet pipe, impeller, control cage and rotor washer.



**2** Remove the top cover and safety rod



## OPERATING COSTS (CONT'D)

### REDUCED WEAR, VIBRATIONS AND NOISE LEVEL

Within the individual quality levels, i.e. Basic, Standard and Superior the service life of all wear parts is uniformed, which means that the servicing of wheel is minimal. In the Superior quality level the service interval of wearing parts is extended from 8 to 16 times.

The defects of screws cause a lot of problems and delays in service. For this reason high-strength studs, screws and a cap nut are used, proving sealing thread against solid particles. That is why the durability of screws is much longer. Screws for screwing side shields are sealed by an additional seal.

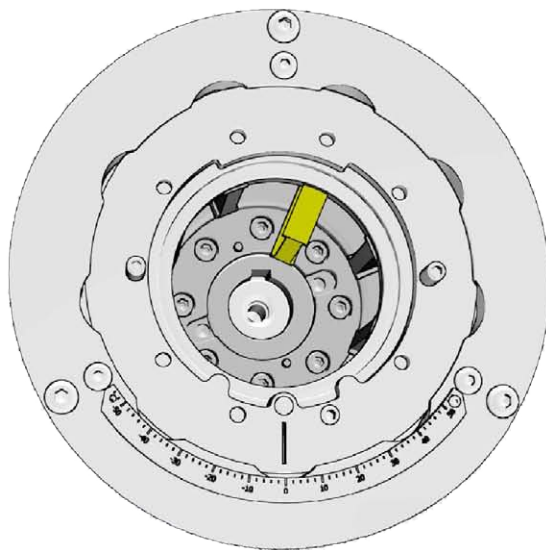
The sm@rt wheel housing is protected by the side shields and trapezoid shields. Thus the housing of the wheel is completely protected. Overlaps between the side and trapezoid shields are made with double labyrinths preventing complete breakthrough of the jet in the housing.

By manufacturing of wheel parts in modern CNC machines, use of new materials and modern heat treatment the components are manufactured within narrow tolerances. This is shown in quieter and smooth running and lower vibrations of the wheel.

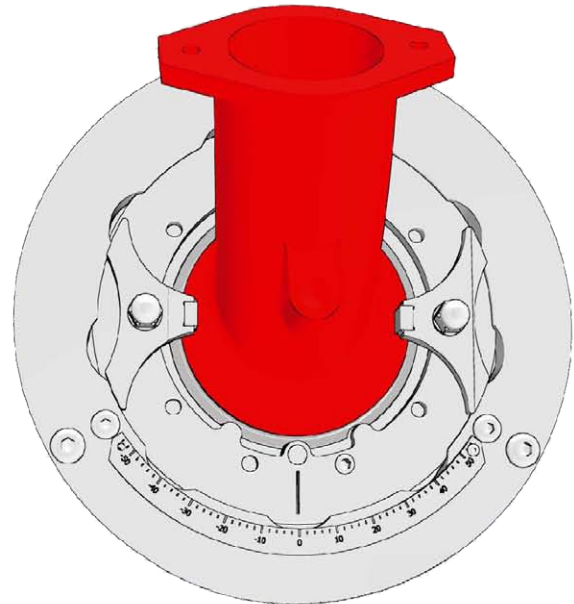
### REDUCED PROCESSING TIME

Because of higher impact energy, i.e. up to 70 %, the reduction of processing time is significant.

\*In comparison to conventional turbines.



**3** Remove the inlet pipe, impeller, control cage and rotor washer



**4** Remove the top cover and safety rod

