



PROFLEX

GRINDING MACHINES FROM 1921



TACCHELLA

INTERNAL AND EXTERNAL DIAMETER GRINDING MACHINE

PROFLEX 1100 CS

PROFLEX 1600 CS

PROFLEX 2100 CS



INTEGRATED GRINDING
SOLUTION





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TACCHELLA ID & OD GRINDING MACHINE – PROFLEX CS 1100 – 1600 – 2100

NEW TACCHELLA PROFLEX CS MORE PRODUCTIVE, MORE FLEXIBLE

Productive modular grinding centre

The new **IMT Tacchella Proflex CS** internal and external grinding machine is the perfect solution for all grinders focusing on high productivity and flexibility. Thanks to the many versions and modular options available, the new **Proflex CS** grinding machines are particularly appreciated in the global markets. They guarantee efficient precision grinding of **gearbox shafts, bearings, pump gears, spindles**, etc., be they small or large batches, including multi-diameter processing or interpolations. The range is characterised by multiple systems for positioning the wheel holder unit, which allow using **two, three, four conventional (\varnothing 610 and/or \varnothing 760 mm) wheels** which can be fitted simultaneously with **high cutting speed CBN wheels (\varnothing 400 and/or \varnothing 500 mm)** in several combinations. The brand new workhead, operated by a built-in motor (axis C), and the new hydraulic tailstock allow grinding with top accuracy round-shaped, non-round-shaped and polygonal workpieces **weighing up to 400 kg**. The range covers **grindable lengths between 400 and 1600 mm** with **centre heights up to 305 mm**, it is equipped with a **Torque B Axis** for automatic direction of the wheel holder unit, which can be freely programmed through the **CNC Siemens 840D sl** or the **Fanuc32i** (optional).

From the success of Proflex the evolution of the species

The new grinding centre is founded on the success of the **Proflex** family, from which it inherits its configurability and flexibility, preserving its concept and adding sophisticated innovations, such as the maintenance monitoring system (**Maintenance Operator Package**) or the **ENERGY SAVING** system to reduce electrical energy consumption: all by just simply pressing a button. The **Proflex CS** versions are especially suitable for the **automotive, machine tool and aerospace industries**, etc. Thanks to a wide range of accessories, it guarantees the most suitable production modes and satisfies even the most demanding customers.

Multibrand synergies

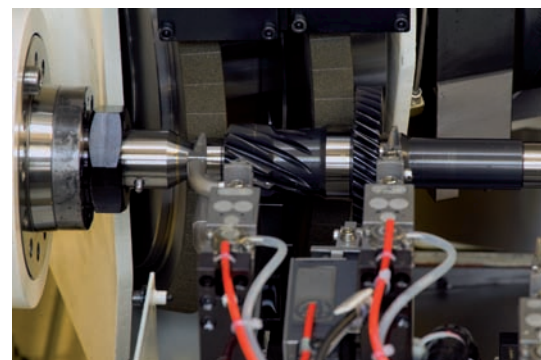
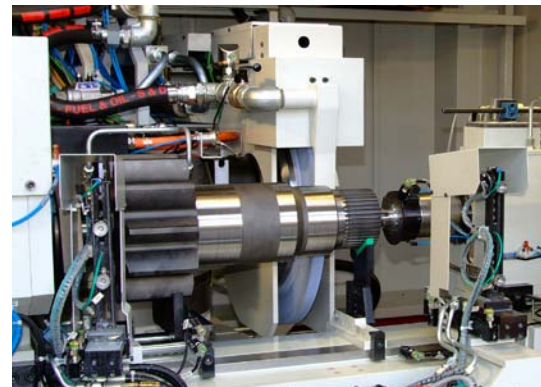
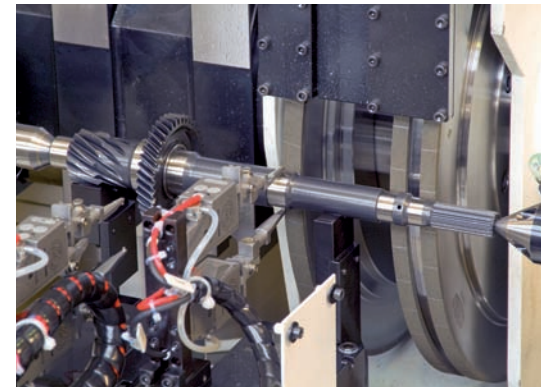
Designed and developed with the most modern technologies, which are the result of the experience and synergies of the **IMT Grinding Group**, the new **Proflex CS** by **Tacchella** combines incredibly short cycle times with a fast re-tooling process, which is the fruit of upgrades introduced in the new and intuitive software. **Proflex CS** uses shared technological platforms born out of the team work of engineers of the entire Group, focused on manufacturing excellence without compromise, ensuring an ideal price to quality ratio, high technological standards and short delivery times.

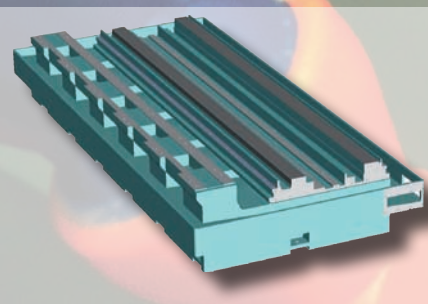
Guaranteed success

Improved surfaces, improved dimensional tolerances, improved repeatability. The **new grinding wheel carriage ("X" and "Z" axes)**, made of stabilized iron castings, slides on **hydrostatic guides** to eliminate any friction, thus ensuring a perfect sliding and top accuracy in workpiece machining. The machine features direct drive transmission obtained through preloaded, **high precision recirculating ball screws** built into the brushless motor (which reduces the need for extraordinary maintenance operations while making them easier) and absolute optical linear scales.

Minimized set-ups

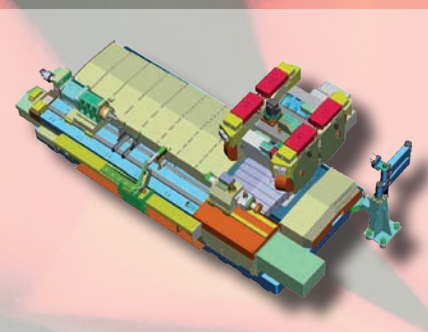
The new interactive operator interface "**Tool Operator Package**" installed on the digital control system simplifies the part-program creation process, simplifying any necessary adjustments. Moreover, all the accessories of the series (post-process, vibration sensors, self-centering rests, automation) are directly managed by the interface.





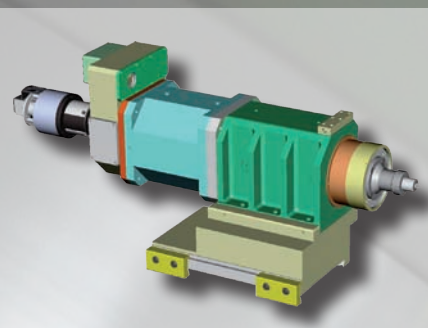
BED

The bed of the new **Proflex CS** is a single structure made of stabilised iron casting, widely ribbed and featuring peripheral grooves to collect the coolant. This bed has been developed using the most modern 3D solid parametric modelling technology, checked with **FEM analysis** and it perfectly absorbs the temperature fluctuations and the vibrations generated by the grinding process, thus ensuring an excellent quality of the ground workpieces.



"X" AND "Z" AXIS GRINDING WHEEL CARRIAGE

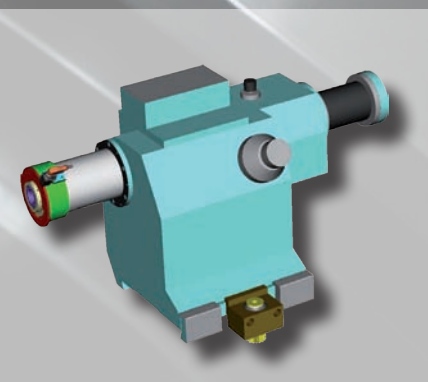
The grinding wheel carriage of the new **Proflex CS** slides on hydrostatic guides to ensure maximum machine compactness and optimal sliding. The **cross guides** - **"X" Axis on the transversal line** and **"Z" Axis on the longitudinal line** - allow minimal overall dimensions on the ground, thus rationalizing the layout of hydraulic and electric systems. The carriage slides thanks to high precision recirculating ball screws, directly coupled to the AC Brushless motor with digital adjustment. The multiple configuration options of the wheel holder unit, which can be fitted with **conventional and/or high cutting speed CBN wheels** (opt.) can be used thanks to the freely programmable direction of the wheel carriage (B Axis) from **-30° to +210°**.



WORKHEAD

The universal workhead of the new **Proflex CS**, with a **fixed and rotating spindle**, is perfect for both live spindle chuck work and for grinding between centres. The new workhead, made with high precision bearings which ensure top roundness precision below 0.001 mm, can be set on an adjustable base with micrometric correction device. The progressive rpm variation is performed by the AC Brushless motor; besides, the unit is fitted with a pneumatic relief device, used to ease the movements in the machine set-up phase.

A workhead fitted with a **C Axis** can be provided for machining workpieces having a non-round shape, as for instance **cams, eccentrics, regular polygons, customized threads and profiles**.



TAILSTOCK

The tailstock of the new **Proflex CS** series is hydraulically-operated. The tailstock is fitted with a safety device checking the correct pressure between the centres and the adjustment of the axial load as well as a built-in device for the micrometric correction of the cylindricity of the workpiece and a pneumatic relief device, used to ease the movements during the machine set-up phase.

The variable-length **W Axis** module can be fitted as an option on the longitudinal fixed bed. This feature allows for fast adjusting to the length of the workpiece to be ground, thus significantly reducing set-up time.

THE UNITS

SHAFTS

The new **Proflex CS** by **Tacchella** is perfect for grinding small or large batches of mechanical shafts for motion transmission (**engine, gearbox, electrical, primary, secondary**, etc.) used in the **automotive, railway, aerospace**, etc. industrial fields. This grinding machine has been designed and manufactured as a result of the experience and synergies of the **IMT Grinding Group**.



BEARINGS

The new **Proflex CS** by **Tacchella**, designed to guarantee high performance in terms of productivity and operational flexibility, is excellent for grinding small or large batches of different types of bearings (**single or double race taper roller bearings, cylindrical roller bearings, ball bearings, single or double row bearings**, etc.) used in the **automotive, railway, aerospace**, etc. industrial fields.



PUMP GEARS

The new **Proflex CS** by **Tacchella**, manufactured by the **IMT Grinding Group**, is the ideal solution to meet medium-to-high production requirements. It grinds with top accuracy different types of pump gears (**cylinder, conical or splined shafts, drive and driven shafts**, etc.), used by most industrial fields (**automotive, hydraulic, plastic, petrochemical**, etc.).



SPINDLES

The new **Proflex CS** by **Tacchella**, equipped with technologies designed to improve machining quality and to reduce the impact on the environment, ensures constantly accurate finishing with optimized cycle times when machining shafts used in the **machine tool** field.



APPLICATIONS

PROFLEX

TACCHELLA



PROFLEX 2						PROFLEX 3						PROFLEX 4
LR	L/L	R/R	L/R	L/I	R/I	LR/L	LR/R	LR/I	L/I/R	L/I/I	L/L/L	LR/LR



IMT GRINDING GROUP

TECHNICAL SPECIFICATIONS				
	VERSIONS			
CHARACTERISTIC DATA	1100	1600	2100	Unità
Distance between the centres	800 ÷ 1100	1200 ÷ 1600	1700 ÷ 2100	mm
Max. grindable length	400 ÷ 600	800 ÷ 1100	1200 ÷ 1600	mm
Centre height	180 (230 ÷ 305)*			mm
Max. grindable diameter	350 (450 ÷ 600)*			mm
Max. weight between centres	250 (400)*			kg
Total installed power, excluding accessories	38 ÷ 82			kW
Machine weight, excluding accessories	11800	12900	14200	kg
Wheel Holder Unit For External and Internal Diameters				
External wheel, diameter x thickness	610 x 120 (150)* (¹)	760 x 80 (100)* (¹)		mm
	400 x 50 (²)	500 x 40 (²)		
Wheel peripheral speed	50 (63)* (¹)			m/s
	120 (²)			
External grinding wheel spindle power	22 (¹)			kW
	24 ÷ 37 (²)			
Internal grinding wheel motor power	8 (18)* S1		-	kW
“X” Axis				
Max. travel	450	450	450	mm
Brushless motor torque	14,7			Nm
Max. speed	20			m/min
“Z” Axis				
Max. travel	750	1350	1950	mm
Brushless motor torque	14,7 ÷ 16,9			Nm
Max. speed	20			m/min
Workhead				
Internal/external fitting taper	M5/ASA5			
Speed variation	10 ÷ 800			rpm
Spindle torque	52			Nm
Automatic tailstock (rotating centre) *				
Internal fitting taper	Morse 5 cylinder			
Sleeve useful travel	100			mm
Micrometric side adjustment	+/- 0,10			mm
Machine dimensions				
B	3300	3560	4360	mm
C	2780			mm
H	2227			mm

* Technical variant.

(1) Conventional wheel.

(2) CBN wheel.

TACCHELLA

TACCHELLA at a glance

- Our Business: Grinding.
- The Market: leading international manufacturers and high-quality grinding machines.
- The market sections: Vehicles with 4 or 2 wheels, Off-road vehicles and Aviation Industry. Transmissions and Drive Reducers, Machine Tools, Tool Sets, Dressing, Tool Holder.
- The activities: design and manufacture of External cylindrical and high-production grinding machines, Broach grinding machines, Sharpening machines, Universal grinding machines.
- The guidelines: ongoing investments in research, design and development of innovative, patented technologies.
- Our most valuable resources: top performance, cutting-edge solutions always one step ahead of the market to meet **TACCHELLA** Customer's needs.
- Our story: nearly one century of non-stop work in the machine tool field.
- Our location: the 75,000 sq. m plant is in Cassine (AL), in the Italian region home of the major Italian car makers, and 20,000 sq. m of this area are indoors.
- Our workforce: approximately 500 highly qualified and skilled employees, who represent our most valuable asset. Thanks to their expertise and passion, they guarantee the excellent quality of **IMT Grinding Group's** product and services.

The whole production process, from design to final testing takes place in-house and is managed through a comprehensive and capillary IT network (**CAD/CAE - PDM - CAM**).

The high quality level required from our grinding machines is achieved by means of highly efficient, accurate and automated CNC production systems. Strict final tests, duly equipped machining and inspection departments located in air-conditioned areas, are key to the high quality of our products.

The sales offices include approx. 50 sales agencies, which are present all over the world.

Tacchella products are the result of the synergies obtained among the designers of the **IMT group**, which always ensure product excellence and best in class technological standards with minimum lead time.

This is why **Tacchella** is a leader of this industry.

IMT GRINDING GROUP is the new industrial group that gathered under the same banner into one **Morara, De.Ci.Ma., Tacchella, Meccanodora and Favretto**, in controlled by **PARITEL Corporation**. **PARITEL HOLDING** is an industrial investment company founded in Bologna in 1989.

paritelspa.it



Metallo in movimento

IMT

www.tacchella.com

www.imtgrindinggroup.com

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