

Top Gauge 200

Modular gauge head for machine tools



Top Gauge 200 (TG200) are modular gauging heads, designed to meet any applications that require the dimensional control on grinding machines, lapping machines and high precision lathes.

The measurement method is based on the comparison with respect to a master.

Applications

- External diameters for continuous or interrupted surfaces
- Internal diameters for continuous or interrupted surfaces, with or without oscillation
- Multi-diameters without mechanical re-tooling
- Continuous or interrupted flat surfaces
- Through feed gauge
- Active or passive positioning
- Thickness calibration
- Roundness and shape analysis

Benefits

- Accuracy
- Sturdiness
- Production stability
- Versatility
- Compatibility
- Easy maintenance



PRECISION

- Sub-micron accuracy and repeatability by zeroing on master
- Sensitivity and linearity regardless the cable length
- Universal damping system for interrupted surfaces
- High thermal stability

STURDINESS

- Body in thermally stabilized stainless steel
- IP67 protection degree
- Anti-crash solutions
- Resistance to chemical agents

VERSATILITY

Top Gauge 200 (TG200) measuring heads can be used for any in-process dimensional control. Their modularity and wide range of accessories allow the usage for all applications on precision machine tools.

In combination with the VM25, VM15 and VM9-GA control units:

- Monitoring of internal and external diameters both on continuous and interrupted surfaces
- Thickness control and calibration
- Active and passive positioning on shoulders
- Continuous or interrupted flat surfaces
- Taper control
- Roundness and shape analysis

COMPATIBILITY

- The TG200 modular body is compatible with other measurement systems on the market
- In case of retrofitting, it is possible to adapt the components already mounted on the machine (slides, brackets and fingers), thus ensuring the system economy.
- The integral cable of the measuring head TG200 can be replaced without involving the transducer.

PRODUCTIVITY and EASE OF USE

- Automatic recognition of the setup parameters of the measuring head installed in the machine without calibrations (PLUG & PLAY BALANCE system).
- Adjustable pre-stroke and overstroke
- Adjustable or fixed pneumatic retraction
- Adjustable measuring force
- Wide measurement range for multi-diameter applications without retooling
- Accessories for quick re-tooling (slides, zeroing guides, brackets)
- Fully automatic production without surveillance
- Machine down time reduction in case of replacement due to fault or crash (PLUG & PLAY BALANCE system)

CONNECTIVITY

TOP GAUGE 200 measuring head is connected to the control unit with an interface designed to ensure the quality of the measurement regardless of the length of the extension cables.

According to the configuration of the machine and the control unit, the interfacing signals may be:

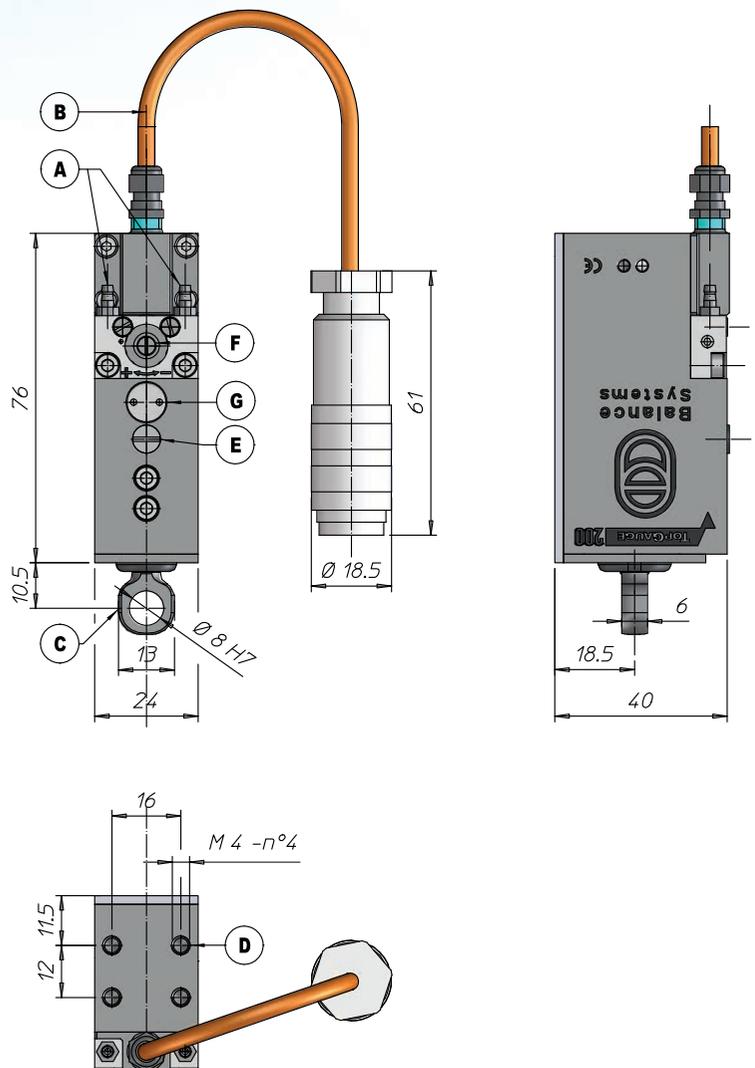
- Digital inputs and outputs
- Profibus DP or Profinet
- BCD or binary codes through parallel interface



TopGauge200

TopGauge200
Gauge for machine tools

- A** Pneumatic connection for retraction circuit
- B** Integral cable with connector
- C** Interface for finger
- D** Interface for bracket
- E** Pre-stroke adjustment
- F** Overstroke and retraction adjustment
- G** Measuring force adjustment



TECHNICAL FEATURES

Transducer linearity	± 2.5 mm	Finger max length	120 mm
Sensitivity error	± 2%	Finger offset (offset)	Max 40 mm
Repeatability	0.1 µm	Type of retraction	Pneumatic: 4-7 bar
Accuracy	0.1 µm	Retraction stroke	Fixed or adjustable
Displayed resolution	0.1 µm	Measuring force	Adjustable: 80 g - 300 g
Thermal drift	< 0.1 µm /°C	Pre-stroke	Adjustable
Thermal stability	< 0.2 µm /24h	Overstroke	Adjustable
Type of pivot	no wear	Damping	Hydraulic and software

TG200 Range | Applications



TG200 | Wide

- External or internal diameters on continuous or interrupted surfaces
- Multi-diameter without mechanical re-tooling
- Active or passive positioning on continuous or interrupted surfaces and shoulders
- Active or passive centring
- Lengths measuring
- Continuous or interrupted flat surfaces



TG200 | Positional

- Active or passive positioning on continuous or interrupted surfaces and shoulders
- Active or passive centering
- Distance between shoulders



TG200 | Small

- External or internal diameters on continuous or interrupted surfaces
- Thickness calibration
- Retrofitting of applications made with TG50 or TG100 measuring heads
- Continuous or interrupted flat surfaces
- Active positioning



TG200 | Small Basic

- Active positioning
- External or internal diameters on continuous or interrupted surfaces
- Retrofitting of applications made with TG50 or TG100 measuring heads

Type	Linearity and sensitivity range *	SETTINGS				Control unit	Plug&Play BALANCE
		Retraction	Pre-stroke	Overstroke	Measuring force		
TG200 Wide	±6250 µm	x	x	x	x	VM25	•
TG200 Positional	±2500 µm	x	x	x	x	VM25	•
TG200 Small	±1000 µm	o	x	o	x	VM25/VM15	•
TG200 Small Basic	±1000 µm	o	x	o	x	VM9-GA	-

x = standard, o = optional

* with 120 mm finger

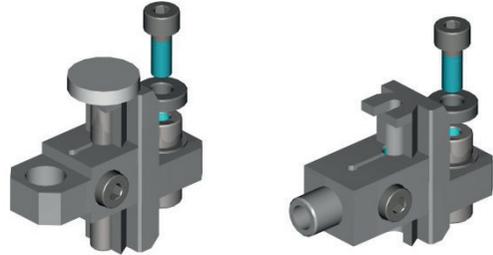
Accessories | Fingers and Zeroing guide

A wide range of fingers for every type of surfaces / materials is available. The choice is based on the type of contact, the length, the offset and the zeroing adjustment.

Fingers

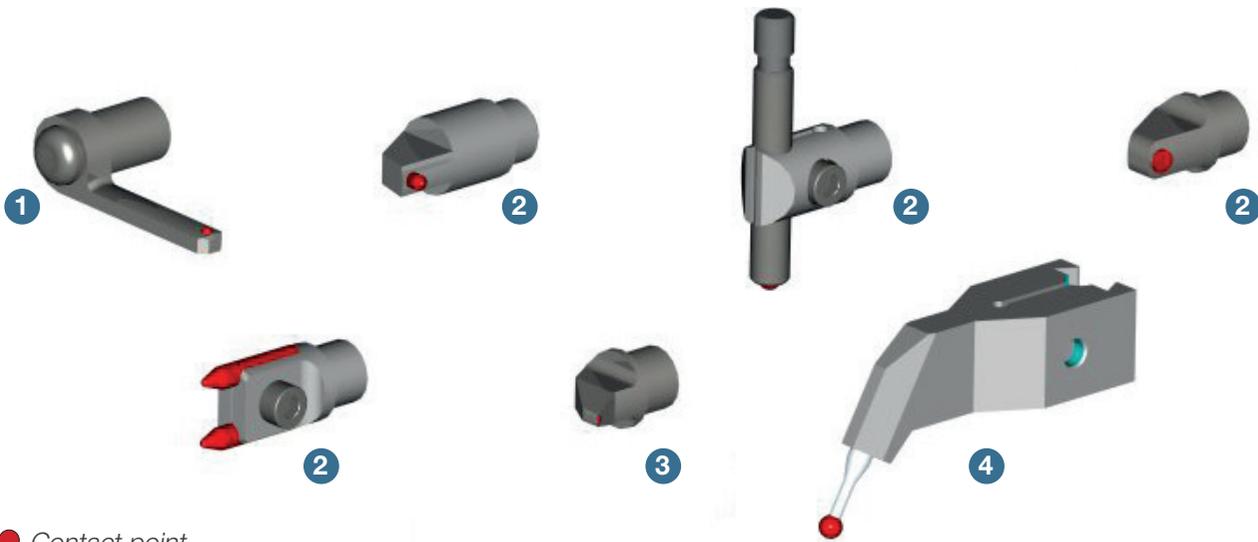


Zeroing guide



Accessories | Feelers

As for the fingers, it is possible to choose among different types of standard contact for internal (1), external (2), positional (3) or special (4) made of diamond or tungsten carbide. Shape and materials are selected according to the application.



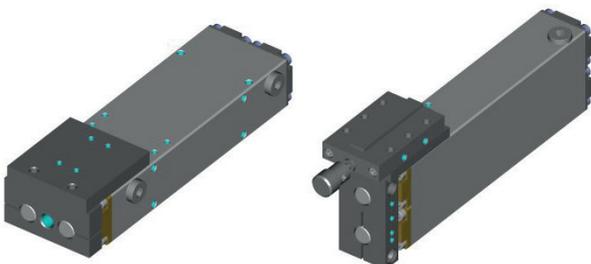
● Contact point

Accessories | Slides and Fine slide

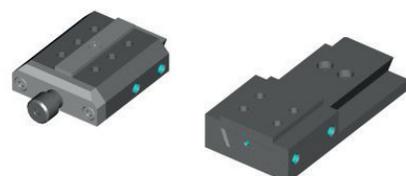
A complete range of slides and fine slide enables the movement of the measuring units from the rest position, for the workpiece loading / unloading operations, to the working position.

The various models are differentiated according to the stroke, to the type of drive circuit (hydraulic or pneumatic) and to the mounting orientation (horizontal or vertical). Optionally position sensors are available.

Slides

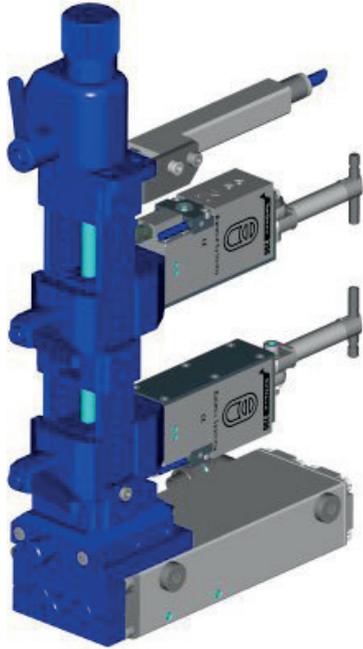


Fine slides

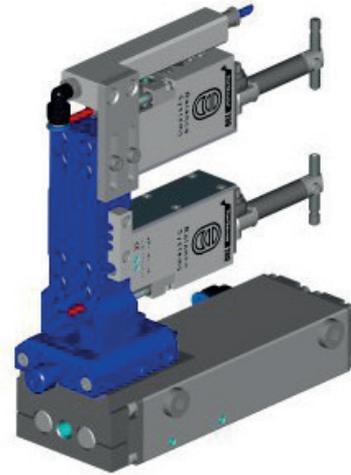


Various options of brackets and fine slides are available. Their ensure the correct re-tooling and mechanical setup of the measuring system. The most suitable type is defined according to the destination of the machine (volumes and production flexibility), to the measuring range and to the mechanical characteristics of the working area (center height, topology of the table, etc.).

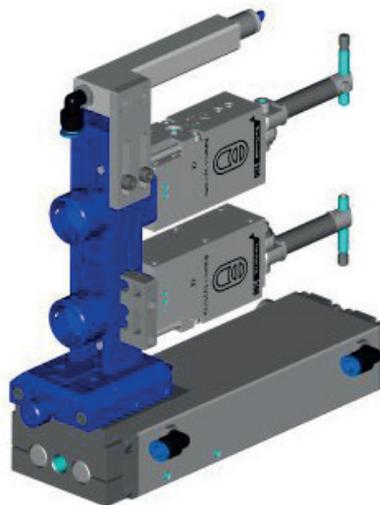
In addition, coolant distributors are optionally available in order to ensure the thermal stabilization.



Application with quick ZERO bracket



Application with fixed bracket



Application with fast retooling bracket



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Distributor:

Balance Systems S.r.l.
Via Roberto Ruffilli, 8/10
20060 Pessano con Bornago
(Milan) - Italy
Tel. (+39) 02.9504955
Fax (+39) 02.9504977
info@balancesystems.it
www.balancesystems.com

