



**WRG**

***HOLE MEASUREMENT SYSTEM  
WITH RADIO DATA TRANSMISSION***



**MARPPOSS**

## Description of the system

The WRG measurement system was conceived to measure holes very accurately and transmit the data via radio, allowing installation on the most common machining centres. In fact, the ATC can pick WRG gauges from the magazine, just like a real tool. The main applications range from automotive, where it can measure parts such as cylinder liners in the engine block, valve seats, and crank shaft and camshaft bores, up to aerospace for measuring rivet seats. The system can be customised to meet customer requirements. The WRG also features great mechanical strength, and has a protection system that intervenes in the event of frontal impact. The application is completed by a Marps E9066 or P7 service electronic unit, which is used to store and display the measurement result, manage production statistics and communicate the measurement status to the CNC machine. Three versions are available, depending on the required size.

### Benefits

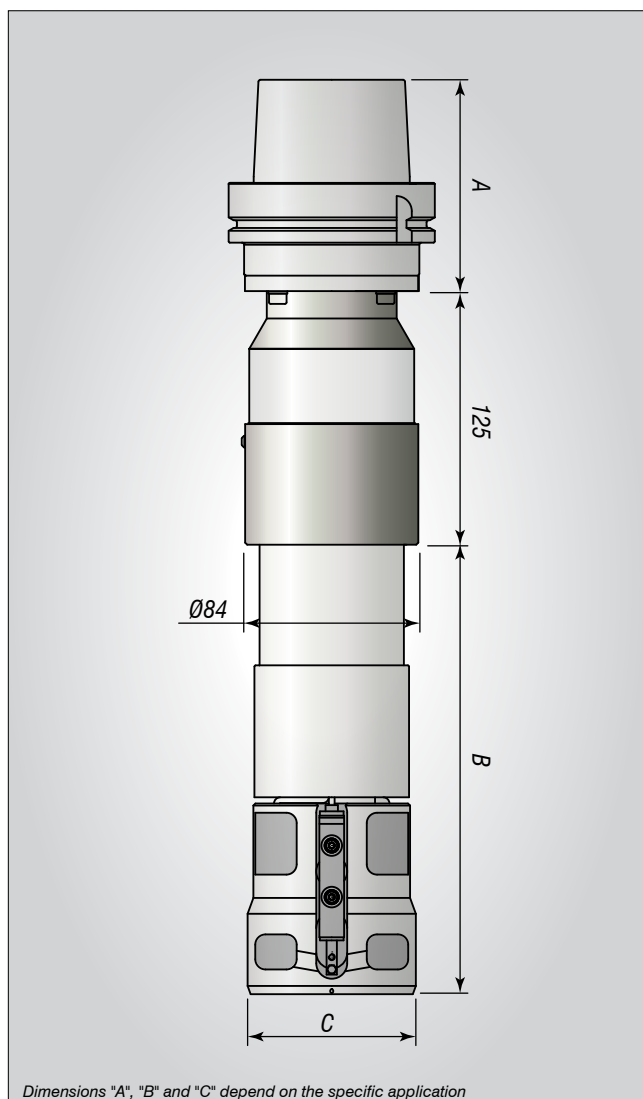
- Parts checked directly inside the machine environment
- High level of customisation to meet all possible customer needs
- Performs both dimensional measurements (diameter) and shape measurements (ovality and cylindricity)
- Frontal protection system
- Equipped with cleaning air
- Fully automatic cycle management
- Clear, immediate result display



GROB-WERKE GmbH & Co. KG

## WRG80

WRG80 is the most commonly adopted solution. It features a larger transmitter, which gives the system a strong structure, making it ideal for gauges with significant lengths and diameters. It can manage up to 8 transducers for a multi-section configuration, which considerably reduces the cycle time.

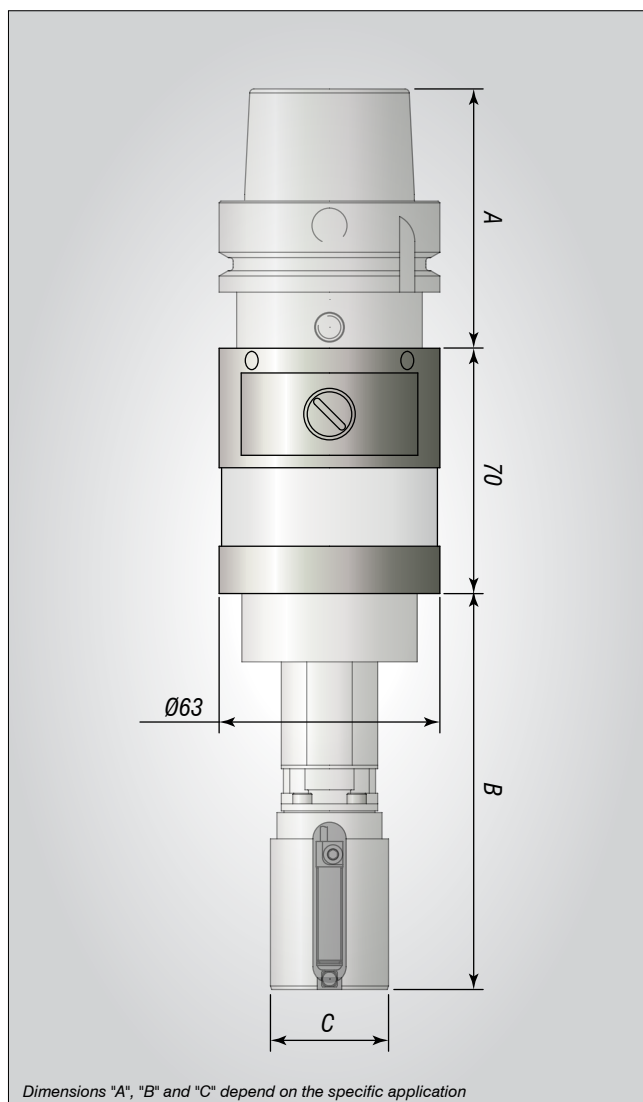


MEASURABLE Ø*	20-200 mm
REPEATABILITY <i>4σ with Ra ≤ 0.8 μm</i>	≤ 1 μm for Ø < 75 mm ≤ 1,5 μm for Ø > 75 mm
REPEATABILITY <i>4σ with Ra &gt; 0.8 μm</i>	≤ 1,5 μm for Ø < 75 mm ≤ 2 μm for Ø > 75 mm
MEASURING RANGE	1.5 mm max diameter
NUMBER OF TRANSDUCERS	up to 8
BATTERY	9V U9VL format lithium (LiMnO <sub>2</sub> )
BATTERY LIFE**	depends on the measuring cycle
MAX ACCELERATION***	5 G
TRANSMISSION TYPE	multichannel radio
TRANSMISSION DISTANCE	15 m
PROTECTION RATING	IP67

\* for through holes  
 \*\* refer to the product manual  
 \*\*\* for standard length gauges

## WRG60

Because of its compact size, the WRG60 is the solution chosen when the overall size limits the application. It can manage up to 4 transducers and is mechanically very strong.

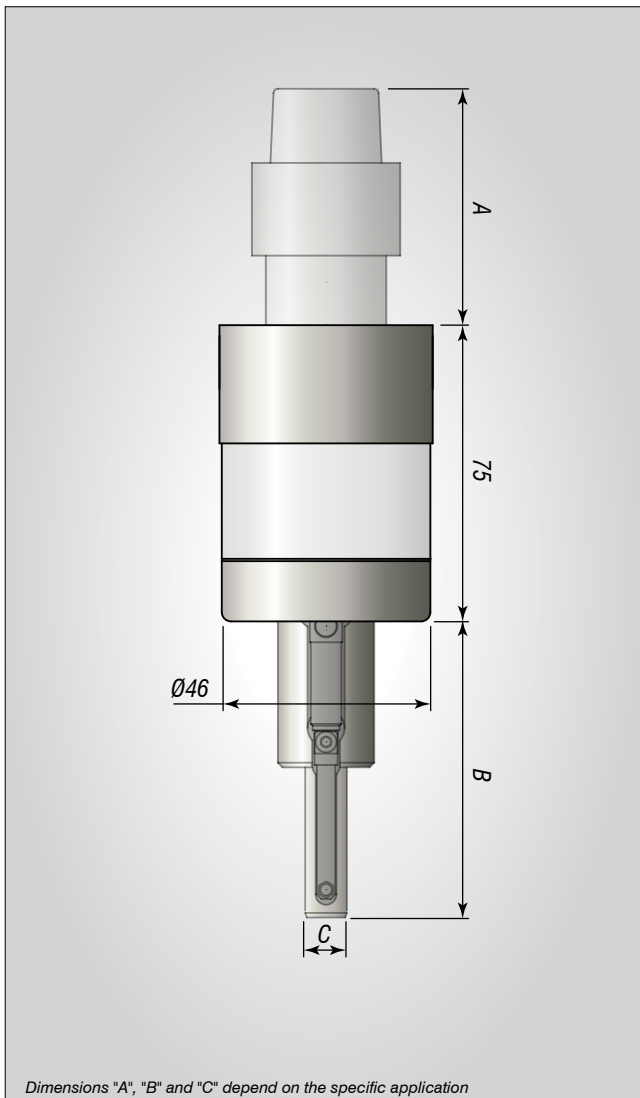


MEASURABLE Ø*	20-200 mm
REPEATABILITY <i>4σ with Ra ≤ 0.8 μm</i>	≤ 1 μm for Ø < 75 mm ≤ 1,5 μm for Ø > 75 mm
REPEATABILITY <i>4σ with Ra &gt; 0.8 μm</i>	≤ 1,5 μm for Ø < 75 mm ≤ 2 μm for Ø > 75 mm
MEASURING RANGE	1.5 mm max diameter
NUMBER OF TRANSDUCERS	up to 4
BATTERY	Two 3V CR123A format lithium batteries (LiMnO <sub>2</sub> )
BATTERY LIFE**	depends on the measuring cycle
MAX ACCELERATION***	5 G
TRANSMISSION TYPE	multichannel radio
TRANSMISSION DISTANCE	15 m
PROTECTION RATING	IP67

\* for through holes  
\*\* refer to the product manual  
\*\*\* for standard length gauges

## WRG45

WRG45 is the ultra-compact solution used in special cases. It can manage up to 2 transducers.



MEASURABLE Ø*	depends on the application
REPEATABILITY 4σ with Ra ≤ 0.8 μm	≤ 1 μm for Ø < 75 mm
REPEATABILITY 4σ with Ra > 0.8 μm	≤ 1,5 μm for Ø < 75 mm
NUMBER OF TRANSDUCERS	up to 2
BATTERY	Two 3V CR2 format lithium batteries (LiMnO2)
BATTERY LIFE**	depends on the measuring cycle
MAX ACCELERATION***	5 G
TRANSMISSION TYPE	multichannel radio
TRANSMISSION DISTANCE	15 m
PROTECTION RATING	IP67

\* special applications, contact the nearest Marposs Office

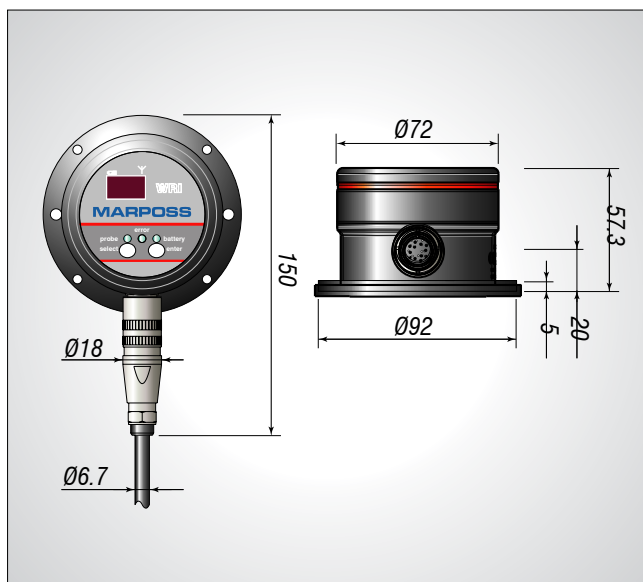
\*\* refer to the product manual

\*\*\* for standard length gauges

## WRI Receiver

The receiver with integrated WRI interface receives the measurement data from the WRG and manages the measuring cycles by interfacing with the machine tool logic through a Marpo E9066 or P7 electronic unit.

It also comes with a practical, 4-digit display that, together with the remote control unit, make it easy to program. The receiver can be supplied fastened directly to the wall of the machine with a dedicated mount, or alternatively it can be equipped with a magnetic clamp for quick installation.



POWER SUPPLY	13.5 - 30 Vdc max current 100 mA Power consumption 1 W	
RS232 SERIAL INTERFACE	Isolated	MEASURE MEASUREMENT CYCLE MANAGEMENT
OUTPUT SIGNALS <i>(may be set to N.C. or N.O. with the exception of the error, which is always set to N.C.)</i>	Solid state relay (SSR) 4 - 30 V 40 mA	OUTPUT 1 (TOUCH/RECOIL)  OUTPUT 2 (TOUCH/RECOIL/BATTERY DISCHARGED)  ERROR
Protection rating <i>(Standard IEC 60529)</i>		IP68

## Industrial Service PC

The machine interacts with the CNC machine through a Marposs electronic service unit, which is typically either E9066 or P7. The Marposs propriety software can automatically manage the custom measuring cycle for each application, display the measurement result, process the shape measurements, collect production statistics and communicate the measurement status to the CNC machine.

### E9066T

- Fanless, long-term durability and reliability
- INTEL® Core™-I processors and Microsoft® Windows®10-IoT operating systems.
- Integrated touchscreen and graphic display
- IP66 (panel versions)
- Equipped with integrated UPS and battery pack
- Can be panel-mounted or supplied in an IP54 case
- Q-DAS compatible (AQDEF certified)
- Multiple communication ports, such as LAN, USB, serial
- Digital I/O (optoisolated) & Profibus interface



### P7

- Graphic display
- IP54
- Cabinet or rack versions available
- Digital I/O (optoisolated) & Profibus interface



## System components


6871904000	WRG80 transmitter
P1SRW00060	WRG60 transmitter
6871904100	WRG45 transmitter
4162100302	U9VL type lithium battery
4162100303	CR123A type lithium battery
4162100306	CR2 type lithium battery
8304890130	WRI with lateral connector
6871015717	remote control
6180890106	15m WRI-J Box cable
6180890107	30m WRI-J Box cable
6180890108	5m WRI-J Box cable
6180890109	20m WRI-J Box cable
6180890110	10m WRI-J Box cable
10T0439059	3m stainless steel metal sheath
6134232000	mounting bracket for WRI
8304890110	Junction box
6738698004	5m junction box - E9066 cable
6738698006	10m junction box - E9066 cable
6738098025	5m junction box - P7 cable



[www.marpo.com](http://www.marpo.com)

*For a full list of address locations, please consult the Marpo official website*

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