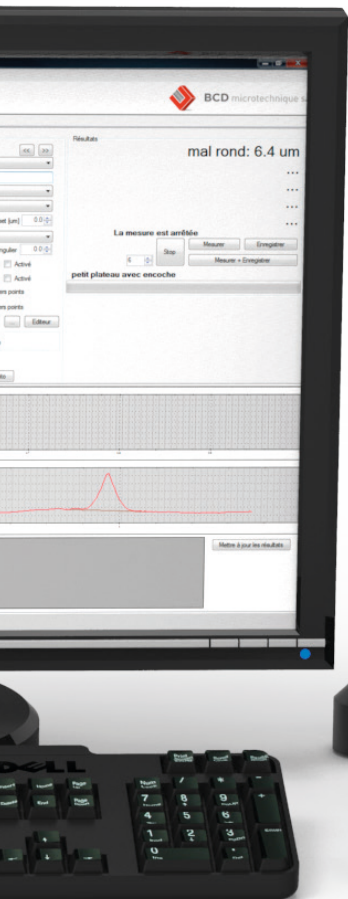




**BCD**  
microtechnique SA



# Optimes GR20s

**Efficient solution  
to measure watch  
wheels**

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## The GR20s instrument

Based on the proven Optimes technology, the GR20s offers precision, efficiency and a user-friendly interface to measure watch wheels. It is specially indicated to measure radial and axial beatings, diameter, division...

The Optimes GR20s works according to the outline projector principle, but with a optical design that provides a great insensitivity to focus. It can measure small parts With very thin details (0.01 mm).

The GR20s has two high resolution orthogonal sensors, giving diameter and position measurements at 100 Hz. The GR20s can be synchronized with different types of drive.

Electronics are incorporated into the column of the instrument. A single USB cable connects to the PC.



## The Rev Master software

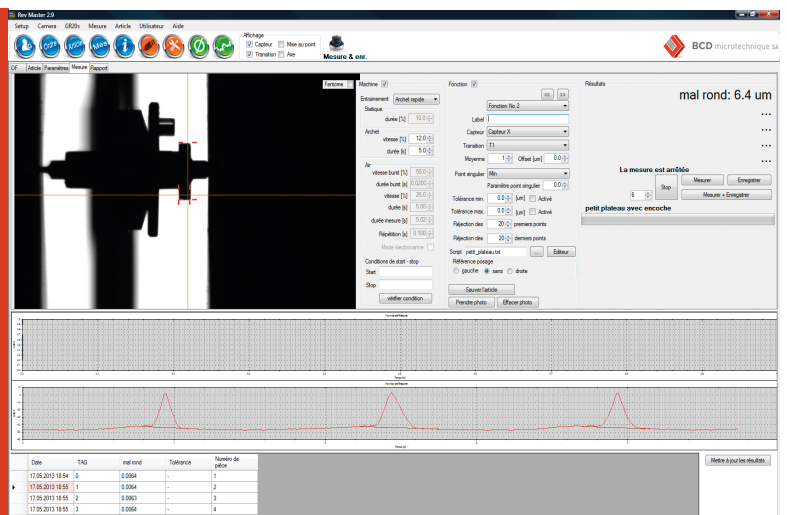


The Rev Master software allows the control of the GR20s and offers a set of analytical, programming articles and users' management functions. Rev Master can be installed without license as many times as desired. Configuration files, articles' databases and session files can also be shared over a network.

Rev Master is particularly easy to use: for example, a simple double click on a file loads a predefined measurement session that configures the GR20s. Rev Master has also advanced measures analysis, visualization and programming articles functions, available with or without the instrument connected to the PC.

## The strengths

- Remote maintenance and support
- Management of the measurements and production orders
- Real-time measurements chart





## Holders and drive options

All GR20 holders and drives are perfectly compatible with the GR20s. Well-known by experienced users of the GR20, o'ring drive offers high accuracy and regularity because it is completely insensitive to shape defects of the o'ring.

Optionally, the air flow drive allows the measurement of all the parts that do not have the possibility to be driven by an o'ring due to the lack of space. For wheels without axis, a holder is also available.

### The range of drives

- Fast motorized bow
- Slow motorized bow
- Airflow drive

### The range of holders

- V-shaped standard holder
- Cantilevered holder
- Holder for measuring wheel without axis
- Holder for pins

V-shaped holders are equipped with 12/100 thick sapphires, and therefore don't damage parts and allow them to rotate freely.

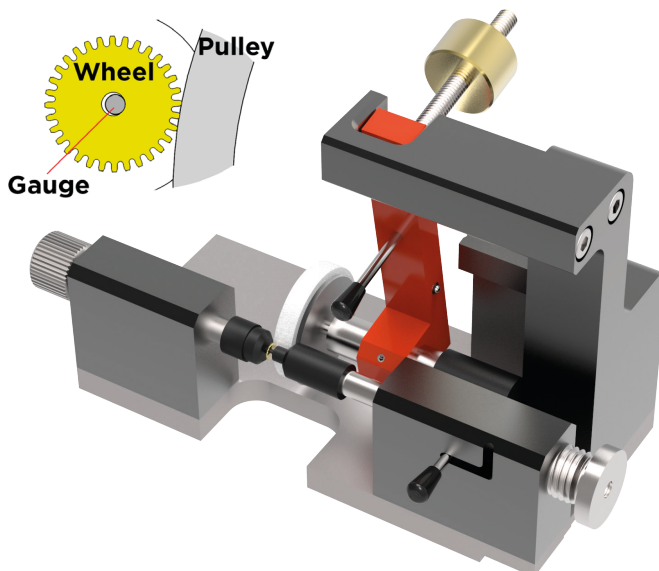
The motorised bow drive comes in two versions, a slow and a fast one, which allows to adapt the speed to the type of part to be measured.

The air-jet drive includes an integrated micro-pump and allows a fine-tuning setup of the air flow for the most flexible use.

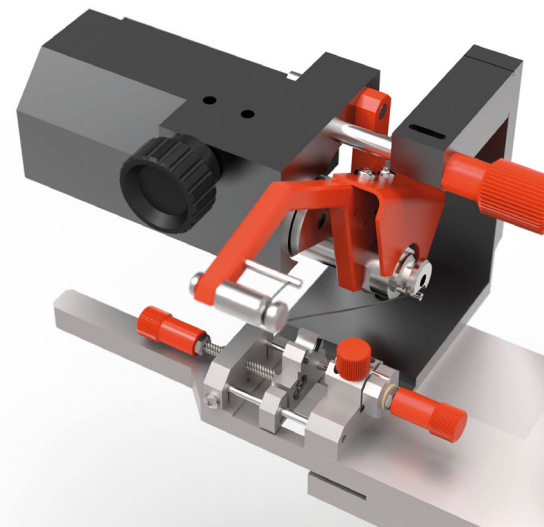
For measuring wheels without axes, the part is held on a gauge with a slightly smaller diameter than the wheel hole. The pulley hold the wheel hole against the gauge, which eliminates clearance between the two. Compared to solutions between centers, measurement of points alignment error and bevel of the wheel is avoided.

All these holders and drives are interchangeable. Only a few seconds are required to change a holder on the device.

*Holder for wheels without axis*



*Motorized bow drive with standard V-shaped holder*



**GR20s: accuracy, user-friendliness and efficiency for measuring watch wheels**



# Functions Summary



## Measured quantities

- Simultaneous measurement on the X and Y axis in a field of 3.5 mm x 3.5 mm
- Diameter and part edges
- Measuring frequency: 100 [Hz]
- Measurement resolution: 0.16 [μm]

## Calculated quantities

- Shape defects like axial and radial beatings.
- Minimum, maximum, average diameter, ...
- Edge and axis position of parts (division ...)
- Tolerance of unilateral and bilateral dimension
- Integrated math functions: min, max, range, average, standard deviation, ...

## Features

- GR20s controlled by 3D mouse
- Users management with access levels
- Measures graphical display window
- Simple results display window
- Parts measurement setup Management
- Management of production orders
- Custom measurement report creation

## Typical applications

- Axial and radial beatings simultaneous measurement
- Diameter measurement
- Division measurement

## Specifications

Type		Value
Consumption	Operating	15 [W]
	Stand-by	2 [W]
Weight		6 kg
Dimensions		520 x 260 x 480 mm
Power supply		15 V 1A
		90 to 240 V AC
Temperature	In operation	10-40 C°
Humidity	In operation	Max 80%
Resolution	DP20 Sensor	0.16 [μm]
Repeatability	Diameter measurement (std deviation   Range)	0.2 [μm]   1.0 [μm]
	Axial and radial (std deviation   Range)	0.2 [μm]   2.5 [μm]
Absolute precision	Diameter	+/- 0.9 [μm]
	Axial and radial beatings (typical)	+/- 1 [μm]

