

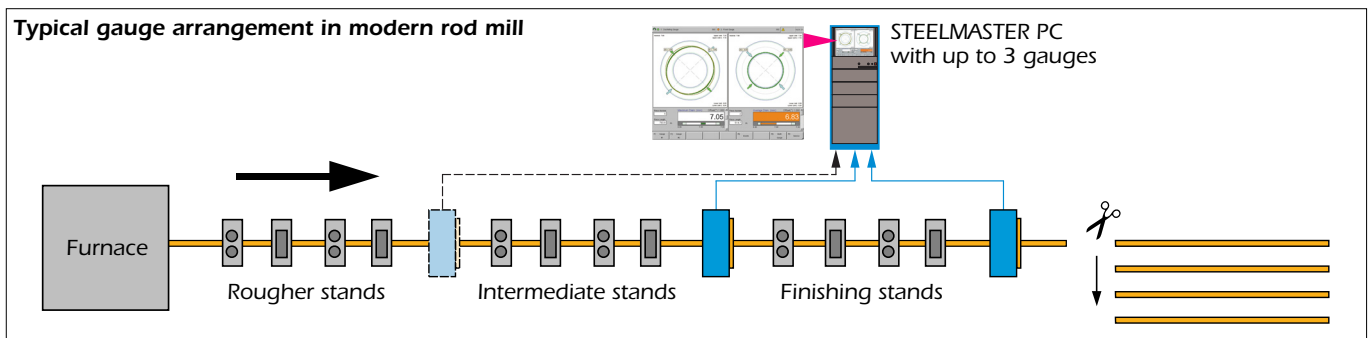
# Multi-Mode Diameter Gauge For Bar, Profile and Pipe Mills

**STEELMASTER SMO 310-S2-NT**  
for Diameters / Dimensions up to approx. 280 mm (11 in.)

Hi-tech laser technology and a unique protection system make this system superior to ordinary optical systems in terms of accuracy and reliability under steel mill conditions.

**For steel bar rolling mills**, after finishing, pre-finishing, intermediate or roughing.  
**For seamless tube/pipe mills**, after sizing or in intermediate locations.

- Temperatures up to 1200° C (2192° F)
- Round, hexagonal, square rectangles, flats, angles etc.
- Diameters from 5 to approx. 280 mm (.4 to 11 in.)
- Speed = unlimited

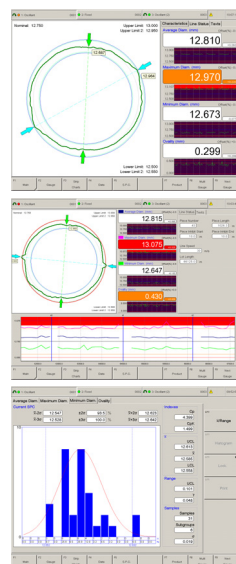


## Outstanding Advantages

- Three measuring modes at choice:
  - A) Static mode shows evolution over 1 billet
  - B) Oscillating mode shows full section of profile
  - C) Selective oscillation over programmable angle shows critical dimensions, especially for non-round products
- Very reliable thanks to unique protection design
- Large measuring field, uncritical guiding
- Two measuring heads under 90° in same plane i.e. ovality is known any time and all diameters captured within only 90° rotation
- Measures rounds and non-round profiles, irrespective of product twist
- Double safety and backup
- Higher immunity to mill conditions than conventional systems
- Higher accuracy than conventional systems
- No wear, close-to-zero maintenance



STEELMASTER PC system in cabinet



Typical screens



Measuring unit

## Standard System

### Measuring Unit

A robust, welded structure ensures protection of the two laser heads against environmental influences such as dust, scale, splashes and heat. It guarantees reliable functioning thanks to an air purging system at the apertures.

The structure is equipped with:

- Drive system for oscillation over 90°
- 4 sealed compartments for laser heads
- 4 protection glasses with thermal coating
- Temperature control system
- 4 air-purged laser apertures
- 1 connection panel for electricals, signals, air, water
- Water-cooled tube in center of unit

### 2 Measuring Heads ODAC 310J

- 1 Emitter / 1 Receiver for each unit
- Light source: visible laser, class II
- Principle: Laser scanning

### STEELMASTER PC Data Processing and Display System comprising:

- Industrial PC
- UPS unit
- Telephone modem
- High resolution 17" color flat screen
- Built into cabinet or mounted separately if required
- RS-232 outputs for computer communication and printer
- ETHERNET network board (protocol = optional)
- Graphic section display
- Numerical data display
- Statistical screens incl. SPC
- Trend displays

### Filter / Blower Unit GE 3 / GE 5

For providing filtered air at high volume to purge the laser aperture and for cooling of the measuring unit. To be placed at a cleanest possible location.

### Electronics Cabinet for STEELMASTER PC Heavy duty, 19" floor standing cabinet

- Fan unit
- Keyboard in drawer
- Space for STEELMASTER PC data and display system
- Status and alarm panel
- Power stabilization and distribution
- Space for optional printer

### STEELMASTER Software

The standard screen languages are English, German, French, Spanish, Chinese. The following functions are supported:

- Pre-treatment of the readings from the measuring heads and of an angular encoder.
- Suppression of both ends of each bar/rod
- Computation of diameters, height, width, diagonal, depending on the product
- Display of measurements on a selectable screen, depending product.
- Min./Max. alarms
- Statistics
- Optional Software: For SPC, ETHERNET TCP/IP protocol

## Options

### MULTIGAUGE Extension

For the connection of up to 3 gauges to the same PC unit.

### Temperature Measurement

Pyrometer, interface and software for conversion to cold values (20° C / 68° F).

### Traversing System

For positioning or withdrawing the measuring unit.

### Remote Repeater Screen

For mounting and operation in a harsh industrial environment, up to 150 m (490 ft.) away.

### Remote Giant Display

Box with 3 groups of 4 digits for AVG. OVALITY, MIN or MAX.

### STEELDATABASE Software

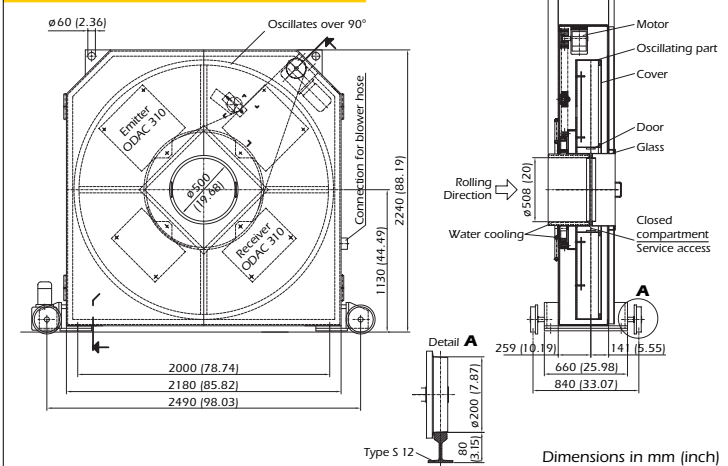
For archiving and viewing of the measuring data.

## Main Data

Measuring principle	Laser scanning, 2 lasers under 90° oscillating through 90°
Oscillation time	Approx. 4 s / 90°
Laser	Visible laser, class II
Measuring field	310 x 310 mm (12.2 x 12.2 in.)
Scanning rate	2 x 1000/s
Repeatability (static)	± 0.005 mm ( .0002 in.)
Processor	Real time preprocessor plus industrial PC as user interface. VGA color screen
Data processing	Full real time presentation plus SPC statistics, control charts, data logging, computer communication

▪ Technical specifications are subject to change without notice

## Dimensions



▶ The above drawing shows the measuring unit with the traversing system; the latter is an option!

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