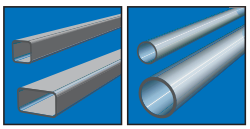


New Size and Shape Gauges for Large Pipe and Bar Mills

STEELMASTER Models SMS 550 and SMO 550 for Diameters up to approx. 500 mm (20 in.).
▶ With ODAC® 550 High-Accuracy Large Field Scanners without a dead zone.

Standard Models

SMS 550-S2
- Static
- 2 axes under 90°

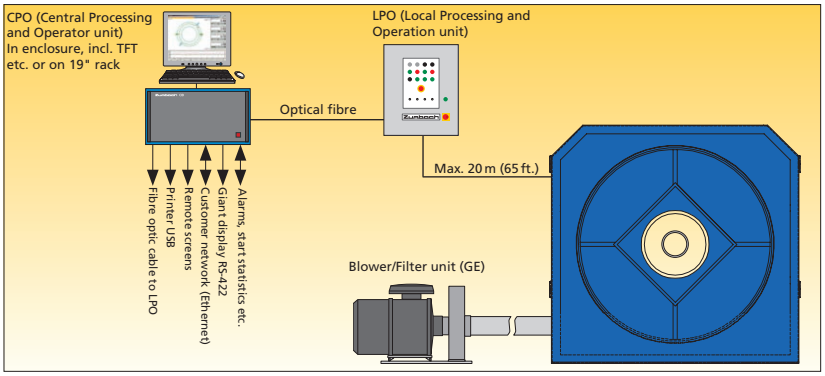
SMO 550-S2
- Oscillating or static
- 2 axes under 90°
- Can work in static (orientable) or in oscillating mode

Special models on request

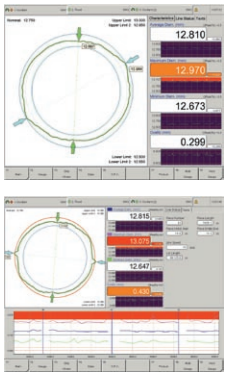
For seamless pipe and other products
- Temperatures up to 1200° C (2192° F)
- Pipe, Rounds, squares, rectangles, flats, angles etc.
- Diameters from 10 to approx. 500 mm (.4 to approx. 20 in.)
- Speed = unlimited

Measurement Solutions
- Sizing mills, 2 or 3 roll
- SRM mills
- Mandrel mills
- Straighteners
- Conveyors

System Overview



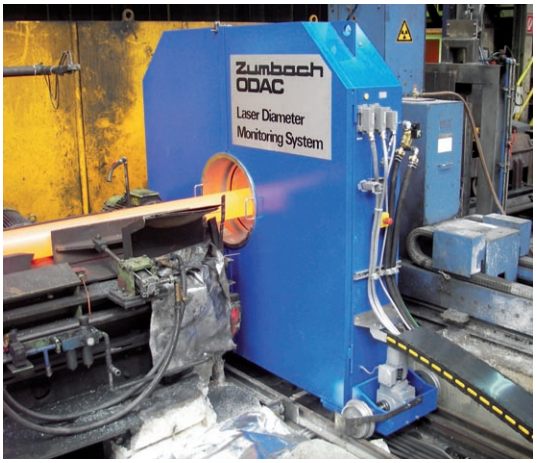
Typical screens



Outstanding Advantages

- Several measuring modes (for SMO):
  - Static mode shows evolution over 1 pipe
  - Oscillating mode shows full section of pipe
  - Selective oscillation over programmable angle shows critical dimensions
- Unique protection design assures outstanding reliability
- Large measuring field without dead zone
- Two or more measuring heads in same plane
- Not affected by product radiation
- Not affected by pipe position
- Higher immunity to mill conditions than conventional systems
- Higher accuracy than conventional systems
- No wear, close-to-zero maintenance

SMO 550-S2 gauge in assembly.



Oscillating gauge at the exit of a seamless pipe mill.

Standard System

Measuring Unit
A robust, welded structure ensures protection of the laser heads against environmental influences such as dust, scale, splashes and heat. A powerful air purging system at the aperture guarantees reliable operation. The structure is equipped with:
- Drive system for oscillation up to 90°
- 2 Service doors
- Secondary protection glasses for each head
- Temperature control system
- Automatic shutter (laser aperture)
- Connection panel for electrics, signals, air, water
- Water-cooled tube in center of unit

Measuring Heads ODAC 550
- 1 emitter / 1 receiver for each axis
- Large measuring field of 550 mm (21.65 in.) without dead zone
- Extreme scan velocity (Mach 3)
- 1000 measurements/s
- Visible laser, class II, no safety issues
- Principle: Laser scanning

CPO Central Processing and Operator Unit
- Industrial, sealed PC, operates without hard disk
- OS Software on Flash disk
- Operating system = Windows XP embedded
- Fibre optics cable to LPO
- ETHERNET TCP/IP for customer network
- Optional cabinet and peripherals

► Up to 4 measuring units can be connected and processed simultaneously.

STEELMASTER Software
The standard screen languages are English, German, French, Spanish and Chinese. The following functions are supported:
- Preprocessing of the readings from the measuring heads and of an angular encoder in the LPO unit
- Suppression of both ends of each pipe
- Computation of ovality and polygonality
- Display of measurements on a selectable screen, product specific.
- Min./Max. alarms for selectable parameters
- Statistics
- Optional software: for SPC, ETHERNET TCP/IP Host protocol
- EPM (Enhanced Profile Measurement) software for polygonal or asymmetric shapes (only with 3 or more axes)

LPO Local Processing and Operation Unit
- Installation max. 20 m (65 ft.) from the measuring unit
- Preprocessing of all measurements and angles
- PLC for auxiliary functions (service, cooling, traversing etc.)
- Fibre optics transmission to CPO

Filter / Blower Unit GE 3 (2 units)
- Providing filtered air at high volume for cooling of the measuring unit and for purging the laser aperture
- Power = 4 kW, 1500 m^3/h (52'972 $ft.^3$/h)
- 2 units operating in parallel

Options

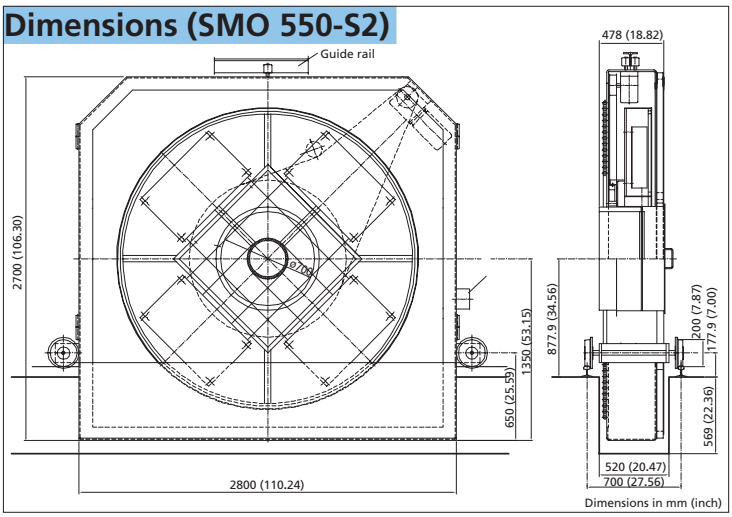
- **Temperature Measurement**
  Pyrometer, interface and software for conversion to cold values (20° C / 68° F).
- **Traversing System**
  For positioning or withdrawing of the measuring unit.
- **Height Adjustment**
  For compensation of center line height changes.
- **Remote Repeater Screen**
  Standing up to a harsh industrial environment.
- **Remote Giant Display**
  Box with 3 groups of 5 digits for AVG. OVALITY, MIN or MAX (configurable).
- **STEELDATABASE Software (SDB)**
  For archiving and reviewing of the measurement data.

Main Data

Measuring principle	Tangential laser scanning
Laser	Visible laser, class II
Measuring field	550 mm (21.65 in.) each axis
Measuring rate	1000/s each axis
Scan speed	Over 1000 m/s (3000 ft./s)
Repeatability (static)	Up to ± 0.005 mm (.0002 in.)*
Accuracy (dynamic)	Up to ± 0.1 mm (.004 in.)*
Number of axes	Standard = 2, on request: 3 or 4
For SMO 550 only:	
Oscillation angle	Adjustable 10...90° (CW or CCW)
Oscillation time	Approx. 1...4 seconds (CW or CCW)

* Depending on model and version

Dimensions (SMO 550-S2)



Note: Dimensions are approximate only

• Technical specifications are subject to change without notice

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