

## MarShaft. HELIO-PAN SNC

## Technical data

<b>Max. workpiece weight</b>	30 kg for center height 100 mm 80 kg for center height 150 mm
<b>Measuring range length</b>	0 mm to 700 mm / 0 mm to 1100 mm
<b>Measuring range outside diameter</b>	0 mm to 120 mm / 0 mm to 220 mm
<b>Max. throw to be measured</b>	100 mm
<b>Center height</b>	100 mm / 150 mm
<b>Measuring blades probe and caliper</b>	1 mm x 5 mm
<b>Mount for workpieces</b>	Clamping between centers
<b>Predepositing of workpieces</b>	Protection V-blocks, optional V-block for predepositing of workpieces
<b>Need of space (W x D x H)</b>	
Machine	2060 mm x 920 mm x 1750 mm / 2460 mm x 920 mm x 1750 mm
Controller box	600 mm x 800 mm x 2200 mm
<b>Weight</b>	Approx. 900 kg / 1100 kg
<b>Electric power</b>	230 V / 1200 W / 50 Hz
<b>Air pressure</b>	6 bar
<b>Colours</b>	White aluminium RAL9006

## Error limits

Measuring task	Measuring range (mm)	Error limit **	Measuring time/feature (s)*
<b>Length tactile</b>	700/1100***	2 + (L/100) µm	3
<b>Diameter tactile</b> DMS 220 SNC	220	1 + (L/100) µm	2
<b>Diameter tactile</b> DMS 120 SNC	120	0,5 + (L/100) µm	2
<b>Axial run-out</b>		1,5 µm	4
<b>Run-out</b>		1,0 µm	4
<b>Roundness</b>		1,0 µm	4
<b>Angle</b> (L = meas. range)		0,01°	

\* Measuring times are not binding, as they are independent of the measuring task and the workpiece geometry.

\*\* Proof on certificated Mahr Calibration Standards.

Form errors of the center bores of the workpieces take negative effects on form measurements.

\*\*\*Dependent of configuration of the measuring machine.

## Mahr GmbH Göttingen

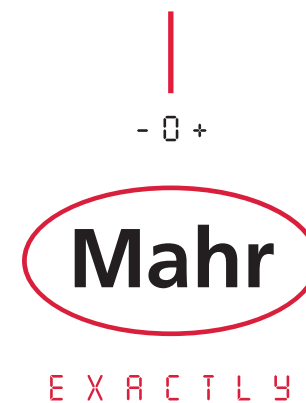
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## HELIO-PAN SNC Shaft Measuring Center



► | The flexible NC controlled shaft measuring machine **HELIO-PAN SNC** is specially concipated for the use in the production area. A high measuring speed and accuracy as well as simpliest operations are remarkable for the measuring machine.

Nearly all measuring tasks in the soft machining method (turning), as well as narrow measures and form tolerances in the area of hard machining method (grinding) can be covered. | ◀

## MarShaft. HELIO-PAN SNC

### Description

Shaft Measuring Center **HELIO-PAN SNC** consisting of

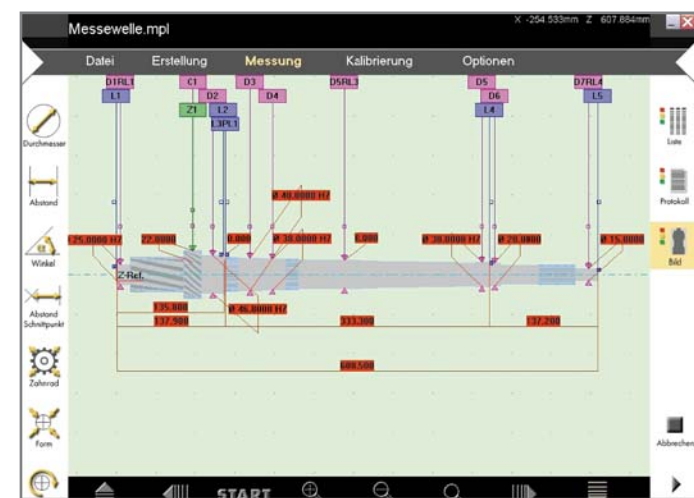
#### Basic instrument

Stable steel bed (center height 100 mm) or granite bed (center height 150 mm) with mounted high precision guide rails.

Guide rails and length measuring system are protected with a bellow cover for surrounding influences. Horizontal clamping surface in stainless, hardened construction with 10/14 mm damping and guidance groove for clamping elements. All measuring modules are mounted on the measuring carriage, driving automatically the measuring positions corresponding to the measuring tasks.

#### Measuring modules

- LMS 100 SNC**  
 Switching, measuring length measuring station with servo drive for measuring of axial measures, as well as axial run-out measures.
- DMS 120 SNC**  
 Diameter measuring station with servo drive. Measuring range 120 mm for diameter, roundness, run-out.
- DMS 220 SNC** (alternatively to DMS 220 SNC against extra price)  
 Diameter measuring station with 2 servo drives. Measuring probe and measuring caliper can drive independent of each other. Measuring range 220 mm for diameter, roundness, run-out.
- Reception of workpiece**  
 The workpiece clamping is made between centers, center height 100 mm/150 mm.
- PMS 100 SNC/150 SNC**  
 Precision measuring spindle with angle measuring system. Run-out accuracy of the measuring spindle is < 0.001 mm.
- Tailstock center height 100 mm/150 mm**  
 With adjustable probe, internal cone MK2. Probe can be blocked for lateral manual clamping.
- Center point rotating**  
 True running accuracy 0.002 mm. Center dia. 2 to 20 mm.
- Predepositioning V-blocks**  
 For optimal handling predepositioning V-blocks are available, on which the operator deposits the workpiece.
- Pneumatic tailstock** (only for center height 150mm)  
 The pneumatic tailstock with interchangeable precision centering unit is situated at the right side of the instrument bed. Run-out accuracy of the tailstock spindle < 0.001 mm  
 Clamping throw 50 mm  
 Center height 150 mm  
 The tailstock can be displaced easily via an air cushion in the machine axis.



## MarShaft. HELIO-PAN SNC

#### Protection machine cover

Stable protection machine cover in modern design with transparent security door.

#### Electronic controller box

All electrical components are stowed away in the 19" electronic controller box. Power electronics, Host computer, CD drive, 3 1/2" disk drive, interface RS 232, graphic chart, Keyboard with mouse pad, CNC control for 4 NC axis, Ink jet colour printer HP Deskjet, 15" TFT colour screen.

#### Worker box

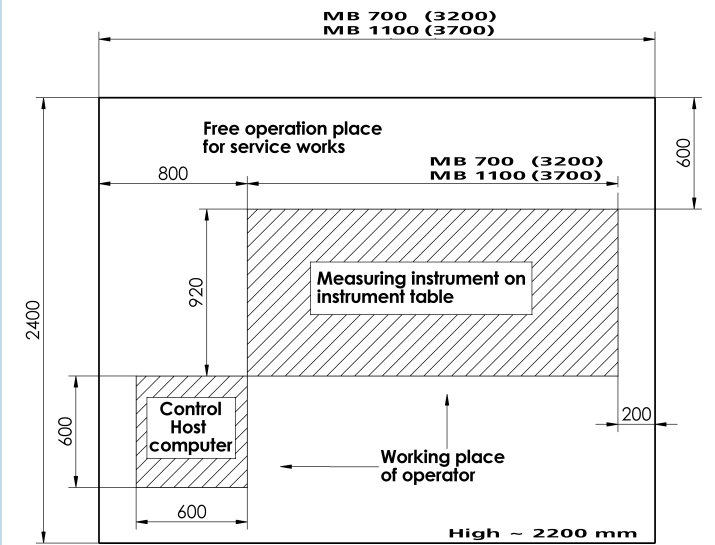
Small keyboard additionally with joystick, emergency stop and "OK" key, on which all functions are available for the creation of a Teach-In program.

#### Software

The complete measuring and control software is installed on the host computer. Operation system Win NT. The measuring software contains all possibilities of the generation of measuring programs. The measuring results are disposed for additional processing in a QS-STAT file.

#### Programming

- For programming the measuring sequences three procedures are available:
- Programming after the Teach-In procedure.
  - Programming at the measuring machine via parts geometry as dxf file.
  - Programming aside the machine via parts geometry as dxf file.



### Example measuring tasks

- Length
- Run-out
- Run-out referred to workpiece axis
- Run-out Interrupted
- Axial run-out
- Axial run-out referred to workpiece axis
- Axial run-out Interrupted
- Step
- Roundness
- Widths of recesses
- Diameters of recesses
- Outside diameters
- Coaxiality
- Concentricity

\* Diameter measurements:  
\* Measurement of length and axial run-out:

**Option DMS 220 SNC**  
**Option LMS 100 SNC**

