

Piezoelectric Force Sensor

Axial Measuring Dowel MDA 20

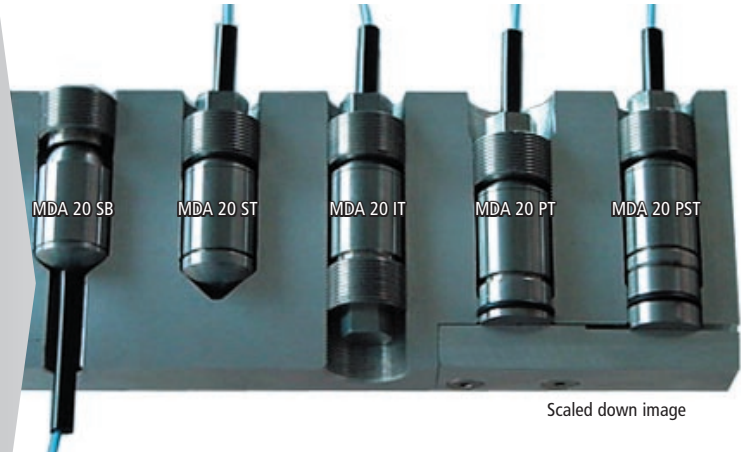
**Tool Monitoring,
Breakage Detection,
Collision Protection**

Wide measuring range

High signal dynamics

**Very short
response times**

**Different models
available**



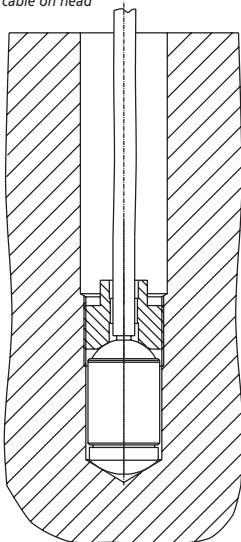
Scaled down image

The Axial Measuring Dowel is a piezoelectric force sensor which measures forces in longitudinal direction proportional to the load on the installed machine components.

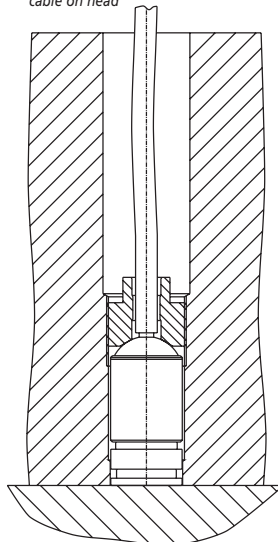
The sensor is designed to catch any overload, collision, tool breakage or missing tool.

According to the available installation options we offer different models:

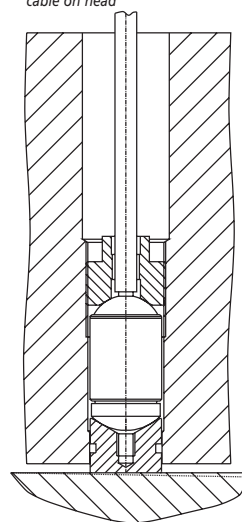
Axial Measuring Dowel
MDA 20 ST
spherical,
cable on head



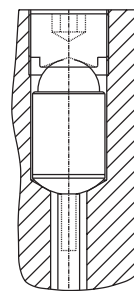
Axial Measuring Dowel
MDA 20 PT
plane,
cable on head



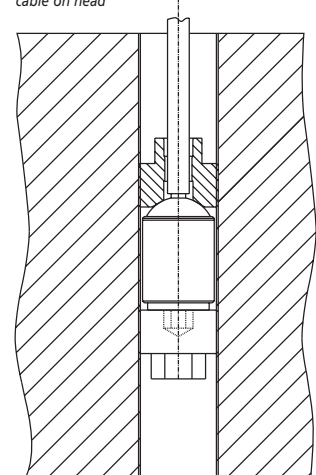
Axial Measuring Dowel
MDA 20 PST
plane, with pivot joint
cable on head



Axial Measuring Dowel
MDA 20 SB
spherical,
cable on base



Axial Measuring Dowel
MDA 20 IT
internal,
cable on head



Standard solution, recommended for most cases.

Cable-sided preload screw – pre-loading by tubular wrench.

If possible, this solution should be preferred, as it generates superior signals.

Cable-sided preload screw – pre-loading by tubular wrench.

If no parallel contact can be achieved between machine parts, this solution has to be chosen. Its pivoting joint will compensate angle errors.

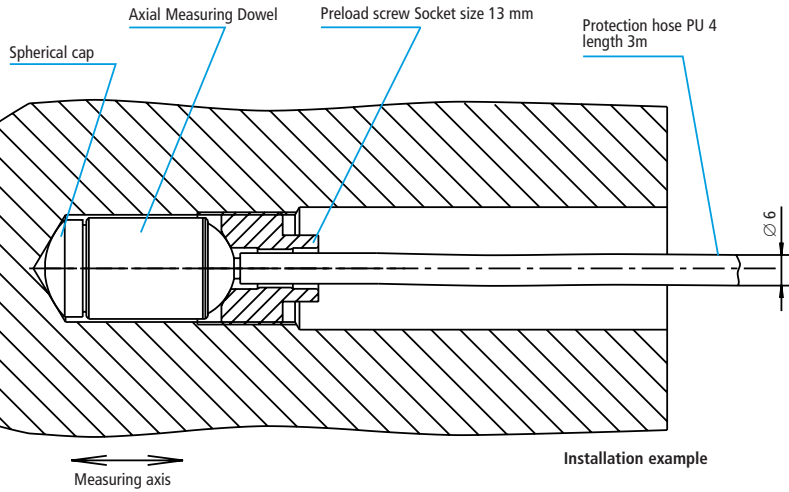
Cable-sided preload screw – pre-loading by tubular wrench.

Preload screw opposite to cable – pre-loading with Allen key.

This solution enables subsequent shifting of the installation position of the Measuring Dowel.

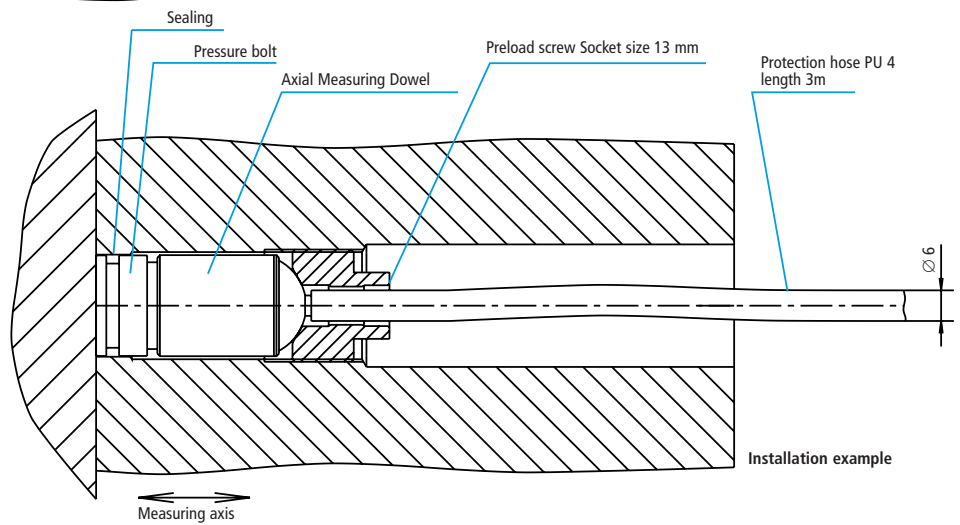
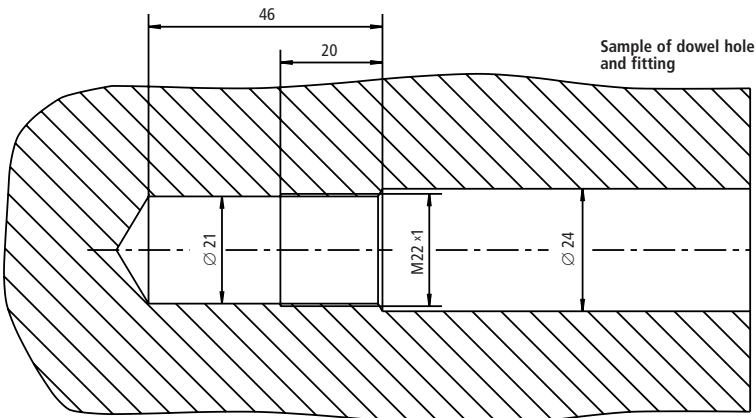
Cable-sided preload screw - pre-loading by tubular wrench; it is also possible to achieve pre-load with the opposing positioning screw.

Axial Measuring Dowel MDA 20



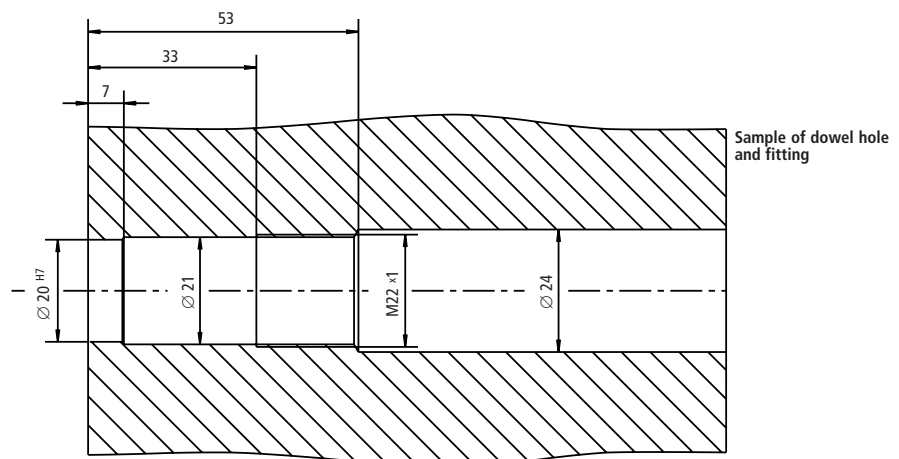
Axial Measuring Dowel MDA 20 ST, spherical, cable topside

Part No.: **0.SH.MDA.20ST**

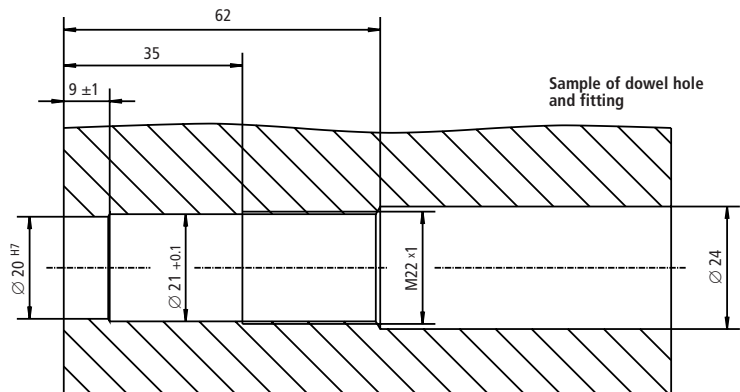
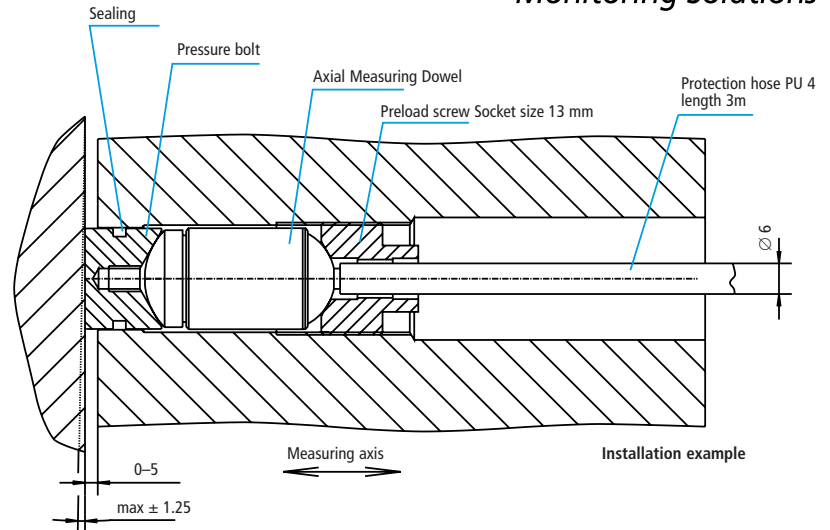


Axial Measuring Dowel MDA 20 PT, plane, cable topside

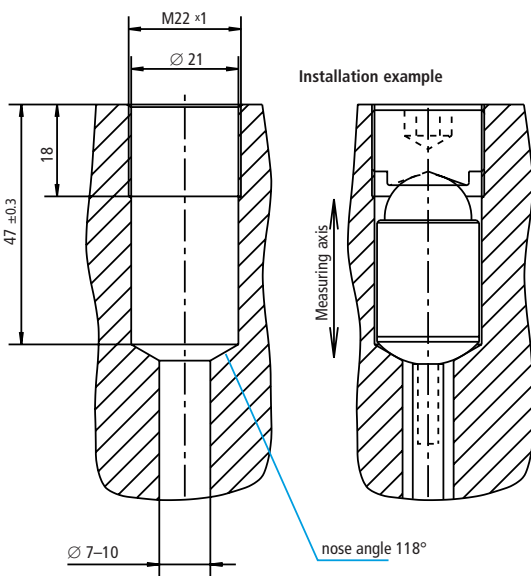
Part No.: **0.SH.MDA.20PT**



Axial Measuring Dowel MDA 20 PST,
plane, with joint, cable topside
Part No.: **0.SH.MDA.20PST**

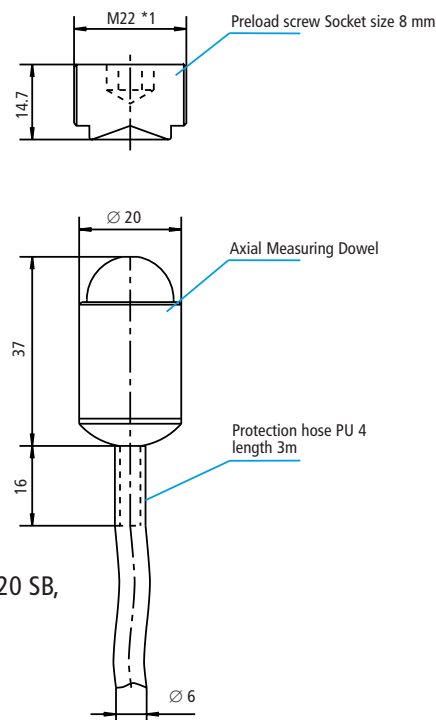


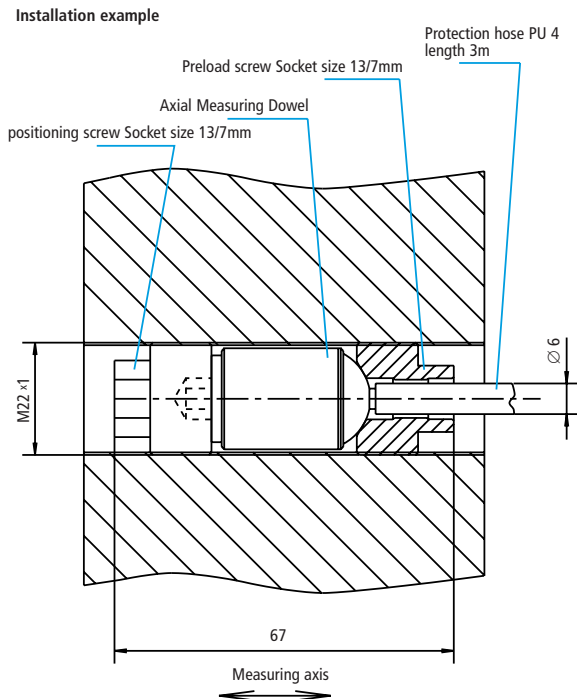
Sample of dowel hole and fitting



Axial Measuring Dowel MDA 20 SB,
spherical, cable on base

Part No.: **0.SH.MDA.20SB**





Axial Measuring Dowel MDA 20 IT,
internal, cable topside

Part No.: **0.SH.MDA.20IT**

Installation notes for all Measuring Dowels

All involved surfaces must be clean.

Make sure, that in case of any coolant intruding, the sensor mounting place should drain the liquid itself via an opening or a drill hole!

The protection hose has to be fixed on at least two locations on the machine in order to avoid that any forces can be transferred via the protection hose to the sensor.

For cleaning of sensor, cable, or protection hose alcohol-based cleaning fluids have to be used, **never use acetone-containing agents.**

Scope of delivery

Sensor with Preload screw resp. pressure bolt/positioning screw, screw union kit for cable input at charge amplifier, 1 copy of operating manual.

Cable configuration

PPU protective hose, dia. 7 mm, minimum radius of curvature $R = 15$ mm, standard length $L = 3$ m, can be cut to length, longer cables on request. If the sensor location is exposed to high mechanical stress (e.g. hot chippings) an additional metal braided protection hose should be considered, length 1.3 m.

Part No.: **0.20.805.PHPU4M**

Technical data of Measuring Dowel MDA 20

Measuring range	Fz 0 to 15 kN -7,5 to +7,5 kN pre-loaded with a tightening torque of 12–15 Nm
Sensitivity	Fz -4 pC/N
Temperature range	-30 to +80°C (-22 to 176° F)
Protection class	IP68, resistant against most oils and coolant lubricants
Housing	Chromium-nickel steel