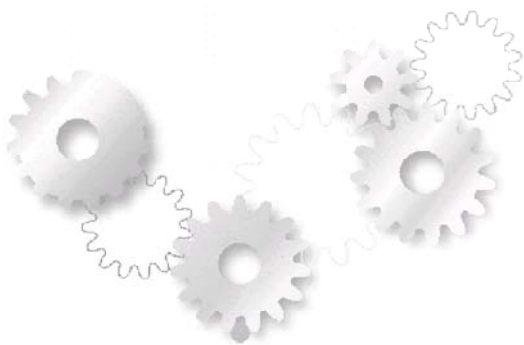




Measuring pins Measuring ball inserts



*A first step to
inspection of size*

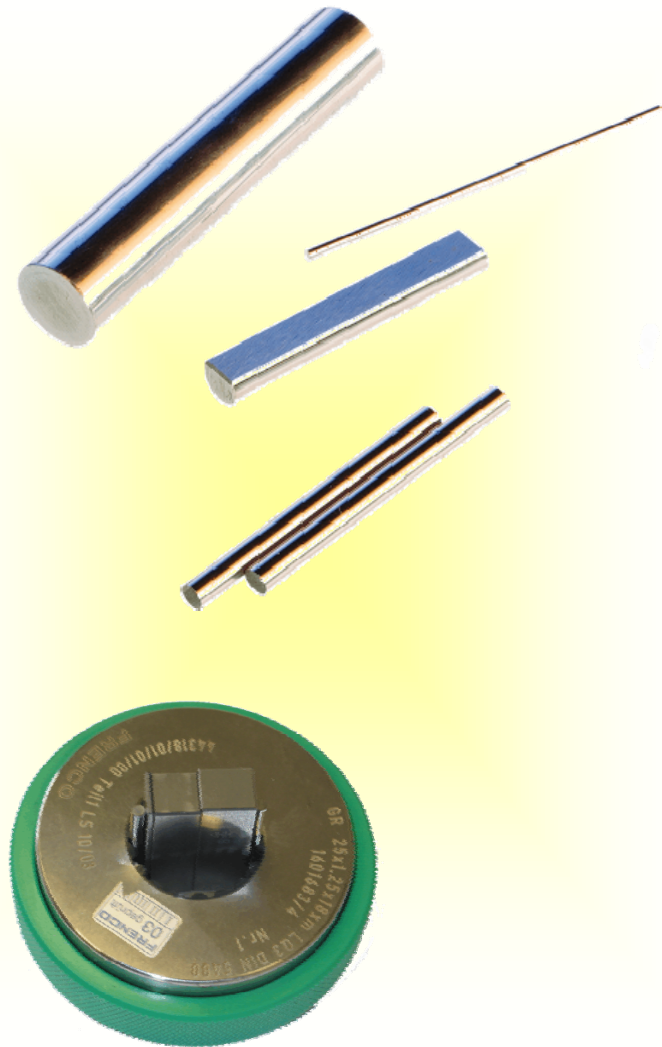


pure
perfection

FRENCO

Measuring pins

Measuring pins are used for size inspections. They are only suitable for spur gears. If the part is very wavy, the measuring pins will contact only on the highest points. Therefore there is difference to the measurement with measuring balls. For precise measurements, as it is required for gages or masters, the real true size of the measuring pin has to be figured out and the dimension to be inspected has to be corrected accordingly. During the use the measuring pins wear. That is why they have to be controlled within the scope of the wear measurement. FRENCO offers measuring pins made of different kind of materials with different accuracy:



Material	Accuracy	Use
steel	$\pm 0,001$ mm	subsidiary parts
tungsten carbide	$\pm 0,001$ mm	precise parts
tungsten carbide	$\pm 0,0005$ mm	gage inspection
tungsten carbide	$\pm 0,0003$ mm	masters and artefacts

Measuring pin and ball inserts

fix measuring pin



measuring ball inset M2,5
without width across flats



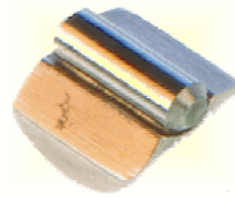
For balls with $\varnothing 0,5 - 7$ mm

measuring ball with internal thread M4



For balls with $\varnothing 10 - 25$ mm

oscillating measuring pin

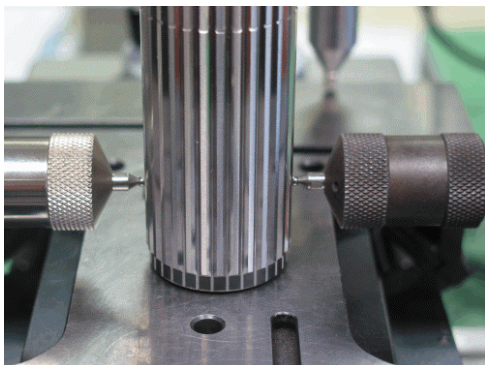


measuring ball inset M4
with width across flats



For balls with $\varnothing 5 - 7$ mm

radius disk



Measuring balls, inserts of measuring balls and insets of measuring pins are always made of tungsten carbide because otherwise the wear would be too big.

FRENCO Product Lines



Gear and spline high precision

Spline Gages
Master Gears, master wheels
Artefacts, masters
Profiled tools
Clamping systems
Gear and spline manufacturing



Instruments for size inspection Series V

Ball inserts and pins VRK
Instruments for rocking VA
Instruments with face stop VP
Indicating gages VM
Variable 3-Disc Gages VD
Customized solutions VS



Rotation Measuring Systems

URM - K with balls and pins
URM - R with master wheels
EWP Single flank gear rolling
ZWP Double flank gear rolling
WS Gear Rollscan



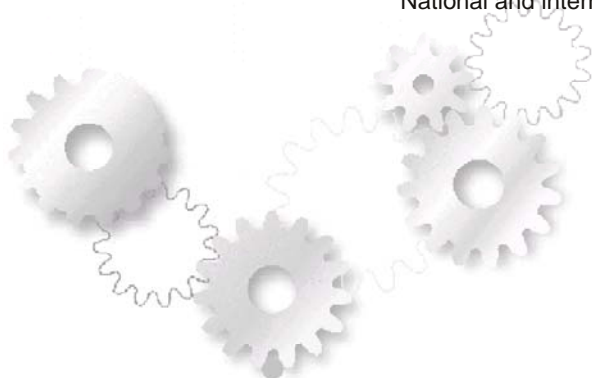
Gear and spline inspection

DKD gear calibration
Gage wear inspection
Part inspections
Deviation analysis



Know-how transfer

Software for gear and spline calculating
Training, seminars and workshops
Consulting and calculations
Literature and documents
National and international standards



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