

## toolset

*Exact measuring systems made of modern material and modular design and construction.*

A versatile top-quality concept produced without compromise. Includes high-tech components and extraordinary stability for accuracy of repeatability.

High-precision glass scales, a cast mineral base, special measurement electronics and a large 2-access-display, give the instrument maximum measuring accuracy.

Modular desing offers the option for tailored solutions to meet almost any requirement.



### toolset **Standard-Variations:**

**41 140:**

TOOLSET TS 140, Spindle ISO 40,  
ø 250 mm, L 320 mm, digital read-out 10my

**41 150:**

TOOLSET TS 150, Spindle ISO 50,  
ø 250 mm, L 320 mm, digital read-out 10my

**41 240:**

TOOLSET TS 240, Spindle ISO 40,  
ø 260 mm, L 330 mm, digital read-out 2,5my

**41 241:**

TOOLSET TS 241, Spindle ISO 40,  
ø 260 mm, L 430 mm, digital read-out 2,5my

**41 250:**

TOOLSET TS 250, Spindle ISO 50,  
ø 260 mm, L 330 mm, digital read-out 2,5my

**41 251:**

TOOLSET TS 251, Spindle ISO 50,  
ø 260 mm, L 430 mm, digital read-out 2,5my

**41 350:**

TOOLSET TS 350, Spindle ISO 50,  
ø 360 mm, L 430 mm, digital read-out 2,5my

**41 352:**

TOOLSET TS 352, Spindle ISO 50,  
ø 360 mm, L 530 mm, digital read-out 2,5my

**41 353:**

TOOLSET TS 353, Spindle ISO 50,  
ø 360 mm, L 630 mm, digital read-out 2,5my

### toolset **Optik-Standard-Variations:**

**44 240:**

TOOLSET TSO 240, Spindle ISO 40,  
ø 220 mm, L 310 mm, digital read-out 1my

**44 241:**

TOOLSET TSO 241, Spindle ISO 40,  
ø 220 mm, L 410 mm, digital read-out 1my

**44 250:**

TOOLSET TSO 250, Spindle ISO 50,  
ø 220 mm, L 320 mm, digital read-out 1my

**44 251:**

TOOLSET TSO 251, Spindle ISO 50,  
ø 220 mm, L 420 mm, digital read-out 1my

**44 350:**

TOOLSET TSO 350, Spindle ISO 50,  
ø 320 mm, L 420 mm, digital read-out 1my

**44 352:**

TOOLSET TSO 352, Spindle ISO 50,  
ø 320 mm, L 520 mm, digital read-out 1my

We will also offer on inquiry made-to-measure variations of Ø 420 to Ø 660 and of L 520 to L 630! (from Ø 450 in steel!)

**toolset Measurement electronics:**



- Measurement systems with the reference marks integrated in the glass scales.
- Workshop-oriented key pad with multifunctional read-out.
- Illuminated LCD display for measured value and operator guidance.
- Measurement analyses to 10my, 2,5my or 1my (standard with optical version).
- Alpha numeric reference-memory. (100 references).
- X-Z axis change select in reference memory, for angle head and turned angle lathe tools.
- Holding function, conversion function, (mm – inch, dia – rad, absolut – incremental measurement).
- Software for choice of font for tool-list, table- and protocol print with 12 digital tolling number data.
- Measuring date output on PC for the expanded measuring software TOOLSETSOFT.

**toolset 2 axis feeler:**

- No-play, slipstick-free mounted mechanism for minimum measurement pressure.
- Replaceable ceramic measuring contact inset.
- Impact-protected indicator can be set for 10my or 2,5my.
- Removable dial test indicator.
- 2-axis dial test indicator.



2 axis feeler



Optical type

**toolset Spindle:**

Precision spindle bearing with reference collar and hand wheel

**Spindle basic types**

ISO 40, ISO 50,  
HSK 63, HSK 100 (on request)



**toolset Guidance:**

- High precision guide rails with angular adjustment.
- Infinite fine adjustment in both axes with a pre-stressed, backlash-free ball nut system.
- Rapid adjustment capability for both axes.
- Rapid axes lock.

**toolset Optical type:**

- Trans-illumination projector with angular and radius graticule screen, rotatable crosshairs.
- Trans-illumination projector with  $\emptyset$  100 – 20x enlargement.
- Illumination with automatic switch-off.
- Measuring accuracy 1my.

## toolset **Reductions:**

We will offer for the different tool types the following optional reductions:

### For Spindle ISO 40:

ISO 30	VDI 16	HSK 32
ISO 35	VDI 20	HSK 40
	VDI 25	HSK 50
	VDI 30	HSK 63

### For Spindle ISO 50:

ISO 30	VDI 16	HSK 40
ISO 35	VDI 20	HSK 50
ISO 40	VDI 25	HSK 63
ISO 45	VDI 30	HSK 80
	VDI 40	HSK 100
	VDI 50	HSK 125



\*On request we can offer versions to suit your special tool requirements.

## toolset **Printer:**

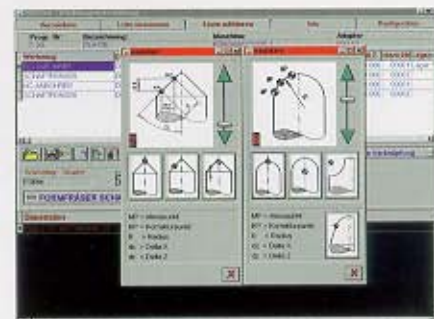
- Protocol printer with tool-list software
- Label printer with cable and 2000 labels



## toolset **SOFT 2.6**

**Optimal supplement to the TOOLSET for a complete solution consists of:**

- Tooling stock control
- Tooling lists organisation
- Machine-data reference administration
- Language option in read-out display
- Application index
- Post processor functions
- DNC Data information
- Tooling-list application with operation description
- Label printing
- Tool-data check list
- As well as an extensive measuring programme with radial, angel and Datum calculation with QS-Protocol.



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