



Представництво в Україні:
ТОВ "ФРАКТАЛЬНІСТЬ"

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TSCORN 4.0



precise. pioneering. worldwide.

The smart solution for your zero point!

Manual probing belongs to the past!

There are different testers, e.g. mechanical edge finders, optical edge finders or 3D Testers. They all have one thing in common:

- the manual probing process depends on the user
- it requires a lot of intuition
- it carries risks such as transmission or typing errors



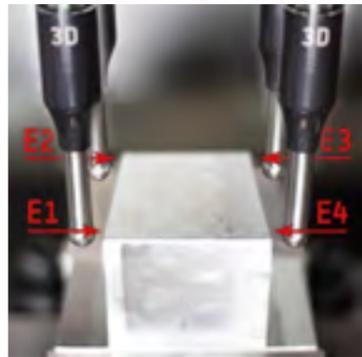
In the end, working hours and potential mistakes cost a lot of money!

Automation has never been that easy!

TSCHORN 4.0

For example: **measure the corner automatically**

- Manually pre-position the probe in X
- Start the cycle
- That's it!



What happens in the background?

Position the tester at the corner which you want to measure. You just define the edge which you want to measure and simply start the cycle. That's it! Now, the cycle starts in X axis and probes the workpiece.

During the probing movement, the machine control waits until the edge is reached. At this moment, the probe transmits the probing signal via radio signal to the receiver and to the machine control. The movement stops immediately and picks up the actual position.

After that, the cycle goes to the Y axis and measures it as well as the Z axis. Finally, it automatically writes all measured values into the currently active workpiece offset.

Small investment - big benefits!

- | | | | |
|---|---|---|--|
| + | Time saving | + | Cost savings |
| + | Repeatability +/- 3 µm | + | The receiver can flexibly be placed outside |
| + | The accuracy is independent from the user | + | The user has a good overview of the status LEDs at all times |

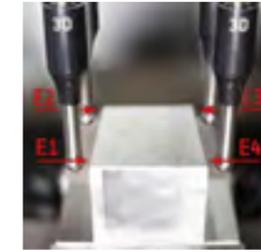
Cycles / makros for Fanuc or Siemens

Axis X, Y or Z



Position the tester in front of the edge.
Preselect axis X, Y or Z, as well as the direction + or - .
After starting, the cycle probes automatically and writes into the offset - that's it!

Measure the corner automatically



Position the tester in the X axis in front of the edge.
Preselect the edge 1, 2, 3 or 4.
Start: the cycle automatically measures first X, then Y, then Z, and automatically writes all axes into the offset - that's it!

Circle centre (inside/outside)



Position the tester approximately on the centre of the circle.
Preselect if you want to probe inside or outside and give an approximate diameter.
After starting, the cycle automatically probes in X axis, Y axis and automatically writes into the offset - that's it!

Groove centre (inside/outside)



Position the tester approximately on the centre of the slot or the key.
Then you chose if you want to measure inside or outside, preselect the axis and give an approximate width.
After starting, the cycle automatically probes the centre in the X axis or Y axis and automatically writes into the offset - that's it!

Tool breakage detection



Chose the milling tool you want to check and start the cycle.
After starting, the cycle automatically probes the tool length. If the tool is broken, the cycle does not find any probing signal and stopps the machine. Additionally, you can preselect a confidence range as a tolerance. Is the tool out of tolerance, the machine stopps. Otherwise, the machine goes on working.

Tool length



Chose the milling tool you want to measure and start the cycle.
After starting, the cycle automatically probes the tool length and writes the tool length into the tool offset of the machine.

Easy!

Software installation

Simple copying of sub program files (simple copy-paste).

Installing the software on the machine control is extremely easy. All you have to do is to copy all the sub program files from the USB flash drive to the subprogram directory of the machine.



Installation - quick & easy



Easy!

Electrical connection

- Connect power supply 12V- 24V (DC)
- Connect the probing signal
- That's it!

Basically, every machine control has an input terminal for the probing signal as a standard. We even succeeded in installing many older models. Thus, only two wires have to be connected for a simple power supply and a third wire with just this probing signal.

Successful!

Many installations - many satisfied customers

We have already successfully installed the system on many different machines.



Anayak plus 4000 - Heidenhain



YCM - Fanuc



Maho MH1600S- Philips



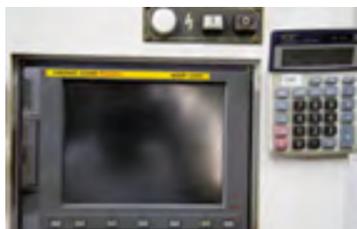
Hermle - Heidenhain



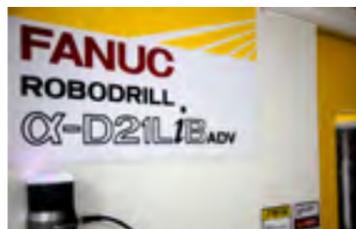
Spinner - Siemens 840D



LK-Machinery - Siemens 828



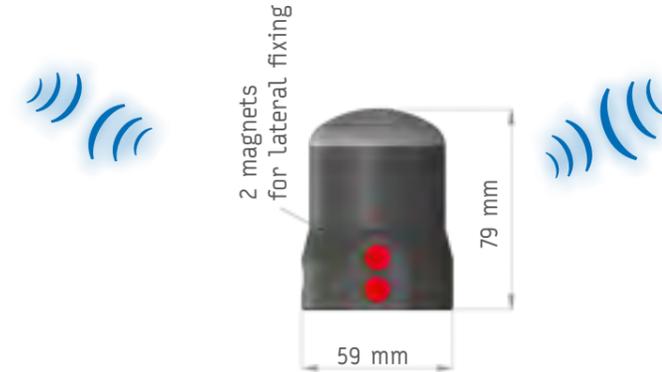
Fanuc MXP-100i



Fanuc - Robodrill



Smart automation for a small price!



Article no.

Description

OOSYSOKTO

System TSCHORN 4.0: edge finder 3D

Delivery contains: edge finder 3D for workpiece measurement, receiver, incl. Fanuc or Siemens macros (cycles)



Article no.

Description

OOSYSONEO

System TSCHORN 4.0: zero setter

Delivery contains: zero setter for tool measurement, receiver, incl. Fanuc or Siemens macros (cycles)



Article no.

Description

OOSYS1020

System TSCHORN 4.0: complete system

Delivery contains: edge finder 3D for workpiece measurement, zero setter for tool measurement, receiver, incl. Fanuc or Siemens macros (cycles)

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3D Testers



precise. pioneering. worldwide.

Quality
with certificate

Advantages of all models of our 3D Testers:

- great overview
- robust construction
- all in one
- IP67 waterproof
- probe tip with carbide ball
- antimagnetic probe tip
- parallel running possible
- fast and simple service



**SLIMplus
WHITE**

The Bestseller
This is the 3D Tester model we sell most



**SLIMplus
BLACK**

The Black version
Easier to read thanks to the black dial face



VIplus

The Visual Plus
Easier to read, also on big machines but nevertheless slim

**SLIMplus
WHITE &
BLACK**



VIplus



Video



Delivery contains:

3D Tester with probe tip standard, adjusting key, factory certificate

Article-No.	Description	Shank	Length	Ball
001V2D012*	3D Tester SLIMplus V2 WHITE	Ø12	approx. 132,5 mm	Ø3
001V2DB12*	3D Tester SLIMplus V2 BLACK	Ø12	approx. 132,5 mm	Ø3
001V2V012*	3D Tester VIplus V2	Ø12	approx. 150,0 mm	Ø3

*also available with shank Ø8 and Ø10 on request



Spare parts

Article-No.	Description	Length	Ball
00163D003	Probe tip standard	approx. 27 mm	Ø3
00163D006	Probe tip long	approx. 62 mm	Ø6
00163D099	Seal for 3D Tester	-	-



3D Tester DREHplus

the Plus for your lathe

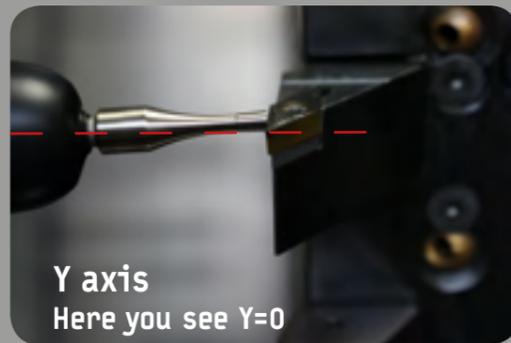
Tool measurement in all axes also in the rotating center (Y)

Innovative probing technology

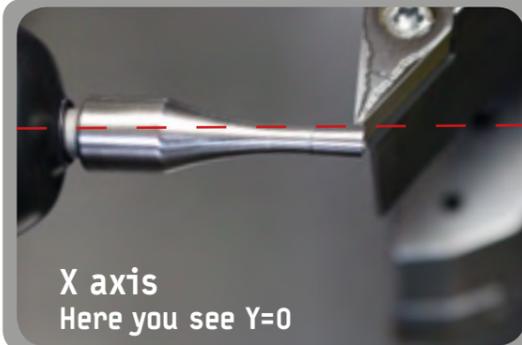
The conical probing corpus allows you to measure any possible cutting insert with various radii and / or angles at any point of the probing corpus. You probe until both indicators show „0“. In this position, the outline of the conical probing corpus is exactly on the symmetry axis.

No other measuring equipment gives you the possibility to measure the rotating centre so simply, precisely and directly in your lathe.

Y=0 corresponds to the rotating centre. As a result, you ensure the best possible processing, achieve long lifetime and preserve best surfaces.

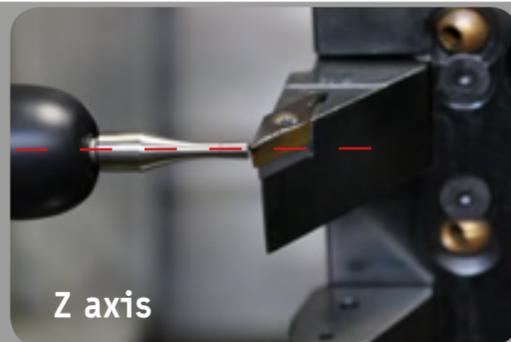


Y axis
Here you see Y=0



X axis
Here you see Y=0

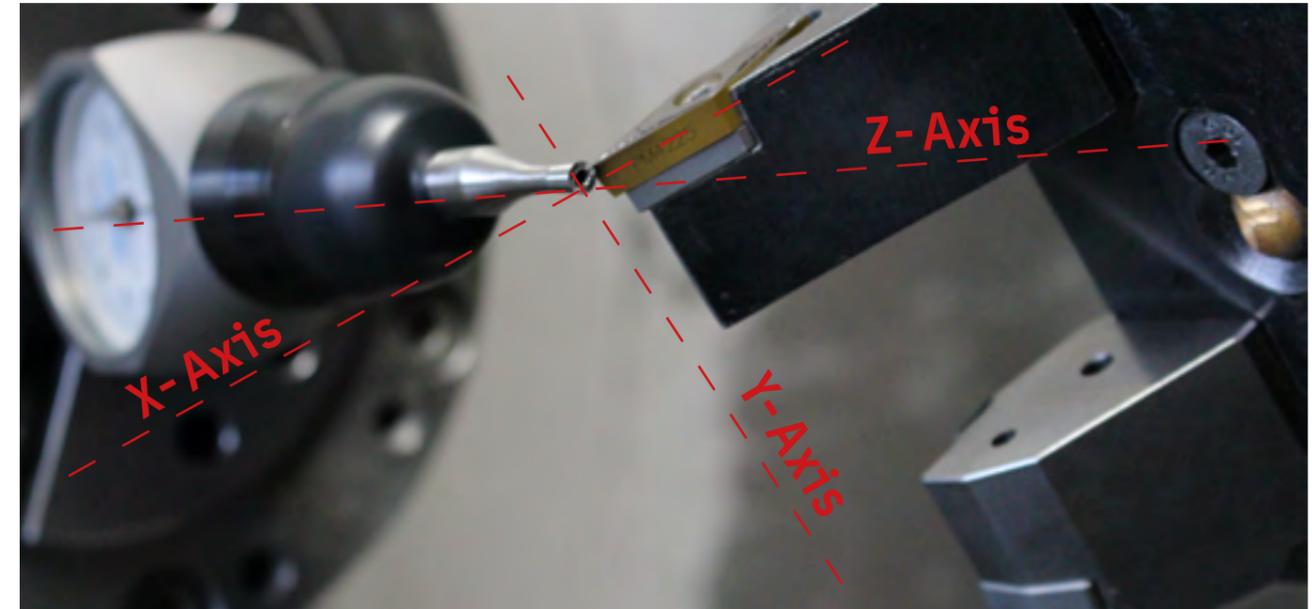
Without any further calculation, you measure your tools to the centre of the spindle, respectively X=0.



Z axis

Also in Z, you can measure all tools, taking into account the length offset in your machine.

Measure your tools in all axes - especially in Y



No other measuring equipment gives you the possibility to measure your tool to the rotating centre simply, precisely and directly in your lathe. This is made possible by our unique probing technology which we have developed specifically for the use in your lathe.

On a ball, it is impossible to precisely measure sharp turning tools. This is why the 3D Tester DREHplus has a patented conical probing corpus. With this, you directly probe the centre of the spindle, both in X axis and in Y axis.

No need for further calculations, since $X = 0$ and $Y = 0$.

Delivery contains:

3D Tester with probe tip DREHplus, adjusting key, factory certificate

Article-No.	Description	Shank	Length	Tester
001V2T020	3D Tester DREHplus V2	Ø20	approx. 138 mm	Ø3,6/Ø3,2
00163T036	Probe tip DREHplus	-	approx. 34 mm	Ø3,6/Ø3,2

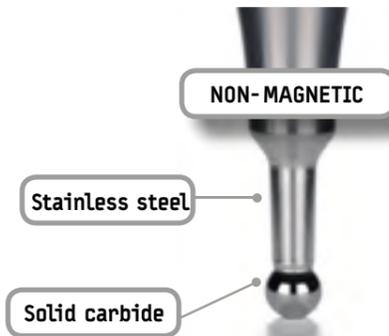


3D Tester SAVEplus

slim and cost-efficient



Adjustable scale



Delivery contains:

3D Tester with probe tip standard, adjusting key, factory certificate

Article-No.	Description	Shank	Length	Tester
00163B012	3D Tester SAVEplus	Ø12	approx. 134 mm	Ø3



Spare parts

Article-No.	Description	Length	Tester
00163D003	Probe tip standard	approx. 27 mm	Ø3
00163D006	Probe tip long	approx. 62 mm	Ø6
00163D099	Seal for 3D Tester	-	-



TSCHORN[®]
Mess- und Spannmittel

Edge finders mechanical



precise. pioneering. worldwide.



The origin of all testers!

To approach reference surfaces or edges with a highly precise repeatability. We deliver all standard version edge finders with probe head Ø6 mm, Ø10 mm as well as the popular probe head Ø10/4 mm. Shanks are available with Ø6 mm, Ø10 mm and also Ø8 mm.

Special versions are our TIN edge finders. These are made out of antimagnetical stainless steel and are coated with a wear-resistant TIN layer.

We deliver all our edge finders in a plastic case. We also offer a wooden case for storage.



1. The edge finder body can be tilted out from the axis' centre by a gentle tip of the finger and is out-of-the-round.

2. By slowly and carefully approaching the rotating edge finder to the respective reference surface, the oscillation movement steadies successively.

3. When reaching the final position, the edge finder body passes along the edge. Now, the position corresponds to the radius of the tracer.



001001000	001010400	001081000	001081400	001000600
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Standard version:

(Made in India)

The standard version is manufactured by our long-term supplier in India according to our quality standards. Here in Germany, we check the edge finders in details in our quality laboratory so that we can guarantee the unique quality of our edge finders.

Article-No.	Description	Shank	Tracer
001000600	Edge finder mech.	Ø6	Ø6
001001000	Edge finder mech.	Ø10	Ø10
001010400	Edge finder mech.	Ø10	Ø10 / Ø4
001081000	Edge finder mech.	Ø8 (Ø10)	Ø10
001081400	Edge finder mech..	Ø8 (Ø10)	Ø10



In wooden case

Standard version:

(Made in India)

Identical to the articles above but in a high-quality wooden case.

Article-No.	Description	Shank	Tracer
001000699	Edge finder (in wooden case)	Ø6	Ø6
001001099	Edge finder (in wooden case)	Ø10	Ø10
001010499	Edge finder (in wooden case)	Ø10	Ø10 / Ø4
001081099	Edge finder (in wooden case)	Ø8 (Ø10)	Ø10
001081499	Edge finder (in wooden case)	Ø8 (Ø10)	Ø10 / Ø4



Straight version:
(Made in India)

Article-No.	Description	Shank	Tracer
001010000	Edge finder mech. Ø10 / Ø10 (straight)	Ø10	Ø10
001010600	Edge finder mech. Ø6-Ø10 / Ø10 (straight)	Ø10	Ø6 - Ø10



Edge finders TIN

TIN version:
(Made in Germany)

The TIN version is **antimagnetical** and the probe head is made out of stainless steel. The probe head is covered with a wear-resistant TIN layer.

Article-No.	Description	Shank	Tracer
001TIN010	Edge finder TIN	Ø10	Ø10
001TIN104	Edge finder TIN	Ø10	Ø10 - Ø4



Article-No.	Description	Shank	Tracer
001Z01000	Spare spring Ø4,6 x 40 (package: 10 pc.)	Ø10 / Ø8	Ø10 / Ø10-Ø4
001Z00600	Spare spring Ø2,6 x 25 (package: 10 pc.)	Ø6	Ø6



Repair Kit:

- 1 - Cover
- 2 - Spring
- 3 - Pin
- 4 - Mounting paste

Article-No.	Description	Shank	Tracer
001K01000	Repair Kit	Ø10 / Ø8	Ø10 / Ø10-Ø4
001K00600	Repair Kit	Ø6	Ø6



Edge finders ECO

TSCHORNECO

Version ECO

- low-cost
- Made in India

Article-No.	Description	Shank	Tracer
0010010EP	Edge finder mech.	Ø10	Ø10
0010104EP	Edge finder mech.	Ø10	Ø10 / Ø4





TSCHORN[®]
Mess- und Spannmittel

Edge finders optical



precise. pioneering. worldwide.

Edge finder 3D: developed by us -
- produced only by us.



Scan me
Product video

Function:

If a conductive workpiece and the probing ball touch (within the axis X, Y and Z), the electrical circuit gets closed and a LED signal appears.

When the LED signal appears, the workpiece's edge is reached with a distance of 5 mm (= radius of probing ball Ø10).

In Z axis, the reference length has to be measured and taken into account respectively.

Probing X/Y axis

Probing X/Y axis

Pass over

Probing Z axis



Quality
with certificate



Probing accuracy ≤ 0.010 mm

3D version:
Probing in X, Y and Z

Application:

For accurate zero point determination and bore centers to the spindle with an accuracy of probing smaller than 0.010 mm.

Please note:

Protection against humidity is essential for the edge finder due to the built-in electronic components.

Delivery includes:

Edge finder with serial number and test certificate in a plastic case.

Article-No.	Description	Shank	Length	Ball	Battery
001031200	Edge finder 3D	Ø12	approx. 111 mm	Ø10	12V-Type 27A
001031600	Edge finder 3D	Ø16	approx. 111 mm	Ø10	12V-Type 23A
001032000	Edge finder 3D	Ø20	approx. 106 mm	Ø10	12V-Type 23A
001032500	Edge finder 3D	Ø25	approx. 116 mm	Ø10	12V-Type 23A
00103M200	Edge finder 3D	MK2	approx. 146 mm	Ø10	12V-Type 27A



Edge finder optical 3D in wooden case

Article-No.	Description	Shank	Length	Ball	Battery
001031299	Edge finder 3D	Ø12	approx. 111 mm	Ø10	12V-Type 27A
001031699	Edge finder 3D	Ø16	approx. 111 mm	Ø10	12V-Type 23A
001032099	Edge finder 3D	Ø20	approx. 106 mm	Ø10	12V-Type 23A
001032599	Edge finder 3D	Ø25	approx. 116 mm	Ø10	12V-Type 23A



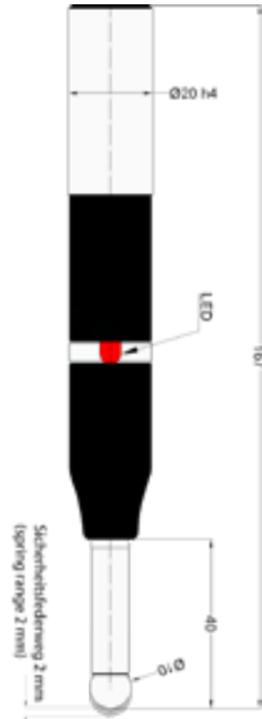
Quality
with certificate

Probing accuracy ≤ 0.005 mm

3D version:
Probing in X, Y and Z



Scan me
Product video



Application:

Our 3D precision probe is a highly precise measuring device which gives out highly precise three dimensional probing results on metal-cutting machines.

Accuracy:

Within all three axis, the accuracy of probing is smaller than 0.005 μ m.

Please note:

Protection against humidity is essential for the edge finder due to the built-in electronic components.

Delivery includes:

3D precision probe with serial number and test certificate in a plastic case (for clean storage).

Article-No.	Description	Shank	Length	Ball	Battery
001532000	3D precision probe	Ø20	approx. 167 mm	Ø10	12V-Type 23A

Quality
with certificate

Probing accuracy ≤ 0.010 mm

3D version:
Probing in X, Y and Z

2D version:
Probing in X and Y



Application:

For accurate zero point determination and bore centers to the spindle with an accuracy of probing smaller than 0.010 mm. When you reach the position, you hear an additional acoustic signal.

Please note:

Protection against humidity is essential for the edge finder due to the built-in electronic components.

Delivery includes:

Edge finder with serial number and test certificate in a plastic case.

Article-No.	Description	Shank	Length	Ball	Battery
001122000	Edge finder 2D	Ø20	approx. 119 mm	Ø10	12V-Type 23A
001132000	Edge finder 3D	Ø20	approx. 131 mm	Ø10	12V-Type 23A



Quality
with certificate

Probing accuracy ≤ 0.010 mm !

2D version:
Probing in X and Y !

Application:

For accurate zero point determination and bore centers to the spindle with an accuracy of probing smaller than 0.010 mm.

Please note:

Protection against humidity is essential for the edge finder due to the built-in electronic components.

Delivery includes:

Edge finder with serial number and test certificate in a plastic case.



Article-No.	Description	Shank	Length	Ball	Battery
001021200	Edge finder 2D	Ø12	approx. 99 mm	Ø10	12V-Type 27A
001021600	Edge finder 2D	Ø16	approx. 99 mm	Ø10	12V-Type 23A
001022000	Edge finder 2D	Ø20	approx. 94 mm	Ø10	12V-Type 23A
001022500	Edge finder 2D	Ø25	approx. 104 mm	Ø10	12V-Type 23A
00102M200	Edge finder 2D	MK2	approx. 133 mm	Ø10	12V-Type 27A

Edge finder optical 2D in wooden case

Article-No.	Description	Shank	Length	Ball	Battery
001021299	Edge finder 2D	Ø12	approx. 99 mm	Ø10	12V-Type 27A
001021699	Edge finder 2D	Ø16	approx. 99 mm	Ø10	12V-Type 23A
001022099	Edge finder 2D	Ø20	approx. 94 mm	Ø10	12V-Type 23A
001022599	Edge finder 2D	Ø25	approx. 104 mm	Ø10	12V-Type 23A



Version ECO

- low-cost
- Made in Germany
- no serial number
- no test certificate

Article-No.	Description	Shank	Length	Ball	Battery
0010216EP	Edge finder 2D	Ø16	approx. 99 mm	Ø10	12V-Type 23A
0010220EP	Edge finder 2D	Ø20	approx. 94 mm	Ø10	12V-Type 23A



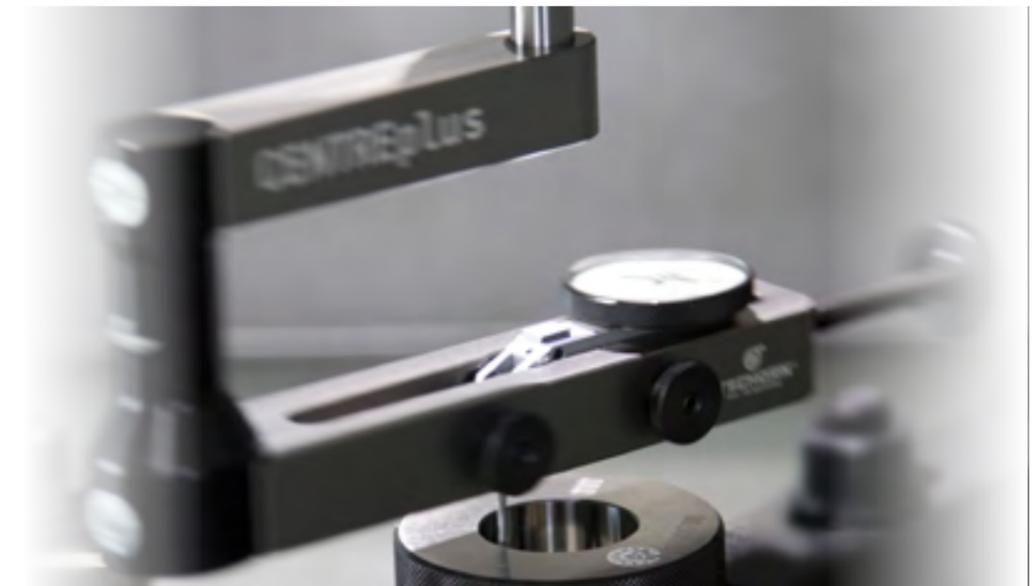
Spare parts

Article-No.	Description	Volt
0011Z6000	Spare battery 23A	12V
0012Z6000	Spare battery 27A	12V





Coaxial indicator : CENTREplus



precise. pioneering. worldwide.



CENTREplus: for simple centering of boreholes and spindles

Application:

To determine centres of a circle to the spindle with a probing accuracy < 0.010 mm. The dial gauge shows 1/100 mm sub-steps.

Design:

Thanks to the horizontal arrangement of the dial gauge, you can always see the dial gauge.



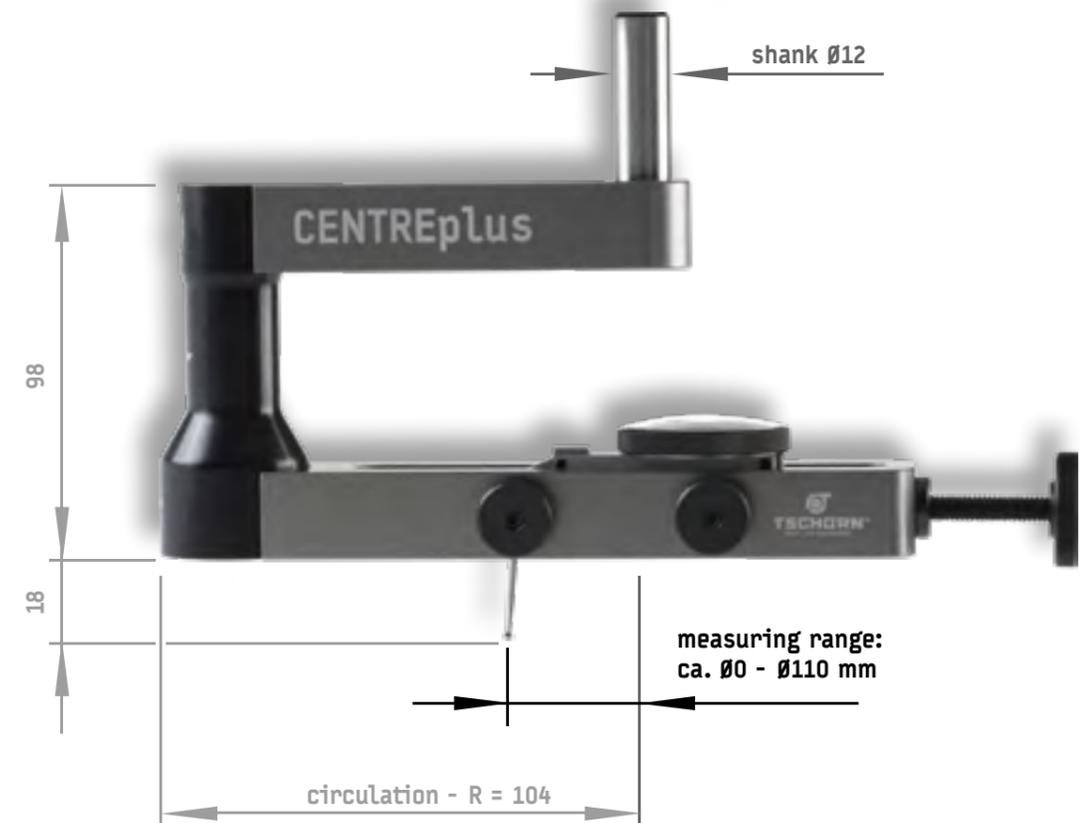
Fine adjustment:

With the fine adjustment, you can position the dial gauge precisely.



Clamping:

With the two knurled screws, you can clamp the dial gauge quickly and precisely.



Optional spare part:

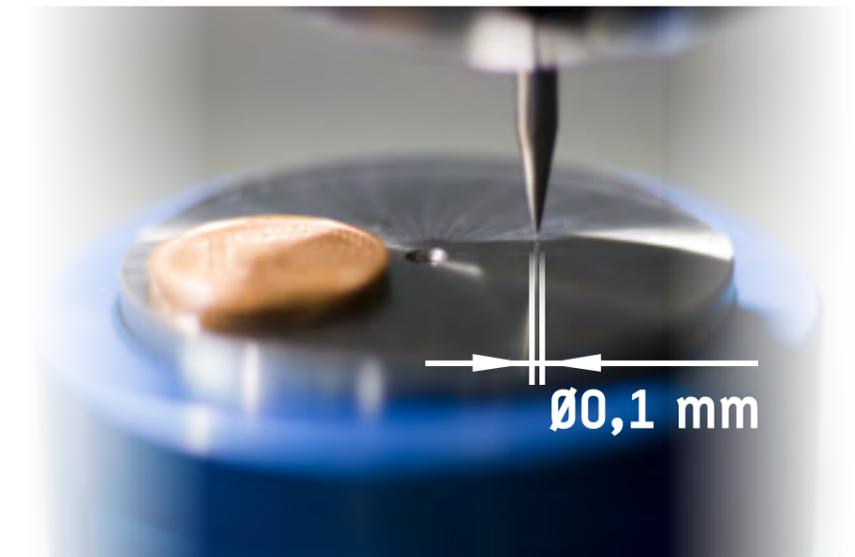
You can order separately a short-arm which increases the measuring range up to Ø200 mm.

Article-No.	Description	Shank
0017C1012	Coaxial indicator CENTREplus Ø0-Ø110	Ø12
0017C1098	Spare dial gauge	
0017C1099	Short-arm (measuring range up to Ø200)	





Zero setters



precise. pioneering. worldwide.

NEW!

**New development:
100 mm - handy - Micro**

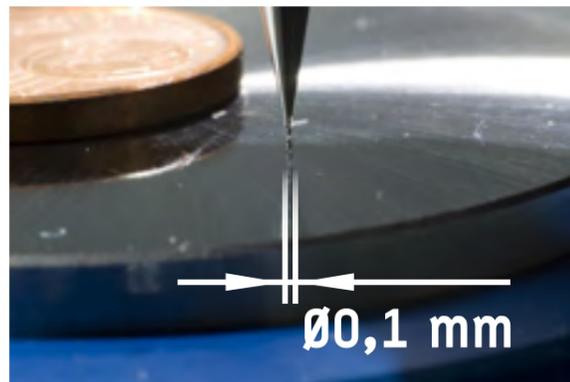
Simple adjustment:

- Push tester
- Small indicator at -2 mm
- Turn scale for large indicator to 0
- Ready!



Micro tools:

We even measured milling tools with $\varnothing 0,1$ mm without any problems.



Quality
with certificate



Scan me
Product video



Application:

To determine the position of workpiece surfaces or tool lengths in Z-direction at milling machines or lathes. The zero setter is placed on the workpiece. The spindle has to be moved carefully onto the tracer until the dial gauge indicates „0“. The reference dimension 100 mm to the workpiece has been reached. A safety spring range of max. 2 mm is included.

Type:

To allow lateral mounting, a zero setter with built-in magnets is also available.

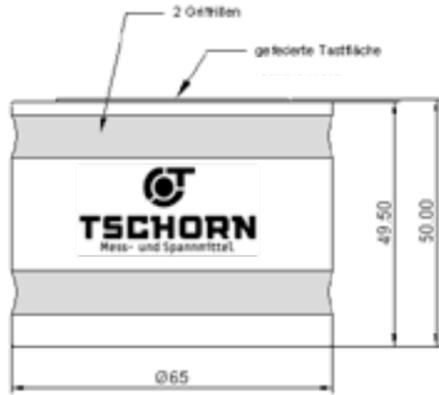
Delivery includes:

Zero setter with serial number and test certificate in a wooden case.

Article-No.	Description	Body	Tester
002400100	Zero setter Micro 100 mm	$\varnothing 54,5$	$\varnothing 42$
002402100	Zero setter Micro 100 mm (Magnet)	$\varnothing 54,5$	$\varnothing 42$
002UM0100	Spare dial gauge for zero setter Micro 100 mm		



Quality
with certificate



Application:

To determine the position of workpiece surfaces or tool lengths in Z-direction at milling machines or turning lathes. The zero setter is placed on the workpiece. The spindle has to be moved carefully onto the tracer until the dial gauge indicates „0“. The reference dimension 50 mm to the workpiece has been reached. A safety spring range of max. 2 mm is included.

Type:

To allow lateral mounting, a zero setter with built-in magnets is also available.

Delivery includes:

Zero setter with serial number and test certificate in a wooden case.

Article-No.	Description	Body	Tester
002101000	Zero setter 50 mm	Ø65	Ø47
002102000	Zero setter 50 mm (Magnet)	Ø65	Ø47



Version ECO

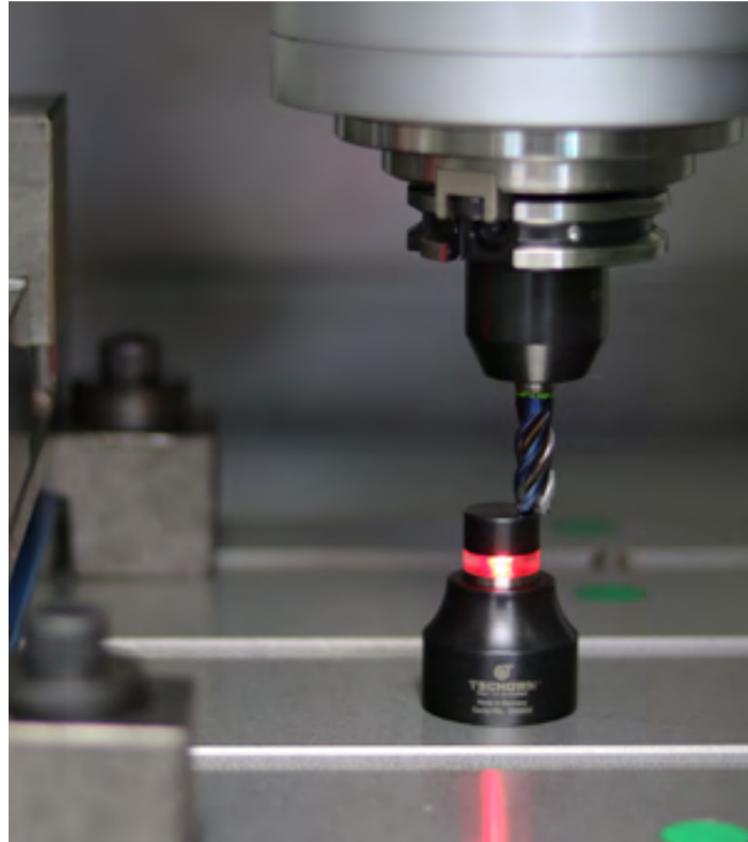
- low-cost
- Made in Germany
- no serial number
- no test certificate



Article-No.	Description	Body	Tester
0021010EP	Zero setter ECO 50 mm	Ø39	Ø20
0021020EP	Zero setter ECO 50 mm (Magnet)	Ø39	Ø20



Quality
with certificate



Application:

To determine the position of workpiece surfaces or tool lengths in Z-direction at milling machines or turning lathes. The zero setter is placed on the workpiece. The spindle has to be moved carefully onto the tracer until the dial gauge indicates „0“. The reference dimension 50 mm to the workpiece has been reached. A safety spring range of max. 2 mm is included.

Type:

To allow lateral mounting, a zero setter with built-in magnets is also available.

Delivery includes:

Zero setter with serial number and test certificate in a wooden case.

Article-No.	Description	Body	Tester
002050000	Zero setter opt. 50 mm	Ø39	Ø19
002050200	Zero setter opt. 50 mm (Magnet)	Ø39	Ø19



NEW!

! New development:
quickly measure lengths at lathes

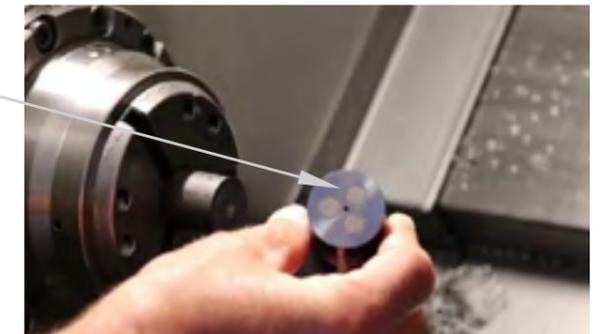


Scan me
Product video



! Perfectly thought-out in detail

Secure horizontal grip
already at Ø8
thanks to 3 powerful magnets



Tolerance for the turning scrap,
avoids measuring faults

Quality
with certificate



Application:

To determine the position of workpiece surfaces or tool lengths in Z-direction at milling machines or lathes. The zero setter is placed on the workpiece. The spindle has to be moved carefully onto the tracer until the dial gauge indicates „0“. The reference dimension 60 mm to the workpiece has been reached. A safety spring range of max. 2 mm is included.

Type:

To allow lateral mounting, a zero setter with built-in magnets is also available.

Delivery includes:

Zero setter with serial number and test certificate in a wooden case.

Article-No.	Description	Body	Tester
002060200	Zero setter TURNING 60 mm	Ø32	Ø19



Article-No.	Description	Volt	Size
0013Z4400	Spare battery SR44	1,5V	Ø11,6 x 5,4



Article-No.	Description	Body	Reading
002U01000	Spare dial gauge	Ø40	0,01 mm

