

21766

## Zero Point Setters

## Type

For quick and easy determination of the reference point in axial direction of machine spindle (e.g. at milling cutters). The instrument is positioned onto the workpiece and the tool (e.g. milling cutter) is moved onto the spring based probe surface, until both pointers of the dial shows. Lower edge of the tool is now precisely positioned 500.01 mm above workpiece surface. Size 50 mm will be stored into machine control data system. Base unit and probe insert of device are all case-hardened HRC 60 +/- 1.

Delivery with measuring log, in wooden case.



21766

Resolution of dial indicator mm	Height of spring measuring surface mm	Probe surface Ø mm	Housing Ø mm	21766	...
0.01	49.5 - 50	47	65		101

21764

## Test arbors (inspection arbors)

diebold

## Type

Tapered shank more accurate than AT3, case-hardened steel hardened (56+4 HRC), ground.

Delivery in wooden crate.

## Use

For the alignment and checking of tool spindles.

21764 301

## Type

with lock ring.



21764

Taper	Shank type	Ø D mm	Usable measuring length L mm	Concentricity and Ø tolerance mm	21764	...
ST 40	DIN 69871	40	320	0.003		301
ST 50	DIN 69871/BT	40	320	0.003		302
HSK 63	DIN 69893	40	346	0.003		303

21767

## Metric Edge Finders JC-20



RENISHAW

## Type

Battery operated edge finder made by Renishaw, is chucked by a collet chuck or milling cutter mount.

As soon as the probe insert contacts the workpiece, a red light is activated.

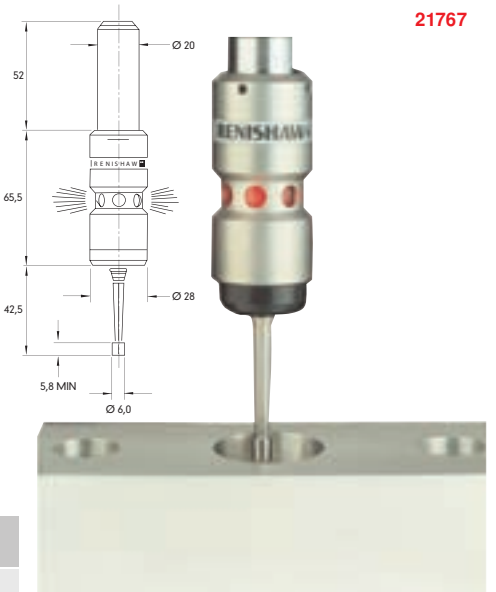
## Use

Only electrically conductive materials can be contacted. The edge finder can be used for different measuring jobs and for zero point setting of workpieces on all manual and CNC-controlled machine tools.

**Criteria:** Inner and outer measurement, determining of bore centrepoint centrally in respect of work spindle, measure reference edges, measure heights and depths. Repeat precision 0.001 mm. Overrun X, Y 15 mm, Z 5 mm, type of protection: IP 44.

## Note:

Replacement batteries, see HHW catalogue volume 2 (tools + machines) Cat. No. 39900.



21767

21767

101

21765

## 3D small edge probe ZERO MASTER

HAIMER

## Type

- Small compact design
- Precision 0.01 mm
- Incl. short probe insert
- Suitable in confined areas, or for small HSK or SK 30 spindles

## Use

For sensing of edges and bores.  
For setting of datum points.

## Note:

Replacement probe, see Cat. No. 21768 102-103.

NEW



21765

Total length mm	Length without clamping shank mm	Clamping shank Ø mm	Housing Ø mm	Reading mm	21765	...
120.8	96	10	49	40		101

IP 67



21768

Universal-3D probe



21768 101

Multi-purpose 3D Probes

Type

Proven metal mechanism, compact design, dustproof and waterproof, comfortable adjustment of concentricity, one scale for radial and axial touching.

Technical data

Clamping shank: 20 mm,  
Readability precision: 0.01 mm,  
Sensing ball Ø: 4 mm.

Scope of supply:

Incl. of short contact point.

Use

For determining workpiece zero points, measurements of length, boreholes, borehole centres, and reference edges.

Note:

Milling cutter mount extra short, DIN 69871 AD, Ø 20 mm, A = 35 mm, see cat.-no. 21631 206.

21768 102

Contact point insert, short, Ø 4 mm, Length 25 mm.

21768 103

Contact point insert, long, Ø 8 mm, Length 65 mm.



21768 101

21768 102

21768 103

	21768	...
3D probes		101
Contact point insert, short		102
Contact point insert, long		103

21769

Digital 3D Probes



Type

A further development of the well experienced mechanical 3-D probe. The measuring procedure can be watched accurately on the digital dial. The dial has a 0.001 mm display with large numerals, mm/inch options, protected against ingress of dust and water spray.

Note:

Milling cutter mount extra short, DIN 69871 AD, Ø 20 mm, A = 35 mm, see cat.-no. 21631 206.  
Suitable contact points see cat.-no. 21768 102+103.



21769

Measuring precision mm	Clamping shank Ø mm	Housing Ø mm	21769	...
0.005	20	65		201

21770 - 21771

Edge sensors

Type

All parts hardened, chucking- and working surfaces ground, partly lapped. Tension spring inside provides elastically compensating connection to upper part of shank.

Use

For the determination of the centre line.

21770 203

Type

With single-point contact head.

21771 205

Type

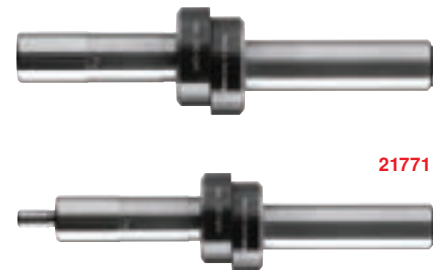
With double-point contact head.

21771 500

Spare spring

Use

For cat.-no. 21770 - 21771.



21770

21771

	Measuring head Ø mm	Straight shank Ø mm	Pack = pcs.	21770	...	21771	...	21771	...
Edge finder single	10	10	-		203				
Edge finder double	10 + 4	10	-				205		
Spare spring	-	-	10						500

Clamping Technology



21772

## Electrical edge finder 2D/3D



## Type

With all-round illuminated indicator. The ball is elastically suspended and is pushed to the side when the reference edge is reached. Precision +/- 0.01 mm. Standard equipment: Edge probe with battery.

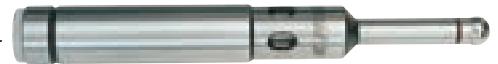
## Use

For centring the spindle above the workpiece.  
For outside and inside centring.

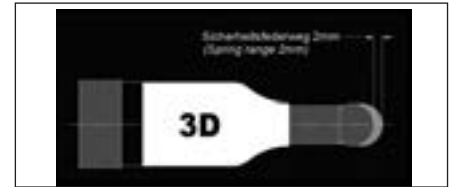
## Note:

Replacement batteries see HHW catalogue volume 2 (tools & machines) Cat. No. 39900 215.

21772 101



21772 102



Type	Shank Ø mm	Spherical tip Ø mm	Battery V	21772	...
2D	20	10	1 x 12.0	101	
3D	20	10	1 x 12.0	102	

21773

## Dial Indicating Centre Finders

## DIACATOR

## Type

With built-in upright dial indicator and rotating probe, max. centring error depending on probe 0.006 - 0.01 mm. Built-in overload clutch to protect against damage. Mounts on screw-on MT 1 morse taper shank (for larger taper holes, use adapters!) or on a straight shank (8 mm Ø).

Complete with pendulum probe for small holes, 2 angled contact point inserts 25 and 48 mm, 1 reducing sleeve MT 1, 3 screw-on adapter sleeves 10, 12 and 16 mm, 1 stop 160 mm and dial indicator, in wooden case.

## Use

For aligning holes and shanks exactly concentrically with work spindle on milling machines, drill presses and boring mills.

## Note:

Special probe, length 100, 125, 150 and 200 mm available on request.

21773



Measuring range for inside Ø mm	Measuring range for Outside Ø mm	21773	...
1.5 - 120	5.0 - 110	101	

21774

## Centre Finders Centro

21774 101

## Type

High-accuracy centre finder with steady dial indicator. Centring precision of 0.003 mm, with probe insert Cat. No. 21774 102.

## Use

For aligning boreholes.

## Note:

Rotational speed of spindle should not exceed 150 rpm. Concentricity errors of spindle and clamping system can be balanced out.

21774 102

## Contact point insert

## Type

Straight, with ball Ø 5 mm.

21774 103

## Contact point insert

## Type

Offset, with ball Ø 5 mm.

21774 104

## Contact point insert

## Type

Straight, with ball Ø 2 mm.

## Use

For small boreholes.

21774 101



21774 102



21774 103



Type	Measuring range inside Ø mm	Measuring range outside Ø mm	Shank Ø mm	21774	...
Centro	3 - 125	0 - 125	16	101	
Contact point insert straight	-	-	-	102	
Contact point insert offset	-	-	-	103	
Contact point insert with ball 2 mm	-	-	-	104	

21775

Precision Centre Finders



**Use**  
For centring, positioning, aligning, adjusting, inspecting, face probing, edge finding, accuracy: 2 µm. The very precise mechanism with rotating probe and the fixed dial indicator are the most important parts.

**21775 201**  
**Precision Centre Finders CO-S**

**Type**  
With fixed clamping shank, 16 mm Ø, dial indicator with 0.01 mm resolution. 1 contact point insert ball Ø 5 mm (for borehole), 1 bent contact point insert, ball Ø 5 mm (for shank), in case.

**21775 204**  
**Precision Centre Finders C III**

**Type**  
For different clamping shanks (see cat.-no. 21778), dial indicator with 0.01 mm graduation. 1 straight contact point insert ball - Ø 5 mm (for borehole), 1 hexagon socket wrench size 3, bottle of watch oil no. 5, in wooden box.

21775 201

21775 204



Type	Reading of dial indicator mm	Probing range inside Ø mm	Probing range outside Ø mm	Face area mm	Probing depth inside Ø mm	Probing depth outside Ø mm	21775	...
CO-S	0.01	6 - 125	0 - 125	120 - 160	55	20		201
C III	0.01	2 - 400	0 - 300	0 - 480	150	150		204

21776

Accessories

**Use**  
For cat.-no. 21775.

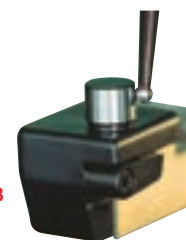
**21776 102**  
**Edge finder**

**Use**  
For positioning the work spindle axis above workpiece edges or corners

**21776 103**  
**Contact point insert**

**Type**  
Straight, ball Ø 1.7 mm.  
**Use**  
For centring holes less than 6 mm.

21776 102



21776	...
	102
	103



21776 103

21777

Accessory Kits

**Type**  
Comprising:  
- **Probe insert**, ball Ø 1.7 mm for centring of bores of less than 6 mm  
- **Angle probe insert**, ball Ø 2.5 mm for alignment of surfaces of between 90 mm and 280 mm Ø

- **Extensions** for enlarging the working range  
- **Plan probe**, ball Ø 5.0 mm  
**Use**  
For **type C III** cat.-no. 21775 204 and 205.

21777

21777	...
	101



21778

Clamping shanks

**Use**  
For **type CO and C III** cat.-no. 21775 204-205.

**21778 202-204**  
**DIN 2080.** cat.-no. 21778 202 with lock ring.

**21778 501-503**  
**Straight shank.**

**21778 102-103**  
**Morse taper shank.**

**21778 302-304**  
**DIN 69871 A,** without gripper groove.

21778 202-204

21778 302-304

Taper MT/ draw-in thread	Taper ST/ draw-in thread	Cylinder-Ø mm	21778	...
3 / M 12	-	-		102
4 / M 16	-	-		103
-	40 / M 16	-		202
-	50 / M 24	-		204
-	40 / M 16	-		302
-	50 / M 24	-		304
-	-	16		501
-	-	20		502
-	-	25		503





**21780**

**Articulated measurement stand**

**Type**

Mechanical central clamping of all joints, clamping force can be variably regulated, every position within the action radii can be reached. Dial gauge receptacle with shank Ø 8 mm, length = 40 mm for direct accommodation in the machine (collet chuck!).

**Use**

For sensing lever measurement devices Use for: Workpiece positioning, centring bores/tappets, alignment of workpieces, difficult to access locations.

**Note:**

Sensing lever measurement devices, see HHW catalogue 2 (tools + machines) cat.-no. 33245 ff.



21780

21780



**21634**

**Reduction Inserts for End Milling Cutters**



**Type**

With straight shank in compliance with DIN 1835 B. Concentricity deviation of taper to internal taper ≤ 0.005 mm.

**Use**

Used as reduction inserts in milling cutter mounts for milling cutters with small diameters.



21634

d H <sub>4</sub> mm	d <sub>1</sub> mm	A mm	D mm	I mm	21634	...
6	20	30	25	50		103
8	20	30	28	50		104
10	20	30	35	50		105

d H <sub>4</sub> mm	d <sub>1</sub> mm	A mm	D mm	I mm	21634	...
12	20	35	42	50		106
6	32	30	25	60		107
8	32	30	28	60		108

d H <sub>4</sub> mm	d <sub>1</sub> mm	A mm	D mm	I mm	21634	...
10	32	30	35	60		109
12	32	35	42	60		110
16	32	38	48	60		111

**21635**

**Spare screws for Weldon**



21635

Thread	for diameter mm	21635	...
M 6	6		601
M 8	8		602
M 10	10		603

Thread	for diameter mm	21635	...
M 12	12+14		604
M 14	16+18		605
M 16	20		606

Thread	for diameter mm	21635	...
M 18 X 2	25		607
M 20 x 2	32+40		608
M 20 x 2	32+40		608

**21636**

**Sawblade Tool holders**

**Type**

With straight shank for mounting in surface chucks, high true-running accuracy.

**Use**

For mounting saw blades with Ø of 20 - 100 mm and saw blade thicknesses of 0,2 - 6 mm (see cat.-no. 17002 - 17008 and 17030 - 17031).

**Note:**

Delivery without saw blades.

**21636 300**

**Type**

Set, 6-part, consists of all sizes of cat.-no. 21636 301-306, incl. case.

**21636 301-308**

**Type**

Single.



21636 300

21636 301-308

Set content	Support Ø mm	Set 21636	...
6-part	20 / 25 / 32 / 40 / 50 / 63		300

for saw blade Ø mm	L1 mm	Ø D1 mm	Ø D2 mm	Ø D3 mm	Single 21636	...
20	94	20	10.0	5		301
25	104	20	13.0	8		302
32	110	20	16.0	8		303
40	114	20	19.5	10		304
50	141	25	24.5	13		305
63	141	25	24.5	16		306
80	160	25	34.0	22		307
100	160	25	39.5	22		308

