

21766

Zero point sensor

Design

Define the reference point in the axial direction of the machine spindle (e.g. for milling) quickly and easily. Place the device on the workpiece and move the tool (e.g. cutter) on the sprung sensor surface until both dial gauge needles point to 0. The lower edge of the tool will now be exactly 50 +/- 0.01 mm above the surface of the workpiece. The dimension 50 mm is entered into the machine control unit. The basic body and the sensor insert of the instrument are case-hardened HRC 60 +/- 1. **Supplied with test log in a wooden case.**



21766

Resolution of the dial gauge mm	Height of the sprung sensor surface mm	Sensor surface Ø mm	Housing Ø mm	21766	...
0.01	49.5-50	47	65		101

21764

Test arbors (check mandrels)

diebold

Design

- Taper shank more accurate than AT3
- Case-hardening steel (56+4 HRC); ground
- **Delivered in wooden case**

Applications

For aligning and checking tool spindles.



21764

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

21767

JCP1 edge finder



Design

The battery-powered edge finder made by Renishaw is placed in the collet chuck or milling cutter holder. As soon as the stylus touches a workpiece, the red lamp lights up.

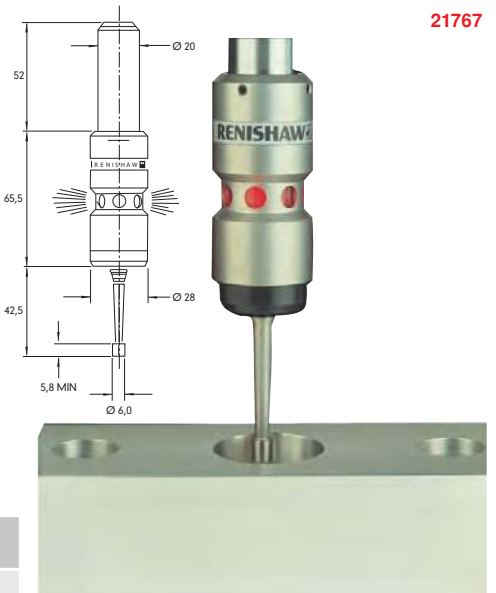
Applications

Only conductive materials can be detected. The edge finder can be used to measure different criteria and determine zero points of workpieces on all manual and CNC-controlled machine tools.

Criteria: Measuring the inside or outside, determining bore centre points centred on the work spindle, measuring reference edges, measuring height and depth. Repeat accuracy 0.001 mm. Overrun X, Y: 15 mm, Z: 5 mm. Degree of protection: IP 44.

Note:

For replacement batteries, see HHW catalogue Volume 2 (tools + machines) art.-no. 39900.



21767

21767 ...

101



21768

Universal 3D sensors



21768 101

Universal 3D sensors

Design

Proven mechanics in metal design, compact construction, dust-proof and watertight, convenient concentricity adjustment, scale for radial and axial sensing.

Technical data:

Clamping shank: 20 mm,
Reading accuracy: 0.01 mm,
Sensor ball diameter: 4 mm.

Scope of delivery:

Includes short probe insert.

Applications

For determining workpiece zero points, measuring lengths, bores, bore centres and reference edges.

Note:

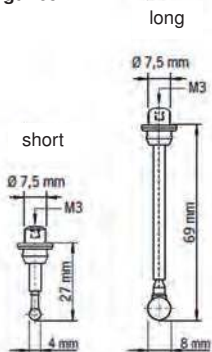
Milling cutter holder, extra short DIN 69871 AD (ISO 7388-1), diameter 20 mm, A = 35 mm, see art. no. 21632 132.

21768 102

Probe insert, short, diameter 4 mm, Length 27 mm.

21768 103

Probe insert, long, diameter 8 mm, Length 69 mm.



	21768	...
3D sensor		101
Probe insert, short		102
Probe insert, long		103



21768 101

21768 103

21768 102

21765

3D small edge finder ZERO MASKER



HAIMER

Design

- Small compact design
- Accuracy 0.01 mm
- Incl. short probe insert
- Suitable for use in confined spaces or for small HSK or SK 30 spindles

Applications

Sensing edges and bores.
Setting zero points.

Note:

Replacement probe, see art. no. 21768 102-103.

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



21765

21769

Digital 3D probe



Design

A further development of the proven mechanical 3D probe. The approach process can be accurately monitored on the digital dial. The dial has a 0.001-mm display with large digits and mm/inch changeover and is dust-proof and splash-proof.

Note:

Milling cutter holder, extra short, DIN 69871 AD, diameter 20 mm, A = 35 mm, see art. no. 21631 206. Suitable probe inserts. see art. no. 21768 102+103.

Measuring accuracy mm	Clamping shaft Ø mm	Housing diameter mm	21769	...
0.005	20	65		201



21769

21770 - 21771

Edge finders

Design

All parts are hardened, clamping and functional surfaces are ground, partly lapped. The probe head is flexibly connected to the clamp shaft by a tension spring.

21770 203

Design

With a **single** probe head.

21771 205

Design

With a **dual** probe head.

21771 500

Spare spring

Applications

For art no. 21770-21771.

	Probe head Ø mm	Straight shank Ø mm	Package = unit	21770	...	21771	...	21771	...
Edge finder, single	10	10	-		203				
Edge finder, dual	10 + 4	10	-				205		
Spare spring	-	-	10						500



21770

21771



21772

Electric edge finder 2D/3D



Design

- With all-round illuminated display
- The ball is spring-mounted and pushes away when passing the reference edge
- Accuracy +/- 0.01 mm
- Standard equipment: Edge finder with battery

Applications

For determining the spindle centre for a workpiece.
For internal and external centring.

Note:

Spare batteries, see HHW catalogue Volume 2 (tools and machinery) art. no. 39900 215.

21772 101



21772 102



Type	Shank Ø mm	Total length mm	Ball Ø mm	Battery V	21772	...
2D	20	160	10	1 x 12.0		101
3D	20	108	10	1 x 12.0		102

21773

Centring device DIACATOR

DIACATOR

Design

- With built-in, upright dial gauge and rotating probe
- Max. centring error 0.006–0.01mm depending on the probe
- Built-in overload clutch to prevent damage
- Mounted on removable Morse taper shank MK 1 (use reducers if the inner taper is larger) or on cylindrical shank (8 mm diameter)
- Includes swivelling probe for smaller bores, two angled probe inserts (25 and 48 mm), one reducing sleeve MK 1, three screw-on spacer sleeves (10, 12 and 16 mm), one stop (160 mm) and dial, in a wooden case

Applications

For the exact central alignment of bores and shafts on the working spindle on milling machines, drilling machines and drills.

Note:

Special probes in the lengths 100, 125, 150 and 200 mm are deliverable on request.

21773



Measuring range for inner Ø mm	Measuring range for outer Ø mm	21773	...
1.5–120	5.0–110		101

21774

Centring device CENTRO

21774 101

Design

- Highly accurate centring device with upright dial gauge
- Centring accuracy 0.003 mm
- For use with probe insert no. 21774 102.

Applications

For aligning bores.

Note:

The spindle speed should not exceed 150 rpm.
Concentricity errors in the spindle and clamping will be compensated.

21774 102

Probe insert

- Straight
- With ball diameter 5 mm

21774 103

Probe insert

- Bent
- With ball diameter 5 mm

21774 104

Probe insert

- Straight
- With ball diameter 2 mm

Applications

For small bores.

21774 101



21774 102



21774 103



Type	Measuring range inner Ø mm	Measuring range outer Ø mm	Shank diameter mm	21774	...
CENTRO	3–125	0–125	16		101
Probe insert, straight, ball Ø 5 mm	-	-	-		102
Probe insert bent, ball diameter 5 mm	-	-	-		103
Probe insert, straight, ball Ø 2 mm	-	-	-		104

21775 Precision centring device Centricator



Applications

For centring, positioning, aligning, adjusting, checking, probing flat surfaces and edge finding with a working accuracy of 2 µm. The high-precision mechanics with circumferential probe and stationary dial gauge form the heart of the device.

Note:

Deliverable with interchangeable straight shanks on request.

21775 201

Precision centring device CO-S

Design

- Fixed clamping shank, 16 mm diameter
- Dial gauge with 0.005 mm reading accuracy
- 1 probe insert ball, diameter 5 mm (for bores)
- 1 bent probe insert, ball diameter 5 mm (for shafts)
- In case

21775 204

Precision centring device C III-S

Design

- Fixed clamping shank, 16 mm diameter
- Dial gauge with 0.005 mm reading accuracy
- 1 probe insert ball, diameter 5 mm (for bores)
- 1 x hexagonal screwdriver SW 3
- Vial of watch oil no. 5
- In wooden device case

21775 201

21775 204



Type	Dial gauge reading accuracy mm	Sensing range inner diameter mm	Sensing range outer diameter mm	Flat faces mm	Probe depth inner diameter mm	Probe depth outer diameter mm	21775	...
CO-S	0.005	6-125	0-125	120-160	55	20		201
C III-S	0.005	2-400	0-300	0-480	150	150		204

21776 Individual accessory

Applications

For art. no. 21775.

21776 102

Edge finder

Applications

For positioning the working spindle axis using workpiece edges or corners.

21776 103

Probe insert

Design

Straight, ball diameter 1.6 mm.

Applications

For centring bores smaller than 6 mm.

21776 102

	21776	...
Edge finder		102
Probe insert		103



21776 103



21777 Accessory set

Design

Comprising:

- **Probe insert**, ball diameter 1.6 mm for centring bores smaller than 6 mm
- **Angle probe insert**, ball diameter 2.5 mm for aligning surfaces from 90 mm to 280 mm diameter
- **Extensions** to enlarge the working area
- **Flat face probe**, ball diameter 5.0 mm

Applications

For **Type C III-S** no. 21775 204 and 205.

21777

	21777	...
		101



21780

Articulated measuring stand

Design

Mechanical central clamping for all joints, infinitely adjustable clamping force, any position within the action radius can be achieved. Dial gauge mount with 8-mm shank diameter, length = 40 mm for direct mounting in the machine (collet chuck!).

Applications

For lever gauge measuring instruments. Used for: workpiece positioning, centring bores/pins, aligning workpieces, hard-to-reach places.

Note:

Lever gauge probes, see HHW catalogue Volume 2 (tools + machines) art. no. 33245 et seq.



21780

Action radius approx. mm	21780	...
150		201

21635

Replacement screws for Weldon

DIN 1835 B



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

21636

Saw blade mounts

Design

With straight shank for mounting on surface chucks, high degree of concentricity.

Applications

For mounting saw blades with diameters of 20–100 mm and saw blade thickness of 0.2–6 mm (see art. no. 17002–17008 and 17030–17031).

Note:

Saw blade not included in delivery.

21636 300

Design

Set, six pieces, consisting of all sizes of art. no. 21636 301–306, incl. case.

21636 301-308

Design

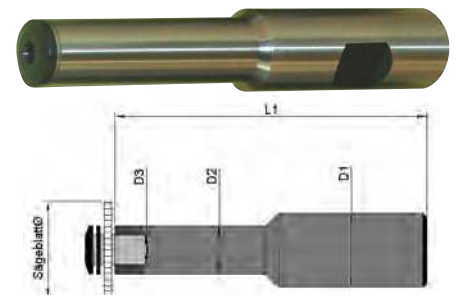
Individual.



21636 300

Set contents	Mount Ø mm	21636	...
Six pieces	20/25/32/40/50/63		300

For saw blade Ø mm	L1 mm	Ø D1 mm	Ø D2 mm	Ø D3 mm	Individual	
					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



21636 301-308

21655

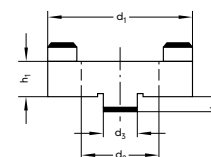
Driving rings

DIN 6366

Applications

For combined mill arbors, art. no. 21648–21650.

For mill arbor Ø d ₂ mm	h ₁ mm	d ₃ mm	h ₂ mm	d ₁ mm	21655	...
16	10	8	5.0	32		202
22	12	10	5.6	40		203
27	12	12	6.3	48		204
32	14	14	7.0	58		205
40	14	16	9.0	70		206



21655