

**INHALT
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SPLIT-BALL PROBES



Split-ball probes are universal bore gauges for indicating internal measurements. The modular design with extensive accessories enables gauging of most common bores. This allows use for serial and individual control as well as preferentially in the plant directly at the production machine.

Due to different styles through bores, blind bores, parallel distances, etc. can be gauged.



T-



R-

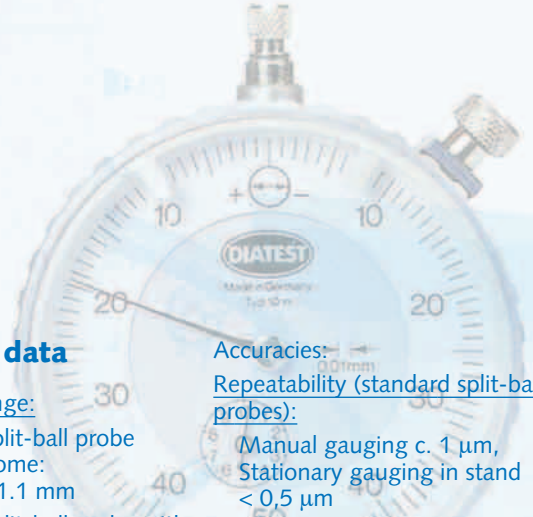


MH6-73-R

T-FB



T-T-



Technical data

Operating range:

- Standard split-ball probe in hard chrome:
Ø 0.47 – 41.1 mm
- Standard split-ball probe with carbide contacts:
Ø 1.5 – 41.1 mm (for heavy wear conditions)
- Standard split-ball probe with ceramic contacts:
Ø 3.7 – 41.1 mm (for soft materials like aluminium etc.)
- Blind bore split-ball probe:
Ø 1.5 – 41.1 mm (for gauging close to bottom of bore)
- 3-point split-ball probe :
Ø 4.75 – 150,6 mm (gauging of polygon-shaped workpieces)
- T-probes: Ø 2.05 – 9.8 mm (for gauging deep bores with Ø smaller than 8.2 mm)

Measuring range:

0.06 mm up to 2.2 mm (according to size of probe)

Accuracies:
Repeatability (standard split-ball probes):

Manual gauging c. 1 µm,
Stationary gauging in stand < 0,5 µm

Linearity (standard split-ball probes):

Size 0.5 – 1.50 max. 2% of travel, min. 0.001 mm
Size 1.75 – 40 max. 1% of travel, min. 0.001 mm

Calibration with setting ring

Measuring depth:

Up to Ø 4.2 max. 750 mm (T-probes with TV2/TV2,5)
Ø > 4.2 – 8.3 max. 1000 mm (T-probes with TV4)
Ø > 8.3 – 41.1 several metres (standard split-ball probes with TV8)

Contact points:

Standard version in hard chrome, different materials like carbide, ceramic (depending on size).
Special shapes for blind bores, parallel distances (grooves)
Special shapes on request

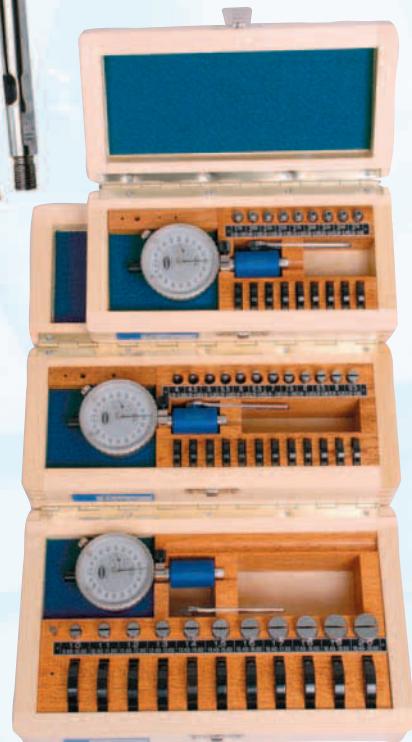
Ø kleiner 8,2 mm)



T-PA



T-3P



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Design

A split-ball probe unit consists of at least 5 parts:

Probe (4) made of hardened steel – in standard version chromed c. 1000 HV

Tapered needle (3) made of hardened steel or carbide with lapped taper.

Hardness steel needle: 62-64 HRC, hardness carbide needle: c. 1600 HV

Indicator holder (2) MH6-51 with clamp 8H6 or MH6-51-Z with clamp 3/8", retracting indicator holder MH6-73-R

Indicating unit (1) any mechanical or electronic indicator, micro comparator or electronic probe with display

Setting ring: DIATEST setting rings are available in metric or inch sizes. Rings up to $\varnothing 1.5$ have an insert made of synthetic sapphire, all other sizes are made of artificially aged and wear resistant special steel. DIATEST setting rings can only be supplied in fixed sizes according to works standard. Intermediate sizes can only be supplied as DIN 2250-C setting rings.

Travel transmission

The lapped taper of the needle transfers the spreading movement of the split-ball probe in a 1:1 ratio to the indicator.

Working Principle

The semicircular anvils of the probe are spread by the measu-

ring pressure of the indicating unit and centre themselves in the bore. The gauge is zero-set (calibrated) in a setting ring. When gauging by hand, determine axial centering by rocking gauge assembly in bore (see below ill., middle). Reversal point of Indicator hand shows measured value. When checking stands are used, rocking movement is not required.

Range of operation

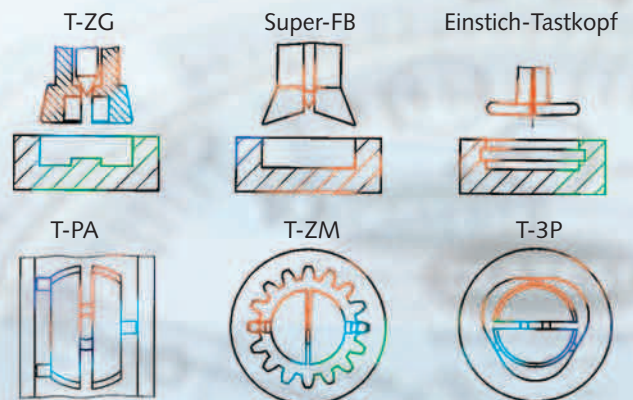
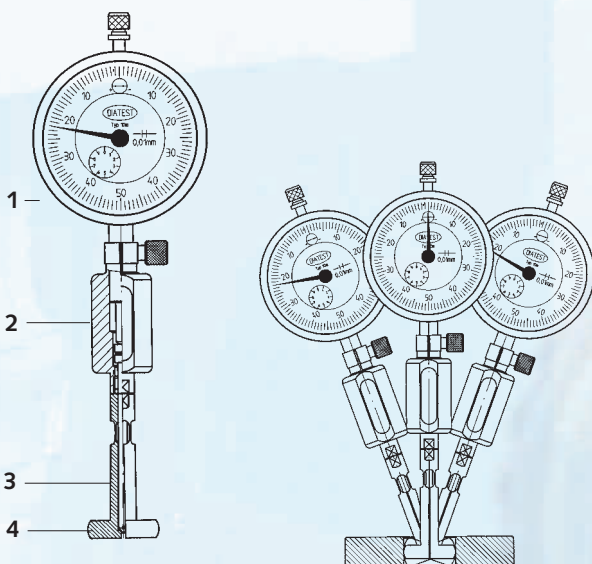
Apart from bore diameters DIATEST split-ball probes can detect geometrical shape defects such as ovality, concentricity, barrel-shape, etc. Besides, split-ball probes are available for gauging parallel distances, groove toothing (serration), internal gears and recesses.

Special shapes on request

Send drawing, workpiece sample and description of gauging method with inquiry.

Some special shapes of DIATEST split-ball bore gauges:

- T-ZG: bore gauging with centre stud (on request)
- Super-FB: blind bore gauging up to c. 0.1 mm to bore ground (on request)
- Recess-probe: diameter gauging of recesses (on request)
- T-PA: gauging of parallel distances (see page 6)
- T-ZM: gear gauging from $M_i = 3.5$ mm (see leaflet "Internal Gear Gauges")
- T-3P: gauging of polygon shapes from $\varnothing 4.75$ mm (see page 6)



Accessories

A large assortment of accessories complete the split-ball-programme. The standard connection thread M6 x 0.75 enables a multiple combination of the individual gauging elements according to the measuring job.

Retracting indicator holder (MH6-73-R)

For easy entry in bore.

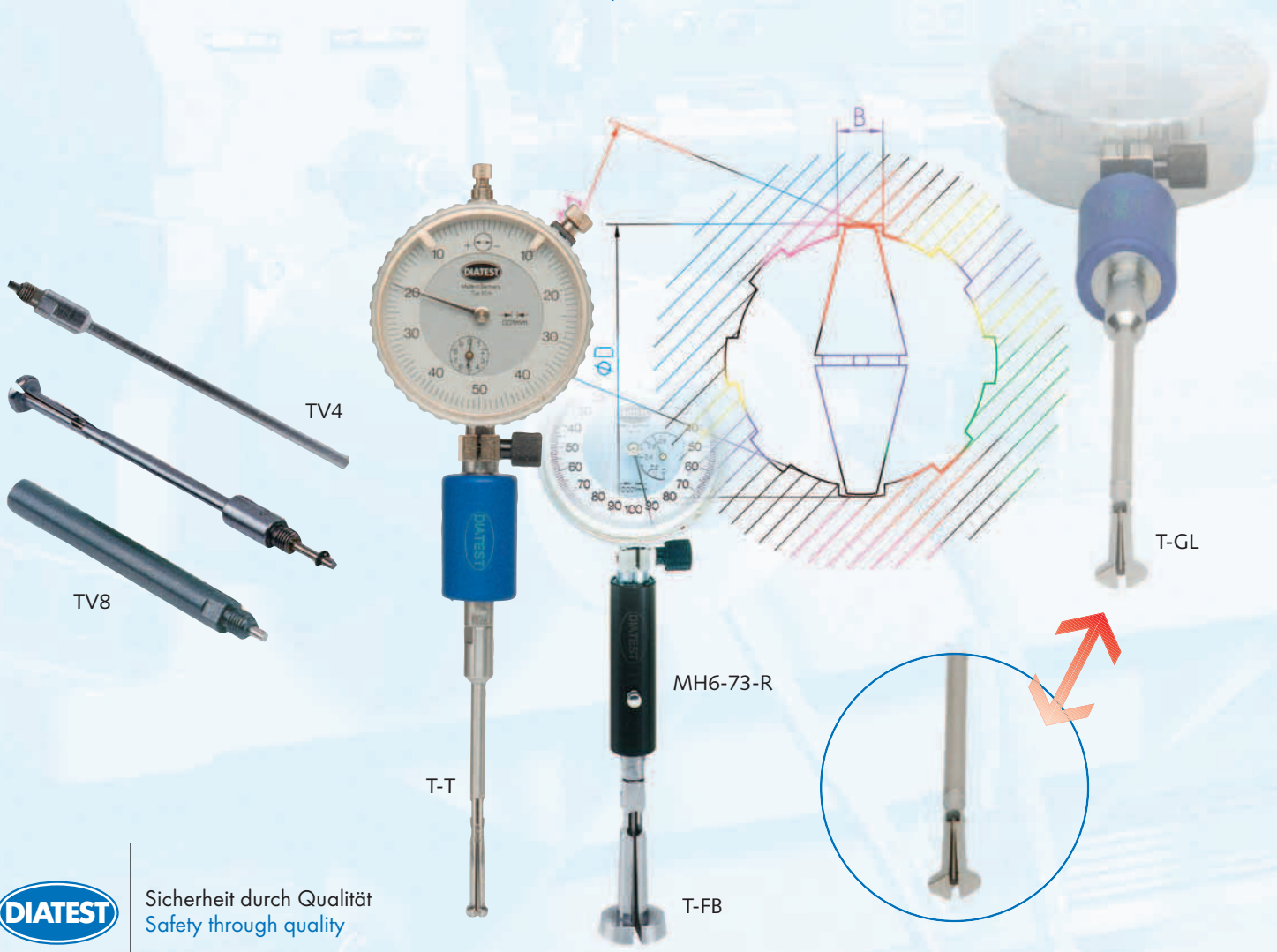
Depth extension TV8 (Ø 8,0)

For measuring deeper bores from c. Ø 8.2 mm. Available in different lengths from L = 20 mm up to L = 1000 mm. From TV8-80 (L = 80) depth extensions are temperature-stabilized.

Depth extensions for T-probes ...

... are required in combination with T-probes for measuring deeper bores smaller than Ø 8.3 mm. Diameter of extension depends on design of T-probe: TV2 (Ø 2.0), TV2.5 (Ø 2.5), TV4 (Ø 4.0). Extensions are available in different lengths from L = 20 mm up to L = 1000 mm (depending on extension). Connection thread of one side is always M6 x 0.75. This allows connection of all accessories. T-extensions are temperature-stabilized.

(T-GL: To measure the groove-Ø of twisted grooved tubes, like e.g. gun barrels. Measuring range of probes: Corresponding to T- or standard probes – see tables on page 12-14 and 20-21).



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Right angle attachment (W6)

Screwed between holder and probe where clearance between tool and workpiece is limited. Minimum distance between right angle attachment and obstacle: 27 mm plus length of probe (see table page 14).

Depth stops (TA8...)

Ideal for gauging bores at a specific depth. Also search for reversal point can be omitted. The depth stop TA8-24 is clamped onto depth extension TV8. The stop ring $\varnothing 24$ is interchangeable with stop rings $\varnothing 45$ or $\varnothing 60$. It is also possible to screw on a special stop ring instead of the discs.

Rotary adapter (TV64-D)

Probe can be turned in bore while dial indicator remains stationary. Specially suitable for roundness measuring of workpieces which cannot be turned.



Checking stands

In combination with split-ball probes checking stands offer a safe basis for an exact and fast bore gauging (measuring of \varnothing , bell mouth, conical form, barrel shape, roundness etc.). Search for reversal point is omitted. Amount of stroke can be set precisely.

This is particularly important when shape defects are detected. Accessories like e.g. floating holder and vee attachment enable a reliable and fast transaction of gauging also for unskilled workers. By using adjustable depth stops one can carry through measurements in indicated depths. Specially beneficial is the use of stands directly on the working place for bore control during production.



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Floating holder (SH-T)

It allows the split-ball probe, which is clamped in the checking stand, a slight "floating" in horizontal plane. A probe easily finds the exact axis when entering into the bore. Floating range continuously adjustable from 0 to 1.5 mm (until 3 mm without regulation).

Version SH-T-F for adjustment of measuring pressure.

Universal checking stand (MST102)

This checking stand is suitable for larger sizes. The measuring stroke is continuously adjustable from 0 – 130 mm. The vee attachment (standard accessory) or other centering devices can be mounted on the platen (100 x 100) in a T-slot.

Extras:

- Collar for $\varnothing 30$ mm c/w dial gauge bracket for precise height adjustment
- Platens in different widths (130 mm and 160 mm)
- Jib arms (150 mm and 200 mm) for larger work-pieces and BMD-floating holders (SH-BMD30)

Checking stand (MST58)

The MST58 is easy to handle and especially suitable for small work-pieces. The measuring stroke is continuously adjustable from 0 – 35 mm. With the checking nut you can easily and exactly adjust the height. The diameter of platen is 58 mm.

Extras:

- For easy positioning a clamp-on-vee (MST-WA) can be fixed to platen
- Perforated platen (MST-MT80) for measuring through bores up to $\varnothing 13$ mm



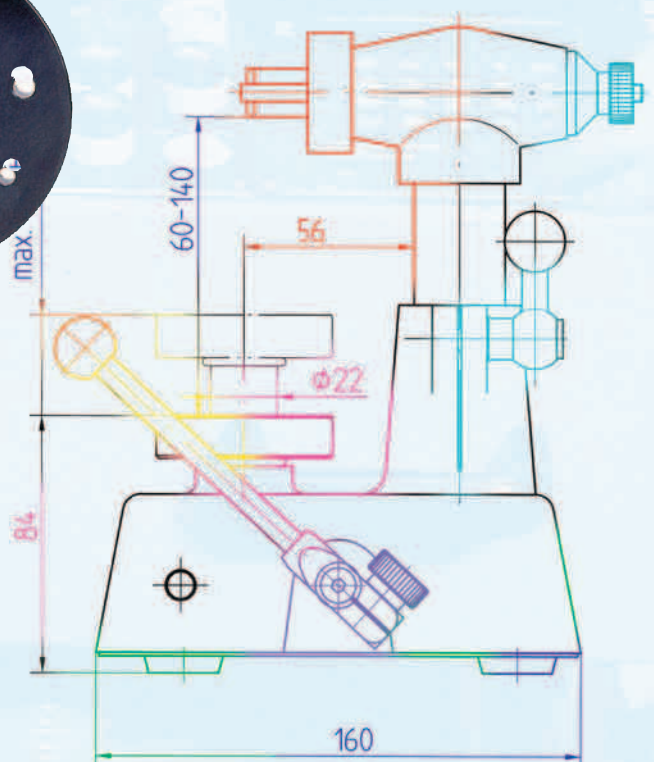
SH-T



MST-MT80



MST-WA



**DIATEST small bore gauges, standard, carbide and blind bore
for bore hole Ø 0.47 mm to 41.1 mm.**

Split-ball probes, complete sets¹⁾, setting ring sets²⁾

Range (Bold type = measuring range of set) mm	Standard probes hard chrome plated		Standard probes carbide inserted		Standard probes ceramic inserted		Blind bore probes hard chrome plated	
	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code
0,47 – 0,53 0,52 – 0,58	T-0,50 T-0,55							
0,57 – 0,67 0,65 – 0,77 0,75 – 0,87 0,85 – 0,97	T-0,60 T-0,70 T-0,80 T-0,90	M00						
0,95 – 1,15 1,07 – 1,25 1,17 – 1,35 1,27 – 1,45 1,37 – 1,55	T-1,0 T-1,1 T-1,2 T-1,3 T-1,4	M0						
1,50 – 1,90 1,80 – 2,20 2,05 – 2,45	T-1,75 T-2,00 T-2,25		T-HM-1,75 T-HM-2,00 T-HM-2,25				T-FB-1,75 T-FB-2,00 T-FB-2,25	
2,30 – 2,70 2,55 – 2,95 2,80 – 3,20 3,05 – 3,45 3,30 – 3,70 3,55 – 3,95	T-2,50 T-2,75 T-3,00 T-3,25 T-3,50 T-3,75	M1	T-HM-2,50 T-HM-2,75 T-HM-3,00 T-HM-3,25 T-HM-3,50 T-HM-3,75	M1-HM			T-FB-2,50 T-FB-2,75 T-FB-3,00 T-FB-3,25 T-FB-3,50 T-FB-3,75	M1-FB
3,80 – 4,20	T-4,00/1		T-HM-4,00/1				T-FB-4,00/1	
3,70 – 4,30 4,20 – 4,80 4,70 – 5,30 5,20 – 5,80 5,70 – 6,30 6,20 – 6,80 6,70 – 7,30 7,20 – 7,80 7,70 – 8,30 8,20 – 8,80 8,70 – 9,30 9,20 – 9,80	T-4,0 T-4,5 T-5,0 T-5,5 T-6,0 T-6,5 T-7,0 T-7,5 T-8,0 T-8,5 T-9,0 T-9,5	M2	T-HM-4,0 T-HM-4,5 T-HM-5,0 T-HM-5,5 T-HM-6,0 T-HM-6,5 T-HM-7,0 T-HM-7,5 T-HM-8,0 T-HM-8,5 T-HM-9,0 T-HM-9,5	M2-HM	T-KE-4,0 T-KE-4,5 T-KE-5,0 T-KE-5,5 T-KE-6,0 T-KE-6,5 T-KE-7,0 T-KE-7,5 T-KE-8,0 T-KE-8,5 T-KE-9,0 T-KE-9,5	M2-KE	T-FB-4,0 T-FB-4,5 T-FB-5,0 T-FB-5,5 T-FB-6,0 T-FB-6,5 T-FB-7,0 T-FB-7,5 T-FB-8,0 T-FB-8,5 T-FB-9,0 T-FB-9,5	M2-FB
9,70 – 10,30	T-10,0/2		T-HM-10,0/2		T-KE-10,0/2		T-FB-10,0/2	
9,40 – 10,60 10,40 – 11,60 11,40 – 12,60 12,40 – 13,60 13,40 – 14,60 14,40 – 15,60 15,40 – 16,60 16,40 – 17,60 17,40 – 18,60 18,40 – 19,60 19,40 – 20,60	T-10 T-11 T-12 T-13 T-14 T-15 T-16 T-17 T-18 T-19 T-20	M3	T-HM-10 T-HM-11 T-HM-12 T-HM-13 T-HM-14 T-HM-15 T-HM-16 T-HM-17 T-HM-18 T-HM-19 T-HM-20	M3-HM	T-KE-10 T-KE-11 T-KE-12 T-KE-13 T-KE-14 T-KE-15 T-KE-16 T-KE-17 T-KE-18 T-KE-19 T-KE-20	M3-KE	T-FB-10 T-FB-11 T-FB-12 T-FB-13 T-FB-14 T-FB-15 T-FB-16 T-FB-17 T-FB-18 T-FB-19 T-FB-20	M3-FB
20,40 – 21,60 21,40 – 22,60 22,40 – 23,60 23,40 – 24,60 24,40 – 25,60 25,40 – 26,60 26,40 – 27,60 27,40 – 28,60 28,40 – 29,60 29,40 – 30,60	T-21 T-22 T-23 T-24 T-25 T-26 T-27 T-28 T-29 T-30	M4	T-HM-21 T-HM-22 T-HM-23 T-HM-24 T-HM-25 T-HM-26 T-HM-27 T-HM-28 T-HM-29 T-HM-30	M4-HM	T-KE-21 T-KE-22 T-KE-23 T-KE-24 T-KE-25 T-KE-26 T-KE-27 T-KE-28 T-KE-29 T-KE-30	M4-KE	T-FB-21 T-FB-22 T-FB-23 T-FB-24 T-FB-25 T-FB-26 T-FB-27 T-FB-28 T-FB-29 T-FB-30	M4-FB
28,90 – 31,10 30,90 – 33,10 32,90 – 35,10 34,90 – 37,10 36,90 – 39,10 38,90 – 41,10	T-30/5 T-32 T-34 T-36 T-38 T-40	M5	T-HM-30/5 T-HM-32 T-HM-34 T-HM-36 T-HM-38 T-HM-40	M5-HM	T-KE-30/5 T-KE-32 T-KE-34 T-KE-36 T-KE-38 T-KE-40	M5-KE	T-FB-30/5 T-FB-32 T-FB-34 T-FB-36 T-FB-38 T-FB-40	M5-FB

Needles				Setting rings		
Standard needles		Blind bore needles		Set of setting rings ²⁾	Standard nominal sizes	inter-mediate sizes
Stahl Steel	Hartmetall Carbide	Stahl Steel	Hartmetall Carbide			
Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code
N00-030				RM00	R-0,500 R-0,550 R-0,600 R-0,700 R-0,800 R-0,900	
N00-040						
N0-070	NHM0-070			RM0	R-1,000 R-1,100 R-1,200 R-1,300 R-1,400	R-1,500
N1-100	NHM1-100	NFB1-100	NFB-HM 1-100	RM1	R-1,750 R-2,000 R-2,250 R-2,500 R-2,750 R-3,000 R-3,250 R-3,500 R-3,750	
N1-150	NHM1-150	NFB1-150	NFB-HM 1-150			
N2-270	NHM2-270	NFB2-270	NFB-HM 2-270	RM2	R-4,000 R-4,500 R-5,000 R-5,500 R-6,000 R-6,500 R-7,000 R-7,500 R-8,000 R-8,500 R-9,000 R-9,500	R-5,750 R-7,750
N3-310	NHM3-310	NFB3-310	NFB-HM 3-310	RM3	R-10,000 R-11,000 R-12,000 R-13,000 R-14,000 R-15,000 R-16,000 R-17,000 R-18,000 R-19,000 R-20,000	R-10,500 R-11,500 R-12,500 R-13,500 R-14,500 R-15,500 R-16,500 R-17,500 R-18,500 R-19,500
N3-310	NHM3-310	NFB3-310	NFB-HM 3-310	RM4	R-21,000 R-22,000 R-23,000 R-24,000 R-25,000 R-26,000 R-27,000 R-28,000 R-29,000 R-30,000	R-20,500 R-21,500 R-22,500 R-23,500 R-24,500 R-25,500 R-26,500 R-27,500 R-28,500 R-29,500
N5-350	NHM5-350	NFB5-350	NFB-HM 5-350	RM5	R-30,000 R-32,000 R-34,000 R-36,000 R-38,000 R-40,000	R-31,000 R-33,000 R-35,000 R-37,000 R-39,000

Technical information

Length of probes	Max. measuring depth	Min. measuring height (Standard probe)	Min. measuring height (Blind bore probe)	Measuring pressure of dial gauge
L ³⁾	M ³⁾	H1 ³⁾	H2 ³⁾	N(ca)
19,5	1,5	0,25		0,3 – 0,6
	1,8	0,27		
	2,0	0,29		
	2,5	0,31		
	2,8	0,33		
	3,0	0,35		
19,5	11	0,6		0,5 – 0,8
25,3	17	0,9		
30,6	22	1,2	0,3	0,8 – 1
47,3	40	2	0,5	1,2 – 1,8
	50			
48,5	50	3,3	1,0	1,5 – 2
48,5	90	3,6	1,2	1,5 – 2,5
48,5	100	4	1,5	1,5 – 2,5



1) A complete set contains:
Wooden box with range chart (space for setting rings is left), split-ball probes and needles, standard holder MH6-51 and wrench SW7-G.

2) Extent of set: See setting rings standard nominal sizes.

3) See sketch page 15.

DIATEST laboratory bore gauges, range 0.47 mm to 30.60 mm.

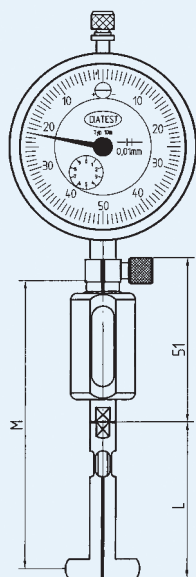
Several basic sets in one box

Range	Standard probes hard chrome plated	Standard probes carbide inserted	Standard probes ceramic inserted	Blind bore probes hard chrome plated	Set of setting rings ²⁾
mm	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Best.-Nr. Order Code
0,47 – 1,55 0,95 – 3,95 1,50 – 9,80 1,50 – 20,60 3,70 – 30,60	M000 M01 M12 M123 M234	M12-HM M123-HM M234-HM	M234-KE	M12-FB M123-FB M234-FB	RM000 RM01 RM12 RM123 RM234

¹⁾ A complete set contains:
Wooden box with range chart
(space for setting rings is left),
split-ball probes and needles,
standard holder MH6-51 and
wrench SW7-G.

²⁾ Extent of set: See setting rings
standard nominal sizes.

Technical information



Maximum measuring depth M

Depends on probe size. For determination of max. measuring depth. Insert bore gauge partly into bore up to indicator.

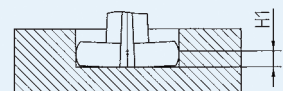
Larger measuring depths from:
 \varnothing 8.20 mm with extension
 \varnothing 2.05 mm with T-probes
 \varnothing 0.95 mm with special probes

Length of probes L

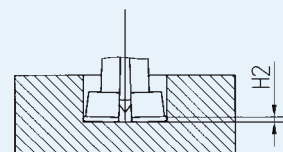
When space is limited and right angle attachment is used, minimum distance between bore obstruction = 27 mm + length of probes (L).

Minimum measuring height H

Indicates how close to bore ground can be gauged when probe is spread to maximum.



Standard probe



Blind bore probe

DIATEST small bore gauges, standard, carbide and blind bore for bore hole Ø 0.0185" to 1.6200".

) Split-ball probes, complete sets¹⁾, setting ring sets²⁾

Range (Bold type = measuring range of set) inch	Standard probes carbide inserted		Standard probes ceramic inserted		Blind bore probes hard chrome plated		
	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	Einzel Single Best.-Nr. Order Code	Gerät ¹⁾ Set ¹⁾ Best.-Nr. Order Code	
0.0185 – 0.0210 0.0205 – 0.0228	T-0X T-00						
0.0224 – 0.0264 0.0256 – 0.0300 0.0295 – 0.0343 0.0335 – 0.0380	T-01 T-02 T-03 T-04	E00					
0.0375 – 0.0450 0.0430 – 0.0490 0.0470 – 0.0530 0.0510 – 0.0570 0.0540 – 0.0610	T-05 T-06 T-07 T-08 T-09	E0					
0.057 – 0.075 0.067 – 0.085 0.081 – 0.096	T-011 T-012 T-013	E1	T-HM-011 T-HM-012 T-HM-013	E1-HM		T-FB-011 T-FB-012 T-FB-013	
0.091 – 0.110 0.105 – 0.126 0.120 – 0.140 0.134 – 0.155 0.149 – 0.169	T-014 T-015 T-016 T-017 T-018		T-HM-014 T-HM-015 T-HM-016 T-HM-017 T-HM-018			T-FB-014 T-FB-015 T-FB-016 T-FB-017 T-FB-018	
0.165 – 0.200 0.185 – 0.220 0.209 – 0.244 0.235 – 0.270 0.260 – 0.295 0.288 – 0.323 0.313 – 0.347 0.335 – 0.370 0.360 – 0.394	T-021 T-022 T-023 T-024 T-025 T-026 T-027 T-028 T-029	E2	T-HM-021 T-HM-022 T-HM-023 T-HM-024 T-HM-025 T-HM-026 T-HM-027 T-HM-028 T-HM-029	E2-HM	T-KE-021 T-KE-022 T-KE-023 T-KE-024 T-KE-025 T-KE-026 T-KE-027 T-KE-028 T-KE-029	E2-KE	T-FB-021 T-FB-022 T-FB-023 T-FB-024 T-FB-025 T-FB-026 T-FB-027 T-FB-028 T-FB-029
0.380 – 0.425 0.420 – 0.480 0.474 – 0.531 0.524 – 0.583 0.573 – 0.634 0.622 – 0.681 0.672 – 0.730 0.721 – 0.780 0.772 – 0.830	T-031 T-032 T-033 T-034 T-035 T-036 T-037 T-038 T-039	E3	T-HM-031 T-HM-032 T-HM-033 T-HM-034 T-HM-035 T-HM-036 T-HM-037 T-HM-038 T-HM-039	E3-HM	T-KE-031 T-KE-032 T-KE-033 T-KE-034 T-KE-035 T-KE-036 T-KE-037 T-KE-038 T-KE-039	E3-KE	T-FB-031 T-FB-032 T-FB-033 T-FB-034 T-FB-035 T-FB-036 T-FB-037 T-FB-038 T-FB-039
0.833 – 0.880 0.872 – 0.930 0.922 – 0.980 0.972 – 1.036 1.022 – 1.080 1.072 – 1.130	T-041 T-042 T-043 T-044 T-045 T-046	E4	T-HM-041 T-HM-042 T-HM-043 T-HM-044 T-HM-045 T-HM-046	E4-HM	T-KE-041 T-KE-042 T-KE-043 T-KE-044 T-KE-045 T-KE-046	E4-KE	T-FB-041 T-FB-042 T-FB-043 T-FB-044 T-FB-045 T-FB-046
1.130 – 1.220 1.210 – 1.300 1.290 – 1.380 1.370 – 1.460 1.450 – 1.540 1.530 – 1.620	T-051 T-052 T-053 T-054 T-055 T-056	E5	T-HM-051 T-HM-052 T-HM-053 T-HM-054 T-HM-055 T-HM-056	E5-HM	T-KE-051 T-KE-052 T-KE-053 T-KE-054 T-KE-055 T-KE-056	E5-KE	T-FB-051 T-FB-052 T-FB-053 T-FB-054 T-FB-055 T-FB-056

Needles				Setting rings			
Standard needles		Blind bore needles		Set of setting rings ²⁾	Standard nominal sizes	Nominal size Inch	inch size in mm
Stahl Steel Best.-Nr. Order Code	Hartmetall Carbide Best.-Nr. Order Code	Stahl Steel Best.-Nr. Order Code	Hartmetall Carbide Best.-Nr. Order Code				
N00-030				RE00	R-0X	0.020	0,5080
N00-040					R-00	0.022	0,5588
					R-01	0.025	0,6350
					R-02	0.028	0,7112
					R-03	0.032	0,8128
					R-04	0.036	0,9144
N0-070	NHM0-070			RE0	R-05	0.040	1,0160
					R-06	0.045	1,1430
					R-07	0.050	1,2700
					R-08	0.055	1,3970
					R-09	0.060	1,5240
N1-100	NHM1-100	NFB1-100	NFB-HM 1-100	RE1	R-011	0.0625	1,5875
					R-012	0.0750	1,9050
					R-013	0.0875	2,2225
					R-014	0.1000	2,5400
					R-015	0.1150	2,9210
N1-150	NHM1-150	NFB1-150	NFB-HM 1-150		R-016	0.1300	3,3020
					R-017	0.1450	3,6830
					R-018	0.1600	4,0640
N2-270	NHM2-270	NFB2-270	NFB-HM 2-270	RE2	R-021	0.1800	4,572
					R-022	0.2000	5,080
					R-023	0.2250	5,715
					R-024	0.2500	6,350
					R-025	0.2750	6,985
					R-026	0.3000	7,620
					R-027	0.3250	8,255
					R-028	0.3500	8,890
					R-029	0.3750	9,525
N3-310	NHM3-310	NFB3-310	NFB-HM 3-310	RE3	R-031	0.4000	10,160
					R-032	0.4500	11,430
					R-033	0.5000	12,700
					R-034	0.5500	13,970
					R-035	0.6000	15,240
					R-036	0.6500	16,510
					R-037	0.7000	17,780
					R-038	0.7500	19,050
					R-039	0.8000	20,320
N3-310	NHM3-310	NFB3-310	NFB-HM 3-310	RE4	R-041	0.8500	21,590
					R-042	0.9000	22,860
					R-043	0.9500	24,130
					R-044	1.0000	25,400
					R-045	1.0500	26,670
					R-046	1.1000	27,940
N5-350	NHM5-350	NFB5-350	NFB-HM 5-350	RE5	R-051	1.1800	29,972
					R-052	1.2600	32,004
					R-053	1.3400	34,036
					R-054	1.4200	36,068
					R-055	1.5000	38,100
					R-056	1.5800	40,132

Technische Daten
Technical information

Length of probes	Max. measuring depth	Min. measuring height (Standard probe)	Min. measuring height (Blind bore probe)	Measuring pressure of dial gauge
L ³⁾ mm	M ³⁾ mm	H1 ³⁾ mm	H2 ³⁾ mm	N(ca)
19,5	1,5 1,8 2,0 2,5 2,8 3,0	0,25 0,27 0,29 0,31 0,33 0,35		0,3 – 0,6
19,5	11	0,6		0,5 – 0,8
25,3	17	0,9		
30,6	22	1,2	0,3	0,8 – 1
47,3	40 50	2	0,5	1,2 – 1,8
48,5	50	3,3	1,0	1,5 – 2
48,5	90	3,6	1,2	1,5 – 2,5
48,5	100	4	1,5	1,5 – 2,5



1) A complete set contains:
Wooden box with range chart (space for setting rings is left), split-ball probes and needles, standard holder MH6-51 and wrench SW7-G.

2) Extent of set: See setting rings standard nominal sizes.

3) See sketch page 19.

DIATEST laboratory bore gauges, range 0.0185" to 1.13".

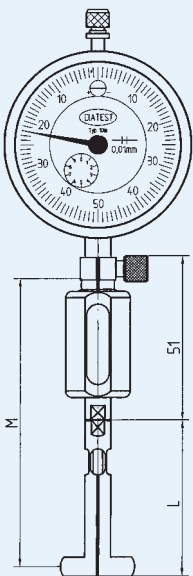
Several basic sets in one box

Range	Standard probes hard chrome plated	Standard probes carbide inserted	Standard probes ceramic inserted	Blind bore probes hard chrome plated	Set of setting rings ²⁾
inch	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Geräte ¹⁾ Sets ¹⁾ Best.-Nr. Order Code	Best.-Nr. Order Code
0.0185 – 0.0610 0.0375 – 0.1690 0.0570 – 0.3940 0.0570 – 0.8300 0.1650 – 1.1300	E000 E01 E12 E123 E234	E12-HM E123-HM E234-HM	E234-KE	E12-FB E123-FB E234-FB	RE000 RE01 RE12 RE123 RE234

1) A complete set contains:
Wooden box with range chart
(space for setting rings is left),
split-ball probes and needles,
standard holder MH6-51 and
wrench SW7-G.

2) Extent of set: See setting rings
standard nominal sizes.

Technische Informationen Technical information



Maximum measuring depth M

Depends on probe size. For determination of max. measuring depth. Insert bore gauge partly into bore up to indicator.

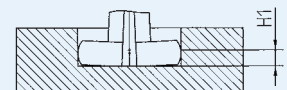
Larger measuring depths from:
Ø 8.20 mm with extension
Ø 2.05 mm with T-probes
Ø 0.95 mm with special probes

Length of probes L

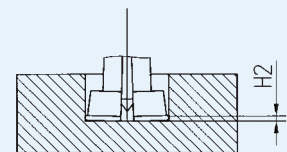
When space is limited and right angle attachment is used, minimum distance between bore obstruction = 27 mm + length of probes (L).

Minimum measuring height H

Indicates how close to bore ground can be gauged when probe is spread to maximum.



Standard-Tastkopf
Standard probe



Sackloch-Tastkopf
Blind bore probe

DIATEST-T-probes to measure deeper bores, Ø 2.05 mm to 9.80 mm.

Range (Bold type = measuring range of set) mm	Standard-T-probes hard chrome plated		Standard-T-probes carbide inserted		Blind bore probes hard chrome plated		Setting rings		Standard needles		Blind bore needles	
	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Satz Set	Stahl Steel	Hartmetall Carbide	Stahl Steel	
	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	
2,05 – 2,45 2,30 – 2,70	T-T-2,25 T-T-2,50							R-2,250 R-2,500		NT1-100	NT-HM1-100	
2,55 – 2,95 2,80 – 3,20 3,05 – 3,45 3,30 – 3,70 3,55 – 3,95 3,80 – 4,20	T-T-2,75 T-T-3,00 T-T-3,25 T-T-3,50 T-T-3,75 T-T-4,00	M1-T	T-T-HM-2,75 T-T-HM-3,00 T-T-HM-3,25 T-T-HM-3,50 T-T-HM-3,75 T-T-HM-4,00	M1-T-HM	T-T-FB-2,75 T-T-FB-3,00 T-T-FB-3,25 T-T-FB-3,50 T-T-FB-3,75 T-T-FB-4,00	M1-T-FB		R-2,750 R-3,000 R-3,250 R-3,500 R-3,750 R-4,000	RM1-T	NT1-150	NT-HM1-150	NT-FB1-150
4,20 – 4,80 4,70 – 5,30 5,20 – 5,80 5,70 – 6,30 6,20 – 6,80 6,70 – 7,30 7,20 – 7,80 7,70 – 8,30 8,20 – 8,80 8,70 – 9,30 9,20 – 9,80	T-T-4,5 T-T-5,0 T-T-5,5 T-T-6,0 T-T-6,5 T-T-7,0 T-T-7,5 T-T-8,0 T-T-8,5 T-T-9,0 T-T-9,5	M2-T	T-T-HM-4,5 T-T-HM-5,0 T-T-HM-5,5 T-T-HM-6,0 T-T-HM-6,5 T-T-HM-7,0 T-T-HM-7,5 T-T-HM-8,0 T-T-HM-8,5 T-T-HM-9,0 T-T-HM-9,5	M2-T-HM	T-T-FB-4,5 T-T-FB-5,0 T-T-FB-5,5 T-T-FB-6,0 T-T-FB-6,5 T-T-FB-7,0 T-T-FB-7,5 T-T-FB-8,0 T-T-FB-8,5 T-T-FB-9,0 T-T-FB-9,5	M2-T-FB		R-4,500 R-5,000 R-5,500 R-6,000 R-6,500 R-7,000 R-7,500 R-8,000 R-8,500 R-9,000 R-9,500	RM2-T	NT2-150	NT-HM2-150	NT-FB2-150

DIATEST-T-probes to measure deeper bores, Ø 0.081" to 0.388".

Range (Bold type = measuring range of set) inch	Standard-T-probes hard chrome plated		Standard-T-probes carbide inserted		Blind bore probes hard chrome plated		Setting rings		Standard needles		Blind bore needles	
	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Gerät ¹⁾ Set ¹⁾	Einzeln Single	Satz Set	Stahl Steel	Hartmetall Carbide	Stahl Steel	
	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	Best.-Nr. Order Code	
0.081 – 0.094 0.092 – 0.107	T-T-013 T-T-014	E1-T						R-013 R-014		NT1-100	NT-HM1-100	
0.107 – 0.122 0.122 – 0.137 0.137 – 0.152 0.152 – 0.167	T-T-015 T-T-016 T-T-017 T-T-018		T-T-HM-015 T-T-HM-016 T-T-HM-017 T-T-HM-018	E1-T-HM	T-T-FB-015 T-T-FB-016 T-T-FB-017 T-T-FB-018	E1-T-FB		R-015 R-016 R-017 R-018	RE1-T	NT1-150	NT-HM1-150	NT-FB1-150
0.166 – 0.187 0.186 – 0.212 0.211 – 0.237 0.236 – 0.262 0.261 – 0.287 0.286 – 0.312 0.311 – 0.337 0.336 – 0.362 0.361 – 0.388	T-T-021 T-T-022 T-T-023 T-T-024 T-T-025 T-T-026 T-T-027 T-T-028 T-T-029	E2-T	T-T-HM-021 T-T-HM-022 T-T-HM-023 T-T-HM-024 T-T-HM-025 T-T-HM-026 T-T-HM-027 T-T-HM-028 T-T-HM-029	E2-T-HM	T-T-FB-021 T-T-FB-022 T-T-FB-023 T-T-FB-024 T-T-FB-025 T-T-FB-026 T-T-FB-027 T-T-FB-028 T-T-FB-029	E2-T-FB		R-021 R-022 R-023 R-024 R-025 R-026 R-027 R-028 R-029	RE2-T	NT2-150	NT-HM2-150	NT-FB2-150

1) A complete set contains:
Wooden box with range chart
(space for setting rings is left),
standard holder MH6-51, T-split-
ball probes, T-needles and depth
extension TV (length 64 mm),
wrenches SW7-G and SW1,7-2-3-G.

Technische Daten
Technical information

Length of probes	Min. measuring height (Standard probe)	Min. measuring height (Blind bore probe)	Required T-extension	Measuring depth with T-extension L = 64 mm	Measuring pressure of dial gauge N(ca)
25,3	0,9		TV2-64	90	0,8 – 1
30,6	1,2	0,3	TV2,5-64	95	0,8 – 1
31	1,7	0,5	TV4-64	95	1 – 1,5



Technische Daten
Technical information

Länge der Tastköpfe Length of probes mm	Mindest Messhöhe (Standard-Tastkopf) Min. measuring height (Standard probe) mm	Mindest Messhöhe (Sackloch-Tastkopf) Min. measuring height (Blind bore probe) mm	Benötigte T-Verlängerung Required T-extension mm	Messtiefe mit T-Verlängerung Measuring depth with T-extension L = 64 mm mm	Messkraft der Messuhr Measuring pressure of dial gauge N(ca)
25,3	0,9		TV2	90	0,8 – 1
30,6	1,2	0,3	TV2,5	95	0,8 – 1
31	1,7	0,5	TV4	95	1 – 1,5

**DIATEST-3-point-probes for bores
from 4.75 mm to 150.6 mm/0.187" to 5.929".**

Range	3-point probes ¹⁾	Range	3-point needles
mm	Best-Nr. Order Code	inch	Best-Nr. Order Code
4,75 – 5,30 5,25 – 5,80 5,75 – 6,30 6,25 – 6,80 6,75 – 7,30 7,25 – 7,80 7,75 – 8,30 8,25 – 8,80 8,75 – 9,30 9,25 – 9,80 9,75 – 10,30	T-3P-5,0 T-3P-5,5 T-3P-6,0 T-3P-6,5 T-3P-7,0 T-3P-7,5 T-3P-8,0 T-3P-8,5 T-3P-9,0 T-3P-9,5 T-3P-10,0	0.187 – 0.209 0.207 – 0.228 0.226 – 0.248 0.246 – 0.268 0.266 – 0.287 0.285 – 0.307 0.305 – 0.327 0.325 – 0.346 0.344 – 0.366 0.364 – 0.386 0.384 – 0.406	N3P-2-270 oder/or N3P-HM2-270
10,25 – 10,80 10,75 – 11,30 11,25 – 11,80 11,75 – 12,30 12,25 – 12,80 12,75 – 13,30 13,25 – 13,80 13,75 – 14,30 14,25 – 14,80 14,75 – 15,30 15,25 – 15,80 15,75 – 16,30 16,25 – 16,80 16,75 – 17,30 17,25 – 17,80 17,75 – 18,30 18,25 – 18,80 18,75 – 19,30 19,25 – 19,80 19,75 – 20,30	T-3P-10,5 T-3P-11 T-3P-11,5 T-3P-12 T-3P-12,5 T-3P-13 T-3P-13,5 T-3P-14 T-3P-14,5 T-3P-15 T-3P-15,5 T-3P-16 T-3P-16,5 T-3P-17 T-3P-17,5 T-3P-18 T-3P-18,5 T-3P-19 T-3P-19,5 T-3P-20	0.404 – 0.425 0.423 – 0.445 0.443 – 0.465 0.463 – 0.484 0.482 – 0.504 0.502 – 0.524 0.522 – 0.543 0.541 – 0.563 0.561 – 0.583 0.581 – 0.602 0.600 – 0.622 0.620 – 0.642 0.640 – 0.661 0.659 – 0.681 0.679 – 0.701 0.699 – 0.720 0.719 – 0.740 0.738 – 0.760 0.758 – 0.780 0.778 – 0.799	N3P-3-310 oder/or N3P-HM3-310
20,25 – 20,80 20,75 – 21,30 21,25 – 21,80 21,75 – 22,30 22,25 – 22,80 22,75 – 23,30 23,25 – 23,80 23,75 – 24,30 24,25 – 24,80 24,75 – 25,30 25,25 – 25,80	T-3P-20,5 T-3P-21 T-3P-21,5 T-3P-22 T-3P-22,5 T-3P-23 T-3P-23,5 T-3P-24 T-3P-24,5 T-3P-25 T-3P-25,5	0.797 – 0.819 0.817 – 0.839 0.837 – 0.858 0.856 – 0.878 0.876 – 0.898 0.896 – 0.917 0.915 – 0.937 0.935 – 0.957 0.955 – 0.976 0.974 – 0.996 0.994 – 1.016	N3P-3-310 oder/or N3P-HM3-310
Messbereich Range = ± 0,6 mm 25,4 – 26,6 26,4 – 27,6 usw. bis/etc. till 54,4 – 55,6	T-3P-26 T-3P-27 usw. bis/etc. till T-3P-55	Messbereich Range = ± 0,024" 1.000 – 1.047 1.039 – 1.087 usw. bis/etc. till 2.142 – 2.189	N3P-3-310 oder/or N3P-HM3-310
55,4 – 56,6 56,4 – 57,6 usw. bis/etc. till 74,4 – 75,6	T-3P-56 T-3P-57 usw. bis/etc. till T-3P-75	2.181 – 2.228 2.220 – 2.268 usw. bis/etc. till 2.929 – 2.976	
75,4 – 76,6 76,4 – 77,6 usw. bis/etc. till 99,4 – 100,6	T-3P-76 T-3P-77 usw. bis/etc. till T-3P-100	2.969 – 3.016 3.008 – 3.055 usw. bis/etc. till 3.913 – 3.961	
100,4 – 101,6 101,4 – 102,6 usw. bis/etc. till 149,4 – 150,6	T-3P-101 T-3P-102 usw. bis/etc. till T-3P-150	3.953 – 4.000 3.992 – 4.039 usw. bis/etc. till 5.882 – 5.929	



¹⁾ 3-point probes are carbide inserted, angular position 120°.
3-point probes with different angular position and
3-point blind bore probes (hard chromed) on request.

DIATEST-PA-probes to measure parallel distances from 4.7 mm to 41.1mm/0.185" to 1.618".

Range mm	Standard version		Range inch	Blind bore version	
	PA-Tastköpfe ¹⁾ PA-probes ¹⁾ Best.-Nr. Order Code	Triebnadeln Needles Best.-Nr. Order Code		PA-Tastköpfe ¹⁾ PA-probes ¹⁾ Best.-Nr. Order Code	Triebnadeln Needles Best.-Nr. Order Code
4,7 – 5,3 5,2 – 5,8 5,7 – 6,3 6,2 – 6,8 6,7 – 7,3 7,2 – 7,8 7,7 – 8,3 8,2 – 8,8 8,7 – 9,3 9,2 – 9,8	T-PA-5,0 T-PA-5,5 T-PA-6,0 T-PA-6,5 T-PA-7,0 T-PA-7,5 T-PA-8,0 T-PA-8,5 T-PA-9,0 T-PA-9,5	N2-270 oder/or NHM2- 270	0.185 – 0.209 0.205 – 0.228 0.224 – 0.248 0.244 – 0.268 0.264 – 0.287 0.283 – 0.307 0.303 – 0.327 0.323 – 0.346 0.343 – 0.366 0.362 – 0.386	T-FB-PA-5,0 T-FB-PA-5,5 T-FB-PA-6,0 T-FB-PA-6,5 T-FB-PA-7,0 T-FB-PA-7,5 T-FB-PA-8,0 T-FB-PA-8,5 T-FB-PA-9,0 T-FB-PA-9,5	NFB2-270 oder/or NFB-HM2- 270
9,4 – 10,6 10,4 – 11,6 11,4 – 12,6 12,4 – 13,6 13,4 – 14,6 14,4 – 15,6 15,4 – 16,6 16,4 – 17,6 17,4 – 18,6 18,4 – 19,6 19,4 – 20,6 20,4 – 21,6 21,4 – 22,6 22,4 – 23,6 23,4 – 24,6 24,4 – 25,6 25,4 – 26,6 26,4 – 27,6 27,4 – 28,6 28,4 – 29,6 29,4 – 30,6	T-PA-10 T-PA-11 T-PA-12 T-PA-13 T-PA-14 T-PA-15 T-PA-16 T-PA-17 T-PA-18 T-PA-19 T-PA-20 T-PA-21 T-PA-22 T-PA-23 T-PA-24 T-PA-25 T-PA-26 T-PA-27 T-PA-28 T-PA-29 T-PA-30	N3-310 oder/or NHM3- 310	0.370 – 0.417 0.409 – 0.457 0.449 – 0.496 0.488 – 0.535 0.528 – 0.575 0.567 – 0.614 0.606 – 0.654 0.646 – 0.693 0.685 – 0.732 0.724 – 0.772 0.764 – 0.811 0.803 – 0.850 0.843 – 0.890 0.882 – 0.929 0.921 – 0.969 0.961 – 1.008 1.000 – 1.047 1.039 – 1.087 1.079 – 1.126 1.118 – 1.165 1.157 – 1.205	T-FB-PA-10 T-FB-PA-11 T-FB-PA-12 T-FB-PA-13 T-FB-PA-14 T-FB-PA-15 T-FB-PA-16 T-FB-PA-17 T-FB-PA-18 T-FB-PA-19 T-FB-PA-20 T-FB-PA-21 T-FB-PA-22 T-FB-PA-23 T-FB-PA-24 T-FB-PA-25 T-FB-PA-26 T-FB-PA-27 T-FB-PA-28 T-FB-PA-29 T-FB-PA-30	NFB3-310 oder/or NFB-HM3- 310
28,9 – 31,1 30,9 – 33,1 32,9 – 35,1 34,9 – 37,1 36,9 – 39,1 38,9 – 41,1	T-PA-30/5 T-PA-32 T-PA-34 T-PA-36 T-PA-38 T-PA-40	N5-350 oder/or NHM5- 350	1.138 – 1.224 1.217 – 1.303 1.295 – 1.382 1.374 – 1.461 1.453 – 1.539 1.531 – 1.618	T-FB-PA-30/5 T-FB-PA-32 T-FB-PA-34 T-FB-PA-36 T-FB-PA-38 T-FB-PA-40	NFB5-350 oder/or NFB-HM5- 350



¹⁾ P-probes are hard chrome plated
Special designs on request

