

# Probe TC50/TC51/TC52



# BLUM

# TC50/TC52

Standard Series  
Universal Touch Probe  
Multidirectional

Standard series Ø 63 mm  
Compact series Ø 40 mm

- very high acceleration and measuring speeds
- precise non-lobing touch characteristics
- robust design
- no-wear, optoelectronic signal generation
- extended battery life
- reliable infrared data transmission
- compatible with BLUM bore gauge BG40 and adjustable boring bar

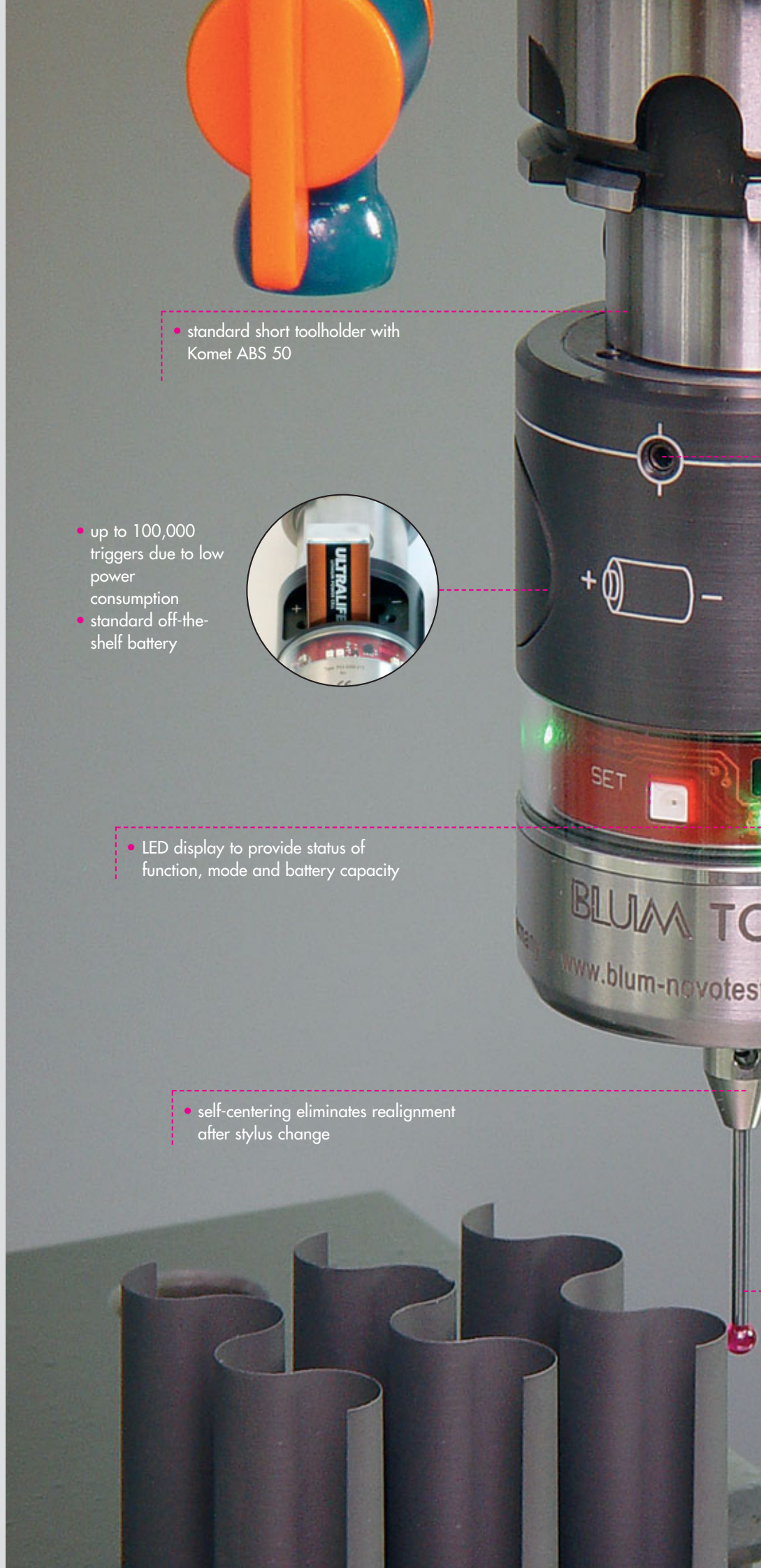
- standard short toolholder with Komet ABS 50

- up to 100,000 triggers due to low power consumption
- standard off-the-shelf battery

- LED display to provide status of function, mode and battery capacity

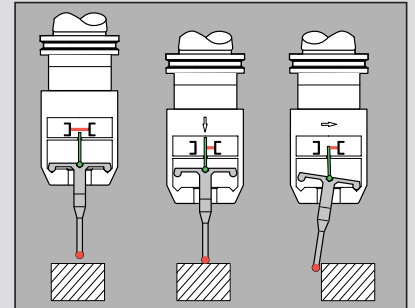
- self-centering eliminates realignment after stylus change

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## The New BLUM measuring principle

The all new optoelectronic measuring principle provides constant multi-directional touch characteristics in all directions.



Spindle orientation is not required.

- the closely arranged diodes guarantee full 360° IR coverage
- the integrated air nozzle guarantees signal transmission without interference and wear.



- easy and fast alignment



### Perfect

The new circular, optoelectronic measurement system guarantees precise trigger contacts and forces in all directions

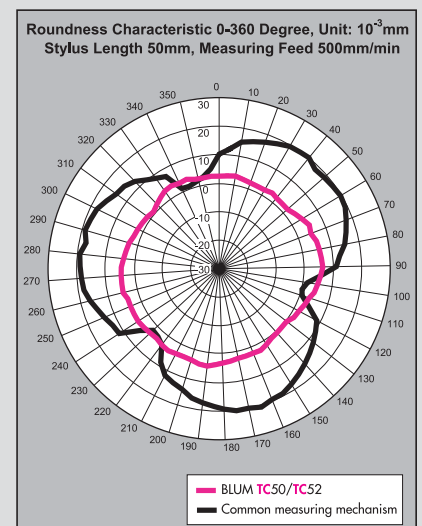
### Fast

The robust design eliminates false trigger signals during rapid machine movement.

### Practical

Special coating of mechanical parts and the no wear optoelectronic measurement system guarantees extended probe life.

The new measuring principle prevents lobing and has superior measuring characteristics in all directions:



Measuring protocol of probing a reference bore

- large choice of styli
- specific styli available

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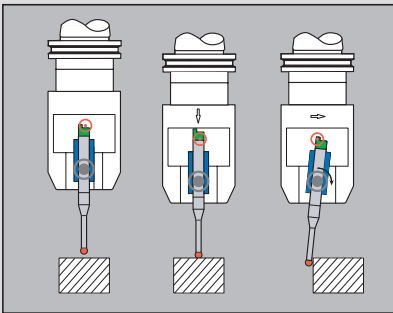
# TC51

High Speed Series,  
Bi-directional Touch Probe  
Designed for fast part and fixture  
location on production machining  
centers.

- extremely fast acceleration and measuring speed
- super precision
- touch proof even with coolant
- robust design
- no-wear optoelectronics and signal generation
- reliable infrared data transmission
- compatible with BLUM bore gauge **BG40** and adjustable boring bar

## The proven BLUM measuring principle

Based on two unidirectional measuring units, this well established principle provides superior accuracy and measuring speed.



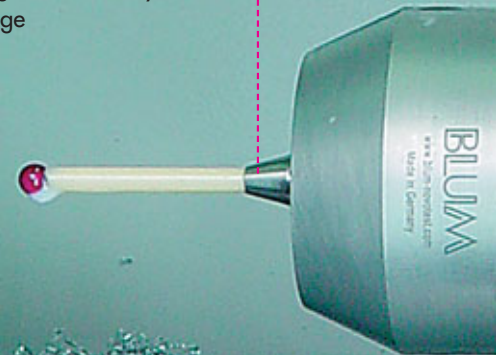
Spindle orientation is required in the XY approach direction.

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- the closely arranged diodes guarantee full 360° IR coverage
- the integrated air nozzle guarantees signal transmission without interference and wear.

- self-centering eliminates realignment after stylus change



### Highdynamic

superior measuring speed of up to 5 m/min.  
and possible acceleration of up to 10 g results in  
significant time savings

### Highprecision

maximum accuracy due to bi-directional  
measuring system

### Touch-proof

absolutely safe under extreme coolant and  
pollution conditions due to stylus pre-deflection  
and higher measuring force

- standard toolholder with  
Komet ABS 50

- easy and fast alignment

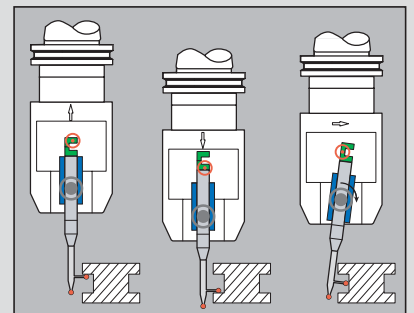


- up to 100,000 triggers due to  
low power consumption
- standard off-the-shelf battery

- LED display to provide  
status of function, mode and  
battery capacity

## TC51-20

For precise measurement of grooves,  
recesses and outside width with  
additional measuring direction in Z+



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# TC50/TC51/TC52

## Technical data series TC

	TC50	TC51	TC51-20	TC52
Approach direction	±X, ±Y, -Z	XY*, -Z	XY*, -Z, +Z	±X, ±Y, -Z
Force XY-direction	2 N**	1,5 N**	1,5 N**	2, 3 N***
Force Z-direction	7 N	4 N	4 N	5,7 N***
Trigger point XY	-	0,5 mm**	0,5 mm**	-
Trigger point Z	-	0,8 mm	0,8 mm	-
Max. acceleration	50 m/s <sup>2</sup>	100 m/s <sup>2</sup>	100 m/s <sup>2</sup>	50 m/s <sup>2</sup>
Repeatability**	1 µm 2 σ	0,5 µm 2 σ	0,5 µm 2 σ	1 µm 2 σ
Max. probing speed	3 m/min	5 m/min	5 m/min	3 m/min
Weight	970 g	870 g	870 g	250 g
Battery	9 V block (6LR61)			1/2 AA 3,6 V
Tool holder HSK-SK-BT	Komets ABS 50			Komet ABS 25
Protection class	IP 68			
Data transmission	Infrared			
Transmitter operating range	± 60° in Z, 360° in X/Y			

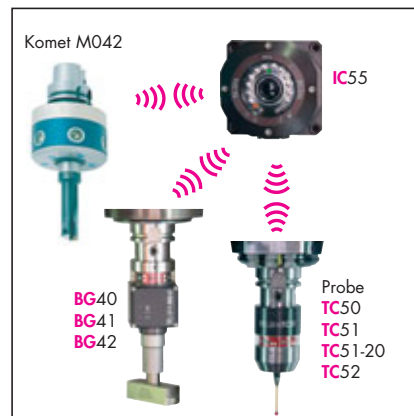
\* via Spindle orientation  
 \*\* Stylus L = 50 mm  
 \*\*\* Stylus L = 30 mm, lower measuring force available

# IC55

## Infrared Controller with Microprocessor Transmission and Receiving Technology of the Latest Generation

- reliable, interference-free infrared data transmission
- robust design, protection class IP68
- no additional interface necessary
- easy to install and integrate
- ideal integration of the air nozzle

## Operating Modes:



A standard for all products

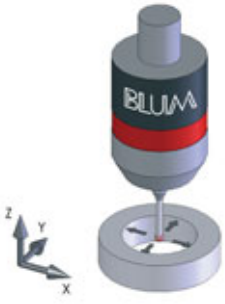
## IC55

- switch ON/OFF via IR flash
- signal transmission for TC series
- 16 bit measuring value transmission for bore gauge BG series
- control of active tools

## Technical data series IC55

Protection class	IP68
Power supply voltage	15-30 V DC / 100 mA
Inputs	3 x 10 mA
Outputs	4 x 50 mA Push-pull output
Air nozzle	integrated
Interface	RS232
Transmitter operating range	3 m / ± 25° Standard / 5 m ± 25° WR + LR
Receiver operating range	3 m / ± 50° Standard / 5 m ± 40° WR + LR

**Measure a hole**



**Measure a shaft**



**Touch a single point in XYZ**



**Measure an inside width or outside width**



**Measure a step in XY or Z**



**Measure straightness/flatness in XY or Z**



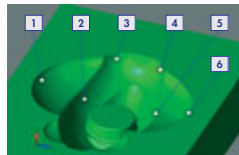
**Software solutions to use 3D-CAD data**



**Measuring protocol**



Customer: Mold & Die Ltd.  
 Description: Testing piece  
 Part number: P2000-6574  
 CAD: FliegenJGS  
 Tester: Riedler  
 Date: 2004-10-28  
 Machine: Hermle C40  
 Unit: mm



Measuring point	nominal			measured				tolerances	
	X	Y	Z	dx	dy	dz	dI	max.	min.
1	-43.220	9.726	-2.866	-0.005	-0.010	-0.002	-0.011	-0.020	-0.300
2	-20.691	15.857	-13.838	0.024	-0.010	0.003	0.027	-0.020	-0.300
3	-12.815	44.128	-3.894	-0.004	-0.002	0.011	0.010	-0.020	-0.300
4	13.588	43.428	-3.808	-0.013	-0.038	0.018	0.040	-0.020	-0.300
5	21.621	15.333	-12.249	-0.019	-0.018	-0.006	-0.028	-0.020	-0.300
6	43.783	10.179	-2.291	-0.036	-0.023	0.003	0.043	-0.020	-0.300

Separate brochure available

**NCSoftware**

**BLUM measuring cycles are available for many NC controls:**

The proven BLUM measuring cycles will cover all your measuring needs.

The measuring programs will guarantee you the very highest precision, flexibility and in-process quality at your machine tool.

Our measuring cycles are supported by detailed documentation available in many languages.

We will support you at any time with our qualified technical staff.

Customized adaptations can be easily developed.

**BLUM measuring cycles will enhance your technology advancement.**

**FormControl**

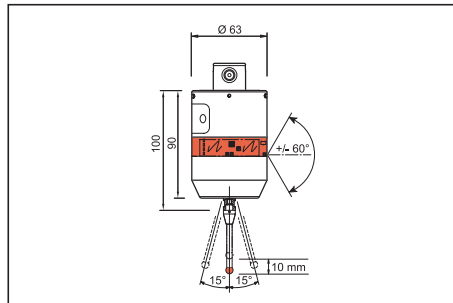
- Contour measurement
- In-process monitoring
- Shopfloor-orientated operation



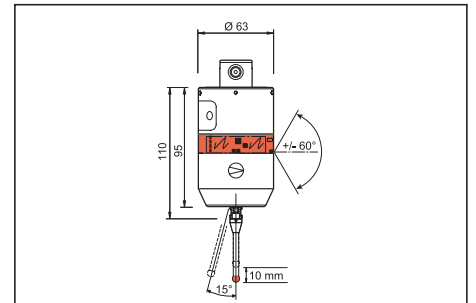
# TC50/TC51/TC52



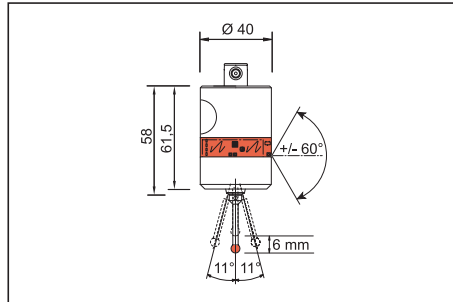
**TC50 multidirectional**



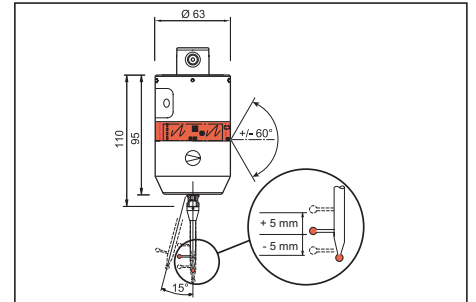
**TC51 bi-directional**



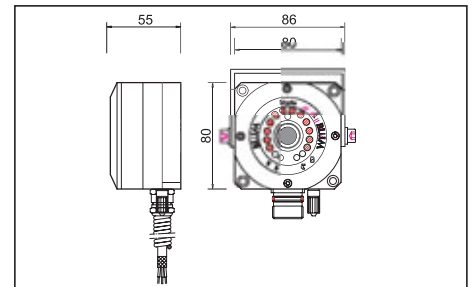
**TC52 multidirectional**



**TC51-20 bi-directional pull/push contact**



**IC55**



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