

Regional roots, international reach.

As a family-run company, we have deep roots in the region while also operating an international network of sales and service subsidiaries. From our sites in Grunkraut in Baden-Wurttemberg and Willich in North Rhine-Westphalia, we supply the machine tool, automotive, aerospace, energy and medical technology sectors, as well as numerous other demanding industrial areas across the globe.

We are always there wherever you need us – This has been our commitment to our customers for over 50 years.

Each of our products combines experience and expertise with an instinct for forward-looking solutions. A comprehensive service portfolio gives us an innovative edge and our customers the assurance of always receiving the best solution. Every day, more than 600 employees worldwide work to achieve this.

Your productivity is what drives us!

Alaman dan Plum

Alexander Blum



CONTENTS

Mission Statement

Measuring Components

LaserControl

Tool Setting Probe

Touch Probes

Touch Probes DIGILOG

Surface Roughness Gauges RG

Software FormControl X

Bore Gauges BG

Sales & Service

International

NOVOTEST Test Engineering Division

Measuring Machines Division



LaserControl DIGILOG

The impressive performance of the LaserControl series has been ensuring maximum precision, reliability and efficiency in countless machining centres for decades now.

The latest generation is writing a new chapter in this success story. The trail-blazing DIGILOG technology opens up a multitude of previously unreachable applications in production measurement technology.

Page 10



High-Speed Touch Probes

Faster, more economic, more precise – the advantages of the high-speed touch probe series can be summarized as simply as that. The probes impress through their state-of-the-art measuring mechanism technologies and top measuring speeds. Specially designed for the harsh conditions in machine tools, they provide the right solution for any task.

Page 32



DIGILOG: Roughness Measurement and Scanning in the Machining Centre

The DIGILOG technology also enables touch probes to achieve standards previously thought impossible. While roughness gauges are used for precise and automatic inspection of workpiece surfaces, DIGILOG probes quickly and reliably scan complex workpiece contours in milling, turning and grinding machines.

Page 52



Worldwide Service

Profit from our comprehensive services to ensure maximum efficiency, in-process reliability and availability for your production. Our worldwide sales and service network enables us to provide optimum support and very short response times.

Page 76

OUR AMBITION IS YOUR PROFIT BLUM-NOVOTEST, MISSION STATEMENT

Quality – Advanced and absolutely reliable solutions that meet the highest quality standards are at the heart of our company. Their sole function is to guarantee the efficiency of your manufacturing process.

Innovation – We see ourselves as technological pioneers and innovators in the field of measuring and testing technology. With us, you are always one step ahead.

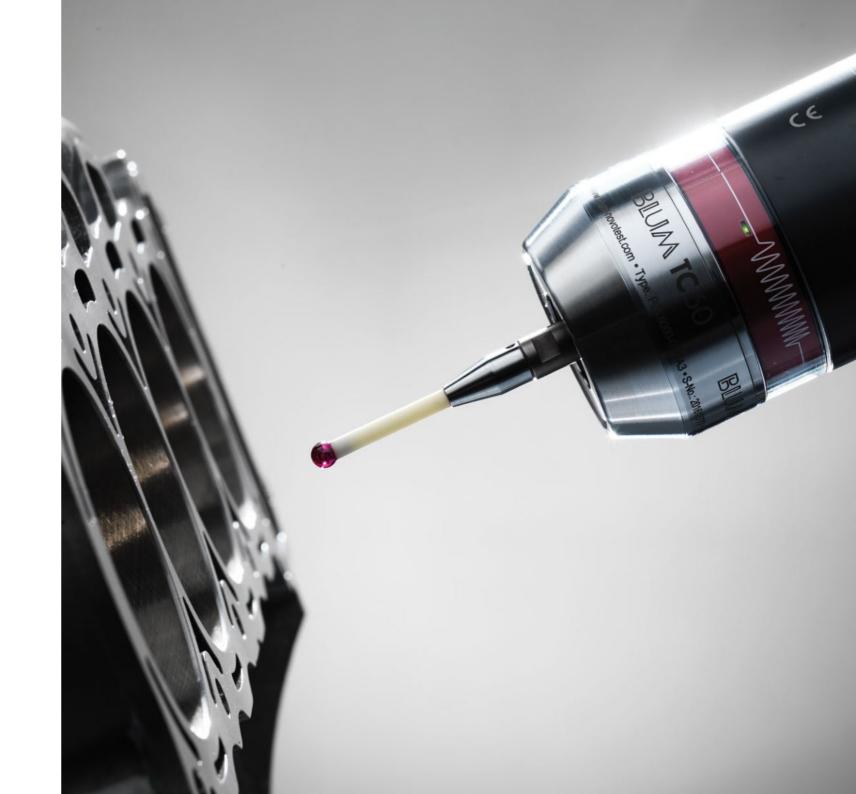
Reliability – Our products stand for uncompromising precision in every environment. This means you are always on the safe side.

Personality – We foster long-term partnerships with our employees, customers and business partners. After all, fairness, trust and reliability are always built on mutual cooperation.

Commitment – Our comprehensive service extends far beyond the normal and is fully focussed on the individual needs of our customers. Your success is our success.

For over 50 years BLUM has been creating products that set standards.

There is a reason for that: Passion



DIGILOG – one technology, many possibilities.

This is where components work together that belong together. Dependable sensor technology is essential for low-man-power, in-process reliability in production. In response to this, BLUM is already in a position to fulfil the demands that Industry 4.0 networked production will be making. DIGILOG technology will be playing a decisive role here: The future-oriented measuring systems open up revolutionary options for production processes because of the data pool generated through thousands of measuring values per second. They cover contour scans with DIGILOG touch probes, process-integrated roughness measuring, bore measuring devices for series production and of course tool measurement using DIGILOG laser measuring systems. The perfect interaction is reflected in the interface hardware as well. It is based on a modular system and can be modified extremely easily to accommodate further measuring systems.

DIGILOG

Alignment Dynamic Mode

er on

UM



The laser measuring systems are the leading solution for non-contact tool setting and tool monitoring in machine tools. For over three decades, they have stood for consistent manufacturing quality and minimum downtime. In combination with the revolutionary DIGILOG technology, LaserControl's perfect protection, high-quality laser optics and intelligent electronics guarantee its tried-and-tested reliability and precision.

- AUTOMATIC MEASUREMENTS DELIVER HUGE TIME SAVINGS
- IN-PROCESS RELIABILITY UNDER COOLANT IN A NEW DIMENSION
- NON-CONTACT MEASUREMENT OF ALL TOOL TYPES, SHAPES, AND CUTTING MATERIALS
- RELIABLE COMPENSATION FOR SPINDLE DRIFT AND RUNOUT ERRORS
- IMPLEMENTATION OF CONTINUOUS PROCESS CHAINS
- ABSOLUTE ACCURACY BETTER THAN ALL COMPARABLE MEASURING SYSTEMS



The laser measuring systems guarantee maximum precision, reliability and efficiency in machining centres. The laser measuring systems attain that impressive performance thanks to their ground-breaking DIGILOG technology and innovative hardware.

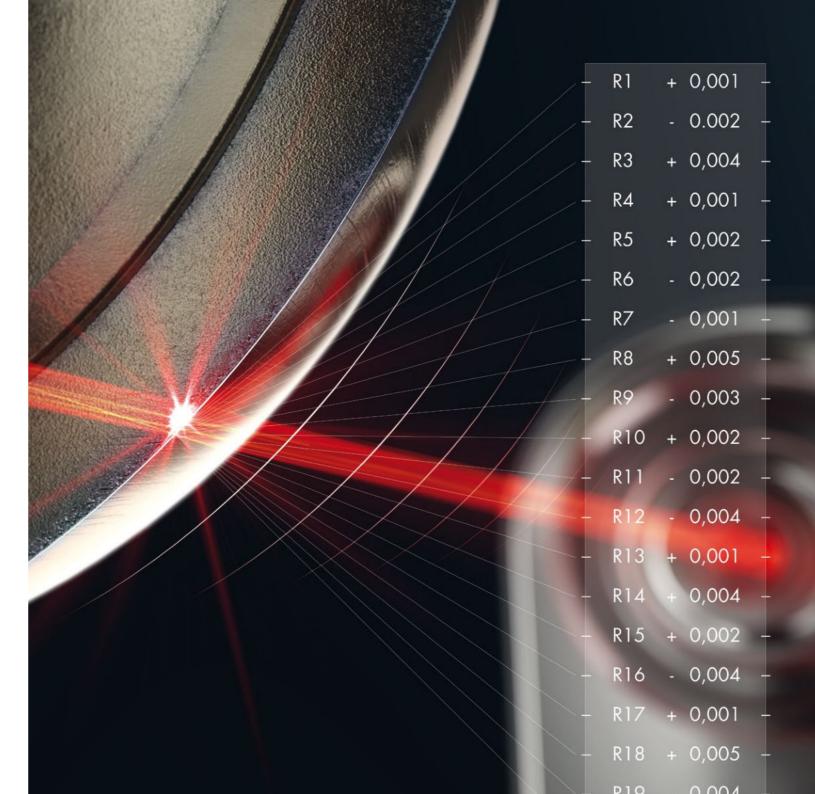
DIGILOG Technology: In-process Reliability in a new Dimension

The DIGILOG laser measuring systems continuously measure the shading of the laser beam, generating thousands of measuring values as a result.

- DRAMATICALLY SHORTER MEASURING TIMES
- MAXIMUM PRECISION UNDER COOLANT
- AUTOMATIC RUN-OUT MONITORING
- ANALYSIS OF ANY SINGLE CUTTING EDGE

Technical data

laser protection class	Class 2 according to IEC60825-1, CFR 1040.10
LASER TYPE	Visible red light laser 630 700 nm < 1 mW
PROTECTION CLASS	





smartDock: Intelligent Variants for more Flexibility

This innovative interface serves as the basis for all new support systems and contains all the necessary pneumatic valves in addition to the electrical, mechanical and pneumatic connections between the machine and laser measuring system.

- ONE ELECTRIC & ONE PNEUMATIC LINE
- NO SEPARATE PNEUMATIC UNIT NEEDED
- SIMPLE LASER PREPARATION
- FLEXIBLY DEPLOYABLE INTERFACE FOR MACHINE INTEGRATION

Premium Laser Optics

- PRECISION BETTER THAN ALL COMPARABLE MEASURING SYSTEMS

HPC Nozzle

- FOR RESIDUE-FREE TOOL CLEANING

Unique Shutter System

- GUARANTEED RELIABLE OPERATION IN ANY MANUFACTURING SITUATION





Software LC-VISION

MEASUREMENT AND VISUALISATION SOFTWARE

LC-VISION is an innovative measurement and visualisation software for DIGILOG laser measuring systems from BLUM. Thanks to the intuitive operating concept, a wide range of measurement tasks can be generated, visualised and evaluated quickly and easily on the control screen. Here, the field of application is not limited to the topic of tool measurement, but also includes a reliable analysis of the motor spindle quality.

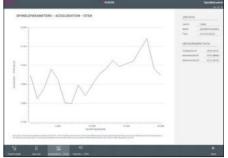


- STEP-BY-STEP PROCESS MAKES THE MEASURING SEQUENCE EASY EVEN WITHOUT NC PROGRAMMING KNOWLEDGE
- ONE USER INTERFACE FOR ALL COMMON MACHINE CONTROLS
- DIAGNOSTIC VIEW FOR DISPLAYING IMPORTANT SYSTEM DATA AND INFORMATION ON PREVENTIVE MAINTENANCE
- EXECUTION OF NEW TECHNOLOGY CYCLES SUCH AS SPINDLECONTROL, TOOLCONTROL ADVANCED OR OSCILLATIONCONTROL
- STABILITY FUNCTION FOR MACHINING UNDER THERMALLY STABLE SPINDLE CONDITIONS
- VISUALISATION AND STATISTICAL EVALUATION OF MEASUREMENTS
- DATA EXPORT OF MEASURED VALUES FOR PROCESSING IN TOOL MANAGEMENT SYSTEMS

Visualisation of the measurement results of a ball cutter



Example of a spindle parameter analysis





Laser Measuring System LC50-DIGILOG

PERFECTION IN TOOL MEASUREMENT

Unbeatably precise and reliable. In order to achieve the greatest possible accuracy in tool measurement in the machine tool, BLUM recommends the use of compact support systems. The laser measuring system LC50 is offered as standard in lengths from 150 to 500 mm. Thanks to the new laser optics, the system also meets the requirements of small high-end machines in micro-machining.

High-precision measurement of all tool types, sizes and shapes



Reliable solutions for every machining operation



NT NT	NT Technology
DIGLOG	DIGILOG Technology
影	Tool Breakage Detection
	Tool Setting
	Single Cutting Edge Monitoring
Ų.	Tool Form Measurement
	Wear Compensation
	Temperature Compensation
	RunoutControl
	MicroWearControl
#	ConicalToolControl
<u></u>	GrindControl
	ToolControl
U≣	SpindleControl

and much more...

System length LC50*	150 mm	200 mm	260 mm	300 mm
MAX. TOOL Ø**	36 mm	120 mm	314 mm	498 mm
MIN. TOOL Ø***	5***/15 µm	20 µm	30 µm	37 µm
REPEATABILITY***	O.2 μm 2σ	0.3 µm 2σ	0.4 µm 2σ	0.5 μm 2σ

^{*} Additional system lengths: 400 and 500 mm ** Vertical/horizontal *** Depending on the installation situation and stability of mounting **** Contact with local BLUM representative is required



Laser Measuring System LC52-DIGILOG

TOOL MEASUREMENT IN TURNING AND MILLING CENTRES

The complete solutuion for any tool. The LC52 is a compact, high-precision system for measurement of the complete tool spectrum in turning and milling centres. The measurement of milling tools via laser can be carried out contact-free under nominal rotation speed. Turning tools can be measured quickly and reliably with the adapted touch probe.

LC52-20 with pneumatically controlled protective sleeve (260 mm)



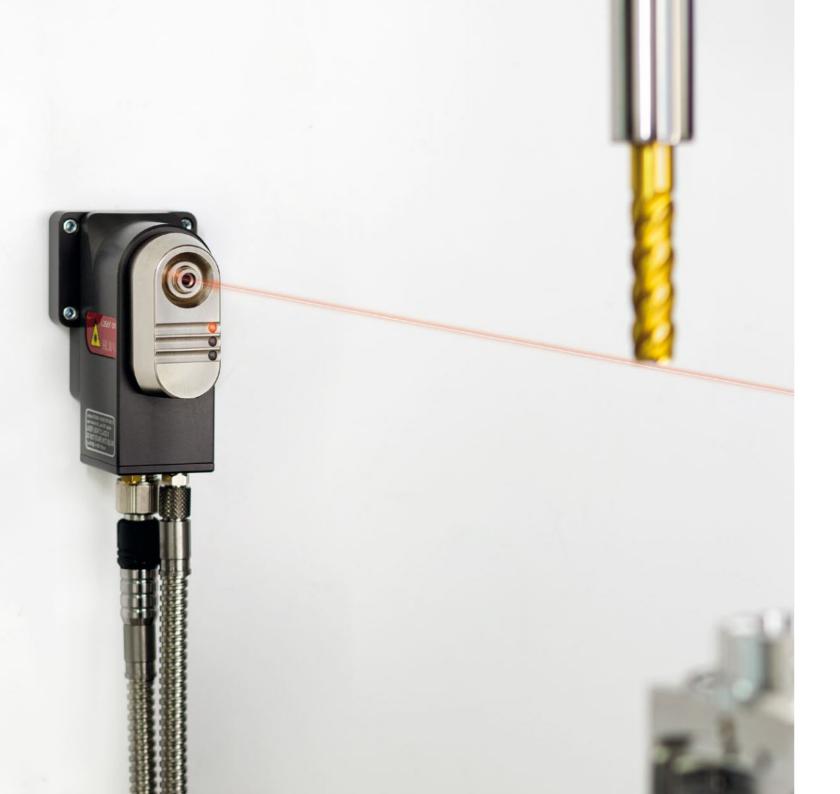


M	NT Technology
₩W pickoc	DIGILOG Technology
题	Tool Breakage Detection
	Tool Setting
	Single Cutting Edge Monitoring
V _A E	Tool Form Measurement
	Wear Compensation
	Temperature Compensation
	RunoutControl
	MicroWearControl
₹	ConicalToolControl
<u>Ö</u> į	GrindControl
	ToolControl
	SpindleControl
	and much more

System length	200 mm	260 mm*	300 mm
MAX. TOOL Ø**	120 mm	314 mm	498 mm
MIN. TOOL Ø***	20 µm	30 µm	37 μm
REPEATABILITY***	0.3 μm 2σ	0.4 μm 2σ	0.5 μm 2σ

^{*} Standard system length LC52-20: 260 mm ** vertical/horizontal

^{***} Depending on the installation situation and stability of mounting



Laser Measuring System LC53-DIGILOG

System with separate transmitter and receiver unit

If installation of the support systems is not possible for machine design reasons, the laser measuring system LC53-DIGILOG is used. The separation of transmitter and receiver allows for flexible integration into a wide variety of machines types.

Like all current laser measurement systems from BLUM, the LC53-DIGILOG also features the trend-setting DIGILOG technology, high-precision laser optics and the unique protection system.

Separate transmitter and receiver units provide flexible installation



Intelligent mounting set for easy installation



DIGILOG Technology

Tool Breakage Detection

Tool Setting

Single Cutting Edge Monitoring

Tool Length Measurement

Wear Compensation

Temperature Compensation

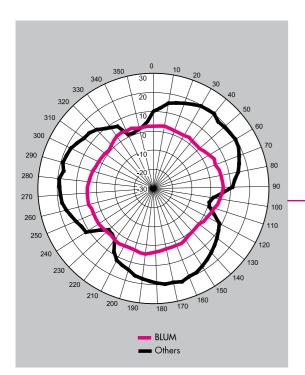
System distance	500 mm	1000 mm	1600 mm	2200 mm
MIN. TOOL Ø (for breakage)*	0.4 mm	0.5 mm	0.5 mm	0.7 mm
MIN. TOOL Ø (for measurement)*	1 mm	1 mm	1 mm	1.5 mm
REPEATABILITY*	2.5 µm 2σ	4.5 μm 2σ	6 μm 2σ	10 μm 2σ

^{*} Depending on the installation situation and stability of mounting



TOOL SETTING PROBES TECHNOLOGY

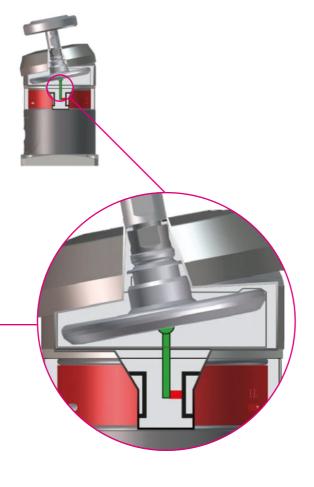
BLUM tool setting probes are characterised by stateof-the-art measuring mechanism technology featuring wear-free opto-electronic signal generation. The robust design enables maximum probing speeds with supreme precision. Fast, reliable data transfer is assured by infrared, BRC radio technology or cable connection.





Multidirectional

Non-lobing touch characteristics with constant deflection forces. ZX-Speed/IR/RC

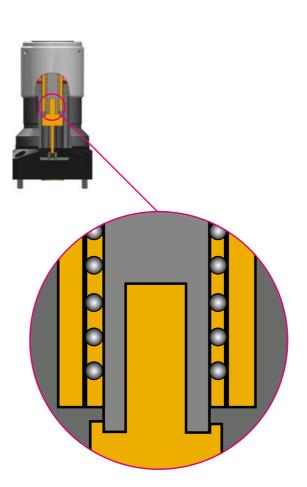


±X, ±Y, -Z



Ball bearing mounted linear guide

The functional principle permits low measuring forces, and prevents lateral forces acting on the tool. Z-Pico, Z-Nano/IR/RC





Multidirectional with face gear

The complete solution: High precision even in off-centre probing operations. Ideal for turning machines. TC53/63, TC54/64, TC76



±X, ±Y, -Z



Tool Setting Probes Z-Series

COMPACT TOOL MEASUREMENT

Robust and economic – the compact tool setting probes are extremely economic solutions for fast tool breakage detection and highly precise length measurements in machine tools. The well-proven design and the wear-free optoelectronic measuring mechanism with linear working principle, provide the highest reliability under the most adverse manufacturing conditions.

Z-Nano IR and Z-Nano RC

- the wireless versions



Z-Pico – for micro-machining





Linear Working Principle



Hardwired



Infrared Transmission



Radio Transmission



Tool Breakage Detection



Tool Length Measurement



Measurement with Coolant



Single and Mass Production



Wear Compensation



Tool Setting Probe	Z -Pico	Z -Nano	Z -Nano IR	Z-Nano RC
HEIGHT	55 mm	75 mm	100 mm	100 mm
Transmission	Cable	Cable	Infrared	Radio
REPEATABILITY	1 μm 2σ	0.5 μm 2σ 0.2 μm 2σ (HP)	0.5 μm 2σ	0.5 µm 2σ
MINIMUM TOOL Ø	0.05 mm*	> 0.1 mm* > 0.2 mm**	> 0.1 mm* > 0.2 mm**	> 0.1 mm* > 0.2 mm**

^{*} Depending on the geometry and material of the tool, probing force must not result in damage of tool ** With chip protection



Tool Setting Probes ZX-Speed Series

UNIVERSAL 3D TOOL SETTING PROBES

Versatile and economic – the 3D tool setting probe series comprises universally applicable probes for the measurement of length, radius and tool breakage in the machining centre. The robust probes use a modern, optoelectronic measuring mechanism which is outstanding in its unparalleled precision and longevity.

ZX-Speed – the cable-bound version



Tool length measurement





Multidirectional



Hardwired



Infrared Transmission



Radio Transmission



Tool Breakage Detection



Tool Length Measurement



Tool Radius Measurement



Measurement with Coolant



Single and Mass Production



Wear Compensation



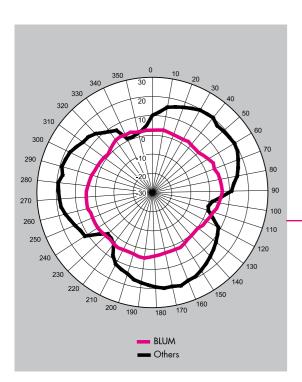
Tool Setting Probe	ZX-Speed	ZX-Speed IR	ZX-Speed RC
HEIGHT	63.5 mm	86 mm	86 mm
Transmission	Cable	Infrared	Radio
REPEATABILITY	0.4 µm 2σ	0.4 μm 2σ	0.4 μm 2σ
MINIMUM TOOL Ø	1 mm*	1 mm*	l mm*

^{*} Depending on the geometry and material of the tool, probing force must not result in damage of tool



TOUCH PROBES TECHNOLOGY

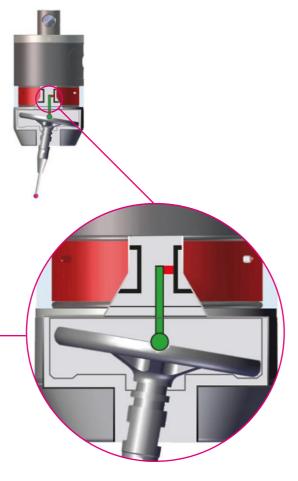
BLUM touch probes are characterised by state-of-theart measuring mechanism technology featuring wearfree opto-electronic signal generation. The robust design enables maximum probing speeds with supreme precision. Fast, reliable data transfer is assured by infrared, BRC radio technology or cable connection.





Multidirectional

Non-lobing touch characteristics with constant deflection forces. *TC50/60, TC52/62*

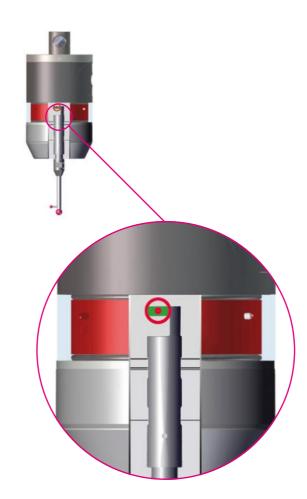


±X, ±Y, -Z



Bidirectional

For high-speed pulling and pushing measurements. *TC51/61*

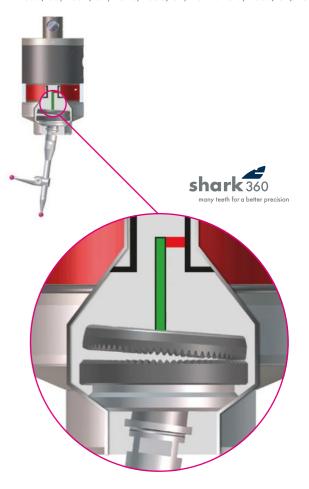


±X*, ±Y*, ±Z, * Via spindle indexing



Multidirectional with face gear

The complete solution: Also for pulling and pushing measurements in milling and turning machines. TC53/63, TC54/64, TC76, TC63/64/76-DIGILOG, TC63/64/76-RG



±X, ±Y, ±Z



Reliable and proven Transmission Technologies

The receiver systems guarantee fast and reliable wireless data transfer. Different systems are available, depending on the measuring system used and the required installation type.



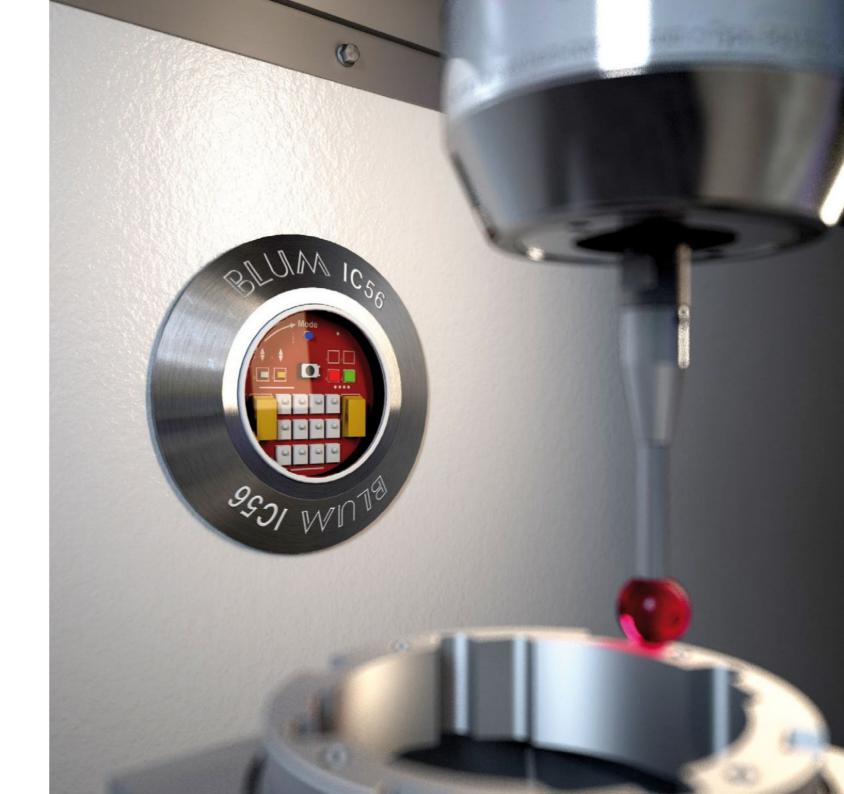
Infrared Transmission

- VERY FAST AND SECURE TRANSMISSION IF THERE IS A LINE OF SIGHT TO THE RECEIVER
- SEQUENTIAL OPERATION OF TWO IR MEASURING SYSTEMS POSSIBLE WITH ONE RECEIVER
- IC57: EXTREMELY COMPACT IR-RECEIVER FOR MOUNTING IN THE SPINDLE CASTING



BRC Radio Technology

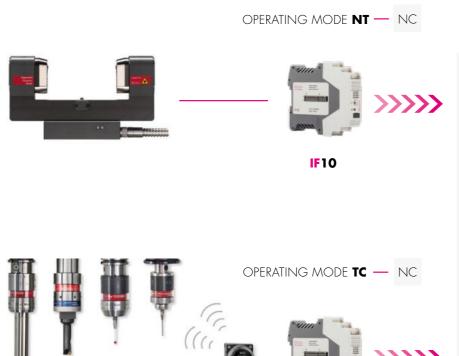
- FAST SIGNAL TRANSMISSION EVEN WITHOUT LINE OF SIGHT
- HIGH INTERFERENCE IMMUNITY THANKS TO BROADBAND TRANSMISSION
- NO INFLUENCE ON OTHER RADIO SYSTEMS
- SEQUENTIAL OPERATION OF UP TO 6 RADIO MEASURING SYSTEMS POSSIBLE WITH ONE RECEIVER





BLUM offers the suitable data-interface variant for each measuring system and all common machine requirements. The interfaces control the devices, process the evaluation of the measuring values and display them clearly on the control screen or on an optional display. The possibility to store, statistically evaluate and visualize

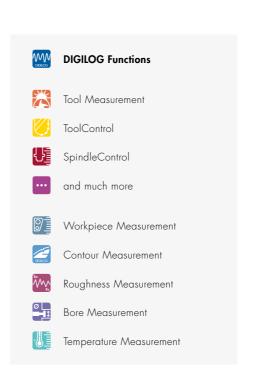
the results is also optionally available. Furthermore, it enables an automatic process control by transferring measurement and compensation values to the machine control. The revolutionary DIGILOG functions are enabled by different extension modules (EM30/31/...).



IF20



>>>>**>>>**







TP48-21 LC-VISION, RG, DIGILOG Contour scan, BG...



Touch Probes TC50/52 | TC60/62

HIGH-SPEED WORKPIECE MEASUREMENT

Faster, more economic, more precise - the advantages of this high-speed touch probe series can be summarized as simply as that. The multidirectional probes impress with the latest measuring mechanism technology featuring optoelectronic signal generation, the highest measuring speeds, and perfect, rotationally symmetrical probing behaviour with no preferential direction.

TC52, TC62 – for small machining centres



Ideal for single and mass production





Multidirectional



Infrared Transmission



Radio Transmission



Position Measurement



Measurement of Standard Features



Contour Measurement



Adaptive Machining



Measurement with Coolant



Wear Compensation



Touch Probe	TC50	TC52	TC60	TC62
SIZE	Ø 63 mm	Ø 40 mm	Ø 63 mm	Ø 40 mm
transmission method	Infrared	Infrared	Radio	Radio
MAX. PROBING SPEED	3000 mm/min	2000 mm/min	3000 mm/min	2000 mm/min
REPEATABILITY	0.3 um 2σ	0.3 um 2σ	0.3 μm 2σ	0.3 µm 2σ



Touch Probes TC51 | TC61

PULLING AND PUSHING MEASUREMENT

Perfect for fast machining centres – the touch probes were specifically developed for the requirements of highly productive machines. The unique bidirectional measuring mechanism with optoelectronic signal generation possesses a superior accuracy and permits measuring speeds of up to 5 m/min. The TC51 and the TC61 are the only touch probes worldwide, that allow quick pulling measurements in Z+ repeatedly and without wear.

Pulling and pushing measurements possible



TC51, TC61 – extremely fast and precise



 $\bigoplus_{\bullet \rightarrow}$

Bidirectional



Infrared Transmission



Radio Transmission



Position Measurement



Measurement of Standard Features



Pulling Measurement



Adaptive Machining



Measurement with Coolant



Mass Production



Wear Compensation



Touch Probe	TC51	TC61	
SIZE	Ø 63 mm	Ø 63 mm	
transmission method	Infrared	Radio	
MAX. PROBING SPEED	5000 mm/min	5000 mm/min	
REPEATABILITY	0.3 µm 2σ	0.3 μm 2σ	



Touch Probes TC53 | TC63

MODULAR TOUCH PROBES

Innovative, variable, highly precise. The modular TC53/63 series comprises versatile touch probe solutions in order to quickly adapt to complex, customer-oriented measuring tasks. All touch probes use the patented shark360 measuring mechanism which sets a new standard with regards to precision and reliability due to a modified face gear and the optoelectronic signal generation.

Mass production of gearbox housings



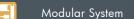
Measurement inside a turbine component









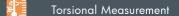


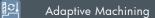




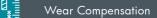






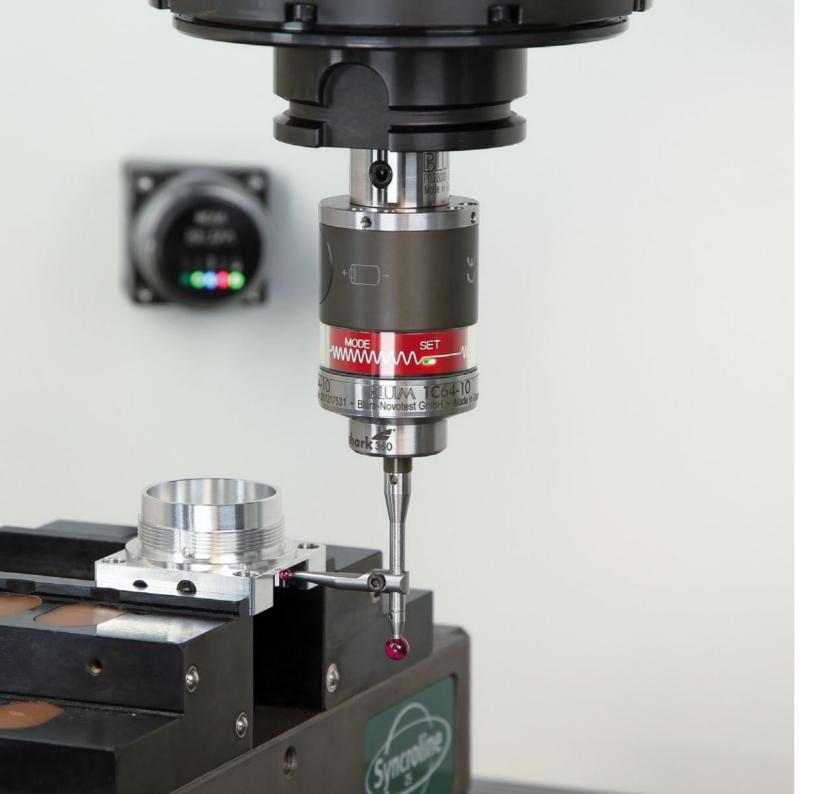








Touch Probe	TC53	TC63	
SIZE	Ø 63 mm	Ø 63 mm	
transmission method	Infrared	Radio	
MAX. PROBING SPEED	2000 mm/min	2000 mm/min	
REPEATABILITY	0.4 μm 2σ	0.4 μm 2σ	



Touch Probes TC54-10 | TC64-10

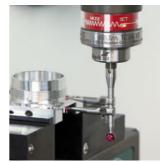
FOR TURNING AND MILLING MACHINES

The touch probes TC54-10 and TC64-10 combine all advantages of the shark360 measuring mechanism with the compactness of a multidirectional BLUM standard touch probe. Due to the robust design and the wear-free, face-geared measuring mechanism, the systems are perfectly suited for the measurement of tools and work-pieces in turning and milling centres.

Workpiece measurement in the turning machine

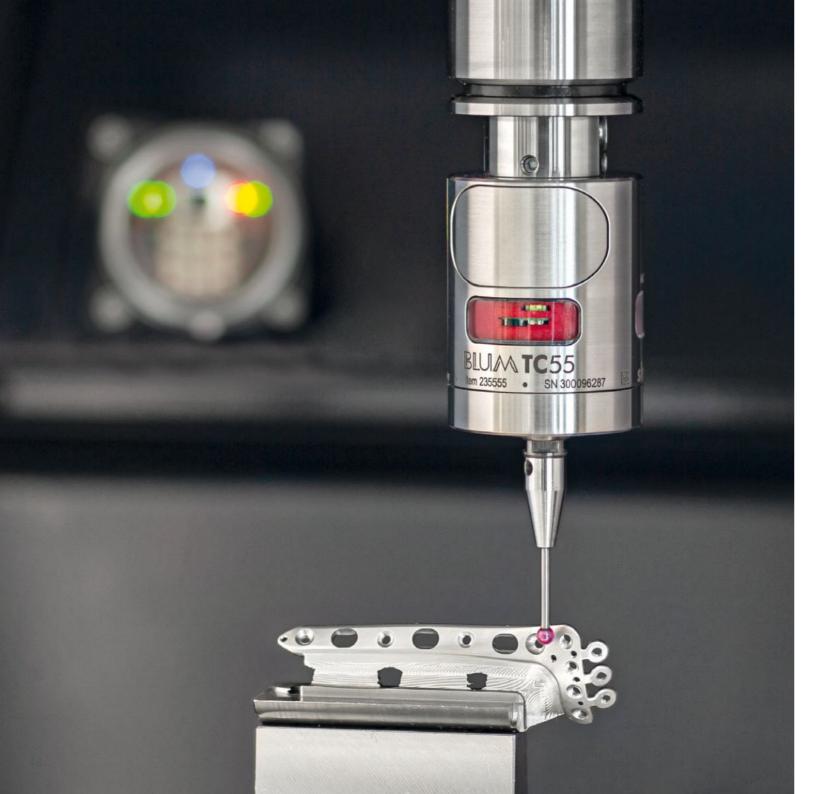


Pulling and pushing measurement



	Multidirectional shark360
(R)	Infrared Transmission
Rodio M	Radio Transmission
	Position Measurement
 □ □	Measurement of Standard Features
F	Pulling Measurement
	Torsional Measurement
	Adaptive Machining
	Measurement with Coolant
製	Tool Breakage Detection
	Tool Length Measurement
	Tool Radius Measurement
	Wear Compensation

Touch Probe	TC54-10	TC64-10	
SIZE	Ø 40 mm	Ø 40 mm	
TRANSMISSION METHOD	Infrared	Radio	
MAX. PROBING SPEED	2000 mm/m	nin 2000 mm/min	
REPEATABILITY	0.4 µm 2σ	0.4 μm 2σ	



Touch Probe TC55

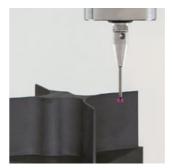
ULTRA-COMPACT VERSATILE

The TC55 touch probe is the smallest cable-free touch probe from BLUM so far. It is deployed in compact milling, turning and millturning centres that are used for microprocessing, medical technology and the measurement of components on machines for additive manufacturing. The integrated shark360 measuring mechanism enables pulling and torsional measurements when the offset stylus is used.

TC55 – the smallest wireless probe from BLUM

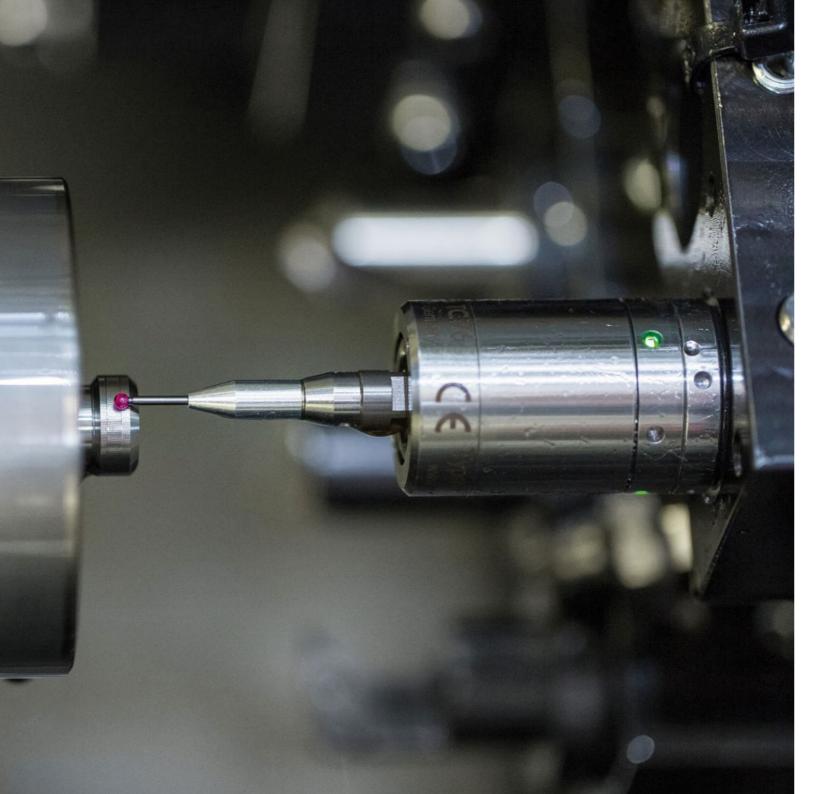


Perfect for delicate parts and small machining centres



Multidirectional shark360 Infrared Transmission Position Measurement Measurement of Standard Features Pulling Measurement Torsional Measurement Adaptive Machining Measurement with Coolant Wear Compensation Temperature Compensation

Touch Probe	TC55
SIZE	Ø 32 mm
Transmission method	Infrared
MAX. PROBING SPEED	2000 mm/min
REPEATABILITY	0.3 μm 2σ



Touch Probe TC76

ULTRA-COMPACT

The compact touch probe TC76 is used for a fast and automatic measurement of tools and workpieces in grinding, turning and milling centres. Due to a modified face gear and the optoelectronic signal generation, the built-in patented shark360 measuring mechanism sets a new standard with regards to precision and reliability.

Workpiece measurement in the turning machine



Tool measurement – TC76 with protective sleeve



Multidirectional shark360 Hardwired Modular System Position Measurement Measurement of Standard Features Pulling Measurement Torsional Measurement Adaptive Machining Measurement with Coolant Tool Breakage Detection Tool Length Measurement Tool Radius Measurement Wear Compensation

Touch Probe	TC76
SIZE	Ø 25 mm
transmission method	Cable
MAX. PROBING SPEED	2000 mm/min
REPEATABILITY	0.4 μm 2σ





Touch Probes TC63-DIGILOG | TC64-DIGILOG

THE DIGILOG REVOLUTION

DIGILOG = high-precision digital measurement and lightning-fast scans in analogue mode. Featuring BRC radio technology, the DIG-ILOG touch probes are particularly well suited to use in milling and turning centres. By analogue scanning of the workpiece surface, machining errors are detected quickly and reliably. The system is also available as a modular version in form of the TC63-DIGILOG.

Analogue contour scan of the sealing chamfer on a valve seat



TC63-DIGILOG – the modular system



shark360 DIGILOG

Radio Transmission

Modular System

Position Measurement

Measurement of Standard Features

ContourScan

Workpiece Inspection

Adaptive Machining

Measurement with Coolant

Mass Production

Wear Compensation

Touch Probe	TC63-DIGILOG	TC64-DIGILOG	
SIZE	Ø 40 mm	Ø 40 mm	
transmission method	Radio	Radio	
MAX. PROBING SPEED	2000 mm/min	2000 mm/min	
REPEATABILITY	0.4 µm 2σ	0.4 μm 2σ	



Touch Probe TC76-DIGILOG

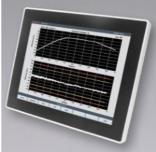
DIGITAL MEASUREMENT & ANALOGUE SCANNING

Hard-wired touch probes for turning and grinding machines for automatic inspection of workpiece contours for machining errors. Exact measurement of workpiece position using digital measurement, extreme reduction in measuring time using lightning-fast, analogue scanning process

Detection of machining errors on gear Analysis on control monitor or grinding machine



BLUM Touch Panel



shark360 DIGILOG Hardwired Modular System Position Measurement Measurement of Standard Features ContourScan Workpiece Inspection Adaptive Machining Measurement with Coolant Mass Production

Wear Compensation

Temperature Compensation

Touch Probe

TC76-DIGILOG

SIZE	Ø 25 mm
transmission method	Cable
MAX. PROBING SPEED	2000 mm/min
REPEATABILITY	0.4 μm 2σ

ROUGHNESS GAUGES MACHINE-INTEGRATED MEASUREMENT

The DIGILOG roughness gauges are used for fast and automatic inspection of work-piece surfaces in milling, turning and grinding machines. Mostly in mass production, a wide range of different surfaces are inspected to within µm accuracy in just a few seconds and analysed according to the roughness parameters Ra, Rz and Rmax. The measured roughness values are either logged for later use, outputted as status values, or visualised via the graphical interface.

Rz 2.95µm Rmax 4.91µm

- AUTOMATED ROUGHNESS MEASUREMENT IN MACHINING CLAMPING
- DIGITAL AND ANALOGUE TOUCH PROBE IN A SINGLE DEVICE
- MECHANICALLY ROBUST DESIGN
- RELIABLE ALSO UNDER COOLANT
- Enable low-manned operation



Roughness Gauge TC64-RG

THE QUANTUM LEAP IN THE MACHINING CENTRE

Globally unique roughness measuring system for automatic inspection in the original fixturing. Fast digital measurement of workpiece position and reliable detection of poor surface quality using analogue measurement. The roughness parameters Ra, Rz, Rq, Rt, Rmax and Wt are outputted on the machine controller. In this way, rejects characterised by the feature "surface roughness" can be minimised.

TC64-RG – Roughness measurement in the machining centre



Analysis on control monitor or BLUM Touch Panel





shark360 DIGILOG



Radio Transmission



Position Measurement



Roughness Measurement



Workpiece Inspection



Measurement with Coolant



Mass Production

Roughness Gauge

TC64-RG

SIZE		Ø 40 mm
transmission met	HOD	Radio
MAX. PROBING SPEE	D	2000 mm/min
MEASURABLE ROUGH	INESS	> Rz 2 µm



Roughness Gauges TC63-RG | TC76-RG

MODULAR VARIANTS

The modular roughness gauge TC63-RG permits adaptation to customer-specific tasks. The single measuring element version delivers maximum measurement accuracy with lower measuring force, and was developed specially for inspection of straight workpiece geometries in milling, turning and grinding machines. Bad surfaces, caused by worn tools, are detected in-process.

TC63-RG – modular system with shark360 DIGILOG technology



TC63-RG with single-measuring



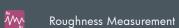








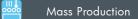












Roughness Gauge	TC63-RG	TC63-RG Single	TC76-RG
SIZE	Ø 40 mm	Ø 40 mm	Ø 25 mm
transmission method	Radio	Radio	Cable
MAX. PROBING SPEED	2000 mm/min	100 mm/min	2000 mm/min
MEASURABIE ROUGHNESS	> Rz 2 um	> Rz 1 um	> Rz 2 um





Software FormControl X

RELIABLE PROCESS AUTOMATION

Measuring, automating and evaluating – these three aspects describe the functionalities of the FormControl X measuring software in just a few words. The solution makes it possible to create complex measuring programmes in a self-explanatory way, to automate machining processes by realising closed control loops and to make the measuring results usable in an Industry 4.0 environment. Manufacturing processes are thus simplified and accelerated, and the quality and manufacturing costs of the finished workpieces are optimised.

Measurement of Standard Features

Contour Measurement

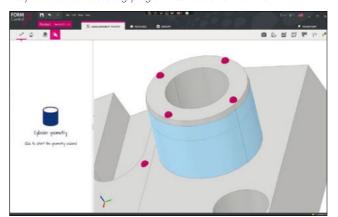
Workpiece Inspection

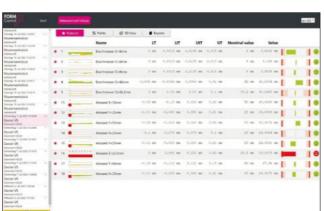
Single and Mass Production

Adaptive Machining

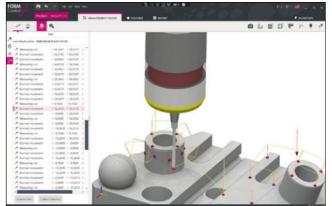
Position Measurement

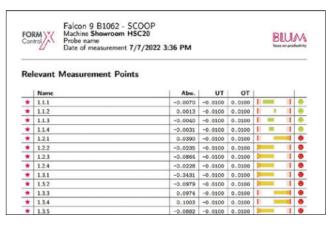
Easy creation of measuring programmes via context wizard

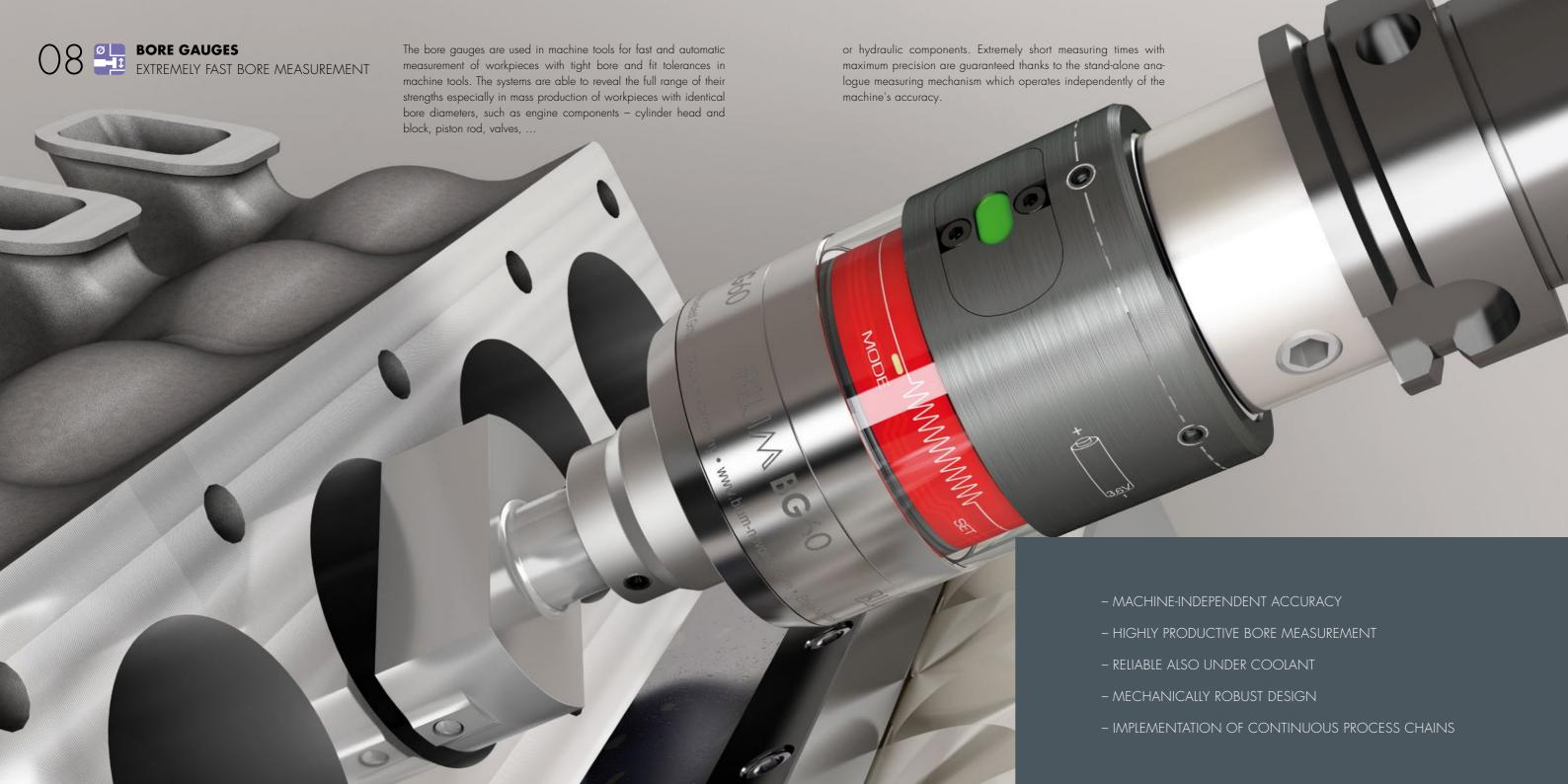




With integrated measurement path optimization and collision control









Software BG-VISION

MEASUREMENT SOFTWARE FOR BORE GAUGES

BG-VISION is an innovative measurement, visualisation and analysis software solution for bore gauges from BLUM. The application, which has been redesigned from the ground up, features an entirely new approach to functionality and ease of use. With its intuitive operating design, it can be used to generate, document and analyse complex measurement sequences quickly and easily.

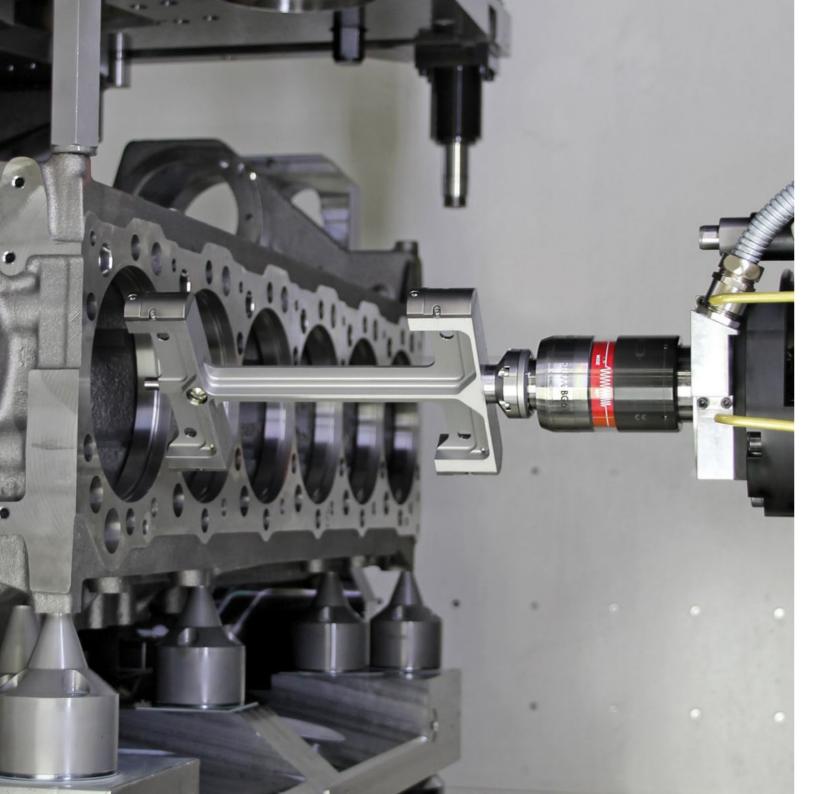


- SIMPLE, PC-BASED USER SOLUTION FOR CREATING COMPLEX MEASUREMENT PROGRAMS
- RECORDING, VISUALISATION AND STATISTICAL ANALYSIS
- COMFORTABLE HARDWARE ADMINISTRATION, INCL. SERIAL NUMBERS, SOFTWARE VERSIONS AND SYSTEM SPECIFICATIONS
- POSSIBLE TO OPERATE WITHOUT AN ADDITIONAL MEASUREMENT COMPUTER (IPC)
- Q-DAS INTERFACE FOR MEASUREMENT SYSTEM ANALYSIS (OPTION)
- PROCESS CONTROL FOR THE IMPLEMENTATION OF CLOSED PRODUCTION SEQUENCES (OPTION)

Visualisation of the measuring results

Statistical analysis





Bore Gauges BG60 | BG61

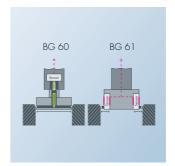
HIGHLY PRODUCTIVE BORE MEASUREMENT

BLUM bore gauges are machine-independent measuring systems for quality monitoring of tight tolerances in highly productive machine tools and transfer lines. The determination of compensation values in the initial setting permits a highly accurate process control, e.g. in the production of engines, valves or compressors.

Measurement of a steering knuckle bore before slitting



Measuring principles of the BG series





Bore Gauge	BG60	BG61
SIZE	Ø 63 mm	Ø 63 mm
Transmission method	Radio	Radio
measuring elements	1	up to 8
resolution	12 bit / 0.15 μm	12 bit / 0.15 μm



Measuring Systems MG80 | TG82

TEMPERATURE MEASUREMENT & MORE

MG80: Measuring system for the acquisition of workpiece temperature, presence of the workpiece, clamping pressure or tool breakage during machining.

TG82: Contact measuring system that can be exchanged via the tool magazine to determine the workpiece temperature.

Both systems transmit the recorded data wirelessly to the control via BRC radio technology. In the case of a temperature measurement, compensation values can be calculated that are directly incorporated into the machining process.

MG80 – with up to 8 sensors in the workpiece clamping device



MG80: Sensors and transmission unit

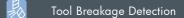


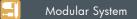
Radio Transmission



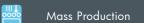












Measuring system	MG80	TG82	
SIZE	Ø 63 mm	Ø 63 mm	
transmission method	Radio	Radio	
field of application	Workpiece clamping device	Machine spindle	





Profit from our comprehensive services to ensure maximum efficiency, in-process reliability and availability for your production.

Our worldwide sales and service network enables us to provide optimum support and very short response times.

- RETROFIT OPTIONS FOR YOUR MACHINE TOOL
- TRAININGS AND WORKSHOPS
- TELEPHONE CUSTOMER SUPPORT
- SOLUTIONS FOR CUSTOM MEASUREMENT TASKS
- EXPRESS DELIVERY FOR URGENT SPARE PARTS REQUIREMENTS
- PRODUCT PRESENTATIONS AND ON-SITE CONSULTING



- BLUM SUBSIDIARY
- BLUM SALES & SERVICE
- SYSTEM INTEGRATOR

Blum-novotest gmbh gruenkraut, germany

BLUM-NOVOTEST GMBH TEST ENGINEERING DIVISION WILLICH, GERMANY

BLUM-NOVOTEST S.R.L COMO, ITALY

BLUM-NOVOTEST LTD.
BIRMINGHAM, ENGLAND

BLUM-NOVOTEST SARL BORDEAUX, FRANCE

BLUM-NOVOTEST S.R.O. KROMĚŘÍŽ, CZECH REPUBLIC

BLUM-NOVOTEST AB SKÖVDE, SWEDEN

BLUM-NOVOTEST IBÉRICA, S.L. BILBAO, SPAIN

OOO BLUM-NOVOTEST NIZHNY NOVGOROD, RUSSIA

BLUM-NOVOTEST, INC. CINCINNATI, USA

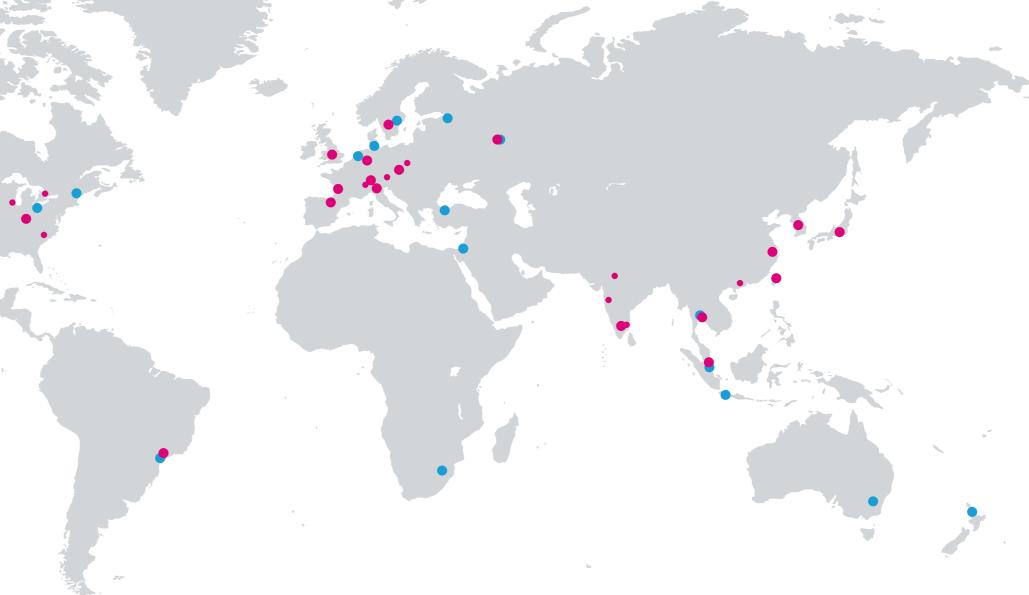
BLUM-NOVOTEST S. DE R.L. DE C.V. SANTIAGO DE QUERÉTARO, MEXIKO

BLUM-NOVOTEST SISTEMAS DE MEDIÇÃO LTDA SAO PAULO, BRAZIL

Blum-novotest k.k Nagoya, Japan

BLUM-NOVOTEST TRADING (SHANGHAI) CO., LTD. SHANGHAI, CHINA BLUM-NOVOTEST LTD. SEOUL, KOREA BLUM PRODUCTION METROLOGY PTE. LTD. BANGKOK, THAILAND BLUM PRODUCTION METROLOGY CO., LTD. TAICHUNG, TAIWAN BLUM PRODUCTION METROLOGY PTE LTD SINGAPORE, SINGAPORE BLUM NOVOTEST MEASURING & TESTING TECHNOLOGY PVT LTD.

BANGALORE, INDIA





DIVISION MEASURING MACHINES
POST-PROCESS SOLUTIONS

Transmission Test Stands

Drive Shaft Test Stands

Hydraulic Test Stands

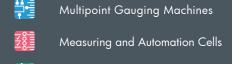
Spindle Test Stands

Special Equipment

Softwa

NOVOTEST is the specialist in test stands for the automotive and hydraulics industries within Blum-Novotest GmbH. Planning, designing and engineering of functional, capacity and durability test stands, as well as the integration into customers automation systems, is our scope of supply and services.

The business division Measuring Machines develops and manufactures solutions for dimensional and geometric inspection for inline 100 % inspection in series production. In addition, you will find a competent partner here for specific special measuring and testing requirements according to customer requirements incl. automation or for integration.



Flexible 2D Measuring Machines

Software

Spindle Test Stands

Crack Detection Testing Machines

Special Measuring Systems



E-Drive test bench for electric axle drives



Swivel test bench for E-Drive and AWD products



Multipoint metrology



Spindle test stand

80 81