



Production Metrology Made in Germany

Blum-Novotest GmbH is a recognised developer of leading-edge measuring components, with more than 45 years of experience as a partner in the worldwide machine tool, automotive and aircraft industries.

Our measuring technology »Made in Germany« supports customers in various industries in increasing their productivity, as well as the quality of the produced parts. As your reliable partner we are following our principles of keeping highest quality standards at competitive prices. We support you in the optimisation of your processes, and thus, help you to maintain a position providing your customers with the highest quality at competitive prices.

Due to the economic efficiency, precision and in-process reliability of our products, the measuring components of BLUM are essential instruments for a wide range of metal-cutting industries.



Alexander Blum



Günther Blum



*BLUM's Quality Management System
is certified according to DIN EN ISO 9001*

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	Micro Single	Micro Single NT	Micro Compact NT	Nano NT	NT-H ²⁾³⁾	NT-H 3D ¹⁾	
•	•	•	•	•	•	•	Tool Measurement
	•	•	•	•	•	•	NT Technology
				•			NT-H Technology
						•	NT-H 3D Technology
						•	shark360 Technology
•	•	•	•	•	•	•	Tool Breakage Detection
	•	•	•	• ²⁾	•	•	Tool Length Measurement
	•	•	•	•	•	•	Tool Radius Measurement
		•	•	•	•	•	Tool Form Measurement
		•	•	•	•	•	Tool Form Monitoring
•	•	•	•	•	•	•	Single Cutting Edge Monitoring
		•	•	•	•	•	RunoutControl
		•	•	•	•	•	ToolTipControl
		•	•	•	•	•	GrindControl
		•	•	•	•	•	MicroWearControl
	•	•	•	• ³⁾	•	•	Axes Compensation

1) For turning and milling tools

2) Optimisation of the absolute accuracy

3) Temperature compensation in 3 axes



Unbeatably precise and reliable. In order to achieve the greatest possible accuracy in measuring tools in the machining centre, BLUM recommends the use of compact support systems. The Micro Compact NT system is by default available up to a length of 1000 mm. The exceedingly compact Nano NT was designed especially for the requirements of high-end machines in micro-machining.



NT Technologie



NT-H Technologie



Tool Breakage Detection



Tool Length Measurement



Tool Radius Measurement



Tool Form Measurement



Tool Form Monitoring



Single Cutting Edge Monitoring



RunoutControl



ToolTipControl



GrindControl



MicroWearControl



Axes Compensation

Nano NT – for micro-tools from $\varnothing 5 \mu\text{m}$

All cutting geometries



Detection of micro-wear



Reliable – patented NT Electronics



Flexible and precise. The laser measuring system Micro Single NT is the modular version of the LaserControl NT series. The separation of transmitter and receiver allows for a flexible integration into a wide variety of machine types. They are, for instance, used if the installation of support systems is impossible due to the design of the machine tool.



NT Technology



Tool Breakage Detection



Tool Length Measurement



Tool Radius Measurement



Single Cutting Edge Monitoring



Axes Compensation

Micro Single NT – the modular system



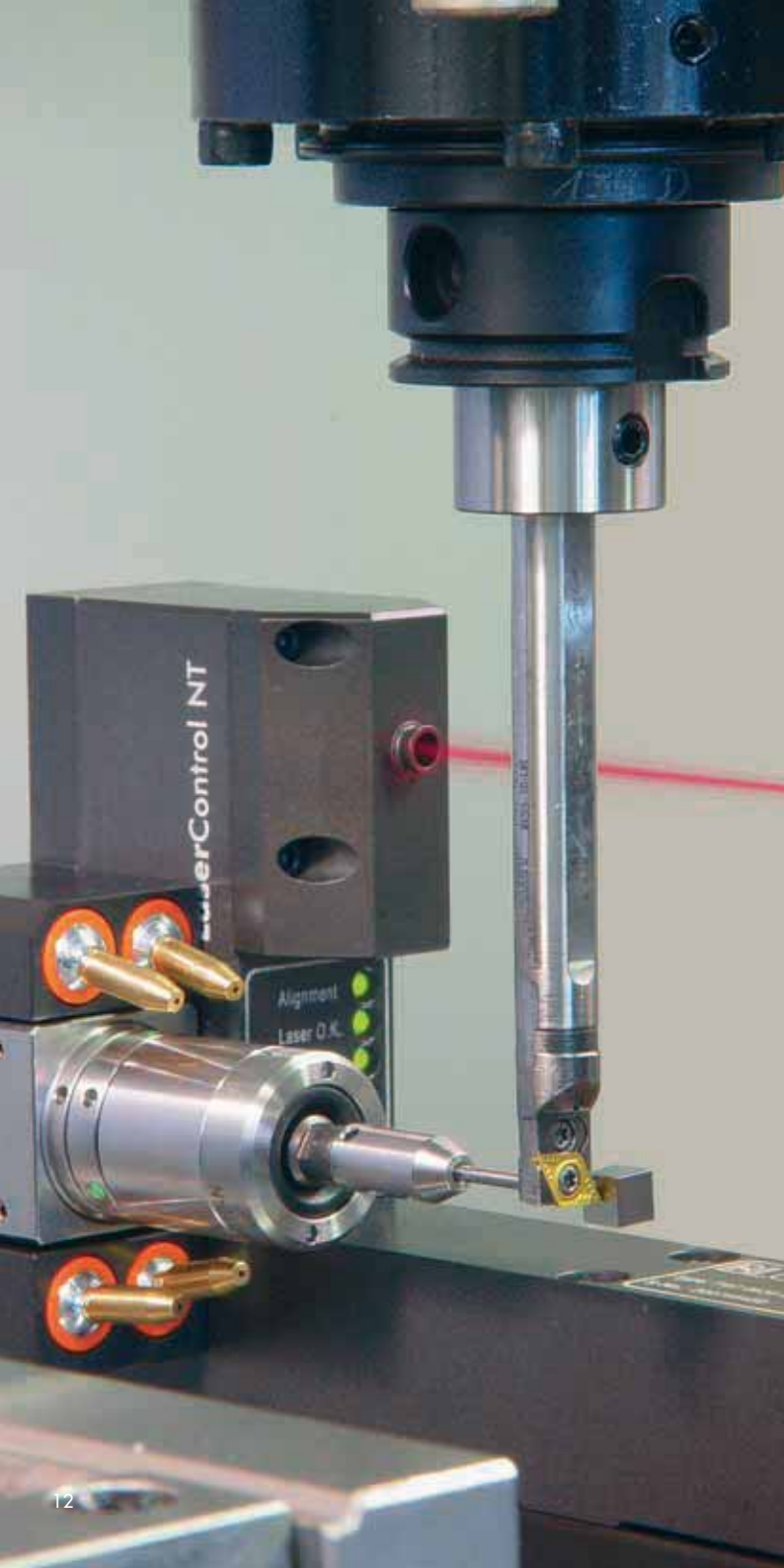
Indispensable – the BLUM pneumatic unit



100 % reliable due to BLUM Protection System



Reliable solutions for every machining operation



LaserControl NT-H 3D | Combined System

The all-rounder for any tool. LaserControl NT-H 3D is a compact and highly precise system for measuring the whole range of tools in turning-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. Thanks to built-in blowing nozzles even coolant, chips on tool or stylus are not a problem.



NT Technology



NT-H 3D Technology



shark360 Technology



Tool Breakage Detection



Tool Length Measurement



Tool Radius Measurement



Tool Form Measurement



Tool Form Monitoring



Single Cutting Edge Monitoring



RunoutControl



ToolTipControl

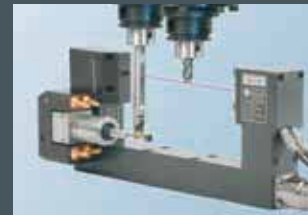


MicroWearControl



Axes Compensation

Measurement of all tools with one system



shark360 measuring mechanism – using cranked styli
















LaserControl NTH 3D with pneumatically controlled protection sleeve



Complete solution with software



Tool Setting Probes

	Z-Nano	Z-Nano IR	Z-Nano RC	Z-Pico	TC53-20	TC63-20		ZX-Speed	ZX-Speed IR	ZX-Speed RC	
	•	•	•	•	•			•	•	•	 Tool Measurement
		•						•			 Infrared Transmission
			•						•		 Radio Transmission
•			•					•			 Hardwired
								•	•	•	 Multidirectional
•	•	•	•								 Linear Working Principle
				•	•						 shark360 Technology
•	•	•	•	•	•			•	•	•	 Wear-free Measuring Mechanism
				•	•						 Modular System
•	•	•	•	•	•			•	•	•	 Tool Breakage Detection
•	•	•	•	•	•			•	•	•	 Tool Length Measurement
				•	•			•	•	•	 Tool Radius Measurement
•	•	•	•	•	•			•	•	•	 Axes Compensation
43	43	43	28	43	43			43	43	43	<i>Equipment diameter in mm</i>



Tool Setting Probes Z-Series

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.



Hardwired



Infrared Transmission



Radio Transmission



Linear Working Principle



Wear-free Measuring Mechanism



Tool Breakage Detection



Tool Length Measurement



Axes Compensation

Z-Pico – for micro-machining
(from 50 µm tool diameter)



Z-Nano – tool measurement with up to
2 m/min (from tool Ø 0.1 mm)



Optional: Chip protection & blowing nozzle



Z-Nano IR & Z-Nano RC –
the wireless versions



Tool Setting Probes 3D-Series

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.



Hardwired



Infrared Transmission



Radio Transmission



Multidirectional



Wear-free Measuring Mechanism



Tool Breakage Detection



Tool Length Measurement



Tool Radius Measurement



Axes Compensation

ZX-Speed – the hardwired version



ZX-Speed IR – with infrared transmission



ZX-Speed-IR and TC52 in DUO-Mode



Tool Length Measurement



Touch Probes

TC50 TC52		TC51		TC53-10		TC53-30		TC54-10		TC60 TC62		TC61		TC63-10		TC63-30		TC64-10		TC76		
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Workpiece Measurement
																						Tool Measurement
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Infrared Transmission
																						Radio Transmission
•																						Hardwired
	•																					Multidirectional
																						Bidirectional
																						shark360 Technology
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Wear-free Measuring Mechanism
																						Modular System
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Single & Mass Production
•																						Contour Measurement
	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Pulling Measurement
•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	•	Axes Compensation
																						Tool Length Measurement
																						Tool Radius Measurement
																						Tool Breakage Detection
63/40	63	40	63	40	63/40	63	40															Equipment diameter in mm



Touch Probes TC50/52 | TC60/62

Faster, more economic, more precise - the advantages of this high-speed touch probe series can be summarized as simply as that. The multidirectional probes convince with the latest measuring mechanism technologies with optoelectronic signal generation, the highest measuring speed (up to 3 m/min) and a perfect, rotationally symmetrical probe behaviour without disadvantageous lobing.



Infrared Transmission



Axes Compensation



Radio Transmission



Multidirectional



Wear-free Measuring Mechanism



Single & Mass Production

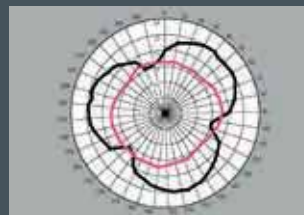


Contour Measurement

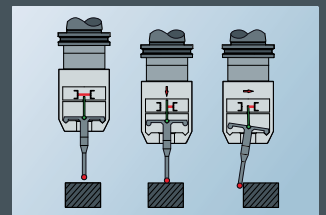
Measurement of contours



TC52, TC62 - for small machining centres



Non-lobing touch characteristics



Optoelectronic measuring mechanism



Touch Probes TC51 | TC61

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+ permanently and without wear.



Infrared Transmission



Pulling Measurement



Radio Transmission



Bidirectional



Wear-free Measuring Mechanism



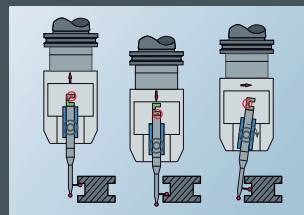
Mass Production



Axes Compensation

TC51, TC61 – extremely fast and precise

TWIN Mode: Simultaneous measurement with two touch probes



Highly precise – bidirectional measuring mechanism



IC56 – modern, reliable transmission



Touch Probes TC53 | TC63

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 probes use the patent **shark360** measuring mechanism which sets a new standard with regard to precision and reliability due to a modified face gear and the optoelectronic signal generation.



Infrared Transmission



Axes Compensation



Radio Transmission



Pulling Measurement



shark360 Technology



Modular System



Wear-free Measuring Mechanism



Single & Mass Production

TC63-30 – application in turning-milling centre



Measurements inside an aircraft turbine



Mass production of gearbox housings



Up to 6 touch probes with one receiver



Touch Probes TC54-10 | TC64-10

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-gearred measuring mechanism, the systems are perfectly suited for the measurement of tools and workpieces in turning and milling centres.



Infrared Transmission



Pulling Measurement



Radio Transmission



Tool Length Measurement



shark360 Technology



Tool Radius Measurement



Wear-free Measuring Mechanism



Tool Breakage Detection



Single & Mass Production



Axes Compensation

Pulling and pushing measurement



Workpiece measurement



Tool Measurement



*Patented **shark360** measuring mechanism with face gear*



Touch Probe TC76

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 patent **shark360** measuring mechanism sets a new standard with regard to precision and reliability.



Hardwired



shark360 Technology



Wear-free Measuring Mechanism



Modular System



Single & Mass Production



Axes Compensation



Pulling Measurement



Tool Length Measurement



Tool Radius Measurement

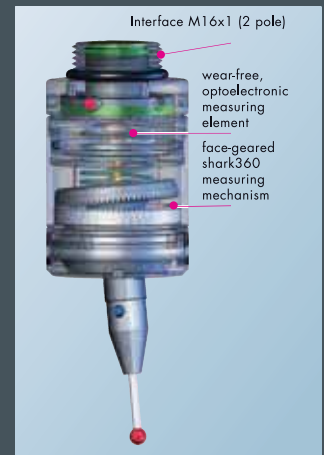


Tool Breakage Detection

Workpiece measurement in grinding centre



TC76 with **shark360** measuring mechanism: Hightech in perfection



shark360 – measurement in Z+/Z-



Touch Probes DIGILOG and Surface Roughness Gauges RG

	TC63-DIGILOG	TC64-DIGILOG	TC76-DIGILOG	TC63-RG	TC64-RG	TC76-RG	
•	•	•	•	•	•		Workpiece Measurement
•	•		•	•			Radio Transmission
		•			•		Hardwired
•	•	•	•	•	•		shark360 DIGILOG
•	•	•	•	•	•		Wear-free Measuring Mechanism
•		•	•		•		Modular System
•	•	•	•	•	•		Single & Mass Production
•	•	•					Pulling Measurement
•	•	•					Axes Compensation
•	•	•					ContourScan
•	•	•					Workpiece Inspection
			•	•	•		Roughness Measurement
40/63	40	25	40/63	40	25		<i>Equipment diameter in mm</i>



TC63-DIGILOG | TC64-DIGILOG

The digilog revolution – now with BRC-Technology. The wireless touch probe TC64-DIGILOG is the digilog solution, especially for milling and turning centres. By analogue scanning of the workpiece surface, machining errors are detected quickly and reliably. The BRC Radio Technology transmits the determined status wirelessly to an external evaluation unit. The system is also available as a modular version in form of the TC63-DIGILOG.



Radio Transmission



Single & Mass Production



shark360 DIGILOG



Pulling Measurement



Wear-free Measuring Mechanism



Modular System



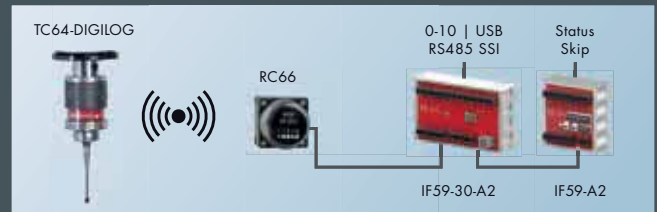
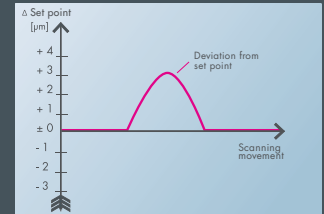
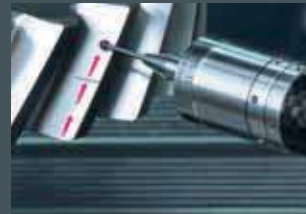
Workpiece Inspection



ContourScan

Scan to detect machining errors
with modular system TC63-DIGILOG

Machining error is being detected



System overview of DIGILOG touch probe in combination with BRC-Technology



Touch Probe TC76-DIGILOG

The digilog revolution. DIGILOG = high-precision digital measurement and cyberspeed scans in analogue mode. With the help of the analogue scan the time spent on measuring complex workpieces, free-form surfaces and contours is radically reduced. The touch probe is applicable on turning, milling and grinding machines. Maximum precision is guaranteed through filtering and averaging of the measuring values.



Hardwired



Single & Mass Production



shark360 DIGILOG



Pulling Measurement



Wear-free Measuring Mechanism



Modular System



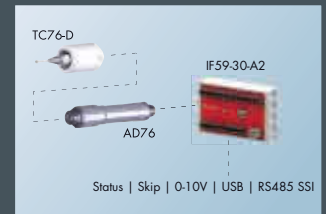
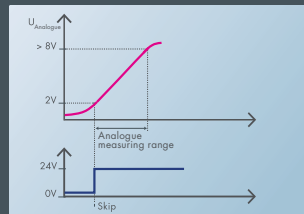
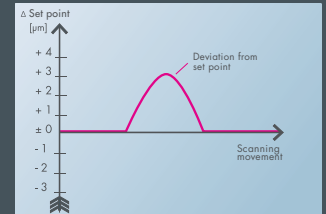
Workpiece Inspection



ContourScan

Detection of machining errors on gear grinding machine

Machining error is being detected



DIGILOG – digital & analogue measuring

System overview



Surface Roughness Gauges

TC63-RG | TC64-RG | TC76-RG

The quantum leap in machine-integrated quality monitoring. The digilog surface roughness gauges allow for detection of poor surfaces during process, e.g. caused by damaged tools. Already manufactured workpieces can be finished with a new tool while in its original setting. Thus, the rejects with the feature "surface roughness", can be reduced to a minimum.



Hardwired



Radio Transmission



shark360 DIGILOG



Wear-free Measuring Mechanism



Roughness Measurement



Mass Production

TC63-RG – modular system with shark360 DIGILOG technology

TC63-RG with single measuring element



Sequentially use of up to 6 measuring systems with one radio receiver



Evaluation & recording at the control screen or Touch Panel



Measurement by mouse click – with the measuring software FormControl the inspection of workpieces in the machining centre is as easy as that. Regardless of whether you are dealing with contours or workpieces with standard geometries, the operator will already recognise machining errors on the machine. This allows re-work in the initial setting. Manufacturing processes are simplified and quickened, transport and storage time between machine tool and measuring machine is omitted.



Contour Measurement



Workpiece Inspection



Diameter Measurement



Distance Measurement



Position Measurement



Angle Measurement



Roundness Measurement



Reference/Chain Dimensioning



Cylindricity Measurement

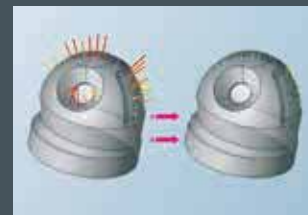


Concentricity Measurement

Measuring & evaluation of standard geometries



Measuring of contours



Alignment function 2.0 and Best-fit



Compiling measurement reports



BG-Series

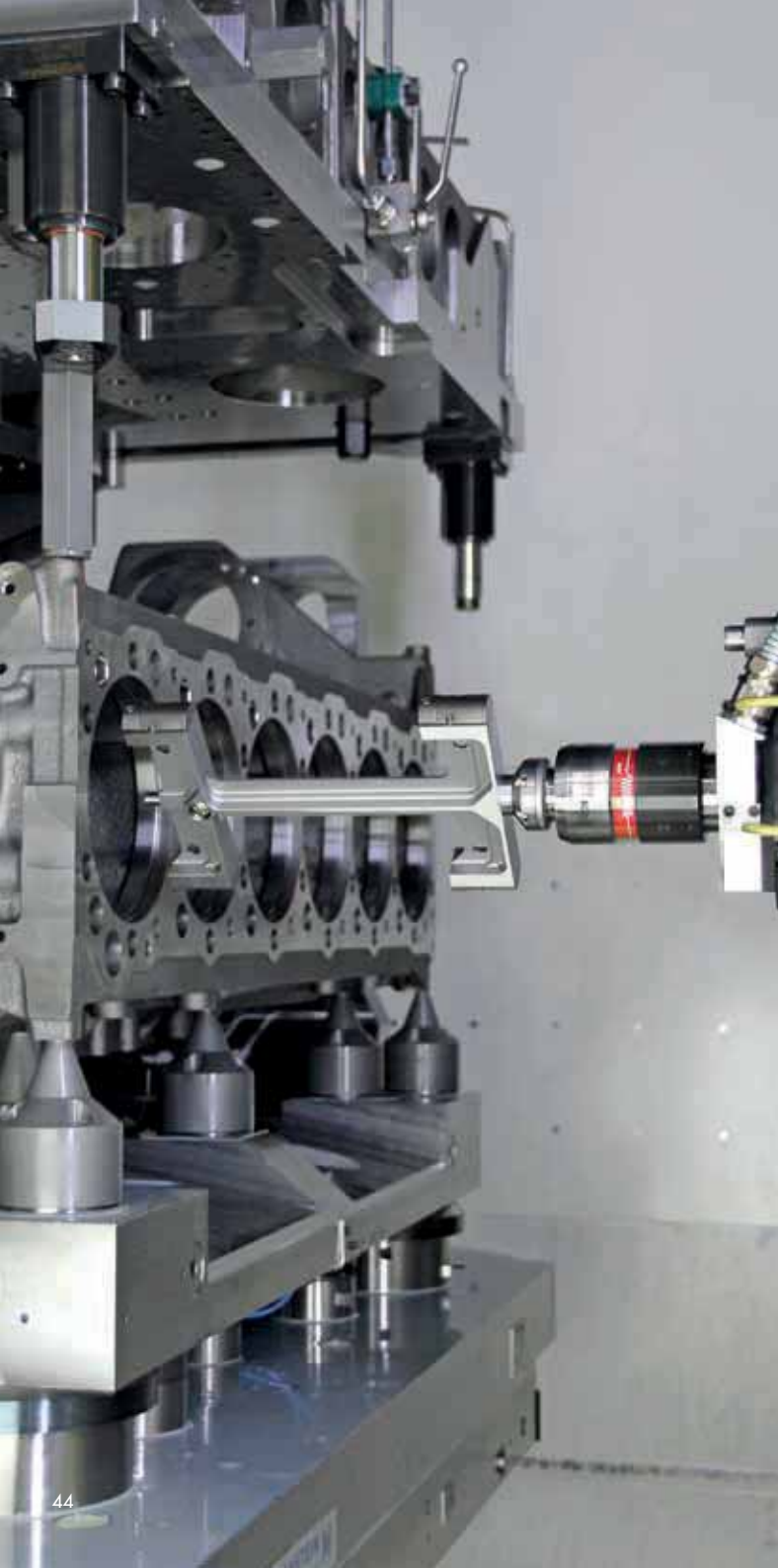
BG60

BG61

TG81

•	•	•		Workpiece Measurement
•	•	•		Temperature Measurement
•	•	•		Radio Transmission
•	•	•		Wear-free Measuring Mechanism
•	•	•		Mass Production
•	•	•		Diameter Measurement
•	•	•		Position Measurement
•	•	•		Roundness Measurement
•	•	•		Cylindricity Measurement
•	•	•		Concentricity Measurement





Bore Gauges BG60 | BG61

BLUM bore gauges are machine-independent measuring systems for quality monitoring of tightly tolerated fits in highly productive machining centres 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.



Radio Transmission



Cylindricity Measurement



Wear-free Measuring Mechanism



Concentricity Measurement



Mass Production



Diameter Measurement



Position Measurement



Roundness Measurement

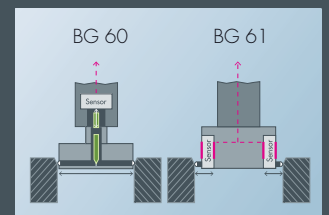
In-process measurement of steering knuckle before slitting: Diameter



Pump bore in a truck motor block: diameter & concentricity



Pneumatic-component: Diameter



Measuring principles of the BG-series



Temperature Measuring System TG81

Temperature under control – the temperature measuring system TG81 has been developed for determination of the workpiece temperature simultaneously during critical machining time. Sensors, integrated into the clamping device, detect the current workpiece temperature which is then transmitted wirelessly to the machine control. On the basis of this data, NC-controls can calculate compensation values and enter them directly into the machining process. Application areas are dry processing or the machining of workpieces with strongly fluctuating entry temperatures.



Temperature Measurement



Radio Transmission



Mass Production



Temperature sensor and transmission unit



Integration of sensors (temperature, workpiece position, clamping pressure) in the workpiece clamping device. Wireless data transmission via BRC-Technology.



Interface IF48

The IF48 is a data interface for measuring systems of BLUM. It conducts measurements, carries out the analysis of the measured values, displaying it clearly. Further options are the storage, statistical evaluation and visualisation of the results. Additionally, it enables an automatic process control by transferring measurement and compensation values to the machine control.



Connection via Profi-Bus or Ethernet, etc.

Measuring computer with touch screen



Managing test plans with up to 40 features



Process automation and process control

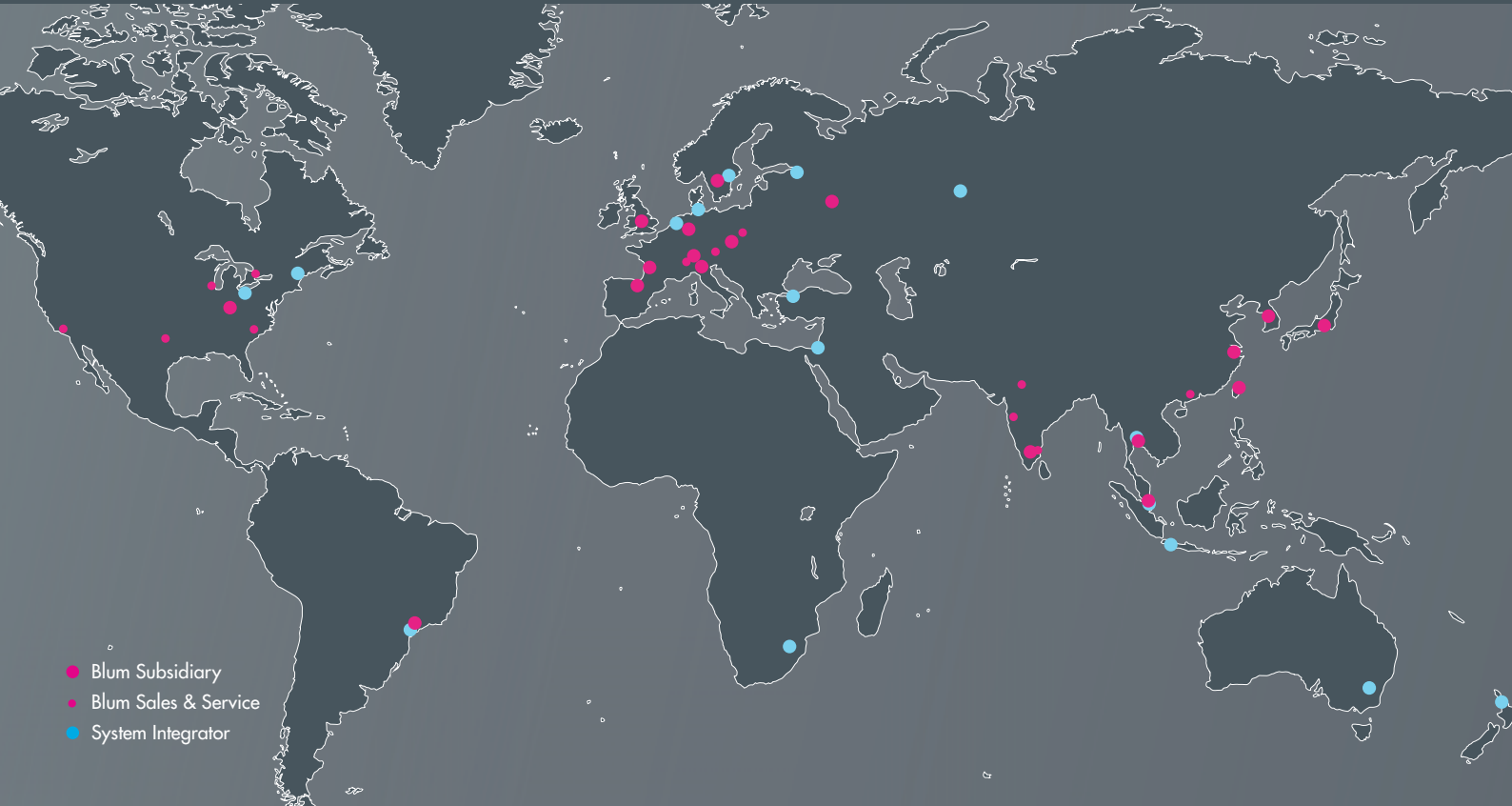


Q-DAS data export

Worldwide Service and Qualified Consulting

- Applications training
- Retrofitting
- Software development for special applications
- Customer-specific solutions

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That's what we offer > **Product Groups**



Touch probe



Tool Setting Probes



LaserControl



Transmission Systems



Software



Accessories



Bore Gauges



FormControl



Special Measuring Systems

That's what our products are for > **Applications**



Tool Measurement



Workpiece Measurement

That's what makes our products unique > **Implemented Technologies**



Multidirectional



Bidirectional



shark360 Technology



shark360 DIGILOG



Hardwired



Linear Working Principle



NT Technology



NTH 3D Technology



NTH Technology



Infrared Transmission



Radio Transmission



Infrared Data Transmission



Modular System



Wear-free Measuring Mechanism

That's what our products can be used for > **Product Features**



Tool Breakage Detection



Single Cutting Edge Monitoring



Tool Form Measurement



Pulling Measurement



Tool Length Measurement



Tool Radius Measurement



GrindControl



MicroWearControl



Workpiece Inspection



Tool Form Monitoring



RunoutControl



ToolTipControl



Roundness Measurement



Cylindricity Measurement



Concentricity Measurement



Temperature Measurement



Diameter Measurement



Position Measurement



Contour Measurement



Single & Mass Production



Axes Compensation



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ContourScan



Roughness Measurement



NOVOTEST Test Engineering

NOVOTEST is the Test Engineering division of Blum-Novotest GmbH. The business division specialises in test stands for automotive, hydraulics and aircraft industries. The scope of supply and services incorporates planning, design and manufacturing of test stands for function, endurance and lifetime testing as well as the integration into customers automated systems.



Transmission Test Stands



Drive Shaft Test Stands



Hydraulic Test Stands



Special Equipment



Software

Transmission Test Stands



Drive Shaft Test Stands



Measuring Machines

The business division Measuring Machines offers state-of-the-art, well proven solutions for dimensional or geometric measurement and crack testing for mainly rotation symmetrical parts in the automotive industry and its component suppliers industries. Furthermore the division is the capable partner for unique measuring and testing demands.



Multipoint Gauging Machines



Measuring and Automation Cells



Flexible 2D Measuring Machines



Software



Crack Detection Testing Machines



Special Measuring Systems

Multipoint Gauging Machines



*Crack Detection Testing Machines
(eddy current)*



Measuring and Automation Cells

