Product Overview





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.

H. Con J. BC

Alexander Blum

Günther Blum





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

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Further Divisions

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Division NOVOTEST Test Engineering	
Division Measuring Machines	









	Tool Measurement
	NT Technology
	NT-H Technology
	NT-H 3D Technology
	shark360 Technology
E C	Tool Breakage Detection
	Tool Length Measurement
	Tool Radius Measurement
	Tool Form Measurement
V)	Tool Form Monitoring
	Single Cutting Edge Monitoring
	RunoutControl
	ToolTipControl
6	GrindControl
	MicroWearControl
	Axes Compensation

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		Single Cutting Edge Monitoring
	NT-H Technology	IRE €	RunoutControl
	Tool Breakage Detection		ToolTipControl
1	Tool Length Measurement	61	GrindControl
♦	Tool Radius Measurement		MicroWearControl
	Tool Form Measurement		Axes Compensation
\mathbb{J}_{r}	Tool Form Monitoring		

Nano NT – for micro-tools from Ø 5 µm

All cutting geometries





Detection of micro-wear





Reliable – patented NT Electronics





LaserControl NT | Single Systems

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
1	Tool Length Measurement
Ø ₽	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 of 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	4
	Tool Breakage Detection	
1	Tool Length Measurement	
⇔	Tool Radius Measurement	
	Tool Form Measurement	



Measurement of all tools with one system





LaserControl NT-H 3D with pneumatically controlled protection sleeve

shark360 measuring mechanism – using cranked styli





Complete solution with software



	1.Nano	I.Nano IP	L.Nano R	L ^{RICO}	(C33)	6 ³²	₹ (t Speed	+59eed	t speed		
•	•	•	•	•	•		•	•	•			Tool Measurement
	•			•				•			B	Infrared Transmission
		•			•				•		Radio	Radio Transmission
•			•				•				X	Hardwired
							•	•	•		$\stackrel{\uparrow}{\leftarrow}\stackrel{\downarrow}{\rightarrow}$	Multidirectional
•	•	•	•									Linear Working Principle
				•	•							shark360 Technology
•	•	•	•	•	•		•	•	•		∾ ₩	Wear-free Measuring Mechanism
				•	•						=	Modular System
•	•	•	•	•	•		•	•	•		E S	Tool Breakage Detection
•	•	•	•	•	•		•	•	•		8₽	Tool Length Measurement
				•	•		•	•	•			Tool Radius Measurement
•	•	•	•	•	•		•	•	•			Axes Compensation
43	43	43	28	43	43		43	43	43			Equipment diameter in mm





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.





Axes Compensation

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





Optional: Chip protection & blowing nozzle

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





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.





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



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•	•	•	•	•	•	•	•		•	•	•			Workpiece Measurement
				•						•	•			Tool Measurement
•	•	•	•	•									®	Infrared Transmission
					•	•	•		•	•			Rodio	Radio Transmission
											•			Hardwired
•					•								$\overset{\uparrow}{\underset{\downarrow}{\overset{\bullet}{\overset{\bullet}{}}}}$	Multidirectional
	•					•							♦	Bidirectional
		•	•	•			•		•	•	•			shark360 Technology
•	•	•	•	•	•	•	•		•	•	•		∞ 1 Ж	Wear-free Measuring Mechanism
		•	•				•		•		•		=]	Modular System
•	•	•	•	•	•	•	•		•	•	•			Single & Mass Production
•					•									Contour Measurement
	•	•	•	•		•	•		•	•	•		F	Pulling Measurement
•	•	•	•	•	•	•	•		•	•	•			Axes Compensation
				•						•	•			Tool Length Measurement
				•						•	•			Tool Radius Measurement
				•						•	•		HAN IN	Tool Breakage Detection
53/40	63	40	63	40	63/40	63	40		63	40	25			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
Radio Transmission
Multidirectional
Wear-free Measuring Mechanism
Single & Mass Production
Contour Measurement



Axes Compensation

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
Radio Transmission
Bidirectional
Wear-free Measuring Mechanism
Mass Production
Axes Compensation



Pulling Measurement

TC51, TC61 – extremely fast and precise





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 shark 360 measuring mechanism which sets a new standard with regard to precision and reliability due to a modified face gear and the optoelectronic signal generation.





Pulling Measurement

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 **shark**360 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 workpieces in turning and milling centres.





Pulling and pushing measurement





Tool Measurement

Workpiece measurement





Patented **shark**360 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 **shark**360 measuring mechanism sets a new standard with regard to precision and reliability.

*	Hardwired	F
4	shark360 Technology	BI
ž¶†	Wear-free Measuring Mechanism	T T T
Ð	Modular System	E C
	Single & Mass Production	
	Axes Compensation	



Workpiece measurement in grinding centre





shark360 – measurement in Z+/Z-

TC76 with **shark**360 measuring mechanism: Hightech in perfection





Touch Probes DIGILOG and Surface Roughness Gauges RG

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			•	•	•		
40/63	40	25	40/63	40	25		

	Workpiece Measurement
	Radio Transmission
A	Hardwired
DIGILOG	shark360 DIGILOG
∞↓	Wear-free Measuring Mechanism
	Modular System
	Single & Mass Production
F	Pulling Measurement
	Axes Compensation
SCAN	ContourScan
22	Workpiece Inspection
	Roughness Measurement
	Equipment diameter in mm





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.





Pulling Measurement

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.

X	Hardwired		Single & Mass Production
DIGLOG	shark360 DIGILOG	F	Pulling Measurement
≈ ₩	Wear-free Measuring Mechanis	sm	
=]	Modular System		
22	Workpiece Inspection		
SCAN	ContourScan		

Detection of machining errors on gear grinding machine





DIGILOG – digital & analogue measuring

Machining error is being detected





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
e Rec	Radio Transmission
SILOG	shark360 DIGILOG
<u>}</u> ∥⊥	Wear-free Measuring Mechanism
	Roughness Measurement
	Mass Production

TC63-RG – modular system with shark 360 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









Software FormControl

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
Ø	Diameter Measurement
	Position Measurement
	Roundness Measurement
	Cylindricity Measurement
	Concentricity Measurement



Distance Measurement

Angle Measurement

Reference/Chain Dimensioning

Measuring & evaluation of standard geometries

Measuring of contours





Alignment function 2.0 and Best-fit





Compiling measurement reports





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







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.





Concentricity 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 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.



Interface **F**48

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.



Temperature Measurement

Radio Transmission Mass Production

Temperature sensor and transmission unit



Connection via Profi-Bus or Ethernet, etc.

Measuring computer with touch screen

Managing test plans with up to 40 features





· Hogo have beening

Process automation and process control

Q-DAS data export



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



Worldwide Service and Qualified Consulting

- Applications training
- Retrofitting

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- Software development for special applications
- Customer-specific solutions

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Please contact us. We are looking forward to assist you.

That's what we offer > Product Groups







That's what our products are for > Applications

That's what makes our products unique > Implemented Technologies



Bidirectional



Infrared Transmission



Radio Transmission

Infrared Data Transmission

Workpiece Inspection

Concentricity Measurement

shark360 Technology

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



Tool Breakage Detection



GrindControl



Roundness Measurement



Contour Measurement





Cylindricity Measurement



Single Cutting Edge Monitoring Tool Form Measurement

Single & Mass Production



Bore Gauges









Special Measuring Systems

Linear Working Principle

-<u>||</u>.

Tool Measurement



FormControl

Workpiece Measurement







shark 360 DIGILOG

Hardwired



NT-H Technology



Wear-free Measuring Mechanism



Tool Length Measurement

Tool Radius Measurement





Temperature Measurement



Distance Measurement





Position Measurement



Reference/Chain Dimensioning











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Roughness Measurement

















RunoutControl

Pulling Measurement





NT Technology



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.



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
Y.	Crack Detection Testing Machines
	Special Measuring Systems

Transmission Test Stands





Drive Shaft Test Stands

Multipoint Gauging Machines





Crack Detection Testing Machines (eddy current)



Measuring and Automation Cells