

BERGHOF TESTING

## Bumper Testers

Always the best solution –  
thanks to a modular system

# BUMPER TESTER BASIC

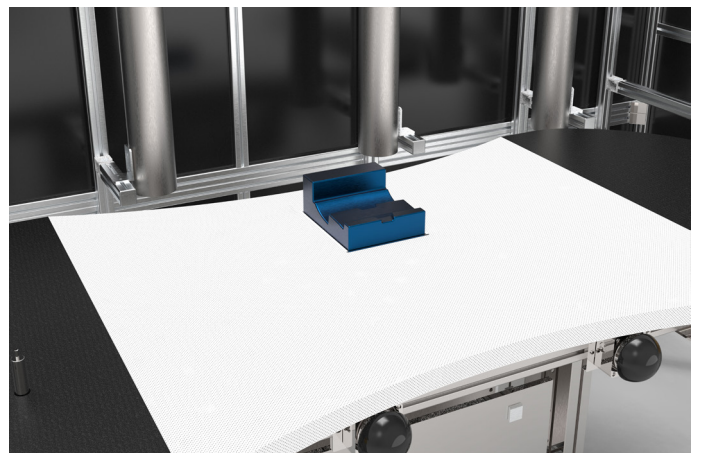


## Bumper testing table – the compact solution for maximum product quality

Full performance, well-considered reduction of equipment: The testing table from Berghof Testing is our basic system for bumper testing. It is the system of choice for automotive suppliers who want to combine maximum quality management with minimal acquisition costs. Based on LIN and CAN communication, the Bumper Tester BASIC precisely carries out all required resistance, current and voltage measurements on the bumper. The system electrically monitors the proper functioning of both the lighting and safety components as well as all radar and ultrasonic sensors of the bumper.

At the core of the test system is our in-house testing software. It reliably tests bumpers, documents the results of the testing runs, arranges them graphically in a simple and clear manner, and stores them in a database system. The graphical user interface allows for an intuitive and easy operating of the system.

As an alternative to the version with testing facility, this basic system for bumper testing is also available without a testing table so it can be easily integrated into an existing assembly line.



- 01** Our Bumper Tester BASIC consists of a compact testing table, a control cabinet and our tried and tested modular testing software.
- 02** Different DUT (devices under test) fixtures can be quickly and easily attached to the testing table. This makes it a space-saving and highly variable solution for the quality management of your products.

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### Your advantages at a glance

- Speed: optimized testing procedure for short cycle time
- Variant-related testing parameter sets
- Service functions for immediate elimination of disruption of production

# STANDARD CONFIGURATION **BASIC**

## Bumper Tester BASIC

Technical Data

### Standard Configuration

Test cabinet with measuring equipment + industrial PC, incl. test application Berghof Bumper Tester

2 x testing adaption front and rear end each		Connecting and electrical connection of the tested object
Current measuring	4 x current measuring channel	For standard components lights, camera systems; pure installing testing; parallel testing possible
Resistance measuring	4 x resistance measuring channel (4-wire)	For standard components antennas, camera systems; pure installation testing; parallel testing possible
Sensor testing ultrasonic	Communication interface for data acquisition	Sensors by Valeo GEN. 5.X; testing according to manufacturer's specifications
Sensor testing Hands Free Access / virtual pedal	Communication interface for bus communication (LIN)	Sensors by HUF, Brose; IEE testing according to manufacturer's specifications; others on request
<b>Optional (for an extra charge) e. g.:</b>		
Sensor testing ultrasonic high performance	Communication interface for data acquisition and bus communication	Sensors by Valeo GEN. 6.1.X; testing according to manufacturer's specifications
	Communication interface for data acquisition	Sensors by BOSCH GEN. 6.X; testing according to manufacturer's specifications
Sensor test radar sensor	Communication interface for bus communication (CAN, CAN FD)	Sensors by BOSCH, Continental, Delphi; testing according to manufacturer's specifications (others on request)
	Communication interface for bus communication (FlexRay)	BOSCH sensors; testing according to manufacturer's specifications (others on request)
Sensor testing pedestrian protection	Communication interface for data acquisition	Sensors by Continental, BOSCH; testing according to manufacturer's specifications (others on request)
Sensor test camera system	Communication via LVDS communication	Camera system by Continental, Valeo; testing according to manufacturer's specifications (on request)
	Communication via bus communication (CAN)	IAV camera system; testing according to manufacturer's specifications (on request)

→ [Price standard configuration Bumper Tester BASIC as well as additional charges for optional versions on request:](#)  
[Thomas Roth | Key Account Manager | +49 7121 894-293 | \[thomas.roth@berghof.com\]\(mailto:thomas.roth@berghof.com\)](#)

Would you like to learn more about this test system? Then [click here](#) or scan the adjacent QR code with your smartphone!



# BUMPER TESTER **ELECTRIC**

## Electric bumper tester – optimum test results in no time at all

Electric bumper testing in top time: Our test system ELECTRIC tests all components of a bumper purely electrically in a testing time of less than 30 seconds. This system stands out above all by a high degree of standardization: Berghof Testing is capable of setting up all such systems identically – depending on the configuration level – right up to a standardized coupling. This gives you maximum flexibility for the future – at a uniquely attractive price. For this plan requires very little development and set-up time, which significantly reduces acquisition costs. Berghof only adapts the DUT fixture to the respective DUT model, adjusted to project specifications.

As a result, the system is maximally flexible and tests independently of variants: The standardized coupling makes it possible to hook every possible DUT variant to the test system. A single system can therefore test all current and future variants. And front and rear bumpers or different variants can even be tested simultaneously on a single system.

The Berghof testing software is also a central component of the electric bumper tester: New DUT variants are activated solely via

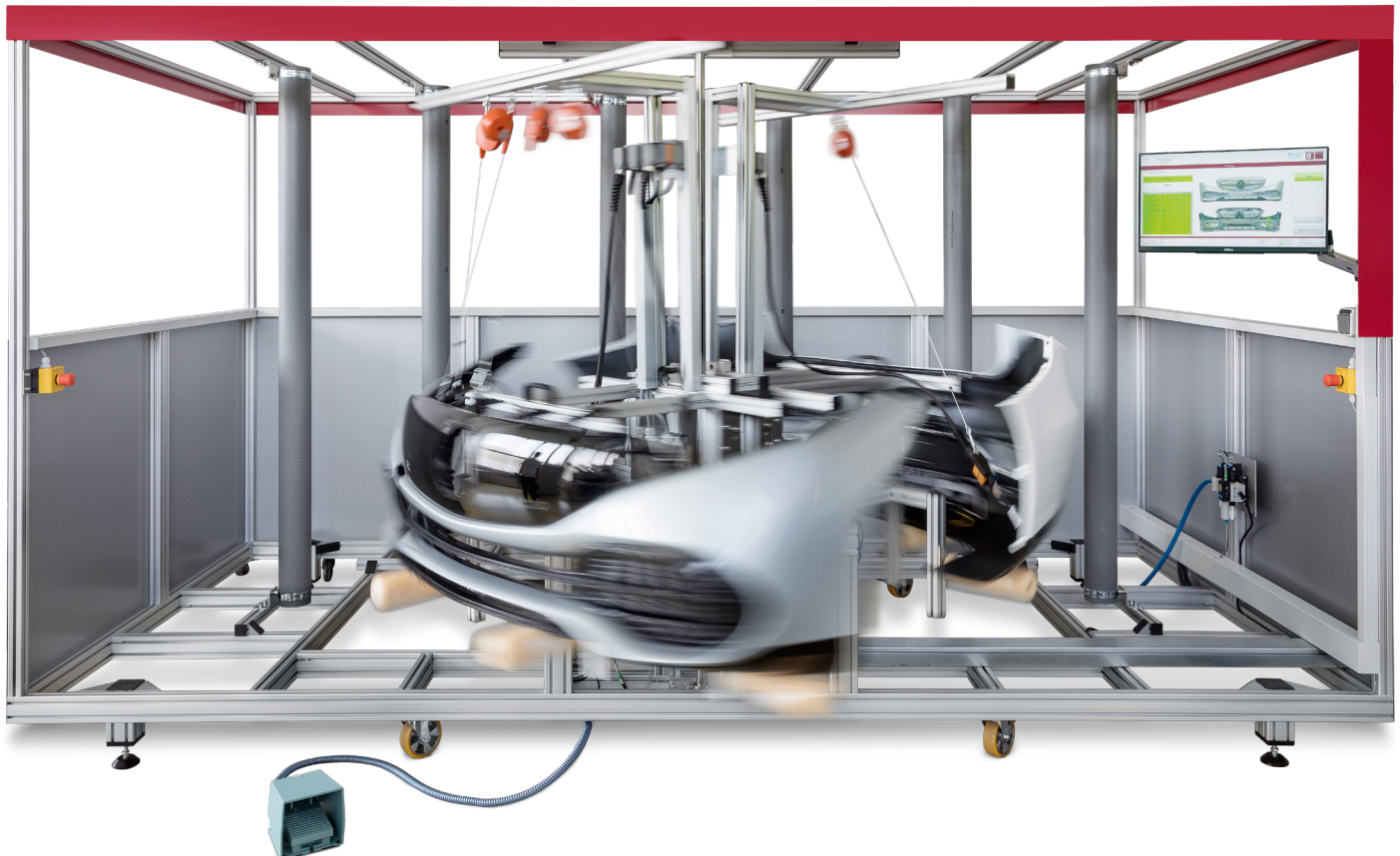
testing application – the layout and installation of variants and the testing sequence are therefore done both quickly and simply. So all you need for a new variant is a new, suitable DUT fixture.

The test sequence itself is also completed in the blink of an eye: two revolving interchangeable fixtures allow the operator to remove a DUT and embed a new one into the system while another bumper is being tested at the same time. This not only provides for short testing times of less than 30 seconds, but also minimizes personnel costs.

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### Your advantages at a glance

- Low acquisition costs: One-time investment for different series, coming variants and mixed operation
- High degree of standardization, maximum flexibility
- Testing time of less than 30 seconds
- Minimal operating effort, changeover times of less than two minutes
- High cost-saving potential



# STANDARD CONFIGURATION **ELECTRIC**

## Bumper Tester ELECTRIC

### Technical Data

#### Standard Configuration

Rotary table, test cabinet with measuring equipment + industrial PC, incl. test application Berghof Bumper Tester

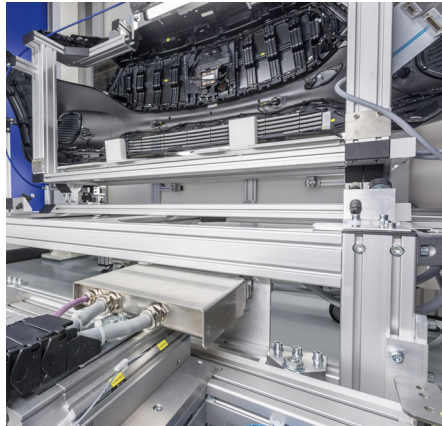
Bumper Tester BASIC	Instead of a testing table, the Bumper Tester ELECTRIC contains a rotary device for the suspension of up to two bumpers to be tested	
Plus variant 1: Rotary table system front and rear end		1 x mounting for front and 1x mounting for rear → mixed operation
Plus variant 2: Rotary table system front		2 x fixture for front
Plus variant 3: Rotary table system rear end		2 x fixture for rear end
<b>Optional (for an extra charge) e. g.:</b>		
Sensor testing ultrasonic high performance	Communication interface for data acquisition and bus communication	Sensors by Valeo GEN. 6.1.X; testing according to manufacturer's specifications
	Communication interface for data acquisition	Sensors by BOSCH GEN. 6.X; testing according to manufacturer's specifications
Sensor test radar sensor	Communication interface for bus communication (CAN, CAN FD)	Sensors by BOSCH, Continental, Delphi; testing according to manufacturer's specifications (others on request)
	Communication interface for bus communication (FlexRay)	BOSCH sensors; testing according to manufacturer's specifications (others on request)
Sensor testing pedestrian protection	Communication interface for data acquisition	Sensors by Continental, BOSCH; testing according to manufacturer's specifications (others on request)
Sensor test camera system	Communication via LVDS communication	Camera system by Continental, Valeo; testing according to manufacturer's specifications (on request)
	Communication via bus communication (CAN)	IAV camera system; testing according to manufacturer's specifications (on request)
Optical documentation	Industrial cameras (min. 5 pcs.): 2 x inside, 3 x outside	Optical documentation carried out parallel to the testing
Sensory monitoring		
Complete automation with the help of an AGV		
RFID technology, hardware coding		
Interchangeable fixtures for further DUT series		

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[Thomas Roth | Key Account Manager | +49 7121 894-293 | \[thomas.roth@berghof.com\]\(mailto:thomas.roth@berghof.com\)](#)

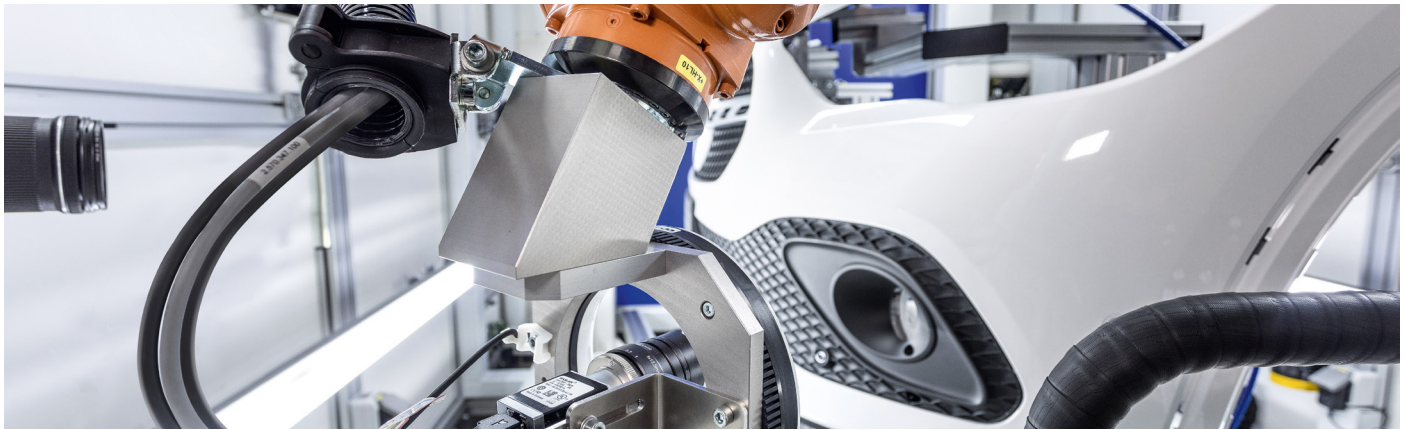
Do you want to know why this solution provides you with an emergency plan for your production more or less for free? Then read on in [our magazine article!](#)



# BUMPER TESTER **ROBOTIC**



- 01** The most powerful and complex bumper test system by Berghof Testing tests 55 optical test features in a cycle time of less than 45 seconds.
- 02** Contacting between the DUT and the test cabin is activated automatically.
- 03** The robotic camera arm scans all relevant test features in one flow – without time-consuming slowing down and accelerating.



## Fully automated: Optical and electrical bumper testing with a robot

Minimum cycle time, maximum flexibility: Berghof Testing's most powerful and automated bumper test system tests electrically and optically – it does so quick and highly flexible. And what's more, with the help of a driverless transport system (DTS), you can operate the bumper tester ROBOTIC completely unmanned. And: Thanks to a camera movement completely without intermediate stops, the test robot, a high-quality industrial robot that is less disposed to faults, manages the impressive number of 55 test characteristics in a cycle time of less than 45 seconds. A DTS automatically embeds and de-embeds the DUTs, it also provides for the contacting between the DUTs and the test cabin. Moreover, the system automatically recognizes different testmobile carts, balancing manufacturing and assembly tolerances by shifting coordinates.

When testing ultrasonic and radar sensors, which are particularly significant for the increasingly important driver assistance systems, the system operates with real-time signal processing, which minimizes cycle times considerably. Our in-house testing software works flexibly with all common bus systems such as

LIN, FlexRay or CAN. It ensures smooth communication between the test system and the installed cameras, hand free access and pedestrian protection systems as well as LED lighting elements. In addition to this resistance and current testing, the system also checks visual criteria of the bumpers such as correct assembly, shape and color. The software documents the results photographically without any gaps.

As with every Berghof test system, the user interface is intuitive and easy to operate with – test results are displayed graphically and thus very clearly. And also new DUT variants can be added quickly and easily at any time.

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### Your advantages at a glance

- Fully automated
- Easy to use
- Clear display of test results
- Speed: 55 optical testing features checked in a cycle time of less than 45 seconds
- Supply and removal by AGV
- Balancing of manufacturing and assembly tolerances

# STANDARD CONFIGURATION **ROBOTIC**

## Bumper Tester ROBOTIC

Technical Data

### Standard Configuration

Test cabin, test cabinet with measuring equipment + industrial PC, incl. test application Berghof Bumper Tester + safety technology

Bumper Tester BASIC (without testing table) plus variant 1, 2 or 3

### Plus variant 1:

Test cabin with robotic system for front and rear end		With 25 test features front and rear end each
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5 x testmobile carts front + rear end each		
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Optical documentation	Industrial cameras (min. 5 pcs.): 2 x inside, 3 x outside	Optical documentation carried out alongside the testing
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### Plus variant 2:

Test cabin with robotic system for front		With 50 testing features front
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10 x testmobile carts front		
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Optical documentation	Industrial cameras (min. 5 pcs.): 2 x inside, 3 x outside	Optical documentation carried out alongside the testing
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### Plus variant 3:

Test cabin with robotic system for rear end		With 50 test features rear
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10 x testmobile carts rear end		
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Optical documentation	Industrial cameras (min. 5 pcs.): 2 x inside, 3 x outside	Optical documentation carried out alongside the testing
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### Optional (for an extra charge) e. g.:

Sensor testing ultrasonic high performance	Communication interface for data acquisition and bus communication	Sensors by Valeo GEN. 6.1.X; testing according to manufacturer's specifications
	Communication interface for data acquisition	Sensors by BOSCH GEN. 6.X; testing according to manufacturer's specifications

Sensor test radar sensor	Communication interface for bus communication (CAN, CAN FD)	Sensors by BOSCH, Continental, Delphi; testing according to manufacturer's specifications (others on request)
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Sensor testing pedestrian protection	Communication interface for data acquisition	Sensors by Continental, BOSCH; testing according to manufacturer's specifications (others on request)
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Sensor test camera system	Communication via LVDS communication	Camera system by Continental, Valeo; testing according to manufacturer's specifications (on request)
	Communication via bus communication (CAN)	IAV camera system; testing according to manufacturer's specifications (on request)

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You want to know what makes this test system so fast and flexible? Find out more [in our report](#) on the Berghof Testing website!



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Presented by:

Berghof Automation GmbH  
Business Unit Testing  
Arbachtalstr. 26  
72800 Eningen, Germany  
Telephone: +49 7121 894-322  
Telefax: +49 7121 804-100  
E-Mail: [testing@berghof.com](mailto:testing@berghof.com)  
[www.berghof-testing.com](http://www.berghof-testing.com)