



**HAHN**  
**AUTOMATION**

visions become real

# Testing & Inspection

by HAHN Automation







# A leading player in test systems



## Why HAHN Automation Testing Equipment?

- HAHN Automation is the specialist for production-integrated testing systems
- We develop standards from individual solutions
- We combine expert process know-how with extensive testing know-how
- We employ Test & Inspection Engineers on three continents: Asia, Europe, North America
- Your professional support is always guaranteed

## HAHN Automation stands for:

- Over 25 years experience in automation and robotics
- Reliable testing systems in operation all over the world
- Individual customer solutions & global support



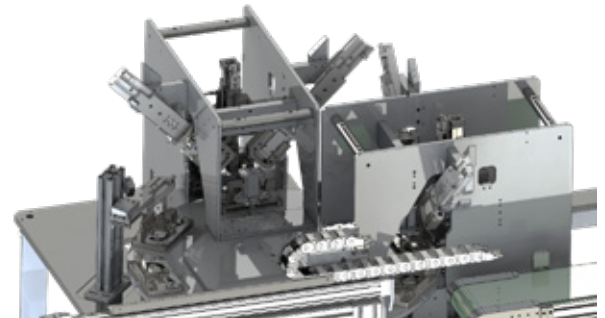
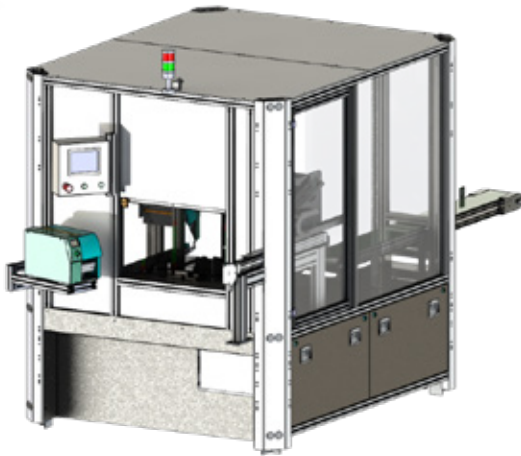
# Door Latches

## Test system for door latches (manually loaded)

### Technical specification:

- Complete functional testing of door latches
- Controlling of all electrical actuators
- Evaluation of the electrical feedback
- Controlling of all mechanical components

Cycle time: 20 sec

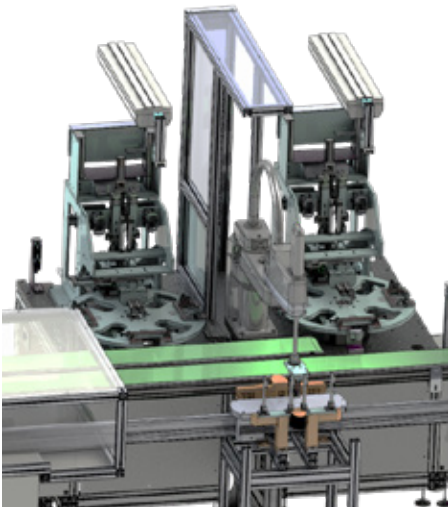


## Test system for door latches (full automatic)

### Technical specification:

- Further development of the manually loaded testing system for door latches
- Modular testing system with fast changeable test stations
- Article handling with Scara Robots
- PLC controlled machine

Cycle time: 6,5 sec



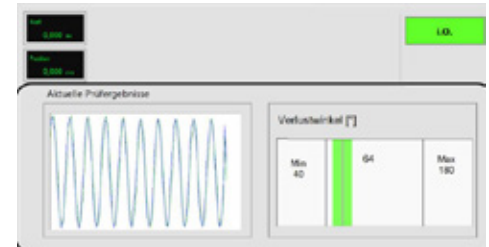
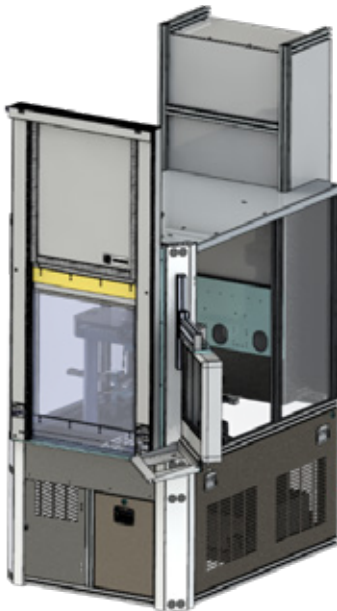
# Bushings

## DynaCheck (Bushings)

### Technical specification:

- Servohydraulic testing actuator
- Automatical electrical connection
- Evaluation according to DIN and FFT
- Time-synchronous recording of two measured values
- Free configurable testcycle
- Evaluation of: static stiffness, dynamic stiffness, loss angle, loss work

Cycle time: 28 sec

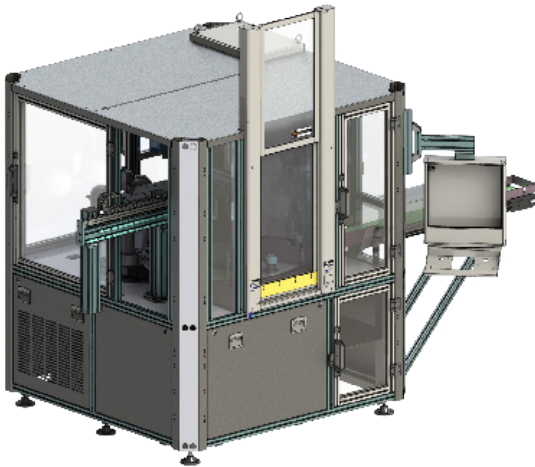


## DynaCheck Hydro Bushings (full automatic)

### Technical specification:

- Further development of “DynaCheck (Bushings)”
- Integrated into full automatic production line with optional manual loading
- Integrated marking station
- Additional visual check with camera system
- Integrated conveyor belt
- Quick & easy changeovers
- Evaluation of: loss angle, dynamic stiffness, static stiffness, loss work

**Cycle time: 10 sec**



# Shock Absorbers

## DynaCheck (Shock Absorbers)

### Technical specification:

- Non-destructive 100% testing of shock absorbers
- Variable positioning with two linear drives
- Real-time capable measured value analysis
- Controlling of the integrated actuators
- Configurable test cycle



Cycle time: 30 sec



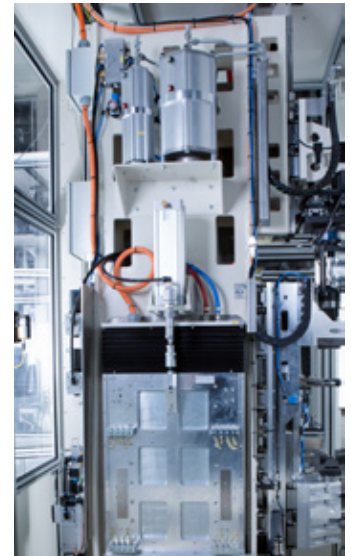




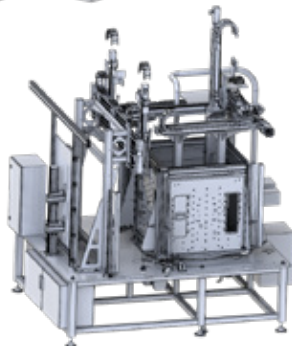
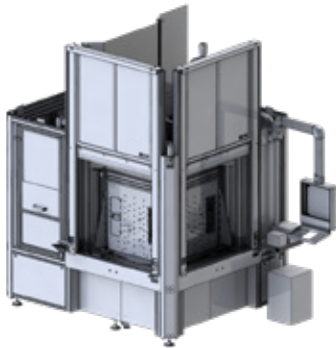
## Technical data



Piston rod $\varnothing$ :	10mm - 28mm
Damper length:	400mm - 1500mm
Damper tube outside $\varnothing$ :	20mm - 80mm
Test stroke:	min. 10mm, max. 100mm
Max. test force:	10kN
Load cell:	20kN
Max. testing speed:	1,2 m/s
Max. acceleration:	50 m/s <sup>2</sup>
Sampling rate:	10 kHz
Test frequency:	1 - 15 Hz
Tracking accuracy:	Max. 2% deviation from the ideal sinus curve



# Window Lifter / Oil Pumps

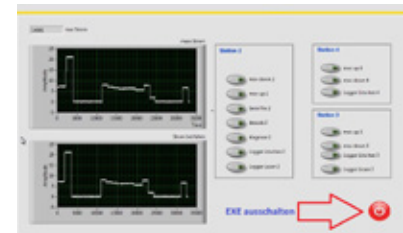


## EOLT for window lifter controlled by LIN-Bus

### Technical specification:

- Assembly and complete functional testing of window lifter in one single machine
- Flexible article fixture
- Controlling of the actuators by LIN-Bus
- Integrated laser marking system
- Testing by intelligent camera system
- Simulation of the window weight
- Motor current measuring

Cycle time: 45 sec

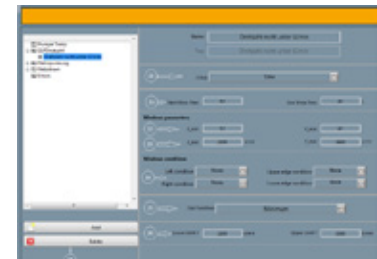
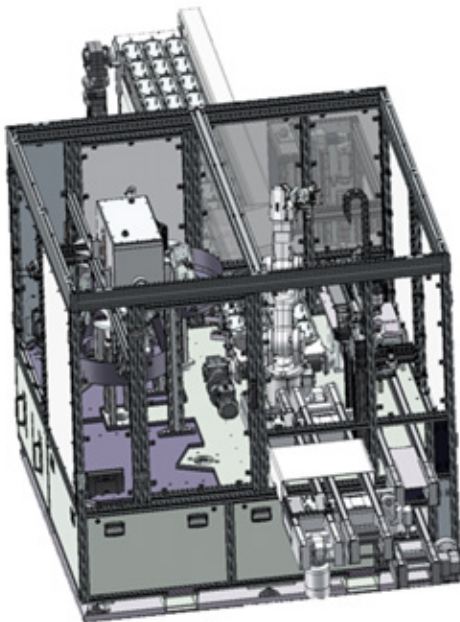


## EOLT for Transmission Oil Pumps (full automatic)

### Technical specification:

- Two test stations controlled by the same software
- Controlling of the pump via Bus
- Testing medium is a prescribed oil
- Removal of the oil by blowing and suction
- Evaluation of relevant performance data: current (U,V,W (RMS)), voltage, oil pressure, oil temperature, oil flow, rotational speed

Cycle time: 22 sec



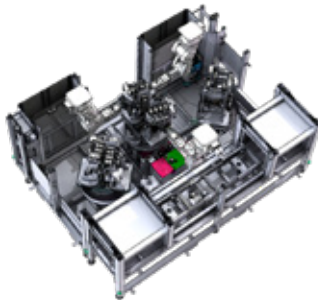
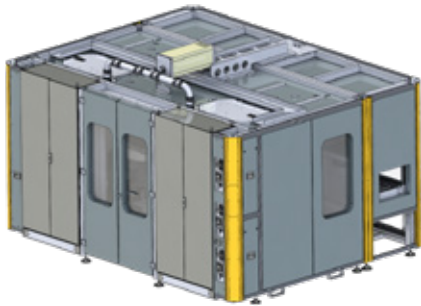
# Turbo Chargers

## EOLT for turbo chargers

### Technical specification:

- Dynamic performance test and real-time measurement of the relevant values
- Article handling (final mounted turbocharger)
- Two articles without changeover
- Simulation of the lubricant circuit & exhaust gas flow
- Preparation and evaluation of the real-time collected measured values
- Leak test
- Oil cleaning (vacuum)
- Compact size

Cycle time: 30 sec



## Technical data



Testing speed:

up to 200.000 turns/min

Evaluation of:

- turning speed
- boost pressure
- all relevant temperatures
- NVH measuring
- air inlet pressure
- air inlet flow
- oil pressure
- oil flow
- ACT current
- ACT position
- leakage rate



In cooperation with:

**ISB** | Investitions-  
und Strukturplan  
Rheinland-Pfalz



Sponsored by the  
**European Union**



# Benefits of a HAHN system



## Our customers benefit of:

- Completely customized test processes / cycles
- Tailored solutions, which can be continuously adapted to customer requirements and are highly flexible
- Flexible testing tasks & configurable test parameters, that can be easily edited by the customer
- Test & analysis software are both integrated into one system control panel
- Graphical analysis according to customer's preferences
- Customer-specific traceability concepts
- Offline re-evaluation of the test parameters
- Open data base concept, that allows the transfer of data to each data base according to customer's preferences
- Full service packages & worldwide support



## HAHN Automation

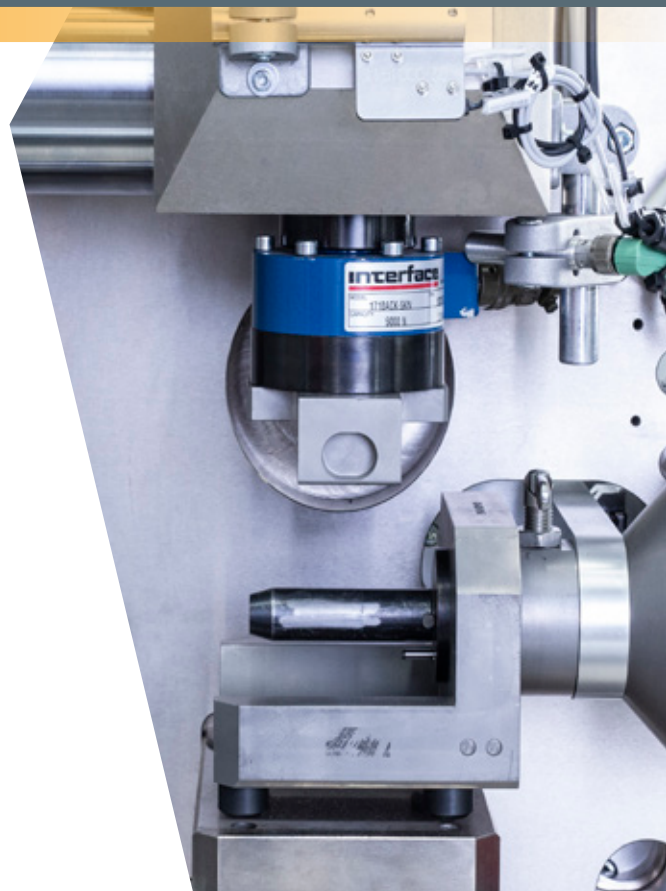
Your competent & reliable partner for  
production-integrated testing processes.

### We develop your individual complete solution!

- Integration into existing production line
- Extension / upgrade of assembly line
- New development as stand-alone system

Feel free to contact our specialists for  
your individual testing solution!

[testing@hahnautomation.com](mailto:testing@hahnautomation.com)





**HAHN**  
**AUTOMATION**

visions become real

HAHN Automation GmbH  
Liebshausener Straße 3  
55494 Rheinböllen, GERMANY  
Tel. +49 6764 9022-0  
info@hahnautomation.com

[www.hahnautomation.com](http://www.hahnautomation.com)