



Product Information

Automated hardness tester

for car and truck rims with reduced cycle times
Brinell hardness testing (HBT) according to DIN EN ISO 6506



Design of the construction and test procedure

The base frame consists of steel profiles with a bearing surface for different rim diameters. The probe AT130DR with enhanced downholder area, extension and hard metal Brinell ball is led onto the testing area by a motor driven z-axis and logs off when the necessary clamping force of 3.5kN is reached. The drive mechanism occurs by a three phase asynchronous motor with controls being integrated into the electrical cabinet. By default cycle times of 60s can be realized, with amplified drive mechanism 30s are feasible. The measurands are provided by the hardness probe AT130 automatically via a RS232 interface after the test is finished. The actual measuring procedure is initiated automatically and the measurand is displayed digitally. The construction offers a position-free-recognition for the test position rim in order to make an appropriate judgment of the measurands if the rim is missing respectively not to start the test in this case. Additionally the hardness testing machine is equipped with a two-hand control for the setting mode including an emergency stop and a switch between automatic and setting mode.

The manual control is mounted at the right side of the machine outside of the robot area. The machine is also equipped with a control panel OP70. Every button at the machine is suitable for the handling with protective gloves. The load periods that are necessary for the test are firmly adjusted in the control. The device is plugged at system voltage 230V/50Hz and compressed air 5bar. (Festo-components) The machine is furnished with a manipulation protective cover for the automatic mode.

- Dimensions (WxDxH [mm]) and weight: about 1100x700x2500, 350 kg
- Movement speed: testing speed 0,002 - 3500 mm/min at full load

Rewind speed 3500 mm/min

Specification of the hardness test site

The following requirements are emanated by the machine operator:

- The delivery and positioning of the specimen is carried out by a robot system provided by the customer.
- The testing device is used within a locked manufacturing cell.
- The test point is flat, plain and without any interfering edges.

Specification probe AT130DR

Test procedure	Penetration depth measurement with proof ferrule
Push sleeve principle	Inured to deflection and yielding of the specimen
Test load choice	Manual, firmly adjusted
Functional principle	The test preload and test overall load are applied pneumatically
Functions	Digital display of the hardness value and measurand output, (interface RS 232), choice of scale, tolerances, calibration
Standard scale	Display scale HBT
Standard accessory	Probe with standard scale, Brinell ball penetrator 2,5mm (incl. MPA certificate), Folder with: 3x instruction manual, arrangement drawing, list of spare parts, incl. controls CD with: 1x instruction manual, arrangement drawing, list of spare parts, incl. controls Specific test report