

APPLICATION NOTE

Customized hardness tester for testing on large and heavy workpieces

Brinell, Rockwell and Vickers



Requirements:

- Brinell, Rockwell and Vickers hardness tester up to 250 kg test load
- Testing of large and heavy workpieces (egg. Rings, bars, ...)
- Workpieces: maximum diameter of 900 mm and weight of 250 kg
- Easy loading by crane and other lifting equipment outside the machine
- Easy handling of the parts on the machine / device
- High machine test height
- Standard use of standard hardness tester

Concept and customized solution

The "Qness 250 E EVO" Makro Universal hardness tester was chosen as the basis for this special solution. This machine has the necessary stability, strength, robustness and is design for industrial environments.

Feature of the series solution:

- Solid steel frame with electrically driven test head for clamping components up to max. 3.200 kg. (Manua version is also possible)
- Moving speed infinitely variable via potentiometer (patented) and automatic slowdown of the approach speed by detecting components on the test table (patented).
- Automatic 8-position turret for free mounting of lenses and indenters.
- Electronic load application (closed-loop) with test load range from 1 - 250 kg
- Optional control of the machine via external PC – System instead of the integrated Windows IoT Embedded PC with attached 12" multi-touch display.
- Software QpixControl2 for simple and fast hardness measurements and comprehensive export functions and software features

Modifications and customizations:

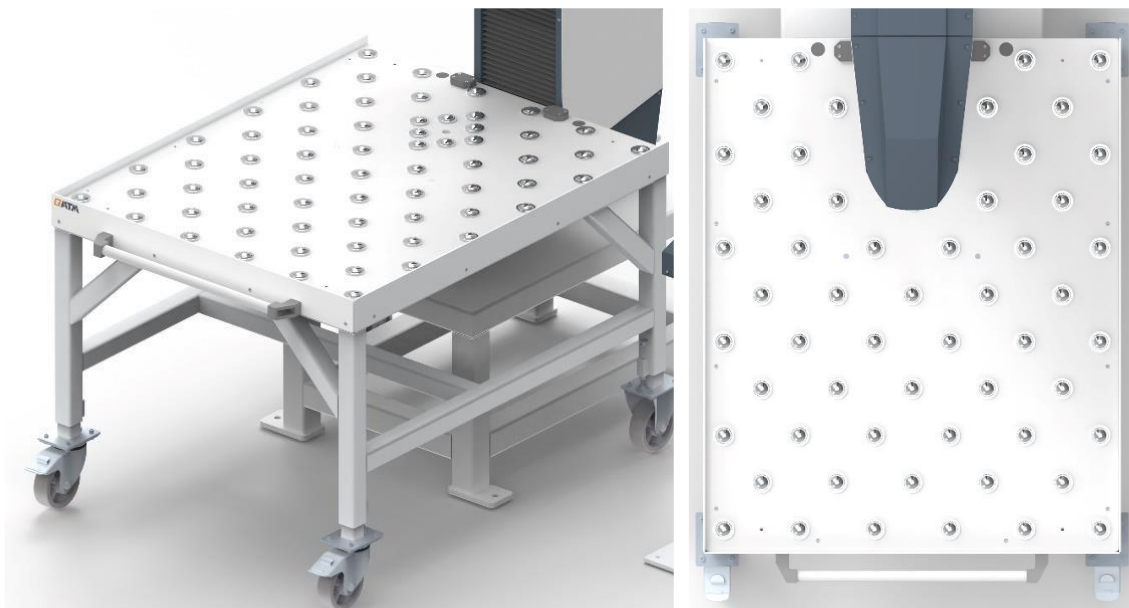
- Extension of the test height to 750 mm instead of 510 mm.
- Start and emergency stop button, potentiometer and enabling button (rapid traverse) were designed as external control unit for better accessibility.
- Large test anvil with 750 x 580 mm instead of 584 x 450 mm.
- Additional roller conveyor 1370 x 1100 mm for loading and testing large rings (diameter 900mm)



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Roller conveyor



Facts

Dimensions	width 1100 mm; depth 1370 mm; height 940 mm
Max. workpiece weight	up to 800 kg
Ball transfer rollers	65 pcs
Load capacity per ball	150 kg
Connections	centered Ø 25 mm hole for standard anvils Locking pin for fixing to the machine
General	Movable on castors with handle bar and lockable
All technical details can be customized.	

Description

The components can be loaded outside the machine area and the table can be pushed under the machine and secured. The roller conveyor was designed in such a way that the workpieces can be tested directly on this table. The workpiece can be easily moved / rotated to the required test position in the machine on the built-in ball rollers.

Technical specifications

Supported test methods:	Brinell, Rockwell, Vickers
Test force range:	1 - 250 kg (9.81 - 2450 N)
Test height:	750 mm / roller conveyor 710 mm
Test table:	750 x 580 mm / roller conveyor 1370 x 1100 mm
Test sequence:	fully automatic / electronic force control
Camera system:	5 MP Ethernet industry standard
Tool changer:	8 positions (4 indenters and 4 lenses)
Lenses:	XLED 2, XLED 5, 5x, 10x, 20x, 50x
Software:	QpixT2 / Control2 "M"

Accessories and options:

fixtures, anvils / prisms and fixtures, collision protection, cross laser, computer cabinet for external PC system, data connections, barcode/QR code reader etc.

Result

