

IMPACT-TEST & RADIAL IMPACT-TEST

TEST MACHINES FOR IMPACT STRENGTH

52 kg

 **MAKRA**
ALPINE METAL TECH

IMPACT-TEST & RADIAL IMPACT-TEST

TEST MACHINES FOR IMPACT STRENGTH

The results of accident and collision research demand wheels which preserve and maintain their functions even under the heaviest of loads. These machines are used to test and simulate those circumstances and confirm performance of all types of vehicle wheels.

A test machine which tests the impact strength of the wheel must also be capable of simulating different loads under consistent test conditions in order to comply with the different international standards.

If the initially designed wheel reaches the necessary or prescribed strength, then the wheel must also be continuously inspected during production. Different changes of material and alloy components require intermediate tests to insure ongoing continuous manufacturing quality. Easy to use, fast and ergonomic convertibility of various test settings characterize our test machines. Through the integrated measuring equipment, the relevant test parameters and test results can be tracked and documented.

Your Advantages

▶ CERTIFIED TEST EQUIPMENT SUPPLIER

The test machines from MAKRA are accepted by all German car manufacturers (BMW, AUDI, Daimler, Volkswagen, Porsche, ...) and for years now are continuously and successfully in use

▶ MASSIVE SIZED MACHINE FRAME

A warp-resistant and robust machine frame guarantees consistent test results

▶ USER-FRIENDLY WHEEL SUPPORT DEVICES

All standard wheel sizes and mounting types can be tested with simple adjustments on either machine or wheel mounting device

▶ COMPREHENSIVE APPLICATION FIELD

Different impact angle, impact plates / - wedges and drop weight variants are easily adjustable and interchangeable. Thereby all current impact and radial runout checks are performed on each test machine

▶ PROTECTION DEVICES FOR SAFE TESTING PROCESS

Electronically secured safety doors and mechanical manually unlocking and electronically monitored guardrails protect the operator

TEST TYPES IMPACT TEST

▶ ISO 7141, BSAU AND TRIAS 43

Clamping angle 13 ° (spring loaded)
Impact plate 380 x 150 mm

▶ SAE J 175 / JASCO C 608- 75/ J

Clamping angle 30 ° non-spring loaded
Impact plate 380 x 150 mm

▶ FORD S 74 EB 1007 CD

Clamping angle 90 ° (wheel held with Cardan shaft)
Impact wedge 45 °
Impact edge R 15

▶ JASCO C 608- 75 / J (NISSAN 90 °)

Clamping angle 90 ° non-spring loaded
Impact plate 380 x 150 mm

Other test types on request

TEST TYPES RADIAL IMPACT

▶ AK-LH 08

IMPACT-TEST MACHINE

The Impact test machine was developed specifically for impact tests and is suitable for all tests worldwide. The carriage with adjustable roller guides insures proper movement and alignment. The drop height can be selected via a digital scale and will automatically move with a chain hoist. The testing procedure is initiated by an electro-pneumatic two-hand release, after the mechanical fall protection has been manually unlocked. Optionally, the fall/impact speed in m/s or km/h is monitored with a velocity meter. The weights, required for different test requirements, are located in the magazine and weights can be loaded with the chain hoist individually into the machine. The impact angle required for the appropriate tests are easily adjustable.

Machine frame designed with test statistics for the chain-hoist drive and rigidity and long use.

In addition, the chain-hoist operated drop-height adjustment also makes weight exchanges and changing of springs, as well as secure handling for the test weights.

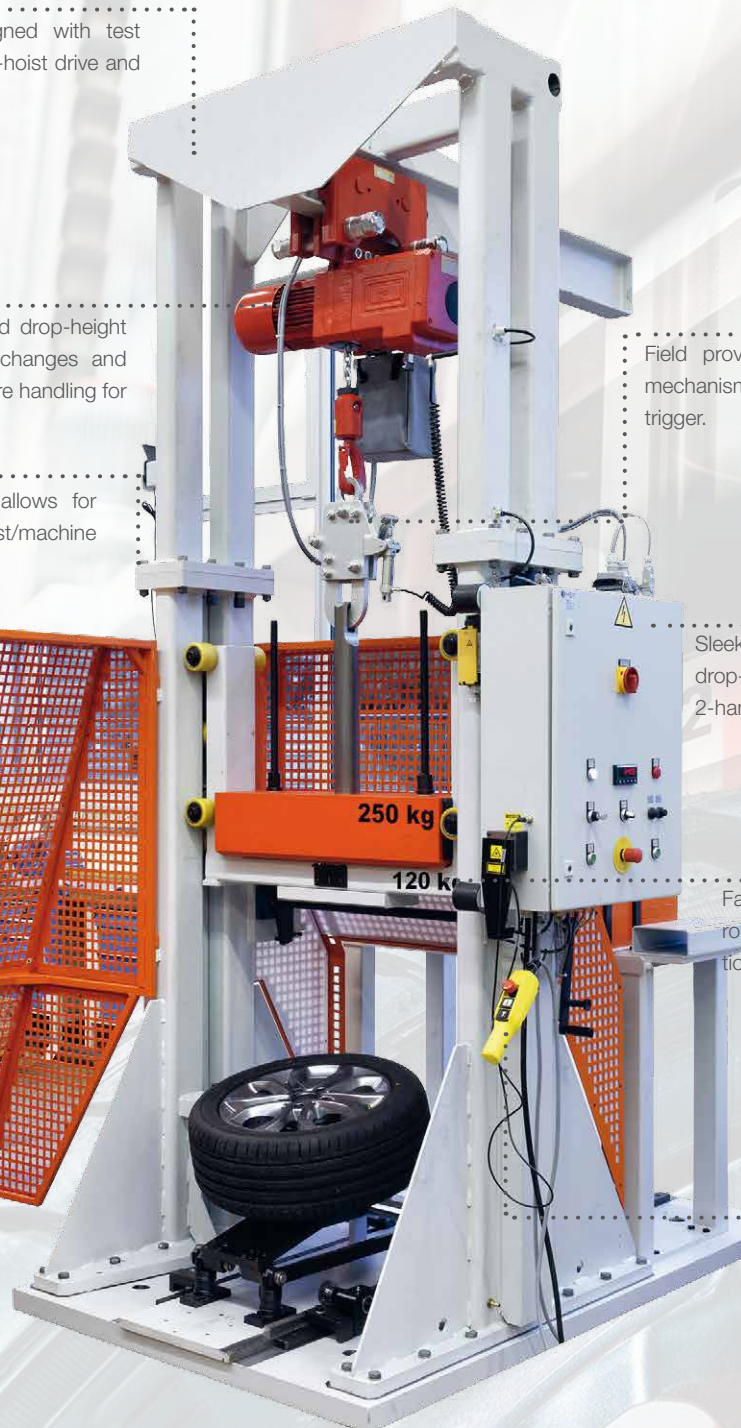
2 piece frame structure allows for convenient shipping to test/machine location.

Field proven and tested release mechanism for the drop weight trigger.

Sleek operating cabinet with drop-height display and 2-handed weight trigger.

Fall carriage with adjustable roller guides insures low-friction movement.

Manual control panel help make it easy to locate the zero point.





TEST SET-UP

All test set-ups can be installed for different types of tests with easy accessibility



OPTION LASER POINT

A laser pointing option allows for exact adjustment of the wheel test position

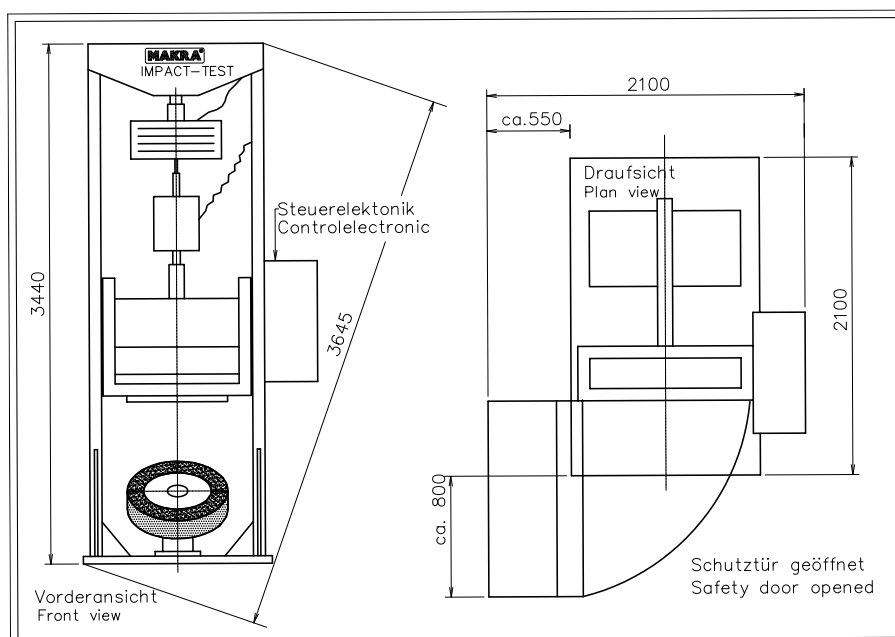


CONFIGURATIONS

Drop weights from the weight magazine are changeable quickly and easily with the chain hoist

TECHNICAL DATA

Wheel dimension	wheels up to 890 mm tire outside diameter wheels up to 320 mm tire width
Drop height	largest total drop weight 1320 kg smallest total drop weight 370 kg, (option 240 kg)
Fall carriage	120 kg
Basic weight	250 kg, (option 120 kg)
Additional weight	from 10 - 500 kg
Additional weight option	from 1 - 5 kg
Electrical supply	3 x 400 VAC, 20 KVA
Pneumatic supply	min. 6 bar
Foor space	2100 x 1600 x 3340 mm (L x W x H)



RADIAL IMPACT-TEST MACHINE

The radial impact test is an additional version of the machine developed from collision and accident research. This test is useful to prevent dents in the inner rim flange when small obstacles are driven over. Additionally, it can be used to test the stability of the wheel against breakage, for instance when driving through potholes and when driving over large obstacles. The wheel is attached to the elastically mounted receiving device. The drop carriage is lifted in to place by lifting spindle servo drive and linear measuring system into the firing position. The testing procedure is initiated by a pneumatic trigger mechanism after the fall protection is manually unlocked. Upon impact with the optional pressure monitored wheel and the rebound of the drop carriage, the carriage is mechanically locked in place so no further impact occurs in the test cycle, simulation one impact only.

Suitably dimensioned machine frame ensures consistent test results.

Linear measuring system for drop height adjustment.

Electronically protected safety gates.

Safety inter-lock for mounting under the fall carriage.

User friendly control panel layout.

Integrated tire pressure testing (Tire pressure recording optional).

Wheel mounting devices for other types of tests (e.g. motorcycle wheels) can be exchanged easily.





FORCE MEASURING UNIT

Impact peen by AK-LH08 specifications for installation of force measuring unit (option)



ADDITIONAL WEIGHT

For extended checks with fast and simple exchange

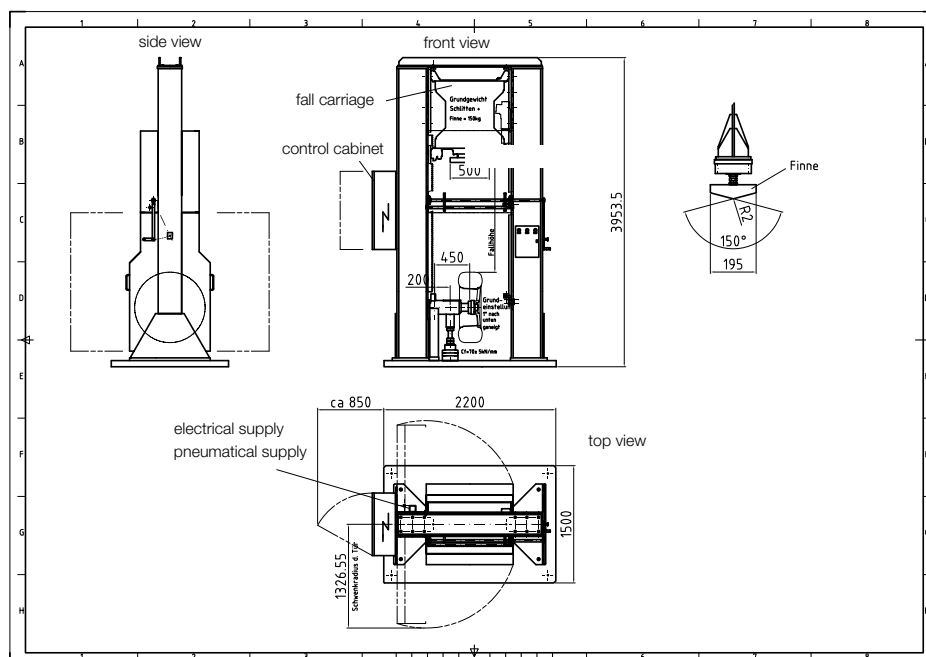


WHEEL SUPPORT

The MAKRA quick clamping system, which is easy-to-use, covers the standard version of the wheel diameter range from 10" to 24". (Options up to 28" available)

TECHNICAL DATA

Wheel dimensions	Tire outside diameter max. 900 mm Tire width max. 350 mm Wheel offset - 30 / + 70 mm (+ 100 mm with wide tire support flange)
System control	Siemens S7-315
Falling mass	150 kg ± 5 kg
Additional load	up to 315 kg (400 kg) divided into 10 kg and 5 kg weights
Impact peen	500 x 195 mm, angle 150°, radius 2 mm
Camber	± 3° adjustable with lead screw
Spring rigidity	cf 70 KNm
Impact energy	approx. 4300 Joule
Drop height	1400 mm (others on request)
Electrical supply	3 x 400 VAC, 40 KVA
Pneumatic supply	compressed air, 6 bar
Floor space	2350 x 1500 x 3960 mm (L x W x H)



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