

Common technical parameters of mag particle units (*) ΔERMAG-3D

Parameter Value	Value Range
Turning table diameter, mm	330
Inspected part diameter, mm	300 (no limitation for min dimention)
Inspected part weight, kg	20
Coil diameter, mm	350
Magnetization frequency, Hz	50/300 (optional)
Strength of magnetic field in the centre of coil A, 50/300 Hz	200/150
Demagnetization	By means of decreasing amplitude current in the magnetizing chamber
Suspention tank volume, L	40
Method of suspension mixing	Mechanized
Suspention Demagnetization, A/cm	By means of the magnetic field 400
Illumination of the inspection zone by visible light	Not less than 1000
Power consumption, (50 Hz) / (50 Hz+300 Hz), kVA	20/30
Dimintions of the device (L×W×H), mm	1225×1598×1436

Common technical parameters of mag particle units on the ΔERMAG 1000 - 3D working place 1 (*)

Parameter Value	Value Range
Inspected part length, mm	1000
Inspected part diameter (Clamping device diameter), mm	250
Inspected part weight, kg	100
Moving drive of movable head	Electromechanical
Clamp of inspected part	Pneumatic, electromechanic
Contact heads diameter, mm	200
Moving drive of movable head (synchronized)	Electromechanic
Circular magnetization system	
Current range of circular magnetization, amplitude value A	
- by means of the applied magnetic field method	From 500 until 5000
- by means of the method of residual magnetization	From 750 until 7500
Current type of circular magnetization	Alternate 50 Hz single halfwave rectified
Longitudial magnetization system	
Max Strength of the longitudinal magnetic field in the 500 mm poles gap (without detail installed), A/cm	100
Current type of the ongitudial magnetization	single halfwave rectified
Power consumption, kVA	50

* Configuration and parameters can be changed upon customer request

MAGNETIC PARTICLE INSPECTION EQUIPMENT



ErMag 1000



ErMag 1800



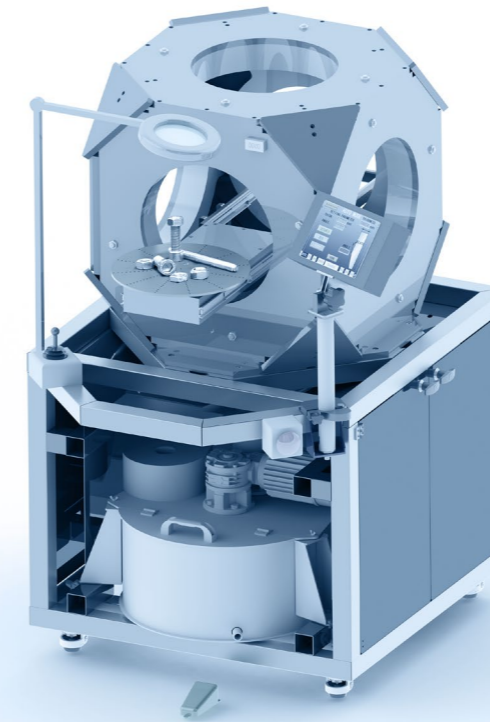
ErMag 3000



RMU



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MADE IN RUSSIA

TOUCHLESS MAGNETIC PARTICLE INSPECTION UNITS
 ErMag-3D и ErMag 1000-3D



www.activetest.ru

TOUCHLESS MAGNETIC PARTICLE INSPECTION UNITS ErMag-3D

SPECIALIZED COMBINED MAGNETIC PARTICLE INSPECTION UNIT ErMag 1000-3D



Specialized solution for high performance inspection of small and medium size details of complicated shape like threads, gear tooth etc.

THE UNIT COSISTS OF

- 3D MAGNETIZING CHAMBER equipped with 3 solenoid pairs;
- Mechnized turning table for details rotating;
- Lightning with white light/ UV is optional) and visual inspection with wideangle magnifier;
- PLC control system with touchscreen;
- Suspension system with shower (oil or water based suspensions are applicable integrated mixing system equipped with suspension demagnetizing solenoid.

ErMag-3D

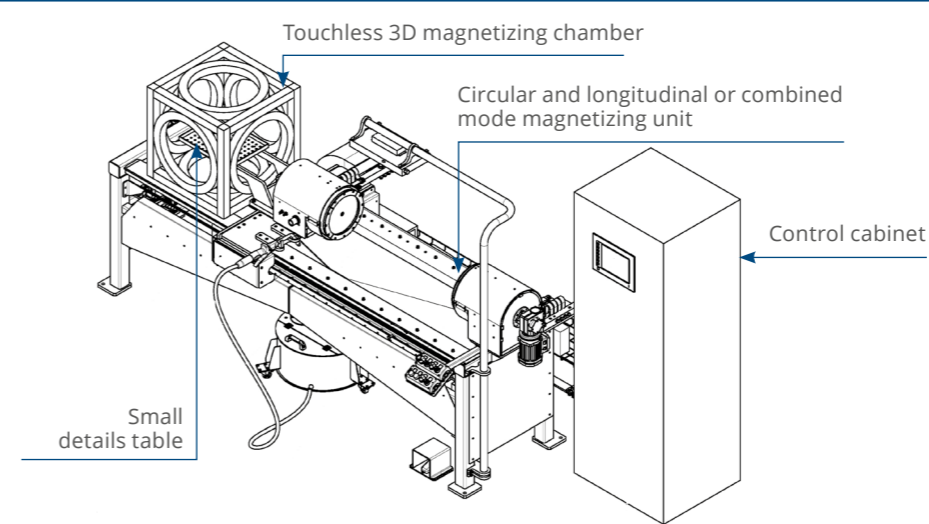
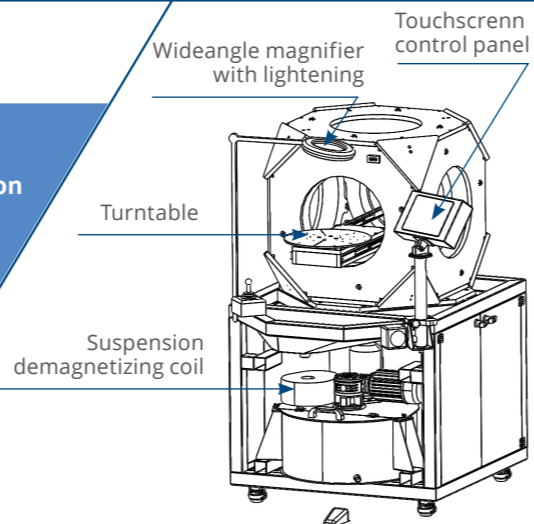
- Touchless magnetizing by means of applying of phase shifted magnetic fields in a system of three pairs of solenoids allows avoid of risk of small details or details with small contact surfaces burning and provide all direction magnetizing durin one single cycle.
- Possibility to apply either 50 Hz current magnetic fields or high frequency 300-400 Hz current magnetic fields.
- Increasing sencibility of detection of surface defects due to high frequency current magnetic field which is concentrated on thin metal surface lay.
- Decresing of demagnetizing factor influence due to amplitude of eddy curent increasing on metall surfaces if high frequency current magnetic field is applied.
- Increasing of defects detection on the detail edges due to normal component of a high-frequency magnetic field of a high frequency field decreasing.

High frequency current magnetizing provides:

Sustainable and reliable defects detection including difficult to detect defects of details like threads, gear teeth etc.

Increasing of reliable defect detection zones close to the detail edges

Increasing of brightness and contrast of defects indication



Specialized combined unit with two independant working places

THE UNIT COSISTS OF

WORKING PLACE 1. ErMag 1000 UNIT:

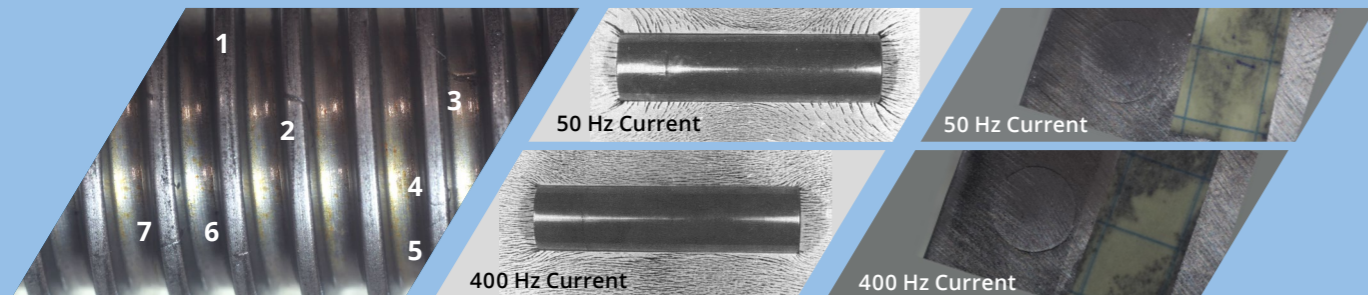
- Cyrcular magnetizing system;
- Longitudinal magnetizing system with magnet installed in clamping unit;
- Demagnetizing system by means of either decreasing circular current or magnet field;
- Rotating clamping unit system with possibility of magnetizing during rotating;
- Suspension sytem (common for working place 1 and 2);
- Control sytem (common for working place 1 and 2).

WORKING PLACE 2. ErMag-3D UNIT:

- 3D MAGNETIZING CHAMBER equipped with 3 solenoid pairs;
- Mechanized turning table for details rotation.

ErMag 1000-3D

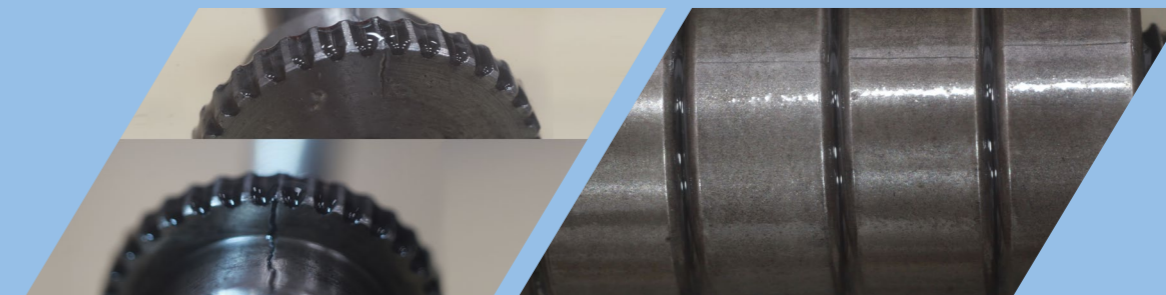
- Two independant working places.
- Small details inspection without clamping unit.
- Circular, longitudinal and combined details magnetization with max length up to 1000 mm at working place 1.
- High performance inspection process without small detail clamping.
- Longituginal magnetizing by means of 3 solenoid system at working place 2.
- 300-400 Hz, 50 Hz, 1Hz rectified current magnetizing.
- Anyoriented defects detection.
- All advantages of ErMag-3D magnetizing.
- High performance inspection.



Craks 1-7 was detected on the different thread surface

Due to low value of normal component of a high-frequency magnetic field of a high frequency field

Indications of artificial defect, detected by means of 50 Hz u 400 Hz



Gear craks detected by means of 300Hz 3D magnetizing chamber

Ball bearings craks detected by means of 300Hz 3D magnetizing chamber