

## Magnetic particle flaw detector TQ STREAM-20



TQ STREAM-20 portable magnetic particle flaw detector is designed to detect surface and subsurface defects when testing products made of ferromagnetic materials. Incomplete fusion, cracks, and flocks can be identified.

The flaw detector is used to check the structure state, strength and other mechanical properties of various workpieces, metal structures, parts of railway transport, both at the manufacturing and during operation.

**Operating principle:** magnetization of the test object to search for various discontinuities with subsequent demagnetization.

### Features of STREAM-20 flaw detector

The low weight of the device is successfully combined with a high output current value.

AC/DC (rectified half-wave) operating mode allows both circular and longitudinal magnetization of test objects.

Flaw detector is designed in accordance with international standards.

### Advantages of STREAM-20 flaw detector

- Smooth adjustment of current amplitude
- Constant current magnetization, impulse current magnetization
- Direct indication of the magnetizing current amplitude value
- Flexible adjustment of impulse current, up to single pulse operation mode
- Magnetization time setting
- Demagnetization time setting
- Saving settings
- Automatic overheating protection
- Connecting different magnetizing devices

### Objects of control:

- Building metal structures
- Gear wheels
- Cast parts
- Castings
- Forgings

### Exploitation

Magnetic particle inspection is a very common non-destructive testing method. A special magnetic powder is required to be applied to the surface under study.

When the control zone is magnetized the highest concentration of magnetic field lines is observed directly above the defect. Magnetized powder particles accumulate in this place and acquire a certain structure. The density of powder particles decreases when moving away from the defect (cracks, discontinuities etc.)

This is followed by a visual interpretation of the indicator lines: the localization, orientation and extent of surface and subsurface defects. The resulting pattern can also be compared with reference samples for magnetic particle inspection.

### TQ STREAM-20 flaw detector operation advantages

- Flaw detector is designed in accordance with international standards.
- Suitable for non-destructive testing of test objects made of ferromagnetic materials in the field conditions as well as in shop and laboratory.
- Suitable for operating in stationary magnetic particle test benches.
- Smooth adjustment of current amplitude, constant current magnetization, impulse current magnetization, magnetization time setting, demagnetization of test objects.

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## Technical specification

Characteristic	Values
<b>Alternative current</b>	
Peak AC, not less	2100 A
Effective AC, not less	1400 A
<b>Rectified half-wave current</b>	
Peak value, not less	2000 A
Effective value, not less	1000 A
<b>Features</b>	
Current adjustment	Smooth
Current indication	Peak value, 1 A resolution
Current measurement error, no more	10 %
Magnetization current	Continuous / intermittent (current-pause)
<b>Intermittent current parameters setting</b>	
Current impulse duration	0.02 – 9,98 s, with 0.02 s step
Pause duration	0.02 – 9,98 s, with 0.02 s step
Magnetization time control	Manually (button on handle, foot switch, button on main device) / timer control
Timer setting range	0.02 – 99,98 s, with 0.02 s step
Demagnetization	Amplitude-decreasing current
Demagnetization time setting	4 – 99 of period of current (0.08 – 1.98 s)
<b>Operating characteristics</b>	
Duty cycle at max. power	50 %
Maximum duration of current supply	10 s
Open circuit voltage	5 V
Length of high current cable	3 m
High current cable cross section	95 mm <sup>2</sup>
Power consumption	8 kVA
Power parameterse	230 V, 50 Hz, 32 A
Power cable (3 m length)	Removable, waterproof connector
Dimensions (width x height x depth)	265 x 300 x 420 mm
Weight without current cables	30 kg

## Basic delivery set:

- Main unit
- Current cable of 2.5 m length and 95 mm cross section with pistol grip and melt-off electrode
- Current cable of 2.5 m length and 95 mm cross section with pistol grip, melt-off electrode and current switch on button
- Power cable
- Operating manual

## Additional accessories:

- Magnetic coil
- Current cables, handles
- Melt-off electrodes made of different metals
- Non-standard length power cable
- Current ON/OFF foot switch
- Custom magnetizing devices
- Trolley

