



PTS

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MT-Magnetic Particle Testing

Crack Detectors and Accessories



www.ptsndt.com

MT-Lightweight Testing Benches

Lightweight testing benches MAS series for MT are designed for inspection single pieces up to the batch inspection of ferromagnetic parts for the presence of longitudinally or transversely oriented cracks on the outer surface by means of magnetic particle inspection method.

Standard delivery for all models

- coil 250 mm (I.D.), manual feed
- right tailstock with position locking, manual feed, manual lever clamping of inspected part
- reversible parking position of the coil allowing the insertion of objects from the top
- girder for suspension lights
- stainless steel bathtub with sloped spout in the middle of the tub
- prismatic supports and clamping Cu plate with contacts made of Cu fabric (replaceable)
- Fe models have reinforced support structure and clamping tailstock for higher load of tested samples



Designation of the MAS testing bench (magnetic bench):
xxx – clamping length; Al, Fe – construction material of the bench

MAS bench designation		500Al	500Fe	700Al	700Fe	1000Al	1000Fe	1500Al	1500Fe
construction material of the bench		aluminium	steel	aluminium	steel	aluminium	steel	aluminium	steel
max. clamping length	mm	500	500	700	700	1000	1000	1500	1500
maximum weight of the tested sample	kg	35	100	35	100	35	100	35	100

dimensions:

length	mm	600	600	800	800	1100	1100	1600	1600
width	mm	950	950	950	950	950	950	950	950
height	mm	1200	1200	1200	1200	1200	1200	1200	1200
weight of the basic version	kg	60	90	63	100	66	110	69	120

Recommended sources

Power sources for MAS series magnetizing benches may be used individually, depending on the requirements. Generally, for MAS Al we recommend the source up to ZP 2000 and for MAS Fe – up to ZP 5000. In order to speed up the test cycle, the ideal choice are dual sources, which enable both magnetization by passage of current and coil magnetization simultaneously.

Optional accessories (for extra charge)

- max. coil dimension of 350 mm (square shaped 400 mm)
- stationary or hand UV lamps
- pneumatic clamping with possible cycle automation
- pump – manual or automatic applying of detecting suspension, circulating system for the testing liquid distribution, stainless steel reservoir with continuous mixing 15, 20 litres (inner shape of the reservoir prevents sedimentation)
- switch for longitudinal/transverse magnetization after clamping
- darkening cabin
- tailored clamping panels
- adjustable nozzles system for serial testing
- secured both-hands operation
- short supporting legs

Modifications are possible according to the customer's requirements and wishes.



MT-HD Testing Benches

Stationary magnetizing benches MAS HD series (heavy duty) are intended for inspection of ferromagnetic parts up to 430 mm diameter, 920 mm length and 100 kg weight.

The advantage is the possibility of using circular and longitudinal magnetization simultaneously, allowing indicate flaws in more directions in one cycle, compared to separate magnetization.

Next advantage is longitudinal magnetization using coils integrated in the tailstocks, which is less time consuming and simpler for operator, unlike the magnetization using the moving coil.



Standard delivery for all models MAS 500 / 700 / 900 HD

- circular magnetization by passing the current
- longitudinal magnetization by coils integrated in the clamping tailstocks
- combined magnetization can be used – both circular and longitudinal simultaneously
- automatic AC demagnetization at the end of testing
- level monitoring of reached currents
- the bench is equipped with stationary switchboard with sources of magnetizing current and control panel, girder for suspension UV lamp, pump, application nozzles for automatic applying and shower for manual applying of the suspension
- these benches are equipped with pneumatic cylinder for clamping the tested product between the tailstocks
- cycle start is done using the footswitch
- manual mode can be activated by the footswitch
- AC type of current, or optionally HWDC or FWDC

MAS HD bench designation

		500	700	900
construction material of the bench		steel	steel	steel
clamping length	mm	520	720	920
max. weight of the tested material	kg	100	100	100
circular magnetization AC (current passage) effective	A	2 000	2 000	2 000
longitudinal magnetization AC (by coils in clamping tailstocks)	Az	10 000	12 000	15 000
diameter of the clamped part , max.	mm	430	430	430
power voltage	V	3x400/50Hz	3x400/50Hz	3x400/50Hz
power input	kVA	35	45	53
capacity of the stainless steel reservoir	l	35	35	35

dimensions:

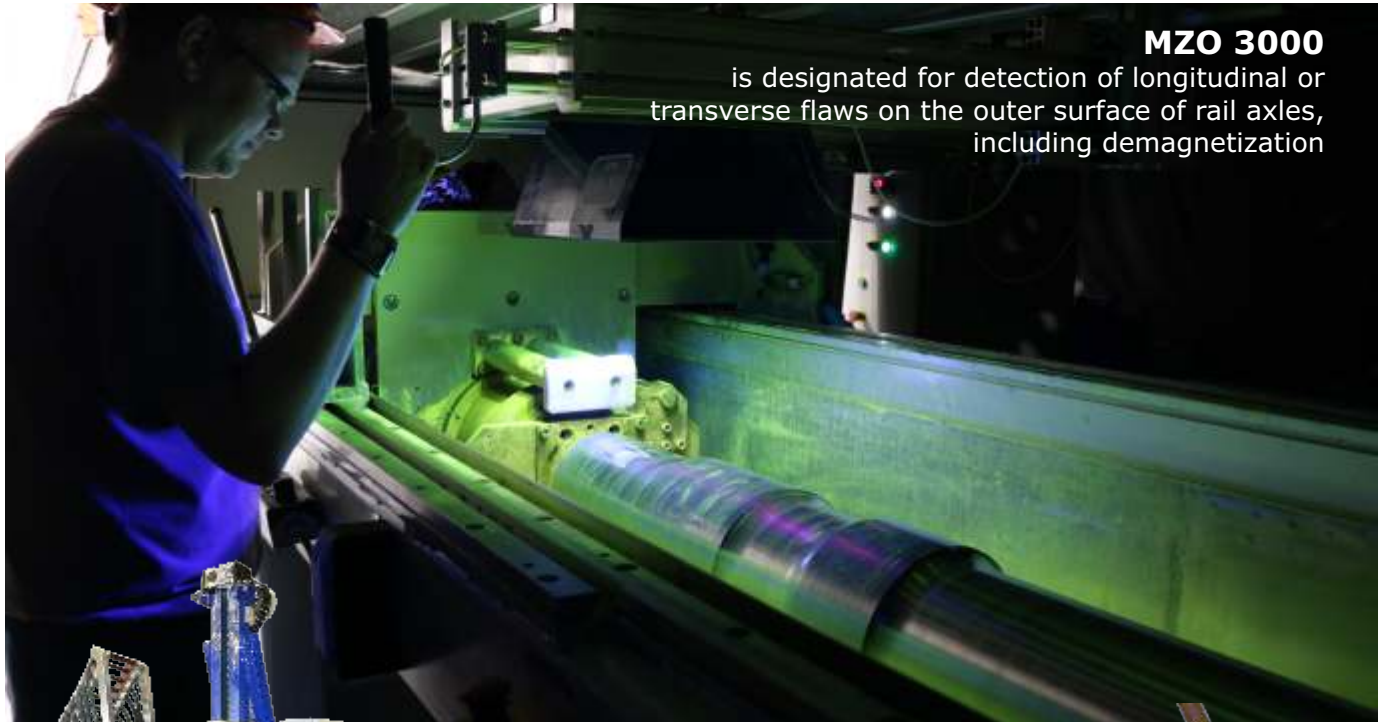
length	mm	1650	1880	2100
width	mm	750	750	750
height	mm	2200	2200	2200
weight of the basic version	kg	500	550	600

Optional accessories (for extra charge)

- stationary or hand UV lamps
- darkening cabin
- tailored clamping panels
- secured both-hands operation for automatic mode
- touch panel control with a database of tested products

Modifications are possible according to the customer's requirements and wishes.

MT-Special Testing Benches



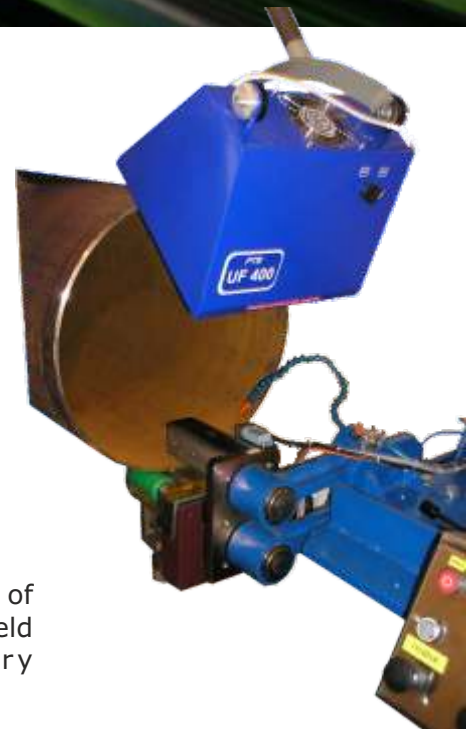
MZO 3000

is designated for detection of longitudinal or transverse flaws on the outer surface of rail axles, including demagnetization



MZK 1000

is designed for detection of surface defects in all directions on railway wheels and for subsequent demagnetization



MZKT 600

is the device for detection of laminar type defects in beveled tube ends



MPI 2C

is the device for inspection of tube ends in the residual field by means of auxiliary conductor

KMZ 1

is intended for surface inspection of pipes for the occurrence of defects in all directions



Magnetizing Power Sources

Magnetizing power sources are intended for magnetizing the material by direct passing of AC or DC (HWDC or FWDC) in magnetic particle non-destructive testing and, in case of DUO (dual) power sources, for simultaneous magnetizing by the coil as well. Power sources may be turned on separately or simultaneously.

Standard delivery for all models

- independent control and measurement of current
- output switching on is done manually
- control of current is performed by thyristor controller
- demagnetization is performed automatically whenever the current is switched off
- source is also equipped with a 230 V / 10 A socket for connecting the UV lamp

ZP		600	1000	1000H	1500	1500H	2000	2000H	2500	2500H	3000	3000H	4000	4000H	5000	5000H
max. testing current (with power cables)																
AC effective (true RMS)	A	600	1000	1000	1500	1500	2000	2000	2500	2500	3000	3000	4000	4000	5000	5000
AC peak value	A	852	1420	1420	2130	2130	2840	2840	3550	3550	4260	4260	5680	5680	7100	7100
HWDC effective	A	600	-	750	-	1000	-	1300	-	2500	-	3000	-	4000	-	5000
HWDC peak value	A	852	-	1500	-	2000	-	2600	-	3500	-	4000	-	6000	-	8000
open circuit voltage	A	4	4,5	5	5	5	5	6	5	6	6	7	7	8	8	9
AC demagnetizing		✓	✓		✓		✓		✓		✓		✓		✓	
operating parameters:																
type (portable, mobile, stationary)	P	P	M	M	M,S	M,S	M,S	M,S	M,S	M,S	M,S	M,S	M,S	M,S	M,S	M,S
power supply	V	230	230	400	400	3x400	3x400	3x400	3x400	3x400	3x400	3x400	3x400	3x400	3x400	3x400
socket	A	16	16	32	32	32	32	32	63	63	125	125	125	125	125	125
consumption at operating current	kVA	2,6	3,5	5,7	6,9	7,8	10	12	13	13	18	18	28	28	41	41
current measuring accuracy	%	+/-10	+/-10		+/-10		+/-10		+/-10		+/-10		+/-10		+/-10	
load capacity	%	35	35		35		35		35		35		35		35	
recommended connecting cable (not included)	m	2,5	2,5	2x2,5	2x2,5		2x2,5		2x3,0		2x3,0		2x4,0		2x4,0	
cable cross section	mm ²	95	95	95	2x70		2x95		2x95		2x120		4x95		4x120	
dimensions	cm	20x22x44	48x66x77		48x66x77		48x66x77		48x66x77		68x66x77		68x66x77		68x66x77	
weight of the basic version (DUO+30)	kg	17	20	50	60	70	70	80	80	90	110	120	130	140	150	160
protection IP		40	40	20	20	20	20	20	20	20	20	20	20	20	20	20



ZP 1000 DUO AC/DC



ZP 1000 DUO



ZP 2000



ZP 5000

Optional accessories (for extra charge)

- cables
- footswitch pedal
- magnetizing prods with replaceable zinc tips
- pulse magnetizing with adjustable pulse duration
- control of nozzle activation for serial testing
- touch panel for complete control of source with automatic settings of parameters according to the product under test
- statistics of achieved currents and magnetization times

Modifications are possible according to the customer's requirements and wishes.

MT-Accessories







UF 400

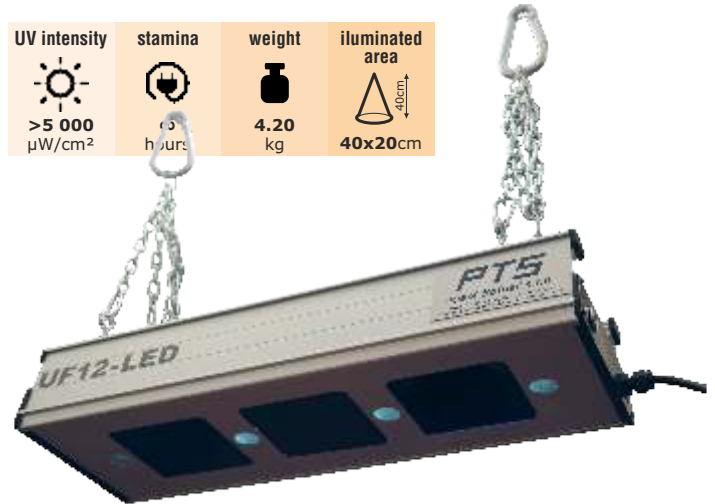
Is stationary ultraviolet radiation source intended for work with fluorescent indicating agents, designed for continuous operation.

UF 14LED

It is modern and economical stationary source of ultraviolet radiation designed for continuous operation. Maximum performance is available immediately after power-up.

UV lamp contains 14 LEDs, offers two power levels and contains UV filter for filtering off the visible light. For white light illumination it contains 4 white LEDs.

UV intensity	stamina	weight	iluminated area
 >5 000 $\mu\text{W}/\text{cm}^2$	 65 hours	 4.20 kg	 40cm 40x20cm



INKAR UV35W

Provides high output and low warming, the lamp has a built-in power source in the body of the lamp, maximum output is available within few seconds after power-on.



MAGNETIZING COILS

The magnetizing coils are manufactured in three versions: the dropdown coils, fixed coils and cable fixed coils (cable and dropdown coils may be produced rectangular as well).

MEASURING SET

Is the complete set of meters and gauges for magnetic particle testing, including all calibration lists, for affordable price.



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