

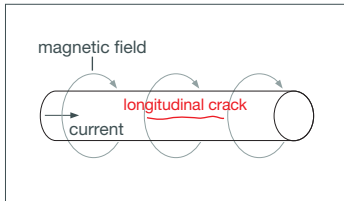


## **DEUTROFLUX UWS**

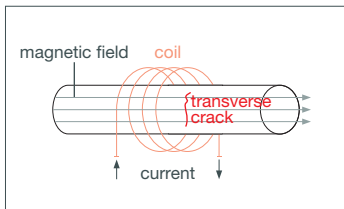
Stationary Magnetic Particle Crack Detector for long workpieces

**KARL DEUTSCH**

# Standard Machine DEUTROFLUX UWS with moveable coil for long workpieces



AC current flow for detection of longitudinal cracks



Field flow for the detection of transverse cracks

Cracks of all directions are indicated through the combination of AC current flow and AC field flow.

## Standard machine DEUTROFLUX UWS with moveable motor-driven coil, to ensure a high and constant testing sensitivity for the entire workpiece surface

For workpieces with 1000 mm to 3000 mm length (500 mm steps) and a maximum weight of 500 kg (UWS 1000, UWS 1500, UWS 2000) respectively 1000 kg (UWS 2500, UWS 3000).

- Two phase-shifted AC currents generate a rotating magnetic field. Thus, cracks of every direction are detected.
- The crack detection uses the skin effect of an AC current for a uniform magnetization and demagnetization without problems, even in case of complicated workpiece geometries.
- No operating errors due to automated test cycle (clamping, spraying, magnetizing, post-/demagnetizing, declamping).
- Electronic and pneumatic modules from worldwide, well-known manufacturers guarantee highest operational reliability and service, even after many years.
- A stable construction using ISO machine profiles enables the additional mounting of tubs, holding devices, etc.
- Contact plates are rotatable contacts are rotatable and vertically adjustable for long tool-life and low contact losses.
- Customer-specific inspection cabin with UV illumination.
- Separate switch cabinet, well-accessible for operation and maintenance.
- The moveable coil with spraying systems on both sides enable the testing in both directions.
- Perfect spraying system: Even complicated workpieces are well sprayed with test liquid from all sides.
- Test liquid container with sloping bottom, circulation pump and without corners in the pump range: No sedimentation in the container.
- Stainless steel in the wet area, powder coating outside. No scaling lacquer.
- Convenient length adjustment by pneumatic brake cylinder: No sticking and no wear – no matter how often the clamping length has to be adjusted.
- Three times economical: Long service life, easy maintenance, excellent price-performance ratio.
- Magnetic Particle Testing (MT) according to DIN EN 9934.



Figure: DEUTROFLUX UWS machine in standard construction with support rolls

# Special Machines

## Customer-specific solutions based on the DEUTROFLUX UWS

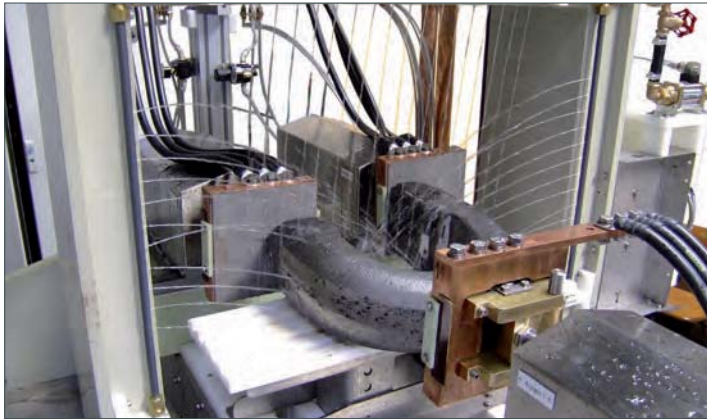
### Special machines

Such machines offer individual solutions with respect to:

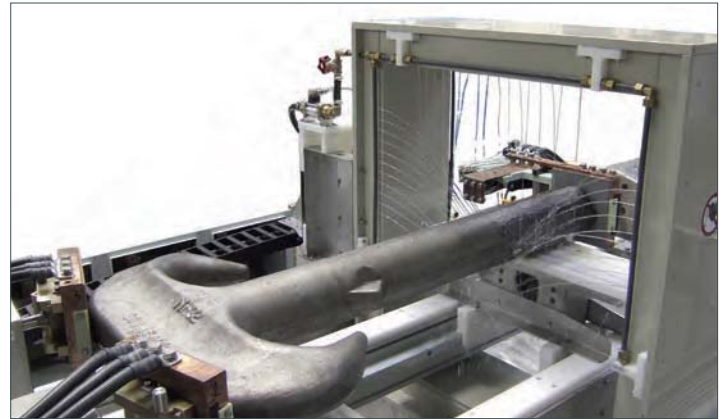
- Machine frames with special lengths
- Larger workpiece weights
- Motor-driven rotating devices
- Specific workpiece fixtures
- Various coil dimensions
- Motor-driven length adjustment
- MEMORY parameter storage
- Multi-contact solutions



Testing machine for railway axles with motor-driven support rolls. Darkening cabin equipped with pneumatic roof opening and pneumatically movable UV lamps.



Special machine with three contacts (3000 A each) for the testing of chain bows.



Flexible angle and distance adjustment, here for testing of double hooks.



Testing of connecting rods for ships. Motor-driven face plates for the rotation of the workpiece inside the machine during the visual inspection. Pneumatically movable UV lamps.



Testing machine with 5000 A for the testing of heavy gear shafts (weight up to 4 t). Customised workpiece holder with special support rolls, which can be changed quickly to ensure highest possible flexibility with respect to the workpiece geometry.

# DEUTROFLUX UWS (Standard Construction)

## Technical Data – Ordering Information – Accessories

DEUTROFLUX-Type	UWS 1000	UWS 1500	UWS 2000	UWS 2500	UWS 3000
Dimensions (L/B/H)	3 m/1.5 m/2.3 m	3.5 m/1.5 m/2.3 m	4 m/1.5 m/2.3 m	4.5 m/1.5 m/2.3 m	5 m/1.5 m/2.3 m
Total weight	1200 kg	1400 kg	1500 kg	1600 kg	1750 kg
<b>Ordering Numbers</b>					
Machine	3061.001	3071.001	3081.001	3091.001	3096.001
Darkening cabin (for crane loading)	3880.002	3880.006	3880.008	3880.009	3880.003

Workpiece Data					
Maximum length	1000 mm	1500 mm	2000 mm	2500 mm	3000 mm
Maximum diameter*	390 mm	390 mm	390 mm	390 mm	390 mm
Maximum weight	500 kg	500 kg	500 kg	1000 kg	1000 kg

\* It is necessary to increase the current flow to 4000 A for maximum diameter.

Machine Data					
<b>Current Flow</b>	50/60 Hz -		<b>Field Flow</b>	50/60 Hz -	
Maximum current (standard)	2000 A <sub>RMS</sub>		Ampere turns	8500 AT	
Open-circuit voltage	8 V		Maximum flux density	> 1 T	
Setting facilities	stepless		Setting facilities	stepless	
Indication	kA, analogue		Indication	per cent AT, analogue	
Current flow supervision	1 threshold, adjustable		Coil dimensions (inside)	400 mm by 400 mm	
			Coil movement	motor-driven, adjustable speed 50 .... 300 mm/s; recommended speed 100 mm/s	
<b>Demagnetization</b>	standard, both directions can be switched off		<b>Cycle Switching</b>	single cycle, times (magnetization and spraying) separately adjustable	
Switchable start	manual/automatic				
Demagnetizing frequency	50/60 Hz				
Demagnetizing time	approx. 1 s				
<b>Spraying</b>	automatic, in both coil moving directions (ring showers)		<b>Machine Data</b>		
<b>Inspection Medium Container</b>			Power connection	400 V, 50/60 Hz 3-phase current	
Content	80 l		Max. power consumption	32 kVA	
Pump, electrical power	0.78 kW		Max. current consumption	80 A	
Pump, discharge capacity	228 l/min		Control voltage	24 V =	
Delivery height	approx. 2 m		Control system	SIMATIC SPS	
Dimension (L/B/H)	950/610/530 mm		Relative duty cycle	30 %	
			Compressed air	4 to 6 bar	
			Air consumption per cycle	approx. 1 NI	
			Clamping stroke	40 mm on each side, twohand operation	
			Paint (cabinet/machine)	RAL 7035/RAL 7016	

Options of Ordering Numbers					
Coil current supervision	3000.025		500 mm x 500 mm coil (enlarged)		3000.05
Spare contact plates	7236.0121		FLUXA-Control		3882.001
Maximum testing current 3000 A <sub>RMS</sub>	3000.044		DEUTROFLUX MEMORY II		3871.001
Maximum testing current 4000 A <sub>RMS</sub>	3000.045		Field flow switchable between AC and DC		3002.2200
Maximum testing current 5000 A <sub>RMS</sub>	3000.046		Current flow connectable as AC and DC		3002.2300
Other mains voltage	3000.0185				
Accessories	Brochure P 38 E				
Inspection media	Brochure P 90 E				

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