

# Mobile demagnetizer MM DM-P / -PC

(general brochure)

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- Specification
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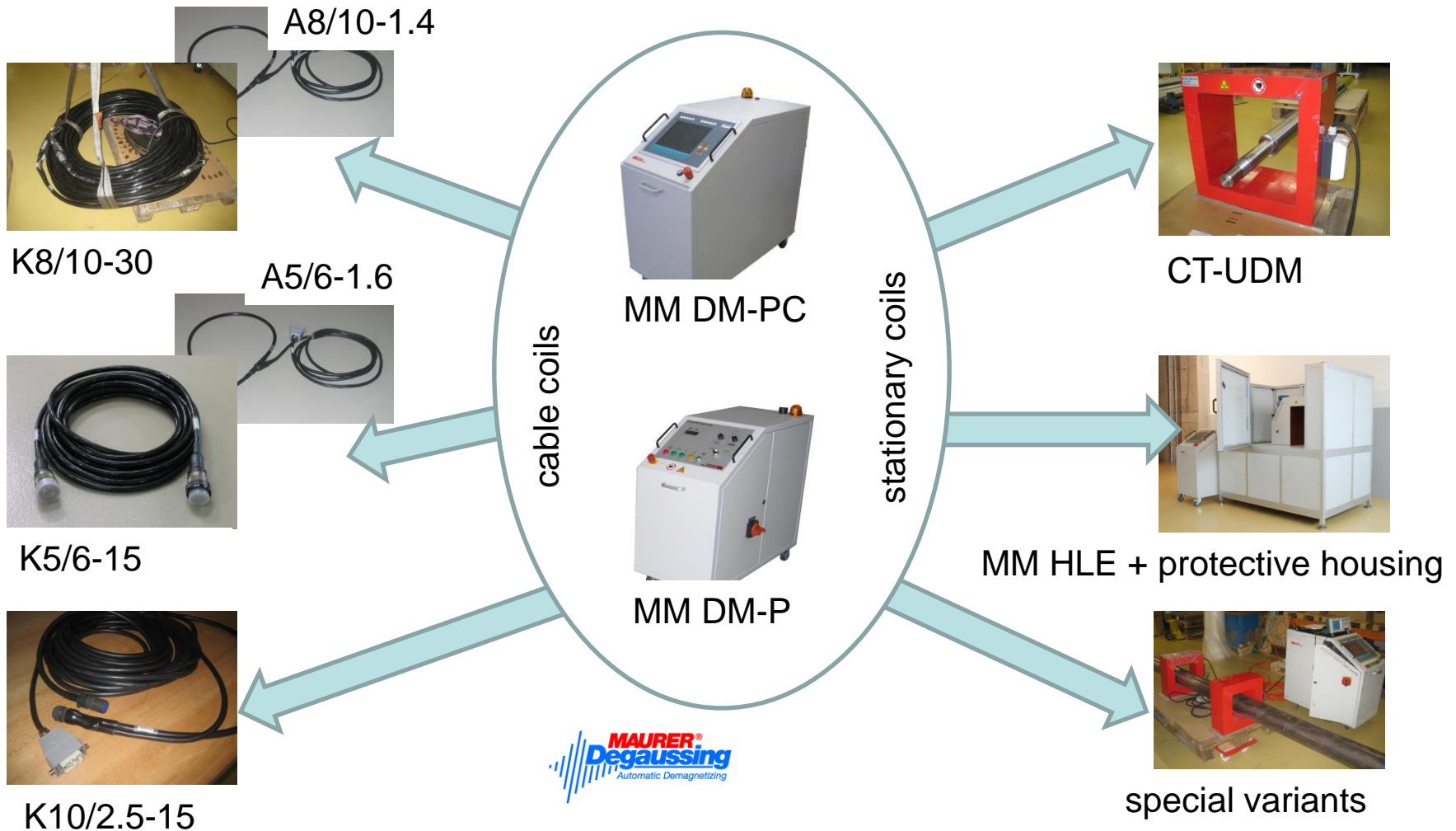
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# Description of the modular mobile demagnetizer



# Power module specifications

Type	MM DM-P	MM DM-PC	MM DM
Available performance	MM DM 110, DM 140, DM 200, DM 240		MM DM36...400
Maximum current	110...240 A		36...400A
Exterior dimensions W x H x D	550 x 1060 x 1150 mm		Variable (on request)
Mobility	Power module cabinet movable on 4 rollers		-
Line power supply	3 x 380...480 VAC 50 / 60 Hz, 63A-CEE fuse		3 x 380...480 VAC 50 / 60 Hz, variable fuse
Operational interface	Control switches	PC with touch screen	Variable (on request)
Operation features	Pulse activation Manual switches Indicator lamps 10 power levels	Pulse activation Enhanced parameters Indicator lamps	Variable (on request)
No. of demagnetization programs	4	Unlimited	Variable (on request)
Offset function	no	yes	Variable (on request)

# Coil module specifications

Type	Flexible cable coils
K8/10-30	Weight ~40kg, length ~30m, may be interconnected several times
A8/10-1.6	Adapter cable for cable type K8/10-30 (necessary)
K5/6-15	Weight ~5kg, length ~15m, may be interconnected several times
A5/6-1.4	Adapter cable for cable type K5/6-15 (necessary)
K10/2.5-15	Weight ~3kg, length ~15m, (no adapter needed)

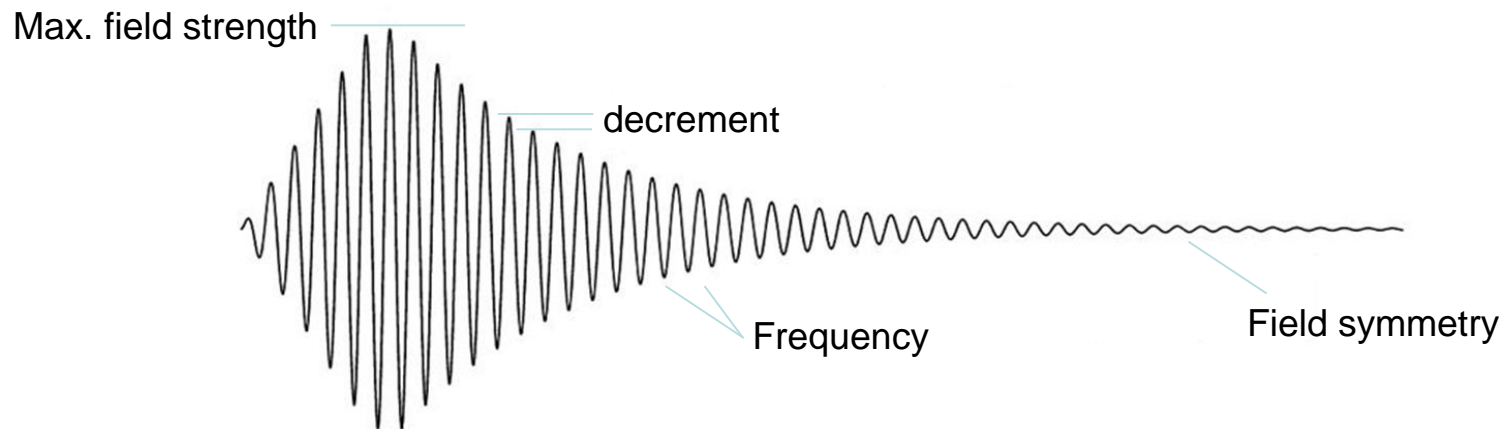
MM HLE	Stationary high performance coil (on request)		
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CT-UDM	Stationary universal coils		
Type	CT6-UDM	CT7-UDM	CT8-UDM
Active opening WxH	400x400mm	550x550mm	750x550mm
Max. field strength	Up to 100kA/m	Up to 75kA/m	Up to 75kA/m

# Technology: Demagnetization through decaying alternating magnetic field

**Goal: the best possible distribution of the domain magnetization direction in the demagnetized material**

Max. field strength [kA/m]	Reversal of hard magnetic domains, penetration depth
Frequency [Hz]	Penetration depth
Effective range [LxWxH, m <sup>3</sup> ]	Full magnetic fluxing of material
Field homogeneity	Uniform effect in the material
Decay precision	Low decrement and best field symmetry at the end of the process for the best possible domain distribution



# Demagnetization Technologies

Technology	Coil module	Field strength				
			Effective range			
				Field homogeneity		
					Decay precision	
Field reduction through increasing distance (continuous process)	Coil					 
	Plate / Yoke					
Pulse without energy feeding (capacitor discharge)	Coil					 
	Plate / Yoke					
Pulse with energy feeding (MaurerDegaussing)	Coil					 
	Plate / Yoke					

# Key arguments

## True demagnetization

- Demagnetization by high power AC sine field pulse with energy feeding
- No re-magnetization of the steel
- Demagnetization of subcomponents prior to assembly and/or welding

## Quick demagnetization

- Short demagnetization pulse duration of ~10 seconds
- Application of the “lay on method” for the cable coils (no winding is needed)
- Allows demagnetization of large steel amounts within a short time

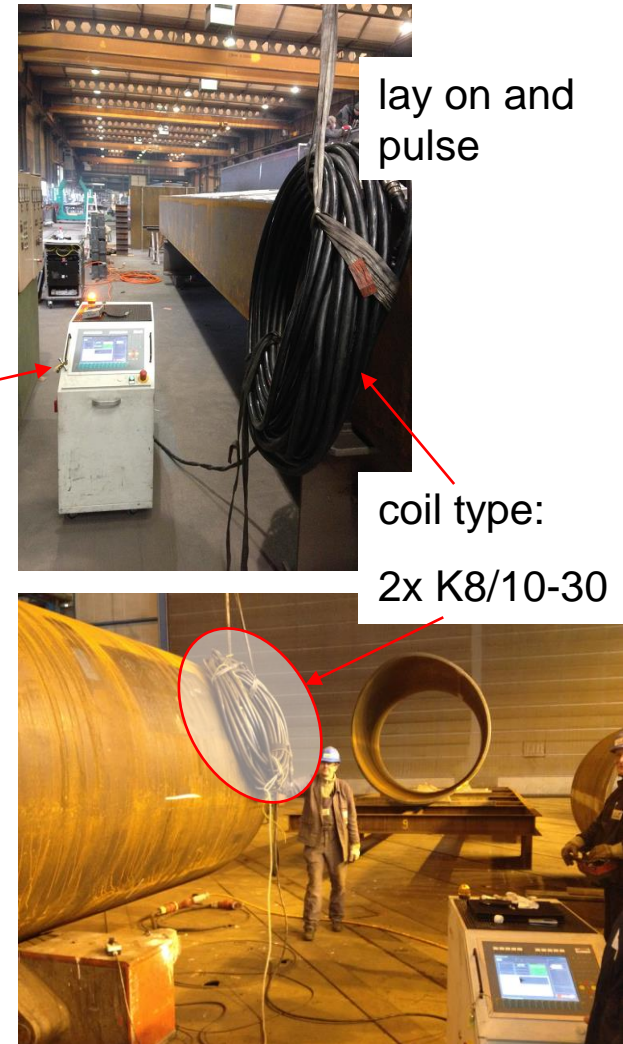
## Easy to use

- Triggering of the pulse by “push the button”
- Standard procedure leads to consistent results
- A degaussing specialist is not needed



# Application example: demagnetization of large surface objects before welding

- Reasons:
  - impaired welding process (magnetic arc blow)
  - Elimination or reduction of magnetocorrosion
- Solution:
  - MM DM200-P or PC
  - 2x K8/10-30 + 1x A8/10-1.4
- Procedure according to:
  - White Paper: „*Demagnetization of large surface objects before welding*“

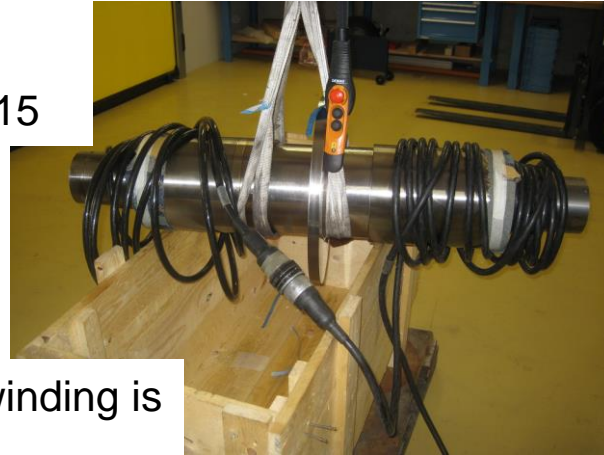




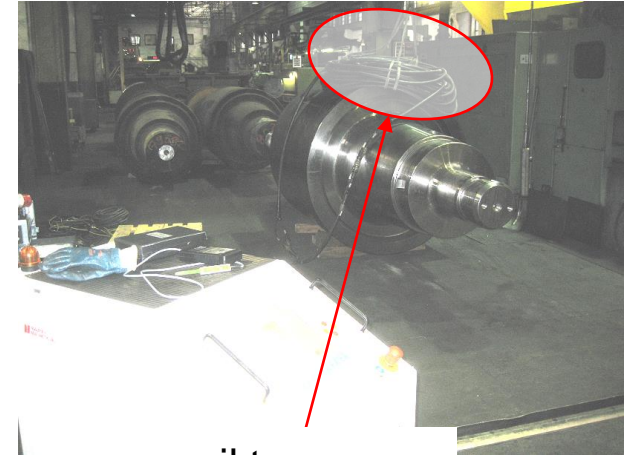
# Application example: Demagnetization of large shafts, rotors etc.

coil type:

2x K5/16-15



(consistent winding is not needed)



coil type:

2x K8/10-30

- Reason: impaired welding processes, disturbing particle adhesion, disturbed eddy current processes (e.g. Bently Nevada)
- Solution:
  - MM DM200-P or -PC
  - 2x K5/6-15 + 1x A5/6-1.6
  - optional 2x K8/10-30 + 1x A8/10-1.4



# Application example: Demagnetization of components prior to electron beam welding

coil type:

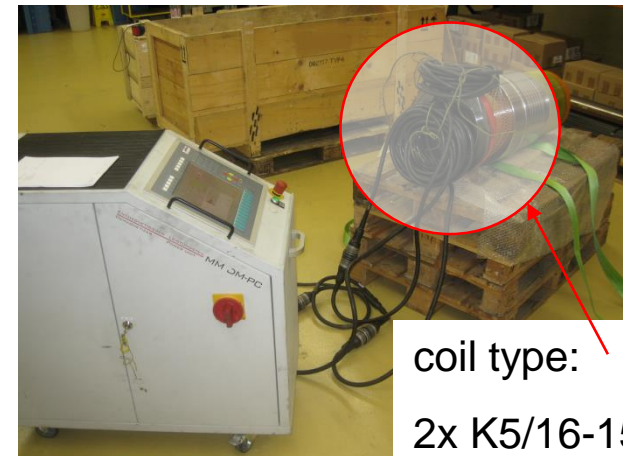
3x K8/10-30



coil type:

1x K8/10-30

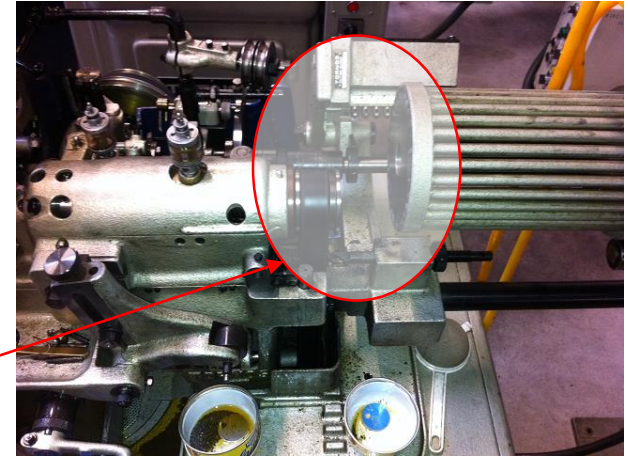
- Reason: impaired welding process (beam deflection)
- Solution:
  - MM DM200-P or -PC
  - 2x K8/10-30 + 1x A8/10-1.4
  - optional 2x K5/6-15 + 1x A5/6-1.6



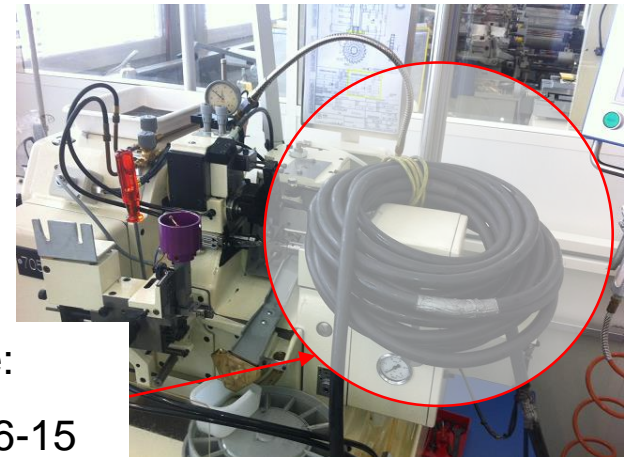
coil type:

2x K5/16-15

# Application example: Demagnetization of automatic lathes (watch industry)



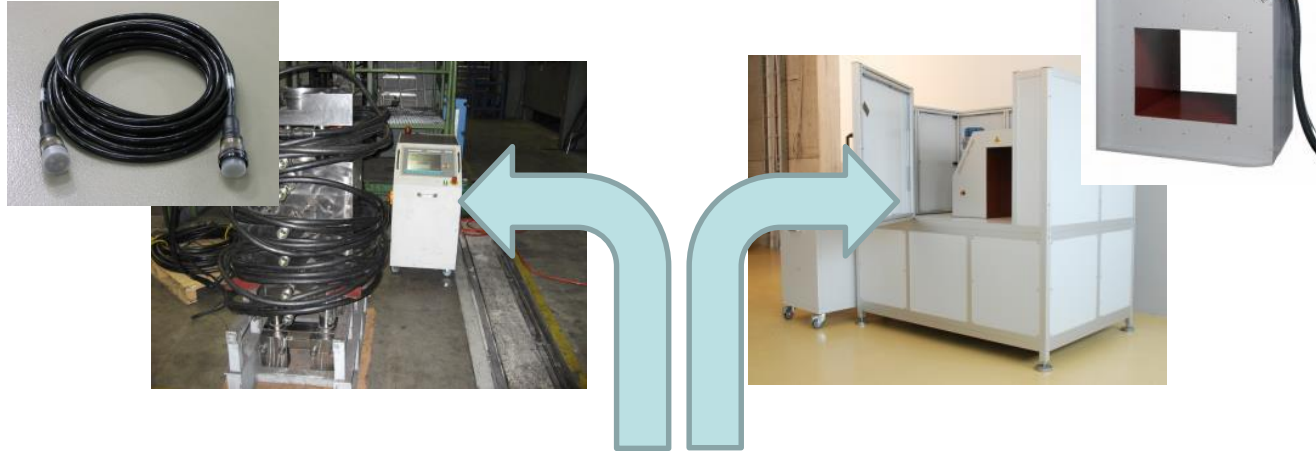
- Reason: produced parts do not release and become jammed in the workspace
- Solution:
  - MM DM200-P or -PC
  - 2x K5/6-15 + 1x A5/6-1.6
  - optional 1x K10/2.5-15



coil type:

2x K5/16-15

# Solution for the demagnetization of machine parts and components



MM DM200 + flex. cable coil  
for demagnetization of:

- entire machines
- components
- steel parts of any kind
- large tungsten carbide punches and dies
- field strength up to 250kA/m (K10/2.5-15)

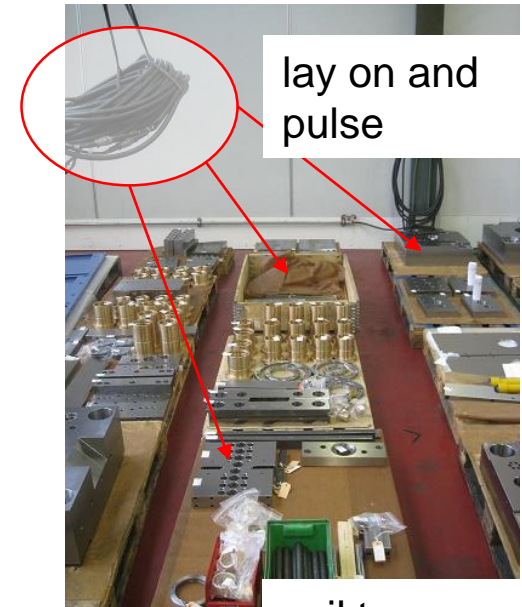


MM DM200+ MM HLE with protective  
housing for demagnetization of:

- tungsten carbide parts
- tungsten carbide (punches and matrices)
- Interior areas of thick walled steel parts
- field strength up to 400kA/m



# Application example: Demagnetization of components (powder press)



- Reason: sintered powder adheres to the matrix and punch and disrupts the compacting process
- Solution:
  - MM DM200-P or -PC
  - 2x K8/10-30 + 1x A8/10-1.4
  - optional 2x K5/6-15 + 1x A5/6-1.6



coil type:  
2x K8/10-30

# Application example: Demagnetization of tungsten carbide punches and matrices of powder- or fine blanking presses



Demagnetization of materials with high coercivity (tungsten carbide, high-strength tool steels etc.) with power module DM200 and cable coil K10/2.5-15:

- Solution: small, compact winding (D ~ 200mm) for achieving the highest possible field strength: ~150...250kA/m, pulse peak power ~80kW  
⇒ **Heating of the cable coil to over 70°C after about 10 pulses**
- Solution:
  - MM DM200-P or -PC
  - 1x K10/2.5-15

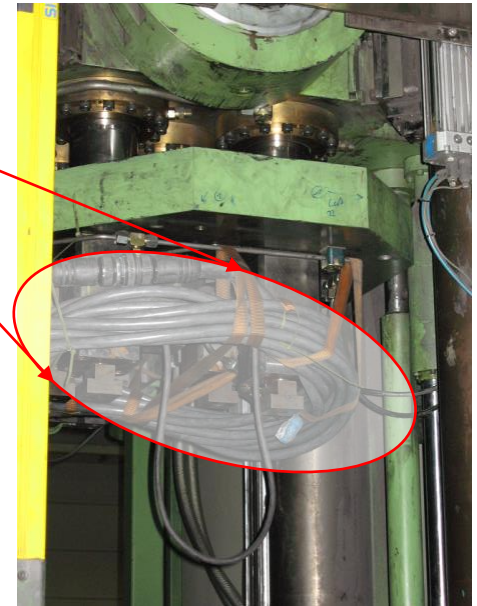


# Application example: Demagnetization of press frames and adapters (powder- or fine blanking presses)



coil type:

2x K8/10-30

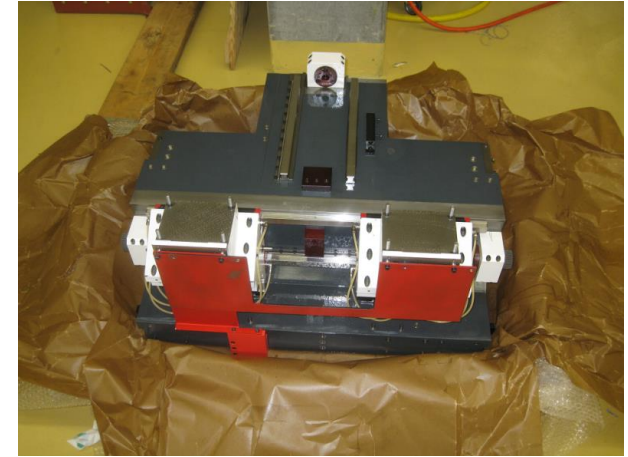
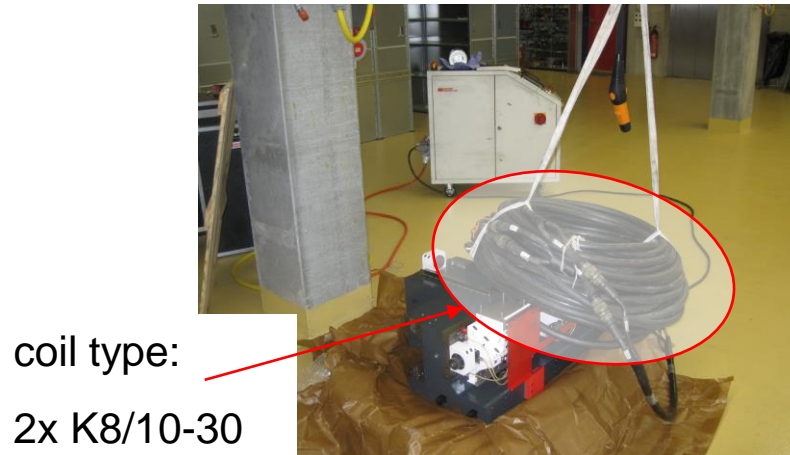


- Reason: disturbing sinter powder or fine blanking residues adhesion to die and punch
- Solution:
  - MM DM200-P or -PC
  - 2x K8/10-30 + 1x A8/10-1.4
  - optional 2x K5/6-15 + 1x A5/6-1.6





# Application example: Demagnetization of machine components (machine tool)



- Reason: disturbing metal chips or residues adhesion
- Solution:
  - MM DM200-P or -PC
  - 2x K8/10-30 + 1x A8/10-1.4
  - optional 2x K5/6-15 + 1x A5/6-1.6

