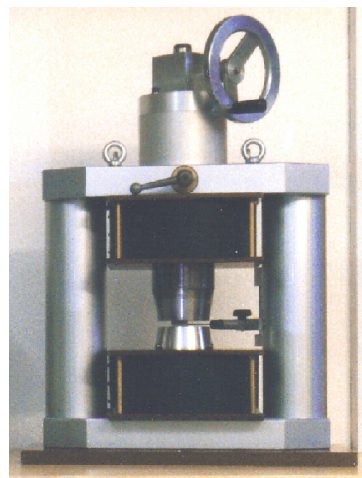


Electro Magnets EM1, EM2 und EM4

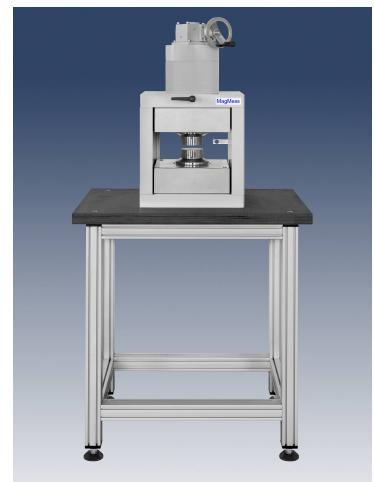
For generation of DC fields up to 3 Tesla
Adjustable air gaps from 0...100 mm
Pole piece diameters ranging from 40...150mm



EM1



EM2



EM4

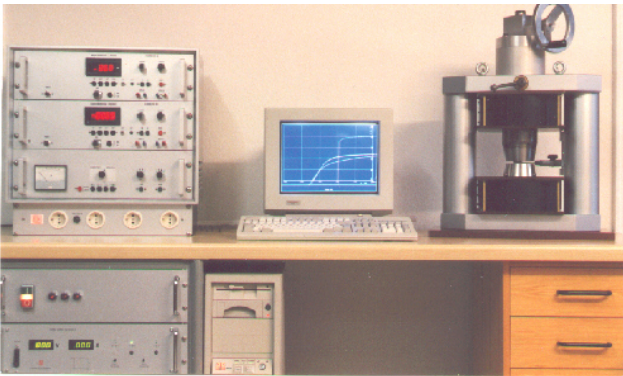
To be used in R&D, labs, teaching and production

Typical applications: Measurement of hysteresis loops, measurement of magnetic susceptibility, testing of Hall-probes, NMR (Nuclear Magnetic Resonance) investigations, EPR (Electron Paramagnetic Resonance) investigations, biological investigations, and magnetization of permanent magnets.

The design of these electro magnets is providing good homogeneity of the magnetic field in the air gap over a wide span of intensity, locking mechanism for the upper pole, exchangeable pole pieces of different diameters and stepless adjustable air gap.

Controllable power supplies for feeding the coils are available, also as 4-quadrant-design.

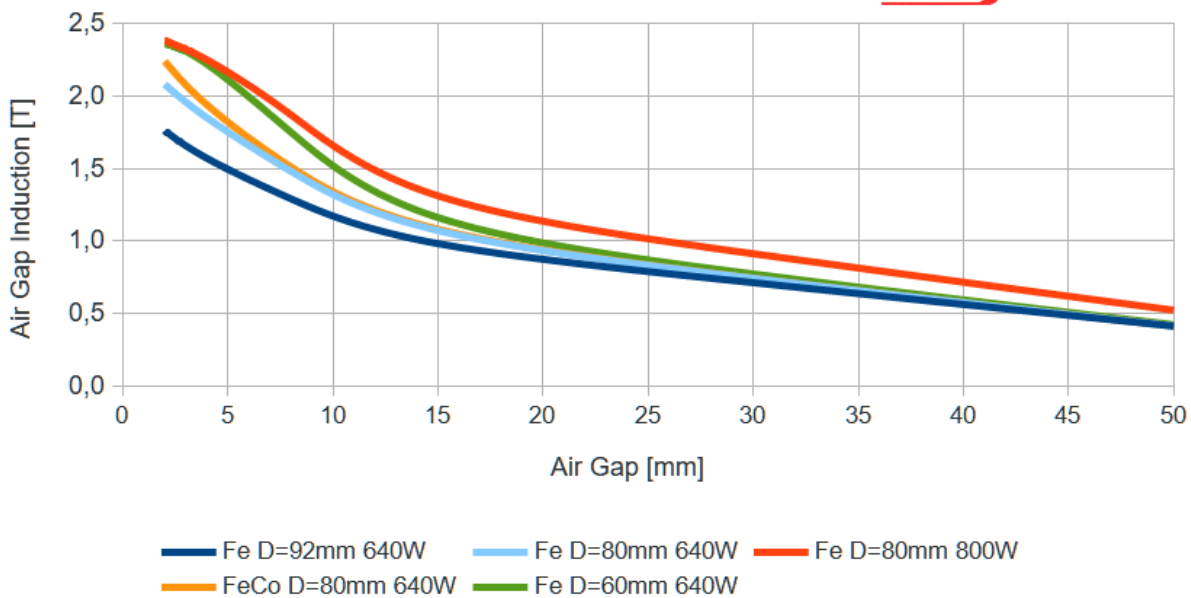
EM2 and EM4 can be equipped with water cooled coils.



Example of use:

Our permanent magnet tester MP2-C is using the EM2 for generation of the magnetic fields needed for plotting demagnetization curves and hysteresis loops of hard magnetic material.

Electro Magnet EM1



Induction [T] vs. Air Gap and Pole Piece Diameter						
Pole Piece	Air Gap [mm]					
	2	4	8	15	30	50
Fe D=92mm 640W	1,76	1,57	1,29	0,98	0,71	0,41
Fe D=80mm 640W	2,08	1,85	1,48	1,07	0,74	0,41
Fe D=80mm 800W	2,38	2,25	1,87	1,31	0,91	0,52
FeCo D=80mm 640W	2,24	1,94	1,51	1,08	0,74	0,41
Fe D=60mm 640W	2,36	2,22	1,75	1,16	0,77	0,42

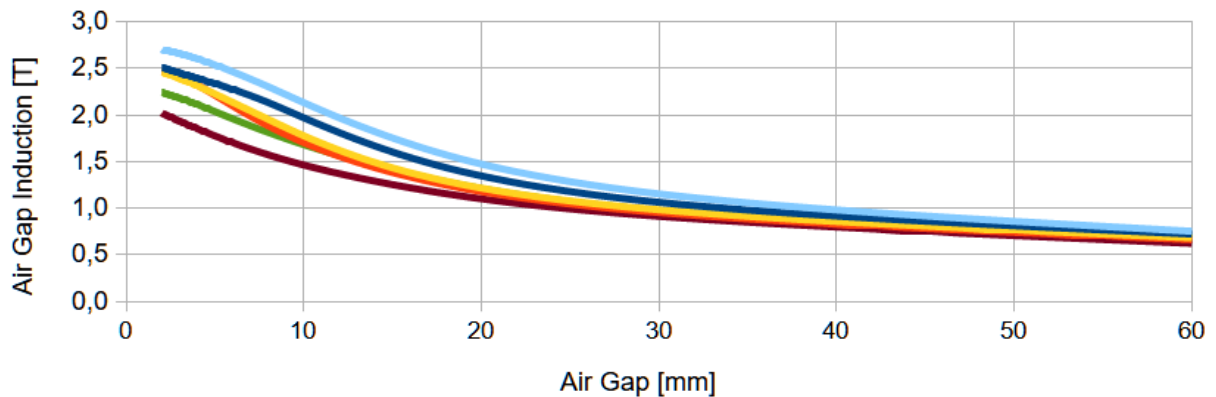
Fe = Steel CK15 FeCo = Cobalt-Iron

Technical Data of EM1:

Pole Piece Diameter:	80/92 mm	Dimensions:	35 x 24 x 51 cm
Air Gap:	0..50 mm	Weight:	ca. 45 kg
Duty Cycle:	10% at 1KW		
Max op. Voltage:	200 V		
Max. feeding Power:	1000 W		

Electro Magnet EM2

Coil Power 3000W



— FeCo D=40mm
 — Fe D=60mm
 — FeCo D=80mm
— PT200 D=60mm
 — Fe D=80mm
 — Fe D=92mm

Air Gap Induction [T] vs. Air Gap and Pole Piece Diameter						
Pole Piece	Air Gap [mm]					
	2	4	8	15	30	60
Fe D=60mm	2,51	2,39	2,13	1,6	1,06	0,72
PT200 D=60mm	2,46	2,32	1,88	1,38	0,95	0,66
FeCo D=80mm	2,46	2,31	1,95	1,43	0,98	0,68
Fe D=80mm	2,24	2,11	1,81	1,41	0,97	0,68
Fe D=92mm	2,02	1,85	1,57	1,25	0,91	0,62
FeCo D=40mm	2,7	2,6	2,3	1,75	1,15	0,75

Fe = Steel CK15 FeCo = Cobalt-Iron PT200 = Heatable Pole Pieces

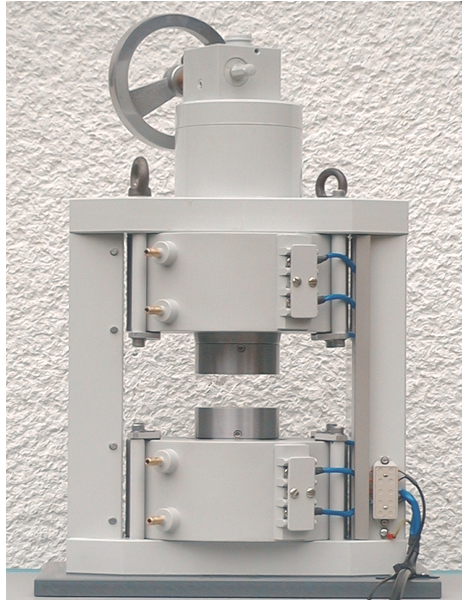
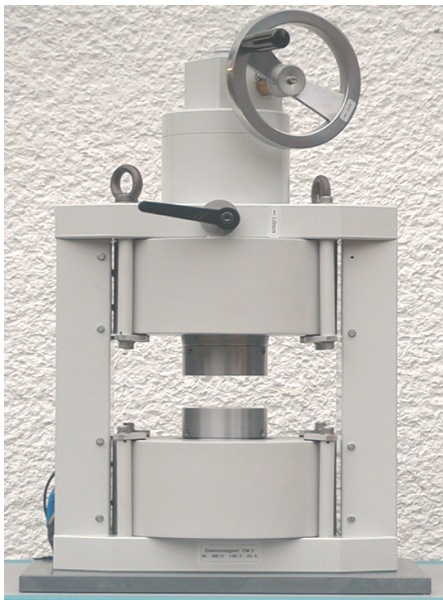
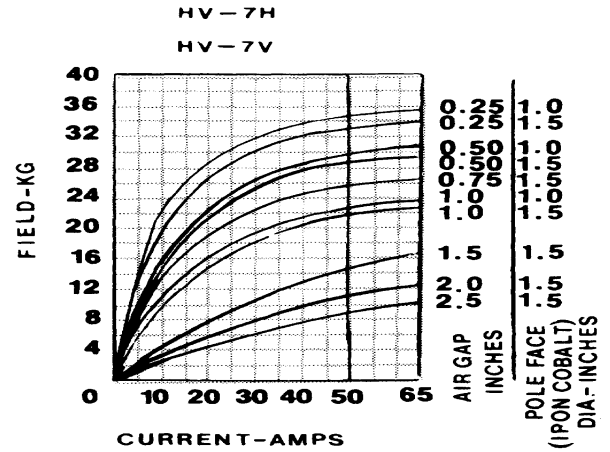
Technical Data EM2:

Pole Piece Diameter: 80/92 mm
 Air Gap: 0..80 mm
 Duty Cycle: 10% at 3KW
 Max. op. Voltage: 300V
 Max. feeding Power: max. 3000 W
 Dimensions: 42 x 26 x 67 cm
 Weight: ca. 165 kg

Technical Data EM4:

Pole Piece Diameter: Max. 150 mm
 Air Gap: 0..70 mm
 Duty Cycle: 100% *
 Max. op. Voltage: 120 V
 Max. feeding Power: 6000 W
 Dimensions: 400 x 457 x 823mm
 Weight: ca. 480 kg

* with water cooling,
 at 0,5 T and 50mm air gap

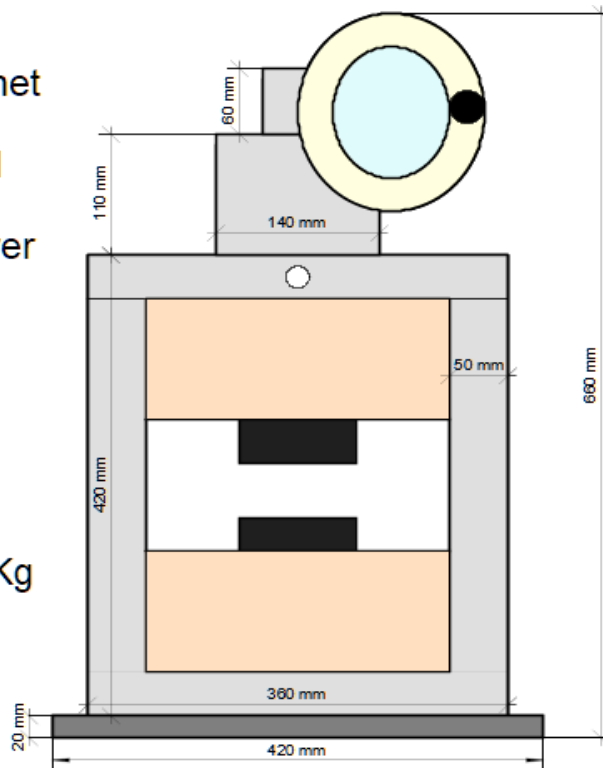


Electro magnet
EM2-W
water cooled

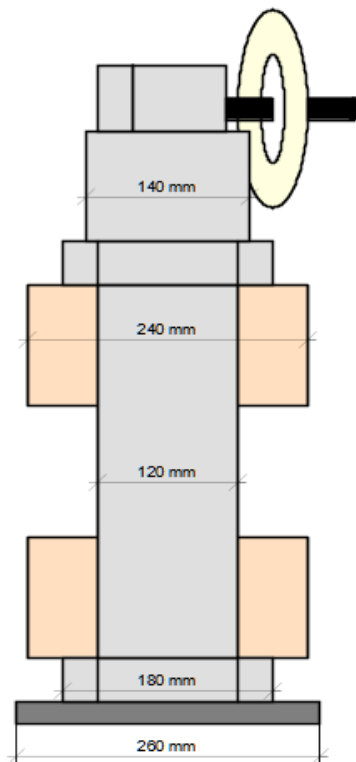
Feeding power
3000W

adjustable
air gap:
0 ... 70mm

Weight:
approx. 160Kg



MagMess
Magnet-Messtechnik
Jürgen Ballanyi e.K.



13.2.2004