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TOOLS

● LIFTING MAGNETS

● MAGNASLOT

● MAGNETIC TOOLS

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MAGNETS

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MACHINES

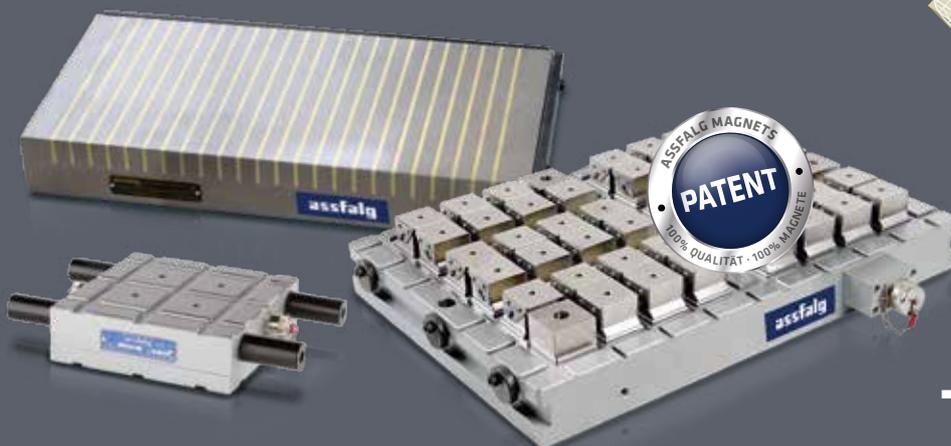
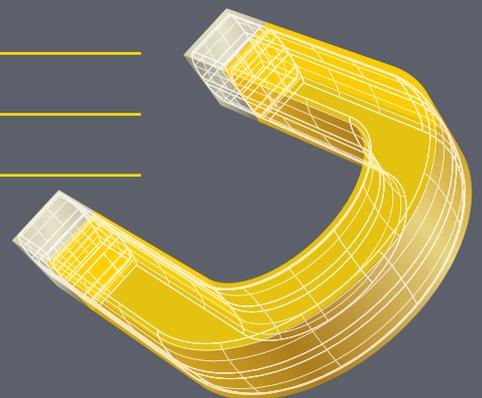
● CLAMPING MAGNETS

# Clamping magnets

## Maximum adhesive force for safe processing

with unimagined production reserves

- 🕒 5-side machining in one clamp
- 🕒 minimum set-up times and increase of productivity
- 🕒 increase in accuracy and tool life



The Ace for Metal

MAGNETS MACHINES TOOLS

**Assfalg GmbH**

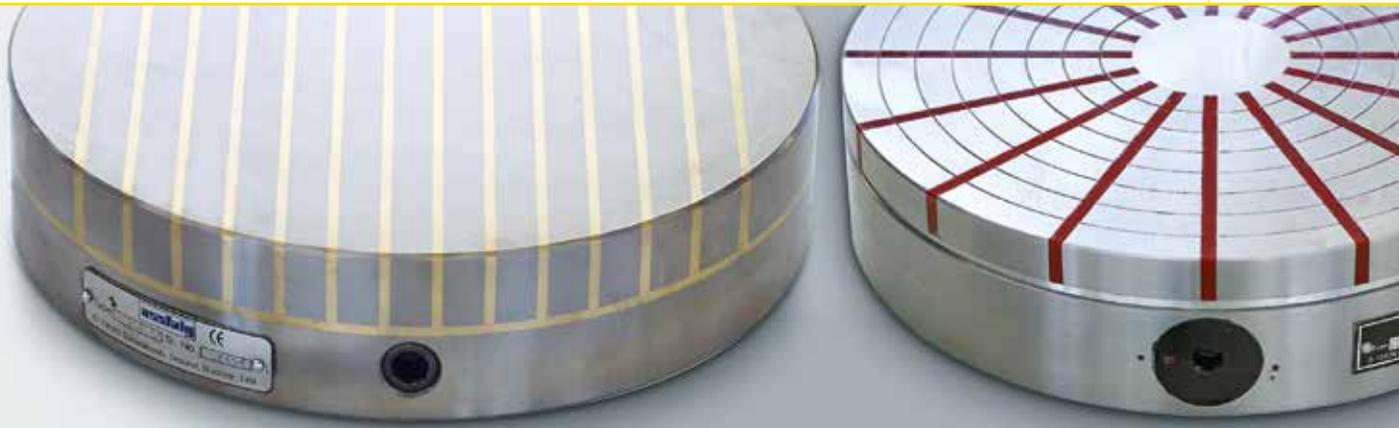
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## Permanent Magnets

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**Microfine**  
Permanent Magnetic Chucks  
for grinding - EDM

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**Microsine**  
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**Permamax**  
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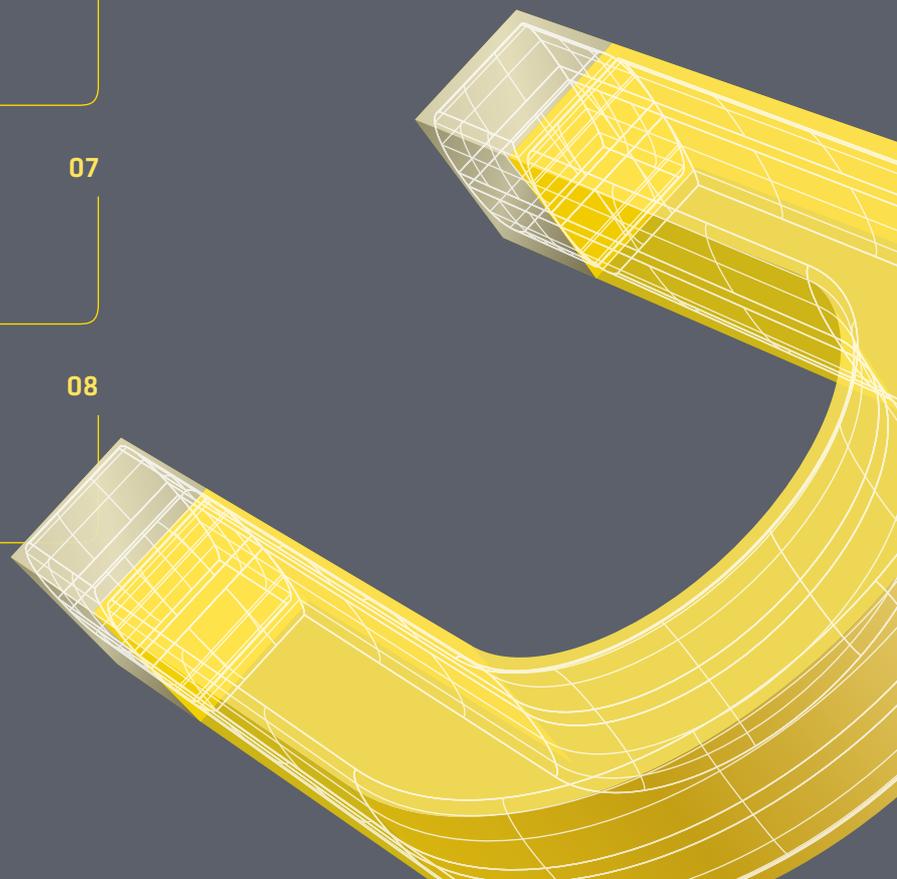
**Permamax**  
Permanent Magnetic Chucks  
for milling, grinding, lathing

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## Electropermanent Magnets 09 | Permanent Magnets 21



### Magnaslot

Electropermanent Magnetic Chucks for milling

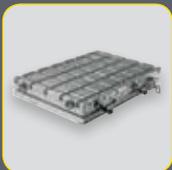
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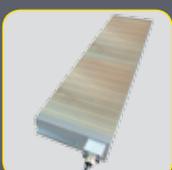
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### Assfalg Magnets in use

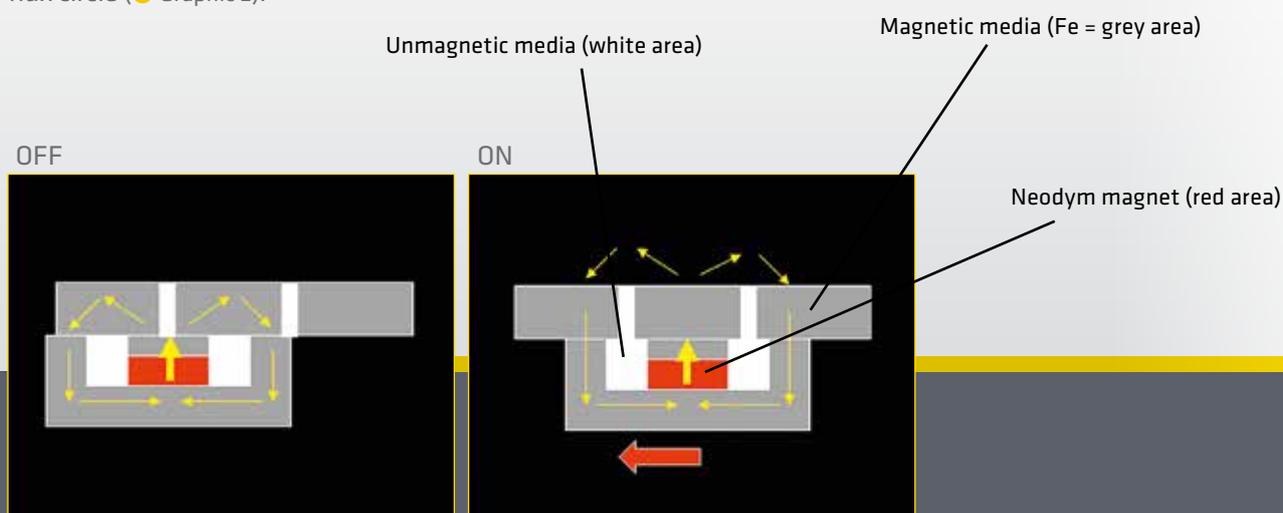
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# Permanent Magnets

## How do Permanent Magnets work?

When switching ON/OFF the Permanent Magnet System inside will be moved against the pole surface. When the magnet is OFF the magnetic flux will be shortcircuited by the pole surface (👇 Graphic 1).

When switching ON the magnet, the magnetic flux will flow through the pole surface and the workpiece on top will be attracted and close the magnetic flux circle (👆 Graphic 2).



👆 Graphic 1

👇 Graphic 2

### Features

- ▶ Permanent Magnets are independent from any power source, portable and fail-safe
- ▶ The clamping force and size of a permanent magnet system is limited by the internal mechanical friction
- ▶ A Permanent Magnet can be destroyed or demagnetized by external, very large magnet fields or heat  $> 80^{\circ}\text{C}$

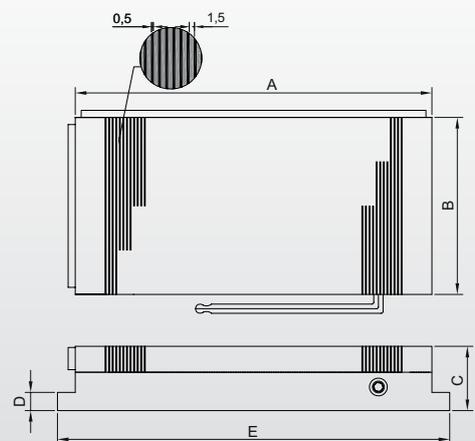
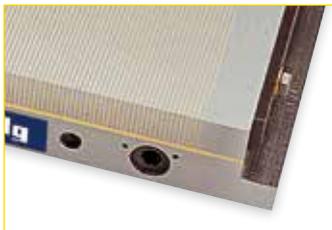
# Microfine

## Permanent Magnetic Chucks

The Microfine is an extremely economical Permanent Magnetic Chuck which can be manually switched.

It has a very flat magnetic field and is suitable for grinding and EDM.

It is used for our Microsine.



### Application

- ▶ Universal use, especially for grinding and EDM, but also for finish milling
- ▶ Especially for small and thin, but also for thick workpieces if surface is clean and even

### Features

- Ⓢ Design with low height, but high adhesive force
- Ⓢ The contact surface can be machined up to 2mm and drilled up to max. 8 mm depth
- Ⓢ Liquid-tight
- Ⓢ Can be switched ON/OFF mechanically
- Ⓢ Workpieces can be clamped stress-free and fast
- Ⓢ 5-side processing, as only one side is magnetically clamped
- Ⓢ Low magnetic penetration depth because of a flat magnetic field due to fine pole pitch – not very good for bridging air gaps
- Ⓢ Adhesive force: 80 N/cm<sup>2</sup> with pole pitch 1.5 + 0.5 mm

### Technical data

	Dimensions [mm]					Weight	No.
	A	B	C	D	E	[kg]	
MF 1510	150	100	48	16	170	5	41731
MF 2512	250	125	48	16	270	11	41732
MF 3015	300	150	48	16	320	16	41733
MF 3515	350	150	48	16	370	18	1969
MF 4515	450	150	53	16	470	24	5093
MF 3020	300	200	53	16	320	22	17007
MF 4020	400	200	53	16	420	30	22221
MF 5020	500	200	53	16	520	37	39408
MF 5025	500	250	53	16	520	47	33730
MF 6030	600	300	58	16	620	76	32502

# Microsine

## Permanent Magnetic Sinetables

Magnet Sinetables are very helpful for angle works on grinding or milling machines, particularly in mould shops..

The standard Microsine has the swivel axis in length and is equipped with Microfine.

There are also Microsine sinetables with swivel axis in width, or in length and width. Any chuck can be taken in place of Microfine.



### Application

- ▶ Universal use, particularly for finishing operations
- ▶ For dry and wet machining

### Features

- ☑ Liquid-tight
- ☑ The standard Microsine is equipped with Microfine Magnetic Chuck
- ☑ The magnetic field is flat and the flux penetration in the workpiece is little
- ☑ The Microfine surface can be machined down by 2mm and partially drilled up to 8mm
- ☑ Workpieces can be fastly clamped with wanted inclination, stress-free
- ☑ Tilting angle is precisely set by sinustable and gauge blocks
- ☑ 5-side machining as only one side is clamped magnetically
- ☑ Adhesive force: 80 N/cm<sup>2</sup> with pole pitch 1.5 + 0.5 mm
- ☑ Swivel range 0 – 45° (on request 0 – 60°)
- ☑ Surface hardened

### Technical data

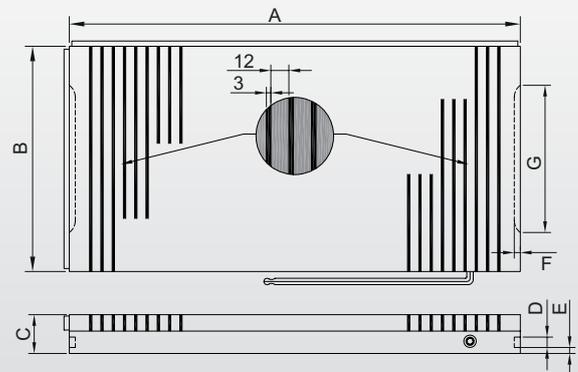
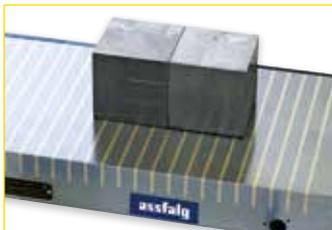
	Dimensions [L×W]	No.	No.
	[mm]	[swivel axis = length]	[swivel axis = length + width]
MF SI 1710	175 x 100	42461	42468
MF SI 3015	300 x 150	11045	27748
MF SI 4515	450 x 150	63101	63100
MS SI 6030	600 x 300	41795	on request
...	other sizes on request		

# Permamax

## Permanent Magnetic Chucks

The Permamax is an extremely strong Permanent Magnetic Chuck - manually switched ON/OFF.

It can be used universally for small and large, thin and thick workpieces on machine tools - especially for milling.



### Application

- ▶ Universal use, especially for milling of small and big workpieces (>30 × 15 × 6 mm)
- ▶ For thin, ferromagnetic workpieces from 0.8 mm thickness, as well as for thick workpieces

### Features

- ☑ Liquid tight
- ☑ Surface can be machined down by 2mm and partially drilled up to 8mm
- ☑ Switched ON/OFF mechanically
- ☑ Workpieces can be clamped stress-free and fast
- ☑ 5-side processing, as only one side is magnetically clamped
- ☑ High power and flat magnetic field (max. 10mm penetration into workpiece)
- ☑ Adhesive force: up to 140 N/cm<sup>2</sup> with pole pitch 12 + 3 mm (highest power is concentrated within 20 mm from edges)

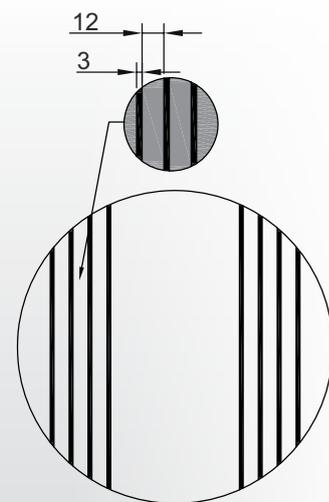
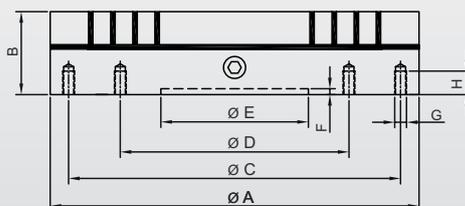
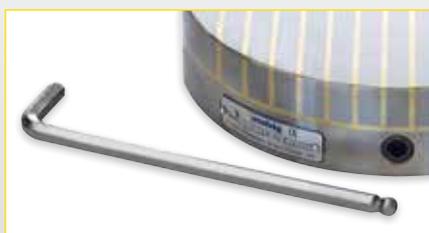
### Technical data

	Dimensions [mm]							Weight [kg]	No.
	A	B	C	D	E	F	G		
PM 1610	160	100	52	14	12	8	60	6	57998
PM 2515	250	150	52	14	12	8	90	15	57999
PM 3015	300	150	52	14	12	8	90	18	5088
PM 3020	300	200	52	14	12	8	120	24	58000
PM 4020	400	200	52	14	12	8	120	32	58001
PM 6020	600	200	52	14	12	8	120	49	58002
PM 5030	500	300	52	14	12	8	190	61	58003
PM 6030	600	300	52	14	12	8	190	73	58005

# Permamax

## Permanent Magnetic Chucks

The round Permamax is a very strong Permanent Magnetic Chuck with parallel pole pitch. It is manually switched. It is universally suitable for all kind of ferromagnetic workpieces.



### Application

- ▶ Universal use, also for small workpieces
- ▶ Best suitable for flat grinding, internal or external grinding or turning or hard turning

### Features

- ⚡ High power and liquid-tight
- ⚡ The surface can be machined down by 2mm and partially drilled up to 8 mm depth (5 mm at  $D \leq 130$  mm)
- ⚡ Mechanically switchable
- ⚡ Workpieces can be clamped stress-free and fast
- ⚡ All-around processing as only one side is clamped magnetically
- ⚡ Adhesive force: up to 140 N/cm<sup>2</sup> with pole pitch 12 + 3 mm

### Technical data

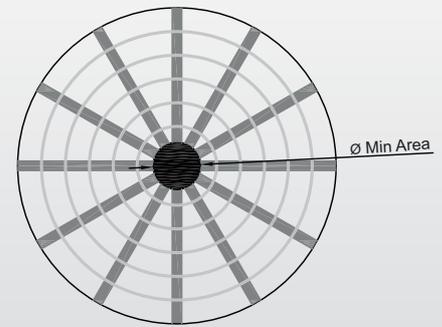
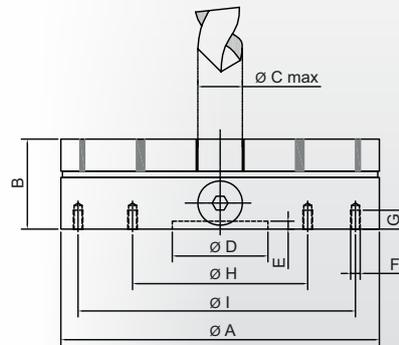
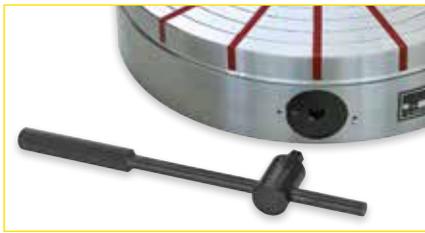
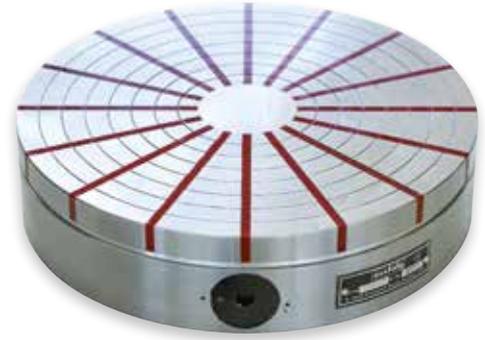
	Dimensions [mm]								Weight	No.
	A	B	C	D	E	F	G	H	[kg]	
PMR 10	100	55	-	75	50	5	M6	12	3	57990
PMR 16	160	55	120	80	50	5	M6	12	9	57991
PMR 20	200	55	180	110	60	5	M6	12	13	57992
PMR 25	250	55	220	140	80	5	M6	12	21	57993
PMR 30	300	55	260	180	150	6	M6	16	30	57994
PMR 35	350	55	300	220	170	6	M8	16	41	57995
PMR 40	400	55	340	260	200	8	M8	16	84	57996

# Neostar

## Permanent Magnetic Chucks

The Neostar is a very strong round Permanent Magnetic Chuck with radial pole pitch. It is manually switched.

It is designed for ferromagnetic discs, rings and cylindric workpieces with approx. 80 mm diameter and more. A through hole in the center can be drilled.



### Application

- ▶ Universal use, particularly for internal and external grinding of cylinders, turning and hard turning
- ▶ Excellently suitable for clamping rings

### Features

- ☑ Liquid-tight
- ☑ Can be switched ON/OFF mechanically
- ☑ The center is not magnetic and can be drilled through up to the dia. "C"
- ☑ Workpieces can be clamped stress-free and fast
- ☑ All-around processing as only one side is clamped magnetically
- ☑ High power and flat magnetic field (penetrates max. 10mm into workpiece)
- ☑ Adhesive force: up to 140 N/cm<sup>2</sup>

### Technical data

	Dimensions [mm]								Boreholes in F	Pole	Weight	No.
	A	B	C	D	E	G	H	I	[mm]	[kg]		
NS 10	100	55	18	50	2	12	-	75	4 x M6	10	3	2814
NS 13	130	57	20	50	5	12	-	100	4 x M6	10	6	4275
NS 16	160	57	24	50	5	12	80	120	4 x M6	10	9	5007
NS 20	200	57	30	60	5	12	110	180	4 x M6	12	14	16350
NS 25	250	70	42	80	5	12	140	220	4 x M6	16	27	12056
NS 30	300	73	42	150	6	16	180	260	4 x M8	16	41	37501
NS 35	350	73	56	170	6	16	220	300	4 x M8	20	55	37502
NS 40	400	75	56	200	8	16	260	340	4 x M8	20	75	37169
NS 50	500	81	75	200	8	16	300	400	4 x M10	24	125	37494
NS 60	600	95	100	250	8	20	350	450	4 x M12	30	200	57997

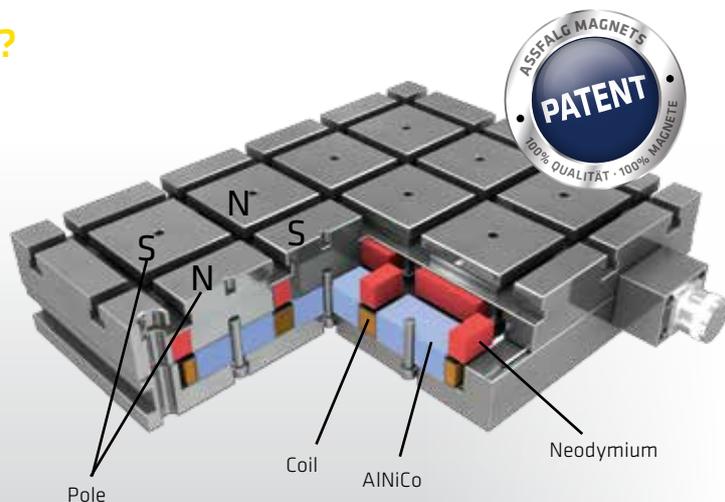
# ElectroPermanent Magnets

## How do ElectroPermanent Magnets work?

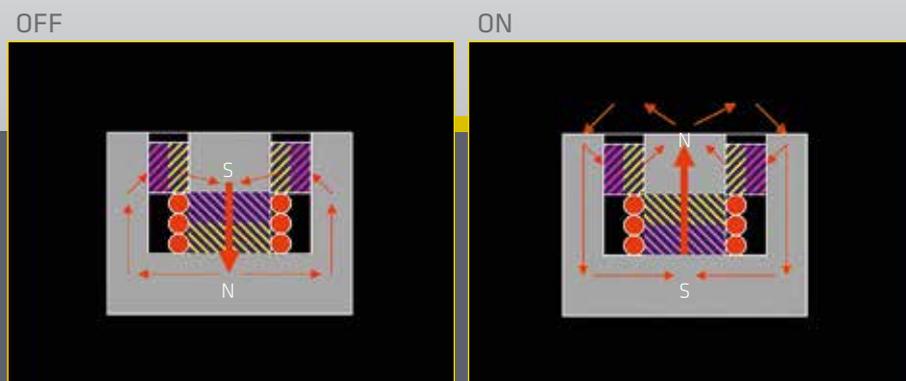
AlNiCo-Magnets (surrounded by coil) can be magnetized as N-pole or S-pole by a current impulse (👉 Graphic 1 + 2).

The AlNiCo-Magnets are exactly opposed to the polarization of the Neodym Permanent Magnets with the magnet being switched OFF (👉 Graphic 1). The AlNiCo-Magnets are rectified to the polarization of the Neodym Permanent Magnets with the magnet being switched ON (👉 Graphic 2).

**Electropermanent Magnets keep their magnetized condition.**



Patent No EP1874504



👉 Graphic 1

👉 Graphic 2

- Unmagnetic media
- Magnetic media (Fe)
- North pole N (AlNiCo)
- South pole S (AlNiCo)

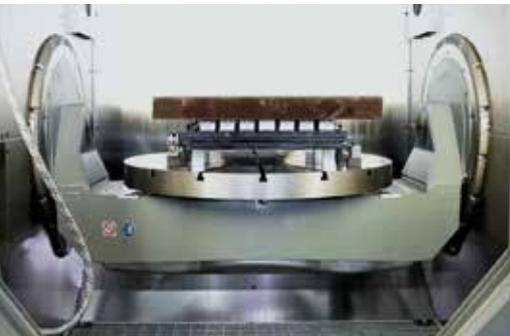
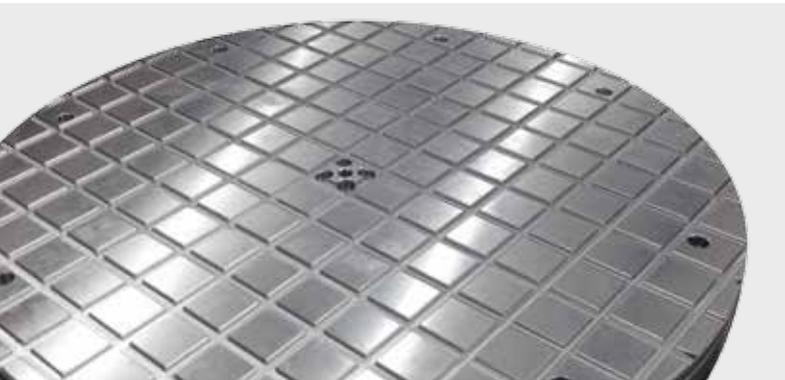
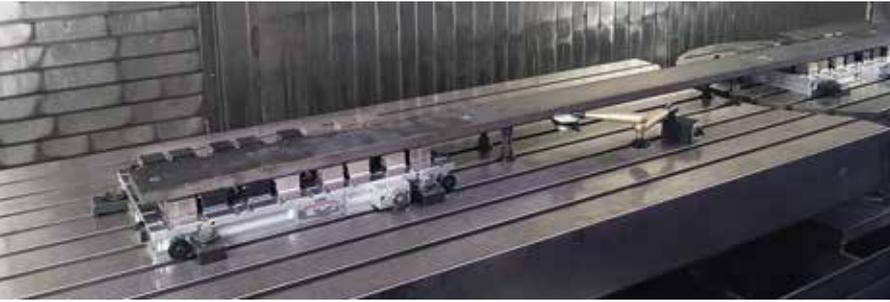
### Features

- ▶ Electropermanent Magnets are Permanentmagnets which are switched electrically. They do not warm up and consume only very little energy (impulse current).
- ▶ They combine the safety of Permanentmagnets with the convenience of Electromagnets.

# Magnaslot

Electropermanent Magnetic Chucks



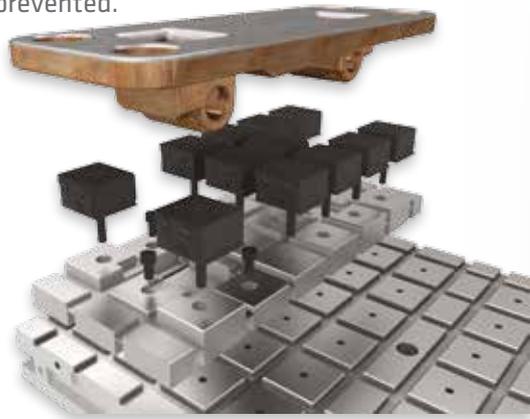


# Magnaslot

## Electropermanent Magnetic Chucks

The patented (EPM) ElectroPermanent Magnetic chuck with solid steel top and squarepole technology is the perfect clamping solution for milling.

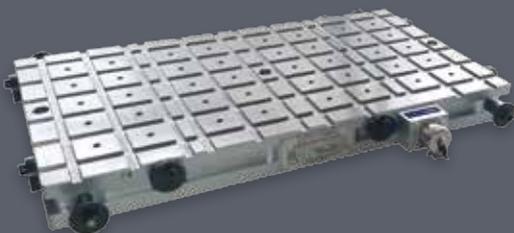
Each pole is surrounded by opposite poles (chess pattern). Hence magnetic power flows in X- and Y- axis. The current impulse for magnetizing and demagnetizing is very energy efficient. By using fixed and mobile pole extensions the roughness of unmachined or bent workpieces can be compensated. Also a distortion will be prevented.



- ☺ An adapter plate with mobile poles provides maximum magnetic power for clamping the uneven workpiece

### Features [HD 50]

- ☒ Pole size 50 x 50 mm
- ☒ Adhesive force  $\geq 350$  kg per pole
- ☒ Magnetic field penetration up to 15mm
- ☒ A minimum of 2 alternate poles must be at least partially covered to get any power
- ☒ The more poles are covered the higher the magnetic clamping force



- ☒ Magnaslot HD or ECO ?  
HD is recommended when workpiece sizes vary a lot from small to big.  
ECO is sufficient when only larger workpieces are clamped.

### Technical data

	Dimension [LxWxH]	Number of Poles	Weight	No.
<b>High pole density (HD)</b>	[mm]		[kg]	
304 HD 50	300 x 430 x 55 *	24	50	38335
306 HD 50	300 x 590 x 55	32	72	50613
308 HD 50	300 x 750 x 55	40	91	41485
404 HD 50	420 x 430 x 55	36	71	49812
406 HD 50	420 x 590 x 55 *	48	100	56130
408 HD 50	420 x 750 x 55	60	127	48641
410 HD 50	420 x 990 x 55	84	168	49787
508 HD 50	480 x 750 x 55 *	70	145	50615
510 HD 50	480 x 990 x 55	98	192	50249
606 HD 50	600 x 590 x 55	72	143	50541
608 HD 50	600 x 750 x 55	90	181	49574
610 HD 50	600 x 990 x 55 *	126	240	49319
<b>Reduced pole density (ECO)</b>	[mm]		[kg]	
304 ECO 50	325 x 370 x 55	20	42	63276
406 ECO 50	370 x 635 x 55	40	90	63277
408 ECO 50	370 x 790 x 55	50	120	64066
508 ECO 50	445 x 790 x 55	60	150	64072
608 ECO 50	580 x 790 x 55	80	170	63278
609 ECO 50	580 x 940 x 55	96	200	63279

\* stock standard

👉 Magnaslot 400 x 800 mm with 32 x P75



👉 Magnaslot HD means: maximum pole number on given chuck size \*\*\*Pole number and chuck size define the chuck price\*\*\*

### Professional advantages

- ▶ All-around 5-side machining and distortion free clamping is possible in one clamp by means of pole extensions -> With given pole number the chuck can be covered with 3 x fixed and multiple mobile pole extensions for rough machining. If already machined side is clamped, then only fixed pole extensions may be advantageous
- ▶ Set-up time is reduced to a minimum, hence an increase of productivity
- ▶ Less vibrations for longer tool life and better process accuracy
- ▶ Patented solid top resists best to hot chips and coolance and cares also for heat dissipation

Technical data	Dimension [LxWxH] [mm]	Number of Poles	Weight [kg]	No.
<b>High pole density (HD)</b>				
304 HD 75	327 x 425 x 60	12	62	48900
306 HD 75	327 x 601 x 60	18	87	49835
308 HD 75	327 x 815 x 60	24	118	52548
404 HD 75	415 x 425 x 60	16	78	52546
406 HD 75	415 x 601 x 60 *	24	110	49011
408 HD 75	415 x 815 x 60	32	150	49012
410 HD 75	415 x 1,029 x 60	40	188	50235
508 HD 75	503 x 815 x 60 *	40	181	52542
510 HD 75	503 x 1,029 x 60	50	228	49833
606 HD 75	591 x 601 x 60	36	157	52543
608 HD 75	591 x 815 x 60	48	212	52544
610 HD 75	591 x 1,029 x 60 *	60	268	49985

\* stock standard

### Features [HD 75]

- 👉 Pole size 75 x 75 mm
- 👉 Adhesive force  $\geq 790$  kg per pole
- 👉 Magnetic field penetration up to 24 mm
- 👉 Less sensitive to air gaps
- 👉 A minimum of 2 alternate poles must be at least partially covered to get any power. The more poles are covered, the higher the magnetic clamping force

### Options

- 👉 Controllers and pole extensions -> see accessories on page 15

### Application

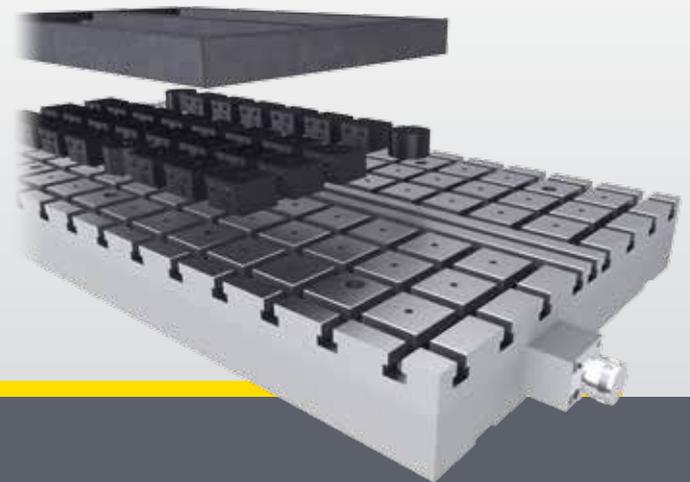
- ▶ Clamping of small and big workpieces for milling
- ▶ Clamping without vibration and without distortion
- ▶ Process accuracy with plane parallelism 0.02/1000 mm and better

# Magnaslot with T-Slots

## Electropermanent Magnetic Chucks

The patented (EPM) ElectroPermanent Magnetic chuck with T-Slots in the solid steel top combine advantages of magnetic and mechanic clamping and positioning for milling.

The additional T-slots need a higher Magnaslot and are manufactured only together with squarepoles 75.



### Application

- ▶ All-around 5-side machining in one clamp
- ▶ For clamping of small and big workpieces by milling processes and rough and fine precision machining
- ▶ Clamping of magnetic and nonmagnetic workpieces
- ▶ A combination of multiple EPM chucks enables large workpiece machining

### Features

- ⌚ Pole size 75 x 75 mm
- ⌚ T-slots for the mechanical clamping
- ⌚ Adhesive force  $\geq 790$  kg per pole
- ⌚ Magnetic field penetration up to 24mm
- ⌚ Less sensitive to air gaps
- ⌚ Distortion and stress free clamping of rough, uneven, and bent workpieces by means of flexible or fixed pole extensions
- ⌚ Minimization of setup time
- ⌚ Patented solid top resists best to hot chips and coolance and cares also for heat dissipation

### Options

- ⌚ Controllers and pole extensions -> see accessories on page 15

Technical data	Dimension [LxWxH]	Number of Poles	Weight	No.
	[mm]		[kg]	
304 HD 75T	327 x 425 x 93	12	90	48887
406 HD 75T	415 x 601 x 93	24	160	49010
508 HD 75T	503 x 815 x 93	40	250	51870
610 HD 75T	591 x 1,029 x 93	60	370	49986

# Accessories

## For Electropermanent Magnetic Chucks

EPM chucks need a controller for switching ON/OFF. The magnetic power can be controlled in 8 steps.

Multiple chucks can also be switched at a time by a multi channel controller or with additional junction box JB in between chuck and controller. A square pole 50 needs at 400V app. 0,5 A, a pole 75 app. 1A. The controllers are equipped with fixed 3m source cable for Plug 16A/32A. Each channel of the controller is connected with the chuck by a 3.5 m shielded, heat and water resistant cable with bayonet and terminal. For special purposes special connecting cables are available.



Controller D50/D100



Hand operating unit - pendant with 8 powersteps (with pin plug for connection with controller)



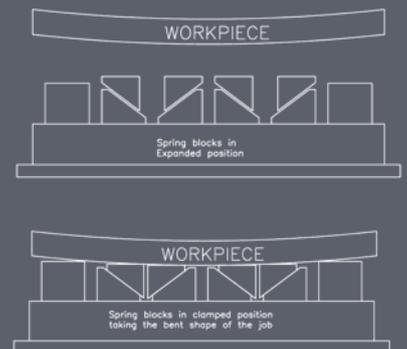
PVF fixed Pole extension



PVB mobile Pole extension compressed (left) and expanded (right)

### Technical data

	Pole size	Dimensions	Version	No.
<b>Pole extensions [Typ]</b>	[mm]	[mm]		
PVF 50	50	50 x 50 x 32	fixed	38010
PVB 50	50	50 x 50 x 32 (+/-3)	mobile	38011
PVF 70	70	70 x 70 x 45	fixed	40127
PVB 70	70	70 x 70 x 45 (+/-5)	mobile	40128



### Technical data

	Channel	No.
<b>Controller [Typ]</b>		
EPM-D50 to 50 A, with pendant	1	13070
EPM-D100 to 100 A, with pendant	1	52950
EPM-D100-4 to 100 A, with pendant	4	58088
EPM-D100-6 to 100 A, with pendant	6	60875



4-channel- operator panel for D100-4



Bayonet connection



Bayonet socket



Bayonet plug

# Doublemag | Triplemag

## Electropermanent Magnetic Chucks

The Doublemag are small Magnaslots, but magnetized on top (to hold the workpiece) and on bottom (to hold itself on the machine table). They are very handy and flexible in use. They can be combined in multiple number to a large magnetic table to clamp economically large workpieces.

The Triplemag are same as Doublemag, but have additional and separately switched magnets on bottom side, enabling a wanted position on the machine table or the wall before clamping the job.

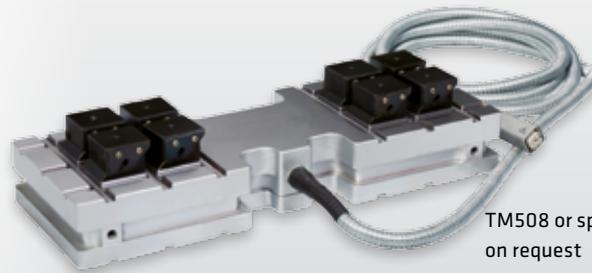
These magnets are manufactured as double row (DM502 or TM508) or single row (TM505).



DM 502

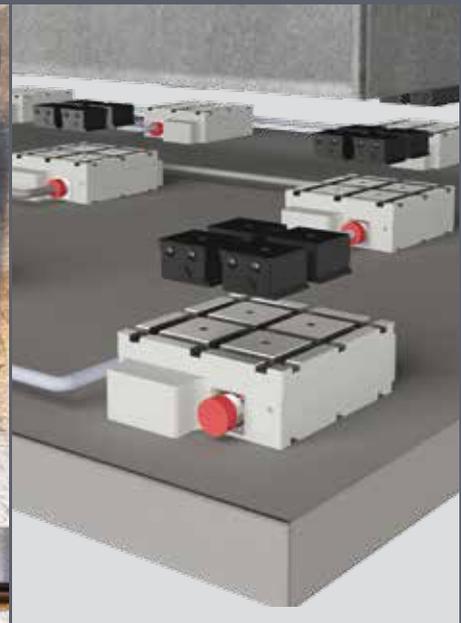


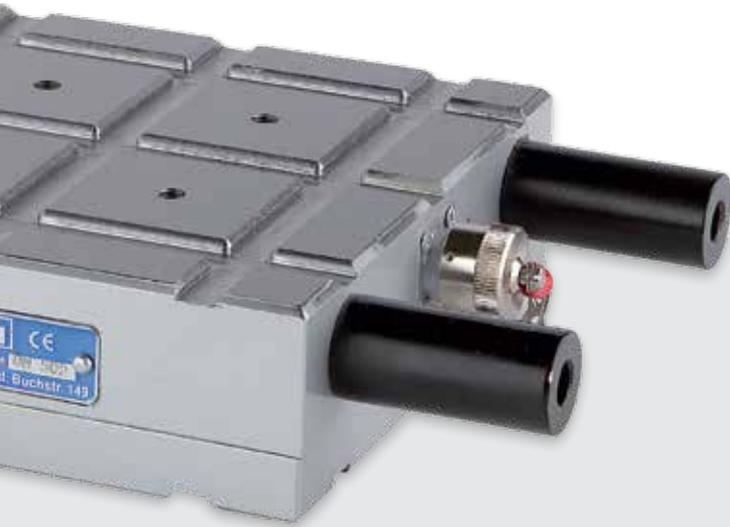
TM 505

TM508 or special versions  
on request

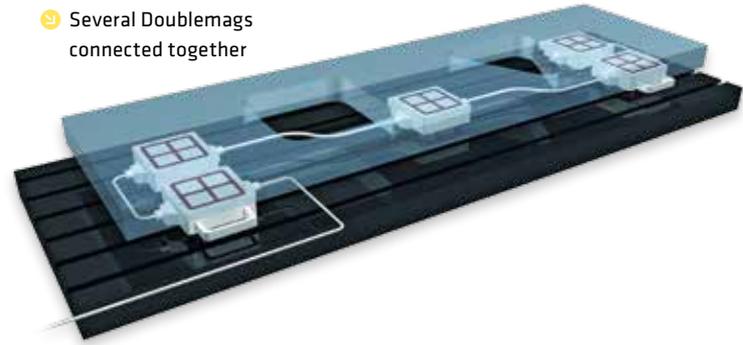
### Application

- ▶ Clamping big or bulky workpieces for milling
- ▶ Clamping for edge cutting or deburring
- ▶ For simple and fast fixing of workpieces
- ▶ Also usable with fixed and movable pole extensions for uneven surfaces





Several Doublemags connected together



**Professional advantages**

- ▶ Drastic reduction of set-up times
- ▶ 5-side machining with simple and fast positioning and clamping
- ▶ Less stress, less vibrations, less torsions for better machining
- ▶ Flexible combination of multiple magnets to machine large or bulky workpieces
- ▶ Better accuracy-plane-parallelism 0,01/1000mm is reachable
- ▶ The advantage of fixed and mobile pole extensions for balancing uneven, bent, large workpieces

**Features**

- ⌚ Pole size 50 × 50 mm
- ⌚ Adhesive force ≥ 350 kg per pole
- ⌚ Full clamping force will only be achieved if the supporting table is ferromagnetic and at least 15 mm thick
- ⌚ Penetration depth of the magnetic field up to 12 mm
- ⌚ Patented solid top resists best to hot chips and coolants and cares also for heat dissipation

**Options**

- ⌚ For pole extensions -> see Accessories on page 15
- ⌚ Footswitch for controller EPM D50 for Doublemag



Controller EPM D50-2 for Triplemag



Footswitch for controller for Doublemag



Controller EPM D50 for Doublemag

**Technical data**

	Dimensions [L×W×H] [mm]	Number of poles	Voltage [Volt]	Ampere [A]	Weight [kg]	No.
DM 502	180 x 180 x 55	2 x 4	400	2	12	52186
TM 503	220 x 180 x 55	2 x 4 + 1 x 2	400	2	12	70604
TM 505	340 x 100 x 55	2 x 4 + 1 x 2	400	2	13	70796

**Technical data**

Controller [Type]	Channel	No.
EPM D50 up to 50 A for Doublemag, with remote control and adhesive force regulation	1	13070
EPM D50-2 up to 50 A for Triplemag, with remote control and adhesive force regulation	2	63863
Footswitch for controller EPM D50 for Doublemag	-	53832

# Round Chuck EPMradial

## Electropermanent Magnetic Chucks

These Electropermanent Magnetic Chucks are ideal for clamping distortionfree big discs, rings or bearings for windmills. Even hardened rings can be finished best. Centric holes or through holes can be drilled.

All the advantages of fixed and mobile pole extensions of Magnaslot can be used, to reach best surface quality.



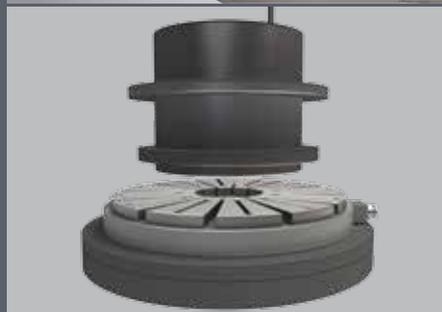
👉 EPMradial from Ø 600 mm



### Application

- ▶ Universal use for clamping ferromagnetic workpieces, particularly on lathes and rotary table grinding machines
- ▶ Ideal for bearing ring processing, also for hard processing

👉 EPMradial-P to Ø 600 mm





### Professional advantages

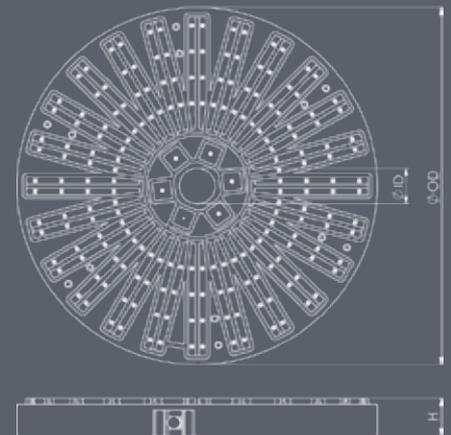
- ▶ Extremely short set-up times due to simple and fast clamping of workpieces
- ▶ 5-side machining with less stress, less torsions, less vibrations by means of fixed and mobile pole extensions
- ▶ No damages to the magnetic chuck by breakouts or through machining, if pole extensions are used
- ▶ Sensible magnet power adjustment for thin workpieces or for aligning

### Features

- ⌚ Extremely high magnetic power with activation within seconds
- ⌚ Through holes, poleshoes without or with T-slots, fixed and mobile pole extensions for ease of clamping and machining
- ⌚ The shielded and protected cable from the controller can be connected to the chuck by bayonet or slipping. The chuck controller can be integrated in CNC-machine controller

### Options

- ⌚ For controllers and pole extensions -> see Accessories on page 15



### Technical data

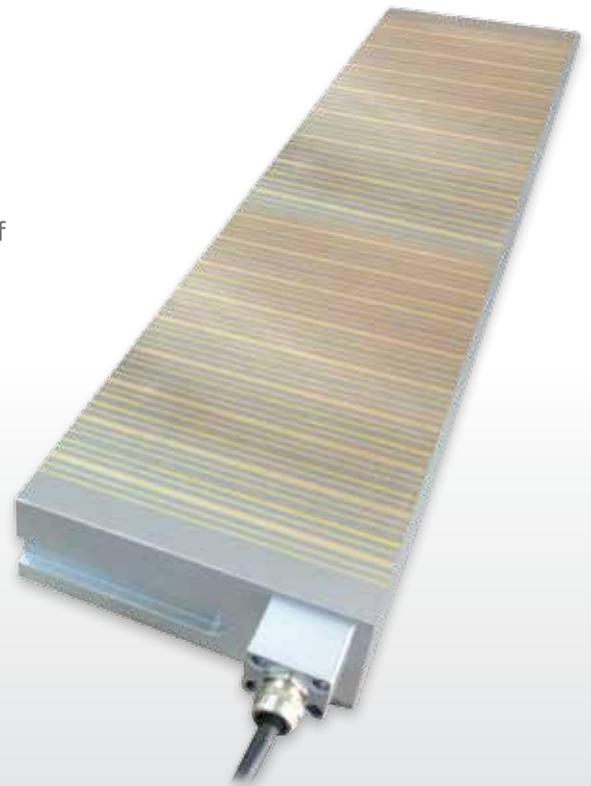
	External diameter	Internal diameter	Height	No.
	[mm]	[mm]	[mm]	
EPMradial 600	600	200	90	65047
EPMradial 800	800	250	90	63541
EPMradial 1000	1,000	250	90	on request
EPMradial 1250	1,250	500	90	on request
...	other sizes on request			

# EPFlux

## Electropermanent Magnetic Chucks

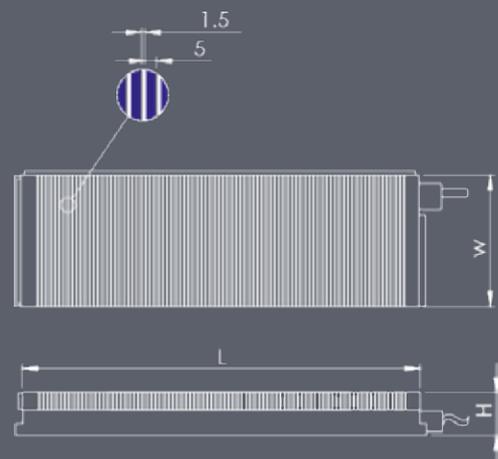
The EPFlux magnetic chuck is highly suitable for grinding applications of all size of jobs – also for high alloyed and hardened workpieces.

There will be nearly no residual magnetism. EPM technology guarantees therefore best accuracy. There is no heating up of the job. Energy consumption is very low.



### Features

- ⌚ Clamping force approx. 100 N/cm<sup>2</sup>
- ⌚ Pole pitch 5 + 1.5 mm
- ⌚ Incorporated cable 3 m
- ⌚ For Controller EPM D50-100 with additional Flux-IC



### Technical data

Technical data	Length	Width	Height	No.
	[mm]	[mm]	[mm]	
EPFlux 4515	450	150	69	64287
EPFlux 5020	500	200	69	51002
EPFlux 6030	600	300	69	63494
EPFlux 8040	800	400	69	on request
EPFlux 10050	1,000	500	69	on request
EPFlux 15060	1,500	600	69	on request

# MS | SW | MAV | PA

## Permanent Magnet Welding Angles

Your universal magnet clamp for small welding and assembly works.  
All magnetic angles are switchable and suitable for flat and round material, except SW.

MAV 120 and PA 200 are stepless adjustable angles.



MS



PA 200



SW



MAV 120



MSA

### Features

- ☑ Easy positioning, adjusting and fixing of workpieces
- ☑ No deflection or influence of welding arc
- ☑ The contact areas of MS, MAV 120 and PA 200 are separately switchable
- ☑ The angle of MAV120 and PA200 is quickly set by scale



Technical data	Dimensions [LxWxH] [mm]	Angle	Switchable	Use also for Round material	Adhesive force [kg]	Weight [kg]	No.
MSA I	110 x 30 x 95	45°/90°	Yes	Yes	36	0.7	45338
MSA II	150 x 35 x 130	45°/90°	Yes	Yes	60	1.4	45339
MS 2-80	153 x 38 x 153	90°	Yes *	Yes	46	1.2	48192
MS 2-90	195 x 46 x 195	90°	Yes *	Yes	68	2.7	18736
MAV 120	197 x 50 x 197	25° - 275°	Yes *	Yes	41	2.4	162
PA 200	240 x 41 x 240	22° - 270°	Yes *	Yes	90	1.6	60343
SW 200	200 x 50 x 200	90°	No	No	40	2.5	46504
SW 300	300 x 50 x 300	90°	No	No	60	4.0	46503

\* Every thigh is separately switchable

# MSQ Magsquare

## Permanent Magnetic Workholding

Versatile workholding and fixturing magnet. The magnetic grip is powerful on the 3 long sides. A simple 180° turn of the knob to switch ON / OFF. Pretapped holes on 4 sides for mounting. Great for supporting guides and walls. MSQ is assembled in angle A90 and Boomer.



### Features

- ✔ Magnets turns completely OFF and stays clean
- ✔ Usable for round and square workpieces
- ✔ Magnetic power is powerful on 3 sides, but acts on all sides
- ✔ Pretapped holes on 4 sides for quick mounting
- ✔ Great for making own fixtures



### Technical data

	Dimensions [L×W×H]	Adhesive force	Weight	No.
	[mm]	[kg]	[kg]	
MSQ 165	48 x 31 x 65	68	0.3	61939
MSQ 400	64 x 42 x 90	181	0.9	60971
MSQ 600	75 x 52 x 106	272	1.4	60972
MSQ 1000	72 x 108 x 147	454	3.4	60973

# A 90

## Permanent Magnet Welding Angles

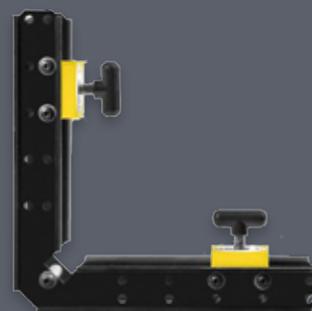
Your third indispensable hand for welding or assembly works on flat and round materials at 90° angle.

Use additional MSQ to increase power. The MSQ can be put reverse for inside angle or slide up and down to adjust.



### Features

- ✔ Sturdy steel construction of the angle
- ✔ Powerful grip can be increased by additional MSQ
- ✔ Usable as inside and outside angle
- ✔ Usable for round and square workpieces
- ✔ Sliding up and down to adjust



### Technical data

	Dimensions [LxWxH]	Adhesive force	Weight	No.
	[mm]	[kg]	[kg]	
A 165	205 x 205 x 47	68	0.8	61945
A 400	288 x 288 x 104	181	2.8	60340
A 600	288 x 288 x 134	272	3.7	60341
A 1000	287 x 474 x 145	454	4.6	60342

# Boomer

## Permanent Magnet Welding Angles, flexible

Your compact helper for welding or assembly works, for round and flat materials.

The rotating MSQ offers unlimited angles for inside and outside workholding.



### Features

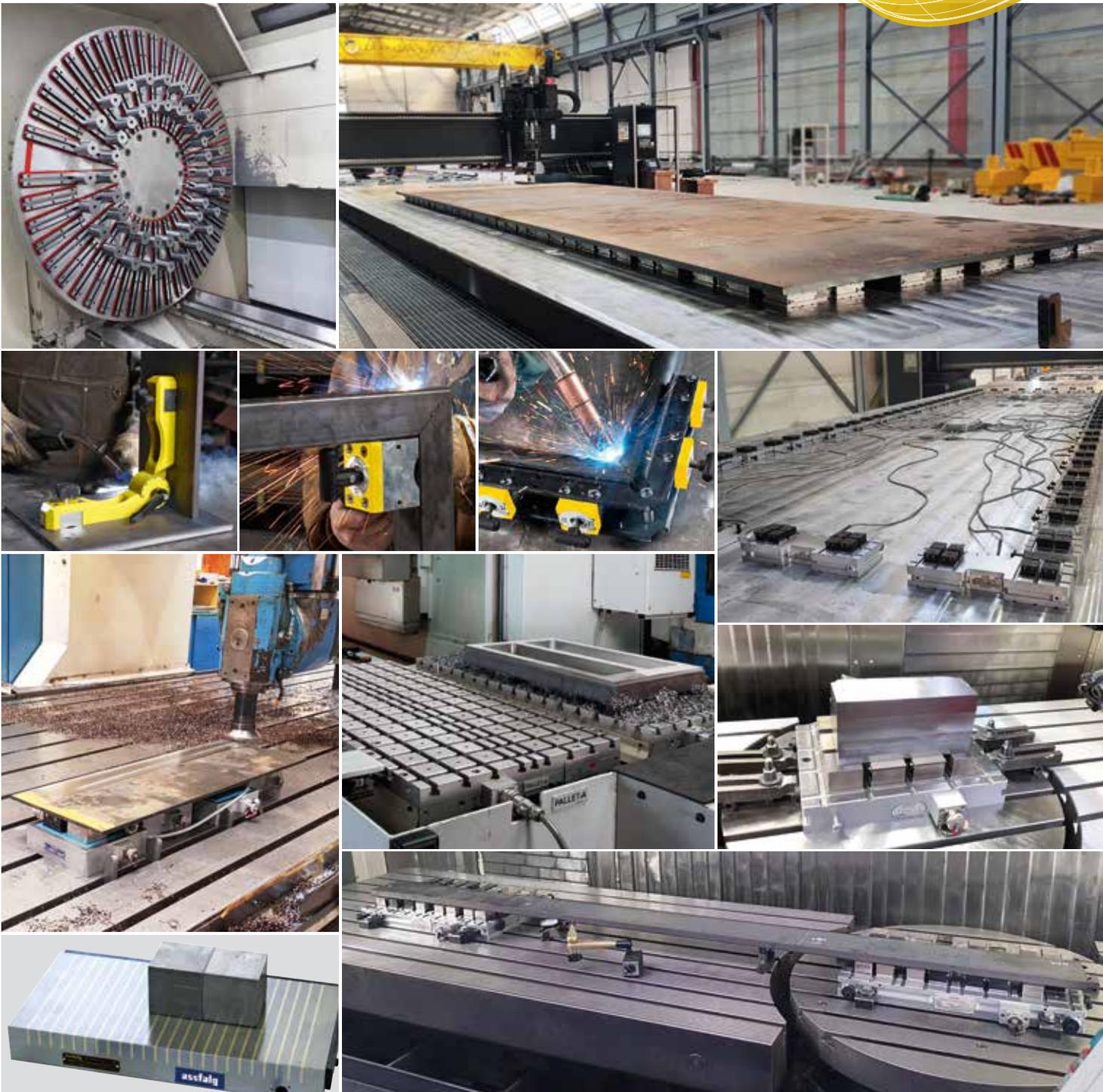
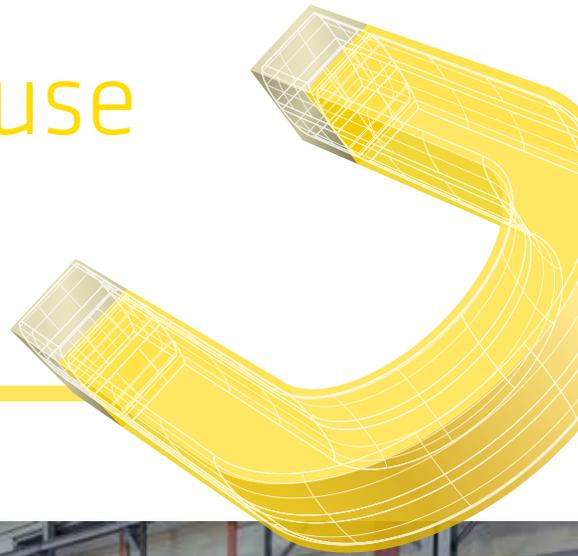
- ⌚ Fast and easy angle adjustment by means of quick release
- ⌚ Engraved scales for exact angle adjustment 0 - 360°
- ⌚ MSQ Magnets can be completely switched off by just turning the switch lever by 180° - stays CLEAN
- ⌚ Sturdy steel construction of the angle
- ⌚ Usable for round and square workpieces
- ⌚ Magnetic power acts on all sides



### Technical data

	Dimensions [LxWxH]	Adhesive force	Weight	No.
	[mm]	[kg]	[kg]	
BA 150	196 x 196 x 80	68	1.3	60344
BA 400	257 x 257 x 109	181	3.0	60345
BA 600	257 x 257 x 169	272	4.4	60346

# Assfalg Magnets in use



WANT TO KNOW MORE?

**We advise you gladly via telephone or during a personal appointment.**

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