

magnoo
SLOT

50⁺



**A Complete
Magnetic Machine Bed**

Introduction to Sarda Magnets

Sarda Magnets has been a brand synonymous with magnets for the last five decades in India. We specialize in designing and manufacture of magnetic work holding, clamping, separation and lifting systems and other magnetic equipments. With advanced design, outstanding performance and unsurpassed reliability, our products are internationally accepted for their quality and performance.

Though we are a 50 years old company, we operate like entrepreneurs. We focus on upgrading ourselves continuously with technological innovations in order to meet our customers' changing needs. We developed for the first time in India, Electro Permanent Magnetic Chucks and Lifters way back in 1990 and the Battery Operated EPM Lifting Magnets were the first of its kind in the world.

Inspired by our first patent of MAGNASLOT (a magnetic bed with T slots giving customers a work holding solution for all kinds of jobs) and the second one for DOUBLEMAG (a unique self-clamping magnet), we have developed several new products and patents for 12 more are in process.

We have been proud recipients of prestigious awards from the Engineering Export Promotion Council from last 10 years in a row.

Goals and Vision

Our goal is to be the pioneer in advancing magnetic technology and maintain highest level of customer satisfaction. We are persistently striving to offer superior quality and highly professional service as well as technical support.

In-house research plus innovative design has led to development of magnetic equipments using the latest technology available.

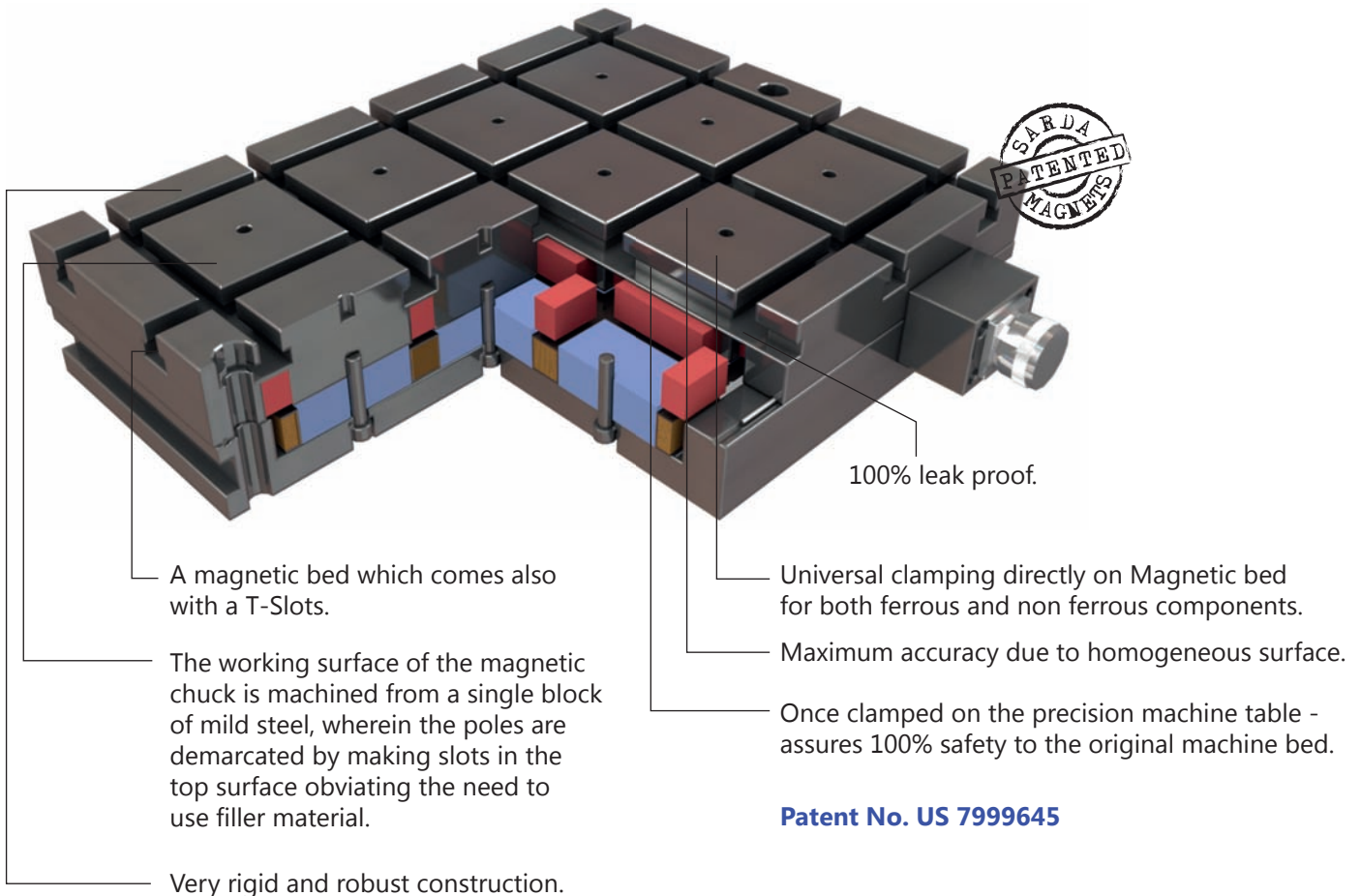
Trained team of technicians and sales personnel are able to provide invaluable advice on magnet use and applications as well as guide customers on the best magnet material and application for the devices they require.

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MAGNASLOT – T

MagnaSlot -An Electro Permanent Magnetic Chuck for holding work pieces magnetically and/or mechanically.



MangaSlot is an invention necessitated by the growing demand for versatility in the machine tool industry. Historically we have moved on from machine tools designed for a specific purpose viz. SPM, to machines tools which are universal in nature.

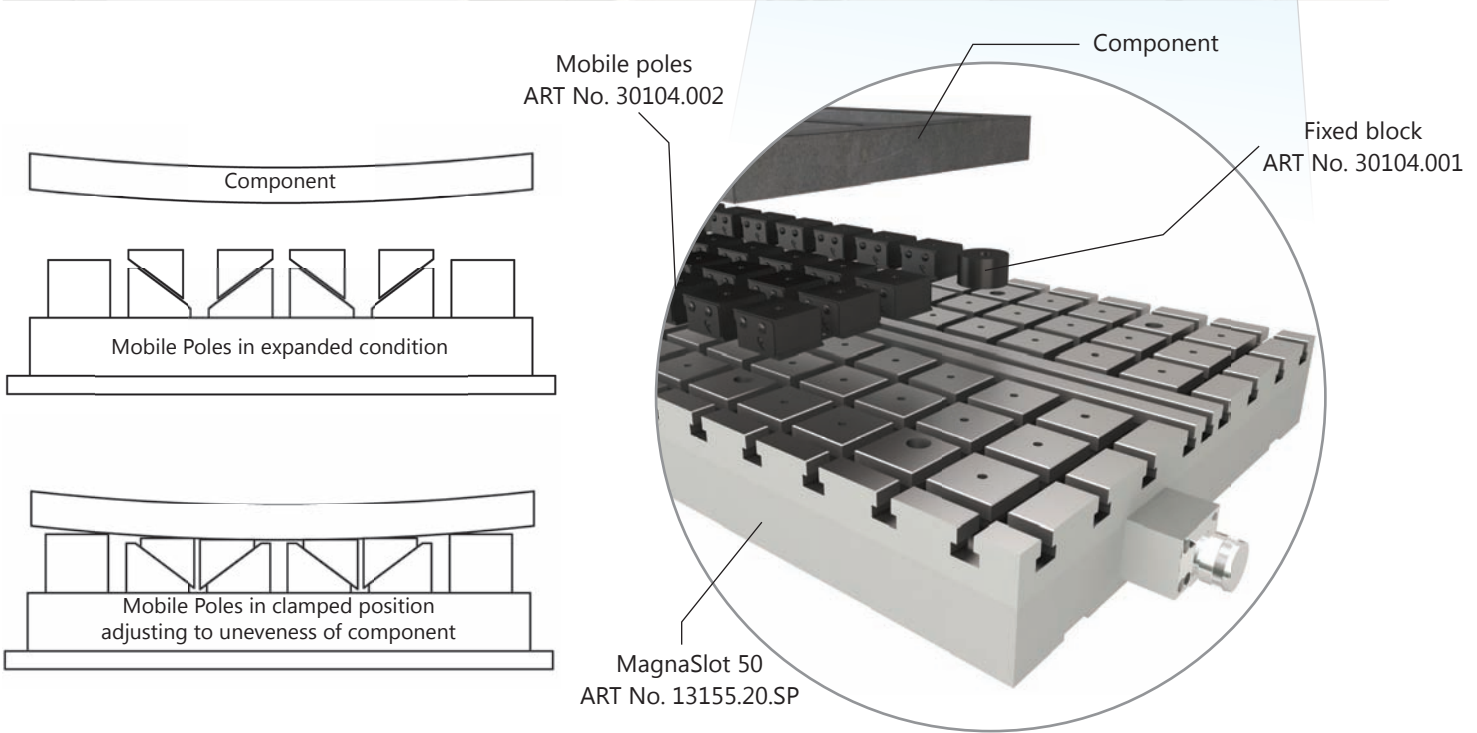
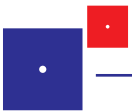
Development of magnetic beds has also moved on from permanent magnetic beds to electro magnetic beds and then to the EPM - Electro Permanent magnetic beds easing the comfort for instantaneous clamping independent of remaining ON with electric power. But the journey does not end here.

The inherent drawback of a magnetic bed comes to fore when the customer wants to clamp a non-magnetic material. The solution is to remove the magnetic bed and use other forms of clamping devices to the machine bed or clamp the secondary clamping device on to the magnetic bed.

Removing the magnetic bed frequently from the machine is not always easy and may lead to damage to the original machine bed.

Another drawback of existing magnetic bed is that the top surface is always made up of two different materials, either steel and aluminum/brass/stainless steel or epoxy. The dissimilar materials used at top surface leads to uneven thermal expansion during machining, creating inaccuracy in the clamping face. Secondly, if there is any crack in the non-magnetic materials, seepage of external liquids takes place, damaging the magnet.

To overcome such problems in the traditional magnetic beds and with an eye on versatility we present – **MangaSlot - Monolithic total steel working surface.**



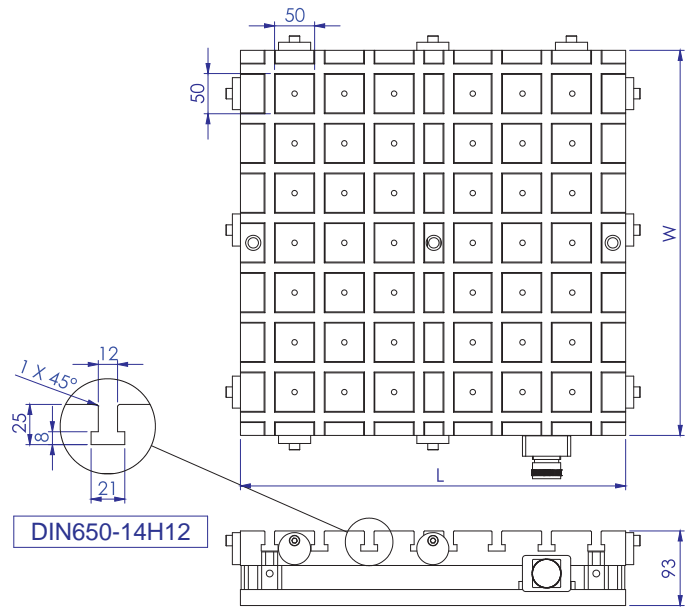
The machine is a BMV 60, with two pallets. Both the pallets are mounted with our MagnaSlot 50T beds. There is no cast iron bed in the bottom there by allowing us to get better utilisation of the machine without over loading the machine bed. Fixtures to clamp steel jobs can now be clamped directly on the bed without any need of an extra magnetic bed. Components for which mechanical clamps are needed are also clamped with the T slots of the Magnaslot.

Solution details:

SI No.	ART No.	Description	Qty
1	13155.20.SP	MagnaSlot 50T, 480x990	1
2	30104.001	Fixed pole Dia 50x32	3
3	30104.002	Mobile pole 47x47x27-32	29
4	93101.01	Controller for the magnets above	1

MangaSlot-T

This product now has a lot of variations available. We have tables with 75mm square pole and 50mm square pole. As a standard we make these Magnetic Machine beds with DIN 650-14H12 T-slot. However other T-slot standards can be manufactured. The table below just gives a basic idea of the sizes which are our standard available. However we have done several special solutions with the biggest size being 1000x2000mm single Magnetic Machine bed. The next level of development in this product range is our futuristic concept of Safeflux, where-in we sense the real time magnetic clamping force and give feedback to the machine to warn about disturbance in clamping.



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available as per customer requirement
- Standard hieght of all MaganSlot-T Chucks 93 mm

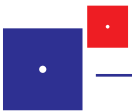
MAGNASLOT 75 T

ART No.	W	L	Poles
13130.01	250	425	8
13130.02		601	12
13130.03		815	16
13130.04		1029	20
13130.05	327	425	12
13130.06		601	18
13130.07		815	24
13130.08		1029	30
13130.09	415	425	16
13130.10		601	24
13130.11		815	32
13130.12		1029	40
13130.13	503	425	20
13130.14		601	30
13130.15		815	40
13130.16		1029	50
13130.17	591	601	36
13130.18		815	48
13130.19		1029	60
13130.22		800	800
13130.25	1000	1000	100

MAGNASLOT 50 T

ART No.	W	L	Poles
13155.01	240	430	18
13155.02		590	24
13155.03		750	30
13155.05	300	990	42
13155.25		300	16
13155.06		430	24
13155.07		590	32
13155.08	420	750	40
13155.11		430	36
13155.12		590	48
13155.13		750	60
13155.15	480	990	84
13155.16		430	42
13155.17		590	56
13155.18		750	70
13155.20	600	990	98
13155.21		590	72
13155.22		750	90
13155.24		990	126
13155.26	800	750	120
13155.69	1000	1000	196

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.



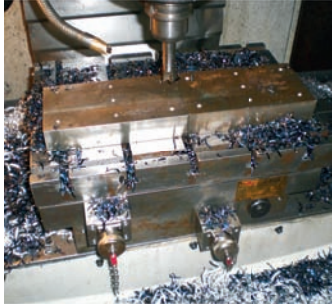
Comparison between available **EPM Chuck & MagnaSlot**

Clamping of Ferrous Job

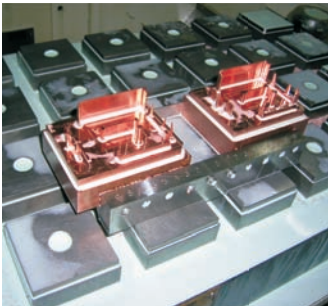


Can be clamped.

Can be clamped.



Clamping of NonFerrous Job



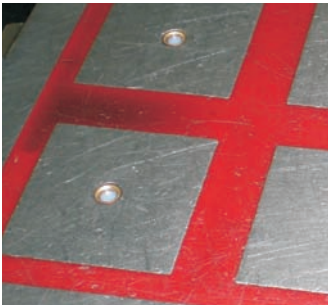
Cannot be clamped directly. To clamp:

- Remove the chuck and clamp job on the T-Slots of machine bed.
- Load additional clamping fixtures or vices.

Can be clamped using T-Slot directly.

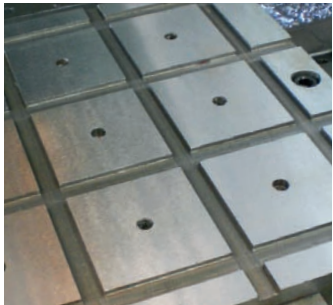


Accuracy of working face

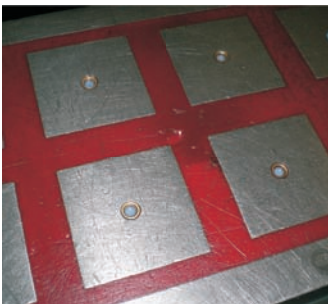


Due to heavy machining there is unequal heating of steel and epoxy resulting in inaccuracies and damage to surface.

As the working face is made of single monolithic block of steel, inaccuracies due to unequal heating is reduced and there is no damage to the surface.

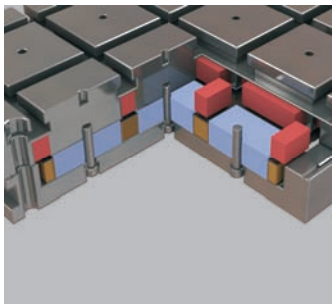


Coil Burn-out



When different materials are used in the top face, due to heating and damage there is a chance of seepage of coolant/ liquid into the chuck, which results in burning of coil. Repair of coil is difficult, as no repair can begin without first destroying the chuck.

Coolant seepage is eliminated as the working face is of a single block of steel, In the unlikely event of coil burning, it can be easily repaired, after removing the top plate, without destruction of the chuck itself.



MAGNASLOT 32

32mm square pole rectangular magnetic chuck



Features

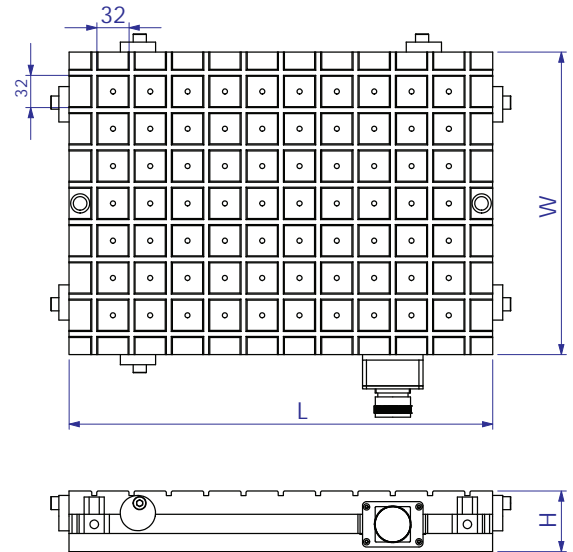
- Patented full steel Top surface.
- Low height of magnetic flux.
- Uniform clamping power throughout the bed.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- Modular, Rigid and Robust construction.
- Unobstructed movement of tools during machining as all five faces of the job can be machined in the same setting.
- Drastically reduces the setup time and machining of the work pieces.
- Total magnetic surface used for clamping giving better machining accuracy as reducing chattering.
- 100% Leak Proof.

Application

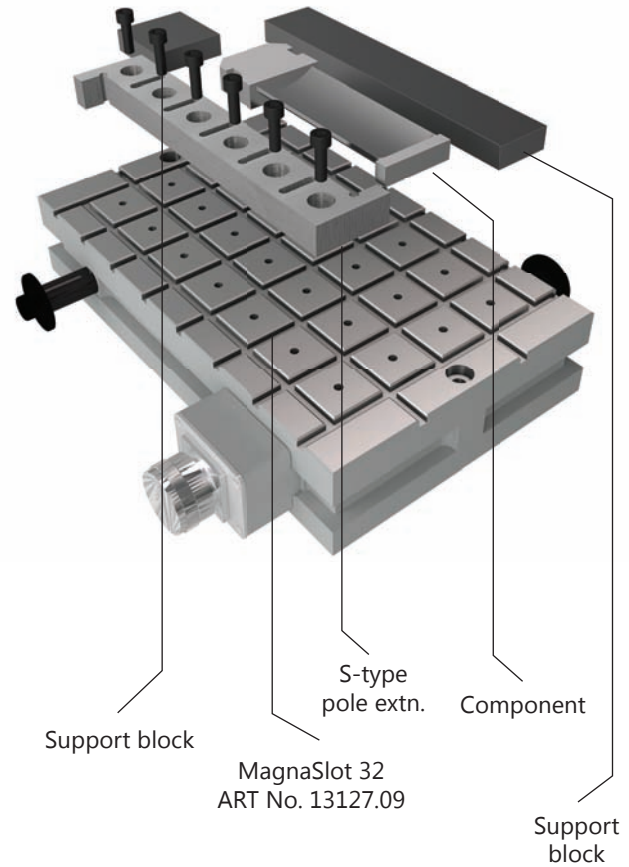
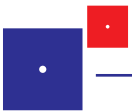
- Most suitable for milling operations on small and thin components.
- A minimum of 9 alternate poles contact is necessary for optimum clamping.
- Minimum thickness of job - 6 mm.
- Easily integrated with Pallet changing and FMS Systems.
- AUTOMATIC SHIMMING: Mobile pole extensions allow clamping and uniformly support work pieces even with uneven surfaces, achieving high accuracies of planarity.
- Clamping force ≥ 140 kg/pole.

ART No.	W	L	Poles	H	Controller
13127.01	150	150	9	60	93101.01
13127.02		300	21		
13127.03		410	30		
13127.04		520	36		
13127.05		620	42		
13127.08	195	195	16		
13127.09		300	28		
13127.10		410	40		
13127.11		520	48		
13127.12		620	56		
13127.13	260	260	36		
13127.14		300	42		
13127.15		410	60		
13127.16		520	72		
13127.17		620	84		
13127.18	300	300	49		
13127.19		410	70		
13127.20		520	84		
13127.21		620	98		
13127.22	410	410	100		
13127.23		520	120		
13127.24		620	140		

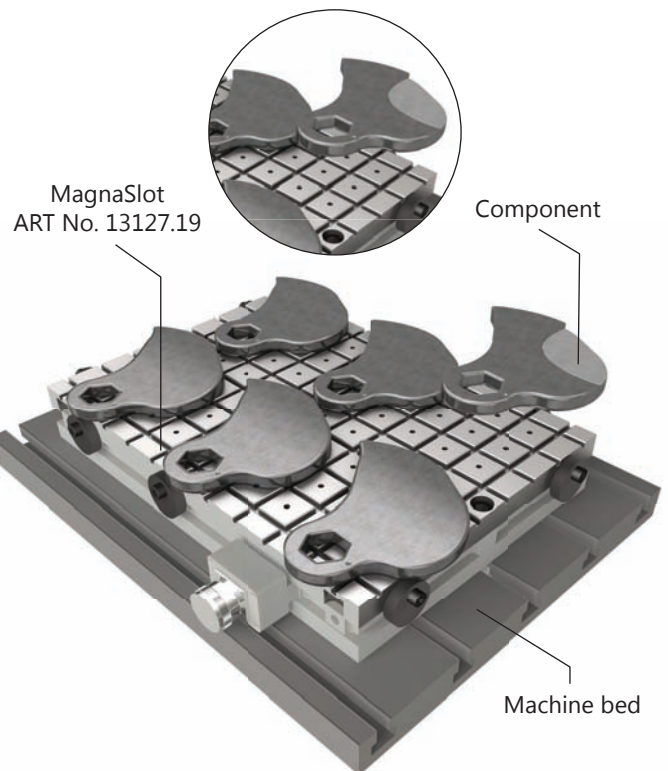
- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



Component	Turbine blade
Input condition	Pre-machined
Material	Magnetic stainless steel
Operation	Face milling
Customer expectation	Machining both the top and bottom face of the component
Trail parameters	<ul style="list-style-type: none"> • Dia 80 face-mill cutter • No. of Cutting edged: 6 • Depth of cut: 1mm • Width of cut: 60mm • Feed: 300mm/min • Rate of material removal: 18 cm³/min
Solution details	6 pole, S-type fixture for the magnet to induce magnetic power from the side



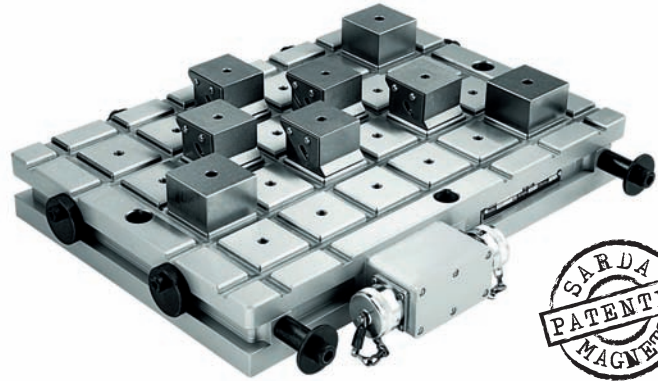
Component	Machine part
Input condition	Pre-machined
Material	Mild steel
Operation	Face milling & edge milling
Customer expectation	The face flatness should be within 0.1mm
Trail parameters	<ul style="list-style-type: none"> • Dia 63 face-mill cutter • No. of cutting edged: 4 • Depth of cut: 1mm • Width of cut: 40mm • Feed: 800mm/min • Rate of material removal: 48 cm³/min
Solution details	MagnaSlot 32mm square pole chuck was used with dowel pins to locate the component

MAGNASLOT 50

50mm square pole rectangular magnetic chuck

Features

- Patented full steel Top surface.
- Low height of magnetic flux.
- High & uniform clamping power throughout the bed.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- Modular, Rigid and Robust construction.
- Unobstructed movement of tools during machining as all five faces of the job can be machined in the same setting.
- Drastically reduces the setup time and machining of the work pieces.
- Total magnetic surface used for clamping giving better machining accuracy as reducing chattering.
- 100% Leak Proof.

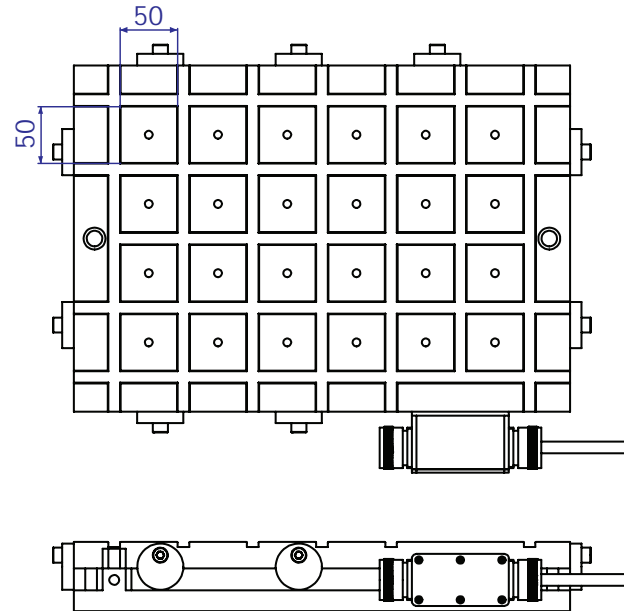


Application

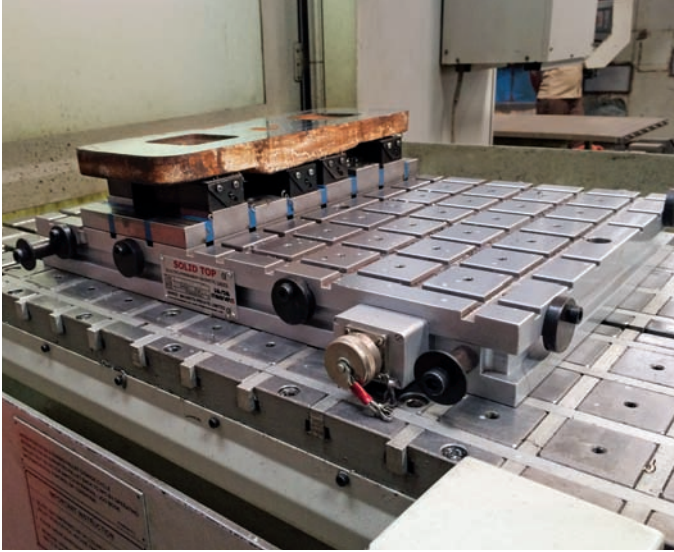
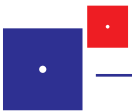
- Most suitable for milling operations on small and thin components.
- A minimum of 8 alternate poles contact is necessary for optimum clamping.
- Minimum thickness of job - 10 mm.
- Easily integrated with Pallet changing and FMS Systems.
- AUTOMATIC SHIMMING: Mobile pole extensions allow clamping and uniformly support work pieces even with uneven surfaces, achieving high accuracies of planarity.
- Clamping force ≥ 350 kg/pole.

ART No.	W	L	No Of Poles	H	Controller	
13117.01	240	430	18	60	93101.01	
13117.02		590	24			
13117.03		750	30			
13117.04		870	36			
13117.05		990	42			
13117.06	300	430	24			
13117.07		590	32			
13117.08		750	40			
13117.09		870	48			
13117.10	990	56	93101.02			
13117.11	420	430				36
13117.12		590				48
13117.13		750				60
13117.14		870	72			
13117.15	990	84	93101.01			
13117.16	480	430				42
13117.17		590				56
13117.18		750				70
13117.19		870	84			
13117.20	990	98	93101.02			
13117.21	600	590			72	
13117.22		750			90	
13117.23		870			108	
13117.24		990	126			

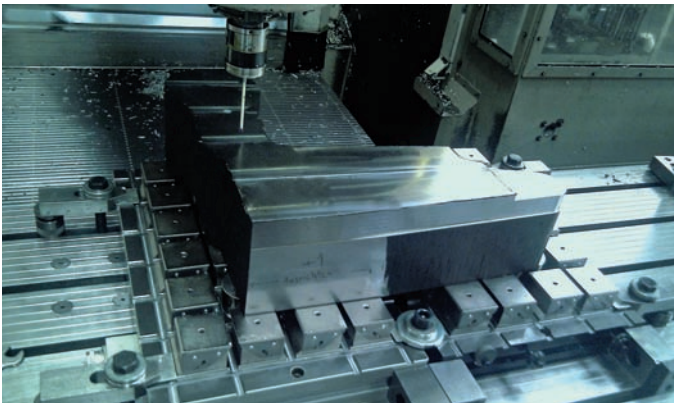
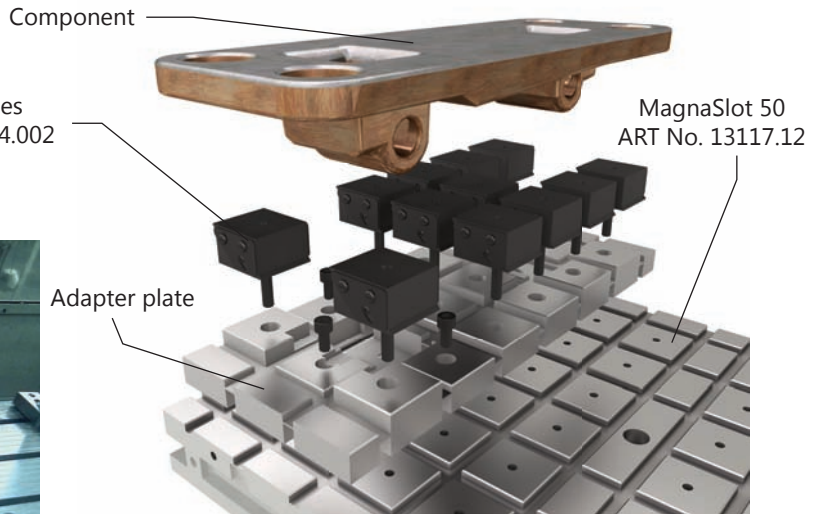
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- Others sizes on request.
- All dimensions are in mm.



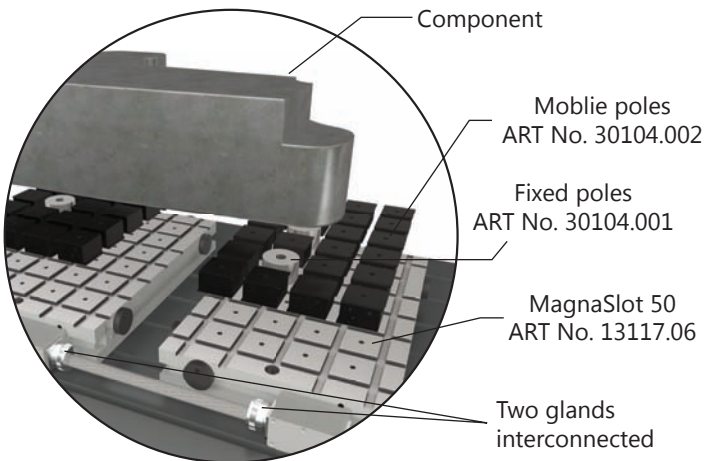
- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



Component	KVMRT PLATES P54, 102 (railway component)
Input condition	As cast
Material	CAST STEEL, HRC30-33
Operations	Face milling
Customer Expectation	Machining both the top and bottom face of the component
Trail parameter	<ul style="list-style-type: none"> • Dia 100 face-mill cutter • No. of cutting edge: 5 • Depth of cut: 2mm • Width of cut: 75mm • Feed: 800mm/min • Rate of material removal: 108 cm³/mm
Solution details	The solution consisted of an adapter plate mounted with mobile poles to adjust to the uneven surface of the casting. There were 3 fixed poles as reference points on the adapter plate.



Component	Mold insert
Input condition	Plate
Material	P20, tool steel
Operations	Machining of mold on all 5 faces
Customer expectation	Machining both the top and bottom face of the component.
Trail parameter	<ul style="list-style-type: none"> • Dia 100 face-mill cutter • No. of Cutting edged: 5 • Depth of cut: 2mm • Width of cut: 75mm • Feed: 800mm/min • Rate of Material Removal: 107.5 cm³/min
Solution details	The solution consisted of mobile poles to adjust to the uneven surface of the plate with 3 fixed poles as reference. Two chucks were interconnected to each other.

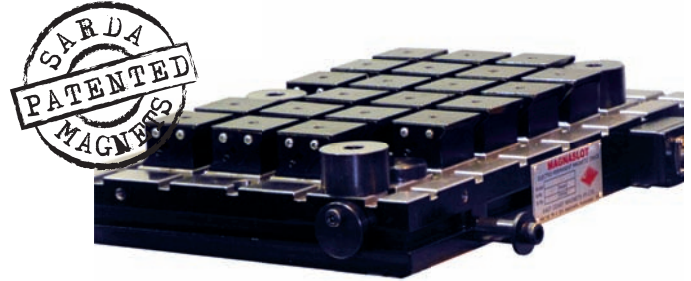


MAGNASLOT 75

75mm square pole rectangular magnetic chuck

Features

- Patented full steel Top surface.
- High & uniform clamping power throughout the bed.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- Modular, Rigid and Robust construction.
- Unobstructed movement of tools during machining as all five faces of the job can be machined in the same setting.
- Drastically reduces the setup time and machining of the work pieces.
- Total magnetic surface used for clamping giving better machining accuracy as reducing chattering.
- 100% Leak Proof.

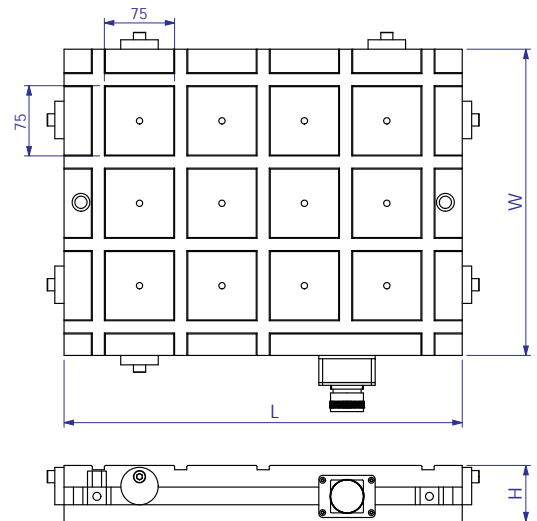


Application

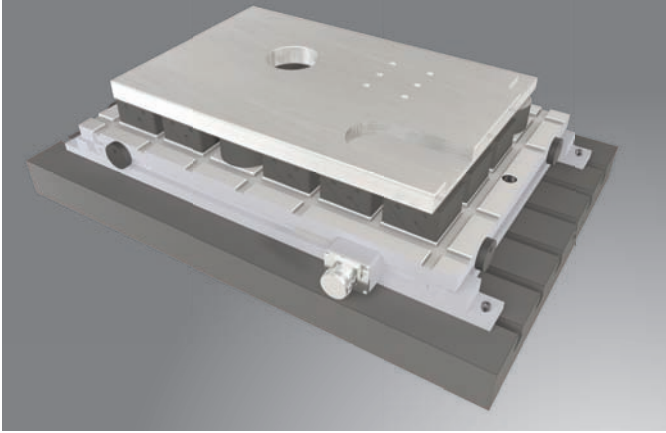
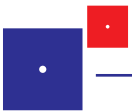
- Most suitable for milling operations on thick and rough components.
- A minimum of 4 alternate poles contact is necessary for optimum clamping.
- Minimum thickness of job - 15 mm.
- Easily integrated with Pallet changing and FMS Systems.
- AUTOMATIC SHIMMING: Mobile pole extensions allow clamping and uniformly support work pieces even with uneven surfaces, achieving high accuracies of planarity.
- Clamping force ≥ 790 kg/pole.

ART No.	W	L	Poles	H	Controller
13131.01	239	425	8	60	93101.01
13131.02		601	12		
13131.03		815	16		
13131.04		1029	20		
13131.05	327	425	16		
13131.06		601	18		
13131.07		815	24		
13131.08		1029	30		
13131.09	415	425	16		
13131.10		601	24		
13131.11		815	32		
13131.12		941	36		
13131.13		1029	40		
13131.14	503	425	20		
13131.15		601	30		
13131.16		815	40		
13131.17		941	45		
13131.18	591	1029	50		
13131.19		601	36		93101.01
13131.20		815	48		93101.02
13131.21		941	54		93102.03
13131.22		1029	60		

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- Others sizes on request.
- All dimensions are in mm.



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.

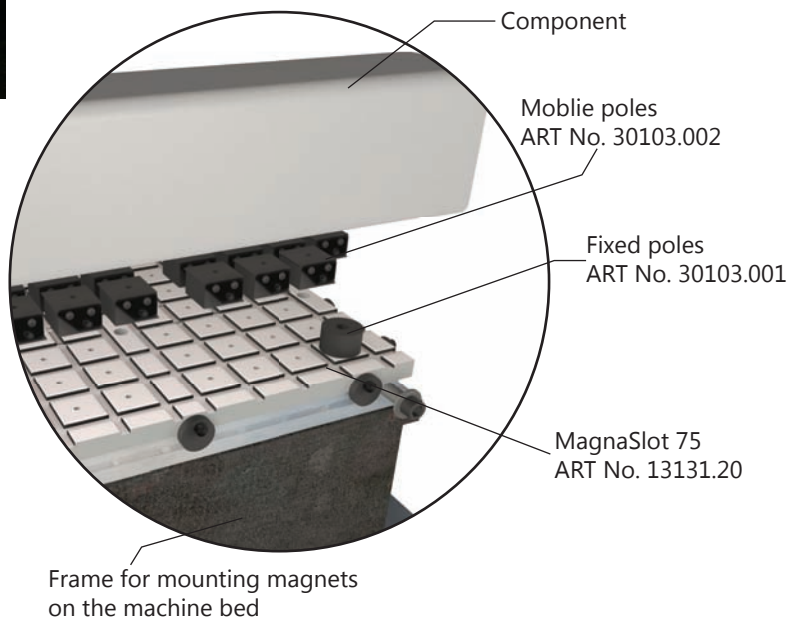
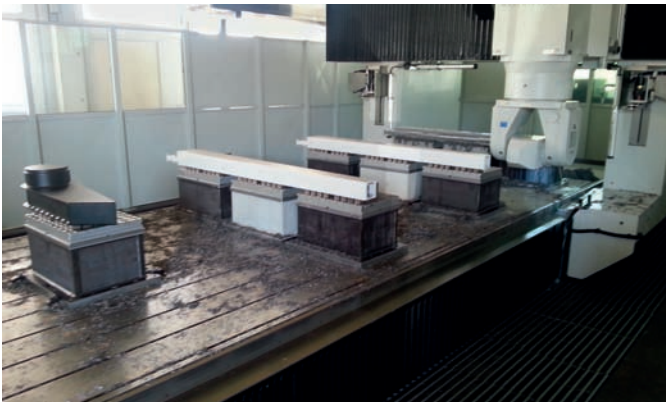
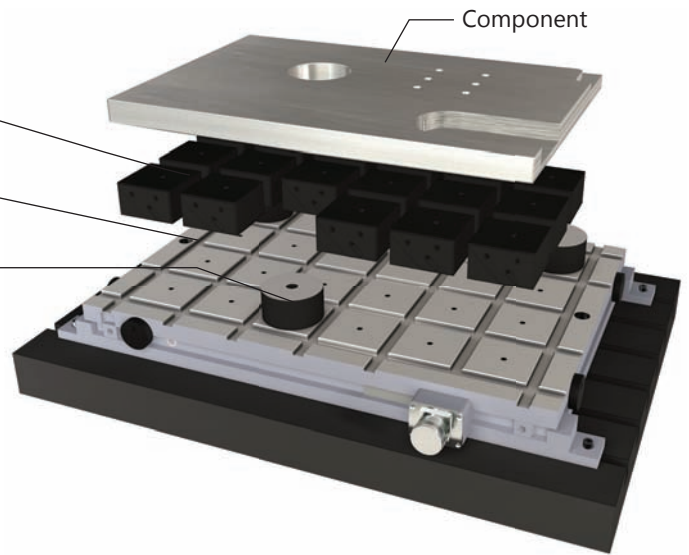


Component	Wall Plate
Input condition	Un-machined Plate
Material	Mild steel
Operation	Machining of both side, drilling and slotting
Customer Expectation	All 5 side machining
Trail details	The job was kept on mobile poles and fixed poles, then machined on all 5 faces with bores and edge milling.
Solution details	MagnaSlot 75 along with fixed and mobile poles were used.

Mobile poles
ART No. 30103.002

MagnaSlot 75
ART No. 13131.10

Fixed poles
ART No. 30103.001



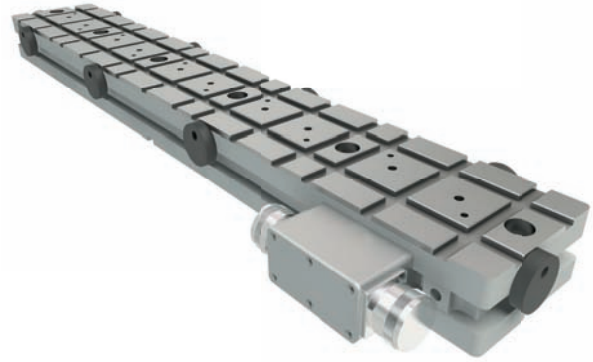
Component	Frame tube
Input condition	Fabricated
Material	Steel
Operation	Drilling and edge milling
Customer expectation	Cycle time
Trail details	The jobs were clamped in sets of 3 MagnaSlot 75 chucks with each chuck having the possibility of being switched on and off separately. Holes upto dia 50 mm were done.
Solution details	MagnaSlot 75 mm square pole chuck was used along with mobile & fixed poles

UNIROW

Single Row EPM chuck with Square poles sizes 50 & 75 mm

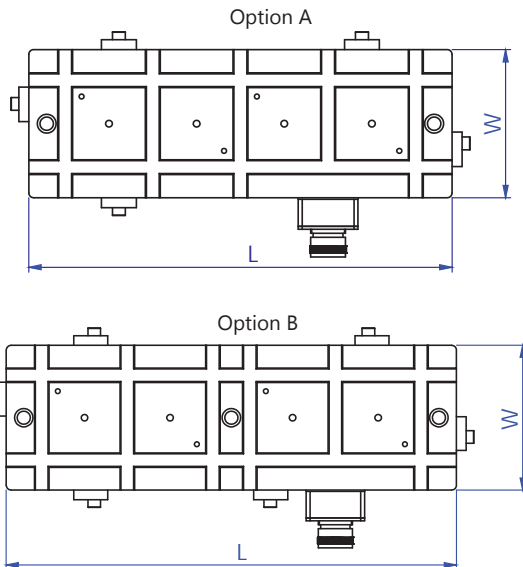
Features

- Patented designed product.
- Single Row of poles of size 50x50 mm or 75x75 mm.
- Modular in design each with 2 connectors.
- Available in 12 standard configurations. Other sizes can be designed as per application demand.
- Magnets can be Daisy Chain connected so that only one cable needs to be connected to the controller and the magnets are connected amongst themselves.
- Height of all magnets is 60 mm.
- Clamping force for UNIROW 50 \geq 350 kg/ pole.
- Clamping force for UNIROW 75 \geq 790 kg/ pole.



Applications

- For machining applications of job of all sizes and shapes.
- Most suitable for jobs with a number of holes and very less clamping area.
- Pole extensions raise the work piece above the chuck to provide clearance for the tools.
- Dowel holes can be made on working surface for location of work piece.



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.

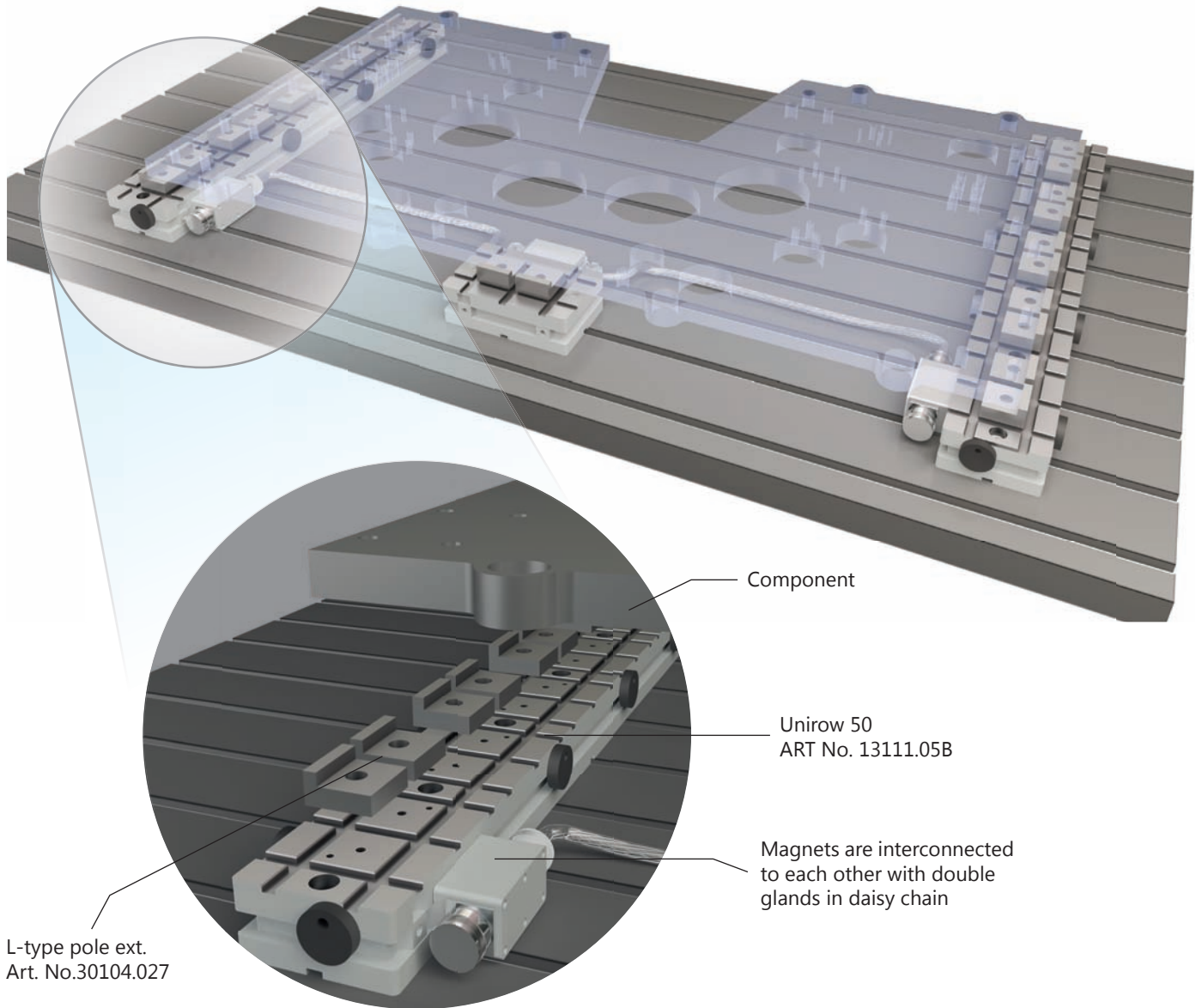
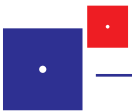
UNIROW 50

ART No.	W	L	Poles
13111.01A	120	190	2
13111.02A	120	310	4
13111.02B	120	345	4
13111.03A	120	465	6
13111.03B	120	500	6
13111.04A	120	585	8
13111.04B	120	655	8
13111.05A	120	705	10
13111.05B	120	810	10

UNIROW 75

ART No.	W	L	Poles
13168.01A	150	287	2
13168.02A	150	425	4
13168.02B	150	463	4
13168.03A	150	639	6
13168.03B	150	677	6
13168.04A	150	815	8
13168.04B	150	891	8
13168.05A	150	991	10
13168.05B	150	1105	10

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- Others sizes on request.
- All dimensions are in mm.



Wall plate of a printing press. The job has a lot of holes making it very difficult for magnets to be put in the bottom of the job. The magnets are put on the side with L-type and the job is clamped. The magnets were interconnected to each other in daisy chain so that only one cable is connected to the controller.

Solution details:

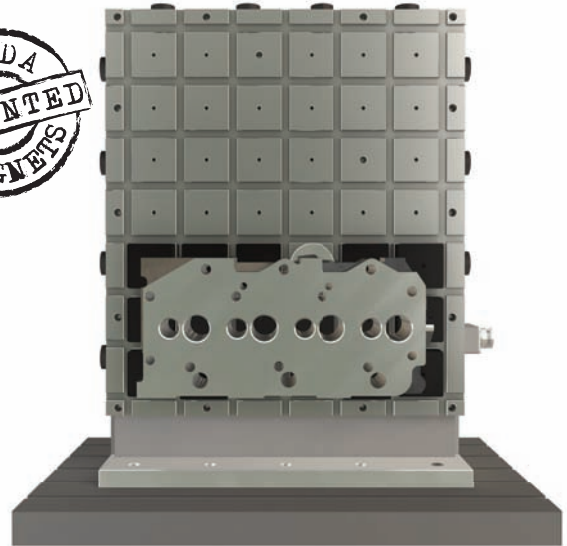
SI No.	ART No.	Description	Qty
1	13111.05	UNIROW 50, with 10 poles	2
2	13111.01	UNIROW 50, with 2 poles	1
3	30104.027	2 pole L-type pole extension	11
4	93102.01	Controller to operate all magnets together	1

EPCUBE

50/ 75mm square pole Tombstone

Features

- Patented full steel Top surface.
- High induction of magnetic flux.
- High & uniform clamping power throughout the bed.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- 2 or 4 or multiple magnetic face.
- Unobstructed movement of tools during machining as all five faces of the job can be machined in the same setting.
- Drastically reduces the setup time and machining of the work pieces.
- Total magnetic surface used for clamping giving better machining accuracy as reducing chattering.
- 100% Leak Proof.
- Clamping force for EPCUBE 50 \geq 350 kg/ pole.
- Clamping force for EPCUBE 75 \geq 790 kg/ pole.



Application

- Most suitable for milling operations on horizontal machining center.
- A minimum of 4/8 alternate poles contact is necessary for optimum clamping.
- Minimum thickness of job : 10-15 mm.
- Easily integrated with Pallet changing and FMS Systems.
- AUTOMATIC SHIMMING: Mobile pole extensions allow clamping and uniformly support work pieces even with uneven surfaces, achieving high accuracies of planarity.

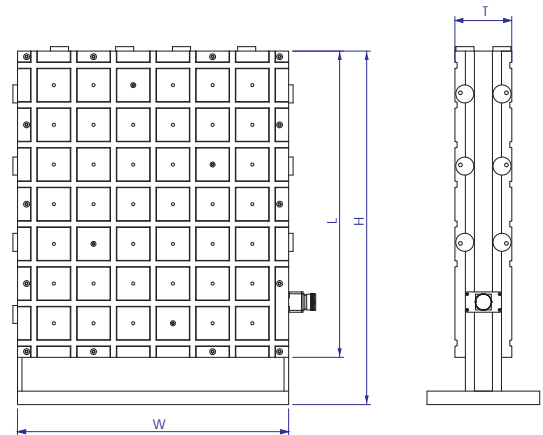
EPCUBE 75

ART No.	W	L	H	T	Poles On Each Face	Controller
13107.01	327	337	442	125	9	93101.09
13107.02	415	425	530		16	
13107.03		601	706		24	
13107.04	591	815	920		48	93101.10
13107.05	601	679	784		42	93101.09
13107.06	767	590	695		64	93101.10
13107.07		1029	1134		80	

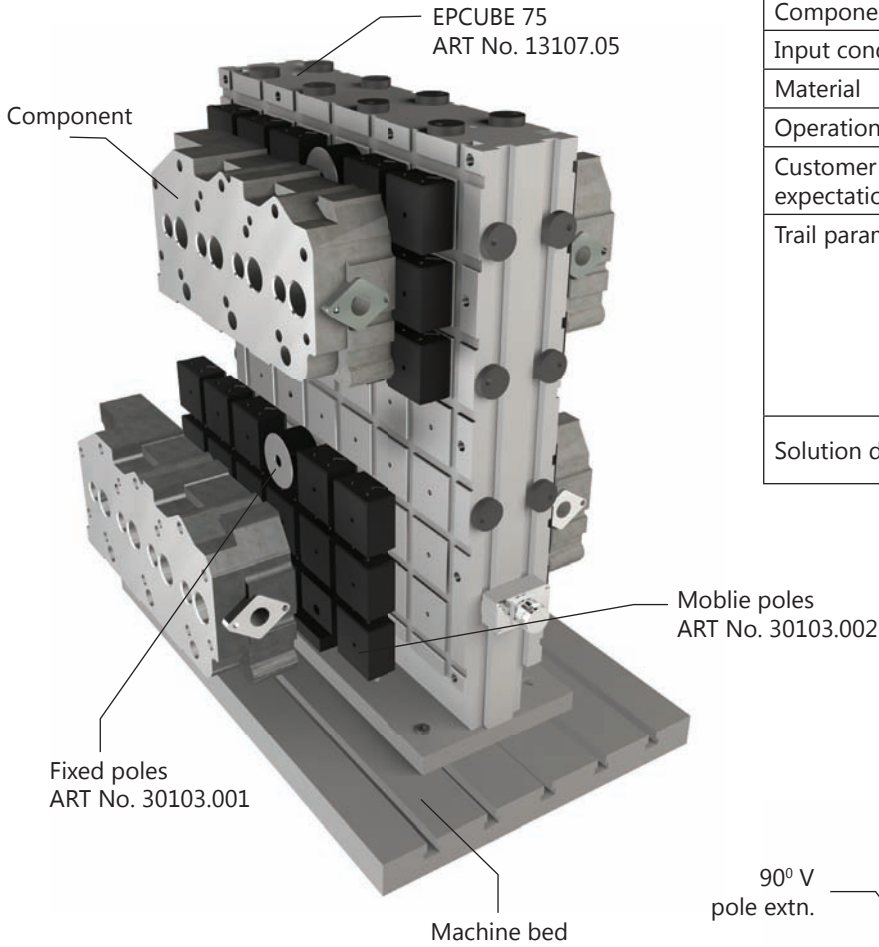
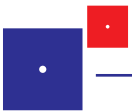
EPCUBE 50

ART No.	W	L	H	T	Poles On Each Face	Controller
13116.01	300	430	535	125	24	93101.09
13116.04	420	590	695		48	
13116.06	480	590	695		56	
13116.07	590	480	585		56	
13116.08		600	705		72	
13116.10	600	750	855		90	93101.10
13116.11		990	1095	126		

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.

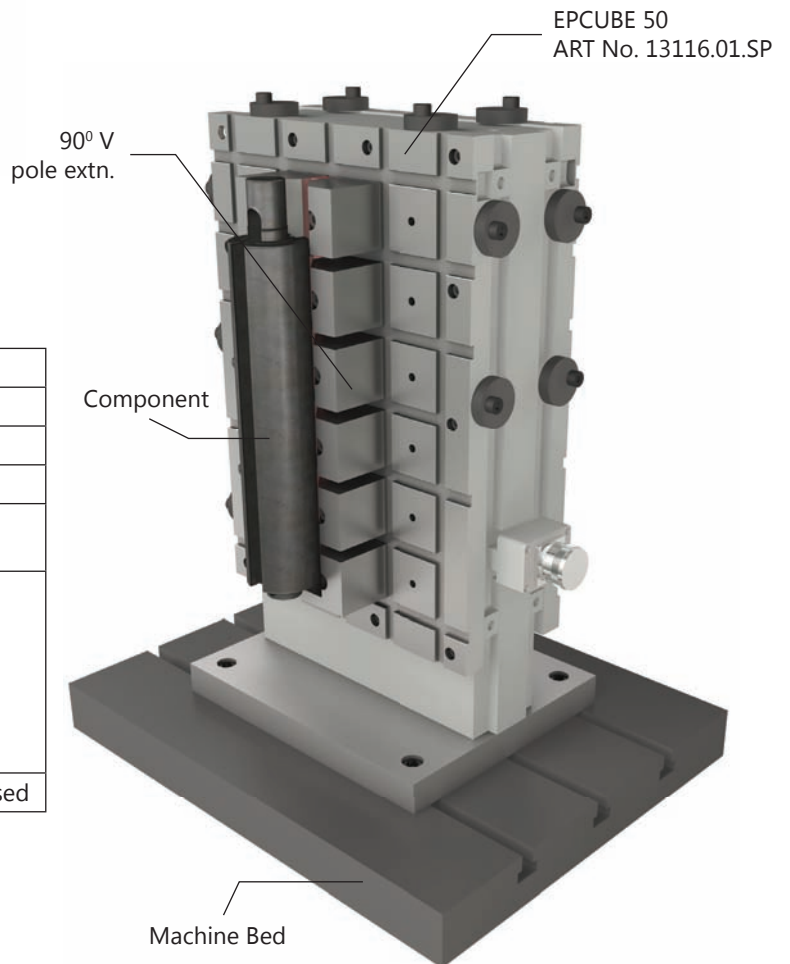


- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



Component	4 Cylinder engine block
Input condition	Pre-machined
Material	Cast iron
Operations	Drilling and face milling
Customer expectation	Flatness of the face to improve
Trail parameter	<ul style="list-style-type: none"> • Dia 200 face-mill cutter • No. of cutting edged: 12 • Depth of cut: 4mm • Width of cut: 160mm • Feed: 800mm/min • Rate of material removal: 305 cm³/min
Solution details	EPCUBE 75 with mobile and fixed poles were used to achieve the flatness of the job.

Component	Round Shaft
Input Condition	Turned
Material	Mild Steel
Operations	Through Slot
Customer Expectation	Cycle time
Trail Parameter	<ul style="list-style-type: none"> • Dia 16 face-mill cutter • No. of Cutting edged: 4 • Depth of cut: 16mm • Width of cut: 16mm • Feed: 400mm/min • Rate of material removal: 100 cm³/min
Fixture Details	EPCUBE 50 with V pole extensions was used



EPMILL

Heavy Duty Standard Pole Rectangular Magnetic Chuck

Features

- Energy Saving: Electricity is required only for switching ON/ OFF.
- High Clamping force is supplied by the powerful Rare-earth magnets.
- Uniformity of clamping over the entire contact surface.
- Drastically reduces the setup time of work pieces.
- Power from entire pole is induced to components for maximum magnetization.
- All Metal surface provides stable working area for heavy duty milling.
- Clamping force up-to 16kg/cm² of contact area.

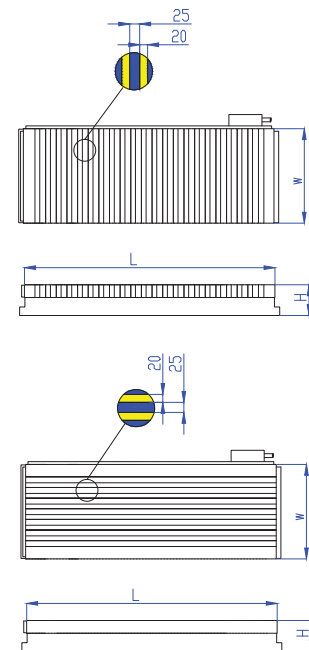


Application

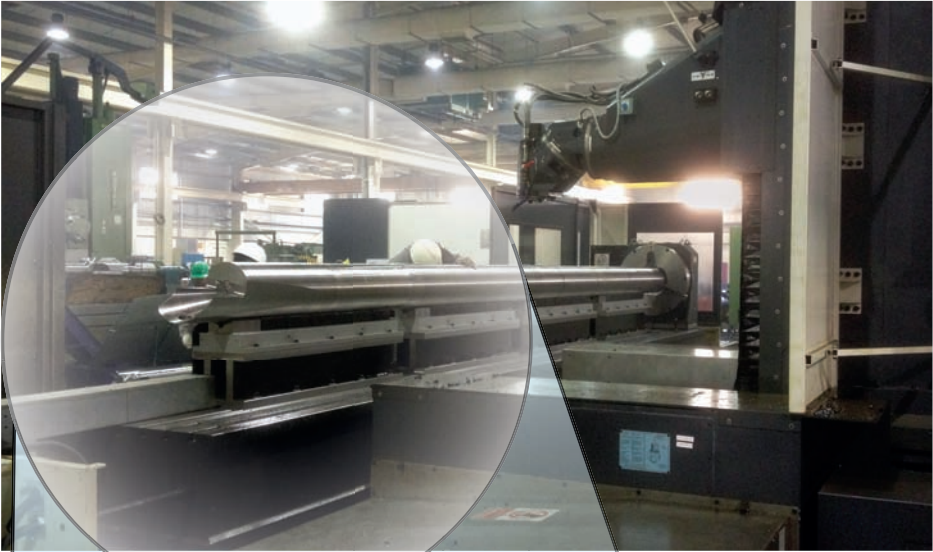
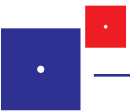
- For milling applications of medium and large sizes of jobs.
- Suitable for milling operations of plates/casting/flats/rods/strips having flat smooth surface.
- Minimum thickness of job - 15 mm.
- Pole extensions raise the work piece above the chuck to provide clearance for the tools.
- Dowel holes can be made for location of work piece.

ART No.	W	L	H	Pole Pitch	Controller
13104.01	260	450	75	45 (20+25)	93102.01
13104.02		500			
13104.03		525			
13104.04		630			
13104.05		700			
13104.06		800			
13104.07		1000			
13104.08	310	450			
13104.09		500			
13104.10		525			
13104.11		630			
13104.12		700			
13104.13		810			
13104.14		1000			
13104.15	400	630			
13104.16		1000			
13104.17		1200			
13104.18		1500			
13104.19	410	810			
13104.20	500	2000			

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.

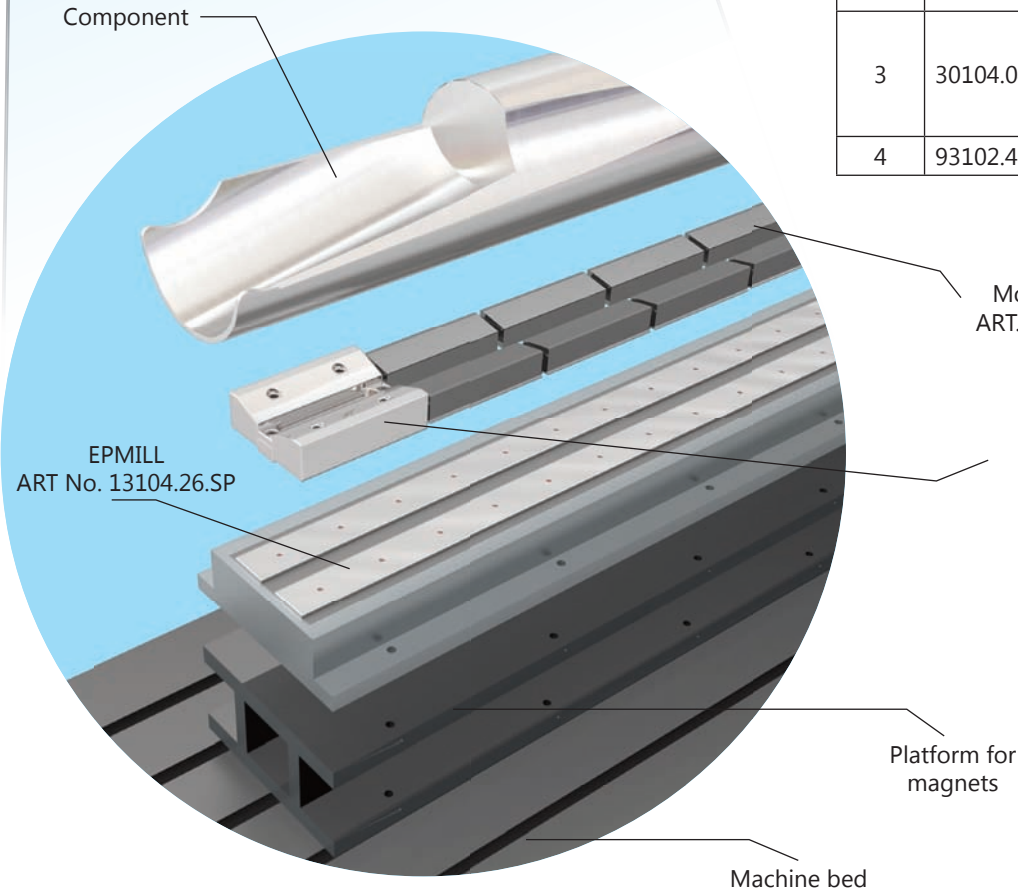


Applications

Whipstock machining, the raw material is a turned rod of Dia 220 mm. One end of the job is held by a Roating Table and the rod is placed on the magnet with specially designed pole extensions. The job is cut on one face then rotated while resting on the magnet and then again cut on the second face. Cycle time for this job has been reduced by more than 100%. Earlier the method required three setups and fixture change but now it is done with one setup.

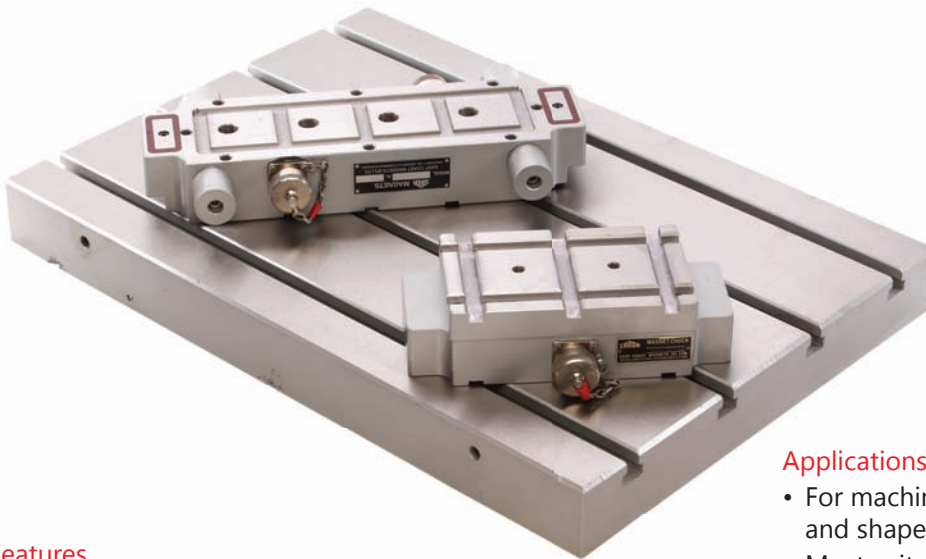
Solution details:

Sl.No	ART. No.	Description	Qty
1	13104.28.SP	EPMILL 230x1425x90	4
2	30104.040	Fixed pole extension with hardened top surface	3
3	30104.041	Special mobile poles with hardened top surface	40
4	93102.40	Special Controller	1



DOUBLEMAG

DOUBLEMAG EPM CHUCKS OF POLES SIZE 50 and 75 mm



Features

- Patented design with full steel working face.
- Unique self clamping magnets.
- Ergonomic design and light weight magnet modules.
- Magnets can be Daisy Chain connected so that only one cable needs to be connected to the controller and the magnets are connected amongst themselves.
- Magnets clamp to the machine bed without the need of any external clamping simultaneously clamping the job.
- Magnets can easily be placed where required.
- Any module of the magnet can be used to switch ON/ OFF as all the modules are interconnected with detachable connectors. This gives a great deal of flexibility.
- Height of all magnets is 60 mm.
- Clamping force for DoubleMag 50 \geq 300 kg/ pole.
- Clamping force for DoubleMag 75 \geq 675 kg/ pole.

Applications

- For machining applications of job of all sizes and shapes.
- Most suitable for jobs with a number of holes and very less clamping area.
- Pole extensions raise the work piece above the chuck to provide clearance for the tools.
- Dowel holes can be made for location of work piece.
- Can be used in welding/ machining testing and assembly to hold the job.

DOUBLEMAG 50

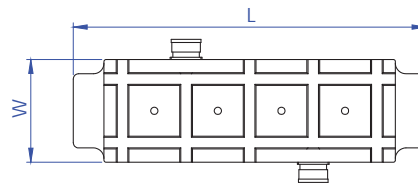
ART No.	L	W	Poles
13114.01A	213	97	2
13114.02A	333	97	4
13114.02B	213	157	4
13114.03A	273	157	6
13114.03B	213	217	6

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- Custom versions of the DoubleMag can also be manufactured.
- All dimensions are in mm.

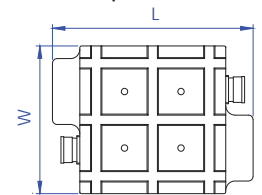
DOUBLEMAG 75

ART No.	L	W	Poles
13115.01A	272	128	2
13115.02A	448	128	4
13115.02B	272	216	4
13115.03A	360	216	6
13115.03B	272	304	6

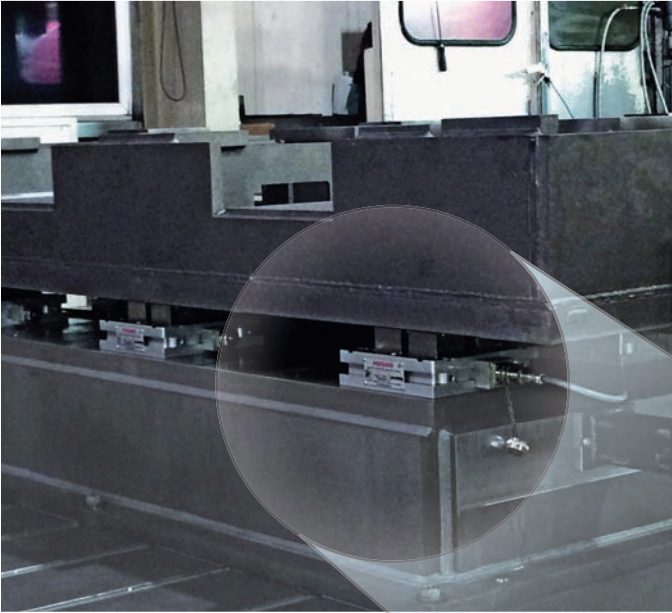
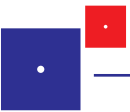
Option A



Option B



- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



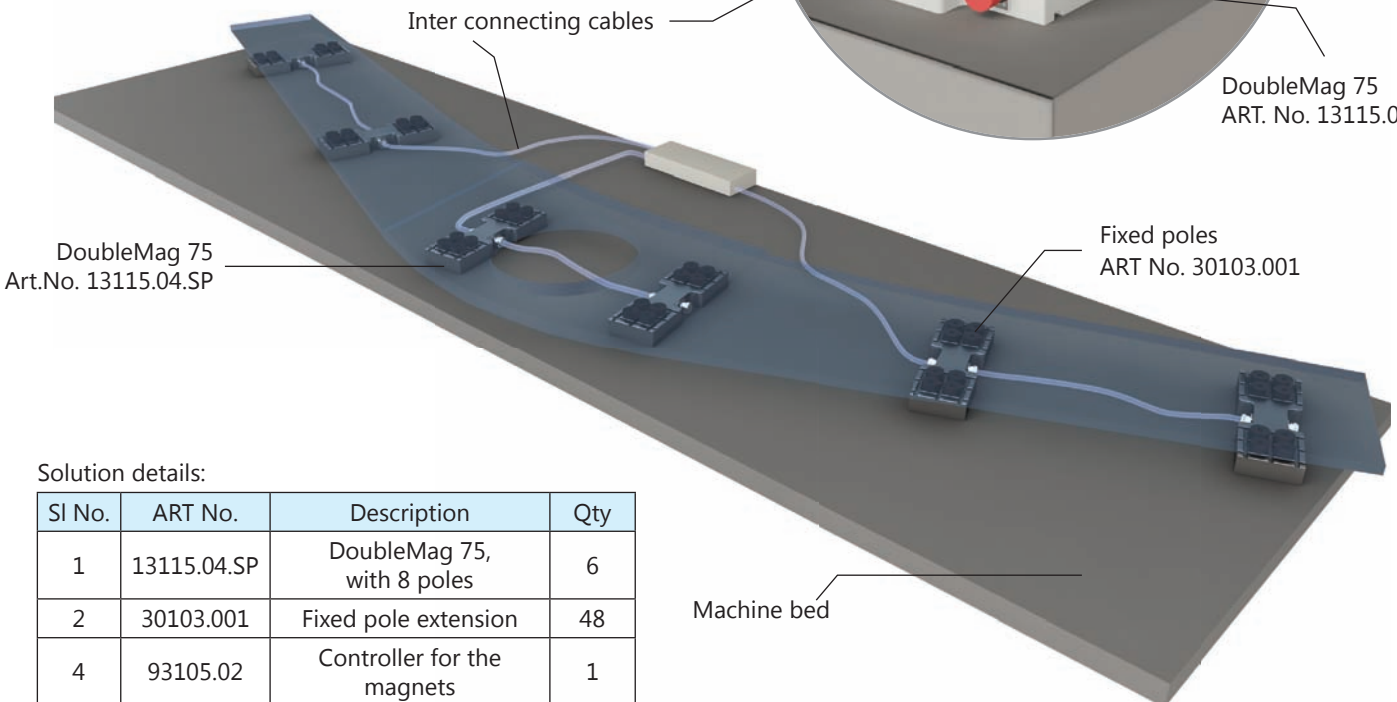
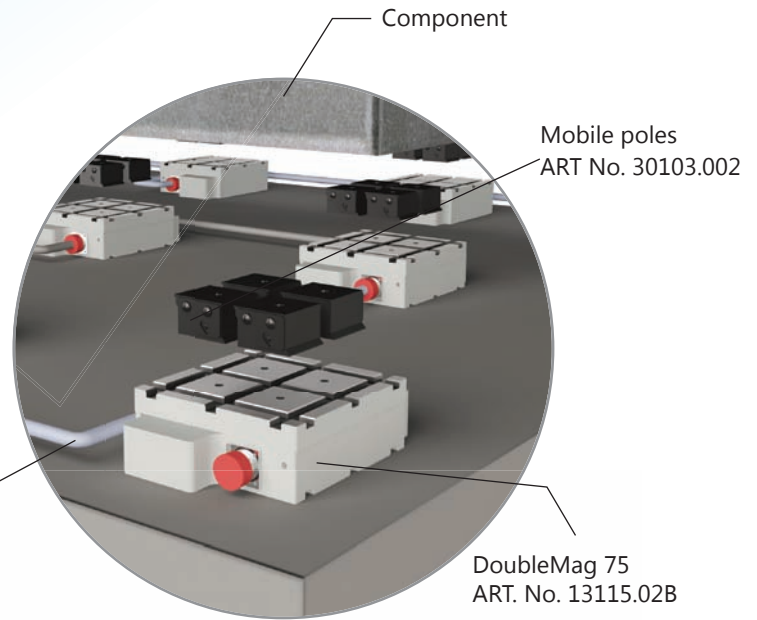
Applications

Component was a machine which needed to be machined with flatness of less than 100 microns. The DoubleMags were put on a Steel plate of thickness 40mm mounted on the machine bed. Then the component was placed on top the magnet. Milling was done and the flatness was achieved.

Solution details:

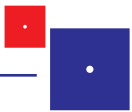
SI No.	ART No.	Description	Qty
1	13115.02B	DoubleMag75, with 4 poles	20
2	30103.001	Fixed Pole Extension	3
2	30103.002	Spring pole extensions	117
4	93105.01	Controller for the magnets	3

Special DoubleMag solution



Solution details:

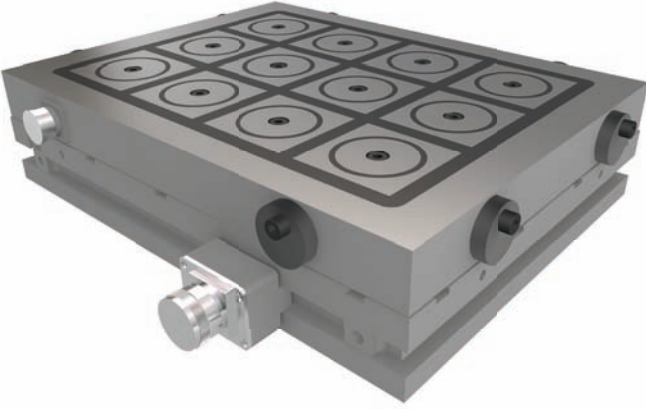
SI No.	ART No.	Description	Qty
1	13115.04.SP	DoubleMag 75, with 8 poles	6
2	30103.001	Fixed pole extension	48
4	93105.02	Controller for the magnets	1



EMEPM

Features

- Electro Magnetic coils for varying magnetic flux height and demagnetization of jobs.
- High and uniform magnetic power, leading to uniform clamping of the job.
- Variable magnetic power.
- Modular, Rigid and Robust construction.
- Can be easily adapted to existing magnetic chucks of pole sizes 70x70 and above.
- 100% Leak Proof.

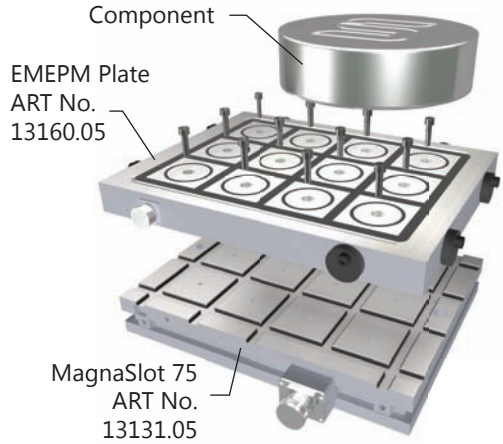
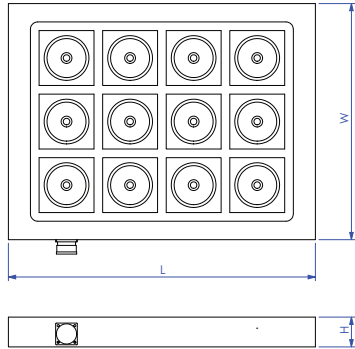


Application

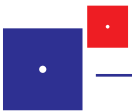
- These EM plates can be used on top of magnetic chucks to reduce and increase magnetic flux height.
- Thinner jobs can be clamped.
- Flux height can be increased to clamp very uneven jobs specially casting.
- Easy release of hardened jobs can be done with these plates.
- Easily adaptable to existing chucks of any size.

ART No.	W	L	Poles	H	Controller	
13160.01	239	425	8	30	93120.01	
13160.02		601	12			
13160.03		815	16			
13160.04		1029	20			
13160.05	327	425	16			
13160.06		601	18			
13160.07		815	24			
13160.08		1029	30			
13160.09	415	425	16			
13160.10		601	24			
13160.11		815	32			
13160.12		941	36			
13160.13	503	1029	40			
13160.14		425	20			
13160.15		601	30			
13160.16		815	40			
13160.17		941	45			
13160.18		1029	50			
13160.19	591	601	36			93120.02
13160.20		815	48			93120.01
13160.21		941	54			93120.03
13160.22		1029	60			

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.



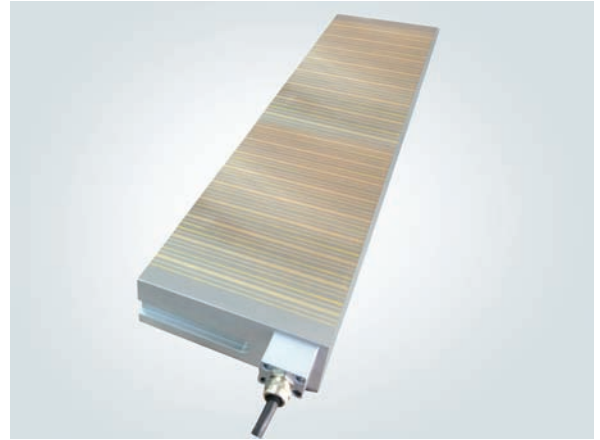
- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



EPFLUX

Features

- Easy release of hardened jobs.
- No electricity required to keep the chuck ON.
- All metal brass and steel laminated top plate provides full active area.
- Variable power makes it possible to adjust the magnetic force.
- Holds all type and sizes of work pieces.
- No heat built up, no deformation providing high precision and accuracy.



Application

- For grinding application of all sizes of jobs.
- These chucks are suitable for all surface grinding machines.
- Easy release of hardened jobs can be achieved.
- Easily adaptable to existing grinding machine.

ART No.	W	L	Pole Pitch	H	Controller
13150.02	150	450	(5+1.5) 6.5	65	93101.01
13150.03	200	500			
13150.04		600			
13150.29	250	500			
13150.05		600			
13150.06		750			
13150.07		1000			
13150.08	1500				
13150.09	400	600			
13150.10		750			
13150.11		900			
13150.12		1000			
13150.14	1500				
13150.15	500	600			
13150.35		800			
13150.43		1000			
13150.58		1500			
13150.42	600	2000			
13150.17		750			
13150.18		1000			
13150.25		1500			
13150.19	700	2000			
13150.27		1000			
13150.53		1500			
13150.62	700	2000			
13150.22		1000			
13150.33		1500			
13150.47	2000				

- Due to continuous upgradation in design there could be change in specification
- Others sizes on request
- All dimensions are in mm

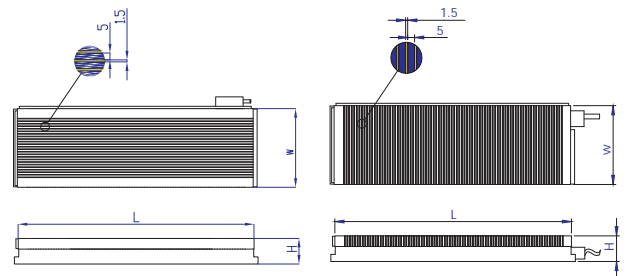
EPGRIND

Double Magnet Grinding chuck for heavy duty grinding is also available the ordering code for the same is:

13105 - Traverse poles

13106 - Cross poles

the last two digits being the same as EPFLUX.



- The Magnets can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.
- These chucks are also available in long pole design and the ordering code for the same is 13151.
- Large area can be arranged by multiple mounting of chucks side by side which can be operated by a single controller.
- Pole pitch of 2 mm (1.5+0.5) can be made at extra cost.

EPRADIAL

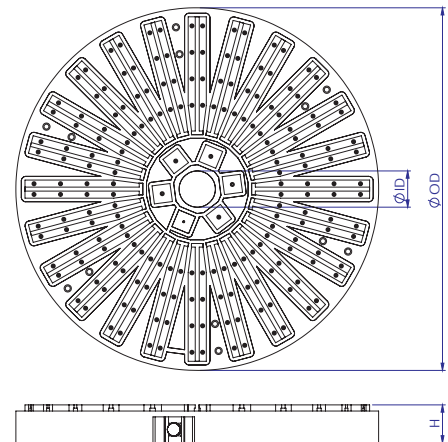
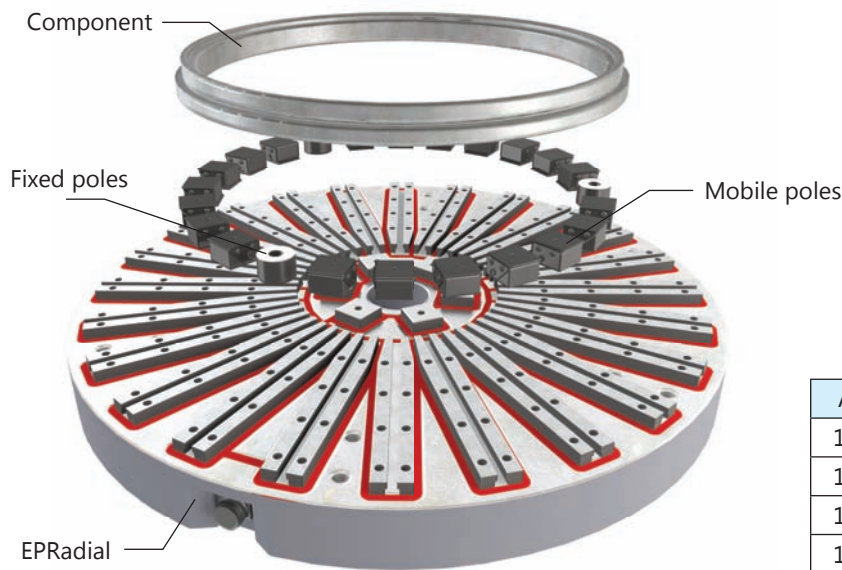
Features

- Most suitable for heavy machining in turning machines.
- Double Magnet circuit High power chucks.
- Static Design – No movable component – Robust.
- Extremely short set-up time due to simple and fast clamping of work piece.
- Magnetic power from all radial poles are transferred to components for rigid clamping.
- Clear cutting path on ID/OD and Face during machining.
- Custom designed pole extension can be adapted to magnets.
- High resistance to both axial and radial forces enabling application of heavy rate of material removal.
- Clamping of deformed or uneven components can be done with fixed & mobile pole extensions.
- Centre holes can be done/used for locating of work piece.
- Chucks available with T-Slotted pole extension.



Application

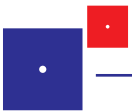
- Ideal for clamping ferromagnetic rings on vertical and horizontal turning machines.
- Radially movable location blocks help to position and secure work pieces. This is also necessary for clearance of the cutting tool or wheel.
- Mobile pole extension ensures perfect clamping of uneven work pieces and machining it flat and parallel.



Component	LABYRINTH RING
Input Condition	PRE-MACHINED
Material	MAGNETIC SS
Operation	ID/ OD and face turning
Customer Expectation	Concentricity and cycle time of machining

ART No.	OD	ID	H	Controller
13204.01	300	80	90	93102.01
13204.02	450	125		
13204.03	500	150		
13204.04	600	200		
13204.05	800	250		
13204.06	1000	250		
13204.07	1250	500		93102.02
13204.08	1500	500		
13204.09	1750	500		
13204.10	2000	500		

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request



EPRADIAL-P

Features

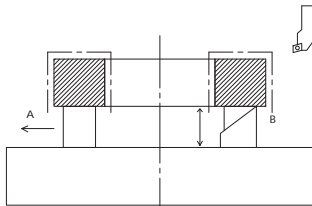
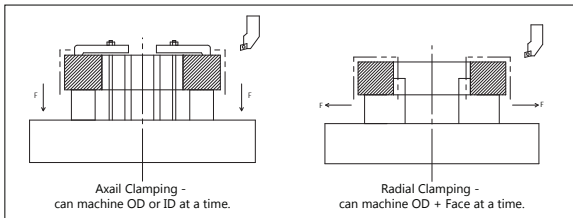
- Ease release of hardened jobs.
- Most suitable for VTL for precision machining.
- Single Magnet circuit with High magnetic power.
- All Metal Surface.
- Radial Pole configuration helps all under the job face for rigid uniform clamping.
- Magnetic Power from all poles transferred to ring/plates held in Centre.



- For power connection bayonet connector is recommended when the chuck is intended to be used in different machine and not permanently mounted on the machine.
- Alternatively slip rings assembly can fitted on the machine spindle for power supply, it is recommended when the chuck is for a specific machine.
- Ordering code is 13201.

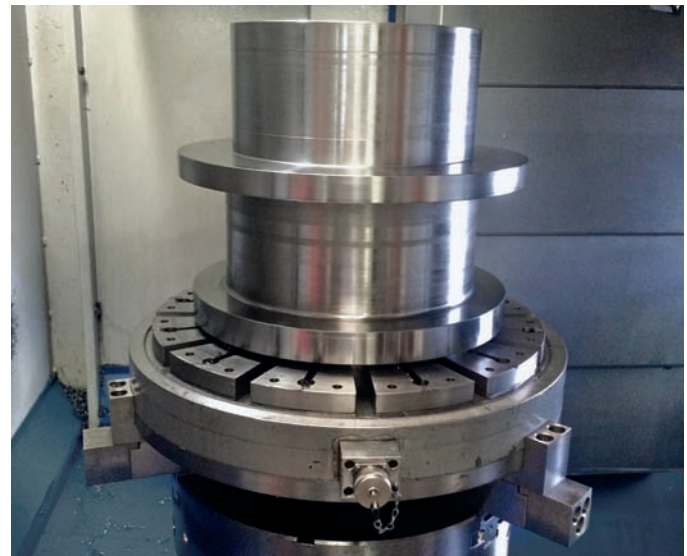
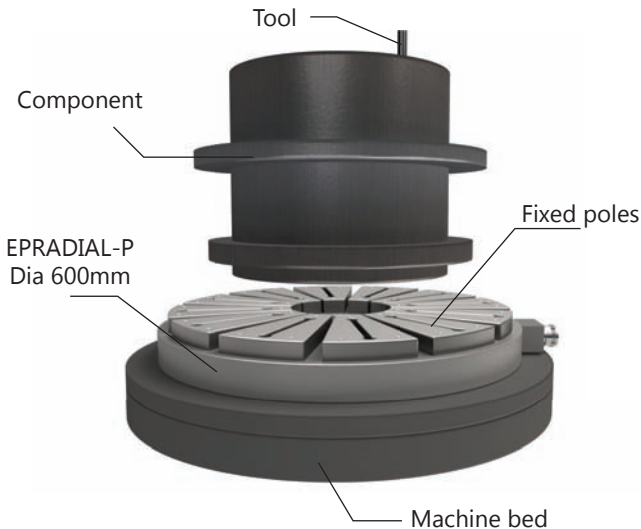
Application

- Ideal for finish turning of Hardened components.
- Clamps ferromagnetic rings on vertical or horizontal turning lathes.
- Mobile pole extension ensures perfect clamping of uneven work pieces and machining it flat and parallel.



Fixed or Moving pole extension projects the job up from the holding face thus giving way for tool to pass through the ID/OD.

Component	Flange			
Input condition	PRE-MACHINED			
Material	Mild Steel			
operations	ID/ OD and face turning			
Customer expectation	Concentricity and cycle time of machining			
Solution details	Sl No.	ART No.	Description	QTY
	1	13204.04	EPRADIAL-P Dia 600mm	1
	2	30110.04	Radial Pole extension	2



EPMODULE

Features

- Patented full steel Top surface.
- High & uniform clamping power throughout the bed.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- Modular, Rigid and Robust construction.
- Drastically reduces the setup time and machining of the work pieces.
- Clear cutting path on ID/OD and Face during machining.
- Custom designed pole extension can be adapted to magnets.
- Magnets are daisy chain connected so that one single cable is clamping to the magnet reducing wiring.
- EMEPM modules can be easily integrated.

Application

- EPModules can be clamped in between the existing jaws of the machine. The height of the modules can be adjusted to accommodate the height of the jaws. The Jaws are used to centre the job and then the magnets are switched ON to clamp them during machining. This gives clear access to ID/ OD and face in one setting.
- EMEPM modules can be easily integrated for easy release of component.

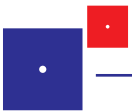


Job

Pole Extn.

EPMODULE

- The Magnet can be designed for 220/380/400/480 VAC, 50/60 Hz.
- Custom designed solutions also available.



EPROUND

Features

- Patented Full steel top surface.
- Round EPM Chuck available in 50/ 75 mm square pole configurations.
- Specifically designed for 5 axis machining centres.
- High and uniform magnetic power.
- Variable magnetic power possible.
- Perfect safety in case of power failure.
- Unobstructed movement of tools during machining as all five faces of the job can be machined in the same setting.
- Drastically reduce the setup time and machining of work pieces.

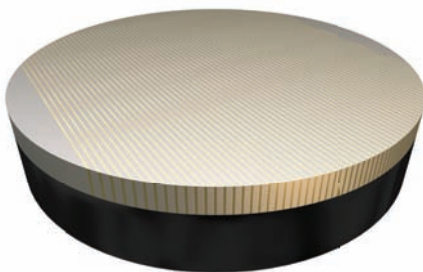
Application

- Directly clamp onto the machine.
- Once magnetised, no cable is required to keep the magnet ON. Ideal for 5 axis machining where the table rotates.
- Can perform heavy duty machining on rough components.
- No deformation of job due to clamping.

EPFLUX-R

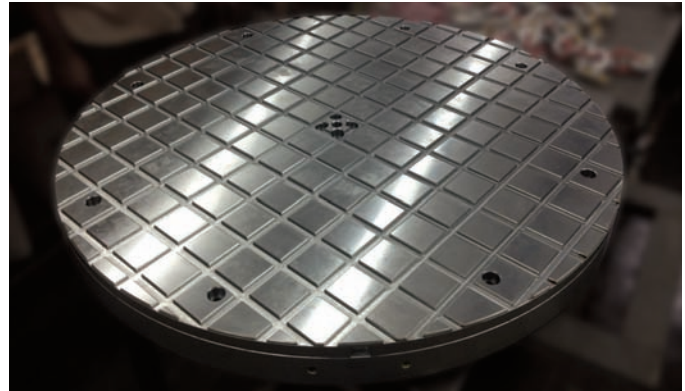
Features

- No electricity required to keep the chuck ON.
- All metal top plate of brass and steel lamination provides maximum active area.
- Variable power makes it possible to adjust the magnetic force.



Application

- For grinding application of all sizes of jobs.
- Suitable for horizontal spindle surface grinding machines as the main cutting thrust is towards the length of the chuck, poles at right angle of the wheel give more gripping of the job.
- No heat build up, deformation provides high precision accuracy

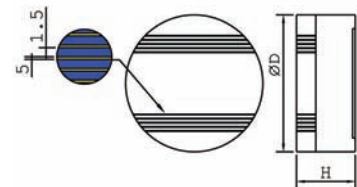


EPRound 50				
Art No.	ØD	No. of Poles	Height	Controller
13108.04	360	12	60	93101.01
13108.01	530	41		
13108.02	700	80		
13108.03	950	156		93101.02

EPRound 75				
Art No.	ØD	No. of Poles	Height	Controller
13109.01	530	21	75	93101.01
13109.02	700	37		
13109.03	950	69		
13109.04	1300	94		93101.02

Art No.	ØD	Pole Pitch	H	Controller
13203.01	200	6.5 (5+1.5)	65	93101.01
13203.02	300			
13203.03	450			
13203.04	500			
13203.05	600			
13203.06	700			

- Due to continuous upgradation in design there could be change in specification.
- Others sizes on request.
- All dimensions are in mm.

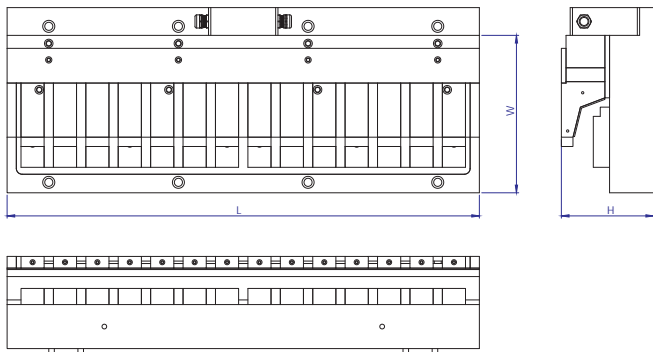


- Large area can be arranged by multiple mounting of chucks side by side which can be operated by a single controller.
- Double magnet grinding chuck for heavy duty grinding. Ordering code 13202.
- Special purpose chucks can also be designed to suit particular applications.
- Pole pitch of 2mm (1.5+0.5) can be made at extra cost.

EPRAIL

Features

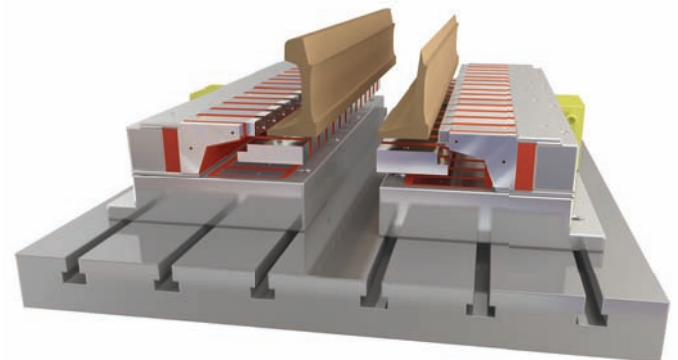
- High clamping force for rigid & uniform clamping.
- Accurate alignment of rail achieved.
- Complete rail machining in only 2 set-up.
- No vibration of Rails during machining operation..
- Increased tool life.
- High stock removal.
- Superior accuracies and finishing.
- Easy chips removal.
- Energy saving.
- Different Profiles of rails can be clamped on same Magnet using adapted pole extensions.
- Total face is accessible for machining.



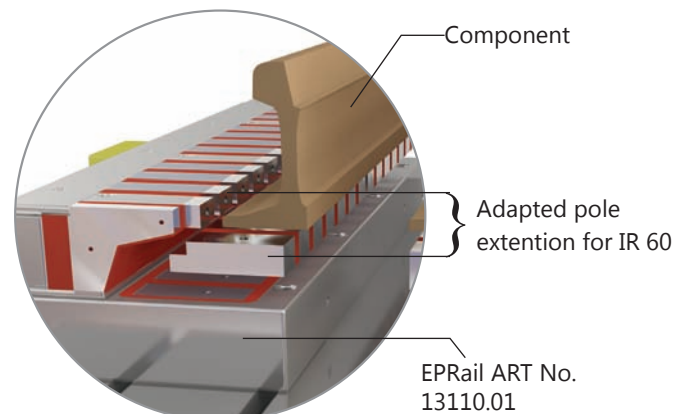
Application

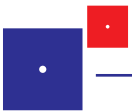
- A EPRAIL system is composed using a series of modular elements each of approx. length of 1000 mm.
- Several modules can be used to design the solution for different length of the rails as per requirement.
- Each EPRAIL module has an independent magnetic sector at right angle placed to clamp respectively the foot and the web of the rail.
- For foot and web of rails specific pole extensions are designed. sectors right angle placed to clamp respectively the foot and the web of the rail.

Art. No.	W	L	H	Controller
13110.01	390	1080	268	93101.40



Component	RAIL IR 60
Input condition	FORGED
Material	Grade 880 - 880
Operation	Machining of Head and foot
Customer expectation	Machining time reduction and accuracy of machining to be improved
Trail parameters	<ul style="list-style-type: none"> • Machining of foot of rail • Dia 100 Shell-mill cutter • No. of Cutting edge 6, 5 inserts per flute • Depth of cut: 25mm • Width of cut: 28mm • Feed: 100mm/min • Rate of Material Removal: 200 cm³/min
Solution details	EPRAIL with pole extensions suiting IR60





EPM CONTROLLER

Features

- Microcontroller based design.
- Solid state Thyristor operated.
- Designed to operate in 110/ 220/ 380/ 400/ 480 VAC, 50-60 Hz. Customer to specify the voltage and frequency prior to purchase.
- Supplied with a pendant for magnetisation/ demagnetisation and power control.
- PLC integration ready. Remote push button ready.
- Suitable to operate all types of EPM Chucks.
- Machine Interlock ready. Interlock will disable machining until magnetisation operation is complete.
- Magnet saturation test. Magnetisation signal will only be given when controller feels that magnet is fully energised.
- Change in magnetisation stage will only come once the magnetic level is selected and the magnetisation operation is performed.
- The current rating depends on the operating voltage. Please consult SARDAMAGNETS representative prior to ordering.
- Using multichannel controller, different magnet/ sections of magnet can be switched individually.



ART No. 93101.01



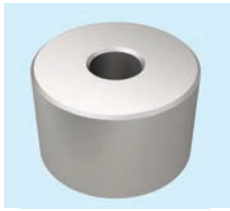
ART No. 93101.06

Solutions for large installations: Working with many chucks may require sectioning of the cables for a simple and fast operation. We design with the client the most practical and economical system to connect all magnetic chucks, once they are fixed onto the machine bed.

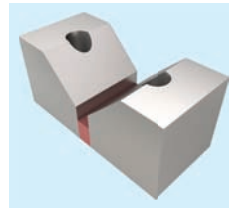
ART No.	Rating (Amp)	Op. Voltage (VAC)	Power Control	Power Steps	Channel Selection
93101.01	50	380/440	✓	8	1
93101.02	100	380/440	✓	8	1
93101.03	100	380/440	✓	4	4
93101.04	25	220	✓	8	1
93101.05	50	220	✓	8	1
93101.06	32	220	✓	8	1
93101.07	32	220	✓	8	1
93101.08	100	380/440	✓	4	6
93101.09	50	380/440	✓	8	2
93101.10	100	380/440	✓	8	2
93105.01	32	220	✗	-	2
93105.02	50	220	✗	-	2

ACCESSORIES

EPM Chuck top tooling to increase productivity



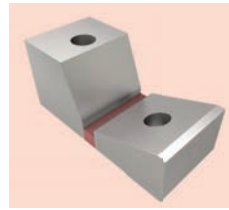
- Fixed Block.
- Dia 32/ 50/ 75 mm.
- Available in various heights.
- Available soft or hardened.



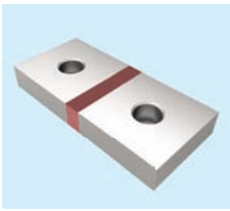
- Fixed V Block.
- V Angle 90°.
- Suitable for Angle milling.
- Available soft or hardened.



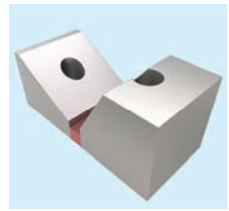
- Mobile Pole extension.
- Suitable for 32/ 50/ 75 mm square pole chucks.
- Special mobile pole extensions with extra height or with multiple poles available.



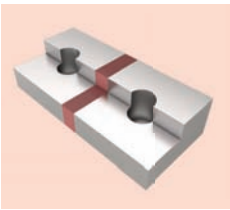
- Fixed V Block.
- V Angle 120°.
- Suitable for Angle milling.
- Available soft or hardened.



- Joint rectangular pole extension.
- Designed for all pole sizes.
- Designed for any grid size with multiple number of poles.
- Available from 10 to 70 mm thickness.



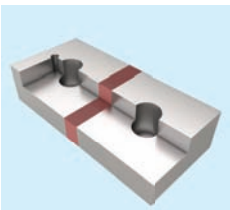
- Fixed V Block.
- V Angle 160°.
- Suitable for Angle milling.
- Available soft or hardened.



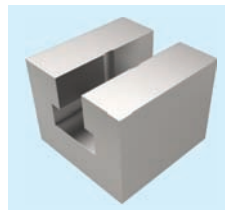
- L-type pole extension.
- Designed for all pole sizes.
- Designed for any grid size with multiple number of poles.
- Available from 10 to 70 mm thickness.



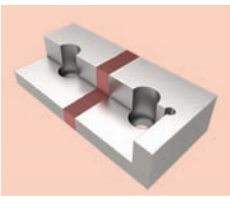
- S-type pole extension.
- Designed for all pole sizes.
- Linear length is available for multiple number of poles.
- Various thickness available from 10 to 70 mm.



- L-type ext. with right end stop.
- Designed for all pole sizes.
- Designed for any grid size with multiple number of poles.
- Available from 10 to 70 mm thickness.



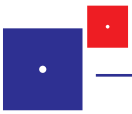
- T Slot Pole Extension.
- Suitable for easy variation of setting.
- Quick adjusting.
- Available soft or hardened.



- L-type ext. with left end stop.
- Designed for all pole sizes.
- Designed for any grid size with multiple number of poles.
- Available from 10 to 70 mm thickness.



- Combo Transfer Block.
- Heavy Metal Removable.
- Perfect 90° Squaring.
- Milling at 45° possible.



TECHNOLOGY UPDATES

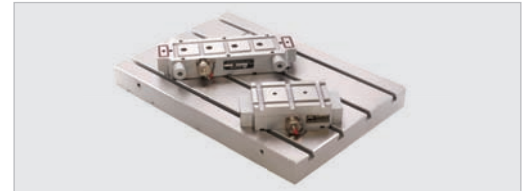
Magnaslot

This invention was necessitated by the growing demand for versatility in clamping of different types of jobs in the same machine with minimum change over time. The T-slots designed in this magnet make it suitable for clamping of ferrous as well as non ferrous materials. Moreover its monolithic surface enhances accuracy and also assures safety to the original magnetic bed.



Doublemag

This unique self clamping magnet clamps both the job as well as the working bed simultaneously as it has magnetic field on both sides i.e. top and bottom hence DOUBLEMAG. Large work pieces can be efficiently clamped without the hassles of using several clamps or a large magnet as greater flexibility is achieved by placing number of modules scattered to cover larger area. These magnets can be daisy connected using detachable bayonet connectors.



Magnet status indicator

Traditionally EPM chucks once switched ON or Off and detachable connectors removed it is not possible to know the actual status of the magnet. With the Patent A magnet status indicator, we are able to provide a visual indication on the gland box of the magnet it's MAG/ DEMAG and clamping strength status. Green for MAG/ Red for DEMAG and Yellow for MAG but not properly clamped.



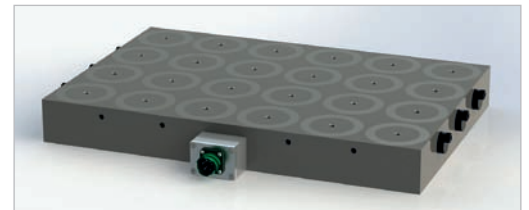
EM/EPM

EPM chucks are made with either single magnet system (where only a reversible permanent magnet is used and is magnetized and demagnetized completely) or a two magnet system (where a reversible and a non-reversible permanent magnet is used. When they are in same direction, it is ON, when in opposite it is OFF). Due to the non-reversible magnets in the two magnet system, complete demagnetization of work pieces is difficult. To overcome this problem a new solution has been developed in which an extra set of electro magnet coils is incorporated into the EPM magnets to demagnetise the job. In addition to demagnetizing the work pieces this extra EM coil can be used to increase and reduce the flux height as per work piece requirement. This system can be incorporated into existing traditional EPM magnets.



Multiflux

All steel Top surface, no soft metals, machineable up to 10mm The Top surface is Flush, no protrusions. The Magnetic Circuit is capable of Demagnetizing, ideal for hard materials. Variable magnetic field strength as well as variable field height. Fail safe technology, no moving parts, no heat generated. Standard sizes in 100mm increments from 200mm².



EPRing

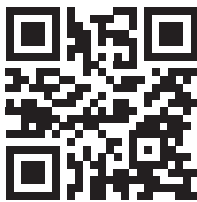
The round pole nature of the EPM magnet allows an optimal distribution of the magnetic area, with free zones available for additional location requirement for reference and hybrid clamping solutions. Being monolithic in nature and without any sealing resin, it can withstand heavy duty machining without losing accuracy.



Flux sensing

Magnetic field is invisible and hence it is difficult to determine in real time the actual clamping force generated and induced in the job by the magnet - as the clamping force changes with thickness/ material / contact area/ shape/ temperature and other factors. With the patented flux sensor, we can know the clamping force generated in real-time.





SARDATM
MAGNETS

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AN ISO 9001:2008 COMPANY

www.magnaslot.com

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