Magnetic Products, Inc.
Highland, Michigan | mpimagnet.com

PRODUCT CATALOG

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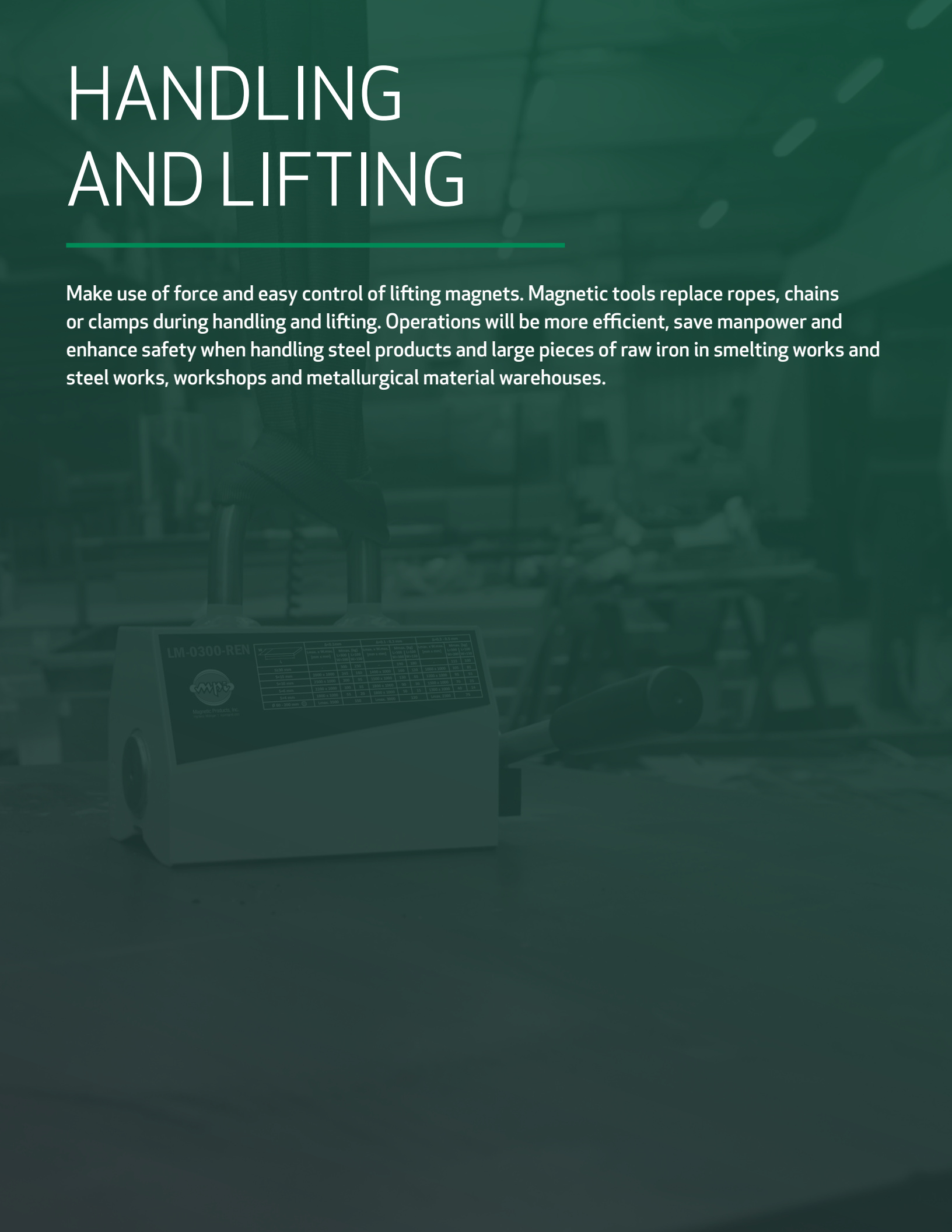
HANDLING AND LIFTING

Make use of force and easy control of lifting magnets. Magnetic tools replace ropes, chains or clamps during handling and lifting. Operations will be more efficient, save manpower and enhance safety when handling steel products and large pieces of raw iron in smelting works and steel works, workshops and metallurgical material warehouses.



MPI Lifting Magnet

Magnet meets the 3+ safety factor

Robust lifting eye made of stainless steel

Five (5) year warranty for the magnetic system

The Air Gap test – a tear-off test is carried out with the air gap - emphasis on higher safety in real operating conditions

Simple Easy Switch control

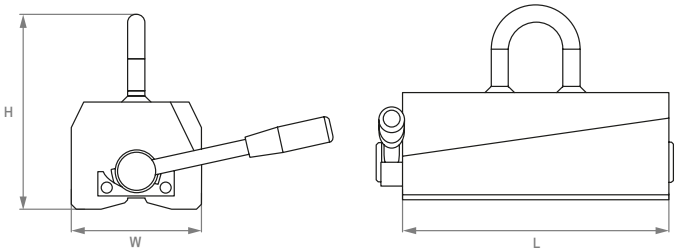
When to choose permanent MPI Lifting Magnet:

The permanent MPI Lifting Magnet magnet is widely used for handling ferromagnetic materials in the metal industry – in workshops, on building sites, in warehouses for semi-finished steel products, when handling steel workpieces, tools, sheets, metal profiled sections, tubes, and bars.

APPLICATION	TECHNOLOGY	NOMINAL LIFTING CAPACITY FOR FLAT MATERIAL	NOMINAL LIFTING CAPACITY FOR ROUND MATERIAL	TEMPERATURE
Lifting	Permanent	up to 4,409 lbs	up to 2,204 lbs	max. 176 °F

Important parameters:

Nominal lifting capacity for flat material:	up to 4,409 lbs
Nominal lifting capacity for round material:	up to 2,204 lbs
Safety factor:	3+ (EN 13155)



Use:

+ handling flat, round, and cylindrical workpieces
+ lifting of profiled sections and sheets

Model	W (in)	L (in)	H (in)	Ø of eye (in)	Weight (lbs)	Tested lifting capacity (lbs)	Workload limit flat materials (lbs)	Workload limit round materials (lbs)	Ø min/max (in)
LM-0150-REN	2.4	3.7	4.7	0.4	6.6	992	330	143	2/4
LM-0300-REN	3.9	6	7.1	0.6	22.1	1,984	661	330	2.4/7.8
LM-0600-REN	4.7	9.7	7.1	0.8	46.3	3,968	1,322	661	2.5/10.6
LM-1000-REN	5.8	12.1	9.3	0.8	88.2	7,054	2,204	1,102	4/11.8
LM-1500-REN	6.5	14.7	10.8	0.8	152.1	10,361	3,306	1,653	6/13.7
LM-2000-REN	6.5	18.8	10.8	0.8	198.4	13,668	4,409	2,204	6/13.7

INSTRUCTIONS FOR USING THE WORKLOAD LIMIT TABLE FOR PLATES AND ROUNDS ON PAGE 6

1. Select your MPI Lifting Magnet model.
2. Select the surface finish and condition (clean and smooth, rusty or hot, irregular or rough) that corresponds to you plate or round bar. If your surface roughness exceeds the maximum, do not make the lift.

Plates:

   a. Select the plate thickness from the table. If your plate thickness is not listed, select the next lower value from the table. **Never lift plates thinner than the minimum listed in the table.**
   b. Check that the plate you are attempting to lift is shorter than the maximum length (L) and narrower than the maximum width (W) listed in the table under the heading "Max. dimensions" for the thickness of the selected plate.

Round bars:

   a. Be sure the diameter of the bar is between the minimum and maximum diameter as listed in the table. **Never lift bars outside this range.**
   b. Be sure that the bar is less than the maximum length (L) max listed in the table.

3. Determine the maximum safe lifting capacity of the magnet based on your material thickness.

Plates:

   a. Select the maximum safe lifting value from the table for the minimum length (L) and minimum width (W) from one of the two choices. **Do not make the lift if your plate is less than these minimum values.**

Round bars:

   a. The maximum safe lifting value is shown in the table

4. If you are not lifting AISI 1020 steel, determine the reduction in safe lifting capacity by the percentage factor for your material from the Material Reduction Factor Table shown below. For example, if you are lifting cast iron, multiply the maximum safe lifting capacity determined in Step 3 above for steel by 45% to get the maximum safe lifting capacity for your lift of cast iron.
5. Finally, determine the weight of the plate or round bar you are attempting to lift to be sure it is less than the maximum safe lifting capacity determined in Step 4. The weight can be calculated using the density of 0.283 lbs per cubic inch for steel or by use of a commonly available on-line weight calculator.

MATERIAL REDUCTION FACTOR TABLE (STEP 4)

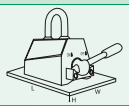
The Workload Limit Table for Conditions and Finishes on Page 6 is for AISI 1020 steel. Other materials are less magnetic. Any increase in alloy content will reduce the safe lifting capacity of the magnet. Use these percentage factors for materials other than AISI 1020 steel:

Material	Percentage Factor
Cast Steel	90%
3% Silicon Steel	80%
AISI 1095 Steel	70%
416 Stainless Steel	50%
Cast Iron (non-chilled)	45%
Pure Nickel	10%

Never attempt to lift non-magnetic metals like 304/316 stainless, aluminum, copper, lead, tin, titanium and zinc, and alloys such as brass and bronze.

WORKLOAD LIMIT FOR PLATES AND ROUNDS (AISI 1020 STEEL)*

SURFACE CONDITIONS AND FINISHES



L= Length (in)
W= Width (in)
H=Height (in)

			Clean and smooth ground surface. Air gap<0.004 in			Rusty and hot rolled surface Air gap 0.004 - 0.012 in			Irregular and rough surface. Air gap 0.012 - 0.02 in		
			Max. dimensions L x W (in)	WLL (lbs) for plate sizes as below		Max. dimensions L x W (in)	WLL (lbs) for plate sizes as below		Max. dimensions L x W (in)	WLL (lbs) for plate sizes as below	
MPI LIFTING MAGNET LM-0150-REN		Thickness (in)		L>8	L=2 - 2.9		L>8	L=2 - 2.9		L>8	L=2 - 2.9
				W>8	W =4 - 7.9		W>8	W =4 - 7.9		W>8	W =4 - 7.9
		0.98	-	330	265	-	187	165	-	132	121
		0.59	79 x 20	287	243	43 x 20	154	132	35 x 20	121	99
		0.39	98 x 20	265	165	59 x 20	143	110	47 x 20	110	88
		0.16	98 x 20	110	55	91 x 20	88	37	67 x 20	66	33
		0.08	59 x 20	44	13	51 x 20	31	9	47 x 20	29	9
	Diameter	Ø2 - Ø4	Lmax. 98	143		Lmax.79	110		Lmax.59	77	
MPI LIFTING MAGNET LM-0300-REN		Thickness (in)		L>12	L=4 - 11.9		L>12	L=4 - 11.9		L>12	L=4 - 11.9
				W>12	W=6 - 11.9		W>12	W=6 - 11.9		W>12	W=6 - 11.9
		>=1.18	-	661	551	-	419	397	-	254	220
		0.59	78 x 39	540	353	55 x 39	353	265	39 x 39	232	187
		0.39	98 x 39	441	209	59 x 39	287	143	47 x 39	209	121
		0.24	86 x 39	220	77	70 x 39	198	66	59 x 39	154	55
		0.16	70 x 39	121	44	70 x 39	110	33	51 x 39	88	31
	Diameter	Ø2.4 - Ø7.8	Lmax. 138	331		Lmax. 118	265		Lmax. 98	165	
MPI LIFTING MAGNET LM-0600-REN		Thickness (in)		L>16	L=5 - 15.9		L>16	L=5 - 15.9		L>16	L=5 - 15.9
				W>16	W=10 - 15.9		W>16	W=10 - 15.9		W>16	W=10 - 15.9
		>=1.18	-	1322	1146	-	948	883	-	595	573
		0.79	78 x 59	1025	838	78 x 49	860	683	49 x 39	551	463
		0.59	88 x 59	948	529	90 x 49	750	441	70 x 39	485	352
		0.39	98 x 59	628	247	94 x 49	529	220	86 x 39	408	187
		0.31	94 x 59	496	198	90 x 49	397	154	78 x 39	287	121
		0.24	86 x 59	342	132	78 x 49	265	99	78 x 39	220	77
	Diameter	Ø2.5 - Ø10.6	Lmax. 157	661		Lmax. 138	529		Lmax. 118	352	
MPI LIFTING MAGNET LM-1000-REN		Thickness (in)		L>20	L=6 - 19.9		L>20	L=6 - 19.9		L>19,7	L=6 - 19.9
				W>20	W=12 - 19.9		W>20	W=12 - 19.9		W>19,7	W=12 - 19.9
		>=2.39	-	2204	2172	-	1863	1841	-	1433	1422
		1.18	96 x 59	1896	1565	78 x 59	1609	1367	75 x 49	1246	1135
		0.98	112 x 59	1830	1179	94 x 59	1554	1047	88 x 49	1212	903
		0.79	126 x 59	1642	805	108 x 59	1411	705	102 x 49	1124	639
		0.59	130 x 59	1102	474	114 x 59	981	430	110 x 49	838	386
		0.39	108 x 59	584	231	100 x 59	529	209	104 x 49	441	187
	Diameter	Ø4 - Ø11.8	Lmax. 177	1102		Lmax. 157	882		Lmax. 137	661	
MPI LIFTING MAGNET LM-1500-REN		Thickness (in)		L>31,5	L=7 - 31.4		L>31,5	L=7 - 31.4		L>31,5	L=7 - 31.4
				W>31,5	W=16 - 31.4		W>31,5	W=16 - 31.4		W>31,5	W=16 - 31.4
		>=3.15	-	3306	3219	-	3131	2646	-	2249	2160
		1.97	118 x 47	3219	2756	98 x 47	2646	2315	78 x 47	2116	1984
		1.18	137 x 47	2161	948	128 x 47	1984	860	98 x 51	1720	772
		0.79	138 x 55	1676	683	118 x 63	1653	639	98 x 69	1532	595
		0.59	118 x 59	1191	430	118 x 59	1168	397	98 x 55	926	353
	Diameter	Ø6 - Ø13.7	Lmax. 197	1653		Lmax. 177	1543		Lmax. 138	1323	
MPI LIFTING MAGNET LM-2000-REN		Thickness (in)		L>31,5	L=7 - 31.4		L>31,5	L=7 - 31.4		L>31,5	L=7 - 31.4
				W>31,5	W=20 - 31.4		W>31,5	W=20 - 31.4		W>31,5	W=20 - 31.4
		>=3.15	-	4409	4299	-	3638	3527	-	2866	2756
		1.97	128 x 59	4299	3527	98 x 59	3527	2976	78x 59	2756	2535
		1.18	138 x 59	2976	1212	128 x 59	2535	1102	98, x 59	2205	992
		0.79	138 x 79	2425	881	118 x 79	2205	827	98 x 79	1984	772
		0.59	118 x 59	1433	551	118 x 59	1323	507	78 x 59	1212	441
	Diameter	Ø6 - Ø13.7	Lmax. 197	2204		Lmax. 177	1984		Lmax. 157	1764	

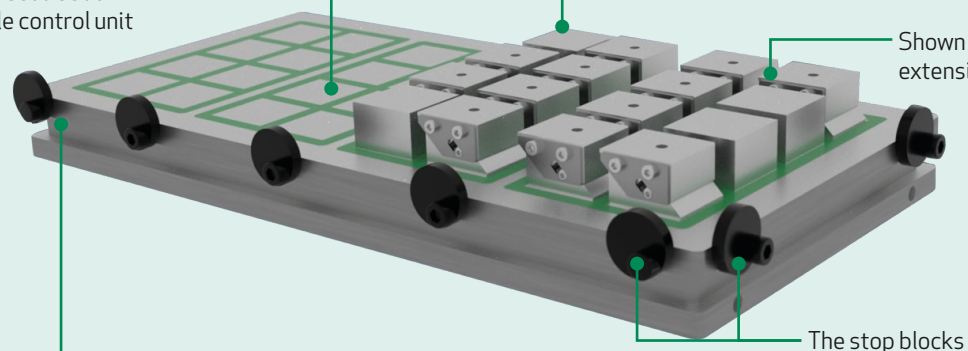
DO NOT LIFT PLATES THINNER THAN INDICATED IN THE CHART. WHEN LIFTING TUBES WITH A THIN WALL, THE LENGTH MAY BE THE LIMITING FACTOR.

*WLL= maximum working load designed for certain lifting magnet capacity, with respect to minimal safety factor 3:1.

MAGNETIC CHUCKS

Accelerate machining ferromagnetic materials. Magnetic chucks are modern devices replacing vises, mechanical clamps and fixtures. Instantaneously clamp and unclamp machined components. Accessible from five (5) sides, the magnetic chuck does not damage the product and reduces production costs.

MPI ElectroPermanent Mastermill Milling Chuck



When to choose MPI ElectroPermanent Mastermill Milling Chuck:

The MPI ElectroPermanent Mastermill Milling Chuck is a versatile magnetic chuck for milling and drilling of both small and large workpieces. Using pole extensions, the material can be machined from five (5) sides, drilled through, and uneven material can be machined as well. For optimum holding force, the required workpiece thickness is at least 0.47 in.

APPLICATION	TECHNOLOGY	CHUCK DIMENSION	HOLDING FORCE	POLES
Milling	Electropermanent	from 11.8 x 19.3 in	170 N/cm²	Square

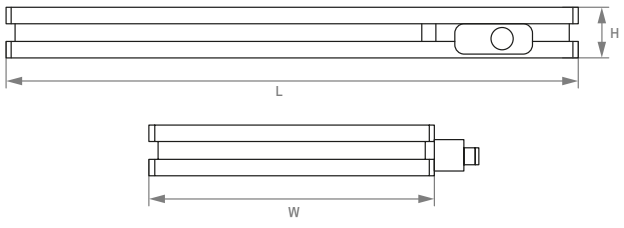
Model	Number of poles	W (in)	L (in)	H (in)	Weight (lbs)
MM-50-300490-EP	24	11.8	19.3	2	108
MM-50-300600-EP	32	11.8	23.6	2	134.5
MM-50-300800-EP	40	11.8	31.5	2	180.8
MM-50-300900-EP	48	11.8	35.4	2	202.8
MM-50-420490-EP	36	16.5	19.3	2	154.3
MM-50-420600-EP	48	16.5	23.6	2	189.6
MM-50-420800-EP	60	16.5	31.5	2	251.3
MM-50-420900-EP	72	16.5	35.4	2	282.2
MM-50-480600-EP	56	18.9	23.6	2	213.9
MM-50-480800-EP	70	18.9	31.5	2	286.6
MM-50-480900-EP	84	18.9	35.4	2	321.9
MM-50-480990-EP	84	18.9	39	2	354.9
MM-50-580800-EP	80	22.8	31.5	2	346.1
MM-50-580900-EP	96	22.8	35.4	2	390.2

Important parameters:

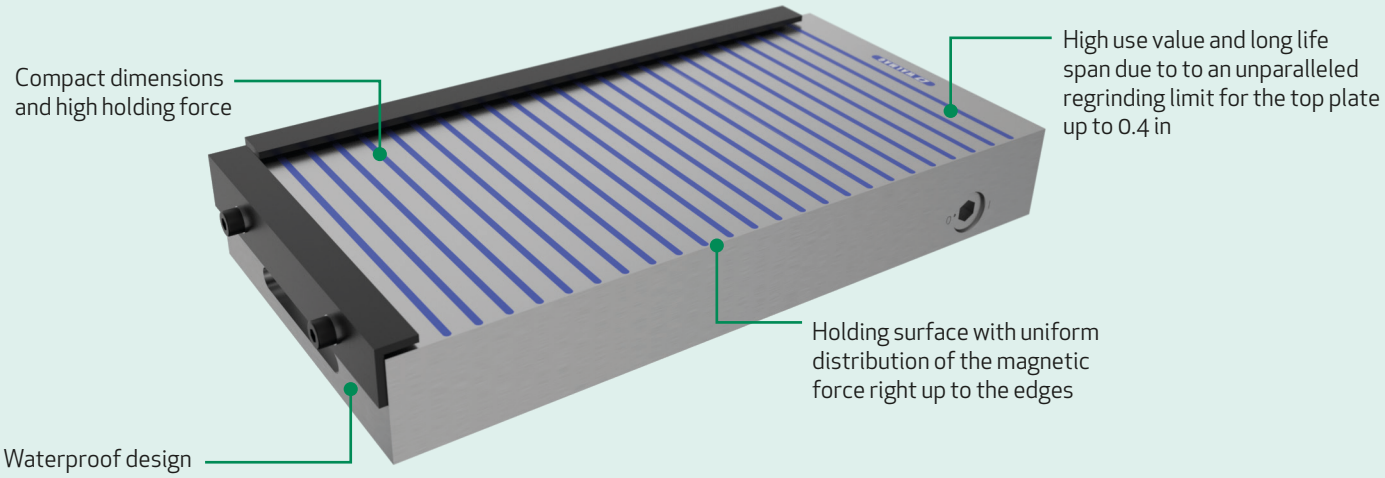
Holding force:	170 N/cm²
Min. workpiece size:	2 x 4.3 x 0.5 in
Poles:	Square
Regrinding limit:	0.2 in
Pole size:	2 x 2 in

Use:

+ machining of uneven parts up to five (5) sides
+ clamping of a wide range of workpiece sizes during milling
+ clamping of large forms, castings, blocks, structures, etc. during drilling operations
+ rough grinding of large parts



MPI Rare Earth Compact Milling Chuck



When to choose MPI Rare Earth Compact Milling Chuck:

The MPI Rare Earth Compact Milling Chuck is used for milling, drilling or heavy grinding of relatively small workpieces that require a significant holding force and stability required for clamping.

APPLICATION	TECHNOLOGY	CHUCK DIMENSION	HOLDING FORCE	POLES
Milling	Permanent	from 5.9 x 9.8 in	160 N/cm²	Transverse

Important parameters:

Holding force:	160 N/cm²
Min.workpiece size:	0.6 x 0.6 x 0.2 in
Poles:	Transverse
Regrinding limit:	0.4 in
Pole pitch:	T0.59 0.43 +0.16 in (steel/epoxy)

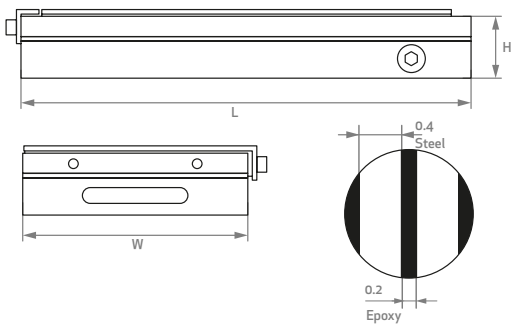
Additional information:

+ available also with mounted top plate with steel and brass lamellae

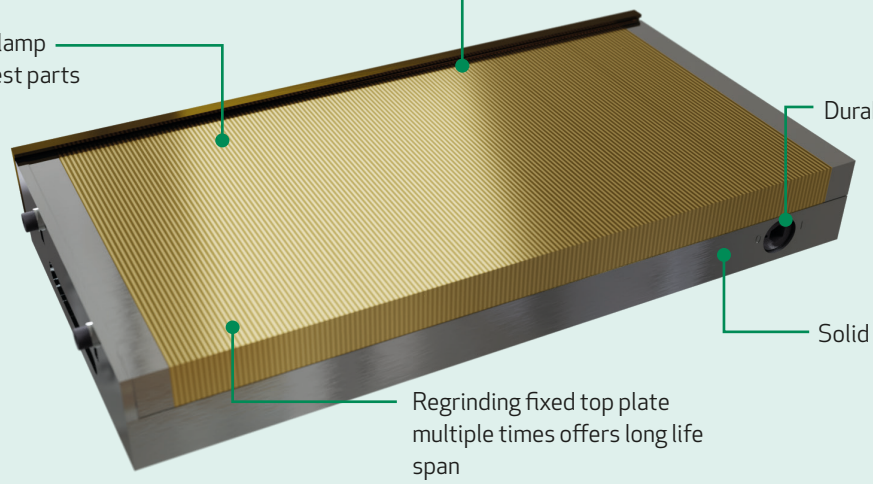
Use:

+ milling, drilling, planing, heavy grinding

Model	W (in)	L (in)	H (in)	Weight (lbs)
CMC-150250-REN	5.9	9.8	2	30.9
CMC-150450-REN	5.9	17.7	2	55.1
CMC-200450-REN	7.9	15.8	2.1	81.6
CMC-200500-REN	7.9	19.7	2.1	90.4
CMC-200600-REN	7.9	23.6	2.1	108
CMC-250400-REN	9.8	15.8	2.4	99.2
CMC-300500-REN	11.8	19.7	2.4	147.7
CMC-300600-REN	11.8	23.6	2.4	178.6
CMC-320320-REN	12.6	12.6	1.9	81.6



MPI Rare Earth Surface Grinder Chuck



When to choose MPI Rare Earth Surface Grinder Chuck:

The MPI Rare Earth Surface Grinder Chuck offers exceptional holding force combined with high quality and favorable pricing. It is a simple, low maintenance clamping device primarily used as an accessory to grinders intended for precise surface grinding of very small, thin parts up to large workpieces and electrical discharge machining.

APPLICATION	TECHNOLOGY	CHUCK DIMENSION	HOLDING FORCE	POLES
Grinding	Permanent	from 3.9 x 6.9 in	100 N/cm²	Transverse

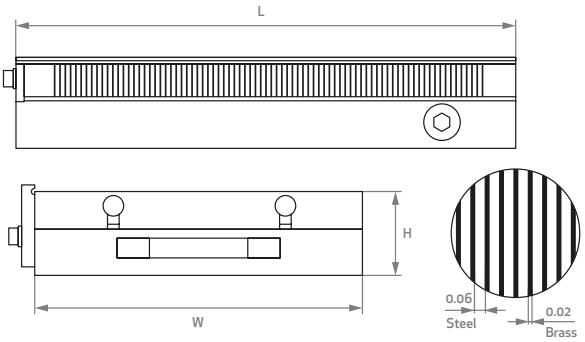
Model	W (in)	L (in)	H (in)	Weight (lbs)
SGC-100175-REN	3.9	6.9	1.9	15.4
SGC-100250-REN	3.9	9.8	1.9	22.1
SGC-130255-REN	5.1	10.0	1.9	28.7
SGC-150250-REN	5.9	9.8	2	33.1
SGC-150300-REN	5.9	11.8	2	39.7
SGC-150350-REN	5.9	13.8	2	48.5
SGC-150400-REN	5.9	15.8	2	55.1
SGC-150450-REN	5.9	17.7	2	61.7
SGC-200400-REN	7.9	15.8	2	77.2
SGC-200450-REN	7.9	17.7	2	81.6
SGC-200500-REN	7.9	19.7	2	90.4
SGC-200600-REN	7.9	23.6	2	108
SGC-300600-REN	11.8	23.6	4.7	198.4

Important parameters:

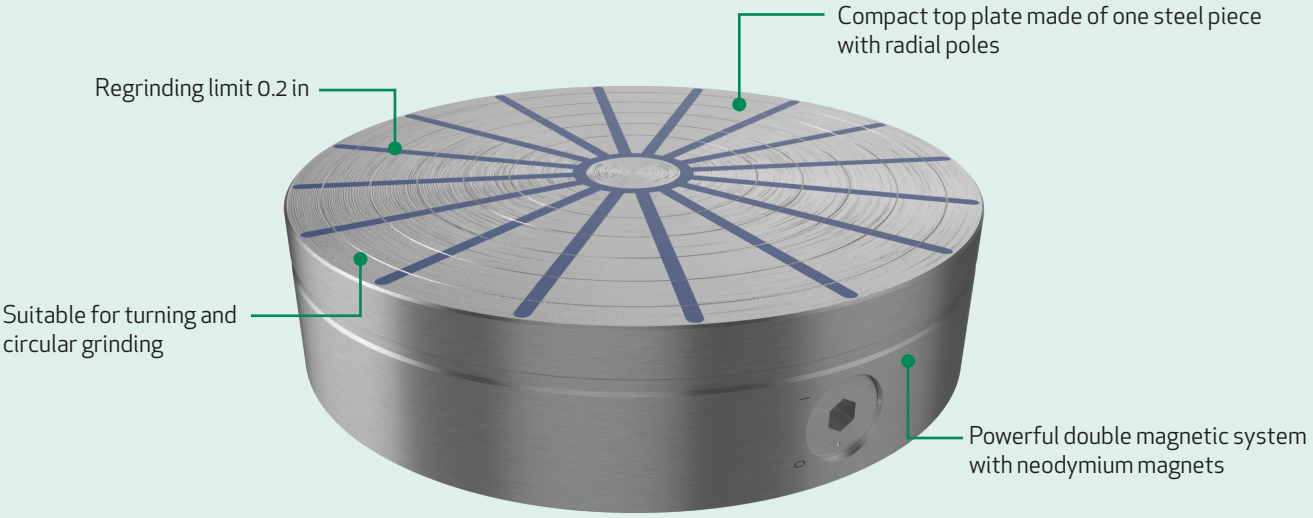
Holding force:	100 N/cm²
Min. workpiece size:	0.2 x 0.2 x 0.04 in
Regrinding limit:	0.3 in
Pole pitch:	T0.08 0.06 + 0.02 in (steel/brass)

Use:

+ precise surface grinding of small and thin, as well as large parts
+ also suitable for electrical discharge machining (EDM)



MPI Double Rare Earth Round Chuck



When to choose MPI Double Rare Earth Round Chuck:

The MPI Double Rare Earth Round Chuck is primarily designed for turning and grinding round and ring-shaped workpieces. The top plate with radial poles offers the possibility to machine the front, inner and outer diameter of the workpiece in one operation.

APPLICATION	TECHNOLOGY	DIAMETER	HOLDING FORCE	POLES
Turning	Permanent	from 5.1 in	140 N/cm²	Radial

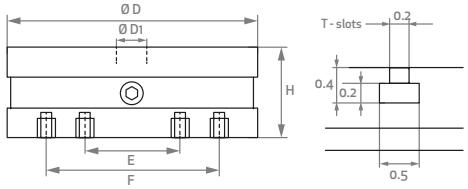
Model	D (in)	H (in)	D1 (in)	E (in)	F (in)	Weight (lbs)
RC-130-REN	5.1	2.2	2	-	3.9	11
RC-150-REN	5.9	2.2	2	3.1	4.7	16.1
RC-200-REN	7.9	2.2	2.4	4.3	7.1	28.7
RC-250-REN	9.8	2.8	3.2	5.5	8.7	55.1
RC-300-REN	11.8	2.9	5.9	7.1	10.2	81.6
RC-350-REN	13.8	2.9	6.7	8.7	11.8	108
RC-400-REN	15.8	2.9	7.9	10.2	13.4	149.9
RC-500-REN	19.7	3.1	7.9	11.8	15.8	240.3
RC-600-REN	23.6	3.1	9.8	13.8	17.7	379.2
RC-700-REN	27.6	3.1	9.8	13.8	17.7	515.9
RC-800-REN	31.5	4.3	13.8	15.8	27.6	925.9

Important parameters:

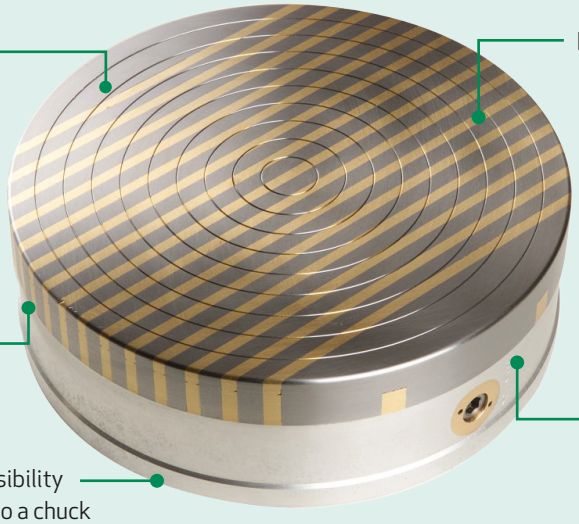
Application:	Turning, circular grinding
Min. workpiece limit:	1.4 in
Regriding limit:	0.2 in

Use:

+ turning and grinding of round and ring-shaped workpieces
+ facing work, internal and external diameter machining is possible separately or in one operation



MPI Double Ceramic Round Chuck



When to choose MPI Double Ceramic Round Chuck:

Due to its high holding force and watertight top plate, the MPI Double Ceramic Round Chuck is an indispensable tool during workpiece turning and circular grinding. The relatively small pole pitch and a low magnetic field make it suitable for thinner workpieces from 0.3 in or from 0.5 in depending on the chuck diameter or pole pitch.

APPLICATION	TECHNOLOGY	DIAMETER	HOLDING FORCE	POLES
Circular grinding	Permanent	from 7.9 in	140 N/cm²	Parallel

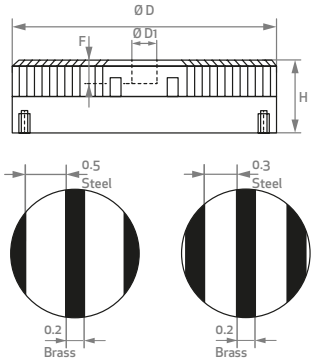
Important parameters:

Application:	Circular grinding, turning
Technology:	Permanent
Min. workpiece size:	1.6 x 1.6 x 0.3 in
Regriding limit:	0.2 in
Pole pitch:	T0.5 0.3 + 0.2 in (steel/brass) or T0.7 0.5 + 0.2 in (steel/brass)

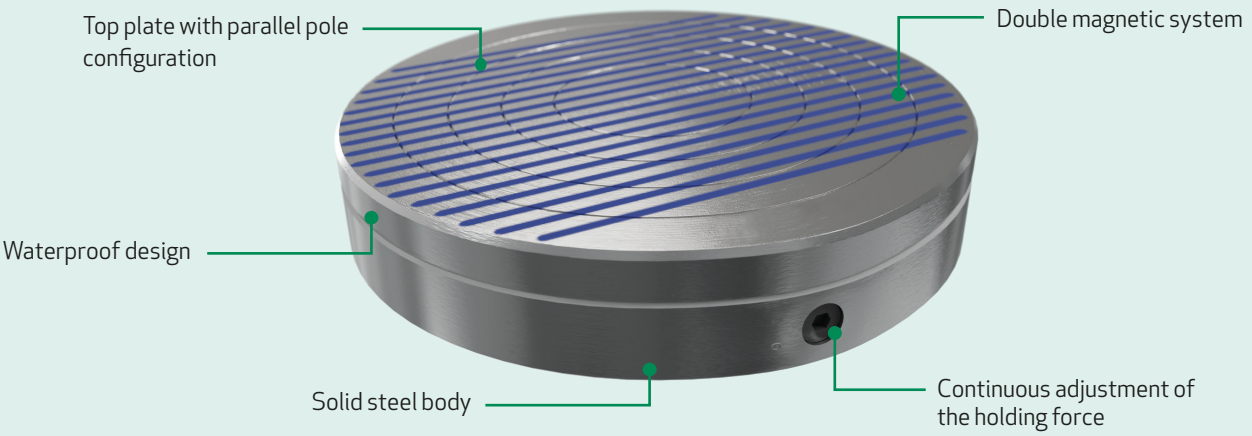
Use:

+ clamping of workpieces during turning and surface grinding
+ facing and external/internal diameter machining is possible separately or in one operation

Model	D (in)	H (in)	F (in)	D1 (in)	Weight (lbs)
RC-0200-CER	7.9	3.1	0.9	0.9	26.5
RC-0250-CER	9.8	3.1	0.9	0.9	37.5
RC-0300-CER	11.8	3.1	0.9	0.9	59.5
RC-0350-CER	13.9	3.1	0.9	0.9	88.2
RC-0400-CER	15.8	3.1	0.9	0.9	123.5
RC-0450-CER	17.7	4	0.9	0.9	172
RC-0500-CER	19.7	3.9	0.9	0.9	187.4



MPI Rare Earth Round Chuck



When to choose MPI Rare Earth Round Chuck:

MPI Rare Earth Round Chuck stands out for its high clamping force and versatility in use. The combination of solid top plate with relatively fine parallel pole arrangement and possibility to continuously control the clamping force means very easy centering of the workpieces during turning or grinding operations.

APPLICATION	TECHNOLOGY	DIAMETER	HOLDING FORCE	POLES
Circular grinding	Permanent	from 6.1 in	160 N/cm²	Parallel

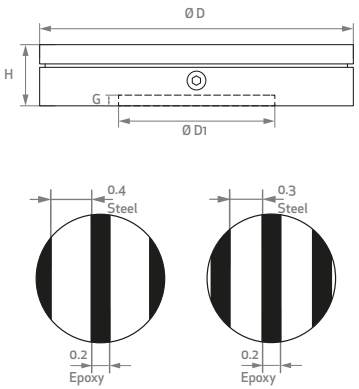
Important parameters:

Application:	Circular grinding, turning
Technology:	Permanent
Min. workpiece size:	1 x 1 x 0.3 in
Regrinding limit:	10 mm
Poles:	T0.5 0.3 + 0.2 in - steel/epoxy or T0.6 0.4 + 0.2 in - steel/epoxy

Use:

+ clamping of workpieces during turning and circular grinding

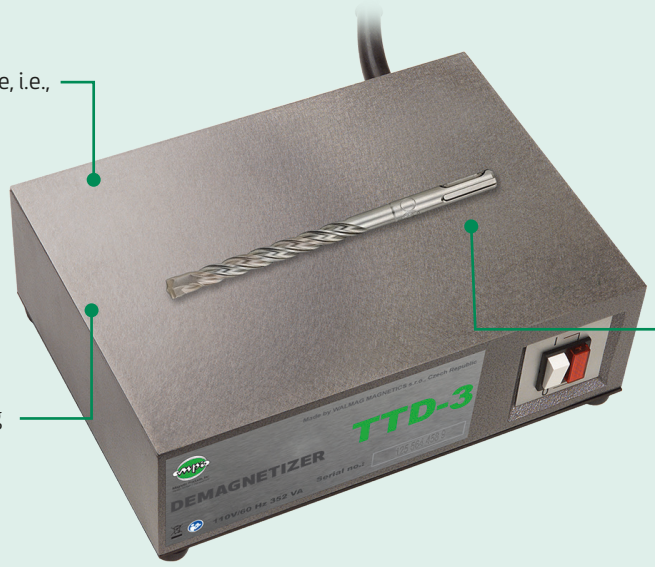
Model	D (in)	H (in)	G (in)	D1 (in)	Weight (lbs)
MAX-155-REN	6.1	2.2	0.2	2	19.8
MAX-200-REN	7.9	2.2	0.2	2.4	33.1
MAX-250-REN	9.8	2.2	0.2	3.2	48.5
MAX-300-REN	11.8	2.2	0.2	5.9	70.6
MAX-350-REN	13.8	2.2	0.2	6.7	94.8
MAX-400-REN	15.8	2.2	0.2	7.9	123.5



DEMAGNETIZATION

Some materials retain a relatively high amount of magnetism after exposure to a magnetic field. To eliminate this, the component must be demagnetized by an alternating magnetic field which is gradually reduced to zero. MPI demagnetizers efficiently eliminate the residual magnetism in various materials and workpieces for a variety of dimensions.

MPI-TTD Series



Suitable as part of a production line, i.e., under a conveyor belt

Customize working area using different size demagnetizers

Ability to enlarge the work area by using more demagnetizers side by side

When to choose MPI Tabletop Demagentizer (TTD):
The MPI Tabletop Demagnetizer (TTD) is recommended for quick and simple demagnetization of flat and small cylindrical components. The TTD allows for manual demagnetization as well as easily integrated into a production line for instance under a conveyor belt.

APPLICATION	TECHNOLOGY	WORKPIECE SIZE	DUTY CYCLE	HEIGHT OF DEMAG. FIELD
Demagnetization	Electro	max. 15.8 x 11 in	20 %	up to 1.6 in

Important parameters:

Application:	Demagnetization
Technology:	Electro
Max. workpiece size:	15.8 x 11 in
Duty cycle:	20 %
Height of demagnetization field:	up to 1.6 in
Voltage:	110 V / 60 Hz

Use:
+ manual demagnetization of tools, dies, bearings, and other cylindrical and flat components
+ demagnetization under a conveyor belt on a production line
+ create larger working area by placing several demagnetizers side by side

Model	W (in)	L (in)	H (in)	Weight (lbs)
TTD-3	9.8	7.1	3.4	19.4
TTD-4	11	10.5	3.4	30.7
TTD-5	15.8	12.1	3.4	41.9