

PERMANENT MAGNETIC CHUCKS

Magnetic chucks are used for holding iron pieces, especially in the machining industry. Their operation is based on magnetism, which depending on the type of chuck, is created with permanent magnets, electromagnets or a combination of both. Selter permanent magnetic chucks are made with magnets which have a high resistance to demagnetisation thereby guaranteeing a long working life for the chuck under normal working conditions.

The use of magnetic chucks in different machining operations provides a wealth of advantages for greater productivity.

- A reduction in tooling costs and machine preparation time.
- A reduction in the time needed to load and unload pieces.
- Maximum access to the piece due to the absence of clamps and fixing devices
- Greater precision in the flatness of the pieces.

In the range of Selter magnetic chucks there are special types for different machining operations and machines, for example: grinding machines, milling machines, lathes and spark erosion machines. The magnetic chucks are divided into the following types:

- NOR-POL, for grinding
- FI-POL, for small, narrow pieces
- MAX-POL, for milling
- Single and double sine tables
- Magnetic chucks and sine tables with extra-fine pole spacing
- Circular magnetic chucks

The type of chuck chosen depends largely on the machine and the operation to be carried out but additionally on the characteristics of the piece. The size, shape, material and surface conditions of the piece are all factors affecting the holding force and must be taken into account before using a magnetic chuck.

SIZE AND SHAPE

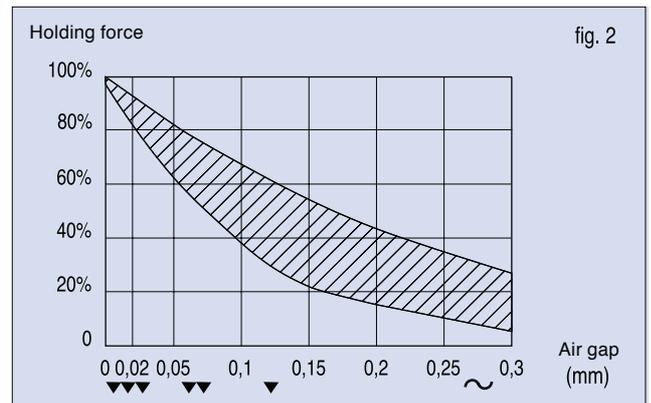
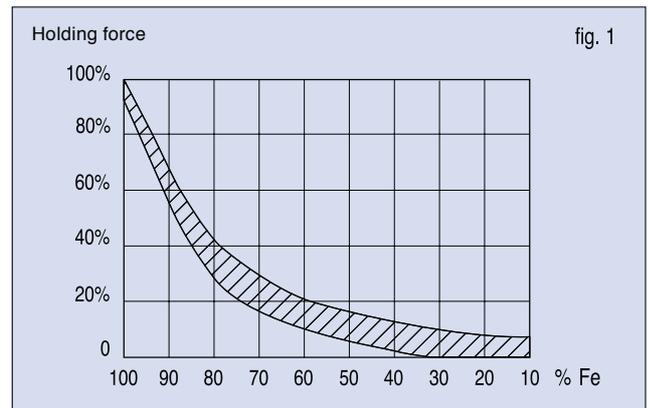
The size of the piece is important to determine the distance between the magnetic poles of the chuck (pole spacing). In general it could be said that for large pieces a large pole spacing is needed and for smaller pieces a narrower pole spacing is more adequate. Various accessories, including flux transmission blocks, magnetic blocks or supports help holding pieces with different sizes for most jobs.

MATERIAL

Pieces to be hold for a chuck must be made of iron. A pure iron material has better magnetic properties than a steel alloy. For this reason, an increase in the alloying material diminishes the holding force (fig. 1).

SURFACE CONDITIONS

The condition of the contact surfaces of both the chuck and the piece are also important for an optimum magnetic hold. A separation (air gap) between the piece and the chuck impedes the flow of the magnetic flux and the holding force is therefore reduced. The maximum holding force exists when the surfaces are perfectly ground and clean. Dirt, protuberances, holes or a rough surface diminish the effectiveness of the magnetic holding. (fig. 2).



NOR-POL / FI-POL MAGNETIC CHUCKS, FOR GRINDING

These chucks are ideal for grinding different kinds of pieces, and give good results with small, narrow pieces.

They are completely coolant-tight and oil-tight and can operate totally submerged in these liquids.

Magnetisation is carried out via the lever, and chucks with lengths over 600 mm have 2 levers. The shaft on smaller chucks does not project from the chuck and can be handled using the Allen key supplied.

The clamps used to hold the chuck are supplied separately and must be ordered expressly.

Available in two different pole spacings: Nor-Pol and Fi-Pol.

NOR-POL

Pole spacing of 6-5 (6 mm of steel and 5 of brass).

It is suitable for all kinds of pieces with thicknesses as small as 2 mm to the very largest pieces.

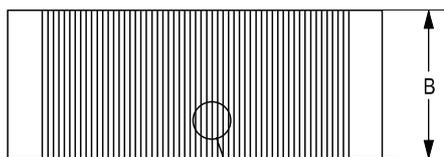
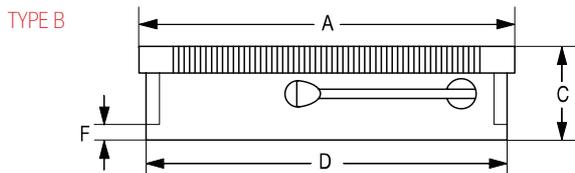
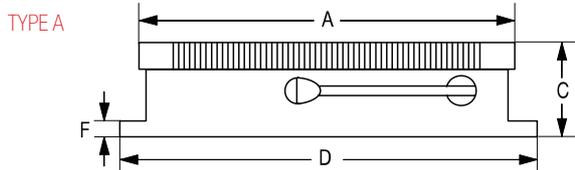
Clamping force: 100 N/cm²

FI-POL

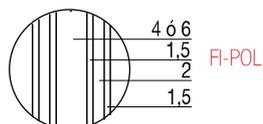
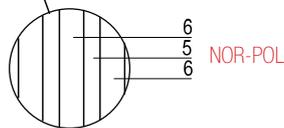
It has a narrower pole spacing: 6-1.5-2-1.5 (6 mm of steel, 1.5 of brass, 2 of steel and 1.5 of brass).

It has greater holding power for small or narrow pieces (less than 3 mm), and for larger pieces, it gives a similar result to Nor-Pol.

Clamping force: 80 N/cm²



POLE SPACING



CODE NOR-POL	CODE FI-POL	A mm	B mm	C mm	D mm	F mm	Nº LEVERS	MODEL	WEIGHT Kg
-	12.10.004	100	65	54	119	10	1*	A	3
-	12.10.002	125	75	57	138	10	1*	A	4
-	12.10.001	150	102	65	165	15	1*	A	7
-	12.10.003	200	100	65	213	15	1*	A	9
-	12.11.002	255	130	65	265	15	1*	A	13
-	12.11.003	325	130	65	335	15	1*	A	17
12.02.008	12.12.007	150	150	65	158	19	1*	A	10
12.02.001	12.12.001	250	150	65	258	15	1*	A	15
12.02.002	12.12.002	300	150	65	308	15	1*	A	18
12.02.003	12.12.003	350	150	65	358	13	1	A	21
12.02.004	12.12.004	400	150	65	410	15	1	A	23
12.02.005	12.12.005	450	150	65	458	15	1	A	26
12.02.006	-	500	150	65	510	15	1	A	29
-	12.13.005	300	200	72	304	20	1	A	28
12.03.002	12.13.002	400	200	72	413	15	1	A	32
12.03.003	12.13.003	450	200	72	463	13	1	A	36
12.03.004	12.13.004	500	200	72	515	15	1	A	40
12.03.006	12.13.006	600	200	72	615	15	1	A	47
12.03.007	-	700	200	79	715	13	2	A	60
12.04.001	-	400	250	93	395	20	1	B	51
12.04.002	12.14.002	450	250	93	445	20	1	B	57
12.04.003	12.14.003	500	250	93	495	20	1	B	64
12.04.004	12.14.005	600	250	93	595	20	1	B	78
12.05.002	12.15.003	500	300	93	495	20	1	B	90
12.05.003	12.15.004	600	300	93	595	20	1	B	100
12.05.004	-	700	300	93	695	24	2	B	116

* THE SHAFT DOES NOT PROJECT FROM THE CHUCK AND CAN BE HANDLED USING A ALLEN KEY

MAX-POL MAGNETIC CHUCKS, FOR MILLING

With a more robust construction and greater magnetic power, this chuck is designed for use with milling machines.

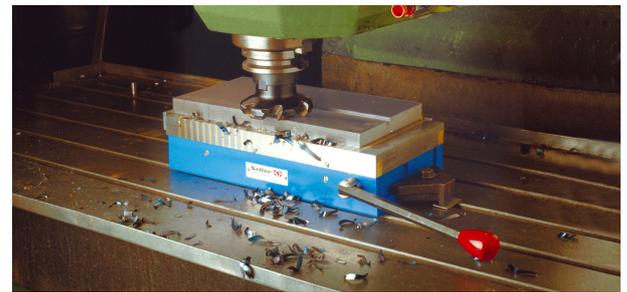
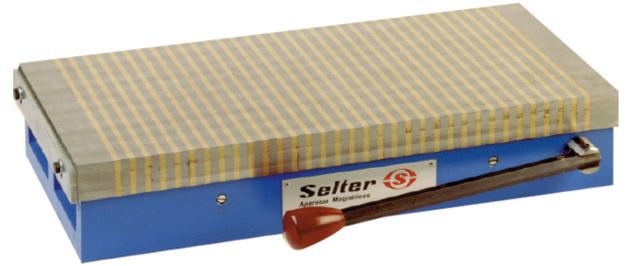
Its pole spacing of 8-5 (8 mm of steel and 5 of brass) is suitable for all kinds of pieces with thicknesses of 5 mm to the very largest pieces.

Clamping force: 120 N/cm²

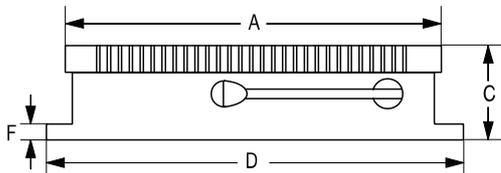
It is completely coolant-tight and oil-tight and can operate totally submerged in these liquids.

Magnetisation is carried out via the lever, chucks with lengths over 600 mm have 2 levers.

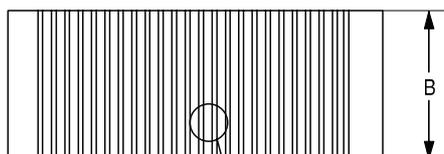
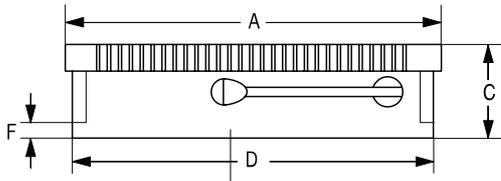
The clamps used to hold the chuck are supplied separately and must be ordered expressly.



TYPE A



TYPE B



POLE SPACING

CODE	A mm	B mm	C mm	D mm	F mm	Nº LEVERS	MODEL	WEIGHT Kg
12.22.001	250	150	93	260	20	1	A	20
12.22.002	300	150	93	310	20	1	A	24
12.22.003	350	150	93	360	20	1	A	27
12.22.004	400	150	93	410	20	1	A	30
12.22.005	450	150	93	460	20	1	A	34
12.22.006	500	150	93	560	20	1	A	38
12.23.001	300	200	93	295	20	1	B	28
12.23.002	400	200	93	395	20	1	B	40
12.23.003	450	200	93	445	20	1	B	45
12.23.004	500	200	93	495	20	1	B	50
12.23.005	600	200	93	595	20	1	B	62
12.23.006	800	200	93	795	20	2	B	82
12.24.001	400	250	93	395	20	1	B	53
12.24.002	450	250	93	445	20	1	B	56
12.24.003	500	250	93	495	20	1	B	64
12.24.004	600	250	93	595	20	1	B	78
12.24.006	750	250	93	745	20	2	B	97
12.24.007	800	250	93	795	20	2	B	103
12.24.008	1.000	250	93	945	20	2	B	129
12.25.001	400	300	93	395	20	1	B	72
12.25.002	500	300	93	495	20	1	B	90
12.25.003	600	300	93	595	20	1	B	100
12.25.004	800	300	93	795	20	2	B	130
12.25.005	900	300	93	895	20	2	B	153
12.25.006	1.000	300	93	995	20	2	B	180

MAGNETIC CHUCKS WITH EXTRA-FINE POLE SPACING

This chuck is very low (40 mm) and has very fine pole spacing of 1.5-0.8 (1.5 mm of steel and 0.8 of brass).

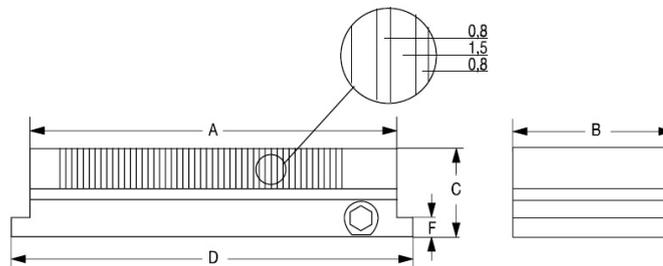
It is suitable for very small or narrow pieces on grinding or sparkerosion machines.

Clamping force: 80 N/cm²

It is completely coolant-tight and oil-tight and can operate totally submerged in these liquids.

The magnetisation shaft does not project from the chuck and can be handled using the Allen key supplied.

The clamps used to hold the chuck are supplied separately and must be ordered expressly.



CODE	A mm	B mm	C mm	D mm	F mm	WEIGHT Kg
12.50.001	150	100	40	165	10	5
12.50.003	200	100	40	215	10	6,5
12.51.002	255	130	40	270	10	11
12.52.008	150	150	40	165	10	7,5
12.52.001	250	150	40	265	10	12
12.52.002	300	150	40	315	10	14,5
12.52.003	350	150	40	365	10	17
12.52.004	400	150	40	415	10	19,5
12.52.005	450	150	40	465	10	22