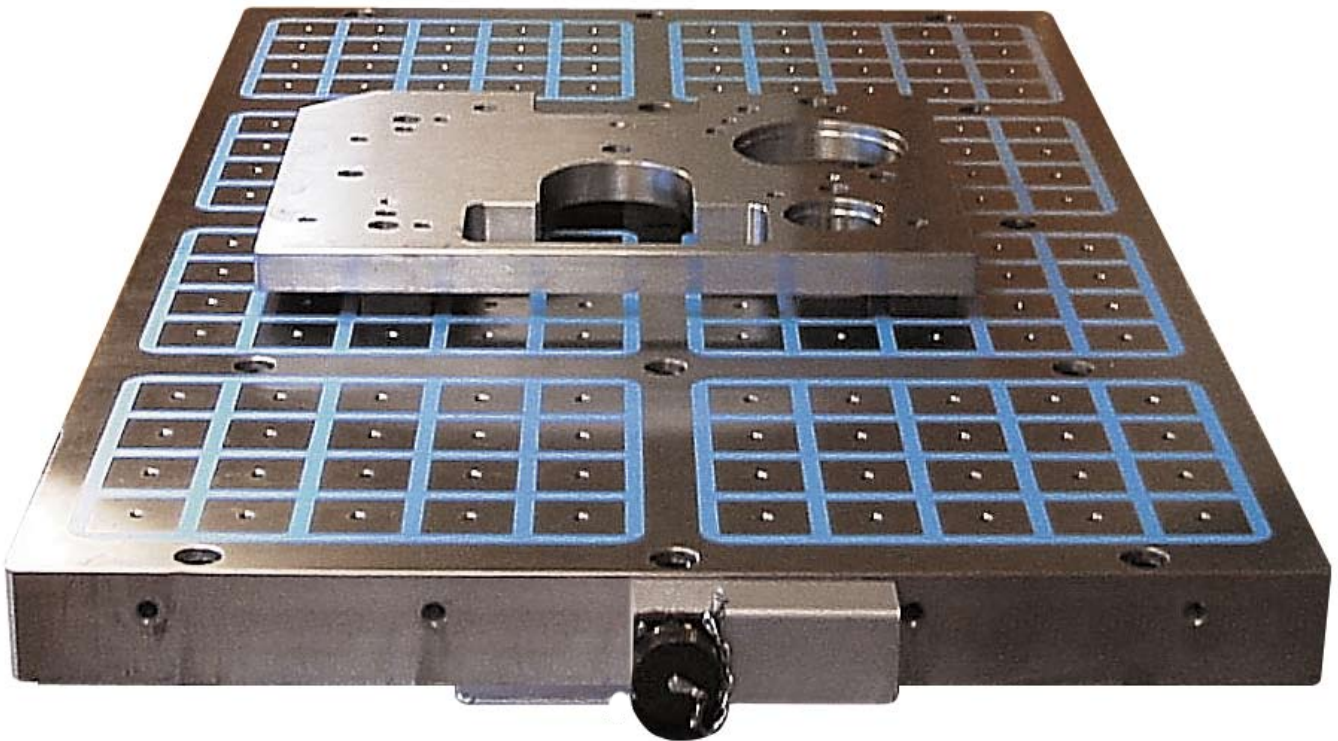


POWER MATRIX

THE ULTIMATE MILLING CHUCK



**Extreme clamping power · Failsafe
Complete machining in a single set-up**

POWER MATRIX

SQUARE POLE TECHNOLOGY

Each pole is a cube: the top face is the working area, the other five sides are clad with magnet material. This creates a chuck that performs better than any other, producing the highest clamping forces possible for the pole size.

MATRIX FORMAT

The matrix format uses the square poles to maximum advantage. Each pole is surrounded by poles of a different polarity. This generates a tight magnetic field around each pole and means clamping force is equally high in every direction.

Thinner materials can be clamped than is possible on parallel pole chucks and swarf retention is reduced.

ELECTRO-PERMANENT DESIGN

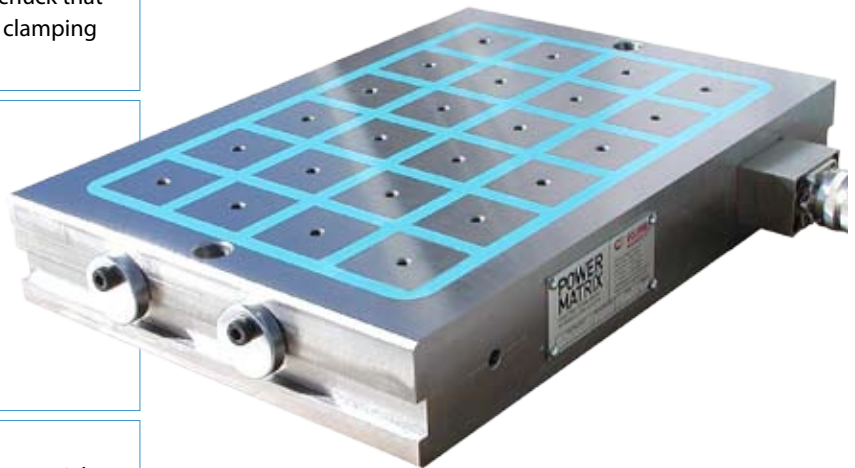
Power Matrix uses two types of permanently magnetic material.

When the chuck is on, the magnetic fields of the materials are in opposition, sending the magnetic force through the top face, clamping the workpiece.

To turn the chuck off, one of the magnet materials's polarity is reversed electronically. This forms a different magnetic circuit, effectively holding the magnetism inside the chuck.

The electronic current is used only to switch the chuck on or off. Switching takes a fraction of a second.

This chuck is failsafe, meaning that if electric power is lost while a workpiece is held, it remains held.



CLAMPING MADE EASY

Power Matrix provides a uniform clamping force over the entire area of the workpiece, reducing vibration.

Clamping is on a single face of the workpiece so the other five faces are clear to machine.

Stepped or shaped pieces can be accommodated with simple pole extensions.

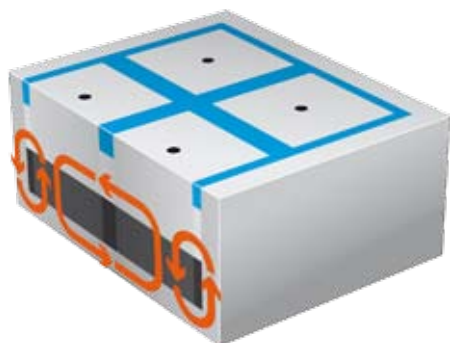
A full range of standard tooling options is available, including angle plates that will transfer the magnetism through 90°.

Moving pole extensions allow uneven or distorted components to be clamped without further distortion.

ADVANCED CLAMPING

Multiple parts can be loaded simultaneously to increase efficiency. Specialised tooling can be offered to nest components for high production applications.

Power Matrix can be supplied with specialised configurations including tombstones, bolsters and others to suit your needs.

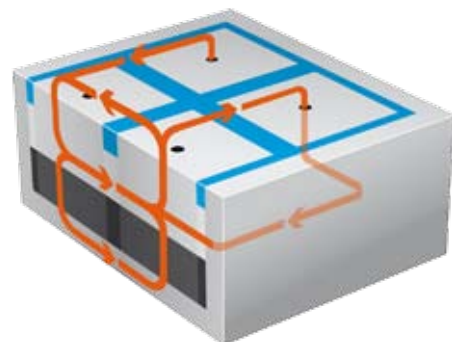


↑ 'OFF'

When the Power Matrix is 'off' the magnetism flows inside the chuck

'ON' →

Turning the Power Matrix 'on' causes the magnetism to flow out of the top face and through the workpiece, holding the workpiece in place



USE POWER MATRIX TO:

- Increase feed rates and metal removal
- Extend insert and tool life by reducing vibration and chatter
- Improve product surface finish
- Machine non-stop – no need to move manual clamps during machining
- Clamp consistently and uniformly every time: 150 tonnes / m²
- Dramatically reduce clamping time – magnetic clamping at the push of a button
- Increase productivity from your existing machines
- Improve safety – failsafe permanent magnet holds the load even when the power is cut



Technical Data

K1 50

50mm square poles designed for smaller thinner components where the magnetism must be finely controlled. Smaller poles allow a more intricate tooling arrangement to be used (supplied on request). Use on smooth or rough surfaced workpieces.

Reference No.	Length	Width	Height	No. of poles
PM2540.K1 50	400	250	68	18
PM2560.K1 50	600	250	68	24
PM2580.K1 50	800	250	68	30
PM2590.K1 50	900	250	68	36
PM25100.K1 50	1000	250	68	42
PM3040.K1 50	400	300	68	24
PM3060.K1 50	600	300	68	32
PM3080.K1 50	800	300	68	40
PM3090.K1 50	900	300	68	48
PM30100.K1 50	1000	300	68	56
PM4040.K1 50	400	400	68	36
PM4060.K1 50	600	400	68	48
PM4080.K1 50	800	400	68	60
PM4090.K1 50	900	400	68	72
PM40100.K1 50	1000	400	68	84
PM5040.K1 50	400	500	68	42
PM5060.K1 50	600	500	68	56
PM5080.K1 50	800	500	68	70
PM5090.K1 50	900	500	68	84
PM50100.K1 50	1000	500	68	98
PM6060.K1 50	600	600	68	72
PM6080.K1 50	800	600	68	90
PM6090.K1 50	900	600	68	108
PM60100.K1 50	1000	600	68	126

K2 50

50mm square poles for smaller workpieces but suitable for thicker and rougher workpieces than K1 50.

Reference No.	Length	Width	Height	No. of poles
PM2540.K2 50	400	250	68	18
PM2560.K2 50	600	250	68	24
PM2580.K2 50	800	250	68	30
PM2590.K2 50	900	250	68	36
PM25100.K2 50	1000	250	68	42
PM3040.K2 50	400	300	68	24
PM3060.K2 50	600	300	68	32
PM3080.K2 50	800	300	68	40
PM3090.K2 50	900	300	68	48
PM30100.K2 50	1000	300	68	56
PM4040.K2 50	400	400	68	36
PM4060.K2 50	600	400	68	48
PM4080.K2 50	800	400	68	60
PM4090.K2 50	900	400	68	72
PM40100.K2 50	1000	400	68	84
PM5040.K2 50	400	500	68	42
PM5060.K2 50	600	500	68	56
PM5080.K2 50	800	500	68	70
PM5090.K2 50	900	500	68	84
PM50100.K2 50	1000	500	68	98
PM6060.K2 50	600	600	68	72
PM6080.K2 50	800	600	68	90
PM6090.K2 50	900	600	68	108
PM60100.K2 50	1000	600	68	126

K1 75

All rounder ideal for 75% of all applications. 20mm or thicker workpiece required for 75mm x 75mm poles to apply maximum clamping force. Use for smooth surfaced workpiece through to the equivalent of black plate.

Reference No.	Length	Width	Height	No. of poles
PM2540.K1 75	400	250	68	8
PM2560.K1 75	600	250	68	12
PM2580.K1 75	800	250	68	16
PM25100.K1 75	1000	250	68	20
PM3040.K1 75	400	300	68	12
PM3060.K1 75	600	300	68	18
PM3080.K1 75	800	300	68	24
PM30100.K1 75	1000	300	68	30
PM4040.K1 75	400	400	68	16
PM4060.K1 75	600	400	68	24
PM4080.K1 75	800	400	68	32
PM40100.K1 75	1000	400	68	40
PM5040.K1 75	400	500	68	20
PM5060.K1 75	600	500	68	30
PM5080.K1 75	800	500	68	40
PM50100.K1 75	1000	500	68	50
PM6060.K1 75	600	600	68	36
PM6080.K1 75	800	600	68	48
PM60100.K1 75	1000	600	68	60

K2 75

Designed for the rough end of production as well as specialist steels, black bar, forgings, tool steel moulds, etc. where air gaps and material would otherwise detrimentally affect clamping force.

Reference No.	Length	Width	Height	No. of poles
PM2540.K2 75	400	250	68	8
PM2560.K2 75	600	250	68	12
PM2580.K2 75	800	250	68	16
PM25100.K2 75	1000	250	68	20
PM3040.K2 75	400	300	68	12
PM3060.K2 75	600	300	68	18
PM3080.K2 75	800	300	68	24
PM30100.K2 75	1000	300	68	30
PM4040.K2 75	400	400	68	16
PM4060.K2 75	600	400	68	24
PM4080.K2 75	800	400	68	32
PM40100.K2 75	1000	400	68	40
PM5040.K2 75	400	500	68	20
PM5060.K2 75	600	500	68	30
PM5080.K2 75	800	500	68	40
PM50100.K2 75	1000	500	68	50
PM6060.K2 75	600	600	68	36
PM6080.K2 75	800	600	68	48
PM60100.K2 75	1000	600	68	60

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