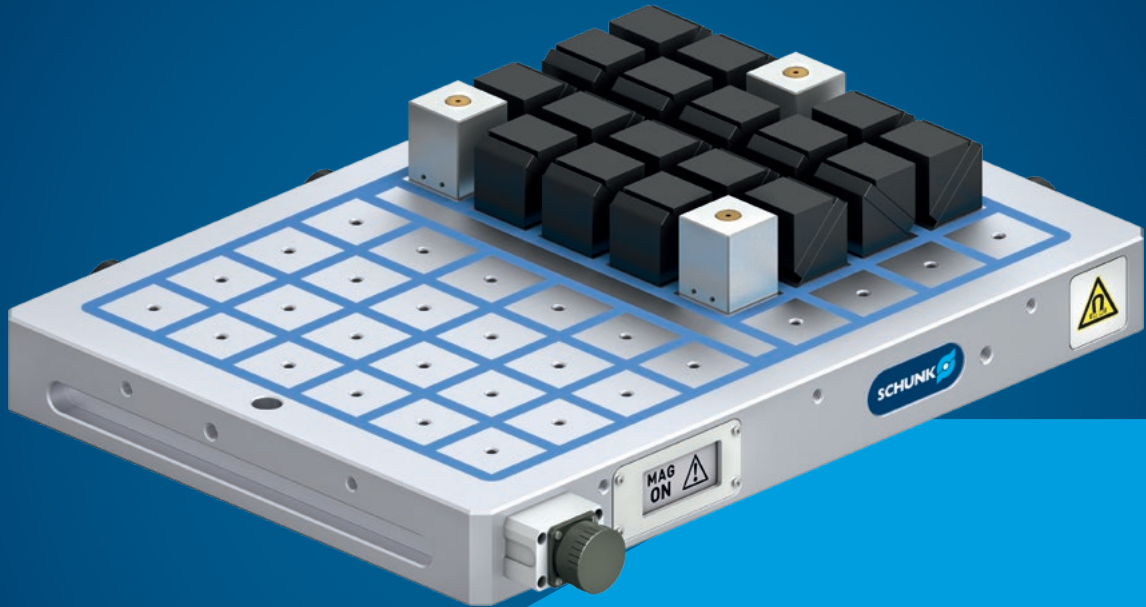




MAGNOS MFRS2

**Magnetic chucks with new
ePaper status display**

Hand in hand for tomorrow

Permanent electromagnetic chucks with new ePaper status display for clear indication of the clamping status

MAGNOS MFRS has always stood for powerful clamping of ferromagnetic workpieces and is characterized by a deeply penetrating magnetic field – ideal for demanding milling applications. The new MFRS2 generation now has an ePaper status display that is unique on the market and clearly indicates to the machine operator whether the magnetic chuck is activated or deactivated. In combination with the MAGNOS app, in which the machining process can be simulated, all uncertainties are eliminated. As in the past, pole extensions can be used for clamping large workpieces from five sides without interfering contours. Moreover, depending on the application and machine tool, it is possible to combine several magnetic chucks with one another and expand them.

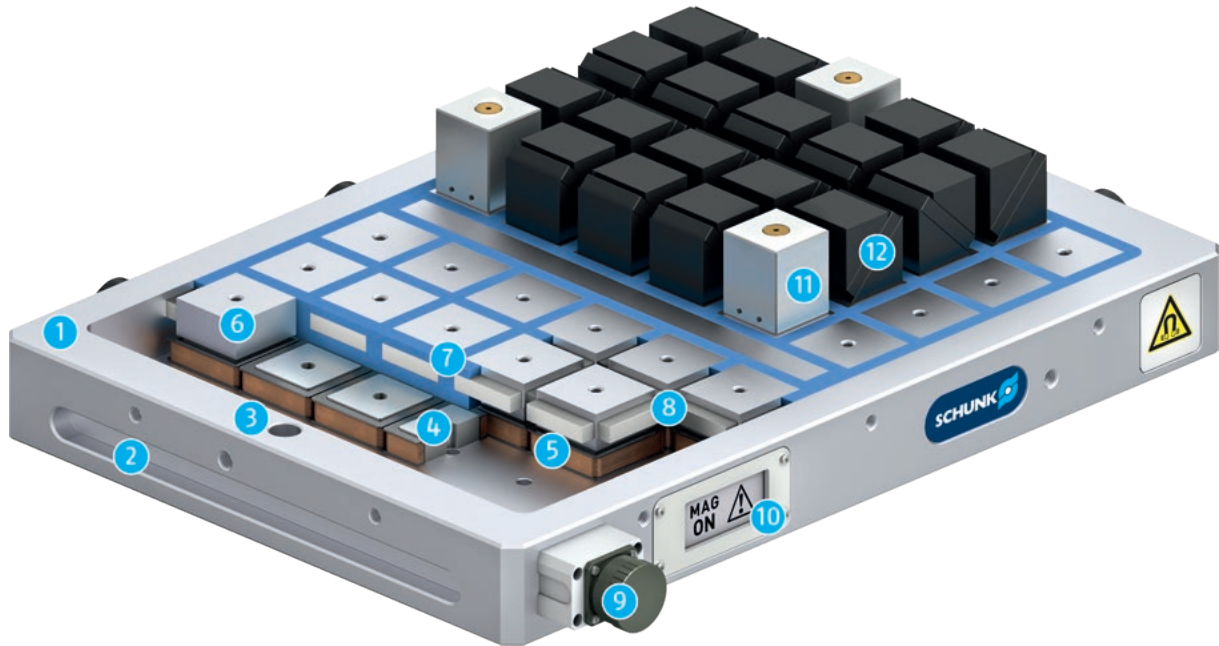


Advantages – Your benefits

- + New ePaper status display**
Visual display of the clamping status for reliable clamping and maximum process reliability
- + 5-sided workpiece machining in one set-up**
Higher accuracy by setting up once and at best accessibility of the machine spindle
- + Even permanent magnetic clamping force across the entire workpiece**
Low deformation and vibration clamping of the workpieces
- + Low vibration clamping**
Improved surfaces and significantly increased precision
- + Deformation-free clamping**
No deformation and internal forces in the workpiece due to the clamping force
- + Control unit compatible with machine control system**
Can also be used in automated applications
- + The modular principle**
Depending on the application or type of machine, the magnetic chucks can be combined or extended in accordance with the modular design principle
- + Clamping within a few seconds**
Shortest possible setup times and a resulting increase in productivity
- + State-of-the-art electropermanent technology for one-time energy supply for MAG/DEMAG process**
Energy-efficient and reliable clamping of the workpieces

Function MFRS2

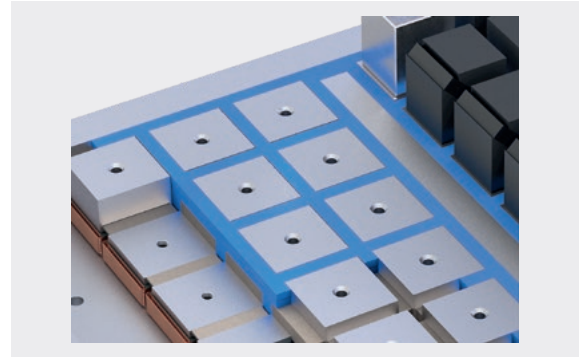
MAGNOS MFRS2 magnetic chucks require only a short electrical pulse, which briefly applies power to the coils. This pulse reverses the polarity of the reversible AlNiCo magnets. Due to the special arrangement of the neodymium permanent magnets, the magnetic field is subsequently short-circuited in the magnetic chuck or guided outwards into the workpiece, and the magnetic field is amplified, depending on the state. Pole extensions on the magnetic chuck ensure that the workpiece can be accurately clamped according to its characteristics and can be later machined from five sides.



- 1 Stable base body**
For optimum clamping results with an additional coating against corrosion
- 2 Mounting groove**
For mounting the magnetic chuck via clamping claws
- 3 Mounting hole**
For direct mounting of the magnetic chuck to the machine table
- 4 Invertible AlNiCo-magnets**
Embedded in the coil – for activating or deactivating of the magnetic chuck
- 5 Coil body, insulated version**
For transmitting pulses for activation or deactivation of the magnetic chuck
- 6 Steel pole**
For transferring the magnetic field to the workpiece and for mounting the pole extensions
- 7 Synthetic resin casting**
For sealing the magnetic chuck and sealing cavities
- 8 Neodymium magnets**
Non-pole reversing permanent magnets
- 9 Connection housing**
For connecting the magnetic chuck to the KEH plus control unit using suitable connection cables
- 10 Status display**
Clear visual display of the clamping status of the magnetic chuck
- 11 Fixed pole extensions**
For fixed support of the workpieces via a 3-point support for OP10 machining or full-surface support for OP20 machining
- 12 Flexible pole extensions**
For contact to deformed or uneven workpieces, in particular during OP10 machining

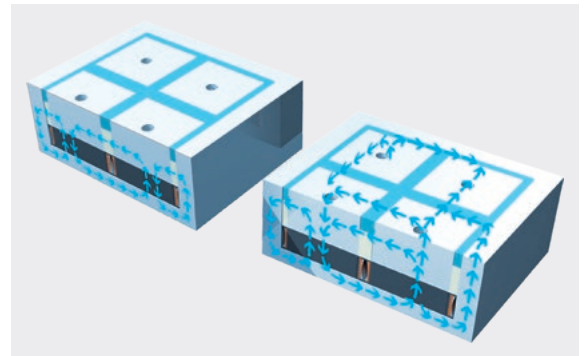
Synthetic resin filling

The synthetic resin filled under vacuum guarantees a unique insulation and magnetic life span of each plate. By means of this special high-end sealing process, the spaces between the poles are filled with high-strength synthetic resin. This resin protects the interior components of the magnetic chuck from corrosion.



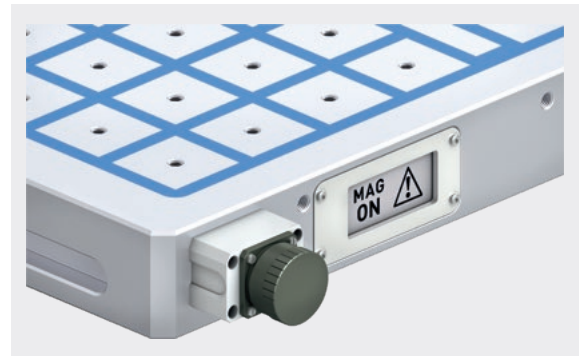
Magnetic double cycle

In order to allow the square pole plates magnetic field to be conducted outward towards the workpiece (clamping phase) or short-circuit it inside the plates (release phase), there are static, permanent magnets on the sides of the poles, and reversible-polarity magnets on the underside. Windings around the reversible-polarity magnets generate a temporary electromagnetic field that reverses the polarity of the magnets in a fraction of a second in order to magnetize or demagnetize them.



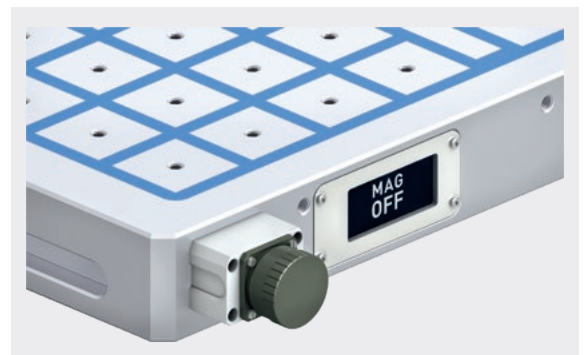
Visual display – MAG status

If the magnetic chuck is clamped or in MAG mode, "MAG ON" is clearly displayed on a white surface in combination with a "start hand". That means that the workpiece is clamped and the machining may be started.



Visual display – DEMAG status

If the magnetic chuck is not clamped or in DEMAG mode, "MAG OFF" is clearly displayed on a dark blue surface in combination with a "stop hand". That means that the workpiece is not clamped and no machining is allowed to be started.



Perfect support for workpieces

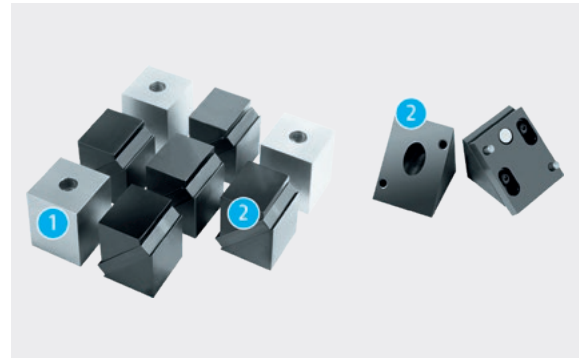
MAGNOS pole extensions ensure that the magnetic chuck locating surfaces are adapted to the workpiece. They enable machining from five sides and facilitate the machining of through-holes.

1 Fixed pole extensions

Serve either as a 3-point support for OP10 or full-surface support for OP20 machining.

2 Flexible EASYTURN pole extensions

Adapt horizontally or vertically to the workpiece – depending on requirements.

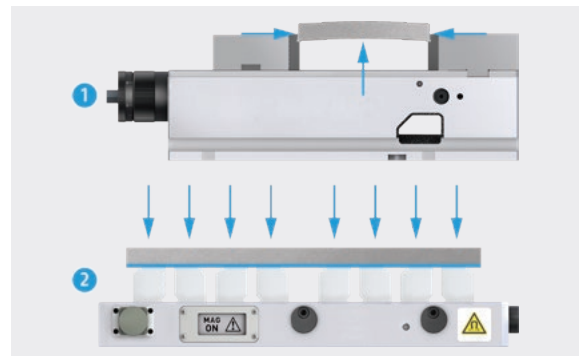


No deformation due to gentle clamping

Due to the magnetic force of MAGNOS thin-walled and sensitive workpieces can be clamped gently and securely. There is no crushing due to isolated points of stress, and none of the surface damage which can occur when using conventional clamping devices.

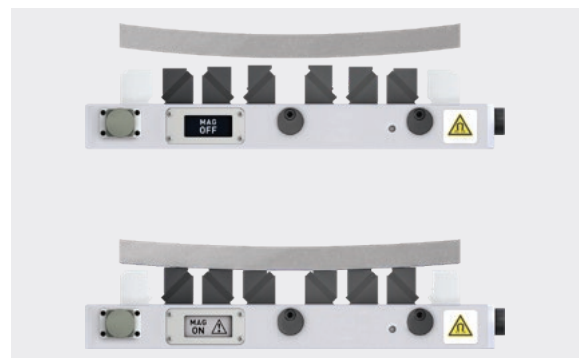
1 Workpiece clamping with conventional clamping devices

2 Workpiece clamping with MAGNOS



Adapts perfectly to the contours of the workpiece

Workpieces of any structure can be perfectly clamped with MAGNOS pole extensions. The pole extensions perfectly adapt to the workpiece contour – the workpiece has an underlay and is stably positioned on the extensions for 5-sided all-round machining.



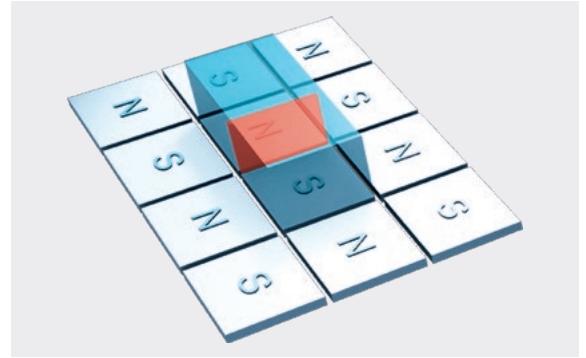
Shortest possible setup times and a resulting increase in productivity

With MAGNOS, the workpiece can be clamped within seconds. It is no longer necessary to spend time on the fine adjustment of the clamping elements or on changing the set-up of the workpiece while it is being processed – nor are time-intensive set-up periods and machine downtimes required.



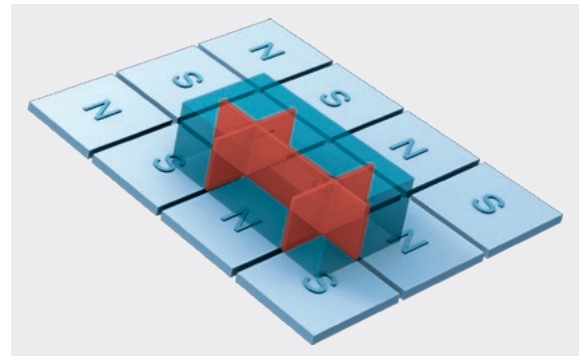
Increasing clamping force by covering poles – two poles

Simply covering one north pole and one south pole is the best way to maintain the holding force acting in the magnets' main force direction in order to prevent the workpiece from being pulled off. This allows for good force absorption against shifting



Increasing clamping force by covering poles – six poles

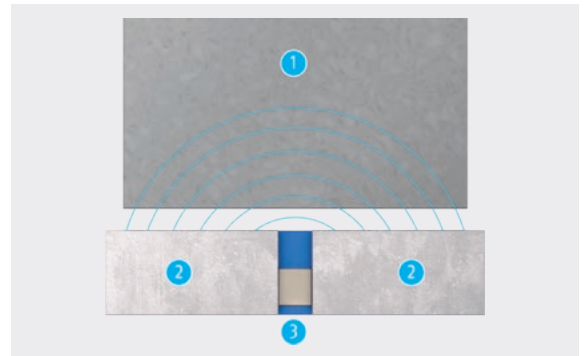
The multiple, maximum covering of the north and south poles generates an excellent holding force to prevent the workpiece from being pulled off. In this case and due to the concentration of the force field lines the best moving force absorption is achieved.



Magnetic chuck type MFRS-A1

MFRS-A1 magnetic chucks with a high compact performance of acting magnetic force are generally sufficient for 80% of all applications.

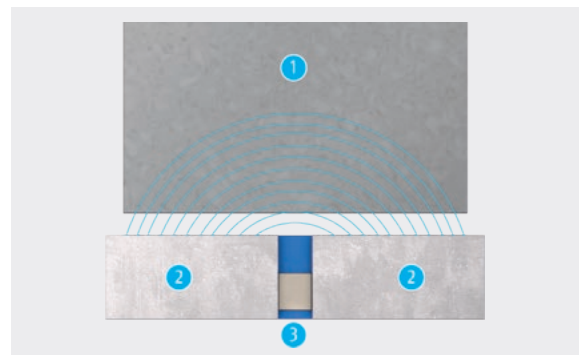
- ❶ Workpiece
- ❷ Poles MFRS-A1
- ❸ MFRS-A1



Magnetic chuck type MFRS-A2

MFRS-A2 magnetic chucks have an even higher density of magnetic field penetrating into the workpiece. These are used primarily for workpieces with very uneven surfaces (die-cast and forged parts) and thus a larger air gap, as more magnetic field lines stay in contact with the workpiece.

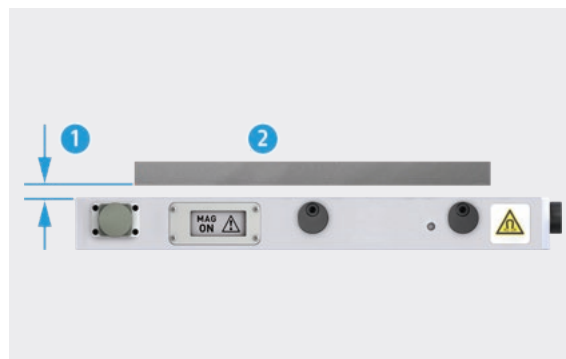
- ❶ Workpiece
- ❷ Poles MFRS-A2
- ❸ MFRS-A2



Definition of air gap

The distance between the magnetic chuck or the pole extensions to the workpiece is called air gap. For a pre-machined workpiece with e.g. a milled surface, the air gap is considerably smaller than for a workpiece which is only sawn. The larger the air gap, the weaker is the magnetic clamping force between magnetic chuck and workpiece.

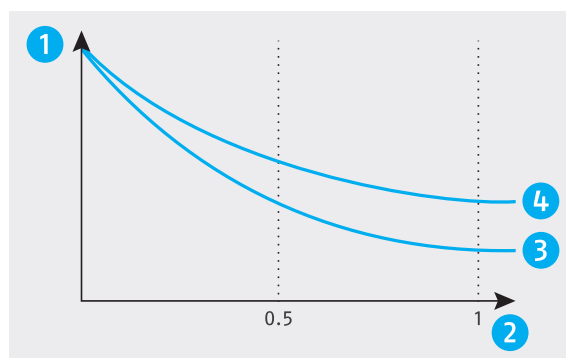
- ① Air gap
- ② Workpiece



Influence of the air gap on the magnetic clamping force

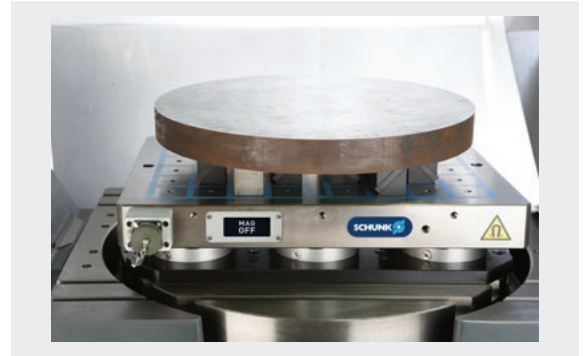
As the air gap increases, the resulting magnetic clamping force to the workpiece decreases. Due to the higher magnetic flow density, MFRS-A2 magnetic chucks with an increasing air gap have better clamping force characteristics than MFRS-A1 magnetic chucks.

- ① Magnetic clamping force [kN]
- ② Air gap [mm]
- ③ MFRS-A1
- ④ MFRS-A2



The operation in a few steps

The workpiece is positioned on the MAGNOS magnetic chuck. Using the pole extensions fully enables the workpiece to be machined from 5 sides in just one set-up.



Simplicity itself: The control unit and the magnetic chuck are connected to one another using the quick-release connector.



By pressing the green and blue buttons, the workpiece is permanently, evenly, and safely clamped in a few seconds.



Remove the quick-release connector. The magnetic chuck is self-sufficient: the magnetic clamping force holds the workpiece consistently and for an unlimited period of time.



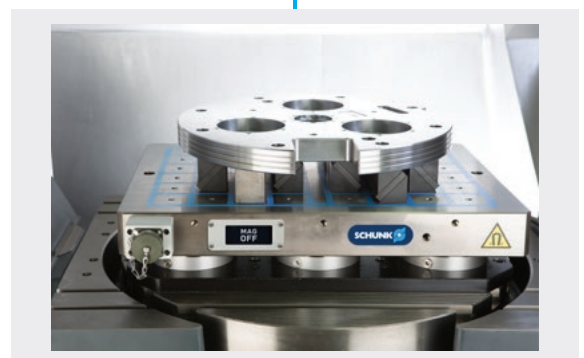
Simplicity itself: The control unit and the magnetic chuck are connected to one another using the quick-release connector.

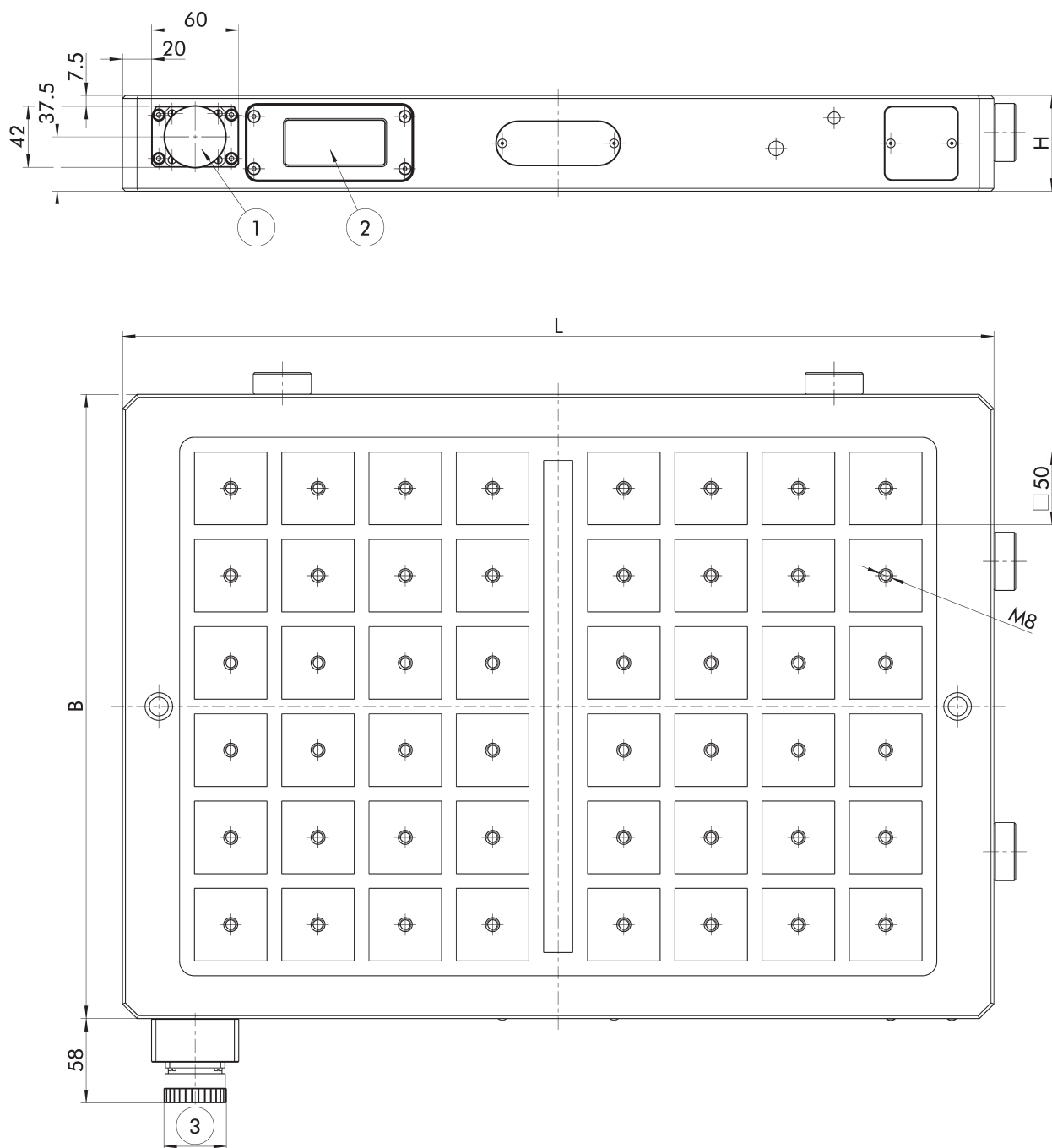


By pressinging the red and blue buttons, the magnetic field is deactivated.



The magnetic field is deactivated and the workpiece can be removed from the magnetic chuck.





Subject to technical changes.

- ① Fast connection for connection cable
- ② ePaper status display

- ③ $\varnothing 43$ mm for 4-PIN connector

Technical data

Description	ID	Length L [mm]	Width B [mm]	Height H [mm]	Max. clamping force [kN]	Number of poles	Connection	Number of channels	Weight [kg]
MFRS2-A1-050 315 x 315	1594943	315	315	66	63	16	4-PIN	1	50
MFRS2-A1-050 430 x 315	1594944	430	315	66	94	24	4-PIN	1	65
MFRS2-A1-050 500 x 315	1594946	500	315	66	94	24	4-PIN	1	75
MFRS2-A1-050 600 x 315	1594947	600	315	66	126	32	4-PIN	1	95
MFRS2-A1-050 430 x 430	1594948	430	430	66	141	36	4-PIN	1	85
MFRS2-A1-050 600 x 430	1594949	600	430	66	188	48	4-PIN	1	120
MFRS2-A1-050 800 x 430	1594950	800	430	66	236	60	4-PIN	1	160
MFRS2-A1-050 500 x 500	1594951	500	500	66	165	42	4-PIN	1	115
MFRS2-A1-050 600 x 500	1594952	600	500	66	220	56	4-PIN	1	145
MFRS2-A1-050 800 x 500	1594953	800	500	66	275	70	4-PIN	1	180
MFRS2-A1-050 1000 x 500	1594954	1000	500	66	330	84	4-PIN	1	230
MFRS2-A1-050 600 x 600	1594955	600	600	66	251	64	4-PIN	1	165
MFRS2-A1-050 800 x 600	1594956	800	600	66	314	80	4-PIN	1	220
MFRS2-A1-050 1000 x 600	1594957	1000	600	66	377	96	4-PIN	1	270

Scope of delivery

Magnetic chuck, operating manual, CE declaration of conformity; without control unit, without pole extensions

Notes

Field of application

For machining medium-sized workpieces with medium thickness.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

ePaper status display

Visual display of the clamping status of the magnetic chuck for process-reliable clamping.

MAG ON = magnetic chuck "clamped".

MAG OFF = magnetic chuck "not clamped".

Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

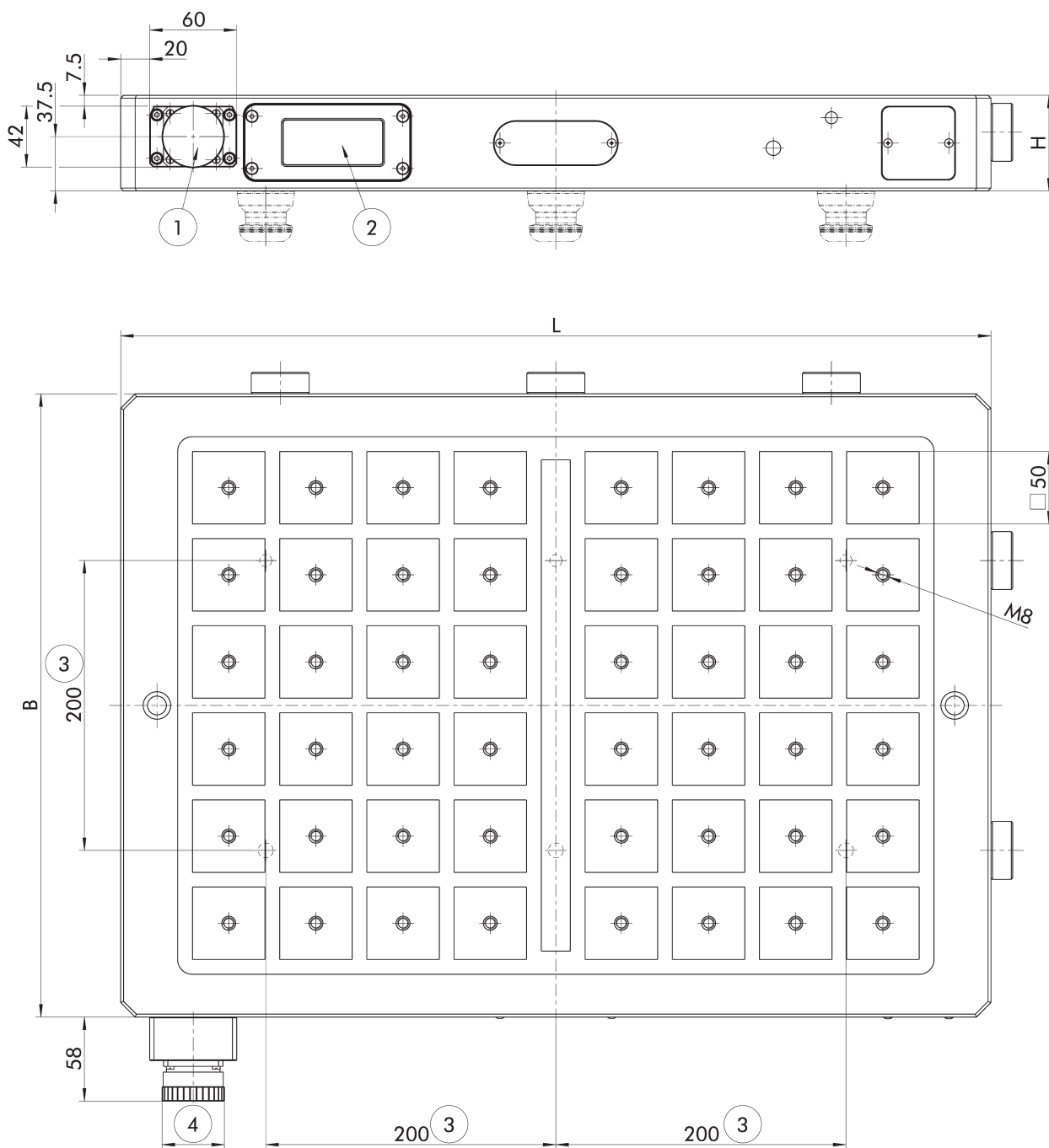
Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Mains voltage 220 V/60 Hz

MFRS2 magnetic chucks with 220 V/60 Hz are available on request.

Further technical data

Pole size	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[V]	[mm]	[mm]		[°C]
50 x 50	400/460	8	230 x 170	67	80



Subject to technical changes.

- ① Fast connection for connection cable
- ② ePaper status display
- ③ Prepared for NSE3 and GFD clamping pins
- ④ Ø43 mm for 4-PIN connector

Technical data

Description	ID	Length L	Width B	Height H	Max. clamping force	Number of poles	Connection	Number of channels	Suitable for	Weight
		[mm]	[mm]	[mm]	[kN]					[kg]
MFRS2-V-A1-050 315 x 315	1594958	315	315	66	63	16	4-PIN	1	NSL3 200	50
MFRS2-V-A1-050 430 x 315	1594959	430	315	66	94	24	4-PIN	1	NSL3 200	65
MFRS2-V-A1-050 430 x 430	1594960	430	430	66	141	36	4-PIN	1	NSL3 400	85
MFRS2-V-A1-050 600 x 430	1594961	600	430	66	188	48	4-PIN	1	NSL3 600	120
MFRS2-V-A1-050 800 x 600	1594962	800	600	66	314	80	4-PIN	1	NSL3 600	220

Scope of delivery

Magnetic chuck with VERO-S interface, operating manual, CE declaration of conformity; without control unit, without pole extensions, without clamping pins

Notes

Field of application

For machining medium-sized workpieces with medium thickness.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

ePaper status display

Visual display of the clamping status of the magnetic chuck for process-reliable clamping.

MAG ON = magnetic chuck "clamped".

MAG OFF = magnetic chuck "not clamped".

Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

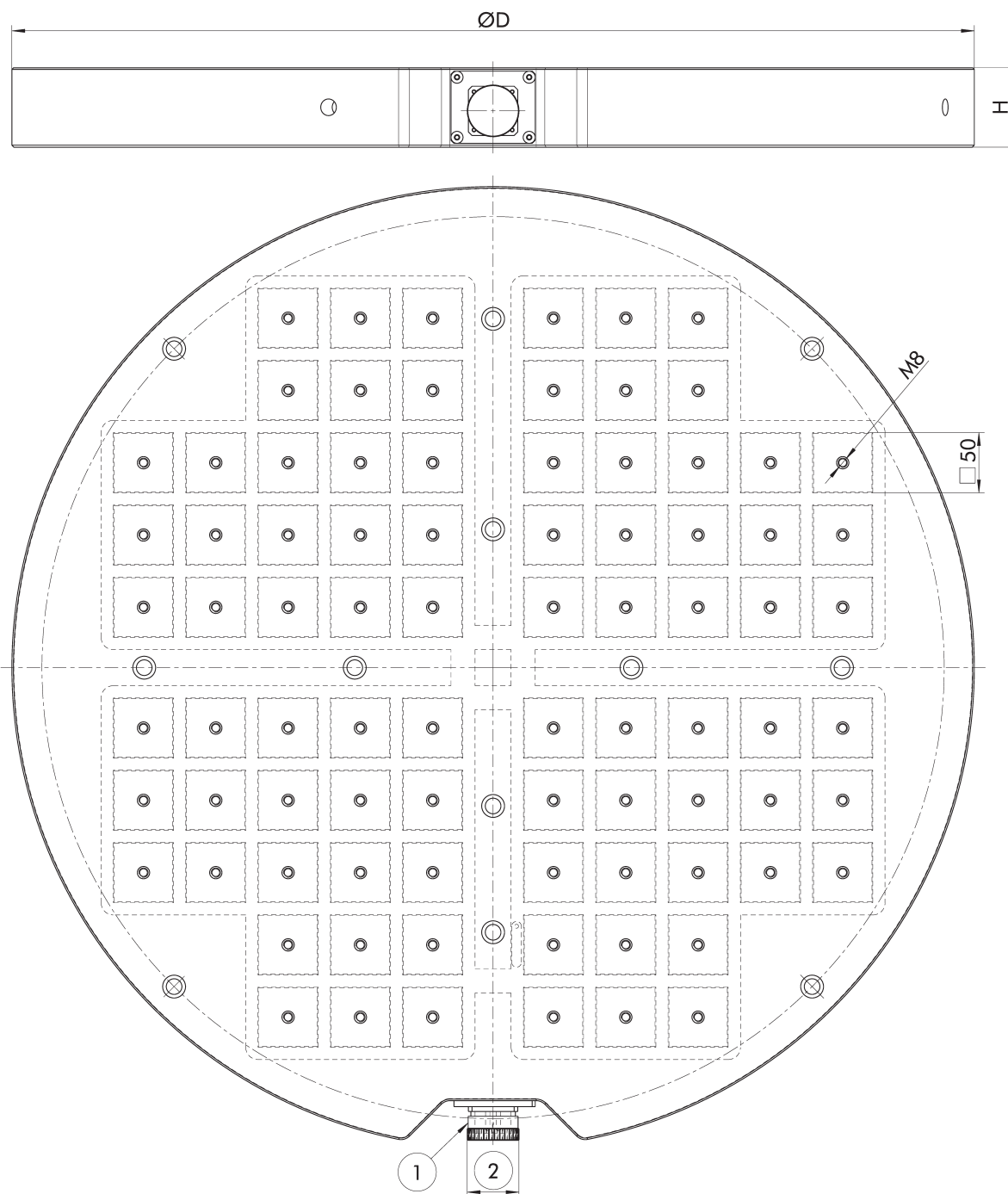
Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Mains voltage 220 V/60 Hz

MFRS2 magnetic chucks with 220 V/60 Hz are available on request.

Further technical data

Pole size	Pitch for VERO-S	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[mm]	[V]	[mm]	[mm]		[°C]
50 x 50	200 x 200	400/460	8	230 x 170	67	80



Subject to technical changes.

① Fast connection for connection cable

② $\varnothing 43$ mm for 4-PIN connector, $\varnothing 46$ mm for 7-PIN connector

Technical data

Description	ID	ØAD	Height H	Max. clamping force	Number of poles	Connection	Number of channels	Weight
		[mm]	[mm]	[kN]				[kg]
MFRR-A1-050 Ø300	0420620	300	66	39	10	4-PIN	1	35
MFRR-A1-050 Ø420	0420621	420	66	86	22	4-PIN	1	65
MFRR-A1-050 Ø500	0420622	500	66	125	32	4-PIN	1	90
MFRR-A1-050 Ø600	0420623	600	66	205	52	4-PIN	1	130
MFRR-A1-050 Ø800	0420624	800	66	329	84	4-PIN	1	235
MFRR-A1-050 Ø1000	0420625	1000	66	470	120	7-PIN	2	365
MFRR-A1-050 Ø1200	0420626	1200	66	755	192	7-PIN	2	525
MFRR-A1-050 Ø1500	0420627	1500	66	1162	296	7-PIN	4	850

Scope of delivery

Magnetic chuck, operating manual, CE declaration of conformity; without control unit, without pole extensions

Notes

Field of application

For machining medium-sized workpieces with medium thicknesses on round machine tables.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

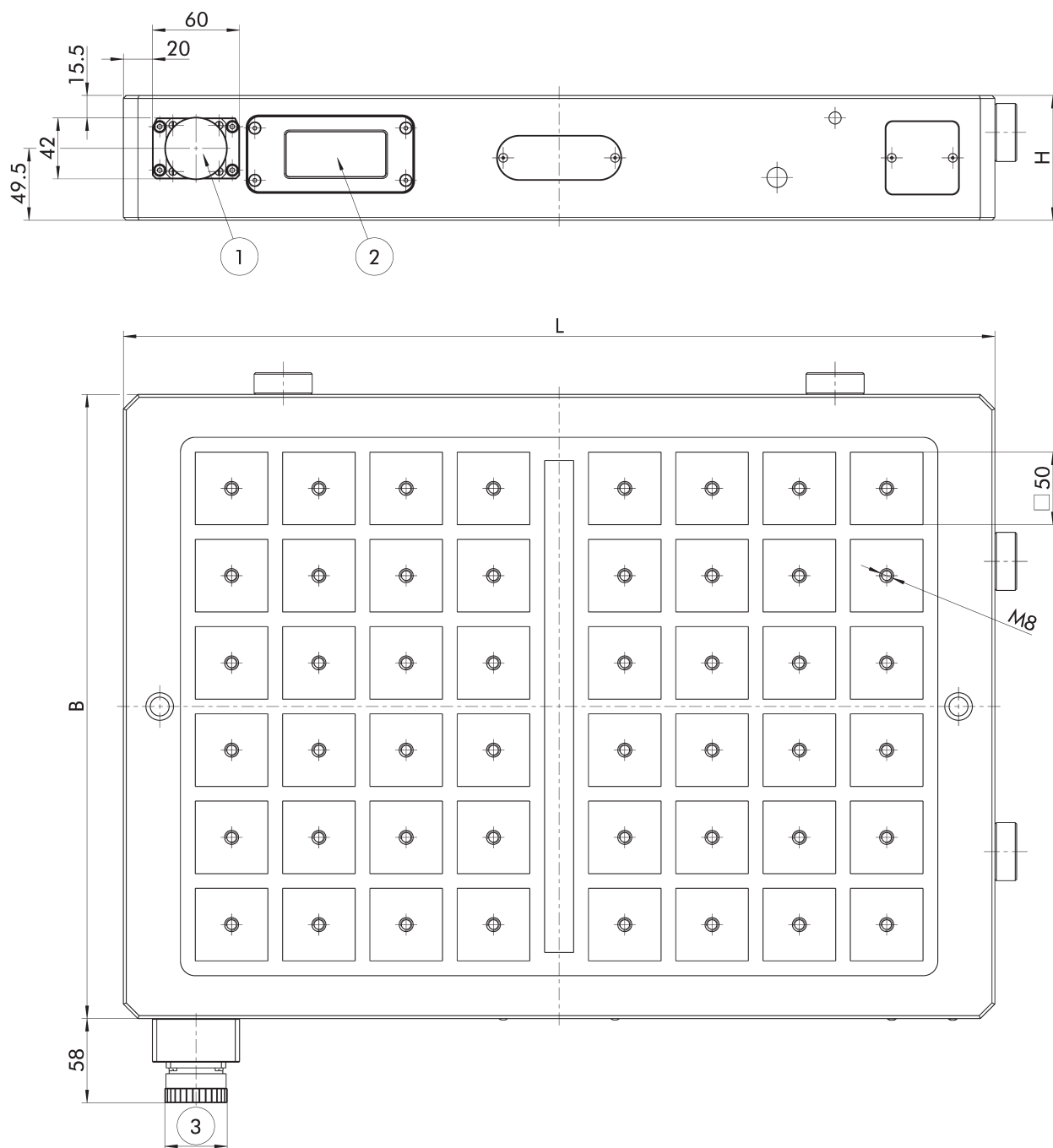
Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Further technical data

Pole size	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[V]	[mm]	[mm]		[°C]
50 x 50	400/460	8	230 x 170	67	80



Subject to technical changes.

- ① Fast connection for connection cable
- ② ePaper status display

- ③ Ø43 mm for 4-PIN connector, Ø46 mm for 7-PIN connector

Technical data

Description	ID	Length L [mm]	Width B [mm]	Height H [mm]	Max. clamping force [kN]	Number of poles	Connection	Number of channels	Weight [kg]
MFRS2-A2-050 315 x 315	1594975	315	315	86	63	16	4-PIN	1	65
MFRS2-A2-050 430 x 315	1594976	430	315	86	94	24	4-PIN	1	90
MFRS2-A2-050 500 x 315	1594977	500	315	86	94	24	4-PIN	1	100
MFRS2-A2-050 600 x 315	1594978	600	315	86	126	32	4-PIN	1	120
MFRS2-A2-050 430 x 430	1594990	430	430	86	141	36	4-PIN	1	115
MFRS2-A2-050 600 x 430	1594991	600	430	86	188	48	4-PIN	1	155
MFRS2-A2-050 800 x 430	1594992	800	430	86	236	60	7-PIN	2	205
MFRS2-A2-050 500 x 500	1594993	500	500	86	165	42	4-PIN	1	150
MFRS2-A2-050 600 x 500	1594994	600	500	86	220	56	4-PIN	1	180
MFRS2-A2-050 800 x 500	1594995	800	500	86	275	70	7-PIN	2	235
MFRS2-A2-050 1000 x 500	1594996	1000	500	86	330	84	7-PIN	2	295
MFRS2-A2-050 600 x 600	1594997	600	600	86	251	64	7-PIN	2	215
MFRS2-A2-050 800 x 600	1594999	800	600	86	314	80	7-PIN	2	280
MFRS2-A2-050 1000 x 600	1595000	1000	600	86	377	96	7-PIN	2	350

Scope of delivery

Magnetic chuck, operating manual, CE declaration of conformity; without control unit, without pole extensions

Notes

Field of application

For machining medium-sized workpieces with medium thickness.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

ePaper status display

Visual display of the clamping status of the magnetic chuck for process-reliable clamping.

MAG ON = magnetic chuck "clamped".

MAG OFF = magnetic chuck "not clamped".

Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

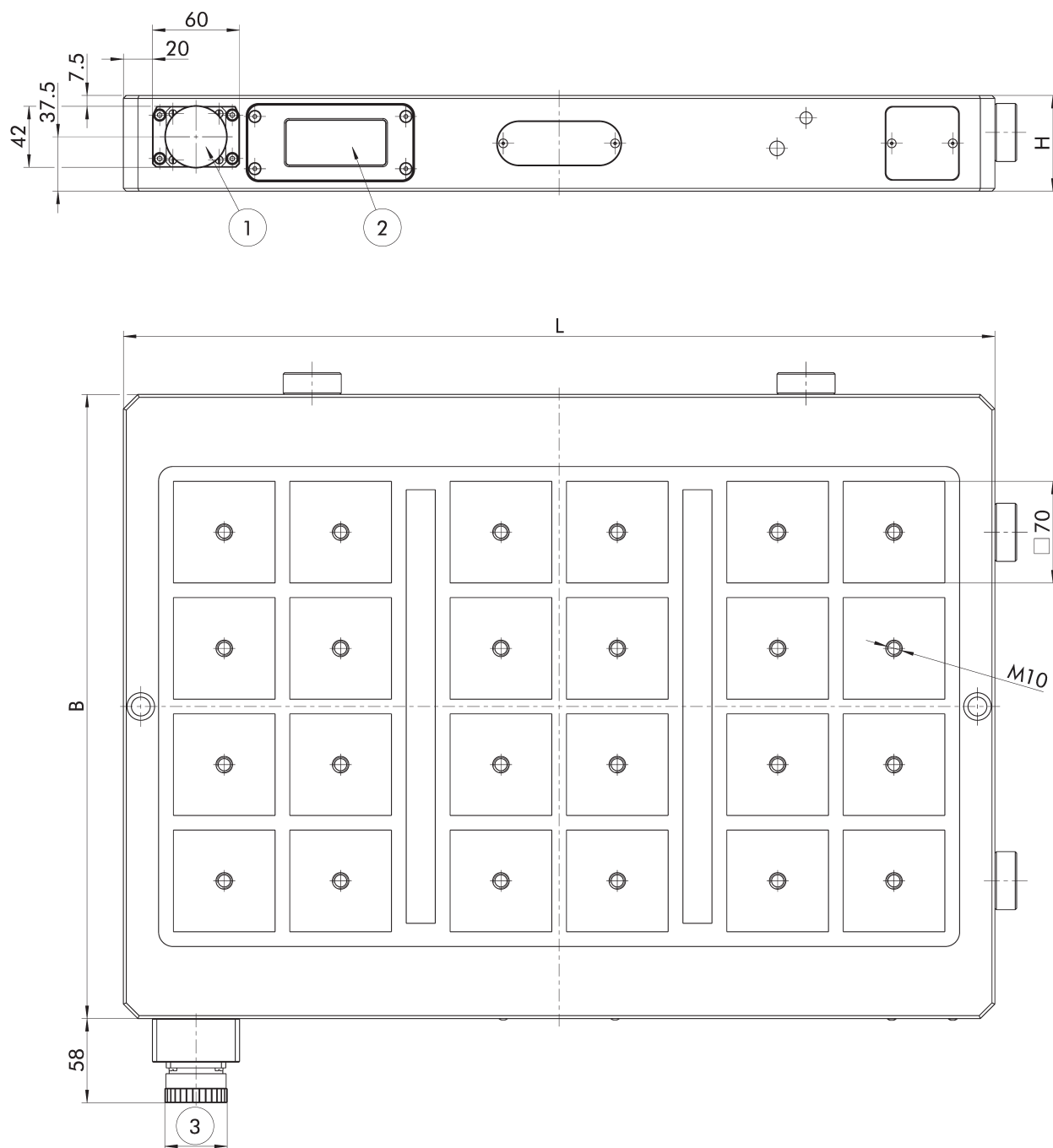
Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Mains voltage 220 V/60 Hz

MFRS2 magnetic chucks with 220 V/60 Hz are available on request.

Further technical data

Pole size	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[V]	[mm]	[mm]		[°C]
50 x 50	400/460	13	230 x 170	67	80



Subject to technical changes.

- ① Fast connection for connection cable
- ② ePaper status display

- ③ $\varnothing 43$ mm for 4-PIN connector

Technical data

Description	ID	Length L	Width B	Height H	Max. clamping force	Number of poles	Connection	Number of channels	Weight
		[mm]	[mm]	[mm]	[kN]				[kg]
MFRS2-A1-070 600 x 315	1595001	600	315	66	139	18	4-PIN	1	86
MFRS2-A1-070 800 x 315	1595002	800	315	66	185	24	4-PIN	1	120
MFRS2-A1-070 430 x 430	1595015	430	430	66	123	16	4-PIN	1	85
MFRS2-A1-070 600 x 430	1595016	600	430	66	185	24	4-PIN	1	120
MFRS2-A1-070 800 x 430	1595017	800	430	66	246	32	4-PIN	1	160
MFRS2-A1-070 500 x 500	1595018	500	500	66	193	25	4-PIN	1	115
MFRS2-A1-070 800 x 500	1595020	800	500	66	308	40	4-PIN	1	180
MFRS2-A1-070 1000 x 500	1595021	1000	500	66	385	50	4-PIN	1	230
MFRS2-A1-070 600 x 600	1595022	600	600	66	277	36	4-PIN	1	165
MFRS2-A1-070 800 x 600	1595023	800	600	66	370	48	4-PIN	1	220
MFRS2-A1-070 1000 x 600	1595024	1000	600	66	462	60	4-PIN	1	277
MFRS2-A1-070 1200 x 600	1595025	1200	600	66	554	72	4-PIN	1	330

Scope of delivery

Magnetic chuck, operating manual, CE declaration of conformity; without control unit, without pole extensions

Notes

Field of application

For machining large and thick workpieces.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

ePaper status display

Visual display of the clamping status of the magnetic chuck for process-reliable clamping.

MAG ON = magnetic chuck "clamped".

MAG OFF = magnetic chuck "not clamped".

Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

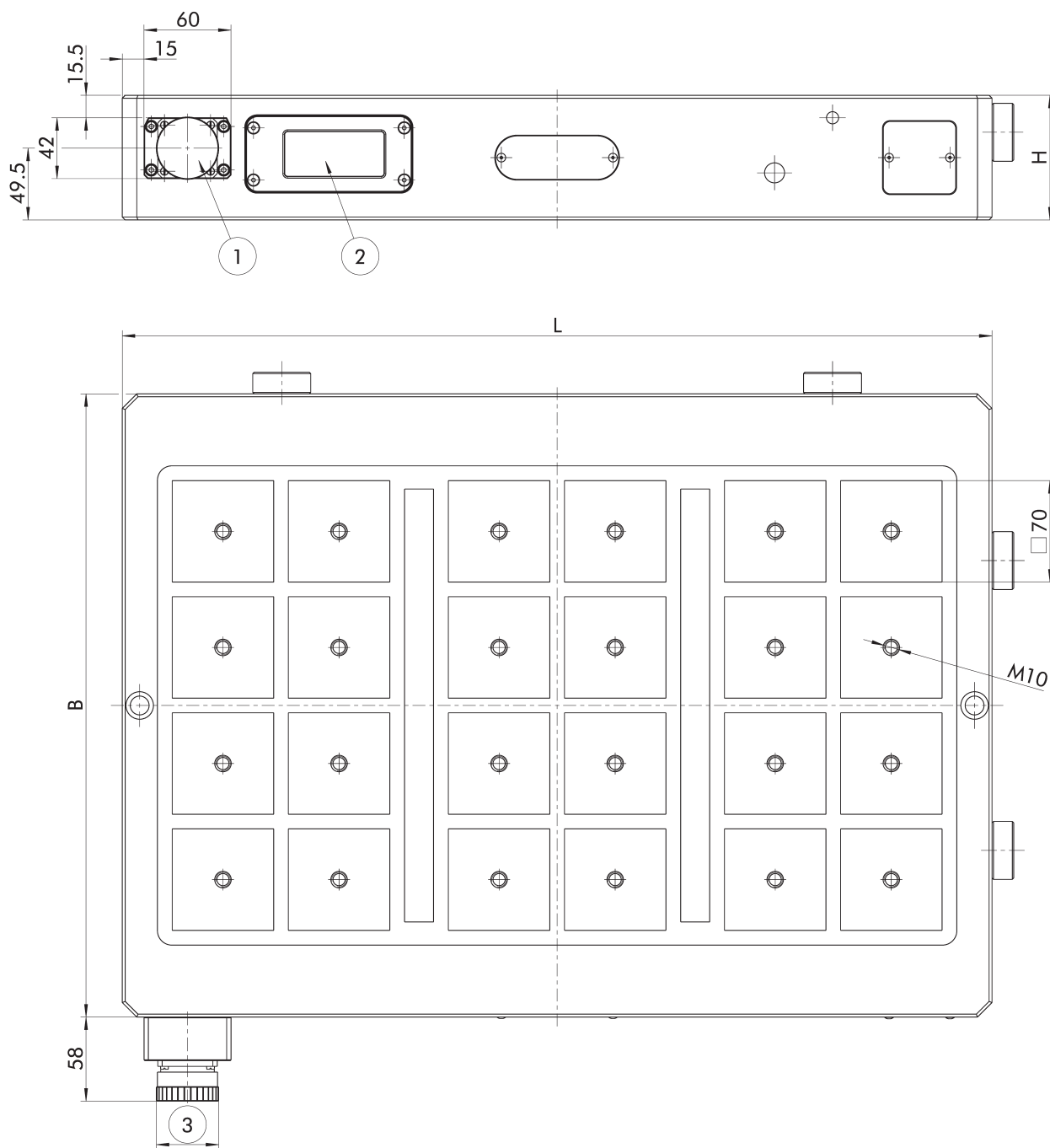
Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Mains voltage 220 V/60 Hz

MFRS2 magnetic chucks with 220 V/60 Hz are available on request.

Further technical data

Pole size	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[V]	[mm]	[mm]		[°C]
70 x 70	400/460	16	310 x 230	67	80



Subject to technical changes.

- ① Fast connection for connection cable
- ② ePaper status display

- ③ Ø43 mm for 4-PIN connector, Ø46 mm for 7-PIN connector

Technical data

Description	ID	Length L [mm]	Width B [mm]	Height H [mm]	Max. clamping force [kN]	Number of poles	Connection	Number of channels	Weight [kg]
MFRS2-A2-070 600 x 315	1595026	600	315	86	139	18	4-PIN	1	115
MFRS2-A2-070 800 x 315	1595027	800	315	86	185	24	4-PIN	1	150
MFRS2-A2-070 430 x 430	1595029	430	430	86	123	16	4-PIN	1	110
MFRS2-A2-070 600 x 430	1595030	600	430	86	185	24	4-PIN	1	155
MFRS2-A2-070 800 x 430	1595031	800	430	86	246	32	4-PIN	1	207
MFRS2-A2-070 500 x 500	1595032	500	500	86	193	25	4-PIN	1	147
MFRS2-A2-070 800 x 500	1595033	800	500	86	308	40	4-PIN	1	240
MFRS2-A2-070 1000 x 500	1595034	1000	500	86	385	50	7-PIN	2	305
MFRS2-A2-070 600 x 600	1595035	600	600	86	277	36	4-PIN	1	216
MFRS2-A2-070 800 x 600	1595036	800	600	86	370	48	7-PIN	2	290
MFRS2-A2-070 1200 x 600	1595037	1200	600	86	554	72	7-PIN	2	430

Scope of delivery

Magnetic chuck, operating manual, CE declaration of conformity; without control unit, without pole extensions

Notes

Field of application

For machining large and thick workpieces.

Maximum clamping force

The maximum clamping force is only available when all poles of the magnetic chuck are covered.

ePaper status display

Visual display of the clamping status of the magnetic chuck for process-reliable clamping.

MAG ON = magnetic chuck "clamped".

MAG OFF = magnetic chuck "not clamped".

Magnetic chucks of the same height

The magnetic chucks are height-adjustable ± 0.1 mm as standard.

Magnetic chucks ground to an equal height (± 0.01 mm) are available on request.

Mains voltage 220 V/60 Hz

MFRS2 magnetic chucks with 220 V/60 Hz are available on request.

Further technical data

Pole size	Mains voltage	Min. material thickness	Min. workpiece size	IP protection class with closed cover plate	Max. working temperature
[mm]	[V]	[mm]	[mm]		[°C]
70 x 70	400/460	20	310 x 230	67	80

Accessories

Standard clamping pins

Clamping pin for positive connection with NSE3 clamping modules.
With shortened fastening screw.



Suitable for	Description	ID
MFRS2-V-A1-050	SPA 40-K	0432369
MFRS2-V-A1-050	SPB 40-K	0432370
MFRS2-V-A1-050	SPC 40-K	1327450

Clamping pin GFD-SP

Clamping pin for positive connection with GFD set-up stations.



Suitable for	Description	ID
MFRS2-V-A1-050	GFD-SP 40	0433600

Workpiece stop

For pre-positioning workpieces on magnetic chucks.



Suitable for	Description	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRS2-A2-050 MFRS2-A1-070 MFRS2-A2-070	WSA-MFRS 150	1315230

ASM 14 set of set-up screws

For fastening of MFRS magnetic chucks on the machine table.
Set consisting of 10 x screws M12 and 10 x T-nuts for T-slot 14 mm.



Suitable for	Description	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRS2-A1-070	ASM 14-66	1322774
MFRS2-A2-050 MFRS2-A2-070	ASM 14-86	1322775

ASM 18 set of set-up screws

For fastening of MFRS magnetic chucks on the machine table.
Set consisting of 10 x screws M12 and 10 x T-nuts for T-slot 18 mm.



Suitable for	Description	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRS2-A1-070	ASM 18-66	1322781
MFRS2-A2-050 MFRS2-A2-070	ASM 18-86	1322782

ASM 22 set of set-up screws

For fastening of MFRS magnetic chucks on the machine table.
Set consisting of 10 x screws M12 and 10 x T-nuts for T-slot 22 mm.



Suitable for	Description	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRS2-A1-070	ASM 22-66	1322787
MFRS2-A2-050 MFRS2-A2-070	ASM 22-86	1322788

ASM 28 set of set-up screws

For fastening of MFRS magnetic chucks on the machine table.
Set consisting of 10 x screws M12 and 10 x T-nuts for T-slot 28 mm.



Suitable for	Description	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRS2-A1-070	ASM 28-66	1322793
MFRS2-A2-050 MFRS2-A2-070	ASM 28-86	1322794

Clamping claw SPR MFRS type A

For fastening of MFRS magnetic chucks of pole sizes 50 and 70.



Suitable for	Description	ID
T-Nut 14 mm	SPR MFRS 14-50/70	1322645
T-Nut 18 mm	SPR MFRS 18-50/70	1322885
T-Nut 22 mm	SPR MFRS 22-50/70	1322886
T-Nut 28 mm	SPR MFRS 28-50/70	1322887

Pole extensions

Fixed pole extensions PVF 50

With through-bore and M8 screw.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050					
MFRS2-A2-050	PVF 50-20	45	45	20	0420090
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050					
MFRS2-A2-050	PVF 50-32	45	45	32	0422391
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050					
MFRS2-A2-050	PVF 50-54	45	45	54	0420091

Flexible pole extensions PVB 50

With through-bore and M8 screw.
Compensation stroke 5 mm.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050					
MFRS2-A2-050	PVB 50-32	47.5	45	32	0422392

Flexible pole extension EASYTURN PVB 50

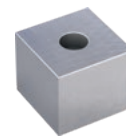
With through-bore and M8 screw.
Compensation stroke 7 mm.
For vertical or horizontal use.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050					
MFRS2-A2-050	PVB 50-54	47	45	54	0420092

Fixed pole extensions PVF 70

With through-bore and M10 screw.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-070					
MFRS2-A2-070	PVF 70-30	70	70	30	0422993
MFRS2-A1-070					
MFRS2-A2-070	PVF 70-47	70	70	47	0422995
MFRS2-A1-070					
MFRS2-A2-070	PVF 70-70	70	70	70	0422997

Flexible pole extensions PVB 70

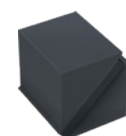
With through-bore and M10 screw.
Compensation stroke 7 mm.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-070					
MFRS2-A2-070	PVB 70-47	75	70	47	0422994

Flexible pole extension EASYTURN PVB 70

With through-bore and M10 screw.
Compensation stroke 7 mm.
For vertical or horizontal use.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-070					
MFRS2-A2-070	PVB 70-70	69	70	70	0422996

Pole extension quick change

Retrofit kit for pole extension quick change

For a one-time assembly and alignment on the magnetic chuck.
With M8 thread.



Suitable for	Description	ID
MFRS2-A1-050		
MFRS2-V-A1-050		
MFRR-A1-050		
MFRS2-A2-050	QCS-NRS	1497908

Fixed pole extension PVF 50 QCS

Prepared for pole extension quick change
Without cover plate.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050	PVF 50-32				
MFRS2-A2-050	QCS	45	45	32	1497903
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050	PVF 50-54				
MFRS2-A2-050	QCS	45	45	54	1497902

Flexible pole extension PVB 50 QCS

Prepared for pole extension quick change
Compensation stroke 7 mm.
For vertical or horizontal use.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050					
MFRS2-V-A1-050					
MFRR-A1-050	PVB 50-54				
MFRS2-A2-050	QCS	47	45	54	1497899

Mounting aid for pole extension quick change

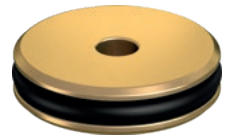
Assembly aid for one-off alignment of the clamping plates of the retrofit kit.



Suitable for	Description	ID
MFRS2-A1-050		
MFRS2-V-A1-050		
MFRR-A1-050		
MFRS2-A2-050	QCS-GMS	1497904

Cover plate

Used to close the through-hole in the fixed pole extensions.

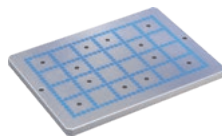


Suitable for	Description	ID
PVF 50-32 QCS		
PVF 50-54 QCS	QCS-VSD Ø16	40106738

Pole plates

24-way pole plate

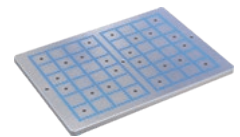
For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050	PVP 50-22 430 x 315				
MFRS2-A2-050		430	315	22	0422490

48-way pole plate

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050	PVP 50-22 600 x 430				
MFRS2-A2-050		600	430	22	0422491

Pole blocks

2-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-2	110	50	34	1311952
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-57-2	110	50	57	1311956

3-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-57-3	170	50	57	1315228

4-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-4	110	110	34	1311953
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-57-4	230	50	57	1311957

6-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-6	170	110	34	1311954
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-57-6	350	50	57	1315229

8-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-8	230	110	34	1311955

12-way pole block

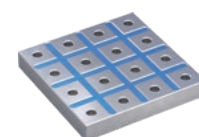
For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-12	350	110	34	1315226

16-way pole block

For milling contours and special forms.



Suitable for	Description	Length mm	Width mm	Height mm	ID
MFRS2-A1-050 MFRS2-V-A1-050 MFRR-A1-050					
MFRS2-A2-050	PEB 50-34-16	230	230	34	1315227



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