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Technology Full of Attraction

Clamping with Magnet Plates

Clamping Plates

Clamping Chucks

Lifting Magnets

Holding Magnets

Demagnetizing Units

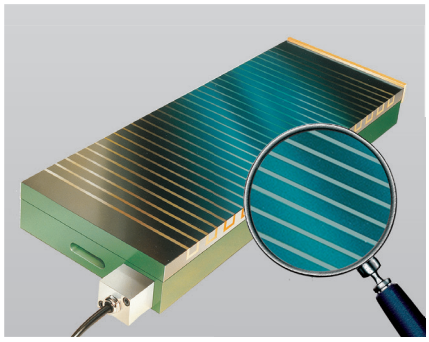
Control Electronics

Metal Detectors

Magnet Separators

Non-Ferrous Separators

Electro-Magnet-Clamping-Plates

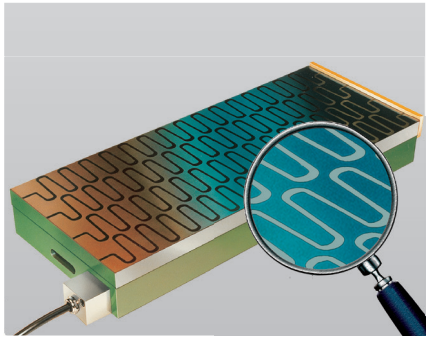


Series 112

with continuous transverse pole spacing

The internal polarity reversal of this magnetic system corresponds precisely to the distribution of the pole on the clamping surface, which means the adhesive force is uniformly distributed over the entire clamping surface. This pole spacing also allows you to clamp workpieces to the longitudinal sides of the pole plates.

Application: universal grinding magnet

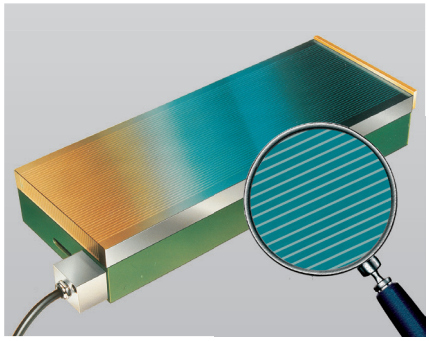


Series 115

with sinusoidal pole spacing

This specific type of pole spacing offers you a symmetrical distribution of north and south poles over the entire clamping surface – in both longitudinal and transverse directions. This arrangement means the clamping plate has a particularly even adhesive force over the entire pole face.

Application: grinding, milling



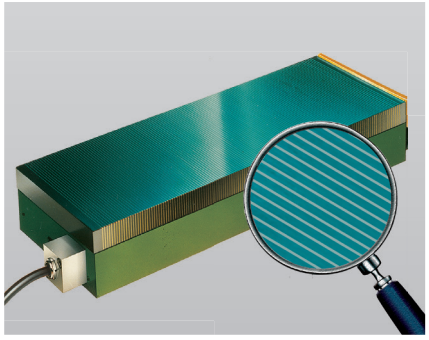
Series 113

with fine longitudinal pole spacing

The special way the magnetic poles are arranged in these units provides you with unbeatable security against transverse displacement forces.

Exceptional adhesive force for thin parts.

Application: grinding, profile grinding of small mass-produced parts, eroding



Series 117

With fine transverse pole spacing

The fine transverse pole spacing is particularly suitable for clamping thin workpieces. The special way the magnetic poles are arranged in these units helps secure the workpieces against shifting in a longitudinal direction. Exceptional adhesive force for thin parts.

Application: grinding, eroding

Structure:

Electro magnet clamping plates primarily consists of three components:

A solid steel lower section, a copper coil and a pole plate. The coil is moulded within the lower section, which means it is securely protected against vibrations and the ingress of moisture. One key quality feature of our clamping plates is the optimal alignment between the electrical power consumption and the magnetic force that can be generated.

While practically applied, the pole plate is subject to wear and tear. Accordingly, it is designed to facilitate multiple reworking before the processing limits are reached. The pole plates can be replaced without any problems, which extends the service life of the overall chuck accordingly. The pole plate can be individually customised to meet your requirements at any time. This may be relevant for example with additional tapped holes, T-grooves, profile, etc.

Design:

- Protection class: IP 65
- Magnet operating time: 100 % (excluding electrical connection)

Magnetic technology:

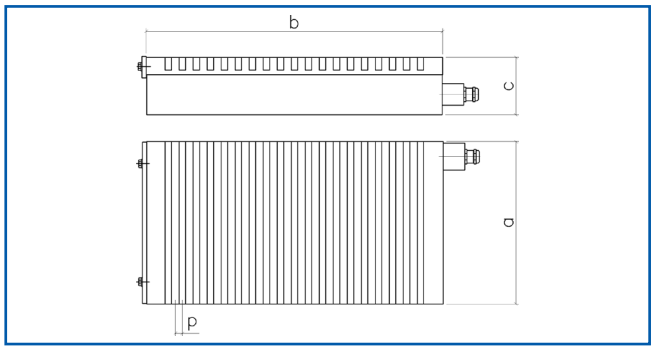
Pole spacing

The arrangement of the magnetic pole on the clamping surface is known as the pole pitch. This arrangement is customised depending on the requirements of the respective use case and depends on the direction of force of the machining process.

Pole distance

The centre-to-centre spacing from two neighbouring unequal magnetic poles is known as the pole distance.

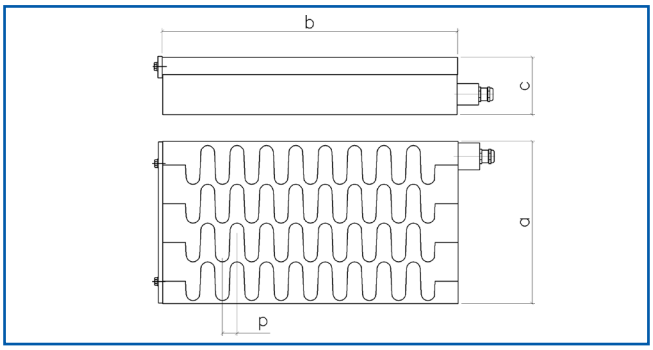
Series 112



Size	Clamping surface a x b [mm]	Construction height c [mm]	Pole space p [mm]	Output [Watt]	Weight [kg]
10/20	102x202	80	13	19	11
10/25	102x252	80	13	24	14
10/30	102x302	80	13	31	17
15/30	152x302	80	13	42	25
15/40	152x402	80	13	52	34
15/45	152x452	80	13	59	38
15/60	152x602	80	13	75	50
17,5/45	177x452	80	18	64	44
20/40	202x402	80	18	66	45
20/50	202x502	80	18	83	56
20/60	202x602	80	18	89	67
20/80	202x802	80	18	120	90
20/100	202x1002	80	18	154	112
25/50	252x502	80	18	94	70
25/60	252x602	80	18	109	84
25/80	252x802	80	18	127	112
25/100	252x1002	80	18	175	140
30/50	302x502	80	25	110	84
30/60	302x602	80	25	128	101
30/80	302x802	80	25	171	134
30/100	302x1002	80	25	209	168
30/120	302x1202	80	25	237	202
30/150	302x1502	80	25	315	252
35/60	352x602	80	25	148	118
35/80	352x802	80	25	191	157
35/100	352x1002	80	25	239	196
35/120	352x1202	80	25	262	235
35/150	352x1502	80	25	323	294
40/60	402x602	80	25	166	134
40/80	402x802	80	25	208	179
40/100	402x1002	80	25	255	224
40/120	402x1202	80	25	329	269
40/150	402x1502	80	25	396	336
40/200	402x2002	80	25	461	448

Other sizes and pole spacings (9, 13, 18, 25) available on request.

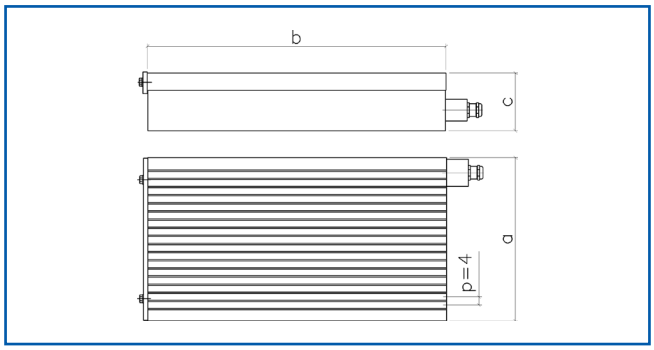
Series 115



Size	Clamping surface a x b [mm]	Construction height c [mm]	Pole space p [mm]	Output [Watt]	Weight [kg]
10/20	102x202	83	14	19	12
10/25	102x252	83	14	24	15
10/30	102x302	83	14	31	18
15/30	152x302	83	14	42	26
15/40	152x402	83	14	52	35
15/45	152x452	83	14	59	39
15/60	152x602	83	14	75	52
17,5/45	177x452	83	14	64	46
20/40	202x402	83	14	66	46
20/50	202x502	83	14	83	58
20/60	202x602	83	14	89	70
20/80	202x802	83	14	120	93
20/100	202x1002	83	14	154	116
25/50	252x502	83	18	94	73
25/60	252x602	83	18	109	87
25/80	252x802	83	18	127	116
25/100	252x1002	83	18	175	145
30/50	302x502	83	18	110	87
30/60	302x602	83	18	128	105
30/80	302x802	83	18	171	139
30/100	302x1002	83	18	209	174
30/120	302x1202	83	18	237	209
30/150	302x1502	83	18	315	261
35/60	352x602	83	25	148	122
35/80	352x802	83	25	191	163
35/100	352x1002	83	25	239	203
35/120	352x1202	83	25	262	244
35/150	352x1502	83	25	323	305
40/60	402x602	83	25	166	139
40/80	402x802	83	25	208	186
40/100	402x1002	83	25	255	232
40/120	402x1202	83	25	329	279
40/150	402x1502	83	25	396	349
40/200	402x2002	83	25	461	465

Other sizes and pole spacings (11, 14, 18, 25, 36) available on request.

Series 113



Size	Clamping surface a x b [mm]	Construction height c [mm]	Pole space p [mm]	Output [Watt]	Weight [kg]
10/20	102x202	92	4	26	13
10/25	102x252	92	4	30	16
15/30	152x302	92	4	51	29
15/40	152x402	92	4	60	39
15/50	152x502	92	4	70	48
17,5/45	177x452	92	4	75	51
20/40	202x402	92	4	72	52
20/50	202x502	92	4	84	64
20/60	202x602	92	4	110	77
20/80	202x802	92	4	145	103
20/100	202x1002	92	4	180	129
25/60	252x602	92	4	132	97
25/80	252x802	92	4	175	129
25/100	252x1002	92	4	210	161
30/50	302x502	92	4	125	97
30/60	302x602	92	4	145	116

Other sizes available on request.

Example order:

Please determine our exact type designation in accordance with the following scheme:

112 - 10/20 - 13 : 24

- 24 — Tension
- 13 — Pole space
- 10/20 — Size (width/length) in cm
- 112 — Series

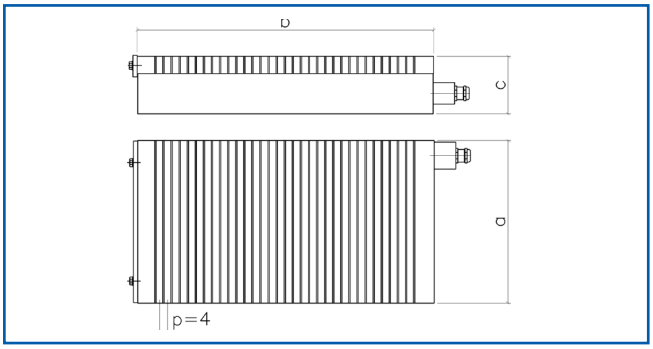
Default values:

Tension 24 V DC or 110 V DC
Relative duty cycle 100 %
(other values on request)

Delivery scope for clamping plates:

- Front stop rail
- Connecting cable
- Longitudinal stop rails (optional)
- Clamping claws (optional)
- Anchor points (optional)

Series 117



Size	Clamping surface a x b [mm]	Construction height c [mm]	Pole space p [mm]	Output [Watt]	Weight [kg]
15/30	152x302	92	4	65	29
15/40	152x402	92	4	90	39
15/50	152x502	92	4	105	48
17,5/45	177x452	92	4	106	51
17,5/50	177x502	92	4	115	56
20/40	202x402	92	4	105	52
20/50	202x502	92	4	130	64
20/60	202x602	92	4	150	77
20/80	202x802	92	4	206	103
20/100	202x1002	92	4	250	129
25/60	252x602	92	4	180	97
25/80	252x802	92	4	233	129
25/100	252x1002	92	4	286	161
30/50	302x502	92	4	175	97
30/60	302x602	92	4	206	116
30/80	302x802	92	4	268	155

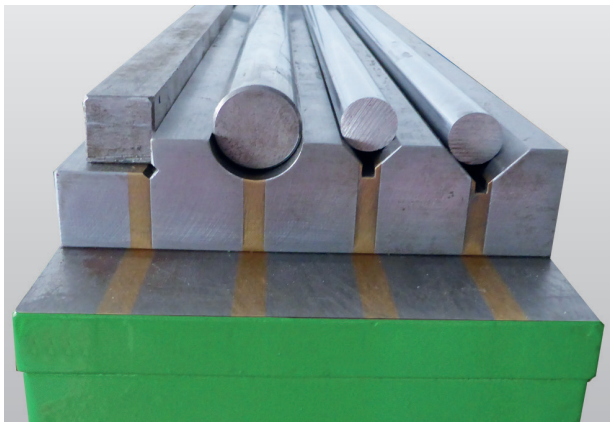
Other sizes available on request.

Electrical connection via:

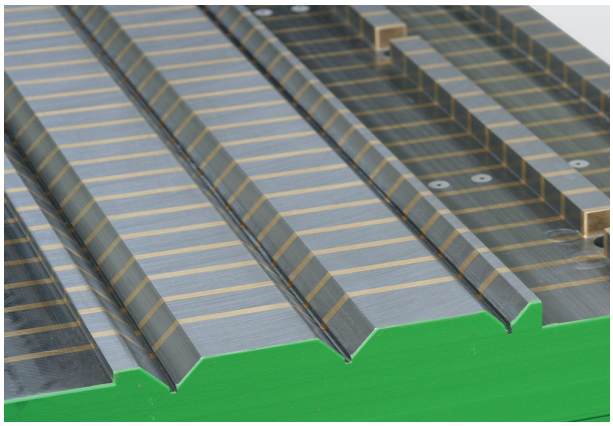
Electronic pole-reversal control units.

These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.

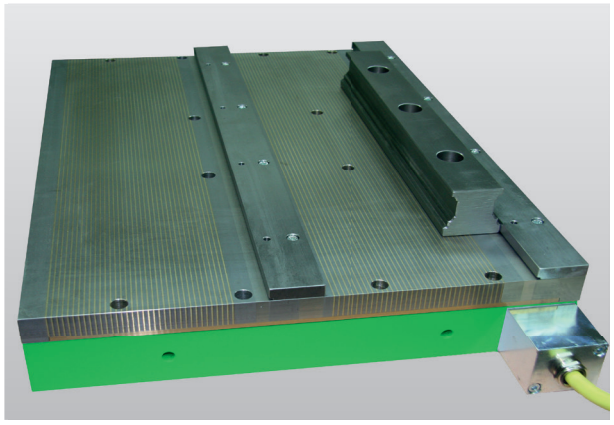
The Wagner Magnets company specialises in customised solutions. Let's agree something today!



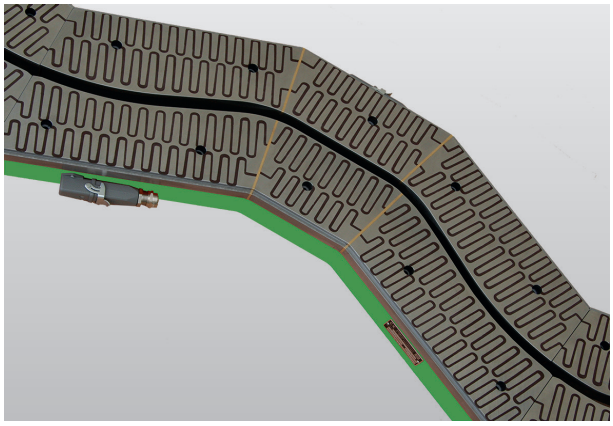
Workpiece-optimised support pole plates



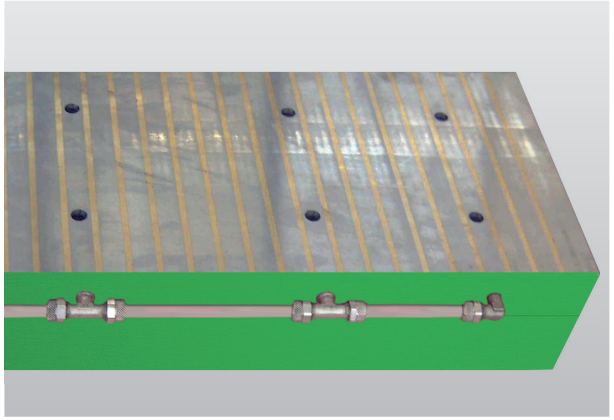
Contoured clamping surfaceclamping areas



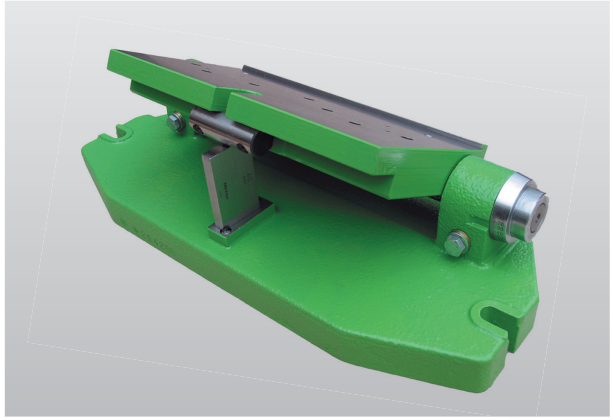
Separately switchable clamping areas



Special designs for laser welding machines



Built-in blow-out holes



Sine table for magnetic systems

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wagner magnete

1110V

Electro-Permanent-Magnet-Clamping-Plate

The electro permanent magnet clamping plate, type 1110V, with increased holding force is particularly suited for the milling of thick workpieces. The integrated and reinforced permanent magnetic clamping system generates a high depth effect to bridge air gaps in case of workpieces with uneven and rough surfaces.

The main fields of application of this magnetic clamping technology are heavy machining, mould construction and HSC machining. The integration in changing pallets, multiple clamping cubes and zero-point clamping systems is possible without any problems.

The permanent magnet clamping system is magnetized by using a current pulse. During the machining process, no further current is supplied, so that no heat is generated if the magnet is activated. This eliminates any inaccuracies resulting from temperature deviations.

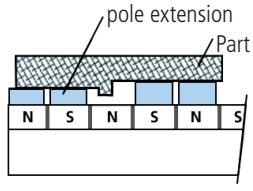
The movable pole extensions with three support points are used to clamp uneven parts. When applying a part and switching on the magnet, the pole extensions adapt to the uneven clamping surface and thus optimize the magnetic flow.

Scope of delivery:
- lowerable stop bar on side
- transport holes on the sides
- fixed mounted junction box with 3.0 m connecting cable
- Through-holes with clamping jaws for fixing on the machine table
- Tapped holes in each pole for fixing of pole shoes

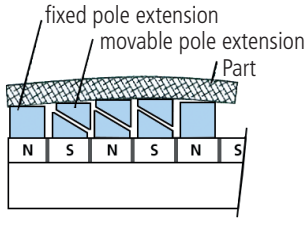
Options:
- movable pole extensions for uneven part clamping surface with fixed three-point support
- fixed pole extensions for release of parts and integration of special designs
- Electrical connection via plug-type connector

Design:
- Protection class: IP 65
- Magnet operating time: 100 %

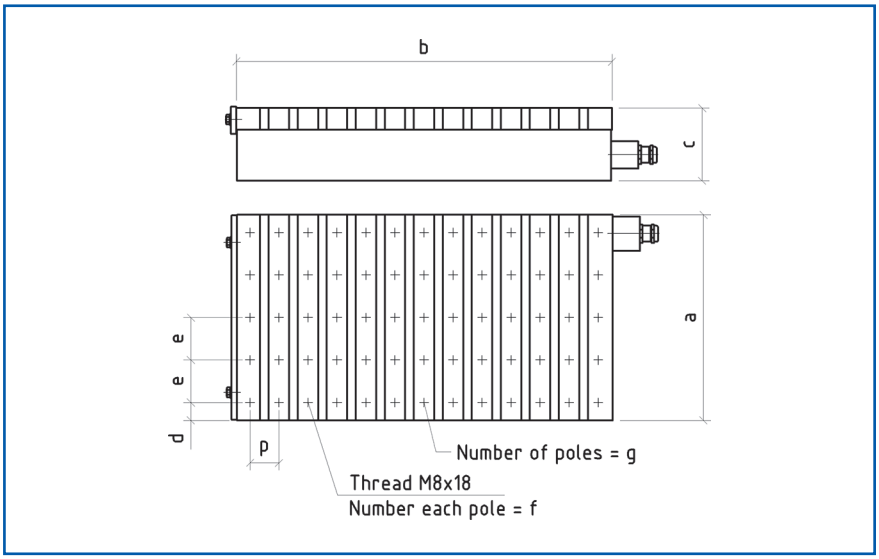
Electrical connection via:
Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Fixed pole extensions, e.g for bridging of part contours.



The movable pole extensions adapt to the shape of the part and are fixed magnetically.



Electro-Permanent-Magnet-Clamping-Plates

Type 1110V
with continuous pole spacing

Characteristics:

Highest level of precision -
Activated magnet remains cold.

Highest level of safety -
Holding force even after power failure.

Energy-conscious -
Power used only for short pulses.

For highest demands, in particular for the use on milling machines, our magnets of type 1110V are used.

Dimensions and technical data:

Type	Width a [mm]	Length b [mm]	Height c [mm]	d [mm]	e [mm]	f [mm]	g [mm]	Pole space p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]
1110V-30/55-61	302	552	107	26	62,5	5	9	61	125	360/30
1110V-30/78-61	302	782	107	26	62,5	5	13	61	177	360/30
1110V-30/102-61	302	1022	107	26	62,5	5	17	61	231	360/60
1110V-30/127-61	302	1272	107	26	62,5	5	21	61	288	360/60
1110V-30/151-61	302	1512	107	26	62,5	5	25	61	342	360/60
1110V-40/55-61	402	552	107	36	55	7	9	61	166	360/30
1110V-40/78-61	402	782	107	36	55	7	13	61	235	360/60
1110V-40/102-61	402	1022	107	36	55	7	17	61	308	360/60
1110V-40/127-61	402	1272	107	36	55	7	21	61	383	360/60x2
1110V-40/151-61	402	1512	107	36	55	7	25	61	455	360/60x2
1110V-50/78-61	502	782	107	31	55	9	13	61	294	360/60
1110V-50/102-61	502	1022	107	31	55	9	17	61	384	360/60x2
1110V-50/151-61	502	1512	107	31	55	9	25	61	569	360/60x2
1110V-50/200-61	502	2002	107	31	55	9	33	61	753	360/60x3 *
1110V-60/78-61	602	782	107	31	60	10	13	61	353	360/60
1110V-60/102-61	602	1022	107	31	60	10	17	61	461	360/60x2
1110V-60/151-61	602	1512	107	31	60	10	25	61	682	360/60x2
1110V-60/200-61	602	2002	107	31	60	10	33	61	903	360/60x4 *
1110V-70/102-61	702	1022	107	32	58	12	17	61	537	360/60x2
1110V-70/151-61	702	1512	107	32	58	12	25	61	795	360/60x3 *
1110V-70/200-61	702	2002	107	32	58	12	33	61	1053	360/60x4 *
1110V-80/102-61	802	1022	107	37	56	14	17	61	614	360/60x2
1110V-80/151-61	802	1512	107	37	56	14	25	61	908	360/60x3 *
1110V-80/200-61	802	2002	107	37	56	14	33	61	1203	360/60x4 *

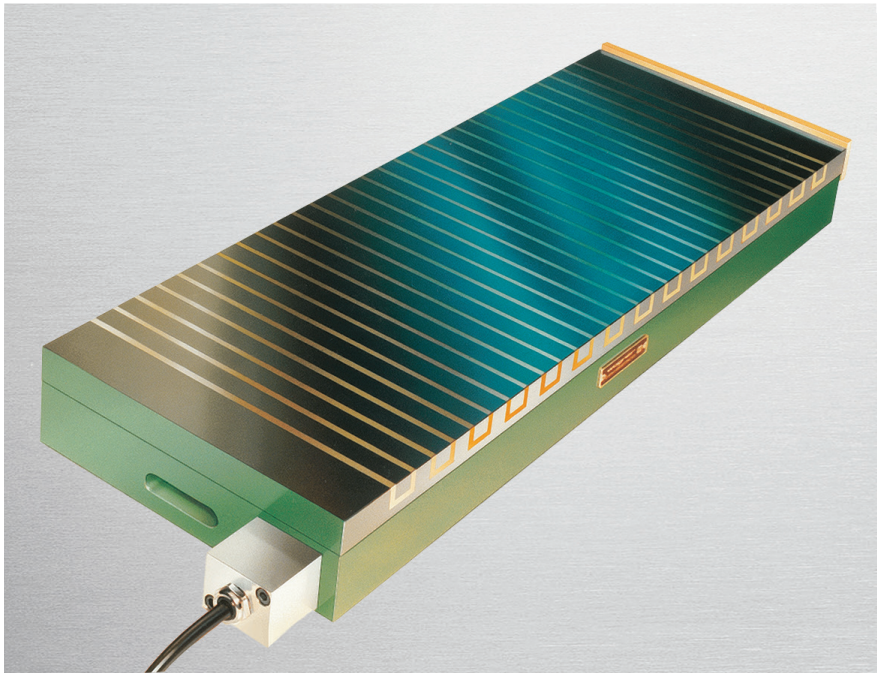
other dimensions possible upon request

* from connected loads of EP360/60x3 and EP360/60x4, two cable inputs are provided

wagner magnete

1120

Electro-Permanent-Magnet-Clamping-Plate



Our electro permanent magnet clamping plate type 1120, with full-width transversal pole spacing features real polarity switch from pole to pole. This achieves a uniform holding force across the entire pole surface of the magnet and clamping surface of the workpiece.

In pole distance "p", the steel poles are separated by brass elements, to achieve alternate rows of north and south poles. We supply type 1120 with standard pole spacing of 11, 13, 18 and 25 mm. Other pole spacing can be ordered specially.

Magnetic holding force is activated as soon as a magnetized workpiece passes through at least one north and south pole. Similarly, this full-width pole spacing enables a lateral fixing to the longitudinal side of the pole plate. Holding bars on the long sides must be made from non-magnetic material to avoid the possibility of a magnetic short circuit.

The electro permanent magnet clamping plates combine the holding force of permanent magnets with the advantage of switching possibilities associated with an electrical system. This provides all the prerequisites for precision, safety and operating comfort.

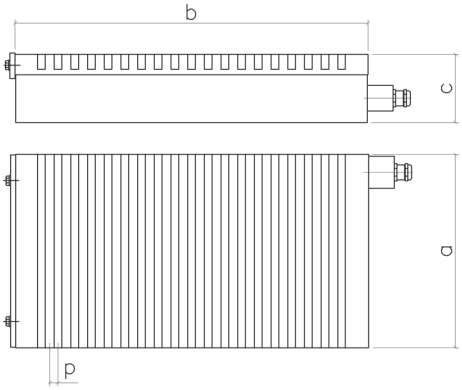
During an operation the power feed is interrupted so that no heat is generated by the activated magnets.This eliminates any potential precision problems caused by temperature fluctuations.Switching operations are triggered by a short current pulse. The homogenous construction design of the magnet system and the pole plate offers high precision.

In the event of a power failure, the active clamping plate retains full holding force which guarantees operational safety. In addition, the power feed can be disconnected from the magnets after the current pulse has been triggered. The magnet holding the workpiece can be used in several stations (pallet exchange system) without a current supply.

Design:
- Protection class IP 65
- Magnet operating time: 100 %

Delivery includes:
- Holding bar on the front
- 1.5 m cable
- Clamping shoes

Electrical connection via:
Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Electro-Permanent-Magnet-Clamping-Plates

Type 1120
with full-width transversal pole spacing

Characteristics:

Highest level of precision –
Activated magnet remains cold.

Highest level of safety –
Holding force even after power failure.

Energy-conscious –
Power used only for short pulses

Dimensions and technical data:

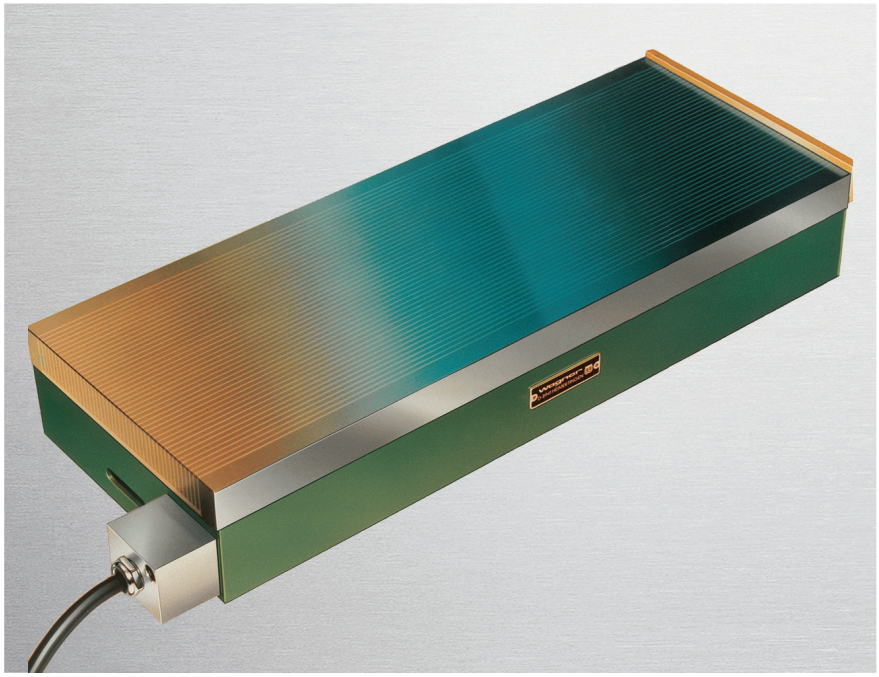
Type	Width a [mm]	Length b [mm]	Height c [mm]	Pole space p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]*
1120-10/30	102	302	80	11-13-18	17	210/10
1120-10/40	102	402	80	11-13-18	23	210/10
1120-15/30	152	302	80	11-13-18	26	210/10
1120-15/40	152	402	80	11-13-18	34	210/10
1120-17.5/45	177	452	80	11-13-18	45	210/10
1120-17.5/50	177	502	80	11-13-18	50	210/10
1120-20/40	202	402	80	11-13-18	45	210/10
1120-20/60	202	602	80	11-13-18	68	210/10
1120-20/80	202	802	80	11-13-18	91	210/30
1120-20/100	202	1002	80	11-13-18	113	210/30
1120-30/60	302	602	80	11-13-18-25	102	210/10
1120-30/80	302	802	80	11-13-18-25	136	210/30
1120-30/100	302	1002	80	11-13-18-25	169	210/30
1120-30/150	302	1502	80	11-13-18-25	254	210/30
1120-40/80	402	802	80	11-13-18-25	181	210/10
1120-40/100	402	1002	80	11-13-18-25	226	210/30
1120-40/150	402	1502	80	11-13-18-25	338	210/30
1120-50/100	502	1002	80	11-13-18-25	282	360/30
1120-50/150	502	1502	80	11-13-18-25	422	360/30
1120-50/200	502	2002	80	11-13-18-25	563	360/30
1120-60/100	602	1002	91	11-13-18-25	384	360/30
1120-60/150	602	1502	91	11-13-18-25	576	360/30
1120-60/200	602	2002	91	11-13-18-25	768	360/30
1120-70/100	702	1002	91	11-13-18-25	448	360/30
1120-70/150	702	1502	91	11-13-18-25	672	360/30
1120-70/200	702	2002	91	11-13-18-25	895	360/30

Other dimensions and pole spacings are available upon request
* = 210 V d.c. variants are also available with 360 V d.c. nominal voltage

wagner magnete

1130

Electro-Permanent-Magnet-Clamping-Plate



Type 1130 with narrow longitudinal pole spacing combines the advantages of advanced permanent magnet systems with the switching possibilities of a purely electrical system.

A very short electrical pulse is all that is required to activate the magnet system. The unit is then current free. This guarantees that the device doesn't heat up and means the highest precisions can be achieved.

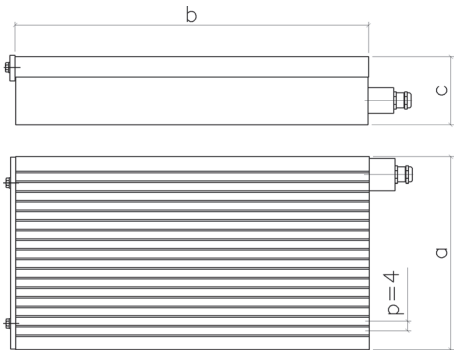
A power failure has no impact on the operational safety of the magnets. The state of the art magnet system produces a strong and extremely uniform holding force across the entire clamping surface. The narrow longitudinal pole spacing with a pole distance of 4 mm is especially suitable for clamping workpieces in the cross direction (example: profile grinding). The special arrangement of the magnetic poles provides high security against shifting across the pole spacing in this type of application.

Magnet control is provided by the tried and tested Wagner pole reversal control unit. Stepwise settable holding force regulation is a control component and provides high operator comfort. To dissipate residual magnetism in the workpieces and clamping plate after the work is completed, a controlled pole reversal is performed automatically in several intervals that can be easily adjusted to suit different work-pieces. The work-pieces can then be easily removed from the magnetic plates.

Design:
- Protection class IP 65
- Magnet operating time: 100 %

Delivery includes:
- Holding bar on the front
- 1.5 m cable
- Clamping shoes

Electrical connection via:
Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Electro-Permanent-Magnet-Clamping-Plates

Type 1130
with narrow longitudinal pole spacing

Characteristics:

Highest level of precision –
Activated magnet remains cold.

Highest level of safety –
Holding force even after power failure.

Energy-conscious –
Power used only for short pulses

Narrow pole spacing –
Also for small and awkward work pieces

Dimensions and technical data:

Type	Width a [mm]	Length b [mm]	Height c [mm]	Pole space p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]*
1130-15/20	152	202	82	4	18	210/10
1130-15/30	152	302	82	4	26	210/10
1130-15/40	152	402	82	4	35	210/30
1130-17.5/45	177	452	82	4	46	210/30
1130-17.5/50	177	502	82	4	51	210/30
1130-20/60	202	602	82	4	70	210/30
1130-20/80	202	802	82	4	93	360/30
1130-20/100	202	1002	82	4	116	360/30
1130-25/60	252	602	82	4	87	360/30
1130-25/80	252	802	82	4	116	360/30
1130-25/100	252	1002	82	4	145	360/60
1130-30/60	302	602	82	4	104	360/30
1130-30/80	302	802	82	4	139	360/60
1130-30/100	302	1002	82	4	174	360/60
1130-30/120	302	1202	82	4	208	360/60
1130-35/80	352	802	82	4	162	360/60
1130-35/100	352	1002	82	4	202	360/60
1130-35/120	352	1202	82	4	243	360/60
1130-40/80	402	802	82	4	185	360/30
1130-40/100	402	1002	82	4	231	360/60
1130-40/120	402	1202	82	4	277	360/60
1130-50/80	502	802	82	4	231	360/30
1130-50/100	502	1002	82	4	289	360/60
1130-50/120	502	1202	82	4	346	360/60
1130-60/100	602	1002	82	4	346	360/60x2
1130-60/120	602	1202	82	4	415	360/60x2

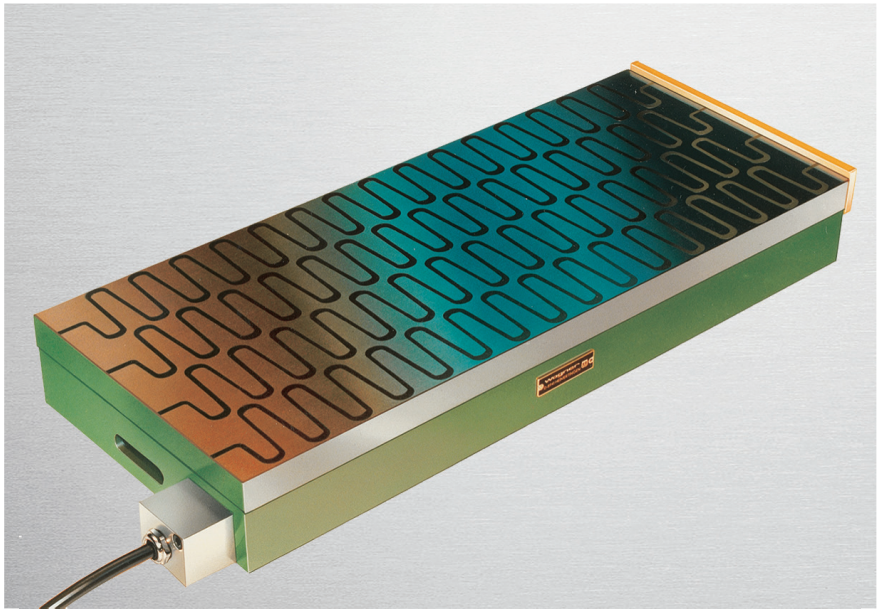
Other dimensions are available upon request
* = 210 V d.c. variants are also available with 360 V d.c. nominal voltage

1130 e 02_2014

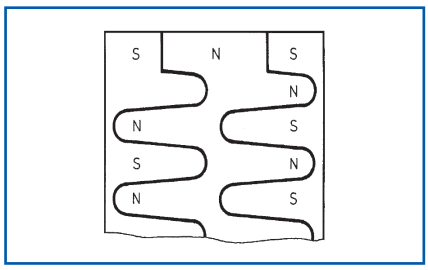
wagner magnete

1150

Electro-Permanent-Magnet-Clamping-Plate



The type 1150 has high adhesive force due to the pendular pole pitch.
The individual poles on the symmetrically arranged pole plate surfaces are setup in transverse as well as longitudinally alternately north and south polarities. This construction enables clamping right to the edge of the pole surface as the magnetic force is distributed uniformly over it. The direct pole support provides a considerable increase in holding force with sinusoidal pole spacing. This makes these magnets suitable for high performance rough grinding. Work-pieces with high alloy content can also be held more securely.



Tapped holes and profiles etc. can be inserted in the pole plate. You can also rework and renew them as wearing parts.

Sinusoidal pole spacing with pole distances of 11 mm, 14 mm, 18 mm, 25 mm and 36 mm are offered for holding workpieces - of all sizes - from the washers to the rough steel-plates.

The electro permanent magnet clamping plates combine the holding force of permanent magnets with the advantage of switching possibilities associated with an electrical system. This provides all the prere-quisites for precision, safety and operating comfort.

During an operation the power feed is interrupted so that no heat is generated by the activated magnets.
This eliminates any potential precision problems caused by temperature fluctu-ations.

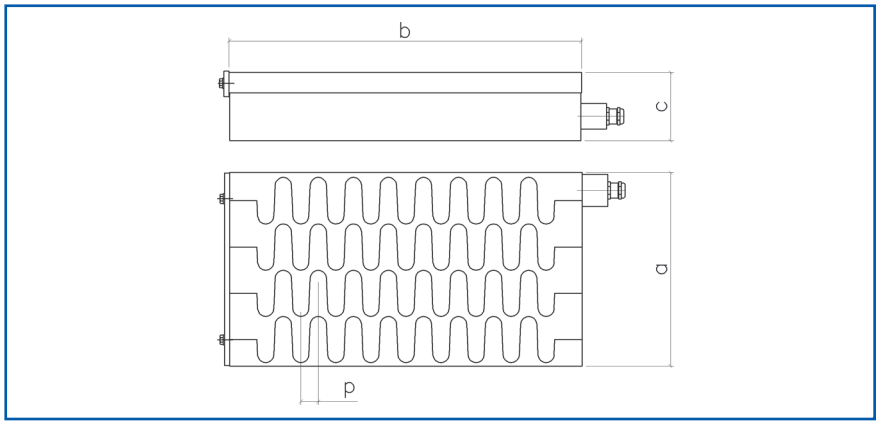
Switching operations are triggered by a short current pulse. The homo-genous construction design of the magnet system and the pole plate offers high precision.

In the event of a power failure, the active clamping plate retains full holding force which guarantees operational safety. In addition, the power feed can be disconnected from the magnets after the current pulse has been triggered. The magnet holding the workpiece can be used in several stations (pallet exchange system) without a current supply.

Design:
- Protection class IP 65
- Magnet operating time: 100 %

Delivery includes:
- Holding bar on the front
- 1.5 m cable
- Clamping shoes

Electrical connection via:
Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Electro-Permanent-Magnet-Clamping-Plates

Type 1150
with sinusoidal pole spacing

Characteristics:

Highest level of precision –
Activated magnet remains cold.

Highest level of safety –
Holding force even after power failure.

Energy-conscious –
Power used only for short pulses

Dimensions and technical data:

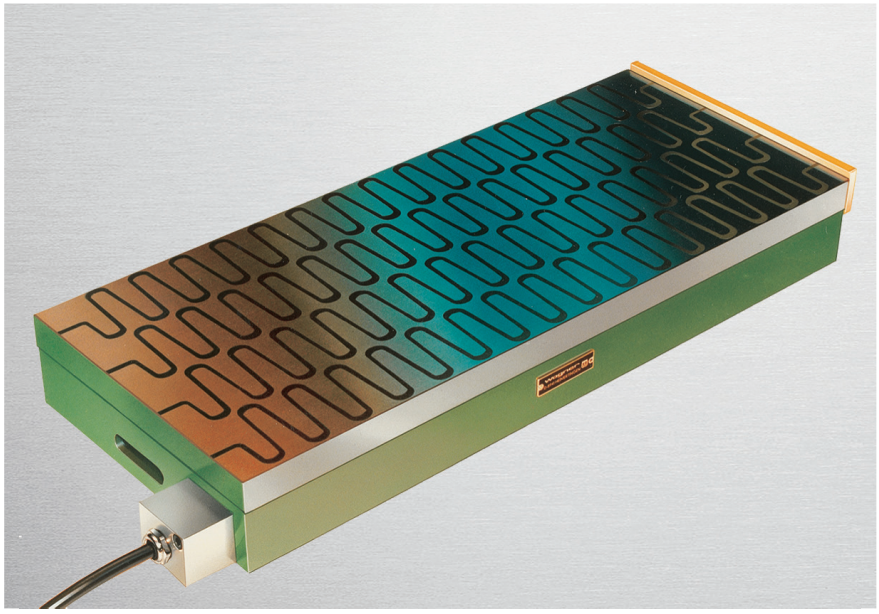
Type	Width a [mm]	Length b [mm]	Height c [mm]	Pole spacing p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]*
1150-10/20	102	202	83	11-14-18	12	210/10
1150-10/30	102	302	83	11-14-18	18	210/10
1150-10/40	102	402	83	11-14-18	24	210/10
1150-15/20	152	202	83	11-14-18	18	210/10
1150-15/30	152	302	83	11-14-18	27	210/10
1150-15/40	152	402	83	11-14-18	36	210/10
1150-20/60	202	602	83	11-14-18	71	210/10
1150-20/80	202	802	83	11-14-18	94	210/30
1150-20/100	202	1002	83	11-14-18	118	210/30
1150-25/60	252	602	83	11-14-18	88	210/10
1150-25/80	252	802	83	11-14-18	117	210/30
1150-25/100	252	1002	83	11-14-18	147	210/30
1150-30/100	302	1002	83	11-14-18-25	176	210/30
1150-30/120	302	1202	83	11-14-18-25	211	210/30
1150-30/150	302	1502	83	11-14-18-25	264	210/30
1150-40/100	402	1002	83	14-18-25-36	234	210/30
1150-40/150	402	1502	83	14-18-25-36	351	210/30
1150-40/200	402	2002	83	14-18-25-36	468	210/30
1150-50/100	502	1002	83	14-18-25-36	292	360/30
1150-50/150	502	1502	83	14-18-25-36	438	360/30
1150-50/200	502	2002	83	14-18-25-36	584	360/30
1150-60/100	602	1002	88	14-18-25-36	372	360/30
1150-60/150	602	1502	88	14-18-25-36	557	360/30
1150-60/200	602	2002	88	14-18-25-36	742	360/30
1150-70/150	702	1502	88	14-18-25-36	650	360/30
1150-70/200	702	2002	88	14-18-25-36	866	360/30
1150-80/150	802	1502	88	14-18-25-36	742	360/30
1150-80/200	802	2002	88	14-18-25-36	989	360/30

Other dimensions and pole spacings are available upon request
* = 210 V d.c. variants are also available with 360 V d.c. nominal voltage

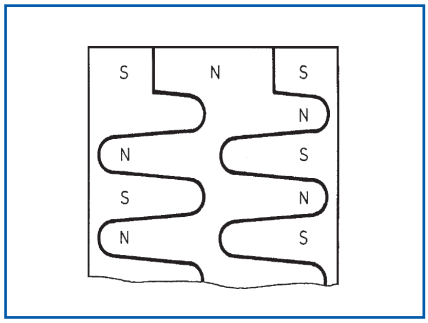
wagner magnete

1150V

Electro-Permanent-Magnet-Clamping-Plate



The type 1150V with pendular pole pitch includes an extra-strong magnetic system.
The individual poles on the symmetrically arranged pole plate surfaces are setup in transverse as well as longitudinally alternately north and south polarities. This construction enables clamping right to the edge of the pole surface as the magnetic force is distributed uniformly over it. The direct pole support provides a considerable increase in holding force with sinusoidal pole spacing.



The integrated strengthened permanent magnet system creates a high depth action for bypassing air gaps in workpieces with uneven and rough surfaces. This makes these magnet systems perfectly suited to high chip removal when milling and grinding.

The pole plate can be reworked and renewed as a wear part.

The electro permanent magnet clamping plates combine the holding force of permanent magnets with the advantage of switching possibilities associated with an electrical system. This provides all the prere-quisites for precision, safety and operator comfort.

During an operation the power feed is interrupted so that no heat is generated by the activated magnets.This eliminates any potential precision problems caused by temperature fluctuations.

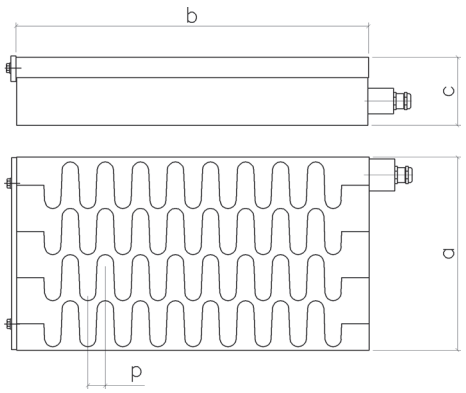
Switching operations are triggered by a short current pulse. The homogenous construction design of the magnet system and the pole plate offers high precision.

In the event of a power failure, the active clamping plate retains full holding force which guarantees operational safety. In addition, the power feed can be disconnected from the magnets after the current pulse has been triggered. The magnet holding the workpiece can be used in several stations (pallet exchange system) without a current supply.

Design:
- Protection class IP 65
- Magnet operating time: 100%

Delivery includes:
- Holding bar on the front
- 1,5 m Cable
- Clamping shoes

Electrical connection via:
Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Electro-Permanent-Magnet-Clamping-Plates

Type 1150V
with sinusoidal pole spacing

Characteristics:

Highest level of precision –
Activated magnet remains cold.

Highest level of safety –
Holding force even after power failure.

Energy-conscious –
Power used only for short pulses

Our magnets type 1150V are designed for heavy-duty operation, in particular, for use on milling machines.

Dimensions and technical data:

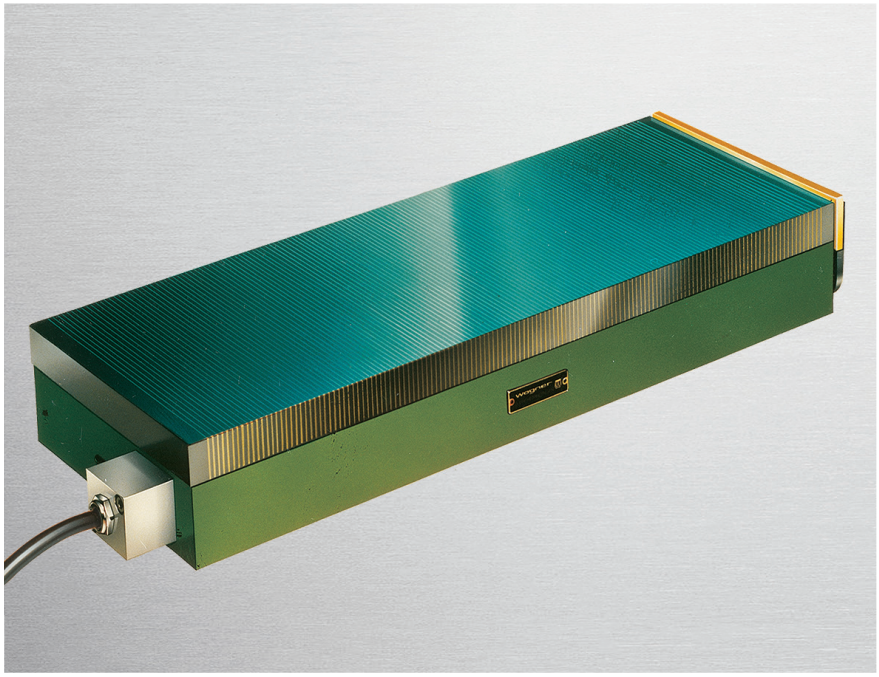
Type	Width a [mm]	Length b [mm]	Height c [mm]	Pole spacing p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]*
1150V-20/60	202	602	83	25	71	210/30
1150V-20/80	202	802	83	25	94	210/30
1150V-20/100	202	1002	83	25	118	210/30
1150V-25/60	252	602	83	25	88	210/30
1150V-25/80	252	802	83	25	117	210/30
1150V-25/100	252	1002	83	25	147	210/30
1150V-30/80	302	802	83	25	141	210/30
1150V-30/100	302	1002	83	25	176	360/30
1150V-30/150	302	1502	83	25	264	360/30
1150V-30/200	302	2002	83	25	351	360/60
1150V-40/80	402	802	83	25	187	210/30
1150V-40/100	402	1002	83	25	234	210/30
1150V-40/150	402	1502	83	25	351	210/30
1150V-40/200	402	2002	83	25	468	360/30
1150V-50/100	502	1002	83	25-36	292	360/30
1150V-50/150	502	1502	83	25-36	438	360/30
1150V-50/200	502	2002	83	25-36	584	360/60
1150V-60/100	602	1002	88	25-36	372	360/30
1150V-60/150	602	1502	88	25-36	557	360/30
1150V-60/200	602	2002	88	25-36	742	360/60
1150V-70/100	702	1002	88	25-36	433	360/30
1150V-70/150	702	1502	88	25-36	650	360/30
1150V-70/200	702	2002	88	25-36	866	360/60
1150V-80/100	802	1002	88	25-36	495	360/30
1150V-80/150	802	1502	88	25-36	742	360/60
1150V-80/200	802	2002	88	25-36	989	360/60

Other dimensions and pole spacings are available upon request
* = 210 V d.c. variants are also available with 360 V d.c. nominal voltage

wagner magnete

1170

Electro-Permanent-Magnet-Clamping-Plate



Type 1170 with narrow transverse pole spacing combines the advantages of advanced permanent magnet systems with the switching possibilities of a purely electrical system.

A very short electrical pulse is all that is required to activate the magnet system. The unit is then current free. This guarantees that the device doesn't heat up and means the highest precisions can be achieved.

A power failure has no impact on the operational safety of the magnets. The state of the art magnet system produces a strong and extremely uniform holding force across the entire clamping surface. The narrow transverse pole spacing with a pole distance of 4 mm is especially suitable for clamping workpieces in the longitudinal direction. The special arrangement of the magnetic poles provides high security against shifting across the pole spacing in this type of application.

Magnet control is provided by the tried and tested Wagner pole reversal control unit. Stepwise settable holding force regulation is a control component and provides high operator comfort.

To dissipate residual magnetism in the work-pieces and clamping plate after the work is completed, a controlled pole reversal is performed automatically in several intervals that can be easily adjusted to suit different work-pieces. The workpieces can then be easily removed from the magnetic plates.

Design:

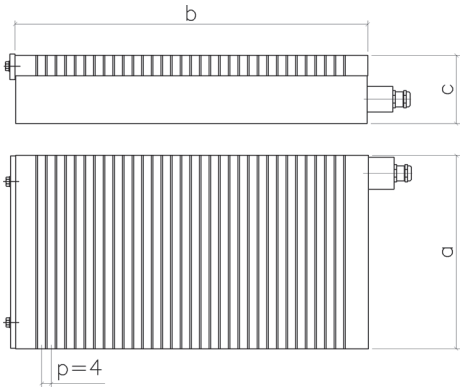
- Protection class IP 65
- Magnet operating time: 100 %

Delivery includes:

- Holding bar on the front
- 1.5 m cable
- Clamping shoes

Electrical connection via:

Electronic pole-reversal control units.
These devices, designed especially for controlling clamping magnets, function to facilitate the power supply and simultaneously as demagnetisation devices. A microprocessor controls and monitors all functions and offers optimal switching comfort with numerous control and monitoring functions. The adhesive force is adjustable in up to 16 stages. In addition, these pole-reversal control units also allow additional configuration of parameters and optimised settings. All device types offer particularly impressive shifting dynamics.



Electro-Permanent-Magnet-Clamping-Plates

Type 1170
with narrow transverse pole spacing

Characteristics:

Highest level of precision –
Activated magnet remains cold.

Highest level of safety –
Holding force even after power failure.

Energy-conscious –
Power used only for short pulses

Narrow pole spacing –
Also for small and awkward work pieces

Dimensions and technical data:

Type	Width a [mm]	Length b [mm]	Height c [mm]	Pole space p [mm]	Weight [kg]	Connection value Pole-reversal control unit [V/A]*
1170-15/20	152	202	82	4	18	210/30
1170-15/40	152	402	82	4	35	210/30
1170-17.5/45	177	452	82	4	46	210/30
1170-17.5/50	177	502	82	4	51	210/30
1170-20/40	202	402	82	4	47	210/30
1170-20/60	202	602	82	4	70	210/30
1170-20/80	202	802	82	4	93	210/30
1170-20/100	202	1002	82	4	116	210/30
1170-25/60	252	602	82	4	87	210/30
1170-25/80	252	802	82	4	116	210/30
1170-25/100	252	1002	82	4	145	360/30
1170-30/60	302	602	87	4	111	210/30
1170-30/80	302	802	87	4	148	360/30
1170-30/100	302	1002	87	4	184	360/30
1170-30/120	302	1202	87	4	221	360/30
1170-35/60	352	602	87	4	129	210/30
1170-35/80	352	802	87	4	172	360/30
1170-35/100	352	1002	87	4	215	360/30
1170-35/120	352	1202	87	4	258	360/60
1170-40/80	402	802	87	4	196	360/30
1170-40/100	402	1002	87	4	245	360/60
1170-40/120	402	1202	87	4	294	360/60
1170-50/100	502	1002	87	4	306	360/60
1170-50/120	502	1202	87	4	367	360/60
1170-60/100	602	1002	87	4	367	360/60
1170-60/120	602	1202	87	4	441	360/60

Other dimensions are available upon request
* = 210 V d.c. variants are also available with 360 V d.c. nominal voltage

wagner magnete

0112N

Permanent-Magnet-Clamping-Plate

Permanent-Magnet-Clamping-Plates are mechanically switchable. The use of magnetic materials exploiting the latest know-how and a stable structure help guarantee optimal adhesive forces and superb accuracy on the pole plate surface.

The unit can be switched on and off via stable gear levers, for which minimal switching power is required compared to the high magnetic performance.

The magnetic systems are maintenance-free. If the surface of the pole plate has become uneven after extended use, it can be made smooth again by carefully reworking, which means the unit will retain all its adhesive force and the planning accuracy.

Design:

- Mechanically switchable magnetic system with removable hexagon hand lever.
- Very solid design for very precise applications.
- Strong clamping forces are achieved by using high-perfor-mance neodymium-magnets for plates with a small construction height.
- The offset base plate of the permanent magnet clamping plate with clamping claws offers the possibility of a quick fixation with optional positioning on the table
- Due to the continous transversal pole spacing the clamping force is equal over the whole width of the magnet.

Applications:

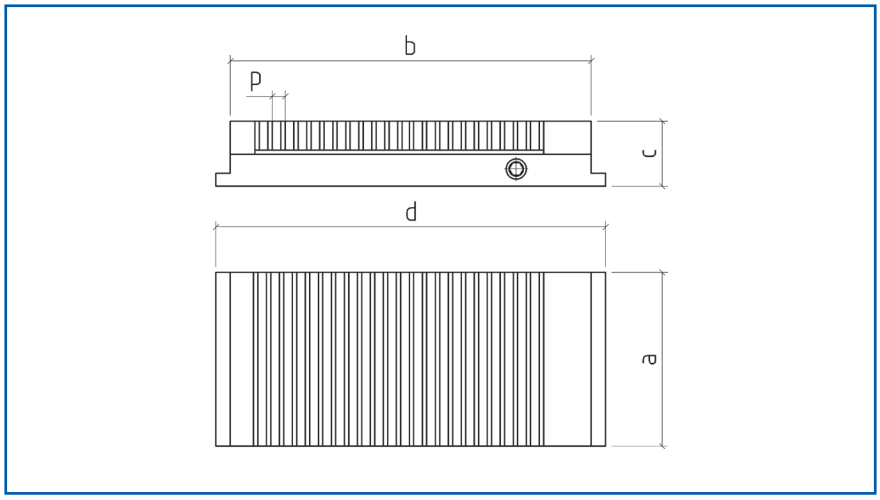
- 4 mm pole spacing for the clamping of very thin workpieces for grinding and precise milling
- 9 mm pole spacing for the treatment of workpieces for machining like drilling, milling and grinding
- Fixation of workpieces on measuring instruments
- As assembling device

Special features:

- Additional thread borings
- cavities in the pole face

Delivery scope:

- Adjusting lever



Permanent-Magnet-Clamping-Plates

Type 0112N

with continuous transverse pole pitch

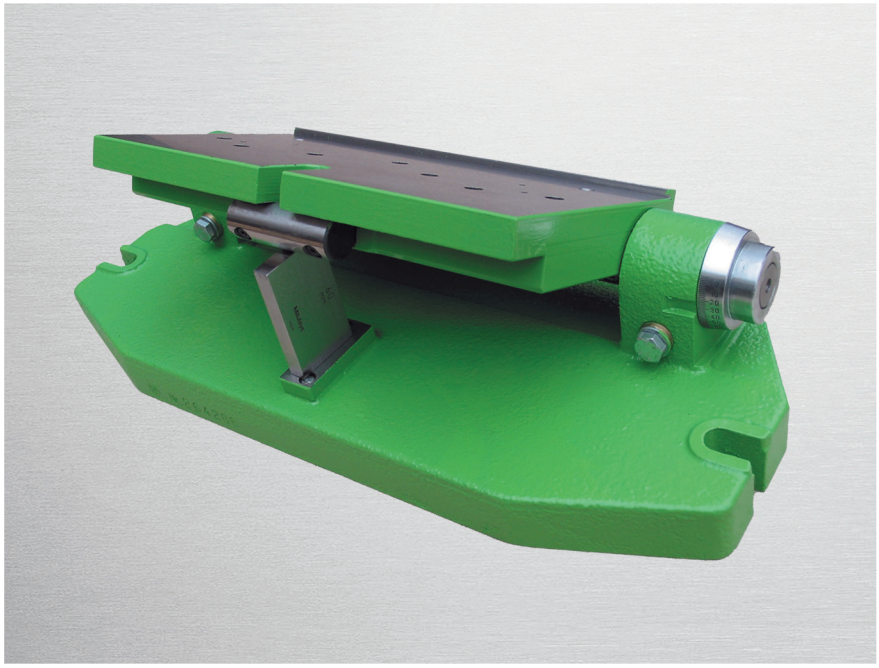
Dimensions and technical data:

Type	Width a [mm]	Pole plate length b [mm]	Overall length d [mm]	Height c [mm]	Pole space p [mm]	Adhesive Force [N/cm²]	Weight [kg]
0112N-12/25-4	120	250	270	45	4	80	10,5
0112N-12/25-9	120	250	270	45	9	80	10,5
0112N-15/30-4	150	300	320	45	4	80	15,7
0112N-15/30-9	150	300	320	45	9	80	15,7
0112N-15/40-4	150	400	420	45	4	80	21
0112N-15/40-9	150	400	420	45	9	80	21
0112N-15/45-4	150	450	470	45	4	80	24
0112N-15/45-9	150	450	470	45	9	80	24
0112N-20/40-4	200	400	420	50	4	80	30
0112N-20/40-9	200	400	420	50	9	80	30
0112N-20/50-4	200	500	520	50	4	80	39
0112N-20/50-9	200	500	520	50	9	80	39

To achieve uniform adhesive force over the entire clamping surface and facilitate the clamping of even small workpieces, clamping magnets with various pole spacing and pole distance are manufactured. The clamping surface is therefore designed alternately with north and south poles. The pole gap comprises non-magnetic material.

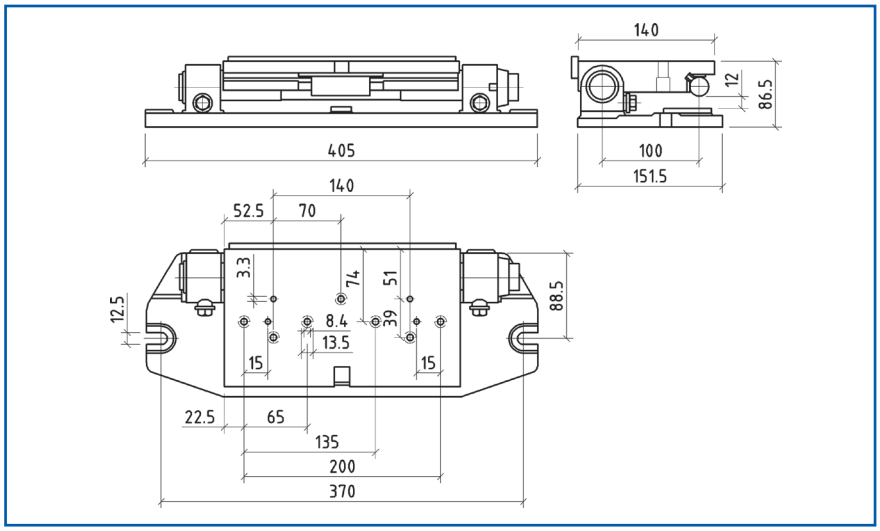
4 mm pole spacing = 3 mm wide steel pole + 1 mm wide brass fin
9 mm pole spacing = 6 mm wide steel pole + 3 mm wide brass fin

Swiveling-Sine-Plate-Carrier



With the swiveling sine plate carrier, magnet clamping plates can be swiveled along the longitudinal axis. Setting any angle from -6° to +90° is possible using a scale. The precision depends on the how the scale is set up and read. When making settings according to the sine function, calculations can be made within the angular range from -6° to +45° with an angular precision of +/- 1'. The measurement point is 100 mm from the center of the longitudinal axis. A hardened steel plate on the cast base housing and a hardened steel shaft as positioning line create the fixed points for the end dimensions. The angular axis is fixed using two clamping points and cannot change during operation under normal conditions. The contact surface is ground down at the 0° position when using a 12 mm end dimension.

Instructions for use:
The distance from the measurement point to the middle of the swivel axis is exactly 100 mm. The sine values for the required angle times 100 is equal to the end dimension height H1. H1 = 100 x sin a. (a sine table is provided with the device)
To achieve the desired angular setting, the base end dimension on the plate carrier of 12 mm must be taken into consideration.



Technical data:
- Settings according to scale from -6° to +90°
- Settings according sine function from -6° to +45°
- Weight of the plate carrier: approx. 20 kg
- Max. dimensions of the magnet clamping plate: 175 x 450 mm
- Notches in the base housing for fastening bolts or screws are provided to fasten the device to the machine table.

Calculated end dimension height H1, calculate intermediate values with the formula [H1 = 100 x sin a]
Total end dimension = H1 + 12 mm

	Minutes											
	0	**5**	**10**	**15**	**20**	**25**	**30**	**35**	**40**	**45**	**50**	**55**
0	0,0000	0,1454	0,2909	0,4363	0,5818	0,7272	0,8727	1,0181	1,1635	1,3090	1,4544	1,5998
1	1,7452	1,8907	2,0361	2,1815	2,3269	2,4723	2,6177	2,7631	2,9085	3,0539	3,1992	3,3446
2	3,4899	3,6353	3,7806	3,9260	4,0713	4,2166	4,3619	4,5072	4,6525	4,7978	4,9431	5,0883
3	5,2336	5,3788	5,5241	5,6693	5,8145	5,9597	6,1049	6,2500	6,3952	6,5403	6,6854	6,8306
4	6,9756	7,1207	7,2658	7,4108	7,5559	7,7009	7,8459	7,9909	8,1359	8,2808	8,4258	8,5707
5	8,7156	8,8605	9,0053	9,1502	9,2950	9,4398	9,5846	9,7293	9,8741	10,0188	10,1635	10,3082
6	10,4528	10,5975	10,7421	10,8867	11,0313	11,1758	11,3203	11,4648	11,6093	11,7537	11,8982	12,0426
7	12,1869	12,3313	12,4756	12,6199	12,7642	12,9084	13,0526	13,1968	13,3410	13,4851	13,6292	13,7733
8	13,9173	14,0613	14,2053	14,3493	14,4932	14,6371	14,7809	14,9248	15,0686	15,2123	15,3561	15,4998
9	15,6434	15,7871	15,9307	16,0743	16,2178	16,3613	16,5048	16,6482	16,7916	16,9350	17,0783	17,2216
10	17,3648	17,5080	17,6512	17,7944	17,9375	18,0805	18,2236	18,3665	18,5095	18,6524	18,7953	18,9381
11	19,0809	19,2237	19,3664	19,5090	19,6517	19,7942	19,9368	20,0793	20,2218	20,3642	20,5065	20,6489
12	20,7912	20,9334	21,0756	21,2178	21,3599	21,5019	21,6440	21,7859	21,9279	22,0697	22,2116	22,3534
13	22,4951	22,6368	22,7784	22,9200	23,0616	23,2031	23,3445	23,4859	23,6273	23,7686	23,9098	24,0510
14	24,1922	24,3333	24,4743	24,6153	24,7563	24,8972	25,0380	25,1788	25,3195	25,4602	25,6008	25,7414
15	25,8819	26,0224	26,1628	26,3031	26,4434	26,5837	26,7238	26,8640	27,0040	27,1440	27,2840	27,4239
16	27,5637	27,7035	27,8432	27,9829	28,1225	28,2620	28,4015	28,5410	28,6803	28,8196	28,9589	29,0981
17	29,2372	29,3762	29,5152	29,6542	29,7930	29,9318	30,0706	30,2093	30,3479	30,4864	30,6249	30,7633
18	30,9017	31,0400	31,1782	31,3164	31,4545	31,5925	31,7305	31,8684	32,0062	32,1439	32,2816	32,4193
19	32,5568	32,6943	32,8317	32,9691	33,1063	33,2435	33,3807	33,5178	33,6547	33,7917	33,9285	34,0653
20	34,2020	34,3387	34,4752	34,6117	34,7481	34,8845	35,0207	35,1569	35,2931	35,4291	35,5651	35,7010
21	35,8368	35,9725	36,1082	36,2438	36,3793	36,5148	36,6501	36,7854	36,9206	37,0557	37,1908	37,3258
22	37,4607	37,5955	37,7302	37,8649	37,9994	38,1339	38,2683	38,4027	38,5369	38,6711	38,8052	38,9392
23	39,0731	39,2070	39,3407	39,4744	39,6080	39,7415	39,8749	40,0082	40,1415	40,2747	40,4078	40,5408
24	40,6737	40,8065	40,9392	41,0719	41,2045	41,3369	41,4693	41,6016	41,7338	41,8660	41,9980	42,1300
25	42,2618	42,3936	42,5253	42,6569	42,7884	42,9198	43,0511	43,1823	43,3135	43,4445	43,5755	43,7063
26	43,8371	43,9678	44,0984	44,2289	44,3593	44,4896	44,6198	44,7499	44,8799	45,0098	45,1397	45,2694
27	45,3990	45,5286	45,6580	45,7874	45,9166	46,0458	46,1749	46,3038	46,4327	46,5615	46,6901	46,8187
28	46,9472	47,0755	47,2038	47,3320	47,4600	47,5880	47,7159	47,8436	47,9713	48,0989	48,2263	48,3537
29	48,4810	48,6081	48,7352	48,8621	48,9890	49,1157	49,2424	49,3689	49,4953	49,6217	49,7479	49,8740
30	50,0000	50,1259	50,2517	50,3774	50,5030	50,6285	50,7538	50,8791	51,0043	51,1293	51,2543	51,3791
31	51,5038	51,6284	51,7529	51,8773	52,0016	52,1258	52,2499	52,3738	52,4977	52,6214	52,7450	52,8685
32	52,9919	53,1152	53,2384	53,3615	53,4844	53,6072	53,7300	53,8526	53,9751	54,0974	54,2197	54,3419
33	54,4639	54,5858	54,7076	54,8293	54,9509	55,0724	55,1937	55,3149	55,4360	55,5570	55,6779	55,7987
34	55,9193	56,0398	56,1602	56,2805	56,4007	56,5207	56,6406	56,7604	56,8801	56,9997	57,1191	57,2384
35	57,3576	57,4767	57,5957	57,7145	57,8332	57,9518	58,0703	58,1886	58,3069	58,4250	58,5429	58,6608
36	58,7785	58,8961	59,0136	59,1310	59,2482	59,3653	59,4823	59,5991	59,7159	59,8325	59,9489	60,0653
37	60,1815	60,2976	60,4136	60,5294	60,6451	60,7607	60,8761	60,9915	61,1067	61,2217	61,3367	61,4515
38	61,5661	61,6807	61,7951	61,9094	62,0235	62,1376	62,2515	62,3652	62,4789	62,5923	62,7057	62,8189
39	62,9320	63,0450	63,1578	63,2705	63,3831	63,4955	63,6078	63,7200	63,8320	63,9439	64,0557	64,1673
40	64,2788	64,3901	64,5013	64,6124	64,7233	64,8341	64,9448	65,0553	65,1657	65,2760	65,3861	65,4961
41	65,6059	65,7156	65,8252	65,9346	66,0439	66,1530	66,2620	66,3709	66,4796	66,5882	66,6966	66,8049
42	66,9131	67,0211	67,1289	67,2367	67,3443	67,4517	67,5590	67,6662	67,7732	67,8801	67,9868	68,0934
43	68,1998	68,3061	68,4123	68,5183	68,6242	68,7299	68,8355	68,9409	69,0462	69,1513	69,2563	69,3611
44	69,4658	69,5704	69,6748	69,7790	69,8832	69,9871	70,0909	70,1946	70,2981	70,4015	70,5047	70,6078
45	70,7107	70,8134	70,9161	71,0185	71,1209	71,2230	71,3250	71,4269	71,5286	71,6302	71,7316	71,8329

wagner magnete

744

Control unit

The control unit, type 744, is used to control all Wagner electric magnets and electropermanent magnets in connection with the pole-reversal control units. They are available both with and without 6, 8 or 16-step holding force switch.
Depending on the version, the control units are used with clamping magnets, holding magnets and lifting magnets.

Standard version:

- Illuminated pushbutton in stainless steel mounting
- Aluminum housing with slip-resistant rear side
- Housing dimensions (LxWxH): 180x103x37 mm
- Protection class IP 65
- 5 m connecting cable

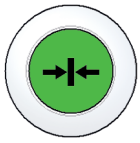
Options:

- Additional illuminated pushbutton and selector switch for special functions
- Connecting cable length: 10 / 15 / 20 m
- Mounting base
- Wall fastening
- Swivelable mounting

Operating elements:

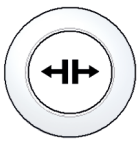
Clamp

When actuating the button, the workpiece is clamped and can be machined. As long as the magnet is switched on, the button glows green. The holding force of the magnet corresponds to the holding force level selected with the selector switch.



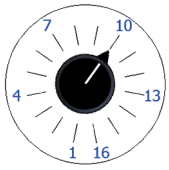
Pole reversal

When actuating the button, pole reversal is started to demagnetize the workpiece. As long as the polarity reversal process is ongoing, the button glows green. As soon as the display has gone off, the workpiece can be removed from the magnet.



Selector switch clamping force

Pre-selection of the holding force via coding switch. The switch can be supplied in 6, 8 or 16 levels (largest number for holding force level = 100% holding force).



Design examples:

To control clamping and holding magnets

- 1 illuminated pushbutton for "Clamping the magnet"
- 1 illuminated pushbutton for "Magnet reversal"
- 1 coding switch with 16 steps for regulating the holding force
- Indicator lamp for indicating error and warning messages
- Housing dimensions (LxWxH in mm): 180x103x37
- For electronic pole-reversal control unit
- Aluminum housing with protection class IP 65

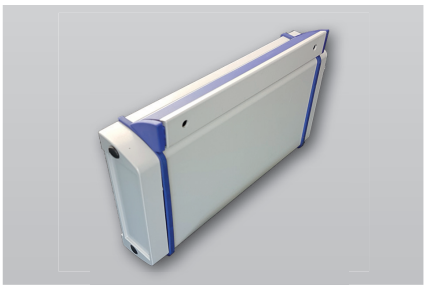
To control loading lifting magnets

- 1 illuminated pushbutton for "Clamping the magnet"
- 1 illuminated pushbutton for "Clamping with reduced holding force" (< 100 %)
- 1 illuminated pushbutton for "Magnet reversal" (double actuation EN13155)
- 1 coding switch with 6 steps for regulating the holding force
- Indicator lamp for indicating error and warning messages
- Housing dimensions (LxWxH in mm): 180x103x37
- For electronic pole-reversal control unit
- Aluminum housing with protection class IP65

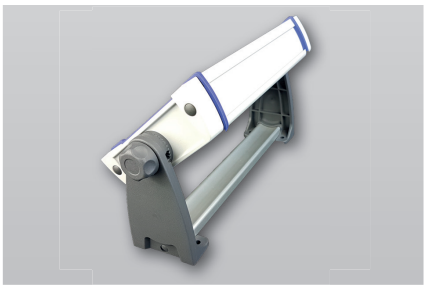
Our control unit 744 can be expanded in a modular manner

Fastening

Mounting base



Wall fastening



Swivelable mounting

wagner magnete

755

Electronic Pole Reversal Control Unit

The type 755 pole-reversal control units are compact and very versatile control units usable for magnets of all kinds.

By reversing the polarity, magnetism in magnets and in the workpiece is eliminated and demagnetised parts can then easily be removed from the magnets.

Within their respectively defined power range, they can be configured and used by setting suitable parameters for practically all types of magnets. Applying a modern digital signal processor successfully facilitated the transfer from conventional voltage control to very precise current control. The current control stands out for the switching dynamics stretching new physical limits and the resulting super-fast clamping and polarity reversal procedures, the repeatability of which is also drastically improved thanks to the precision regulation. Of course, the scope also includes balancing out of any voltage fluctuations from the power supply source.

In devices for standard applications, the basic configuration is implemented during the final inspection by the manufacturer. The basic configuration determines the basic properties of the reverse pole control unit used to control magnets. A difference is established between magnet types (electro, electropermanent and neodymum magnets) and their individual nominal voltages. Another basic setting is the number of adhesive force levels selectable via the adhesive force inputs.

Using the easily adapted calibration process, the device is adapted to the respective magnets.

Current control is established in accordance with the configured adhesive force level and the nominal voltage.

There are 15 different program cycles available to demagnetise electro and electropermanent magnets respectively.

For special applications, the reverse pole control unit can be additionally configured or aligned via an optionally available monitoring program.

Technical data:

- Mains voltage: 230 V AC (+/-10%)
- Mains frequency: 50 / 60 Hz
- Protection system: IP 20
- Operating mode: Continuous operation
- perm.temperature range: 0°C to 40°C
- EMC: EN 61000-6-2 / EN61000-6-4
- For the connection of the magnet use a shielded cable
- Available clamping force curves: 6, 8 or 16 steps.
- Installation height: 1000 mNN
  When operating at great heights, the output power is limited.

Input signals:

- Clamping (SPA IN)
- Pole reversal (UMP IN)
- switch off without demagnetizing process (OFF/QUIT)
- acknowledge fault message (OFF/QUIT)
- 4 inputs for selecting the clamping force levels
- RS 232 interface for PC communication

Program selection

Use the coding switch on the front panel to select up to 16 pole reversal programs.

Output signals:

- Magnet clamped (SPA OUT)
- Pole reversal magnet (UMP OUT)
- Fault (Error or O.K.)
- All output signals are available as potential-free contacts and 24V signals.

Short-circuit behaviour:

The reverse pole control unit is short-circuit-proof. In the event of a short circuit, it is internally disconnected within 10µsec.

Connection values for various output voltages:

Type	nom. output voltage [V DC]	nom. output current [A DC]	Dimensions WxHxD [mm]	Weight [kg]	Use for
755-EL24/7	24	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EL110/7	110	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EL220/6	220	6	142,5x202,5x136	2,8	Electro magnets (continuous operation)
755-EP210/10	210 EP	10	142,5x202,5x136	2,8	Elektro-permanent magnets (pulsed operation)

For compliance with the EMC directives the use of a line reactor is necessary! For line lengths over 20 m between pole reversal control unit and magnet it is necessary to use an output choke.

Accessories:

Control unit

For manual control of the pole-reversal control unit, different control units of type 744 are available. They are equipped with a coding switch to adjust the holding force and illuminated keys to clamp and unclamp the magnet. Keys and coding switch are also available as installation components.

Monitor program

With the additional "USG Monitor" software, the configuration options for the pole-reversal control unit are extended considerable. The following options are available, for example:

- selecting the 6-step, 8-step, and 16-step holding force curve and changing the freely-programmable holding force curve
- changing the pole reversal programs
- activating special options

wagner magnete

756

Electronic Pole Reversal Control Unit

The pole-reversal control unit, type 756, is a controllable power and voltage source to magnetize:

- Electromagnets (EL)
- Electro-permanent magnets (EP)
- Electro-permanent magnets with neodymium system (Nd)

The unit is controlled using 24 V DC control inputs. The system statuses are displayed via three-line display, LED displays and photo-MOS relay.

The unit is supplied via 3-phase mains connection 50 / 60 Hz. The unit is suitable for nominal magnetic currents of at least 6 A.

The pole-reversal control unit is characterized by the following features:

- Optional current or voltage controlled operation
- Pre-selection of up to 4 freely programmable parameter sets for the magnet by optional control inputs
- very short switching times
- When switching off the magnet quickly, the energy released is fed back to the mains
- Very fine resolution of the holding force levels
- Exclusive use of PhotoMOS relays for the feedback signals (no bouncing, relays can connect smallest currents without showing high resistance)
- Configuration via USB and monitor program (optional)
- Ground leakage protection

The pole-reversal control unit 756 provides a nominal input of 22,17 kVA (3 x 400 V, 32 A). Depending on the application (type of magnet, nominal voltage and power consumption of the magnet connected), the unit can also be supplied with reduced voltage and / or reduced fusing.

To switch off electro-permanent magnets, or to reduce the residual magnetism for electromagnets, reversing of poles is necessary. Here a magnetic field with changing polarities and decreasing intensity is generated.
This process reduces the residual magnetism to a minimum. The pole-reversal control unit 756 controls the necessary currents / voltages using the magnet. The basic setting of the pole-reversal control unit is made at our works prior to dispatch. If required, the pole-reversal process can be changed by selecting another pole-reversal program. In addition, it is possible to change the pole-reversal programs using the optional monitor program.

Technical data:

- Mains supply voltage: 3x400 V AC (+/- 10 %), PE
- Mains frequency: 50 / 60 Hz
- Protection class: IP 20
- Operating mode: Continuous operation
- perm. temperature range: 0 °C bis 40 °C
- acc. to EMC and Low Voltage Directive
- Holding force levels: up to 256 levels (16 freely programmable, interpolated)
- Installation height 1000 m MSL
  In case the machine is operated at higher altitudes, the possible output will be reduced.

Input signals:

- Clamp
- Pole-reversal
- Switch off without pole-reversal
- Acknowledge fault message
- 4 inputs for selecting the holding force levels
- 4 extra inputs can be assigned optionally
- USB interface for configuration
- 24 V DC, 2,5 mA

Program selection:

Use switch S1 on the front plate to select up to 16 pole-reversal programs..

Output signals:

- Magnet clamped
- Reverse magnet polarity
- Fault
- PhotoMOS relay with common earth, MINUS or PLUS switching
- max. 24 V, max. 0,5 A
- 6 optional outputs

Short-circuit behavior:

The pole-reversal control unit is protected against destruction of the power semiconductors by internal fuses.

Connection values for various output voltages:

Type	Use for	Magnet voltage [V DC]	max. nominal current magnet [A DC]	Dimensions WxHxD [mm]	Weight [kg]
756-EL110/16	Electromagnets (continuous current)	110	16	125x375x245	7,2
756-EL220/16	Electromagnets (continuous current)	220	16	125x375x245	7,2
756-EL110/30	Electromagnets (continuous current)	110	30	125x375x245	7,2
756-EL220/30	Electromagnets (continuous current))	220	30	125x375x245	7,2
756-EP210/30	Electro-permanent magnets (pulsed operation)	210	30	125x375x245	7,2
756-EP360/30	Electro-permanent magnets (pulsed operation)	360	30	125x375x245	7,2
756-EP210/60	Electro-permanent magnets (pulsed operation)	210	60	125x375x245	7,2
756-EP360/60	Electro-permanent magnets (pulsed operation)	360	60	125x375x245	7,2

756-.../... freely configurable version for up to 4 different magnet systems;
other magnet voltages available as special configuration

Accessories:

Control unit

For manual control of the pole-reversal control unit, different control units of type 744 are available. They are equipped with a coding switch to adjust the holding force and illuminated keys to clamp and unclamp the magnet. Keys and coding switch are also available as installation components.

Monitor program

With the additional "USG Monitor" software, the configuration options for the pole-reversal control unit are extended considerable. The following options are available, for example:

- selecting the 6-step, 8-step, and 16-step holding force curve and changing the freely-programmable holding force curve
- changing the pole reversal programs
- activating special options

wagner magnete

757

Electronic Pole Reversal Control Unit

The pole-reversal control unit, type 757, is a controllable power and voltage source to magnetize:

- Electromagnets
- Electro-permanent magnets

The unit is controlled using 24 V DC control inputs. The system statuses are displayed by means of 4 LED's.

The pole-reversal control unit is characterized by the following features:

- developed for applications for generating safety extra-low voltage (SELV) or functional extra-low voltage (PELV)
- high starting current up to 16 A for electromagnets; up to 25 A for electro-permanent magnets with an extremely compact construction
- very short switching times
- optionally current-regulated or voltage regulated operation
- Pre-selection of up to 4 freely programmable parameter sets for the magnet by optional control inputs
- Very fine resolution of the holding force levels
- the digital outputs can connect currents up to 1.5 A totally
- thanks to the small construction, the device is suitable for fitting on a standard mounting rail in a switch cabinet of vertical construction
- Configuration via USB and monitor program (optional)

To switch off electro-permanent magnets, or to reduce the residual magnetism for electromagnets, reversing of poles is necessary. Here a magnetic field with changing polarities and decreasing intensity is generated.
This process reduces the residual magnetism to a minimum. The pole-reversal control unit 757 controls the necessary currents / voltages using the magnet. A basic setting of the electrical rated values is carried out when the pole-reversal control unit 757 is shipped. If required, the pole-reversal process can be changed by selecting another pole-reversal program. In addition, it is possible to change the pole-reversal programs using the optional monitor program.

Technical data:

- Connection is made to a suitable (SELV/PELV) AC / DC power supply (for example, power supply Puls CPS20.481 or CP10.481)
- Acc. to EMC and Low Voltage Directive
- Input voltage: 26 V DC to 56 V DC
- Output voltage: up to 50 V DC (depending on the input voltage)
- Output current: electromagnets max. 16 A
  electro-permanent magnets max. 25 A (16 A per conductor)
- Efficiency: approx. 98 %
- S.C. behavior: has an overcurrent cutoff and short-circuit protection
- Signal inputs: 12 inputs
  24 V DC
  2 mA per input
- Signal outputs: 5 outputs
  high side switch
  24 V, max. 1.5 A (in total for all 5 outputs)
- Internal supply: 24 V, max. 1,5 A
- Pole-reversal programs: 16, freely programmable
- Holding force levels: up to 256 levels (16 freely programmable, interpolated)
- Interface: USB
- Protection class: IP 20 (switch cabinet integration)
- Dimensions (WxHxD): 22,5 mm x 126 mm x 102,5 mm
- Weight: 160 g
- Ambient temperature: permissible in operation 0 °C to 40 °C
  permissible during storage and transport -20 °C to 70 °C
- Atm. humidity: max. 90 %, condensation not permitted
- Power loss: max. 10 W
- Max. installation height: 1000 m MSL (In case the machine is operated at higher altitudes, the possible output will be reduced)

Accessories:

Control unit
For manual control of the pole-reversal control unit, different control units of type 744 are available. They are equipped with a coding switch to adjust the holding force and illuminated keys to clamp and unclamp the magnet. Keys and coding switch are also available as installation components.

Monitor program
With the additional "USG Monitor" software, the configuration options for the pole-reversal control unit are extended considerable. The following options are available, for example:
- selecting the 6-step, 8-step, and 16-step holding force curve and changing the freely-programmable holding force curve
- changing the pole reversal programs
- activating special options

wagner magnete

692-6

Magnetic field meter

The magnetic field meter is a handy and practical device to measure static or dynamic magnetic fields.

Technical data:

- Measuring range: 0 bis 3000 mT
- Measuring accuracy: ± 5% of display value
- Minimal value: 0,01 mT
- External data output: Digital output (USB) and analog output
- Energy supply: Batteries or external power source
- Application temperature: 0 bis 40 °C
- Dimensions (LxWxH): Measuring unit 140x64x30 mm
- Weight: 250 g (including sensor and batteries)

Special features:

- The meter is compact, light and easy to operate.
- Strong magnetic forces within the range of 0 to 3000 mT can be measured.
- The high resolution measurement mode ensures precise measuring.
- The sensor can be replaced without complex calibration.
- The membrane keypad provides excellent dust protection.
- The automatic switch-off function prevents any unnecessary battery consumption.
- To allow several hours of use of the sensor, an external power source can be connected.
- Both digital and analog signals can be output. The digital output via USB allows further processing of the data on a PC.

692-6 e 08_2016