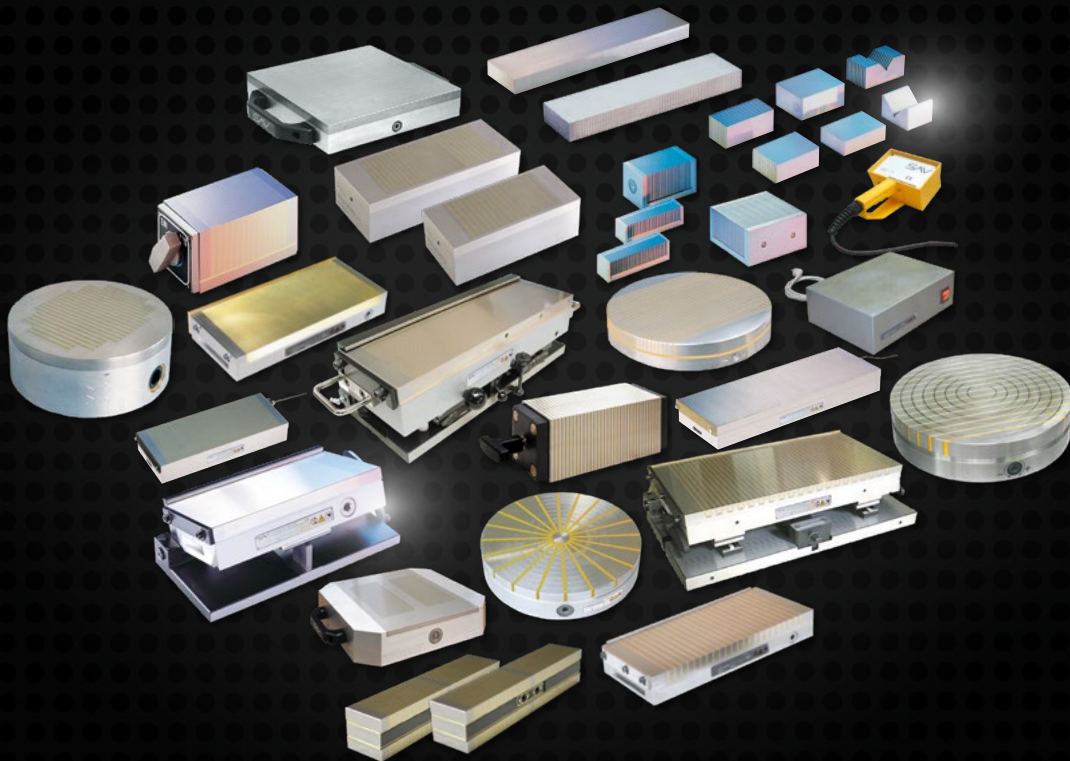


EFFICIENT AND QUALITY ORIENTED

Permanent magnetic systems

SELECTION FOR INTERNATIONAL SALES

ENGLISH



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Clamping technology in perfection

SAV is one of the pioneers in the development, production and worldwide implementation of high-performance standard and special solutions. **Our Focus:** customer orientation for optimal processes and minimized costs – even in the μm range.

Your workpiece needs precision

Since 1984, we have been offering perfectly thought-out solutions for every form of workpiece clamping in a wide range of industries and for all applications. With our systems, we now achieve measurable optimization of industrial manufacturing processes.

Due to high precision, quality and system competence, the use of clamping devices minimizes throughput times, saves time and money and reduces process complexity. How does that work? We rely on three idealistic success factors. Clamping technology can be the key to guaranteed product quality.

Our fields of work



MAGNET SYSTEMS



VICES AND FIXTURES



CIRCULAR CHUCKS



CUSTOMISED SPECIAL SOLUTIONS



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SAV 220.30

PERMANENT MAGNETIC PALLETS

Transverse pole pitch $P = 1.9 \text{ mm}$



APPLICATION

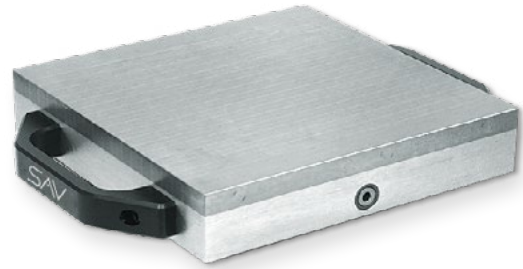
In conjunction with zero-point workholding systems. Can be adapted to most systems.

MATERIAL

Aluminium main body with steel 1.0037/1.4571 pole plate

TECHNICAL DATA

- Tapped holes for stop bars and stop brackets possible.
- Magnetic field height: 4 mm
- Wear layer of the pole plate: 3 mm
- Rated holding force: 80 N/cm^2
- Pole pitch: 1.9 mm



mm				Qty.	kg
A	B	C*	D	Control points	Weight
240	240	46	204	1	19.0
280	280	67	230	2	25.0
320 ¹⁾	320	60	250	1/2	32.0

* Exact dimension is determined through the reference system.
¹⁾ With 45° chamfers on the corners for pallet changer

* Dimension **C** is a guide value and is determined exactly through the reference system.

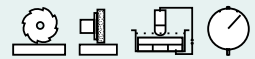
ORDERING EXAMPLE

Designation	SAV no. - A x B - control points - reference system - adaptation
Permanent magnetic pallet	SAV 220.30 - 320 x 320 - 1 - reference system - adaptation

SAV 220.31

PERMANENT MAGNETIC PALLETS

True transverse pole pitch $P = 6 \text{ mm}$



APPLICATION

In conjunction with zero-point workholding systems. Can be adapted to most systems.

MATERIAL

Aluminium main body with steel 1.0037/1.4571 pole plate

TECHNICAL DATA

- Low weight and high rated holding force
- Wear layer of the pole plate: 2 mm
- Rated holding force: 120 N/cm^2
- Tapped holes for stop bars and stop brackets possible
- Low magnetic field
- Clamping holes on the top surface on request



mm						Qty.	kg
A	B	C*	D	E	F	Control points	Weight
240	240	60	126.0	-	-	1	18.0
280	280	66	166.0	80.0	80.0	2	21.5
320 ¹⁾	320	65	206.0	80.0	80.0	1	25.0/36.0
320 ¹⁾	320	65	234.0	123.0	123.0	2	36.0

* Exact dimension is determined through the reference system.
¹⁾ With 45° chamfers on the corners for pallet changer

ORDERING EXAMPLE

Designation	SAV no. - A x B - control points - reference system - adaptation
Permanent magnetic pallet	SAV 220.31 - 320 x 320 - 2 - reference system - adaptation

SAV 242.01

PERMANENT MAGNETIC CLAMPING BLOCKS

With fine and extra-fine pole pitch



APPLICATION

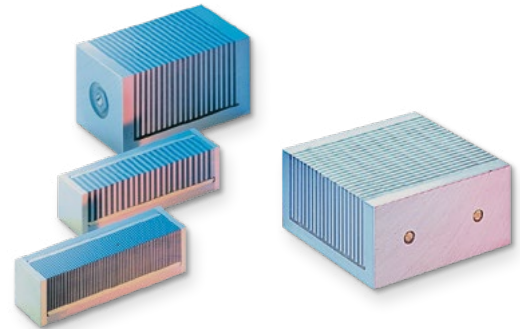
For profiling and machining small workpieces, e.g. dies. For chucking thin parts, we recommend chuck MH 204 with extra-fine pole pitch.

DESIGN

Two or three magnetic chucking areas, pole pitch 4 mm, for MH 204 pole pitch 1.3 mm. Chuck blocks MH 201S to MH 203S made of SmCo₅ magnets with extremely high holding force for materials which are difficult to chuck.

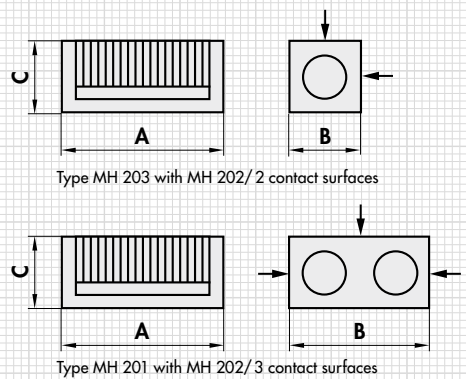
TECHNICAL DATA

- Rated holding force: 80 N/cm² for MH 201 to MH 204
180 N/cm² for MH 201S to MH 203S
- Magnetic field height: 6 mm
- Wear layer of the pole plate: 14 mm for MH 201 and MH 202
6 mm for MH 203 and MH 204



Type	mm			max. Angle deviation	Qty. Contact surfaces	kg Weight	
	A	B	C				
MH 201 MH 201S	100	100	50	5'	1 area 100 x 100 2 areas 100 x 50	3.6	
MH 202 MH 202S	100	50	50	5'	3 areas 100 x 50	1.7	
MH 203 MH 203S	100	25	25	5'	2 areas 100 x 25	0.5	
MH 204	-	100	25	25	5'	2 areas 100 x 25	0.5

ORDERING EXAMPLE	
Designation	SAV no. - type
Permanent magnetic clamping block	SAV 242.01 - MH 201



SAV 242.02

PERMANENT MAGNETIC CLAMPING BLOCKS

With three magnetic chucking areas



APPLICATION

For angled and parallel grinding of small and medium workpieces. Suitable as an add-on block for the base magnet on the machine.

DESIGN

Switched on and off with a rotary knob. 3 magnetic contact surfaces.

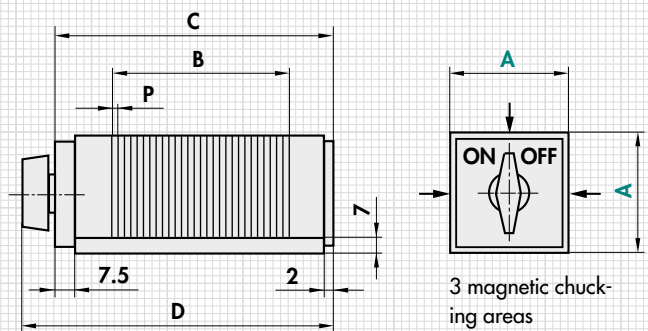
TECHNICAL DATA

- Rated holding force: 60 N/cm²
- Magnetic field height: 2 mm
- Pole divisions: 0.5 mm brass / 1.0 mm steel



A	B	C	D	P	kg Weight
55	90.5	125.5	146	0.5 +1	2.8
70	90.5	125.5	151	0.5 +1	4.0

ORDERING EXAMPLE	
Designation	SAV no. - A
Permanent magnetic clamping block	SAV 242.02 - 55



**SAV 242.05
SAV 242.12**

NEODYMIUM MAGNETIC BLOCKS

With P = 6 mm transverse pole pitch, neodymium iron boron magnets, extremely high holding force



APPLICATION

For workpieces which are difficult to chuck, e.g. **Ferro-Tic**, tungsten carbide with cobalt content, very small workpieces. For fast and easy chucking – also for workpieces with complicated EDM contours or workpieces which are difficult to chuck.

DESIGN

Extremely high holding force using a specially developed process. Sturdy solid steel body. ON/OFF control on the face side. Larger versions also available with force-actuated control mechanism on request. Pole divisions made of 4 mm steel and 2 mm brass with NdFeB magnets in the pole gap.

**AS STAINLESS VERSION
SAV 242.12**

High holding force due to specially developed process. Sturdy solid steel body. ON/OFF control on the face side. Precision-ground version. Housing, ON-switch and pole grid stainless, poles made of steel.



TECHNICAL DATA

- Rated holding force on inducible steel surface: 180 N/cm²
- Rated holding force: 120 N/cm²
- Magnetic field height: approx. 4 mm
- Wear layer of the pole plate: 3 mm
- Available with adaptation for zero-point workholding system

Type	mm								kg
	A	B	C ^{+0.5/-2}	D	E	F	G	H	
ND 100	140	70	51	102	118	35	62	12	3.0
ND 200	200	70	51	157	178	36	62	12	4.2

ORDERING EXAMPLE

Designation	SAV no. - type
Neodymium magnetic block	SAV 242.05 - ND 100

4 x M 6 / 9 deep

1 magnetic chucking area

SAV 242.11

PERMANENT MAGNETIC CLAMPING BLOCKS

With four magnetic chucking areas, also as a stainless version



APPLICATION

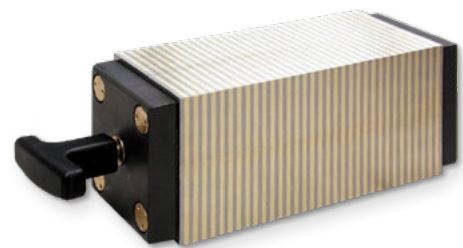
For angled and parallel grinding of small and medium workpieces.

DESIGN

Sturdy design with good magnetic force. Pole divisions made of 2 mm brass / 2 mm steel.

TECHNICAL DATA

- Standard rated holding force: 50 N/cm²
- Rated holding force, stainless (RF): 30 N/cm²
- Magnetic field height: 2 mm
- Wear layer of the pole plate: 4 mm



SAV 242.11 - RF consisting of stainless, high-alloy chrome steel poles. Primarily suitable for use on EDM machines.

A	B	C	D	P	Weight
140	115	65	65	2 + 2	3.1
160	135	65	65	2 + 2	4.0

ORDERING EXAMPLE

Designation	SAV no. - A - version
Permanent magnetic clamping block	SAV 242.11 - 140 - RF

4 magnetic chucking areas

SAV 243.01

PERMANENT MAGNETIC CHUCKS

With fine transverse pole pitch $P = 1.9 \text{ mm}$



APPLICATION

Suitable for chucking thin, small, medium and large workpieces.

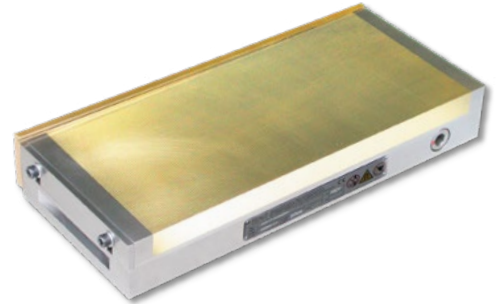
DESIGN

Continuous transverse pole pitch, even holding force over the entire width. Pole divisions made of 0.5 mm brass/1.4 mm steel.

Available with adaptation for zero-point workholding system.

TECHNICAL DATA

- Rated holding force: 80 N/cm^2 (140 x 70)
 90 N/cm^2
(from 175 x 100)
- Magnetic field height: 6 mm
- Wear layer of the pole plate: 8 mm

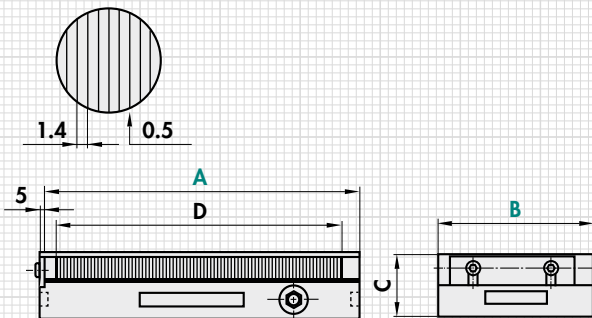


mm				kg	mm				kg
A	B	C ^{+0.5} ₋₂	D	Weight	A	B	C ^{+0.5} ₋₂	D	Weight
140*	70	49	103	3.7	450	150	51	417	30.0
175	100	49	147	7.0	300	200	51	267	26.2
200	100	49	177	8.1	400	200	51	373	35.0
255	130	49	223	14.5	500	200	51	466	43.7
150	150	51	118	9.8	600	200	51	566	52.4
250	150	51	223	16.4	500	250	56	464	58.5
300	150	51	267	19.7	500	300	56	462	70.2
350	150	51	316	23.0	600	300	56	557	84.2

* Control on face side with pull bar

ORDERING EXAMPLE

Designation SAV no. - A x B
Permanent magnetic chuck SAV 243.01 - 500 x 200



Design with flushing holes for EDM available.

SAV 243.11

PERMANENT MAGNETIC CHUCKS

With continuous transverse pole pitch $P = 15 \text{ mm}$, with neodymium magnets, amplified system



APPLICATION

Suitable for heavy and rough machining. The dense magnetic field with maximum concentration opens up areas of application for small, medium and large workpieces, even with rough or uneven surfaces.

DESIGN

Neodymium magnet system with high holding force. ON/OFF control using a manual lever. In the OFF position, a low-strength opposite field facilitates removing of the workpieces.

The magnets are equipped with lengthwise and crosswise stops.

TECHNICAL DATA

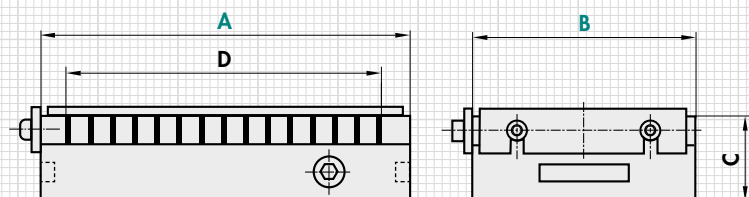
- Rated holding force: 150 N/cm^2
- Magnetic field height: approx. 12 mm
- Wear layer of the pole plate: 5 mm



mm				kg
A	B	C ^{+0.5} ₋₂	D	Weight
250	150	56	199	17.0
300	150	56	244	20.0
350	150	56	289	24.0
400	200	59	349	35.0
500	200	59	439	44.0
600	200	59	544	52.0
600	300	62	544	87.0

ORDERING EXAMPLE

Designation SAV no. - A x B
Permanent magnetic chuck SAV 243.11 - 500 x 200



SAV 243.15

PERMANENT MAGNETIC BEAMS
With transverse pole pitch top and bottom



APPLICATION

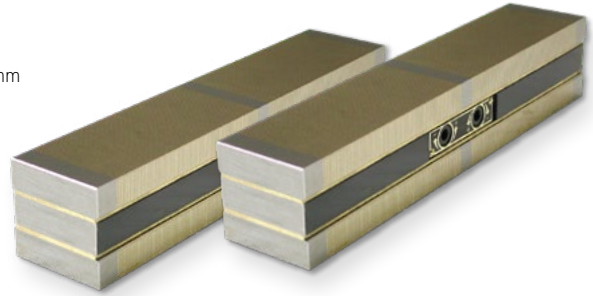
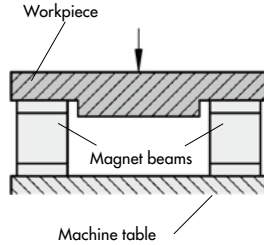
As a workholding fixture for holding workpieces on EDM machines and machine tools, for jigs, etc.

DESIGN

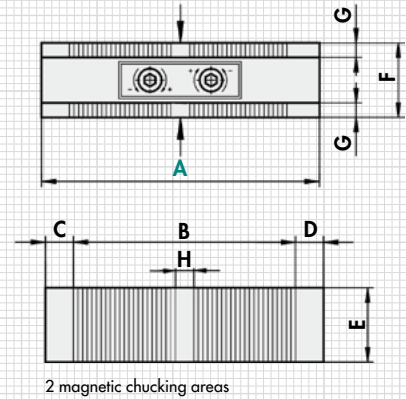
Two opposite chucking areas, separate switching. Only available in pairs. Low magnetic field due to fine pole pitch.

TECHNICAL DATA

- Parallelism: 0.02 mm
- Pole pitch: 1.3 mm
- Magnetic field height: 6 mm
- Wear layer of the pole plate: 6 mm

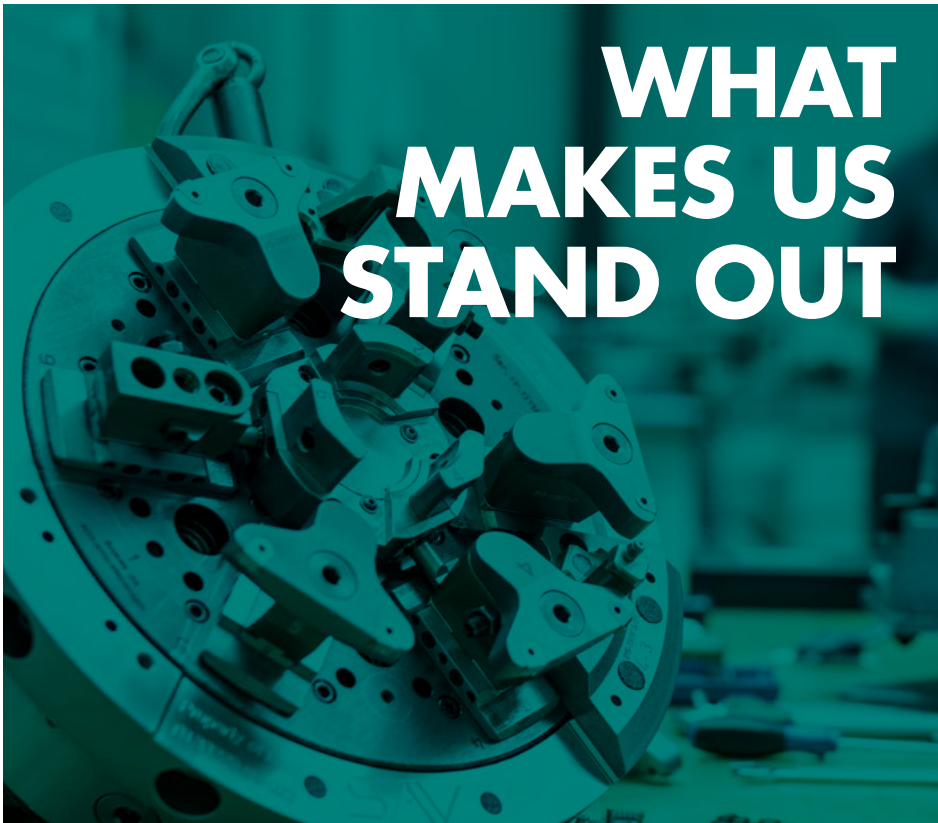


mm								N	kg
A	B	C	D	E	F	G	H	Rated force	Weight
125	98	13.5	13.5	52	50	15	-	300	2.5
180	153	13.5	13.5	52	50	15	11	400	3.6
250	225	12.5	12.5	52	50	15	11	590	5.0



ORDERING EXAMPLE

Designation	SAV no. - A
Permanent magnetic beam	SAV 243.15 - 125



WHAT MAKES US STAND OUT

- Workholding systems using magnetic, hydraulic, mechanical and vacuum principles
- Combinations for stationary and rotary workholding
- Proven standard systems and individually customised solutions
- Highest quality standards
- Products "made in Germany"
- Cross-industry competence
- Solutions for virtually any machining process
- Development and manufacturing competence under one roof
- Support during the entire product development phase – from the initial idea to after sales service

SAV 244.01

PERMANENT MAGNETIC CIRCULAR CHUCKS

With very fine parallel pole pitch $P = 1.9 \text{ mm}$



APPLICATION

For chucking small and thin to medium workpieces.

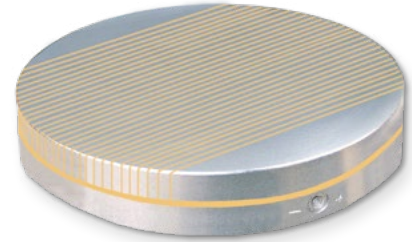
DESIGN

Powerful magnet system with neodymium magnets and low magnetic field height. Magnetic force continuously adjustable. Available with flange on request (see SAV 248.90 to 248.94).

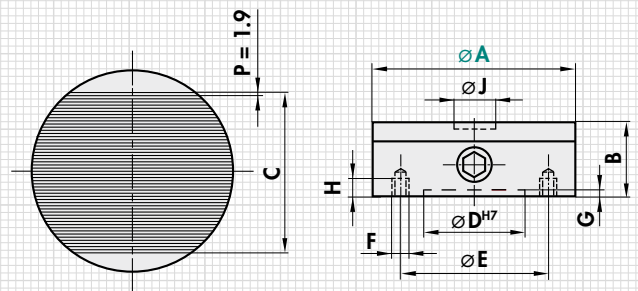
Size J (diameter and depth) machining is possible at the centre of the pole plate. For the other sizes, a 5 mm wearing thickness applies across the entire surface. Concentric lines facilitate visual alignment of the workpieces.

TECHNICAL DATA

- Rated holding force: up to $\varnothing 160$: 60 N/cm^2
from $\varnothing 200$: 90 N/cm^2
- Magnetic field height: 8 mm
- Wear thickness of the top surface: 5 mm
- Geometrically balanced: Quality G 6.3



mm										kg
A	B ^{+0.5/-2}	C	D	E	F	G	H	J		Weight
100	50	71	60	85	4 x M8	4	10	20x14		3.0
130	50	99	90	115	4 x M8	4	10	20x14		5.0
150	50	105	110	132	4 x M8	4	10	24x5		7.0
160	57	116	125	142	4 x M8	4	16	24x5		9.0
200	57	153	150	180	4 x M8	4	16	200x5		15.0
250	57	192	200	232	4 x M8	4	16	250x5		20.0
300	62	227	250	285	4 x M8	4	16	300x5		31.0



ORDERING EXAMPLE

Designation SAV no. - A
Permanent magnetic circular chuck SAV 244.01 - 150

SAV 244.06

PERMANENT MAGNETIC CIRCULAR CHUCKS

With radial pole pitch



APPLICATION

For round and ring-shaped workpieces.

DESIGN

High magnetic force. Concentric rings allow easy alignment of workpieces. Magnetic field continuously adjustable up to $\varnothing 300 \text{ mm}$. Through hole possible up to max. diameter D. Standard version without through hole at the centre. Diameter C is magnetically not active. Available with flange on request (see SAV 248.90 to 248.95).

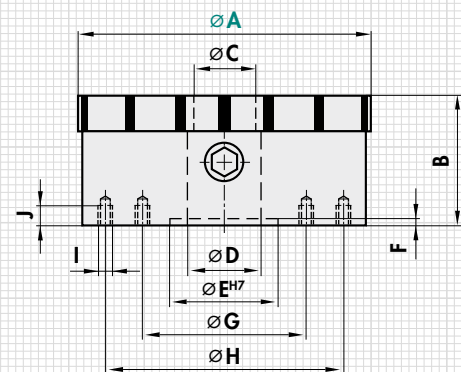
Larger diameters with T-grooves on request. Pole gap with brass pigment.

TECHNICAL DATA

- Rated holding force: 80 to 150 N/cm^2
- Wear thickness of the top surface: 5 mm (for $A = 100$ to 300 mm)
10 mm (for $A = 350$ to 400 mm)
- Geometrically balanced: $G 6.3$



mm										Qty.	kg	N/cm^2
A	B ^{+0.5/-2}	C	D ₂	E	F	G	H	I	J	Poles	Weight	Nom. hold.f.
100	48	14	-	51	6	76	-	M6	8	6	2.6	80
130	57	16	20	50	5	100	-	M6	10	10	5.7	90
150	57	20	24	50	5	80	120	M6	8	10	6.5	90
200	57	28	30	60	5	110	180	M6	8	12	13.0	115
250	70	30	50	80	5	140	220	M6	8	16	20.0	135
300	73	40	58	150	6	180	260	M8	10	16	30.0	150
350	73	40	58	170	6	220	300	M8	12	20	49.0	150
400	75	40	58	200	8	260	340	M8	12	20	75.0	150
500	92	60	58	200	8	360	440	M8	12	26	144.0	150



4 fastening holes per pitch circle

ORDERING EXAMPLE

Designation SAV no. - A
Permanent magnetic circular chuck SAV 244.06 - 400

SAV 244.07

NEODYMIUM MAGNETIC CIRCULAR CHUCKS

With parallel pole pitch $P = 6$ mm, neodymium magnets with extremely high holding force



APPLICATION

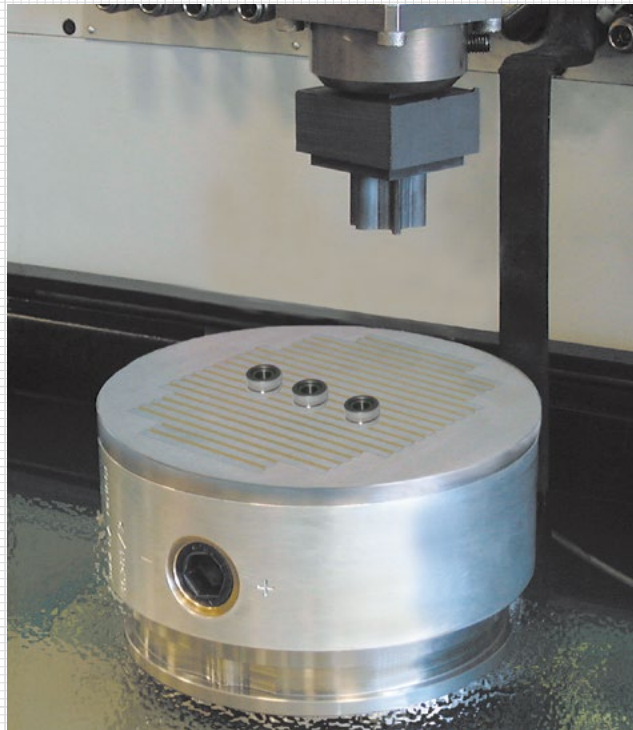
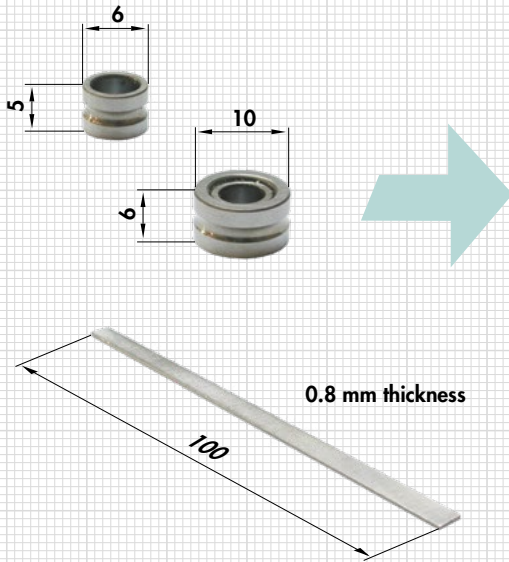
For workpieces which are difficult to chuck, e.g. Ferro-Tic and tungsten carbide with cobalt content. For small and very small workpieces.

DESIGN

Aluminium housing, stainless steel pole plate. Extremely high holding force through use of neodymium iron boron magnet materials and a specially developed process. Available with flange on request (see SAV 248.90 to 248.94). Pole gap with brass pigment. Available with adaptation for zero-point workholding system.

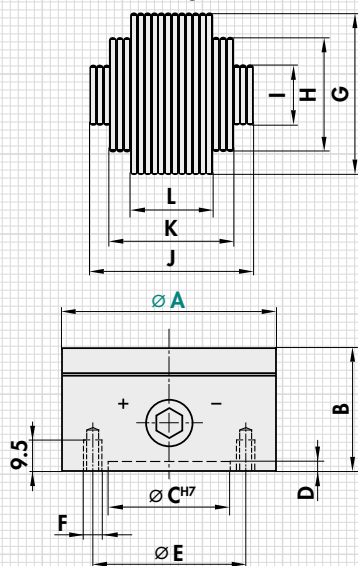
TECHNICAL DATA

- Rated holding force: 120 N/cm²
(On inducible steel surface: 180 N/cm²)
- Magnetic field height: 4 mm
- Wear layer of the pole plate: 3 mm



mm												kg
A	B ^{+0.5/-2}	C	D	E	F	G	H	I	J	K	L	Weight
100	65	70	4	90	M 6 (4x)	-	-	48	-	-	74	2.0
125	65	95	4	110	M 8 (4x)	-	88	54	-	98	67	3.0
160	65	125	4	140	M 10 (4x)	-	104	54	-	134	61	4.5
200	65	125	4	180	M 10 (4x)	134	104	74	158	110	73	8.5

Pole diagram



ORDERING EXAMPLE

Designation SAV no. - A
Neodymium magnetic circular chuck SAV 244.07 - 160

SAV 244.11

PERMANENT MAGNETIC CIRCULAR CHUCKS

With parallel pole pitch, reinforced magnet system



APPLICATION

For chucking small to large workpieces for grinding and turning.

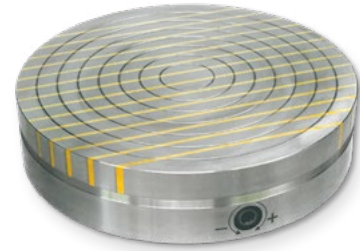
DESIGN

Powerful magnet system with neodymium magnets and low magnetic field height. All sizes with 1 control point. Magnetic force continuously adjustable. Option for integrating a central hole "H". Available with flange on request (see SAV 248.90 to 248.94).

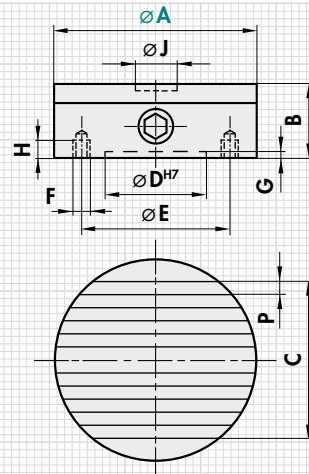
Concentric rings facilitate visual alignment of the workpieces. Pole gap with solid brass.

TECHNICAL DATA

- Rated holding force:
 - Diameter A = 160 and 200 mm: 100 N/cm²
 - Diameter A = 250 to 500 mm: 150 N/cm²
- Magnetic field height: 10 mm
- Wear layer of the pole plate: 6 mm
- Geometrically balanced: G 6.3



mm										kg
A	B ^{+0.5} ₋₂	C	D	E	F	G	H	J	P	Weight
160	57	102	125	142	4 x M8	4	12	D15x6	8+3	8.0
200	57	146	150	180	4 x M8	4	12	D20x6	8+3	13.0
250	57	198	200	232	4 x M8	4	12	D25x20	12+3	20.0
300	62	228	250	285	4 x M8	4	12	D25x20	12+3	31.0
350	62	288	300	334	4 x M8	5	12	D25x20	12+3	43.0
400	67	318	300	350	6 x M10	5	20	D25x20	12+3	60.0
450	67	378	350	400	6 x M10	5	20	D25x20	12+3	76.0



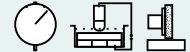
ORDERING EXAMPLE

Designation SAV no. - A
 Permanent magnetic circular chuck SAV 244.11 - 250

SAV 245.01

PRECISION SINE TABLES

Swivelling around the longitudinal axis



DESIGN

With sine table base unit made of steel. Hardened, burnished and precision-ground. Base plate alignment edge parallel to the stop bar. Maximum precision with flat design. Standard design with permanent magnetic chuck. The sine tables are delivered in a wooden storage box, up to and including size 400 x 200 mm. With sine table with degrees/minutes in mm, precision length stop and transverse stop bar.

APPLICATION

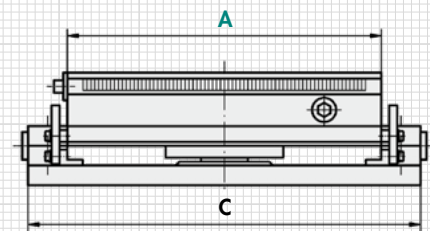
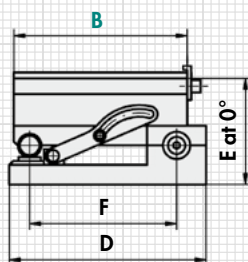
The angles are determined using the gauge blocks using the sinusoidal principle. Clamping is achieved with the upper bearing shell halves.

TECHNICAL DATA

- Angle accuracy: ±5 arc sec
- Plane parallelism: ±0.005/100 mm
- Gauge block at 0°: 3 mm
- Swivelling range: 0° to 45°
- Rated holding force: 90 N/cm²
- Pole pitch: 1.9 mm
- Magnetic field height: 6 mm
- Wear layer of the pole plate: 8 mm



mm						kg
A	B	C	D	E ₂ ⁰	F	Weight
150	150	190	165	85	135	12.0
175	100	215	115	80	85	10.0
250	100	290	115	80	85	16.0
255	130	295	145	80	115	19.0
250	150	290	165	83	135	20.5
300	150	340	165	86	135	26.5
300	200	340	215	86	185	35.0
350	150	390	165	85	135	35.0
400	200	440	215	85	185	52.0
500	250	540	265	96	235	84.0
600	300	660	317	117	275	121.0

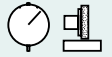


ORDERING EXAMPLE

Designation SAV no. - A x B
 Precision sine table SAV 245.01 - 300 x 150

Other designs and dimensions on request. Also available with electro permanent magnet or other magnet systems. All standard sized of the permanent magnetic chucks SAV 243.01 (chapter 1.2.1) are available as a sine table.

Design with flushing holes for EDM available (surcharge applies).



DESIGN

With sine table base unit made of steel. Hardened, burnished and precision-ground. Magnet housing annealed without stress.

Maximum precision with flat design.

4-point contact for optimum precision.

Delivered with a lifting aid, rod and sine table with degrees/minutes in mm.

Precision longitudinal stop with transverse stop bar, 3 m connecting cable, painted magnet housing.

Available alternatively with electrical chucks and integrated water cooling for $P = 13$ (EM) or electro-permanent magnetic chucks for $P = 4$ (EP).

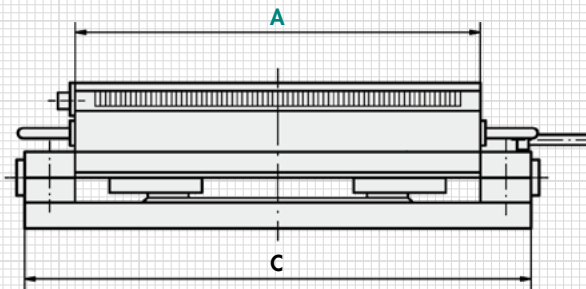
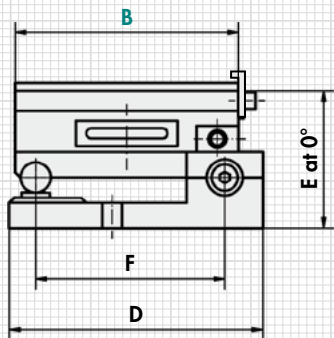


APPLICATION

The angles are determined using the gauge blocks using the sinusoidal principle.

TECHNICAL DATA

- Angle accuracy: ± 5 arc sec
- Plane parallelism: $\pm 0.005/100$ mm
- Gauge block at 0° : $0/5$ mm
- Swivelling range: 0° to 45°
- Rated holding force: 100 N/cm^2
- Pole pitch:
 - 4 mm for EP magnet as per SAV 243.73
 - 13 mm for EM magnet as per SAV 243.42
- Magnet voltage:
 - 210 V for EP
 - 24 V or 110 V for EM



With electro-permanent magnet $P = 4$ (EP)

mm						kg	A
A	B	C	D	E_2^0	F	Weight	Magnet current
450	175	448	203	125.5	175	55.0	30
500	175	498	203	125.5	175	61.0	30
500	200	498	228	125.5	200	70.0	30

With electromagnet $P = 13$ (EM)

mm						kg	Type
A	B	C	D	E_2^0	F	Weight	Control
450	175	448	203	125.5	175	55.0	E4
500	175	498	203	125.5	175	61.0	E4
500	200	498	228	125.5	200	70.0	E4

Other designs and dimensions on request.
Also available with other magnet systems.

ORDERING EXAMPLE

Designation	SAV no. - A x B - pole pitch - version - magnet voltage
Precision sine table	SAV 245.09 - 500 x 200 - 4 - EP - 210 V

SAV 245.10

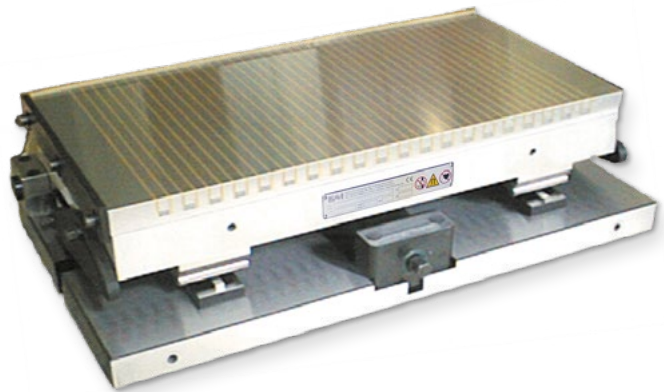
PRECISION SINE TABLES

Swivelling around longitudinal axis, permanently installed on machine table



DESIGN

With sine table base plate made of steel.
 Annealed without stress.
 All structural elements made of steel. Hardened and precision-ground. Sturdy design with high precision. With mechanical adjustment gear or hydraulic swivelling aid, depending on size. Maximum precision with flat design.
 4-point contact for optimum safety.
 Standard version with electro permanent magnetic chuck as per SAV 243.70. Pole pitch 13, 18 or 25 mm.
 Delivered with sine table with degrees/minutes in mm, precision longitudinal stop with transverse stop bar, 3 m connecting cable, painted magnet housing, ratchet and socket.

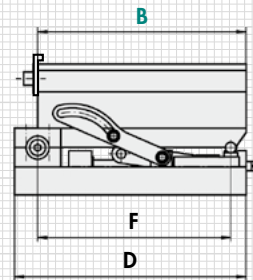
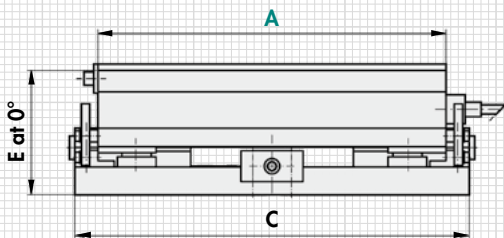


APPLICATION

The angles are determined using the gauge blocks using the sinusoidal principle.

TECHNICAL DATA

- Gauge block at 0°: 5 mm
- Swivelling range: 0° to 45°
- Angle accuracy: ±5 arc sec
- Plane parallelism: ±0.005/100 mm
- Pole pitch: 13/18/25 mm
- Rated holding force: 90/110/115 N/cm²
- Magnet voltage: 360 V



mm						kg	A
A	B	C	D	E 0°	F	Weight	Magnet current
400	200	460	280	165	175	90.0	30
500	200	560	280	176	175	120.0	30
500	250	560	315	146	225	138.0	30
600	200	660	280	165	175	170.0	30
600	300	660	370	146	275	200.0	30
800	300	860	370	186	275	250.0	30
800	400	860	455	186	375	320.0	30

* Depending on magnet type.
 The stated heights refer to the electro permanent magnetic chucks SAV 243.70.

Other designs and dimensions on request. Also available with electromagnet or other magnet systems. Please state the required magnet when ordering (see chapters 1.2.1, 1.2.2 and 1.2.3).

ORDERING EXAMPLE

Designation SAV no. - A x B - pole pitch - voltage
 Precision sine table SAV 245.10 - 800 x 300 - 18 - 360 V

SAV 248.03

LAMINATED TOP PLATES

For placing on magnetic chucks with parallel pole pitch



APPLICATION

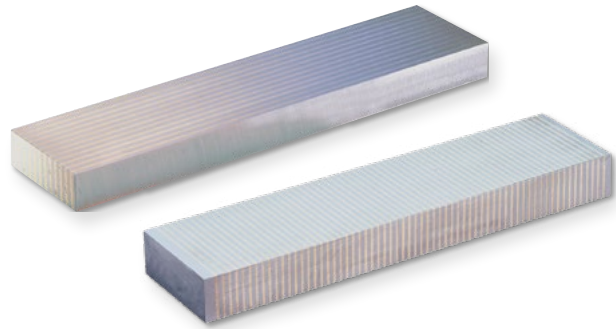
For placing on magnetic chucks with parallel divisions to conduct the magnetic field into the workpiece.

DESIGN

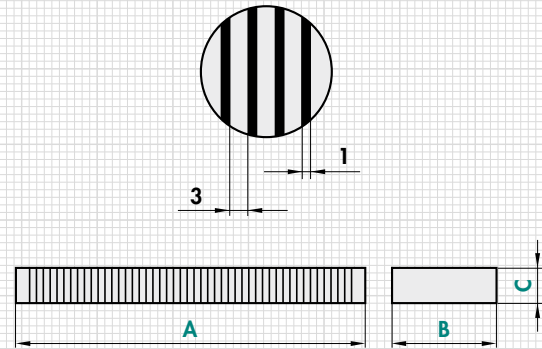
Attaching to a magnet upon agreement.

TECHNICAL DATA

- Pole pitch: 3 mm steel, 1 mm brass
- Profile depth: Max. 8 mm



mm				kg	mm				kg
A	B	C	Weight		A	B	C	Weight	
320	75	25	4.8		250	75	25	3.8	
650	75	25	9.8		500	75	25	7.5	
320	100	40	10.1		250	100	25	5.0	
650	100	40	20.5		500	100	25	10.0	
Design with longitudinal pole pitch					400	75	25	6.0	
					250	75	40	6.0	
					500	75	40	12.0	
					200	100	40	6.4	
					400	100	40	12.8	
					500	100	40	16.0	
					Version with transverse pole pitch				



ORDERING EXAMPLE

Designation	SAV no. - A x B x C
Laminated top plate	SAV 248.03 - 400 x 100 x 40

SAV 248.60

LAMINATED BLOCKS

For placing on magnetic chucks with parallel pole pitch



APPLICATION

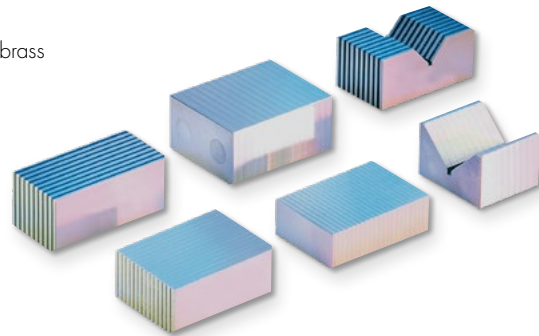
In conjunction with magnetic chucks for parallel pole division direction for machining irregular workpieces.

DESIGN

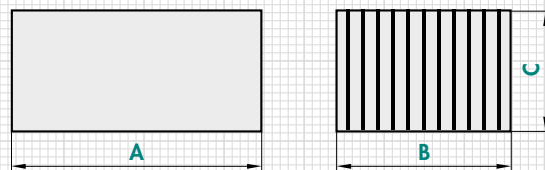
Longitudinal and transverse pole pitch and prisms.

TECHNICAL DATA

- Pole pitch: 3 mm steel, 1 mm brass
- Profile depth: Max. 8 mm



mm			Pole direction	Design	kg
A	B	C			Weight
65	60	40	Transverse pole (Q)	Prism (P)	0.8
72	45	22	Transverse pole (Q)	Flat (E)	0.5
75	60	30	Longitudinal pole (L)	Flat (E)	0.7
80	60	30	Transverse pole (Q)	Flat (E)	0.7
80	80	50	Transverse pole (Q)	Flat (E)	2.5
90	62	33	Longitudinal pole (L)	Flat (E)	0.8
100	50	40	Longitudinal pole (L)	Flat (E)	1.7
100	50	40	Longitudinal pole (L)	Prism (P)	1.0
100	70	41	Transverse pole (Q)	Flat (E)	2.1
100	70	48	Longitudinal pole (L)	Flat (E)	2.7
120	80	50	Transverse pole (Q)	Flat (E)	3.8



ORDERING EXAMPLE

Designation	SAV no. - A x B x C - pole direction - version
Laminated block	SAV 248.60 - 75 x 60 x 30 - L - E

SAV 878.05

TESLAMETER

Compact device with large measuring range



APPLICATION

For measuring residual remanence on workpieces and tools, in holes and gaps. Suitable for micro magnetic fields and very strong fields. For measuring magnetic flux densities and the field distribution on magnetic chucks.

DESIGN

Lightweight and compact design. Housing protected against dirt. Energy-saving function for long battery life. Liquid crystal display (LCD) with digital measured value output.

If the sensor is worn, it can easily be reordered and replaced (SAV 878.05 - S).

TECHNICAL DATA

- Automatic measuring range selection
- Display either in Tesla (T) or Gauss (G)
- Static and dynamic measurements
- Maximum value display for dynamic measurements
- Magnetic pole indicator N/S
- Zero-point adjustment
- Measuring range for static fields: 0 – 1500 mT
- Measuring range for dynamic fields: 0 – 750 mT
- Measuring accuracy: ±5 %
- service temperature: 0 – 40 °C
- Dimensions: 150 x 150 x 25 mm
- Weight: 0.25 kg



ORDERING EXAMPLE

Designation	SAV no.
Teslameter	SAV 878.05

SAV 890.02

TABLE DEMAGNETIZERS

Standard device



APPLICATION

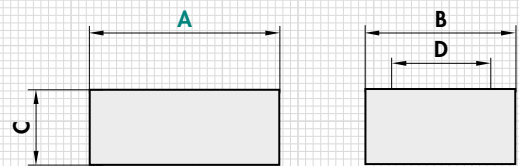
The demagnetisers are suitable for use in measuring rooms, workshops and production lines and have a strong action for demagnetising bearing rings, dies, swages and other tools.

TECHNICAL DATA

- Power supply: 230 V/50 Hz AC
- Protection rating: IP 20
- Duty cycle: 100 duty cycle
- Power consumption: max. 920 W
- Penetration depth: approx. 50 mm



mm				kg	VA
A	B	C	D	Weight	Power
250	180	87	150	11.0	920
280	266	87	220	18.0	920
400	306	87	260	24.0	920



D = active width

ORDERING EXAMPLE

Designation	SAV no. - A
Table demagnetizer	SAV 890.02 - 250

SAV 890.70

MANUAL DEMAGNETIZERS

For universal use



APPLICATION

For demagnetising the surfaces of larger workpieces. Mobile use.

DESIGN

Lightweight housing for easy handling. 3 m cable with connector.

TECHNICAL DATA

- Rated voltage: 230 V/50 Hz
- Power consumption: 220 VA
- Protection rating: IP 42
- Automatic shutdown: at > 50 °C
- Duty cycle: 30 %



ORDERING EXAMPLE

Designation	SAV no. - type
Manual demagnetiser	SAV 890.70 - HD 2

Type	Size of the active zone	Power supply	Depth of the magnetic field	Weight
HD 1	105 x 75 mm	220 - 240 V / 50Hz	20 mm	1.9 kg
HD 2	150 x 95 mm	220 - 240 V / 50Hz	40 mm	2.2 kg



The magnetic force is generated by the permanent magnets which are magnetised and demagnetised with short current pulses. The block magnet features a sturdy design and a long service life. The pole pitch forms "true" N and S poles.



DESIGN

- Solid pole plate with 13 mm, 18 mm or 25 mm transverse pole pitch
- "True" N/S pole spacing
- Switch-off using demagnetising cycle
- Electro permanent magnetic system for absolute safety in case of power failure.
- On request available with compressed air holes for $P = 18/25 \text{ mm}$ for easier removal of larger parts (adhesion)
- High accuracy thanks to pole plates bolted in a narrow grid
- Reinforced systems for high wear possible on request
- 8 mm wear layer on the pole plate
- Pole plate can be replaced when worn
- Chucking slots on both face sides
- Length over 1000 mm with through holes for fastening upon agreement or machine table
- Robust and water-tight
- Protection rating IP 65

RATED HOLDING FORCE

90 N/cm², with $P = 13 \text{ mm}$ pole pitch
 110 N/cm², with $P = 18 \text{ mm}$ pole pitch
 115 N/cm², with $P = 25 \text{ mm}$ pole pitch
 Controllable with control unit.

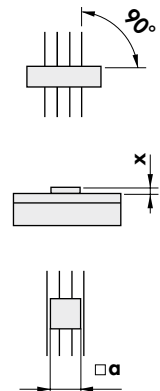
RATED VOLTAGE, RECOMMENDED

210 V IMP up to size $A \times B = 600 \times 400$
360 V IMP above size $A \times B = 600 \times 400$

APPLICATION

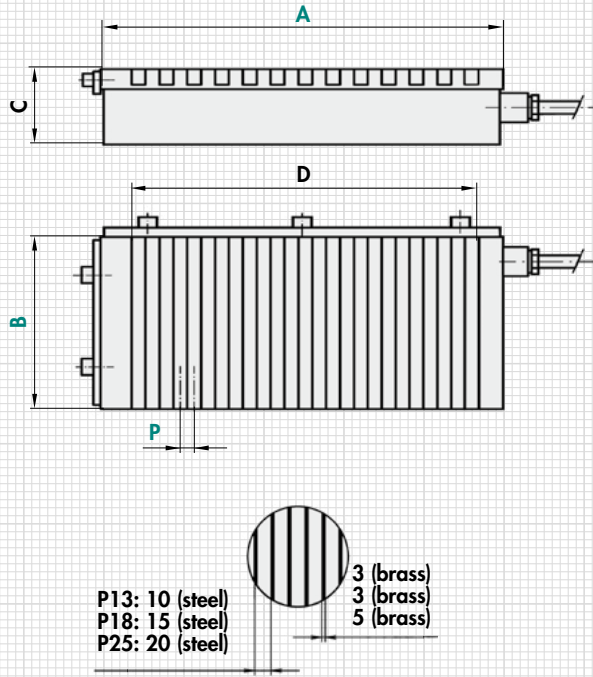
For universal chucking of workpieces with high precision.

- For main workpiece axis perpendicular to the pole pitch
- For workpieces up to min. thickness x :
 4.5 mm with $P = 13 \text{ mm}$
 6.0 mm with $P = 18 \text{ mm}$
 8.5 mm with $P = 25 \text{ mm}$
- For flat workpieces min. a :
 25 mm x 25 mm with $P = 13 \text{ mm}$
 32 mm x 32 mm with $P = 18 \text{ mm}$
 45 mm x 45 mm with $P = 25 \text{ mm}$



SCOPE OF DELIVERY

- Stop bar on one short and one long side
- 3 m connecting cable on right short side, rear
- On request with water-tight heavy-duty power connector
- Larger magnetic chucks from 25 kg are provided with lifting lugs for transport
- Control and hand remote unit not in the scope of delivery
- Clamps



mm					kg	V	A
A	B	C ₋₁ ⁰	D	P	Weight	Rated voltage	Control max. pul. Current
200	100	80	120	13	11.0	210	30
300	100	80	224	13	17.0	210	30
300	150	80	224	13	25.0	210	30
400	150	80	328	13	34.0	210	30
450	175	80	381	18	44.0	210/360	30
400	200	80	345	18	45.0	210/360	30
500	200	80	417	18	56.0	210/360	30
600	200	80	525	18	67.0	210/360	30
800	200	80	705	18	90.0	210/360	30
500	250	80	417	18	70.0	210/360	30
600	250	80	525	18	84.0	210/360	30
800	250	80	705	18	112.0	210/360	30
500	300	80	417	18	90.0	210/360	30
600	300	80	525	18	108.0	210/360	30
800	300	80	705	18	145.0	210/360	30
1000	300	80	930	18	180.0	210/360	30
600	350	80	525	18	126.0	210/360	30
800	350	80	705	18	168.0	210/360	30
1000	350	80	921	18	210.0	210/360	30

mm					kg	V	A
A	B	C ₋₁ ⁰	D	P	Weight	Rated voltage	Control max. pul. Current
600	400	80	525	18	145.0	210/360	30
700	400	80	633	18	169.0	360	30
800	400	80	705	18	193.0	360	30
1000	400	80	921	18	240.0	360	30
1200	400	90	1137	18	289.0	360	30
800	500	80	730	25	241.0	360	30
1000	500	80	930	25	301.0	360	30
1200	500	90	1130	25	361.0	360	30
1250	500	90	1180	25	376.0	360	30
1500	500	90	1430	25	450.0	360	30
1600	500	90	1520	25	480.0	360	60
2000	500	90	1930	25	602.0	360	60
1000	600	80	930	25	361.0	360	30
1200	600	90	1130	25	433.0	360	30
1250	600	90	1180	25	451.0	360	30
1500	600	90	1430	25	542.0	360	30
1600	600	90	1520	25	578.0	360	60
2000	600	90	1930	25	722.0	360	60
1500	800	90	1430	25	723.0	360	60
1600	800	90	1520	25	771.0	360	60
2000	800	90	1930	25	963.0	360	60

Other sizes and rated voltages on request.

Larger chucking areas can be implemented by joining several blocks without gaps.

Allocation to the correct control unit is based on the max. power consumption/magnet voltage.

ORDERING EXAMPLE

Designation	SAV no. - A x B - pole pitch - rated voltage
Electro permanent magnetic chuck	SAV 243.70 - 2000 x 800 - 25 - 360 V



Precision grinding magnet with very narrow pole pitch. The magnetic force is generated by the permanent magnets which are magnetised and demagnetised with short current pulses.



DESIGN

- Pole plate with particularly narrow, continuous transverse pole pitch, 3 mm steel and 1 mm brass.
- Pole divisions bonded and additionally bolted together solidly with tie rods lengthwise
- High accuracy thanks to pole plates bolted in a narrow grid
- Switch-off using demagnetising cycle
- 8 mm wear layer on the pole plate
- Low magnetic field height of 4 mm
- Electro-permanent magnetic system for absolute safety in case of power failure
- Chucking slots on both face sides
- Reinforced systems for high wear possible on request
- Length over 1000 mm with through holes for fastening upon agreement
- Robust and water-tight
- Protection rating IP 65

RATED HOLDING FORCE

100 N/cm²,
Controllable with control unit

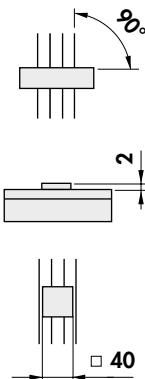
RATED VOLTAGE, RECOMMENDED

210 V IMP up to size A x B = 600 x 300
360 V IMP above size A x B = 600 x 300

APPLICATION

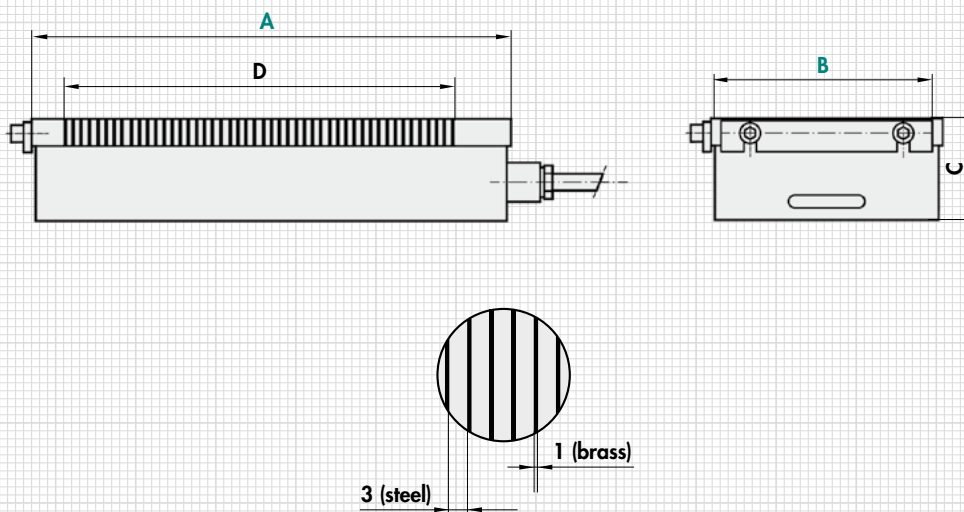
For chucking thin, flat workpieces with high precision.

- For main workpiece axis perpendicular to the pole pitch
- For thin workpieces up to: min. thickness = 2 mm
- For flat workpieces: min. length = 40 mm



SCOPE OF DELIVERY

- Stop bar on one short and one long side
- 3 m connecting cable on right short side, rear
- On request with water-tight heavy-duty power connector
- Larger magnetic chucks are provided with lifting lugs for transport
- Control and hand remote unit not in the scope of delivery
- Clamps



mm				kg	V	A	mm				kg	V	A
A	B	C ₋₁ ⁰	D	Weight	Rated voltage	Control max. pul. Current	A	B	C ₋₁ ⁰	D	Weight	Rated voltage	Control max. pul. Current
450	175	77	397	44.0	210/360	30	600	350	77	549	126.0	360	30
400	200	77	349	45.0	210/360	30	800	350	77	749	168.0	360	30
500	200	77	445	56.0	210/360	30	1000	350	77	949	210.0	360	60
600	200	77	549	67.0	210/360	30	600	400	77	549	145.0	360	30
800	200	77	749	90.0	360	30	700	400	77	645	169.0	360	30
500	250	77	453	70.0	210/360	30	800	400	77	749	193.0	360	30
600	250	77	549	84.0	210/360	30	1000	400	77	949	240.0	360	60
800	250	77	749	112.0	360	30	1200	400	87	1149	289.0	360	60
500	300	77	453	90.0	210/360	30	800	500	77	749	241.0	360	60
600	300	77	549	108.0	210/360	30	1000	500	77	949	300.0	360	60
800	300	77	749	145.0	360	30	1200	500	87	1149	361.0	360	60
1000	300	77	949	180.0	360	30							

Other sizes and rated voltages on request. Larger chucking areas can be implemented by joining several blocks without gaps. Allocation to the correct control unit is based on the max. power consumption/magnet voltage.

ORDERING EXAMPLE

Designation	SAV no. - A x B - rated voltage
Electro permanent magnetic chuck	SAV 243.73 - 1200 x 500 - 360 V

DESIGN

The device complies with the standards:

- 2014/35/EU – Low Voltage Directive
- 2014/30/EU – Electromagnetic Compatibility Directive
- 2011/65/EU – RoHS

A safety contact in the control unit can be used to prevent machining of the workpiece if the voltage unit is not switched on.

Manually actuated with illuminated push-buttons. The optional connection to a CNC control uses a 24 V signal voltage.

A stepped holding force control is integrated as a standard. It can be controlled with a coding switch.

When using the lower levels of the holding force control, it must be noted that safety as per the accident prevention regulations is no longer ensured. The enabling level can be adjusted, however, and must be adapted to the workpiece.

Ambient temperature max.: 45 °C

Power supply: 230/400 V DC

Frequency: 50/60 Hz

Duty cycle for electromagnets: 100 %

APPLICATION

For electromagnetic workholding devices. Also suitable for retrofitting.

FUNCTION

Electronic polarity reversal control units supply electromagnetic workholding devices with direct current. In addition, the integrated polarity reversal device and microcontroller reduce the residual holding force between the magnetically held workpieces and the workholding device caused by remanence. This makes it easier to remove the workpieces from the magnetic chuck and to remove any swarf generated. At the same time, the residual field strength in the workpiece is dissipated almost completely.

For parts which are particularly difficult to magnetise, the controller offers a number of advanced polarity reversal programs. When ordering a magnetic chuck and polarity reversal control unit together, you will of course receive optimised settings for time and magnetic action.

For your safety, the device permanently monitors the power source, its own power components and all connecting cables including the magnetic coil.

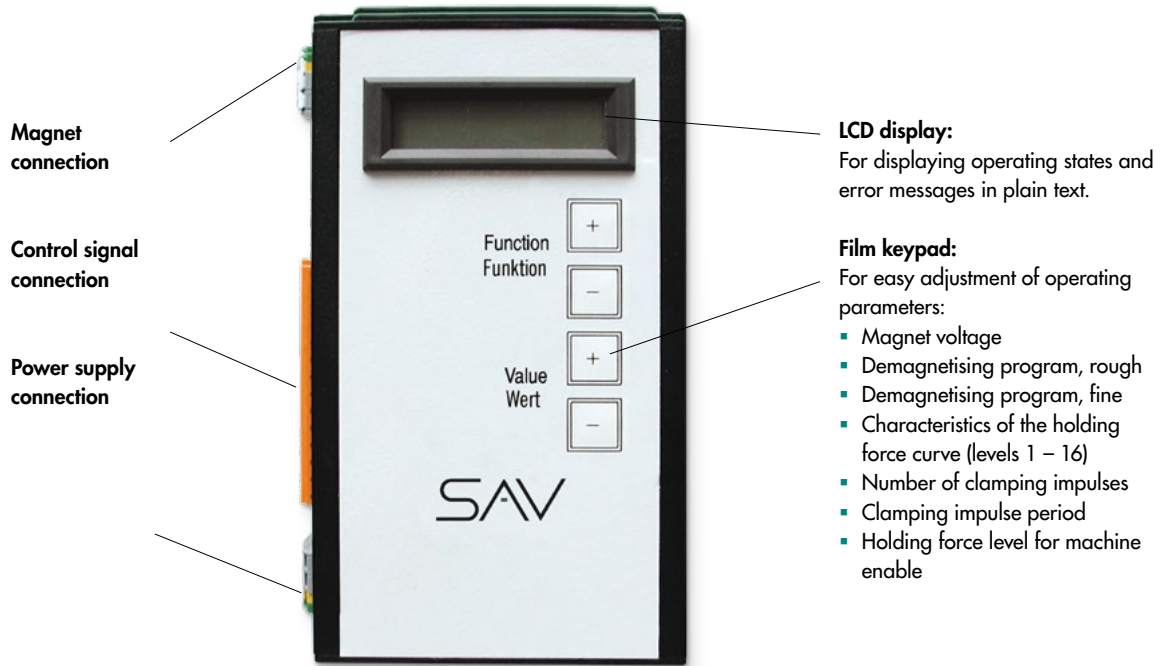
An LCD display acts as a signal generator.


PERFORMANCE CHARACTERISTICS

- Small and compact
- Can be integrated into any machine control cabinet
- User-friendly with LCD plain text display and film keypad
- Universal for all magnet types and voltages
- Reliable and safe operation


ELECTRICAL DATA

Order number	Type	DC in V	max. in A	AC in V	DC in kW	A	Mains transformer required
	Control	Magnet voltage	Magnet current	Power supply	max. magnetic power	Fuse	
876.10 -_- T-24 / 7 / 230	E 1	24	7	230	168	4	yes (T)
876.10 -_- T-24 / 15 / 230	E 2	24	15	230	360	6.3	yes (T)
876.10 -_- T-24 / 25 / 230	E 3	24	25	230	600	6.3	yes (T)
876.10 -_- O-110 / 6 / 230	E 4	110	6	230	660	4	no (O)
876.10 -_- O-110 / 16 / 230	E 5	110	16	230	1760	16	no (O)
876.10 -_- O-110 / 30 / 230	E 6	110	30	230	3300	25	no (O)
876.10 -_- T-110 / 6 / 400	E 7	110	6	400	660	4	yes (T)
876.10 -_- T-110 / 16 / 400	E 8	110	16	400	1760	16	yes (T)
876.10 -_- T-110 / 30 / 400	E 9	110	30	400	3300	25	yes (T)



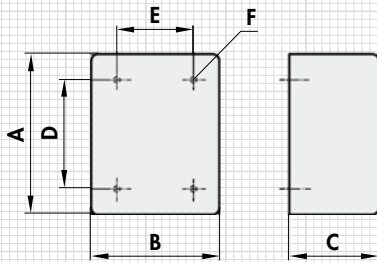
GEOMETRIC DATA

Control cabinet version (S) protection rating IP 54

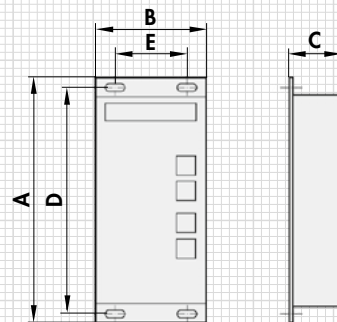
Order number	Type	Contr.	mm						Weight
			A	B	C	D	E	F	
876.10-S-T-24/7/230	E 1		250	400	150	205	355	∅10	14.0
876.10-S-T-24/15/230	E 2		250	500	150	205	455	∅10	20.0
876.10-S-T-24/25/230	E 3		500	400	250	455	355	∅10	32.0
876.10-S-O-110/6/230	E 4		300	250	155	260	210	∅8	10.0
876.10-S-O-110/16/230	E 5		250	400	150	205	355	∅10	14.0
876.10-S-O-110/30/230	E 6		250	400	150	205	355	∅10	16.0
876.10-S-T-110/6/400	E 7		500	400	250	455	355	∅10	28.0
876.10-S-T-110/16/400	E 8		500	400	250	455	355	∅10	38.0
876.10-S-T-110/30/400	E 9		600	400	250	555	355	∅10	54.0

Installation version (E) protection rating IP 00

Order number	Type	Contr.	mm						Weight
			A	B	C	D	E	F	
876.10-E-T-24/7/230	E 10		220	120	95	210	85	∅5	2.0
876.10-E-T-24/15/230	E 11		260	120	95	250	85	∅5	3.0
876.10-E-T-24/25/230	E 12		320	120	95	310	85	∅5	6.0
876.10-E-O-110/6/230	E 13		220	160	95	210	85	∅5	2.0
876.10-E-O-110/16/230	E 14		260	160	95	250	85	∅5	3.0
876.10-E-O-110/30/230	E 15		350	160	100	325	225	∅8	8.0
876.10-E-T-110/6/400	E 16		220	160	95	210	85	∅5	2.0
876.10-E-T-110/16/400	E 17		260	160	95	250	85	∅5	3.0
876.10-E-T-110/30/400	E 18		350	160	100	325	225	∅8	6.0



Dimensional drawing for control cabinet version (S)



Dimensional drawing for installation version (E)

ORDERING EXAMPLE

Designation	SAV no. - version - mains transformer - rated magnet voltage/max. magnet current/power supply
Electronic polarity-reversing control unit	SAV 876.10 - E - O - 110/6/230


SAV 876.02
- SE3
HAND REMOTE UNITS

For actuating polarity reversal control units SAV 876.10

DESIGN

To comply with accident prevention regulations on machine tools, it must be ensured that the machine feed is only enabled when the chucking magnet is activated (using auxiliary contacts) and that the activation is monitored with an indicator light. The control units comply with these regulations.

The indicator light is integrated into the keys of the control unit.

The auxiliary contacts for the machine feed are located in the polarity reversal control unit.

APPLICATION

For switching DC magnets in conjunction with the electronic polarity reversal control units SAV 876.10.

The yellow and green keys are used for switching on. The yellow and red keys are used to initiate the polarity reversal process. Any malfunctions detected by the polarity reversal control units are also indicated by a coded flashing signal in the red key.

The holding force can be selected in 8 levels.

HAND REMOTE UNIT TYPE SE3

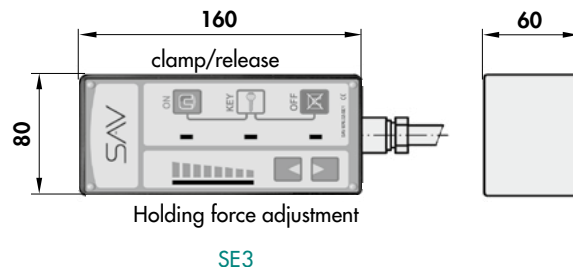
For holding force control at 8 levels for inverse BCD coding, with integrated indicator lights and a 2 m numbered cable, 9-pole. Additional numbered cable available (surcharge applies).

TECHNICAL DATA

- Housing size (LxWxH): 160 x 80 x 60 mm
- Operating voltage: 24 V
- Protection rating: IP 63
- Protection class: III



hand remote unit SE3



SE3

SAV 244.70
ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCKS

With radial pole pitch



A strong magnetic field is the special feature of our circular magnets. The magnetic force is generated by the permanent magnets which are magnetised and demagnetised with short current pulses.

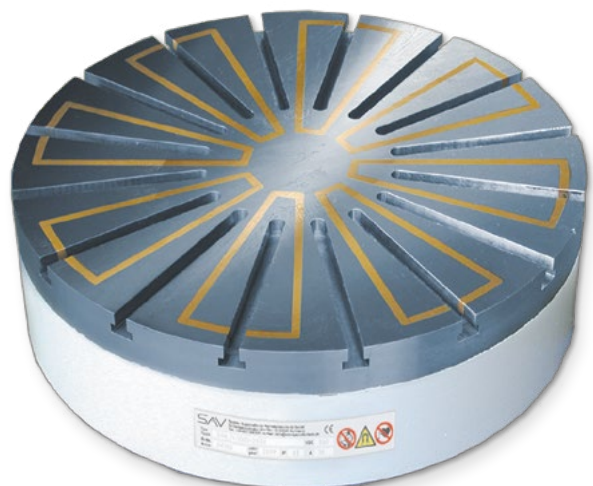
RATED HOLDING FORCE

- 120 N/cm², controllable with control unit

APPLICATION

Primarily for precise grinding of small to large workpieces on rotary table and cylindrical grinding machines.

Also suitable for turning applications.


HEAVY-DUTY POWER CONNECTOR WITH QUICK-RELEASE Optional (surcharge applies)

Easy handling of the plug-in connection



**SAV 244.71****ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCKS**

Amplified magnet system with radial pole pitch and extra high holding force

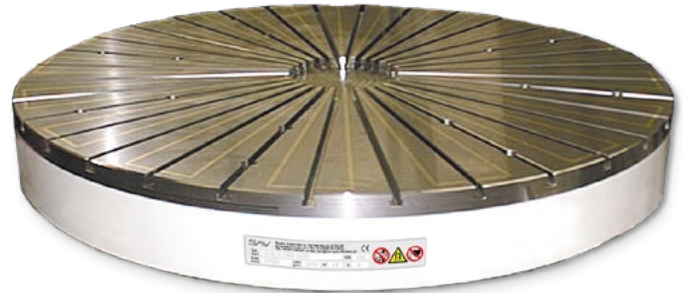


Thanks to the use of special magnet materials, this new type of circular magnets develops an extremely high holding force. Magnetising and demagnetising is achieved with a short direct current pulse. The homogeneous and precise design of the circular magnet allows hard turning and extreme material removal during turning.

RATED HOLDING FORCE:170 N/cm², controllable with control unit**APPLICATION**

Hard turning and extreme material removal for turning applications on small and large workpieces.

Grinding with maximum precision.

**SAV 244.72****ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCKS**

With circular pole pitch



The circular magnets with circular pole pitch allow several workpieces to be chucked off-centre.

The strong magnetic field is distributed evenly across the pole plate.

RATED HOLDING FORCE100 N/cm², controllable with control unit**APPLICATION**

Primarily for precise grinding of small to large workpieces on rotary table and cylindrical grinding machines. The circular pole pitch also allows machining of multiple parts which are not placed centrally.

**SAV 244.73****ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCKS**

With parallel pole pitch 4 mm



Circular magnet with fine pole pitch for thin parts.

Centre also magnetically active.

RATED HOLDING FORCE

- 100 N/cm², controllable with control unit using holding force coding switch

APPLICATION

Grinding thin plates, wide rings with low thickness and min. widths of 40 mm.





SAV 244.74

ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCKS
With parallel pole pitch 28 mm, extremely high holding force



Extremely high holding forces through high-energy systems with low field heights. Magnetising and deactivation are achieved with short current pulses.

RATED HOLDING FORCE

- 150 N/cm², controllable with control unit

APPLICATION

Turning of thinner plates with high level of material removal



SAV 244.76

COMBINED CIRCULAR CHUCKS
Radial pole pitch and integrated jaw chuck



Combination of magnetic and mechanical workholding

ADVANTAGES

- Reproducible centring
- Reliable process
- Option for combining first and second chucking
- Compact design (height from 170 mm)

RATED HOLDING FORCE

170 N/cm², controllable with control unit



The innovative combination of magnetic workholding with a centring chuck – a complete system solution from a single source

SAV 243.76 / SAV 220.76

ELECTRO PERMANENT MAGNETIC CHUCKS
With transverse pole pitch P = 35, 65, 85 mm



Milling magnet also for hard machining.
Amplified magnet system with demagnetising cycle.
Optimised system for high holding forces.
Magnetically fully saturated system thanks to flux concentration.
Design SAV 220.76 square (pallet),
Design SAV 243.76 rectangular.

RATED HOLDING FORCE

- 80 N/cm² with P = 35 mm
- 100 N/cm² with P = 65 mm
- 160 N/cm² with P = 85 mm

Controllable with control unit

APPLICATION

Heavy machining also on pallet changing systems. With demagnetising cycle, therefore also suitable for higher alloy materials or hardened materials.



SAV 243.76
Pole pitch 35, 65, 85



SAV 220.76
Pole pitch 35, 65



SAV 243.77

ELECTRO PERMANENT MAGNETIC CHUCKS

With transverse pole pitch $P = 27.5, 55, 85$ mm

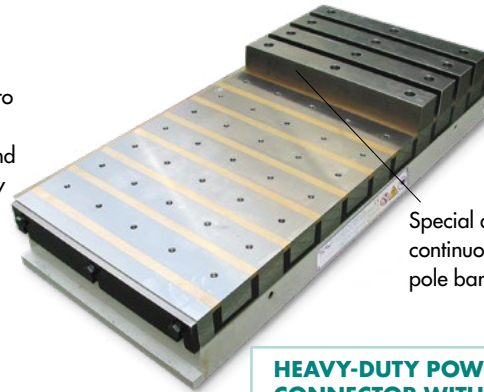
Milling magnet with holding forces in the high-end range. The workholding system with NdFeB high-energy magnets was optimised to the state of the art in magnet technology. The electro permanent magnetic switching of the AlNiCo/NdFeB magnet system generates extremely high holding forces. Magnetising and demagnetising are achieved with short current pulses. For heavy machining on non-hardened and low alloy workpieces.

RATED HOLDING FORCE

195 N/cm² on inducible steel surface
 110 N/cm² with $P = 27.5$ mm pole pitch
 150 N/cm² with $P = 55$ mm pole pitch
 170 N/cm² with $P = 85$ mm pole pitch
 controllable with control unit using holding force coding switch

APPLICATION

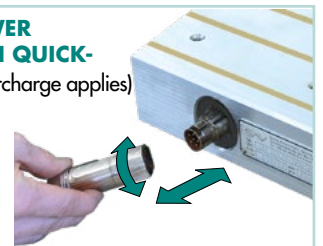
For heavy milling with high level of material removal.
 Ideal for use on pallet changing systems.



Special design with continuous transverse pole bars

HEAVY-DUTY POWER CONNECTOR WITH QUICK-RELEASE Optional (surcharge applies)

Easy handling of the plug-in connection



SAV 243.78

ELECTRO PERMANENT MAGNETIC CHUCKS

With universal round pole pitch



For large-area, thin parts, e.g. for widening weld seams.

RATED HOLDING FORCE

- When using pole raisers: 3200 N/pole
- For direct placement: 900 kN/m²

APPLICATION

- For chucking thinner plates, e.g. weld seam preparation and for milling of hard parts and higher alloyed materials. Please contact us for more information
- Amplified magnet system with demagnetising cycle, also suitable for hard milling

- Universal for a variety of different part geometries 5-side machining possible when using pole shoes (mobile and fixed) to create free space for tools
- Suitable for medium and large-surface systems
- Round version available on request



SAV 243.79

ELECTRO PERMANENT MAGNETIC CHUCKS

Universally suitable system with hexagonal pole pitch



Milling magnet for flexible use with high holding force.

DESIGN

- Optimised high-energy magnet system
- Low height
- Electro permanent magnetic system for absolute safety in case of power failure.
- Tapped hole grid M8 for optional pole shoes
- Protection rating IP 65
- 8 mm wear layer of the pole plate

RATED HOLDING FORCE

- On workpiece: 150 N/cm²
- Per pole pair: 900 daN

APPLICATION

For milling, especially for universal machining with high level of material removal





SPECIAL SOLUTIONS GRINDING

ELECTRO PERMANENT MAGNETIC SYSTEM

With exchangeable pole bars



SIZE

4000 x 180 mm

WORKPIECE

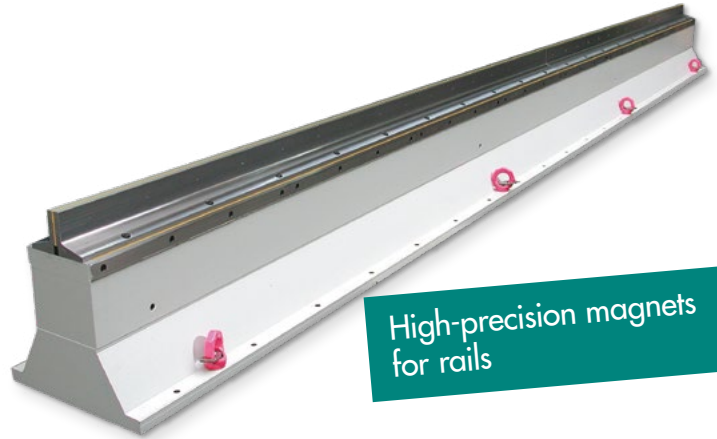
Linear guideways

APPLICATION

Grinding of the guide tracks
with 4 µm/4000 mm accuracy

DESCRIPTION

- With longitudinal pole pitch for homogeneous magnetic field along the entire length
- Made completely from one piece
- High-energy system
- Exchangeable pole plates to create free space for tools



High-precision magnets
for rails

ELECTRO PERMANENT MAGNETIC BRIDGE

With index table



SIZE

1100 x 200 mm

WORKPIECE

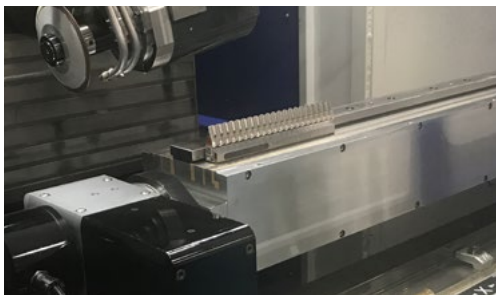
Broaching tools

APPLICATION

Grinding

DESCRIPTION

- 4 workpieces on swivel bridge
- With magnetically active stops
- With precision index table



ELECTRO MAGNETIC CIRCULAR CHUCK

For centreless shoe grinding



SIZE

Diameter 180 to 500 mm

WORKPIECE

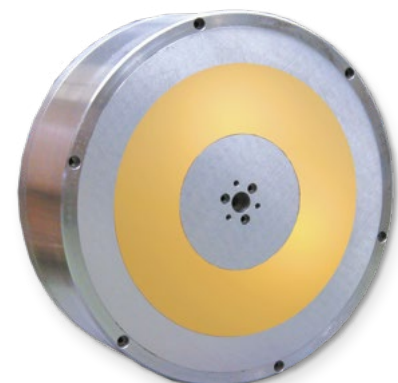
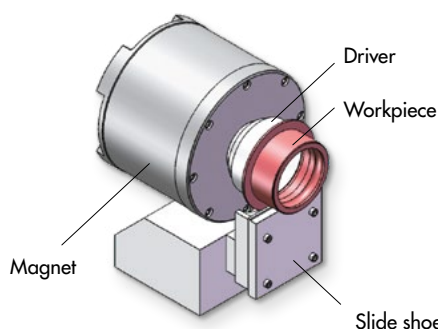
Rolling bearings with small contact surfaces

APPLICATION

For high-precision sliding shoe grinding

DESCRIPTION

- Workpieces held axially using drivers for initiating the rotating motion
- High-precision workpiece positioning eccentric using stationary sliding shoes





SPECIAL SOLUTIONS **SINE TABLES**

ELECTRO PERMANENT MAGNETIC INDEX TABLE

For grinding with large workpiece projection



SIZE

1730 x 230 mm

WORKPIECE

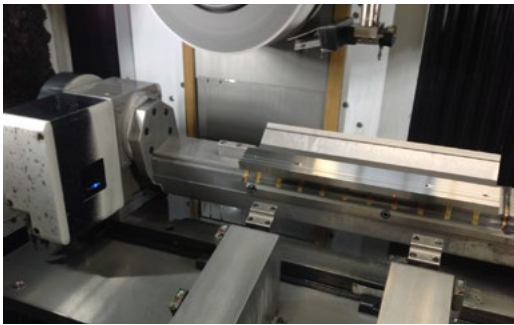
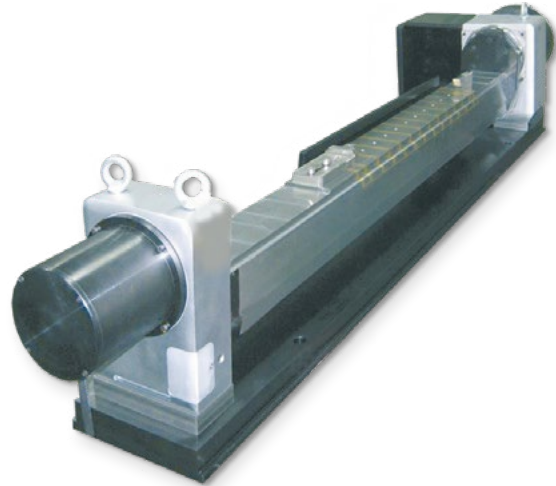
Bottom bending tools

APPLICATION

Grinding

DESCRIPTION

Reinforced magnet system for on-the-fly grinding of bottom bending tools



PRECISION SWIVEL DEVICE

High accuracy for extremely long parts



SIZE

Length 12 m

WORKPIECE

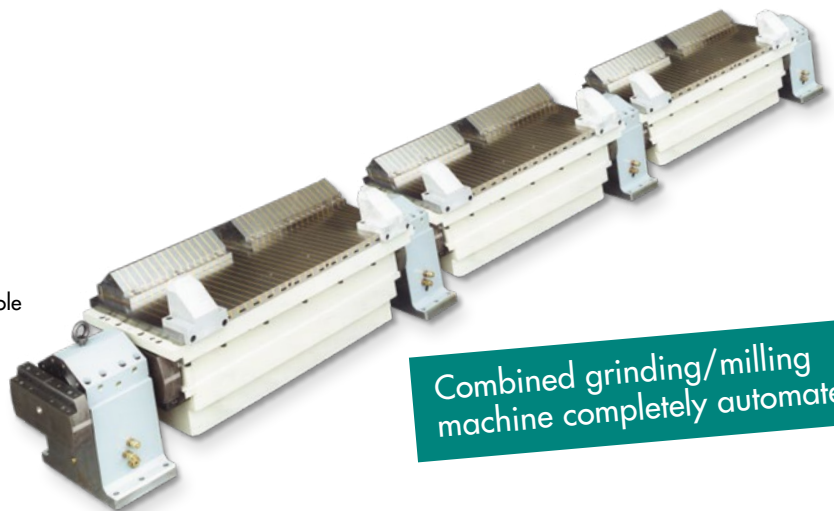
Swap body trailers

APPLICATION

Milling and grinding on combined machine

DESCRIPTION

- Swivel device with electro permanent magnet and pole blocks, motor driven, with rotary encoder
- Direct measuring system
- Axes with hydrostatic bearing
- With hydraulic clamping



Combined grinding/milling
machine completely automated



SPECIAL SOLUTIONS **MILLING**

HIGH-PERFORMANCE MILLING MAGNETS

Workpiece-based for high productivity



SIZE

4260 x 753 mm

WORKPIECE

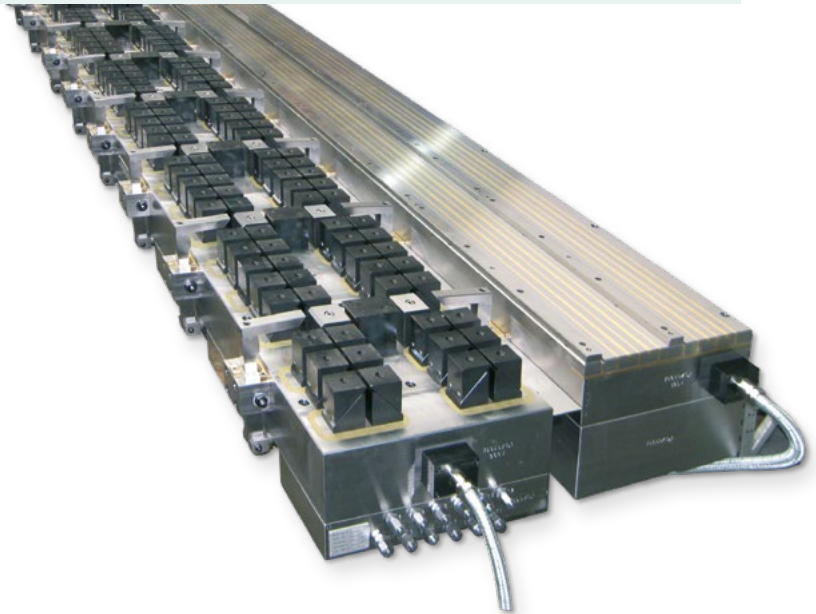
Racks

APPLICATION

5-sided milling in 2 chucking processes

DESCRIPTION

- First chucking in two rows in conjunction with individually activated hydro chucks. Magnetic base chucking using rigid and movable pole shoes
- Second chucking with direct contact with magnetically active side stops



MAGNETIC-HYDRAULIC MILLING FIXTURE

For flexible railway point manufacturing



SIZE

8000 x 1200 mm

WORKPIECE

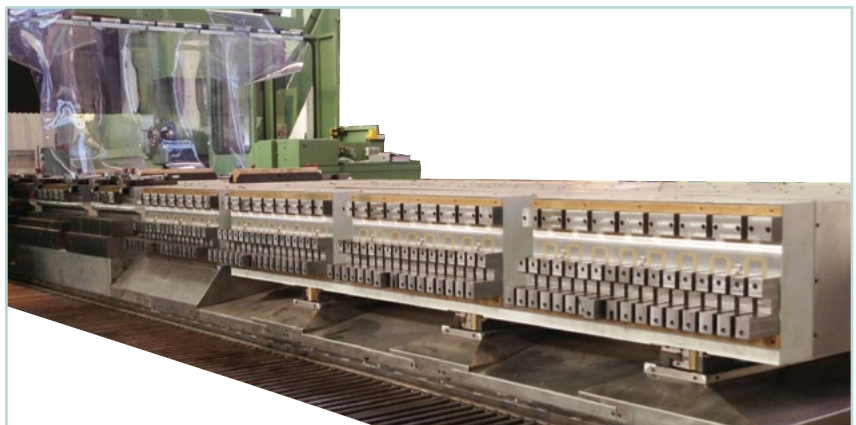
Railway rails

APPLICATION

Heavy milling

DESCRIPTION

- Magnetic/hydraulic combination
- For different rail profiles on 2 levels and on 2 lines
- 3 m adjustable angle with electric motor



SPECIAL SOLUTIONS TURNING

ELECTRO PERMANENT MAGNETIC CIRCULAR CHUCK

For hard turning



SIZE

1200 mm diameter

WORKPIECE

Bearing rings

APPLICATION

For hard turning

MANUFACTURING BENEFITS OF MAGNETIC CHUCKING

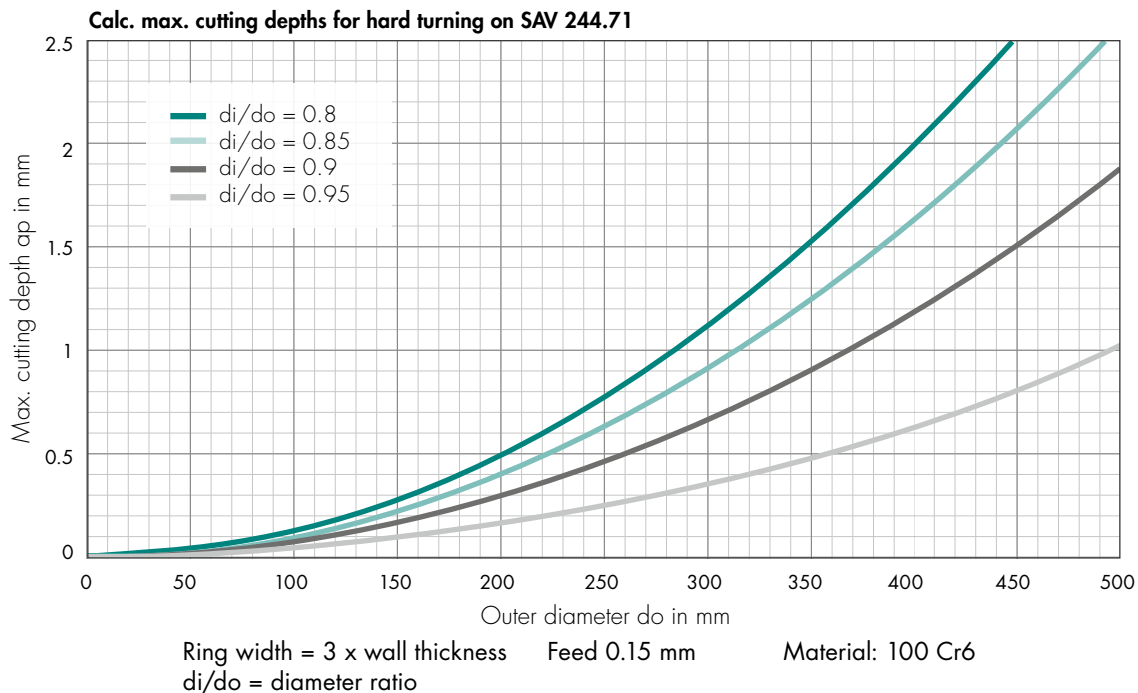
- Precision machining from 3 sides in one chucking process
- Levelling of the reference surface
- Two-dimensional holding force with high damping for excellent surface qualities
- Cost-efficient workholding fixture with low effort for machine integration
- Flexibility thanks to large workpiece holding area
- Releasing of internal workpiece holding during production



TEST RESULTS FOR HARD TURNING RING Ø 600 MM

Shape or surface quality	Reproduced quality of magnetic chuck	Improvement potential*
Arithmet. average roughness	0.3 µm	0 % to 25 %
Circle format deviation	0.5 µm	75 % to 90 %
Cylinder irregularity	10 µm	80 % to 85 %
Wall thickness fluctuation	25 µm	60 % to 80 %

* Improvement potential compared to conventional methods



SIZE

4300 mm diameter

WORKPIECE

Bearing rings

APPLICATION

Machining from 3 sides

DESCRIPTION

- Minimal chucking and set-up times
- Extreme forces also for heavy machining

- Complete table surface usable
- High accuracy and damping from two-dimensional force transmission
- Large magnetically active areas in circumference direction
- Very small non-magnetic zones at the centre
- Individual spindle adaptation
- High circumferential speeds
- Extremely large diameters, e.g. 12 m in segment version





SPECIAL SOLUTIONS **FIXTURES**

HYDRAULIC 4-FOLD WORKHOLDING FIXTURE

On dual index table



SIZE

800 x 550 x 420 mm

WORKPIECE

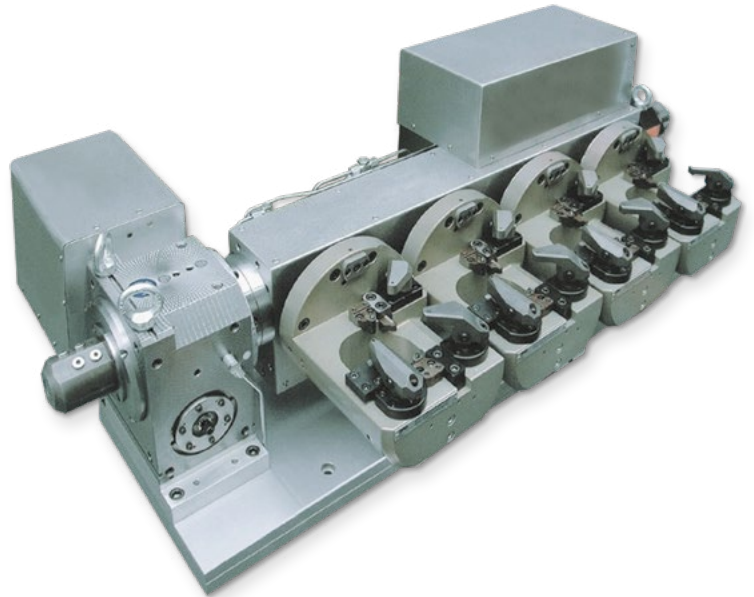
Aluminium housing

APPLICATION

Milling, drilling, spindles

DESCRIPTION

- 2-axe indexing unit with 4 NC axes
- 3 special swivel clamps each
- Workpiece placement monitoring using air sensing
- Base structure made of high-strength aluminium, hard-coated



HYDRAULIC WORKHOLDING FIXTURE



SIZE

2000 x 400 x 400 mm

WORKPIECE

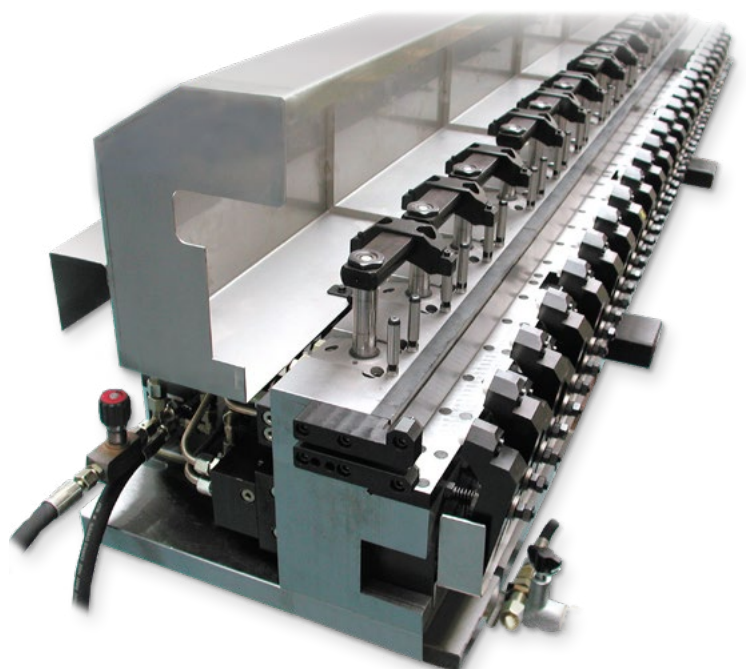
Racks

APPLICATION

Assembly

DESCRIPTION

Used for assembling rack elements in linear guideways



SPECIAL SOLUTIONS **ROTATING CHUCKS****FORCE-ACTUATED SOLUTIONS**

Designs

**BOLT CHUCKS**

- Extreme machining

**FINGER CHUCK**

- Precision workholding with point contact/clamping, no flattening of uneven parts

**COMPENSATION CHUCK**

- Shaft workholding with centre offset

**6-JAW COMPENSATION LEVER CHUCK**

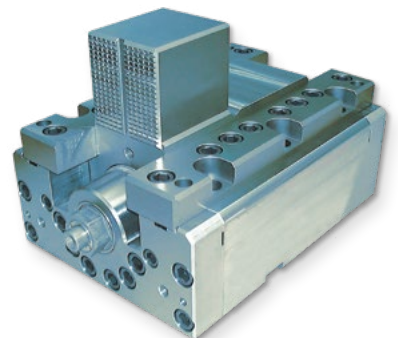
- Low-deformation chucking of rings

**CENTRING AND FACE CHUCK**

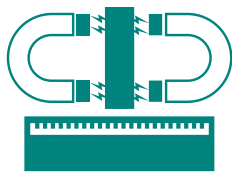
- Fine turning

**BOX JAWS**

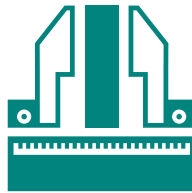
- Machining of large parts



power. people. passion.



**Magnetic
Systems**



**Clamping
Fixtures**



**Clamping
Chucks**

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