

Magnets



Product overview



Magnets



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Product overview









Technical data for holding magnets (gripper magnets)



Structure:

Gripper magnets are magnets that have only one adhesive surface, because of their structure. No magnetic force action originates from any of the other surfaces of the gripper magnet body. This construction makes it possible to limit the three-dimensional affect of the magnetic field so that no unintentional magnetization of the entire workpiece in contact with the gripper magnet, or of the machine elements surrounding the gripper magnet, occurs.

Designs:

The round gripper magnets of the the model series:

K0545.01 through K0545.10

K0546.01 through K0546.09

K0547.01 through K0547.10

have a core made of the permanent magnetic material AlNiCo, which is inserted for magnetic shielding into a soft iron pot with an intervening sleeve made of a non-magnetizable material. The ceramic permanent magnetic material SrFe (hard ferrite) is used for the Flat Gripper magnets of the model series

K0548.01 through K0548.10 and

K0549.01 through K0549.26.

Here as well, a pot of soft iron ensures the desired magnetic shielding.

The magnets of the model series

K0550.01 through K0550.18 and

K0551.01 through K0551.15

have a core of SmCo, an alloy of metallic rare earth elements with cobalt. For a given overall size, SmCo increases the adhesive force by three to five times that of AlNiCo or hard ferrite grippers.

Adhesive forces:

The values indicated in the table are minimum values that are achieved for a vertical pulldown with full-surface contact of the gripper magnets on soft iron or low-carbon steel workpieces of sufficient thickness. In case of unclean pole faces or non-flat workpieces, air gaps are formed, which sharply decrease the adhesive forces. It is therefore advisable to always ensure a clean pole face and to clean it from time to time if necessary.

Diagram:

Reduction of the adhesive force of a round bar gripper with increasing air gap (magnetically nonconductive intermediate layers function like air gaps).



Fixing instructions for screened gripper magnets with no pins









incorrect

correct

Core: permanent magnet

non-magnetic sleeve

jacket in Fe

correct

correct



Holding magnets (round bar and flat grippers must not be used directly in iron, but must be bolted, glued, pressed or poured into a sleeve of non-magnetic material (see representation opposite).

L..._

workpieces to clamp



Non-m

Non-magnetic material such as CuZn, Al, Cu or plastic

Installation or fastening possibilities of gripper magnets

Gripper magnets - Series type

Shielded system

	Order No.	Description	System	Temperature* max. °C	Fastening possibility
from	K0545.01	Round bar gripper	shielded	450	Pressing in/shrink-fitting/
to	K0545.10				gluing in
from	K0546.01	Round bar gripper	shielded	450	Soldering in (soft soldering)/
to	K0546.10				gluing in
from	K0547.01	Round bar gripper	shielded	450	Riveting the pin in/
to	K0547.10				screwing in
from	K0551.01	Round bar gripper	shielded	200	Pressing in/gluing in
to	K0551.15				screwing in
from	K0548.01	Flat gripper	shielded	100	Pressing in/gluing in
to	K0548.10				
from	K0549.01	Flat gripper	shielded	100	Screwing in
to	K0549.26				-
from	K0550.01	Flat gripper	shielded	200	Pressing in/gluing in
lto	K0550.18				- • •

* Long-term heating or alternating thermal stresses may result in mechanical changes of the magnet system in some cases. In many cases they have no influence on the function. The same applies to the case of chemical stresses (chemical baths, aggressive gases, etc.).



Round holding magnets (round bar grippers)

in AlNiCo with fitting tolerance







Material, surface finish: Housing in galvanized steel. Magnetic core AlNiCo.

Sample order: K0545.01

Note:

Shielded system. Diameter "D" ground to a fitting tolerance of h 6. Fastening possibilities by pressing, shrink-fitting or gluing. Round bar grippers can be shortened by the dimension "H" with no loss of adhesive force.

Temperature range: max. 450°C.



KIPP Round holding magnets (round bar grippers) in AINiCo with fitting tolerance

Order No.	D	L	Н	Adhesive force N	Approx. weight g	
K0545.01	6	10	2	1,5	2	$\overline{\mathbf{G}}$
K0545.02	8	12	3	3,5	4	1
K0545.03	10	16	6	7	9	
K0545.04	13	18	7	10	17	
K0545.05	16	20	5	18	29	
K0545.06	20	25	6	42	57	
K0545.07	25	30	5	96	110	
K0545.08	32	35	3	180	200	
K0545.09	40	45	5	240	420	
K0545.10	50	50	2	420	720	



Round holding magnets (round bar grippers)

in AlNiCo without fitting tolerance





Material, surface finish: Housing in galvanized steel. Magnetic core AlNiCo.

Sample order: K0546.01

Note:

Shielded system. Diameter "D" without fitting tolerance. Fastening possibilities are pressing, shrink-fitting or gluing. Round bar grippers can be shortened by the dimension "H" with no loss of adhesive force.

Temperature range: max. 450°C.



KIPP Round holding magnets (round bar grippers) in AINiCo without fitting tolerance

Order No.	D	L	Н	Adhesive force N	Approx. weight g
K0546.01	6	20	12	1,5	4
K0546.02	8	20	11	3,5	7
K0546.03	10	20	10	7	11
K0546.04	13	20	9	10	19
K0546.05	16	20	5	18	29
K0546.06	20	25	6	42	57
K0546.07	25	35	10	96	140
K0546.08	32	40	8	180	240
K0546.09	40	50	10	240	500
K0546.10	50	60	12	420	900



Round holding magnets with pin (round bar grippers)

in AlNiCo





Material, surface finish: Housing in galvanized steel. Magnetic core AlNiCo.

Sample order: K0547.01

Note:

Round bar grippers with smooth pin, shielded system. The pin can be lengthened by the dimension " $H^{\rm "}$ with no loss of adhesive force.

Technical data: max. 450°C.

KIPP Round holding magnets with pin (round bar grippers) in AlNiCo

Order No.	D	D1	L	L1	Н	Adhesive force N	Approx. weight g	
K0547.01	6	3	28	20	2	1,7	4	6
K0547.02	8	3	28	20	3	4	7	Ш.
K0547.03	10	4	28	20	6	8,5	12	
K0547.04	13	4	28	20	7	12	20	
K0547.05	16	5	28	20	5	20	32	
K0547.06	20	6	33	25	6	50	62	
K0547.07	25	8	45	35	5	115	137	
K0547.08	32	10	50	40	3	200	245	
K0547.09	40	15	70	50	5	240	520	
K0547.10	50	18	85	60	2	420	960	



Flat holding magnets (flat gripper)

in hard ferrite







Material, surface finish: Housing in galvanized steel. Magnetic core hard ferrite

Sample order: K0548.01

Note:

Flat Gripper without threaded bush. Flat holding magnets are pressed or glued into location holes.

Hairline cracks in the installed magnetic material are unavoidable for technical reasons in version D 80. They do not impair the function of the adhesive magnets in any way.

Temperature range: max. 200°C.



KIPP Flat holding magnets (flat grippers) in hard ferrite

Order No.	D	L	Adhesive force N	Approx. weight g
K0548.01	10 ±0,15	4,5	4	2
K0548.02	13 ±0,15	4,5	10	3
K0548.03	16 ±0,15	4,5	18	4,5
K0548.04	20 ±0,15	6	30	10
K0548.05	25 ±0,15	7	40	19
K0548.06	$32 \pm 0,20$	7	80	30
K0548.07	40 ±0,20	8	125	55
K0548.08	50 ±0,20	10	220	100
K0548.09	63 ±0,20	14	350	230
K0548.10	80 ±0,25	18	600	485

K0549

Flat holding magnets with thread (flat gripper)

in hard ferrite







Material, surface finish:

Housing in galvanized steel. Magnetic core hard ferrite

Sample order: K0549.01

Note:

Flat gripper with thread shielded system.

Hairline cracks in the installed magnetic material are unavoidable for technical reasons in versions D 80, D 100 and D 125. They do not impair the function of the adhesive magnets in any way.

Temperature range: max. 200°C.



KIPP Flat holding magnets with thread (flat grippers) in hard ferrite

Order No. Form A	Order No. Form B	D	D1	D2	L	Н	Т	Adhesive force N
K0549.21	K0549.01	10 ±0,15	-/6	M3	11,5	4,5	-/5	4
K0549.22	K0549.02	13 ±0,15	-/6	M3	11,5	4,5	-/5	10
K0549.23	K0549.03	16 ±0,15	-/6	М3	11,5	4,5	-/5	18
K0549.24	K0549.04	20 ±0,15	-/6	М3	13	6	-/5	30
K0549.25	K0549.05	25 ±0,15	-/8	M4	15	7	-/6	40
K0549.26	K0549.06	32 ±0,20	-/8	M4	15	7	-/6	80
-	K0549.07	40 ±0,20	10	M5	18	8	8	125
-	K0549.08	50 ±0,20	12	M6	22	10	10	220
-	K0549.09	63 ±0,20	15	M8	30	14	14	350
-	K0549.10	80 ±0,25	20	M10	34	18	14	600
-	K0549.11	99 ±0,25	22	M12	42	22	17	900
-	K0549.12	125 ±0,25	25	M14	50	26	20	1.300



Flat gripper

in SmCo







Material, surface finish:

Housing in galvanized steel.Magnetic core SmCo

Sample order: K0550.01

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Note:

Flat Grippers, shielded system. Flat grippers with an SmCo core have three to five times the adhesive force of AlNiCo of hard ferrite grippers.

Temperature range:

max. 200°C.

KIPP Flat grippers in SmCo

Order No. Form A	Order No. Form B	D	D1	D2	L	L1	Adhesive force N
K0550.01	K0550.11	6 ±0,15	-/6	-/M3	-/11,5	4,5	5
K0550.02	K0550.12	8 ±0,15	-/6	-/M3	-/11,5	4,5	11
K0550.03	K0550.13	10 ±0,15	-/6	-/M3	-/11,5	4,5	20
K0550.04	K0550.14	13 ±0,15	-/6	-/M3	-/11,5	4,5	40
K0550.05	K0550.15	16 ±0,15	-/8	-/M4	-/11,5	4,5	60
K0550.06	K0550.16	20 ±0,15	-/8	-/M4	-/13	6	90
K0550.07	K0550.17	25 ±0,15	-/8	-/M4	-/14	7	150
K0550.08	K0550.18	32 ±0,20	-/10	-/M5	-/15,5	7	220



Bar magnet

in SmCo





Material, surface finish: Housing in brass.Magnetic core SmCo

Sample order: K0551.01

Note:

Smooth design, shielded system. Diameter "D" ground with fitting tolerance h 6. Under no circumstances may SmCo grippers be pressed directly into iron, as otherwise loss of adhesive force occurs as a result of magnetic short circuits. SmCo gripper magnets are especially suitable for direct use in spot-welding machines, as no demagnetisation occurs.

Round bar grippers can be shortened by the dimension ",H" with no loss of adhesive force.

Temperature range: max. 200°C.

KIPP Round bar gripper in SmCo

Order No.	D	L	Η	Adhesive force N	Distance to iron wall/mm	Approx. weight g
K0551.01	6	20	10	8	1,5	4,5
K0551.03	8	20	10	22	1,5	8
K0551.05	10	20	8	40	2	12
K0551.07	13	20	6	60	2,5	20
K0551.09	16	20	2	125	3	30
K0551.11	20	25	5	250	4	60
K0551.13	25	35	7	400	5	134
K0551.15	32	40	4,5	600	6	251



D1

 $D^{\pm 0,2}$

Round holding magnets with internal thread (round bar gripper)

in NdFeB

adhesive surface





Material, surface finish: Housing in galvanized steel. Magnetic core NdFeB

Sample order: K0552.01

Note:

Shielded system. Bar grippers are used for fitting into steel and iron. This requirement is principally specified in plant and mechanical engineering. Can also be used as blind-hole magnets.

Size D 50: System having 4 magnets of Ø 18 mm.

Temperature range: max. 80°C.

KIPP Round holding magnets with internal thread (round bar gripper) in NdFeB

Order No.	D	D1	L	Т	Can be shortened by	Adhesive force N	Approx. weight g
K0552.01	8	M3	12	5	3	12	7
K0552.02	10	M4	16	7	7	24	8
K0552.03	13	M4	18	7	3	60	18
K0552.04	16	M4	20	7	6	90	30
K0552.05	20	M5	25	9	9	135	60
K0552.06	25	M6	30	9	10	190	110
K0552.07	35	M8	40	13	10	300	290
K0552.08	50	M12	50	13	13	550	750



Flat gripper

in NdFeB



Form B



Form C





Material, surface finish: Housing in galvanized steel. Magnetic core NdFeB

Sample order: K0553.01

Note:

Shielded system. With the permanent magnetic material NdFeB the adhesive force increases by approx. 10-20% compared with SmCo.

Temperature range:

max. 80°C.

Order No.	Form	D	D1	D2	D3	L	L1	Adhesive force N	Approx. weight g
K0553.01	А	6 ±0,15	-	-	-	-	4,5	5	1
K0553.02	А	8 ±0,15	-	-	-	-	4,5	13	1,5
K0553.03	А	10 ±0,15	-	-	-	-	4,5	25	2,5
K0553.04	А	13 ±0,15	-	-	-	-	4,5	60	4,5
K0553.05	А	16 ±0,15	-	-	-	-	4,5	95	6,5
K0553.06	А	$20 \pm 0,15$	-	-	-	-	6	140	15
K0553.07	А	25 ±0,15	-	-	-	-	7	200	22
K0553.08	А	$32 \pm 0,20$	-	-	-	-	7	350	40
K0553.11	В	6 ±0,15	6	M 3	-	11,5	4,5	5	1,5
K0553.12	В	8 ±0,15	6	M 3	-	11,5	4,5	13	2
K0553.13	В	10 ±0,15	6	M 3	-	11,5	4,5	25	3
K0553.14	В	13 ±0,15	6	M 3	-	11,5	4,5	60	5
K0553.15	В	16 ±0,15	6	M 4	-	11,5	4,5	95	7,5
K0553.16	В	20 ±0,15	8	M 4	-	13	6	140	16
K0553.17	В	25 ±0,15	8	M 4	-	14	7	200	25
K0553.18	В	$32 \pm 0,20$	10	M 5	-	15,5	7	350	48
K0553.23	С	10 ±0,15	-	-	M 3	11,5	4,5	25	3
K0553.24	С	13 ±0,15	-	-	M 5	12,5	4,5	60	5
K0553.25	С	16 ±0,15	-	-	M 6	12,5	4,5	95	8
K0553.26	С	20 ±0,15	-	-	M 6	16	6	140	16
K0553.27	С	25 ±0,15	-	-	M 6	17	7	200	25
K0553.28	С	32 ±0,20	-	-	M 6	17	7	350	48

KIPP Flat gripper in NdFeB



Flat gripper with through hole

in hard ferrite





Material, surface finish: Housing in galvanized steel. Magnetic core hard ferrite

Sample order: K0554.50

Note: Shielded system

Temperature range: max. 200°C.

KIPP Flat gripper with through hole in hard ferrite

Order No.	D	D1	D2	Н	Adhesive force N	Approx. weight g
K0554.50	50 ±0,20	8,5	22	10	180	85
K0554.63	63 ±0,20	6,5	24	14	290	197
K0554.80	80 ±0,25	6,5	11,5	18	540	458

K0555

Flat gripper with counterbore

in hard ferrite



KIPP Flat gripper with counterbore in hard ferrite

Order No.	D	D1	D2	Н	Adhesive force N	Approx. weight g
K0555.01	16 ±0,15	3,3	7	4,5	14	4
K0555.02	20 ±0,15	4,2	9	6	27	9
K0555.03	25 ±0,15	5,5	11	7	36	17
K0555.04	32 ±0,20	5,5	11	7	72	27
K0555.05	40 ±0,20	5,5	11	8	90	52



Material, surface finish:

Housing in galvanized steel. Magnetic core hard ferrite

Sample order: K0555.01

Note: Shielded system

Temperature range: max. 200°C.



Flat gripper with internal thread

in NdFeB



KIPP Flat gripper with internal thread in NdFeB

Order No.	D	D1	D2	Н	Adhesive force N	Approx. weight g
K0556.01	32	M5	5,5	7	330	40
K0556.02	40	M5	10,5	8	550	73
K0556.03	63	M10	11,7	14	1.100	316
K0556.04	75	M10	13	15	1.750	480



Pot magnets



KIPP Pot magnets

Order No.	D	D1	L	Т	Adhesive force N	Approx. weight g
K0557.01	17	M6	16	4	18	26
K0557.02	21	M6	19	5	28	50
K0557.03	27	M6	25	6	65	110
K0557.04	35	M6	30	9	115	215
K0557.05	65	M12	43	13	400	1.080



Material, surface finish: Housing in galvanized steel. Magnetic core NdFeB

Sample order: K0556.01

Note: Shielded system

Temperature range: max. 80°C.



Material, surface finish:

Housing in steel, painted red. Magnetic core AlNiCo.

Sample order: K0557.01

Note:

Hard magnet in aluminium housing and steel jacket. Shielded system. Pot magnets are used for holding, for lifting and for fitting into devices.



Temperature range:

max. 450°C.





Flat pot magnets



KIPP Flat pot magnets

Order No.	D	D1	L	Adhesive force N	Approx. weight g
K0558.01	19	3,5	8	30	18
K0558.02	29	5	9	55	46
K0558.03	38	5	10,5	95	97



Button magnets



KIPP Button magnets

Order No.	D	D1	L	Adhesive force N	Approx. weight g
K0559.01	13	4,2	10	7	7
K0559.02	19	5,4	13	19	20
K0559.03	25	5,4	16	29	56
K0559.04	32	7	25	66	133



Material, surface finish:

Housing in steel, painted red. Magnetic core AlNiCo.

Sample order: K0558.01

Note:

Shielded system. Pot magnets are used for installation in systems if little space is needed.

Temperature range:

max. 450°C.

On request: Other colours.



Material, surface finish: Magnet core AlNiCo, painted red.

Sample order:

K0559.01

Note:

Split adhesive surface with through fastening hole. Non-shielded system. Button magnets with a divided adhesive surface are used for laboratory purposes, measurement and to hold metal objects still.

Temperature range:

max. 450°C.



Strong magnets





KIPP Strong magnets

Order No.	Size	A	В	B1	D	Η	Adhesive force N	Approx. weight g
K0560.01	1	-	31	20	4	20	45	65
K0560.02	2	-	40	25	5	25	90	150
K0560.03	3	-	45	29	6	30	120	220
K0560.04	4	30	58	35,5	8	35	230	380
K0560.05	5	40	70	57	8	41	320	1.600



Material, surface finish: Magnet core AlNiCo, painted red.

Sample order: K0560.01

Note:

U-shaped magnets with high adhesive force. Nonshielded system. The magnets are supplied with a galvanised protective plate and are used for holding, sorting and lifting. Sizes 1, 2 and 3 have only one attachment hole in the

Sizes 1, 2 and 3 have only one attachment hole in the centre.

Temperature range: max. 450°C.

K0561

Protective rubber caps for flat gripper

S





KIPP Protective rubber caps for flat gripper

Order No.	D	L	S
K0561.50	52	6	0,5
K0561.63	65	8	0,5
K0561.80	83	11	0,5



Material, surface finish: Synthetic rubber, black.

Sample order: K0561.50

Note:

For protecting sensitive surfaces. The rubber protective caps are slipped over the adhesive surfaces of flat grippers. The shearing force with which the magnet can be displaced is doubled and reaches almost the original adhesive force of the magnet.



Temperature range: max. 60°C.







Flat gripper with internal thread

magnet

rubber

in NdFeB, with rubber protective jacket

D

D2

adhesive surface





Material, surface finish:

Housing in galvanized steel. Magnetic core NdFeB (neodymium) Protective rubber jacket, synthetic rubber, black.

Sample order:

K0562.01

Note:

Flat gripper with internal thread. Shielded system. With rubber protective jacket for protecting sensitive surfaces. The coefficient of friction is increased by the rubber protective jacket, so that high lateral static friction forces are achieved.

Temperature range: max. 60°C.

Order No.	D	D2	Н	Adhesive force N	Approx. weight g
K0562.01	22	M4	6	35	9
K0562.02	31	M5	6	75	21
K0562.03	43	M4	6	85	29
K0562.04	66	M6	8,5	180	100
K0562.05	88	M8	8	420	186

KIPP Flat gripper with internal thread in NdFeB, with rubber protective jacket



Flat gripper with threaded bush

in NdFeB, with rubber protective jacket





Material, surface finish:

Housing in galvanized steel. Magnetic core NdFeB (neodymium) Protective rubber jacket, synthetic rubber, black.

Sample order: K0563.01

Note:

Flat gripper with threaded bush, shielded system. With rubber protective jacket for protecting sensitive surfaces. The coefficient of friction is increased by the rubber protective jacket, so that high lateral static friction forces are achieved.

Temperature range: max. 60°C.

KIPP Flat gripper with threaded bush in NdFeB, with rubber protective jacket

Order No.	D	D1	D2	Н	L	Т	Adhesive force N	Approx. weight g
K0563.01	12	8	M4	7	14,8	6	10	6
K0563.02	22	8	M4	6	11,5	6	50	13
K0563.03	31	8	M4	6	11,5	5	75	22
K0563.04	43	8	M4	6	10,5	5	85	30
K0563.05	66	10	M5	8,2	15	8	180	105
K0563.06	88	12	M8	8,2	17	11	420	192





Flat gripper with threaded pin in NdFeB,

rubber

magnet

with rubber protective jacket

D

D2

adhesive surface





Material, surface finish:

Housing in galvanized steel. Magnetic core NdFeB (neodymium) Protective rubber jacket, synthetic rubber, black.

Sample order:

K0564.01

Note:

Flat gripper with threaded pin, shielded system. With rubber protective jacket for protecting sensitive surfaces. The coefficient of friction is increased by the rubber protective jacket, so that high lateral static friction forces are achieved.

Temperature range: max. 60°C

KIPP Flat gripper with threaded pin in NdFeB, with rubber protective jacket

Order No.	D	D2	Н	L	Adhesive force N	Approx. weight g
K0564.01	22	M4	6	12,5	50	11
K0564.02	43	M6	6	21	85	32
K0564.03	66	M8	8,2	23	180	107
K0564.04	88	M8	8,2	23,5	420	193



Flat gripper with borehole in NdFeB,

with rubber protective jacket





Material, surface finish:

Housing in galvanized steel. Magnetic core NdFeB (neodymium) Protective rubber jacket, synthetic rubber, black.

Sample order: K0565.01

Note:

Flat gripper with borehole, shielded system. With rubber protective jacket for protecting sensitive surfaces. The coefficient of friction is increased by the rubber protective jacket, so that high lateral static friction forces are achieved.

Temperature range: max. 60°C.

KIPP Flat gripper with borehole in NdFeB, with rubber protective jacket

Order No.	D	D1	D2	Η	Т	Adhesive force N	Approx. weight g
K0565.01	22	8	4	6	3,5	35	8
K0565.02	31	9	6	6	3,5	75	20
K0565.03	43	12,8	7	6	4,2	85	27
K0565.04	57	25,3	8	7,6	3,3	175	77
K0565.05	66	22	5,5	8,5	3,2	210	100

