COVAL

vacuum managers

CMG

Magnetic Gripper



ADVANCED VACUUM SOLUTIONS

CMG

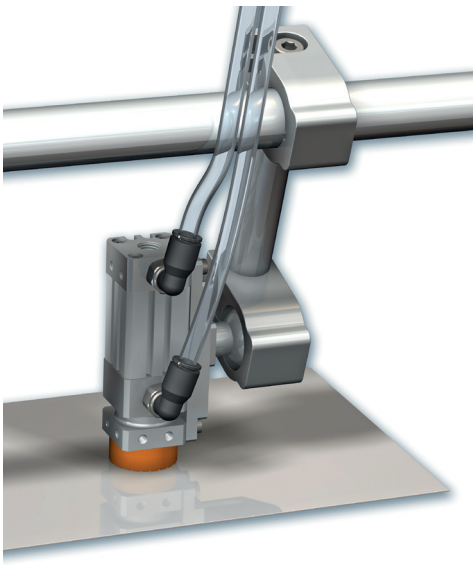
Magnetic Gripper

General Points



Industry-specific applications

The CMG series by COVAL includes pneumatically actuated magnetic grippers, which are activated and deactivated by compressed air. Designed to offer exceptional holding forces, these grippers are ideal for handling perforated sheets, complex laser-cut parts, and sheets with holes and cutouts. Utilizing magnetic force, they are the perfect solution for your ferromagnetic parts handling needs.



Materials

Aluminum, Neodymium, POM, Steel, TPU

Applications

- Handling of Perforated Sheets and Laser-Cut Parts:
  Designed to manage complex shapes and precise cutouts.
- Handling of Ferromagnetic Parts:
  Ensures a firm and secure grip on ferromagnetic materials.
- Use Without Friction Ring:
  Allows for achieving even higher gripping forces.

Advantages

- Safety: In the event of a power and/or compressed air failure, the fixed magnet maintains its position, ensuring safe handling.
- Compact and Lightweight Design: Facilitates integration into various work environments.
- Replaceable Friction Ring: Effectively absorbs high lateral forces and can be easily replaced for simplified maintenance.
- Increased Flexibility: Side tooling connection offers more adaptation possibilities.
- Robust Design: Perfectly suited for use in welding cells, resistant to demanding conditions.

Characteristics

		(N) Tensile force, with/without friction ring			(N) Slipping force	
Models	**Ø of the friction ring (mm)**	**Sheet metal thickness 1 mm (N)**	**Sheet metal thickness 2 mm (N)**	**Maximum (N)**	**On dry sheet metal (N)**	**On oily sheet (N)**
CMG20	20	15/20	17/22	17/22	8	8
CMG30	30	70/90	85/110	85/110	32	23
CMG40	40	110/125	200/280	200/320	81	56
CMG50	50	125/140	250/300	380/480	105	65

Holding force values tested on flat metal surface with 3.2 Ra value and steel quality S235JR.

Specifications

Air Supply Pressure: 3.5 - 6.0 bar
Ambient Temperature Range: 5-70°C (41-158°F)
Maximum Contact Temperature: 70°C (158°F)

Please specify the part e.g.: CMG20
See part n° table above.

Warning

Strong permanent magnet. Can be harmful to pacemaker wearers and sensitive equipment.

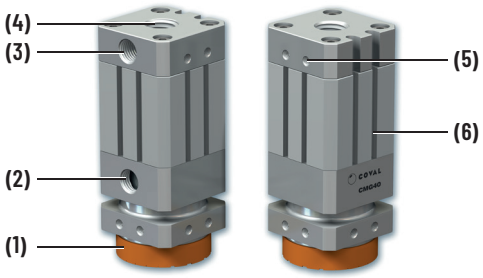
CMG

Magnetic Gripper

Description and Dimensions



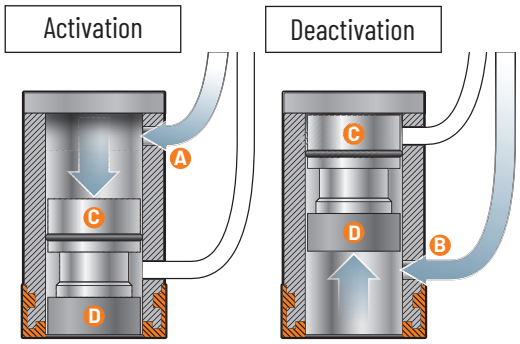
Description



Position	Description
1	Friction ring
2	Compressed air connection for deactivation
3	Compressed air connection for activation
4	Center mounting hole
5	Mounting holes for brackets
6	Slot for magnetic switch

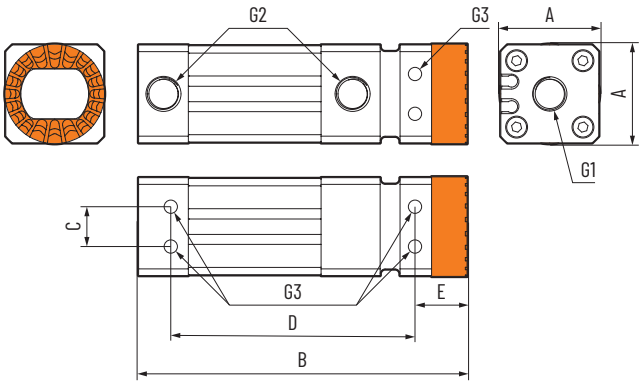
Operation

By pressurizing the upper port (A), the magnets are activated. By pressurizing the lower port (B), the magnets are deactivated.



Position	Description
A	Compressed air connection activation
B	Compressed air connection deactivation
C	Piston
D	Magnet

Dimensions



Models	A	B	C	D	E	G1	G2	G3	(g)
CMG20	20	78.2	6.5	55	13.2	G1/8"-F	M5x0.8-F	M3x0.5-F	90
CMG30	30	99.4	12	74	15.7	G1/8"-F	G1/8"-F	M4x0.7-F	223
CMG40	40	99.4	12	74	15.7	G1/4"-F	G1/8"-F	M4x0.7-F	427
CMG50	50	123.4	15	100	15.7	G1/4"-F	G1/8"-F	M5x0.8-F	795

The magnetic gripper can be mounted with a ball joint bracket or a locking pin bracket.

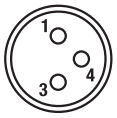
The values represent the average characteristics of our products.
Note: All dimensions are in mm.



Magnetic switches



Electrical connections



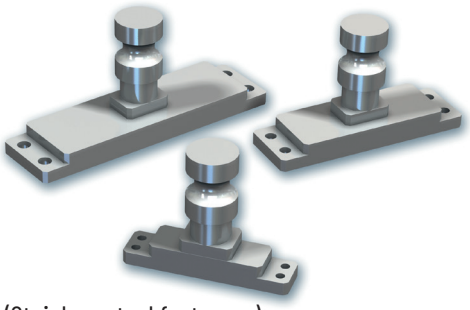
1 = Brown (+)
3 = Black (OUT)
4 = Blue (-)

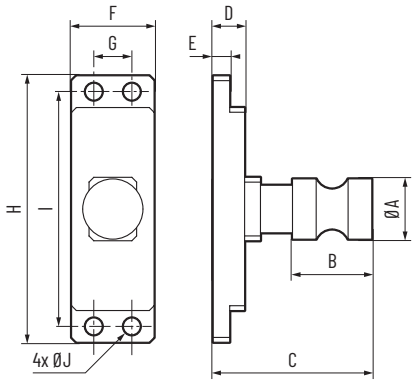
Characteristics

Models	Output type	Connection	Supply voltage range	Max. starting current	Function
KT02NE	NPN	Opened end (3-wire type)	5 to 30 V DC	80 mA	NO
KT02PE	PNP	Opened end (3-wire type)	5 to 30 V DC	80 mA	NO
KT02NEQD	NPN	M8 male connection	5 to 30 V DC	80 mA	NO
KT02PEQD	PNP	M8 male connection	5 to 30 V DC	80 mA	NO

Supports

CMG_FIXA: Locking pin mounting bracket Ø19 mm (supplied with 4 mounting screws).

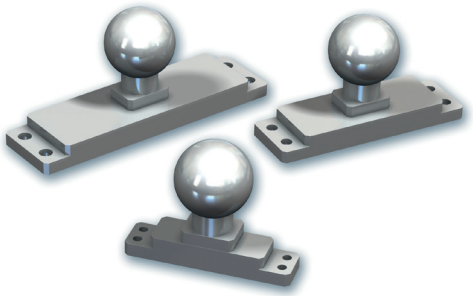


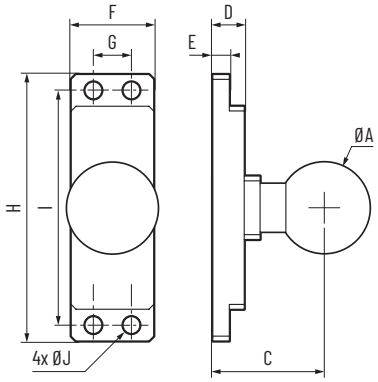


Materials: Aluminum (Stainless steel fasteners)

Models	Compatibility	Ø A	B	C	D	E	F	G	H	I	Ø J	(g)
CMG20FIXA	For CMG20	19	25	50	9.9	5.2	15	6.5	63	55	3.4	48.8
CMG30-40FIXA	For CMG30/40	19	25	50	9.9	5.2	26	12	84	74	4.6	83
CMG50FIXA	For CMG50	19	25	50	9.9	5.2	30	15	110	100	5.5	108

CMG_FIXB: Ball joint mounting bracket Ø28.5 mm (supplied with 4 mounting screws).



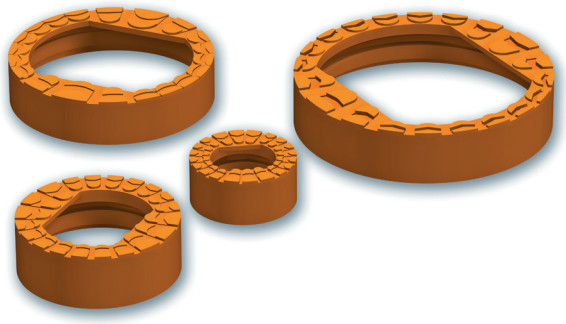


Materials: Aluminum (Stainless steel fasteners)

Models	Compatibility	Ø A	B	C	D	E	F	G	H	I	Ø J	(g)
CMG20FIXB	For CMG20	28.5	-	35.05	9.9	5.2	15	6.5	63	55	3.4	63.8
CMG30-40FIXB	For CMG30/40	28.5	-	35.05	9.9	5.2	26	12	84	74	4.6	98
CMG50FIXB	For CMG50	28.5	-	35.05	9.9	5.2	30	15	100	100	5.5	123



Friction Ring



Models	Description
80010594	Friction ring Ø 20 for CMG20 (x5)
80010595	Friction ring Ø 30 for CMG30 (x5)
80010596	Friction ring Ø 40 for CMG40 (x5)
80010597	Friction ring Ø 50 for CMG50 (x5)

Materials: TPU

The values represent the average characteristics of our products.
Note: All dimensions are in mm.

COVAL
vacuum managers

vacuum components



A TECHNOLOGICAL PARTNER ON A GLOBAL SCALE

Located in the South of France, COVAL SAS designs, produces, and markets high-performance vacuum components and systems for industrial applications in all sectors worldwide.

An ISO 9001: V2015 certified company, COVAL innovates globally in vacuum handling. Our optimized components integrate intelligent and reliable functionalities, adapt to your industrial context, and safely improve your productivity.

With a strong spirit of innovation and technological advancements, the COVAL team is now recognized as an expert in developing reliable, economical, and productive custom solutions.

COVAL's references are found in major industrial sectors such as packaging, food processing, automotive, plastics, aerospace, and robotics, where vacuum handling is crucial for efficiency and productivity.

COVAL markets its products and services worldwide through its subsidiaries and authorized distributor network. Always attentive to its customers, COVAL supports the implementation of its solutions with a continuous and attentive relationship.

Visit the following section on COVAL's website:
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