



Hand in hand for tomorrow



## Product data sheet

Compensation unit AGM-Z 063

## Precise. Reliable. Modular.

### Compensation unit AGM-Z

Modular compensation unit with z-axis flexibility for the compensation of inaccuracies and tolerances as well as differences in height. As part of the AGM product family, the AGM-Z can be flexibly combined with the AGM-XY and AGM-W and therefore always offers the right compensation behavior for a wide range of applications.

### Field of application

For handling tasks such as automated machine loading, assembly tasks such as pressing in components or positioning components for joining tasks. For use with magnetic grippers, where reliable compensating is required. Compensation units can be used on robots as well as in stationary applications.



### Advantages – Your benefits

**Highest bearing load capacity** enables the handling of high loads and moments thanks to the ball guide

**Maximum flexibility** thanks to the modularity of the AGM product family, combinations with XY and W are possible

**Locking** for switching the unit rigidly in a defined, extended or retracted position

**Easily adaptable spring forces** by manually reducing the springs

**Increased process stability** by various sensing options via magnetic switches or inductive proximity switches



Sizes  
Quantity: 8



Handling weight  
2.2 .. 275 kg

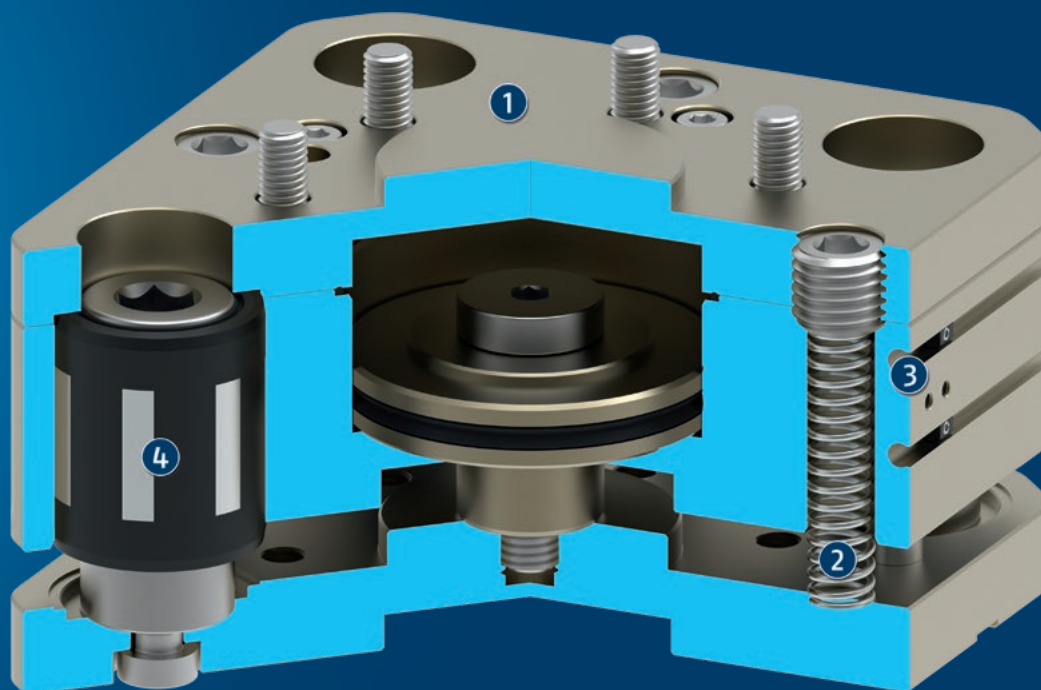


Compensation Z  
4 .. 20 mm

## Functional description

The AGM-Z offers compensation in the z-axis, for example for removal and storage processes in any spatial orientation. Robust ball guides ensure maximum bearing load capacity when handling high loads and moments. The stiffness of the integrated pressure springs can be adjusted for optimal contact pressure forces during

storage. This can be increased by additional actuation of the pneumatic cylinder. The modular and compact design enables combinations to be made, and saves installation height. The retracted and extended positions are monitored by magnetic switches or inductive proximity switches.



- ① **ISO mounting pattern**  
on the robot and tool side, for easy mounting on most types of robots without needing an additional adapter plate
- ② **Pressure springs**  
for adjustable clamping forces during storage
- ③ **Monitoring groove**  
Monitoring of the retracted and extended status
- ④ **Ball guides**  
enables great maximum moments at minimum size

## General notes about the series

**Guidance system:** Ball guides

**Monitoring:** via magnetic switch or inductive proximity sensor

**Actuation:** pneumatic, with filtered compressed air as per ISO 8573-1:2010 [7:4:4].

**Housing:** hard anodized aluminum alloy, functional parts made of hardened steel

**Scope of delivery:** Compensation unit in the ordered variant, elements for mechanical connection and safety information. Product-specific instructions can be downloaded at [schunk.com/downloads-manuals](https://schunk.com/downloads-manuals).

**Warranty:** 24 months

**Harsh environmental conditions:** Please note that use under harsh environmental conditions (e.g. in the coolant area, cast and grinding dust) can considerably reduce the service life of the units, and we will not take over any warranty. However, in many cases we can find a solution. Please contact us for assistance.

**Fluid consumption:** refers to the air consumption per one retraction and extension cycle



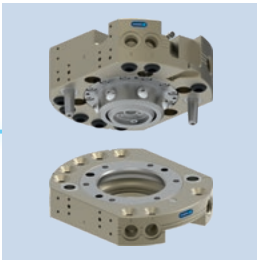
## Application example

During automated loading and unloading of machine tools, compensation units can effectively compensate for tolerances.

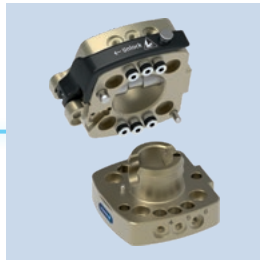
- ① Combined compensation unit XYZ with optional spring cartridges
- ② Universal gripper EGU

## SCHUNK offers more ...

The following components make the product even more productive – the suitable addition for the highest functionality, flexibility, reliability, and controlled production.



Tool changer pneumatic



Manual tool changer



AGM-XY



AGM-W



Inductive proximity switch



Electric magnetic gripper



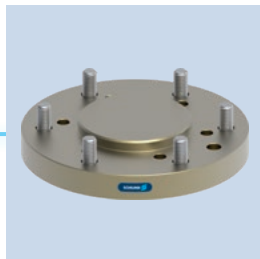
Universal gripper



Universal gripper



Magnetic switches



Adapter plates as per DIN ISO 9409

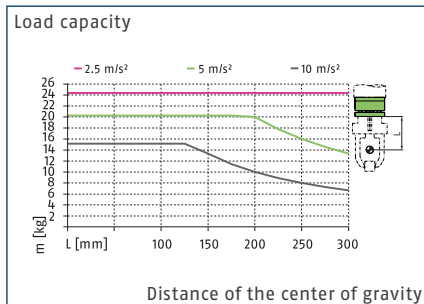
① For more information on these products can be found on the following product pages or at [schunk.com](http://schunk.com).

# AGM-Z 063

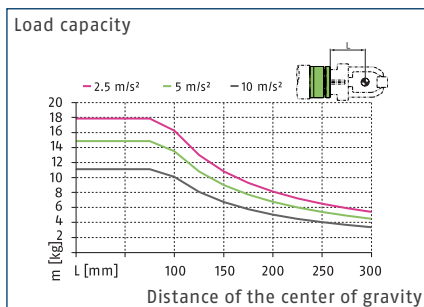
Compensation unit



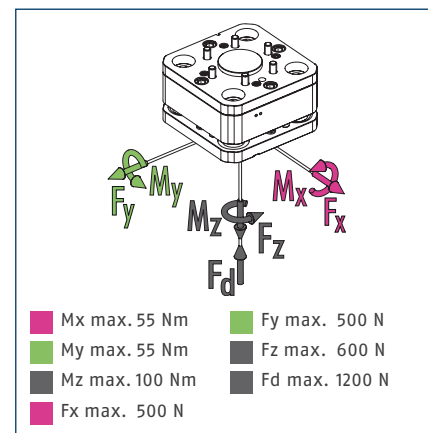
## Load diagram – vertical design



## Load diagram – horizontal design



## Max. loads



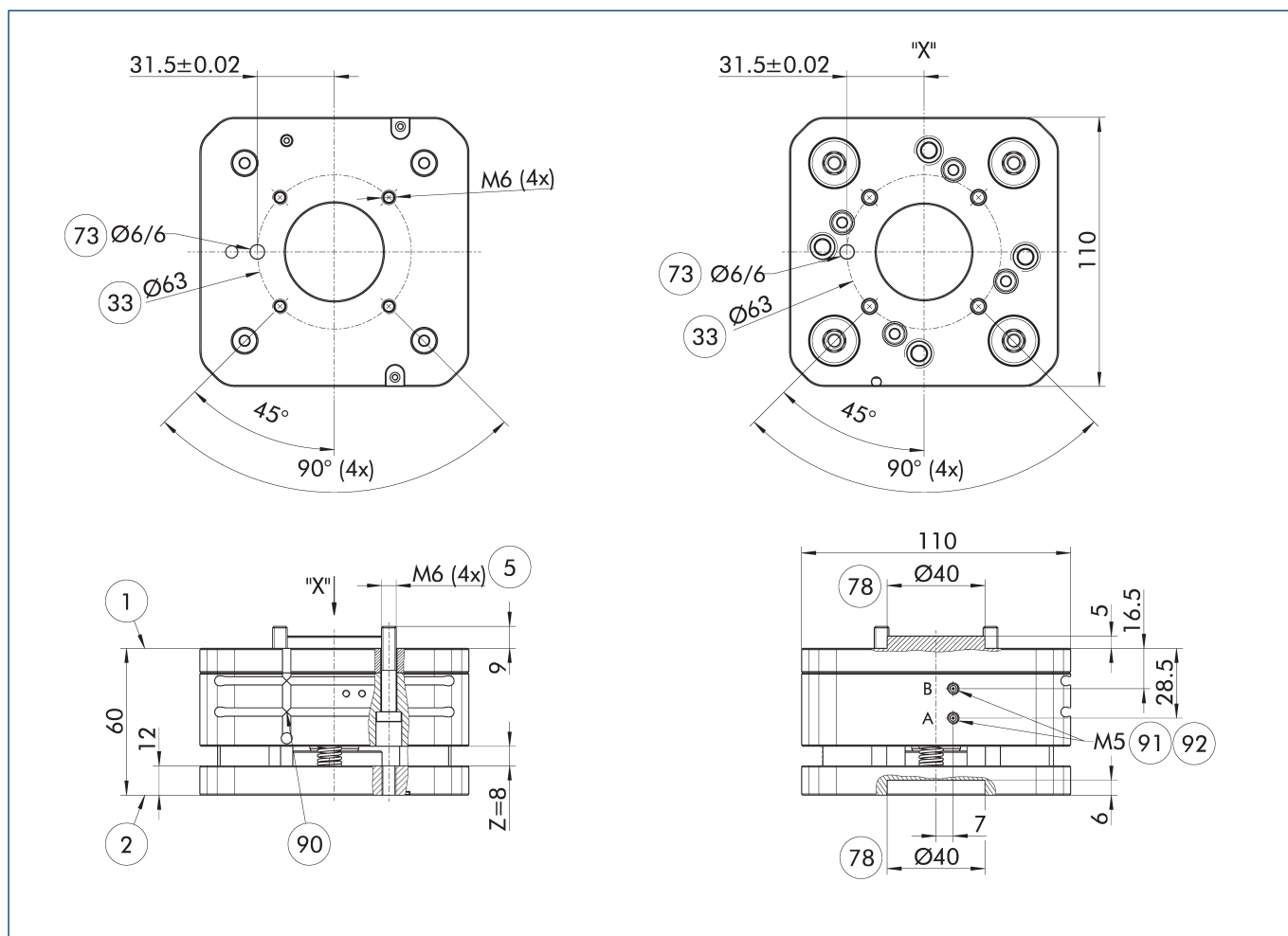
① This is the sum of all static loads that are permitted to act on the compensation unit.

## Technical data

| Description                       |       | AGM-Z 063          |
|-----------------------------------|-------|--------------------|
| ID                                |       | 1575971            |
| Compensation Z                    | [mm]  | 8                  |
| Min./max. spring force            | [N]   | 80/125             |
| Min./nom./max. operating pressure | [bar] | 2.5/6/6.5          |
| Repeat accuracy                   | [mm]  | 0.02               |
| Robot-side connection             |       | ISO 9409-1-63-4-M6 |
| Tool-side connection              |       | ISO 9409-1-63-4-M6 |
| Weight                            | [kg]  | 1.9                |
| Min./max. ambient temperature     | [°C]  | 5/60               |
| Extension/retraction time         | [s]   | 0.15/0.25          |
| Max. eccentric load               | [mm]  | 300                |
| IP protection class               |       | 50                 |
| Max. dynamic moment Mx/My         | [Nm]  | 20                 |
| Max. dynamic moment Mz            | [Nm]  | 40                 |
| Force Fx max. dynamic             | [N]   | 220                |
| Force Fy max. dynamic             | [N]   | 220                |
| Force Fz max. dynamic             | [N]   | 300                |

① Further technical data can be found at [schunk.com](http://schunk.com).

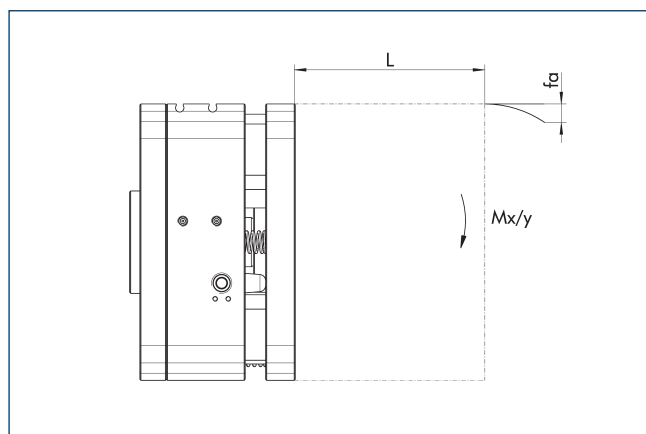
### Main view AGM-Z 063



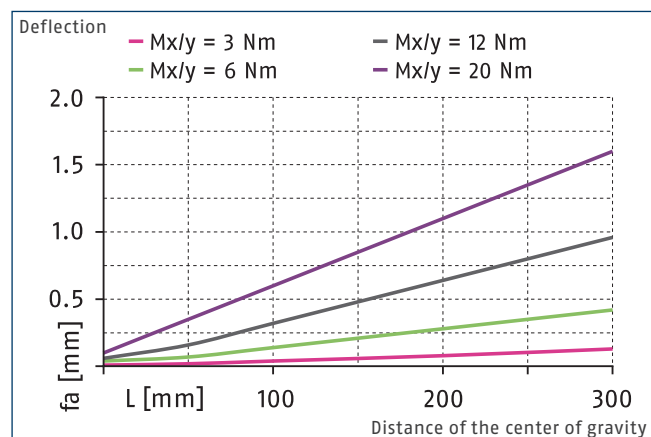
The drawing shows the basic version of the compensation unit in the extended position, without considering any dimensions of the options described below.

- |                                           |                                       |
|-------------------------------------------|---------------------------------------|
| ① Robot-side connection                   | ⑦⑧ Fit for centering                  |
| ② Tool-side connection                    | ⑨⑩ Slot for magnetic switch           |
| ⑤ Through hole for connection with screws | ⑨① Retract air connection A (locked)  |
| ③③ DIN ISO-9409 bolt circle               | ⑨② Extend air connection B (unlocked) |
| ⑦③ Fit for centering pins                 |                                       |

### Deflection

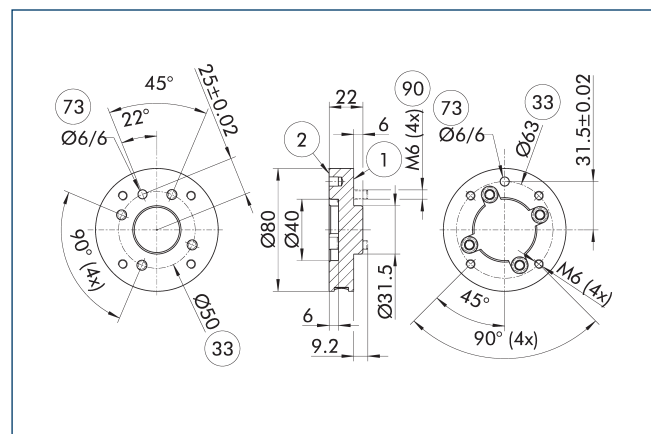


### Deflection diagram – horizontal design



① The diagram shows the change in the maximum deflection (fa) as a function of the lever arm (L) in the depressurized status and the moments ( $M_{x,y}$ ) acting on the additionally attached mass. The diagram does not replace the technical design.

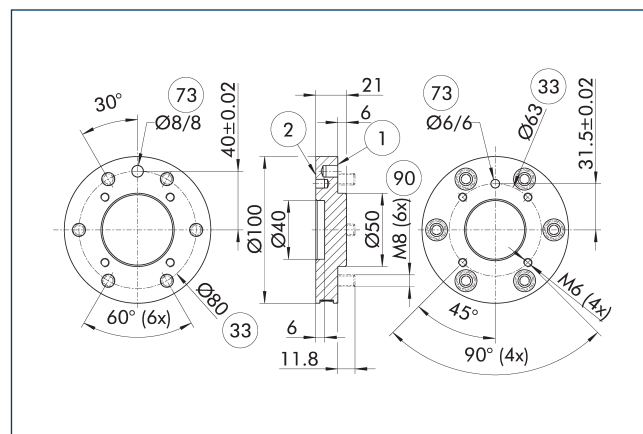
### Adapter plate A-IS0063/IS0050



- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑨⑨ Fastening screw for the screw connection on robot side

| Description     | ID      |  |
|-----------------|---------|--|
| Adapter plate   |         |  |
| A-IS0063/IS0050 | 1601241 |  |

### Adapter plate A-IS0063/IS0080

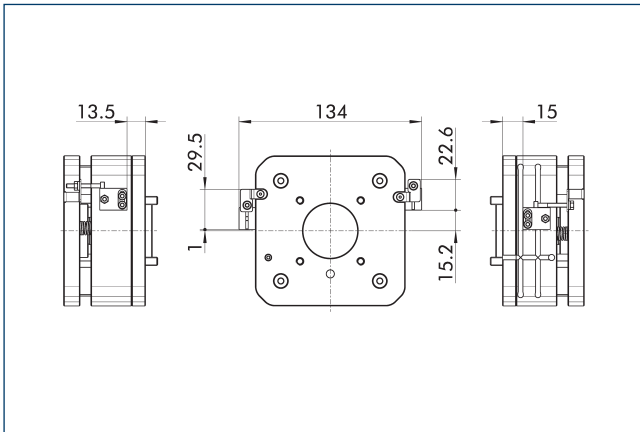


- ① Robot-side connection
- ② Tool-side connection
- ③③ DIN ISO-9409 bolt circle
- ⑦③ Fit for centering pins
- ⑨⑨ Fastening screw for the screw connection on robot side

| Description     | ID      |  |
|-----------------|---------|--|
| Adapter plate   |         |  |
| A-IS0063/IS0080 | 1601243 |  |



## Attachment kit for proximity switch IN 80

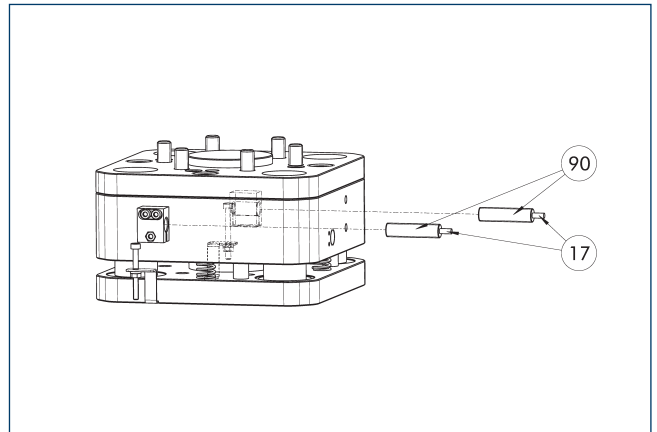


End position monitoring can be mounted with an attachment kit.

| Description                         | ID      |
|-------------------------------------|---------|
| Attachment kit for proximity switch |         |
| AS-AGM-Z-050/63-IN80                | 1601729 |

① This attachment kit needs to be ordered optionally as an accessory.

## IN 80 inductive proximity switches



①⑦ Cable outlet

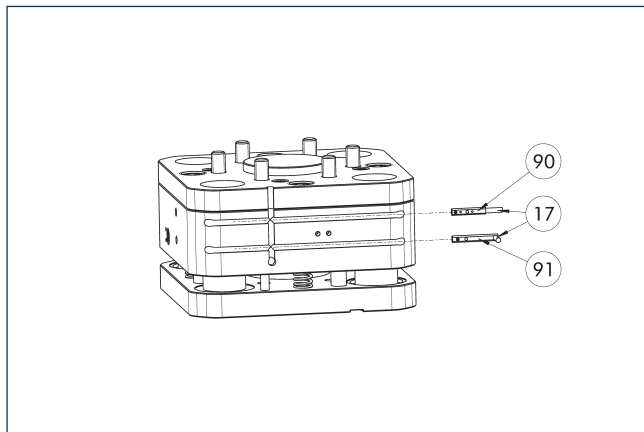
⑨⑩ IN proximity switch

End position monitoring can be mounted with an attachment kit.

| Description                                          | ID      | Often combined |
|------------------------------------------------------|---------|----------------|
| Attachment kit for proximity switch                  |         |                |
| AS-AGM-Z-050/63-IN80                                 | 1601729 |                |
| Inductive proximity switch                           |         |                |
| IN 80-S-M12                                          | 0301578 |                |
| IN 80-S-M8                                           | 0301478 | •              |
| INK 80-S                                             | 0301550 |                |
| Inductive proximity switch with lateral cable outlet |         |                |
| IN 80-S-M12-SA                                       | 0301587 |                |
| IN 80-S-M8-SA                                        | 0301483 | •              |
| INK 80-S-SA                                          | 0301566 |                |

① Two sensors (closer/S) are required for each unit and extension cables are available as an option. This attachment kit needs to be ordered optionally as an accessory. For sensor cables, note the minimum permissible bending radii. These are generally 35 mm.

### Electronic magnetic switch MMS



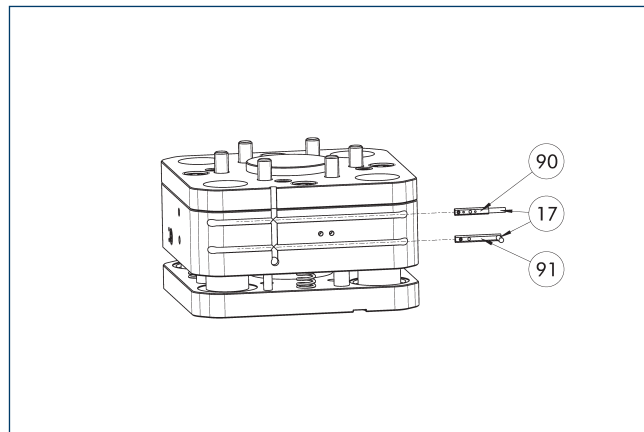
- ① Cable outlet  
② Sensor MMS 22-...-SA  
③ Sensor MMS 22-...

End position monitoring for mounting in the C-slot.

| Description                                            | ID      | Often combined |
|--------------------------------------------------------|---------|----------------|
| Electronic magnetic switch                             |         |                |
| MMS 22-S-M8-PNP                                        | 0301032 |                |
| MMSK 22-S-PNP                                          | 0301034 |                |
| Electronic magnetic switches with lateral cable outlet |         |                |
| MMS 22-S-M8-PNP-SA                                     | 0301042 |                |
| MMSK 22-S-PNP-SA                                       | 0301044 |                |
| Connection cables                                      |         |                |
| KA BG08-L 3P-0300-PNP                                  | 0301622 | ●              |
| KA BG08-L 3P-0500-PNP                                  | 0301623 |                |
| KA BW08-L 3P-0300-PNP                                  | 0301594 |                |
| KA BW08-L 3P-0500-PNP                                  | 0301502 |                |
| Clip for connector/socket                              |         |                |
| CLI-M8                                                 | 0301463 |                |
| Cable extension                                        |         |                |
| KV BW08-SG08 3P-0030-PNP                               | 0301495 |                |
| KV BW08-SG08 3P-0100-PNP                               | 0301496 |                |
| KV BW08-SG08 3P-0200-PNP                               | 0301497 | ●              |
| Sensor distributor                                     |         |                |
| V2-M8                                                  | 0301775 | ●              |
| V4-M8                                                  | 0301746 |                |
| V8-M8                                                  | 0301751 |                |

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

### Programmable magnetic switch MMS 22-PI1



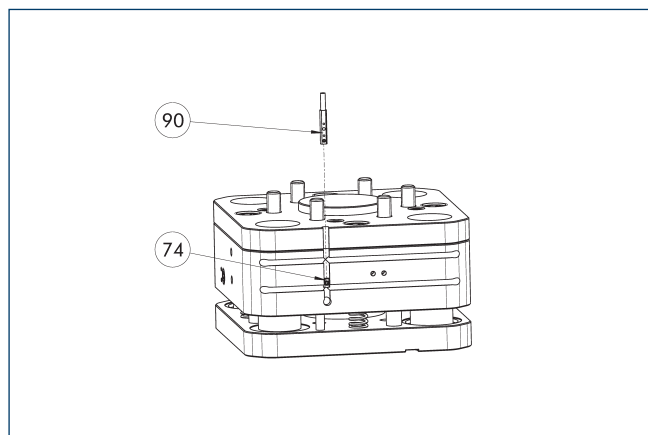
- ① Cable outlet  
② Sensor MMS 22-PI1-...-SA  
③ Sensor MMS 22-PI1-...

Position monitoring with one programmable position per sensor and integrated electronic system in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

| Description                                               | ID      | Often combined |
|-----------------------------------------------------------|---------|----------------|
| Programmable magnetic switch                              |         |                |
| MMS 22-PI1-S-M8-PNP                                       | 0301160 | ●              |
| MMSK 22-PI1-S-PNP                                         | 0301162 |                |
| Programmable magnetic switch with lateral cable outlet    |         |                |
| MMS 22-PI1-S-M8-PNP-SA                                    | 0301166 | ●              |
| MMSK 22-PI1-S-PNP-SA                                      | 0301168 |                |
| Programmable magnetic switch with stainless steel housing |         |                |
| MMS 22-PI1-S-M8-PNP-HD                                    | 0301110 | ●              |
| MMSK 22-PI1-S-PNP-HD                                      | 0301112 |                |

- ① Two sensors are required per unit for monitoring two positions. On option, extension cables and sensor distributors are available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor system.

## Programmable magnetic switch MMS 22-PI2



74 Limit stop for sensor

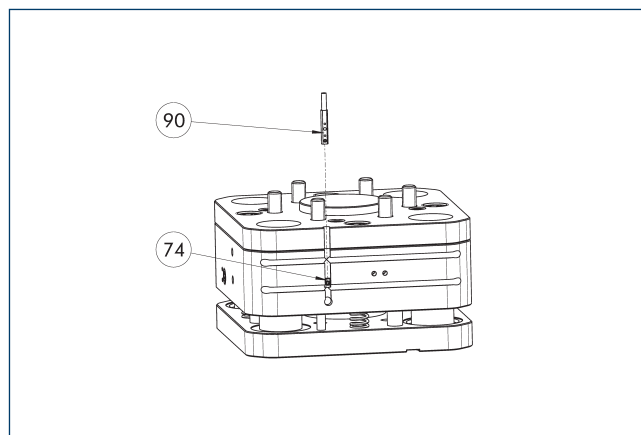
90 MMS 22...-PI2-... sensor

Position monitoring with two programmable positions per sensor and electronics integrated in the sensor. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the table provided, teaching is only possible with the ST teaching tools.

| Description                                               | ID      | Often combined |
|-----------------------------------------------------------|---------|----------------|
| Programmable magnetic switch                              |         |                |
| MMS 22-PI2-S-M8-PNP                                       | 0301180 | ●              |
| Programmable magnetic switch with lateral cable outlet    |         |                |
| MMS 22-PI2-S-M8-PNP-SA                                    | 0301186 | ●              |
| Programmable magnetic switch with stainless steel housing |         |                |
| MMS 22-PI2-S-M8-PNP-HD                                    | 0301130 | ●              |

- ① One sensor is required per unit for monitoring two positions. Extension cables and sensor distributors are optionally available. Additional product variants of the sensor, and further information and technical data can be found in the catalog chapter sensor systems.

## Analog position sensor MMS-A



74 Limit stop for sensor

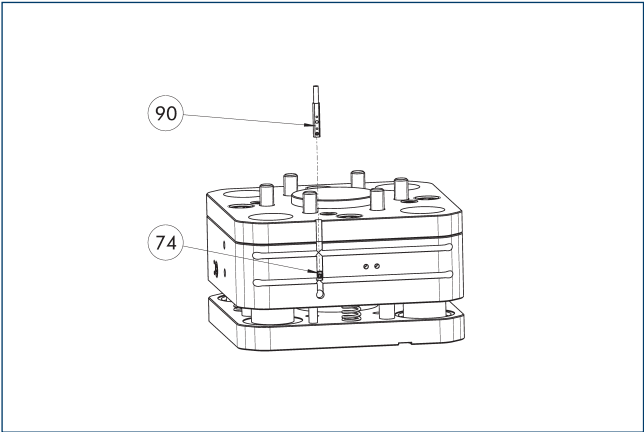
90 MMS 22-A-... sensor

Non-contact measuring, analog multi-position monitoring for any number of positions, easy to assemble in the C-slot. Can be programmed using MT magnetic teaching tool (included in the scope of delivery, ID 0301030) or ST plug teaching tool (optional). End position monitoring for mounting in the C-slot. If the ST plug teaching tools are listed in the chart provided, teaching is only possible with the ST teaching tools.

| Description            | ID      |  |
|------------------------|---------|--|
| Analog position sensor |         |  |
| MMS 22-A-10V-M08       | 0315825 |  |
| MMS 22-A-10V-M12       | 0315828 |  |

- ① One sensor is required per compensation unit. Further information and technical data can be found in the catalog chapter sensor systems.

Magnetic switch MMS 22-I0-Link



74 Limit stop for sensor      90 Sensor MMS 22-I0L-...

Sensor for multi-position monitoring through detection of the complete compensation stroke. The sensor is mounted directly in the C-slot of the compensation unit. The sensor is programmed for the compensation unit via the I0-Link interface, magnet teaching tool MT (included in scope of delivery; ID 0301030) or the ST plug teaching tool (not included in scope of delivery; ID 0301026). An I0-Link master is required for operation.

| Description                  | ID      |  |
|------------------------------|---------|--|
| Programmable magnetic switch |         |  |
| MMS 22-I0L-M08               | 0315830 |  |
| MMS 22-I0L-M12               | 0315835 |  |

- ① One sensor is required per compensation unit. Further information and technical data can be found in the catalog chapter sensor systems.





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