

Installation and operating instructions

AGM-XY

Compensation unit in XY direction

Translation of the original operating instructions

Imprint

Copyright:

This manual is protected by copyright. The author is SCHUNK SE & Co. KG.
All rights reserved.

Technical changes:

We reserve the right to make technical improvements.

Document number: 1647451

Version: 02.00 | 3/6/2026 | en-US

Dear Customer

Dear Customer,

Thank you for putting your trust in our products and our family-owned company, the leading technology supplier of robots and production machines.

Our team is always available to answer any questions on this product and other solutions. We look forward to your challenging questions. We will find a solution!

Best regards,

Your SCHUNK team

Customer Management

Tel. +49-7133-103-2503

Fax +49-7133-103-2189

cmg@de.schunk.com



Please read the operating manual in full and keep it close to the product.

Table of Contents

1	General	5
1.1	About this Manual	5
1.1.1	Illustration of safety notes	5
1.1.2	Definition of Terms	6
1.1.3	Applicable documents	6
1.1.4	Sizes.....	6
1.2	Warranty	7
1.3	Scope of delivery.....	7
1.4	Accessories	7
1.5	Accessories	7
2	Basic safety notes.....	8
2.1	Intended use.....	8
2.2	Not intended use	8
2.3	Structural changes.....	9
2.4	Ambient conditions and operating conditions	9
2.5	Personnel qualification	9
2.6	Personal protective equipment	10
2.7	Notes on safe operation.....	10
2.8	Transport.....	11
2.9	Malfunctions.....	11
2.10	Disposal	11
2.11	Fundamental hazards	11
2.11.1	Protection during handling and assembly	12
2.11.2	Protection during commissioning and operation	13
3	Technical specifications.....	14
3.1	Type plate / Engraving.....	14
3.2	Basic data	15
4	Installation and commissioning	16
4.1	Installation example	18
4.2	Attaching the product to the robot.....	19
4.3	Adapter plates	20
4.4	Compressed air connection.....	22
4.5	Mounting sensors.....	24
4.5.1	Overview of sensors	25
4.5.2	Installing the MMS 22 magnetic switch	26
4.5.3	Installing the MMS 22-A magnetic switch.....	28
4.5.4	Installing the MMS 22-IOL magnetic switch.....	30
4.5.5	Installing the MMS 22-PI1 programmable magnetic switch.....	32

4.5.6	Installing the MMS 22-PI2 programmable magnetic switch	34
4.6	Stroke adjustment	36
4.7	Weight compensation using spring or air cartridges	37
4.7.1	Fitting spring and air cartridges	37
4.7.2	Setting the spring and air cartridges.....	38
5	Troubleshooting.....	42
6	Maintenance	43
6.1	Lubricants/lubrication points (basic lubrication).....	43
6.2	Replace seal	44
6.3	Maintaining and assembling the product	44
7	assembly drawing	45
8	Spare parts package	46
9	Translation of the original declaration of incorporation	47
10	UKCA declaration of incorporation	48
11	Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)	49

1 General

1.1 About this Manual

This manual contains important information for the safe, correct use of the product.

The manual is an integral part of the product and must be kept accessible by personnel at all times.

Personnel must have read and understood this manual before beginning any work. The observance of all safety notes in this manual is the precondition for all safe working.

Besides this manual, other documents which apply are those listed under ▶ 1.1.3 [6].

NOTE: The illustrations in this manual are intended to provide a basic understanding and may deviate from the actual version.

1.1.1 Illustration of safety notes

To make risks clear, the following signal words and symbols are used for safety notes.



⚠ DANGER

Danger to individuals!

Ignoring a safety note such as this will certainly lead to irreversible injury and even death.



⚠ WARNING

Danger to individuals!

Ignoring a safety note such as this can lead to irreversible injury and even death.



⚠ CAUTION

Danger to individuals!

Non-observance can cause minor injuries.

NOTICE

Material damage!

Information about avoiding material damage.

1.1.2 Definition of Terms

The term "product" replaces the product name on the title page in this manual.

1.1.3 Applicable documents

- General terms of business *
- Catalog data sheet of the purchased product *
- Assembly and operating manuals of the accessories *

The documents labeled with an asterisk (*) can be downloaded from [schunk.com/downloads](https://www.schunk.com/downloads).

1.1.4 Sizes

This manual applies to the following sizes:

- AGM-XY 031
- AGM-XY 040
- AGM-XY 050
- AGM-XY 063
- AGM-XY 080
- AGM-XY 100
- AGM-XY 125
- AGM-XY 160
- AGM-XY 160L

1.2 Warranty

If the product is used as intended, the warranty is valid for 24 months from the date of delivery from the production facility under the following conditions:

- Observance of the specified maintenance and lubrication intervals
- Observance of the ambient conditions and operating conditions

Parts touching the workpiece and wearing parts are not part of the warranty.

1.3 Scope of delivery

The scope of delivery includes:

- Compensation unit in XY direction AGM-XY in the version ordered
- Mechanical connection, Fastening screws for connection to the robot are integrated into the product.
- Accessory pack
- Safety information (product-specific instructions available online)

1.4 Accessories

Contents of the accessory kit:

- 1x Cylindrical pin for position orientation (for ISO centering)

1.5 Accessories

A wide range of accessories is available for this product.

For information regarding which accessory articles can be used with the corresponding product variants, see catalog data sheet.

2 Basic safety notes

2.1 Intended use

The product is designed to compensate for tolerances and positional inaccuracies in the linear degrees of freedom X and Y. A mechanical center lock via a form-fitting piston is installed in the product as standard.

Additional position memory function: Locking of the moving plates at any position (e.g., X=1, Y=0.5), implemented by a pneumatic piston "damper" that is pressed onto the compensation plate.

Additional function: air and spring cartridge: weight compensation for horizontal application of the compensation unit.

- The product may only be used within the scope of its technical data, ► 3 [14].
- When implementing and operating components in safety-related parts of the control systems, the basic safety principles in accordance with DIN EN ISO 13849-2 apply. The proven safety principals in accordance with DIN EN ISO 13849-2 also apply to categories 1, 2, 3 and 4.
- The product is intended for installation in a machine/ automated system or for attachment to a robot. The applicable guidelines for the machine/automated system must be observed and complied with.
- The product is intended for industrial and industry-oriented use.
- Appropriate use of the product includes compliance with all instructions in this manual.

2.2 Not intended use

Any use beyond the intended purpose or any other use is considered misuse. This includes in particular:

- Use as a pressing tool, punching tool, clamping device, lifting device, or guide aid for tools
- Exceeding the specified pressures, stresses, and mechanical loads
- Use outdoors
- Use in potentially explosive atmospheres

2.3 Structural changes

Implementation of structural changes

Modifications, changes or reworking, e.g. additional threads, holes, or safety devices, can damage the product or impair its functionality or safety.

- Structural changes should only be made with the written approval of SCHUNK.

2.4 Ambient conditions and operating conditions

Required ambient conditions and operating conditions

Incorrect ambient and operating conditions can make the product unsafe, leading to the risk of serious injuries, considerable material damage and/or a significant reduction to the product's life span.

- Make sure that the product is only used within its defined application parameters, ▶ 3 [14].
- Make sure that the product is a sufficient size for the workpiece.
- Make sure that the environment is free from splash water and vapors as well as from abrasion or processing dust. Exceptions are products that are designed especially for contaminated environments.

2.5 Personnel qualification

Inadequate qualification of personnel

Work on the product by inadequately qualified personnel can lead to serious injuries and considerable material damage.

- Order all work to be performed only by appropriately qualified personnel.
- Personnel must have read and understood the complete manual before beginning any work on the product.
- Observe national accident prevention regulations and the general safety notes.

The following personnel qualifications are required for the various types of work on the product:

Trained electrician

Due to their technical training, knowledge and experience, trained electricians are able to work on electrical systems, recognize and avoid possible dangers and know the relevant standards and regulations.

Qualified personnel

Due to its technical training, knowledge and experience, qualified personnel is able to perform the delegated tasks, recognize and avoid possible dangers and knows the relevant standards and regulations.

- Instructed person** Instructed persons have been instructed by the user regarding the tasks entrusted to them and the potential dangers of inappropriate behavior.
- Manufacturer's service personnel** The manufacturer's service personnel have the specialized training, knowledge, and experience to perform the work entrusted to them and to recognize and avoid potential dangers.

2.6 Personal protective equipment

Use of personal protective equipment

Personal protective equipment serves to protect staff in the event of a danger that may interfere with their health or safety at work.

- When working on and with the product, observe the occupational health and safety regulations and wear the required personal protective equipment.
- Observe the valid safety and accident prevention regulations.
- Wear protective gloves to guard against sharp edges and corners or rough surfaces.
- Wear heat-resistant protective gloves when handling hot surfaces.
- Wear protective gloves and safety goggles when handling hazardous substances.
- Wear close-fitting protective clothing and also wear long hair in a hairnet when dealing with moving components.

2.7 Notes on safe operation

Incorrect manner of working by personnel

An incorrect manner of working can make the product unsafe and risk the danger of serious injuries and considerable material damages.

- Avoid any manner of working that may interfere with the function and operational safety of the product.
- Use the product as intended.
- Observe the safety notes and assembly instructions.
- Do not expose the product to any corrosive media. Products for special ambient conditions are excluded.
- Rectify malfunctions as soon as they occur.
- Observe the care and maintenance instructions.
- Observe the current safety, accident prevention, and environmental protection regulations for the application field of the product.

2.8 Transport

Handling during transport

Incorrect handling during transport can make the product unsafe and risk serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- During transport and handling, secure the product to prevent it from falling.
- Do not walk under suspended loads.

2.9 Malfunctions

Behavior in case of malfunctions

- Immediately remove the product from operation and report the malfunction to the responsible departments/persons.
- Order appropriately trained personnel to rectify the malfunction.
- Do not recommission the product until the malfunction has been rectified.
- Test the product after a malfunction to establish whether it still functions properly and no increased risks have arisen.

2.10 Disposal

Handling of disposal

Incorrect handling during disposal can make the product unsafe and risks serious injuries and considerable material and environmental harm.

- Follow local regulations on dispatching product components for recycling or orderly disposal.

2.11 Fundamental hazards

General

- Observe safety distances.
- Never deactivate safety devices.
- Before commissioning the product, take appropriate protective measures to secure the danger zone.
- Disconnect power sources before installation, modification, maintenance, or calibration. Ensure that no residual energy remains in the system.
- If the energy supply is connected, do not move any parts by hand.
- Do not reach into the open mechanism or movement area of the product during operation.

Possible electrostatic energy

Components or assembly groups may become electrostatically charged. When the electrostatic charge is touched, the discharge can trigger a shock reaction which may lead to injuries.

- The operator must ensure that all components and assembly groups are included in the local equipotential bonding in line with the applicable regulations.
- The equipotential bonding must be implemented by a specialist electrician in line with the applicable regulations while paying particular attention to the actual conditions in the working environment.
- The effectiveness of the equipotential bonding must be verified by regular safety measurements.



⚠ WARNING

Risk of injury due to uncontrolled movements!

Incorrect control can cause the product to move in an uncontrolled manner and cause serious injuries.

- Do not reach into the movement area of the product during commissioning, conversion and adjustment work.
- Observe the direction of rotation of the product when designing the control system.



⚠ WARNING

Risk of injury due to sudden movements!

If the energy supply is switched on or if residual energy is still present in the system, this can cause components to move unexpectedly, which may result in serious injuries.

- Before starting any work on the product: Switch off the energy supply and secure against re-connection.
- Ensure that no residual energy remains in the system.

2.11.1 Protection during handling and assembly

Incorrect handling and assembly

Incorrect handling and assembly can make the product unsafe and pose a risk of serious injuries and considerable material damage.

- Order all work to be performed only by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention regulations.

- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

Incorrect lifting of loads

Falling loads can cause serious injuries and even death.

- Stand clear of suspended loads and do not step within their swiveling range.
- Never move loads without supervision.
- Do not leave suspended loads unattended.

2.11.2 Protection during commissioning and operation

Falling or violently ejected components

Falling and violently ejected components can cause serious injuries and even death.

- Take appropriate protective measures to secure the danger zone.
- Never step into the danger zone during operation.

3 Technical specifications

3.1 Type plate / Engraving

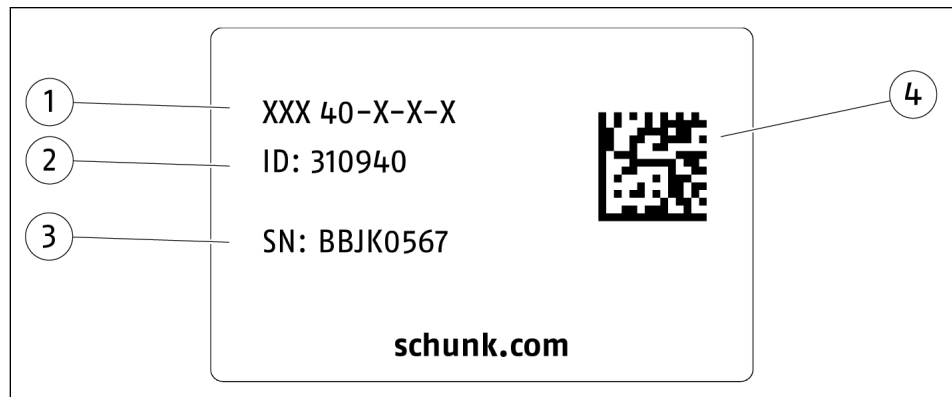


Illustration for example purposes only

1	Product name
2	Identification number
3	Serial number
4	Data matrix code

Scan the code or enter the serial number on the web to obtain further product information: CAD data, catalog data sheets, spare parts packages, software updates, and much more.

For more information, visit [schunk.com/serialization](https://www.schunk.com/serialization)

A separate app may be required for scanning with a mobile phone.

3.2 Basic data

Designation	Value
Pressure medium	Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4]
Minimum pressure [bar]:	4
Maximum pressure [bar]:	6.5
Ambient temperature [°C] max.	+60
Ambient temperature [°C] min.	+5
Noise emission [dB(A)]	≤70
Repeatability [mm]	0.03 – 0.05

Size	Weight [kg]	Compensation range in X/Y direction [mm]
031	0.5	2
040	0.8	3
050	1.0	4
063	2.0	5
080	3.6	7
100	5.8	9
125	10.9	10
160	22.0	12
160L	31.7	15

NOTE

Due to its design, the AGM-XY may still have a clearance of approx. 0.02 mm even when locked.

Rigid centric locking cannot therefore be guaranteed.

NOTE

To increase the service life of the AGM-XY, we recommend locking the AGM-XY during fast movements and/or with heavy loads.

NOTE

In a horizontal position, the weight cannot be absorbed by the stroke limiter.

This must be released via the spring or air cartridges.

NOTE

The guides are resistant to the most common cooling lubricants.

4 Installation and commissioning



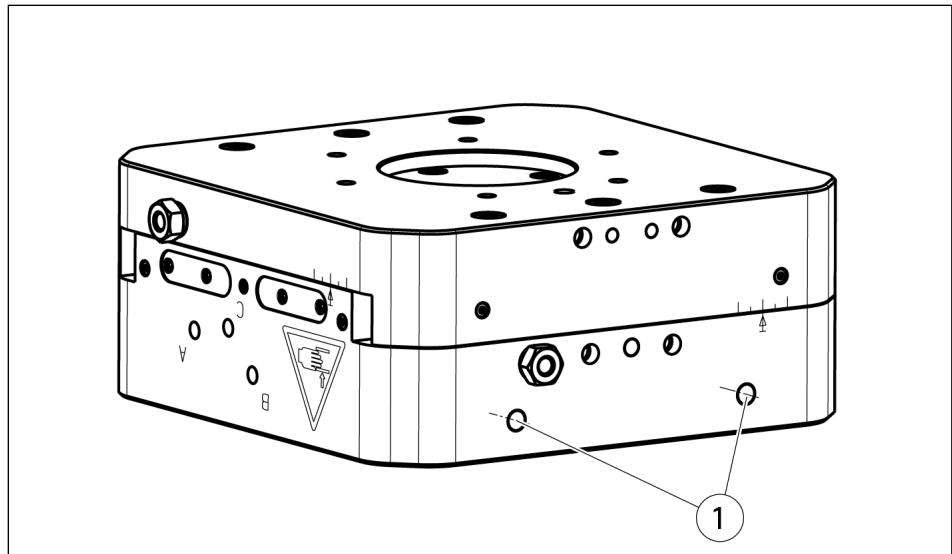
⚠ WARNING

Risk of injury due to the product falling!

During transport and assembly/disassembly, the product may fall and cause injury.

- Secure the product using appropriately sized aids.
- Use transport threads for sizes 160 and above.
- Wear suitable protective equipment.

Use M10 side transport threads (1) or, if necessary, threads on the ISO screw-on surface.



⚠ WARNING

Risk of injury due to unexpected movements of the machine/ system!

Switch off the power supply.

Ensure that there is no residual energy left in the system.

NOTICE

The AGM-XY may only be moved or accelerated when locked.

NOTE

For horizontal installation, we recommend using spring or air cartridges to balance the weight. ▶ 4.7 [37]

NOTE

If the position memory is activated, the AGM-XY must not be locked.

Likewise, it must not be balanced.

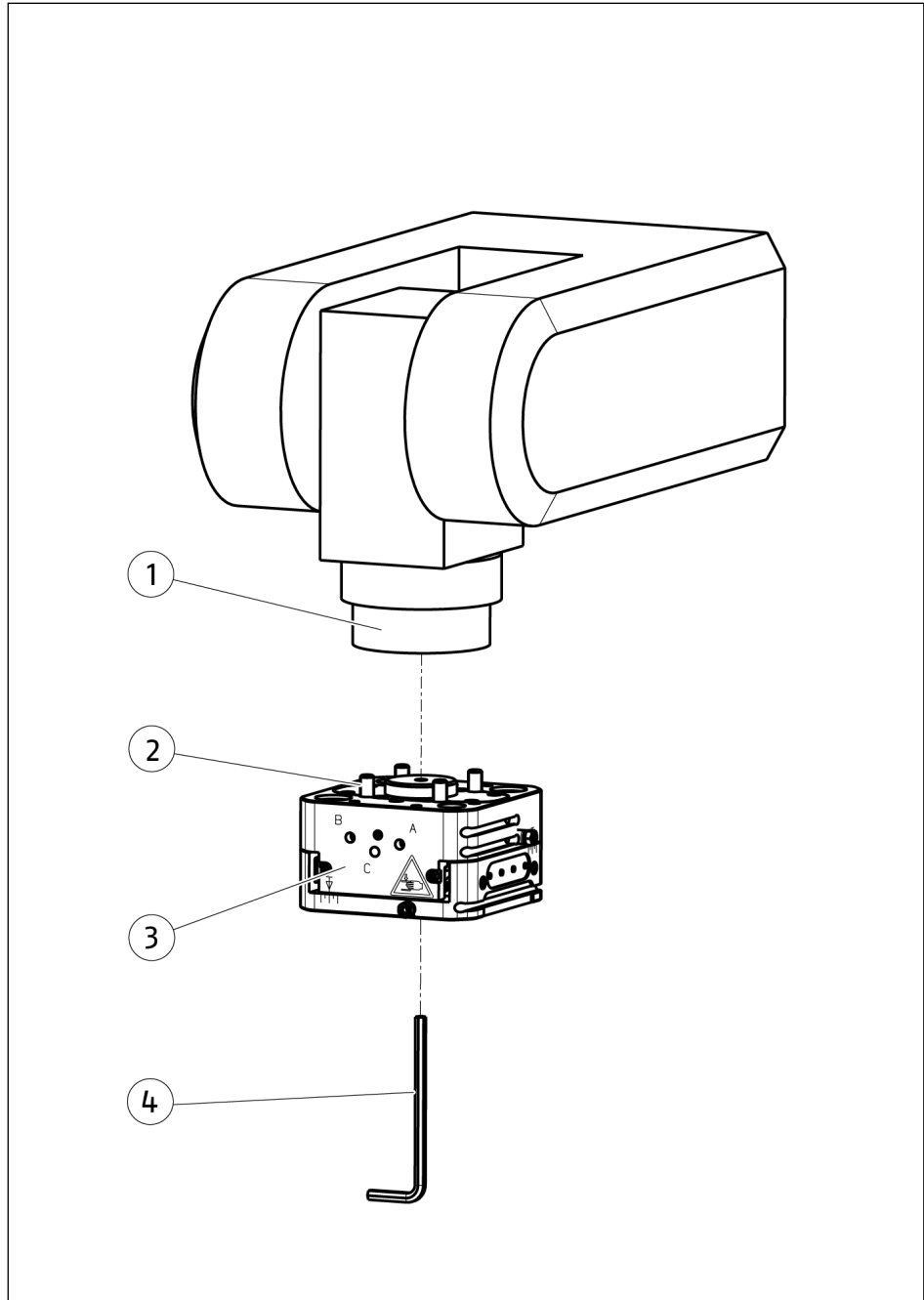
The position memory may be damaged.

NOTE

The AGM-XY is locked upon delivery from size 080 onwards.

Unlock the stroke again during commissioning. ▶ [4.6](#) [📄 36]

4.1 Installation example



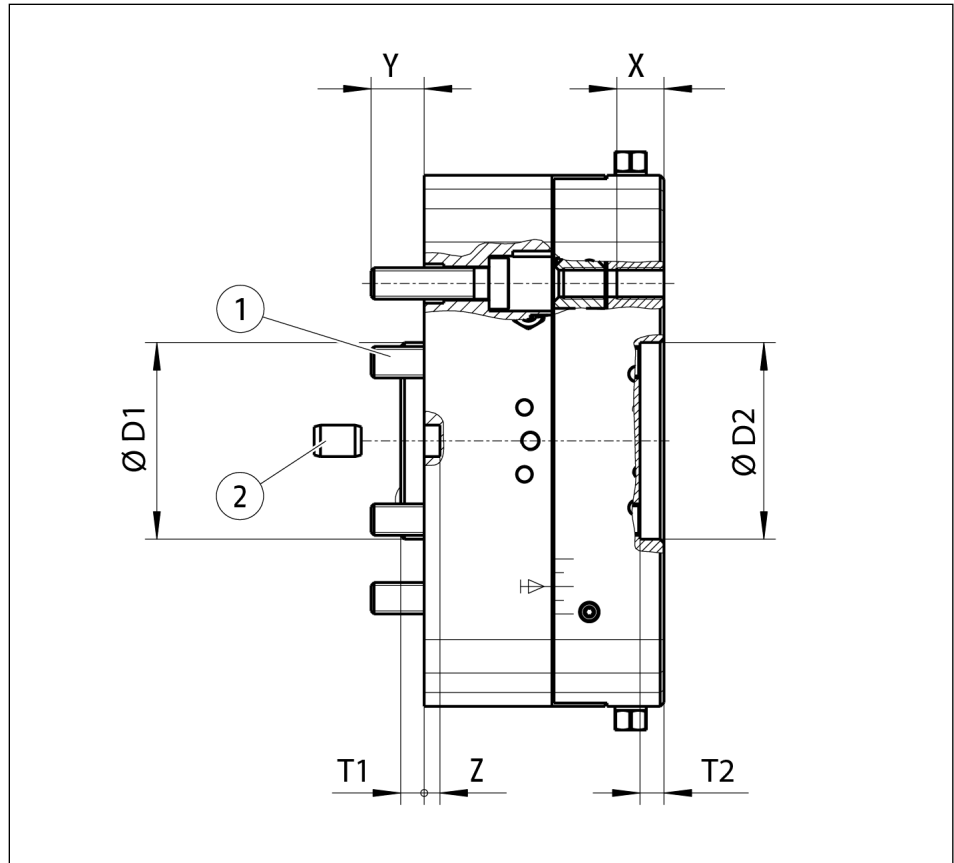
Item	Description	Notes
1	Robot arm	with interface according to DIN ISO 9409
2	Mounting screws	pre-assembled
3	Compensation unit AGM-XY	
4	Hex key	for fastening the pre-assembled fastening screws (2)

4.2 Attaching the product to the robot

NOTICE

Breakage possible due to incorrect installation!

- Observe the maximum screw-in depth on the robot or tool side, see table: Permissible fastenings, centering, and screw tightening torque.



Size	Robot interface
031	ISO 9409-1-31.5-4-M5
04	ISO 9409-1-40-4-M6
05	ISO 9409-1-50-4-M6
063	ISO 9409-1-63-4-M6
080	ISO 9409-1-80-6-M8
100	ISO 9409-1-100-6-M8
125	ISO 9409-1-125-6-M10
160	ISO 9409-1-160-6-M10
160L	ISO 9409-1-160-6-M10

Permissible fastenings, centering, and screw tightening torque

Size	① Screw Thread \emptyset	② Cylindrical pin \emptyset [mm]	ⓧ Max. screw-in depth on tool side [mm]	Ⓨ Max. screw-in depth on robot side [mm]	Ⓩ \emptyset and depth centering [mm]	Tightening torque [Nm]
031	M5	5	8	6.1	\emptyset 5H7x6	6.1
040	M6	6	10.5	9.1	\emptyset 6H7x6	10
050	M6	6	10	9.1	\emptyset 6H7x6	10
063	M6	6	11	9.8	\emptyset 6H7x6	10
080	M8	8	12	13.5	\emptyset 8H7x8	25
100	M8	8	13	12	\emptyset 8H7x8	25
125	M10	10	18	16	\emptyset 10H7x10	49
160	M10	10	19	16	\emptyset 10H7x10	49
160L	M10	10	20	18	\emptyset 10H7x10	49

The required cylindrical pin (2) is included in the accessory pack. The fastening screws (1) shown are already pre-assembled in the module.

Size	\emptyset D1 $\begin{smallmatrix} 0 \\ -0.03 \end{smallmatrix}$	\emptyset D2 $\begin{smallmatrix} +0.02 \\ 0 \end{smallmatrix}$	T1	T2
031	20	20	4	4
040	25	25	6	4
050	31.5	31.5	6	6
063	40	40	6	6
080	50	50	6	6
100	63	63	6	6
125	80	80	8	8
160	100	100	8	8
160L	100	100	8	8

1. The cylindrical pin (2) can be used to center the AGM-XY.
2. Attach AGM-XY to the robot interface by tightening the pre-assembled screws (1), see table: Permissible fastenings, centering, and screw tightening torque.
3. The pneumatic connection and electrical cables are fastened, bundled, and mounted with strain relief to ensure maximum freedom of movement during use.

4.3 Adapter plates

Available adapter plates

Adapter plate	ID number
A-IS0031/IS0040	1600680
A-IS0040/IS0031	1601226
A-IS0040/IS0050	1601228
A-IS0050/IS0040	1601229
A-IS0050/IS0063	1601240
A-IS0063/IS0050	1601241
A-IS0063/IS0080	1601243
A-IS0080/IS0063	1601244
A-IS0080/IS0100	1601245
A-IS0100/IS0080	1601246
A-IS0100/IS0125	1601248
A-IS0125/IS0100	1601249
A-IS0125/IS0160	1601250
A-IS0160/IS0125	1601252
A-IS0160/IS0200	1601254
A-IS0200/IS0160	1601255
A-IS0200/IS0200-12xM16	1601256

4.4 Compressed air connection

NOTICE

Possible damage to the AGM-XY!

Exceeding the maximum permissible handling weight or the permissible mass moment of inertia may damage the AGM-XY.

- Compensatory movements must always be performed without impact or rebound.
- To do this, ensure sufficient throttling and/or damping.
- Observe the diagrams and information in the catalog data sheet.

NOTICE

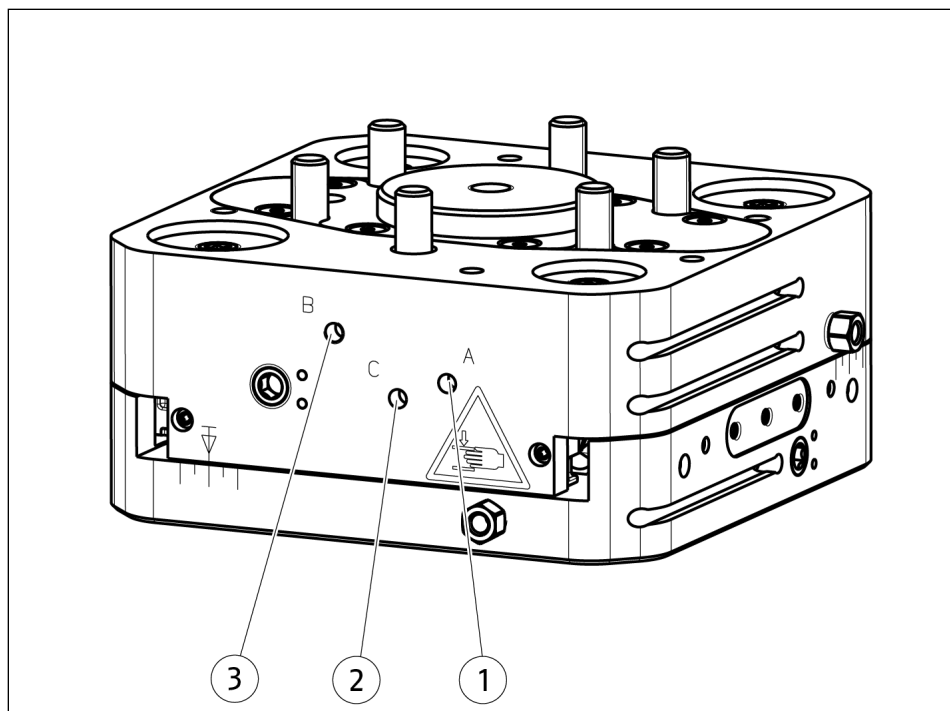
Observe the requirements for the air supply, ▶ 3 [14].

NOTE

In the event of a pressure drop or emergency stop, the AGM-XY returns to its initial position.

NOTE

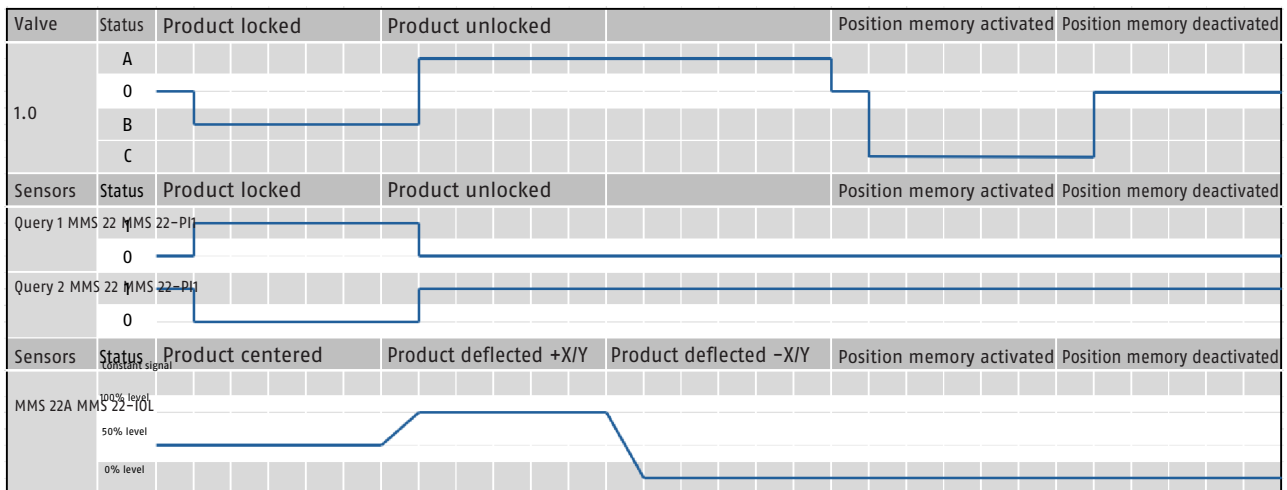
In the version without position memory, connection C has no function.



Compressed air connection

Size	Item ① Connection A, unlock Thread Ø	Item ② Connection C, pos. storage tank Thread Ø	Item ③ Connection B, lock Thread Ø
031	M5	M5	M5
040	M5	M5	M5
050	M5	M5	M5
063	M5	M5	M5
080	M5	M5	M5
100	G1/8	G1/8	G1/8
125	G1/8	G1/8	G1/8
160	G1/8	G1/8	G1/8
160L	G1/8	G1/8	G1/8

Flowchart



4.5 Mounting sensors

NOTE

When mounting and connecting the sensors, observe the Sensor Assembly and Operating Manual.

The product is prepared for the use of sensors.

- For exact type designations of suitable sensors, see the catalog data sheet and ▶ 4.5.1 [□ 25].
 - For technical data on the appropriate sensors, see the installation and operating instructions and the catalog data sheet.
 - The installation and operating instructions and the catalog data sheet are included with the sensor and are available at schunk.com.
 - For information on handling sensors, visit schunk.com or contact your SCHUNK representative.
-

NOTE

Since the product cannot be moved to its end positions using compressed air, we recommend the following procedure for teaching the programmable sensors: MMS 22-A ▶ 4.5.3 [□ 28], MMS 22-IOL ▶ 4.5.4 [□ 30] and MMS 22-PI2 ▶ 4.5.6 [□ 34] as well as the installation and operating instructions for the respective sensor.

1. Position the robot so that the product is suspended.
2. Then move it to the end positions by hand.



⚠ WARNING

Risk of crushing fingers

Do not put your fingers in the gap.

3. "Zero" the sensor in both end positions (teach the sensor system the system limits).
-

NOTE

Recommendation for stroke limitation

Teach the entire range, then reduce the stroke using the stroke adjustment.

NOTE

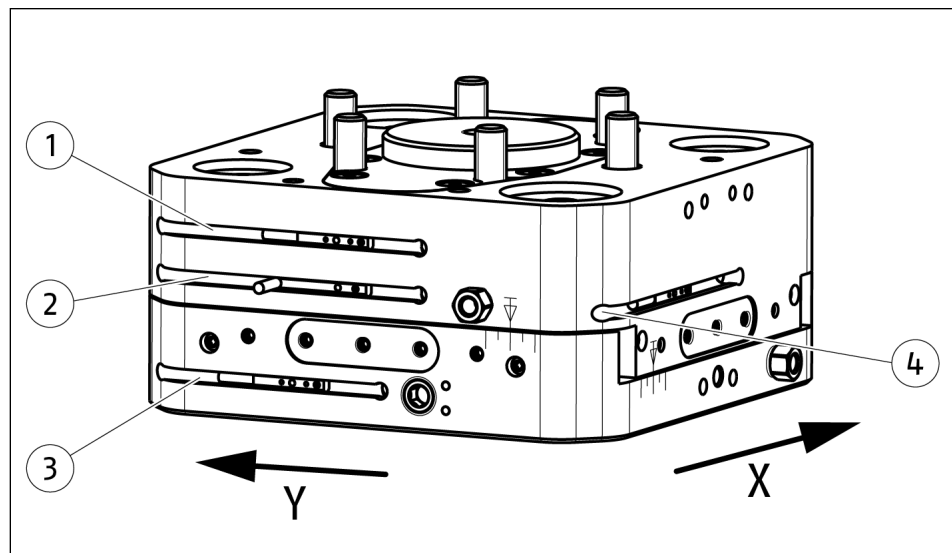
Recommendation for spring/air cartridges

Turn the cartridges back to reach the end position completely. Then teach-in and screw the cartridges back in again.

4.5.1 Overview of sensors

Size	MMS 22	MMS 22-A	MMS 22-PI1	MMS 22-PI2	MMS 22-IOL
031	✓	✓	✓	✓	✓
040	✓	✓	✓	✓	✓
050	✓	✓	✓	✓	✓
063	✓	✓	✓	✓	✓
080	✓	✓	✓	✓	✓
100	✓	✓	✓	✓	✓
125	✓	✓	✓	✓	✓
160	✓	✓	✓	✓	✓
160L	✓	✓	✓	✓	✓

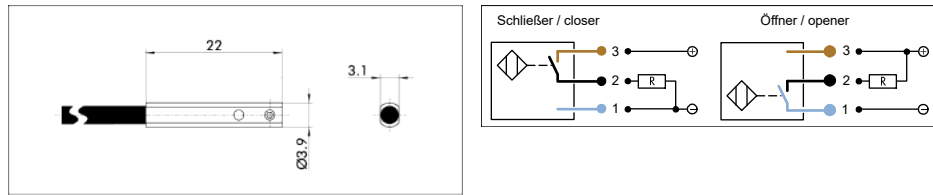
Grooves and probes



Sensor	Groove 1	Groove 2	Groove 3	Groove 4
MMS 22	Unlocked	locked	-	-
MMS 22-A	-	-	Deflection Y	Deflection X
MMS 22-PI1	Unlocked	locked	-	-
MMS 22-PI2	-	-	Deflection Y	Deflection X
MMS 22-IOL	-	-	Deflection Y	Deflection X

4.5.2 Installing the MMS 22 magnetic switch

Sensor and circuit diagram



NOTICE

Material damage due to an incorrect tightening torque!

If the threaded pin is tightened with an incorrect tightening torque, the product may be damaged.

- Observe a maximum tightening torque of 10 Ncm for the set-screws.

NOTE

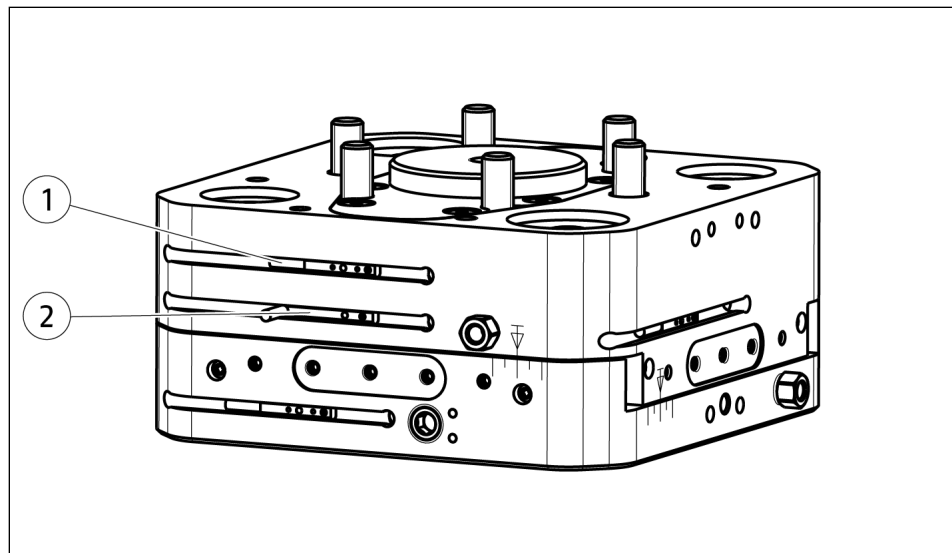
Ferromagnetic components change the switching positions of the sensor. Example: Adapter plate made of mild steel.

For ferromagnetic adapter plates:

- First mount the product on the adapter plate.
- Then set the switching position of the sensor.

NOTE

- Do not use the sensor as a safety component.
- Do not pull on the cable of the sensor.
- Secure the cable and connection plug so that they are not taugt and cannot move during operation.
- Do not exceed the permitted bending radius of the cable.
- Do not allow the sensor to come into contact with hard objects and chemicals (e. g., nitric acid, chromic acid and sulfuric acid).



Compensation unit
Locked



Compensation unit
Unlocked

⚠ WARNING

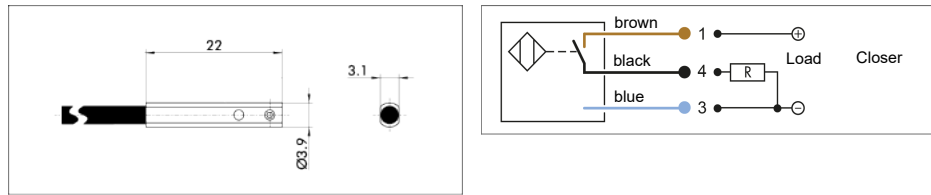
Risk of crushing fingers

Do not insert fingers into the gap.

- 1.** Apply pressure to connection B.
⇒ AGM-XY is locked.
 - 2.** Push the magnetic switch into the profile groove (2) until it switches.
 - 3.** Secure the magnetic switch in this position with the threaded pin.
 - 4.** Unlock and relock AGM-XY to test the function.
-
- 1.** Apply pressure to connection A.
⇒ AGM-XY is unlocked.
 - 2.** Push the magnetic switch into the profile groove (1) until it switches.
 - 3.** Secure the magnetic switch in this position with the threaded pin.
 - 4.** Lock and unlock AGM-XY to test the function.

4.5.3 Installing the MMS 22-A magnetic switch

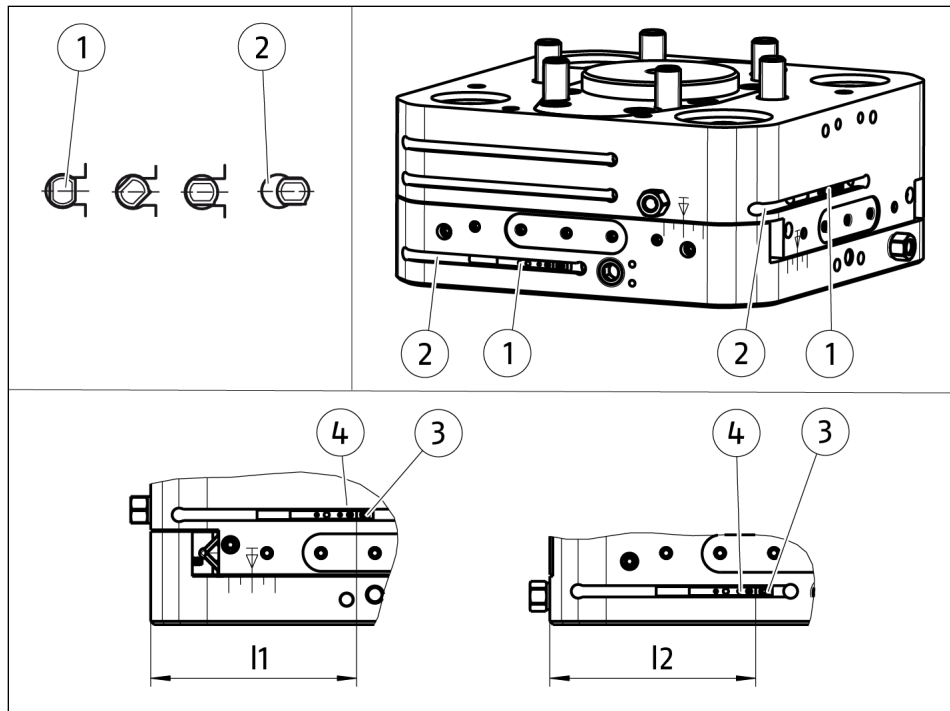
Sensor and circuit diagram



NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximum tightening torque.



NOTE

The slot nut is not set to the dimensions of the MMS 22-A sensor (160L without stop) upon delivery, so the distance must be readjusted for this sensor beforehand.

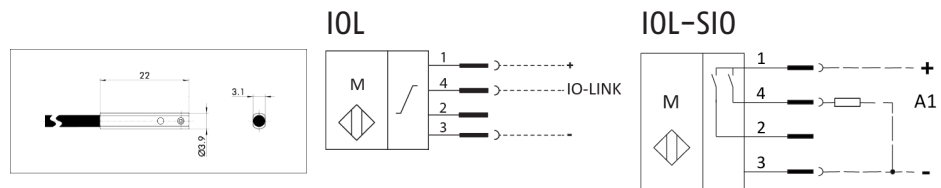
Loosen the T-slot nut, set it to the l1 dimension, and tighten it, see the following table.

1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see Translation of Sensor Assembly and Operating Manual.

Size	l1 [mm]	l2 [mm]
031	37.5	37.5
040	37.5	51.5
050	42	38
063	57	71.5
080	63.4	63.8
100	73	72.5
125	90	88
160	109	106
160L	116.2	117.2

4.5.4 Installing the MMS 22-IOL magnetic switch

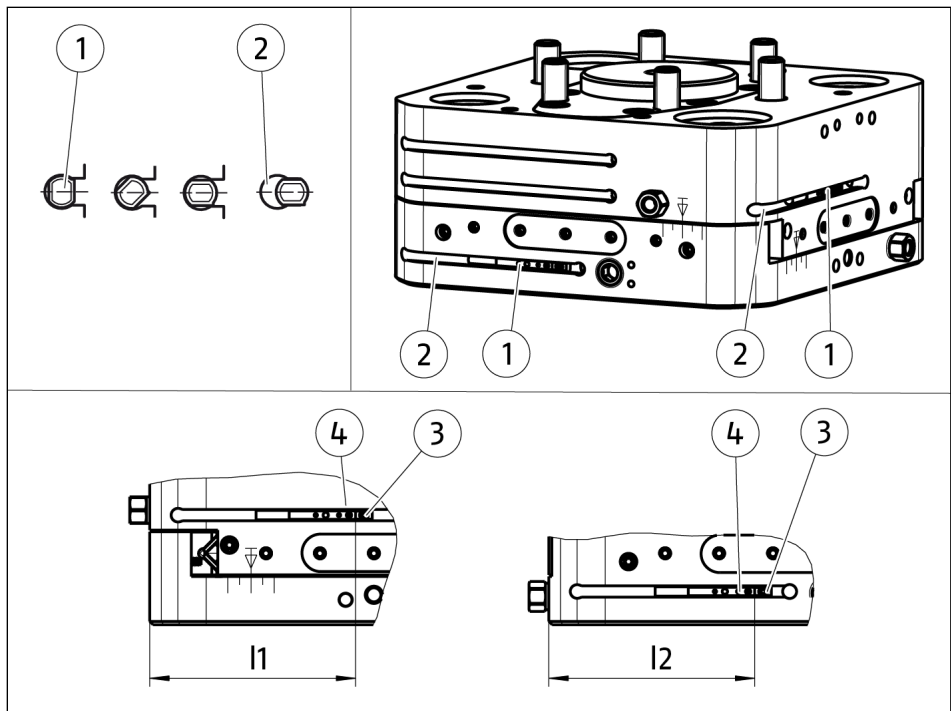
Sensor and circuit diagram



NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximum tightening torque.



NOTE

The groove nut is not set to the dimensions of the MMS 22-IOL sensor (160L without stop) upon delivery, so the distance must be readjusted for this sensor beforehand.

Loosen the T-slot nut, set it to the I1 dimension, and tighten it; see the table below.

NOTE

The slotted nuts are set to the dimensions of the PI2 sensor (160L without stop) upon delivery, so the distance must be readjusted for this sensor beforehand.

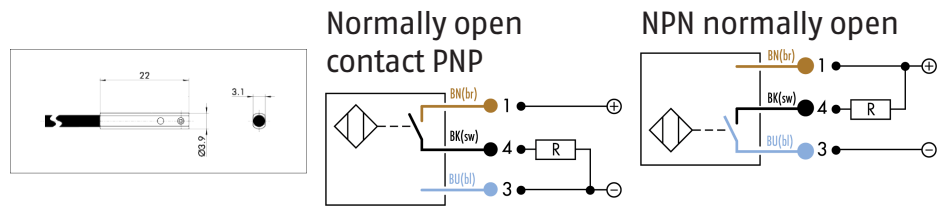
Loosen the slotted nuts, adjust to the dimension I1 or I2, and retighten, see the following table.

1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see Translation of Sensor Assembly and Operating Manual.

Size	l1 [mm]	l2 [mm]
031	39	47.2
040	39	53
050	43	40
063	56.5	74
080	62	62
100	72	72.5
125	86.5	88.7
160	118	119.5
160L	118	119.5

4.5.5 Installing the MMS 22-PI1 programmable magnetic switch

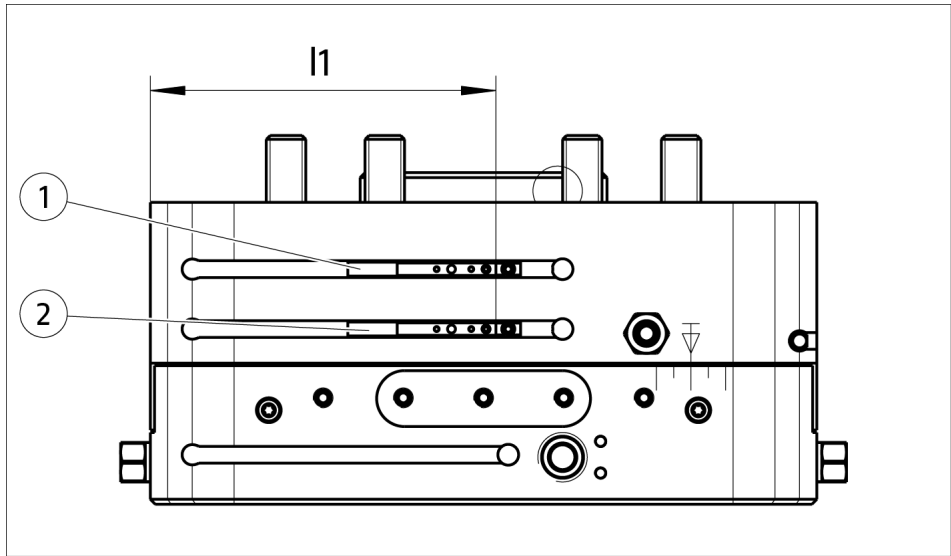
Sensor and circuit diagram



NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximum tightening torque.



NOTE

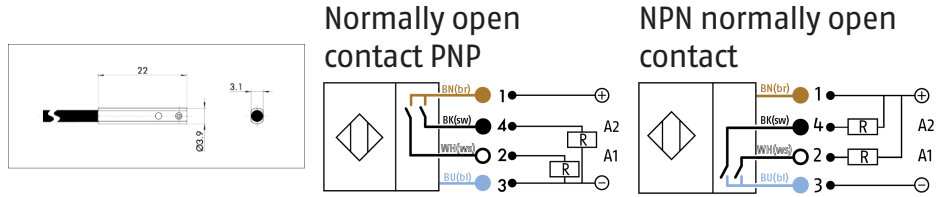
- The slotted blocks are not set to the PI1 sensor dimension (160L without stop) upon delivery, so the distance must be readjusted for this sensor beforehand. Loosen the slotted blocks, set them to the l1 or l2 dimension, and retighten them; see the table below.

1. Turn sensor 1 (1) into the groove (2).
OR: Slide the sensor 1 (1) into the groove (2) until the sensor 1 (1) stops at the T-nut (3).
2. Secure the sensor 1 (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor 1 (1), see Sensor Assembly and Operating Manual.
4. Repeat steps for sensor 2.

Size	l1 [mm]
031	37.5
040	43
050	49
063	62
080	75
100	110
125	110
160	159
160L	159

4.5.6 Installing the MMS 22-PI2 programmable magnetic switch

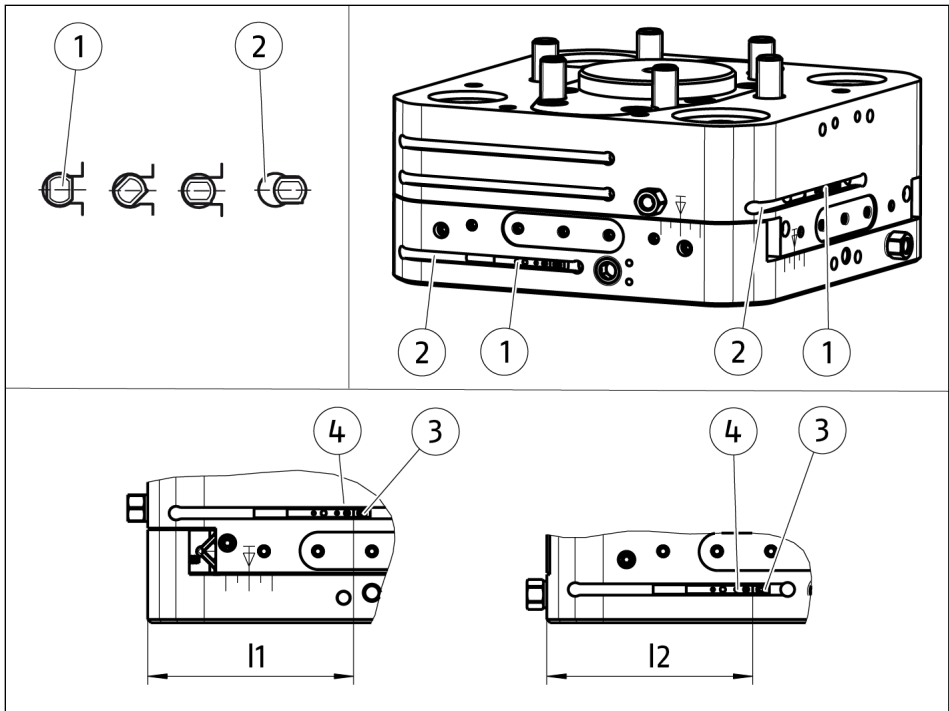
Sensor and circuit diagram



NOTICE

Risk of damage to the sensor during assembly!

- Observe the maximum tightening torque.



NOTE

The slot nut is set to the dimensions of the PI2 sensor upon delivery (160L without stop).

Therefore, the distance does not need to be adjusted for this sensor.

1. Turn the sensor (1) into the groove (2).
OR: Slide the sensor (1) into the groove (2) until the sensor (1) stops at the T-nut (3).
2. Secure the sensor (1) using the set-screw (4).
Tightening torque: 10 Ncm
3. Adjust sensor (1), see Translation of Sensor Assembly and Operating Manual.

Size	l1 [mm]	l2 [mm]
031	39.9	48.2
040	39.5	53.5
050	49	47
063	59	73
080	62.7	63
100	72.5	73
125	88.2	89.5
160	-	-
160L	118.5	120.4

4.6 Stroke adjustment

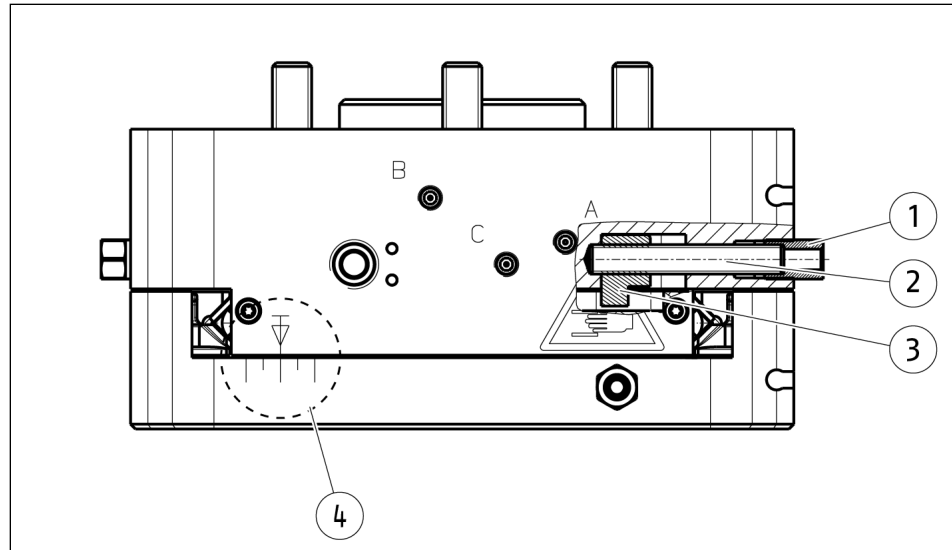
NOTE

The stroke limit is activated on delivery of sizes 80–200.

Set to the desired compensation stroke before commissioning.

The stroke in the X and Y directions is set as follows.

The stroke setting is available four times.



1. Loosen the clamping nut (1).

NOTE

Only loosen, do not unscrew!

2. Turn the threaded pin using a hex key (2).
This adjusts the stroke via the stroke pin (3).
3. The adjustment range is indicated on the scale (4) (size 200 does not have a scale).
4. Tighten the clamping nut (1) again.

NOTE

We recommend only using the stroke limiter for vertical axes and not for continuous loading on horizontal axes.

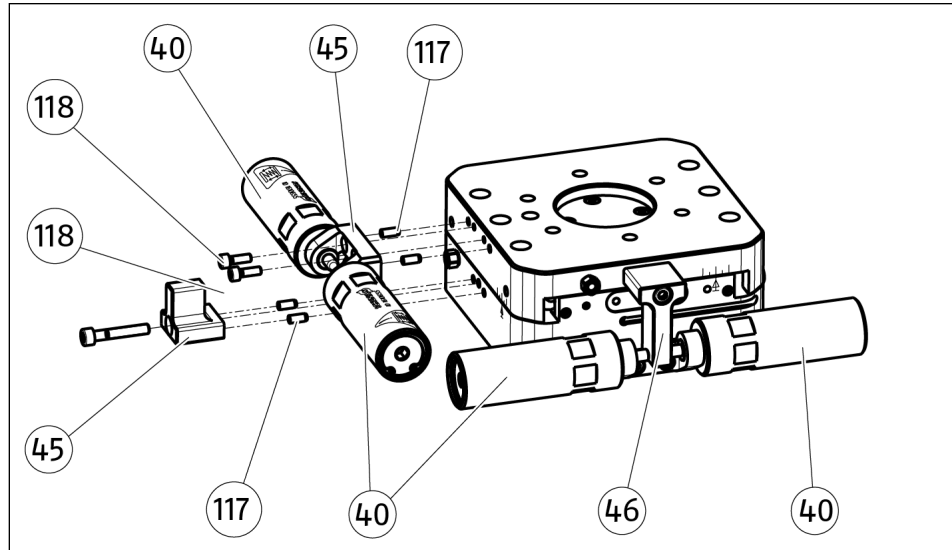
Spring or air cartridges should be used to compensate for weight force in horizontal positions.

4.7 Weight compensation using spring or air cartridges

When the AGM-XY is installed horizontally, weight compensation can be achieved by attaching spring or air cartridges.

4.7.1 Fitting spring and air cartridges

Both cartridge types are mounted in the same way



NOTE

Depending on the application, the cartridge holders can be screwed onto the respective opposite outer surfaces. Note the interfering contour.

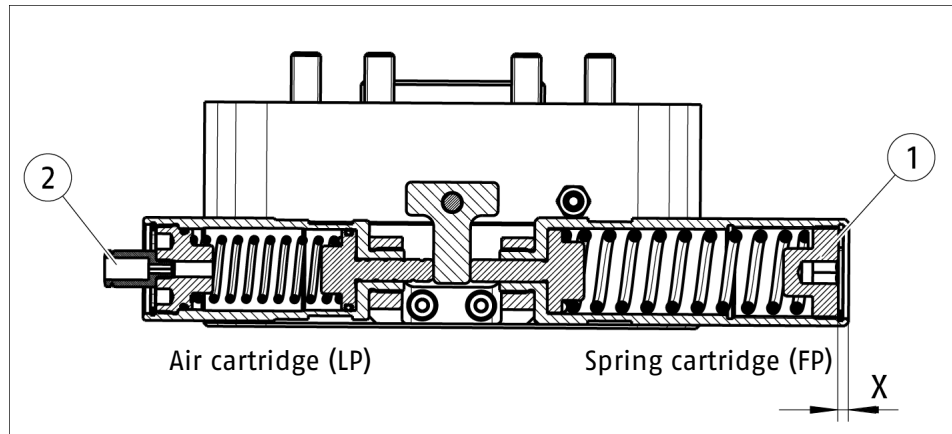
1. Insert the cylindrical pins (117).
2. Attach the holder (41) and tighten with the screws (118).
3. Insert the cylindrical pins (117).
4. Screw the short stop (45) or long stop (46) tight with the screw (119).
5. Screw the cartridge (40) into the holder (41) until it makes contact and tighten.

First grease the contact surface between the stop (45/46) and the plunger of the cartridge (40). ▶ 6.1 [43]

4.7.2 Setting the spring and air cartridges

NOTE

The maximum stroke of the spring and air cartridge corresponds to the maximum stroke of the size.



Spring cartridge (FP)



⚠ WARNING

The cartridges are under spring tension!

Upon delivery, the spring cartridges are set to the minimum force without plunger deflection (dimension X).

- The return force of the spring cartridges can be continuously adjusted using the adjusting screw (1). Turning in the adjusting screw (1) increases the minimum force of the spring cartridge and thus the increase in spring force per mm of plunger deflection by the spring rate. (mm screw-in depth x spring rate, see example and table)
- The spring cartridges are adjusted by the customer to enable a balance in terms of the mounting dimensions and the position of the mass in the XY planes.

Example:

- A return force of 60 N is desired for the BG 063. The minimum force set at the factory is 50 N and must therefore be increased by 10 N.
 - Force increase 10 N ÷ spring rate 5.5 N/mm = 1.8 mm. Therefore, screw in the adjusting screw by 1.8 mm.
- ⇒ After adjustment, the spring cartridge has a restoring force of approx. 60 N.

NOTE

The minimum force increases by the spring rate when the product is deflected (plunger deflection) (set return force 60 N, see example above).

The product deflects 2 mm against the spring cartridge, which corresponds to 2 mm deflection x 5.5 N spring rate = 11 N.

When deflected, the spring cartridge achieves a total force of 71 N (60 N + 11 N).

Size	Min. force FP1/FP2 [N]	Dimension X [mm]	Force range FP 1 [N]	Force range FP 2 [N]	Increase in spring force per mm of plunger deflection FP 1 [N/mm]	Increase in spring force per mm of plunger deflection FP 2 [N/mm]
031	5	2.1	5-45	-	2.5	-
040	5	2.1	5-45	-	2.5	-
050	22	2.2	22-90	-	3.5	-
063	50	2.6	50-190	-	5.5	-
080	100	2.8	100-370	-	12.4	-
100	200/320	3.4	200-420	320-700	7.9	13.8
125	375/600	3.5	375-700	600-1150	7.6	12.9
160	650/1000	5	650-1175	1000-1800	15	23.5
160L	900/1500	5.5	900-1630	1500-2750	16.6	28.3

Air cartridge (LP)

Applying compressed air from 0–6 bar at air connection 2 (not included in the scope of delivery) increases the specified minimum force of the air cartridge and thus the return force. (by the specified value per bar, see table, last column).

NOTE

The spring of the air cartridge cannot be adjusted!
The return force can only be adjusted by means of air pressure.

Example:

- A return force of 105 N is desired for the BG 063. The minimum force set at the factory is (50 N) and must therefore be increased by 55 N.
 - Force increase 55 N ÷ force increase per bar 27 N/bar = 2 bar. Therefore, set the pressure to 2 bar.
- ⇒ After adjustment, the air cartridge has a restoring force of approx. 105 N.

NOTE

The minimum force increases when the product is deflected (plunger deflection) by the spring rate (set return force 105 N, see example above).
The product deflects 2 mm against the air cartridge, corresponding to 2 mm deflection x 1.7 N spring rate = 3.4 N.
When deflected, the air cartridge achieves a total force of 108.4 N (105 N + 3.4 N).

Size	Min. force LP1/LP2 [N]	Force range LP1 0–6 bar (spring + air)	Force range LP 2 0–6 bar (spring + air)	Increase in spring force per mm of plunger deflection LP1 [N/mm]	Increase in spring force per mm of plunger deflection LP2 [N/mm]	Force increase per bar LP1/LP2 [N]
031	5	5–45	–	0.2	–	8
040	5	5–45	–	0.2	–	8
050	25	25–100	–	0.7	–	11
063	50	50–200	–	1.7	–	27
080	110	110–330	–	4	–	38
100	150	150–490	300–640	5.2	10.8	55/55
125	400/620	400–920	620–1130	16	9.7	90/90

Size	Min. force LP1/LP2 [N]	Force range LP1 0-6 bar (spring + air)	Force range LP 2 0-6 bar (spring + air)	Increase in spring force per mm of plunger deflection LP1 [N/mm]	Increase in spring force per mm of plunger deflection LP2 [N/mm]	Force in- crease per bar LP1/LP2 [N]
160	650/1100	650-1350	1100-1800	7.7	10	120/120
160L	790/1460	790-1789	1460-2460	8	18.3	170

5 Troubleshooting

Malfunction / error that occurred	Possible cause / Corrective action
The AGM-XY deflates when stationary	Air connection not installed correctly. Unused air connections open.
The AGM-XY loses air when in operation	The AGM-XY must be returned to the factory for inspection
The AGM-XY is locked.	The AGM-XY is locked upon delivery from size 080 onwards. Unlock the stroke again during commissioning. ▶ 4.6 [36]

6 Maintenance

The product is maintenance-free if the environmental and operating conditions are observed, ▶ 2.4 [49].

Schunk recommends lubrication. ▶ 6.1 [43]

Although the product is maintenance-free, it should be regularly inspected visually to ensure that it functions properly.

In the case of extreme ambient and operating conditions, such as

- Contaminated environments
- High temperatures
- Operations using compressed air quality that does not meet ISO 8573-1: 7:4:4

the product must be cleaned, checked for damage and wear, relubricated and the seals replaced as required.

This will help achieve a long service life even under extreme ambient and operating conditions.

6.1 Lubricants/lubrication points (basic lubrication)

During maintenance, treat all greasing areas with lubricant. Apply a thin film of lubricant using a lint-free cloth.

SCHUNK recommends the listed lubricants.

Lubricant point	Lubricant
Seals and sealing surfaces	SCHUNK grease 1
Centering piston	SCHUNK grease 1
Metallic sliding surfaces	SCHUNK grease 1
Linear guides	SCHUNK grease 1

Details regarding SCHUNK lubricant designations are available at [schunk.com/lubricants](https://www.schunk.com/lubricants).

The product contains food-compliant lubricants as standard.

The requirements of standard EN 1672-2:2020 are not fully met.

NOTE

- Change contaminated food-compliant lubricant.
- Observe information in the safety data sheet from the lubricant manufacturer.

6.2 Replace seal

Position of the item numbers ▶ 7 [📄 45]

1. Remove pressure lines and disconnect cable connections.
2. Unscrew the screws (132) and remove the robot flange (1).
3. Pull the piston (10) out of the housing (2) together with the centering pin (8).

NOTICE

Do not damage any seals during reassembly.

4. Grease the new seal before installation. ▶ 6.1 [📄 43]

6.3 Maintaining and assembling the product

Maintenance

- Clean all parts thoroughly and check for damage and wear.
- Treat all greased areas with lubricant.
▶ 6.1 [📄 43]
- Oil or grease bare external steel parts.
- Replace all wear parts / seals.

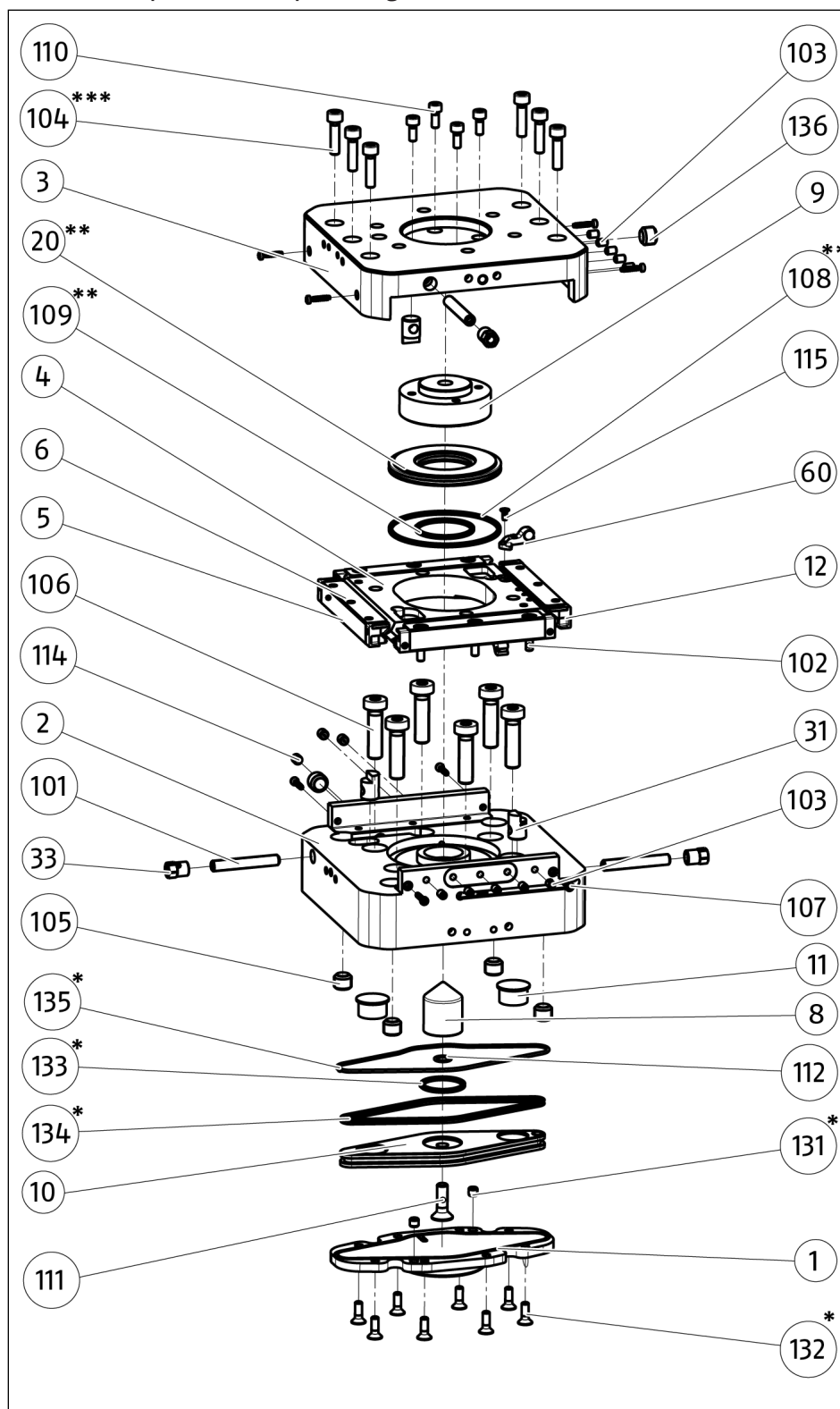
Assembly

Assembly is carried out in reverse order to disassembly when replacing the seal. Please note the following:

- Unless otherwise specified, all screws and nuts must be secured with Weicon No. 30243 and tightened to the specified torque.

7 assembly drawing

The following illustration is an example.
It is used as an illustration and for a classification of the individual components.
Deviations possible depending on size and version.



* Wearing part, replace during maintenance. Included in the spare parts package. Spare parts package can only be ordered as a complete set.

** Only available in the version with position memory

*** For sizes 031 – 063 threaded pins

8 Spare parts package

Size	ID number
031	1581537
040	1581538
050	1581539
063	1581550
080	1581551
100	1581556
125	1581558
160	1581993
160L	1581997

Contents of the spare parts package, ► 7 [\[45\]](#).

NOTE

The spare parts packages apply to both the basic version (AGM-XY) and the position memory version (e.g., AGM-XY-050-P).

9 Translation of the original declaration of incorporation

in terms of the Directive 2006/42/EG, Annex II, Part 1 Section B.

Manufacturer/
Distributor SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik
Bahnhofstr. 106 – 134
D-74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation: Compensation unit in XY direction / AGM-XY /pneumatic
ID number 1577130, 1577137, 1577153, 1577159, 1577181, 1577185, 1577187, 1577191,
1577193, 1577195

Product designation: Combination of AGM-XY and AGM-Z – AGM-XYZ
ID number 1591320, 1591324, 1591325, 1591326, 1591328, 1591329, 1591340,
1591342, 1591343, 1591345, 1601257, 1601259, 1601260, 1601261,
1601262, 1601263, 1601264, 1601265, 1601266, 1601268

Product designation: Additional function: Spring/air cartridge
ID number 1601825, 1601828, 1601841, 1601843, 1601844, 1601849, 1601850,
1610655, 1610682, 1610683, 1629643, 1629644, 1629649, 1629650,
1601827, 1601840, 1601842, 1601846, 1601847, 1601852, 1601853,
1610658, 1610684, 1610685, 1629645, 1629646, 1629651, 1629652

meets the following basic occupational health and safety of the Machinery Directive 2006/42/EC:

No. 1.1.1, No. 1.1.2, No. 1.1.3, No. 1.1.5, No. 1.3.2, No. 1.5.3, No. 1.5.4, No. 1.5.6, No. 1.5.8, No. 1.5.10, No. 1.5.11, No. 1.5.13

The partly completed machinery may not be put into operation until it has been confirmed that the machine into which the partly completed machinery is to be installed complies with the provisions of the Machinery Directive (2006/42/EC). The declaration shall be rendered invalid if modifications are made to the product.

Applied harmonized standards, especially:

EN ISO 12100:2010 Safety of machinery – General principles for design –
Risk assessment and risk reduction

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Stefanie Walter Address: refer to manufacturer's address

Signature: see original declaration

Lauffen/Neckar, December 2026

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

10 UKCA declaration of incorporation

in accordance with the Supply of Machinery (Safety) Regulations 2008.

Manufacturer/
Distributor SCHUNK Intec Limited
Clamping and gripping technology
3 Drakes Mews, Crownhill
MK8 0ER Milton Keynes

We hereby declare that on the date of the declaration the following partly completed machine complied with all basic safety and health regulations found in the "Supply of Machinery (Safety) Regulations 2008".

The declaration shall be rendered invalid if modifications are made to the product.

Product designation: Compensation unit in XY direction / AGM-XY / pneumatic
ID number 1577130, 1577137, 1577153, 1577159, 1577181, 1577185, 1577187, 1577191, 1577193, 1577195

Product designation: Combination of AGM-XY and AGM-Z – AGM-XYZ
ID number 1591320, 1591324, 1591325, 1591326, 1591328, 1591329, 1591340, 1591342, 1591343, 1591345, 1601257, 1601259, 1601260, 1601261, 1601262, 1601263, 1601264, 1601265, 1601266, 1601268

Product designation: Additional function: Spring/air cartridge
ID number 1601825, 1601828, 1601841, 1601843, 1601844, 1601849, 1601850, 1610655, 1610682, 1610683, 1629643, 1629644, 1629649, 1629650, 1601827, 1601840, 1601842, 1601846, 1601847, 1601852, 1601853, 1610658, 1610684, 1610685, 1629645, 1629646, 1629651, 1629652

The partly completed machine may not be put into operation until it has been confirmed that the machine into which the partly completed machine is to be installed complies with the provisions of the "Supply of Machinery (Safety) Regulations 2008".

Applied harmonized standards, especially:

EN ISO 12100:2010 Safety of machinery – General principles for design – Risk assessment and risk reduction

The special technical documentation according to Annex VII, Part B, belonging to the partly completed machine, has been created.

Person authorized to compile the technical documentation:
Marcel Machado, address: refer to manufacturer's address



Lauffen/Neckar, December 2026

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation

11 Information on the RoHS Directive, REACH Regulation and Substances of Very High Concern (SVHC)

RoHS Directive

SCHUNK products are classified as "large-scale stationary installations" or as "large-scale stationary industrial tools" within the meaning of Directive 2011/65/EU and its extension 2015/863/EU "on the restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS)", or fulfill their intended function only as part of one. Therefore products from SCHUNK do not fall within the scope of the directive at this time.

REACH Regulation

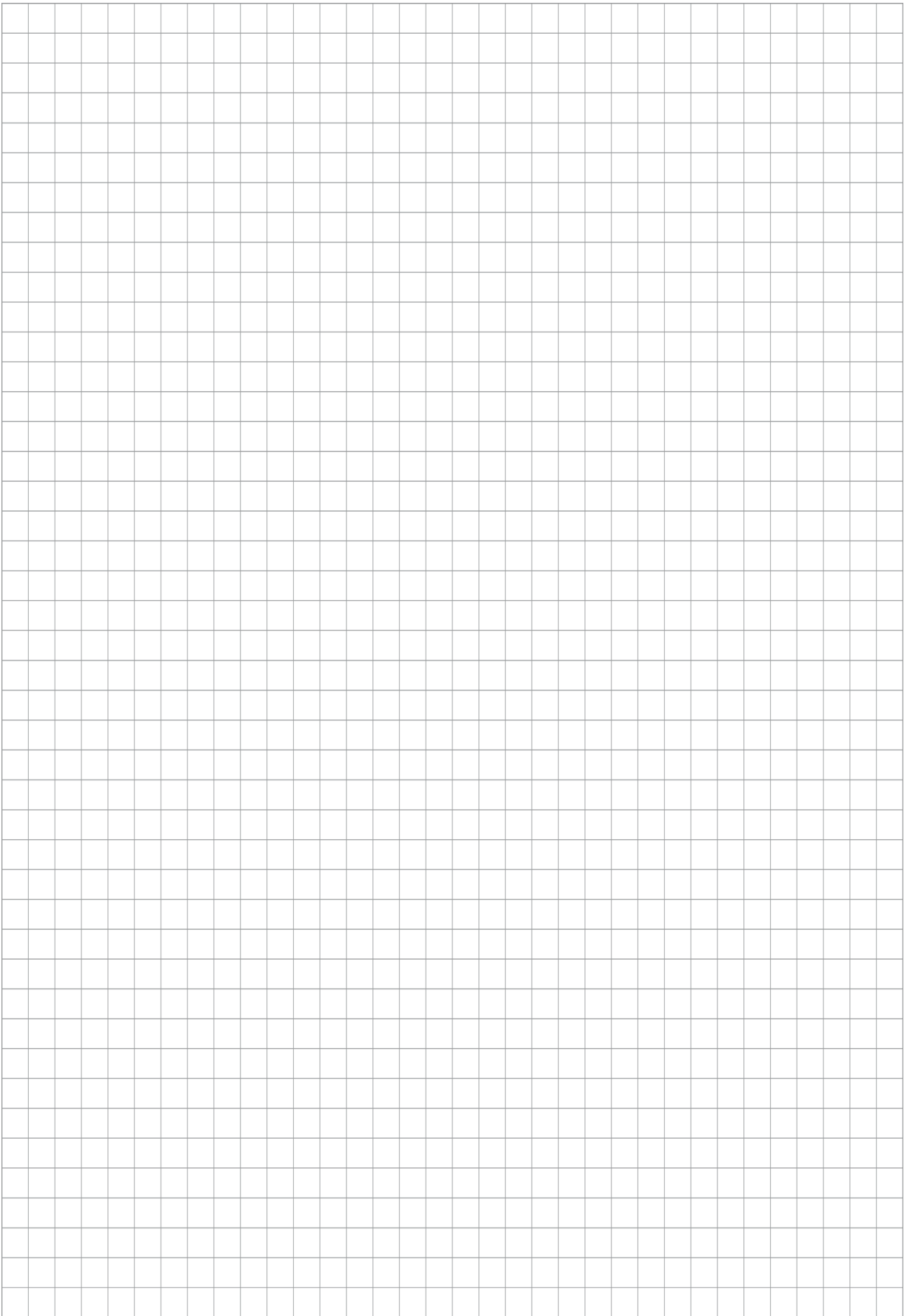
Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and the environment wherever possible.

Only in rare exceptional cases do SCHUNK products contain SVHC substances on the candidate list with a mass content above 0.1%. In accordance with Article. 33 (1) of Regulation (EC) No. 1907/2006, SCHUNK complies with its duty to "communicate information on substances in articles" and lists the components concerned and the substances used in an overview that can be viewed at schunk.com/SVHC.

Signature: see original declaration

Lauffen/Neckar, December 2026

Dr.-Ing. Manuel Baumeister,
Head of Systems Engineering,
Technology & Innovation







SCHUNK SE & Co. KG
Spanntechnik | Greiftechnik | Automatisierungstechnik

Bahnhofstr. 106 - 134
D-74348 Lauffen/Neckar
Tel. +49-7133-103-0
info@de.schunk.com
schunk.com

Folgen Sie uns | *Follow us*



Wir drucken nachhaltig | *We print sustainable*