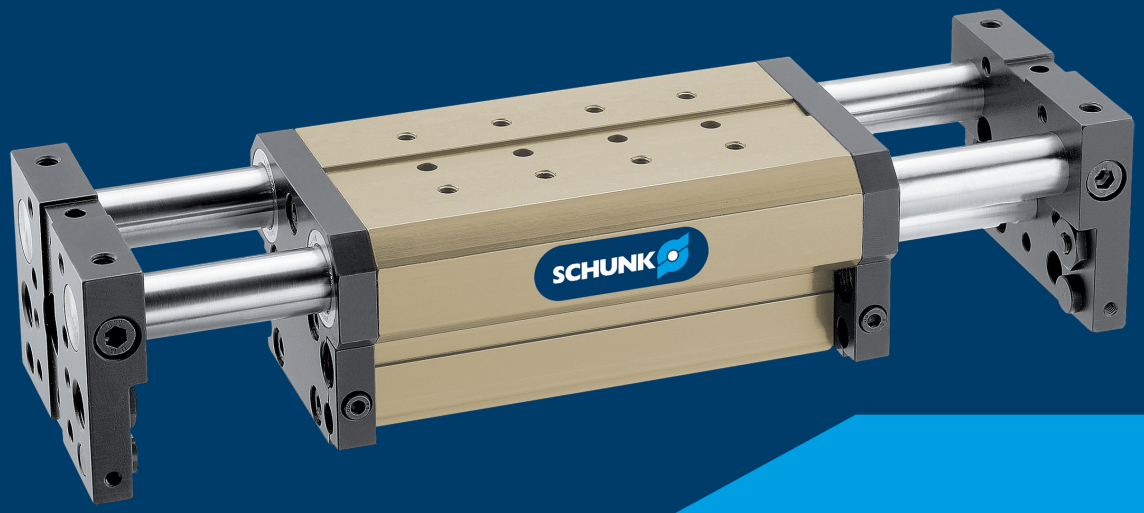
SCHUNK



KLM

Linear module

Hand in hand for tomorrow

Imprint

Technical changes:
We reserve the right to make alterations for the purpose of technical improvement.

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Dear Customer,

Thank you for trusting 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. Ask us questions and challenge us. We will find a solution!

Best regards,

Your SCHUNK team

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

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1 General

1.1 About this manual

This manual contains important information for a safe and appropriate use of the product.

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

Before starting work, the personnel must have read and understood this operating manual. Prerequisite for safe working is the observance of all safety instructions in this manual.

In addition to these instructions, the documents listed under ▸ 1.1.3 [🗋 6] are applicable.

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

1.1.1 Presentation of Warning Labels

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

⚠ DANGER

Dangers for persons!

Non-observance will inevitably cause irreversible injury or death.

⚠ WARNING

Dangers for persons!

Non-observance can lead to irreversible injury and even death.

⚠ CAUTION

Dangers for persons!

Non-observance can cause minor injuries.

CAUTION

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 *

Die mit Stern (*) gekennzeichneten Unterlagen können unter **schunk.com/downloads** heruntergeladen werden.

1.1.4 Sizes

This operating manual applies to the following sizes:

- KLM 25
- KLM 50
- KLM 100
- KLM 300

1.1.5 Variants

This operating manual applies to the following variations:

- KLM, intermediate stop ZZA on the piston side
- KLM, intermediate stop ZZA on the piston rod side

1.2 Warranty

If the product is used as intended, the warranty is valid for 24 months from the ex-works delivery date under the following conditions:

- Observe the specified maintenance and lubrication intervals
- Observe the ambient conditions and operating conditions

Parts touching the workpiece and wear parts are not included in the warranty.

1.3 Scope of delivery

The scope of delivery includes

- Linear module KLM in the version ordered
- 2x shock absorber LMST (KLM; 25, 50, 100, 300)
- 2x driver LMNS xxx01 (KLM 50, 100, 300)
- Assembly and Operating Manual
- Accessory pack

1.4 Accessories

The following accessories are required for the module:

- Proximity switches NI
- LMAS stop screw (optional)

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

1.4.1 Sensors

Designation	Size	Type
Inductive proximity switches	25	IN-40-S-M8
	50	IN-40-S-M8
	100	NI 30 KT
	300	NI 30 KT

- Exact type designation of the compatible sensors see catalog.
- Information on handling sensors is available at schunk.com or from SCHUNK contact persons.

2 Basic safety notes

2.1 Intended use

The product is exclusively designed for linear movement of useful loads into any desired position.

- The product may only be used within the scope of its technical data, ▸ 3 [🗋 15].
- 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 principles 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. 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

It is not intended use if the product is used, for example, as a pressing tool, stamping tool, lifting gear, guide for tools, cutting tool, clamping device or a drilling tool.

- Any utilization that exceeds or differs from the appropriate use is regarded as misuse.

2.3 Constructional 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 Spare parts

Use of unauthorized spare parts

Using unauthorized spare parts can endanger personnel and damage the product or cause it to malfunction.

- Use only original spare parts or spares authorized by SCHUNK.

2.5 Environmental and operating conditions

- Make sure that the product is used only in the context of its defined application parameters, ▸ 3 [🗋 15].
- Make sure that the product is not exposed to excessive vibrations and/or strokes.
- 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.
- Make sure that the environment is clean and the ambient temperature corresponds to the specifications per the catalog.
- Ensure that no strong magnetic fields impair the function of the product.
  Contact your SCHUNK partner if the product is to be used in strong magnetic fields.

2.6 Personnel qualification

Inadequate qualifications of the personnel

If the personnel working with the product is not sufficiently qualified, the result may be serious injuries and significant property damage.

- All work may only be performed by qualified personnel.
- Before working with the product, the personnel must have read and understood the complete assembly and operating manual.
- Observe the national safety regulations and rules and general safety instructions.

The following personal qualifications are necessary for the various activities related to 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 were instructed by the operator about the delegated tasks and possible dangers due to improper behaviour.

Service personnel of the manufacturer Due to its technical training, knowledge and experience, service personnel of the manufacturer is able to perform the delegated tasks and to recognize and avoid possible dangers.

2.7 Personal protective equipment

Use of personal protective equipment

Personal protective equipment serves to protect staff against danger which 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.

2.8 Notes on safe operation

Incorrect handling of the personnel

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- 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. This does not apply to products that are designed for special environments.
- Eliminate any malfunction immediately.
- Observe the care and maintenance instructions.

- Observe the current safety, accident prevention and environmental protection regulations regarding the product's application field.

2.9 Transport

Handling during transport

Incorrect handling during transport may impair the product's safety and cause serious injuries and considerable material damage.

- When handling heavy weights, use lifting equipment to lift the product and transport it by appropriate means.
- Secure the product against falling during transportation and handling.
- Stand clear of suspended loads.

2.10 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.

2.11 Disposal

Handling of disposal

The incorrect handling of disposal may impair the product's safety and cause serious injuries as well as considerable material and environmental harm.

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

2.12 Fundamental dangers

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.

2.12.1 Protection during handling and assembly

Incorrect handling and assembly

Incorrect handling and assembly may impair the product's safety and cause serious injuries and considerable material damage.

- Have all work carried out by appropriately qualified personnel.
- For all work, secure the product against accidental operation.
- Observe the relevant accident prevention rules.
- Use suitable assembly and transport equipment and take precautions to prevent jamming and crushing.

Incorrect lifting of loads

Falling loads may cause serious injuries and even death.

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

2.12.2 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.

2.12.3 Protection against dangerous movements

Unexpected movements

Residual energy in the system may cause serious injuries while working with the product.

- Switch off the energy supply, ensure that no residual energy remains and secure against inadvertent reactivation.
- Never rely solely on the response of the monitoring function to avert danger. Until the installed monitors become effective, it must be assumed that the drive movement is faulty, with its

action being dependent on the control unit and the current operating condition of the drive. Perform maintenance work, modifications, and attachments outside the danger zone defined by the movement range.

- To avoid accidents and/or material damage, human access to the movement range of the machine must be restricted. Limit/prevent accidental access for people in this area due through technical safety measures. The protective cover and protective fence must be rigid enough to withstand the maximum possible movement energy. EMERGENCY STOP switches must be easily and quickly accessible. Before starting up the machine or automated system, check that the EMERGENCY STOP system is working. Prevent operation of the machine if this protective equipment does not function correctly.

2.12.4 Protection against electric shock

Possible electrostatic energy

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

- The operator must ensure that all components and assembly groups are included in the local potential equalisation in accordance with the applicable regulations.
- While paying attention to the actual conditions of the working environment, the potential equalisation must be implemented by a specialist electrician according to the applicable regulations.
- The effectiveness of the potential equalisation must be verified by executing regular safety measurements.

2.13 Information about special dangers

⚠ WARNING

Risk of injury caused by crushing and impacts when moving the unit or attachments!

Risk of injury due to attachments breaking or becoming loose!

⚠ WARNING

Risk of injury from objects falling and being ejected!

Falling and ejected objects during operation can lead to serious injury or death.

- Take appropriate protective measures to secure the danger zone.

⚠ WARNING

Risk of injury due to unexpected movements!

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

⚠ WARNING

Risk of injury when the machine/system moves unexpectedly in the case of a loss of power supply or control system malfunction.

Use of a holding brake on the linear axis.

3 Technical data

Size	25	50	100	300
Ambient temperature [°C]	5 – 60			
Fluid consumption / 10 mm stroke	1.13	2	4.9	12.57
IP rating	40			
Noise emission [dB(A)]	72			
Pressure medium	Compressed air (10µm): dry (non-condensing), oiled or not oiled Compressed air, compressed air quality according to ISO 8573-1:2010 [7:4:4]			
Min. pressure [bar]	3			
Max. pressure [bar]	8			
Nominal working pressure [bar]	6			

More technical data is included in the catalog data sheet. Whichever is the latest version.

4 Assembly

4.1 Design precautions

- A protective cover is recommended to minimize the risk of injury.
- Ensure that loose, solid and / or attached parts are tightened.
- Due to the high levels of kinetic energy, shock absorbers must be used
- Take into account possible that the operating pressure can drop due to power outages.
- Pay attention to the possibility of the failure of power supplies.
- Mount the compressed air so that a sudden retraction is prevented
- Pay attention to emergency shutdown facilities.
- Pay attention to what will happen after an emergency stop or abnormal stoppage. Ensure that nobody can be placed at risk or be injured when equipment is restarted.

4.2 Notes of Installation

- When mounting loads, take measures to prevent impermissible forces and torques.
- Choose a connection with a load that has its own guide mechanism, and make sure that it is aligned sufficiently.
- During operation, avoid contact with the linear module.
- Use a suitable screw tightening torque for mounting the linear module, or choose loads on the linear module in accordance with the generally applicable guidelines for screw connections.

4.3 Connections

4.3.1 Mechanical connection

⚠ WARNING

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

Moving the axes may cause serious injuries.

- Before performing assembly and adjustment works, switch off the energy supply.
- Make sure there is no residual energy in the system.

Check the evenness of the bolting surface.

The figure refers to the whole bolting surface.

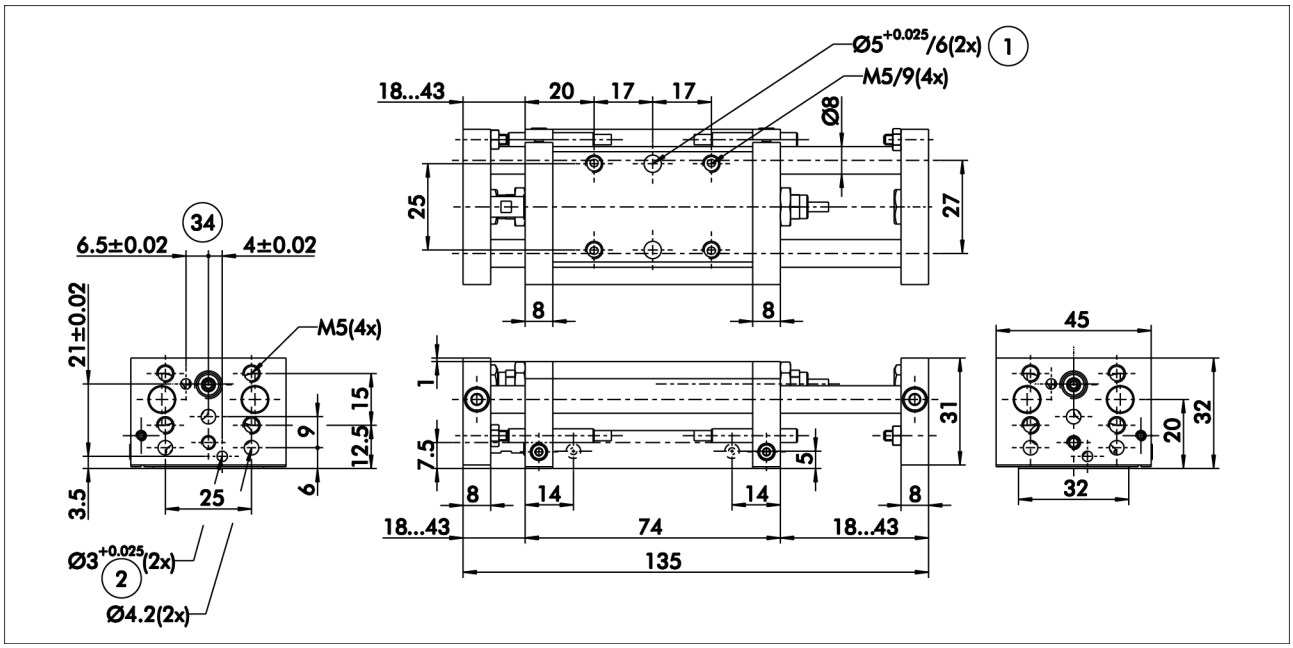
Zulässige Unebenheit [mm]
< 0.02

Tab.: Requirements for the evenness of the bolting surface

Mounting

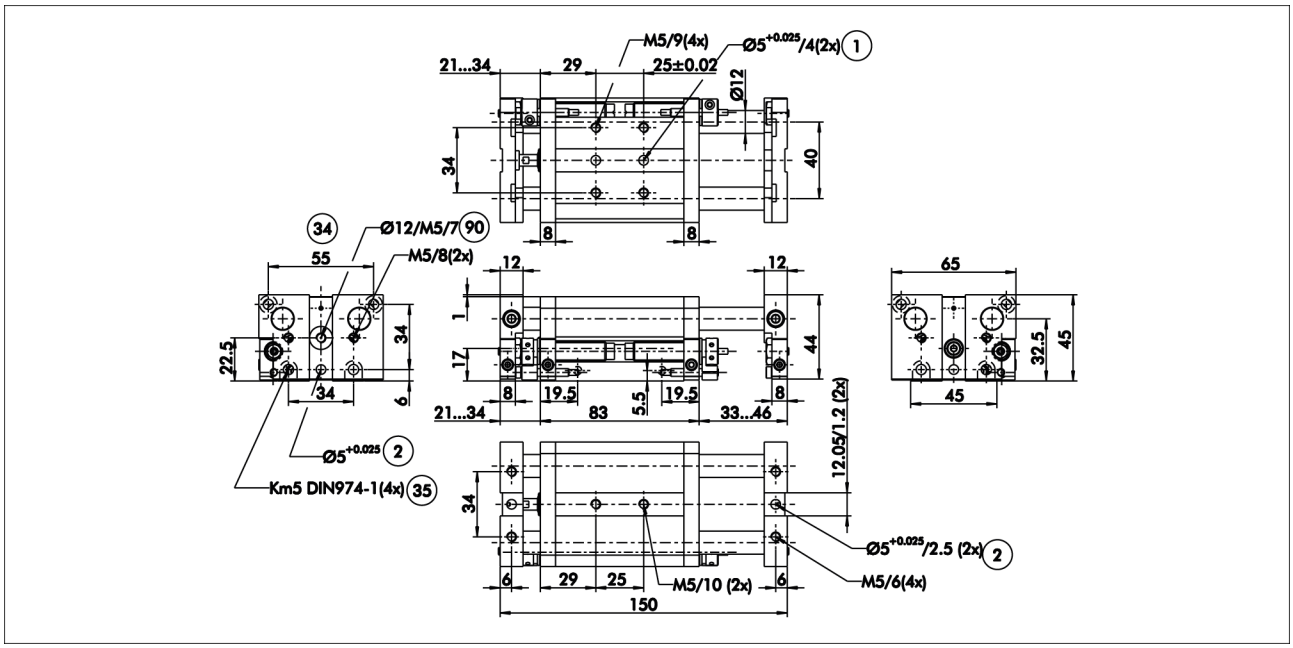
The linear module may be selectively attached to the body or the carriage. Similarly, the structure may be optionally attached to the end carriage or the base body.

The following drawings show the mounting of the linear module to the base body and the securing of the structure of the face plates.



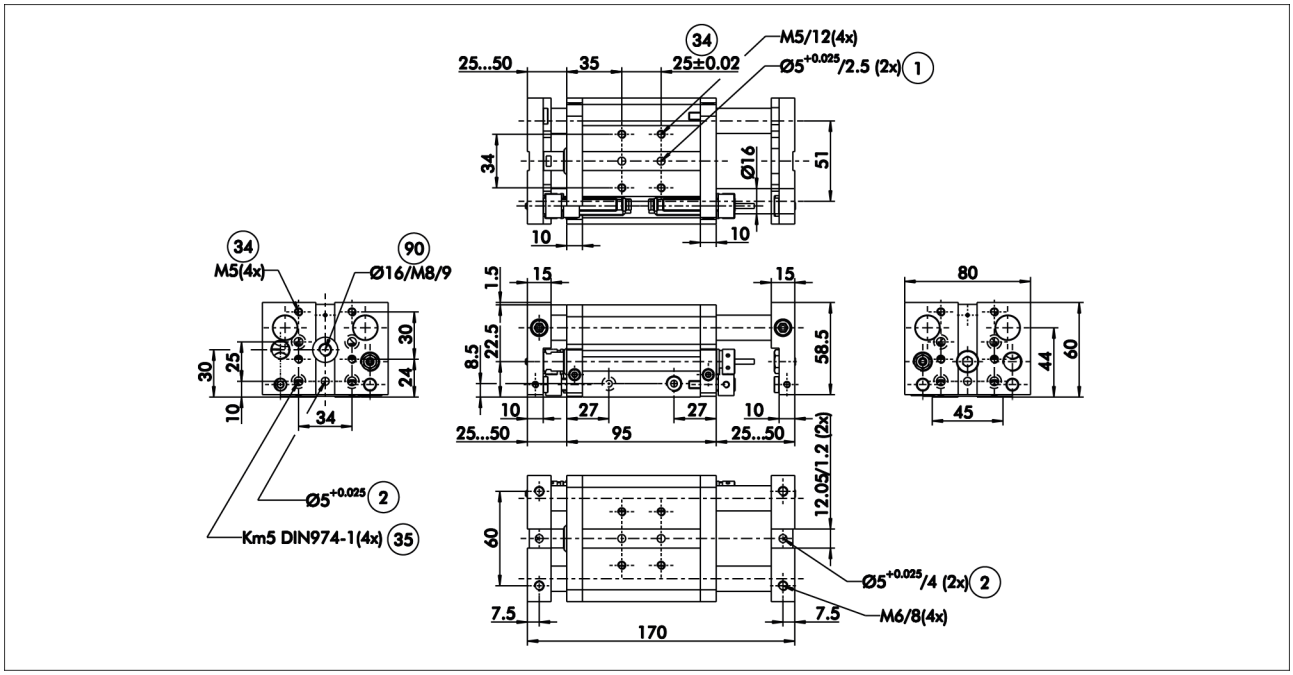
Assembly options KLM 25

1	Connection linear module	2	Connection assembly
34	On both connecting surfaces		



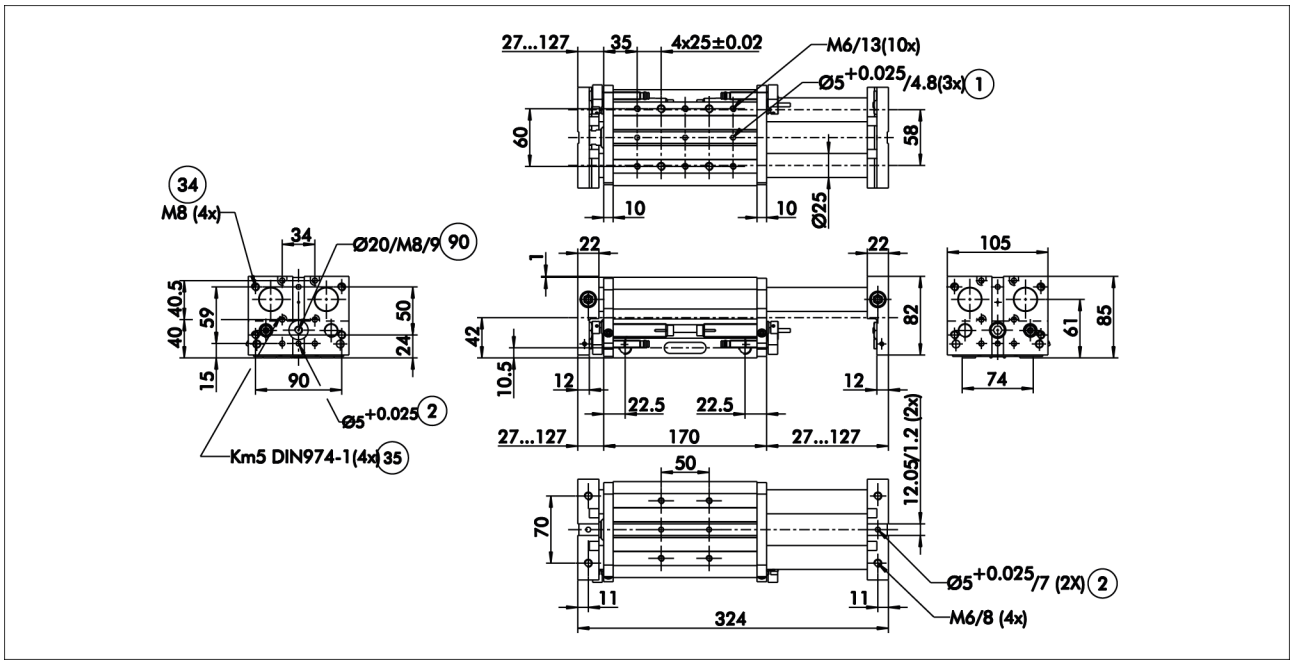
Assembly options KLM 50

1	Connection linear unit	2	Connection assembly
34	On both connection surfaces	35	back
90	Through bore in end plate and threaded into the base body (one side only)		



Assembly options KLM 100

1	Connection linear module	2	Connection assembly
34	On both connection surfaces	35	back
90	Through bore in end plate and threaded into the base body (one side only)		



Assembly options KLM 300

1	Connection linear module	2	Connection Assembly
34	On both connection surfaces	35	back
90	Through bore in end plate and threaded into the base body (one side only)		

4.3.2 Pneumatic connection

⚠ WARNING

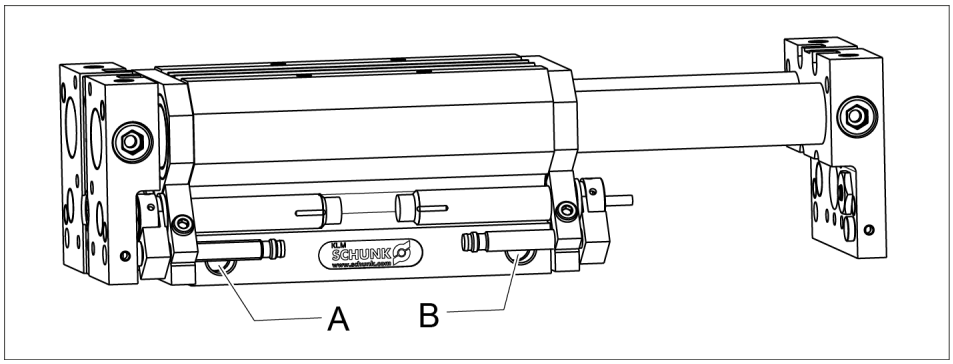
Risk of injury due to unexpected movements!

If the power supply is switched on or residual energy remains in the system, components can move unexpectedly and cause serious injuries.

- Before starting any work on the product: Switch off the power supply and secure against restarting.
- Make sure, that no residual energy remains in the system.

NOTE

- Observe the requirements for the air supply ▸ 3 [🗋 15]
- Operation is possible without restrictions with oiled or unoiled compressed air.
- Use connecting pipes of a cross-section that is larger than or identical to that of the connector thread.
- Before installing connecting cables, remove dust, dirt or particles by blowing the equipment.
- Avoid penetration of sealant into the pipeline network.
- Take the pneumatic components just before mounting out of the packaging.



Location of air connections

Size	25	50	100	300
Hose connection A = Linear unit of extend B =Linear unit of retract	M5	M5	G1/8"	G1/4"

Tab.: Thread diameter of the air connections

5 Commissioning

CAUTION

Possible damage to the linear module when changing the air supply!
Before operating with oil.-free air, the linear module should never be operated with lubricated air.

CAUTION

Possible damage to the linear module!

If the unit moves too hard into the end position, the linear module may be damaged.

- A linear movement must always be free of impact and bounce.
- For this purpose, carry out sufficient throttling and damping, ▶ 5.2 [🗋 23].
- Observe the specifications in the catalog data sheet.

- Check technical specifications.
- Do not use the linear module until you have determined that it
  is in perfect operating condition, after having checked for compliance with all permissible operating parameters.
- Regulate the poerating speed of the cylinder with regulator valves. Starting slow, increase the speed until the desired operating speed is reached.

- Take measures to prevent impermissible forces or jolts.
- Do not subject the linear module to loads outside of the operating range.
  - Excessive loads can result in damage or inaccuracy of the guide unit.
  - The maximum permissible loads are specified in our standard catalog.

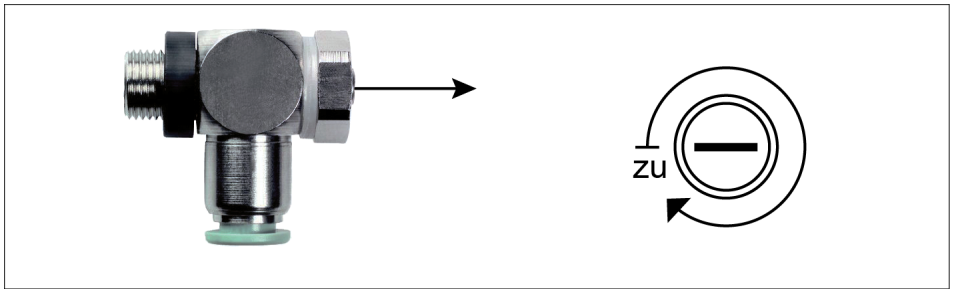
5.1 Setting the speed

CAUTION

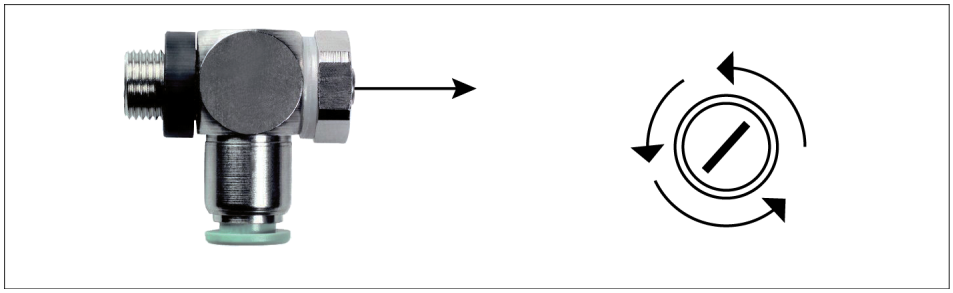
Material damage due to erroneous settings!

If the end position is approached too hard, the product may be damaged.

- Adjust exhaust throttle valve and shock absorber so that the movement is braked smoothly.



1. Close exhaust throttle valve completely.

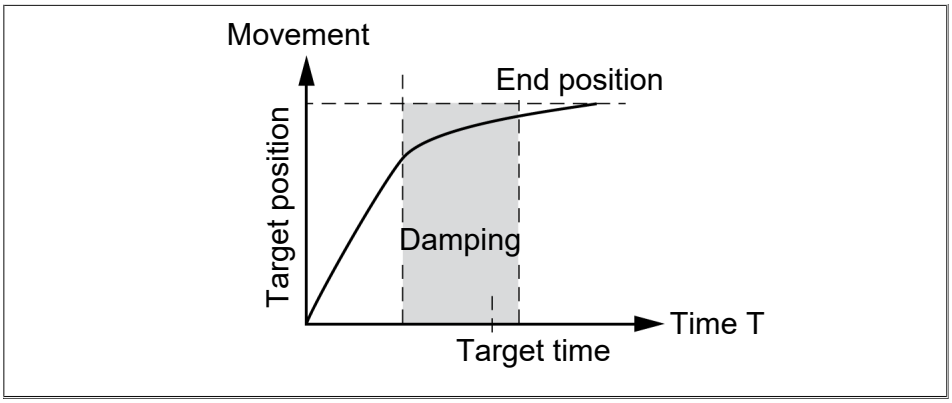


2. Open exhaust throttle valve until the product starts to move.
3. Continue to open the exhaust throttle valve incrementally until the movement decelerates smoothly.
   - ⇨ If the speed is too low, the product will brake too soon and the end position will be reached too slowly.
   - ⇨ If the speed is too high, the product will impact against the end position and the shock absorber will be overloaded.

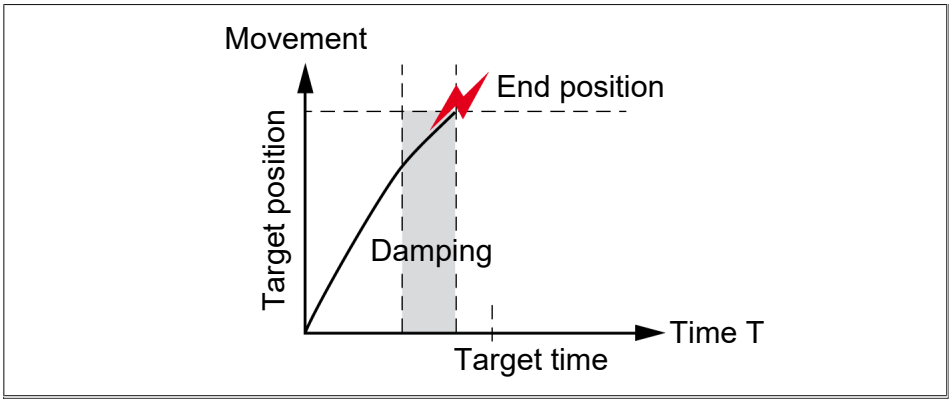
NOTE

A smooth motion may also be too slow in many use-cases. Further settings can be made via the shock absorbers, ▸ 5.2 [🗋 23].

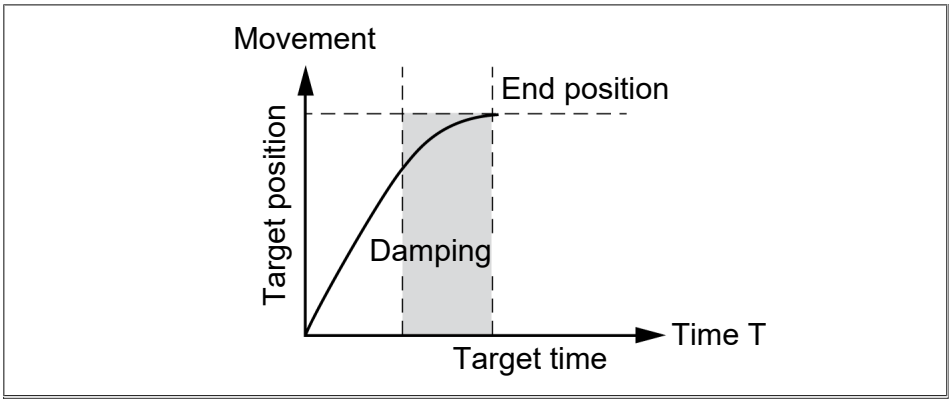
5.2 Adjustment of the shock absorber stroke



The shock absorber stroke is too long and the end position is reached too slowly.



The shock absorber stroke is too short and the unit arrives in the end position too abruptly.

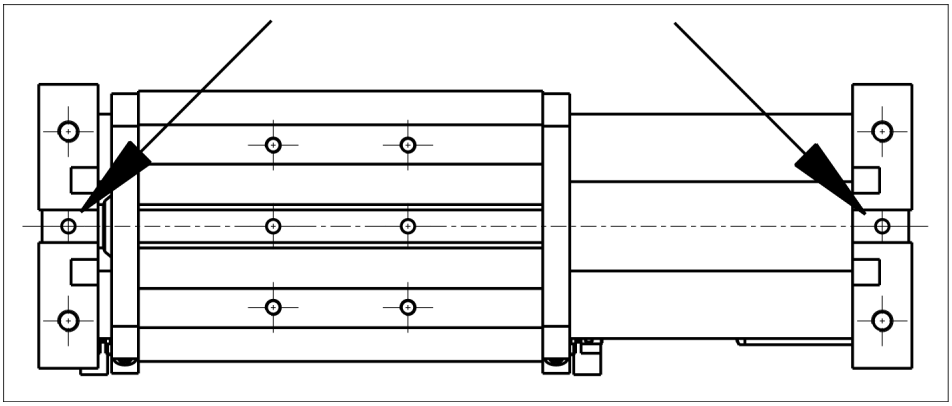


Optimal shock absorber stroke.

6 Handling

CAUTION

The end plates are mounted at the factory so that the fitting bores ▸ 6.2 [🗋 26] are aligned to dimension with a tolerance of ±0.01 mm! After mounting by the customer of the intermediate stop ▸ 6.2 [🗋 26] the dust covers ▸ 6.3 [🗋 27] and the anti-fall device ▸ 6.4 [🗋 27] the customer must ensure/set the tolerance, if necessary.



Orientation of the end plates

6.1 Final positions

The following components are available for stroke limitation, damping and monitoring of end positions:

- LMAS-... (stop screw)
- LMST-... (shock absorber stop)
- LMNS-... (proximity switch)

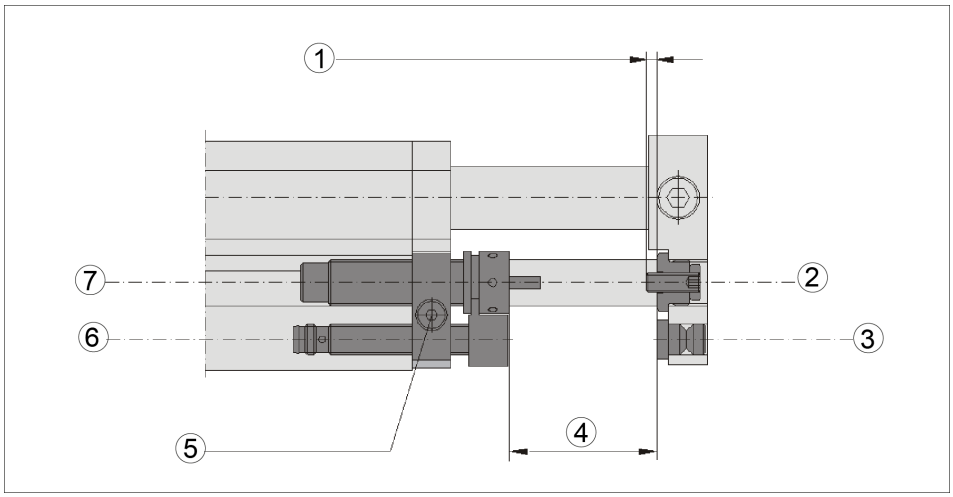
Use the stop screw LMAS-... only for short strokes, slow stroke speeds and low kinetic energy!

Shock absorber stops (LMST-...) must be used as standard!

The following diagram shows the installation of LMST -... and LMNS -... using installation variant 1 (interior).

If installation variant 2 (exterior) is used, the actuating pin and damping adjustment are interchanged with LMST -... and LMNS -.... (does not apply to KLM 25)

Installation



Linear module end positions set – installation variant 1

1	Setting dimension Z for damping	2	LMD– ...
3	Actuating pin	4	Stroke
5	Clamping screw	6	LMNS– ...
7	LMST– ...		

Stroke adjustment

In order to adjust the linear module stroke, after undoing the clamping screw (5), the shock absorber stop LMST –... (7) and the proximity switch LMNS –... (6) can be adjusted together via a fine thread (not with KLM 25).

The end position monitoring does not have to be readjusted. Retighten the clamping screw (5) after setting the desired stroke.

Max. permitted screw tightening torque

with strength class 8.8:

- KLM 25: 1.5 Nm
- KLM 50: 1.5 Nm
- KLM 100: 3.0 Nm
- KLM 300: 5.9 Nm

The maximum permissible values for end position adjustment can be found in the catalog.

Damping adjustment

The set screw of the damping adjustment LMD (2) can be used to adjust the stroke of the shock absorber and therefore the absorption characteristic to the kinetic energy occurring during operation.

To do this, loosen the counter nut and adjust the setting dimension by turning the set screw (2).

The minimum and maximum permissible values for end position adjustment can be found in the catalog.

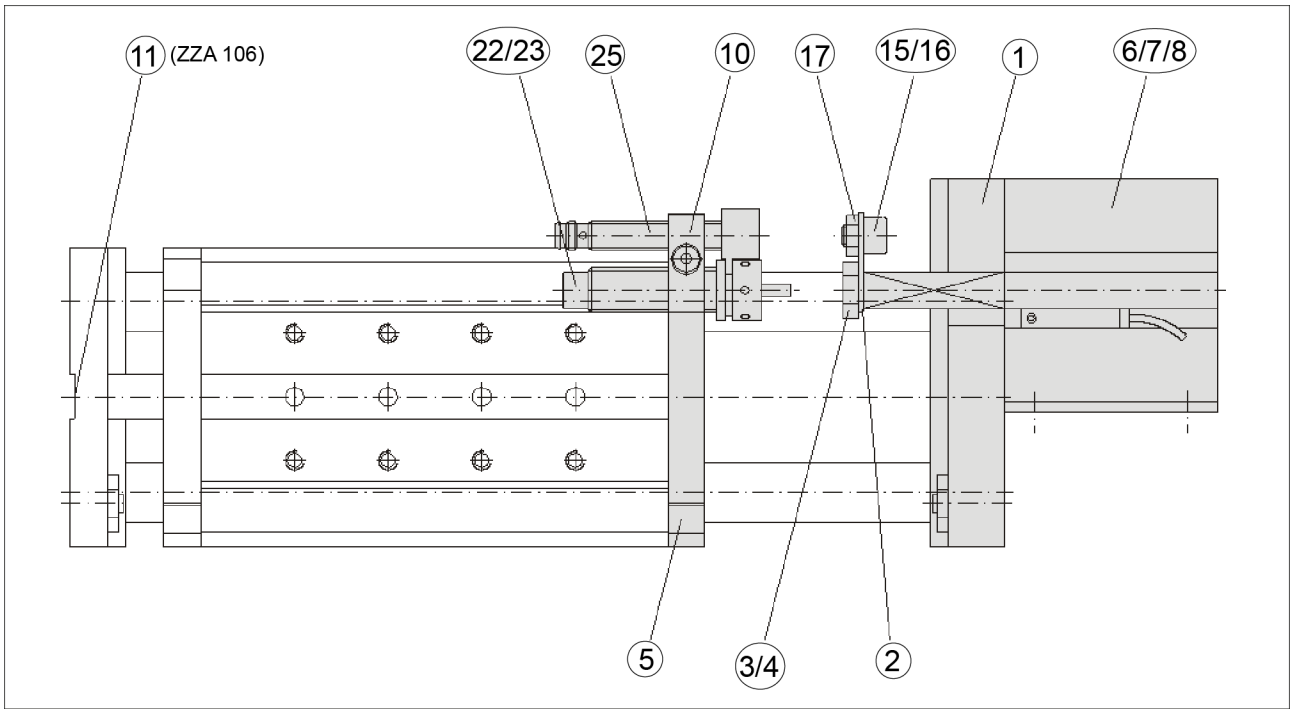
6.2 Intermediate stops

CAUTION

Observe general notes at ▸ 6 [🗋 24]

Intermediate stops are add-on modules for linear modules. 2 models are available for all KLM linear modules:

- Execution 1: Attachment KLM piston-side
- Execution 2: Attachment KLM rod-side



Intermediate stops execution 1

Execution 1 is shown. In execution 2 the entire intermediate stop is mounted on the other side of the module.

It is also possible to equip a linear module with one intermediate stop each of execution 1 and 2. (2 intermediate positions)

End position sets can be used for stroke limiting, shock absorption and monitoring of the intermediate position ▸ 6.1 [🗋 24]

The maximum possible intermediate position adjustment is specified in the catalog.

6.3 Dust cover

CAUTION

Observe general notes at ▶ 6 [🗋 24]

1. Remove the mounting screw for the piston rod.
2. Loosen the mounting screws for the end plates and remove the end plates.
3. SPlace the dust cover on the guide shafts and mount on the top plates.
4. Place end plates on the guide shafts and tighten with fastening screws; mount fastening elements for the piston rod.

6.4 Rod lock

⚠ WARNING

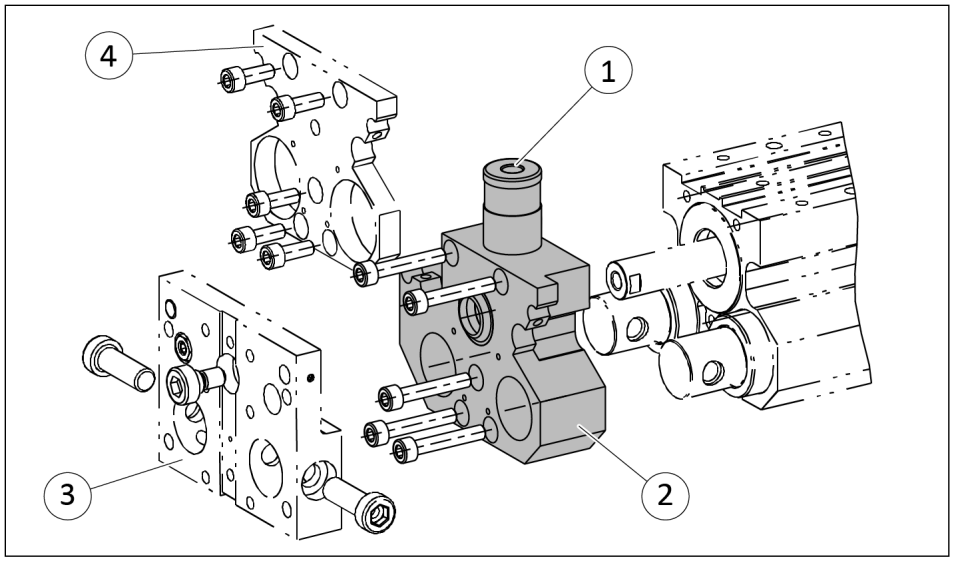
The rod lock is not a safety component for personal protection in the sense of the Machine Directive.

CAUTION

Damage to the rod lock due to incorrect actuation / overload!

- The rod lock may only be triggered and unlocked when the product has been shut down.
- See the data on static holding force in the catalog. The forces occurring in a clamped condition must not exceed the holding force.
- In the event of a dynamic load or overload (e.g. drop in pressure during movement), the clamping cartridge must be checked and replaced if necessary.

NOTE
Apply threadlocker to all exposed screw threads.



Item	Designation	KLM		
		50	100	300
1	Pneumatic connection	M5	M5	G1/8"

1. Remove face plate (3) and cover plate (4).
   ⇨ The cover plate (4) is no longer required.
2. Install the completely installed rod lock (2) on the product.
3. Lubricate wiper ring, ▸ 8 [🗋 30].
4. Mount the front plate (3) on the product on the rod lock (2).
5. Remove the screw from the pneumatic connection (1).
   ⇨ The rod lock is active and must be released by the appropriate air pressure.

7 Troubleshooting

7.1 Module does not move?

Possible cause	Corrective action
Compressed air is missing	Check air compression
Pneumatically connected incorrectly	Check the air supply

7.2 End position signal not present

Possible cause	Corrective action
Initiator to stop inaccurately adjusted	Readjust the initiator
Defective initiator	Exchange the initiator
Cable breakage.	Replace the initiation cable

7.3 Linear module proposes at the end positions

Possible cause	Corrective action
Damping wrong adjustet.	Adjust stop screw.
Shock absorber defective.	Change the shock absorber.
Stroke speed too high.	Check / reduce stroke speed with ventilation valves.
	Change defective exhaust ait throttle if necessary.

7.4 Payload swings in the final position

Possible cause	Corrective action
Stroke speed too high.	Check / reduce stroke speed with ventilation valves.
	Change defective exhaust ait throttle if necessary.
Bad damping.	Adjust damping (stop screw).▶ 6.1 [🗋 24]
Unfavorable installation.	Check construction.
Unfavorable CLM – Type.	Use larger LM – Type.

8 Maintenance and care

Maintenance work	Maintenance interval
Functionality check damper	Regularly
Change the dampers	After 2 million cycles
Check the state of the seals	Regularly
Change the seals	As required

The seals are included in the seal kit ▶ 8.1 [🗋 31]

During maintenance, treat all greased areas with lubricant. Thinly apply lubricant with a lint-free cloth.

SCHUNK recommends the listed lubricant.

Lubricant point	Lubricant
Seals and sealing surfaces	SCHUNK grease 1
Linear guides	SCHUNK grease 10

Details regarding SCHUNK lubricant designations are available at **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.

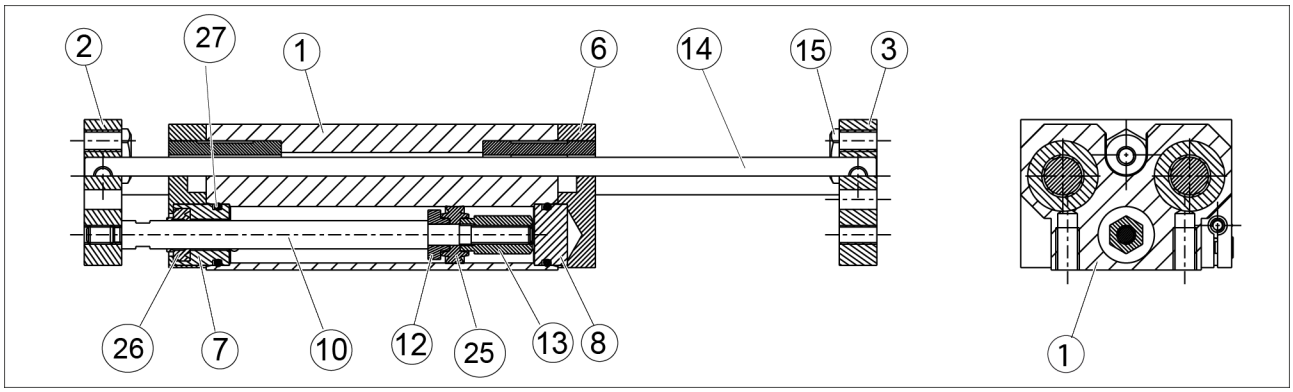
8.1 Spare parts

8.1.1 KLM 25

As standardized wearing a set of seals is available. The scope of delivery includes all seals.

Order of the seal set:

- KLMDI 25



According to the sectional drawing all other wear parts and components are available separately.

Order numbers as in the following example

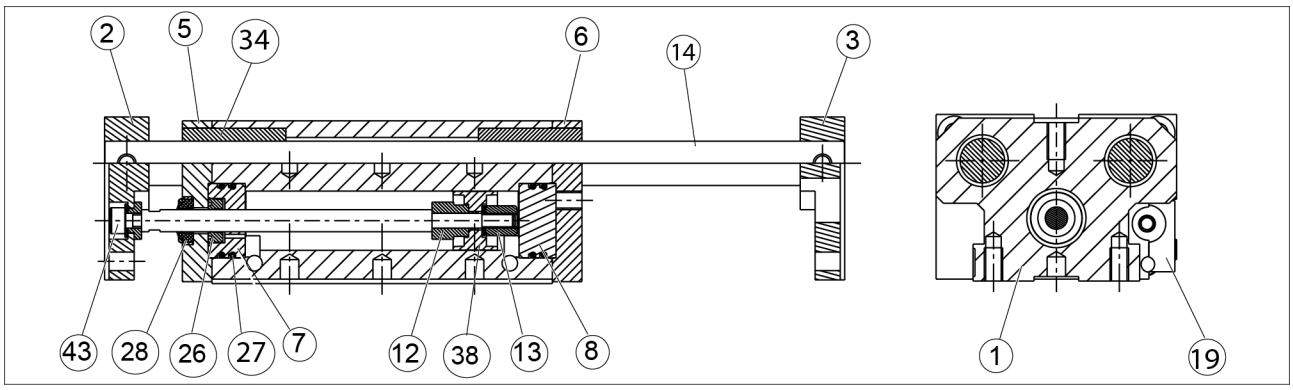
Part no. 1 KLM 25 - H025 - 01

8.1.2 KLM 50

As standardized wearing a set of seals is available. With the gasket set all gaskets are included in the delivery.

Order of the seal set:

- LMDI 50 (for linear module of series KLM 50)



All other wearing parts and individual components are available individually according the sectional drawings.

Order numbers as in the following example

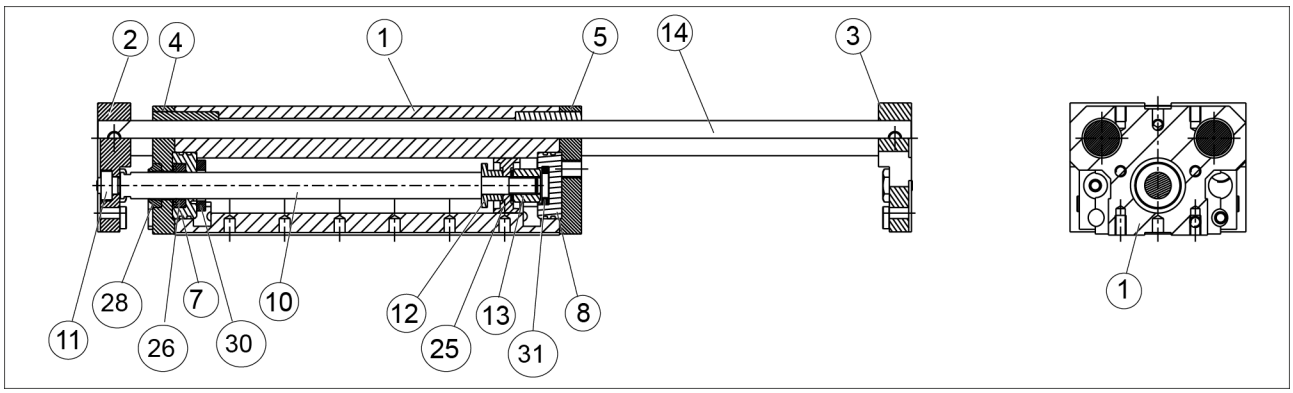
Part no. 1 KLM 50 – H075 – 01

8.1.3 KLM 100

As standardized wearing a set of seals is available. With the gasket set all gaskets are included in the delivery.

Order of the seal set:

- LMDI 100 (for linear module of series KLM 100)



All other wearing parts and individual components are available individually according the sectional drawings.

Order numbers as in the following example

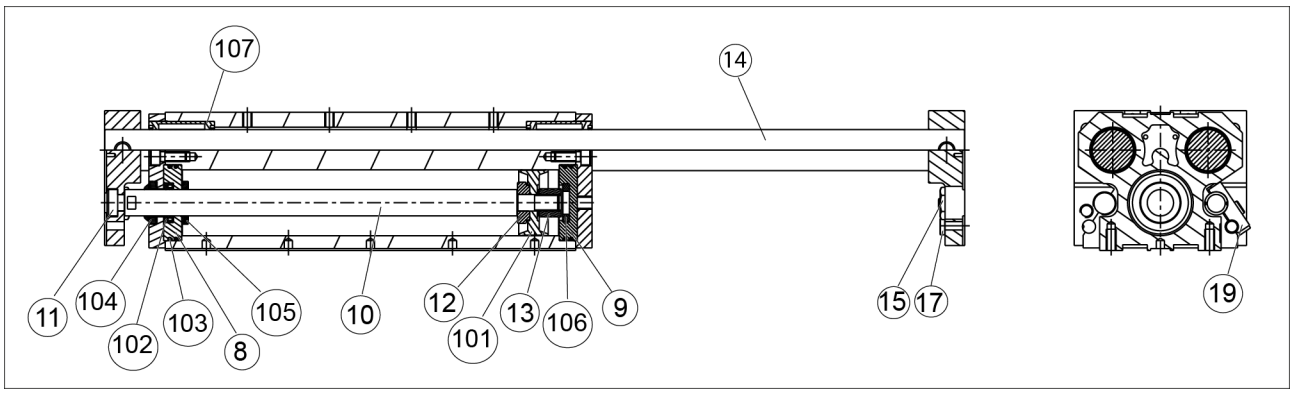
Part no. 1 KLM 100 – H075 – 01

8.1.4 KLM 300

As standardized wearing a set of seals is available. With the gasket set all gaskets are included in the delivery.

Order of the seal set

- LMDI 300



* only for the stroke variants 50/ 150/ 250

All other wearing parts and individual components are available individually according the sectional drawings.

Order numbers as in the following example

Part no. 1 KLM 300 – H100 – 01

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 Toolholding and Workholding | Gripping Technology | Automation Technology Bahnhofstr. 106 – 134 D–74348 Lauffen/Neckar

We hereby declare that the partly completed machine described below

Product designation:	Linear module / KLM /pneumatic
ID number	0314010, 0314011, 0314012, 0314013, 0314014, 0314015, 0314016, 0314414, 0314415,0 314416, 0314017.0314018, 0314019.0314020, 0314021, 0314022, 0314417, 0314418, 0314419, 0314420, 0314421, 0314422, 0314550, 0314554, 0314558, 0314562, 0314566, 0314570

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: see manufacturer's address

Signature: see original declaration

Lauffen/Neckar, March 2024

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:	Linear module / KLM / pneumatic
ID number	0314010, 0314011, 0314012, 0314013, 0314014, 0314015, 0314016, 0314414, 0314415,0 314416, 0314017.0314018, 0314019.0314020, 0314021, 0314022, 0314417, 0314418, 0314419, 0314420, 0314421, 0314422, 0314550, 0314554, 0314558, 0314562, 0314566, 0314570

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, March 2024

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

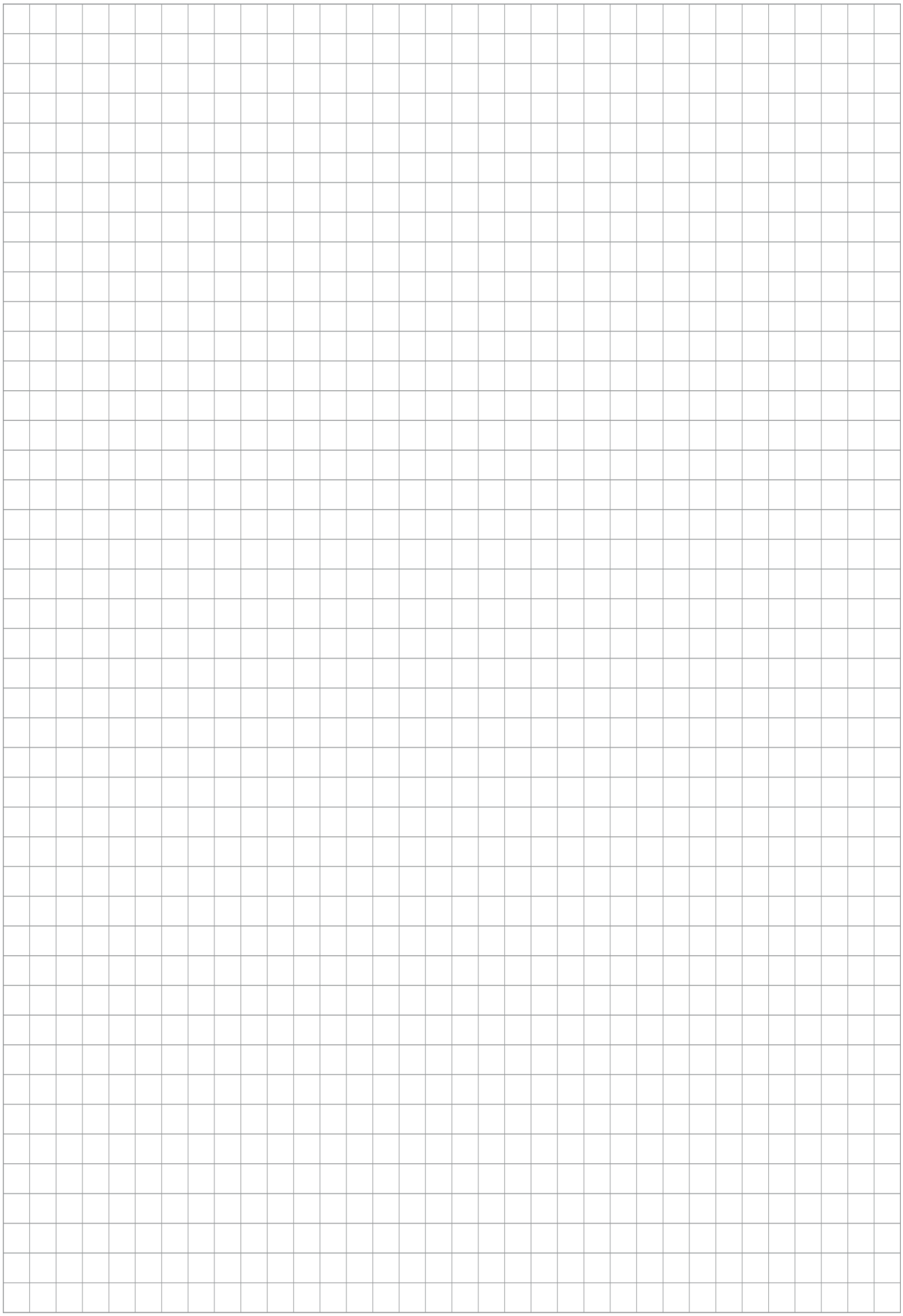
Products from SCHUNK fully comply with the regulations of Regulation (EC) No. 1907/2006 "concerning the Registration, Evaluation, Authorization and Restriction of Chemicals (REACH)" and its amendment 2022/477. SCHUNK attaches great importance to completely avoiding chemicals of concern to humans and 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, March 2024

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



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