



Linear thrust unit
LE 12.1 – LE 200.1



Read operation instructions first.

- Observe safety instructions.
- These operation instructions are part of the product.
- Retain operation instructions during product life.
- Pass on instructions to any subsequent user or owner of the product.

Purpose of the document:

This document contains information for installation, commissioning, operation and maintenance staff. It is intended to support device installation and commissioning.

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1. Safety instructions

1.1. Basic information on safety

Standards/directives	Our products are designed and manufactured in compliance with recognised standards and directives. This is certified in a Declaration of Incorporation and an EU Declaration of Conformity. The end user or the contractor must ensure that all legal requirements, directives, guidelines, national regulations and recommendations with respect to assembly, electrical connection, commissioning and operation are met at the place of installation.
Safety instructions/warnings	All personnel working with this device must be familiar with the safety and warning instructions in this manual and observe the instructions given. Safety instructions and warning signs on the device must be observed to avoid personal injury or property damage.
Qualification of staff	Assembly, electrical connection, commissioning, operation, and maintenance must be carried out exclusively by suitably qualified personnel having been authorised by the end user or contractor of the plant only. Prior to working on this product, the staff must have thoroughly read and understood these instructions and, furthermore, know and observe officially recognised rules regarding occupational health and safety. Work performed in potentially explosive atmospheres is subject to special regulations which have to be observed. The end user or contractor of the plant are responsible for respect and control of these regulations, standards, and laws.
Commissioning	Prior to commissioning, it is important to check that all settings meet the requirements of the application. Incorrect settings might present a danger to the application, e.g. cause damage to the valve or the installation. The manufacturer will not be held liable for any consequential damage. Such risk lies entirely with the user.
Operation	Prerequisites for safe and smooth operation: • Correct transport, proper storage, mounting and installation, as well as careful commissioning. • Only operate the device if it is in perfect condition while observing these instructions. • Immediately report any faults and damage and allow for corrective measures. • Observe recognised rules for occupational health and safety. • Observe the national regulations. • During operation, the device warms up and increased surface temperature may occur. To prevent possible burns, we recommend checking the surface temperature using an appropriate thermometer and wearing protective gloves, if required, prior to working on the device.
Protective measures	The end user or the contractor are responsible for implementing required protective measures on site, such as enclosures, barriers, or personal protective equipment for the staff.
Maintenance	To ensure safe device operation, the maintenance instructions included in this manual must be observed. Any device modification requires prior written consent of the manufacturer.

1.2. Range of application

AUMA linear thrust units are designed for the operation of industrial valves, e.g. globe valves.

Other applications require explicit (written) confirmation by the manufacturer.

The following applications are not permitted, e.g.:

- Industrial trucks according to EN ISO 3691

- Lifting appliances according to EN 14502
- Passenger lifts according to DIN 15306 and 15309
- Service lifts according to EN 81-1/A1
- Escalators
- Continuous duty
- Radiation exposed areas in nuclear power plants

No liability can be assumed for inappropriate or unintended use.

Observance of these operation instructions is considered as part of the device's designated use.

1.3. Warnings and notes

The following warnings draw special attention to safety-relevant procedures in these operation instructions, each marked by the appropriate signal word (DANGER, WARNING, CAUTION, NOTICE).



Indicates an imminently hazardous situation with a high level of risk. Failure to observe this warning could result in death or serious injury.



Indicates a potentially hazardous situation with a medium level of risk. Failure to observe this warning could result in death or serious injury.



Indicates a potentially hazardous situation with a low level of risk. Failure to observe this warning could result in minor or moderate injury. May also be used with property damage.



Potentially hazardous situation. Failure to observe this warning could result in property damage. Is not used for personal injury.

Arrangement and typographic structure of the warnings



Type of hazard and respective source!

Potential consequence(s) in case of non-observance (option)

- Measures to avoid the danger
- Further measure(s)

Safety alert symbol  warns of a potential personal injury hazard.

The signal word (here: DANGER) indicates the level of hazard.

1.4. References and symbols

The following references and symbols are used in these instructions:

Information

The term **Information** preceding the text indicates important notes and information.



Symbol for CLOSED (valve closed)



Symbol for OPEN (valve open)



Important information before the next step. This symbol indicates what is required for the next step or what has to be prepared or observed.



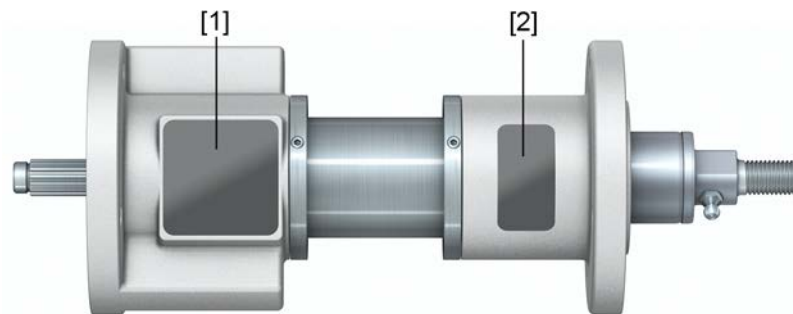
Reference to other sections

Terms in brackets shown above refer to other sections of the document which provide further information on this topic. These terms are either listed in the index, a heading or in the table of contents and may easily be located.

2. Identification

2.1. Name plate

Figure 1: Arrangement of name plates



- [1] Linear thrust unit name plate
 [2] Additional plate, e.g. KKS (Power Plant Classification System) plate or approval plate

Description of linear thrust unit name plate

Figure 2: Linear thrust unit name plate (example)



- [1] Name of manufacturer
 [2] Address of manufacturer
 [3] **Type and size** (see explanation below)
 [4] **Order number** (see explanation below)
 [5] Serial number (works number)
 [6] **Stem** (see explanation below)
 [7] Thrust (for modulating duty/open-close duty)
 [8] Stroke
 [9] Lubricant
 [10] Enclosure protection
 [11] Ambient temperature
 [12] Explosion-proof version (option)
 [13] Customer information (option)

Type and size These instructions apply to the following device types and sizes:

Linear thrust unit: LE 12.1 – LE 200.1

Stem Thread diameter, flank lead and version of stem.

- LH = Stem extension for clockwise rotation, i.e. multi-turn actuator closes the valve in a clockwise rotation

- RH = Stem retraction for clockwise rotation, i.e. multi-turn actuator closes the valve in a counterclockwise rotation

Order number The product can be identified using this number and the technical data as well as order-related data pertaining to the device can be requested.

Please always state this number for any product inquiries.

On the Internet at <http://www.auma.com> > Service & Support > myAUMA, we offer a service allowing authorised users to download order-related documents such as wiring diagrams and technical data (both in German and English), inspection certificate and the operation instructions when entering the order number.

Description of approval plate in explosion-proof version (option)

Figure 3: Approval plate in explosion-proof version (example)



- [1] Ex symbol, CE mark, number of test authority

Classification:

- [2] Gas explosion protection
[3] Dust explosion protection

2.2. Short description

AUMA linear thrust units type LE 12.1 – LE 200.1 are designed for the operation of industrial valves, e.g. globe valves.

They are used in combination with multi-turn actuators on valves which require linear travel. The linear thrust units convert the output torque of the multi-turn actuator into an axial thrust. As an option, AUMA linear thrust units are available with spring-loaded damping devices to compensate for changes in lengths caused by varying temperatures, for example.

3. Transport, storage and packaging

3.1. Transport

For transport to place of installation, use sturdy packaging.



Hovering load!

Death or serious injury possible.

- Do NOT stand below hovering load.
- Linear thrust units mounted to a valve in combination with an actuator: Attach ropes or hooks for the purpose of lifting by hoist to valve and NOT to actuator.
- Respect total weight of combination (gearbox, linear thrust unit, actuator, ...).

Figure 4: Example: Lifting the linear thrust



Table 1:

Weights linear thrust units

Type ¹⁾	Stroke ¹⁾	Weight [kg] ²⁾	Base weight [kg]
LE 12.1/ LE 25.1	50	8	11
	100	9	
	125	9	
	200	10	
	250	11	
	400	13	
	500	14	
LE 50.1	63	10	11
	125	12	
	250	15	
	400	18	

Weights linear thrust units			
Type ¹⁾	Stroke ¹⁾	Weight [kg] ²⁾	Base weight [kg]
LE 70.1 / LE 100.1	80	23	40
	160	26	
	320	32	
	400	35	
LE 200.1	100	45	40
	200	50	
	400	62	
	500	68	

1) Refer to name plate

2) Without actuator and base

3.2. Storage

NOTICE

Danger of corrosion due to inappropriate storage!

- Store in a well-ventilated, dry room (maximum humidity 70 %).
- Protect against floor dampness by storage on a shelf or on a wooden pallet.
- Cover to protect against dust and dirt.
- Apply suitable corrosion protection agent to uncoated surfaces.

Long-term storage

For long-term storage (more than 6 months), observe the following points:

1. Prior to storage:
Protect uncoated surfaces, in particular the output drive parts and mounting surface, with long-term corrosion protection agent.
2. At an interval of approx. 6 months:
Check for corrosion. If first signs of corrosion show, apply new corrosion protection.

3.3. Packaging

Our products are protected by special packaging for transport when leaving the factory. The packaging consists of environmentally friendly materials which can easily be separated and recycled. We use the following packaging materials: wood, cardboard, paper, and PE foil. For the disposal of the packaging material, we recommend recycling and collection centres.

4. Assembly

4.1. Mounting position

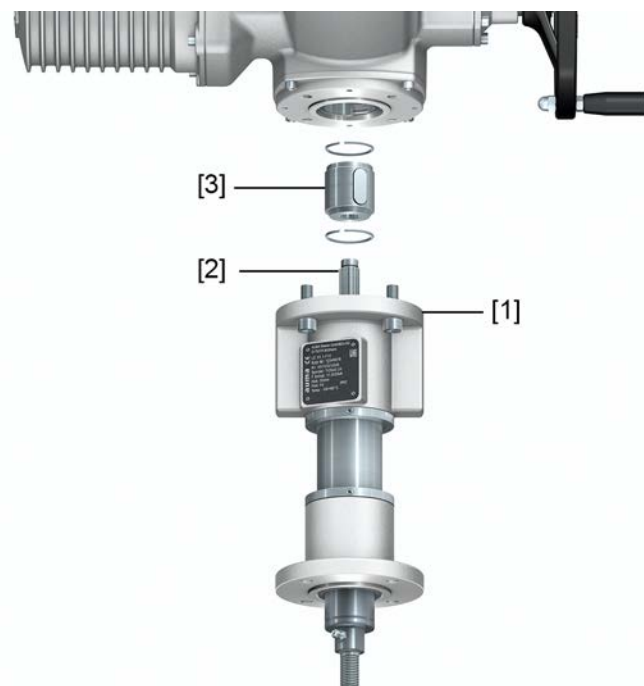
The linear thrust units described here can be operated without restriction in any mounting position.

4.2. Actuators for linear thrust units

Assembly is performed in compliance with actuator operation instructions. This section provides information and indications regarding suitable actuators, flanges, and screws.

State of delivery When AUMA actuators and linear thrust units up to size LE 50.1 and a stroke of max. 200 mm are supplied together, assembly is performed in the factory. For larger strokes and when exceeding size LE 70.1, assembly must be performed by the customer. The suitable output drive sleeve and the screws for assembly are generally part of the scope of delivery.

Figure 5: Example of AUMA multi-turn actuator with LE 25.1



- [1] Actuator mounting flange
- [2] Stem
- [3] Output drive sleeve with retaining ring

Table 2:

Suitable AUMA actuators, flanges, and screws					
Type	Suitable AUMA actuator	Actuator mounting flange	Screws		Tightening torque T_A [Nm]
		EN ISO 5210	Size	Quantity	Strength class A2-70
LE 12.1	SA 07.2/SAR 07.2	F10, F10-ZB ¹⁾	M10 x 30	4	36
	SVC 05.1/SVCR 05.1				
LE 25.1	SA 07.6/SAR 07.6	F10, F10-ZB ¹⁾	M10 x 30	4	36
	SVC 07.1/SVCR 07.1				
LE 50.1	SA 10.2/SAR 10.2	F10, F10-ZB ¹⁾	M10 x 30	4	36
	SVC 07.5/SVCR 07.5				

Suitable AUMA actuators, flanges, and screws

Type	Suitable AUMA actuator	Actuator mounting flange	Screws		Tightening torque T_A [Nm]
		EN ISO 5210	Size	Quantity	Strength class A2-70
LE 70.1	SA 14.2/SAR 14.2	F14, F14-ZB ¹⁾	M16 x 40	4	150
LE 100.1	SA 14.6/SAR 14.6	F14, F14-ZB ¹⁾	M16 x 40	4	150
LE 200.1	SA 16.2/SAR 16.2	F16, F16-ZB ¹⁾ , F25 ²⁾	M20 x 50	4	294

1) Actuator mounting flange with 2 holes for pivots

2) Extension flange F16/25 max. input torque 1,000 Nm

4.3. Mounting the linear thrust unit to a valve

Mounting position Mounting is most easily done with the valve shaft pointing vertically upward. But mounting is also possible in any other position.

Linear thrust units leave the factory with retracted stem.

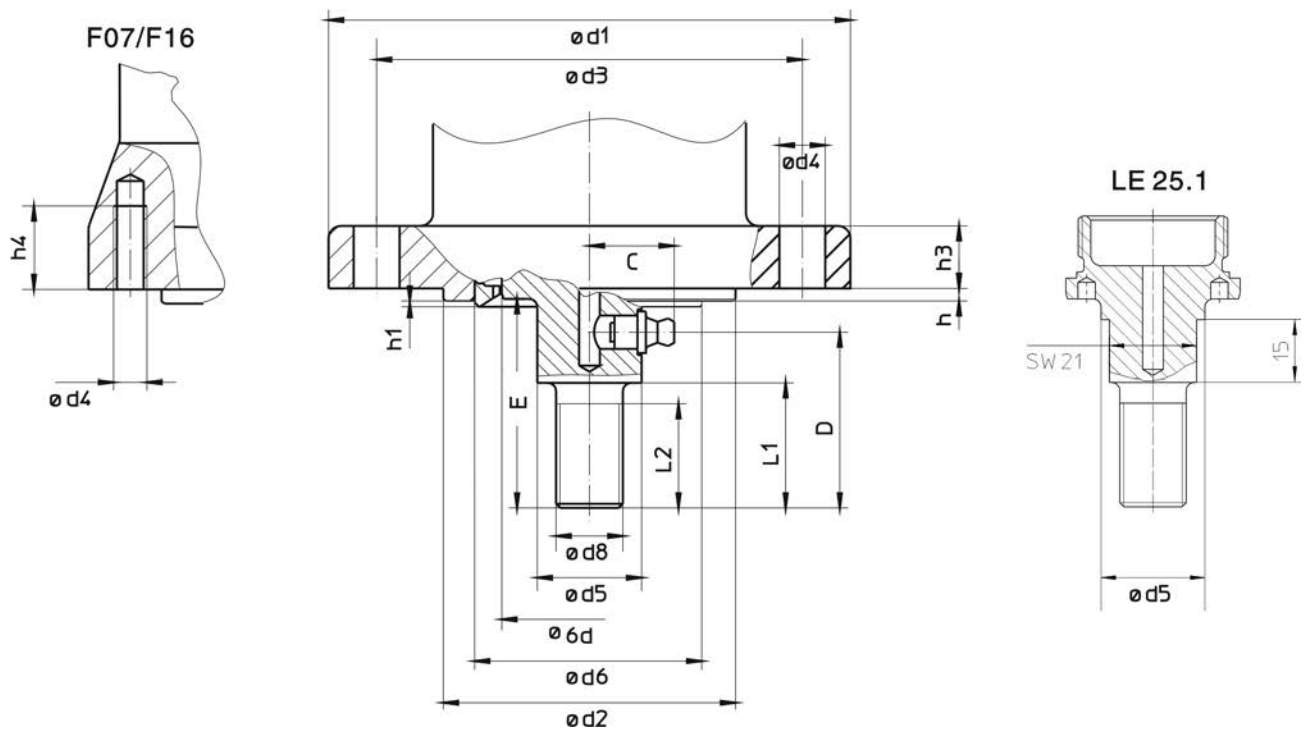
4.3.1. Attachment dimensions for mounting to valve

Table 3:

Attachment dimensions to valve

Dimensions	LE 12.1		LE 25.1		LE 50.1	LE 70.1	LE 100.1	LE 200.1
EN ISO 5210 (DIN 3210)	F07 (G0)	F10 (G0)	F07 (G0)	F10 (G0)	F10 (–)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
C	18		21		24	26	26	29
D	37		42		43	63	63	76
E ±0.2	45		50		55	75	75	90
L1	25		30		35	–	–	–
L2	20		25		30	55	55	65
Ø d1	□75	□125	□75	□125	125	175	175	210
Ø d2	(55 g7 = d6)	70 f8	(55 g7 = d6)	70 f8	70 g7	100 f8	100 f8	130 f8
Ø d3	70	102	70	102	102	140	140	165
Ø d4 (4x)	M8	11	M8	11	11	18	18	M20
Ø d5	20		25		32	36	36	42

Attachment dimensions to valve								
Dimensions	LE 12.1		LE 25.1		LE 50.1	LE 70.1	LE 100.1	LE 200.1
EN ISO 5210 (DIN 3210)	F07 (G0)	F10 (G0)	F07 (G0)	F10 (G0)	F10 (-)	F14 (G1/2)	F14 (G1/2)	F16 (G3)
Ø d6 g7	–	55 ¹⁾	–	55 ¹⁾	–	–	–	120
Ø d8	M12 x 1.25		M16 x 1.5		M20 x 1.5	M36 x 3	M36 x 3	M42 x 3
Ø d9 –0.1	42		42		55	70	70	100
h	3.4	3	3.4	3	3.4	4	4	4
h1	–	0.5	–	0.5	–	–	–	0.5
h3	–	15	–	15	15	18	18	–
h4	20	–	20	–	–	–	–	32
Grease nipple A-D8 according to DIN 71412								

1) Spigot for F07

4.3.2. Linear thrust unit: mount to valve

1. Check whether attachment dimensions of linear thrust unit suit the valve.
2. Push stem of linear thrust unit to desired position (e.g. OPEN) using the hand-wheel.
 - ➔ Mount valve and actuator in the same end position.
 - ➔ For **globe valves**, the conventional assembly position is end position CLOSED (stem is retracted).
3. Clean mounting surfaces (mounting flanges at linear thrust unit and valve). Thoroughly degrease uncoated mounting surfaces.
4. Place linear thrust unit onto valve as to ensure that bores or thread align with the output mounting flanges.

Information: Ensure that the spigot fits uniformly in the recess and that the mounting faces are in complete contact.
5. Fasten linear thrust unit with screws according to table.

Information: We recommend applying liquid thread sealing material to the screws to avoid contact corrosion.
6. Fasten screws crosswise to a torque according to table.

Table 4:

Tightening torques for screws		
Threads	Tightening torque [Nm]	
	Strength class	
	A2-70/A4-70	A2-80/A4-80
M6	7.4	10
M8	18	24
M10	36	48
M12	61	82
M16	150	200
M20	294	392

7. Connect coupling stud (Ø d8) of linear thrust unit with valve stem.

Information: The type of connection depends on the valve and is determined by the valve manufacturer.
8. In case of risk of jamming due to moving parts: Provide protective equipment.

5. Commissioning

5.1. Stroke

The stroke of linear thrust units is limited by end stops.

NOTICE

Damage at linear thrust unit due to excessive torques!

→ Max. permissible input speeds may not be exceeded.

NOTICE

Approaching the end stops in motor operation!

Risk of damage at linear thrust unit.

- DO NOT use end stops as stroke limitation in motor operation.
- Prior to performing motor operation: Limit stroke via limit switching in multi-turn actuator (setting).
- Observe overrun when performing the setting.

Stroke setting

The stroke per turn depends on the thread pitch of the stem (refer to name plate).

The setting of end positions OPEN and CLOSED within the possible stroke of the linear thrust unit is done via the mounted multi-turn actuator. Refer to <Limit switching: set> chapter in operation instructions of suitable AUMA multi-turn actuators.

5.2. Thrust limitation

Thrust limitation is made via mounted actuator.

Refer to <Limit switching: set> chapter in operation instructions of suitable AUMA multi-turn actuators.

NOTICE

Damage at linear thrust unit due to excessive torque!

- Max. permissible thrusts may not be exceeded.
- Use actuator in recommended size.
- Stall torque operations and operations while bypassing the torque switches are not permitted.

NOTICE

Valve damage due to excessive tripping torque limit setting!

- The tripping torque must suit the valve.
- Only change the setting with the consent of the valve manufacturer.

Calculation of thrust limitation (tripping torque)

The maximum required or permissible thrust [F in kN] for a globe valve must be converted to torque [T in Nm] when setting the actuator torque switching:

Formula: $T = F \times f$

Type	LE 12.1	LE 25.1	LE 50.1	LE 70.1	LE 100.1	LE 200.1
Factor f	2.6	2.6	3.2	3.9	3.9	4.6

The thrust limitation is then performed indirectly using the calculated value through the setting of the torque switching at the mounted multi-turn actuator.

Example:

Max. permissible thrust of globe valve: $F = 30 \text{ kN}$

Linear thrust unit type LE 50.1 (factor $f = 3.2$)

$T = 30 \text{ kN} \times 3.2 \text{ m/k} = \mathbf{96 \text{ Nm}}$

Multi-turn actuator type SA 10.2; torque range 40 – 120 Nm

5.3. Test run

**Moving parts!**

Danger of jamming.

- Keep hands clear from stroke range of combination.
- If necessary, fit protection cover.

Verify stroke direction

Information: AUMA linear thrust units type LE 12.1 – LE 200.1 leave the factory with retracted stem (end position OPEN).

1. Move actuator manually to intermediate position or to sufficient distance from end position.
2. Switch on actuator in direction OPEN and observe the direction of stroke.
 - Switch off before reaching the end position.
3. In case of incorrect direction of stroke, reverse rotary direction at actuator.
4. Then: Approach end position CLOSED and end position OPEN and check seating.

6. Servicing and maintenance



Damage caused by inappropriate maintenance!

- Servicing and maintenance must be carried out exclusively by suitably qualified personnel having been authorised by the end user or the contractor of the plant. Therefore, we recommend contacting our service.
- Only perform servicing and maintenance tasks when the device is switched off.

AUMA Service & Support

AUMA offers extensive service such as servicing and maintenance as well as customer product training. For the relevant contact addresses, please refer to <Addresses> in this document or to the Internet (www.auma.com)

6.1. Preventive measures for servicing and safe operation

The following actions are required to ensure safe device operation:

Every 6 months after commissioning and then once a year

- Perform visual inspection for grease leakage.
- Check fastening screws between actuator, linear thrust unit and valve for tightness. If required, fasten screws while applying the tightening torques as indicated in chapter <Assembly>.
- Perform test run.

6.2. Maintenance intervals

Recommendation for grease change and seal replacement:

- Generally after 4 to 6 years for modulating duty.
- Generally after 6 to 8 years if operated frequently (open-close duty).
- Generally after 10 to 12 years if operated rarely (open-close duty).

The flange for actuator with spring-loaded damping device (option) is lubricated for life.

NOTICE

Gearing damage due to inappropriate grease!

- Only use original lubricants.
- The lubricant type is marked on the name plate.
- Do not mix lubricants.

Table 5: Grease quantities

LE		12.1-50 25.1-50	12.1-100 25.1-100	12.1-125 25.1-125	12.1-200 25.1-200	12.1-250 25.1-250	12.1-400 25.1-400	12.1-500 25.1-500	50.1-63	50.1-125	50.1-250
Qty	dm ³	0.10	0.13	0.16	0.28	0.36	0.54	0.65	0.28	0.41	0.70
Weight	kg ¹⁾	0.09	0.12	0.15	0.26	0.33	0.50	0.60	0.26	0.38	0.65
LE		50.1-400	70.1-80 100.1-80	70.1-160 100.1-160	70.1-320 100.1-320	70.1-400 100.1-400	200.1-100	200.1-200	200.1-400	200.1-500	
Qty	dm ³	1.09	0.52	0.88	1.48	1.79	1.71	2.80	4.92	6.11	
Weight	kg ¹⁾	1.01	0.48	0.81	1.37	1.65	1.58	2.58	4.53	5.63	

1) for ρ = approx. 0.9 kg/dm³

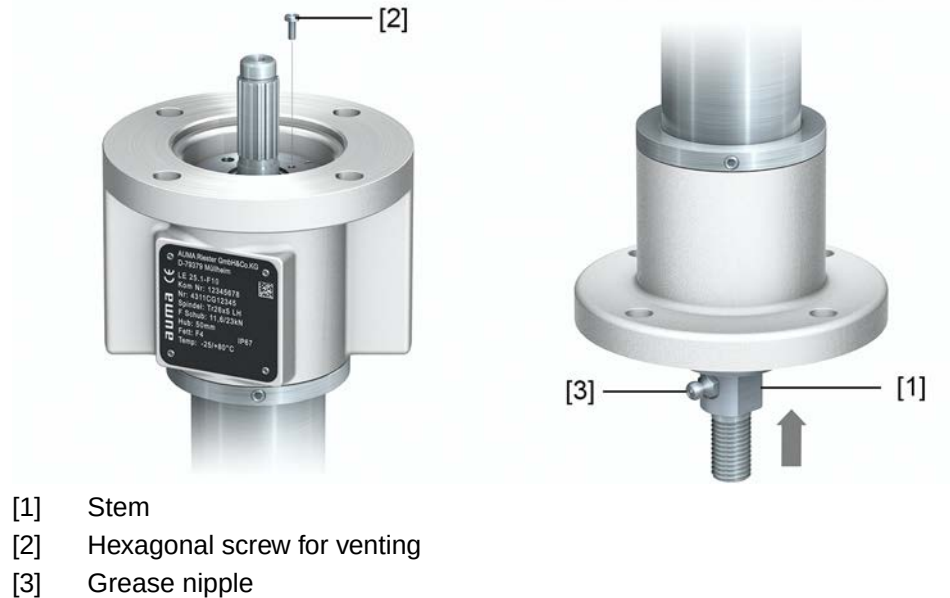
Instructions for use in potentially explosive atmospheres of categories M2, 2G, 3G, 2D and 3D according to EU directive 2014/34/EU

- The technical data as well as the ambient temperatures, type of duty and running times indicated on the name plate must imperatively be observed.
- In hazardous areas where combustible dust is present in particular, perform visual inspection for deposit of dirt or dust on a regular basis. Clean devices if required.

6.3. Re-lubrication

Re-lubrication is only necessary if grease has been visibly leaking and can be performed through the grease nipple while mounted.

Figure 6: Grease nipple and vent



1. Move stem [1] to upper position (retracted).
2. Remove multi-turn actuator from linear thrust unit.
3. Open vent hole by removing the hexagon screw [2].
4. Press grease into the grease nipple [3] with grease gun until grease emerges from the vent hole of the hexagon screw [2].
5. Close vent hole again using hexagon screw [2].
6. Mount multi-turn actuator again to linear thrust unit.

6.4. Disposal and recycling

Our devices have a long lifetime. However, they have to be replaced at one point in time. The devices have a modular design and may, therefore, easily be separated and sorted according to materials used, i.e.:

- electronic scrap
- various metals
- plastics
- greases and oils

The following generally applies:

- Greases and oils are hazardous to water and must not be released into the environment.
- Arrange for controlled waste disposal of the disassembled material or for separate recycling according to materials.
- Observe the national regulations for waste disposal.

7. Technical data

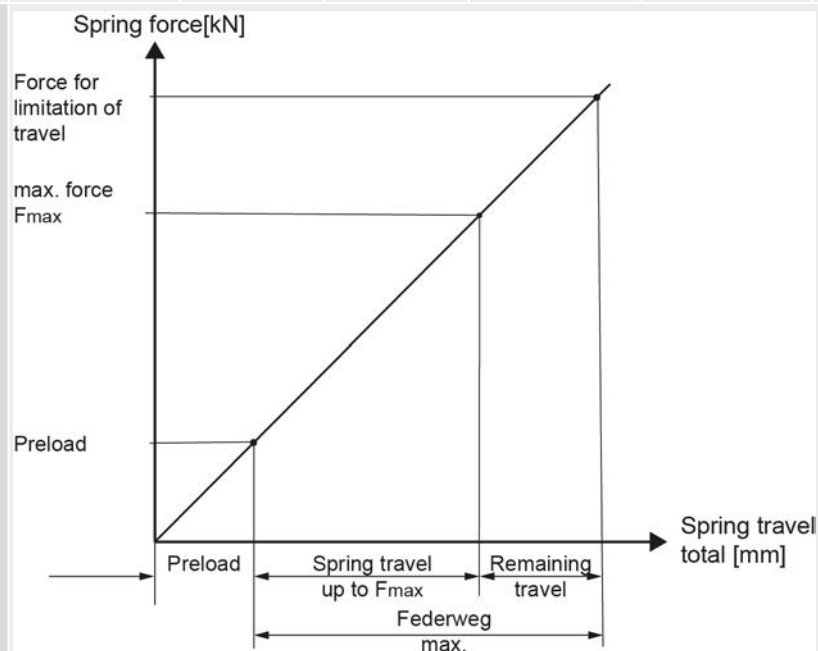
Information The following tables include standard and optional features. For detailed information on the customer-specific version, refer to the order-related data sheet. The technical data sheet can be downloaded from the Internet in both German and English at <http://www.auma.com> (please state the order number).

7.1. Features and functions

Features and functions						
Type of duty	Short-time duty S2 - 15 min (open-close duty) Intermittent duty S4 -25 % (modulating duty); based on maximum thrust for modulating torque 100 % load may only be applied for a short time during opening and closing.					
Self-locking	Yes					
Input speed	Refer to actuator name plate					
Closing direction	Standard:	LH Stem extension for clockwise rotation of multi-turn actuator				
	Option:	RH Stem retraction for clockwise rotation of multi-turn actuator				
Output drive type	Standard thread of valve stem (for exact version, refer to actuator name plate)					
	LE 12.1	LE 25.1	LE 50.1	LE 70.1	LE 100.1	LE 200.1
	26 x 5 LH	26 x 5 LH	32 x 6 LH	40 x 7 LH	40 x 7 LH	48 x 8 LH

Version with spring-loaded damping device (option)¹⁾

Type	Spring travel max.	Force for travel limitation	Preload ²⁾		Spring travel to $F_{\max}$	Max. force $F_{\max}$	Remaining travel
	[mm]	[kN]	[mm]	[kN]	[mm]	[kN]	[mm]
LE 12.1	4	15	1.7	6.8	1.8	11.5	2.2
LE 25.1	4	33	2	13.8	1.7	23	2.3
LE 50.1	5	46	3	22	3	37.5	2
LE 70.1	6	79	2.8	33.4	3.6	64	2.4
LE 100.1	6	149	2.7	56.9	4.4	128	1.6
LE 200.1	6	264	3	99.4	4.2	217	1.8



- 1) Not suitable for use in potentially explosive atmospheres.
2) Tolerance variations of disc springs are not considered.

7.2. Service conditions

Service conditions		
Ambient temperature	Standard:	–25 °C to +80 °C
	Options:	0 °C to +120 °C –40 °C to +60 °C –60 °C to +60 °C
Enclosure protection according to EN 60529	Standard:	IP67
Corrosion protection	Standard:	KS: Suitable for use in areas with high salinity, almost permanent condensation, and high pollution.
	Option:	KX: Suitable for use in areas with extremely high salinity, permanent condensation and high pollution.
Base coating	Two-component iron-mica combination	
Colour base	Standard:	AUMA silver-grey (similar to RAL 7037)
	Option:	Available colours on request

Special features for use in potentially explosive atmospheres

The tests to ensure conformity with ATEX directive 2014/34/EU were performed according to the technical data. For other applications, please consult AUMA. 100 % load may only be applied for a short time during opening and closing. Sufficient pause times have to be respected.

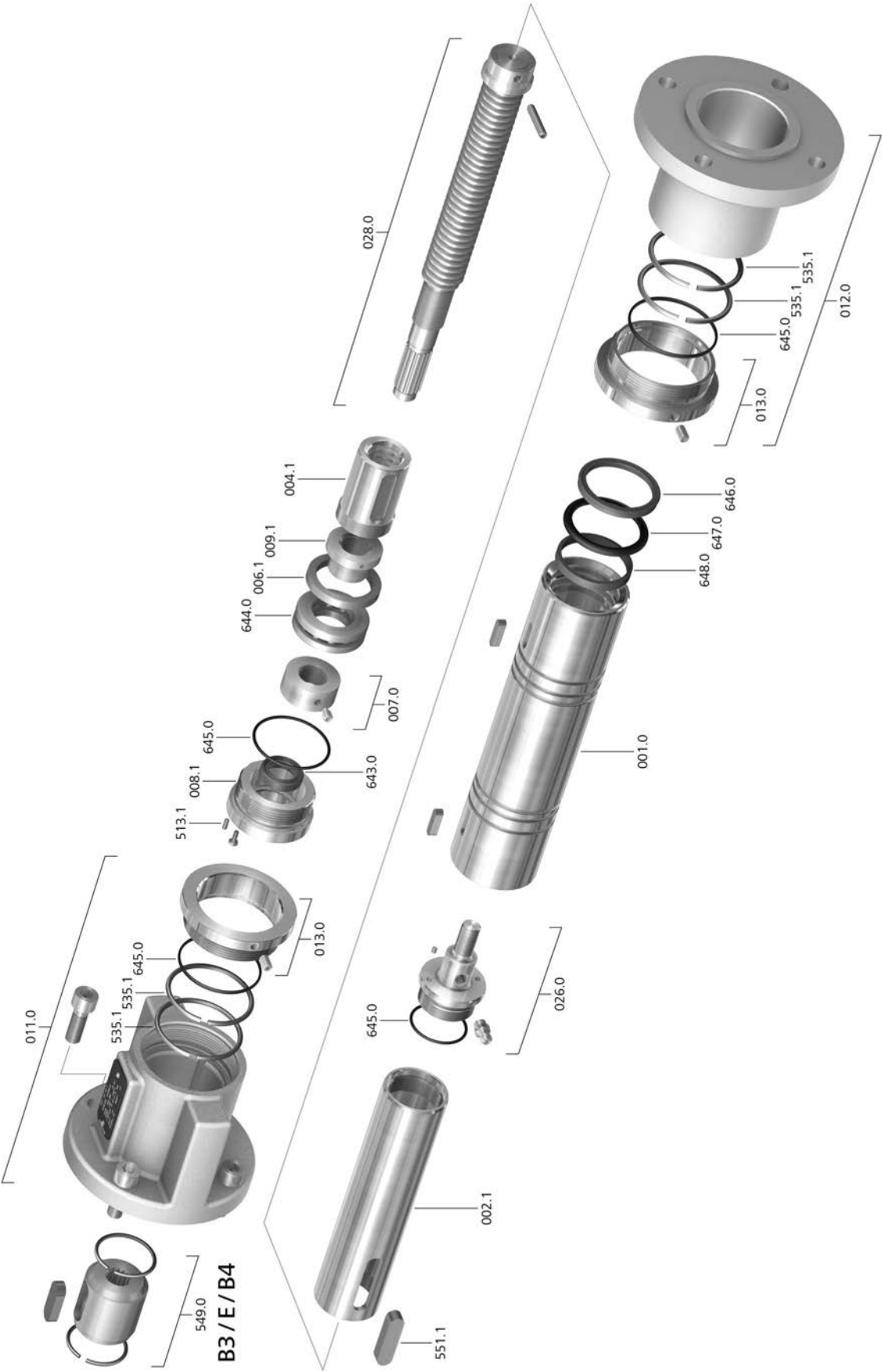
Explosion protection	Linear thrust unit:	II2G c IIC T4 according to ATEX CD 2014/34/EU
	Multi-turn actuator:	II2G c IIC T4 according to ATEX CD 2014/34/EU
Type of duty	Short-time duty S2 - 15 min, max. 3 cycles (OPEN-CLOSE-OPEN) based on mean thrust and standard ambient temperature Intermittent duty S4 - 25 %; based on maximum thrust for modulating torque	
Ambient temperature	Standard:	–25 °C to +40 °C
	Option:	–40 °C to +40 °C

7.3. Further information

Further information	
EU Directives	ATEX Directive: (2014/34/EU) Machinery Directive: (2006/42/EC)

8. Spare parts

8.1. Linear thrust unit LE 12.1 – LE 200.1

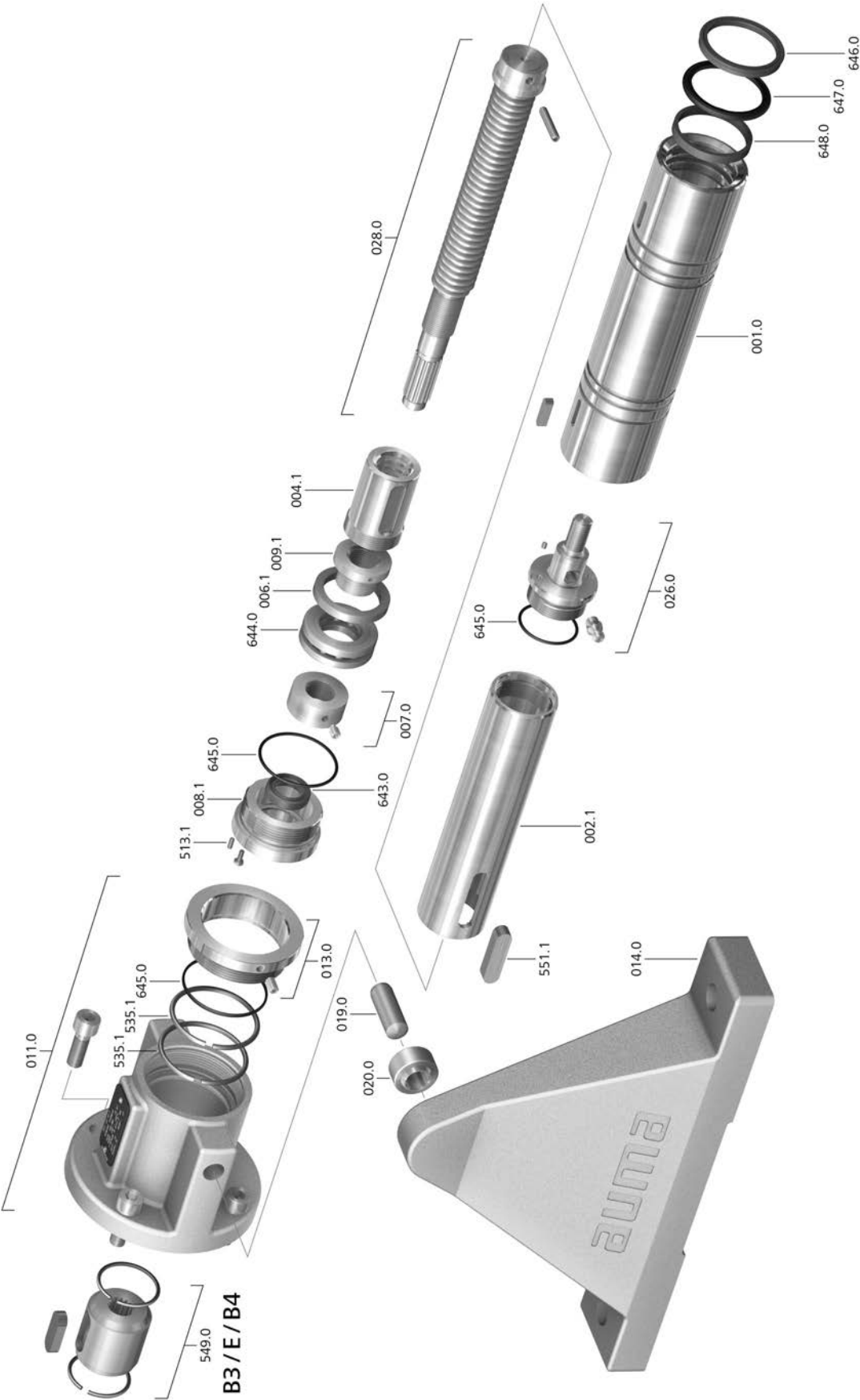


Spare parts

Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

No.	Designation	Type
001.0	Outer tube	
002.1	Inner tube	
004.1	Nut	
006.1	Support washer	
007.0	Ring nut	Sub-assembly
008.1	Barrel nut	
009.1	Bearing bush	
011.0	Actuator mounting flange	Sub-assembly
012.0	Output mounting flange	Sub-assembly
013.0	Locking nut	Sub-assembly
026.0	Coupling stud	Sub-assembly
028.0	Stem	Sub-assembly
513.1	Grub screw	
535.1	Snap ring	
549.0	Output drive type B3/B4/E	Sub-assembly
551.1	Parallel key	
643.0	Radial seal	
644.0	Axial deep groove ball bearing	
645.0	O-ring	
646.0	Wiper ring	
647.0	Sealing ring	
648.0	Guide ring	

8.2. Linear thrust units LE 12.1 — LE 200.1 with base



Spare parts

Please state device type and our order number (see name plate) when ordering spare parts. Only original AUMA spare parts should be used. Failure to use original spare parts voids the warranty and exempts AUMA from any liability. Representation of spare parts may slightly vary from actual delivery.

No	Designation	Type
001.0	Outer tube	
002.1	Inner tube	
004.1	Nut	
006.1	Support washer	
007.0	Ring nut	Sub-assembly
008.1	Barrel nut	
009.1	Bearing bush	
011.0	Actuator mounting flange	Sub-assembly
012.0	Output mounting flange	Sub-assembly
013.0	Locking nut	Sub-assembly
014.0	Base assy	Sub-assembly
019.0	Parallel pin	
020.0	Joint bearing	
026.0	Coupling stud	Sub-assembly
028.0	Stem	Sub-assembly
513.1	Grub screw	
535.1	Snap ring	
549.0	Output drive type B3/B4/E	Sub-assembly
551.1	Parallel key	
643.0	Radial seal	
644.0	Axial deep groove ball bearing	
645.0	O-ring	
646.0	Wiper ring	
647.0	Sealing ring	
648.0	Guide ring	

9. Certificates

Information Certificates are valid as from the indicated date of issue. Subject to changes without notice. The latest versions are attached to the device upon delivery and also available for download at <http://www.auma.com>.

9.1. EU Declaration of Conformity / Declaration of Incorporation

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EU Declaration of Conformity / Declaration of Incorporation in compliance with Machinery Directive

for linear thrust units of the following types:

LE 12.1, LE 25.1, LE 50.1, LE 70.1, LE 100.1, LE 200.1

AUMA Riester GmbH & Co. KG as manufacturer declares herewith, that the above mentioned linear thrust units meet the basic requirements of the following Directives:

2014/30/EU (EMC Directive)
2006/42/EC (Machinery Directive)

As partly completed machinery in "ATEX" and "Mining" versions, the linear thrust units further comply with the requirements of the following directives and the respective approximation of national laws as well as the respective harmonised standards as listed below:

Directive 2014/34/EU

EN 1127-1:2011	EN 13463-1:2009
EN 1127-2:2014	EN 13463-5:2011

Directive 2006/42/EC

EN 60204-1:2006 / A1:2009 / AC:2010
EN ISO 5210:2017
EN ISO 5211:2017

The above mentioned AUMA linear thrust units in "ATEX" and "Mining" versions are marked as follows:

II2G c IIC T4 or T3
II2D IP6X T130°C or T190°C
IM2 c I

In order to meet the requirements for use of AUMA linear thrust units in potentially explosive atmospheres, the relevant information in the operation instructions must imperatively be observed.

AUMA linear thrust units are designed to be installed on industrial valves. Putting into service is prohibited until the final machinery has been declared in conformity with the provisions of Directive 2006/42/EC.

The following basic requirements in compliance with Annex I of the Directive are respected:

Appendix I, articles 1.1.2, 1.1.3, 1.1.5, 1.2.1, 1.2.6, 1.3.1, 1.3.2, 1.3.4, 1.3.7, 1.5.1, 1.5.2, 1.6.3, 1.7.1, 1.7.2, 1.7.3, 1.7.4

The manufacturer shall be obligated to electronically submit the documents for the partly completed machinery to national authorities on request. The relevant technical documentation pertaining to the machinery described in Annex VII, part B has been prepared.

Authorised person for documentation: Michael Noll, Aumastr. 1, 79379 Muellheim, Germany

Muellheim, 2019-01-01

Dr. J. Hoffmann, CEO

This declaration does not contain any guarantees. The safety instructions in product documentation supplied with the devices must be observed. Non-concerted modification of the devices voids this declaration.

Y006.536/003/en/1.19

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