



Part-turn gearboxes

GQB 80.1 – GQB 250.1



Read operation instructions first.

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

Target group:

This document contains information for assembly, commissioning and maintenance staff.

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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 part-turn gearboxes are designed for the operation of industrial valves, e.g. butterfly valves and ball 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
- Automation of special valves (e.g. louvre dampers, stack dampers, diverters with toggle arm, guillotine isolators)
- Continuous duty
- Modulating duty (class C according to EN 15714-2: modulating)
- Hydraulic steel structures & hydropower
- Radiation exposed areas in nuclear power plants
- Buried service
- potentially explosive atmospheres, except the explosion-proof version is explicitly specified on the name plate

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 results 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.

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)

Wiring diagram **Texts extracted from other documents**

Texts extracted from other documents are highlighted in a different font. For example *Wiring diagram*.

 **Result of a process step**

Describes the result of a preceding process step.

2. Identification

2.1. Name plate

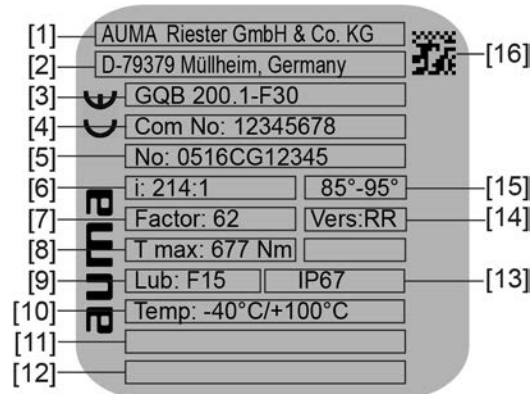
Figure 1: Arrangement of name plates



- [1] Gearbox name plate
- [2] Additional plate, e.g. KKS plate (Power Plant Classification System)

Gearbox name plate

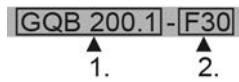
Figure 2: Gearbox name plate (example GQB 200.1)



- [1] Name of manufacturer
- [2] Address of manufacturer
- [3] **Type designation** - valve attachment (flange)
- [4] **Order number**
- [5] **Serial number**
- [6] **Reduction ratio**
- [7] **Factor**
- [8] Max. valve torque (output torque)
- [9] **Type of lubricant**
- [10] Permissible ambient temperature
- [11] **Explosion-proof version** (option)
- [12] Can be assigned as an option upon customer request
- [13] **Enclosure protection**
- [14] **Version**
- [15] Swing angle
- [16] **Data Matrix code**

Descriptions referring to name plate indications

Type designation Figure 3: Type designation (example)



1. Type and size of gearbox
2. Flange size for valve attachment

Type and size

These instructions apply to the following devices types and sizes:

Part-turn gearboxes type **GQB**, sizes **160.1 – 250.1**

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.

Serial number

| Description of the serial number (with the example of 0512CG12345) | | | |
|--------------------------------------------------------------------|----|---------|--------------------------------------------------------|
| 05 | 15 | CG12345 | |
| 05 | | | Positions 1 + 2 : Assembly in week = week 05 |
| | 15 | | Positions 3 + 4 : Year of manufacture = 2015 |
| | | CG12345 | Internal number for unambiguous product identification |

Reduction ratio The reduction ratio within gearing and primary reduction gearing reduces the required input torques and increases the operating time.

Factor Mechanical conversion factor for actuator size determination:

Input torque = required valve torque (output torque)/factor

Type of lubricant AUMA abbreviation for type of lubricant used in the gear housing.



Danger of explosion when using inappropriate lubricant in potentially explosive atmospheres!

→ Only use lubricant type F21 with adhesive lubrication. The use of other greases is not permitted.

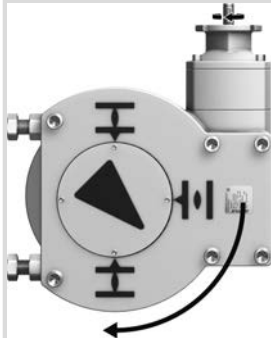
Explosion-proof version (option) Gearboxes may only be used in potentially explosive atmospheres if explosion-proof version is indicated on the name plate. In explosion-proof version, other (reduced) valve torques and input speeds apply than in weatherproof version.

Version The first letter of the version indicates the **position of the worm shaft** in relation to the worm wheel (view on input shaft).

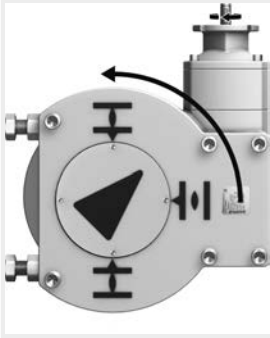
The second letter indicates the **direction of rotation** at the output drive (view on housing cover) for clockwise rotation at the input shaft.

Versions:
Worm shaft position and direction of rotation of output drive GQB 80.1 – GQB 250.1

RR



RL



Description of both versions (view on housing cover):

| Initials | Direction of rotation at input shaft | Position of worm shaft | Direction of rotation at output drive |
|----------|--------------------------------------|------------------------|---------------------------------------|
| RR | Clockwise | R = Right | R = Clockwise |
| RL | Clockwise | R = Right | L = Counterclockwise |

Data Matrix code When registered as authorised user, you may use our **AUMA Assistant App** to scan the Data Matrix code and directly access the order-related product documents without having to enter order number or serial number.

Figure 4: Link to AUMA Assistant App:



For further Service & Support, software/apps/... refer to www.auma.com.

2.2. Short description

GQB part-turn gearboxes are worm gearboxes converting a rotary movement at the input shaft into a part-turn movement at the output drive. The worm gearboxes are driven either via electric motor (by means of a multi-turn actuator) or manually (e.g. via a handwheel). The required input torques are reduced due to high reduction ratios within the gearbox. Internal, mechanical end stops limit the swing angle at the output drive side to $90^\circ \pm 5^\circ$.

Worm gearboxes are available in different versions to comply with various mounting requirements and rotary directions.

3. Transport, storage and packaging

3.1. Transport

For transport to place of installation, use sturdy packaging.



The coupling is not secured within the gearbox. Risk of falling out!

Injury hazard.

- Check whether plug-in coupling is inserted in gearbox housing.
- Remove coupling from gearbox housing prior to transport.

Figure 5: Coupling



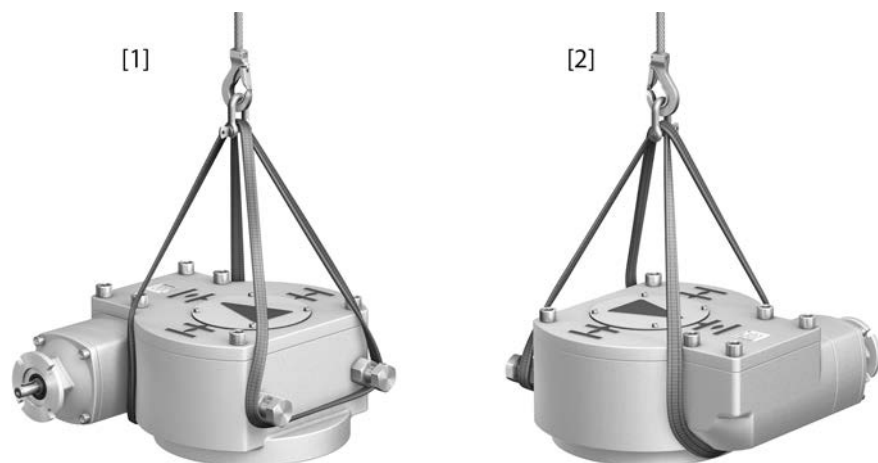
Hovering load!

Risk of death or serious injury!

- Do NOT stand below hovering load.
- Attach ropes or hooks for the purpose of lifting by hoist only to housing and NOT to handwheel.
- Observe manufacturer specifications for fixing lifting straps and round slings.
- Heed total weight of arrangement.

Examples of transport without actuator

Figure 6: Example of GQB 200.1, horizontal suspension



Strap/sling arrangement

- [1] View on front
- [2] View on rear

Figure 7: Example of GQB 200.1, vertical suspension

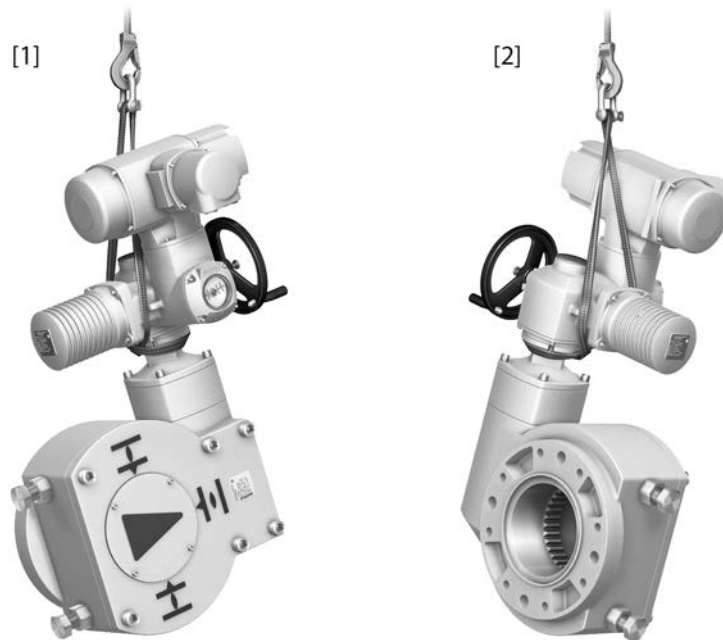


Strap/sling arrangement

[1] With lifting straps/sling around bearing cover

Examples of transport with mounted actuator/actuator controls

Figure 8: Example of GQB 200.1 with SA .2 and AC .2, vertical suspension

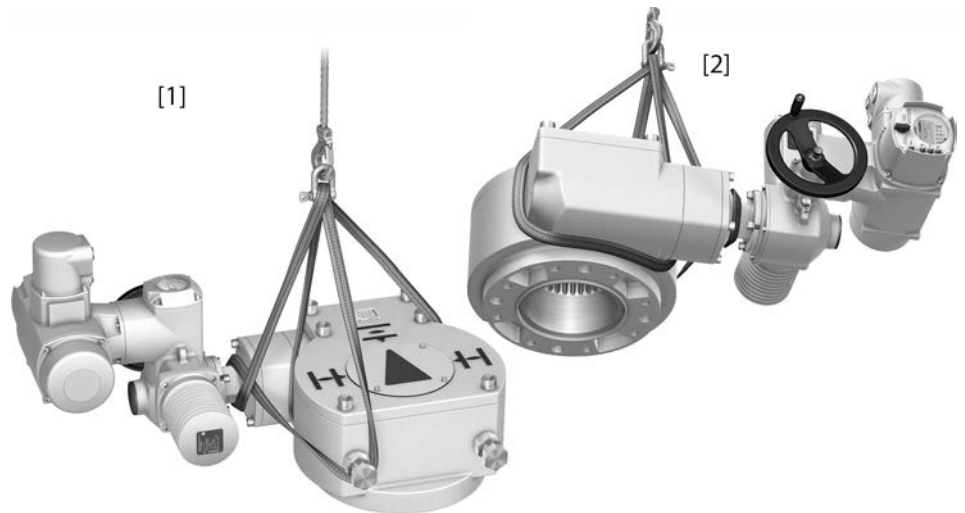


Strap/sling arrangement

[1] View on front

[2] View on rear

Figure 9: Example of GQB 200.1 with SA .2 and AC .2, horizontal suspension



Strap/sling arrangement

[1] View on front

[2] View on rear

Table 1:

| Weights including grease filling in gear housing | |
|--------------------------------------------------|--------------------|
| Type | [kg] ¹⁾ |
| GQB 80.1 | 16 |
| GQB 100.1 | 28 |
| GQB 125.1 | 46 |
| GQB 160.1 | 90 |
| GQB 200.10 | 146 |
| GQB 250.1 | 272 |

1) Indicated weight applies to largest output flange sizes, largest primary reduction gearing without coupling

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

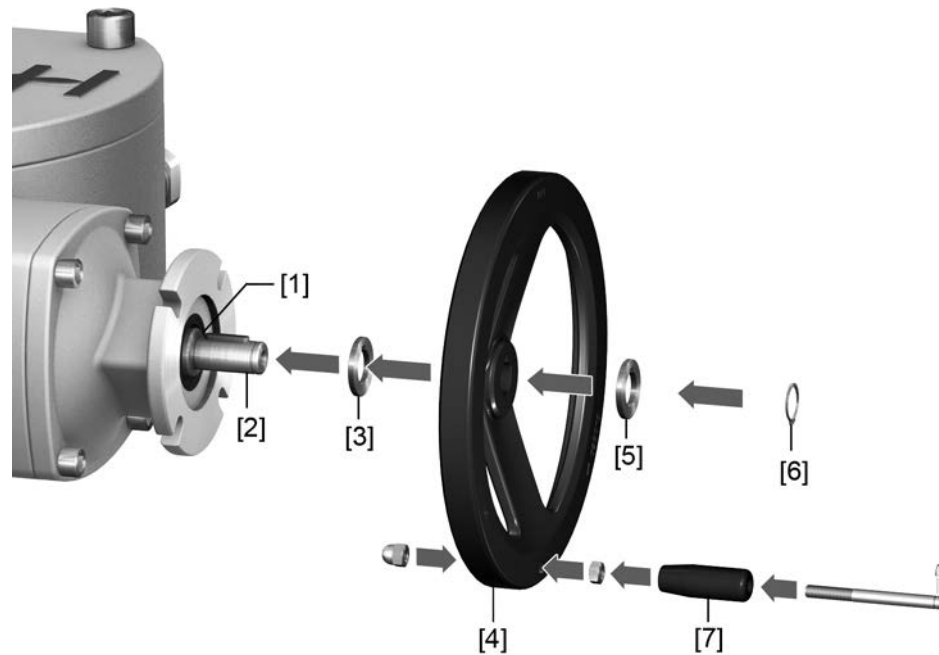
4.1. Mounting position

The gearboxes described here can be operated without restriction in any mounting position.

4.2. Handwheel fitting

Gearboxes designed for manual operation are supplied with a separate handwheel. Fitting is performed on site according to the description below.

Figure 10: Handwheel



- [1] Retaining ring for input shaft (partly required)
- [2] Gear input shaft
- [3] Spacer (partly required)
- [4] Handwheel
- [5] Spacer (partly required)
- [6] Retaining ring
- [7] Ball handle

1. For input shafts with keyway: Place retaining ring [1] onto input shaft [2].
2. If required, fit spacer [3].
3. Slip handwheel [4] onto input shaft.
4. If required, fit spacer [5].
5. Secure handwheel [4] using the retaining ring [6] supplied.
6. Fit ball handle [7] to handwheel.

4.3. Multi-turn actuators for motor operation

Refer to the operation instructions pertaining to the multi-turn actuator for indications on how to mount multi-turn actuators to gearboxes.

This chapter supplies basic information and instructions which should be considered in addition to the operation instructions of the multi-turn actuator.

Screws to actuator

Screws are included in the scope of delivery of the gearbox for mounting AUMA multi-turn actuators. When mounting other actuators, the screws might be either too long or too short (insufficient reach of screws).



Risk of actuator falling off in case inappropriate screws used should shear.

Risk of death or serious injury!

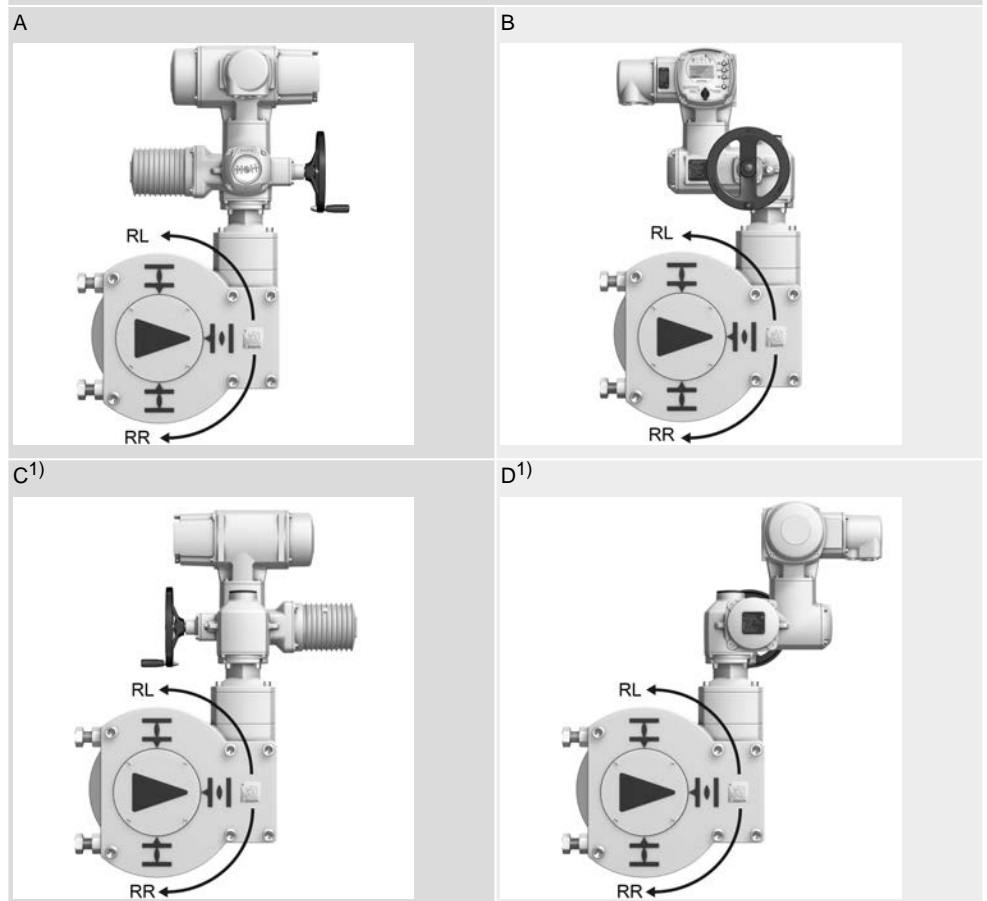
- Check length of screws.
- Only use screws with strength class specified herein.

The reach of screws must be sufficient for the internal threads to ensure the supporting strength of the device and to accept the lateral forces due to the applied torque.

Screws which are too long could make contact with the housing parts, presenting the risk that the device performs a radial shift with respect to the gearbox. This can lead to shearing of the screws.

4.3.1. Mounting positions Multi-turn actuators with part-turn gearboxes

Mounting positions A – D for multi-turn actuators with part-turn gearboxes



1) CAUTION: This mounting position is not available for all sizes/reduction ratios. Risk of crushing due to insufficient distance between handwheel ball handle and the housing for certain sizes.

Please consider possible space confinements on site when selecting the mounting position.

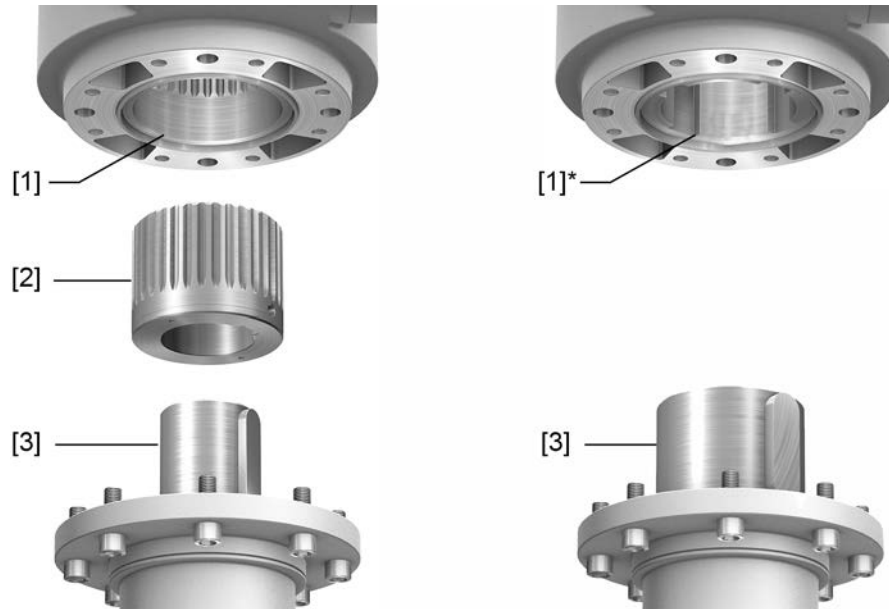
Mounting positions may easily be changed at a later date.

4.4. Gearbox to valve: mount

Mounting the gearbox onto the valve is either made via a plug-in coupling or an integral gearbox coupling (option)

4.4.1. Valve attachment via coupling

Design Figure 11: Valve attachment via plug-in/integral coupling



- [1] Gearbox worm wheel with internal splines
- [2] Splined plug-in coupling
- [1]* Worm wheel of gearbox with integral coupling
- [3] Valve shaft (example with key)

- Application**
- For valve attachments according to EN ISO 5211
 - For rotating, non-rising valve stem

NOTICE

Damage due to radial forces!

Risk of valve damage for applications requiring transmission of radial forces from the valve shaft to the coupling.

→ In these cases, do NOT directly mount gearbox to valve but use torque reaction lever as connection.

4.4.1.1. Gearbox with plug-in coupling: mount to valve

Unbored couplings or couplings with pilot bore must be machined to match the valve shaft prior to mounting the gearbox to the valve (e.g. with bore and keyway, two-flat or square bore).

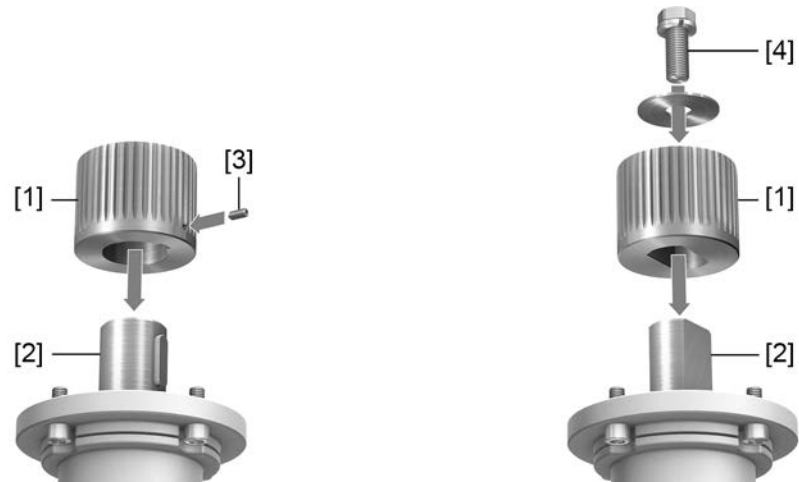
- Information**
- Assemble valve and gearbox in the same end position. As a standard, the gearbox is supplied in end position CLOSED.
- Recommended mounting position for **butterfly valves**: End position CLOSED.
 - Recommended mounting position for **ball valves**: End position OPEN.

- Assembly steps**
1. If required, move gearbox in same end position as valve using the handwheel.
 2. Clean valve shaft and mounting faces, thoroughly degrease uncoated mounting surfaces.

Information: We recommend applying a surface sealing agent on the cleaned contact surfaces between valve and gearbox to seal the flange connection.

3. Lubricate complete coupling (also interior/bore) with a corrosion protection grease or corrosion protection oil (such as CorrosionX HD (Heavy Duty)® by Scandex).
4. Place coupling [1] onto valve shaft [2] and secure against axial slipping by using a grub screw [3] or a clamping washer and a screw with curved spring lock washer [4]. Thereby, ensure that dimensions X, Y or L are observed (refer to figure and table <Mounting positions for coupling>).

Figure 12: Examples: Fit coupling



- [1] Coupling
- [2] Valve shaft
- [3] Grub screw
- [4] Clamping washer and screw with curved spring lock washer

Figure 13: Mounting positions for coupling

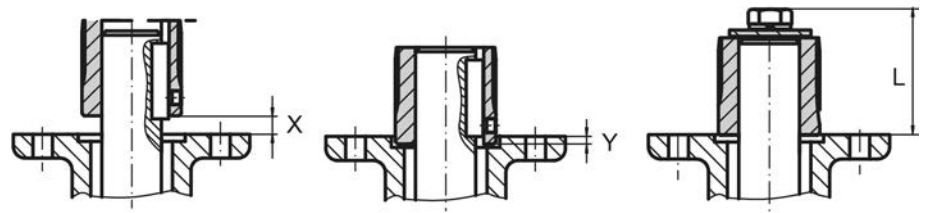


Table 2:

| Dimensions [mm] | GQB 80.3 | | | GQB 100.3 | | | GQB 125.3 | | |
|-----------------|-----------|-----|-------------------|-----------|-----|-----|-----------|-----|-----|
| EN ISO 5211 | F12 | F14 | F16 ¹⁾ | F14 | F16 | F25 | F16 | F25 | F13 |
| X max. | 22 | 22 | 11 | 24 | 24 | 24 | 20 | 20 | 20 |
| Y max. | 3 | 3 | 14 | 13 | 13 | 13 | 31 | 31 | 31 |
| L max. | 100 | 100 | 110 | 120 | 120 | 120 | 140 | 140 | 140 |
| | GQB 160.1 | | | GQB 200.1 | | | GQB 250.1 | | |
| EN ISO 5211 | F25 | F30 | F35 | F30 | F35 | F40 | F35 | F40 | F48 |
| X max. | 30 | 30 | 45 | 45 | 45 | 55 | 30 | 30 | 35 |
| Y max. | 15 | 15 | 0 | 10 | 10 | 0 | 5 | 5 | 0 |
| L max. | 130 | 140 | 130 | 160 | 190 | 160 | 220 | 230 | 220 |

1) Extended coupling (+20 mm) required

5. Fit gearbox. If required, slightly turn gearbox until splines of coupling engage.
Figure 14:



Information Ensure that the spigot (if provided) fits uniformly in the recess and that the flanges are in complete contact.

6. If flange bores do not match thread:
 - 6.1 Slightly rotate handwheel until bores line up.
 - 6.2 If required, shift gearbox position by one tooth on the coupling.
7. Fasten gearbox with screws.
Information: We recommend glueing in the screws using threadlocking adhesive (e.g. Loctite 243).
8. Fasten screws crosswise to a torque according to table.

Table 3:

| Tightening torques for screws | |
|-------------------------------|----------------------------------------------|
| Threads | Tightening torque [Nm] |
| | Strength class Rm min. 800 N/mm ² |
| M12 | 82 |
| M16 | 200 |
| M20 | 392 |
| M30 | 1,422 |
| M36 | 2,481 |

4.4.1.2. Gearbox with integral coupling: mount to valve

Information Assemble valve and gearbox in the same end position. As a standard, the gearbox is supplied in end position CLOSED.

- Recommended mounting position for **butterfly valves**: End position CLOSED.
- Recommended mounting position for **ball valves**: End position OPEN.

- Assembly steps**
1. If required, move gearbox in same end position as valve using the handwheel.
 2. Clean valve shaft and mounting faces, thoroughly degrease uncoated mounting surfaces.

Information: We recommend applying a surface sealing agent on the cleaned contact surfaces between valve and gearbox to seal the flange connection.

3. Fit gearbox. If required, slightly rotate gearbox until the valve shaft key engages into the keyway.

Figure 15:



Information Ensure that the spigot (if provided) fits uniformly in the recess and that the flanges are in complete contact.

4. If flange bores do not match thread:
 - 4.1 Slightly rotate handwheel until bores line up.
 - 4.2 If necessary, shift gearbox by one keyway.

5. Fasten gearbox with screws.

Information: We recommend glueing in the screws using threadlocking adhesive (e.g. Loctite 243).

6. Fasten screws crosswise to a torque according to table.

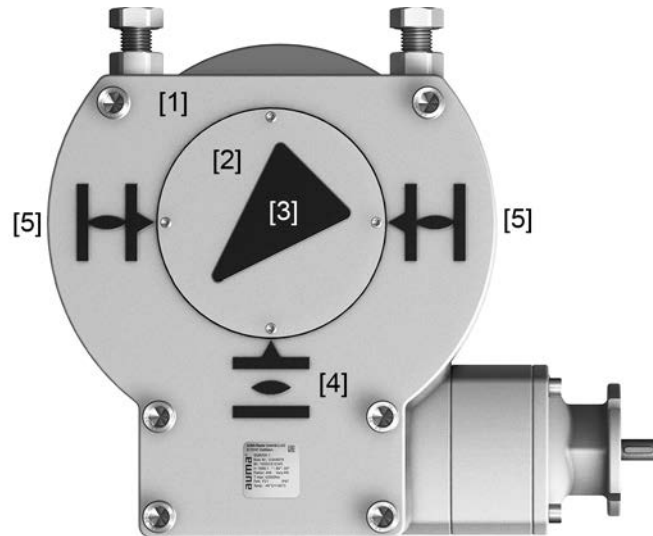
Table 4:

| Tightening torques for screws | |
|-------------------------------|----------------------------------------------|
| Threads | Tightening torque [Nm] |
| | Strength class Rm min. 800 N/mm ² |
| M12 | 82 |
| M16 | 200 |
| M20 | 392 |
| M30 | 1,422 |
| M36 | 2,481 |

5. Indications



5.1. Mechanical position indicator/running indication

Figure 16: Mechanical position indicator



- [1] Housing cover
- [2] Pointer cover
- [3] Indicator mark
- [4] Symbol for position OPEN
- [5] Symbol for position CLOSED

Characteristics Mechanical position indicator:

- Used as running indication (Pointer cover [2] with mark [3] rotates during actuator operation)
- Continuously indicates the valve position (The marks [3] follows the travel of the valve and rotates from OPEN to CLOSED and vice versa by approx. 90°)
- Indicates that end positions (OPEN/CLOSED) have been reached (Mark [3] points to symbol  for position OPEN [4] or to symbol  for position CLOSED [5].)

6. Commissioning

6.1. End stops in gearbox

The internal end stops limit the swing angle. They protect the valve against overload. End stop setting is performed by the valve manufacturer **prior** to installing the valve into the pipework.



Exposed, rotating parts (discs/balls) at the valve!

Pinching and damage at the valve.

- End stops should be set by suitably qualified personnel only.
- Set end stops as to ensure that they are NOT reached during normal operation.

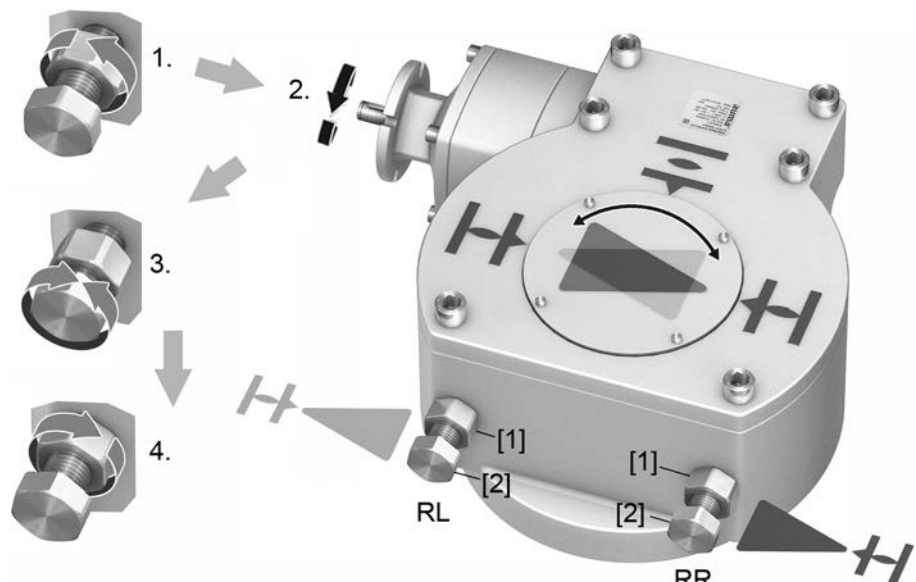
Information

The setting sequence depends on the valve:

- Recommendation for **butterfly valves**: Set end stop CLOSED first.
- Recommendation for **ball valves**: Set end stop OPEN first.

6.1.1. End stop CLOSED: set

Figure 17:



- RR End stop CLOSED for “Vers. RR” (refer to name plate)
- RL End stop CLOSED for “Vers. RL” (refer to name plate)
- [1] Nut
- [2] Setting screw for end stop

Procedure

1. Loosen nut [1] and turn slightly in opposite direction.
2. Turn valve to position CLOSED.

NOTICE

No overload protection at valve if nut is not fastened!

- In motor operation: Stop travel before reaching the valve end position (consider overrun).
- The last part of the travel must be completed in manual operation mode.

3. If end position CLOSED has not been reached: Turn back setting screw [2] until the valve can be operated into end position CLOSED.

NOTICE**Risk of damage at valve or gearbox in case of insufficient reach of setting screw!**

→ Respect maximum distance between screw head and housing wall.

Figure 18: Maximum distance between screw head and housing wall

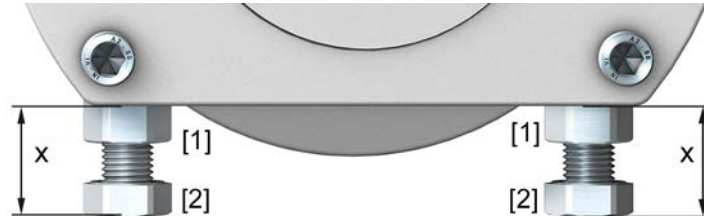


Table 5:

| Maximum distance between screw head and housing wall | | | | | | |
|------------------------------------------------------|------|-------|-------|-------|-------|-------|
| Size GQB | 80.1 | 100.1 | 125.1 | 160.1 | 200.1 | 250.1 |
| Max. distance x [mm] for 90° swing angle | 33 | 33 | 43 | 57 | 67 | 80 |
| Max. distance x [mm] for 95° swing angle | 38 | 39 | 50 | 66 | 78 | 95 |

4. Apply thread sealing agent (such as Sikaflex® -221) to setting screw thread [2], between nut [1] and housing.
5. Turn setting screw [2] up to the stop.
 - With mounted multi-turn actuator (not required for manual operation): Turn setting screw [2] counterclockwise by 1/4 turn.
 - ➔ This ensures that the gearbox end stop cannot be reached during motor operation if a multi-turn actuator is mounted and that the valve can close tightly for torque seating.
6. Hold setting screw [2] and tighten nut [1] until it is flush on the housing. Firmly tighten nut [1] using a spanner.

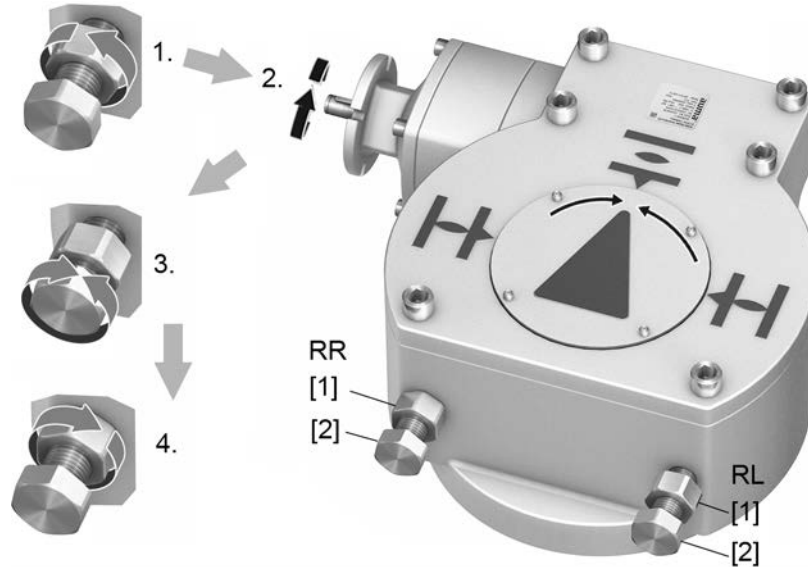
Information: The setting screw [2] must not turn when tightening the nut [1]: Otherwise the end stop setting will be changed.

Further settings hereafter:

- Check whether the mark aligns with the symbol CLOSED. Refer to <Mechanical position indicator: modify>.
- If the gearbox is mounted to a multi-turn actuator, set the seating in end position CLOSED straight after completion of the current setting position: <Seating in end positions via multi-turn actuator>.

6.1.2. End stop OPEN: set

Figure 19:



- RR End stop OPEN for “Vers. RR” (refer to name plate)
- RL End stop OPEN for “Vers. RL” (refer to name plate)
- [1] Nut
- [2] Setting screw for end stop

- Procedure**
1. Loosen nut [1] and turn slightly in opposite direction.
 2. Turn valve to position OPEN.

NOTICE

No overload protection at valve if nut is not fastened!

- In motor operation: Stop travel before reaching the valve end position (consider overrun).
- The last part of the travel must be completed in manual operation mode.

3. If end position OPEN has not been reached: Turn back setting screw [2] until the valve can be operated into end position OPEN.

NOTICE

Risk of damage at valve or gearbox in case of insufficient reach of setting screw!

- Respect maximum distance between screw head and housing wall.

Figure 20: Maximum distance between screw head and housing wall

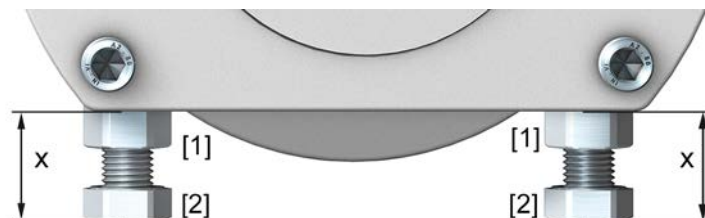


Table 6:

| Maximum distance between screw head and housing wall | | | | | | |
|------------------------------------------------------|------|-------|-------|-------|-------|-------|
| Size GQB | 80.1 | 100.1 | 125.1 | 160.1 | 200.1 | 250.1 |
| Max. distance x [mm] for 90° swing angle | 33 | 33 | 43 | 57 | 67 | 80 |
| Max. distance x [mm] for 95° swing angle | 38 | 39 | 50 | 66 | 78 | 95 |

4. Apply thread sealing agent (such as Sikaflex® -221) to setting screw thread [2], between nut [1] and housing.
5. Turn setting screw [2] up to the stop.
 - With mounted multi-turn actuator (not required for manual operation): Turn setting screw [2] counterclockwise by 1/4 turn.
 - ➔ This ensures that the gearbox end stop cannot be reached during motor operation if a multi-turn actuator is mounted and that the valve can close tightly for torque seating.
6. Hold setting screw [2] and tighten nut [1] until it is flush on the housing. Firmly tighten nut [1] using a spanner.

Information: The setting screw [2] must not turn when tightening the nut [1]: Otherwise the end stop setting will be changed.

Further settings hereafter:

- Check whether the mark aligns with symbol OPEN. Refer to <Mechanical position indicator: modify>.
- If the gearbox is mounted to a multi-turn actuator, set the seating in end position OPEN straight after completion of the current setting position: <Seating in end positions via multi-turn actuator>.

6.2. Seating in end positions via multi-turn actuator

This chapter supplies basic information and instructions which should be heeded in addition to the operation instructions of the multi-turn actuator.

- The valve manufacturer has to determine whether the valve is limit or torque seated.
- End position seating must be set in compliance with the operating instructions pertaining to the multi-turn actuator.
- When setting the torque switching within the multi-turn actuator, make sure that the tripping torque for both directions does not exceed the max. gearbox input torque (refer to technical data or name plate).
- Set the torque switching within the multi-turn actuator to the following value to prevent damage to the valve:
 Tripping torque = valve torque/factor (refer to name plate)

6.2.1. Seating in end position CLOSED: set

1. Move valve to end position CLOSED.

Information: The last part of the travel must be completed in manual operation mode!
2. For **limit seating** in end position CLOSED:
 - 2.1 Turn back the valve from the valve end position by an amount equal to the overrun.
 - 2.2 Set limit switching for the end position CLOSED according to the operation instructions for the multi-turn actuator.

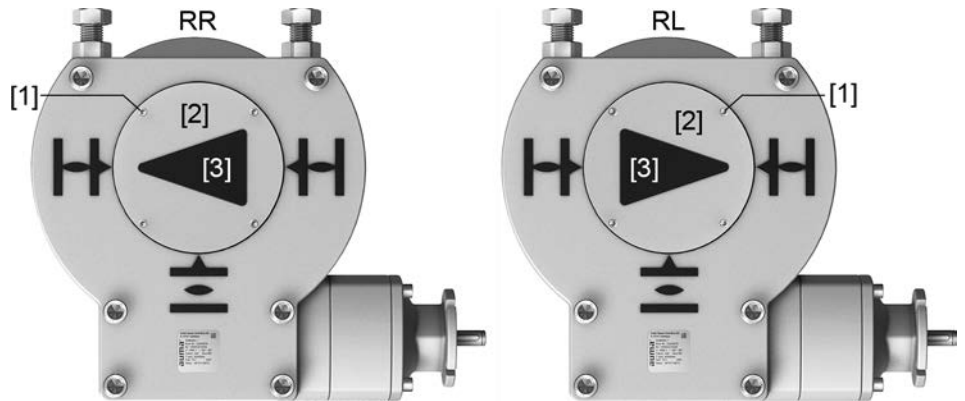
6.2.2. Seating in end position OPEN: set

1. Move valve to end position OPEN.

Information: The last part of the travel must be completed in manual operation mode!
2. For **limit seating** in end position OPEN:
 - 2.1 Turn back the valve from the valve end position by an amount equal to the overrun.
 - 2.2 Set limit switching for end position OPEN according to the operation instructions for the multi-turn actuator.

6.3. Mechanical position indicator: modify



Figure 21: Indication of end position CLOSED.



RR/RL refer to name plate (“Vers. RR” or “Vers. RL”)

- [1] Screws for pointer cover
- [2] Pointer cover
- [3] Indicator mark

Check indication in end position

1. Move valve to end position OPEN or CLOSED and check setting.
 - ➔ The setting is correct if:
 - the mark [3] points to the symbol  in end position CLOSED.
 - the mark [3] points to the symbol  in end position OPEN.



Modify indication

2. If the mark position is not correct:
 - 2.1 Loosen four screws [1] at pointer cover [2].
 - 2.2 Re-place pointer cover [2] to the symbol matching the end position. (The pointer cover can be shifted by steps of 90°.)
 - 2.3 Replace and fasten screws [1].

7. 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)

7.1. Preventive measures for servicing and safe operation

- Before commissioning, perform visual inspection for grease leakage and paint damage (corrosion).
- Thoroughly touch up any possible damage to paint. Original paint in small quantities can be supplied by AUMA.

7.2. Maintenance intervals

Recommendation for plants subject to strong vibration

- For plants subject to strong vibration, 6 months after commissioning and then once a year: Check fastening screws between actuator and gearbox/valve for tightness. If required, fasten screws while applying the tightening torques as indicated in chapter <Assembly>. For screws sealed and secured with e.g. thread sealing material, this action is not required.

Recommendation for grease change and seal replacement:

- The gearboxes are virtually maintenance-free. Without visual grease leakage, neither grease change nor seal replacement nor relubrication is not required.

Instructions for use in potentially explosive atmospheres of categories M2, 2G, 3G, 2D and 3D

- Imperatively heed the ambient temperatures, type of duty and input speeds specified in the technical data and on the name plate.
- In potentially explosive atmospheres, in particular where combustible dust is present, perform visual inspection for deposit of dirt or dust on a regular basis. Clean devices if required.

7.3. 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.:

- 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.

8. 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).

8.1. Technical data Part-turn gearboxes (weatherproof version)

| Valve | | Gearbox | | | | | | | | | | | |
|--------------------|---------------------------------|-----------|-----------------|----------------------|---------------|--------------------|-----------------------------------------------|---------------|--------------|-------------------|------------------|----------------------|-----|
| Max. output torque | Valve attachment | Type | Reduction ratio | Factor ¹⁾ | Turns for 90° | Max. input torques | Input mounting flange for multi-turn actuator | Input shaft Ø | Hand-wheel Ø | Max. Manual force | Max. Input speed | Weight ²⁾ | |
| to [Nm] | Flange according to EN ISO 5211 | | | | | [Nm] | | [mm] | [mm] | [N] | [rpm] | approx. [kg] | |
| 3,000 | F12, F14, F16 | GQB 80.1 | 54:1 | 16.7 | 14 | 180 | Without F10 | 20 | 400 | 926 | 54 | 15 | |
| | | | 225:1 | 64.2 | 56 | 47 | F07 | 16 | 200 | 483 | 215 | 15 | |
| 6,000 | F14, F16, F25 | GQB 100.1 | 52:1 | 17.2 | 13 | 349 | Without F10 | 30 | 800 | 874 | 54 | 26 | |
| | | | 217:1 | 65.8 | 54 | 92 | F10 | 20 | 250 | 752 | 215 | 27 | |
| 12,000 | F16, F25, F30 | GQB 125.1 | 903:1 | 245.6 | 226 | 25 | F07 | 16 | 125 | 417 | 215 | 28 | |
| | | | | | | | F10 | 20 | 125 | 417 | 215 | | |
| | | | 217:1 | 69.8 | 54 | 172 | F14 | 30 | 400 | 860 | 215 | 48 | |
| | | | 628:1 | 181.5 | 157 | 67 | F10 | 20 | 400 | 860 | 215 | 49 | |
| 21,000 | F25, F30, F35 | GQB 160.1 | 903:1 | 253.3 | 226 | 48 | F07 | 16 | 200 | 489 | 215 | 47 | |
| | | | | | | | F10 | 20 | 200 | 489 | 215 | | |
| | | | 218:1 | 72.2 | 55 | 291 | F14 | 30 | 630 | 852 | 215 | 72 | |
| | | | 563:1 | 175.0 | 141 | 120 | F10 | 20 | 630 | 852 | 215 | 75 | |
| 42,000 | F30, F35, F40 | GQB 200.1 | 880:1 | 254.5 | 220 | 83 | F10 | 20 | 250 | 624 | 215 | 75 | |
| | | | 1,784:1 | 500.4 | 446 | 42 | F10 | 20 | 160 | 509 | 215 | 75 | |
| | | | 214:1 | 72.9 | 54 | 577 | F16 | 40 | – | – | 215 | 124 | |
| | | | 552:1 | 169.0 | 138 | 249 | F14 | 30 | – | – | 215 | 129 | |
| 84,000 | F35, F40, F48 | GQB 250.1 | 864:1 | 257.1 | 216 | 164 | F14 | 30 | 400 | 752 | 215 | 129 | |
| | | | 1,751:1 | 506.1 | 438 | 83 | F10 | 20 | 400 | 752 | 215 | 127 | |
| | | | | | | | F10 | 20 | 250 | 645 | 215 | | |
| | | | 214:1 | 74.8 | 54 | 1 123 | F25 | 50 | – | – | 215 | 240 | |
| | | | | | | | F16 | 40 | – | – | 215 | | |
| | | | 552:1 | 173.7 | 138 | 484 | F14 | 30 | – | – | 215 | 252 | |
| | | | | 864:1 | 264.4 | 216 | 318 | F14 | 30 | 800 | 1,120 | 215 | 252 |
| | | | | 1,751:1 | 520.9 | 438 | 162 | F14 | 30 | 630 | 931 | 215 | 252 |
| | | | | | | | | F14 | 30 | 400 | 763 | 215 | 252 |
| | | | | | | | | F10 | 20 | 400 | 763 | 215 | 252 |

- 1) Conversion factor from output torque to input torque for actuator size definition. When new, the factor can fall short of the indicated value by up to 15 %.
- 2) Specified weight includes coupling (without bore) and grease filling in the gear housing

Additional information on weight:

For an additional extension flange, the weight adds up as follows:

| Type | GQB 80.1 | | GQB 100.1 | | GQB 125.1 | | GQB 160.1 | | GQB 200.1 | | GQB 250.1 | |
|------------------------|----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|
| Extension flange | F14 | F16 | F25 | F25 | F25 | F30 | F30 | F35 | F35 | F40 | F40 | F48 |
| Additional weight [kg] | 0.3 | 3 | 0.1 | 4 | 4 | 7 | 3 | 15 | 6 | 17 | 7 | 20 |

Technical data

General information

Part-turn gearboxes are suitable for manual and motor operation of industrial valves.
 GQB part-turn gearboxes are not suitable for:

- Hydraulic steel structures & hydropower
- Nuclear applications
- Buried service
- Automation of special valves (e.g. louvre dampers, stack dampers, diverters with toggle arm, guillotine isolators)

Features and functions

| | | |
|-----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| Type of duty | Class A according to EN 15714-2: OPEN-CLOSE | |
| Weatherproof version | Class B according to EN 15714-2: Inching/positioning or positioning duty | |
| End stops | End positions OPEN and CLOSED can be set individually. | |
| Swing angle | 90° ± 5° | |
| Direction of rotation | Standard: | Suitable for clockwise closing valves |
| | Option: | Suitable for counterclockwise closing valves |
| Lifetime | GQB 80.1 – GQB 125.1 | Lifetime according to EN 15714-2 and ISO/DIS 22109 when assuming a valve torque safety factor of 1.5. |
| | GQB 160.1 – GQB 250.1 | Lifetime according to EN 15714-2 and ISO/DIS 22109 when assuming a valve torque safety factor of 1.2. |
| Worm wheel material | Spheroidal cast iron (EN-GJS) | |
| Housing material | Cast iron (EN-GJL) | |
| Self-locking | The gearboxes are self-locking when at standstill under normal service conditions; strong vibration may cancel the self-locking effect. While in motion, safe braking is not guaranteed. If this is required, a separate brake must be used. | |
| Static safety factor | <ul style="list-style-type: none"> • Sized with double safety, in relation to maximum torques • With overload protection to prevent housing damage | |

Interface to multi-turn actuator or operator

| | | |
|---------------------|-----------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Input shaft | Standard: | Corrosion-protected, cylindrical with parallel key according to DIN 6885-1 |
| | Option: | Cylindrical with parallel key according to DIN 6885-1 with square adapter for power tool emergency operation |
| Flange for actuator | In accordance with EN ISO 5210 | |
| Manual operation | Standard: | <ul style="list-style-type: none"> • Handwheel made of aluminium with electrophoretic coating • Handwheel with ball handle |
| | Options: | <ul style="list-style-type: none"> • Handwheel made of GJL-200 with electrophoretic coating and painting • Handwheel lockable • Handwheel extension on request |
| Position indicator | Mechanical position indication proportional to travel (pointer cover) | |

Interface to the valve

| | | |
|---------------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output drive flange | Dimensions according to EN ISO 5211 | |
| Connection to valve shaft | Standard: | Plug-in unmachined output drive sleeve with splines |
| | Options: | <ul style="list-style-type: none"> • Plug-in finish-machined coupling with splines and bore with keyway, square bore or two-flat with grub screw for secure fixing to valve shaft. • Plug-in finish-machined coupling with splines and bore with keyway, square bore or coated two-flat with grub screw for secure fixing to valve shaft. • Integral coupling for adopting enlarged valve shaft diameter with 4 keyways according to DIN 6885 (not available for QQB 80.1 - QQB 100.1) |
| Spigot | Standard: | <ul style="list-style-type: none"> • QQB 80.1 – GQB 125.1: Plane (recess) according to EN ISO 5211 • QQB 160.1 – GQB 250.1: Spigot according to EN ISO 5211 (integrated into the housing) |
| | Options: | <ul style="list-style-type: none"> • 4 bores for dowel pin • QQB 80.1 – GQB 125.1: With spigot according to EN ISO 5211 • QQB 160.1 – GQB 250.1: Plane |

| Service conditions | | |
|-------------------------------------------------|------------------------------------|-------------------------------------------------------------------------------------------------------------|
| Use | Indoor and outdoor use permissible | |
| Ambient temperature | Standard: | −40 °C to +100 °C |
| | Option: | Further temperature ranges on request |
| Humidity | Up to 100 % relative humidity | |
| Vibration resistance according to IEC 60068-2-6 | 1g, 5 to 200 Hz or on request | |
| Enclosure protection according to EN 60529 | IP67 | |
| Corrosion protection | KN | Suitable for installation in industrial units, in water or power plants with a low pollutant concentration. |
| | KS | Suitable for use in areas with high salinity, almost permanent condensation, and high pollution. |
| Coating | Double layer powder coating | |
| Colour | Standard: | AUMA silver-grey (similar to RAL 7037) |
| | Option: | Available colours on request |

| Further information | |
|---------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|
| EU Directives | Machinery Directive: (2006/42/EC) |
| Reference documents | Dimensions GQB 80.1 – GQB 125.1 Dimensions GQB 160.1 – GQB 250.1 Dimensions Extensions for input shaft Mounting position – Mounting of actuators |

8.2. Technical data Part-turn gearboxes (explosion-proof version)

| Valve | | Gearbox | | | | | | | | | |
|--------------------|---------------------------------|-----------|-----------------|----------------------|---------------|-------------------|-----------------------------------------------|---------------|-------------|--------------------------------|----------------------|
| Max. output torque | Valve attachment | Type | Reduction ratio | Factor ¹⁾ | Turns for 90° | Max. input torque | Input mounting flange for multi-turn actuator | Input shaft Ø | Handwheel Ø | Max. manual force at handwheel | Weight ²⁾ |
| to [Nm] | Flange according to EN ISO 5211 | | | | | [Nm] | | [mm] | [mm] | [N] | approx. [kg] |
| 2,150 | F12/F14/F16 | GQB 80.1 | 54:1 | 16.7 | 14 | 128 | Without | 20 | 400 | 642 | 15 |
| | | | 225:1 | 64.2 | 56 | 34 | F07 | 20 | 400 | 642 | |
| 4,250 | F14/F16/F25 | GQB 100.1 | 52:1 | 17.2 | 13 | 248 | Without | 30 | 800 | 619 | 26 |
| | | | 217:1 | 65.8 | 54 | 65 | F10 | 20 | 250 | 517 | 27 |
| | | | 903:1 | 245.6 | 226 | 17 | F07 | 16 | 125 | 277 | 28 |
| | | | | | | | F10 | 20 | 125 | 277 | |
| 8,500 | F16/F25/F30 | GQB 125.1 | 217:1 | 69.8 | 54 | 122 | F14 | 30 | 400 | 609 | 48 |
| | | | 628:1 | 181.5 | 157 | 47 | F10 | 20 | 400 | 609 | 49 |
| | | | | | | | F07 | 16 | 200 | 336 | 47 |
| F10 | 20 | 200 | 336 | | | | | | | | |
| 17,500 | F25/F30/F35 | GQB 160.1 | 218:1 | 72.2 | 55 | 242 | F14 | 30 | 630 | 769 | 72 |
| | | | 563:1 | 175.0 | 141 | 100 | F10 | 20 | 315 | 635 | |
| | | | | | | | 880:1 | 254.5 | 220 | 69 | F10 |
| | | | 1,784:1 | 500.4 | 446 | 35 | F10 | 20 | 160 | 437 | |
| 35,000 | F30/F35/F40 | GQB 200.1 | 214:1 | 72.9 | 54 | 480 | F16 | 40 | – | – | 124 |
| | | | 552:1 | 169.0 | 138 | 207 | F14 | 30 | 500 | 829 | |
| | | | | | | | F14 | 30 | 400 | 681 | 129 |
| | | | 864:1 | 257.1 | 216 | 136 | F10 | 20 | 400 | 681 | |
| | | | 1,751:1 | 506.1 | 438 | 69 | F10 | 20 | 250 | 553 | |

Technical data

| Valve | | Gearbox | | | | | | | | | |
|--------------------|---------------------------------|-----------|-----------------|----------------------|---------------|-------------------|-----------------------------------------------|---------------|-------------|--------------------------------|----------------------|
| Max. output torque | Valve attachment | Type | Reduction ratio | Factor ¹⁾ | Turns for 90° | Max. input torque | Input mounting flange for multi-turn actuator | Input shaft Ø | Handwheel Ø | Max. manual force at handwheel | Weight ²⁾ |
| to [Nm] | Flange according to EN ISO 5211 | | | | | [Nm] | | [mm] | [mm] | [N] | approx. [kg] |
| 70,000 | F35/F40/F48 | GQB 250.1 | 214:1 | 74.8 | 54 | 936 | F25 | 50 | – | – | 240 |
| | | | | | | | F16 | 40 | – | – | |
| | | | 552:1 | 173.7 | 138 | 403 | F14 | 30 | – | – | 252 |
| | | | | | | | 864:1 | 264.4 | 216 | 265 | |
| | | | 1,751:1 | 520.9 | 438 | 134 | F14 | 30 | 400 | 672 | |
| | | | | | | | F10 | 20 | 400 | 672 | |

- 1) Conversion factor of output torque to input torque for actuator size definition. When new, the factor can fall short of the indicated value by up to 15 %.
- 2) Specified weight includes coupling (without bore) and grease filling in the gear housing

Max. permissible ambient temperatures and input speeds

| Valve | | Gearbox | | | | | | | |
|----------------------------|-----------|-----------------|----------------------------------------------------------|-------|-------|-------|-------|-------|-----|
| Max. output torque to [Nm] | Type | Reduction ratio | Max. input speed [rpm] / Max. ambient temperature for T3 | | | | | | |
| | | | 26.4 | 38.4 | 54 | 75.6 | 108 | 150 | 216 |
| 2,150 | GQB 80.1 | 54:1 | 80 °C | | | – | | | |
| | | 225:1 | 80 °C | | | – | | | |
| 1800 | GQB 80.1 | 54:1 | 80 °C | | | – | | | |
| | | 225:1 | 80 °C | | | – | | | |
| 4,250 | GQB 100.1 | 52:1 | 80 °C | | | – | | | |
| | | 217:1 | 80 °C | | | – | | | |
| 3500 | GQB 100.1 | 903:1 | 80 °C | | | – | | | |
| | | 52:1 | 80 °C | | | – | | | |
| 8,500 | GQB 125.1 | 217:1 | 80 °C | | | 70 °C | 65 °C | 40 °C | |
| | | 628:1 | 80 °C | | | 80 °C | | | |
| 7,000 | GQB 125.1 | 903:1 | 80 °C | | | 80 °C | | | |
| | | 217:1 | 80 °C | | | 80 °C | | | |
| 17,500 | GQB 160.1 | 218:1 | 80 °C | 70 °C | 65 °C | 40 °C | – | | |
| | | 563:1 | 80 °C | | | 70 °C | 40 °C | | |
| 14,000 | GQB 160.1 | 880:1 | 80 °C | | | 70 °C | | 65 °C | |
| | | 1,784:1 | 80 °C | | | 80 °C | | 70 °C | |
| 35,000 | GQB 200.1 | 218:1 | 80 °C | | | 70 °C | 65 °C | 40 °C | |
| | | 563:1 | 80 °C | | | 70 °C | | 65 °C | |
| 28,000 | GQB 200.1 | 880:1 | 80 °C | | | 80 °C | | 70 °C | |
| | | 1,784:1 | 80 °C | | | 80 °C | | 70 °C | |
| 70,000 | GQB 250.1 | 214:1 | 80 °C | 70 °C | 65 °C | 40 °C | – | | |
| | | 552:1 | 80 °C | | | 70 °C | 65 °C | 40 °C | |
| 56,000 | GQB 250.1 | 864:1 | 80 °C | | | 65 °C | | 40 °C | |
| | | 1,751:1 | 80 °C | | | 80 °C | | 70 °C | |
| 56,000 | GQB 250.1 | 214:1 | 80 °C | 70 °C | 65 °C | 40 °C | – | | |
| | | 552:1 | 80 °C | | | 70 °C | 40 °C | | |
| 56,000 | GQB 250.1 | 864:1 | 80 °C | | | 70 °C | | 65 °C | |
| | | 1,751:1 | 80 °C | | | 80 °C | | 70 °C | |

| Additional information on weight: | | | | | | | | | | | | |
|--------------------------------------------------------------------|----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|-----------|-----|
| For an additional extension flange, the weight adds up as follows: | | | | | | | | | | | | |
| Type | GQB 80.1 | | GQB 100.1 | | GQB 125.1 | | GQB 160.1 | | GQB 200.1 | | GQB 250.1 | |
| Extension flange | F14 | F16 | F25 | F25 | F25 | F30 | F30 | F35 | F35 | F40 | F40 | F48 |
| Additional weight [kg] | 0.3 | 3 | 0.1 | 4 | 4 | 7 | 3 | 15 | 6 | 17 | 7 | 20 |

| General information | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Part-turn gearboxes are suitable for manual and motor operation of industrial valves. | |
| GQB part-turn gearboxes are not suitable for: | |
| <ul style="list-style-type: none"> Hydraulic steel structures & hydropower Nuclear applications Buried service Automation of special valves (e.g. louvre dampers, stack dampers, diverters with toggle arm, guillotine isolators) | |

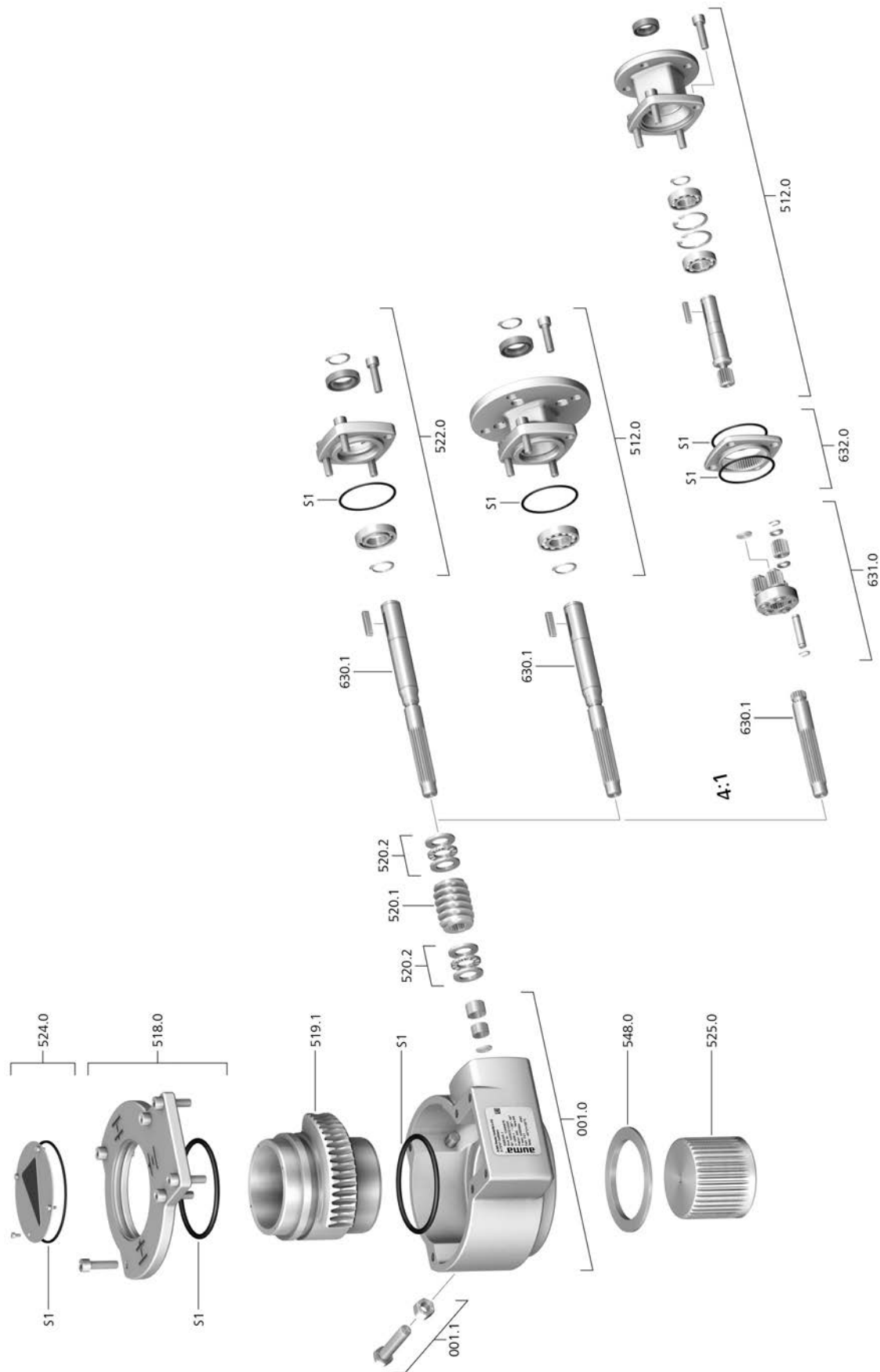
| Features and functions | |
|---------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Explosion protection | Standard: II 2G Ex h IIC T3 Gb II 2D Ex h IIIC T190 °C Db |
| | Type of duty Class A according to EN 15714-2: OPEN-CLOSE / max. 3 subsequent strokes (90°), cooling down is then required Class B according to EN 15714-2: Inching/positioning or positioning duty For nominal voltage and +40 °C ambient temperature and at run torque load. |
| End stops | End positions OPEN and CLOSED can be set individually. |
| Swing angle | 90° ± 5° |
| Direction of rotation | Standard: Suitable for clockwise closing valves Option: Suitable for counterclockwise closing valves |
| Lifetime | Lifetime according to EN 15714-2 and ISO/DIS 22109 |
| Worm wheel material | Spheroidal cast iron (EN-GJS) |
| Housing material | Cast iron (EN-GJL) |
| Self-locking | The gearboxes are self-locking when at standstill under normal service conditions; strong vibration may cancel the self-locking effect. While in motion, safe braking is not guaranteed. If this is required, a separate brake must be used. |
| Statistical safety factor | <ul style="list-style-type: none"> Sized with double safety, in relation to maximum torques With overload protection to prevent housing damage |

| Service conditions | |
|------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Use | Indoor and outdoor use permissible |
| Ambient temperature | Min. -40 °C |
| Humidity | Up to 100 % relative humidity |
| Enclosure protection according to EN 60529 | IP67 |
| Vibration resistance according to EN 60068-2-6 | 1g, 5 to 200 Hz at input mounting flange for actuator |
| Corrosion protection | Standard: KN Suitable for installation in industrial units, in water or power plants with a low pollutant concentration. Option: KS Suitable for use in areas with high salinity, almost permanent condensation, and high pollution. |
| Coating | Double layer powder coating |
| Colour | Standard: AUMA silver-grey (similar to RAL 7037) Option: Available colours on request |

| Further information | |
|---------------------|------------------------------------------------------------------------------------------------------------------------|
| EU Directives | ATEX Directive: (2014/34/EU) Machinery Directive: (2006/42/EC) |
| Standard | EN 80079-36 |
| Reference documents | Dimensions GQB 160.1 – GQB 250.1 Dimensions Extensions for input shaft Mounting position – Mounting of actuators |

9. Spare parts

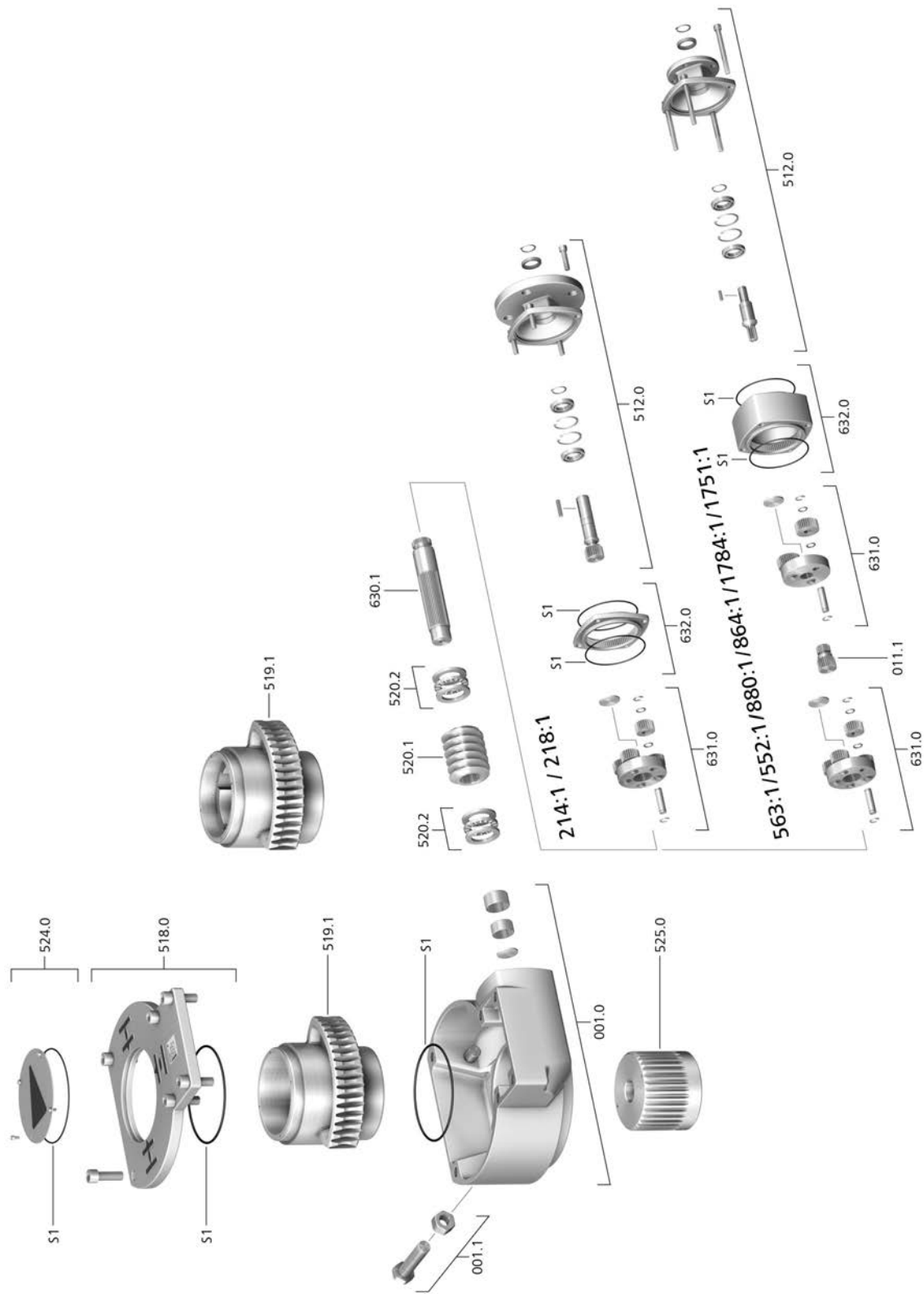
9.1. Part-turn gearboxes QQB 80.1 – QQB 125.1



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.

| Ref. no. | Designation | Type |
|----------|-------------------------------|--------------|
| 001.0 | Housing | Sub-assembly |
| 001.1 | Setting screw for end stop | Sub-assembly |
| 512.0 | Input mounting flange | Sub-assembly |
| 518.0 | Housing cover | Sub-assembly |
| 519.1 | Worm wheel | |
| 520.1 | Worm shaft | Sub-assembly |
| 520.2 | Axial cylinder roller bearing | |
| 522.0 | Bearing cover | Sub-assembly |
| 524.0 | Pointer cover | Sub-assembly |
| 525.0 | Coupling | Sub-assembly |
| 548.0 | Spigot ring | |
| 630.1 | Shaft | Sub-assembly |
| 631.0 | Planet carrier | |
| 632.0 | Internal geared wheel | |
| S1 | Seal kit | Set |

9.2. Part-turn gearboxes GQB 160.1 – GQB 250.1



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.

| Ref. no. | Designation | Type |
|----------|-------------------------------|--------------|
| 001.0 | Housing | Sub-assembly |
| 001.1 | Setting screw for end stop | Sub-assembly |
| 011.1 | Pinon | |
| 512.0 | Input mounting flange | Sub-assembly |
| 518.0 | Housing cover | Sub-assembly |
| 519.1 | Worm wheel | |
| 520.1 | Worm | Sub-assembly |
| 520.2 | Axial cylinder roller bearing | |
| 524.0 | Pointer cover | Sub-assembly |
| 525.0 | Coupling | Sub-assembly |
| 630.1 | Shaft | Sub-assembly |
| 631.0 | Planet carrier | |
| 632.0 | Internal geared wheel | |
| S1 | Seal kit | Set |

10. 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>.

10.1. Declaration of Incorporation and EU Declaration of Conformity

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Declaration of Incorporation in compliance with Machinery Directive

for gearboxes of the following types:

GQB 80.1, GQB 100.1, GQB 125.1, GQB 160.1, GQB 200.1, GQB 250.1

AUMA Riester GmbH & Co. KG as manufacturer declare herewith, that the above mentioned gearboxes meet the basic requirements of the following Directives:

2006/42/EC (Machinery Directive)

As partly completed machinery the gearboxes 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 2006/42/EC

EN ISO 12100:2010
EN ISO 5211:2017

AUMA gearboxes are designed for the operation of 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, 1.3, 1.3.2, 1.3.3, 1.3.4, 1.3.7, 1.5.5, 1.6.1, 1.6.3, 1.6.4

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.

Y007.618/003/en/1.19

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