



INSTRUCTION MANUAL

Two-way / three-way valve

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Instruction manual

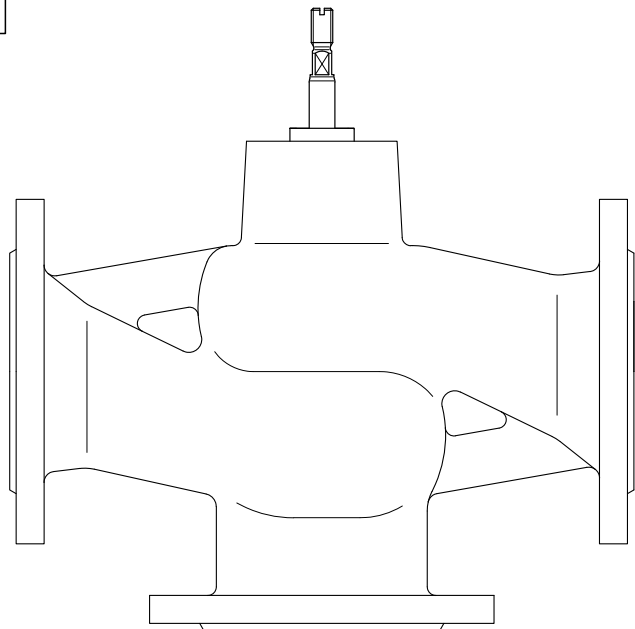
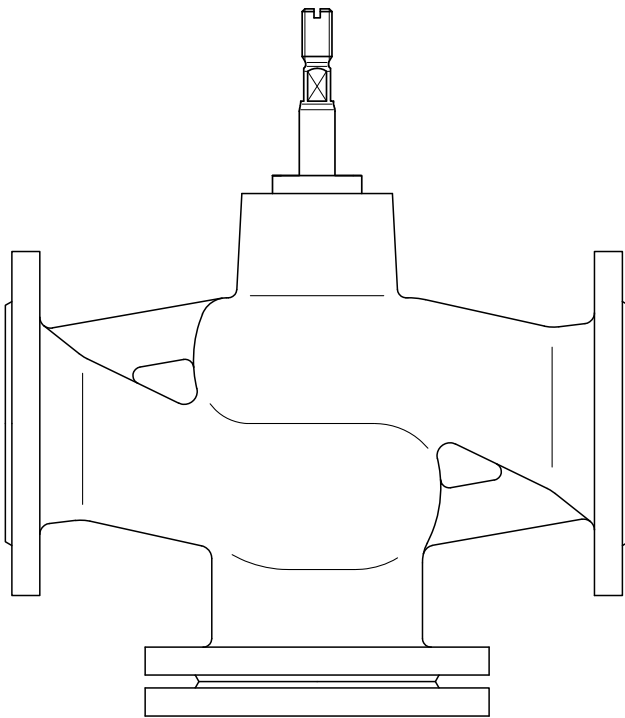
BR206GF / BR216GF DN 15 - DN 100
BR306GF / BR316GF DN 15 - DN 100



Instruction manual

BR216GF DN 125 - DN 200
BR316GF DN 125 - DN 200





Instruction Manual

Two-way / three-way valve

BR206GF / BR216GF DN 15 - DN 100

BR306GF / BR316GF DN 15 - DN 100

General information

Amendment	Version	Date	Changes
	1.0	December 2007	Initial preparation
	1.1	March 2011	Revision
	1.2	November 2022	Revision

Authorization The copyright for this operating manual as well as all rights in case of patent awarding or registration of registered design remain with the manufacturer!

Subject to alterations The regulations, directives, standards etc. are compliant with the current state of information at the time of development and are not subject to modification service. They must be applied by the operator at his own responsibility in their latest valid version.

Concerning all data, information, and illustrations in this manual we reserve the right of technical modifications and improvements. No claims can be considered for alteration or rework of already delivered fittings.

Manufacturer **HORA**
Geschäftsbereich Flow Control
Holter Regelarmaturen GmbH & Co. KG
Helleforthstrasse 58–60
33758 Schloss Holte-Stukenbrock
Germany

phone: +49 (0) 5207/8903-0

mail: fc@hora.de

www.hora.de

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1 Safety

Please carefully read this operating manual and in particular the following safety notes prior to installation and operation.



DANGER

Immediately threatening risk which will result in death or serious injuries of the body.



WARNING

Potentially dangerous situation which might result in death or serious injuries of the body.



CAUTION

Potentially dangerous situation which might result in minor injury of the body. Indicates a risk which may be result in property damage.

ATTENTION

ATTENTION

Potentially dangerous situation where the product or an object may be damaged in its environment.

Hint: Notes for application and other useful information.

1.1 Proper use

The delivery note is a part of the operating instructions. If not at hand, it must be requested prior to commissioning the fitting and then compared with the characteristic values of the system. Deviations from system and delivery note values must be cleared with the manufacturer prior to commissioning.

The fitting is designed for use within the pressure and temperature limits specified on the delivery slip.

Any other utilization for tasks diverting from the intended use stated above as well as any operation outside the allowable pressure and temperature ranges shall be deemed non-intended use. The owner-operator bears sole responsibility for risks to humans and machinery as well as any other property!

1.2 For the owner-operator

Keep the operating manual always within reach at the place of operation of the fitting!

The intended use also includes the compliance with accident preventions, EN regulations and safe working practices for all measures described in these operating instructions in due consideration of prevailing rules.

Follow the additional regional, local or internal safety regulations, if any.

Make sure that any person entrusted to carry out one of the actions described in this operating manual has read and understood this manual.

1.3 Personnel

Only qualified personnel shall work at or near these fittings. Qualified persons are deemed persons who are familiar with the installation, erection, start-up and operation and/or maintenance of the fittings or have been qualified appropriately for their work. The necessary and prescribed qualifications include:

- Training / instruction or authorization to turn on /off circuits and appliances / systems according to EN 60204 (DIN VDE 0100 / 0113) and the standards of safety technology.
- Training or instruction according to the standards of the safety technology concerning care and use of adequate safety and work protection equipment.
- First Aid training.

Work safely and refrain from any mode of working which might in any way endanger the safety of persons or the fitting and/or other assets.

1.4 Prior to work

Check, whether the nominal / functional data on the type plate match the operating data of the system.

Prior to the start of maintenance and / or repair work all electrical leads leading to the fitting actuator, if existing, must be disconnected from the mains by qualified personnel according to EU Guidelines. In addition the fitting must be depressurised, cooled down and empty.



During operation the fitting may be under pressure and temperature.

When the fitting is not depressurised and cooled down there is a risk of damage to property and severe bodily injuries.

- Ensure that fitting is depressurised, cooled down and empty.
-

1.5 Work environment

The ambient temperature (atmospheric temperature, air humidity and wetness) must not exceed or drop below the common values.

2 Product Specification

Fittings of the lines of products described in this document are used for controlling cold and hot water with antifreeze and anti-corrosives. The fitting consists of the valve and the drive which alters the position of the flow restrictor (cone) in relation to the seat as a function of the control input. Suitable drives include electrical linear actuators which act by an axial shift of the cone.

2.1 Two-way valve

- Flow from A to B

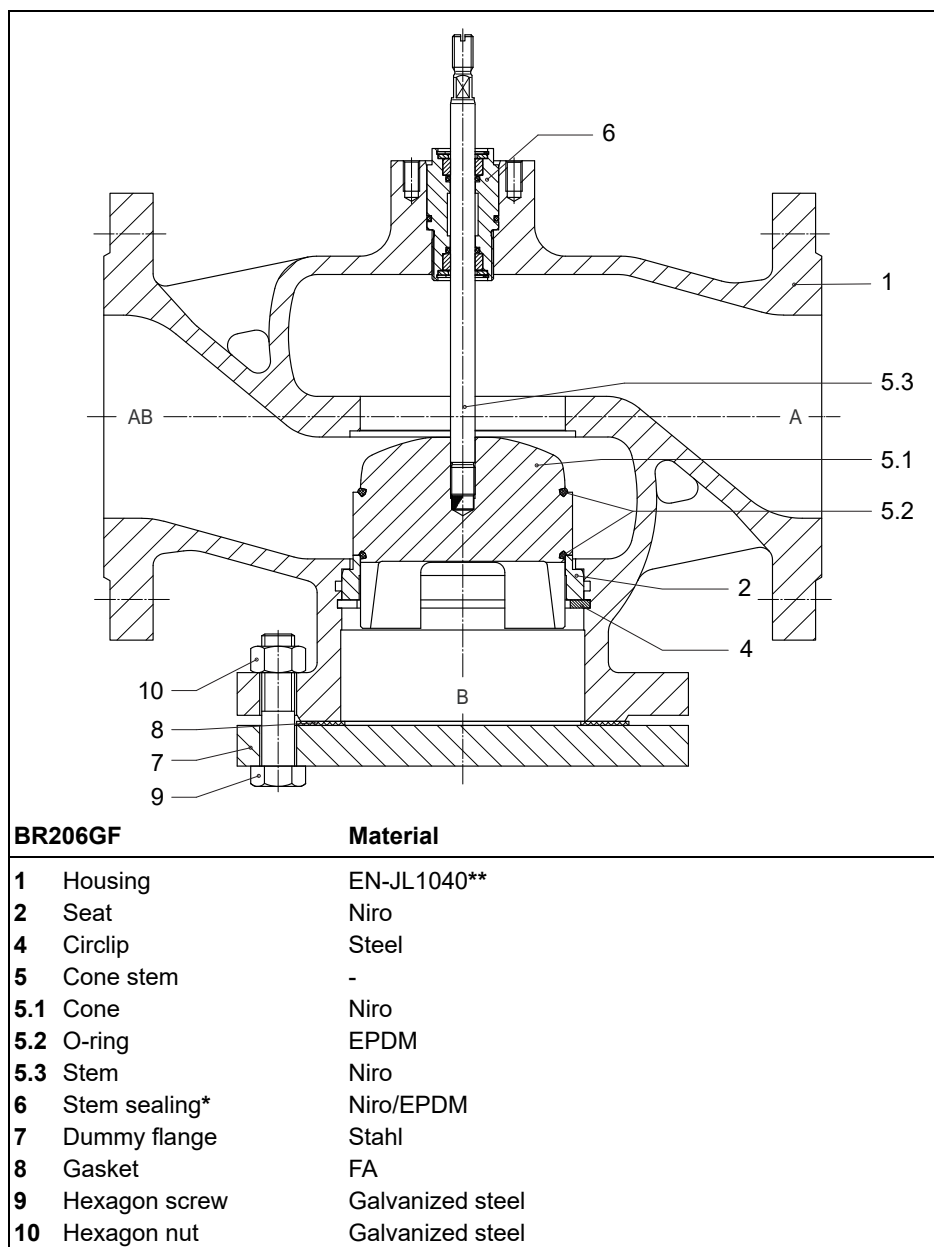


diagram 1 Component part denominations

* This component part is available as a spare part!

** We reserve the right to deliver housings made of higher-grade material

2.2 Three-way valve

- Mixing valve: Flow from A to AB and B to AB

2.4 Identification of fitting

The housing or type plate of the fitting bears the following identifications:

- Nominal width DN
- Nominal pressure PN
- Admissible maximum temperature TS
- Material of housing
- Name of manufacturer
- Melting symbol
- Product identification (production series and serial number)
- Flow symbol
- CE identification (for fittings from category I onwards only as per 97/23/EU)

2.5 Test pressure

The test pressure PT has been calculated on the base of the allowable pressure at room temperature PS_{RT} .

All admissible pressures at room temperature for valves with a pressure level designation based on the material have been taken from directive EN 1092.

The test pressure PT equals 1.5 times the allowable pressure at room temperature. It has been rounded on the next higher entire number. Labelling the fitting housing with the test pressure is not necessary when this factor is observed.

2.6 Limits for application

The fittings are state-of-the-art and operative for the intended use as well as operation within the data stated on the type plate.



Operability can be impaired posing a danger of personal damage or damage to property.

Ensure that

- the assembly, setting and / or commissioning is carried out properly according to the guidelines in these operating instructions.
 - the operating data are within the values stated on the type plate and/or on the delivery note.
 - the ambient conditions (atmospheric temperature, air humidity and wetness) do not exceed or drop below common values.
-

2.7 Technical data

Production series	BR206GF	BR216GF	BR306GF	BR316GF
Form	Feed-through		Three-way	
Nominal width	DN 15 - DN 100			
Pressure stage	PN 6	PN 16	PN 6	PN 16
Characteristic curve	A→AB gl% mod.		A→AB gl% mod. B→AB linear	
Stroke	14 mm - 30 mm			
Stem sealing	O-ring made of EPDM			
Function	Two-way valve		Mixing valve or change-over valve	
Type of connection	Flange as per EN 1092-2 type 21			
Installation length	EN 558-1 basic series 1			
Leakage rate	EN 1349 – Seat leakage VI G 1 (tight fitting)			
Fluid temperature	Cold and hot water with antifreeze and anticorrosive from 0 ... +150°C From 130°C admissible for horizontal drive position only With stem heater suitable for water with antifreeze up to -10°C			
Dimensions	See technical data sheets			

Tabelle 1 Technical data

2.8 Type plate

Type plate for fittings
without
CE marking

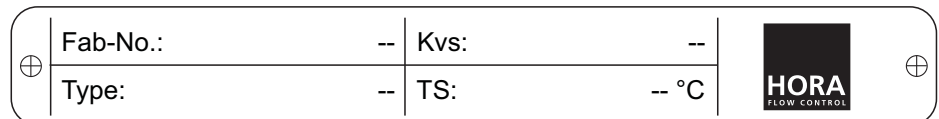


diagram 3 Type plates for fittings Article 3, Section 3

Type plates for fittings
with
CE marking

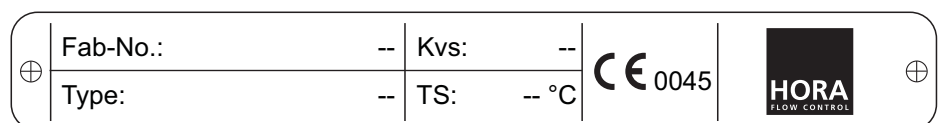


diagram 4 Type plate for fittings, category I

Manuf. no.	16 digit number 1 - 8: Allocation to order 9 - 12: Position 13 - 16: Month and year of manufacture Example: 07208389/01/1007 Order 07208389 Position 1 Date of manufacture October 2007
Kvs	K _{vS} -Value in m ³ /h
Type	Series designation of fitting
TS	Admissible maximum temperature
CE 0045	CE identification with key figure of stated office 0045 (Technical Control Board Hannover/Sachsen-Anhalt)

table 2 Meaning of inscription

3 Transport, storage and handling



CAUTION

Non-compliance with safety regulations may result in injury!

- Wear the required personal and other safety equipment.
- Protect the fitting against external damage (impact, stroke, vibrations etc.) especially in the area around the valve stem
- Repair any damage to the anticorrosive immediately (paintwork, oiled surfaces etc.).
- Wait until arriving at the site of installation before removing the sealing plugs serving as a protection for the flanges and interiors of the fitting!

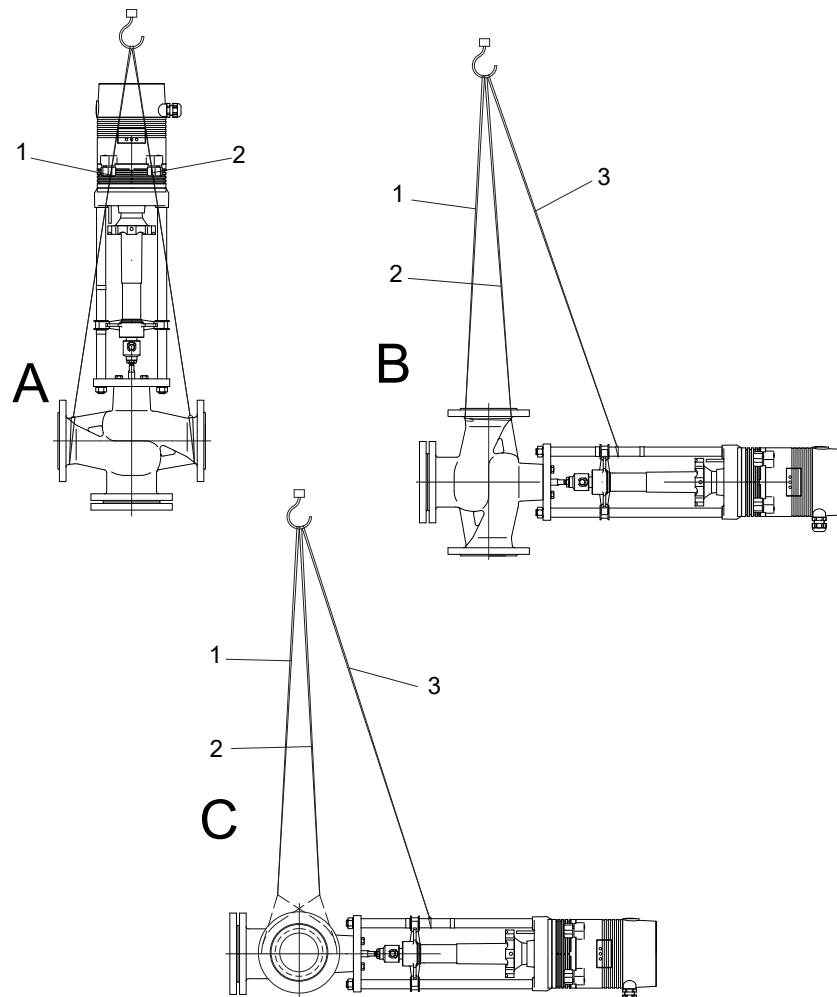


diagram 5 Lift the fittings for installation in pipeline with the help of belt 1, 2, 3

- **There are three options of handling when installing the fitting**
 - Fig. A: Wrap the belt around the housing. Run the belt (1) and (2) along the right and left of the drive so as to hold the fitting in the indicated position and to prevent vertical tilting.
 - Images B and C: Wrap belts (1) and (2) around the housing. Attach belts (3) to the spacer column but never to the stem! It serves to hold the fitting's horizontal position.

4 Assembly

Prior to installing the fitting:

- ⇒ 4.1 *Checking the scope of delivery* on page 11
- ⇒ 4.2 *Preparing assembly* on page 11

The installation of the fitting comprises the following steps:

- ⇒ 4.3 *Assembling the fitting* on page 12

4.1 Checking the scope of delivery

- Check the packaging for damage.
- Dispose of packaging in an environmentally friendly manner.
- Check the delivered items against the delivery note in order to see whether the delivery is complete.
- Report any missing or damaged products to the manufacturer.

4.2 Preparing assembly

- To remove scale, welding residue and other impurities inside the duct system, disinfect and rinse the system prior to trial operation.
- During the rinsing cycle replace the fitting with an adaptor.
- Install a dirt trap or filter upstream of the valve.
- Prior to installing the fitting check whether the pipeline guide is constructed in such a way that mechanical stresses (such as forces and moments originating from pipeline expansion during operation, vibrations etc.) do not affect the valve housing during installation and operation. Arrange for possible compensators.

Smoothing section upstream and downstream of fitting

ATTENTION

A linear pipeline section of a length of 10 x DN, upstream and downstream of the fitting increases the control behaviour of the fitting.

- Non-observance may result in undefined flows.
-

Hint: To enable assembly work on the fitting during operation we recommend sealed locking fittings and a bypass at an appropriate distance upstream and downstream from the fitting. The turned off duct stretch must be ready for draining.

4.3 Assembling the fitting

- 1 Linear actuator and valve must match if functional disturbances are to be avoided. Select a suitable combination of linear actuator and valve.
- 2 Determine the assembly position of the linear actuator. Do not arrange linear actuators in a hanging position.
- 3 For a slanted or horizontal fitting position install the drive in such a way that the position of the columns generates a maximum section modulus.
⇒ *diagram 6 Assembly positions for linear actuator and valve* on page 12
- 4 Pay attention to the flow symbol on the valve body. A reversed direction of flow has a detrimental effect on the control behaviour!
⇒ *diagram 1 Component part denominations* on page 6
⇒ *diagram 2 Component part denominations* on page 7
- 5 Connect the pipelines stress-free without angle, central or longitudinal offset.
- 6 For flange fitting use only suitable seals, screws and nuts (not included in delivery).
- 7 Fit insulation to fittings operated at high temperatures ($> 50^{\circ}\text{C}$) or low temperatures ($< 0^{\circ}\text{C}$) for protection against touching by fitting insulation material.

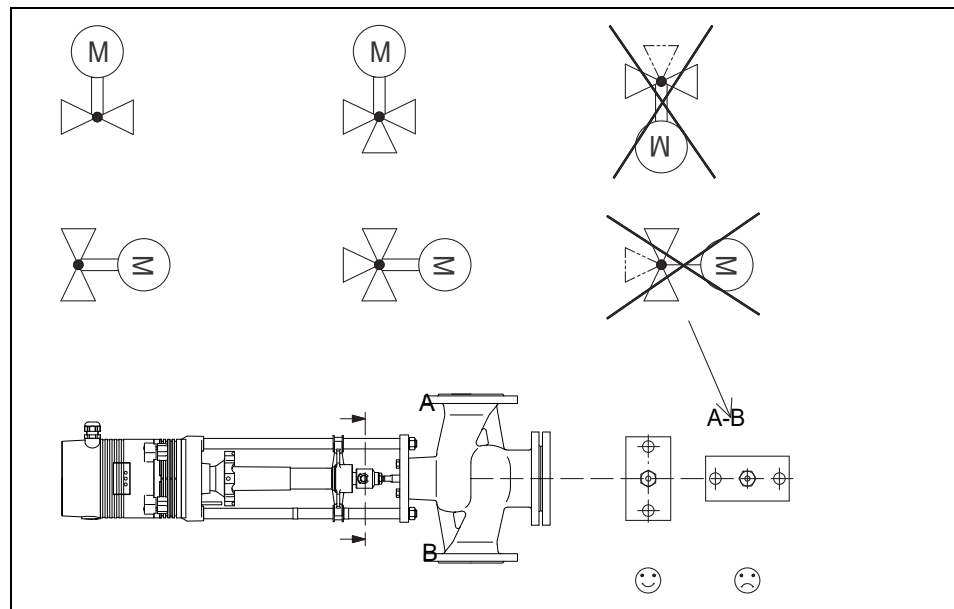


diagram 6 Assembly positions for linear actuator and valve

5 Commissioning



Prior to commissioning a new system and after alterations and repairs ensure

- that all installation / assembly work has been properly completed!
- that the fitting is functioning without posing a danger to persons, appliances or the system!
- Follow the operating instructions!



Risk of injury during operation

Due to risk of injury, the handling of objects between the valve and the actuating drive during operation is prohibited!

Hint: During commissioning run the stroke several times through the operating cycle (whilst flow of substance flows through fitting).

6 Maintenance, care and repairs

This is a low maintenance fitting. You do not have to carry out continuous or periodical maintenance.

7 Spare parts

When ordering accessories and spare parts please quote the specifications engraved on the type plate of your fitting.



Risk of personal injury and damage to property due to the use of faulty spare parts!

Spare parts must match the technical data specified by the manufacturer.

- Use genuine spare parts at all times.

⇒ *diagram 1 Component part denominations* on page 6

⇒ *diagram 2 Component part denominations* on page 7

8 Decommissioning and disposal

Dispose of the fitting according to national regulations and laws.

9 Replacing stem seal



During operation the fitting may be under pressure and temperature.

When the fitting is not depressurised and cooled down there is a risk of damage to property and severe bodily injuries.

- Ensure that fitting is depressurised, cooled down and empty.



Prior to carrying out any work pay attention to the following:

- Depressurize the linear actuator. Please refer to the operating instructions for the linear actuator.

■ How to shut down the system

- 1 Lock the duct on either side of the valve (push inlet and outlet into duct section).
- 2 Depressurise the cable section.
- 3 Allow the valve to cool down to about room temperature.
- 4 Refer to safety data sheet (EC guideline 91 / 155 EEC) for information about the line content when dealing with hazardous (chemicals directive) media or those hazardous to groundwater (water supply directive) media. Comply with personal safety equipment as prescribed in the data sheet.
- 5 Empty and dispose of the line content as per EC guideline 75 / 442 / EEC.

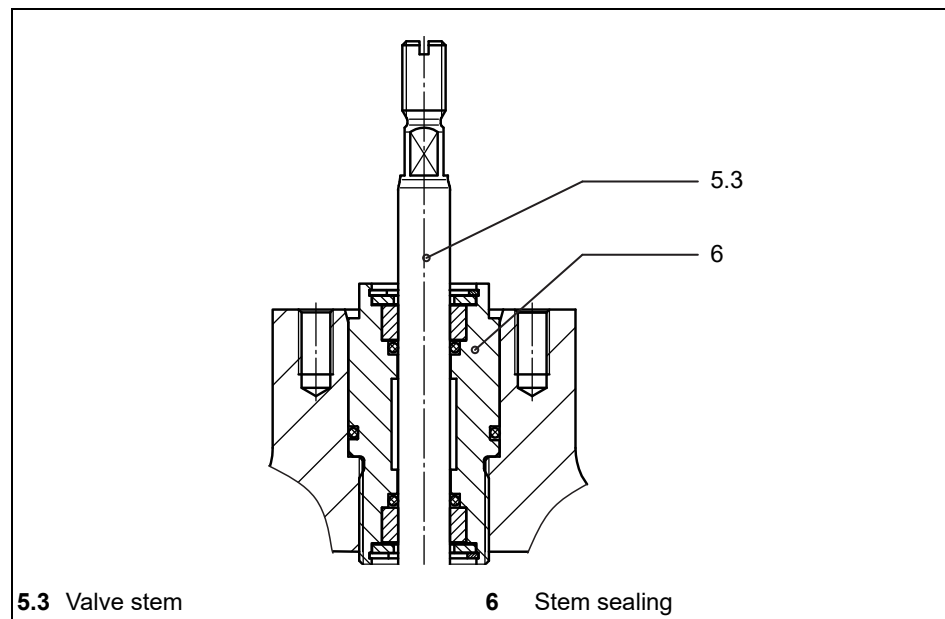


diagram 7 Stem sealing

■ Replacing the stem seal

- 1 Unscrew the stem seal **(6)** using spanner width 41 and remove it from the valve stem **(5.3)**.
- 2 Check the valve stem **(5.3)** for deposits and damage.
- 3 Try to remove possible deposits with a smooth polishing cloth.
- 4 If the valve stem is damaged consult the manufacturer.
- 5 If the valve stem is in proper working order **(5.3)** fit the new stem seal **(6)**.

Hint: Avoid damage to the O-ring seal from the stem thread

- 6 Tighten the stem seal (6).

10 How to remedy faults



During operation the fitting may be under pressure and temperature.

When the fitting is not depressurised and cooled down there is a risk of damage to property and severe bodily injuries.

- Ensure that fitting is depressurised, cooled down and empty.



Prior to carrying out any work pay attention to the following:

- Disconnect the linear actuator from the power supply. Please refer to the operating instructions for the linear actuator.

⇒ ■ *How to shut down the system on page 14*

10.1 Check list for breakdown

Fault	Cause/reason	Rectification
1. Stem is not moving	Interior mounting jammed.	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Drive not working	<input type="checkbox"/> See operating instruction for drive
2. Stem is showing jerky movements	Stem is soiled	<input type="checkbox"/> Clean stem using suitable detergent
	Stem is damaged	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Driving force is too low	<input type="checkbox"/> Compare the actuating data of the type plate to the operating data of the system – in case of deviation inform the supplier / manufacturer
3. Stem does not travel across the whole travel area (0 to 100% travel)	Foreign matter in valve seat, damaged interior parts	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
4. Leakage of valve seat excessive	Foreign matter in valve seat, damaged interior parts	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Cone does not lock properly, possibly due to foreign substance in valve seat	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service. Check working order of drive, see operating instructions
5. Leakage of stem seal	Stem sealing is worn	<input type="checkbox"/> Replace stem seal
	Stem is soiled	<input type="checkbox"/> Clean stem using suitable detergent
	Stem is damaged	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.

table 3 Check list breakdown

HORA

Geschäftsbereich Flow Control
Holter Regelarmaturen GmbH & Co. KG
Helleforthstrasse 58–60
33758 Schloss Holte-Stukenbrock
Germany

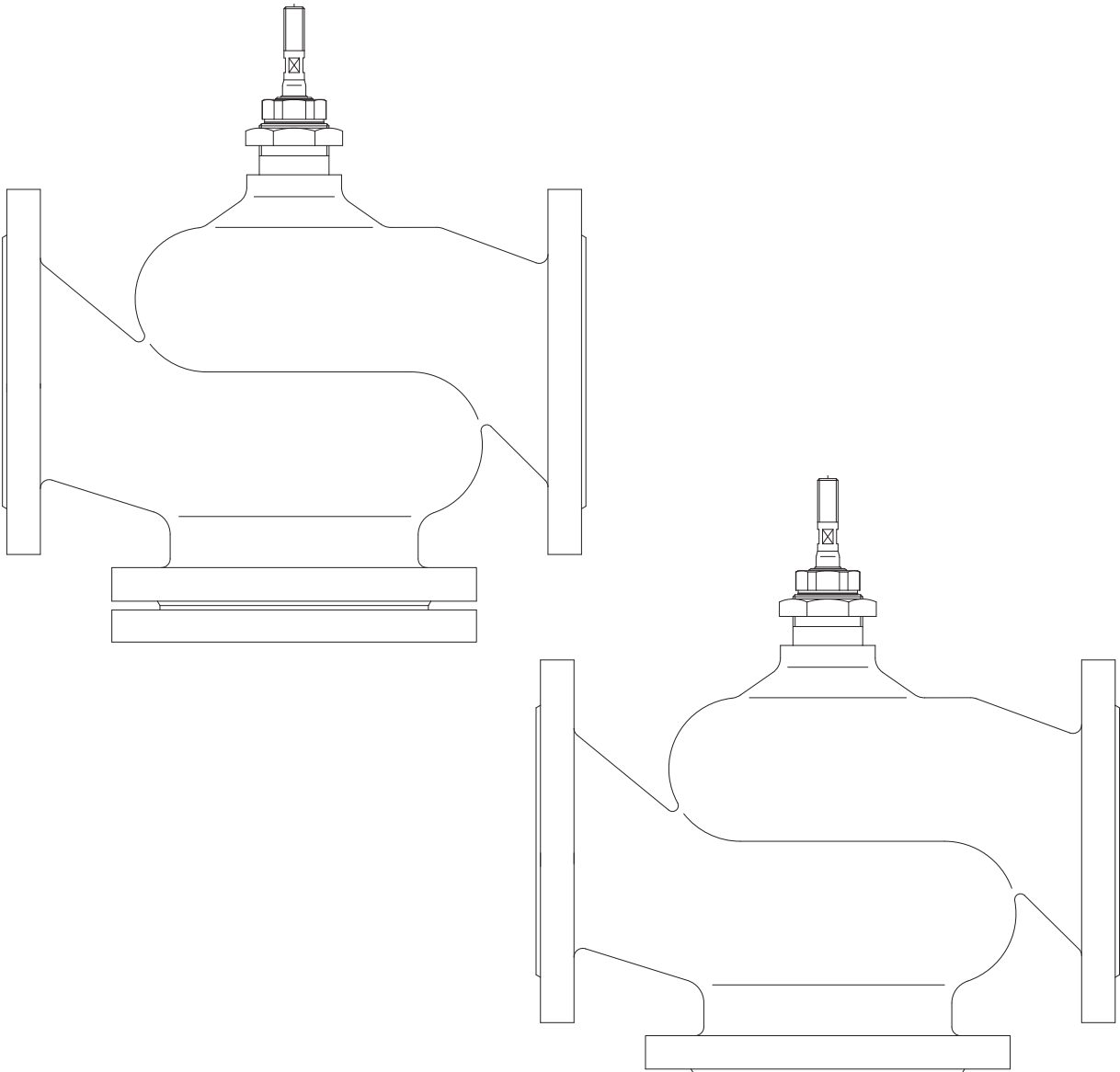
phone: +49 (0) 5207/8903-0

mail: fc@hora.de

www.hora.de







Instruction Manual

Two-way / three-way valve

BR216GF DN 125 - DN 200

BR316GF DN 125 - DN 200

General information

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- Training or instruction according to the standards of the safety technology concerning care and use of adequate safety and work protection equipment.
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1.4 Prior to work

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- Ensure that fitting is depressurised, cooled down and empty.
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1.5 Work environment

The ambient temperature (atmospheric temperature, air humidity and wetness) must not exceed or drop below the common values.

2 Product Specification

Fittings of the lines of products described in this document are used for controlling cold and hot water with antifreeze and anti-corrosives. The fitting consists of the valve and the drive which alters the position of the flow restrictor (cone) in relation to the seat as a function of the control input. Suitable drives include electrical linear actuators which act by an axial shift of the cone.

2.1 Two-way valve

- Flow from A to B

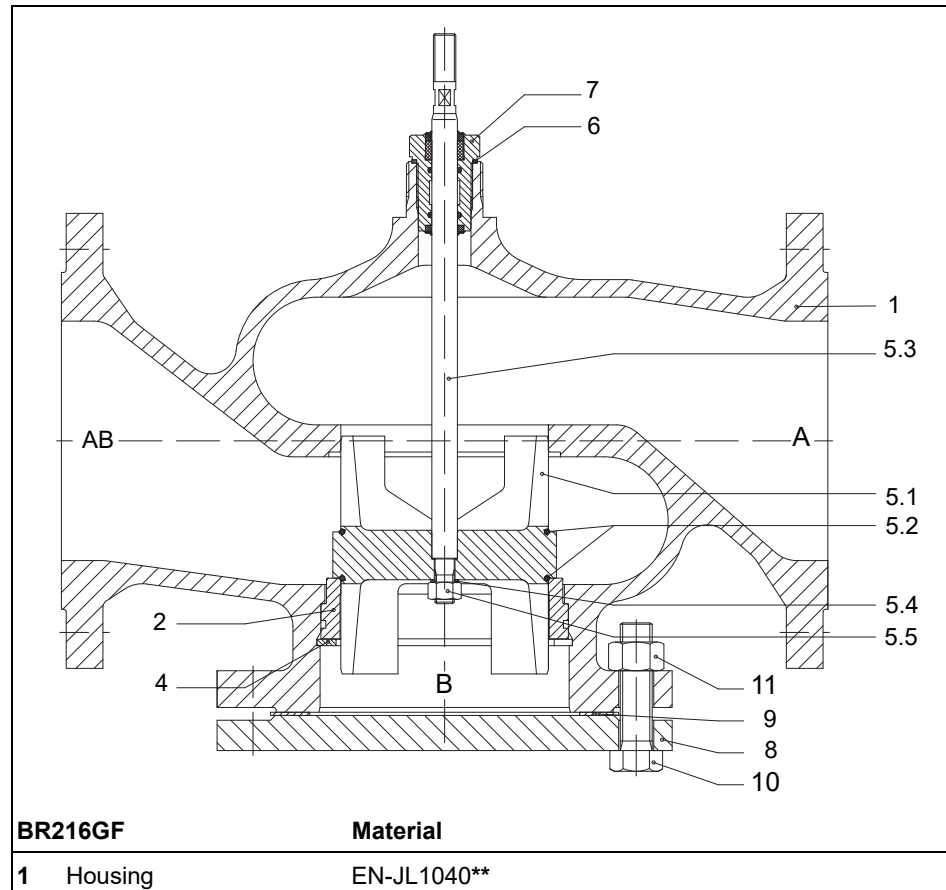


diagram 1 Component part denominations

* This component part is available as a spare part!

** We reserve the right to deliver housings made of higher-grade material

2.2 Three-way valve

- Mixing valve: Flow from A to AB and B to AB
- Reversing valve: Flow from AB to A and AB to B, not suitable for use as dispensing valve

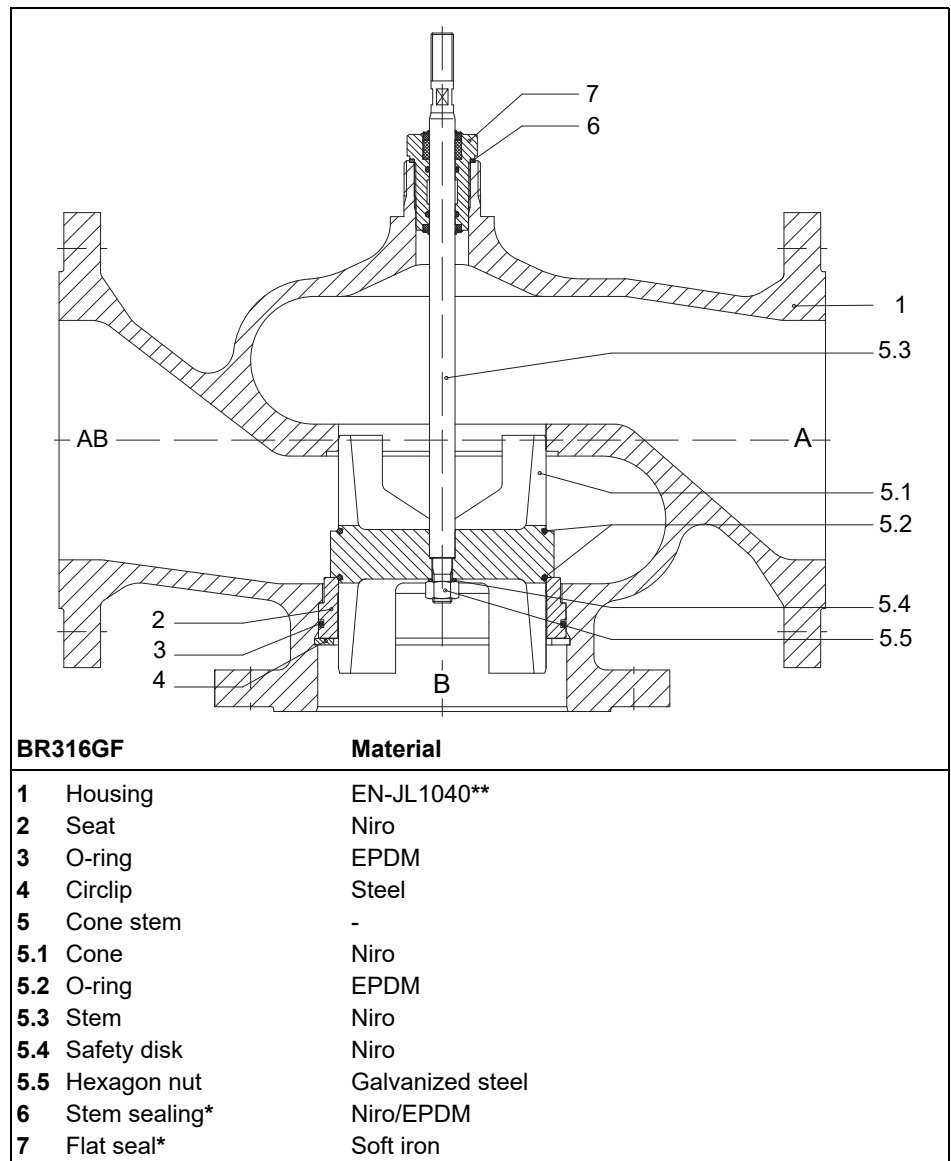


diagram 2 Component part denominations

* This component part is available as a spare part!

** We reserve the right to deliver housings made of higher-grade material

2.3 Accessories

- With stem heater suitable for water with antifreeze up to -10°C
24 VAC, 50/60 Hz or 24 VDC Power consumption: P_{max} ? 200 VA
 P_N ? 45 VA
- Epoxy resin special coating to act as anticorrosive in case of condensation, max 80°C
- Silicone-free model

2.4 Identification of fitting

The housing or type plate of the fitting bears the following identifications:

- Nominal width DN
- Nominal pressure PN
- Admissible maximum temperature TS
- Material of housing
- Name of manufacturer
- Melting symbol
- Product identification (production series and serial number)
- Flow symbol
- CE identification (for fittings from category I onwards only as per 97/23/EU)

2.5 Test pressure

The test pressure PT has been calculated on the base of the allowable pressure at room temperature PS_{RT} .

All admissible pressures at room temperature for valves with a pressure level designation based on the material have been taken from directive EN 1092.

The test pressure PT equals 1.5 times the allowable pressure at room temperature. It has been rounded on the next higher entire number. Labelling the fitting housing with the test pressure is not necessary when this factor is observed.

2.6 Limits for application

The fittings are state-of-the-art and operative for the intended use as well as operation within the data stated on the type plate.



Operability can be impaired posing a danger of personal damage or damage to property.

Ensure that

- the assembly, setting and / or commissioning is carried out properly according to the guidelines in these operating instructions.
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-

2.7 Technical data

Production series	BR216GF	BR316GF
Form	Feed-through	Three-way
Nominal width	DN 125 - DN 150	DN 125 - DN 150
Pressure stage	PN 16	PN 16
Characteristic curve	A?AB gl% mod.	A?AB gl% mod. B?AB linear
Stroke	50 mm	50 mm
Stem sealing	O-ring made of EPDM	O-ring made of EPDM
Function	Two-way valve	Mixing valve or change-over valve
Type of connection	Flange as per EN 1092-2 type 21	
Installation length	EN 558-1 basic series 1	EN 558-1 basic series 1
Leakage rate	EN 1349 – Seat leakage VI G 1 (tight fitting)	
Fluid temperature	Cold and hot water with antifreeze and anticorrosive from 0 ... +150°C From 130°C admissible for horizontal drive position only With stem heater suitable for water with antifreeze up to -10°C	
Dimensions	See technical data sheets	

table 1 Technical data

2.8 Type plate

Type plate for fittings
without
CE marking

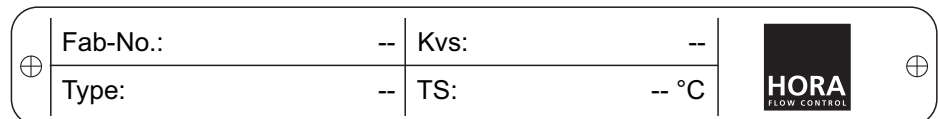


diagram 3 Type plates for fittings Article 3, Section 3

Type plates for fittings
with
CE marking

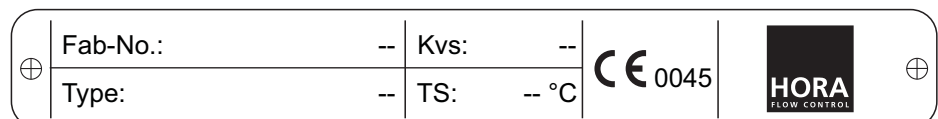


diagram 4 Type plate for fittings, category I

Manuf. no.	16 digit number 1 - 8: Allocation to order 9 - 12: Position 13 - 16: Month and year of manufacture Example: 07208389/01/1007 Order 07208389 Position 1 Date of manufacture October 2007
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Type	Series designation of fitting
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table 2 Meaning of inscription

3 Transport, storage and handling



CAUTION

Non-compliance with safety regulations may result in injury!

- Wear the required personal and other safety equipment.
- Protect the fitting against external damage (impact, stroke, vibrations etc.) especially in the area around the valve stem
- Repair any damage to the anticorrosive immediately (paintwork, oiled surfaces etc.).
- Wait until arriving at the site of installation before removing the sealing plugs serving as a protection for the flanges and interiors of the fitting!

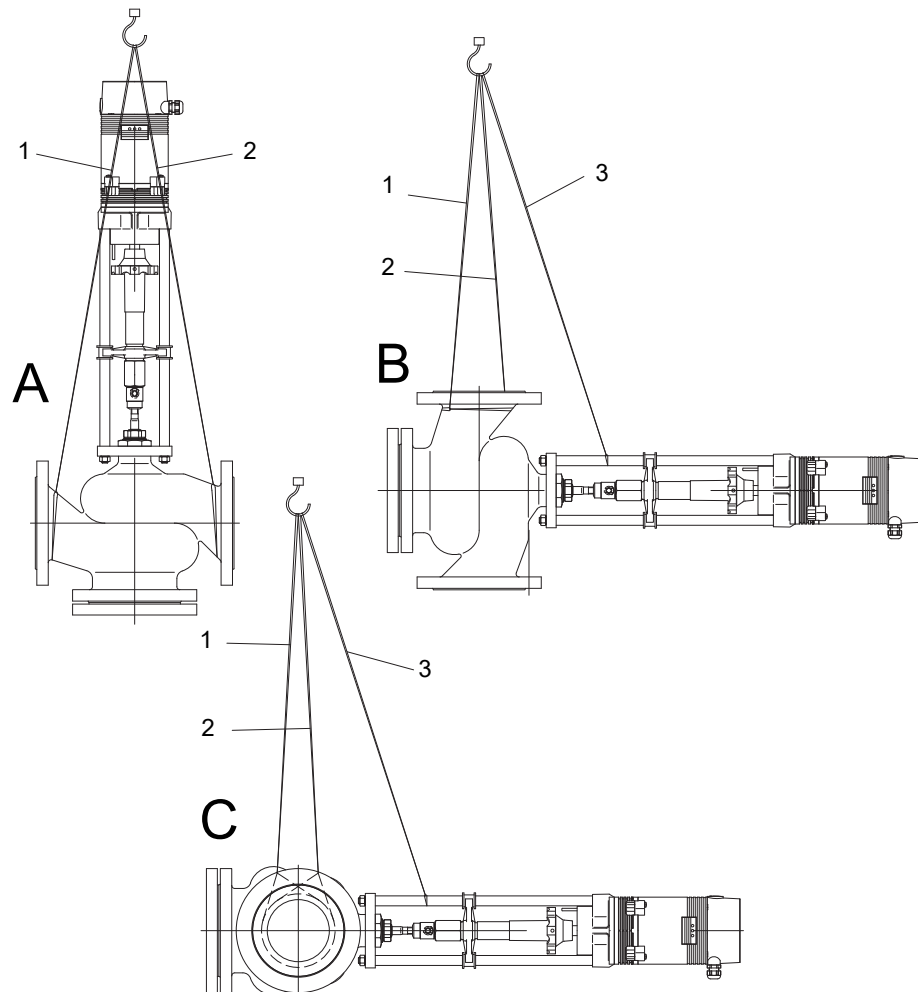


diagram 5 Lift the fittings for installation in pipeline with the help of belt 1, 2, 3

- **There are three options of handling when installing the fitting**
 - Fig. A: Wrap the belt around the housing. Run the belt (1) and (2) along the right and left of the drive so as to hold the fitting in the indicated position and to prevent vertical tilting.
 - Images B and C: Wrap belts (1) and (2) around the housing. Attach belts (3) to the spacer column but never to the stem! It serves to hold the fitting's horizontal position.

4 Assembly

Prior to installing the fitting:

- ⇒ 4.1 *Checking the scope of delivery* on page 11
- ⇒ 4.2 *Preparing assembly* on page 11

The installation of the fitting comprises the following steps:

- ⇒ 4.3 *Assembling the fitting* on page 12

4.1 Checking the scope of delivery

- Check the packaging for damage.
- Dispose of packaging in an environmentally friendly manner.
- Check the delivered items against the delivery note in order to see whether the delivery is complete.
- Report any missing or damaged products to the manufacturer.

4.2 Preparing assembly

- To remove scale, welding residue and other impurities inside the duct system, disinfect and rinse the system prior to trial operation.
- During the rinsing cycle replace the fitting with an adaptor.
- Install a dirt trap or filter upstream of the valve.
- Prior to installing the fitting check whether the pipeline guide is constructed in such a way that mechanical stresses (such as forces and moments originating from pipeline expansion during operation, vibrations etc.) do not affect the valve housing during installation and operation. Arrange for possible compensators.

Smoothing section upstream and downstream of fitting

ATTENTION

A linear pipeline section of a length of 10 x DN, upstream and downstream of the fitting increases the control behaviour of the fitting.

- Non-observance may result in undefined flows.
-

Hint: To enable assembly work on the fitting during operation we recommend sealed locking fittings and a bypass at an appropriate distance upstream and downstream from the fitting. The turned off duct stretch must be ready for draining.

4.3 Assembling the fitting

- 1 Linear actuator and valve must match if functional disturbances are to be avoided. Select a suitable combination of linear actuator and valve.
- 2 Determine the assembly position of the linear actuator. Do not arrange linear actuators in a hanging position.
- 3 For a slanted or horizontal fitting position install the drive in such a way that the position of the columns generates a maximum section modulus.
⇒ *diagram 6 Assembly positions for linear actuator and valve* on page 12
- 4 Pay attention to the flow symbol on the valve body. A reversed direction of flow has a detrimental effect on the control behaviour!
⇒ *diagram 1 Component part denominations* on page 6
⇒ *diagram 2 Component part denominations* on page 7
- 5 Connect the pipelines stress-free without angle, central or longitudinal offset.
- 6 For flange fitting use only suitable seals, screws and nuts (not included in delivery).
- 7 Fit insulation to fittings operated at high temperatures ($> 50^{\circ}\text{C}$) or low temperatures ($< 0^{\circ}\text{C}$) for protection against touching by fitting insulation material.

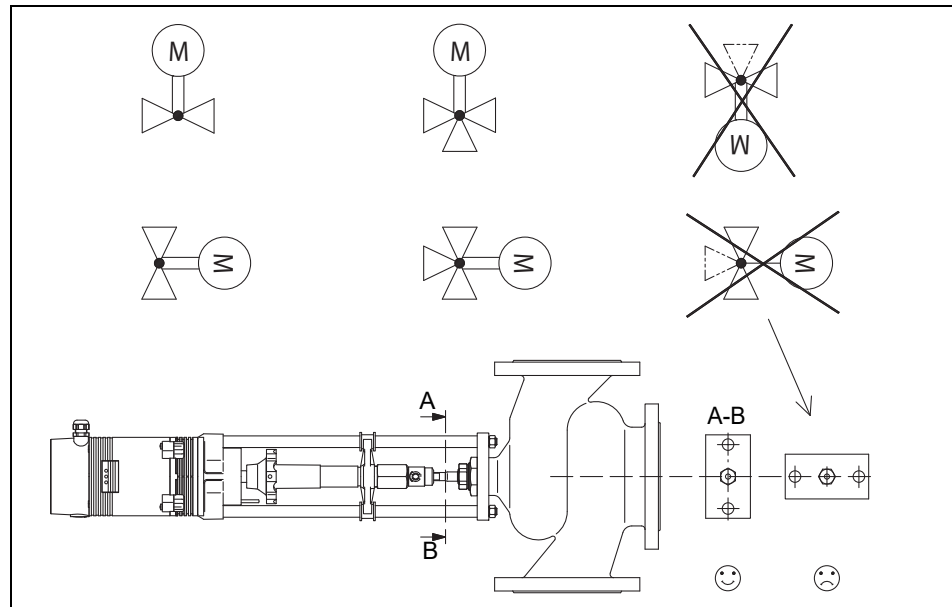


diagram 6 Assembly positions for linear actuator and valve

5 Commissioning



Prior to commissioning a new system and after alterations and repairs ensure

- that all installation / assembly work has been properly completed!
- that the fitting is functioning without posing a danger to persons, appliances or the system!
- Follow the operating instructions!



Risk of injury during operation

Due to risk of injury, the handling of objects between the valve and the actuating drive during operation is prohibited!

Hint: During commissioning run the stroke several times through the operating cycle (whilst flow of substance flows through fitting).

6 Maintenance, care and repairs

This is a low maintenance fitting. You do not have to carry out continuous or periodical maintenance.

7 Spare parts

When ordering accessories and spare parts please quote the specifications engraved on the type plate of your fitting.



Risk of personal injury and damage to property due to the use of faulty spare parts!

Spare parts must match the technical data specified by the manufacturer.

- Use genuine spare parts at all times.
-

⇒ *diagram 1 Component part denominations* on page 6

⇒ *diagram 2 Component part denominations* on page 7

8 Decommissioning and disposal

Dispose of the fitting according to national regulations and laws.

9 Replacing stem seal



During operation the fitting may be under pressure and temperature.

When the fitting is not depressurised and cooled down there is a risk of damage to property and severe bodily injuries.

- Ensure that fitting is depressurised, cooled down and empty.



Prior to carrying out any work pay attention to the following:

- Depressurize the linear actuator. Please refer to the operating instructions for the linear actuator.

■ How to shut down the system

- 1 Lock the duct on either side of the valve (push inlet and outlet into duct section).
- 2 Depressurise the cable section.
- 3 Allow the valve to cool down to about room temperature.
- 4 Refer to safety data sheet (EC guideline 91 / 155 EEC) for information about the line content when dealing with hazardous (chemicals directive) media or those hazardous to groundwater (water supply directive) media. Comply with personal safety equipment as prescribed in the data sheet.
- 5 Empty and dispose of the line content as per EC guideline 75 / 442 / EEC.

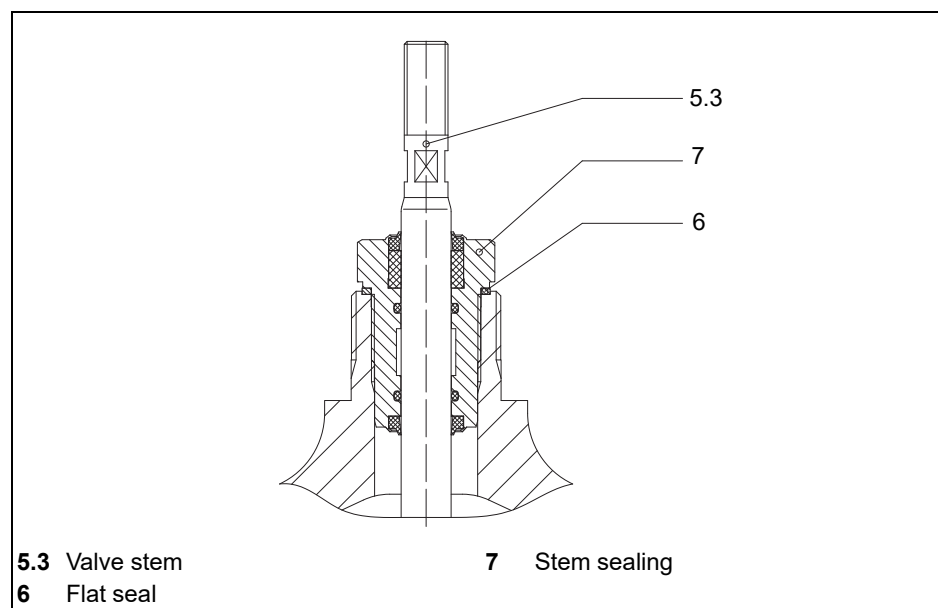


diagram 7 Stem sealing

■ Replacing the stem seal

- 1 Unscrew the stem seal (7) using spanner width 41 and remove it from the valve stem (5.3).
- 2 Remove the flat seal (6).
- 3 Check the valve stem (5.3) for deposits and damage.
- 4 Try to remove possible deposits with a smooth polishing cloth.
- 5 If the valve stem is damaged consult the manufacturer.
- 6 If the valve stem is in proper working order (5.3) fit the flat seal (6) and the new stem seal (7).

Hint: Avoid damage to the O-ring seal from the stem thread

- 7 Tighten the stem seal (7).

10 How to remedy faults



During operation the fitting may be under pressure and temperature.

When the fitting is not depressurised and cooled down there is a risk of damage to property and severe bodily injuries.

- Ensure that fitting is depressurised, cooled down and empty.



Prior to carrying out any work pay attention to the following:

- Disconnect the linear actuator from the power supply. Please refer to the operating instructions for the linear actuator.

⇒ ■ *How to shut down the system* on page 14

10.1 Check list for breakdown

Fault	Cause/reason	Rectification
1. Stem is not moving	Interior mounting jammed.	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Drive not working	<input type="checkbox"/> See operating instruction for drive
2. Stem is showing jerky movements	Stem is soiled	<input type="checkbox"/> Clean stem using suitable detergent
	Stem is damaged	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Driving force is too low	<input type="checkbox"/> Compare the actuating data of the type plate to the operating data of the system – in case of deviation inform the supplier / manufacturer
3. Stem does not travel across the whole travel area (0 to 100% travel)	Foreign matter in valve seat, damaged interior parts	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
4. Leakage of valve seat excessive	Foreign matter in valve seat, damaged interior parts	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.
	Cone does not lock properly, possibly due to foreign substance in valve seat	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service. Check working order of drive, see operating instructions
5. Leakage of stem seal	Stem sealing is worn	<input type="checkbox"/> Replace stem seal
	Stem is soiled	<input type="checkbox"/> Clean stem using suitable detergent
	Stem is damaged	<input type="checkbox"/> Dismantle fitting and send in or ask for customer service.

table 3 Check list breakdown

HORA

Geschäftsbereich Flow Control
Holter Regelarmaturen GmbH & Co. KG
Helleforthstrasse 58–60
33758 Schloss Holte-Stukenbrock
Germany

phone: +49 (0) 5207/8903-0

mail: fc@hora.de

www.hora.de

