

BALLOREX® S
- Static Balancing Valves



BROEN

BALLOREX® S – DN 10 - 50

Application

BALLOREX® S valves are combined balancing and isolation valves for heating, cooling and potable water systems. The valves are used for balancing of main risers and terminal units i.e. radiators. BALLOREX® S standard valves are used for potable water, heating systems, cooling and air conditioning systems.

BALLOREX® S is available in non-dezincifiable brass.



Function

BALLOREX® S combines four different functions:

1. Balancing

The regulation needle is installed within the isolation ball valve. To regulate the flow the needle is moved up or down to achieve the required flow. A scale on the side of the needle indicates the set position.

The regulation needle works independently of the isolation ball valve. Therefore when isolating using the ball valve, the flow setting is not altered.

2. Isolation

The valve can be used as isolation valve.

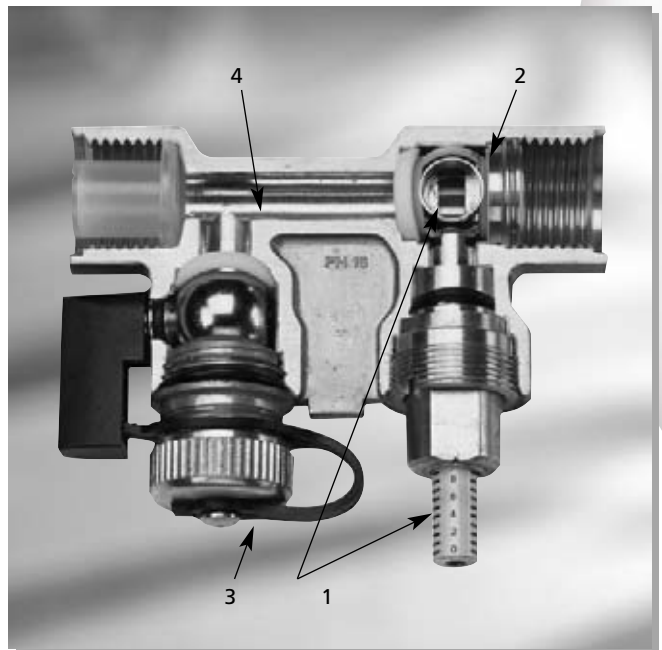
The isolation function has no affect on the setting of the regulating needle.

3. Draining

The valve can be used for draining. This is carried out through the measuring port.

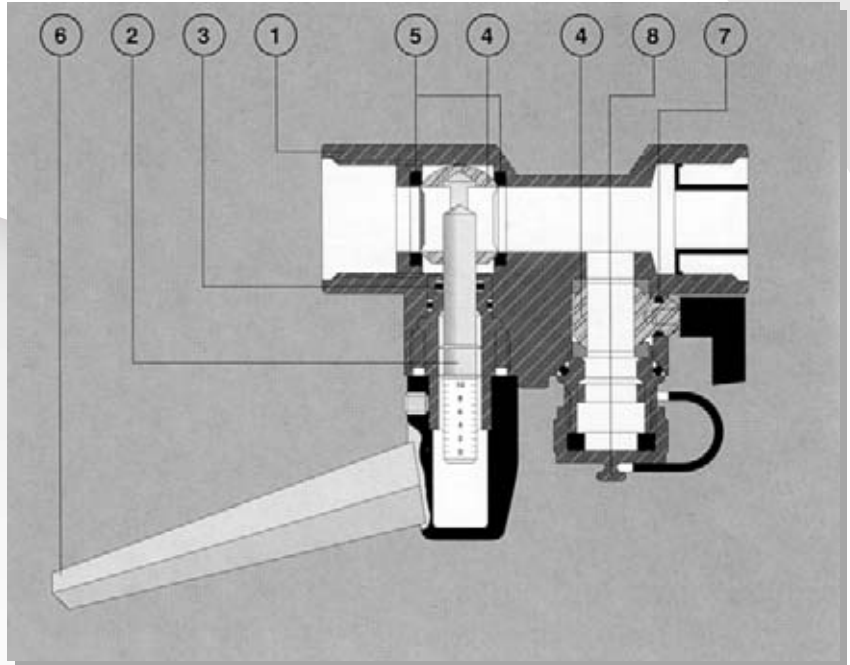
4. Flow and temperature measuring

The flow through the valve can be measured in l/s or m³/h by means of the flowmeter. This is inserted through the drain port.



BALLOREX® S – DN 10 - 50

Construction



Specification of materials

| | | | |
|---|------------------------------|----------------------|----------------|
| 1 | Valve body | brass | EN12165 CW602N |
| 2 | Regulation needle | chrome coated brass* | EN12164 CW614N |
| 3 | O-ring | | EPDM |
| 4 | Isolation ball | chrome coated brass* | EN12164 CW614N |
| 5 | Gasket | Teflon | PTFE |
| 6 | Handle | glass filled nylon | PA 6 |
| 7 | O-ring | | EPDM |
| 8 | Measuring/ draining valve | brass | EN12164 CW614N |

**) For aggressive media made in non-dezincifiable brass (EN12164 CW602N).*

Data

| | |
|------------------------------------|------------------|
| Minimum media temperature: | -10°C |
| Minimum cooling media temperature: | -35°C* |
| Maximum media temperature: | 135°C |
| Maximum working pressure: | 16 bar = 1,6 MPa |

| | | |
|-------------------------------|----------|--------|
| Division of adjustment screw: | DN 10-25 | 0 - 10 |
| | DN 32 | 0 - 18 |
| | DN 40 | 0 - 20 |
| | DN 50 | 0 - 18 |

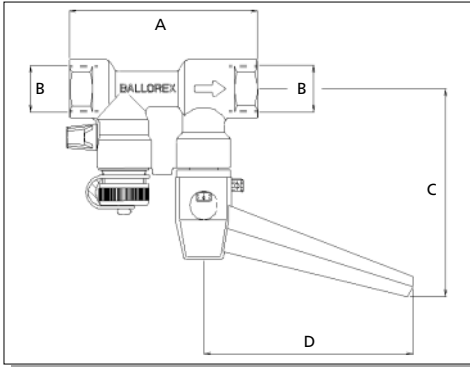
Pre-setting is determined by means of the table of rating, page 11.

**) Depends on cooling media.*

BALLOREX® S – DN 10 - 50

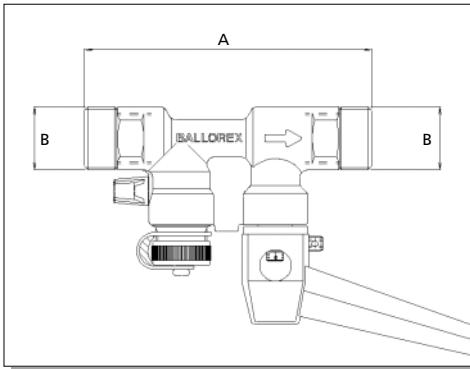
Ordering no. and installation dimensions

All dimensions in mm



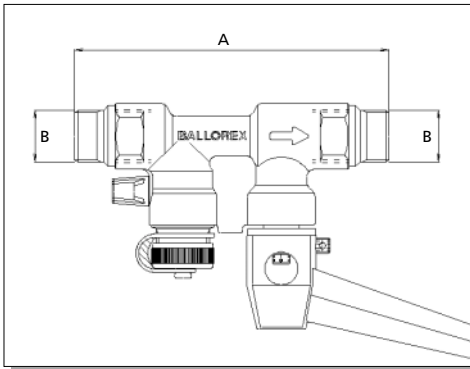
Female

| DN | A | B | C | D | Ordering no. | Kvs |
|----|-----|----------|-----|-----|-----------------|------|
| 10 | 96 | G 3/8" | 94 | 100 | 3215000-005001 | 1,8 |
| 15 | 90 | G 1/2" | 94 | 100 | 3315000-005001* | 1,8 |
| 20 | 95 | G 3/4" | 95 | 100 | 3415000-005001* | 4,7 |
| 25 | 105 | G 1" | 97 | 100 | 3515000-005001* | 7,3 |
| 32 | 115 | G 1 1/4" | 147 | 170 | 3615000-005001* | 11,3 |
| 40 | 125 | G 1 1/2" | 150 | 170 | 3715000-005001* | 18,4 |
| 50 | 155 | G 2" | 155 | 170 | 3815000-005001* | 24,8 |



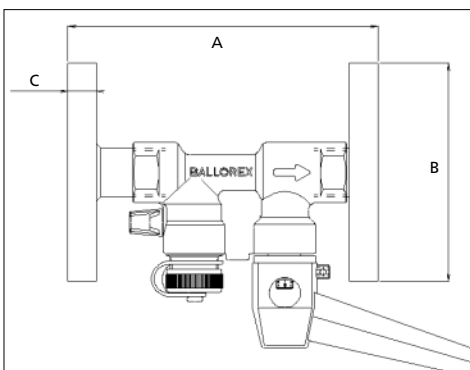
Flat thread

| DN | A | B | D | Ordering no. | Kvs |
|----|-----|----------|-----|----------------|------|
| 15 | 116 | G 3/4" | 100 | 3315400-005001 | 1,8 |
| 20 | 119 | G 1" | 100 | 3415400-005001 | 4,7 |
| 25 | 133 | G 1 1/4" | 100 | 3515400-005001 | 7,3 |
| 32 | 143 | G 1 1/2" | 170 | 3615400-005001 | 11,3 |
| 40 | 159 | G 1 3/4" | 170 | 3715400-005001 | 18,4 |
| 50 | 195 | G 2 3/8" | 170 | 3815400-005001 | 24,8 |



Male

| DN | A | B | D | Ordering no. | Kvs |
|----|-----|----------|-----|----------------|------|
| 10 | 119 | G 3/8" | 100 | 3215300-005001 | 1,8 |
| 15 | 121 | G 1/2" | 100 | 3315300-005001 | 1,8 |
| 20 | 129 | G 3/4" | 100 | 3415300-005001 | 4,7 |
| 25 | 141 | G 1" | 100 | 3515300-005001 | 7,3 |
| 32 | 160 | G 1 1/4" | 170 | 3615300-005001 | 11,3 |
| 40 | 170 | G 1 1/2" | 170 | 3715300-005001 | 18,4 |
| 50 | 207 | G 2" | 170 | 3815300-005001 | 24,8 |



Flange (all flanges are with 4-bolt holes)

| DN | A | B | C | D | Ordering no. | Kvs |
|----|-----|-----|----|-----|----------------|------|
| 15 | 130 | 95 | 12 | 100 | 3315200-005005 | 1,8 |
| 20 | 150 | 105 | 14 | 100 | 3415200-005005 | 4,7 |
| 25 | 160 | 115 | 14 | 100 | 3515200-005005 | 7,3 |
| 32 | 180 | 140 | 16 | 170 | 3615200-005005 | 11,3 |
| 40 | 200 | 150 | 16 | 170 | 3715200-005005 | 18,4 |
| 50 | 230 | 165 | 18 | 170 | 3815200-005005 | 24,8 |

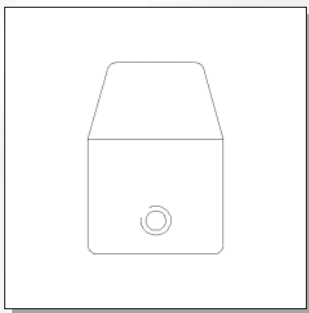
*) When ordering valves of non-dezincifiable brass the first digit in the Ordering no. must be changed from 3 to 4 - f.ex. Ordering no. 3315000-005001 must be changed into Ordering no. 4315000-005001.

BALLOREX® S – DN 10 - 50

Accessories

Protection cover

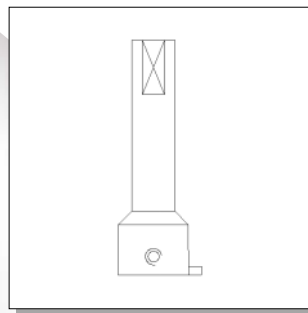
The protection cover is used as sealing of the shutting off function.



| Dimension DN | Ordering no. |
|--------------|----------------|
| 10-25 | 3315027-000005 |
| 32-50 | 3615027-000005 |
| | |
| | |
| | |
| | |

Extended spindle

When the insulation cover is used for DN 10 to DN 50, an extended spindle can be fitted to enable valve to be used for shut off operation without removing the insulation covers.



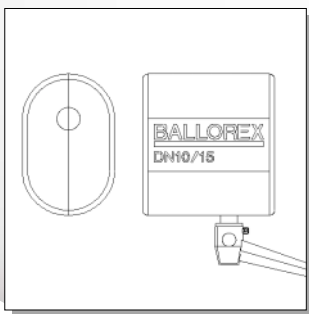
| Dimension DN | Ordering no. |
|--------------|----------------|
| 10-25 | 3315029-000005 |
| 32-50 | 3615029-000005 |
| | |
| | |
| | |
| | |

Insulation cover

To be used to minimise the thermal loss from the valve to the environments:

- Min. temperature: - 20°C
- Max. temperature: 125°C
- Thermal conductivity: 0,023 W/m°C

The insulation cap consists of 2 cups which are placed around the valve. The cups are assembled with an Allen-key to be mounted into the small hole next to the handle.



| Dimension DN | Ordering no. |
|--------------|----------------|
| 10/15 | 3315050-000005 |
| 20 | 3415050-000005 |
| 25 | 3515050-000005 |
| 32 | 3615050-000005 |
| 40 | 3715050-000005 |
| 50 | 3815050-000005 |

Additional accessories

- Allen-key*
- Handle, short
- Handle, long*
- Regulating needle
- Regulating needle tool
- Pins (DN 65-150)*
- Pointed screw (DN 65-150)*
- Installation instructions*

*) delivered with the valve as standard.

BALLOREX® S – DN 65 - 300

Application

BALLOREX® S valves are combined balancing and isolation valves for heating and cooling systems.

The valves are used for balancing of main risers and terminal units i.e. radiators. BALLOREX® S standard valves are used for heating systems, cooling and air conditioning systems.

Function

BALLOREX® S combines four different functions:

1. Balancing

DN 65-150

The regulation needle is installed within the isolation ball valve. To regulate the flow the needle is moved up or down to achieve the required flow. A scale on the side of the needle indicates the set position. The regulation needle works independently of the isolation ball valve. Therefore when isolating using the ball valve, the flow setting is not altered.

DN 200-300

The setting of the butterfly valve determines the flow through the valve. Any isolation affects the setting. The setting is read on the gear box.

2. Isolation

DN 65-150

The valve can be used as isolation valve. The isolation function has no affect on the setting of the regulating needle.

DN 200-300

The butterfly valve can be used as isolation valve. The isolation affects the setting.

3. Draining

DN 65-300

The valve can be used for draining. This is carried out through the measuring port.

4. Flow and temperature measuring

DN 65-300

The flow through the valve can be measured in l/s or m³/h by means of the flowmeter. This is inserted through the drain port.

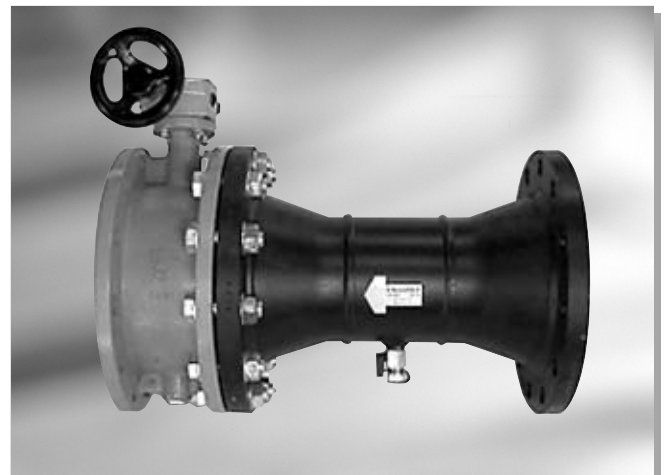
DN 65-150 with welding ends



DN 65-150 with flange mounting

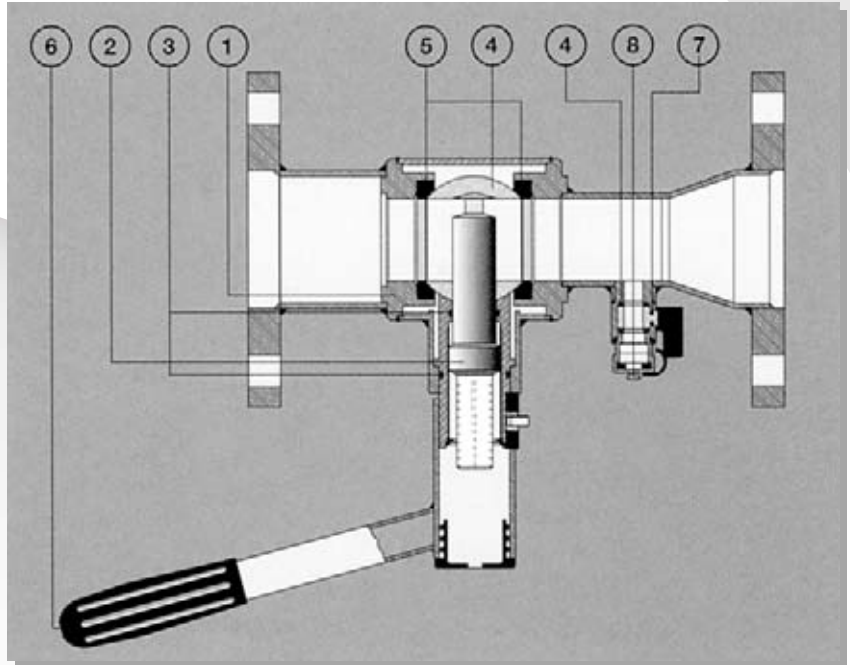


DN 200-300 with flange mounting



BALLOREX® S – DN 65 - 150

Construction



Specification of materials

| | | | |
|---|------------------------------|-----------------------|----------------|
| 1 | Valve body | surface treated steel | St 37,0 |
| 2 | Regulation needle | chrome coated brass | EN12164 CW614N |
| 3 | O-ring | | EPDM |
| 4 | Isolation ball | chrome coated brass | EN12164 CW614N |
| 5 | Gasket | Teflon | PTFE |
| 6 | Handle | surface treated steel | St 37,0 |
| 7 | O-ring | | EPDM |
| 8 | Measuring/ draining valve | brass | EN12164 CW614N |

Data

| | |
|------------------------------------|------------------|
| Minimum media temperature: | -10°C |
| Minimum cooling media temperature: | -35°C* |
| Maximum media temperature: | 110°C |
| Maximum working pressure: | 16 bar = 1,6 MPa |

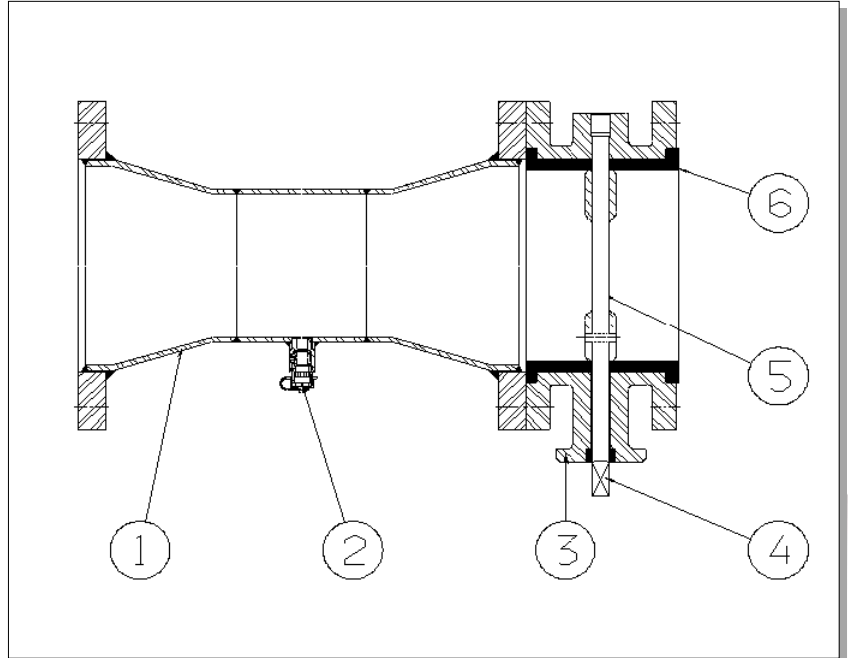
| | | |
|-------------------------------|--------|--------|
| Division of adjustment screw: | DN 65 | 0 - 30 |
| | DN 80 | 0 - 27 |
| | DN 100 | 0 - 24 |
| | DN 125 | 0 - 24 |
| | DN 150 | 0 - 29 |

Pre-setting is determined by means of the table of rating, page 12.

*) Depends on cooling media.

BALLOREX® S – DN 200 - 300

Construction



Specification of materials

| | | | |
|---|--------------------------|-----------------------|----------------|
| 1 | Valve housing/Pipe | surface treated steel | St 37,0 |
| 2 | Measuring/draining valve | brass | EN12164 CW614N |
| 3 | Butterfly valve body | cast iron | GGG40 |
| 4 | Spindle | stainless steel | AISI 304 |
| 5 | Disc | stainless steel | AISI 304 |
| 6 | Seat | | EPDM |

Data

| | |
|----------------------------|------------------|
| Minimum media temperature: | -10°C |
| Maximum media temperature: | 110°C |
| Maximum working pressure: | 16 bar = 1,6 MPa |

| | | |
|--|--------|-------|
| The number of turns between the fully open and closed position: | DN 200 | 0 - 7 |
| | DN 250 | 0 -10 |
| | DN 300 | 0 -10 |

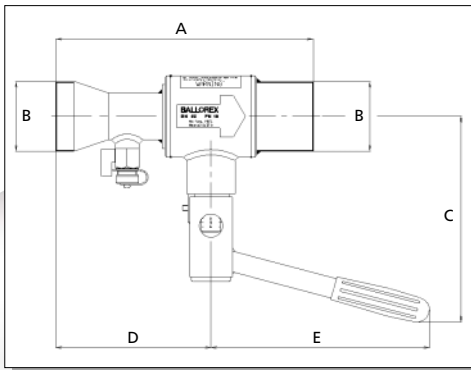
The butterfly valve can be adjusted in 10° steps.
Fully open means 90° turn of the valve disc.

Pre-setting is determined by means of the table of rating, page 13.

BALLOREX® S – DN 65 - 300

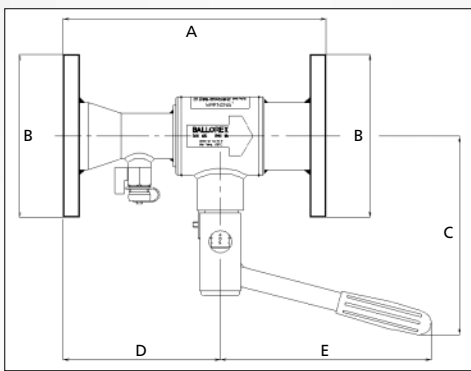
Ordering no. and installation dimensions

All dimensions in mm



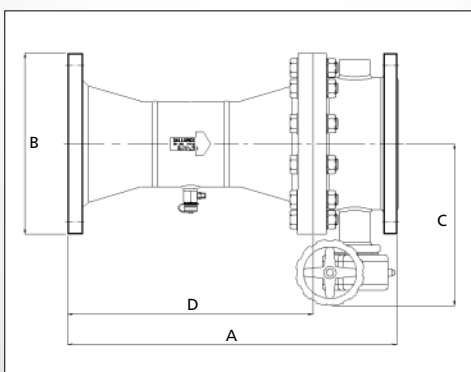
Welding

| DN | A | B | C | D | E | Ordering no. | Kvs |
|-----|-----|-----|-----|-----|-----|----------------|-----|
| 65 | 274 | 76 | 227 | 165 | 234 | 3915000-605005 | 50 |
| 80 | 294 | 89 | 256 | 180 | 237 | 3925000-605005 | 87 |
| 100 | 334 | 114 | 282 | 209 | 242 | 3935000-605005 | 150 |
| 125 | 383 | 140 | 282 | 284 | 242 | 3935300-605005 | 150 |
| 150 | 462 | 168 | 445 | 298 | 540 | 3935500-605005 | 335 |



Flange mounting

| DN | A | B | C | D | E | Flange holes | Ordering no. | Kvs |
|-----|-----|-----|-----|-----|-----|--------------|----------------|-----|
| 65 | 290 | 185 | 227 | 173 | 234 | 4 | 3915100-605005 | 50 |
| 80 | 310 | 200 | 256 | 188 | 237 | 8 | 3925100-605005 | 87 |
| 100 | 350 | 220 | 282 | 217 | 242 | 8 | 3935100-605005 | 150 |
| 125 | 400 | 250 | 282 | 242 | 242 | 8 | 3935400-605005 | 150 |
| 150 | 480 | 285 | 445 | 307 | 540 | 8 | 3935600-605005 | 335 |

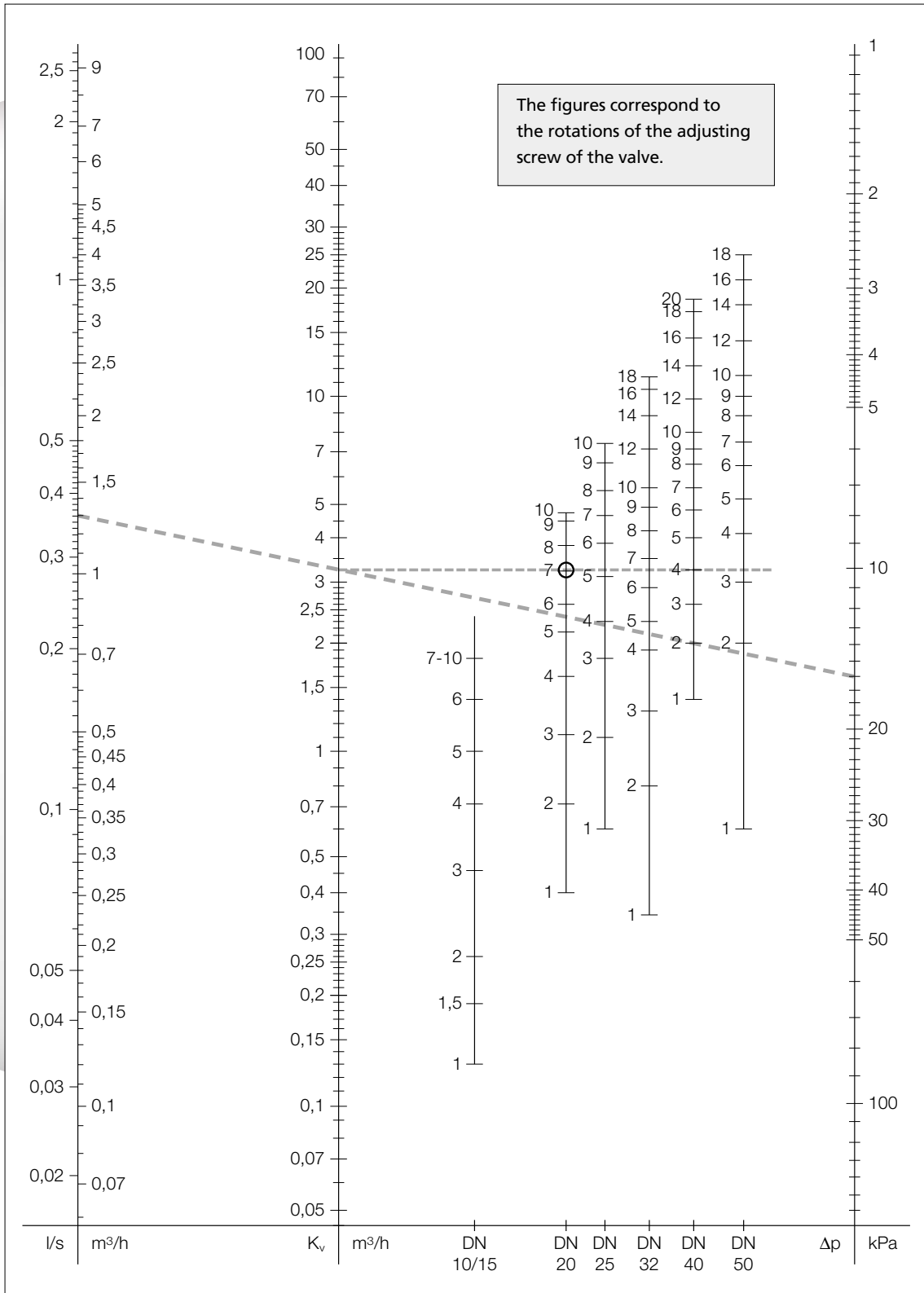


Flange mounting

| DN | A | B | C | D | Flange holes | Ordering no. | Kvs |
|-----|-----|-----|-----|-----|--------------|----------------|------|
| 200 | 600 | 340 | 295 | 448 | 12 | 3935800-605009 | 1568 |
| 250 | 730 | 405 | 355 | 565 | 12 | 3936000-605009 | 1600 |
| 300 | 850 | 460 | 410 | 672 | 12 | 3936200-605009 | 3165 |

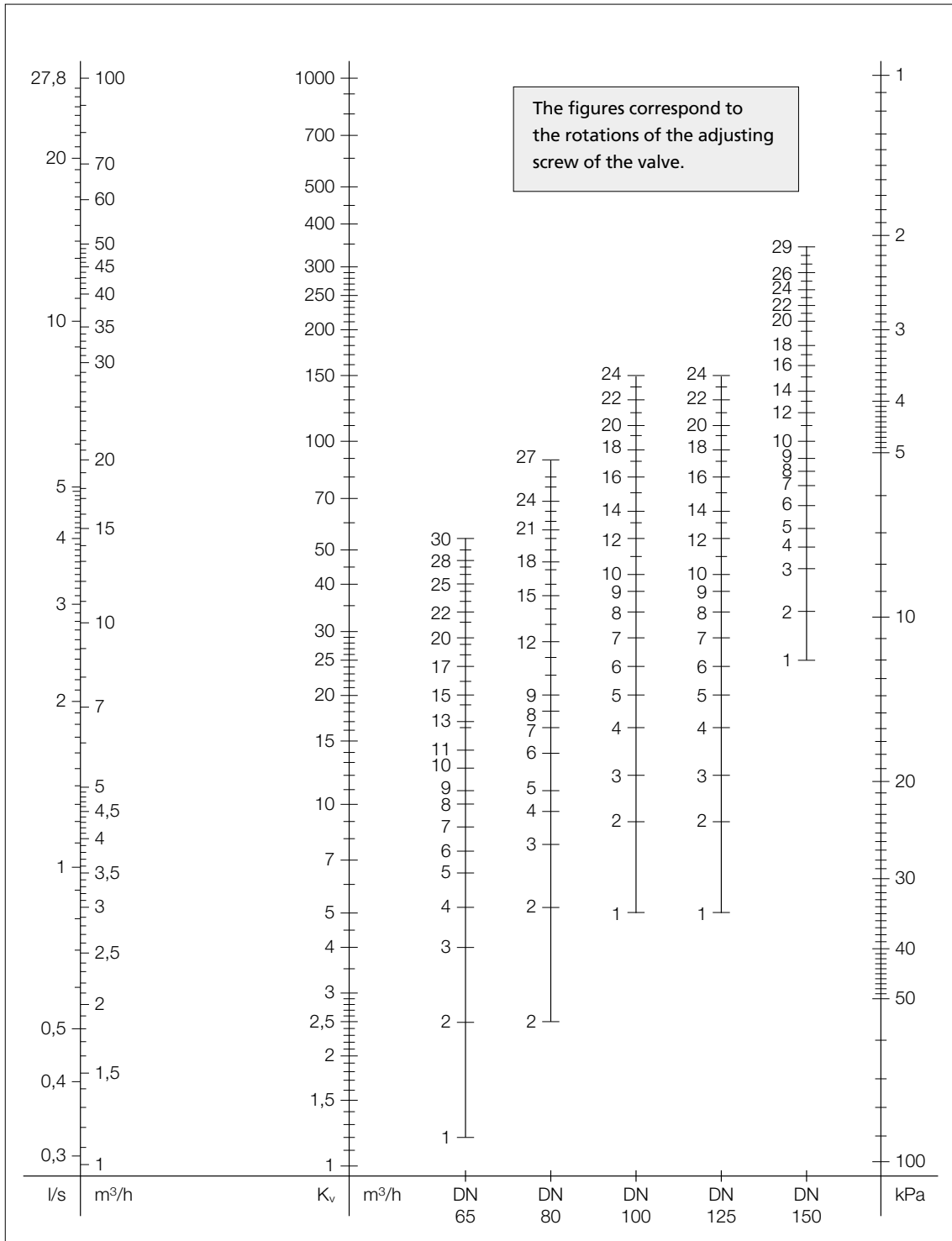
BALLOREX® S – DN 10 - 50

Rating graph



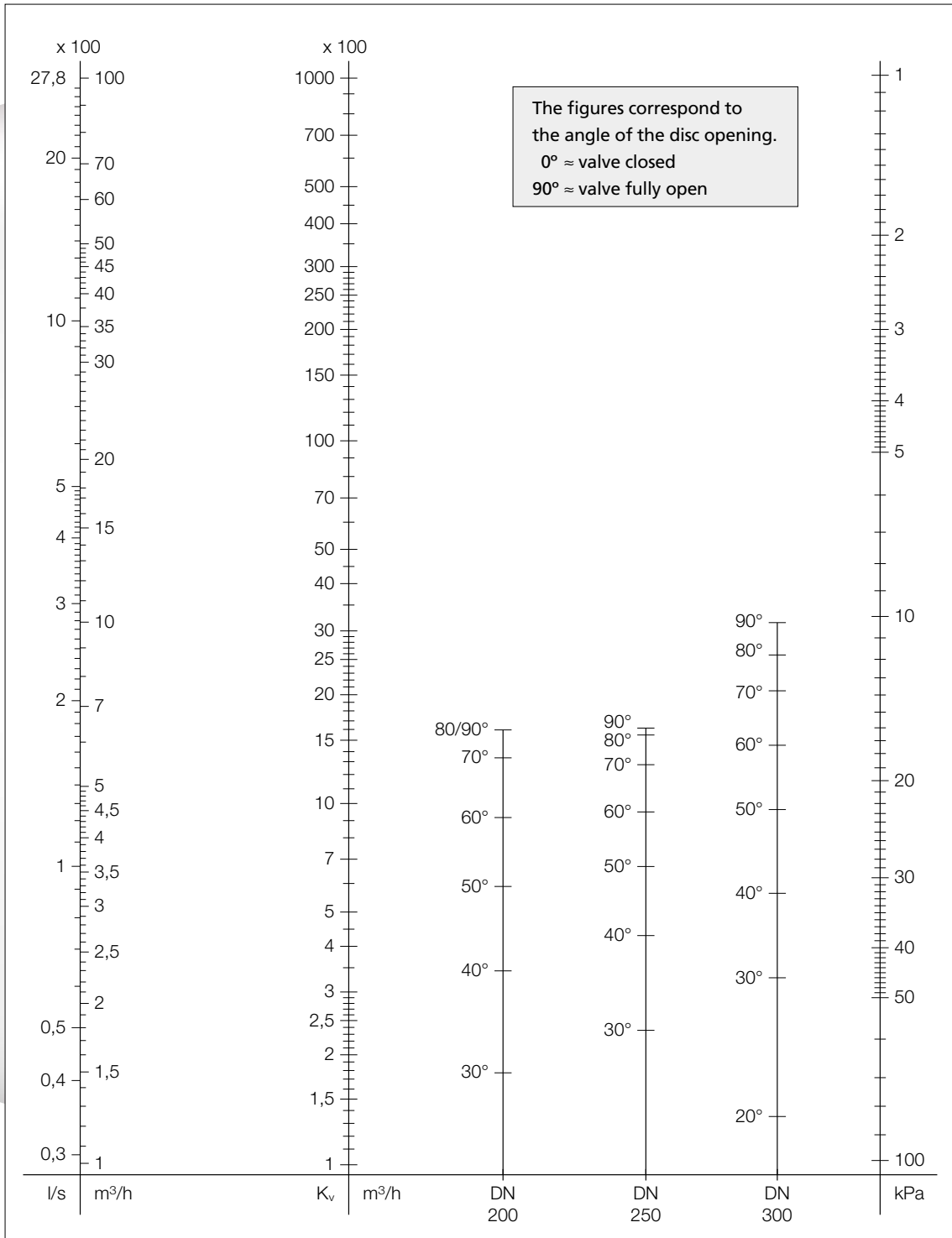
BALLOREX® S – DN 65 - 150

Rating graph



BALLOREX® S – DN 200 - 300

Rating graph



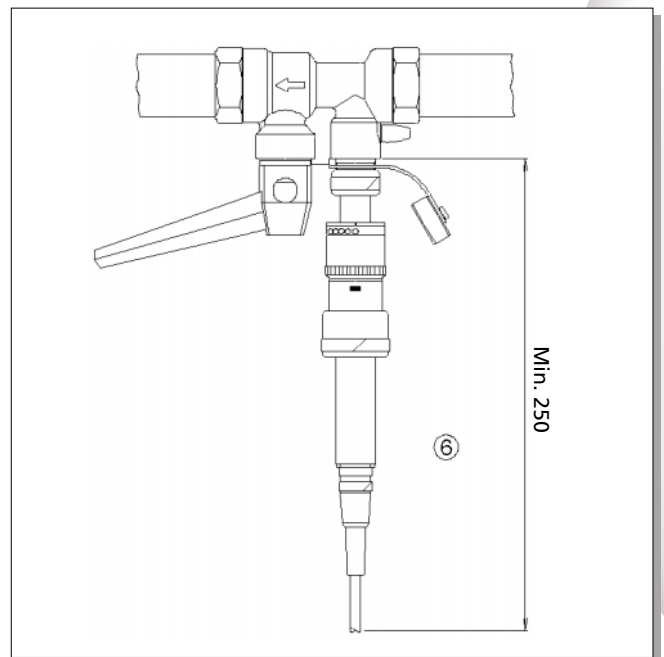
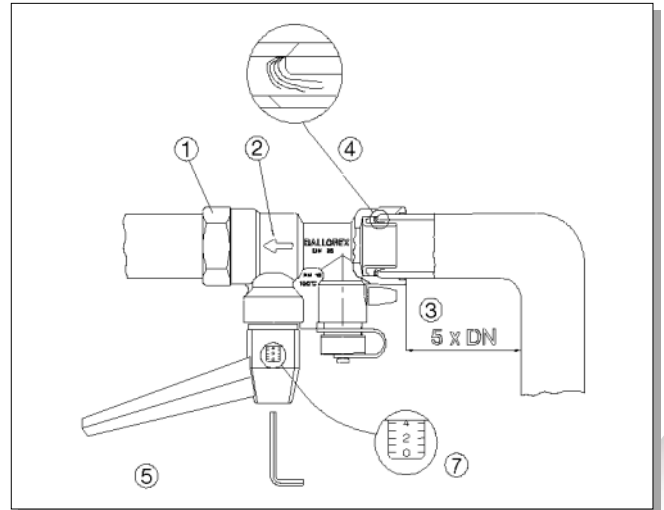
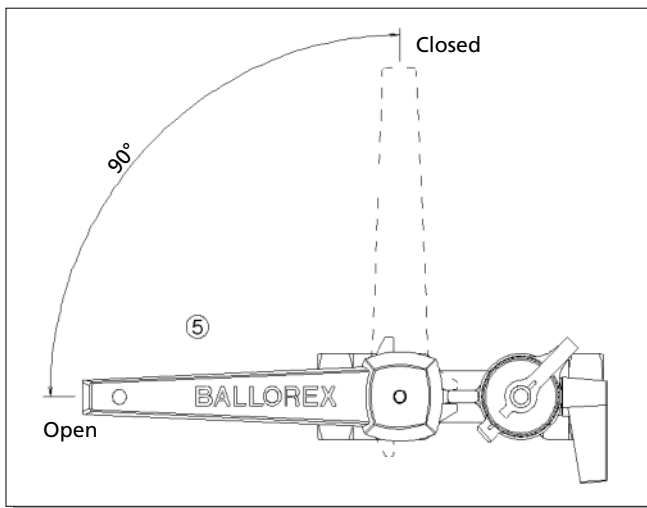
If the preset quantity of water causes a valve opening smaller than 30°, you must select a smaller valve having a setting bigger than 30°.

BALLOREX® S – DN 10 - 300

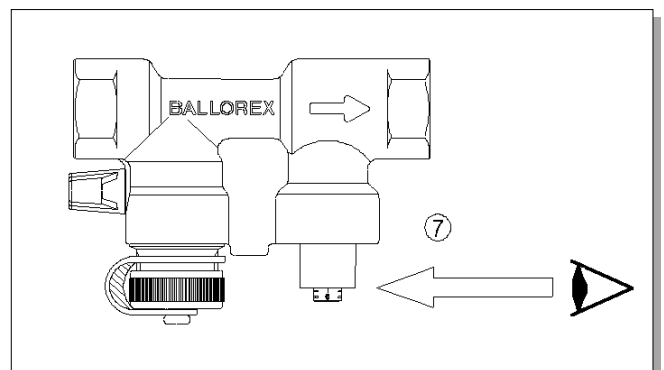
Installation

1. The valves can be installed in **any position**. I.e. with measurement port facing up or down.
2. The valve should be installed with the **flow** in the **direction** of the arrow stamped/glued on the valve body.
3. A straight run of pipework with a **minimum length** of 5 x DN should be allowed up stream the valve.
A straight run of pipework with a **minimum length** of 10 x DN is required if a pump is mounted prior to the valve.
4. The plastic insert on female x female valve protects the **measuring probe** against jointing compound entering the valve body when the flow is measured (DN10-50).
5. The **isolation handle** requires the following area to allow for 90° rotation:

| | |
|-------------|--------|
| DN 10-25: | 100 mm |
| DN 32-50: | 170 mm |
| DN 65-125: | 250 mm |
| DN 150: | 540 mm |
| DN 200-300: | 0 mm |



6. Free space of min. 250 mm, radially from the drain nipple, is required for installation of the **measuring probe**.
7. **Adjustment of flow**
For DN 10 - 150: The setting of the regulating needle is read where the position indication is level with the top of the valve body. The setting can be changed with an Allen-key.
For DN 200-300: The setting is read on the gearbox, where changes of the setting also take place.



BALLOREX® S – DN 10 - 50

Marking

The valve is marked with BALLOREX® name, DN size, PN rating, max. temperature and date-code.

Non-dezincifiable valves are embossed with "DZR".

When using in cooling systems

The BALLOREX®-valve can be used in cooling systems with glycol media as long as you consider the viscosity of the media and make the necessary corrections. Contact your supplier to learn about the correction factors.

Service and maintenance

- Draining of water/medium from the system.
- Impurities in the valve. The shutting off ball can be turned 180°.
- Replacement of the adjustment needle having full media pressure on the system (however not for valves larger than DN 50).
- Adjustment of the water flow.

The BROEN Group, whose headquarters are on the island of Fuenen, Denmark, has subsidiaries and dealers in more than 25 countries around the world.



BROEN

- a reliable partner

BROEN A/S were established in 1948 and are today one of the world's leading manufacturers of ball valves.

BROEN constantly works on clean and more environmentally friendly technologies both internally and externally. In order to achieve this it is necessary to be able to trace all production stages. Therefore BROEN is certified to ISO 9001 and the company constantly has its products and methods monitored by internationally acknowledged institutes and organisations.

This and many other facets make BROEN a reliable and environmentally responsible partner.

BROEN

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