



Stübbe®

Partner for Solutions

Ball valve

Operating instructions for series

C200

C200 PROP, C200 DOS

C200with relief bore



Version BA-2016.02.05
Print-No. 300 587
TR MA DE Rev001

We reserve the right to make technical changes.

Read carefully before use.

Save for future use.

ASV Stübbe GmbH & Co. KG
Hollwieser Strasse 5
32602 Vlotho
Germany
Phone: +49 (0)5733-799-0
Fax: +49 (0)5733-799-5000
Email: contact@asv-stuebbe.de
Internet: www.asv-stuebbe.com



1 Images


| | | |
|---|-------|---|
| 1 | C200 |  Stübbe |
| 2 | Id No | 145039 |
| 3 | PN/DN | 10 / 40 1407-87345 |
| 4 | | PP • PTFE • FPM |

Fig. 1

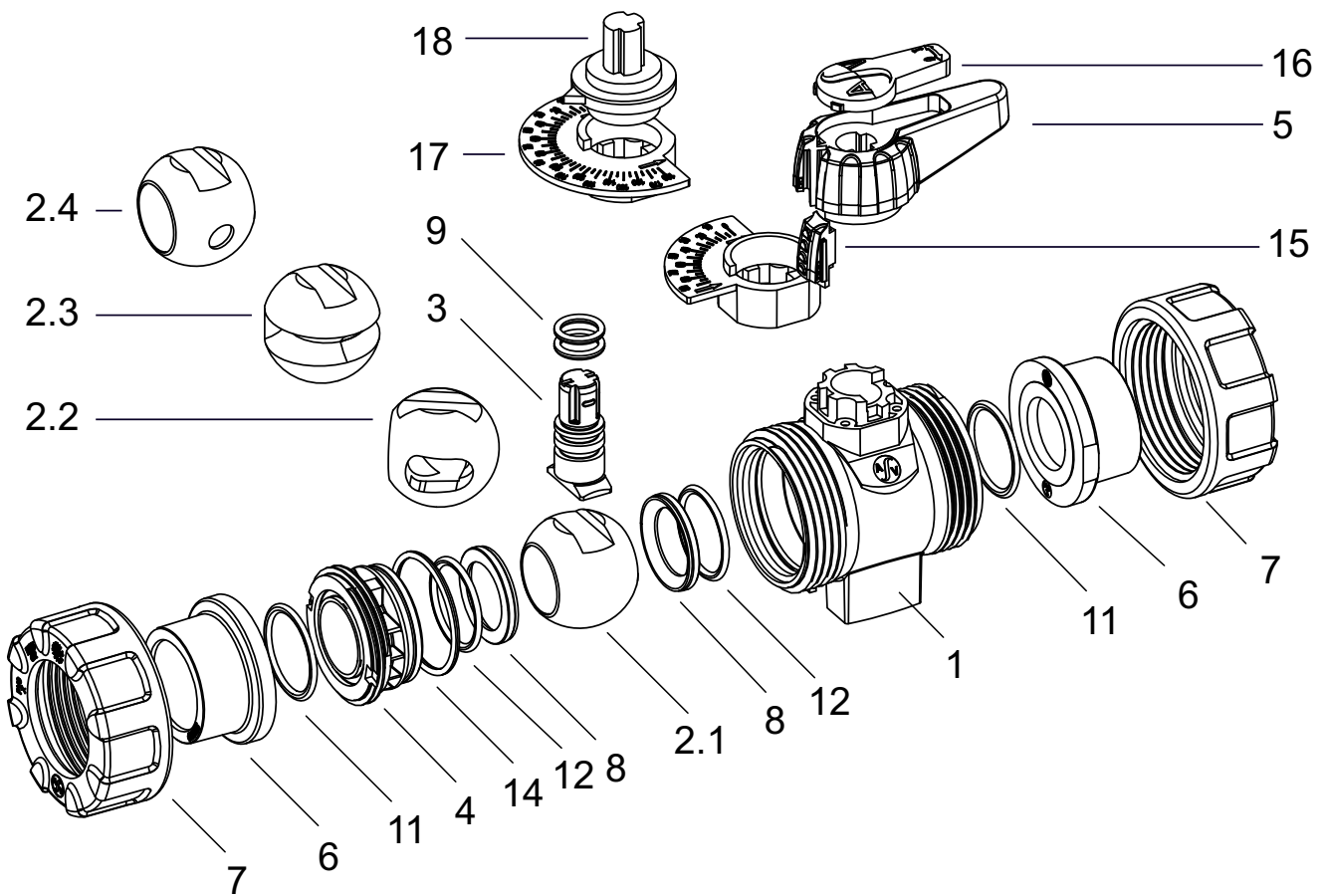


Fig. 2

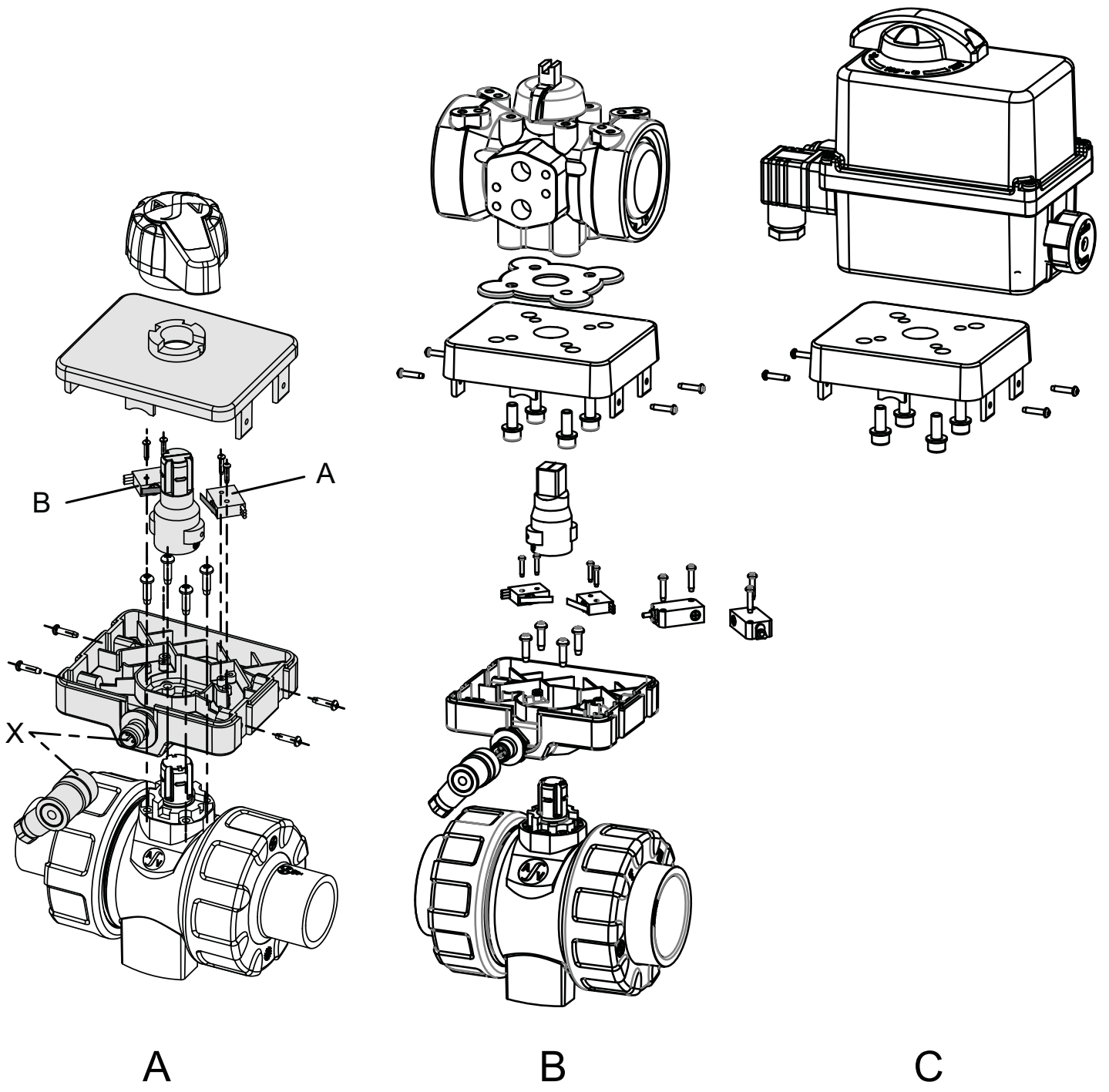
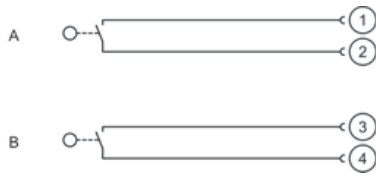
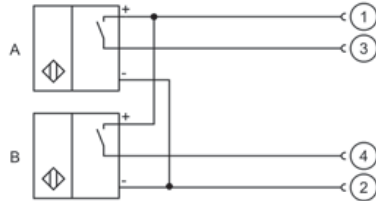


Fig. 3

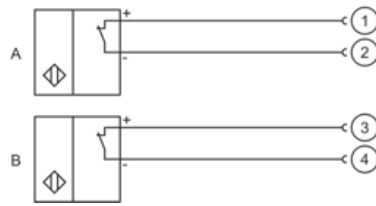
DC1C



NBB2-V3-E2



NJ2-V3-N



A

B

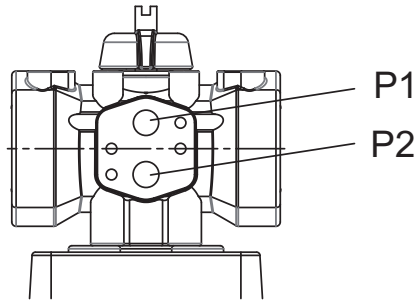


Fig. 4

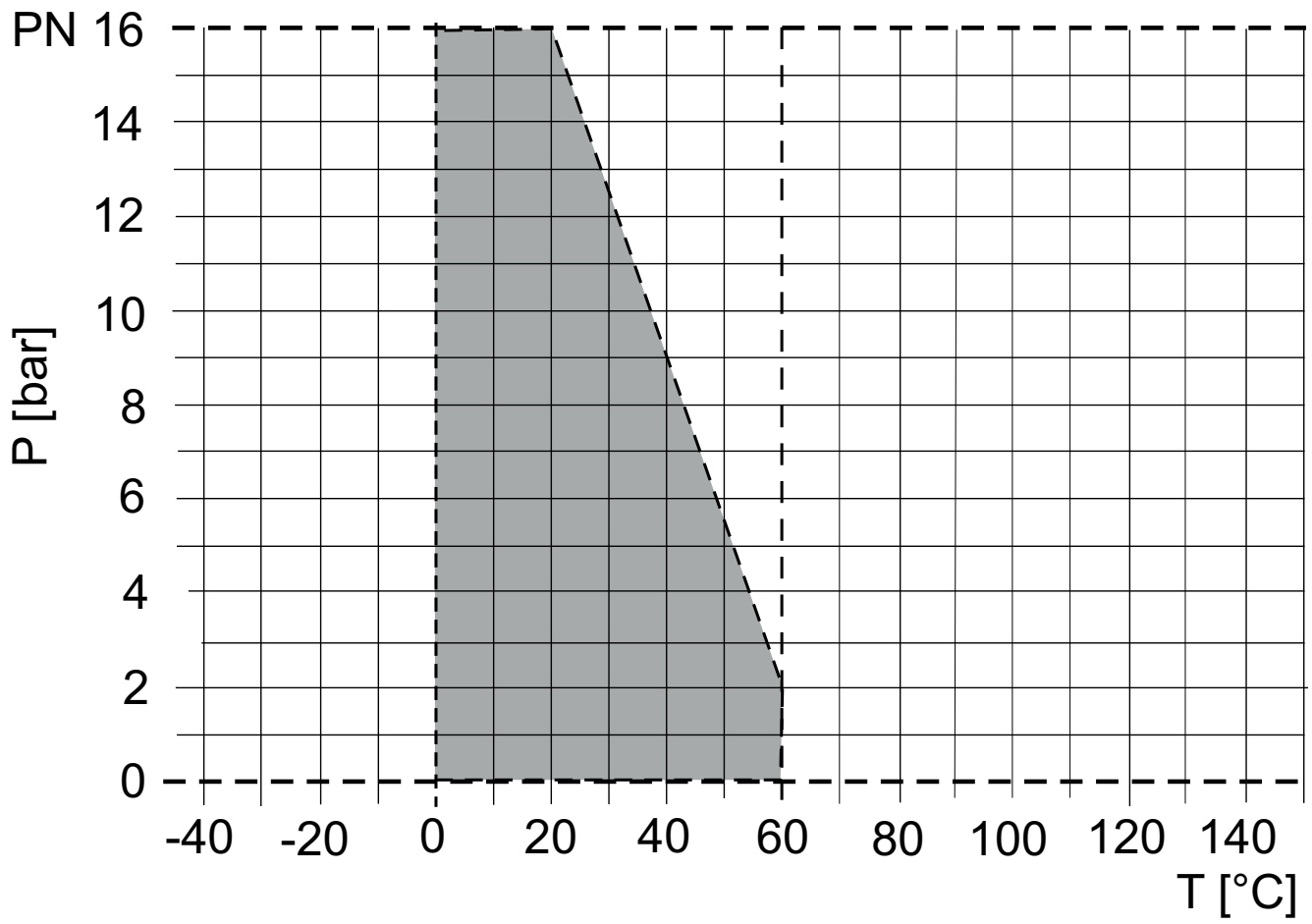


Fig. 5 PVC-U

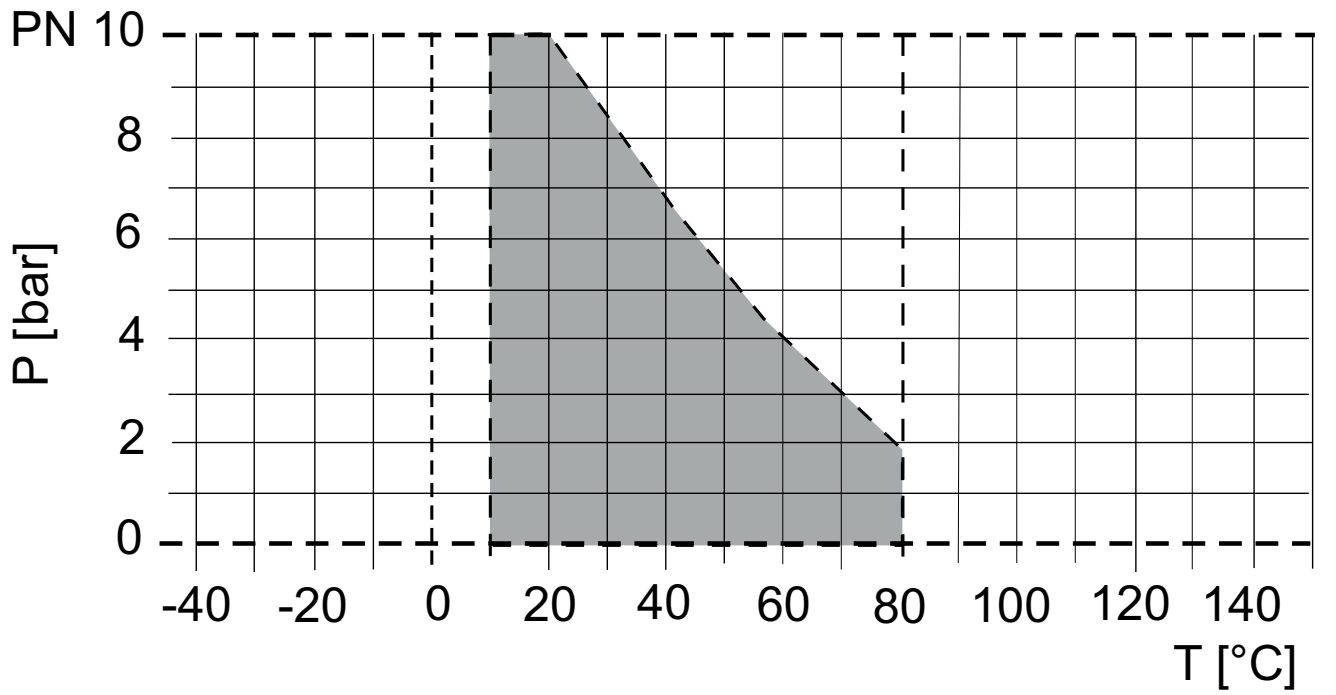


Fig. 6 PP

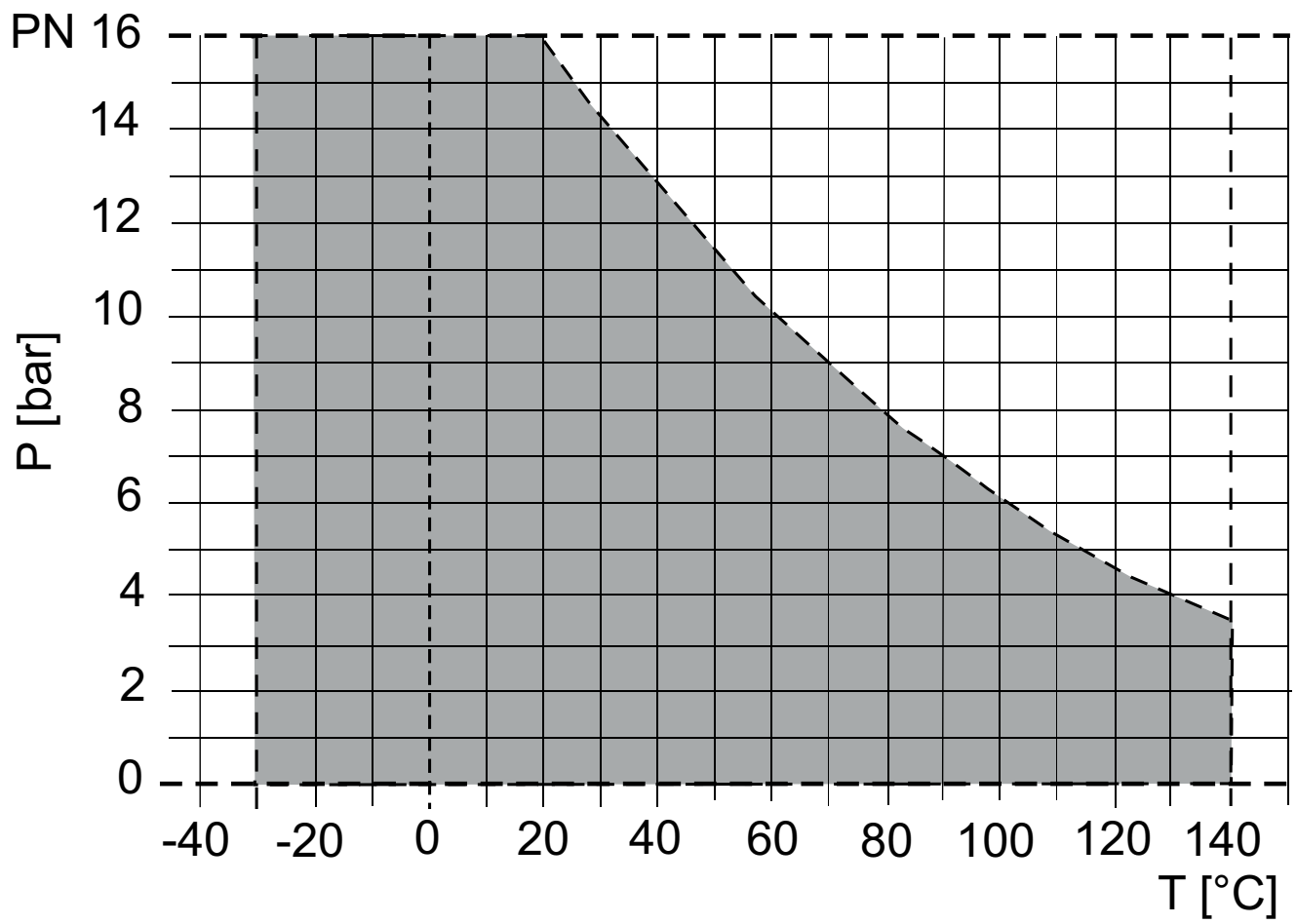


Fig. 7 PVDF

1 About this document

This manual

- is part of the fitting
- applies to all series referred to
- describes safe and proper operation during all operating phases

1.1 Target groups

Operating company

- Responsibilities:
 - Keep this manual available at the place of operation, also for future use.
 - Ensure that employees read and observe this manual and other applicable documents, especially the safety instructions and warnings.
 - Observe any additional country-specific rules and regulations that relate to the system.

Qualified personnel, fitter

- Mechanics qualification:
 - Qualified employees with additional training for fitting the respective pipework.
- Electrical qualification:
 - Qualified electrician
- Responsibility:
 - Read, observe and follow this manual and the other applicable documents, especially all safety instructions and warnings.

1.2 Other applicable documents



To download:

Data sheet C200, C200 with relief bore

Technical data, operating conditions

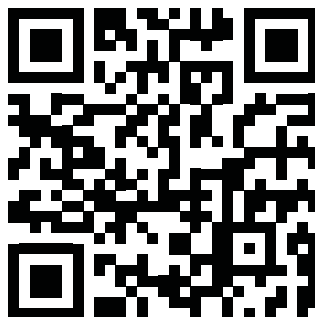
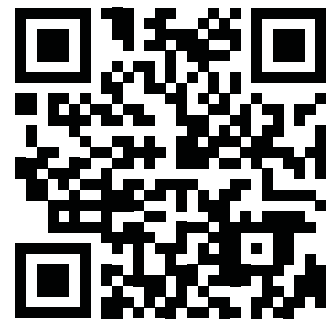
http://www.asv-stuebbe.de/pdf_datasheets/300174.pdf

To download:

Data sheet C200 PROP, C200 DOS

Technical data, operating conditions

http://www.asv-stuebbe.de/pdf_datasheets/300594.pdf



To download:

Resistance Guide

Chemical resistance of the materials used

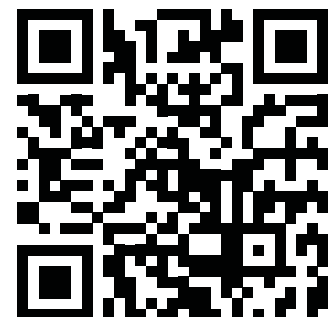
http://www.asv-stuebbe.de/pdf_resistance/300051.pdf

To download:

CE declaration of conformity








Conformity with standards

http://www.asv-stuebbe.de/pdf_DOC/300168.pdf




Tab. 1 Other application documents, purpose and where found

1.3 Warnings and symbols

| Symbol | Meaning |
|--|--|
|  | <ul style="list-style-type: none"> • Immediate acute risk • Death, serious bodily harm |
|  | <ul style="list-style-type: none"> • Potentially acute risk • Death, serious bodily harm |
|  | <ul style="list-style-type: none"> • Potentially hazardous situation • Minor injury |
|  | <ul style="list-style-type: none"> • Potentially hazardous situation • Material damage |
|  | <p>Safety warning sign</p> <ul style="list-style-type: none"> ▶ Take note of all information highlighted by the safety warning sign and follow the instructions to avoid injury or death. |
|  | Instruction |
| 1. , 2. , ... | Multiple-step instructions |
| ✓ | Precondition |
| → | Cross reference |
|  | Information, notes |

Tab. 2 Warnings and symbols


2 Safety instructions

 | The manufacturer accepts no liability for damages caused by disregarding any of the documentation.

2.1 Intended use

- Only use the fitting with suitable media (→ resistance lists).
- Adhere to the operating limits (→ 9.1.1 Pressure and temperature limits, Page 16).
- C200, C200 with relief bore: Only use fitting to close off pipelines.
- C200 PROP: Only use fitting to set or regulate flow
- C200 DOS: Only use fitting for dosing.

2.2 General safety instructions

 | Read and observe the following regulations before carrying out any work.

2.2.1 Obligations of the operating company

Safety-conscious operation

- Only operate the fitting if it is in perfect technical condition and only use it as intended, staying aware of safety and risks, and in adherence to the instructions in this manual.
- Ensure that the following safety aspects are observed and monitored:
 - Intended use
 - Statutory or other safety and accident-prevention regulations
 - Safety regulations governing the handling of hazardous substances
 - Applicable standards and guidelines in the country where the pump is operated
- Make personal protective equipment available.

Qualified personnel

- Make sure all personnel tasked with work on the fitting have read and understood this manual and all other applicable documents, especially the safety, maintenance and repair information, before they start any work.
- Organize responsibilities, areas of competence and the supervision of personnel.
- The following work should be carried out by specialist technicians only:
 - Installation, repair and maintenance work
 - Work on the electrical system
- Make sure that trainee personnel only work on the fitting under supervision of specialist technicians.

2.2.2 Obligations of personnel

- Observe the instructions on the fitting and keep them legible, e.g. nameplate, identification marking for fluid connections.
- Only carry out work on the fitting if the following requirements are met:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again

2.3 Specific hazards

2.3.1 Hazardous media

- When handling hazardous media (e.g. hot, flammable, explosive, toxic, hazardous to health or the environment), observe the safety regulations for the handling of hazardous substances.
- Use personal protective equipment when carrying out any work on the fitting.
- Collect leaking pumped liquid and residues in a safe manner and dispose of in accordance with environmental regulations.
- For media prone to outgassing, use C200 with relief bore.

3 Layout and Function

3.1 Marking

3.1.1 Name plate

Fig. 1 Nameplate (example)

| | | | |
|---|--|---|--|
| 1 | Type | 4 | Materials (valve body, diaphragm, other gaskets) |
| 2 | ID number | 5 | Date of manufacture - Series number |
| 3 | Nominal pressure [bar] / Nominal diameter [mm] | | |

3.2 Layout

Manually, electrically or pneumatically operated ball valve.

- Direction of flow
 - C200: any
 - C200 PROP, C200 DOS, C200 with relief bore: Arrow on housing
- Opening angle
 - C200, C200 PROP, C200 with relief bore: OPEN/CLOSE 90°
 - C200 DOS: OPEN/CLOSE 180°
- Optional installation position
 - Position electric drive laterally or over the fitting.

Fig. 2 Layout

| | | | | | |
|-----|-----------------------|----|------------|----|-----------------|
| 1 | Housing | 5 | Hand lever | 14 | O-ring |
| 2.1 | Ball standard | 6 | Insert | 15 | Locking slide |
| 2.2 | Ball PROP | 7 | Union nut | 16 | Lever inlay |
| 2.3 | Ball DOS | 8 | Ball seal | 17 | Graduated dial |
| 2.4 | Ball with relief bore | 9 | O-ring | 18 | Display adapter |
| 3 | Stem | 11 | O-ring | | |
| 4 | Union threaded neck | 12 | O-ring | | |

4 Transport, Storage and Disposal

4.1 Unpacking and inspection on delivery

1. Unpack the fitting when received and inspect it for transport damage.
2. Report any transport damage to the manufacturer immediately.
3. Ensure that the information on the type plate agrees with the order/design data.
4. For immediate installation, dispose of packaging material according to local regulations.
 - For later installation, leave the fitting in the original packaging.

4.2 Transportation

1. If possible, transport fitting (including drive) in original packaging.
2. To transport, lift the fitting by hand, weight specifications (→ Data sheet)

4.3 Storage


NOTE

Material damage due to inappropriate storage!

- Store the fitting properly.

-
1. Make sure the storage room meets the following conditions:
 - Dry
 - Frost-free
 - Vibration-free
 - Not in direct sunlight
 - Storage temperature +10 °C to +60 °C
 2. Store fitting in “Valve open” state, if possible in the original packaging.

4.4 Disposal

-  Plastic parts can be contaminated by poisonous or radioactive media to such an extent that cleaning will not be sufficient.

WARNING

Risk of poisoning and environmental damage from medium.

- ▶ Use personal protective equipment when carrying out any work on the fitting.
 - ▶ Before disposing of the fitting:
 - Collect escaping medium and dispose separately according to local regulations.
 - Neutralize residues of medium in the fitting.
 - ▶ Remove plastic parts and dispose of them in accordance with local regulations.
-
- ▶ Dispose of fitting in accordance with local regulations.

5 Installation and connection

5.1 Preparing for installation

5.1.1 Check operating conditions

1. Ensure the design of the fitting is consistent with the purpose intended:
 - Materials used (→ nameplate).
 - Medium (→ order and design data).
2. Ensure the required operating conditions are met:
 - Resistance of body and seal material to the medium (→ resistance lists).
 - Media temperature (→ 9.1.1 Pressure and temperature limits, Page 16).
 - Working pressure (→ 9.1.1 Pressure and temperature limits, Page 16).
 - Setting range
3. Consult with the manufacturer regarding any other use of the device.

5.2 Planning pipelines

5.2.1 Designing pipelines

WARNING

Risk of poisoning and environmental damage from medium.

Leaks due to impermissible pipework forces.

- ▶ Ensure that the fitting is not subject to any pulling or thrusting forces or bending moments.
-

1. Plan pipes safely:
 - No pulling or thrusting forces
 - No bending moments
 - Adjust for changes in length due to temperature changes (compensators, expansion shanks)
 - Optional installation position
 - Direction of flow
 - C200: any
 - C200 PROP, C200 DOS, C200 with relief bore: according to arrow on housing
2. Dimensions (→ Data sheet).

5.3 Installing fitting in pipe

WARNING

Risk of poisoning and environmental damage from medium.

Leak due to faulty installation.

- ▶ Installation work on the pipes should only be performed by technicians who have been specially trained for the pipework in question.

NOTE

Material damage due to contamination of the fitting!

- ▶ Make sure no contamination reaches the fitting.
- ▶ Flush the pipe with a neutral medium.

NOTE

Material damage if ball valve is used as final unit!

Leaks at the ball valve.

- ▶ Ensure that the ball valve is installed with the two inserts and the two unions nuts.
- ▶ Ensure that the locking slide (15) or the union threaded neck (4) in the direction of the pressurized pipeline.



The fitting is installed according to the connection type of the pipes.
If necessary, the fitting can be fastened to the two fixing plates on the underground. (→ 9.2 Tightening torques, Page 16).

1. Open fitting completely.
2. Prepare pipe ends according to connection type.
3. Unscrew union nuts and slide over free pipe ends.
Check mounting direction.
4. Connect inserts with pipe ends.
5. Position fitting between the pipe ends.
 - C200 PROP, C200 DOS, C200 with relief bore: Observe direction of flow (arrow on housing).
 - Position electric drive laterally or over the fitting.
6. Hand-tighten the union nut.

Connection with flange

1. Prepare pipe ends according to connection type.
2. Depending on the connection type, insert flat gasket or O-ring.
3. Radially push the fitting between the flange ends.
4. Bolt fitting and flange with flange screws, nuts and washers.
While doing so, observe tightening torques (→ 9.2 Tightening torques, Page 16).

5.4 Drive and limit switch box


 | Pneumatic drive can only be used for C200 (not for C200 PROP, C200 DOS).

Fig. 3 Drive and limit switch box

A Limit switch box B Pneumatic drive C Electric drive
 A – open
 B – closed

5.5 Connection


 | Only necessary for fittings with electric or pneumatic drives.

Fig. 4 Connecting the fitting

A Connect limit switch B Connect pneumatics

5.5.1 Electrical connection


DANGER

Risk of electrocution!

► All electrical work must be carried out by qualified electricians only.

1. Connect limit switch (→ Figure Connecting the fitting, Page 10).
2. Connect electric drive (→ Operation instructions for electric drive).

5.5.2 Pneumatic connection

 Solenoid pilot valves are available for control of the pneumatic drive (→ Operating instructions for pilot valve):

- 3/2-way valve for single-acting drives
- 5/2-way valve for double-acting drives

CAUTION

Risk of injury from compressed air!

- All work on the pneumatic system must be carried out by qualified technicians.
- Connect compressed air lines to the pneumatic drive.

| Function | Control pressure on | |
|----------------------|---------------------|-------|
| | P1 | P2 |
| Normally closed (NC) | – | open |
| Normally open (NO) | – | close |
| Double acting (DA) | close | open |

Tab. 3 Control pressure connections

5.5.3 Check sense of rotation of drive

1. Open and close drive once via the electric or pneumatic connection.
2. Check position of the fitting at the flow indicator:
 - C200, C200 with relief bore: Hand lever along the pipe: Fitting opened
 - C200: Hand lever perpendicular to the pipe: Fitting closed
 - C200 PROP, C200 DOS: Observe graduated scale (0 = closed)

5.6 Performing the hydrostatic test



Pressure test using neutral medium, e.g. water.

1. Pressurize the fitting, ensuring:
 - Test pressure < permissible system pressure
 - Test pressure < 1.5 PN
 - Test pressure < PN + 5 bar
2. Check the fitting for leaks.

6 Operation

6.1 Commissioning

- ✓ Fitting correctly installed and connected

WARNING

Risk of injury and poisoning due to medium escaping.

- ▶ Use personal protective equipment when carrying out any work on the fitting.

1. Opening and closing the fitting:
 - C200, C200 with relief bore: Hand lever along the pipe: Fitting opened
 - C200: Hand lever perpendicular to the pipe: Fitting closed
 - C200 PROP, C200 DOS: Observe graduated scale (0 = closed)
2. After the initial stresses due to pressure and operating temperature, check if the fitting is sealed.

7 Maintenance

WARNING

Risk of injury and poisoning due to hazardous media liquids!

- ▶ Use personal protective equipment when carrying out any work on the fitting.

7.1 Servicing

1. Visual and function check (every three months):
 - Normal operating conditions unchanged
 - No leaks
 - No unusual operating noises or vibrations
2. Ensure that fitting functions properly (opening, closing)
3. Clean fitting with a moist cloth if necessary.

7.2 Maintenance

DANGER

Risk of electrocution!

- ▶ All electrical work must be carried out by qualified electricians only.

WARNING

Risk of injury and poisoning due to hazardous or hot media.

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.

WARNING

Risk of injury during disassembly!

- ▶ Wear protective gloves, components can be very sharp-edged due to wear or damage.
- ▶ Remove components with springs (e.g. pneumatic drive) carefully, since spring tension can cause components to be ejected.

7.2.1 Removing fitting

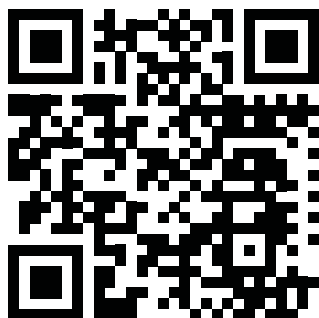
1. Ensure that:
 - System is empty
 - System has been flushed
 - System is depressurized
 - System has cooled down
 - System is secured against being switched back on again
2. Remove fitting from the pipe.
3. Decontaminate fitting if required.
 - Dead space in the fitting may still contain medium.

7.2.2 Fixing leaks in the port

1. Remove fitting (→ 7.2.1 Removing fitting, Page 14).
2. Tighten union threaded neck.
3. Install fitting (→ 5.3 Installing fitting in pipe, Page 9).
4. If the fitting is still leaky, replace ball seals and/or ball.

7.3 Replacement parts and return

1. For ordering spare parts or returns
(→ <http://www.asv-stuebbe.com/service/downloads>).



2. Have the following information ready to hand when ordering spare parts (→ nameplate).
 - Fitting type
 - ID number
 - Nominal pressure and diameter
 - Body and seal material

8 Troubleshooting

WARNING

Risk of injury and poisoning due to hazardous or hot media.

- ▶ Use personal protective equipment when carrying out any work on the fitting.
- ▶ Safely collect the media and dispose of it in accordance with environmental regulations.


Consult with the manufacturer regarding faults which are not identified in the following table, or which cannot be traced to the indicated causes.

| Error | Possible cause | Corrective action |
|-------------------------------------|-------------------------------------|--|
| Medium leakage at the pipe fittings | Pre-tension of the O-ring too small | ▶ Retighten union nut by hand. |
| Medium leakage at the stem | O-ring worn | ▶ Replace fitting (→ 7.2.1 Removing fitting, Page 14). |
| Fitting does not close completely | Ball seals worn Ball worn | ▶ (→ 7.2.2 Fixing leaks in the port, Page 14). |


Tab. 4 Troubleshooting

9 Appendix

9.1 Technical specifications

 Technical data (→ Data sheet).

9.1.1 Pressure and temperature limits

 Other media (→ resistance lists).

Use at temperatures under 0 °C should be agreed with the manufacturer.

Fig. 5 Pressure and temperature limits PVC-U

Fig. 6 Pressure and temperature limits PP

Fig. 7 Pressure and temperature limits PVDF

9.2 Tightening torques

| Description | Size | Tightening torque [Nm] |
|--------------------------|------|------------------------|
| Screw in fastening plate | DN15 | 2.0 |
| | DN20 | 2.0 |
| | DN25 | 4.0 |
| | DN32 | 6.0 |
| | DN40 | 6.0 |
| | DN50 | 6.0 |
| Union nut | – | hand-tight |
| Union threaded neck | – | hand-tight |

Tab. 5 Tightening torques