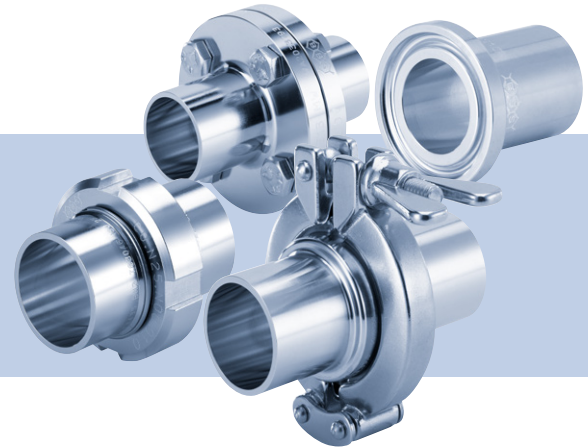


## Type BBS-03, BBS-05, BBS-06, BBS-25

Sterile connection elements  
Sterile Verbindungselemente  
Raccords union stériles



Operating Instructions  
Bedienungsanleitung  
Manuel d'utilisation

# 1. THE OPERATING INSTRUCTIONS

The operating instructions contain important information.

- Read the instructions carefully and follow the safety instructions in particular.
- Keep the instructions in a location where they are available to every user.
- The liability and warranty for types BBS-03, BBS-05, BBS-06 and BBS-25 do not apply if the procedures in the instructions are not observed.

## 1.1. Symbols

→ designates a procedure which you must carry out.

**Warning of injuries:**



**DANGER!**

Immediate danger! Serious or fatal injuries.



**WARNING!**

Possible danger! Serious or fatal injuries.



**CAUTION!**

Danger! Moderate or minor injuries.

**Warning of damage:**

**NOTE!**

# 2. INTENDED USE

**Non-authorized use of Type BBS-03, BBS-05, BBS-06 and BBS-25 may be dangerous to people, nearby equipment and the environment.**

- Type BBS-03, BBS-05, BBS-06 or BBS-25 has been designed as a connection between pipelines for the flow of gases and liquids in the sterile area.
- Use according to the authorized data, operating conditions, and conditions of use specified in the contract documents and operating instructions.
- Correct transportation, storage and installation, as well as careful use and maintenance are essential for reliable and faultless operation.
- Use the connection elements only as intended.

## 2.1. Definitions of terms

The term "connection element" used in these instructions always stands for Type BBS-03, BBS-05, BBS-06 and BBS-25.

### 3. BASIC SAFETY INSTRUCTIONS

These safety instructions do not take into account any contingencies and events which may arise during the installation, operation and maintenance of the connection elements.



#### **Danger – high pressure and discharge of medium!**

- Before loosening the lock nut or locking clamp, always turn off the pressure and vent the lines.
- Wear protective equipment if media is hazardous.

#### **General hazardous situations**

- Do not make any internal or external changes to the connection element.
- Ensure that the system cannot be activated unintentionally.
- Installation and maintenance work may be carried out only by authorized technicians with the appropriate tools.
- The connection elements may be operated only when in perfect condition and in consideration of the operating instructions.
- As far as inspection, maintenance and repairs are concerned, observe national provisions of the country in which the connection elements are installed.
- The general rules of technology apply to application planning and operation of the connection elements.

### 4. GENERAL INFORMATION

#### 4.1. Contact address

##### **Germany**

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Sales Center

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Email: [info@burkert.com](mailto:info@burkert.com)

##### **International**

Contact addresses can be found on the final pages of the printed operating instructions. And also on the Internet at: [www.burkert.com](http://www.burkert.com)

#### 4.2. Warranty

The warranty is only valid if the connection elements are used as intended in accordance with the specified application conditions.

#### 4.3. Information on the Internet

The operating instructions and data sheets for Types BBS-03, BBS-05, BBS-06 and BBS-25 can be found on the Internet at: [www.burkert.com](http://www.burkert.com)

## 5. TECHNICAL DATA

### 5.1. Conformity

The connection elements of Type BBS-03, BBS-05, BBS-06 and BBS-25 comply with EC Directives in accordance with the EC Declaration of Conformity.

### 5.2. Standards (if applicable)

The applied standards which are used to demonstrate compliance with the EC Directives are listed in the EC type test certificate and/or the EC Declaration of Conformity.

### 5.3. Identification

Information on material and pipe dimensions can be found on the stamping on the connection element. The identification number of the connection element can be found on the supplied 3.1 certificate.

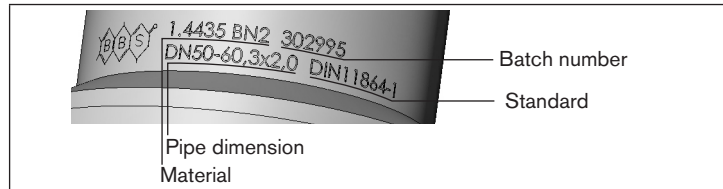


Fig. 1: Example of identification of the connection element

### 5.4. Sealing materials

Seal material	Operating temperature
EPDM	-40 °C to 90 °C, briefly up 140 °C
FEP	-60 °C to 160 °C, briefly up 205 °C

Tab. 1: Material of O-rings (BBS-03, -05, -06) or clamp seal (BBS-25).

### 5.5. General technical data

Material comes into contact with medium	Stainless steel 1.4435 BN2 (316L)
Material does not come into contact with medium	Stainless steel 1.4305 or equivalent
Pipe dimensions	See label on connection element (Example: <a href="#">"Fig. 1"</a> )
Permitted application temperature	Depending on sealing material, see <a href="#">"Tab. 1" page 4</a>
Ambient temperature	-20 °C to +80 °C
Media	Gases or liquids

## 6. ASSEMBLY



### WARNING!

#### Risk of injury from improper assembly!

- Installation must only be carried out by authorized technicians and with the appropriate tools!
- Secure system from unintentional activation.

### 6.1. Welding in the pipe connection

#### NOTE!

##### Damage to the welding ends!

- Remove end protection just before welding.

##### Leak due to damaged sealing contour!

- To ensure the sealing function, protect the sealing contour during installation, welding and cleaning procedures.

##### Leak due to damaged seal!

- It is **essential** to remove the seal before welding and protect it from dust, flying sparks and other influences!

#### Before welding:

→ Connect the parts **positively** in a protective gas shield.

→ For type BBS-03: **Unscrew pipe connection!**

Pull union nut **on the liner side** over the area to be welded onto the pipe part to be welded on.

#### Welding

We recommend welding the connections using orbital welding machines.

→ Always supply the weld with an inert gas.

→ Always form root seam welds.

→ Carefully clean welded joint.

→ Manual welding is possible. In doing so, use a higher-alloy filler metal than the base material of the connection.

#### After welding:

When cleaning the weld seam by grinding or acid cleaning, observe the following before assembling the connection:

- Carefully remove all grinding dust and acid-cleaning residue.
- Do not damage the label.
- There must be no material abrasion on the sealing edges. Material abrasion will result in sharp-edged sealing contours and a damaged seal.
- Check sealing contour for damage.

We recommend preparing a welding report.

## 6.2. Installing the seal

### NOTE!

#### Damage to the EPDM and FEP seal!

- Sealing contours and contact areas must be free of contaminants.
- Do not use any pointed metallic objects.
- Never install FEP seals by force – e.g. by kinking. Even the slightest damage will result in leaks!

#### Damaged seals must be replaced!

- Remove protective caps from sealing contours (protective caps only for small delivery quantities or per order)

#### Type BBS-03, BBS-05 and BBS-06:

- Insert O-ring before assembling the connection element into the threaded connection or liner.

#### EPDM seals: Do not install using grease or oil!

If required, glycerin can be used as an installation aid.

**FEP seals:** Install by lubricating the surface with silicone grease (FDA-compliant).

O-ring must be located firmly and tightly in the designated groove and must not protrude into the pipe connection.

#### Type BBS-25:

- Insert clamp seal into the threaded connection before screwing the connection element together.

#### EPDM seals: Do not install using grease or oil!

If required, glycerin can be used as an installation aid.

Clamp seal must be located centrally and firmly and tightly in the designated groove and must not protrude into the pipe connection.

## 6.3. Installing the pipe connection

- Ensure that the seal is located correctly in the sealing contour.
- Assemble both connection parts so that they are in alignment (concentric deviation and angular offset of the pipe ends max.  $\pm 0.5\%$  of the outer pipe diameter)

#### Type BBS-03

- Pull union nut over the liner.
- We recommend lubricating the thread with suitable grease.
- Manually turn union nut clockwise on the threaded connection. Ensure that the connection turns freely, do not use force.
- Tighten union nut using a suitable tool.

We recommend using flanges from DN 40.

### Type BBS-06

- Insert hexagon bolts through the screw holes in the flange.
- Push circlip over the ends of the bolts.
- Turn nuts on to the bolt threads, tighten by hand.
- Tighten bolts crosswise using a suitable tool until flange sheets are firmly situated one on top of the other.

### Type BBS-05 and BBS-25

#### NOTE!

##### Damage to the connection element!

- Do not use any tools to install the clamp.

- Manually place clamp over the connection.
- Insert clamp screw into the designated slot, but do not use force.
- Check that the clamp is seated correctly.
- Carefully and evenly tighten the wing nut by hand until both pipe components are firmly situated one on top of the other.

## 7. START-UP



### WARNING!

#### Risk of injury from improper operation!

Improper operation may result in injuries as well as damage to the connection element and the surrounding area.

- Before start-up, ensure that the operating personnel are familiar with and completely understand the contents of the operating instructions.
- Observe the safety instructions and intended use.
- Only adequately trained personnel may start up the equipment/the connection element.
- Following assembly, ensure a controlled restart.
- When starting up the equipment, ensure that no unauthorized voltage increases and pressure surges can occur.

## NOTE!

### Damage to the seals when cleaning the pipeline systems.

- Clean the pipeline systems preferably with a cleaning agent which does not damage the seals.
- Do not clean the connection elements with wire brushes or machines which cause abrasion of the surface.
- When using mechanical pipeline monitoring devices, ensure that they do not damage the sealing elements (also the sealing contour).

**Damaged seals must be replaced!**

## 8. MAINTENANCE



### WARNING!

#### **Danger – high pressure and discharge of medium!**

- Before loosening the lock nut or locking clamp, always turn off the pressure and vent the lines.
- Wear protective equipment if media is hazardous.
- Lock nuts or locking clamps of the connection elements on pressurized lines may be retightened only by technicians in consideration of special precautions.
- When shutting down the equipment, ensure that no unauthorized voltage increases and pressure surges can occur.
- Following maintenance, ensure a controlled restart.

#### **Have the connection elements serviced regularly by technicians!**

We recommend a maintenance interval of 6 months.

Inspection and maintenance work includes in particular monitoring and ensuring the

- leak-tightness,
- identification,
- proper mode of operation of the safety and warning devices.

### Opening the screw connection Types BBS-03 and BBS-06

→ **Follow safety instructions!**

- Slacken lock nut or lock screws until they can still hold the pipe ends.
- Vent the pipe ends slightly and slacken them until they no longer stick to each other.
- Remove lock nut or lock screws.
- Loosen pipe connection.

### Opening the clamp connection Types BBS-05 and BBS-25

→ **Follow safety instructions!**

- Open wing nut until the locking clamp still holds the pipe ends.
- Vent the pipe ends slightly and slacken them until they no longer stick to each other.
- Remove locking clamp.
- Loosen pipe connection.

## 9. TRANSPORTATION, STORAGE, DISPOSAL

### NOTE!

#### Transport damage!

Inadequately protected connection elements may be damaged during transportation.

- Transport the connection element in a firmly assembled state, protected against moisture and dirt, in shock-resistant packaging.
- The welding ends must be protected by end caps.

#### Incorrect storage may damage the connection element.

- Prevent the temperature from exceeding or dropping below the permitted storage temperature.
- Store the connection element in a dry and dust-free location!
- Store EPDM O-rings and FEP O-rings dry and protected from UV radiation and for not longer than 3 years.
- Storage temperature -40 to +80°C.

#### Damage to the environment caused by device components contaminated with media.

- Dispose of the device and packaging in an environmentally friendly manner!
- Observe applicable disposal and environmental regulations.

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### **International address**

[www.burkert.com](http://www.burkert.com) → Bürkert → Company → Locations

Manuals and data sheets on the Internet: [www.burkert.com](http://www.burkert.com)

Bedienungsanleitungen und Datenblätter im Internet: [www.buerkert.de](http://www.buerkert.de)

Instructions de service et fiches techniques sur Internet : [www.buerkert.fr](http://www.buerkert.fr)

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