

# Repair instructions

## Micro-flow Valve Series 6a



Fig. 1 - Micro-flow valve Series 6a with Samson control actuator



This equipment may only be dismantled and disassembled by skilled staff, who are familiar with the assembly, start-up and the operation of this product.

Skilled staff in the sense of these repair and assembly instructions, are persons who, as a result of their training, knowledge, and experience, also their knowledge of the relevant standards, are able to recognise possible dangers.

### 1. Design, operation and dimensions

Design, operation and dimensions, as well as all further technical details can be found in the **Data sheet < TB 06a\_EN >**

### 2. Installation, start-up and maintenance

Guidelines for the installation, start-up and maintenance can be found in the respective **operating instructions**

< **BA 01a-01\_EN** > for automatic control valves, i.e.

< **BA 01a-02\_EN** > for manually operated control valve,

## 0. Introduction

These instructions are intended to support the user in the assembly and repair of micro-flow valves of the series 6a.

Technical details, as a result of further development of the valves mentioned in these instructions are subject to modification.

The text and illustrations do not necessarily display the scope of supply, or an eventual order of spare parts. Drawings and graphics are not to scale. Customer related designs, which are not in accordance with our standard offer, are not shown. The transfer of these instructions to third parties is only allowed with the written approval of Pfeiffer Chemie-Armaturenbau GmbH.

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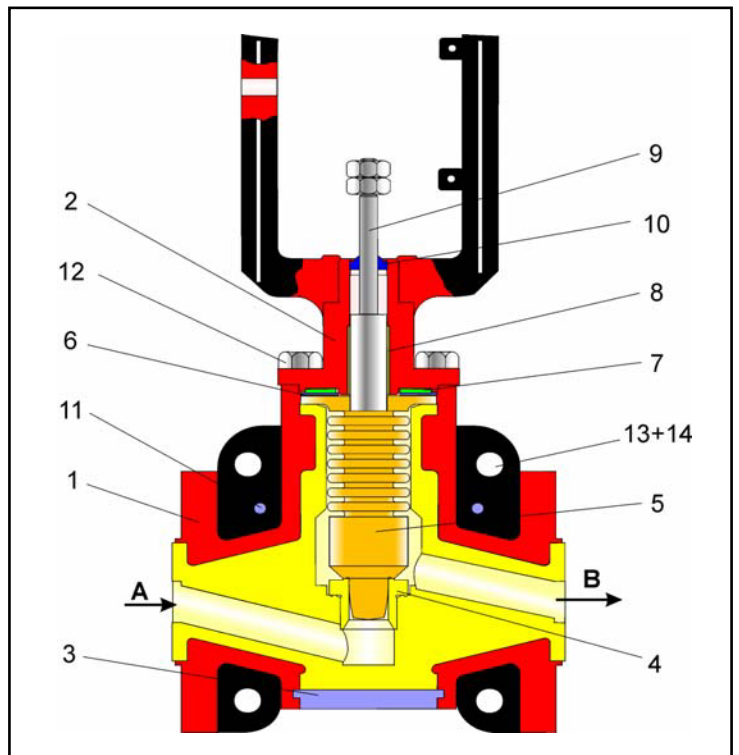


Fig. 2 - Sectional view of a micro-flow valve, Series BR 6a => Parts list, see Table 1 on page 2



The pressure ring ( 6 ) and the spring washer ( 7 ) are placed on the upper side of bellow flange. ( 5 )  
Refer to the explosion drawing ( Fig. 3 ) when positioning the spring washers.

### 3.3 Pre-assembly of the bonnet flange

Press the glycodur-bushing ( 8 ) with loctite in the bonnet flange. ( 2 )  
Through the existing bore in the bonnet flange, ( 2 ) drill a 3 mm hole in one side of the glycodur bushing. ( 8 ) Now press the locating groove pin ( 15 ) into the bore.

The wipe off ring ( 10 ) is inserted into the upper part of the bonnet flange. ( 2 ) Following this, insert the pre-assembled stem unit (see section 3.2) into the bonnet.



**Note:** The locating groove pin in the bonnet flange must be guided into the slot of the stem unit.

### 3.4 Pre-assembly of the valve body

The valve body, made of spheroidal cast iron, forms together with the PTFE - liner and the bonnet flange ( 3 ) a complete unit, which together with the grooved pins, ( 11 ) socket head screws, ( 13 ) and hexagon nuts ( 14 ) are screwed together.



**Note:** The assembled valve body unit, must not be disassembled.

With the use of a special tool, screw the PTFE - seat ( 4 ) into the specified seat bore of the body. ( 1 )



**Note:**  
The tightening torque ist 2 Nm.

### 3.5 Final assembly of the valve

Clamp the pre-assembled body ( see section 3.4 ) with the bonnet opening facing upwards in a vice.

The pre-assembled bonnet flange ( see section 3.3 ) is placed carefully onto the body, and aligned with the screws. ( 12 )



**Attention:** To avoid damage to the parts during assembly, the bonnet flange, ( 2 ) of the valve plug ( 5 ) must not come in contact with the seat. ( 4 )

Tighten the screws ( 12 ) evenly, and in alternating pattern.

### 3.6 Stroke adjustment

If the micro valve and the Samson control actuator are delivered separately, the dimension „ A “ from the top of the stem shaft nut to the top of the shell can be adjusted according to table 2. This can be checked on assembly.

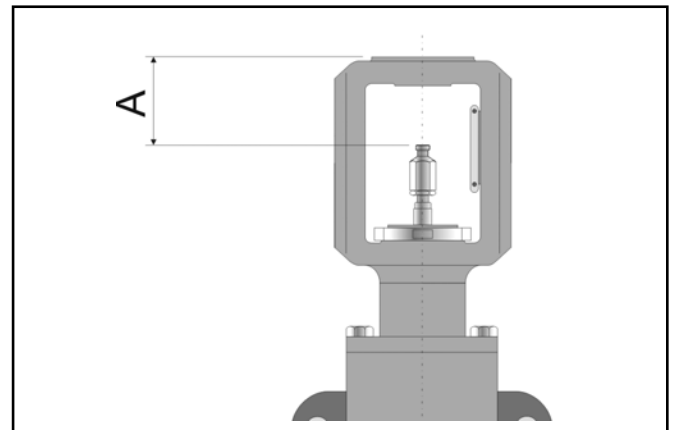


Fig. 4 - Stroke adjustment

Stroke adjustment with Samson actuator ( valve closed )	
DN	A
6 to 15	75 ± 0,1

Table 2 - Stroke adjustment

### 3.7 Stroke limit

- **Stroke limit at 10 mm with the operation mode „Actuator shaft retracting - STEF“**

The limit for operation mode STEF, is effective by means of a spacing washer with an inside thread. ( 1 ) This is screwed and cemented with loctite onto the actuator shaft, ( 4 ) and situated between diaphragm shell ( 7 ) and diaphragm disc. ( 3 )  
During the assembly, the springs under the diaphragm surface are under tension.

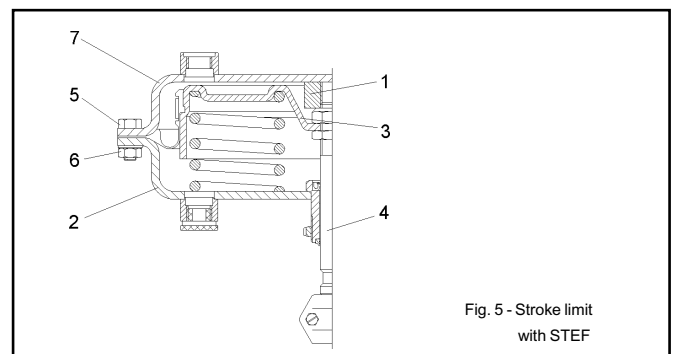


Fig. 5 - Stroke limit with STEF

- For adjusting the hub limit, loosen the screws ( 5 ) and nuts ( 6 ) and remove the upper diaphragm ( 7 ).
- The distance washer ( 1 ) is screwed and cemented with loctite onto the actuator shaft. ( 4 )
- Following this, tighten the upper diaphragm ( 7 ) with the screws ( 5 ) and nuts ( 6 ) evenly, and in alternating pattern.

- **Stroke limit at 10 mm with the Operation mode „Actuator shaft extended - STAF“**

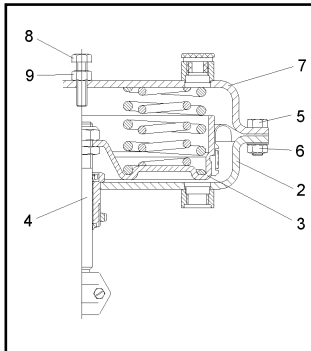


Fig. 6 - Stroke limit with STAF

The stroke limit for operation mode STAF for kvs 0,005; 0,01; 0,05 and a bore seat of 2mm can be set by using the positioning screw. The max. stroke of 10mm must on no account be exceeded. Otherwise the plug when opened, will not be guided into the seat, this means a central guidance in the bore seat can not be ensured, which could cause extrem damage or even break off, when the valve is closed.

For adjusting the stroke, a hole for a threaded screw M10 x 1 is bored in the middle of the upper part of the diaphragm ( 7 ).

- When the assembly of the actuator on the valve is completed, the screw M10 x 1 ( 8 ) with the counter nut ( 9 ) is screwed in position.
- With this screw ( 8 ) the exact stroke limit can now be set, and with the counter nut ( 9 ) locked in position.

**Assembly of the control valve is now completed.**

## 4. Trouble shooting

Action to be taken in the event of malfunction is described in the **Operating instructions** under **section 7**  
**< BA 01a-01\_EN >** for automatic control valves, i.e.  
**< BA 01a-02\_EN >** for hand operated control valves.

## 5. Repair of the micro valve

### 5.1 Replacing the bellow unit and the wipe off ring

If leakage is located at the stuffing box, the wipe off ring, and the bellow unit may be defect. It is therefore recommended to check the condition of all seals and the bellow unit.

To dismantle the wipe off ring and the bellow unit, proceed in reverse order to the assembly instructions for the valve in section 3. As with all other plastic parts, proceed to check the wipe off ring, and the bellow unit for damage, and if necessary replace these parts.

### 5.2 Other repairs

We recommend larger repairs to be carried out in our factory, by our skilled at Pfeiffer.

## 6. Customer inquiries

( by inquiries, please state the following: )

1. Commission number ( embossed on the type plate )
2. Type, manufacturer number, nominal diameter, and control valve design.
3. Pressure and temperature of the media flow
4. Through flow in m<sup>3</sup>/h
5. Possible circuit diagram

**For your special requirements, please contact our technical sales department.**

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**Specifications are subject to change without notice**