

ASSEMBLING INSTRUCTION

Translation from the original language

Hygienic valves

GEA ECOVENT® accessories - angle seat valve TEFASEP-Gold

GEA Tuchenhagen GmbH
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1 General Information

1.1 Information about this document

These additional operating instructions are part of the user information for the valve.

These additional operating instructions contain the manufacturer's instructions to the operator of the valve and to all persons who work on or use the valve regarding the procedures to follow.

They include basic instructions for use of the valves. This document is a supplement to the general standard operating instructions for the ECOVENT angle seat valves and is therefore to be considered part of it.

These additional operating instructions must be observed before installation and commissioning.

2 Safety

2.1 Intended use

The valve is used for opening and closing pipeline sections.

Proper use of the valve also includes compliance with these operating instructions.

The medium should preferably flow in the opening direction of the valve disk to avoid pipe hammers when the valve is opened or closed.

In a closed pipe system, hydraulic pressure build-up may occur when the valve switches and result in seal damage.



Hint!

The manufacturer will not accept any liability for damage resulting from any use of the valve which is not in accordance with the designated use of the valve. The risk is borne solely by the operating company.

3 Technical data

3.1 Technical data

Refer to the following tables for the key technical data of the valve:

Technical data: Valve	
Designation	Description
Size	4" to 6" OD
Material of product contact parts	Stainless steel 1.4404
Fitting position	Any position, if valve and pipe system can drain properly

Technical data: Ambient temperatures	
Designation	Description
Valve	0 to 45 °C (32 ... 113 °F), standard < 0 °C (32 °F): Use control air with low dew point. Protect valve rods against freezing. < -15 °C: no solenoid valves in the control top
Initiator	-20 to +80 °C (-4 ... +176 °F)
Product temperature and operating temperature	depending on the sealing material

Technical data: Compressed air supply, product pressure	
Designation	Description
Air hose	
• Metric	Material PE-LD Outer-Ø 6 mm +/- 0.1 mm Inside Ø 4 mm
• Inch	Material PA outer-Ø 6.35 mm +/- 0.1 mm Inside Ø 4.3 mm
Control air	acc. to ISO 8573-1
• Solid particle content:	Quality class 6 Particle size max. 5 µm Particle density max. 5 mg/m ³
• Water content:	Quality class 4 max. dew point +3 °C If the unit is used at higher altitudes or at low ambient temperatures, the dew point must be adapted accordingly.
• Oil content:	Quality class 3, preferably oil free max. 1 mg oil to 1 m ³ air

Technical data

Tightening torques for the hinged clamps/ cast C-rings

Technical data: Compressed air supply, product pressure	
Designation	Description
Control air pressure	6 bar (87 psi), max. 8 bar (116 psi) configuration with standard drive Alternative combinations of product pressure and control air pressure on request
Product pressure	2 bar (30 psi) configuration with standard actuator

3.2 Tightening torques for the hinged clamps/ cast C-rings

Tighten the nuts of the hinged clamps to the tightening torques specified in the table.

Required tightening torques			
Size	[Nm]	[lbft]	Valve stroke [c]
4" OD	22	15.4	155mm
6" OD	45	31.5	230mm

- Check function
- Actuate valve with compressed air
- Check whether the valve stroke (c) is correct

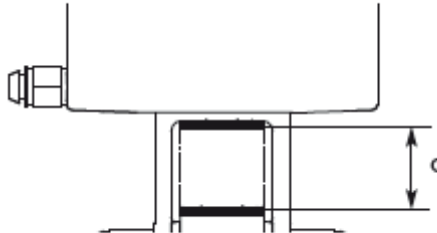


Fig.1

4 Tefasep Gold

4.1 Note



Hint!

TEFASEP gold valve seat seals achieve optimal sealing only after an initial CIP or SIP cleaning.

CIP or SIP cleaning operating conditions:

-Medium: lye, hot water or saturated steam

- Temperature: >80 °C (176 °F)

- Hold time: 20 ... 30 min

The valve must be brought to the closed position for a brief period (3 minutes) immediately after CIP or SIP cleaning.

During commissioning, regularly check all sealing points for leaks.

Exchange defective seals and repeat the CIP or SIP process.

4.2 Servicing intervals

To ensure the highest operational reliability, all wearing parts should be replaced at longer intervals.

The actual servicing intervals can only be determined by the user since they depend on the operating conditions, for instance:

- daily period of use,
- switching frequency,
- type and temperature of the product,
- type and temperature of the cleaning solution,
- ambient conditions.

Servicing intervals		
Applications	Servicing Intervals (Guideline Values) Elastomers	Servicing Intervals (Guideline Values) TEFASEP gold (hard seal)
Media at temperatures of 60 °C to 130 °C (140 °F to 266 °F)	approx. every 3 months	approx. every 12 months
Media at temperatures of < 60 °C (< 140 °F)	approx. every 12 months	approx. every 12 months

4.3 Exchanging the O-ring (TEFASEP gold)

Tools required:

- O-ring cutter
- Heat-resistant protective gloves
- Oven (no microwave)

⚠ Caution!

Health hazard due to toxic fumes!

The O-ring cutter cuts the seal with a hot metal tip. At temperatures of more than 300 °C, toxic fumes can be released.

▶ Avoid directly inhaling the fumes.

⚠ Caution!

Risk of injury due to hot and sharp-edged parts!

The O-ring cutter cuts the seal with a hot metal tip. This process heats up the seal and possibly also metal parts of the valve.

▶ When removing the valve seat seal always wear heat-resistant protective gloves.

Carry out the following steps:

1. Place the heated metal tip of the O-ring cutter at right angles on the valve seat seal to be removed.
2. Cut through the valve seat seal at one point using the O-ring cutter.
! Pay attention not to damage the edge of the radial groove.



Fig.2

3. Take out the cut valve seat seal.
4. Warm a new O-ring (TEFASEP gold valve seat seal) in the oven.
Temperature 140 °C (guideline value)
Time 3 - 5 minutes (guideline value)
! Ensure that the seal can be deformed along the circumference without much effort. The heating time required depends on the type of oven and can vary accordingly.



Fig.3

5. Use both thumbs to press the heated O-ring (TEFASEP gold valve seat seal) into the radial groove at one point.



Fig.4

6. Then use both palms to press the valve seat seal in place in the radial groove.
! Make sure the valve seat seal "clicks" into the radial groove. The audible clicking noise indicates that the seal has been fitted correctly.
! The valve may not be totally leak-proof after a new TEFASEP gold valve seat seal has been fitted. The valve seat seal will adjust itself optimally to the sealing surfaces only after the first CIP or SIP cleaning (see) and will then guarantee perfect sealing up to the maximum closing pressure or vacuum.

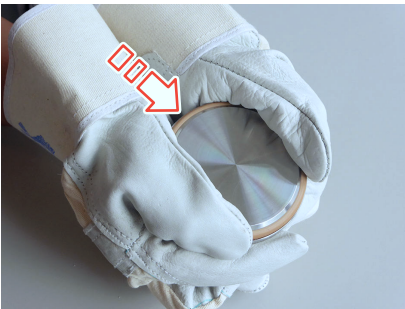


Fig.5

? The valve seat seal is still too rigid and cannot be mounted?

→ Heat the valve seat seal again as described in the first step.

? When installing the valve seat seal, the seal does not "click" into place any more?

The valve seat seal has been overheated and can no longer be used.

→ Repeat the operation with a new valve seat seal.

→ Observe the data specified for heating the valve seat seal.

→ The valve seat seal has been removed.

5 Spare parts list - angle seat valve ECO NI

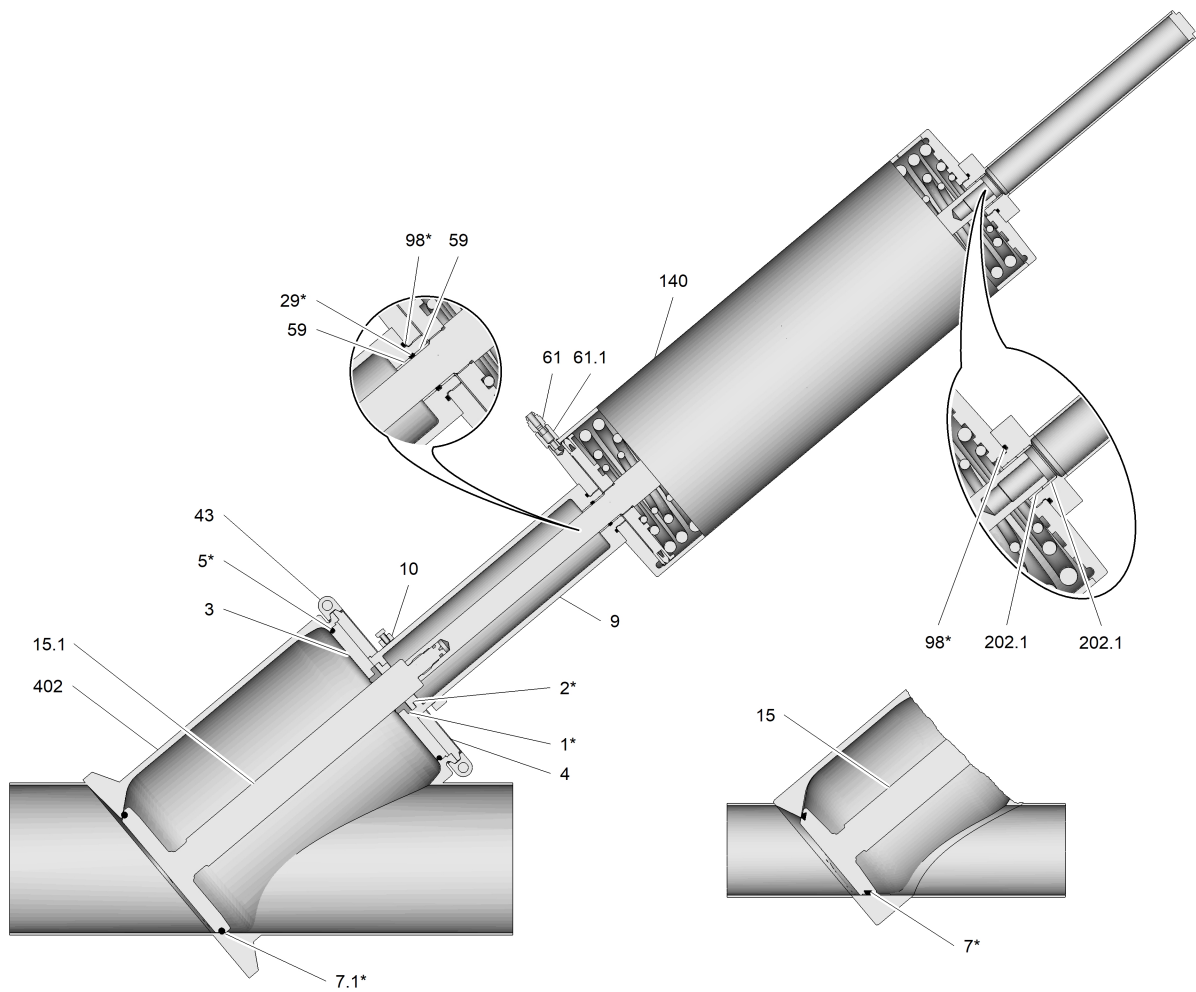


Fig.6

Spare parts list - angle seat valve ECO NI

Item	Designation	Material	4" OD	6" OD
Seal set NI/ECO 3A		TEFASEP gold/EPDM	221-200126	221-200128
		TEFASEP gold/FKM	221-200127	221-200129
1*	Seal ring	EPDM	924-085	924-088
		FKM	924-083	924-087
2*	Bearing	PTFE/carbon	935-088	935-003
	Bearing, 3A	PEEK450G	935-100	935-102
3	Seal disk	1.4404	221-141.15	221-141.66
4	Locking ring	1.4301	221-641.04	221-641.05
5*	O-ring	EPDM	930-156	930-260
		FKM	930-178	930-259
7*	V-ring	EPDM	932-028	932-042
		FKM	932-039	932-041
7.1*	O-ring	Tefasep gold	930-103	930-1082
9	Lantern	1.4301	221-638.05	221-638.10
10	Retaining ring	1.4301	221-003957	221-007708
15	Valve disk NI	1.4404	221-002676	--
15.1	Valve disk NI-TS	1.4404	221-639.25	221-639.24
29*	O-ring	NBR	930-026	930-035
43	Clamp join KL	--	221-507.11	221-507.14
59*	Plain bearing	IGLIDUR-X	704-044	704-042
61	Screw-in plug connection G1/8"-6.35/4.31	Brass/nickel-plated	933-173	933-173
	Elbow screw-in plug connection G1/8"-6.3	Brass/nickel-plated	933-979	933-979
61.1	Reducing nipple NPT	1.4305	933-962	933-962
98*	O-ring	NBR	930-046	930-059
140	Drive ECO	--	221-642.14	221-642.25
	NI housing	1.4404/316L	221-002649	221-007731
	Housing NI_C (with 1" CIP clamp connection)	1.4404/316L	221-007710	221-008264
402	Housing NI_C (with 2" CIP clamp connection)	1.4404/316L	221-005155	221-007682
Blanking plate ECO-E				
Blanking plate ECO-E cpl.		1.4301	221-643.21	221-643.30
98*	O-ring	NBR	930-046	930-059
202.1*	Plain bearing	IGLIDUR-X	704-044	704-042
* Items marked with an * are wearing parts				
The seal set includes items 1, 2, 5, 7, 7.1, 29, 59, 98, and 202.1.				

6 Dimension sheet - angle seat valve_ECO E

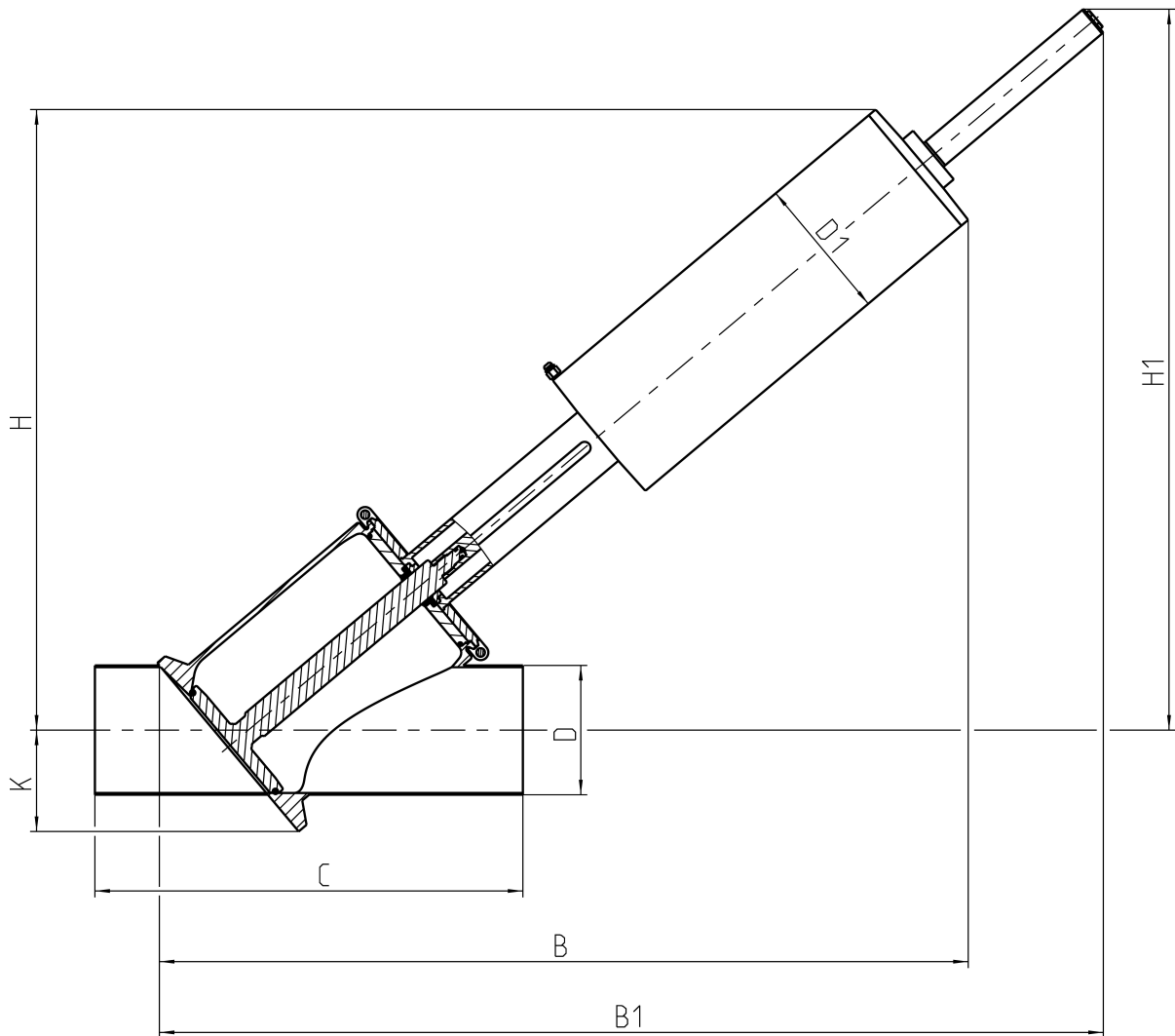


Fig.7

Dimension sheet - angle seat valve_ECO E

Dimension		4" OD	6" OD
B	[mm]	733	945
B1	[mm]	829	1105
Ø		101.6 x 2.1	152.4 x 2.7
C	[mm]	360	500
D		170	170
H	[mm]	576	722
H1		641	842
C		79.5	118.5
Stroke S	[mm]	155	230
Weight	[kg]	40.0	59.6

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