

INSTALLATION INSTRUCTIONS

Original instructions



Hygienic valves

GEA VARINLINE® Housing

GEA Tuchenhausen GmbH
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1 Assembly and installation

1.1 Niveles de higiene

Maintenance and repair

Before carrying out maintenance and repair work on the component's electrical equipment, perform the following steps in accordance with the "5 safety rules":

- Isolate from the power supply
- Take appropriate measures to prevent switch on
- Test absence of voltage
- Earthing and short-circuiting
- Cover or safeguard any adjacent live parts.

For maintenance and repair, the following principles apply:

- Observe the intervals specified in the maintenance schedule.
- Only qualified personnel may carry out maintenance or repair work on the component.
- The component must be switched off and secured against being switched back on before maintenance or repair work. Work may only be started once any residual energy has been discharged.
- Block access for unauthorized persons. Put up notice signs which draw attention to the maintenance or repair work going on.
- Do not climb on the component. Use suitable access aids and working platforms.
- Wear suitable protective clothing.
- Only use suitable and undamaged tools to carry out maintenance work.
- When replacing parts only use approved, fully functional load suspension devices and lifting accessories which are suitable for the intended purpose.
- Before setting the unit back into operation, refit all safety devices as originally provided in the factory. Then check that all safety devices are working correctly.
- Make sure lubricants are used properly.
- Check pipes are firmly secured, also check for leaks and damage.
- Check that all emergency stop devices are working correctly.

For removal, the following principles apply:

- Only qualified personnel are allowed to dismantle the component.
- The component must be switched off and secured against being switched back on before it is disassembled. Work may only be started once any residual energy has been discharged.
- Disconnect all power and utility lines.
- Markings, e.g. on lines, must not be removed.
- Do not climb on the component. Use suitable access aids and working platforms.
- Mark the lines (if unmarked) prior to disassembly to ensure they are not confused when re-assembling.
- Protect open line ends with blind plugs against ingress of dirt.
- Pack sensitive parts separately.

1.2 Pressure equipment directive

The component is a piece of pressure equipment (without safety function) in the sense of the pressure equipment directive 2014/68/EU. Classified acc. to Attachment II.

The nominal diameters smaller than DN 25 are subject to article 4, paragraph 3 of the Pressure Equipment Directive which specifies sound engineering practice.

Nominal diameters > IPS 4", DN 125 only valid for the fluid group II.

The Declaration of Conformity is included in the scope of delivery of the casing.

1.3 Removing the housing

⚠ CAUTION

Danger of injury due to caustic liquids

The cleaning agent residues contained in the pipelines can be caustic.

- Therefore, always flush the pipeline section of the in-line housing sufficiently before disassembly.

ATTENTION

Damage in the sealing area

After removing the snap rings, the bottom closure may fall out.

- Catch the lower blanking plate to prevent damage to the sealing area.

1. Depressurise the pipeline section of the in-line housing.
 2. Shut off, flush and secure the pipeline section of the in-line housing.
 3. Remove the hinged ring from the housing.
 - Catch the lower blanking plate to prevent damage to the sealing area.
 4. Pull out the blanking plate and remove the O-rings.
- ⇒ The housing is disassembled.

INFO

Carefully lever out blanking plate that cannot be loosened by hand crosswise using a small straight-blade screwdriver.

1.4 Maintenance

INFO

Replace the O-rings before reassembling the housing locks.

1. Carefully clean the in-line housing and closures.
2. Lightly grease new O-rings and fit them onto blanking plates.

⇒ Maintenance is completed.

INFO

Do not use conventional greases and oils for seals in contact with the product. Observe the safety data sheets of the lubricant manufacturers. Tuchenhausen recommends Rivolta F.L.G. MD-2 and PARALIQ GTE 703. These lubricants are approved for foodstuff and are resistant to beer froth. They have the NSF-H1 (USDA H1) registration. Rivolta F.L.G. MD-2 can be ordered from GEA Tuchenhausen.

1.5 Assemble the housing

In-line housings with welding supports

Prerequisites

- There must be no objects (tools, cleaning rags, cleaning agents) in the pipe before installing the in-line housing.
- The installation position must ensure that the VARINLINE housing can safely run empty.

⚠ CAUTION

Danger of injury due to caustic liquids

The cleaning agent residues contained in the pipelines can be caustic.

- Therefore, always flush the pipeline section of the in-line housing sufficiently before disassembly.

ATTENTION

Damage to fitting and sealing surfaces

Tilted blanking plates damage the fitting and sealing surfaces and lead to leaks.

- When installing the blanking plates, ensure that they are correctly seated.

1. Basically weld in-line housings free of stress and distortion with mounted blanking plates and hinged rings, but without O-rings.
 2. Flush the housing with forming gas from the inside to push the oxygen out of the system.
 3. Fit the housing into place and tack it.
 4. Use a suitable welding method. Tuchenhausen recommends pulsed TIG welding.
 5. Weld the housing into the pipe system; use welding filler, if necessary.
 6. Passivate the seam after welding.
 7. Insert the blanking plates with new O-rings into the housing.
→ Ensure that the fasteners are correctly seated.
 8. Assemble the hinged rings.
→ Tighten the nuts of the hinged rings with the following torque:
M6 9 Nm (6.6 lb ft)
M8 22 Nm (16.2 lb ft)
- ⇒ The housing is assembled.

2 Replacement parts

This chapter contains information on ordering replacement parts for the components and is aimed at all users of the components.

2.1 Order information

Only original spare parts from GEA may be used. All spare parts are packed in GEA original packaging and marked accordingly.

The spare parts are not included in the scope of supply of the machine.

The specifications listed below must be cited on every spare part order.

- Machine type: see type plate
- Machine number: see type plate
- Order number: see spare parts list
- Name: see spare parts list

2.2 Spare parts list

Spare parts list - VARINLINE® housing

1 Spare parts list - VARINLINE® housing

DN 10 - DN 15

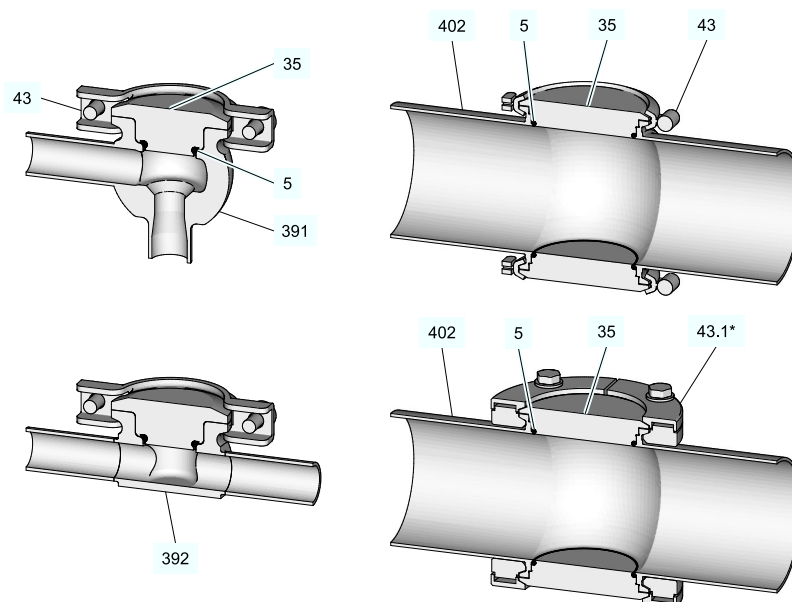


Fig.1: Pos. 43.1 Clamp connection DE for the reduction of potential internal pressures

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Spare parts list - VARINLINE® housing

Item	Designation	Process connection	B		F	N			
		DN	10	15	25	40	50	65	80
		Material							
5	O-ring	EPDM	930-270	930-270	930-309	930-144	930-144	930-144	930-144
		FKM	930-163	930-163	930-168	930-171	930-171	930-171	930-171
		HNBR	930-637	930-637	930-632	930-633	930-633	930-633	930-633
		PTFE	930-181	930-181	930-188	930-190	930-190	930-190	930-190
35	Blanking plate	1.4404	--	--	221-144.01	221-144.02	221-144.02	221-144.02	221-144.02
		1.4435	221-144.15	221-144.15	221-144.12	221-144.13	221-144.13	221-144.13	221-144.13
43	Clamp connection	--	606-001	606-001	221-507.02	221-507.04	221-507.04	221-507.04	221-507.04
43.1	Clamp connection DE	1.4301	--	--	222-156.02	222-156.01	222-156.01	222-156.01	222-156.01
391	Housing EL	1.4435	221-193.04	221-193.04	--	--	--	--	--
392	Housing G2	1.4435	221-192.03	221-192.03	--	--	--	--	--
402	Housing V2	1.4404	--	--	221-102.41	221-102.43	221-102.44	221-102.23	221-102.24
		1.4435	--	--	221-102.74	221-102.75	221-102.76	221-102.32	221-102.33

Item	Designation	Process connection	N			G		
		DN	100	125	150	100	125	150
		Material						
5	O-ring	EPDM	930-144	930-144	930-144	930-156	930-156	930-156
		FKM	930-171	930-171	930-171	930-178	930-178	930-178
		HNBR	930-633	930-633	930-633	930-863	930-863	930-863
		PTFE	930-190	930-190	930-190	--	--	--
35	Blanking plate	1.4404	221-144.02	221-144.02	221-144.02	221-144.04	221-144.04	221-144.04
		1.4435	221-144.13	221-144.13	221-144.13	221-144.22	221-144.22	221-144.22
43	Clamp connection	--	221-507.04	221-507.04	221-507.04	221-507.11	221-507.11	221-507.11
43.1	Clamp connection DE	1.4301	222-156.01	222-156.01	222-156.01	--	--	--
391	Housing EL	1.4435	--	--	--	--	--	--
392	Housing G2	1.4435	--	--	--	--	--	--
402	Housing V2	1.4404	221-102.18	221-102.21	221-102.45	221-102.07	221-102.08	221-102.40
		1.4435	221-102.34	221-102.35	--	--	--	--

Spare parts list - VARINLINE® housing

Item	Designation	Process connection	N								G	
		OD	1"	1.5"	2"	2.5"	3"	4"	6"	4"	6"	
		Material										
5	O-ring	EPDM	930-309	930-144	930-144	930-144	930-144	930-144	930-144	930-156	930-156	
		FKM	930-168	930-171	930-171	930-171	930-171	930-171	930-171	930-178	930-178	
		HNBR	930-632	930-633	930-633	930-633	930-633	930-633	930-633	930-863	930-863	
		PTFE	930-188	930-190	930-190	930-190	930-190	930-190	930-190	--	--	
35	Blanking plate	1.4404	221-144.01	221-144.02	221-144.02	221-144.02	221-144.02	221-144.02	221-144.02	221-144.04	221-144.04	
		1.4435	221-144.12	221-144.13	221-144.13	221-144.13	221-144.13	221-144.13	221-144.13	221-144.22	221-144.22	
43	Compression connection	--	221-507.02	221-507.04	221-507.04	221-507.04	221-507.04	221-507.04	221-507.04	221-507.11	221-507.11	
43.1	Compression connection DE	1.4301	222-156.02	222-156.01	222-156.01	222-156.01	222-156.01	222-156.01	222-156.01	--	--	
402	Housing V2	1.4404	221-102.52	221-102.53	221-102.54	221-102.63	221-102.64	221-102.65	221-902.17	221-102.57	221-902.26	
		1.4435	221-102.50	221-102.77	221-102.02	221-102.03	221-102.51	--	--	--	--	

Item	Designation	Process connection	N				G	
		IPS	2"	3"	4"	6"	4"	6"
		Material						
5	O-ring	EPDM	930-144	930-144	930-144	930-144	930-156	930-156
		FKM	930-171	930-171	930-171	930-171	930-178	930-178
		HNBR	930-633	930-633	930-633	930-633	930-863	930-863
		PTFE	930-190	930-190	930-190	930-190	--	--
35	Blanking plate	1.4404	221-144.02	221-144.02	221-144.02	221-144.02	221-144.04	221-144.04
		1.4435	221-144.13	221-144.13	221-144.13	221-144.13	221-144.22	221-144.22
43	Clamp connection	--	221-507.04	221-507.04	221-507.04	221-507.04	221-507.11	221-507.11
43.1	Clamp connection DE	1.4301	222-156.01	222-156.01	222-156.01	222-156.01	--	--
402	Housing V2	1.4404	221-102.62	221-102.66	221-102.67	221-102.22	221-102.57	221-102.31

Item	Designation	Process connection	B			F
		ISO	13.5	17.2	21.3	33.7
		Material				
5	O-ring	EPDM	930-270	930-270	930-270	930-309
		FKM	930-163	930-163	930-163	930-168
		HNBR	930-637	930-637	930-637	930-632
		PTFE	930-181	930-181	930-181	930-188
35	Blanking plate	1.4404	--	--	--	221-144.01
		1.4435	221-144.15	221-144.15	221-144.15	221-144.12
43	Clamp connection	--	606-001	606-001	606-001	221-507.02
43.1	Clamp connection DE	1.4301	--	--	--	222-156.02
391	Housing EL	1.4435	221-193.46	221-193.40	221-193.41	--
392	Housing G2	1.4435	221-192.05	221-192.06	221-192.07	--
402	Housing V2	1.4435	--	--	--	221-102.96

Item	Designation	Process connection	N					
		ISO	42.4	48.3	60.3	76.1	88.9	114.3
		Material						
5	O-ring	EPDM	930-144	930-144	930-144	930-144	930-144	930-144
		FKM	930-171	930-171	930-171	930-171	930-171	930-171
		HNBR	930-633	930-633	930-633	930-633	930-633	930-633
		PTFE	930-190	930-190	930-190	930-190	930-190	930-190
35	Blanking plate	1.4404	221-144.02	221-144.02	221-144.02	221-144.02	221-144.02	221-144.02
		1.4435	221-144.13	221-144.13	221-144.13	221-144.13	221-144.13	221-144.13
43	Clamp connection	--	221-507.04	221-507.04	221-507.04	221-507.04	221-507.04	221-507.04
43.1	Clamp connection DE	1.4301	222-156.01	222-156.01	222-156.01	222-156.01	222-156.01	222-156.01
391	Housing EL	1.4435	--	--	--	--	--	--
392	Housing G2	1.4435	--	--	--	--	--	--
402	Housing V2	1.4435	221-102.97	221-102.98	221-102.25	221-102.13	221-102.14	221-102.15

Spare parts list - VARINLINE® housing

2.3 Dimension sheet

Dimensional sheet - In-line housing

1 Dimensional sheet - In-line housing

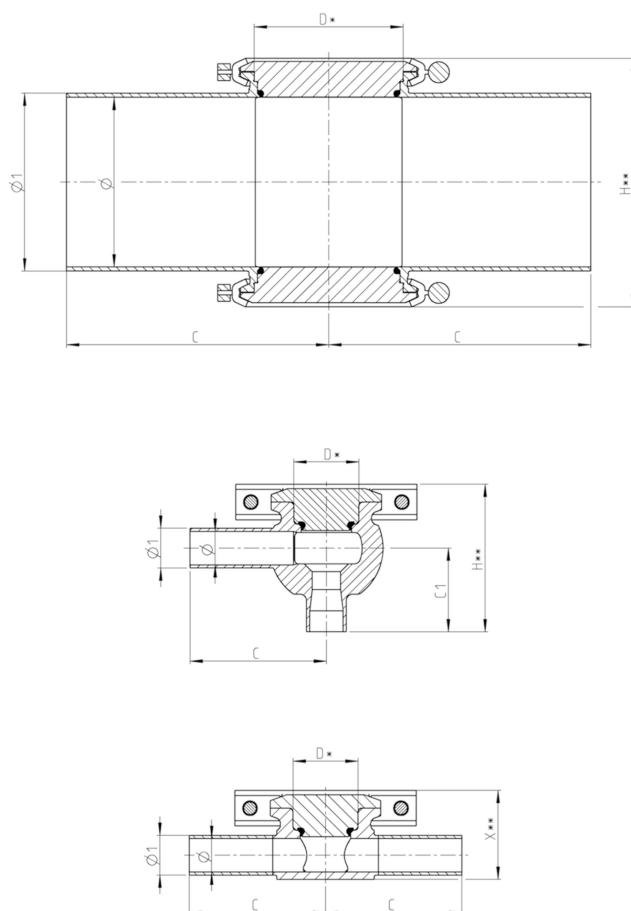


Fig.1

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Dimensional sheet - In-line housing

Process connection	B		F	N							G		
DN	10	15	25	40	50	65	80	100	125	150	100	125	150
Ø	10	16	26	38	50	66	81	100	125	150	100	125	150
Ø1	13	19	29	41	53	70	85	104	129	154	104	129	154
C	65	65	90	90	90	125	125	125	125	150	125	125	150
C1	40	40	--	--	--	--	--	--	--	--	--	--	--
H **	68.5	71.5	63	75	87	103	118	137	162	187	147	172	197
X **	37.5	43.5	--	--	--	--	--	--	--	--	--	--	--
D *	31	31	50	68	68	68	68	68	68	68	123	123	123

Process connection	F	N						G	
OD	1"	1.5"	2"	2.5"	3"	4"	6"	4"	6"
Ø	22.1	34.8	47.5	60.2	72.9	97.4	146.9	97.4	146.9
Ø1	25.4	38.1	50.8	63.5	76.2	101.6	152.4	101.6	152.4
C	90	90	90	125	125	125	150	125	150
H **	59	72	84.5	97	110	134.5	184	144.5	194
D *	50	68	68	68	68	68	68	123	123

Process connection	N				G	
IPS	2"	3"	4"	6"	4"	6"
Ø	56.3	84.3	109.7	162.8	109.7	162.8
Ø1	60.3	88.9	114.3	168.3	114.3	168.3
C	114.3	152.4	152.4	152.4	152.4	152.4
H **	94	122	147	199	157	209
D *	68	68	68	68	123	123

Process connection	B			F	N					
ISO	13.5	17.2	21.3	33.7	42.4	48.3	60.3	76.1	88.9	114.3
Ø	10.3	14	18.1	29.7	38.4	44.3	56.3	72.1	84.3	109.7
Ø1	13.5	17.2	21.3	33.7	42.4	48.3	60.3	76.1	88.9	114.3
C	65	65	65	114.3	114.3	114.3	114.3	152.4	152.4	152.4
C1	40	40	40	--	--	--	--	--	--	--
H **	68.5	70.5	72.5	67	75.5	81.5	94	110	122	147
X **	37.5	42.5	46.5	--	--	--	--	--	--	--
D *	31	31	31	50	68	68	68	68	68	68

D* is a nominal size, not a pass-through size

H** / X** may vary slightly depending on the clamping connections used

GEA Tuchenhausen GmbH
Am Industriepark 2-10
21514 Büchen , Germany

Phone +49 4155 49-0