

Operating Manual for Float-Controlled Condensate Trap

Type: 1401 / 1480 and 1550 / 1551

Connections: Flanges, socket thread, butt weld, socket welding, DN 15 / 25 / 40 / 50

1.0 Safety instructions

1.1 Proper use

Any improper use, intervention in the design and deviation from the design data automatically lead to termination of the warranty. The float-controlled condensate trap is designed for the discharge of condensate from steam, compressed air and pressure gas systems. Any other use is not permissible. The manufacturer is not liable for damage resulting from any other use. The user or operator bears the risk in this case. This also applies analogously to incorrect assembly, startup, use and maintenance.

1.2 Warnings and symbols



- There is a risk of personal injury due to escaping operating medium as well as because of pressure, temperature and weight. Failure to comply with these warnings may lead to accidents.
- Follow the instructions in this operating manual.
- The operator must ensure that this operating manual and, if necessary, other relevant documents are available on site.
- Only trained or instructed personnel may be assigned to handling this equipment.
- Any mode of operation that may impair safety must be avoided.

2.0 General description and use

2.1 Design of the condensate trap

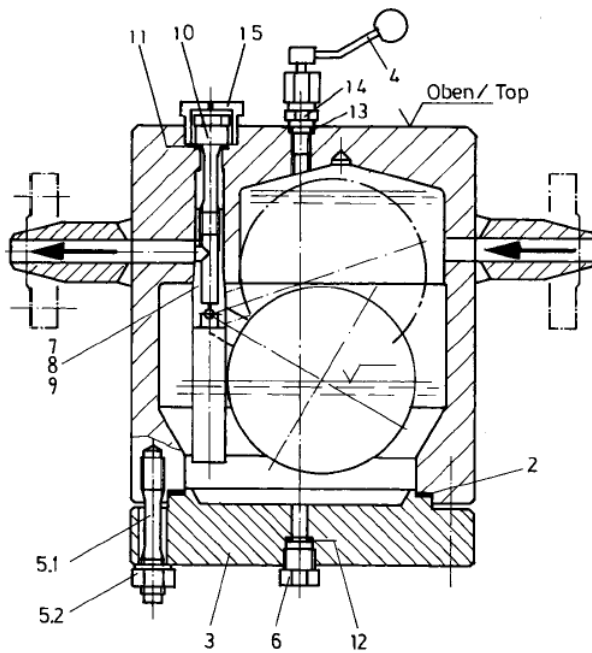


Fig. 1: 1401-1550

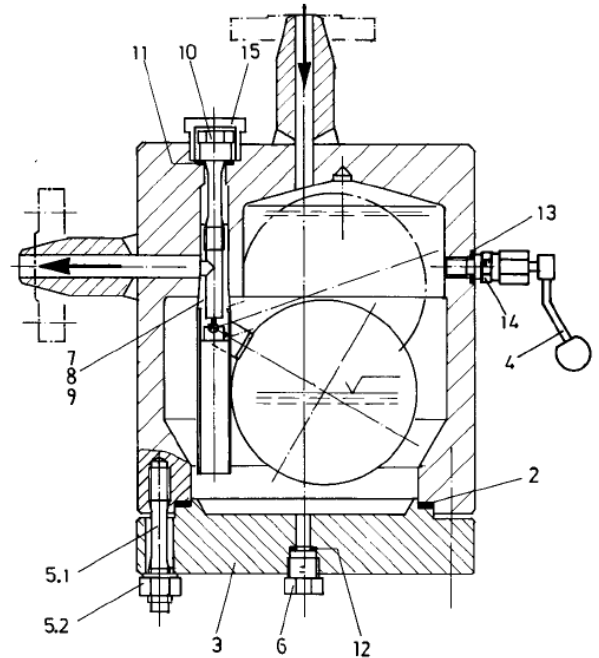




Fig. 2: 1480-1551

Item	1	Top housing section with connections
	1.62	Retaining brackets
	2	Housing gasket
	3	Lower housing part
	4	Control valve
	5.1	Expansion screw
	5.2	Hexagon nut
	6	Screw plug
	7	Float control

8	Support body with rotary valve
9	Float assembly with fork
10	Support screw
11	Flat seal
12	Flat seal
13	Flat seal
14	Control screw
15	Protective cap

2.2 Identification, operating limits (see rating plate)

 Rifox – Hans Richter GmbH Spezialarmaturen – Bremen			
Works standard	Armat.-Type		Year
<input type="text"/>	<input type="text"/>		<input type="text"/>
Prod.-no.	Volume	PT	
<input type="text"/>	L	bar g	
PS / Design	TS / Design		
<input type="text"/> bar g	<input type="text"/> °C		
Cross sect.	Connection		
<input type="text"/>	DN	PN	
Flow direction	<input type="text"/>		
			

2.3 Functional limit of standard float control (PMO in bar g)

Cross section	Type 1401 / 1480		Type 1550 / 1551	
	Cold condens.	Hot condens.	Cold condens.	Hot condens.
Iax	70	50		
Ibx	65	45		
Ia			120	80
Ib			120	75
Ic			115	60
III			65	40
IV			60	35
SQ / SK	Special model. Design according to process data			

2.4 Function / installation / venting / gas compensation

Due to its gravity, the condensate flows down to the deepest point, i.e. into the condensate trap housing. A rising condensate level lifts the float and through the float fork / rotary valve connection the valve opening is opened. When the condensate level drops, the control closes.

- In the case of steam, automatic venting must be provided (vent jet necessary). While start-up the venting can additional ensue manually with the screw (4); loosen item (14) by only a quarter turn.
- For proper function of the float control with pressure gases, the gas in the condensate trap housing must be able to move into the gas space with the same operating pressure above the condensate trap (pressure compensation). For this purpose the screw (14) can be replaced by a cutting ring union and a compensating line can be installed leading upward.
- **In the case of pressure gases, a special gastight under-level control is nearly exclusively used (if necessary, consult Rifox).**

3.0 Assembly

3.1 Fitting location

The condensate trap hangs in the middle of the pipeline with the housing sealing plug pointing up and is easily accessible from all sides. A clearance of at least 200 mm from the bottom must be provided for dismantling the float control. It should be possible to mount a lifting device above the fitting location.

3.2 Installation

The condensate trap can be screwed into a pipeline between flanges or it can be welded in directly by means of welding ends. In special cases a screwed connection is also implemented.

- Remove protective caps from inlet and outlet.
- Fitting position according to Fig. 1 and 2, i.e. with lower housing part facing down
- Support: With type 1550/51 the weight of the condensate trap must be taken up by a support, e.g. via theretaining brackets welded onto the housing.

With types 1401 / 80 the support is not necessary if the pipeline is adequately supported before and after the condensate trap. Two M16 threads are provided for a support at the top on the front end of the housing.
Trap weight: type 1550/51 = approx. 73 kg and 1401/80 = approx. 43 kg



- To avoid down times, it is recommended that provision be made for a shut-off device with a by-pass line both in front of and behind the condensate trap.

4.0 Start-up



The pressure build-up and heating-up of the housing should not take place abruptly. If leaks occur due to so-called settling after the first start-up, the screws (5.1, 6, 10, 14) can be retightened taking into account the indicated torque. Retightening may only be carried out when the housing is depressurized and warm to the touch.

5.0 Monitoring and checking

Malfunions arise either as condensate backup or steam entry into the condensate system.



Condensate backup can be determined: a) with the screw (14); loosen item (14) by only a quarter turn while ensuring that no condensate escapes; and b) in the case of steam applications, with a surface thermometer on the housing (if necessary, consult Rifox).

Steam or gas entry can be determined with an ultrasonic measuring device. In the case of steam entry, check the control according to point 6.2 and replace if required (if necessary, consult Rifox).

6.0 Maintenance / Inspection

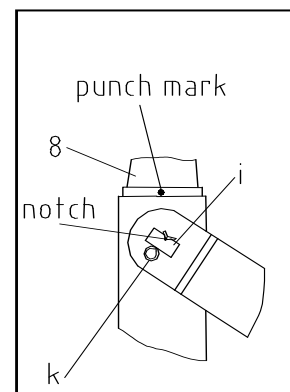
6.1 Opening the condensate trap and dismantling the float control



1. The condensate trap must be depressurized. Shut off the system in front of and behind the condensate trap.
2. Release any residual pressure by loosening the screw (14) by only a quarter turn.
3. Loosen hexagon nuts (5.2) evenly crosswise and take off sealing plug (3) (approx. 15 kg).
4. Loosen and screw off protective cap (15).
5. Loosen support screw (10) and unscrew 1 - 2 turns.
6. The control is detached from the conical housing seat by means of gentle blows with a hammer on the front end of the support screw (10).
7. Screw out the support screw (10) completely. Remove float control.

6.2 Disassembling and cleaning the float control

1. After removing the cotter pin (k), the rotary valve (i) is simply pulled out to the side.
2. Clean the parts using, for example, benzene.
3. Check the rotary valve (i) for wear along the sealing edge. If wear is detected, the support body (8) together with the rotary valve (i) must be replaced. A precise leak test must be carried out by Rifox.
4. During assembly ensure that the notch in the rotary valve (i) points to the punch mark on the support body (8) and the cotter pin (k) is inserted and secured again carefully.
5. The float must be able to move up and down without resistance.



6.3 Installing the control and assembling the condensate trap

1. The complete float control is inserted into the conical housing seat with the support body (8). Ensure here that the float is positioned in the center of the housing.
2. The support body (8) is fixed in place by means of a light tap with a plastic hammer on the front end of the immersion tube in the conical housing seat.
3. Screw in support screw (10) with gasket (11) and tighten evenly crosswise using a standard ring wrench. For tightening torque see p. 4.
4. Screw in protective cap (15) and fix with a locknut using moderate force.
5. Check the housing gasket (2) and replace necessary.
6. Tighten the housing screws (5.1) evenly crosswise. For tightening torque see p. 4.

6.4 Care and maintenance, spare parts

- + In the case of a great risk of dirt accumulation, the housing should be rinsed thoroughly from time to time, but while depressurized. If necessary, the float control should also be checked according to point 6.2.
 - + Dirt that has collected in the housing can be removed after taking off the screw plug (6).
 - + In special cases, it may be advisable to install a separate upstream dirt trap.
 - + The float control usually does not require special care; maintenance primarily depends on the wear resistance of the valve seal. See points 6.1 and 6.2 in this connection.
- Spare parts:** Only genuine spare parts may be used. See p. 4.

Spare parts: type 1401 / 1480, DN 15 - 50

Item	Designation	Dimension/DIN	Type A, C22.8	Type B, 13CrMo44	Type C, 1.4571
2	Seal	138 x 128	Soft iron, grooved	SS profiled graphite	SS profiled graphite
4	Control valve	G1/4	Standard SS	SS 1.4571	SS 1.4571
5.1	Expansion screw	M16x95,DIN2510	21CrMoV57	21CrMoV57	A4-70
5.2	Hexagon nut	M16, DIN2510	24CrMo5	24CrMo5	A4
6	Screw plug	G1/2	SS 1.4571	SS 1.4571	SS 1.4571
7	Float control	Type lax,lbx,lc	Standard SS	Standard SS	SS 1.4571
10	Support screw	G1/4, 45 long	SS 1.4571	SS 1.4571	SS 1.4571
11	Seal	Ø 22	SS profiled graphite	SS profiled graphite	SS profiled graphite
12	Seal	Ø 18	Soft iron	SS profiled graphite	SS profiled graphite
13	Seal	Ø 18	Soft iron	SS profiled graphite	SS profiled graphite
14	Screw	HD-G1/4	SS 1.4571	SS 1.4571	SS 1.4571
15	Protective cap	G 1"	SS 1.4571	SS 1.4571	SS 1.4571

Type 1550 / 1551, DN 15 - 50:

Item	Designation	Dimension/DIN	Type A, C22.8	Type B, 13CrMo44	Type C, 1.4571
2	Seal	175 x 155	SS profiled graphite	SS profiled graphite	SS profiled graphite
5.1	Expansion screw	M16x95, DIN2510, 16x	21CrMoV57	21CrMoV57	A4-70
5.2	Hexagon nut	M16, DIN2510	24CrMo5	24CrMo5	A4
6	Screw plug	G1/2	SS 1.4571	SS 1.4571	SS 1.4571
7	Float control	Type Ia / 1b / 1c / III / IV / VI / Via / VII	Standard SS	Standard SS	SS 1.4571
10	Support screw a) G1/4 b) M18x1.5	60 long 60 long	SS 1.4571	SS 1.4571	SS 1.4571
11	Seal	a) Ø 22; b) Ø 28	Soft iron	SS profiled graphite	SS profiled graphite
12	Seal	Ø 18	Soft iron	SS profiled graphite	SS profiled graphite
13	Seal	Ø 18	Soft iron	SS profiled graphite	SS profiled graphite
14	Screw	HD-G1/4	SS 1.4571	SS 1.4571	SS 1.4571
15	Protective cap	a) G 1", M42x1.5	SS 1.4571	SS 1.4571	SS 1.4571

Screw tightening torque (at room temperature coat thread with temperature-resistant lubricant)

Type	Housing material	Pos. 5.1	Pos. 6	Pos. 10	Pos. 14
1401/1480	a) C22.8 b) 13CrMo44 c) Niro	60-70	a) 80 b) 30 c) 30	20-25	20-25
1550/1551	a) C22.8 b) 13CrMo44 c) Niro	60-70	a) 80 b) 30 c) 30	25	20-25

7.0 Conformity declaration CE

We declare conformity with Directive 97/23/EC of 29.05.97 for the following pressure equipment:

Float-controlled condensate trap type 1401 / 1480, 1550 / 1551

The pressure equipment described is a pressure-keeping component in accordance with Article 1, 2.1.4. Applied conformity assessment procedure according to Annex III:

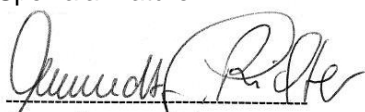
cat. 3, fluid group 1, module H

Designated office: Lloyd's Register Quality Assurance GmbH, Mönkebergstr. 27, D-20095 Hamburg, Germany. Identification No. 0525

In the case that the equipment is modified without our approval, this declaration shall no longer be valid.

RIFOX-Hans Richter GmbH

Spezialarmaturen


Management


Quality Assurance



RIFOX - Hans Richter GmbH Spezialarmaturen

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