

## **Operating instructions**

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### **Overflow valves**





**IMPORTANT**

**Read carefully before use.**

**Keep for future reference.**

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# 1 About these instructions

## 1.1 Principles

The operating instructions are part of the overflow valve.




## 1.2 Applicable documents

Document	Contents
Catalogue page	Description of the overflow valve

Refer to the manufacturer's documentation for accessories.

## 1.3 Hazard levels

The warning notes are marked and classified according to the following hazard levels:

Symbol	Explanation
 <b>DANGER</b>	Identifies a hazard with a high risk level that will result in death or serious injury.
 <b>WARNING</b>	Identifies a hazard with a moderate risk level that will result in death or serious injury.
 <b>CAUTION</b>	Identifies a hazard with a low risk level that will result in a minor or moderate injury.
<b>NOTICE</b>	Identifies a risk to property. Damage to property may occur if this notice is ignored.

# 2 Safety

## 2.1 Intended use

The overflow valve is for the protection against excessive pressure of tanks and pipework systems that do not require regulatory approval. The permissible operating conditions are specified in these operating instructions.

The overflow valve is suitable for the media listed in these operating instructions; see section 4.5 "Media". Operating conditions and applications deviating from these require the approval of the manufacturer.

Only media may be employed to which the materials used for the valve body and seals are resistant. Contaminated media or usage outside of the pressure and temperature specifications can lead to damage to the valve body and seals.

### Avoidance of foreseeable incorrect use

- ▶ Never exceed the permissible usage limits specified in the data sheet or in the documentation with regard to pressure, temperature, etc.
- ▶ Follow all safety instructions and operating procedures in these operating instructions.
- ▶ Warranty claims against HEROSE GMBH will be rejected if the HEROSE seal is broken by unauthorised companies.

## 2.2 Meaning of the operating instructions

The operating instructions are to be read and followed by the responsible technical personnel before installation and start-up. As part of the overflow valves the operating instructions must be available in their vicinity. People could be seriously injured or killed if the operating instructions are not followed.

- ▶ Read the operating instructions before using the overflow valve and comply with them.
- ▶ Retain the operating instructions and make sure they are available.
- ▶ Pass on the operating instructions to subsequent users.

## 2.3 Requirements for persons who work on the overflow valve

If the overflow valve is used incorrectly, persons could be seriously injured or killed. In order to avoid accidents, all persons who work with the valve must meet the following minimum requirements.

- They are physically capable of controlling the overflow valve.
- They can safely carry out the work on the overflow valve within the scope of these operating instructions.
- They understand how the overflow valve works within the scope of their work and can recognise and avoid the hazards associated with the work.
- They have understood the operating instructions and are able to implement the information of the operating instructions accordingly.

## 2.4 Personal protective equipment

Missing or unsuitable personal protective equipment increases the risk of damage to health and injuries to people.

- ▶ The following protective equipment is to be provided and worn during work:
  - Protective clothing
  - Safety shoes
- ▶ Set out and use additional protective equipment depending on the utilisation and the media:
  - Safety gloves
  - Eye protection
  - Ear protection
- ▶ Wear the specified personal protective equipment for all work on the overflow valve.

## 2.5 Additional equipment and spare parts

Additional equipment and spare parts not conforming to the manufacturer's requirements can adversely affect the operational safety of the overflow valve and cause accidents.

- ▶ In order to ensure operational safety, use original parts or parts that conform to the manufacturer's requirements. If in doubt, have these confirmed by the dealer or manufacturer.

## 2.6 Adhere to the technical thresholds

If the technical thresholds for the overflow valve are not adhered to, the valve may be damaged, accidents may be caused and people may be seriously injured or killed.

- ▶ Adhere to the thresholds. See section 4 "Description of the overflow valve".

## 2.7 Safety instructions

### **DANGER**

#### **Hazardous medium.**

Escaping operating medium can lead to poisoning, burns and caustic burns!

- ▶ Wear the prescribed protective equipment.
- ▶ Provide suitable collecting containers.
- ▶ Stand to the side of or behind the valve during lifting.
- ▶ The outlet must be free.

#### **Flammable media and dusts**

Risk of sustaining burns!

- ▶ Avoid potential sources of ignition in the immediate vicinity of the overflow valve.
- ▶ Attach warning signs.

#### **Risk of injury due to pressure**

Injury due to the valve being flung away!

- ▶ Depressurise and empty all supply lines before dismantling the valve.
- ▶ Make sure that the system is depressurised.
- ▶ Secure against being pressurised again.
- ▶ Do not bend over the valve when dismantling.

## **WARNING**

### **Harmful and/or hot/cold conveyed media, lubricants and fuels**

Hazardous for persons and the environment!

- ▶ Collect and dispose of rinsing medium and any residual media.
- ▶ Wear protective clothing and a protective mask.
- ▶ Observe legal regulations regarding the disposal of harmful media.

### **Risk of injury if maintenance work is done incorrectly!**

Incorrect maintenance can lead to serious injury and considerable material damage.

- ▶ Before the start of work, ensure there is sufficient room for doing the work.
- ▶ Ensure the space around the work is tidy and clean. Parts and tools in loose piles or lying around are hazard sources.
- ▶ If parts have been removed, take care to assemble correctly and re-install all attachment items.
- ▶ Before putting back into service, ensure:
  - All maintenance work has been carried out and completed.
  - There are no persons in the hazard area.
  - All covers and safety devices are installed and operating correctly.

## **CAUTION**

### **Cold/hot pipelines and/or overflow valves.**

Risk of injury due to thermal influences!

- ▶ Isolate the overflow valve.
- ▶ Attach warning signs.

### **Medium escaping at high speed and high/low temperature.**

Risk of injury!

- ▶ Wear the prescribed protective equipment
- ▶ Secure the discharge area

## **NOTICE**

### **Impermissible stresses arising from operating conditions and extensions / added structures.**

Valve body leaking or broken!

- ▶ Provide suitable support.
- ▶ Additional loads, such as traffic, wind or earthquakes, are not explicitly taken into account by default and require separate dimensioning.

### **Condensation in air conditioning, cooling and refrigeration plants.**

Icing!

Blocking of the actuation mechanism!

- ▶ Damage due to corrosion!
- ▶ Isolate the overflow valve diffusion-tight

### **Improper installation.**

Damage to the overflow valve!

- ▶ Remove cover caps before installation.
- ▶ Clean the sealing surfaces.
- ▶ Protect the body against impacts.

### **Painting of overflow valves and pipelines.**

Functional impairment of the overflow valve / loss of information!

- ▶ Protect spindle, plastic parts and type plate against the application of paint.

### **Exceeding the maximum permissible operating conditions.**

Damage to the overflow valve!

- ▶ The maximum permissible operating pressure must not be exceeded, and the minimum and maximum permissible operating temperatures must be observed.

### 3 Transport and storage

#### 3.1 Inspection of condition on delivery

- ▶ Inspect the overflow valve for damage upon receipt.  
In case of transport damage, determine and document the precise extent of the damage, and report it immediately to the supplying dealer/carrier and the insurer.

#### 3.2 Transportation

- ▶ Transport the overflow valve in the supplied packaging.  
The overflow valve is delivered in a ready-to-operate state with the connections protected by caps.
- ▶ Protect the overflow valve against shocks, impacts, vibration and dirt.
- ▶ Adhere to a transport temperature range of -20 °C to +65 °C.

#### 3.3 Storage

- ▶ Store the overflow valve in a clean and dry place.
- ▶ Make use of a desiccant or heating in damp storerooms to prevent the formation of condensation.
- ▶ Adhere to a storage temperature range of -20 °C to +65 °C.

### 4 Description of the overflow valve

Refer to the respective catalogue page for further and detailed information.



#### 4.1 Structure

##### Design

Directly acting angle overflow valve, spring-loaded.

#### 4.2 Marking

The overflow valves are provided with an individual marking for identification.

Symbol	Explanation
e.g. G1/2	Connection size
PN.....	Nominal pressure (max. permissible operating pressure)
	Manufacturer's mark "HEROSE"
e.g. CC491K	Material
 0045	CE mark, ID of notified body only from size 1-1/4"
e.g. 06195	Type
01.18	Date of manufacture MM/YY
N	NBR
P	PTFE
F	FPM
-.....°C - +.....°C	min / max. temperature
Axx.x	Narrowest flow cross-section A in mm <sup>2</sup>
x.xx bar	Setting pressure



### 4.3 Intended use

Overflow valves are for the protection against excessive pressure of tanks and pipework systems that do not require regulatory approval

### 4.4 Operating data

Type	d <sub>0</sub> [mm]	Pressure range [bar]	Max. back pressure [%]	Temperature [°C]		Medium
06001	6	11 to 36	3%	-196°C to +65°C		See section 4.5 "Media"
06003	6	1.0 to 55		-196°C to +50°C		
06195	12	0.5 to 25		NBR -10 °C to +110 °C	FPM -10 °C to +165 °C	
	15	0.2 to 20				
	18	0.5 to 16				
	20					
	24	0.2 to 16				
	28					
06196	12	0.2 to 25		-10 °C to +185 °C		
	15	0.2 to 20				
	18					
	20	0.4 to 16				
	24	0.2 to 23.5				
	28	0.2 to 16				
06198	12	0.8 to 25		PTFE -10 °C to +185 °C	FPM -10 °C to +165 °C	
	15	0.2 to 20				
	18	2.0 to 25				
06370	12	0,7	-10°C to +110°C			
		21 to 25				
	15	0,5 to 0,99				
	28	18,5 to 20				
06376	18	9,0 to 17,5				
06380	12	0,10 to 0,15	-10°C to +185°C			
06381	10.5	0.5 to 36	-196 °C to +185 °C			
06386	10.5	0.5 to 36				

### 4.5 Media

Type	Medium
06001	Gases, cryogenic liquefied gases and their gas mixtures
06003	
06195	Fluids
06196	Vapours and gases
06198	
06370	Non-adhesive liquids
06376	Non-toxic, incombustible liquids
06380	Non-toxic vapours and gases
06381	Gases, cryogenic liquefied gases and their gas mixtures
06386	

## 4.6 Materials

- ▶ See catalogue page.

## 4.7 Scope of delivery

- Overflow valve
- Operating instructions

## 4.8 Dimensions and weights

- ▶ See catalogue page.

## 4.9 Lifetime

The user is obligated to use Herose products for their intended purpose.

In this case, a technical service life may be assumed in accordance with the underlying product standards (e.g. EN1626 for globe valves and EN ISO 4126-1 for safety valves).

The technical service life can be restarted several times through the exchange of wearing parts within the context of the maintenance intervals, and lifetimes of more than 10 years can be achieved.

If products are stored for a period exceeding 3 years, then the plastic components and elastomer sealing elements fitted to the product should be replaced as a precautionary measure before installation and use.

# 5 Assembly

## 5.1 Installation position

Type	Installation position
06001 06003	The safety valves can be installed vertically or in a horizontal installation position with the outlet facing downwards.
06195 06196 06198	Vertical
06370 06376	The safety valves can be installed vertically or in a horizontal installation position with the outlet facing downwards.
06380 06381 06386	Vertical

## 5.2 Notes regarding the installation

- ▶ Use suitable tools.
  - Open-ended spanners
  - Torque wrench
- ▶ Clean tools before the installation
- ▶ Open the packaging only directly before the installation. Free from oil and grease for oxygen (O<sub>2</sub>) overflow valves for oxygen are permanently marked with "O<sub>2</sub>".
- ▶ Only install the valve if the maximum operating pressure and operating conditions of the plant correspond to the marking on the overflow valve.
- ▶ Remove protective caps or covers before assembly.
- ▶ Inspect the overflow valve for dirt and damage. DO NOT install damaged or dirty overflow valves.
- ▶ Remove dirt and residues from the pipeline and overflow valve in order to prevent leaks.
- ▶ Avoid damaging the connections. The sealing surfaces must remain clean and intact.
- ▶ Seal the overflow valve with suitable seals. No sealant (sealing tape, liquid sealing tape) may enter the overflow valves. Respect the suitability for use with O<sub>2</sub>.
- ▶ Connect pipelines in a force-free and torque-free manner. Stress-free installation.
- ▶ In order to ensure trouble-free operation, no impermissible static, thermal or dynamic stresses may be transmitted to the overflow valve. Observe reaction forces.
- ▶ Temperature-dependent changes in length in the pipework system must be compensated with expansion joints.

- ▶ The over flow valve is supported by the pipework system.
- ▶ The over flow valve must be protected from dirt and damage during construction work.
- ▶ Check the leak-tightness.

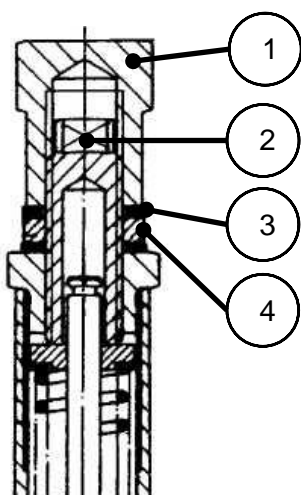
**Tightening torques**

			max. tightening torque [Nm]						
			External thread				Internal thread		
Type	Material	Thread	G	NPT	R; Rc	M	G	NPT	R; Rc
06001	CW617N	1/2"	100	110	90				
06003	CW617N	1/4"	21	29	28				
		1/2"	100	110	90				
06195 06196 06198 06370 06376 06380	CC491K	1/2"					35	80	70
		3/4"					50	110	110
		1"					110	250	220
		1 1/4"					170	390	390
		1 1/2"					220	550	530
		2"						360	890
06381 06386	CW614N	1/2"	39	70	80				
		3/4"	110	180	160				
	1.4301	1/2"	60	70	130		70	180	150
		3/4"	180	200	260				

## 6 Operation

- ▶ The maximum permissible pressure loss in the supply lines to the overflow valve may not exceed the 3% pressure difference between the set pressure and external back pressure on the overflow valve.
- ▶ Vibrations are to be avoided.
- ▶ Check the following points prior to start-up:
  - All assembly and installation work are completed.
  - Compare the material, pressure, temperature and installation position with the layout plan for the pipework system.
  - Dirt and residues from the pipeline and overflow valve are removed to prevent leaks.

### 6.1 Adjusting device



- Adjustable overflow valves 06001, 06198 and 06386
- To set or correct the set pressure, adjust the set screw (2) of the overflow valve.
- To set the pressure:
  - ▶ Unscrew the cover (1).
  - ▶ Remove the USIT ring (3).
  - ▶ Loosen locknut (4) and suitably adjust the set screw (2).  
Note the set pressure on the type plate.
    - Clockwise rotation  
Raises the set pressure.
    - Counter clockwise rotation  
Lowers the set pressure.
  - ▶ When the desired pressure is set, secure the set screw (2) with the locknut (4).
  - ▶ Put the USIT ring (3) in place again.
  - ▶ Screw on the cover (1) again.
- It is recommended to use manometers when adjusting the overflow valve.

## 7 Maintenance and service

### 7.1 Safety during cleaning

- ▶ Take note of the specifications in the safety data sheet and the general occupational health and safety rules if degreasers are used for process-related reasons for the cleaning of bearing parts, fittings and other precision parts.

### 7.2 Maintenance

The maintenance intervals must be defined by the user according to the operating conditions.

The recommendations for functional checking of the overflow valves are to be taken from section 7.2.1 "Inspection and maintenance intervals" in these operating instructions.

#### 7.2.1 Inspection and maintenance intervals

Recommended intervals		
Inspection	Interval	Scope
Inspection	▶ During start-up	<ul style="list-style-type: none"> <li>■ Visual inspection                             <ul style="list-style-type: none"> <li><input type="checkbox"/> of the valve for damage;</li> <li><input type="checkbox"/> of the marking for legibility;</li> <li><input type="checkbox"/> for absence of damage to the seal</li> </ul> </li> <li>■ Leak-tightness                             <ul style="list-style-type: none"> <li><input type="checkbox"/> Threaded connection of the valve seat;</li> </ul> </li> <li>■ If existent, actuation of the lifting.</li> </ul>
Functional test	▶ annually	<ul style="list-style-type: none"> <li>■ If present, test of lifting including visual inspection.</li> </ul>
External inspection	▶ Every 2 years	<ul style="list-style-type: none"> <li>■ Check of function and leak-tightness including visual check.</li> </ul>
Internal inspection	▶ Every 5 years	<ul style="list-style-type: none"> <li>■ Replacement of all sealing elements by the manufacturer including functional, leak-tightness and visual check.</li> </ul>
Strength test	▶ Every 10 years	<ul style="list-style-type: none"> <li>■ Replacement of all sealing elements by the manufacturer including functional, leak-tightness, pressure test and inspection.</li> </ul>

### 7.3 Fault table

Fault	Cause	Remedial action
<ul style="list-style-type: none"> <li>Overflow valve does not respond</li> </ul>	Covers have not been removed;	▶ Remove covers.
	Set pressure too high;	▶ Replace the overflow valve.
	Back pressure not taken into account;	▶ Replace the overflow valve.
<ul style="list-style-type: none"> <li>Not lif table</li> </ul>	Pressure below 85% of the set pressure;	▶ Lifting in the range $\geq 85\%$ of the set pressure without aids.
<ul style="list-style-type: none"> <li>Leak in the seat</li> </ul>	Foreign bodies between cone and seat, contaminated medium;	▶ Remove foreign bodies by briefly lifting / flush the system or replace the overflow valve.
	Seat damaged;	▶ Replace the overflow valve.
	Cone seal damaged;	▶ Replace the overflow valve.
	Overflow valve has fluttered;	▶ See "Fluttering".
<ul style="list-style-type: none"> <li>Damage to the inlet/outlet</li> </ul>	Transport damage;	▶ Replace the overflow valve.
	Wrong connecting thread / tightening torque too high;	▶ Replace the overflow valve.
	Impermissible forces such as bending or torsional forces are being transmitted.	▶ Install stress-free.
<ul style="list-style-type: none"> <li>Pressure surges</li> </ul>	Overflow valve not fitted at the highest point;	▶ Install the overflow valve at the highest point.
	water not drained correctly or at all;	▶ Attach water drain according to regulations.
<ul style="list-style-type: none"> <li>Constantly blowing off</li> </ul>	Spring corroded by impermissible medium and broken;	▶ Replace the overflow valve.
	System pressure too high	▶ Replace the overflow valve.
	Seal damaged;	▶ Replace the overflow valve.
<ul style="list-style-type: none"> <li>Fluttering</li> </ul>	Pressure loss in the supply line $>3\%$ ;	▶ Reduce resistance through chamfer or radius in the connecting socket; choose a larger one if necessary. ▶ Shorter supply line. ▶ Incorrect overflow valve, replace it.
	Seals for inlet and outlet connector too small or not installed centrally;	▶ Change conditions.
	overflow valves are too highly rated;	▶ Select smaller overflow valves.
	Blow-off pipe too long or diameter too small;	▶ Use a larger nominal diameter or a back-pressure-compensating stainless steel bellows. The max. height is to be specified by the manufacturer.
	Inlet or outlet connector too small;	▶ Dimensions must be larger than the nominal inlet or outlet diameter.
	Back pressure higher than 3%;	▶ Use back-pressure-compensating stainless steel bellows. The max. height is to be specified by the manufacturer.
<ul style="list-style-type: none"> <li>Inadequate performance</li> </ul>	overflow valves incorrectly configured for the plant conditions;	▶ Re-dimension and replace the overflow valve.
	Overflow valves not being used in accordance with the applicable regulations;	▶ Change conditions.

## 7.4 Repairs

Repairs to the overflow valves may be carried out only by HEROSE or by specialist workshops authorised by HEROSE and monitored by the regulatory authorities, using only original spare parts.

## 7.5 Returns / complaints

Use the Service form in case of returns/complaints.



Contact in case of service:

Herose.com › Service › Product service › Complaints

E-mail: [service@herose.com](mailto:service@herose.com)

Fax: +49 4531 509 – 9285

## 8 Disassembly and disposal

### 8.1 Notes regarding the disassembly

- ▶ Take note of all national and local safety requirements.
- ▶ The pipework system must be depressurised.
- ▶ The medium and the overflow valve must be at ambient temperature.
- ▶ Aerate / flush the pipework system in the case of corrosive and aggressive media.

### 8.2 Disposal

1. Dismantle the overflow valve.
  - ▶ Collect greases and lubricating fluids during dismantling.
2. Separate the materials:
  - Metal
  - Plastic
  - Electronic scrap
  - Greases and lubricating fluids
3. Carry out a sorted disposal of the materials.

