Operating and Installation Instructions

Direct Loaded Safety Valves, permitted acc. to AD - A2, TÜV - SV 100, with/without lifting device

HEROSE

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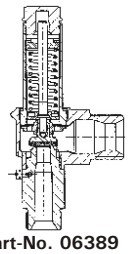

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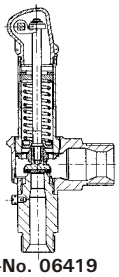

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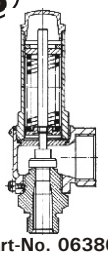

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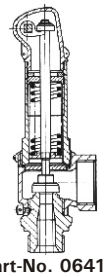

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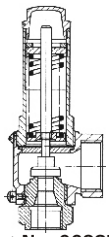

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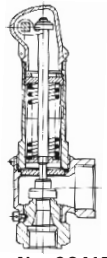

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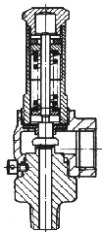

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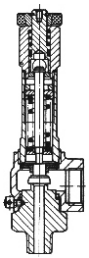

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Operating and Installation Instructions

1.0 General Information on Operating Instructions

These operating instructions contain the necessary information to install and operate the valve both safely and effectively.
If problems arise which cannot be solved with the aid of these operating instructions, please contact the supplier/manufacturer for further information. These operating instructions comply with the applicable EN safety standards as well as regulations and codes of practice applicable in the Federal Republic of Germany. If the valve is used outside the Federal Republic of Germany, the operator or the person responsible for the system design must ensure that valid national codes of practice are complied with. The manufacturer reserves all rights to implement technical modifications and improvements at any time. The use of these operating instructions assumes the user is qualified as described under Section 2.3 "Qualified Personnel".
The operating personnel must be instructed in accordance with the operating instructions.

2.0 Notes on Possible Dangers

2.1 Significance of Symbols

⚠ Warning of general danger

2.2 Safety Related Definitions

The signal definitions DANGER, WARNING, CAUTION and NOTE are used in these operating instructions as indications for particular hazards or for information requiring special signs.

DANGER means that if the relevant information is disregarded, there is a danger of fatal injury and / or considerable damage to property can occur.

WARNING means that if the relevant information is disregarded, there is a danger of serious injury and / or damage to property can occur.

CAUTION means that if the relevant information is disregarded, there is a danger of serious injury and / or damage to property can occur.

NOTE means that particular attention must be paid to certain technical aspects.

All other information not specifically emphasised such as transport, installation, operating and maintenance instructions as well as technical data (in the operating instructions, product documentation and on the device itself) must also be complied with to the fullest extent in order to avoid faults which in turn can cause serious injury to persons or damage property.

2.3 Qualified Personnel
The term "qualified personnel" relates to persons who are familiar with the installation, assembly, start up and operation of the product and have the qualification corresponding to their responsibilities. Such as:
Instruction and awareness to comply with all operational, regional and in-company regulations and requirements;
Training or instruction in accordance with safety technology standards with regard to the upkeep and use of appropriate safety and work protection equipment; First aid training, etc.
(see TRB 700)

3.0 Handling

3.1 Storage
- Storage temperature -20°C to +65°C dry, free of dirt.
- A desiccant or heating to prevent condensation is necessary in damp rooms.

3.2 Transport
- Transport temperature -20°C to +65°C.
- Protect against external force (impact, vibration etc.).

3.3 Handling before Installation
- If flange covers are fitted, remove shortly before installation.
- Protect against atmospheric conditions e.g. wetness (use a desiccant)!
- Correct handling protects against damage.

Operating and Installation Instructions

4.0 Description

4.1 Scope of Application
Safety valves are safety devices on pressure vessels for protection against excessive pressure.

Type	Pressure range	Temperature	Medium
06386/06416 06387/06417	0,2 bar-40 bar	-196°C-+185°C	Vapours and gases inclusive cryogenic oxygen
06388/06418 06430/06435	d_o = 7,0 3,3 bar-40 bar d_o = 10,5 &15,0 3,0 bar-40 bar d_o = 23,0 2,0 bar-40 bar	-196°C-+185°C	Cryogenic non-inflammable vapours and gases acc. to TRG 101
06389/06419	3,3 bar-40 bar	-196°C-+185°C	Cryogenic non-inflammable vapours and gases acc. to TRG 101
06472/06477	0,5 bar-6,0 bar	-196°C-+150°C	Vapours and gases inclusive cryogenic oxygen
06474/06478	6,0 bar-40 bar	-196°C-+150°C	Vapours and gases inclusive cryogenic oxygen

NOTE: The medium will not damage the wetted parts of the safety valve. If in doubt contact the manufacturer.

4.2 Definitions

Set Pressure: The set pressure is the gauge pressure at which under operating conditions direct loaded safety valves commence to lift.

Test Pressure: The test pressure is the gauge pressure at which under test stand conditions (atmospheric back pressure) direct loaded safety valves commence to lift.

Opening Pressure: The opening pressure is the gauge pressure at which the lift is sufficient to discharge the predetermined flowing capacity; it is equal to the set pressure plus opening pressure difference.

Reseating Pressure: The reseating pressure is the gauge pressure at which the direct loaded safety valve re-seats.
For detailed definitions see DIN 3320.

4.3 Marking of Permitted Safety Valves

TÜV SV 99 xxx xx D/G/F 0,xx x

TÜV-Sign
Safety Valve
Year of type test approval
Number of type test
Flow diameter d0 on the inlet size in mm

Set pressure p in bar
Coefficient of discharge
Application mark:
D suitable for vapours
G suitable for gases
F suitable for fluids
F/K/S suitable for liquid, grained or powder form products
H suitable for hot water

5.0 Installation ⚠

5.1 Basic Notes on Installation
Spring loaded safety valves should be installed with the bonnet vertically upwards, considering the direction of flow. The minimum diameter of the pipe prior to the safety valve must be a minimum of the d_o of the safety valve Safety valves must be installed so that the vented medium can not injure people or damage properties. Safety valves should be installed in such a way that no inadmissible static, dynamic or thermal loads can be transmitted to the valve, if this is the case then these factors must be catered for in the installation. Between the safety valve and the pressure equipment no valve or fitting should be installed. Should the relief valve outlet be fitted with a discharge pipe this must not be less than the relief valve outlet diameter or be fitted with any other components that can restrict the discharge flow. The relief valve outlet or discharge pipe must be located in a safe area. The discharge pipes must not be installed where it will allow any of the venting medium to collect. (see also AD-Merkblatt A 2).

Operating and Installation Instructions

5.2 General Notes on Installation
The following points should be taken into account besides the basic notes on installation:

- Visual checking of marking (see 4.3) concerning application and set pressure
- Visual checking concerning outer damage. Damaged valves should be not installed
- Remove protecting cap if present
- Care must be taken should the components become hot during the installation of the valve. Operating personnel must be instructed
- The space inside the valve and the pressure vessel must be free of any foreign products.
- When installing safety valves with threaded connections, use metal or plastic seal washers only acc. to DIN 7603

CAUTION: Seal materials such as seal tape or liquid seal material should not be used as this type of material can break off and enter the valve causing it to leak.

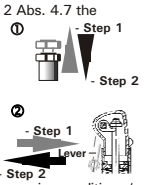
- Only use suitable tools for installing of safety valves
CAUTION: The torque must be correct to avoid any damages.

6.0 Lifting Device
It shall be possible to lift safety valves with lifting device at a pressure 85% of set pressure. All liftable safety valves are provided with a respective device, placed at the top of the bonnet.

6.1 Operation testing of Lifting Device ⚠
On the first insallation or after interruptions or for operation testing acc. to AD-Merkblatt A 2 Abs. 4.7 the following steps are to be carried out (see Illustr. 1 & 2):

Illustr.1
Step 1: Pull up the lifting device until a clear discharge of the medium is audible.
Step 2: Let go the lifting device.

Illustr.2
Step 1: Push the lifting lever in direction of the bonnet until a clear discharge of the medium is audible.
Step 2: Let go the lifting lever.



Now the valve is **ready for operation.**

7.0 Maintenance
Maintenance and maintenance-intervals have to be defined by the operator according to the service conditions (see TRB 600 und AD-Merkblatt A 2). The operation testing of lifting device acc. to 6.1 should be carried out at least monthly in addition to the above mentioned reasons.

8.0 Dismantling the Valve ⚠
The following points must be observed beside the general principal rules and TRB 700 govering the assembly work:
- pressureless pipe system
- medium must be cool
- plant must be drained
- purge piping system in case of aggressive or caustic media
- have assembly work performed only by qualified personnel (see point 2.3)

9.0 Repairs ⚠
Repairs on safety valves can only be carried out by company HEROSE or authorized HEROSE workshops, revied by official licenced authorities.

10.0 Gaurantee
The extent and period of warranty cover are specified in the "sales conditions of HEROSE GMBH" valid at the time of delivery or, by notice in supplied documentation, in the contract of sale itself. In any case, however, the legally stipulated warranty period of 6 months shall apply.
No warranty claims can be made for any damage caused as the result of incorrect handling, disregard of operating and installation instructions, accident prevention regulations, EN, DIN, VDE standards and other applicable codes of practice.

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