
Operating and Maintenance Instructions

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**Pressure-relief valves,
directly controlled**

**Keep for
future
reference!**

Series DS..GA/GC

Job No.:

Valve Ident No.:

Machine No.:

Valve Type:

Operating data of the valve according to order data sheet

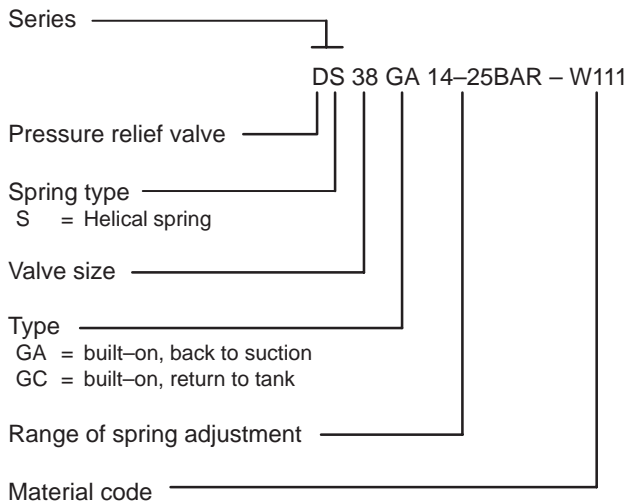
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1 General

Directly controlled pressure-relief valves are used as safety valves for lubricating fluids. The liquids must not contain any abrasive particles nor chemically attack the valve materials.

Example:



1.1 Testing

Prior to leaving our factory, all valves are subjected to a functional test on the test bench. Only properly operating valves leave the factory achieving the data warranted by us.

1.2 Application and Installation

The pressure-relief valves serve to limit the system pressure in the plant and in the pump. The valves of types GA and GC are provided for direct attachment to ALLWEILER screw pumps series VKF. The return-pipeline to be attached (Type GC) must be connected, stress-free and sealing.

2 Warranty

Our liability for shortcomings in the supply is laid down in our delivery conditions. No liability will be undertaken for any damages caused by non-compliance with the operating instructions and service conditions.

If at any later date the operating conditions happen to change (e.g. different liquid pumped, viscosity, temperature or flow quantities), it must be checked by us from case to case and confirmed, if necessary, whether the valve is suited for these purposes.

In case no special agreements were made, valves supplied by us may, during the warranty period, be opened or varied only by us or our authorized contractual service stations, otherwise, our liability for any defects will cease.

2.1 Availability

In principle, we recommend the precautionary purchase and storage of complete spare valves whenever the valves supplied are of decisive influence on the maintenance of a production process.

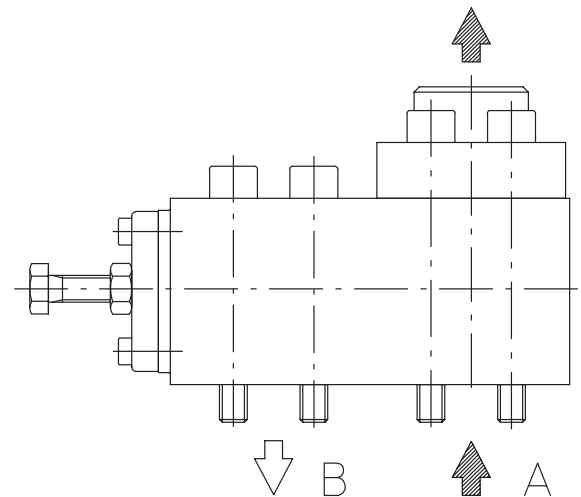
3 Types/Structural Design

Together with the valve casing, the pressure-relief valve forms a control block.

3.1 Types

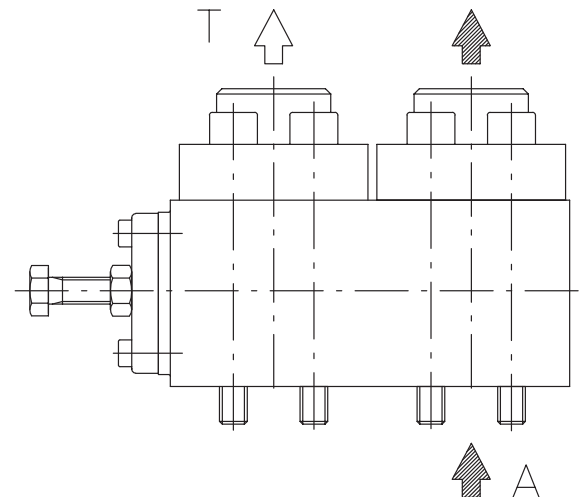
3.1.1 Type GA

Built-on pressure-relief valve with outlet-side connection (A) and suction-side connection (B).



3.1.2 Type GC

Built-on pressure-relief valve with outlet-side connection (A) and connection (T) for a return pipeline into a pressureless tank.



3.2 Structural design

The valve casing (1) has a delivery-side connection (A) and suction-side connection (B) or connection (T) to the tank.

The valve cone (8) is guided in the valve casing (1) and pressed onto the valve seat (i), metallicly sealing, by means of the valve spring (29). The O-ring (20) in the valve spring plate closes the pressure-relief valve sealing to the outside.

The opening pressure is adjusted by means of the adjusting screw (17) and the valve spring (29). The adjusting screw (17) is fixed in its position, checked by means of the hexagon nut (31).

4 Mode of operation

Through opening (A), the fluid pumped enters the valve casing where it is under a specific operating pressure pressing against the valve cone (8). The valve cone (8) is pressed onto the valve seat by means of the force of the pretensioned valve spring and/or cup spring (29), and closes the connection between space (A) and space (B).

The system pressure in space (A) overcoming the force of the pre-tensioned pressure spring (29), valve cone (8) is lifted off from the valve seat.

The branch current thus generated flows through space (B) and/or space (T) into the pump suction chamber and/or through the balance pipeline into the pressureless tank. The operating pressure decreasing to below the set opening pressure, the valve cone (8) closes the valve seat (i), and no further fluid pumped flows from space (A) to space (B) and/or (T). The operating pressure is built up again in space (A).

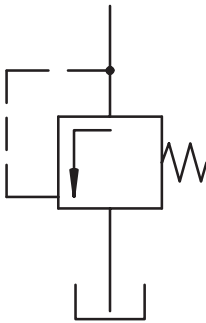
5 Operation/Switching Diagram

5.1 Operation with adjusting screw

By means of the adjusting screw (17), the respective opening pressure is adjusted.

Clockwise rotation: Pressure build-up
Counterclockwise rotation: Pressure reduction.

5.2 Switching diagram according to DIN/ISO 1219



6 Range of Application

The pressure-relief valves can be applied for maximum operating temperatures up to 100°C (higher temperatures on request).

The exact operating data of the pressure-relief valve such as pressures, maximum flow rate and viscosity range can be taken from the details for ordering and are engraved on the name plate.

7 Maintenance

The pressure-relief valve is maintenance-free.

7.1 Spare parts

Parts marked with ① in the sectional drawing are provided as spare parts. If a high readiness for operation is required, we recommend to keep on stock a complete pressure-relief valve.

For replacement and spare parts orders, the following are to be quoted besides the **order number and part number**:

Abbreviation of the pressure-relief valve, construction number, year of construction, flow rate in l/min and opening pressure in bar.

These data are engraved on the name plate of the valve.

8 Troubles, Causes and Remedial Action

8.1 Troubles with reference numbers for cause and remedial action

The table below is to be regarded as a guide to troubles, if any, and their possible causes. In case of troubles not listed herein or if same cannot be traced back to the causes listed, it is recommended to contact the factory, our branch offices or sales agencies.



The valve must be depressurized and drained when faults are being rectified.

Troubles	Reference numbers for cause and remedial action
Pressure drops	1, 2
Pressure-relief valve does not open	3, 4
Pressure-relief valve does not close	2, 5, 6

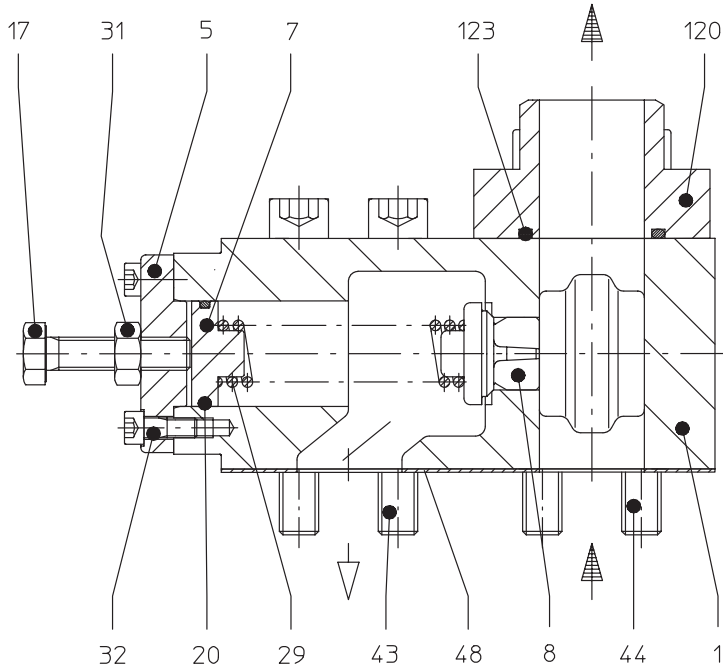
8.2 Causes and remedial action

Ref. – No.	Cause	Remedial action
1	Valve spring (29) is fatigued.	Install new valve spring (29).
2	Valve seat is leaky.	Replace valve cone (8), regrind seat, if necessary.
3	Valve spring (29) is excessively pre-tensioned.	Untension valve spring (29) by means of adjusting screw (17) and adjust to the requested operating pressure.
4	Valve cone (8) jammed in valve casing a) by foreign bodies. b) Operating temperature of plant is materially higher than stated in the order.	a) Dismount pressure-relief valve, and clean. b) Contact factory, rework fits, if necessary.
5	Valve spring (29) is not or insufficiently pre-tensioned.	Turn adjusting screw (17) clockwise until the requested operating pressure is reached.
6	Foreign bodies prevent valve seat from closing.	Dismount and clean internals.

9 Associated Documentation

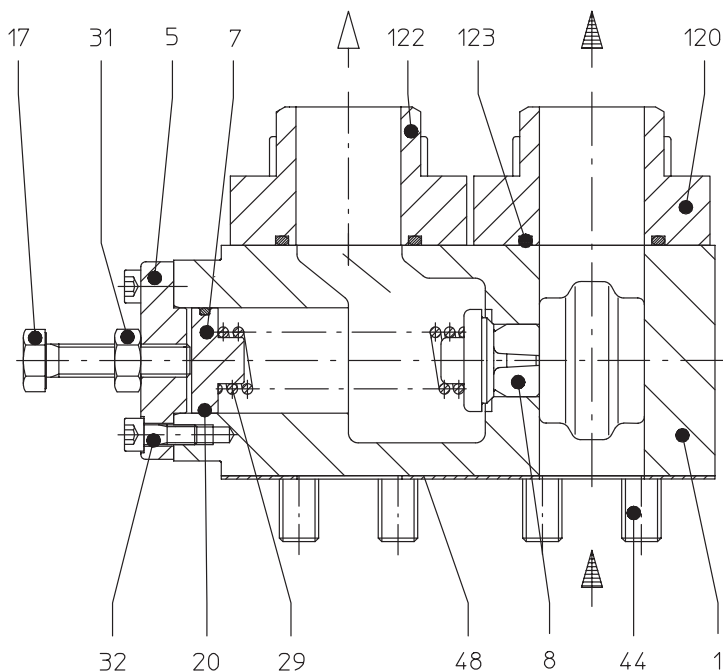
9.1 Sectional drawing with parts list

Pressure-relief valve Series DS..GA (built-on, back to suction)



Part No.	Denomination
1	Valve casing
5	Cover
7	Valve spring plate
8 ①	Valve cone
17	Hexagon screw
20 ①	O-ring
29 ①	Valve spring
31	Hexagon nut
32	Socket-head cap screw
43	Socket-head cap screw
44	Socket-head cap screw
48 ①	Gasket
120	Welding flange (PN 160)
122	Welding flange (PN 16)
123 ①	O-ring
①	Replacement parts/Spare parts

Pressure-relief valve Series DS..GC (built-on, return to tank)



Part No.	Denomination
1	Valve casing
5	Cover
7	Valve spring plate
8 ①	Valve cone
17	Hexagon screw
20 ①	O-ring
29 ①	Valve spring
31	Hexagon nut
32	Socket-head cap screw
44	Socket-head cap screw
48 ①	Gasket
120	Welding flange (PN 160)
122	Welding flange (PN 16)
123 ①	O-ring
①	Replacement parts/Spare parts

Subject to technical changes.

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