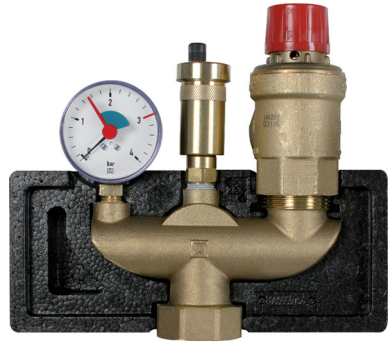


Operating instructions



Boiler safety group assembly

KSG Magnum

Type: KSG Magnum G1¹/₄

Type: KSG Magnum G1¹/₂

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1 About these operating instructions

These operating instructions describe the boiler safety group assembly "KSG Magnum" (also referred to as "product" in these operating instructions).

These operating instructions are part of the product.

- You may only use the product if you have fully read and understood these operating instructions.
- Verify that these operating instructions are always accessible for any type of work performed on or with the product.
- Pass these operating instructions as well as all other product-related documents on to all owners of the product.
- If you feel that these operating instructions contain errors, inconsistencies, ambiguities or other issues, contact the manufacturer prior to using the product.

These operating instructions are protected by copyright and may only be used as provided for by the corresponding copyright legislation. We reserve the right to modifications.

The manufacturer shall not be liable in any form whatsoever for direct or consequential damage resulting from failure to observe these operating instructions or from failure to comply with directives, regulations and standards and any other statutory requirements applicable at the installation site of the product.

2 Information on safety

2.1 Safety messages and hazard categories

These operating instructions contain safety messages to alert you to potential hazards and risks. In addition to the instructions provided in these operating instructions, you must comply with all directives, standards and safety regulations applicable at the installation site of the product. Verify that you are familiar with all directives, standards and safety regulations and ensure compliance with them prior to using the product.

Safety messages in these operating instructions are highlighted with warning symbols and warning words. Depending on the severity of a hazard, the safety messages are classified according to different hazard categories.



WARNING

WARNING indicates a potentially hazardous situation, which, if not avoided, can result in serious injury or equipment damage.

NOTICE

NOTICE indicates a hazardous situation, which, if not avoided, can result in equipment damage.

In addition, the following symbols are used in these operating instructions:



This is the general safety alert symbol. It alerts to injury hazards or equipment damage. Comply with all safety instructions in conjunction with this symbol to help avoid possible death, injury or equipment damage.

2.2 Intended use

This product may only be used in sealed heating systems (as per EN 12828) with a heating capacity of up to 200 kW (G1¼) or 350 kW (G1½).

The product may only be used for the following media:

- Water
- Water/glycol mixtures with a maximum glycol concentration of 50 %

Any use other than the application explicitly permitted in these operating instructions is not permitted and causes hazards.

Verify that the product is suitable for the application planned by you prior to using the product. In doing so, take into account at least the following:

- All directives, standards and safety regulations applicable at the installation site of the product
- All conditions and data specified for the product
- The conditions of the planned application

In addition, perform a risk assessment in view of the planned application, according to an approved risk assessment method, and implement the appropriate safety measures, based on the results of the risk assessment. Take into account the consequences of installing or integrating the product into a system or a plant.

When using the product, perform all work and all other activities in conjunction with the product in compliance with the conditions specified in the operating instructions and on the nameplate, as well as with all directives, standards and safety regulations applicable at the installation site of the product.

2.3 Predictable incorrect application

The product must never be used in the following cases and for the following purposes:

- Operation when the discharge opening is shut off
- Use with adherent, corrosive or flammable fluids
- Operation with media that have an adverse effect on the proper operation of the product
- Temperatures and pressures in excess of or below the permissible temperatures and pressures

2.4 Qualification of personnel

Only appropriately trained persons who are familiar with and understand the contents of these operating instructions and all other pertinent product documentation are authorized to work on and with this product.

These persons must have sufficient technical training, knowledge and experience and be able to foresee and detect potential hazards that may be caused by using the product.

All persons working on and with the product must be fully familiar with all directives, standards and safety regulations that must be observed for performing such work.

2.5 Personal protective equipment

Always wear the required personal protective equipment. When performing work on and with the product, take into account that hazards may be present at the installation site which do not directly result from the product itself.

2.6 Modifications to the product

Only perform work on and with the product which is explicitly described in these operating instructions. Do not make any modifications to the product which are not described in these operating instructions.

3 Transport and storage

The product may be damaged as a result of improper transport or storage.

NOTICE

INCORRECT HANDLING

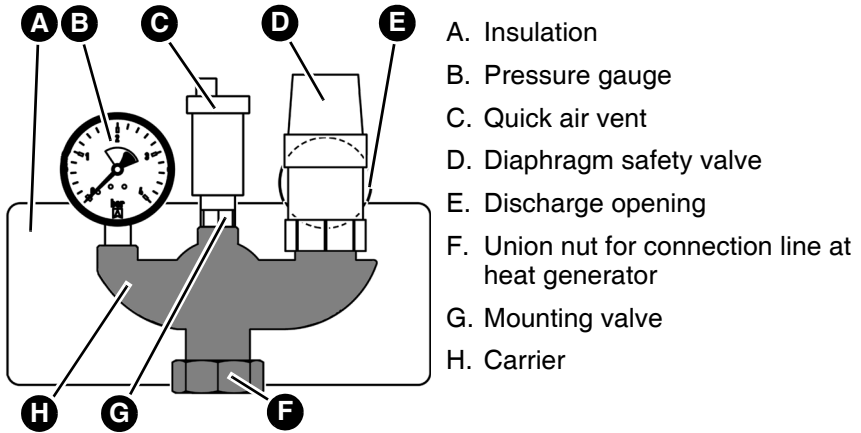
- Verify compliance with the specified ambient conditions during transport or storage of the product.
- Use the original packaging when transporting the product.
- Store the product in a clean and dry environment.
- Verify that the product is protected against shocks and impact during transport and storage.

Failure to follow these instructions can result in equipment damage.

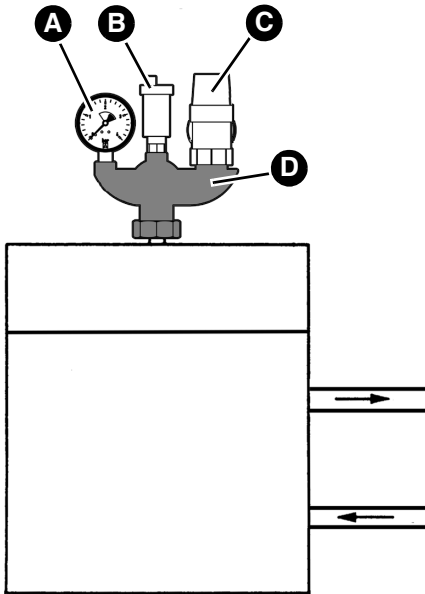
4 Product description

The product consists of a diaphragm safety valve, a pressure gauge and a quick air vent. The components are mounted on a carrier. The carrier is contained in an insulation piece.

4.1 Overview



4.2 Application example(s)



- A. Pressure gauge
- B. Quick air vent
- C. Diaphragm safety valve
- D. Carrier

4.3 Function

If the maximum permissible pressure in the heating system is exceeded, the diaphragm safety valve discharges liquid. The pressure gauge displays the system pressure in the heating system. The quick air vent automatically vents the heating system.

4.4 Approvals, conformities, certifications

Refer to the operating instructions of the diaphragm safety valve.

4.5 Technical data

Parameter	G1¼	G1½
General specifications		
Dimensions with insulation (W x H x D)	230 x 185 x 105 mm	230 x 190 x 105 mm
Weight	1.6 kg	1.8 kg
System pressure	3 bar	
Test pressure	2.5 bar	
Operating temperature range		
Medium	Max. 120 °C	
Carrier		
Material	Brass	
Bottom connection with union nut	G1¼ female	G1½ female
Diaphragm safety valve		
Nominal pressure	3 bar	
Inlet x outlet	G1 female x G1¼ female	G1¼ female x G1½ female
Heat capacity	200 kW	350 kW
Pressure gauges		
Connection	G¼ PTFE	
Range	0-4 bar, green range at 1.5-3 bar	
Quick air vents		
Connection	G ³ / ₈ male	
Nominal pressure	12 bar	
Insulation		
Material	EPP	

5 Mounting

The product is connected as a safety group assembly to the safety flow (extra connection) of the heat generator.

5.1 Preparing mounting

- ⇒ Verify that liquid can be discharged via the discharge line of the safety valve.
- ⇒ Verify that the product cannot be shut off.
- ⇒ Verify that the product is mounted in such a way that no external forces can act on the components after it has been installed.
- ⇒ Verify that the product is not overheated by welding or soldering work performed on the system.
 - Install the product after completion of such welding or soldering work.
- ⇒ Verify that the nominal pressure of the product corresponds to the specification value of the system.
- ⇒ Verify that the liquid in the system and the application area of the product are compatible.
- ⇒ Verify that the pipe of the product is thoroughly flushed prior to installation.
 - Impurities such as weld beads, hemp or metal chips cause leaks of the safety valve.

5.2 Mounting the product



WARNING

HOT LIQUID

Water in systems is under high pressure and can have temperatures of more than 100 °C.

- Verify that the water has cooled down before mounting the product.

Failure to follow these instructions can result in death, serious injury or equipment damage.

-
- ⇒ Verify that the product is mounted at the highest point of the heat generator or in the immediate vicinity at the flow line.
- A connection line with a maximum length of 1 m and the size of the inlet cross section may be installed between the product and the heat generator.

The diaphragm safety valve is mounted to the carrier with a PTFE seal; it can be rotated by up to 180° without the connection becoming untight.

Observe the operating instructions of the diaphragm safety valve when mounting the product.

1. Remove the insulation.
2. Mount the product in such a way that the components are vertical.
 - Use the enclosed flat gasket for sealing the product to the heat generator.
3. Tighten the union nut.
 - The tightening torque is 80 Nm.
4. Fit the complete insulation.

6 Maintenance

6.1 Maintenance intervals

Refer to the operating instructions of the diaphragm safety valve.

When	Activity
Every six months	Perform a visual inspection of the quick air vent Verify tightness of the quick air vent If the quick air vent is not tight, it must be replaced

7 Troubleshooting

Any malfunctions that cannot be removed by means of the measures described in this chapter may only be repaired by the manufacturer or by qualified persons.



WARNING

HOT LIQUID

Water in heating systems is under high pressure and can have temperatures of more than 100 °C.

- When there is a malfunction of the product, take all necessary measures to ensure that hot liquids do not pose any hazard to persons.

Failure to follow these instructions can result in death, serious injury or equipment damage.

Problem	Possible reason	Repair
Pointer of pressure gauge below green range	System pressure too low	Fill liquid into the system until the pointer of the pressure gauge is in the green range
Pointer of the pressure gauge again below green range after filling of the system	Leak in system	Check the system for leaks
Other malfunctions	-	Contact the AFRISO service hotline

8 Decommissioning, disposal

Dispose of the product in compliance with all applicable directives, standards and safety regulations.

1. Dismount the product (see chapter "Mounting", reverse sequence of steps).
2. Dispose of the product.

9 Returning the device

Get in touch with us before returning your product.

10 Warranty

See our terms and conditions at www.afriso.com or your purchase contract for information on warranty.

11 Spare parts and accessories


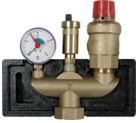
NOTICE

UNSUITABLE PARTS


- Only use genuine spare parts and accessories provided by the manufacturer.

Failure to follow these instructions can result in equipment damage.

Product

Product designation	Part no.	Figure
Boiler safety group assembly "KSG Magnum G1 $\frac{1}{4}$ "	77627	
Boiler safety group assembly KSG "KSG Magnum G1 $\frac{1}{2}$ "	77628	

Spare parts and accessories

Product designation	Part no.	Figure
Pressure gauge HZ 63 rad	63911	
Quick air vent G $\frac{3}{8}$	77710	
Diaphragm safety valve G1 x G1 $\frac{1}{4}$ 3 bar, Hz	42378	
Diaphragm safety valve G1 $\frac{1}{4}$ x G1 $\frac{1}{2}$ 3 bar, Hz	42379	