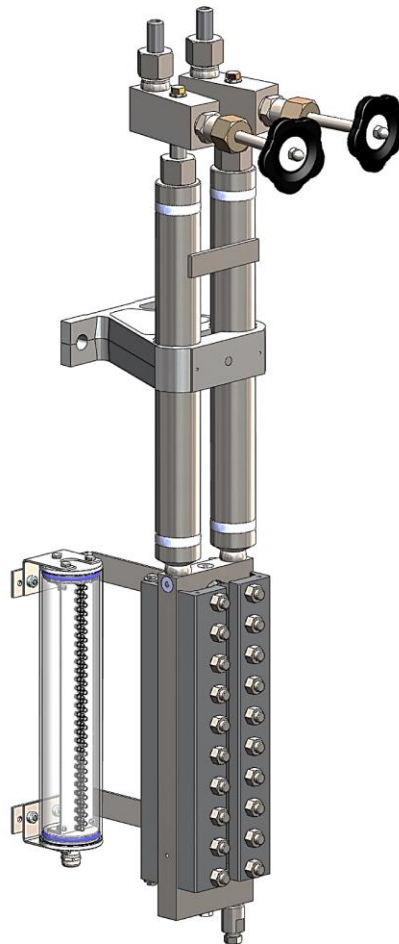




Remote level gauge

Type G



Edition 03/2021
D-05-B-51518-EN-01

Installation and operating instructions



Product philosophy

Thank you for placing your trust in IGEMA and deciding in favour of one of our high-quality products.

For more than 100 years, measuring and control systems have been developed, produced and sold worldwide under the IGEMA brand name.

“Steam is our passion” and we offer you the entire programme for the safe and economic operation of your plants, especially in the steam and condensate sector.

Please read the installation and operating instructions carefully to ensure a safe and reliable operation.

In addition to the information on installation and operation, you will also find important information on maintenance, care, safety and value retention of your measuring and control system.



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1. Important safety instructions




KEEP THESE INSTALLATION AND OPERATING INSTRUCTIONS IN A SAFE PLACE!




Commissioning as well as maintenance and repair work may only be carried out by qualified persons in compliance with the installation instructions given in this operating manual. The correct installation, commissioning, maintenance and operation of the device presupposes that the person in charge is familiar with measurement and control systems and complies with the general installation and safety instructions. In addition, the correct and intended use of tools and the handling of safety devices must be ensured. Unqualified persons must not be assigned the above tasks!

IGEMA GmbH accepts no liability for damage to property or personal injury caused by unqualified persons or by failure to observe these installation and operating instructions. If no sufficiently qualified person can be found, IGEMA GmbH can be commissioned with the installation/maintenance.

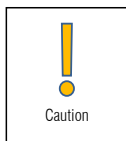
1.1 Symbols used in these instructions

In the following installation and operating instructions, safety instructions are marked with the following symbols:

 Danger	This symbol and signal word refer to a potentially hazardous situation which could result in death or injuries if ignored.
 Caution electrical voltage	This symbol and signal word indicate live parts with an immediate danger of death from electric shock.
 Caution hot	This symbol with a signal word indicates a potentially hazardous situation that can result in severe burns and scalds all over the body.

 Caution	This symbol and signal word refer to a potentially hazardous situation which could result in personal injury, property and environmental damage if ignored.
 Caution	This symbol and signal word refer to a potentially hazardous situation which could result in damage to the equipment if ignored.
 Info	This symbol indicates useful information and recommendations as well as measures that will prolong the value of your measuring and control system.

1.2 Intended use of the device



Use these installation and operating instructions, the identification on the rating plate (see 5.6) and the technical data sheet to check whether the device is suitable for the intended use/application. The device complies with the requirements of the European Pressure Equipment Directive 2014/68/EU.

The device may only be used to indicate fill levels on containers.

The maximum values of the pressure and temperature range of the device must be checked before installation. If the maximum allowable operating values of the device are lower than those of the system on which it is to be installed, protective instruments for the device, such as pressure reducers or similar, must be provided to avoid limit situations. The device may only be used in accordance with the information in these installation and operating instructions or for the parameters and applications agreed in the supply contract. (see rating plate, 5.6) The operator of the direct water level indicator is obliged to familiarise himself on the compatibility of the medium and the device. In case of doubt, contact the relevant installation manager or site manager.

The correct installation position, alignment and flow direction of the device must be observed! Before installing the IGEMA product on boilers or containers, it is essential to remove all protective covers and, if necessary, the protective film from rating plates and sight glasses.

1.3 Safety at work



Before installation or carrying out maintenance work on the device, safe access must be ensured and a secure working area with sufficient lighting must be defined and marked out. Always use lifting equipment for heavy loads!

Before starting any work, carefully check which liquids or gases are or have been in the pipeline. (flammable substances, irritating substances, substances hazardous to health) When opening or dismantling the device, residues of the medium can escape. Subsequent fumes are also possible in unpressurized and cold systems. Use designated PPE such as safety goggles and respiratory protection!

Special attention must be paid to the condition of the environment around the installation or maintenance site. Be aware of e.g.: potentially explosive atmospheres, lack of oxygen in tanks and pits, dangerous gases/liquids, extreme temperatures, hot surfaces, fire hazard (e.g. during welding) and moving machine and system components. Protect yourself from excessive noise by taking the required protective measures.

For all maintenance work or new installations, on new or existing boilers or vessels, it is imperative to check that the boiler or vessel has been depressurised and that the pressure has been safely reduced to atmospheric pressure. In principle, no system should be regarded as unpressurized even if indicated by pressure measuring devices such as pressure gauges or sensors. When releasing the pressure, make sure that no persons are in the release area. Carefully check whether you and/or other persons in the vicinity need PPE to protect yourself from external influences such as high and low temperatures, radiation, noise, danger to eyes, loose objects that can fall down or chemicals.

There is always a risk of injury when handling large and/or heavy equipment. Observe the load handling regulation as a minimum requirement for working with loads. Avoid handling the device with your own physical force, e.g. by lifting, pulling, carrying, pushing or supporting it, especially to prevent back injuries. Use lifting equipment to move heavy and bulky equipment in accordance with Article 1, Section 2 of the German Load Handling Regulation (LasthandhabV).



Under normal operating conditions the surface of the device can become very hot! Under the maximum operating conditions, the surface temperature can exceed 350°C. After shutting off or, if necessary, shutting down the boiler, wait until the temperature has normalized to room level. To avoid the risk of burns and scalds, always use PPE including safety goggles!

1.4 Safety instructions for this device



These installation and operating instructions are an integral part of the device and must be forwarded to the responsible departments "Goods inward, Transport, Installation, Commissioning and Maintenance". They must be kept in such a way that the technical staff have access to these documents at all times. If the device is passed on to a third party, these installation and operating instructions must also be included in the national language of the third party.

Avoid shocks and hard contact during transport, as this can lead to damage. During intermediate storage, the device must be kept dry and secured against damage.

When servicing the unit, make sure to use sharp-edged internal parts and avoid shards of broken glass. There is a risk of cutting hands and arms! Always wear work gloves when changing packing, valve seat and valve plug.

For units with a dead weight of 30 kg or more, the customer must provide adequate support (e.g. via a spring suspension device, etc.). This can be attached to the holding strap/eyelet on the device.

When returning goods to IGEMA GmbH, the applicable safety and environmental laws according to GGVSEB [German ordinance on the national and international carriage of dangerous goods by road, rail, and inland waterways] must always be observed. If there are any risks to health or the environment due to residues or the device has a mechanical defect this must be indicated when returning the device and the necessary precautionary measures must be taken. If the returned goods are devices that have come into contact with or contain hazardous substances, a safety data sheet must be enclosed, and the goods must be clearly marked. In addition, the hazardous substance must be reported to the logistics service provider.

1.5 Exclusion of liability

IGEMA GmbH Mess- und Regelsysteme will assume no liability if the above regulations, instructions and safety precautions are not observed and followed. If they are not expressly listed in the installation and operating instructions, changes to an IGEMA device are carried out at the risk of the user.

2. Contents of packing

Remote level gauge:

The level gauge is delivered as unit A, B and C.

- Unit A consist of:
- Level gauge (k)
 - Indicator valves (h, j)
- Unit B consist of:
- Upper main shutoff valve (c) with condenser (b)
 - Lower main shutoff valve (g)
- Unit C consist of:
- Illumination device (p)

3. Important information



The remote level gauge is for measurement and control purposes and must only be used to display fill levels on a tank. Here care must be taken that pressure and temperature do not exceed the maximum limitations of use. These can be found on the identification plate.



The operator of the remote water level gauge is responsible for the intended use of the indicator.



Note!
For displays weighing 30 kilograms or more, the customer must provide sufficient support (e.g. by spring hangers or similar).

3.1 Intended use

Remote level gauge:

The remote level gauge type GS can be used for every steam generator according to TRD 401 except continuous steam generators.

In the sight opening, a float indicates the water level in the passage between water and steam.

Applied rules as per TRD/Ad2000 or ASME-Boilers.

4. Explanations

4.1 Scope of supply

The type FA GS is used to indicate the water level of steam generators.

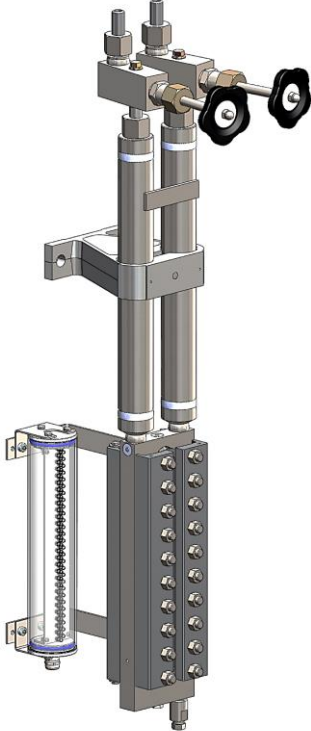
4.2 Function

The level gauge works according to the physical law of the communicating tubes.

The geodetic pressure difference of two water columns is transferred to a transparent separating blue liquid in the remote level gauge. This liquid is not soluble in water and non-toxic.

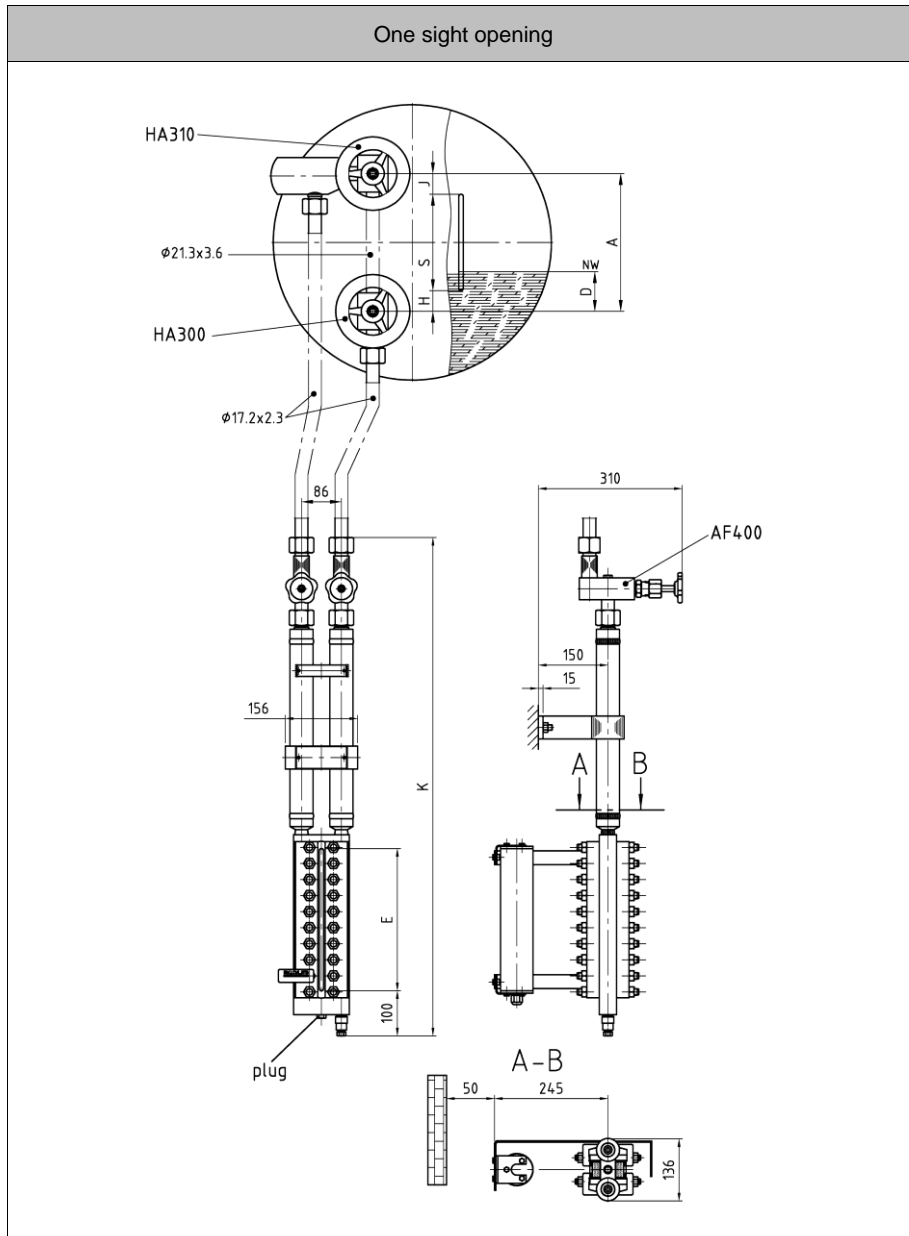
A signal float swimming on separating liquid reports water level in steam drum on a scale of 1:1 or on a reduced scale.

4.3 Versions

Single show length	
	

5. Technical data

5.1 Version



Sight openings:

All. pressure	PS [bar]	10-50	80-200
Sight opening	S [mm]	470 (on request)	---
		310 or 390	
All. temperature range on the "remote indicator" body and on the indicator valve	TS [°C]	2 to 40	

5.2 Type of connection

Standard : Flanges according to DIN
 On request : flanges according to ASME
 Buttwelding end according to DIN or ASME

5.3 Materials

Parts in contact with the medium: C steel or stainless steel according to DIN or ASME.
 Pressure holding components: C steel or stainless steel according to DIN or ASME.

5.4 Application limits




Max. all. pressure PS	[bar]	10-200
Max. all. temperature TS	[°C]	40

5.5 Corrosion resistance

The safety of the unit is not influenced by corrosion if it is used as intended.

5.6 Identification plate / Marking

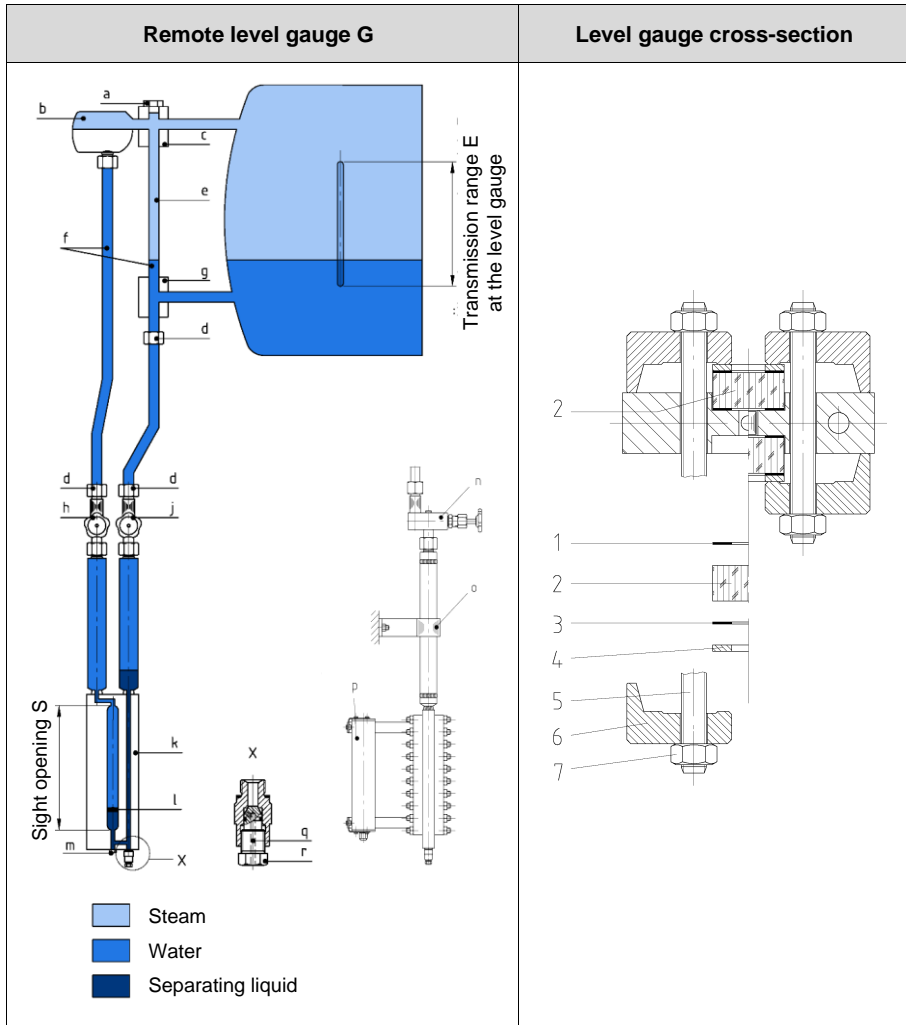
The following data are indicated on the identification plate according to EN 19:

 IGEMA GmbH Mess- und Regelsysteme Antwerpener Straße 1 Germany – 48163 Münster  *  See installation instructions	Built	A	Type	B	
	PS	C	bar	TS D °C	
	Conn. Type	PN E	DN F		
	G				

* marking depending on the realization

A Date of manufacture D Max. all. Temperature G TAG-Nr. (optional)
 B Type of unit E Nominal pressure (not listed)
 C Max. all. Pressure F Nominal diameter

6. Construction



- | | | |
|--------------------------|-------------------------|--------------------|
| (a) Vent plug | (k) Level gauge | (1) Sealing |
| (b) Condenser | (l) Indicator fluid | (2) Glass |
| (c) Upper shut-off valve | (m) Plug | (3) Sealing |
| (d) Bolting | (n) Plug | (used as cushion) |
| (e) Balance pipe | (o) Supporting clamp | (4) Pressure plate |
| (f) Connection line | (p) Illumination device | (5) Cover screw |
| (g) Lower shut-off valve | (q) Drain opening | (6) Cover rail |
| (h) Indicator valve | (r) Adjusting screw | (7) Hexagon nut |
| (j) Indicator valve | | |

7. Assembly

7.1 Version with flange

- Respect installation position!
- Remove protection caps from connection flanges. Caps only serve as transport protection.
- Ensure that sealing surfaces are clean and undamaged.
- Use sealing material as per EN1514 and screws as per DIN2510 or DIN974 (material 1.7709).
- Mount main shutoff valves.

7.2 Version with buttwelding end

- Einbaulage beachten!
- Schutzkappen entfernen. Die Schutzkappen dienen nur als Transportsicherung.
- Montage nur mit: Schweißprozess 111 (Lichtbogenhandschweißen) und 141 (Wolfram-Inertgasschweißen).

7.3 Remote level gauge (see sketch chapter 6)

- Fix level gauge (k) via supporting clamp (o).
- Connect main shutoff valves (c) and (g) on boiler studs.
- Weld on balance pipe (e) and lay connection lines (f) with constant slope to avoid air locks during operation.
- Weld on connection bolting (d) on the ends of connection lines (f). Check sealing and sealing surface of the bolting (d).
- Tighten firmly bolting (d) on condenser (b) and shutoff valve (g).
- Mount illumination device (p) and carry out electrical connection observing the VDE 0100 and the current regulations.
- Boiler manufacturer or operator have to ensure that filling (separating liquid and water) in level gauge (k), connection lines (f) and condenser (b) can neither freeze nor vaporise.

7.4 Illumination device



Only use the lamp in explosion-proofed rooms!
Only skilled and qualified electricians may carry out assembly and connection of the lamps!
Never insulate illumination devices!

Mount the illumination device with the fixing elements on the level gauge.

8. Commissioning



Commissioning and maintenance must be carried out by qualified personnel! If no sufficiently qualified person can be employed, IGEMA GmbH can be commissioned to carry out the commissioning. In principle IGEMA GmbH recommends commissioning the indicator at the same time as the boiler (item 8.2). If it is not possible to commission the indicator

according to item 8.2, the indicator can be commissioned with the boiler under pressure and temperature (item 8.3)

All liquid level gauges are subjected to 100% pressure testing before delivery. In individual cases, material settling may occur during transport, longer storage or during assembly. All screw connections must therefore be checked for tight fit and appropriate torque (see following text).

8.1 Before commissioning

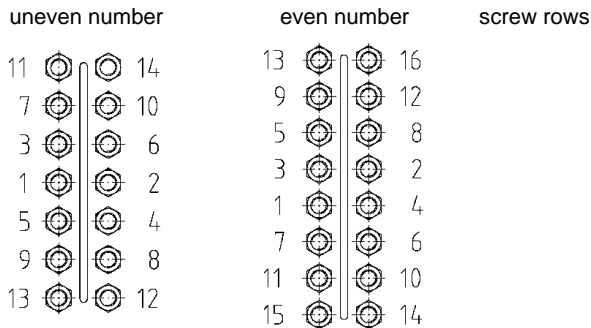
Before commissioning, check whether any transport damage has occurred. If the delivered Igema products show transport damage, please contact our SERVICE department immediately.

Furthermore, due to possible material settlements, all screw connections must be checked for the correct tightening torque Md_{max} according to the table in chapter 10.4!



Tightening sequence to be observed for the cover rails is presented below!
Non-compliance may result in leakage, glass and mica break.

The following tightening sequence must be ensured at the cover rails (drawing below). Non-compliance can lead to leaks, which are not covered by the warranty. Tighten the screw connection to the tightening torque Md_{max} according to the table (see item 10.4).



At the latest 24 h after commissioning, the screw connections must be checked and tightened $M_{d_{max}}$ again with the torques specified above in the listed tightening sequence $M_{d_{max}}$ (see item 10.4)! This should be repeated until the bolts permanently hold the specified torques.

The union nuts of the valves must be tightened so that no leakage occurs at the spindle and the handwheel / hand lever can still be turned.



Note!

After commissioning, slight leaks can occur in the valves, but these will reappear after a short time due to temperature and pressure.

8.2 Cleaning of connection lines (f) (see sketch chapter 5)

- Close main shutoff valves (c) and (g). Detach connection lines (f) on indicator valves (h) and (j) and on bolting (d) and bend a little to the side.

Cleaning of connection lines can be made in two ways:



Ensure that nobody stays next to detached bolting of indicator valves (h) and (j)!

- Remove vent plug (a) and purge connection lines (f) with water through this opening.
 - Bring boiler to operating condition with firmly tightened vent plug (a) and purge connection lines (f) by opening and closing several times main shutoff valves (c) and (g).
- Tighten firmly detached connection lines on indicator valves (h) and (j).

8.2 Commissioning of remote level gauge

Fill level gauge and connection lines with water and indicator liquid in the following order to avoid air locks.

- Close tightly main shutoff valves (c, g) and indicator valves (h, j).
Check bolts of adjusting screw (r) and plug (m).
Unscrew plugs (a, m and n).
- Fill in water at plug (n) on the indicator valve (j) until the water level is in the highest visible area of the indicator. Then fill in the indicator liquid until the level of the indicator liquid is at the highest visible point of the indicator. Continue to fill in a quantity of approx. 10 cm³ of indicator liquid.
The marking of the working material "indicator liquid" is visible on the container.



Observe the safety advice on the container of the indicator liquid.
These are shown on the container of the indicator liquid and in the safety data sheet.
Use the liquid supplied in the container within one year.

- Fill in clean water up to overflowing at plug (n) on indicator valve (h). Firmly tighten plug (n) with sealing.
- Fill in clean water up to overflowing at plug (n) on indicator valve (j). Firmly tighten plug (n) with sealing.
- Slowly fill in clean water up to overflowing at vent plug (a) of main shutoff valve (c). Both shutoff valves (c, g) must be closed. Tighten vent plug (a) with sealing
- After having reached a minimum operating pressure of 2 bar, open valves in the following order: c, g, h and j.
- Check all screw connections for tightness during the period of boiler start-up to operating condition and retighten if necessary. After a few hours of operation, check all screw connections again for tightness and retighten them.

8.3 Adjustment of the indicator liquid level

The level of the indicator liquid is adjusted during boiler operation at medium water level. By repeatedly opening the regulating screw (r) for a short time, enough display liquid is drained off at the drain opening (q) until the display corresponds to the water level of the direct water level indicator.

If the deviation is greater, readjustment must be carried out in stages, i.e. with small pauses. The indicator liquid to be drained off must be collected in a container, taking into account the safety advice of the working material "indicator liquid". The marking of the working material is visible on the container.



If, as a result of an error, too much liquid has been drained or too little has been poured in, proceed as in point 8.2.

9. Operation

9.1 Operating monitoring (see sketch chapter 6)

The display liquid level must be compared with the water level on the direct water level indicator at regular intervals.

If not matched, the following causes may occur:

- Indicator valves (h, j) are not opened.
Open first indicator valve (h) and then valve (j).
- Main shutoff valves (c, g) are not opened.
Close opened indicator valves (h, j). Opening valves in the following order: c, g, h and j.
- Condenser (b) is not hot enough; no condensation.
Carefully turn vent plug (a) once and vent condenser (b). Firmly close vent plug again.
- Operating errors in observing the sequence of opening the valves.
Drain the indicator liquid according to point 8.2.
Subsequent measures according to point 8.2 / 8.3.
- Liquid level comparatively too high
Adjustment following to point 8.3.

Regularly check tightness of valves (c, g, h and j) and retighten stuffing box if necessary.



To relieve the stuffing box of the indicator valves (h, j) and main shut-off valves (c, g) during operation, open the valve stems as far as they will go.

9.2 Decommissioning of boiler

- Close indicator valves (h, j) in any case of decommissioning. In case of longer boiler stagnation, also close shutoff valves (c, g).
- Open valves for re-commissioning in following order: c, g, h and j.
- If boiler is in operating condition, pay attention that operating temperature on condenser (b) is sufficient. Vent condenser (b) as per 9.1 if necessary.

10. Maintenance



**Carry out maintenance works only if connection lines (f) are empty and pressureless!
Beware of escaping steam!**

It is assumed that the person charged with the maintenance tasks is fully conversant with measurement and control systems. Untrained persons must not carry out maintenance work! If there is no adequately qualified person available, IGEMA GmbH can be brought in to service your measurement and control system.

When replacing components, it must be ensured that only original IGEMA GmbH parts are used.

Any warranty is void if components from other manufacturers are used.

Preventive Maintenance

The following points should be observed to maximize gauge life:

Proper cleaning and maintenance of level gauges in steam service is vital for enhanced performance and service life. The gaskets and mica shields shall always be replaced during maintenance, even if they appear to be in perfect condition. Gaskets relax and can harden over time while defects in mica (i.e., chips or scratches) become points of high stress concentration. Even with no visible defects, a used glass has surface stresses induced from the original assembly and pressurization of the gauge. If reassembled, the gaskets and sealing surfaces will apply new stresses, which are likely to break the mica either during assembly or when the gauge is pressurized.

Therefore, new mica is always required. The gauge glass must be kept clean to ensure the visible water level in the chamber accurately represents the water level in the boiler.

The user must determine upon evaluation of his or her own operating experience an appropriate maintenance schedule necessary for the specific application. Note that the frequency and method of blow-down/purging may affect service life and performance of glass level gauges. Realistic maintenance schedules can only be determined with full knowledge of the services and application situation involved.

10.1 Cleaning of connection lines (f) (see sketch chapter 6)

- Close valves (h, j, c, g) tightly.
- Use vent plug (a) to make level gauge and connection lines (f) pressureless. Carefully open vent plug (a) one turn.
- Further measures as described under point 8.1.
Commissioning of level gauge as described under point 8.2 / 8.3.

10.2 Cleaning of level gauge

Close indicator valves (h, j). Carefully unfasten plug (n) on main shutoff valves (c, g) to relieve high pressure of level gauge (k). Remove plug (n).

- Drain indicator liquid through drain opening (q) by unfastening adjusting screw (r) and collect liquid in a container. Respect safety regulations of "indicator liquid". Marking "indicator liquid" is written on the container.
Observe enclosed safety data sheet!
- Remove plug (m). Purging of level gauge with water through plug (n). Insert circular brush in opening at plug (m) during purging and clean glasses through opening at plug (n) on indicator valve (h). Firmly tighten adjusting screw (r) and plug (m).
- For filling and adjusting level gauge with connection lines see points 8.2 and 8.3.

10.3 Replacement of glasses

- Loosen screw connections (5, 7) and remove cover rail (6), pressure plate (4) and glasses (2). Carefully remove the seals (1,3) without damaging the contact and sealing surfaces.
- Clean the sealing and contact surfaces and carefully carry out the assembly with the new seals (1), glasses (2) and gaskets (3) in the sequence shown (indicator cross-section).
- Tighten screws (5, 7) from top to bottom starting in the middle of sight opening -using successively opposite diagonal tightening

10.4 Tightening torques

All. pressure PS [bar]	Tightening torque Md → Md _{max} [Nm]				
	in steps				
	1	2	3		
≤100	35	50	65	-	-
>100	45	60	75	90	105

11. Shutoff valves

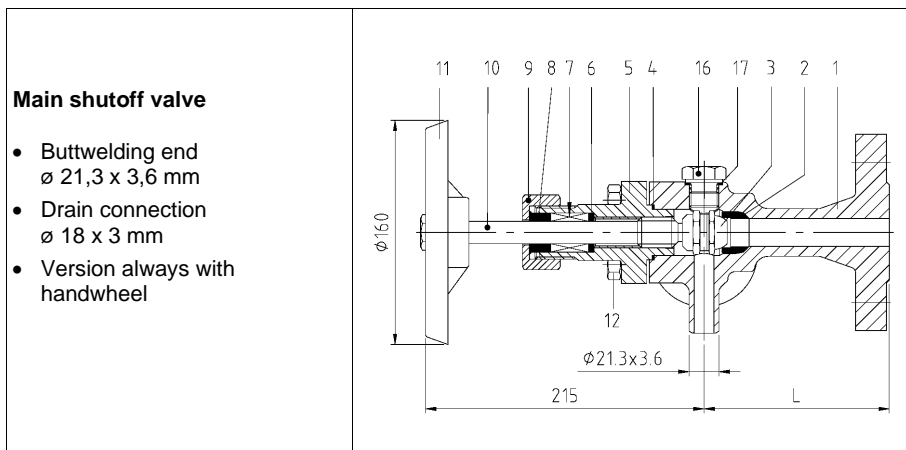
11.1 General information and operating instructions

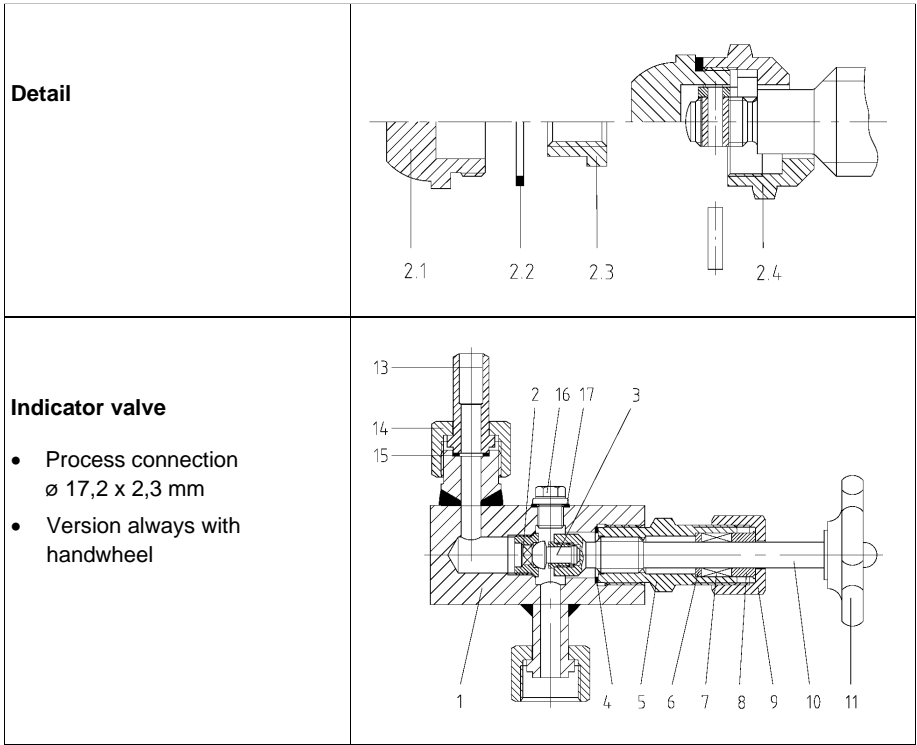
IGEMA valves are mostly maintenance-free and easy to handle. All IGEMA valves are equipped with metal gaskets and hand operation. Sealing of valve spindle is made with a gland packing.

*Turn handwheel clockwise to close the valve.
Turn handwheel counterclockwise to open valve.*

Tools to increase hand torque are not permitted.

11.2 Construction of valves





- | | | |
|--------------------------|--------------------|--------------------|
| (1) Valve housing | (10) Valve spindle | (2.1) Cone half |
| (2) Seat | (11) Hand wheel | (2.2) Sealing ring |
| (3) Cone set | (12) Nut | (2.3) Clamping nut |
| (4) Sealing ring | (13) Weld ferrule | (2.4) Cone half |
| (5) Upper part of valve | (14) Cap nut | |
| (6) Base ring | (15) Sealing ring | |
| (7) Stuffing box packing | (16) Screw plug | |
| (8) Stuffing box | (17) Sealing | |
| (9) Cap nut | | |

11.3 Indicator valve (h, j)



**Carry out maintenance works only if connection line (f) is empty and pressureless!
Beware of escaping steam!**

- Close valves (h, j, c and g) and carefully turn vent plug (a) once.

- Remove vent plug (a) and plug (n) of indicator valve which should be maintained (h or j).
Unscrew upper part of valve (5) with valve spindle (10).

Replacement of seat (2) and cone set (3):

Replace cone set (3).

Unscrew seat with hexagon socket wrench SW 10 and replace.

Tightening torque **Md = 70 Nm**.

Replacement of stuffing box packing (7):

Loosen screw cap (9) and unscrew valve spindle (10) clockwise from thread of upper part of valve (5).

Loosen handwheel (11) and push valve spindle (10) out of stuffing box packing (7).

Carefully remove deposits on valve spindle.

Take off screw cap (9) and gland (8) and push out stuffing box packing to be replaced over base ring (6).

Assembly in following order:

Screw in valve spindle (10), insert base ring (6) - stuffing box packing (7) - and gland (8), place and tighten screw cap (9).

Fix handwheel (11). Tighten valve spindle (10) counterclockwise in upper part of valve (5) as far as it will go.

Insert upper part of valve (5) with valve spindle (10) and new sealing ring (4) in valve housing (1) and tighten.

11.4 Main shutoff valve (c, g)



Carry out maintenance works only if boiler is pressureless and empty below valve stud.

- Loosen nut (12) and remove upper part of valve (5) with valve spindle (10).

Replacement of seat (2) and cone (3):

Cone parts (2.1, 2.2, 2.4) loosen cone halves (2.1, 2.4) which are screwed together.

Unfasten pinned clamping nut (2.3) and remove cone half.

Assembly with parts to be replaced in reverse order:

See detail for assembly of cone halves (2.1, 2.4) and sealing ring (2.2).

Screw cone halves (2.1, 2.4) together.

Remove seat with special wrench and replace.

Tightening torque **Md = 100 Nm**.

⇒ Replacement of gland packing (7) as described under 10.3.

Insert upper part of valve (5) with new sealing (4) and tighten nuts (12) using successively opposite diagonal tightening. Tightening torque $M_d = 60 \text{ Nm}$.

12. Case of damage



**Provide security in the danger zone.
Severe burns and scalding's on the whole body are possible!**

- Check if no further steam escapes at the damaged place.
- **Set boiler pressureless!**

Close valves as follows:

- Close the upper and lower shut-off valves (c+g) on the steam- and water-carrying connections.
- Close the indicator valve (h+j) on the steam- and water-carrying connection piece.
- Slowly open the drain opening (q). The indicator liquid to be drained off must be collected in a container, taking into account the safety advice of the working material "indicator liquid". The marking of the working material is visible on the container.
- For commissioning with new spare parts see item 10.8.

13. Spare parts

⇒ Always indicate article no. and serial no. (indicated on the identification plate) in case of spare parts order!!

13.1 Remote level gauge (see sketch chapter 6)

for S=310

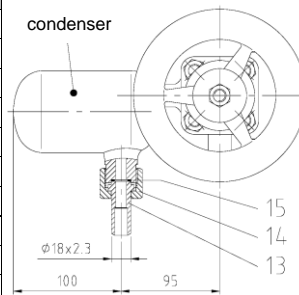
Pos. Nr.	Article- No.		Quantity	Designation	Material
	≤100	>100			
	40-04443		1	Blue indicator fluid 1,68	
1	40-00247		2	Sealing	Graphite- steel
2	40-00007	40-00026	2	Glass	Borosilicate
3	40-00247		2	Sealing (used as cushion.)	Graphite- steel
4	40-00429		2	Pressure plate	RSt 37.2
5	40-00355	40-00368	20	Threaded bolt	1.7709
6	25-01085	25-01290	4	Cover rail	1.0425
7	40-00583	40-00716	40	Hexagon nut	1.7258
D	40-01365		2	Sealing	1.4541
m	40-00327		1	Screw plug	1.4300
	40-01242		1	Sealing ring	1.4541
x	40-00123		1	Sealing ring	1.4541
	15-04135		1	Drain plug	1.4021

for S=390

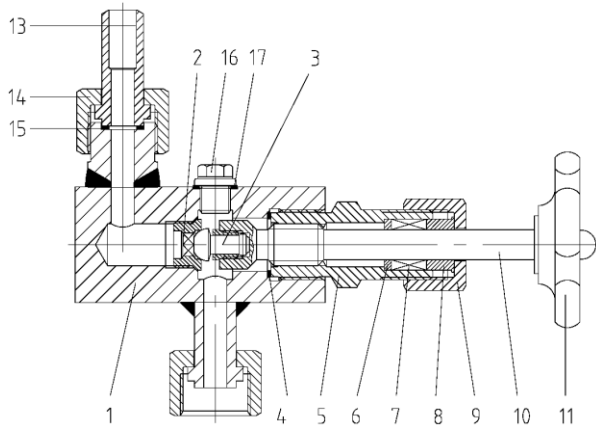
Pos. Nr.	Article- No.		Quantity	Designation	Material
	≤100	>100			
	40-04443		1	Blue indicator fluid 1,68	
1	40-00248		2	Sealing	Graphite- steel
2	40-00010	40-00028	2	Glass	Borosilicate
3	40-00248		2	Sealing (used as cushion.)	Graphite- steel
4	40-00420		2	Pressure plate	RSt 37.2
5	40-00355	40-00368	24	Threaded bolt	1.7709
6	25-01277	25-01296	4	Cover rail	1.0425
7	40-00583	40-00716	48	Hexagon nut	1.7258
d	40-01365		2	Sealing	1.4541
m	40-00327		1	Screw plug	1.4300
	40-01242		1	Sealing ring	1.4541
x	40-00123		1	Sealing ring	1.4541
	15-04135		1	Drain plug	1.4021

13.2 Main shutoff valve

Pos. Nr.	Article- No.	Qty.	Designation	Material
2,3	15-00297	1	Cone set with seat	1.4034 / 1.4104
17	40-00099	1	Sealing ring	1.0338.03
18	40-00331	1	Screw plug	1.0711
4	40-00120	1	Sealing ring	1.0338.03
6,7,8	15-00112	1	Stuffing box packing	Graphite
9	25-00662	1	Screw cap	1.0711
10	15-02690	1	Spindle	1.4104
11	15-00419	1	Handwheel assembly	Aluminium / Stahl
15	40-00113	2	Sealing ring	1.0338.03
14	25-01143	2	Cap nut	1.0711
13	25-00744	2	Weld ferrule	1.0460



13.3 Indicator valve



Pos. Nr.	Article- No.	Quantity.	Designation	Material
13	25-00744	1	Weld ferrule	1.0305
14	25-01144	1	Screw cap	Niro
15	40-01365	1	Sealing ring	
2,3	15-00114	1	Cone set with seat	
16	40-00327	1	Plug	
17	40-00127	1	Sealing ring	
4	40-00129	1	Sealing ring	Graphite
6,7,8	15-00295	1	Stuffing box packing	
9	25-00657	1	Screw cap	Niro
10	25-00557	1	Spindle	
11	15-00669	1	Handwheel assembly	Plastic

14. Decommissioning



Severe burns and scalding's on the whole body are possible!

Before detaching flange connections, screw glands, cover screws or screw plugs, all connected lines must be depressurised (0 bar) and cooled off to ambient temperature (20°C)!

14.1 Disposal

Dismount unit and separate waste products.

When disposing the unit, observe legal regulations for waste disposal.



This high-quality IGEMA product was designed, manufactured and tested with the application of the QM System guidelines in accordance with DIN EN ISO 9001:2000.

If the device supplied indicates transport damage or gives cause for complaint in spite of our final quality control please contact our SERVICE department on telephone +49 2501 92424-0 by return.

15. Manufacturer's declaration

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Kommentiert [FN1]: Email an Claudius!

IGEMA GmbH

Antwerpener Str. 1
48163 Münster
Deutschland

www.igema.com

Fon.: +49 2501 92424-0
Fax.: +49 2501 92424-99
info@igema.com

