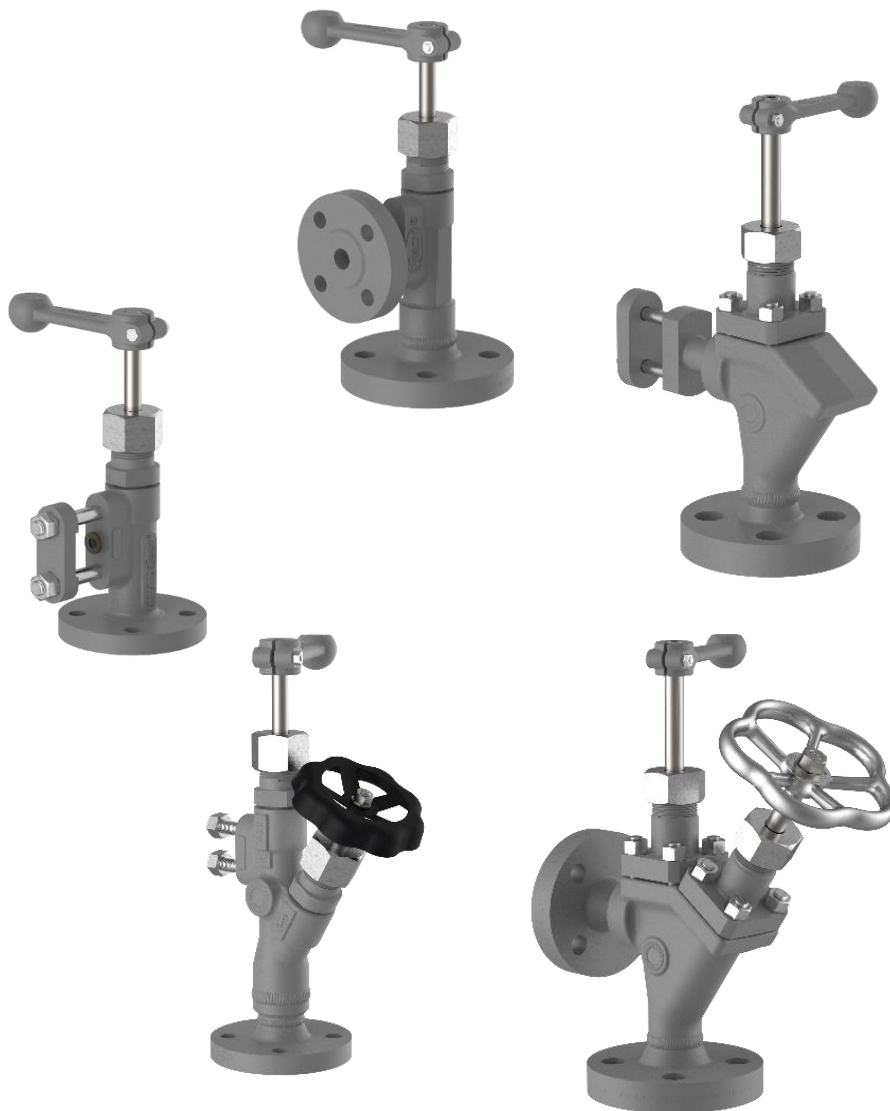




Shutoff valve

Single and double shutoff



Version: 01/2024

D-09-B-62826-EN-00

Installation and operating instructions

(English translation)

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1 About this document

1.1 Introduction

The Installation and operating instructions is part of the Shutoff valve. It must be made available to the responsible departments "Incoming goods, transport, assembly, commissioning and maintenance". The Installation and operating instructions must be stored in such a way that the specialist personnel has access to them at all times. If the gauge is passed on to a third party, these Installation and operating instructions must also be included in the national language of the third party.

NOTE

Safe and trouble-free operation of Igema GmbH Shutoff valve is not possible without precise knowledge.

- Installation and operating instructions Note installation and operating instructions
- Familiarise yourself with all relevant documents.

The Installation and operating instructions contain important information for the proper use and safe operation of Shutoff valve. Please also note important information on the repair, maintenance, care, safety and value preservation of your measuring and control system.

If the Installation and operating instructions or the accompanying documents are partially not available or have become unusable, a replacement document for the gauge can be obtained by specifying the document number on the cover page. It is also possible to download the operating instructions after scanning the QR code shown on the back.


1.2 Product identification







The gauge and the associated valves are described in the documents accompanying the delivery. This allows the operating instructions to be assigned to the valves.

The valves are usually part of a gauge. The operating instructions for the gauge therefore refer to the applicable documents for the mounted valves. It must be ensured that these operating instructions are the document described as the applicable document.

1.3 Marking of safety and warning information

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

 SIGNAL WORD	SYMBOL(S)
Nature and source of danger	
Consequences of non-compliance	
Instructions for action to avoid the danger	

	This symbol with the signal word DANGER and a background warning colour indicates a danger that will result in death or serious injury if not avoided.
	This symbol with the signal word WARNING and a background warning colour indicates a danger that can lead to death or serious injury if not avoided.
	This symbol with the signal word CAUTION and a background warning colour indicates a danger that can lead to injuries if not avoided.
	This symbol with the signal word NOTICE and a background colour indicates a danger that can lead to property damage if not avoided.
	This symbol with the signal word ENVIRONMENT and a background colour indicates a danger that can lead to environmental pollution if not avoided.
	This symbol with the signal word TIP and a background colour indicates a user tip that provides additional and useful tips.

1.4 Copyright

This operating manual contains texts and drawings that may not be reproduced, distributed or otherwise communicated in whole or in part without the express permission of the manufacturer.

The copyright of the operating instructions remains with:

Igema GmbH
Antwerpener Str. 1
48163 Münster
Germany

Violations oblige you to pay compensation.

2 Safety Instructions

2.1 Requirements for personnel

NOTE

Property damage caused by incorrect installation, commissioning, maintenance and operation

Only qualified persons who are familiar with the measurement and control systems are allowed to carry out work



Igema GmbH can be commissioned for the installation and maintenance.

CAUTION

Risk of injury due to external influences

External influences can lead to injuries in the absence of protective equipment

- Put on personal protective equipment according to category II



2.2 Safety at work

WARNING

Risk of injury due to leaking medium

Inflammatory, irritating and harmful substances can escape from the gauge and lead to skin injuries and burns. This danger is also to be expected in the case of an unpressurised cooled system.



- Wear protective clothing including safety glasses.
- Check the danger posed by the medium and, if necessary, wear respiratory protection or support.
- Observe the order of work.
- Perform work only when the gauge is depressurized and emptied.
- In principle, do not consider any system to be depressurised.

Risk of injury due to high temperatures



Surfaces of the gauges and areas near the gauges heat up to the maximum permissible temperature and can cause severe burns if touched.

- Check the danger of the medium.
- Wear protective clothing including safety glasses.
- Before carrying out maintenance and dismantling work, wait until the system is adjusted to the atmospheric conditions.

Danger of suffocation due to dangerous gases



Escaping gases can lead to suffocation.

- Check the danger of the medium.
- Wear protective clothing including safety glasses and respiratory protection.
- Before carrying out maintenance and dismantling work, wait until the system is adjusted to the atmospheric conditions.

Risk of injury due to corrosive liquids



Corrosive liquids can cause serious injuries in case of skin contact

- Check the danger of the medium.
- Wear protective clothing including safety glasses.

CAUTION

Risk of injury due to unsecured work area

An unsecured work area can endanger working and bystanders.

- Ensure safe access.
- Delimit and mark the secured working area.
- Sufficiently illuminate the working area.

Risk of injury due to heavy loads

There is a risk of injury when handling large and/or heavy gauges.

- Observe the load handling regulation.
- Use lifting equipment to move heavy and bulky appliances.

Risk of health damage due to noise



Noise leads to damage to the health of the hearing.

- Wear hearing protection.
- Avoid or limit noise if possible.

2.3 Intended use

NOTE

Property damage caused by irregular use

- Use gauges exclusively as a gauge of filling levels on containers.
- Maintain maximum pressure and temperature ranges of all components.
- Ensure the suitability of the gauge for the planned use/application.
- Ensure the compatibility of the gauge and the medium.
- Observe the correct orientation and flow direction of the gauge.

2.4 Damage to the product

NOTE

Property damage caused by incorrect storage and transport

Incorrect transport and storage can cause damage to the gauge.

- Avoid bumps and hard setdown.
- Store the gauge protected from environmental influences and in a dry place.
- Secure the gauge against damage.



3 Contents of the packaging

3.1 Included

In most cases, the valves are supplied as part of a gauge pre-assembled as a unit. Individual valves can also be supplied.

1. Valve in a pre-assembled unit **or** individual valve
2. Installation and operating instructions

3.2 Optional versions

These operating instructions apply to the shutoff valve in the standard as well as in customer-specific design. Examples of the optional version are shown in *Chap. 6.4*.

4 System Description

4.1 General

IGEMA shutoff valves are mostly maintenance-free and easy to handle. All IGEMA valves have metal seals; the valve spindle is sealed with a stuffing box packing. The shut-off valve designs range from a simple shut-off to a double shut-off. All main valve spindles are equipped with a quick closure function that ensures that the valve can be opened or closed with a $\frac{1}{3}$ turn.

4.2 Function

Hand lever/handwheel rotated clockwise:

Valve is **closed**.

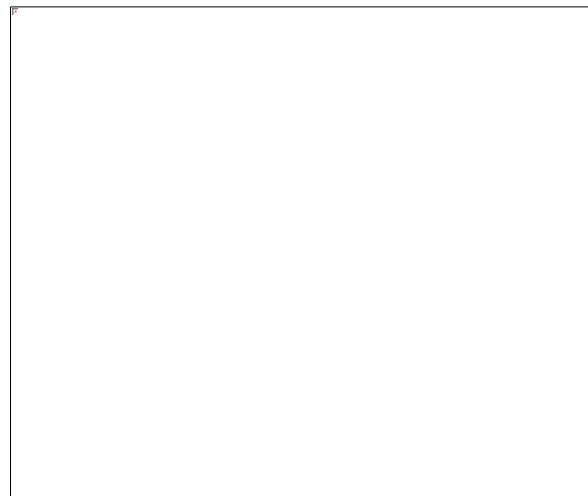
Hand lever/handwheel rotated anticlockwise:

Valve is **opened**.

6



Example: A120-CS



Example: A210-CS

NOTE

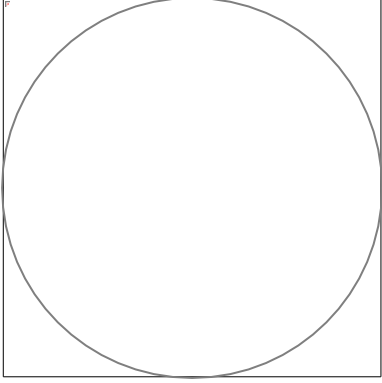
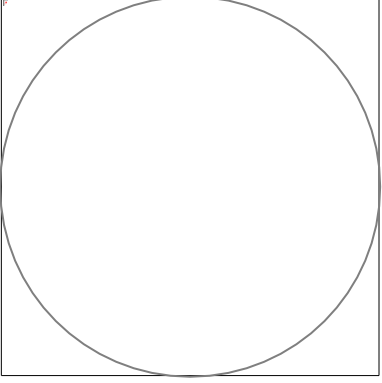
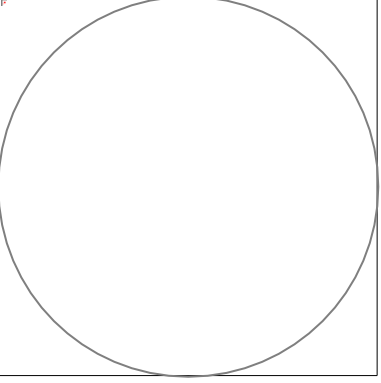
Material damage due to increased torques

Opening and closing the valves with excessive torques leads to leaks and damage.

- Open and close valves with manual torque.

4.3 Self-closing ball safety function

All IGEMA GmbH shutoff valves are equipped with a self-closing ball function. This function is a safety device that automatically closes the valve passage of the shut-off valve in the event of damage to the gauge (e.g. mica breakage). The ball self-closing function is only guaranteed when the valves are fully open.

		
<p>Ball position during commissioning or flushing/purging</p>	<p>Ball position during normal operation</p>	<p>Ball position during glass - mica break or incorrect commissioning</p>

i NOTE

Property damage due to contamination

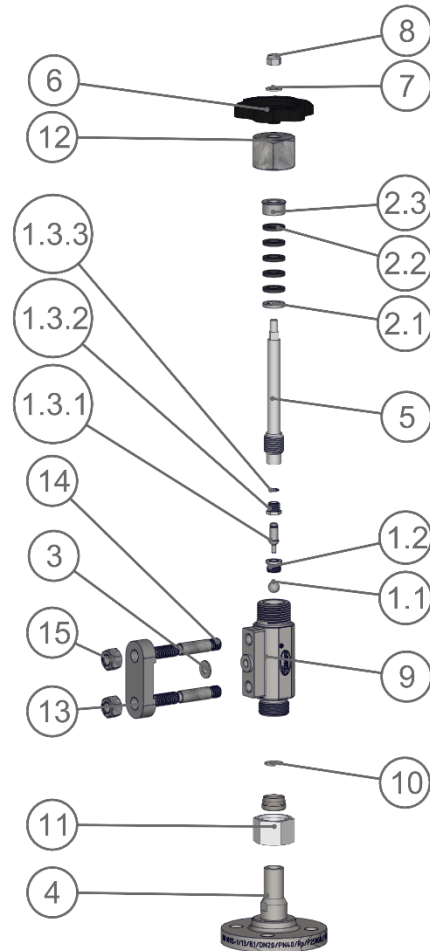
Residuals (dirt, welding beads etc.) can put self-closing ball out of service.

- Ensure cleanliness of the flowing medium

5 Construction

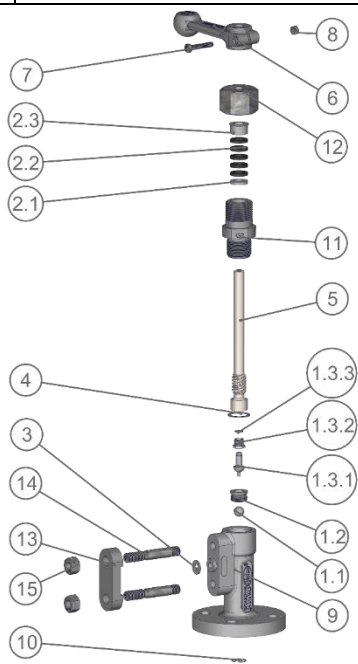
5.1 A110-CS and A115-CS

Pos.	Designation	Quantity
1.1	Ball	1
1.2	Valve seat	1
1.3.1	Valve cone with ejector pin	1
1.3.2	Threaded bush M12 x 1.5	1
1.3.3	Snap ring SW8	1
2.1	Base ring	1
2.2	Packing rings	5
2.3	Stuffing box	1
3	Sealing ring $\varnothing 8 \times \varnothing 17.5 \times 1.5$	1
4	Flange with adapter	1
5	Spindle	1
6	Handwheel	1
7	Washer	1
8	Hexagon nut M8	1
9	Valve body	1
10	Retaining spring	1
11	Cutting ring with union nut	1
12	Union nut G1"	1
13	Clamping bracket	1
14	Stud bolts M12	2
15	Hexagon nuts M12	2

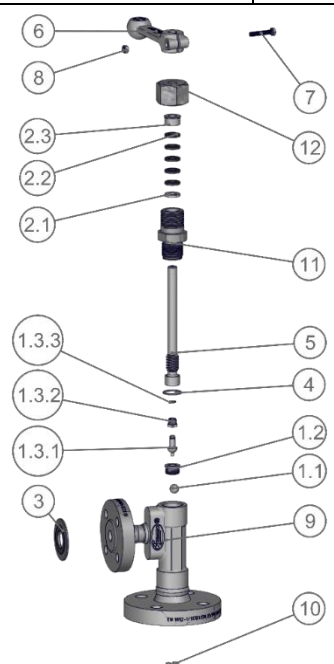


5.2 A120-CS, A140-CS, A145-CS, A150-CS and A155-CS

Pos.	Designation	Quantity
1.1	Ball	1
1.2	Valve seat	1
1.3.1	Valve cone with ejector pin	1
1.3.2	Threaded bush M12 x 1.5	1
1.3.3	Snap ring SW8	1
2.1	Base ring	1
2.2	Packing rings	5
2.3	Stuffing box	1
3	Sealing ring Ø8 x Ø17.5 x1.5	1
	For A150-CS / A155-CS: Comb profile seal <i>(not included in the scope of delivery)</i>	
4	Sealing ring Ø22 x Ø27.5	1
5	quick-closing spindle	1
6	Hand lever	1
7	Hexagon screw	1
8	Hexagon nut M6	1
9	Valve body	1
10	Retaining spring	1
11	Valve upper part	1
12	Union nut G1"	1
13	Clamping bracket	1
14	Stud screws	2
15	Hexagon nuts M12	2



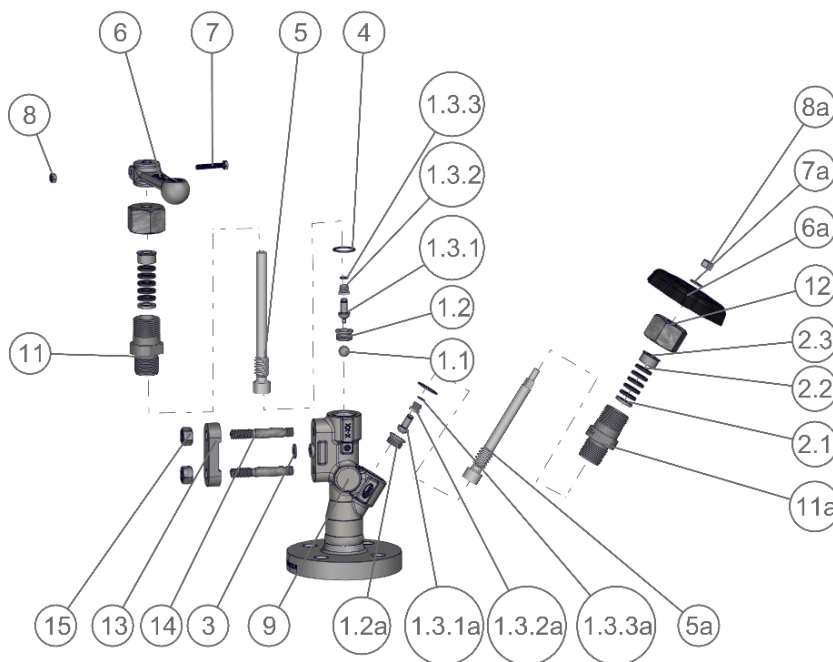
Example: A120-CS



Example: A150-CS

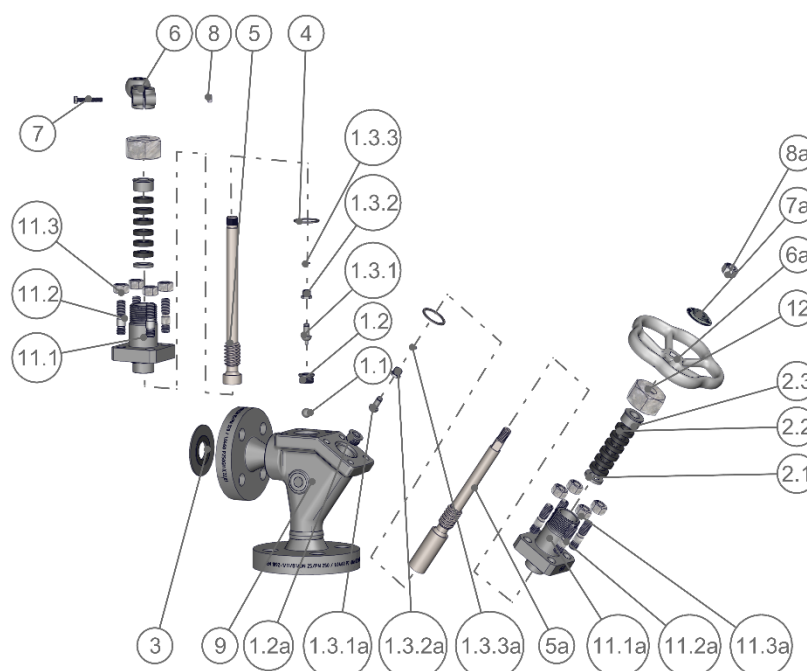
5.4 A210-CS and A220-CS

Pos.	Designation	Quantity
1.1	Ball	1
1.2/ 1.2a	Valve seat	2 x 1
1.3.1	Valve cone with ejector pin	1
1.3.1a	Valve cones	1
1.3.2 / 1.3.2a	Threaded bush M12 x 1.5	2 x 1
1.3.3 / 1.3.3a	Snap ring SW8	2 x 1
2.1	Base ring	2 x 1
2.2	Packing rings	2 x 5
2.3	Stuffing box	2 x 1
3	Sealing ring Ø8 x Ø17.5 x 1.5	1
4	Sealing ring Ø22 x Ø27.5	2 x 1
5	quick-closing spindle	1
5a	Spindle	1
6	Hand lever	1
7	Hexagon screw	1
8	Hexagon nut	1
6a	Handwheel	1
7a	Washer	1
8a	Hexagon nut	1
9	Valve body	1
11 / 11a	Valve upper part	2 x 1
12	Union nut G"	2 x 1
13	Clamping bracket	1
14	Stud screws	2
15	Hexagon nut	2



5.5 A230 and A240

Pos.	Designation	Quantity
1.1	Ball	1
1.2/ 1.2a	Valve seat	2 x 1
1.3.1	Valve cone with ejector pin	1
1.3.1a	Valve cones	1
1.3.2 / 1.3.2a	Threaded bush M12 x 1.5	2 x 1
1.3.3 / 1.3.3a	Snap ring SW8	2 x 1
2.1	Base ring	2 x 1
2.2	Packing rings	2 x 5
2.3	Stuffing box	2 x 1
3	Comb profile seal <i>(not included in the scope of delivery)</i>	1
4	Sealing ring Ø22 x Ø27.5	2 x 1
5	quick-closing spindle	1
5a	Spindle	1
6	Hand lever	1
7	Hexagon screw	1
8	Hexagon nut	1
6a	Handwheel	1
7a	Washer	1
8a	Hexagon nut	1
9	Valve body	1
11 / 11a	Valve upper part	2 x 1
12	Union nut G"	2 x 1
13	Clamping bracket	1
14	Stud screws	2
15	Hexagon nut	2





6 Technical data

6.1 Limitations of use

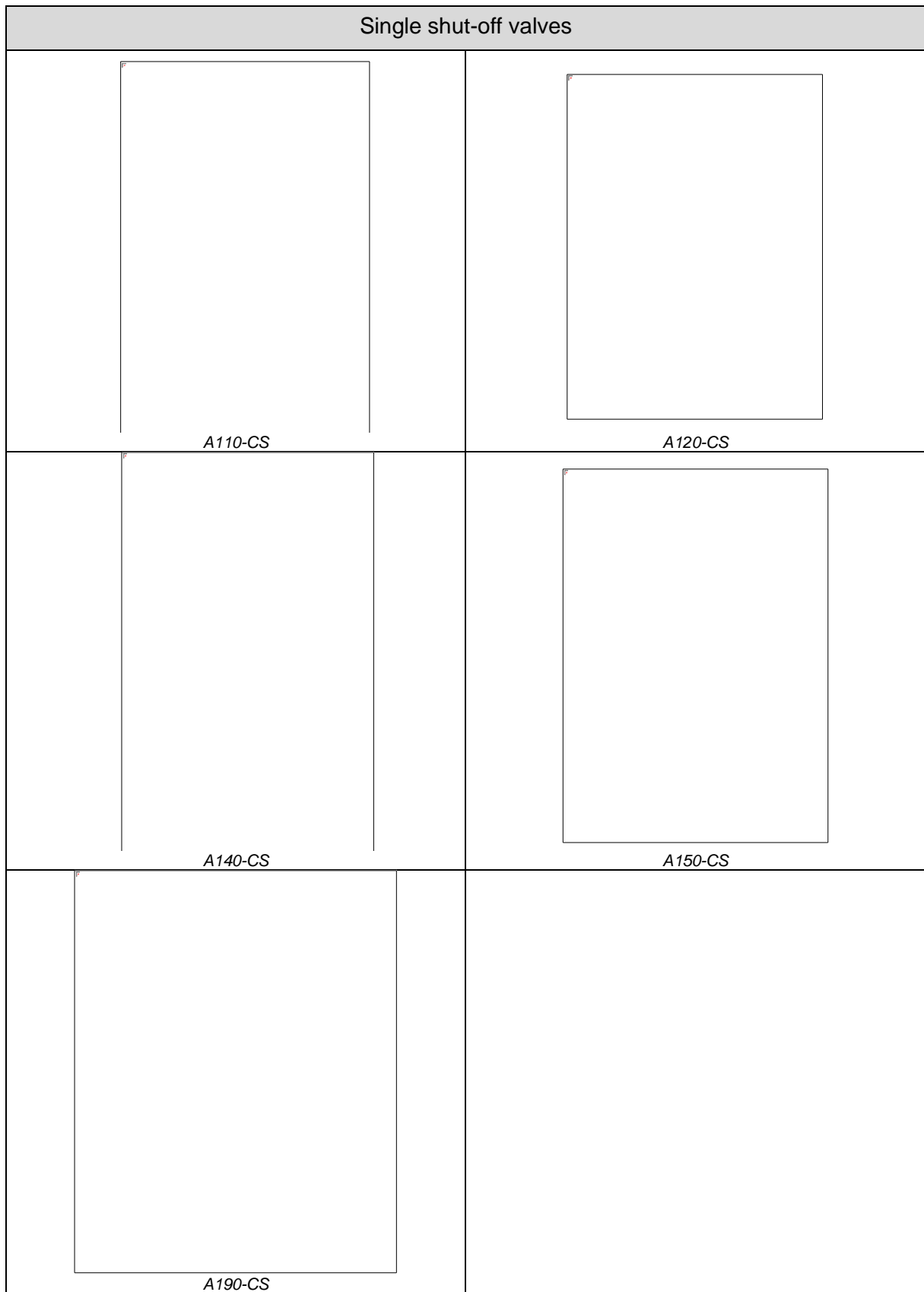
Limitations of use A120-CS	all. Pressure [PS]	all. Temperature [TS]
	32 bar 464 psig	239°C 462°F

Limitations of use A110-CS, A115-CS, A140-CS, A145-CS, A150-CS, A155-CS, A210-CS and A220-CS	all. Pressure [PS]	all. Temperature [TS]
	120 bar 1740 psig	326°C 618°F

Limitations of use A190, A230 and A240	all. Pressure [PS]	all. Temperature [TS]
	200 bar 2900 psig	367°C 692°F

The application limits vary depending on the connections fitted.

6.2 Dimensions





Double shut-off valves			
<div style="font-size: 8px; margin-bottom: 5px;"> The handle position and operation are self-explanatory and are described in the manual of the valve. For any further information, please contact your local distributor. </div> <div style="border: 1px solid black; width: 90%; margin: 0 auto; height: 150px;"></div> <p style="text-align: center; margin-top: 10px;">A210-CS</p>		<div style="border: 1px solid black; width: 90%; margin: 0 auto; height: 150px;"></div> <p style="text-align: center; margin-top: 10px;">A220-CS</p>	
<div style="border: 1px solid black; width: 90%; margin: 0 auto; height: 150px;"></div> <p style="text-align: center; margin-top: 10px;">A230</p>		<div style="border: 1px solid black; width: 90%; margin: 0 auto; height: 150px;"></div> <p style="text-align: center; margin-top: 10px;">A240</p>	

		[mm]	[inch]
Hand lever height	[L1*]		
A110-CS		~146	5 3/4
A120-CS		~176	7
A140-CS			
A150-CS			
A190-CS		~238	9 3/8
A210-CS		~176	7
A220-CS			
A230		~238	9 3/8
A240			

**Dimensions may vary for other versions.
 Connection dimension L can be found on the next page*

6.3 Available dimensions

	Valve type	Process connection	Lateral connection	Connection dimension L		Item number
				[mm]	[inch]	
DIN	A110-CS	Flange EN 1092-1 PN40 DN20	M12 x 48	122	4 ⁴ / ₅	15-18926
	A120-CS	Flange EN 1092-1 PN 40 DN25	M12 x 48	85	3 ¹ / ₃	15-12656
		Flange EN 1092-1 PN 40 DN25	M12 x 48	85	3 ¹ / ₃	15-10773
	A140-CS	Flange EN 1092-1 PN160 DN25	M12 x 48	126	5	15-13673
	A150-CS	Flange EN 1092-1 PN160 DN25	Flange EN1092-1 PN160 DN15	126	5	15-16203
	A190	Flange EN 1092-1 PN320 DN25	Flange EN1092-1 PN320 DN15	170	6 ² / ₃	15-15166
	A210-CS	Flange EN 1092-1 PN40 DN20	M12 x 48	164	6 ¹ / ₂	15-18590
	A210-CS	Flange EN 1092-1 PN160 DN25	M12 x 48	150	6	15-18465
	A220-CS	Flange EN 1092-1 PN160 DN25	Flange EN 1092-1 PN160 DN15	150	6	15-18567
	A230	Flange EN 1092-1 PN160 DN25	M14 x 40	146	5 ³ / ₄	15-00140
	A240	Flange EN 1092-1 PN250 DN25	Flange EN 1092-1 PN320 DN15	155	6 ¹ / ₉	15-06733
	A210-CS	Welding ends DIN EN 10253-2 EN series 3 Ø33.7x3.2	M12 x 48	154	6	15-18525
	A220-CS	Welding ends DIN EN 10253-2 EN series 3 Ø33.7x3.2	Flange EN 1092-1 PN160 DN15	154	6	15-18594
	A220-CS	Welding ends DIN EN 10253-2 EN series 5 Ø33.7x4.5	Flange EN 1092-1 PN160 DN15	154	6	15-18599
	A230	Welding ends DIN EN 10253-2 EN series 3 Ø33.7x3.6	M14 x 40	150	6	15-03389
A240	Welding ends DIN EN 10253-2 EN series 6 Ø60.3x5.6	Flange EN 1092-1 PN320 DN15	167	6 ⁴ / ₇	15-12836	

ASME	A140-CS	Flange B16.5 NPS 1" Class 150	M12 x 48	116	4 4/7	15-15148
		Flange B16.5 NPS 3/4" Class 300	M12 x 48	117	4 3/5	15-16952
	A150-CS	Flange B16.5 NPS 1 1/2" Class 1500	Flange B16.5 NPS 1/2" Class 1500	170	6 2/3	15-17029
	A190	Flange B16.5 NPS 3/4" Class 1500	Flange B16.5 NPS 1" Class 1500	161	6 1/3	15-14905
	A210-CS	Flange B16.5 NPS 3/4" Class 300	M12 x 48	153	6	15-18233
	A210-CS	Flange B16.5 NPS 1" Class 600	M12 x 48	158	6 2/9	15-18523
	A230	Flange B16.5 NPS 1" Class 1500	M14 x 40	161	6 1/3	15-17276
	A240	Flange B16.5 NPS 1" Class 1500	Flange B16.5 NPS 3/4" Class 1500	161	6 1/3	15-10225
	A210-CS	Welding end B16.25 NPS 1" Class 600	M12 x 48	154	6	15-18457
	A240	Welding end B16.25 NPS 1" Class 3000	Flange B16.5 NPS 3/4" Class 1500	157	6 1/6	15-14045

*Other dimensions on request

6.4 Optional versions

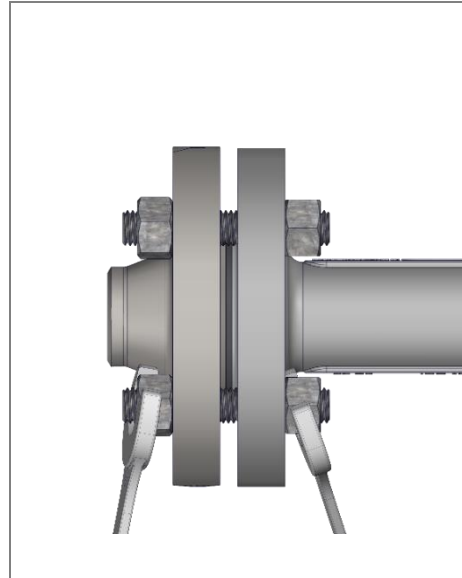
In addition to customer-specific process connections, the valves can also be customised with other features. These operating instructions also apply to these versions.

Examples of optional versions		
With live load packing	Sprocket for remote control	With welding socket
<p>Example: installed in the A140-CS-LL</p>	<p>Example: A120-CS with sprocket</p>	<p>Example: A140-CS with welding socket</p>
	<p>Example: A240 with sprocket</p>	<p>Example: A240 with welding socket</p>

7 Assembly

7.1 Version with flange

- Observe the orientation of the gauge .
- Check sealing surfaces for cleanliness
- Install the flange connection between the gauge and the boiler/pressure vessel according to the applicable standard



7.2 Version with welding sleeve



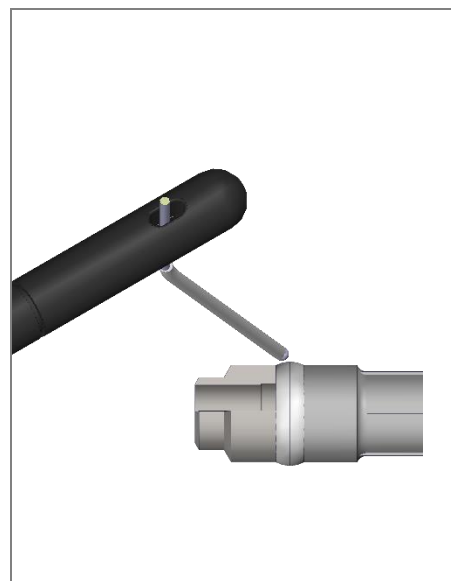
WARNING

Eye damage due to lack of personal protective equipment

Lack of eye protection during welding leads to eye damage in working and bystanders.

- Secure the work area.
- Wear a welding protective mask.

- Observe the orientation of the gauge.
- Remove protection caps. (Transportation lock)
- Assembly only by using welding process 111 (metal-arc welding with covered electrode) or 141 (inert-gas tungsten-arc welding).
- Check on an application-specific basis whether a subsequent heat treatment of the weld seams is required.



8 Commissioning



WARNING

Risk of injury due to leaking medium



Inflammatory, irritating and harmful substances can escape from the gauge and lead to skin injuries and burns. This danger is also to be expected in the case of an unpressurised cooled system.

- Wear protective clothing including safety glasses.
- Check the danger posed by the medium and, if necessary, wear respiratory protection or support.
- Observe the order of work.
- Perform work only when the gauge is depressurized and emptied.
- In principle, do not consider any system to be depressurised.

8.1 Before commissioning



TIP

Leaks that occur during commissioning can self-adjust within a short period of time. If this is not the case, measures must be taken in accordance with *Chap. 10*.

Torque

All valves are pressure tested before delivery. In individual cases, material settlement can occur due to transport, long-term storage or during assembly. All screw connections must therefore be checked for tightness and appropriate torque.



NOTE

Leaks due to insufficient torques

- Check screw connections for appropriate torque and a tight fit.
- 24 hours after commissioning, check all screw connections again for the correct torque and possibly retighten.
- Check for leaks in the first few days after commissioning

Condition of the boiler water

 **NOTE**
Property damage caused by contaminated medium

Impurities in the medium can cause leaks during commissioning and possible subsequent flushing.

- Ensuring the cleanliness of the medium in the best possible way

8.2 Commissioning at the same time as the boiler

 **TIP**

This type of commissioning is recommended by Igema GmbH due to the lower stress on the components.

Commissioning at the same time as the boiler must be carried out in the same way for all gauge types. These steps describe the commissioning of a gauge of type LG40-CS with a shut-off valve of type A120-CS as an example.

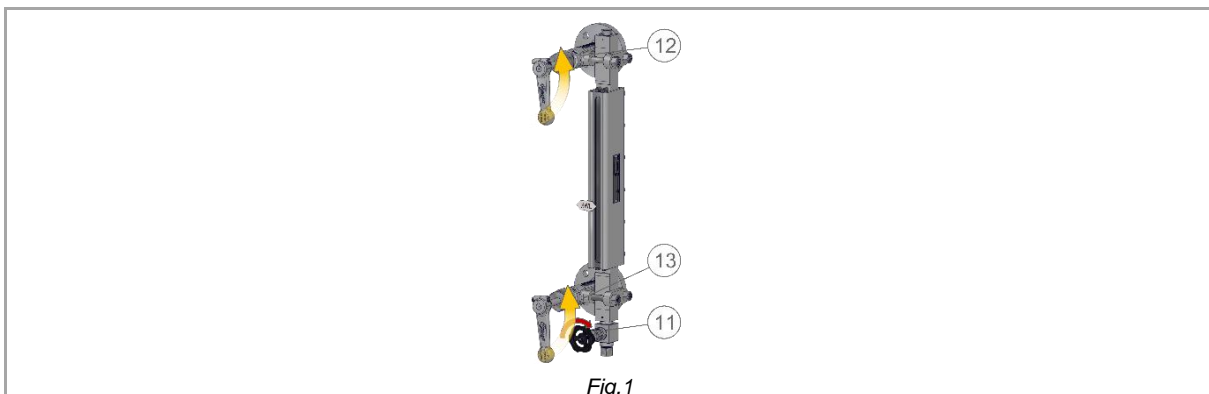


Figure 1:

- Close the drain valve (Pos.11).
- Open the shut-off valves (pos. 12, 13) as far as they will go.

The commissioning of the pressure vessel / boiler with the gauge can now be carried out.

8.3 Commissioning under pressure and temperature loads

With this type of commissioning, the action steps of the gauges must be followed.



TIP

Other commissioning for double shut-off valves

If there are double shut-off valves on the gauge, other things must be ensured before commissioning.

- Close the hand lever.
- Completely open the handwheel

Commissioning can now be carried out as described. If the shut-off valve needs to be opened or closed, this can be done by operating the hand lever of the quick-closing spindle.

If the level of the medium does not become visible, this may be related to the safety function of the ball self-closing in the valve.

- Carry out commissioning as described and ensure that the shut-off valves are opened slowly.

9 Servicing

NOTE

Property damage caused by incorrect spare parts

Replaced spare parts that do not correspond to the characteristics of the original spare parts may cause damage to the gauge.

- Only use original parts from Igema GmbH for replacement.

Material damage due to insufficient or incorrect lubrication

Lubrication of components with inadequate or incompatible lubricants can lead to material damage.

- Ensure compatibility of lubricant and medium
- Ensure compatibility of lubricant and operating temperature.
- Keep spindle threads lubricated.



WARNING

Risk of injury due to leaking medium



Inflammatory, irritating and harmful substances can escape from the gauge and lead to skin injuries and burns. This danger is also to be expected in the case of an unpressurised cooled system.

- Wear protective clothing including safety glasses.
- Check the danger posed by the medium and, if necessary, wear respiratory protection or support.
- Observe the order of work.
- Perform work only when the gauge is depressurized and emptied.
- In principle, do not consider any system to be depressurised.



CAUTION

Cuts caused by sharp objects



During the maintenance of the device, sharp-edged parts may cause injuries.

- Always expect sharp-edged parts and shards due to glass breakage.
- Wear work gloves

9.1 Replacement of seat, cone fitting and ball

On double shut-off valves, the following steps relating to the spindle must be carried out on the quick-closing spindle and on the angled spindle.

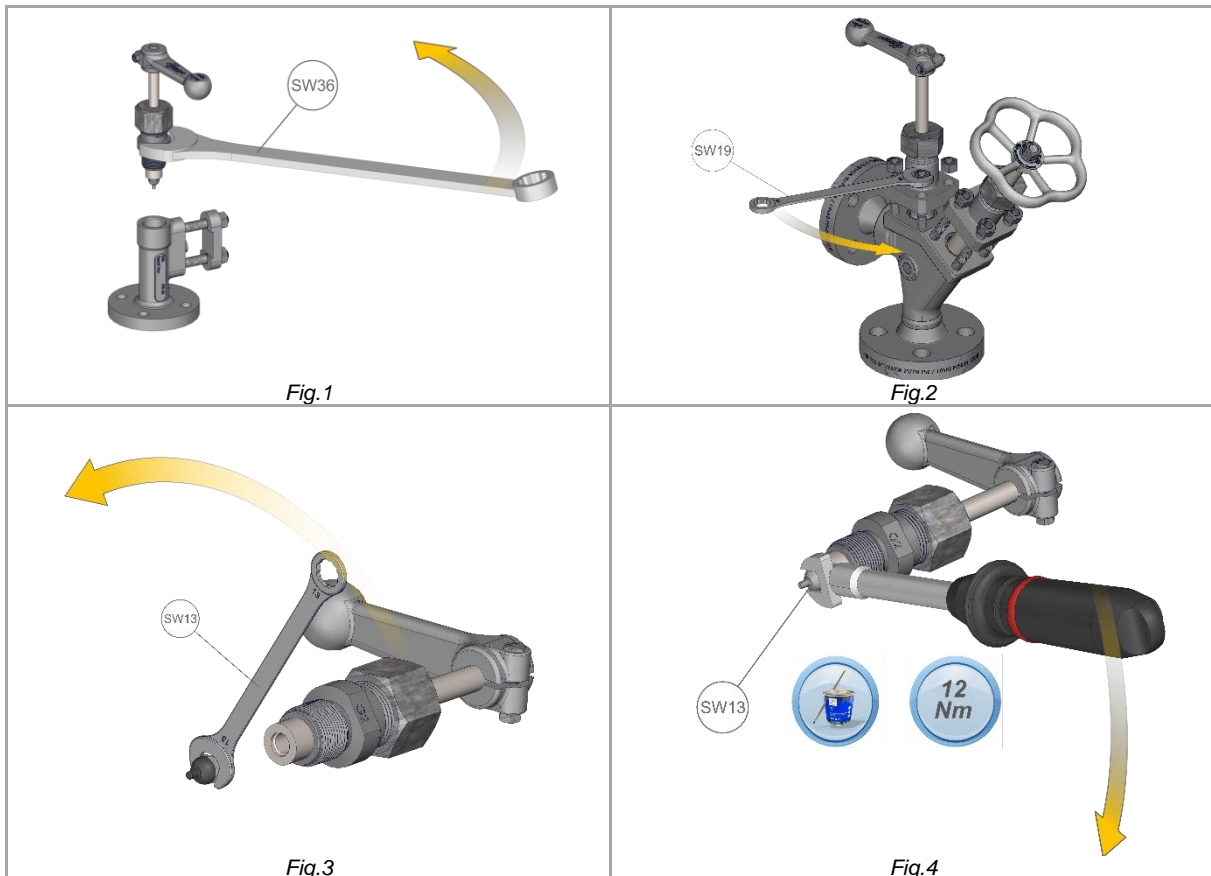



Figure 1/2:

- Unscrew the valve upper part from the valve body.
- Unscrew and remove the valve upper part from the valve body by loosening the nuts.

Figure 3:

- Unscrew the cone fitting from the spindle.

For double shut-off valves, use an SW19 spanner on both plug sets.

Figure 4:

- Lubricate the threads of the new cone fitting.
- Screw a new cone fitting into the spindle.
- Tighten with torque of **12Nm**.

Figure 5/6:

- Unscrew seat with hexagonal wrench (SW10).
- Remove ball, check for damage and replace if necessary.
- Replace the ball seat.

Figure 7/8:

- Grease the new seat on the thread
- Screw in seat with a torque of **70Nm**.

The reassembly (chap. 9.3) can now be done.

9.2 Replacement of packing set





Figure 1/2:

- Unscrew the valve upper part (pos. 11) and remove it from the valve body (pos. 9).

Figure 3/4:

- Loosen the hexagon nut (Pos.8) on the hexagon screw (Pos.7) of the handle (Pos.6).
- Remove the handle from the valve spindle (pos. 5).

For version with handwheel:

- Loosen the hex nut on the spindle
- Remove hand lever from spindle

Figure 5/6:

- Loosen the union nut (pos. 12).

Figure 7:

- Unscrew the valve spindle from the upper part of the valve.

Figure 8:

- Knock the packing set (pos. 2.1, 2.2, 2.3) out of the valve upper part from behind using a punch (Ø14).

Figure 9:

- Remove deposits on the valve spindle without damaging the material.
- Check the sealing surface for contamination and damage.
- Screw the greased valve spindle into the upper part of the valve.

Figure 10:

- Guide the base ring (pos. 2.1), packing rings (pos. 2.2) and stuffing box (pos. 2.3) over the valve spindle.
- Insert the packing set centred in the upper valve part.

Figure 11/12:

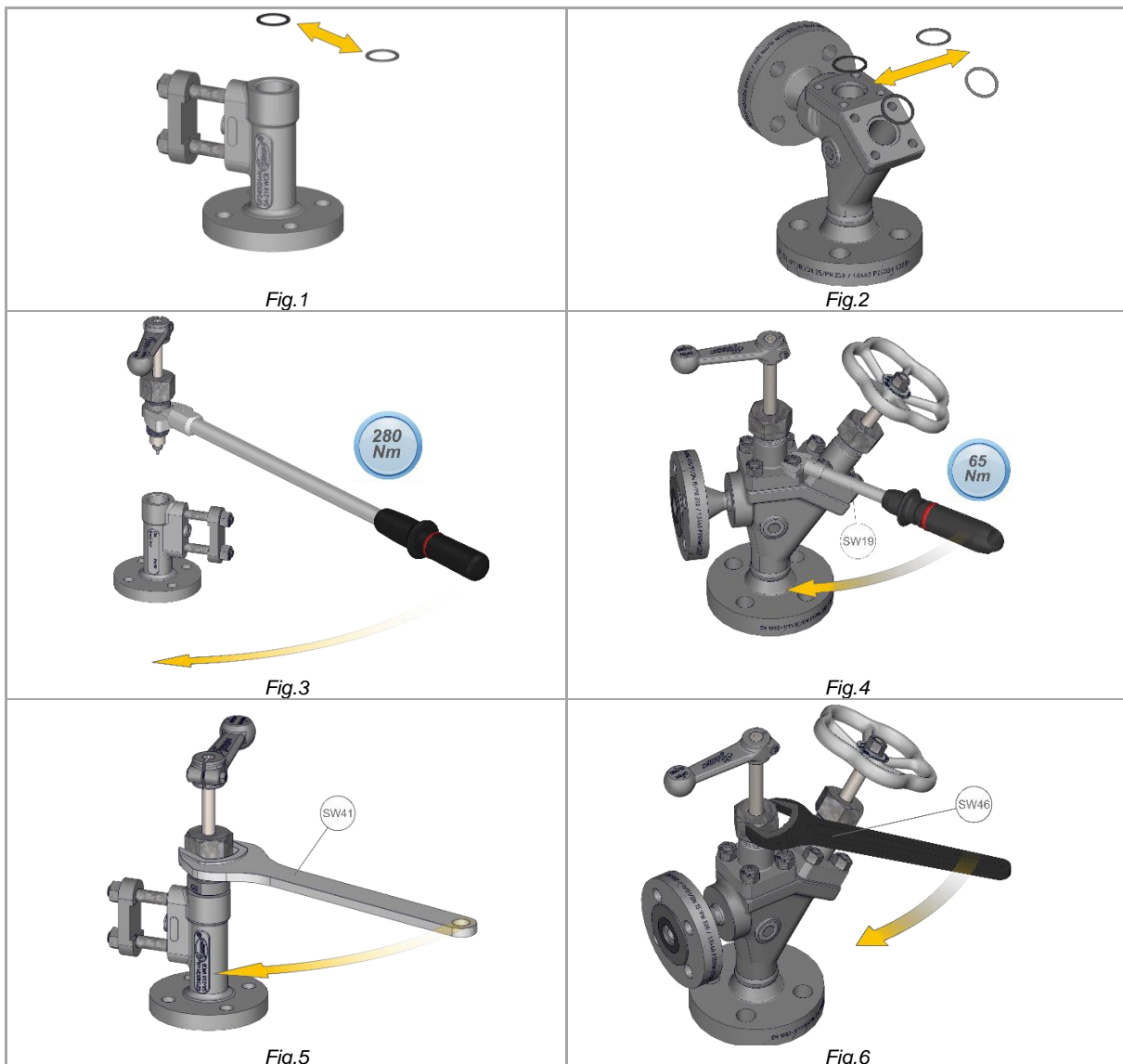
- Unscrew the union nut on the upper part of the valve.

Figure 13/14:

- Place the hand lever/wheel on the valve spindle.
- Tighten the hexagon nut.

The reassembly (chap. 9.3) can now be done.

9.3 Assembly after replacing components


Figure 1/2:

- Replace old sealing rings with new ones.

Figure 3/4:

- The previously assembled assemblies must be professionally pre-assembled.

Shut-off valves without flange on valve upper part.

- Screw the assembly with the valve upper part into the valve body.
- Tighten with a torque of 280Nm.

Shut-off valves with flange on valve upper part.

- Insert the valve upper part into the valve body.
- Tighten the nuts diagonally one after the other with a torque of 65 Nm.

Figure 5/6:

- Tighten the union nut so far that the hand lever/ handwheel can still be rotated.

10 Case of damage

Fault	Cause:	Remediation
Leaks at spindle/stuffing box packing	Insufficient preload on union nut	Increase the torque on the union nut (<i>Chap.10.1</i>).
Permanent leakage at spindle/stuffing box packing	Wear and tear	Replace the stuffing box packing (<i>Chap. 9.2</i>).

10.1 Spindle / gland packing leaks

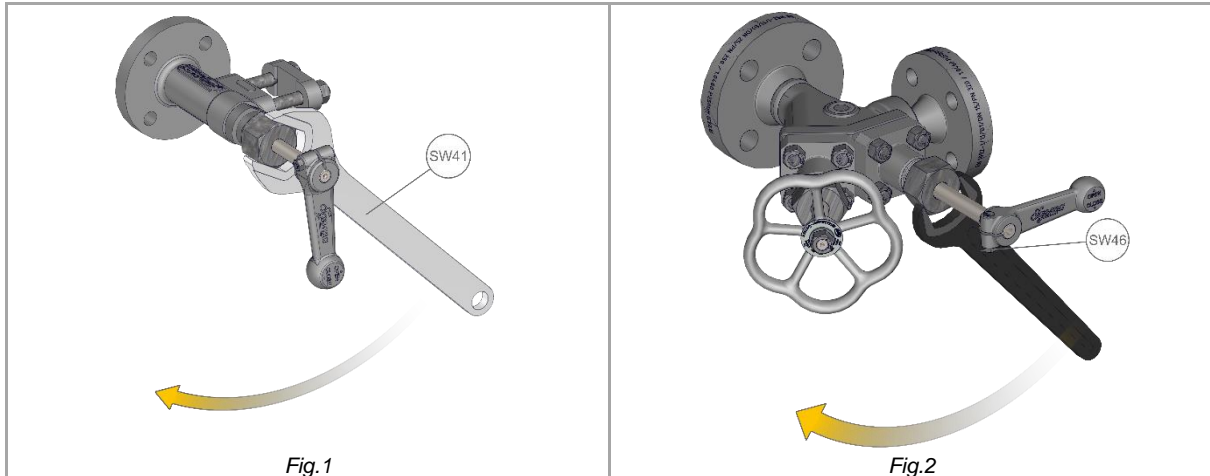


Figure 1/2:

- Tighten the union nut on the appropriate spindle

TIP

The service life of the valve is increased by regularly checking for tightness.

11 Spare parts

i NOTE

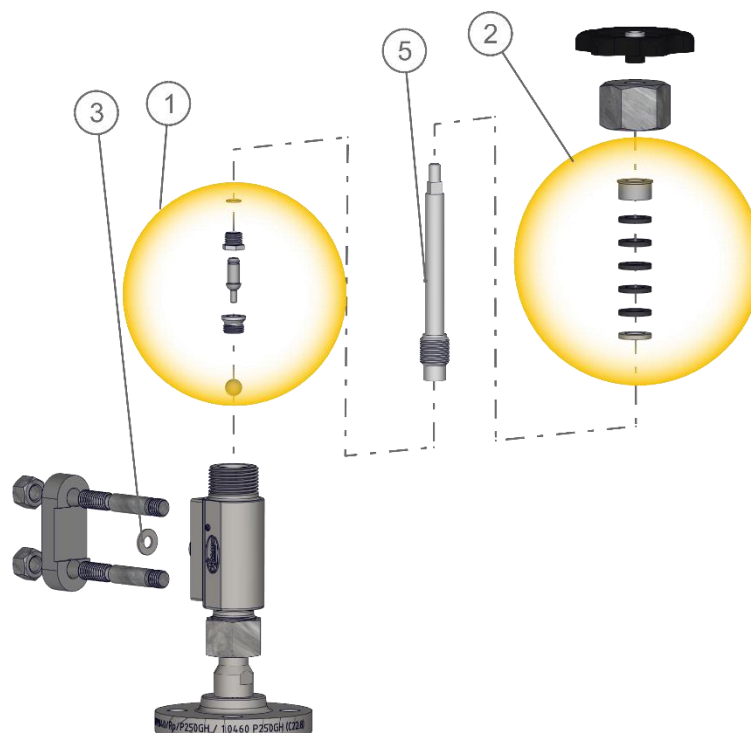
Property damage caused by incorrect spare parts

Replaced spare parts that do not correspond to the characteristics of the original spare parts may cause damage to the gauge.

- Only use original parts from Igema GmbH for replacement.

11.1 A110-CS and A115-CS

Pos.	Designation	Item no.	Quantity
1	Cone fitting, seat, ball	15-00118	1
2	Packing set	15-00113	1
3	Sealing ring $\varnothing 9 \times \varnothing 17.5 \times 1.5$ mm	40-00109	1
5	Spindle	25-00553	1

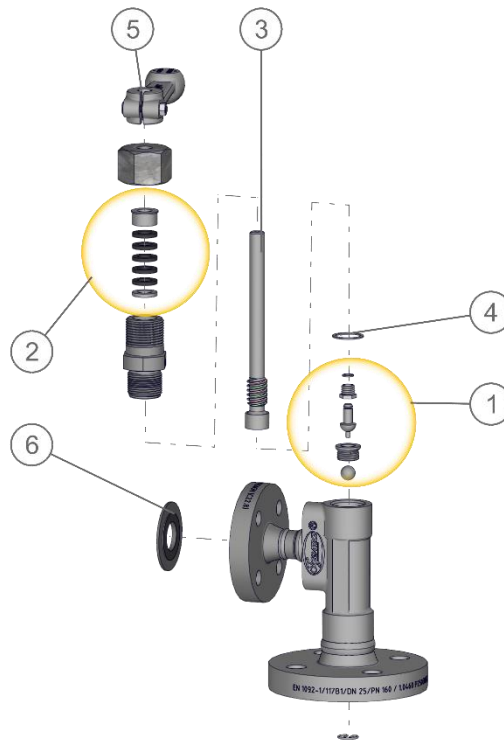


11.2 A120-CS, A140-CS and A145-CS

Pos.	Designation	Item no.		Quantity
		A120-CS	A140-CS / A145-CS	
1	Cone fitting, seat, ball	15-00116		1
2	Packing set	15-00113		1
3	Spindle	25-00553		1
4	Sealing ring \varnothing 22 x \varnothing 27.5 x 1.5 mm	40-00117		1
5	Hand lever	25-00102		1
6	Sealing ring \varnothing 9 x \varnothing 17.5 x 1.5 mm	40-00109	40-00156	1
-	Disc springs for live load packing (n.d.)	40-11375		6

11.3 A150-CS and A155-CS

Pos.	Designation	Item no.	Quantity
1	Cone fitting, seat, ball	15-00116	1
2	Packing set	15-00113	1
3	Spindle	25-00553	1
4	Sealing ring $\varnothing 22 \times \varnothing 27.5 \times 1.5$ mm	40-00117	1
5	Hand lever set	25-00102	1
6	Grooved metal gasket	40-00206	1

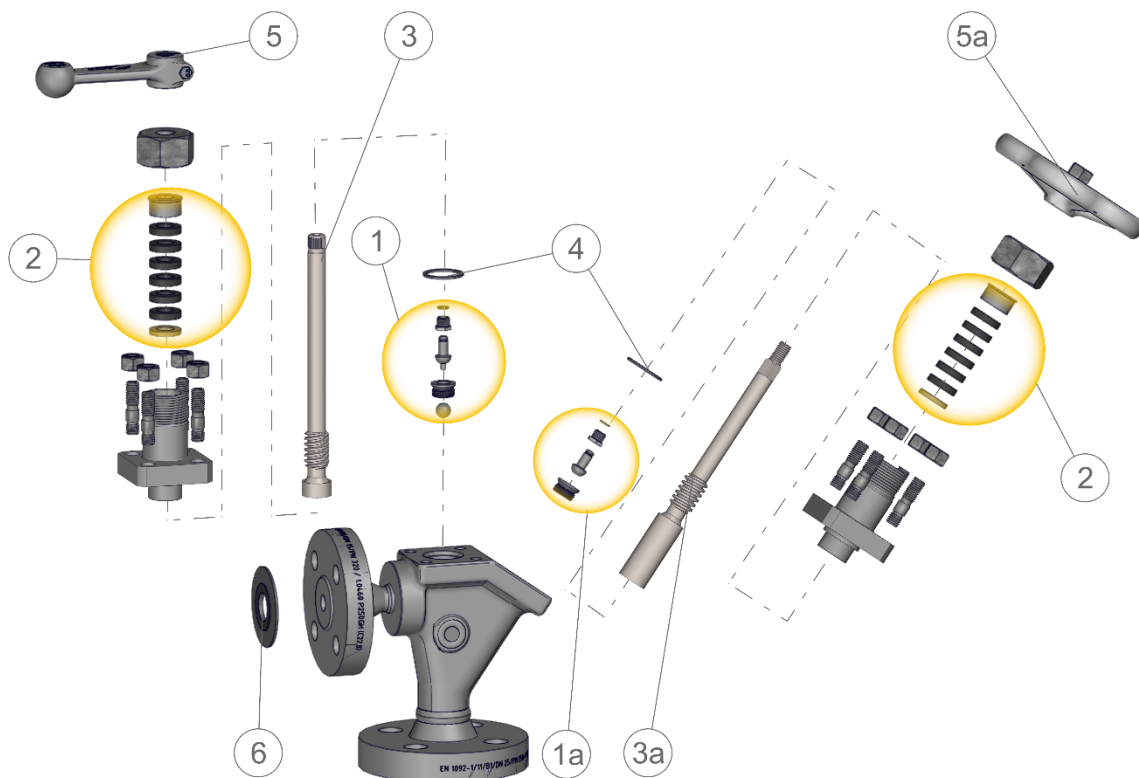


11.4 A210-CS and A220-CS

Pos.	Designation	Item no.	Quantity
1	Cone set, seat and ball	15-00115	1
1a	Cone set and seat	15-00114	1
2	Packing set	15-00113	2
3	quick-closing spindle	25-00126	1
3a	Spindle	25-00652	1
4	Sealing ring	40-00117	2
5	Hand lever set	15-00338	1
5a	Handwheel set	15-00237	1
6	Sealing ring	40-00109	1

11.5 A230 and A240

Pos.	Designation		Item no.	Quantity
1	Cone set, seat and ball		15-00115	1
1a	Cone set and seat		15-00114	1
2	Packing set		15-00113	2
3	quick-closing spindle		25-00126	1
3a	Spindle		25-00652	1
4	Sealing ring		40-00117	2
5	Hand lever set		15-00338	1
5a	Handwheel set		15-00237	1
6	Comb profile seal(A240)	80 - 100 bar	40-00206	1
		160 - 200 bar	40-00207	
	Sealing ring (A230)	80 - 200 bar	40-00112	



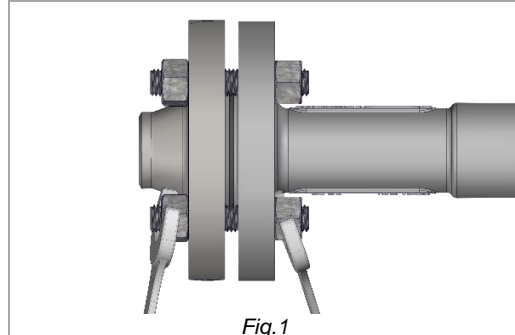
12 Decommissioning and disposal

12.1 Dismantle valve

Flange connections

During the following work, the individual components hang freely and must be secured against falling.

- Loosen nuts on flange connections.
- Removing bolts from flanges
- Secure the seal between the flanges against falling off



Welded connections

Valves and gauges that are firmly connected to each other (e.g. welded connections) must be separated from each other at the connection points. For this purpose, the appropriate tool must be selected according to the application and environment.

Clamp connections

The disassembly with clamping bracket on a gauge of type LG40-CS is described below. The action sequences for valves with clamping brackets are the same for each gauge.

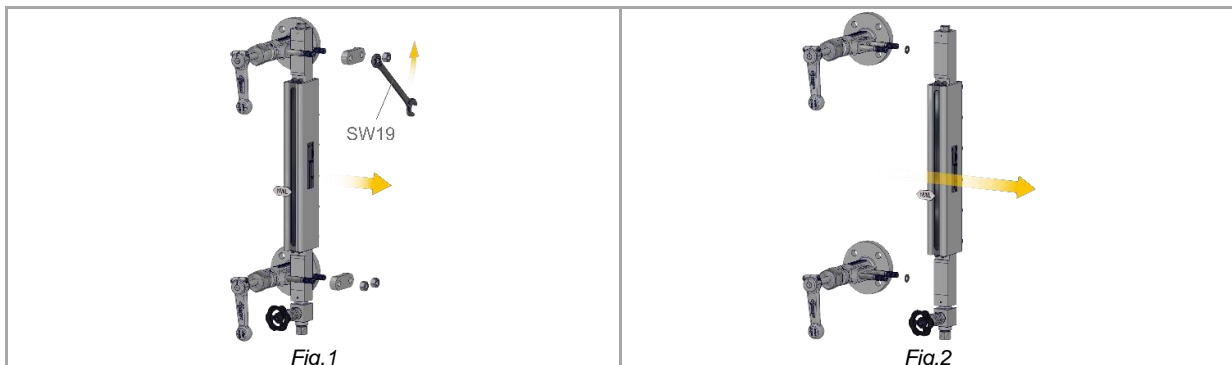


Figure 1

- Loosen the hexagon nuts of the valves.
- Unscrew the hexagon nuts and remove them together with the clamping brackets.

NOTE

Property damage due to impacts

If the gauge is handled, it may be damaged by impacts.

- Secure the display unit against falling.

Figure 2

- Remove the gauge body from the valves.

12.2 Disposal

**ENVIRONMENT****Risk to the environment due to residues**

Residues on the gauge can pose a danger to the environment.

- For returns, observe the applicable safety and environmental laws according to GGVSEB [The Dangerous Goods Ordinance on Roads, Railways and Inland Waterways].
- Indicate possible dangers and take precautionary measures.
- Label possible residues and enclose the safety data sheet.
- Register hazardous substance with the logistics service provider.

Danger to the environment from waste materials

Incorrectly disposed waste materials cause damage to the environment.

- Separating waste materials.
- Comply with local and legal regulations for waste disposal.

**CAUTION****Health hazard due to dangerous residues**

Residues of hazardous substances pose a health hazard.

- Indicate possible dangers and take precautionary measures.



This high-quality IGEMA product was designed, manufactured and tested with the application of the QM System guidelines in accordance with DIN EN ISO 9001:2015.

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



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