Product group	Type
High Performance	441, 442 DIN/ANSI, 441, 442 Full nozzle DIN/ANSI, 455, 456, 457, 458
Modulate Action	433
S & R	440, 424
Critical Service	546

Contents

1 Purpose

This LESER Global Standard (LGS) is assembly documentation for different assembly cases for LESER safety valves of the High Performance series. The required work steps, tools and materials are described.

2 Scope

This document must be used for the assembly of a High Performance safety valve in agencies and subsidiaries of LESER GmbH & Co. KG.

3 References

LGS 3325 (LWN 322-04)
WI 3308-08 (LWN 308.08)
LGS 3324 (LWN 324.01)
LGS 3323 (LWN 322.02)

4 Disclaimer

LESER puts in a great deal of effort into making up-to-date and correct documentation available. Nevertheless, LESER GmbH & Co. KG gives no guarantee that the recommended actions presented here are entirely correct and error free. This document is to be applied exclusively to the specified type. LESER GmbH & Co. KG declines any liability or responsibility for the correctness and completeness of the content.

LESER GmbH & Co. KG reserves the right to change the information contained in this document, which is for the products of LESER GmbH & Co. KG and is intended for LESER subsidiaries, at any time and without prior announcement.

LESER GmbH & Co. KG is available to the users of this document to provide additional information.

5 Qualified assembly personnel

The assembly of LESER safety valves may only be performed by trained or qualified assembly personnel. The qualifications must be obtained through the appropriate training measures.

6 General Information

- Gloves must be worn during the entire assembly.

7 General illustration

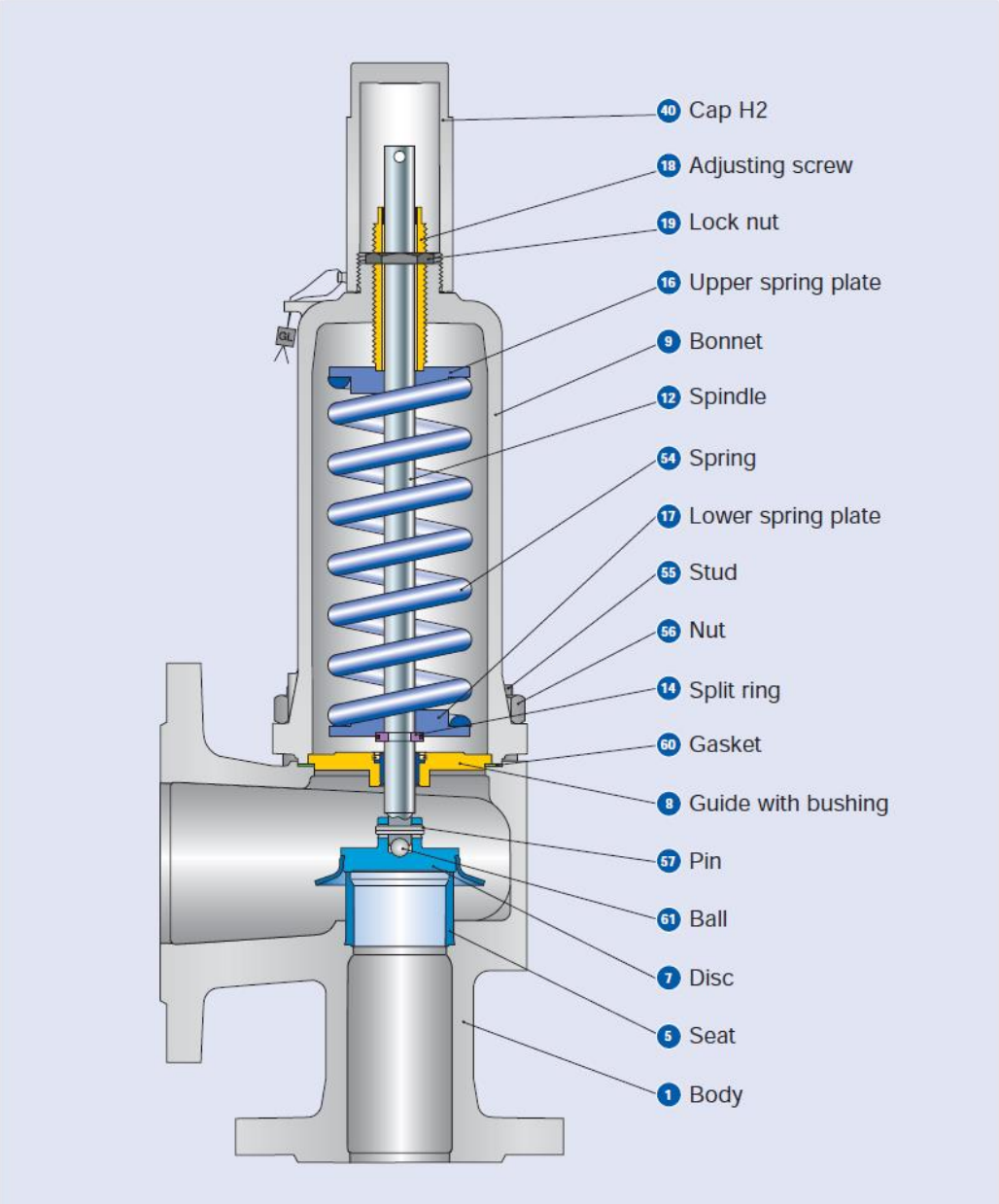


Fig. 7-1 Cross sectional drawing of High Performance 441.

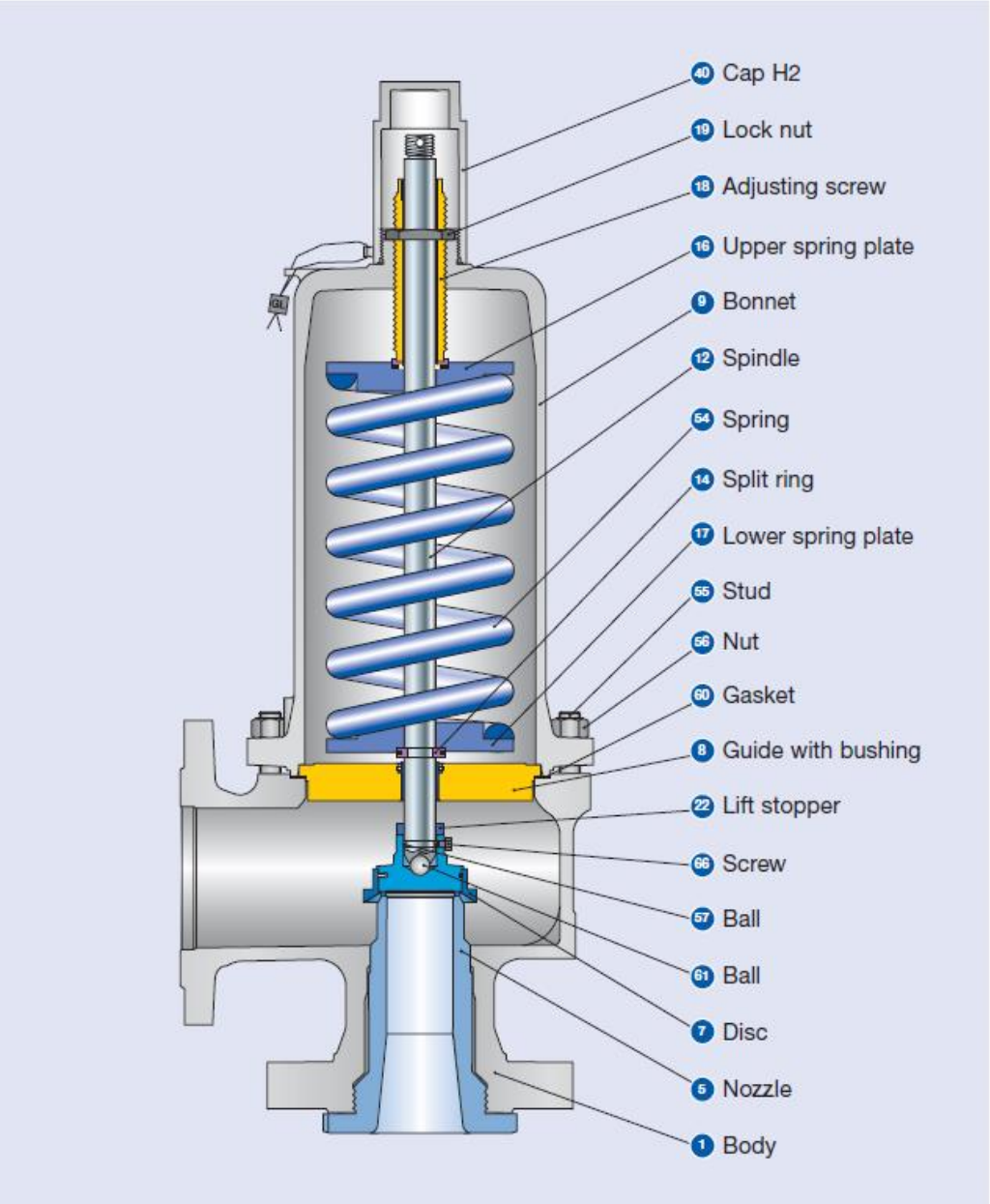


Fig. 7-2 Cross sectional drawing of High Performance 458.

8 Preparation for valve assembly

8.1 Hammer in the punch numbers (if requested in the order).

Illustrations	Description	Aids / Tools
 Figure 8.1-1	Hammer in the markings on the edge of the outlet flange.	Hammer Punch numbers

9 Assembly of the High Performance series

9.1 Assembly of the nozzle (types 441 Full Nozzle, 442 Full Nozzle, 457, 458)

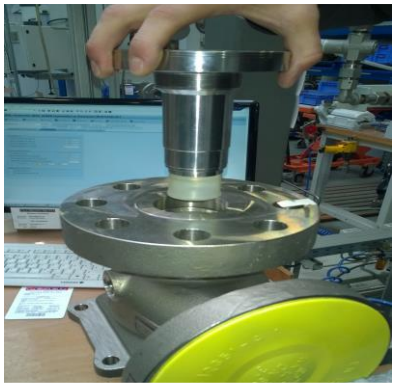
Illustrations	Description	Aids / Tools
 **Figure 9.1-1**	Grease sealing surface	Assembly grease (Molykote Paste), brush
	Leave the protection cap on the nozzle to secure against damage.	
 **Figure 9.1-2**	Screw nozzle into the body.	

 **Figure 9.1-3**	Tighten nozzle with C-spanner (put a small protective slab between the nozzle and C-spanner).	C-spanner with a nose

9.2 Assembly of the seat and the seat screw (types 431, 433 PN160)

Illustrations	Description	Aids / Tools
 **Figure 9.1-1**	Grease sealing surface of the seat and put it in the body.	Assembly grease (Molykote Paste), brush
	Grease sealing surface of the seat screw and put it in the thread of the body.	
 **Figure 9.1-2**	Put the assembly device 60S.2512.3305 on the seat screw and tighten the seat screw with turning moment	

public

9.3 Screw the studs into the body.

Illustrations	Description	Aids / Tools
 Figure 9.2-1	Screw in the studs with an impact wrench. **Tip:** Place the guide washer on the opening of the body so that no studs can fall on the seat.	Impact wrench

9.4 Disc assembly

9.4.1 Assembly of the disc with rotating lifting aid and rollpin

Illustrations	Description	Aids / Tools
 Figure 9.4.1-1	Individual parts of the disc with rotating lifting aid	

Illustrations	Description	Aids / Tools
 **Figure 9.4.1-2**	Crimp the pin inwards at one end to make assembly easier.	Anvil Hammer
 **Figure 9.4.1-3**	Use the head of the hammer to lightly curve the pin (hit in the middle of the pin).	
 **Figure 9.4.1-4**	Put the assembly together (it must be easy to move the disc in the lifting aid by 360°) and secure it with pins.	

9.4.2 Assembly of the disc with a lifting aid and a securing ring

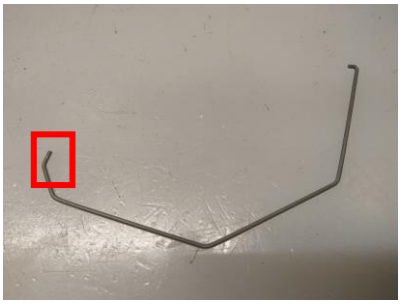
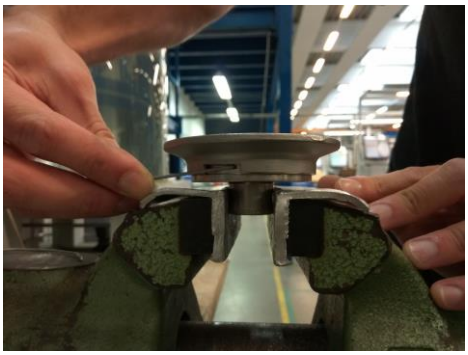
Illustrations	Description	Aids / Tools
 **Figure 9.4.22-1**	Put the disc in the lifting aid with hands. ATTENTION: Sealing surface must not be damaged!!!	-
 **Figure 9.4.22-2**  **Figure 9.4.22-3**	Clamp the disc on the clamping vice and insert the marked end (see Figure 9.3.2-3) of the securing ring in the recess on the side of the disc with hands.	Clamping Vice

Figure 9.4.22-4

Rotate the lifting aid with the sickle spanner.

Figure 9.4.22-5

Rotate the lifting aid until the other end of the securing ring sits in the recess of the disc.

Optional: A very slight use of Halocarbon against higher friction between the disc and the lifting aid, when occurs, is allowed.

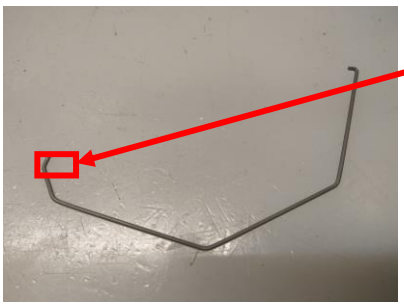
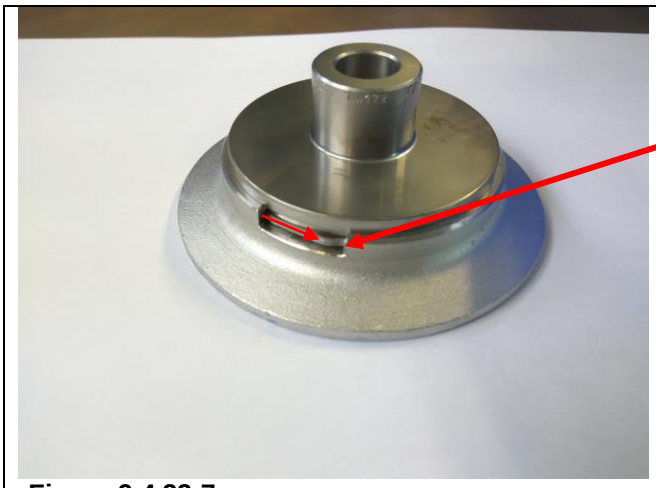


Figure 9.4.22-6

!!ATTENTION!! It is not permitted to rotate the disc after this bent point while tightening.
Reason: Torque increases exponentially if the disc is rotated after this point.

 Figure 9.4.22-7	!!ATTENTION!! The securing ring should be rotated until the end bent point of the securing ring. Rotating of the securing ring further of the end bent point of securing ring must be absolutely avoided.	
	!!!ATTENTION!!! The re-use of an already installed securing ring is not permissible.	

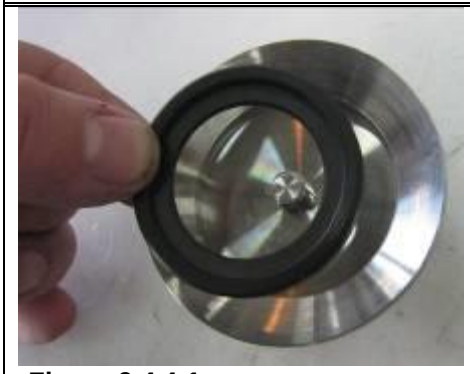
9.4.3 Disc assembly, O-ring disc

Illustrations	Description	Aids / Tools
 Figure 9.4.3-1	Individual parts of the O-ring disc	

 **Figure 9.4.3-2**	Wet O-ring with water and avoid twisting of ring when inserting.	
 **Figure 9.4.3-3**	Insert retainer.	

Illustrations	Description	Aids / Tools
 Figure 9.4.3-4	Screw nut onto neck and tighten. Set torque as per LGS 3325.	Torque wrench
 Figure 9.4.3-5	Secure the nut by hitting it with a centre punch. Hammer in the marking for the O-Ring material according to WI 3308-08.	Centre punch Hammer Punch numbers

9.4.4 Disc assembly, sealing plate

Illustrations	Description	Aids / Tools
 Figure 9.4.4-1	Put the sealing plate in the disc.	

Illustrations	Description	Aids / Tools
 Figure 9.4.4-2	Put the retainer on the sealing plate.	
 Figure 9.4.4-3	Screw nut onto threaded neck and tighten. Set torque as per LGS 3325.	Torque wrench
 Figure 9.4.4-4	Secure the nut by hitting it with a centre punch Hammer in the marking for the sealing plate material according to WI 3308-08.	Punch numbers Hammer Centre punch

9.5 Assembly of spindle/disc assembly

9.5.1 Assembly of spindle/disc assembly (without bellows)

Illustrations	Description	Aids / Tools
 **Figure 9.5.1-1**	Put the ball into the disc body.	
 **Figure 9.5.1-2**	Put the spindle in the disc and secure with a pin.	
 **Figure 9.5.1-3**	Put on lift stopper, if required.	

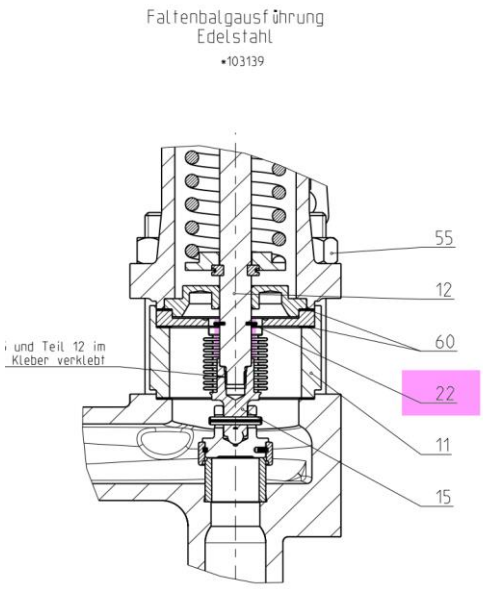
Illustrations	Description	Aids / Tools
 Figure 9.5.1-4	Push the guide washer onto the spindle.	
 Figure 9.5.1-5	Put half-washers in the recess of the spindle and secure with a retaining clip.	
 Figure 9.5.1-6	Push the lower spring plate, the spring and the upper spring plate over the spindle one after the other.	

Illustrations	Description	Aids / Tools
 Figure 9.5.1-7	Push the spacer onto the top spring disc.	

9.5.2 Assembly of spindle/disc assembly (with stainless steel bellows)

Illustrations	Description	Aids / Tools
 Figure 9.5.2-1	Some bellows versions must be screwed together.	
 Figure 9.5.2-2	If the spindle has a thread on the bottom end, then put a minimal amount of superglue on it and quickly screw into the bellows.	Glue WEICON VM20/ 60H.0760.0026(Abbildung Abweichend)

Illustrations	Description	Aids / Tools
 Figure 9.5.2-3	For valves that are smaller in size, the spindle must be greased first in order to avoid any friction from occurring between the bellows and spindle.	
 Figure 9.5.2-4	Insert the ball into the disc body.	
 Figure 9.5.2-5	Put the stainless steel bellows into the disc and secure with a pin.	Lubricant

Illustrations	Description	Aids / Tools
 Figure 9.5.2-6	If required insert the lift stopper.	Hammer Pin punch
 Figure 9.5.2-7	**NEW:** For the types 433 DN 20, 25, 32 and 441 DN 20 the lift stopper (Mat. Nr.: 292.A000.0378) replaces the Retaining Clip 8x1 (Mat. Nr.: 491.1103.0000)	

public

Illustrations	Description	Aids / Tools
 Figure 9.5.2-8	Place the sealing ring on the bellows.	

Illustrations	Description	Aids / Tools
 **Figure 9.5.2-9**	Put on the guide washer (if bellows are not already screwed together with the guide washer)	
 **Figure 9.5.2-10**	Put half-washers in the recess of the spindle and secure with a retaining clip.	
 **Figure 9.5.2-11**	Push on the bottom spring plate.	

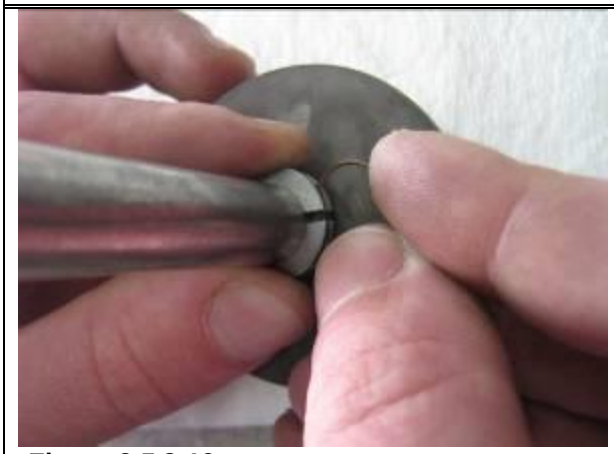
9.5.3 Assembly of spindle/disc assembly (with elastomer bellows)

Illustrations	Description	Aids / Tools
 **Figure 9.5.3-1**	Put the ball into the disc body.	
 **Figure 9.5.3-2**	Put the spindle in the disc and secure with a pin.	
 **Figure 9.5.3-3**	⚠ **CAUTION:** The pin is shorter than usual and must not protrude so that the elastomer bellows are not damaged later.	

Illustrations	Description	Aids / Tools
 Figure 9.5.3-4	Elastomer bellows, hose clamps and guide washer	
 Figure 9.5.3-5	Put the hose clamp onto the elastomer bellows and put both together over the guide washer.	
 Figure 9.5.3-6	Tighten the hose clamp with pliers.	Pliers

Illustrations	Description	Aids / Tools
 **Figure 9.5.3-7**	Put the second hose clamp with the lock opposite the first hose clamp on the elastomer bellows.	
 **Figure 9.5.3-8**	Put the elastomer bellows on the spindle over the neck of the disc.	
 **Figure 9.5.3-9**	Tighten the second hose clamp with pliers. **Attention!** The hole for the pin and lock of the hose clamp must not lie on the seam of the elastomer bellows!	Pliers

public

Illustrations	Description	Aids / Tools
 Figure 9.5.3-10	Put half-washers in the recess of the spindle and secure with a retaining clip.	
 Figure 9.5.3-11	Push the lower spring plate, the spring and the upper spring plate onto the spindle.	

9.6 Inserting the assembly

9.6.1 Inserting the assembly (without bellows or with elastomer bellows)

Illustrations	Description	Aids / Tools
 **Figure 9.6.1-1**	Put the sealing ring in the sealing surface. Put the assembly (depending on the weight and size with or without the spring and top spring plate) carefully into the outlet body.	
 **Figure 9.6.1-2**	In the process, push the guide washer down and lift the spindle somewhat so that the disc does not touch down.	
 **Figure 9.6.1-3**	Carefully put the disc with the spindle down on the seat. Put on the spring and top spring plate (if not already done).	

9.6.2 Inserting the assembly (with stainless steel bellows).

Illustrations	Description	Aids / Tools
 **Figure 9.6.2-1**	Place the sealing ring in the sealing surface of the body.	
 **Figure 9.6.2-2**	Put the bonnet spacer / cooling zone on the body. Insert the sealing ring in the bonnet spacer / cooling zone.	
 **Figure 9.6.2-3**	Put the assembly (depending on the weight and size with or without the spring and top spring plate) carefully into the outlet body. In the process, push the guide washer down and lift the spindle somewhat so that the disc does not touch down. Carefully put the disc with the spindle onto the seat.	

Illustrations	Description	Aids / Tools
 Figure 9.6.2-4	Put on the spring and top spring plate (if not already done).	
 Figure 9.6.2-5	If a thrust bearing is necessary, then assemble as follows: Adapt the axial needle roller to the top disc plate and grease.	Brush Halocarbon (OI-56 S / 60H)
 Figure 9.6.2-6	Put the bearing washer on the axial needle roller and grease as well.	

9.7 Assembly of the bonnet

9.7.1 Assembly of the bonnet up to DN 65 (AKL) with and without bellows

9.7.1.1 Assembly of the bonnet up to DN 65 (AKL) without bellows or with elastomer bellows

Illustrations	Description	Aids / Tools
 **Figure 9.7.1.1-1**	Put the bonnet on the body.	
 **Figure 9.7.1.1-2**	Screw on the nuts and tighten (torque as per LGS 3324).	Open-end spanner Torque wrench

9.7.1.2 Assembly of bonnet up to DN 65 with stainless steel bellows

Illustrations	Description	Aids / Tools
 **Figure 9.7.1.2-1**Error! No sequence specified.	Put the bonnet on the body.	
 **Figure 9.7.1.2-2**Error! No sequence specified.	Screw on the nuts and tighten (torque as per LGS 3324).	Open-end spanner, torque wrench

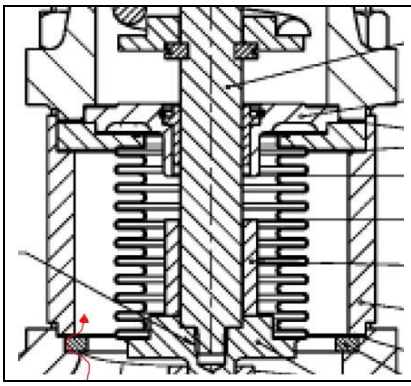
9.7.2 Assembly of bonnet as of DN 80 with and without bellows

9.7.2.1 Assembly of bonnet as of DN 80 without bellows or elastomer bellows

Illustrations	Description	Aids / Tools
 **Figure 9.7.2.1-1**	Put the bonnet on the body and spindle/disc assembly.	
 **Figure 9.7.2.1-2**	Put nuts on studs and tighten (torque as per LGS 3324).	Open-end spanner, torque wrench

9.7.2.2 Assembly of bonnet as of DN 80 with stainless steel bellows

Illustrations	Description	Aids / Tools
 **Figure 9.7.2.2-1**Error! No sequence specified.	Put the bonnet on the body and spindle/disc assembly.	
 **Figure 9.7.2.2-2**Error! No sequence specified.	Put nuts on studs and tighten (torque as per LGS 3324).	Torque wrench

	Put on the cover ring. Put the gasket on the cover ring. Put on the Bonnet spacer.	

9.8 Determination and installation of the lift stopper for small and large valves

9.8.1 Lift stopper with ring/sleeve

9.8.1.1 Procedure for small valves without bellows

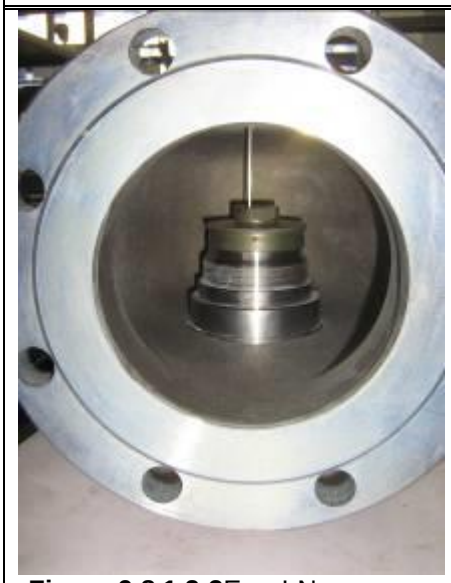
Illustrations	Description	Aids / Tools
 **Figure 9.8.1.1-1**	Take the extent to which the stroke has to be limited from the order. Insert the spindle/disc assembly without the spring and spring disc. Put on the bonnet and tighten the nuts. Make sure the adjusting screw and spindle are flush.	
 **Figure 9.8.1.1-2**	Clamp the body in a vice on the outlet. Carefully open the disc with a screwdriver through the inlet up to the end stop.	Screwdriver
 **Figure 9.8.1.1-3**	Measure the spindle overlap in an opened state. Obtain the stroke requested in the order from this measurement and have the lift stopper made.	Depth gauge

public

9.8.1.2 Procedure for large valves without bellows

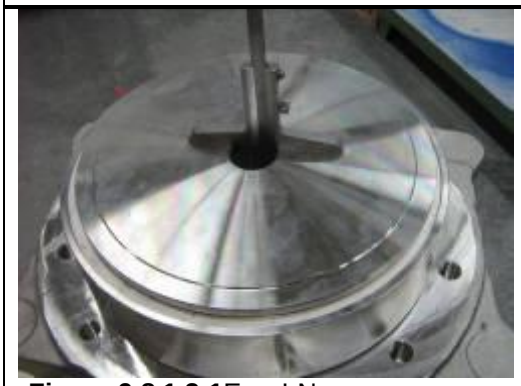
Look in the order to find out at which measurement the stroke is to be stopped.

Illustrations	Description	Aids / Tools
 **Figure 9.8.1.2-1**Error! No sequence specified.	Carefully put the disc on the seat/nozzle and put the sealing ring in the body.	
 **Figure 9.8.1.2-2**Error! No sequence specified.	Put the guide washer on the body and use the depth gauge to measure the path from the top edge of the guide washer to the top edge of the disc.	

Illustrations	Description	Aids / Tools
 **Figure 9.8.1.2-3**Error! No sequence specified.	Deduct the measurement of the guide washer as well as the desired stroke from the order from the total dimensions and have the lift stopper made.	Depth gauge

9.8.1.3 Procedure for valves with bellows

Look in the order to find out at which measurement the stroke is to be stopped.

Illustrations	Description	Aids / Tools
 **Figure 9.8.1.3-1**Error! No sequence specified.	Place the completely assembled disc on the seat and insert the ball. Put the bellows with the guide washer in the body, or alternatively the bonnet spacer. Insert all sealing rings. Use the depth gauge to measure the distance from the top edge of the guide washer to the bottom of the bellows, or alternatively to the built-in lift stopper. Deduct the measurement of the guide washer as well as the desired stroke from the order from the total dimensions and have the lift stopper made.	Depth gauge

9.8.2 Lift stopper with set screw (taken from LWN 324.01)

Take the extent to which the stroke has to be limited from the order.

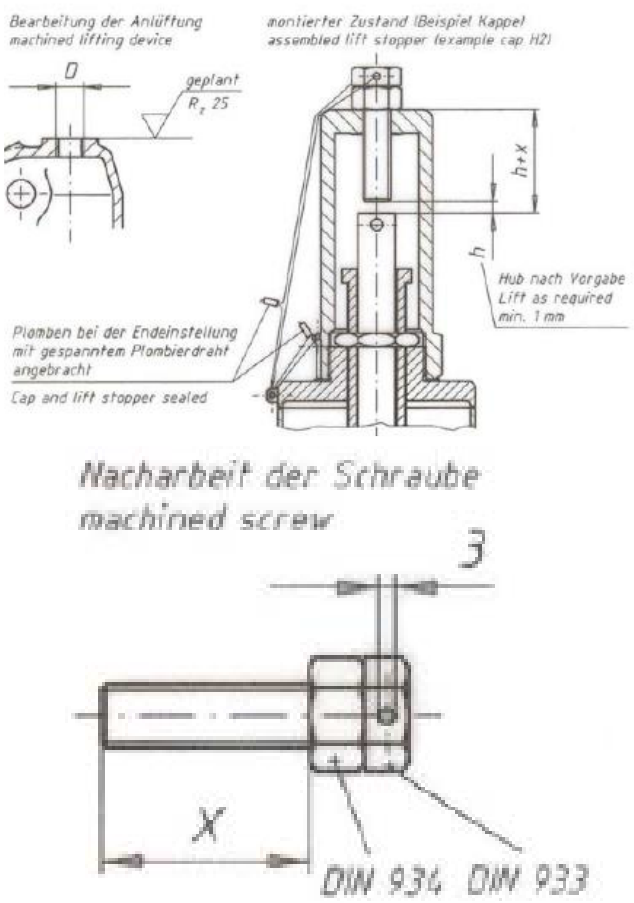
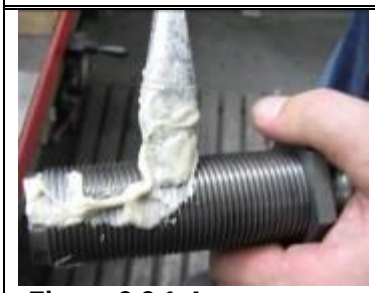
Illustrations	Description	Aids / Tools
	Use a completely assembled valve to measure the distance from the top edge of the cap/lever to the end of the spindle. Deduct the measurement of the guide washer as well as the desired stroke from the ZAKL and have the lift stopper made. Seal the screws with PTFE tape, screw them in and tighten (torque as per LGS 3324).	PTFE tape Depth gauge Open-end spanner

Figure 9.8.2-1

9.9 Adjusting the set pressure

9.9.1 Adjusting screw assembly

Illustrations	Description	Aids / Tools
 **Figure 9.9.1-1**	Individual parts of the adjusting screw	
 **Figure 9.9.1-2**	Put the bushing in the adjusting screw.	
 **Figure 9.9.1-3**	Screw the lock nut on approximately three-quarters of the way down the adjusting screw.	

Illustrations	Description	Aids / Tools
 **Figure 9.9.1-4**	Grease adjusting screw	Assembly grease (Molykote Paste) Brush
 **Figure 9.9.1-5**	Screw into the bonnet until resistance from the spring is felt.	
 **Figure 9.9.1-6**	Secure the spindle from turning with a pin punch.	Open-end spanner Pin punch

Illustrations	Description	Aids / Tools
 **Figure 9.9.1-7**	Slowly pressurise the valve on the test bench to find out whether the valve opens at the set pressure. The set pressure of the valve has been reached when you can hear air escaping. Full opening must be achieved. If the valve opens outside the stipulated set pressure tolerance, then the adjusting screw must be adjusted again. → Turning in a clockwise direction causes the valve to open at a higher pressure → Turning in an anti-clockwise direction causes the valve to open at a lower pressure Release the pressure when readjusting the adjusting screw. Readjust the adjusting screw and then pressurise the valve again.	Pressure gauge
 **Figure 9.9.1-8**	Secure the adjusting screw with the lock nut. Afterwards, check the set pressure once again.	Open-end spanner

9.9.2 Testing the seat tightness P12

This test is performed for every valve after setting the pressure.

The exact execution of the test is described in a separate work instruction ***AA-EF-013***.

9.10 Assembly of the cap / lever

9.10.1 Assembly of cap H2

Illustrations	Description	Aids / Tools
 **Figure 9.10.1-1**	Grease the thread and sealing face of the cap.	Brush Halocarbon (OI-56 S / 60H)
 **Figure 9.10.1-2**	Put on the E-CTFE sealing ring if it is shown in the parts list. **Caution:** The sealing ring may only be used once. If it is necessary to disassemble the cap, the sealing ring must be replaced.	
 **Figure 9.10.1-3**	Screw on the cap and tighten with a spanner (torque as per LGS 3324).	Open-end spanner Torque wrench

9.10.2 Assembly of lever H3

Illustrations	Description	Aids / Tools
 **Figure 9.10.2-1**	Push the spindle cap onto the spindle. Use a pin and retaining clip to secure.	
 **Figure 9.10.2-2**	Put clamping screw into H3 cap at designated place.	Ring spanner
 **Figure 9.10.2-3**	Grease the thread of the lever and screw it onto the bonnet (lever must be opposite from outlet).	Brush Halocarbon (OI-56 S / 60H)

Illustrations	Description	Aids / Tools
 Figure 9.10.2-4	Insert the venting lever into the spindle cap and fasten with a pin and retaining washers.	Pliers
 Figure 9.10.2-5	Make sure that the lever has enough play to vent.	

Illustrations	Description	Aids / Tools
 **Figure 9.10.2-6**	Tighten the clamping screw on the lever.	Ratchet
 **Figure 9.10.2-7**	Completely assembled lever H3	Open-end spanner

9.10.3 Special assembly of H3

Variante	Beschreibung	Steuerung	H3 Anlüftung
A	Position: Standard	-/-	
B	Position: 90° versetzt zum Standard (Richtung Austritt)	Sonder	
C	Position: 180° versetzt zum Standard (Richtung Austritt)	M08	
D	Position: 270° versetzt zum Standard (Richtung Austritt)	Sonder	

public

9.10.4 Lifting devH4

9.10.5 Test of the lifting fork position

right

wrong

Lifting fork assembled wrong (position)

1. working steps

- Before the assembly of the already assembled H4 Lifting dev the position of the lifting fork within the lifting dev has to be checked to guarantee that the lifting dev is working properly.
    - With it take a look from the thread side into the lifting dev and check the position of the lifting fork.

2. aid

- k.A.

3. tool

- k.A.

4. device

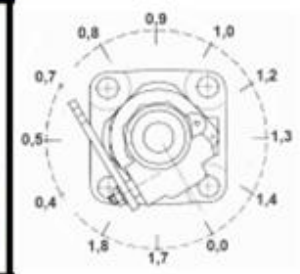
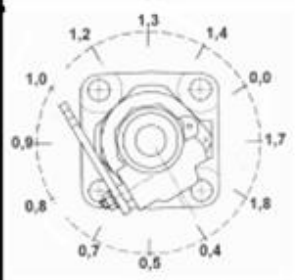
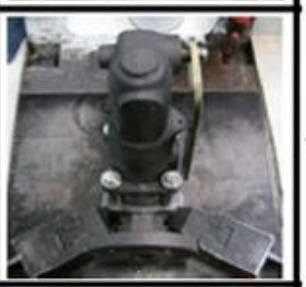
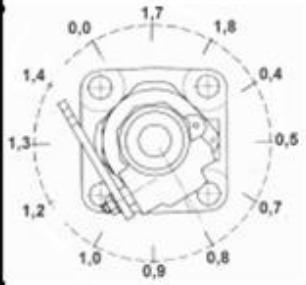
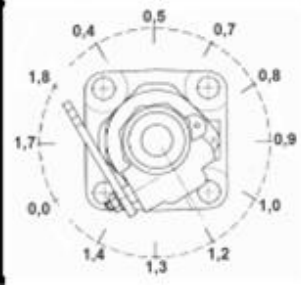
- k.A.

public

9.10.6 Assembly of lever H4

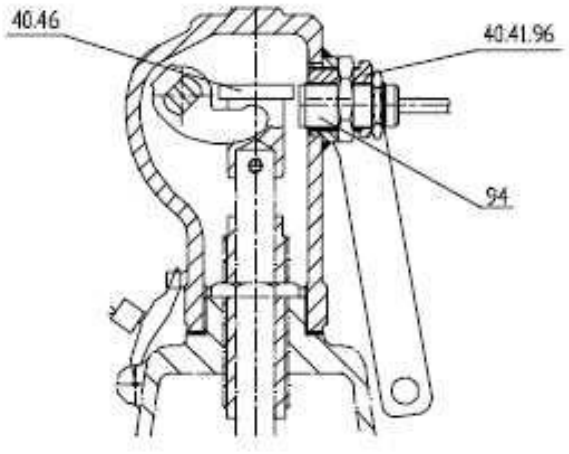
Illustrations	Description	Aids / Tools
 **Figure 9.10.6-1**	Put the spindle cap onto the spindle and secure with a pin and retaining clip.	
 **Figure 9.10.6-2**	Put on the E-CTFE sealing ring if it is shown in the parts list. **Caution:** The sealing ring may only be used once. If it is necessary to disassemble the cap, the sealing ring must be replaced.	
 **Figure 9.10.6-3**	Align the lever with sealing rings so that the lever arm is parallel to the outlet. **Caution:** If multiple E-CTFE sealing rings have to be used, then a metal sealing ring must be inserted between each of them. Grease the lever and matching sealing rings. Put them on and tighten with an open-end spanner (torque as per LGS 3324).	Open-end spanner

9.10.7 Special assembly of H4

Variante	Beschreibung	Steuerung	H4 Anlüftung	
A	Position: **Standard**	-/-		
B	Position: **90° versetzt zum Standard** (Richtung Austritt)	Sonder		
C	Position: **180° versetzt zum Standard** (Richtung Austritt)	M08		
D	Position: **270° versetzt zum Standard** (Richtung Austritt)	Sonder		

public

9.11 Insertion of the lift indicator

Illustrations	Description	Aids / Tools
 **Figure 9.10.710-1**	Individual parts of the lift indicator	
 **Figure 9.10.710-2**	Put the cap into position as described in 10.3 and secure.	Open-end spanner
 **Figure 9.10.710-3**	Put the eccentric hole of the holder into such a position that the collar of the spindle cap would seal on top with the edge of the lift indicator.	Depth gauge

public

Illustrations	Description	Aids / Tools
 Figure 9.10.710-4	Secure the position with a lock nut.	
 Figure 9.10.710-5	Screw the lift indicator into the collar of the spindle cap as far as it will go. Then unscrew it one complete turn. Secure the position of the lift indicator by tightening the first nut hand tight. Then lock with a second nut.	Open-end spanner Depth gauge

9.12 Assembly of the test gag / Assembly short / Plug screw

Illustrations	Description	Aids / Tools
 **Figure 9.10.711-1**	Grease the sealing surface of the short bolt.	Brush Halocarbon (OI-56 S / 60H)
 **Figure 9.10.711-2**	Put on the sealing ring and grease it as well.	Brush Halocarbon (OI-56 S / 60H)
 **Figure 9.10.711-3**	Screw the test gag into the cap or lever and tighten.	Torque wrench

9.13 Assembly of the test gag / Assembly long / Test gag

Illustrations	Description	Aids / Tools
 **Figure 9.10.711-1**	Grease the sealing surface of the long bolt.	Brush Halocarbon (OI-56 S / 60H)
 **Figure 9.10.711-2**	Put on the sealing ring and grease it as well.	Brush Halocarbon (OI-56 S / 60H)
  **Figure 9.10.711-3**	Screw the test gag into the cap or lever and tighten. Attach a red flag with the inscription “blocked” onto the chain of the long screw.	Torque wrench

public

9.14 Assembly of the O-ring damper

9.14.1 O-Ring damper H2 (J65)

Illustrations	Description	Aids / Tools
 **Figure 9.14.1-1**	Individual parts of the O-ring damper H2 (J65)	
 **Figure 9.14.1-2**	Put the support sleeve onto the adjusting screw.	
 **Figure 9.14.1-3**	Put O-ring onto the spindle over the support sleeve. The O-ring must not sit on the cross hole or a thread, if this is present.	

Illustrations	Description	Aids / Tools
 **Figure 9.14.1-4**	Put the counter ring onto the O-ring or support sleeve.	
 **Figure 9.14.1-5**	Put pressure spring onto the counter ring.	

Illustrations	Description	Aids / Tools
 **Figure 9.14.1-6**	Grease the cap on the thread.	Brush Halocarbon (OI-56 S / 60H)
 **Figure 9.14.1-7**	Tighten the cap with an open-end spanner	Open-end spanner

9.14.2 O-ring damper H4 (J66)

Illustrations	Description	Aids / Tools
 **Figure 9.14.2-1**	Individual parts of the O-ring damper H4 (J66)	
 **Figure 9.14.2-2**	Fasten the O-ring damper on the spindle with a steel pin and retaining clip. Then assemble the H4 lever cover as described in 12.3.	

Illustrations	Description	Aids / Tools
 Figure 9.14.2-3	Individual parts of the O-ring damper H4	
 Figure 9.14.2-4	Put the first O-ring - counter ring - second O-ring - support sleeve - spring - cap onto the lever one after the other.	

9.15 Testing the seal tightness of the back seal P21 (seal tightness to the outside)

This test is performed on every gas-tight valve after its assembly.

9.16 Sealing the valve

Illustrations	Description	Aids / Tools
 Figure 9.14-1	If structurally possible (sealing hole/lug on cap/lever and bonnet exist), seal the valve. Otherwise sealing lugs must be welded on at the closest workstation. Closely connect the sealing hole or lug from the cap/lever and bonnet in a clockwise direction and seal the ends of the wire with a lead seal. If classification approvals (TÜV etc.) are required, then seal afterwards.	Sealing pliers Lead seal Seal wire