

**Stafsjö**  
SINCE 1666

# Maintenance instruction

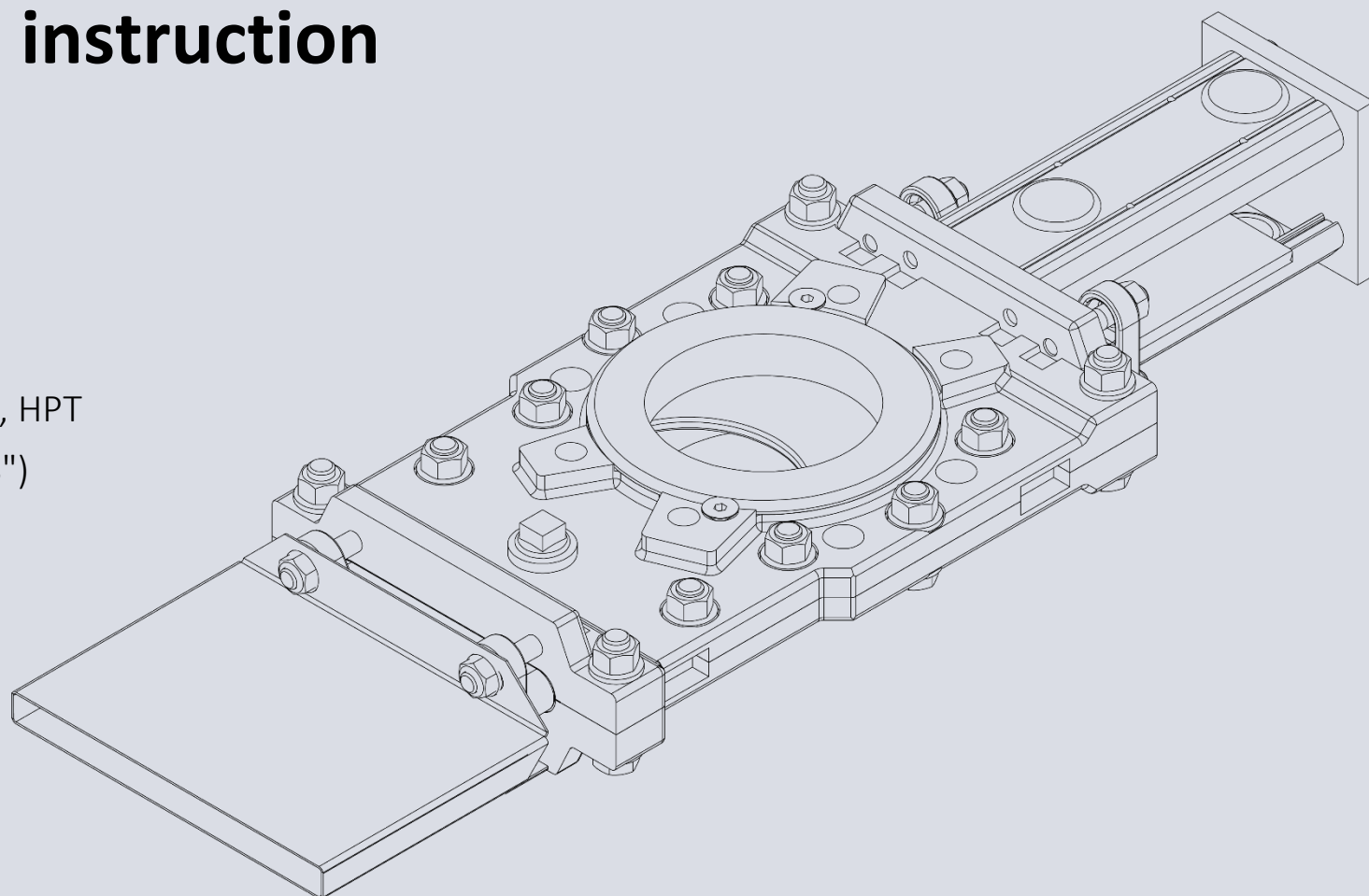
Knife gate valve HG, HPT

DN 50 - DN 150 (2" - 6")

DN 200 - DN 250 (8" - 10")

Knife gate valve HL, HG, HP, HPT

DN 300 - DN 1200 (12" - 48")



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## 1. Introduction

This maintenance instruction is a step-by-step instruction for maintenance of

- A. Knife gate valve HG, HPT in sizes DN 50 - DN 150 (2" - 6").
- B. Knife gate valve HG, HPT in sizes DN 200 - DN 250 (8" - 10").
- C. Knife gate valve HL, HG, HP, HPT in sizes DN 300 - DN 1200 (12" - 48").

In this instruction notes and warnings are marked with symbols:

 XXXXX	<b>Danger / Warning</b> Points out a dangerous situation which may cause personal injuries or death.
	<b>Advice</b> Has to be respected.
	<b>Information</b> Information useful to follow.



If these notes and warnings are not respected by the user, dangerous situations may occur and may invalidate the warranty.

## 2. Spare parts

Each Stafsjö knife gate valve is identified with a label containing the valve item number and its serial number. When corresponding with Stafsjö or our local sales partner, please have this available to make sure you order and receive correct spare parts.


Stafsjö recommends the customer to keep one set of "basic" spare part kit for each valve type and size on stock. Spare parts can be ordered from Stafsjö or our local sales partners.

## 3. Disassembling of valve parts

	<ul style="list-style-type: none"><li>Steps and procedures described in this section are based on a valve which is not installed in a pipe system.</li><li>Follow procedure described in installation and service instruction for the knife gate valve and its actuator.</li><li>Maintenance shall be performed by qualified personnel. Qualified are those people who, due to experience, can judge the risk and execute the work correctly and who are able to detect and to eliminate possible risks.</li><li>Always consider the application of the valve and carefully prepare relevant personal safety equipment before starting any maintenance.</li></ul>
	<ul style="list-style-type: none"><li>Always have the knife gate valve's item and serial number available to ensure you order correct spare parts to your valve.</li></ul>

To simplify the disassembling of the knife gate valve, place the valve on a horizontal work bench.

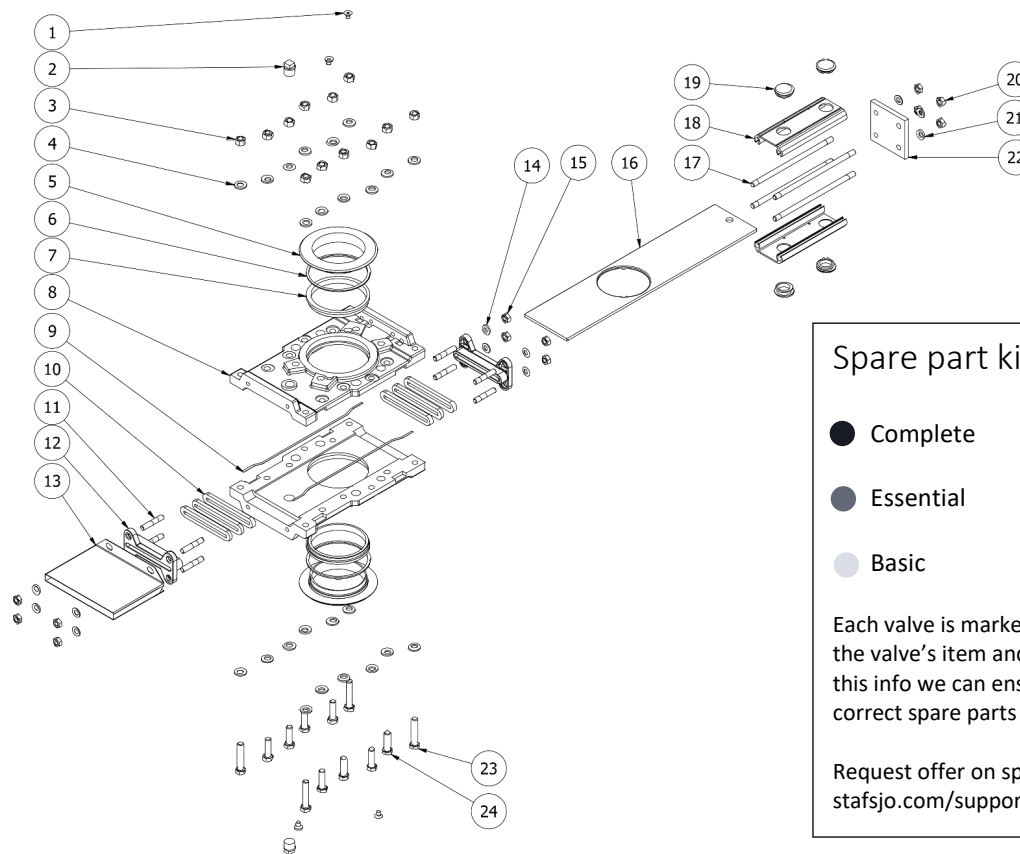
1. Disconnect the air/hydraulic/power supply. Follow procedure described in installation and service instruction for the knife gate valve and its actuator.
2. Disassemble the actuator and top works.
3. Disassemble the glands.
4. Unscrew valve body bolts and remove one valve body side from the other.
5. Remove stuffing box braids and its scrapers (if any).
6. Remove the gate.
7. Inspect the gate for any damages. Dents and scratches will affect its ability to seal tight.
8. Remove retainer rings and the seats.
9. Remove the body gasket/rod/o-ring and guiding pads.
10. Clean the inside of knife gate valve carefully, especially all sealing surfaces.

	<ul style="list-style-type: none"><li>Recycle worn out parts to extent possible.</li></ul>
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A. Knife gate valve HG, HPT in sizes DN 50 - DN 150 (2" - 6").

Pos	Part	Spares		
1	Retainer ring screw	■		
2	Flush port plug			
3	Nut	■		
4	Washer			
5	Retainer ring	■		
6	Seat o-ring	■	■	
7	Seat	■	■	■
8	Valve body side			
9	Body gasket (Grafoil tape)	■	■	
10	Glandbox packing braids	■	■	■
11	Stud bolt	■	■	
12	Gland			
13	Lower gate guard <sup>1)</sup>	■		
14	Washer	■	■	
15	Locking nut	■	■	
16	Gate	■	■	
17	Tie rod			
18	Beam	■		
19	Rubber/plastic plug	■		
20	Nut			
21	Washer			
22	Yoke (temporary)			
23	Long bolt	■		
24	Short bolt	■		

1) Lower gate guard together with beam gate guards are only supplied when the valve is remote operated.



### Spare part kits

- Complete
- Essential
- Basic

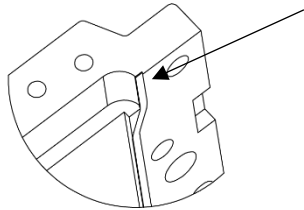
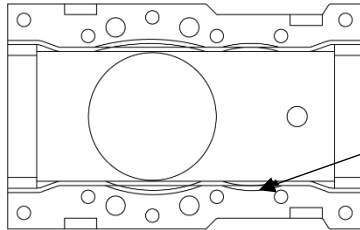
Each valve is marked with a label including the valve's item and serial number. With this info we can ensure you receive correct spare parts to your valve.

Request offer on spare parts at [stafsjo.com/support/original-spare-parts/](https://stafsjo.com/support/original-spare-parts/)



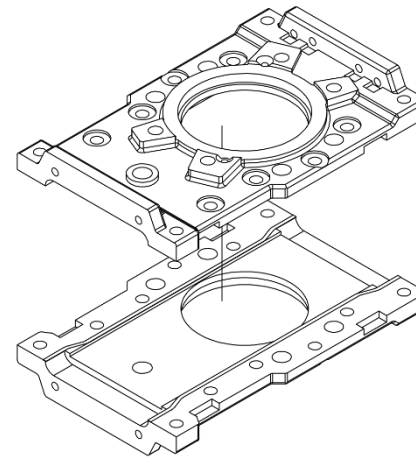
- Always consider the application of the valve and carefully prepare relevant personal safety equipment before starting any valve assembly.
- Valve assembly shall be performed by qualified personal. Qualified are those persons who, due to experience, can judge the risk and execute the work correctly and who are able to detect and to eliminate possible risks.

A1

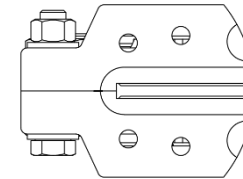


- Clean the valve body surface for the grafoil tape.
- Place the grafoil as close to the bolt holes as possible without cracking the grafoil tape.
- 1/3 of the grafoil should be inside the gland box and protrude 5 mm on the outside (top).
- Only one valve body needs grafoil tape!

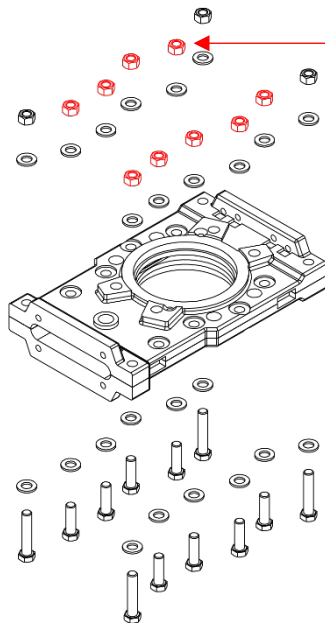
A2



- Put the valve body sides together.



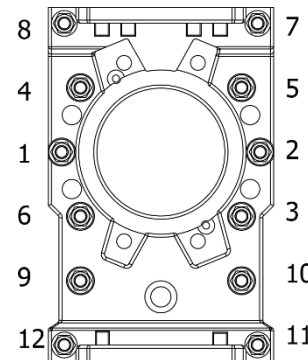
A3



Flat/low nut.

- Apply thread paste. Not for FZB bolts.
- Assemble the body boltings.
- Nut should be on the front/top side.
- Kit can include several different bolt lengths and nut sizes.
- Assemble valve body bolts manually before using machine support.

A4



Torque (Nm) for flat/low nut

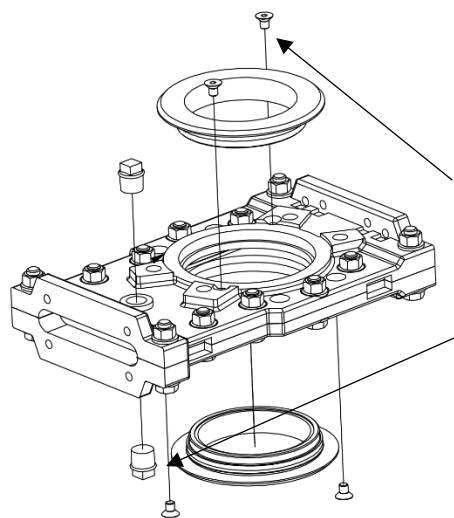
Valve size	Bolt	Nm A2-70	Nm A2-80	Nm FZB 8,8
DN 80-DN 150	M12	42	50	52

Torque (Nm) for standard nut

Valve size	Bolt	Nm A2-70	Nm A2-80	Nm FZB 8,8
DN 80-DN 150	M12	60	75	80

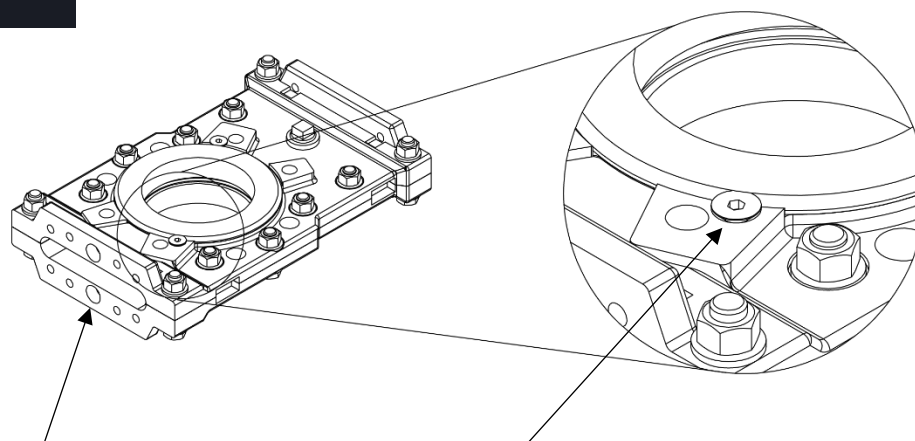
Tighten the bolts crosswise, **minimum twice**.

A5



- Assemble the seat onto the retainer ring according to “**Re-packing instruction**”.
- Push the flange rings onto the valve body, one set on each side.
- Tighten the retainer ring screw. Top of the retainer ring screw must not be higher than the retainer ring surface.
- Install the flush plug with Teflon gasket. Tighten with 5 Nm.

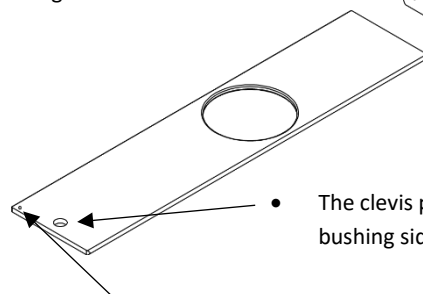
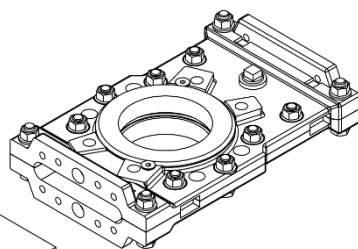
A6



- Knock in the stem bushing into the hole. It should be put in place on the bolt head side.
- Top of the retainer ring screw must not be higher than the retainer ring surface.

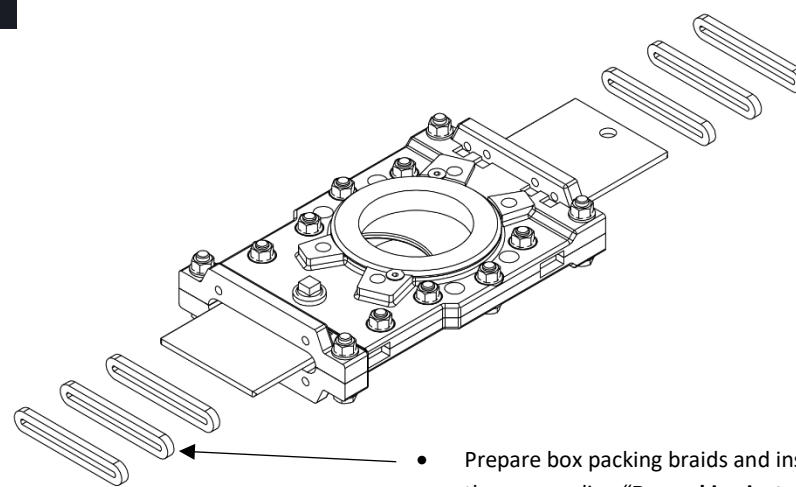
A7

- Insert the gate into the valve body until it has the same protrusion on both sides. If it is difficult to insert it, loosen the retainer rings a bit.



- The clevis pin hole should be on the bushing side / top works side.
- The gate indicator hole should be on the left side.

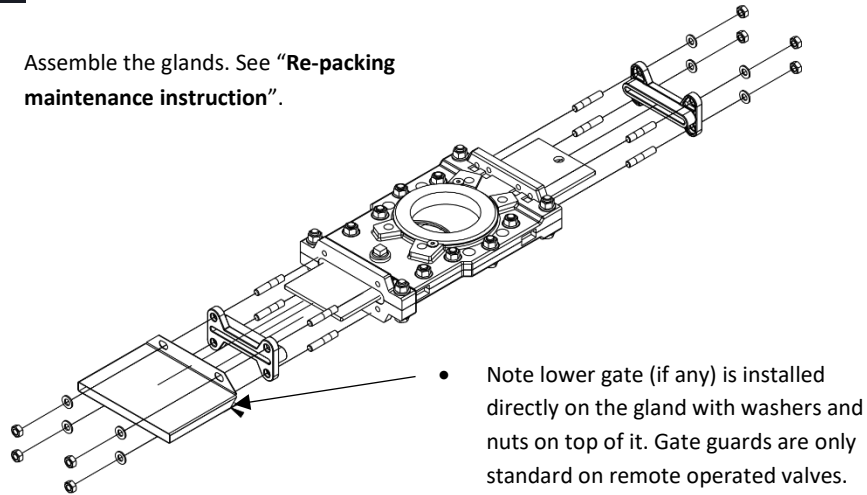
A8



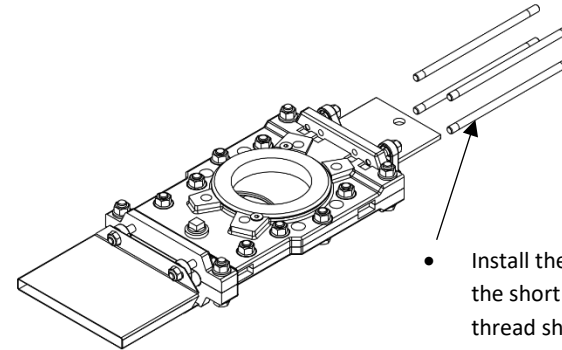
- Prepare box packing braids and install them according to “**Re-packing instruction**”.

A9

- Assemble the glands. See “**Re-packing maintenance instruction**”.



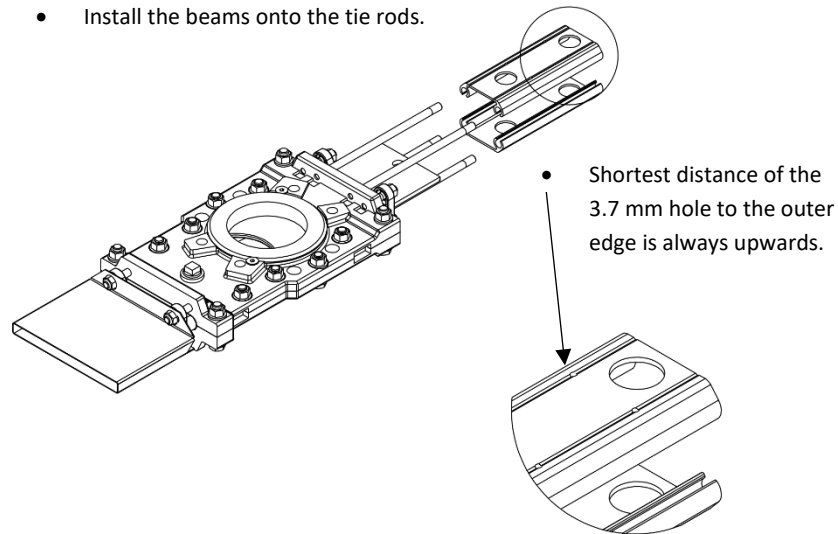
A10



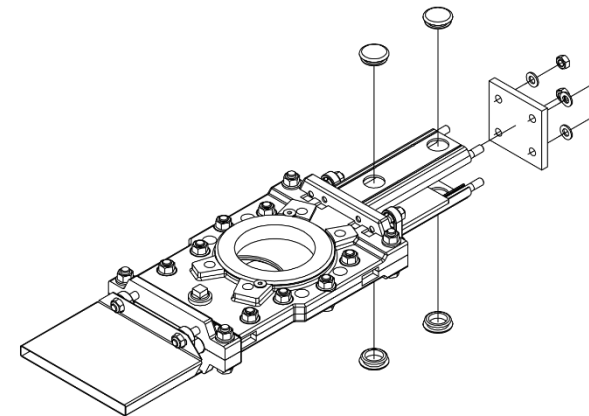
- Install the tie rods manually with the short thread end first. Long thread should be against the actuator against the actuator. Use thread paste on all threads.

A11

- Install the beams onto the tie rods.



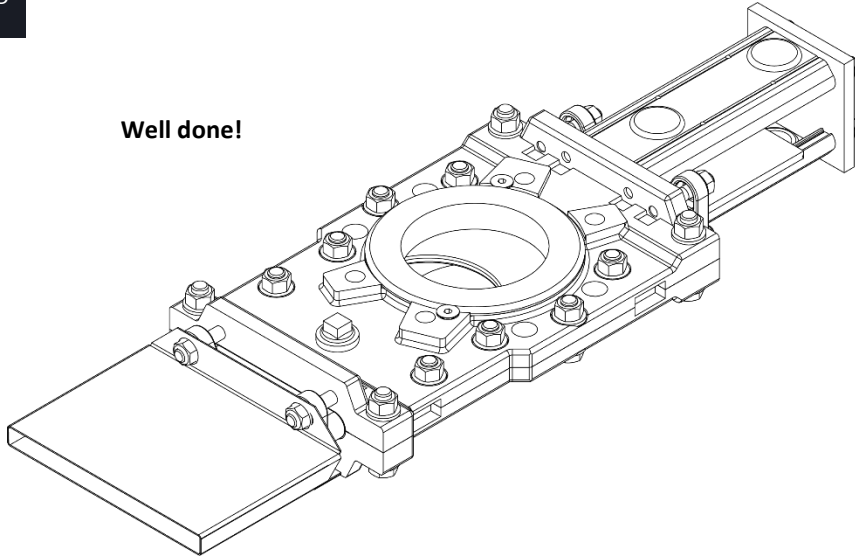
A12



- Install black plugs in the beams.
- Assemble temporary wooden plate if the valve should be left in storeroom.
- You are now ready to continue with assembly of actuator you intend to use on the valve, automation equipment and relevant gate guards (if any). Observe and respect relevant instructions.

A13

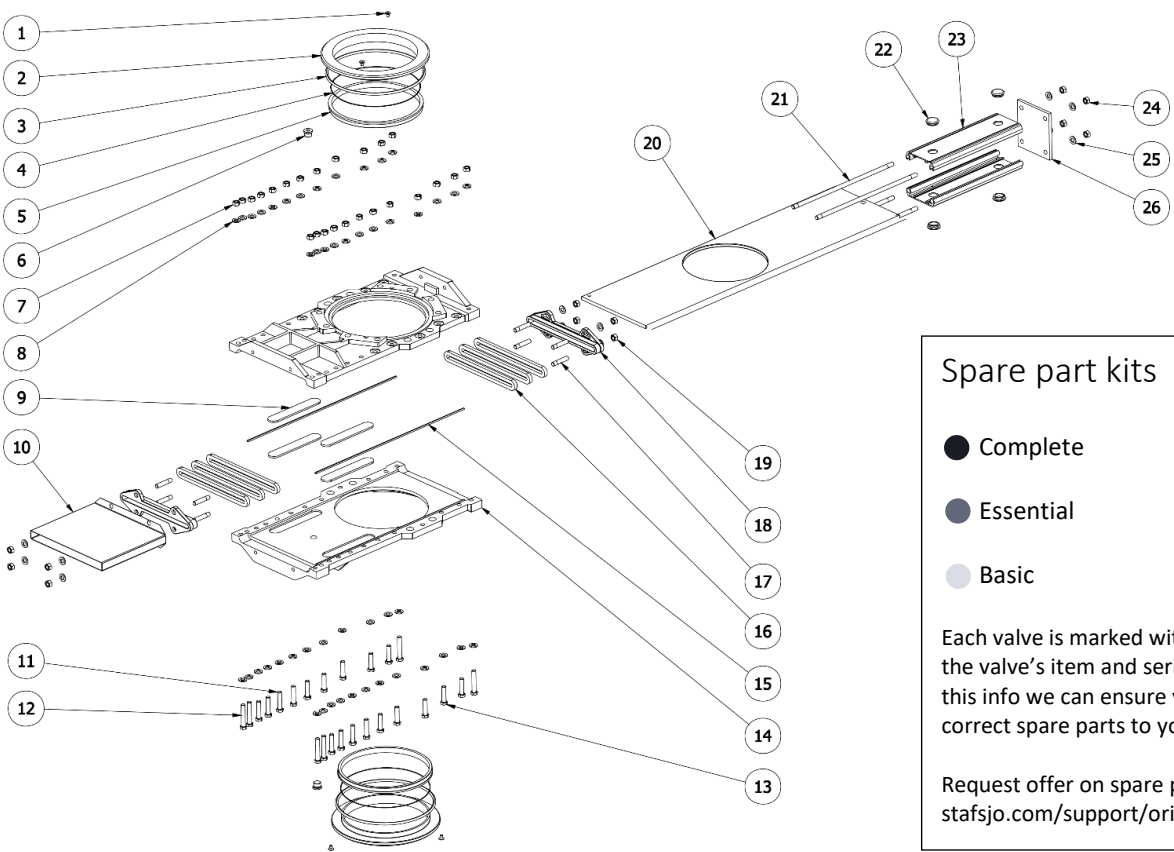
**Well done!**



B. Knife gate valve HG, HPT in sizes DN 200 - DN 250 (8" - 10").

Pos	Part	Spares	
1	Retainer ring screw		
2	Retainer ring		
3	Seat o-ring		
4	Seat o-ring		
5	Seat		
6	Flush port plug		
7	Nut		
8	Washer		
9	Guiding pad		
10	Lower gate guard <sup>1)</sup>		
11	Bolt		
12	Bolt long		
13	Bolt short		
14	Valve body side		
15	PTFE body seal		
16	Glandbox packing braids		
17	Stud bolt		
18	Gland		
19	Locking nut with washer		
20	Gate		
21	Tie rod		
22	Plug		
23	Beam		
24	Nut		
25	Washer		
26	Yoke (temporary)		

1) Lower gate guard together with beam gate guards are only supplied when the valve is remote operated.



Spare part kits

● Complete

● Essential

● Basic

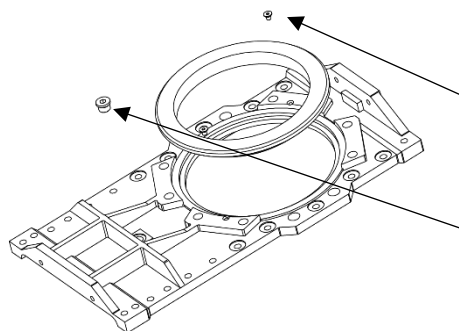
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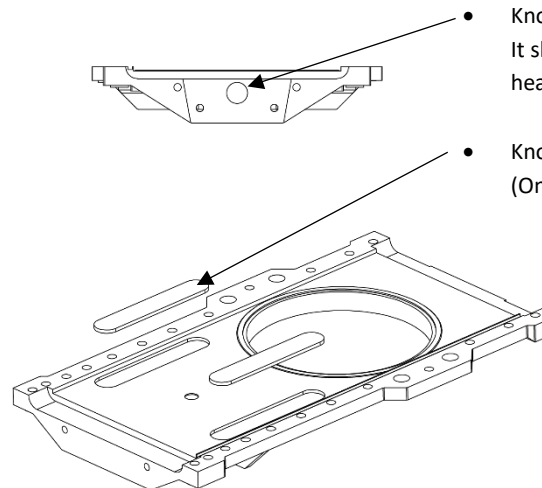


B1



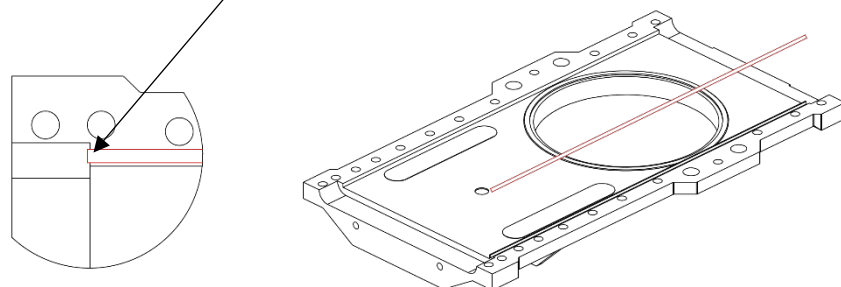
- Assemble the seat onto the retainer ring according to “**Re-packing instruction**”.
- Push the flange rings onto the valve body side.
- Tighten the retainer ring screw. Top of the retainer ring screw must not be higher than the retainer ring surface.
- Install the flush plug with Teflon gasket. Tighten with 5 Nm.

B2



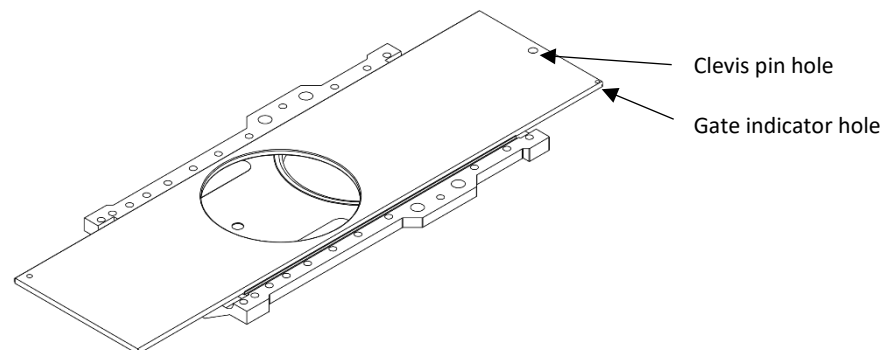
- Knock in the stem bushing into the hole. It should be put in place on the bolt head side.
- Knock the PTFE guiding pads in place (Only on DN 250 and larger).

B3



- Cut the **PTFE rod** so you have about 3 mm protrusion in the gland box, on each side.
- Put the **PTFE rods** aside.

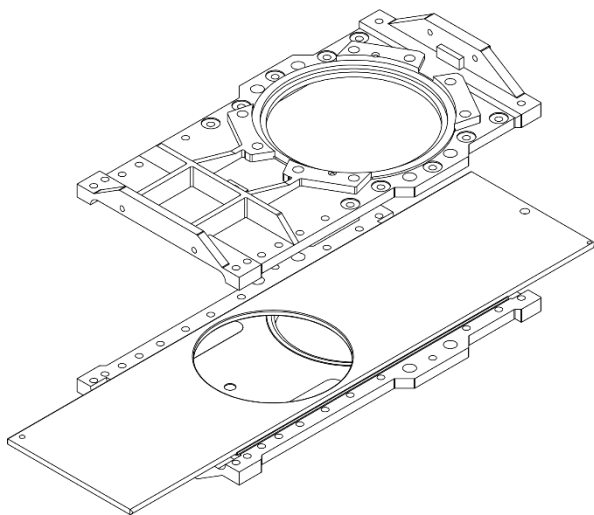
B4



- Put the gate in place with equal protrusion on each side.
- The clevis pin hole should be on the bushing side.
- The gate indicator hole should be on the right side when viewed from above.

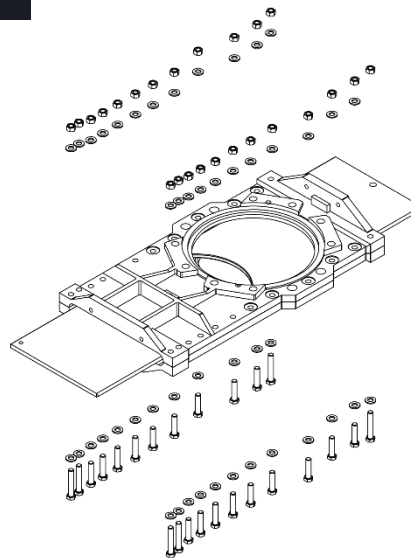
B5

- Put the other valve body side on top of the other.



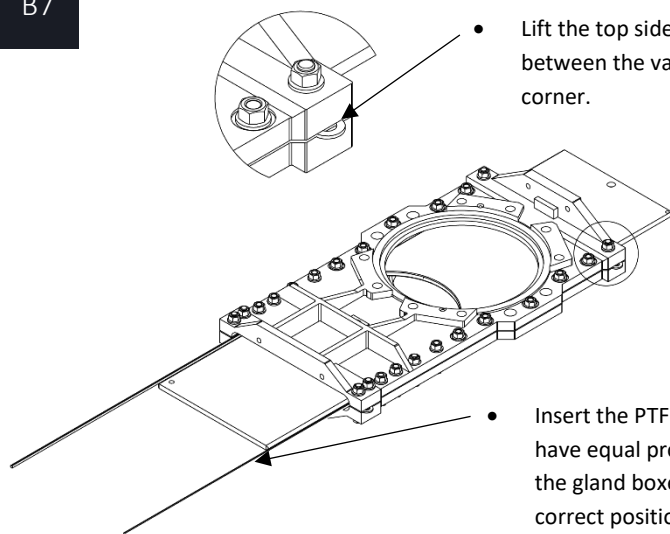
B6

- Apply thread paste. Not for FZB bolts.
- Nut should be on the top side.
- There may be several different bolt lengths.
- Assemble valve body bolts manually before using machine support.



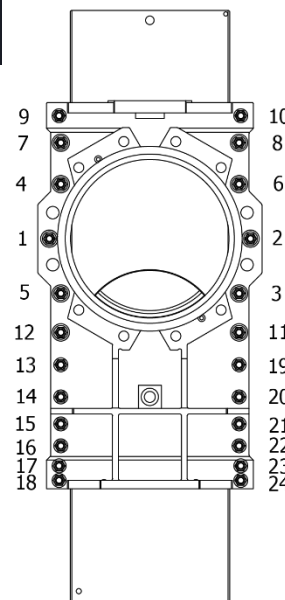
B7

- Lift the top side and place a washer in between the valve body sides, one in each corner.



- Insert the PTFE rods. Make sure you have equal protrusions on each side in the gland boxes. When the rod is in correct position, remove the temporary washers and assemble the body bolts.

B8



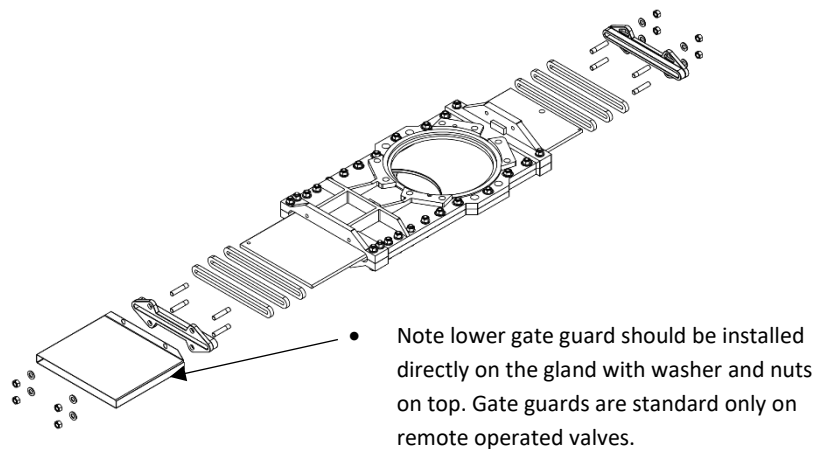
Torque (Nm) for body boltings

Valve size	Bolt	Nm A2-70	Nm A4-80	Nm FZB 8,8
DN 200-DN 250	M12	60	75	80

Tighten the bolts crosswise, **minimum twice**.

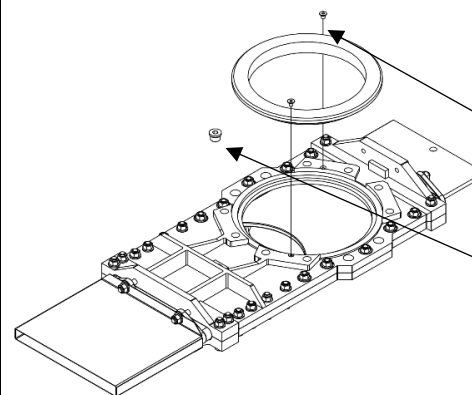
B9

- Prepare braids and install them according to “Re-packing instruction”.



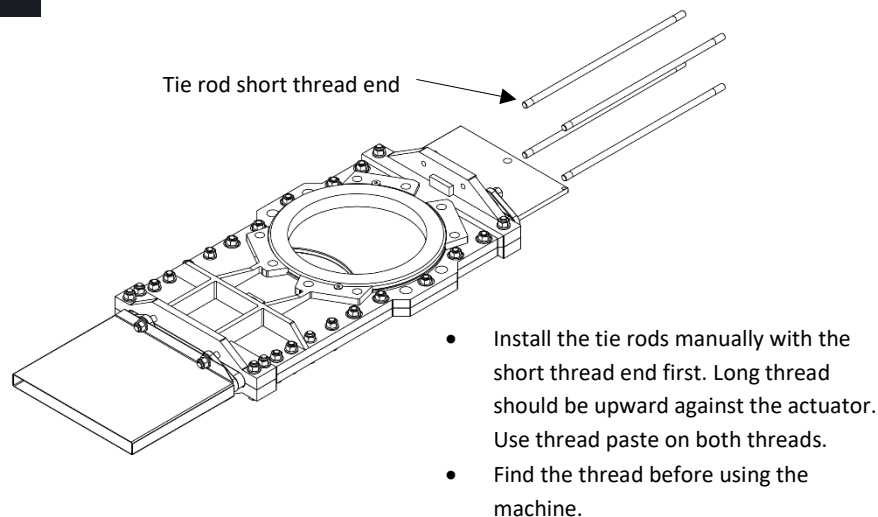
B10

- Assemble the seat onto the retainer ring. See “Re-packing instruction”.
- Push the flange rings onto the valve body side.
- Tighten the transport screw. Top of the retainer ring screw must not be higher than the retainer ring surface.
- Install the flush plug with Teflon gasket. Tighten with 5 Nm.



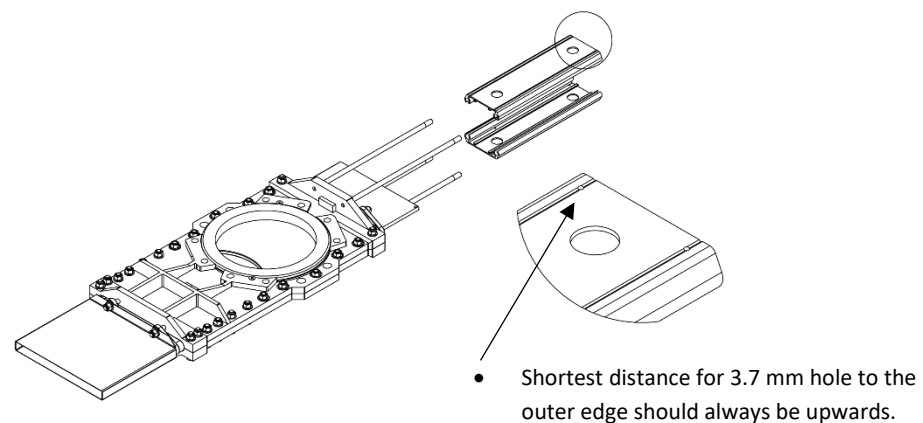
B11

Tie rod short thread end



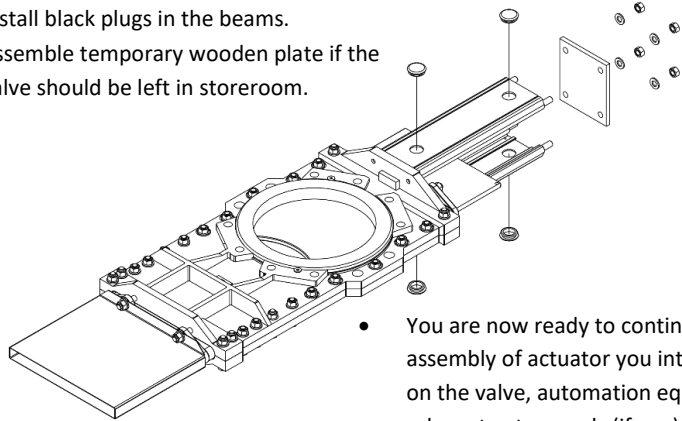
B12

- Slip on the beams onto the tie rods.



B13

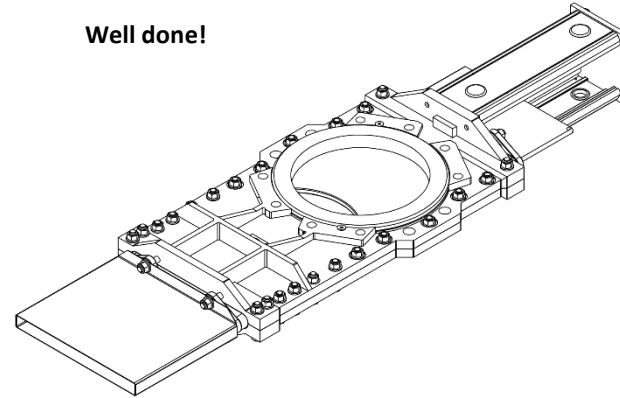
- Install black plugs in the beams.
- Assemble temporary wooden plate if the valve should be left in storeroom.



- You are now ready to continue with assembly of actuator you intend to use on the valve, automation equipment and relevant gate guards (if any). Observe and respect relevant instructions.

B14

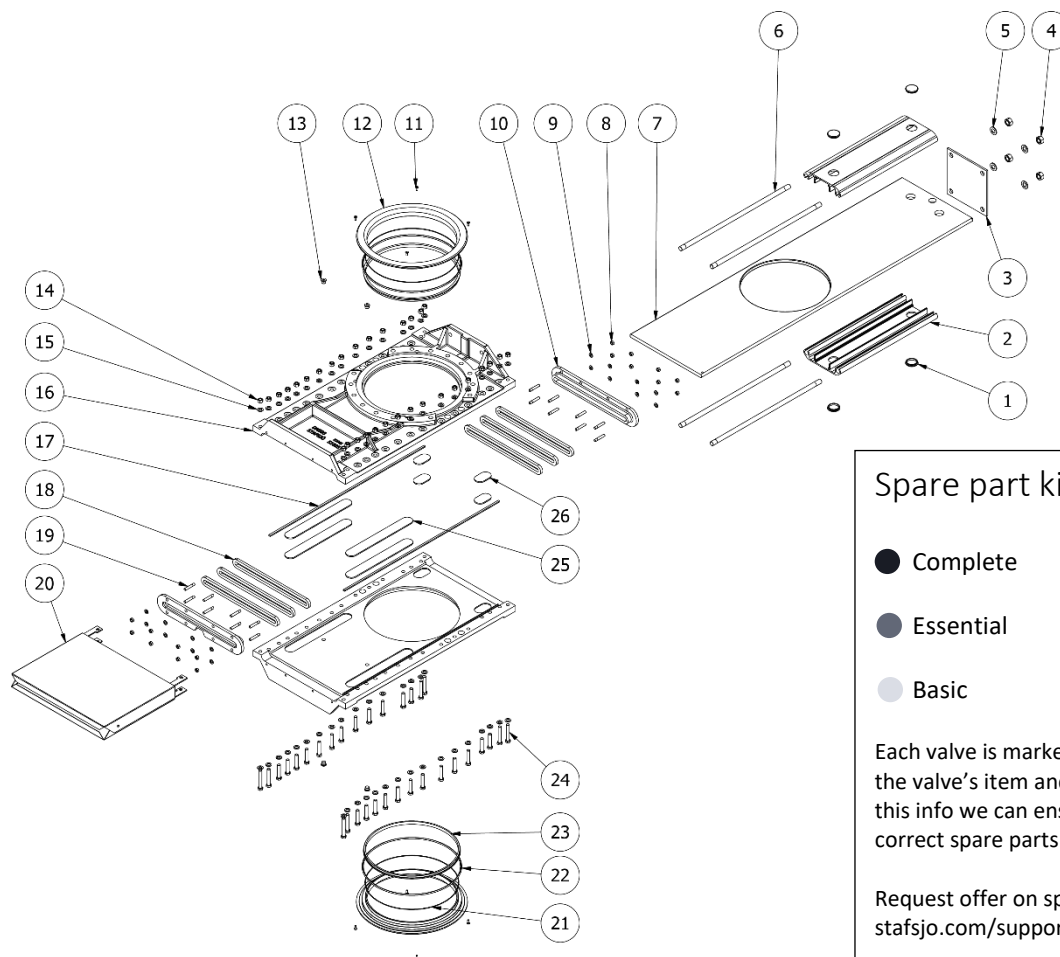
**Well done!**



## C. Knife gate valve HL, HG, HP, HPT in sizes DN 300 - DN 1200 (12" - 48")

Pos	Part	Spares		
1	Plug			
2	Beam			
3	Yoke (temporary)			
4	Nut			
5	Washer			
6	Tie rod			
7	Gate			
8	Locking nut			
9	Washer			
10	Gland			
11	Retainer ring screw			
12	Retainer ring			
13	Flush port plug			
14	Nut			
15	Washer			
16	Valve body side			
17	Body seal o-ring			
18	Glandbox packing braids			
19	Stud bolt			
20	Lower gate guard <sup>1)</sup>			
21	Seat o-ring			
22	Seat o-ring			
23	Seat			
24	Body bolts			
25	Guiding pad			
26	Guiding pad			

1) Lower gate guard together with beam gate guards are only supplied when the valve is remote operated.



### Spare part kits

● Complete

● Essential

● Basic

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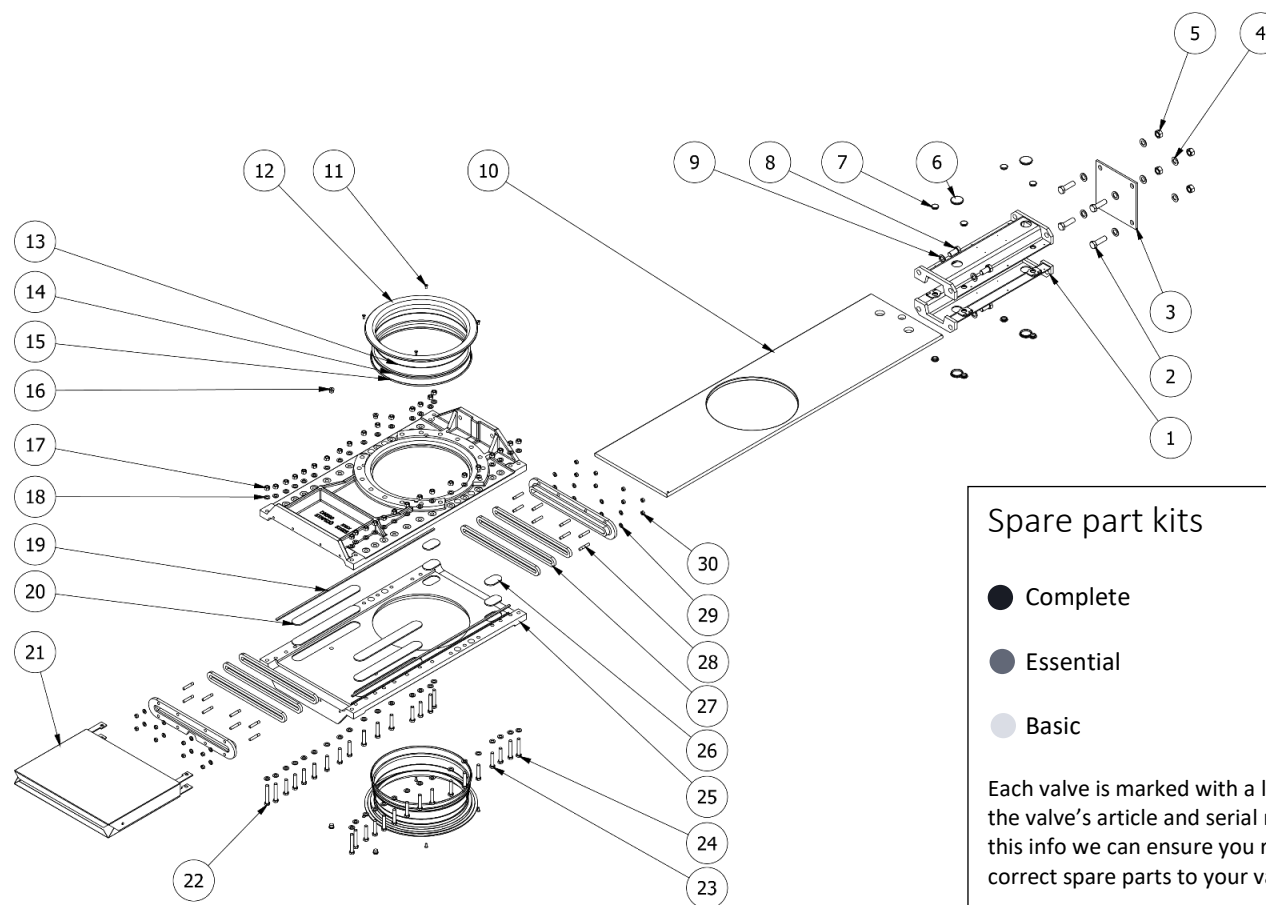


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- Valve assembly shall be performed by qualified personal. Qualified are those persons who, due to experience, can judge the risk and execute the work correctly and who are able to detect and to eliminate possible risks.

# C1. Knife gate valve HL, HG, HP, HPT in sizes DN 300 - DN 1200 (12" - 48") with stainless steel topworks

Pos	Part	Spares		
1	Beam			
2	Longer bolt			
3	Yoke (temporary)			
4	Washer			
5	Nut			
6	Plug	■		
7	Plug	■		
8	Shorter bolt			
9	Washer			
10	Gate	■		
11	Retainer ring screw	■		
12	Retainer ring	■		
13	Seat o-ring	■	■	
14	Seat o-ring	■	■	
15	Seat	■	■	
16	Flush port plug			
17	Nut	■		
18	Washer	■		
19	O-ring	■	■	
20	Guiding pad	■	■	
21	Lower gate guard <sup>1)</sup>	■		
22	Long bolt	■		
23	Short bolt	■		
24	Standard bolt	■		
25	Valve body side			
26	Guiding pad	■	■	
27	Glandbox packing braids	■	■	
28	Stud bolt	■		
29	Washer	■		
30	Locking nut	■		

1) Lower gate guard together with beam gate guards are only supplied when the valve is remote operated.



## Spare part kits

- Complete
- Essential
- Basic

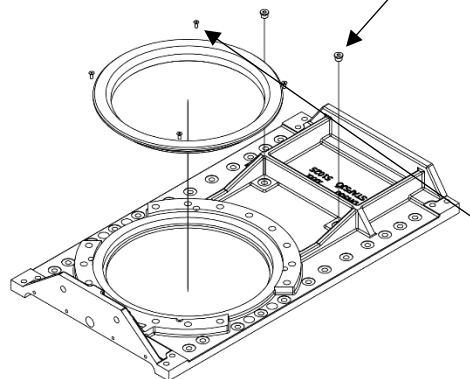
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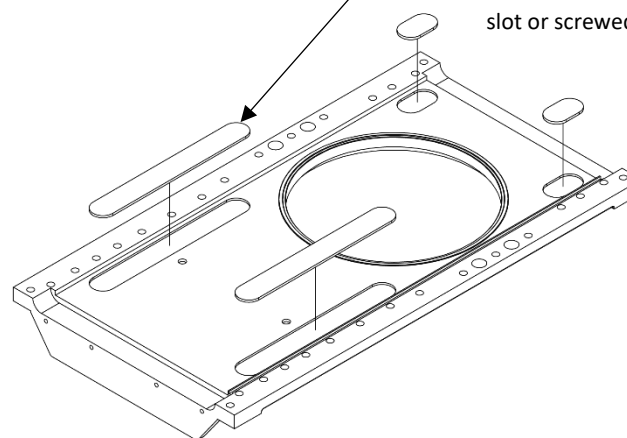
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C1



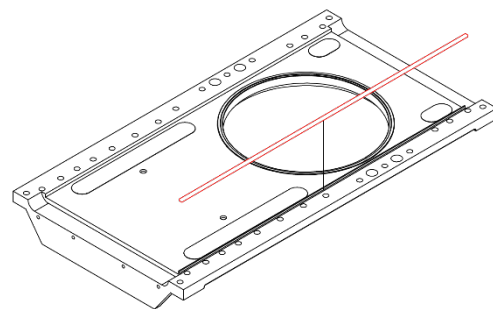
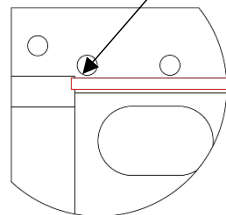
- Install the flush plug with Teflon gasket. Tighten with 5 Nm.
- Assemble the seat onto the retainer ring according to “**Re-packing instruction**”.
- Push the flange rings onto the valve body side.
- Tighten the retainer ring screw. Top of the retainer ring screw must not be higher than the retainer ring surface.
- Knock in the stem bushing (if any) into the hole.

C2



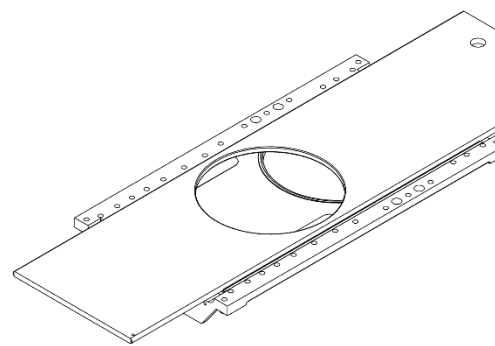
- Assemble the PTFE guiding pads.
- Quantity and type differ from size to size. They are either knocked, pushed into a slot or screwed in place.

C3



- Cut the **o-ring** so you have about 3 mm protrusion in the gland box, on each side.
- Glue the **o-rings** into to the grooves with 3 mm protrusion in the gland boxes. Around five glue spots are needed.

C4



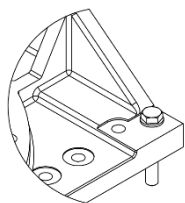
- Put the gate in place with equal protrusion on each side.
- The clevis pin hole should be on the stem bushing side.
- The gate indicator hole should be on the right side when viewed from above.

Clevis pin hole  
Gate indicator hole

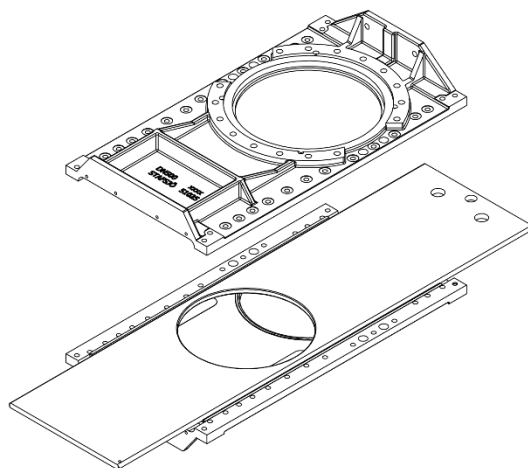


C5

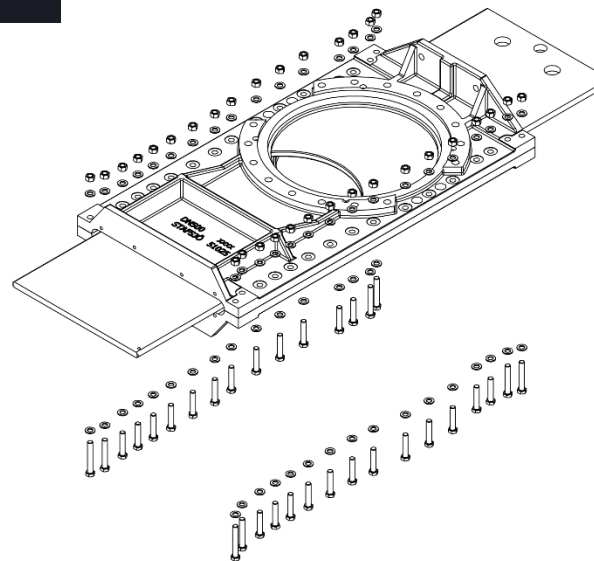
- Put the other valve body side on top of the other.



- Put a bolt in each corner to make fitting easier.



C6



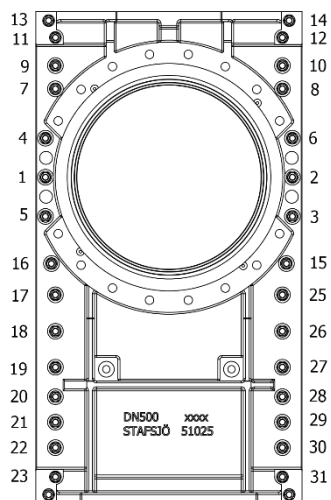
- Apply thread paste. Not for FZB bolts.
- Nut should be on the top side.
- There may be several different bolt lengths.
- Make sure equal o-ring protrusions in gland box.
- Assemble valve body bolts manually before using machine support.

C7

Torque (Nm) for valve body bolting

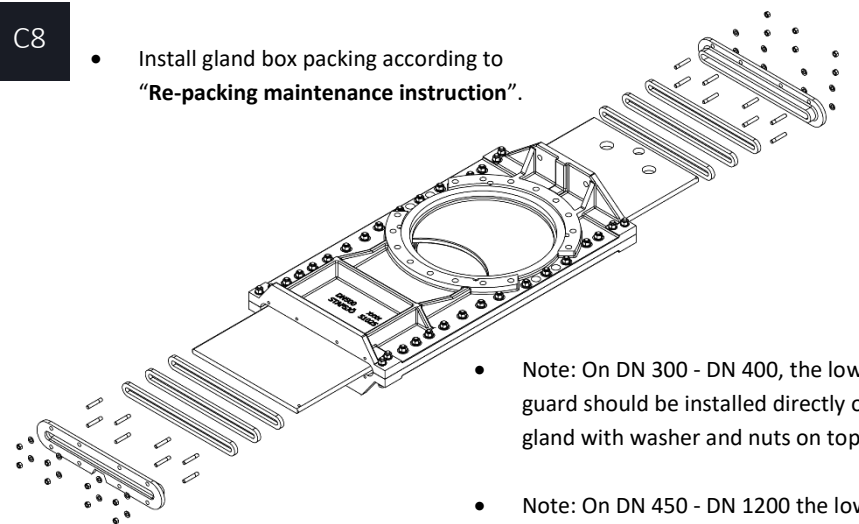
Valve size	Bolt	Nm A2-70	Nm A4-80	Nm FZB 8,8
DN 300 - DN 350	M12	60	75	80
DN 400 - DN 600	M16	140	190	200
DN 700 - DN 1200	M20	275	365	380

Tighten the bolts crosswise, **minimum twice**.



C8

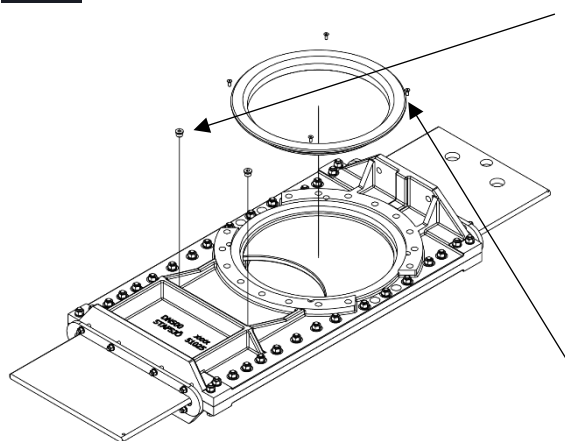
- Install gland box packing according to "Re-packing maintenance instruction".



- Note: On DN 300 - DN 400, the lower gate guard should be installed directly on the gland with washer and nuts on top.
- Note: On DN 450 - DN 1200 the lower gate guard is assembled together with body bolts.



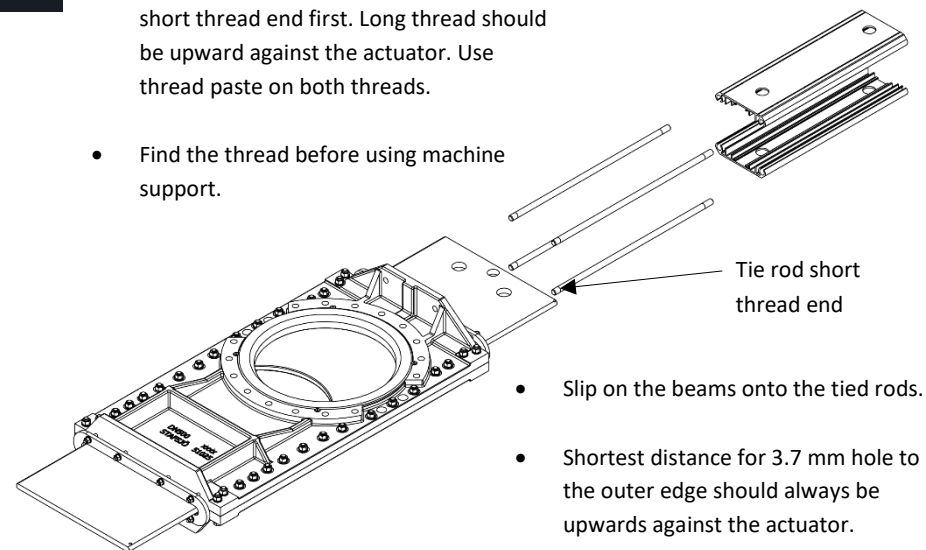
C9



- Install the flush plug with Teflon gasket. Tighten with 5 Nm.
- Assemble the seat onto the retainer ring. See “**Re-packing instruction**”.
- Push the flange rings onto the valve body side.
- Tighten the retainer ring screws. Top of the retainer ring screw must not be higher than the retainer ring surface.

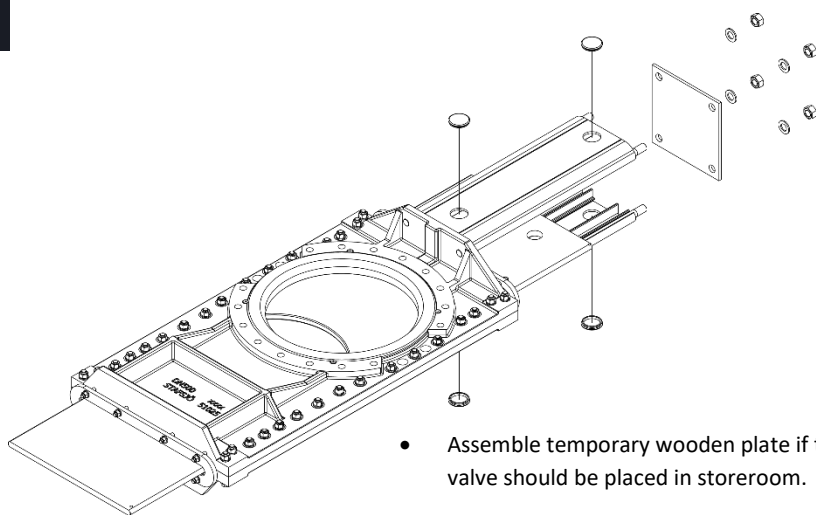
C10

- Install the tie rods manually with the short thread end first. Long thread should be upward against the actuator. Use thread paste on both threads.
- Find the thread before using machine support.



- Slip on the beams onto the tied rods.
- Shortest distance for 3.7 mm hole to the outer edge should always be upwards against the actuator.

C11

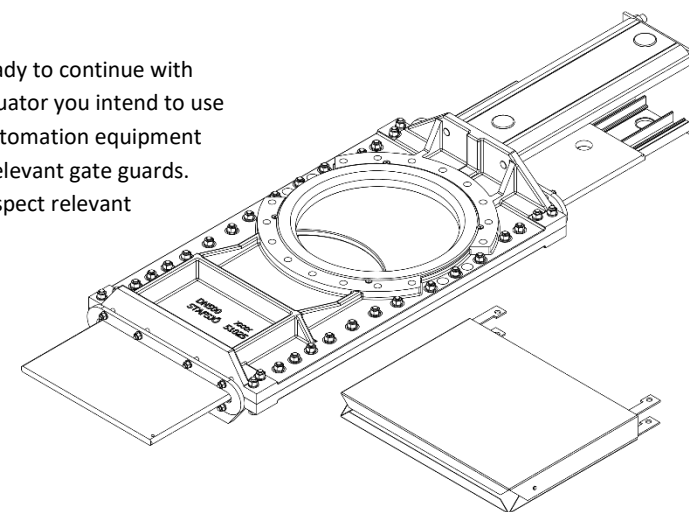


- Assemble temporary wooden plate if the valve should be placed in storeroom.
- Install black plugs in the beams.

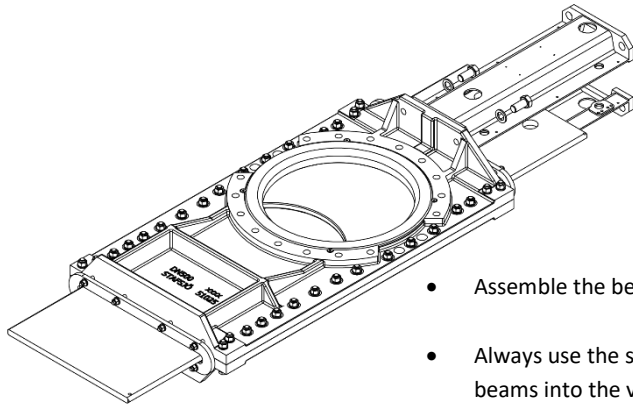
C12

### Well done!

You are now ready to continue with assembly of actuator you intend to use on the valve, automation equipment together with relevant gate guards. Observe and respect relevant instructions.

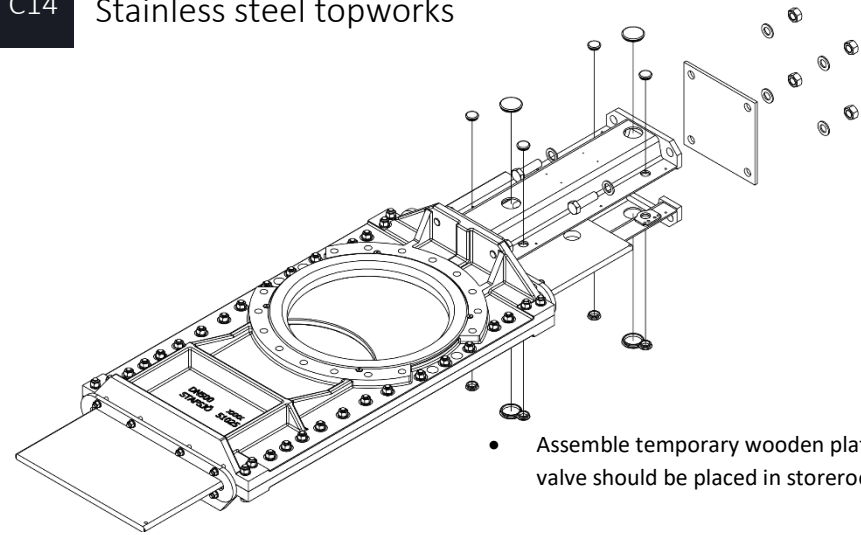


### C13 Stainless steel topworks



- Assemble the beams with a washer and bolts.
- Always use the shortest screws to fasten the beams into the valve body. Longer should be used on actuator side.
- Use thread paste on the bolts.

### C14 Stainless steel topworks



- Assemble temporary wooden plate if the valve should be placed in storeroom.
- Install black plugs in the beams.

### C15 Stainless steel topworks

Well done!

You are now ready to continue with assembly of actuator you intend to use on the valve, automation equipment together with relevant gate guards. Observe and respect relevant instructions.

