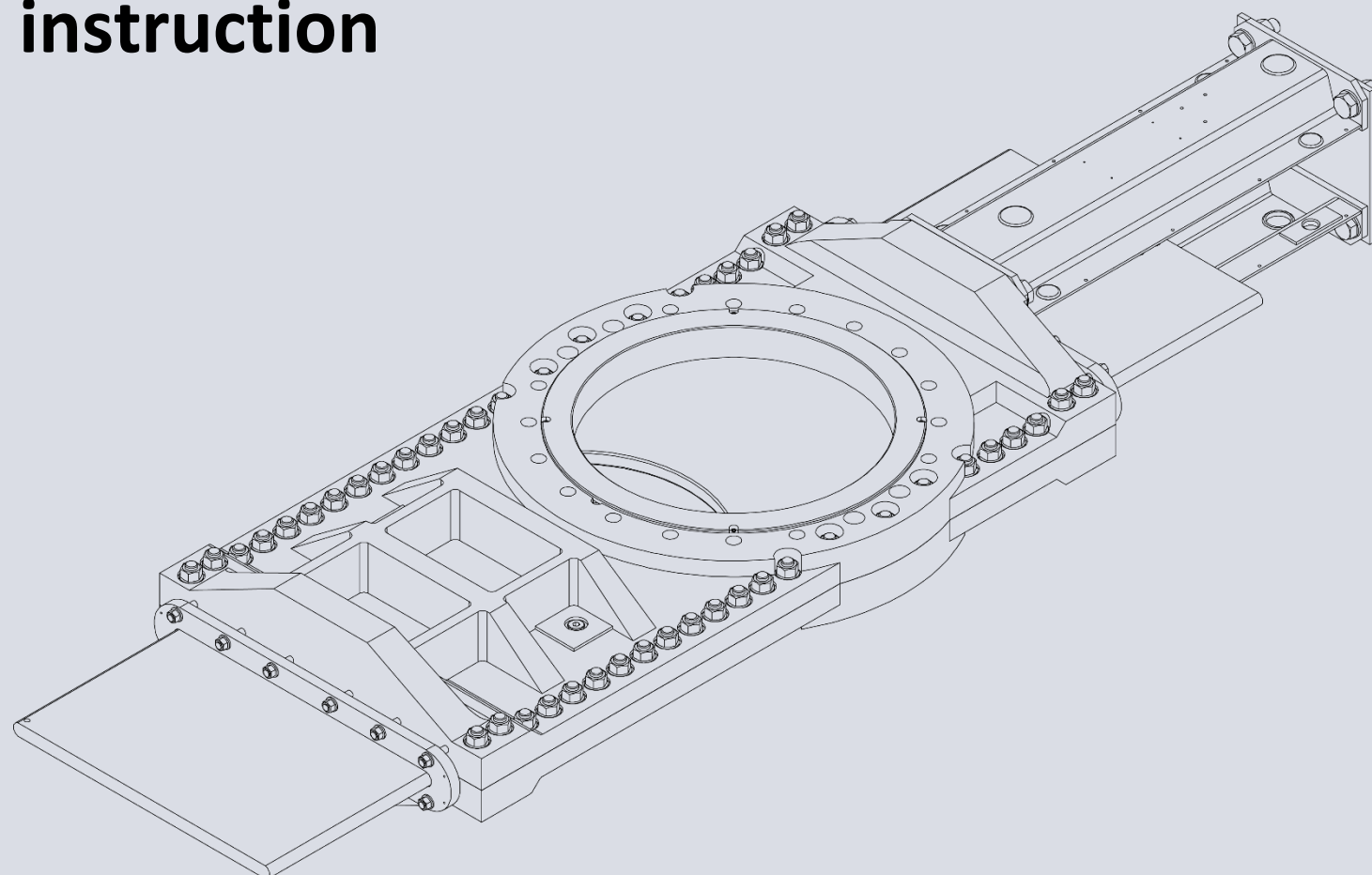


Stafsjö
SINCE 1666

Maintenance instruction

Knife gate valve HX

DN 100 - DN 900 (4" - 36")



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1. Introduction

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

A. Knife gate valve HX DN 100 - DN 900 (4" - 36").

In this instruction notes and warnings are marked with symbols:

	Danger / Warning Points out a dangerous situation which may cause personal injuries or death.
	Advice Has to be respected.
	Information 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">• Steps and procedures described in this section are based on a valve which is not installed in a pipe system.• Follow procedure described in installation and service instruction for the knife gate valve and its actuator.• 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.• Always consider the application of the valve and carefully prepare relevant personal safety equipment before starting any maintenance.
	<ul style="list-style-type: none">• Always have the knife gate valve's item and serial number available to ensure you order correct spare parts to your valve.

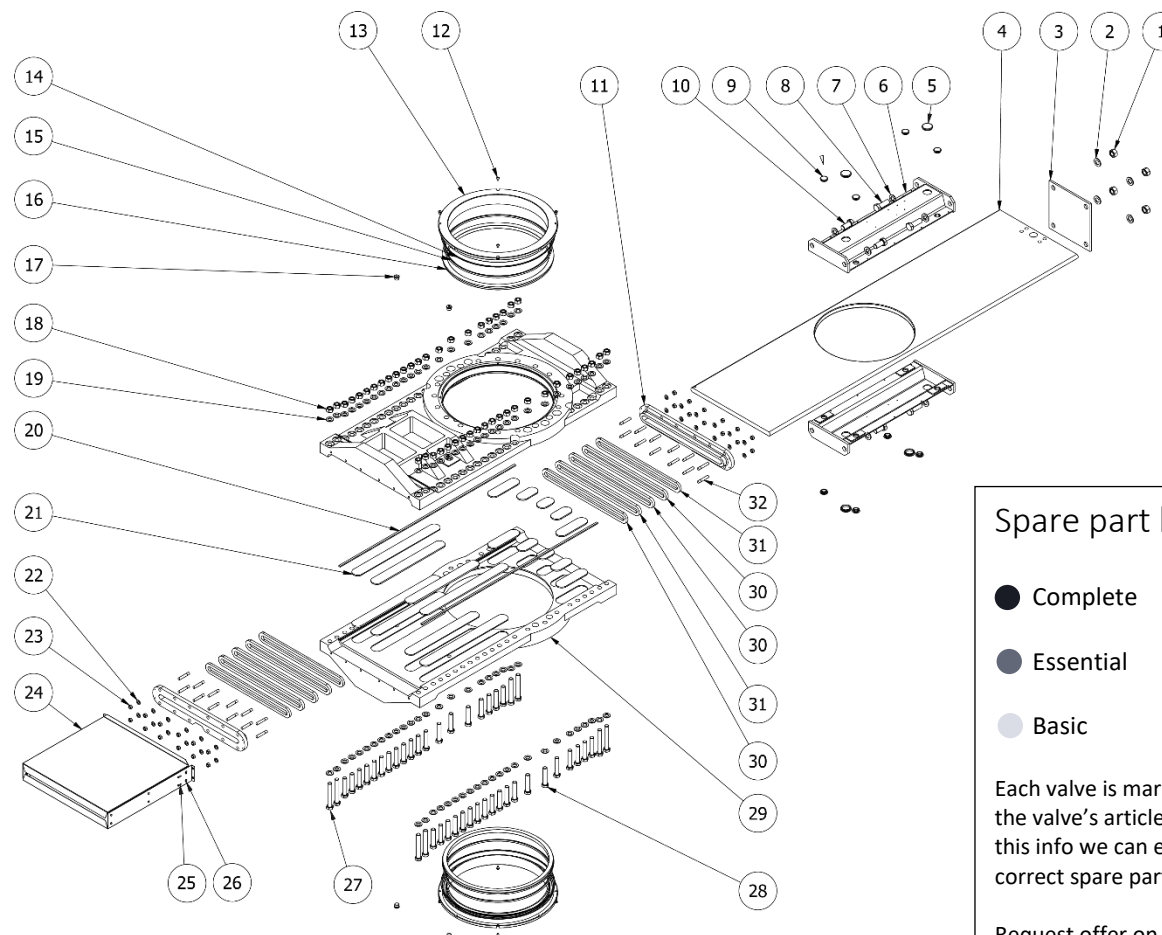
To simplify the disassembling of the knife gate valve, place the valve on a horizontal work bench.

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.
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">• Recycle worn out parts to extent possible.
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A. Knife gate valve HX DN 100 - DN 900 (4" - 36") with stainless steel topworks

Pos	Part	Spares		
1	Nut			
2	Washer			
3	Yoke (temporary)			
4	Gate			
5	Plug	■		
6	Beam			
7	Washer			
8	Long bolt			
9	Plug	■		
10	Short bolt			
11	Gland			
12	Retainer ring screw	■		
13	Retainer ring	■		
14	O-ring	■	■	
15	O-ring	■	■	
16	Seat	■	■	
17	Flush plug			
18	Nut	■		
19	Washer			
20	O-ring / Rod	■	■	
21	Guiding pads	■	■	
22	Washer	■		
23	Locking nut	■	■	
24	Lower gate guard	■		
25	Screw	■		
26	Washer	■		
27	Long bolt	■		
28	Short bolt	■		
29	Valve body			
30	Box packing braids	■	■	
31	Scraper	■		
32	Stud bolt	■		



Spare part kits

- Complete
- Essential
- Basic

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

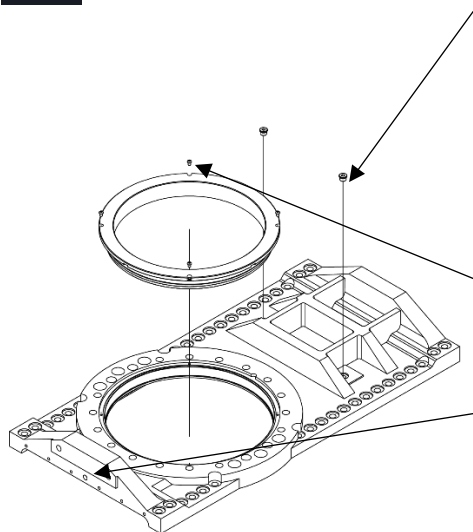
Request offer on spare parts at stafsjo.com/support/original-spare-parts/

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



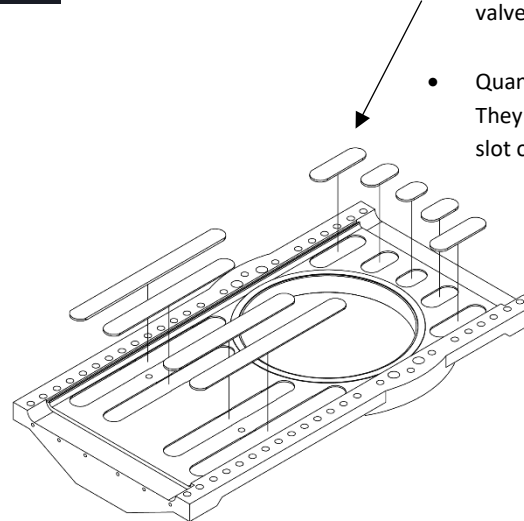
- Always consider the application of the valve and carefully prepare relevant personal safety equipment before starting any valve maintenance.
- Valve assembly shall be performed by qualified personal. Qualified are those persons who, due to experience, can judge the risk and execute the work correctly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

A1



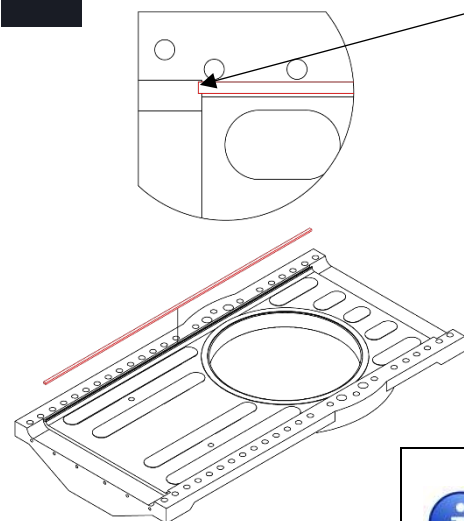
- Install the flush plug with Teflon gasket. Tighten with 5 Nm.
- Assemble the seat onto the retainer ring according to “**Re-packing instruction**”.
- Push the flange rings onto the valve body side.
- Tighten the retainer ring screw. Top of the retainer ring screw must not be higher than the retainer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

A2



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

A3

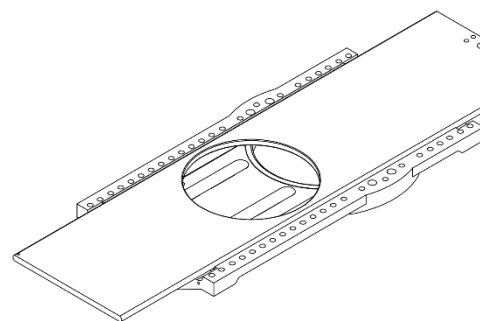


- Cut the **PTFE rod or FKM/FPM o-ring** so you have about 3 mm protrusion in the gland box, on each side.
- **Only for FKM/FPM o-ring:** Glue the **o-rings** into the grooves with 3 mm protrusion in the gland boxes. Around five glue spots are needed. Use minimum amount of glue. Its purpose is only to keep rubber o-ring in correct position during assembly. Repeat procedure on the other valve body side.
- **Only for PTFE rod:** Leave PTFE rod aside. It shall be installed later, see A7.



DN 150 - DN 300 (6" - 12") are supplied with PTFE rod as body gasket.
DN 350 - DN 900 (12" - 36") are supplied with o-ring as body gasket except for *HX in Titanium*, which always has PTFE rod regardless of size.

A4

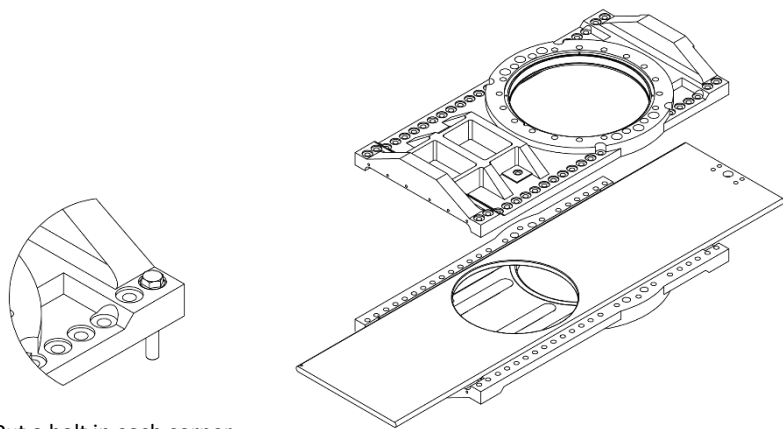


- Put the gate in place with equal protrusion on each side.
- The clevis pin hole should be on the stem bushing/topworks side.
- The gate indicator hole should be on the right side when viewed from above (if any).

Clevis pin hole
Gate indicator hole

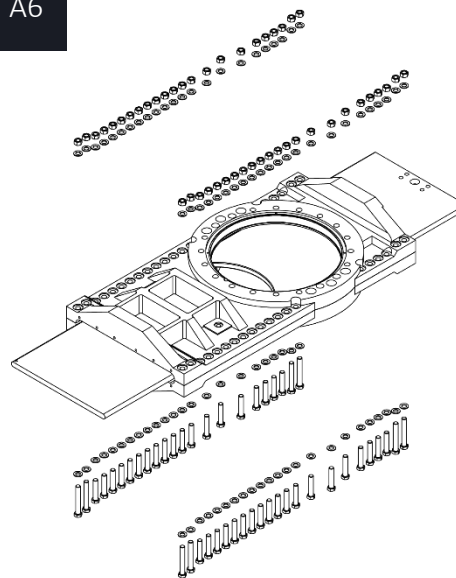
A5

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



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

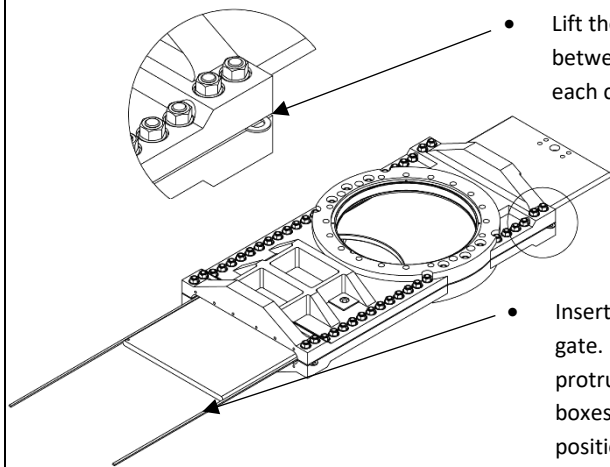
A6



- Apply thread paste on the bolts.
- Nut should be on the top side. There may be several different bolt lengths.
- Make sure equal o-ring protrusions in gland boxes. For PTFE rod, see A7.
- Install valve body fasteners but do not tighten.

A7

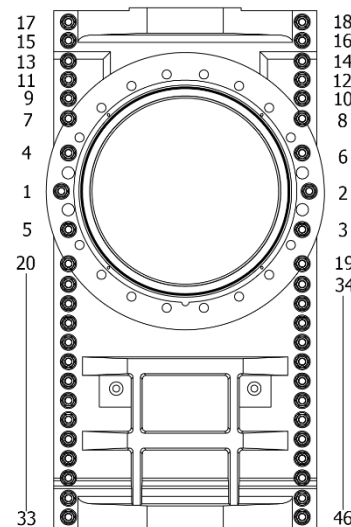
Only applicable for HX with PTFE rod as body gasket



- Lift the top side and place a washer in between the valve body sides, one in each corner.
- Insert the PTFE rods on each side of the gate. 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 manually before using machine support.

A8

Torque (Nm) for valve body bolting

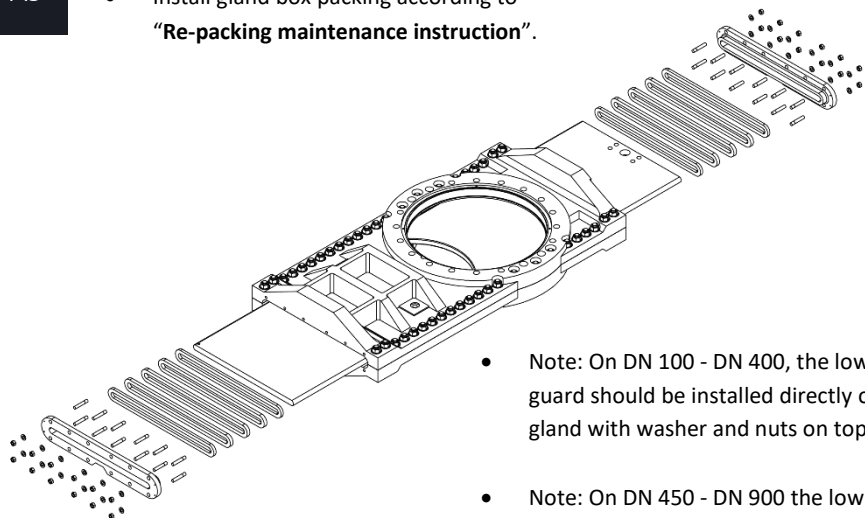


Valve size	Bolt	Nm A2-70	Nm A4-80	Nm FZB 8,8
DN 100 - DN 200	M12	60	75	80
DN 250 - DN 300	M16	140	190	200
DN 350 - DN 900	M20	275	365	380

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

A9

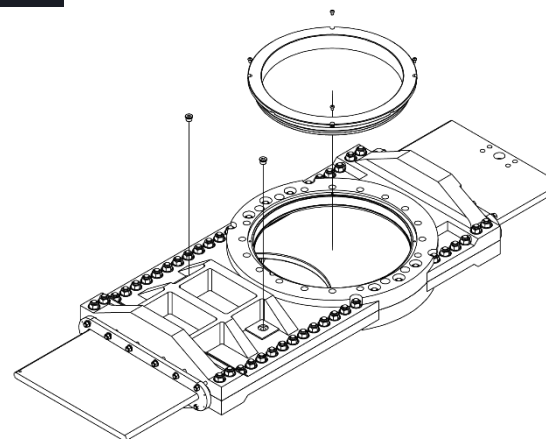
- Install gland box packing according to “Re-packing maintenance instruction”.



- Note: On DN 100 - DN 400, the lower gate guard should be installed directly on the gland with washer and nuts on top.
- Note: On DN 450 - DN 900 the lower gate guard is assembled on the gland.

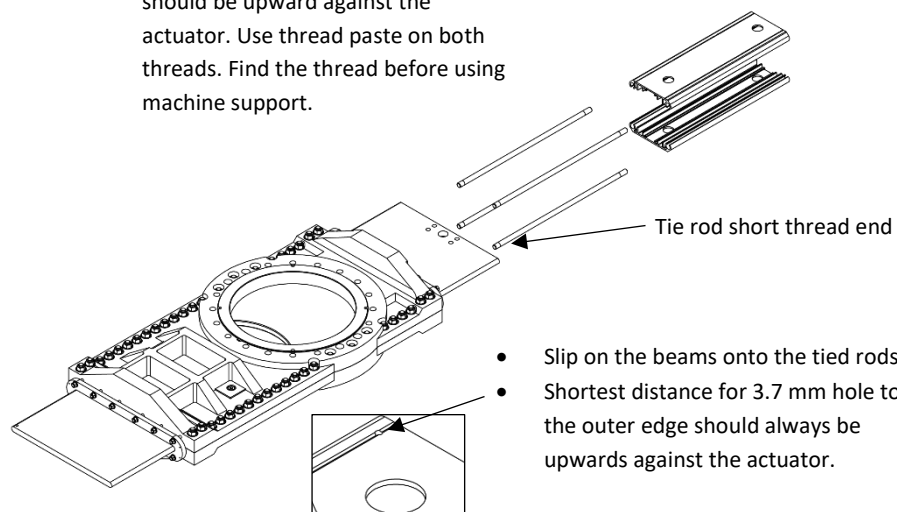
A10

- 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.



A11

- 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.

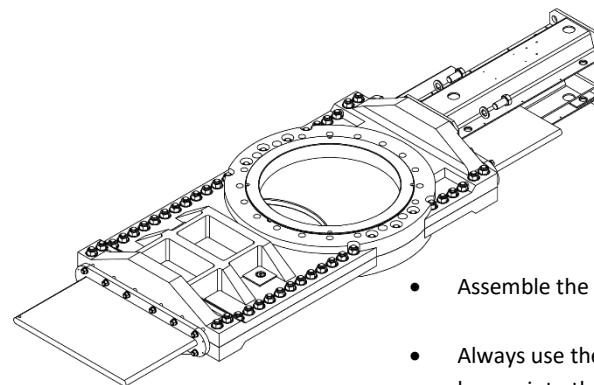


- Slip on the beams onto the tied rods.
- Shortest distance for 3.7 mm hole to the outer edge should always be upwards against the actuator.

A12

Stainless steel topworks (optional)

- Assemble the beams with washers 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.



A13

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.

