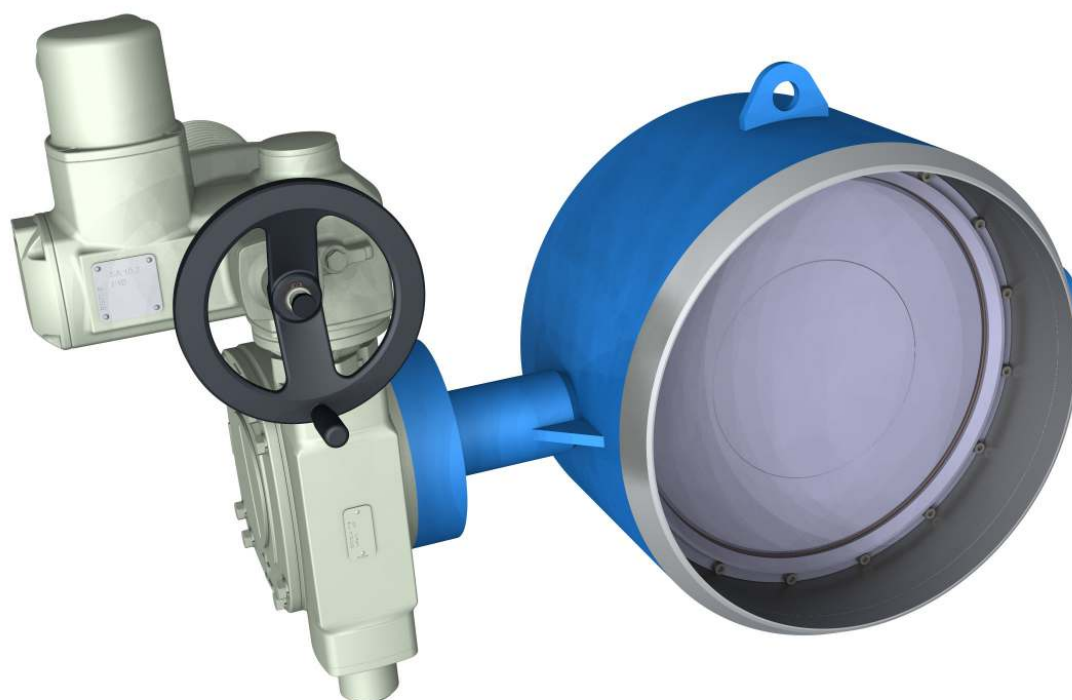


**INSTALLATION AND OPERATION
MANUAL 31300CS SERIES**



CONTENT

General	3
Transport and storage	4
Hoisting	5
Installation position	6
Recommended mounting	11
Welding	12
Flushing	13
Start up	14
Control use	15
Cavitation	17
Valve operation	19
Troubleshooting	21



General

For complete information regarding the installation, operation, maintenance and repair of the valve please see the full version of the instructions for installation, operation and maintenance of Högfors valves.

! Prohibited to remove the actuator during transportation, installation and operation.



! Valve disc must remain in closed position during transport, storage and installation.

! Prohibited to hoist the valve from the actuator.



The valve is delivered with an actuator that has been adjusted at the factory.

Prohibited to change the factory settings of the actuator



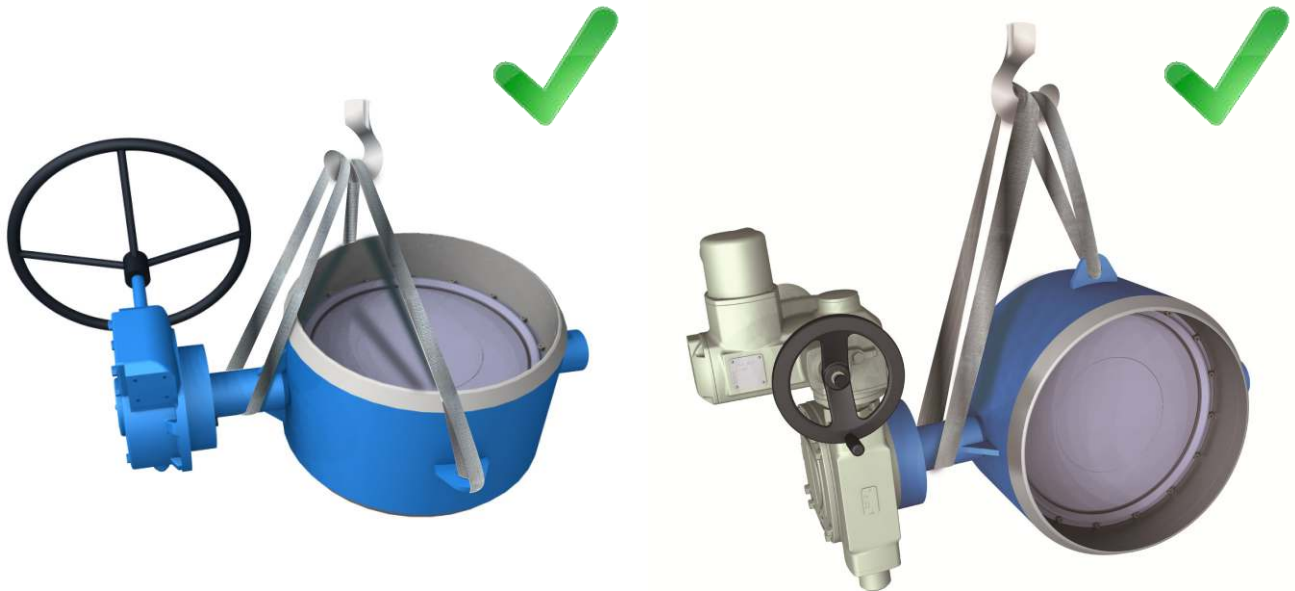
Transport and storage

- When receiving the valve, please check that there is no transportation damages.
- The valve must be stored in a secure location away from rain.
- The packing is not designed for long-term storage in the open air.



Hoisting

Please follow the recommended method for hoisting as shown below. Please use soft cable for hoisting.

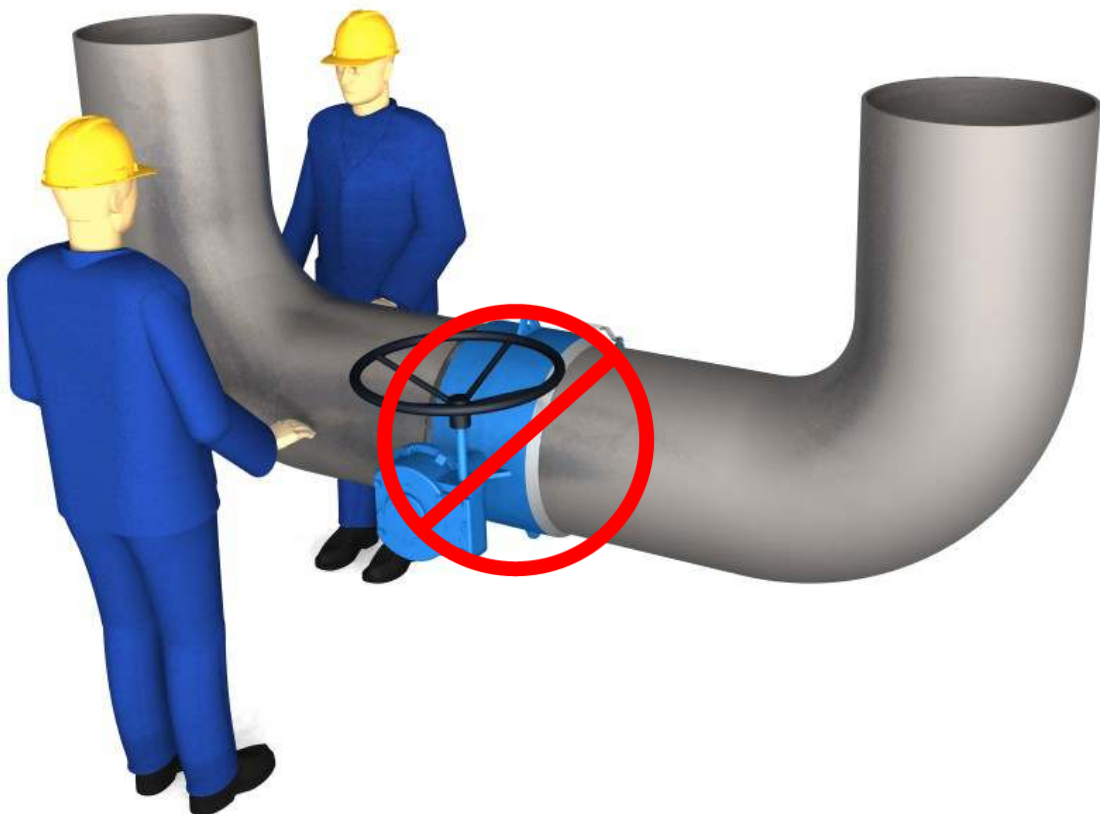
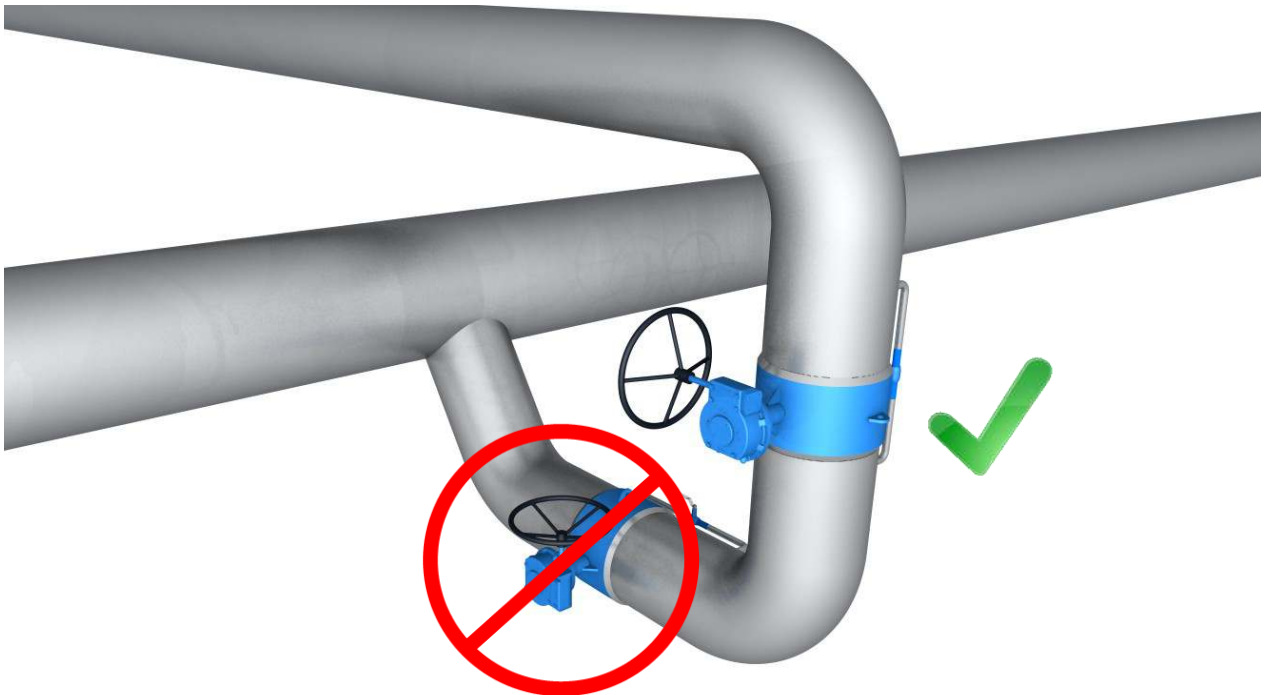


Prohibited to hoist the valve from the actuator.

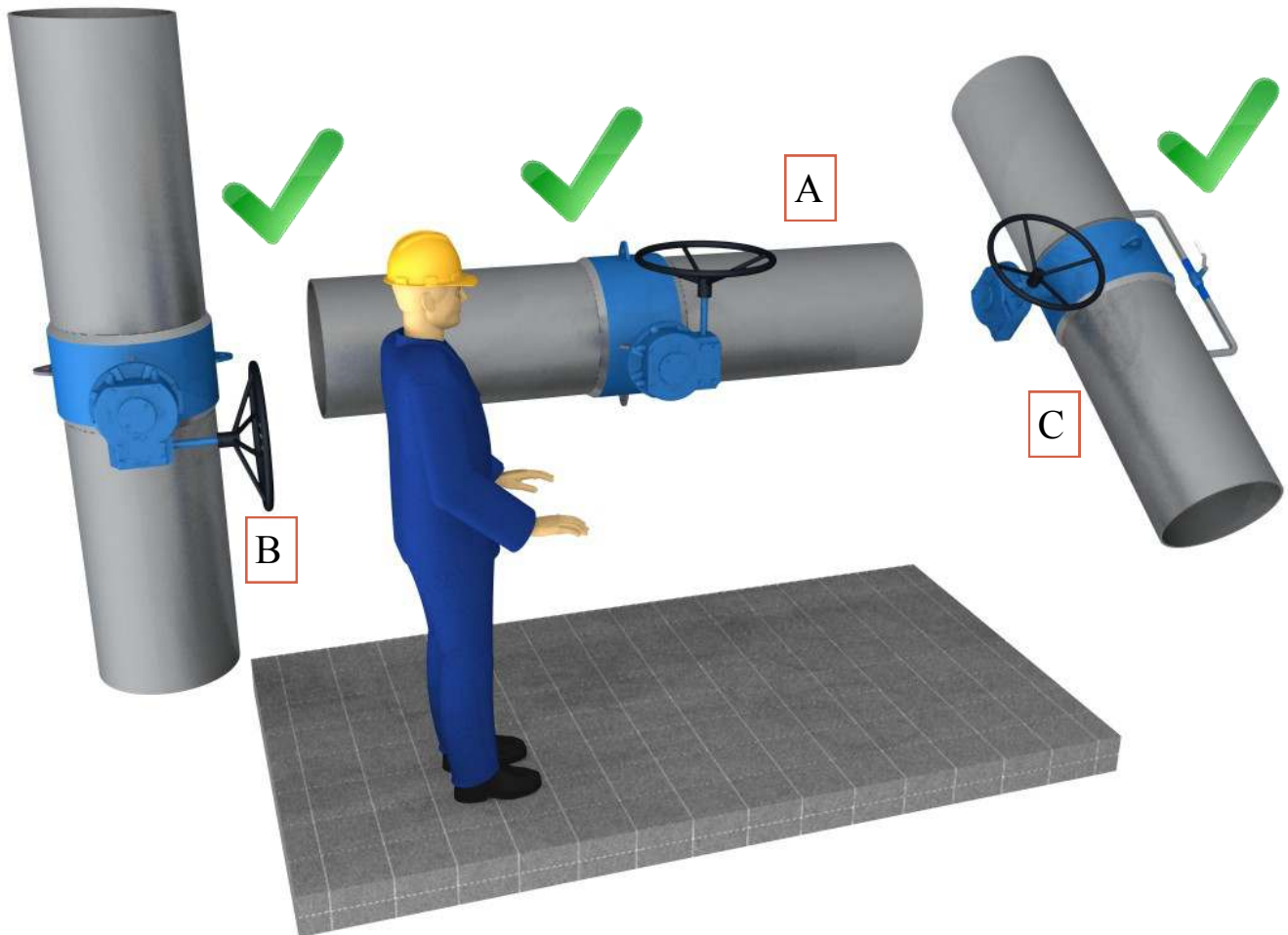


Installation position

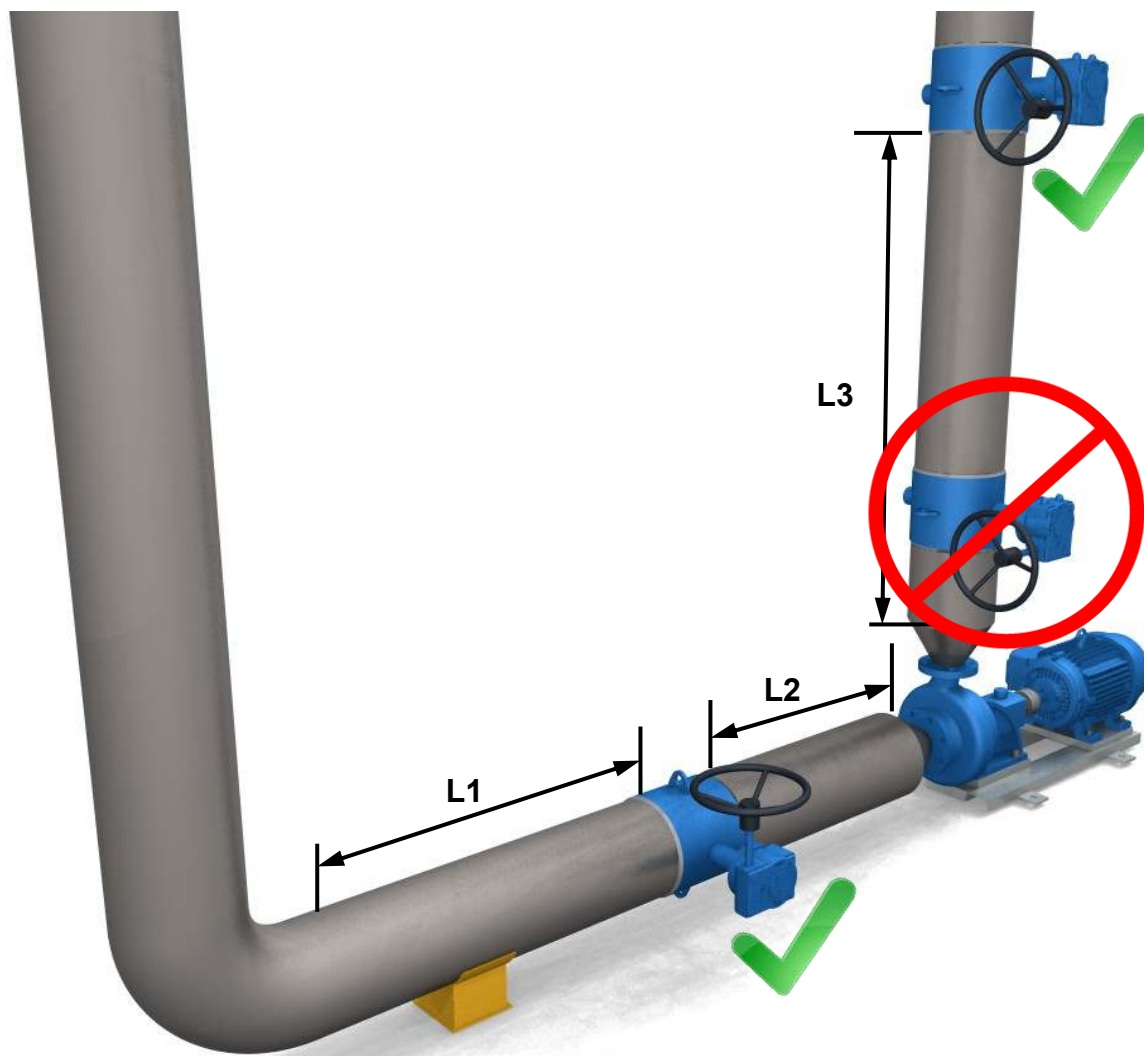
Please do not install the valve in the lowest sections of the pipeline or other places where there is likely to be a concentration of impurities.



The valve can be mounted in horizontal (A), vertical (V) or diagonal (C) pipeline.



Please place the valve as far as possible from sources of turbulence: pumps, elbows and tees.



Minimum Clearances:

After the tee or tapping

$L1 = DN \times 3$

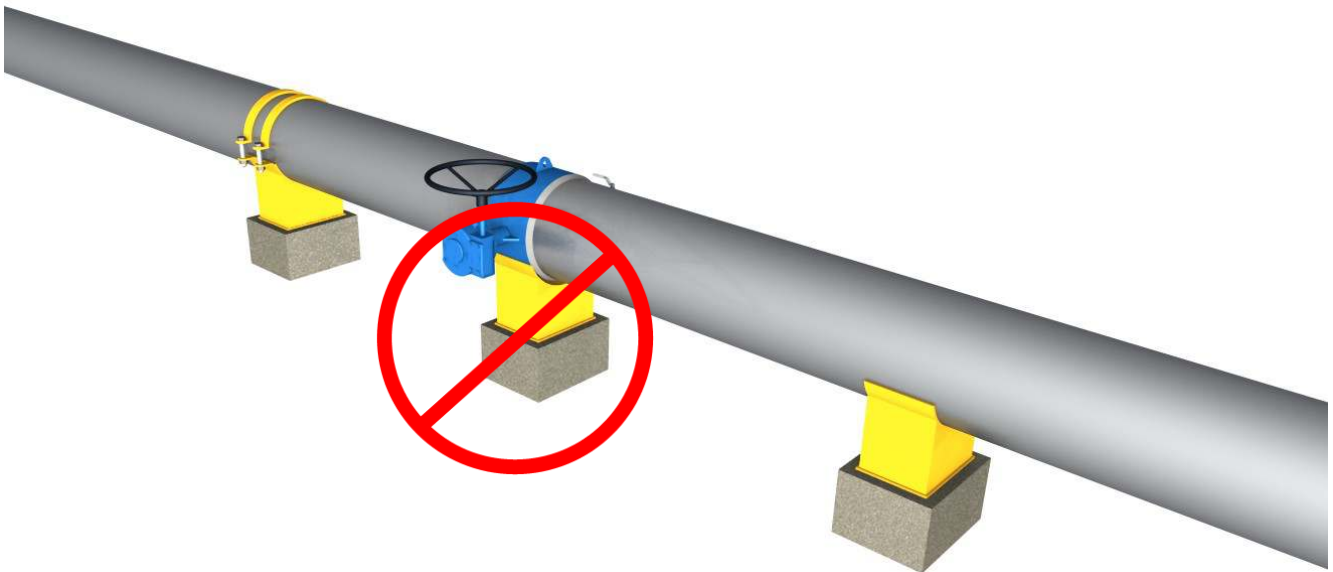
Before the pump (suction side)

$L2 = DN \times 3$

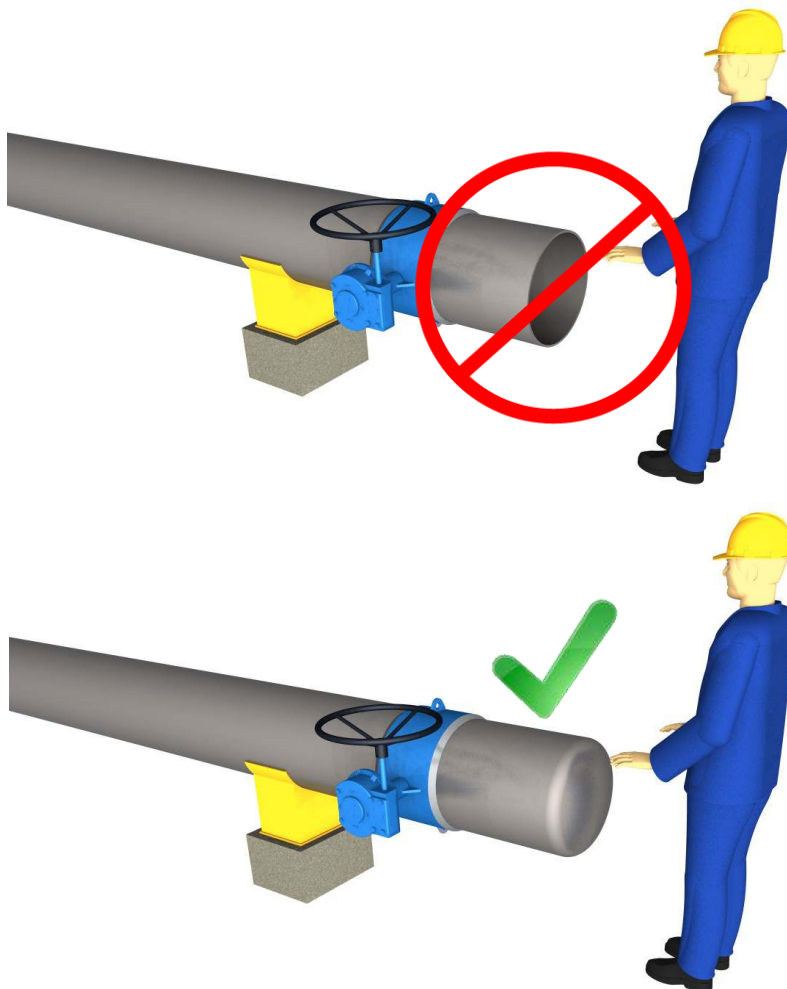
After the pump (pressure side)

$L3 = DN \times 5$

Do not install the pipeline support under the valve.

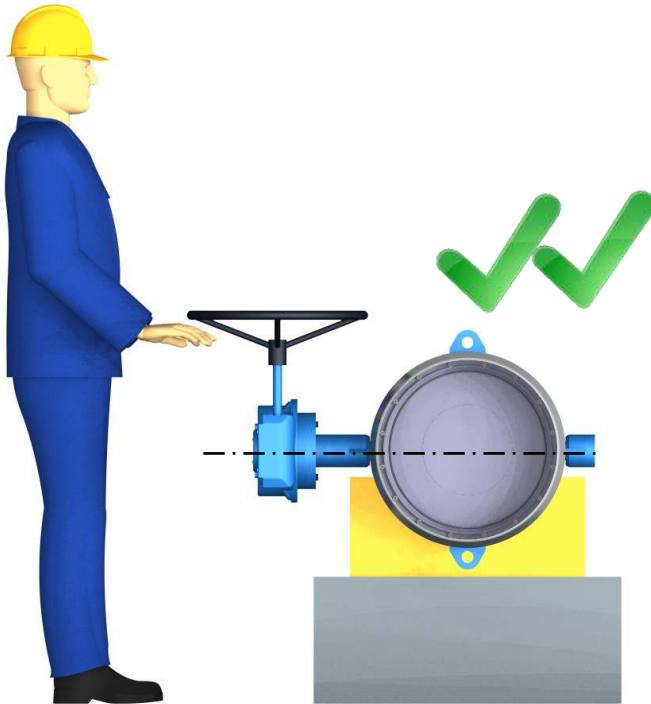


If the valve valve is the final item in the pipeline, then a welded plug flange must be installed.

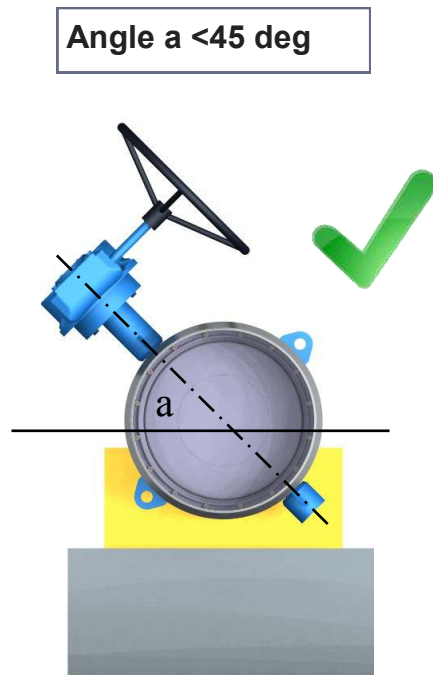


Recommended position of the valve in the pipeline:

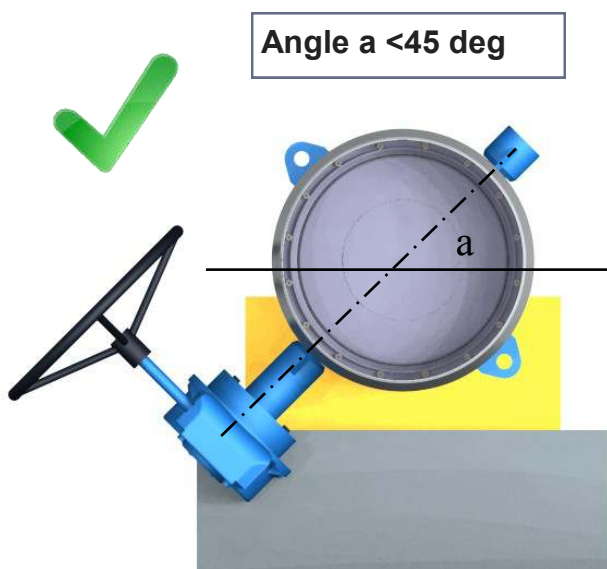
- 1) shaft horizontally or
- 2) shaft inclined, but as close as possible to the horizontal position.



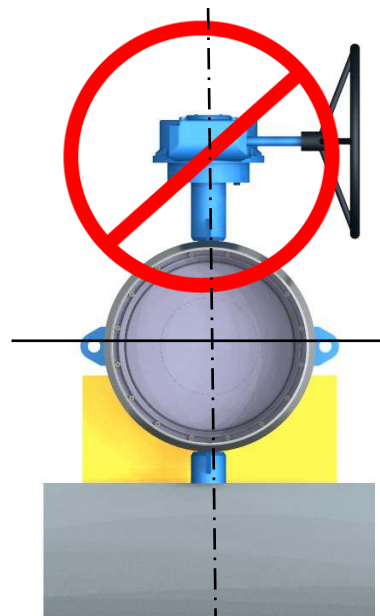
Recommended position



Permissible position



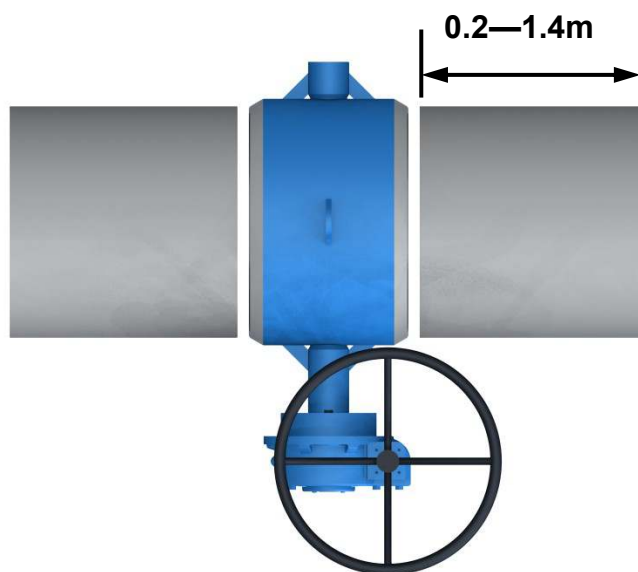
Permissible position



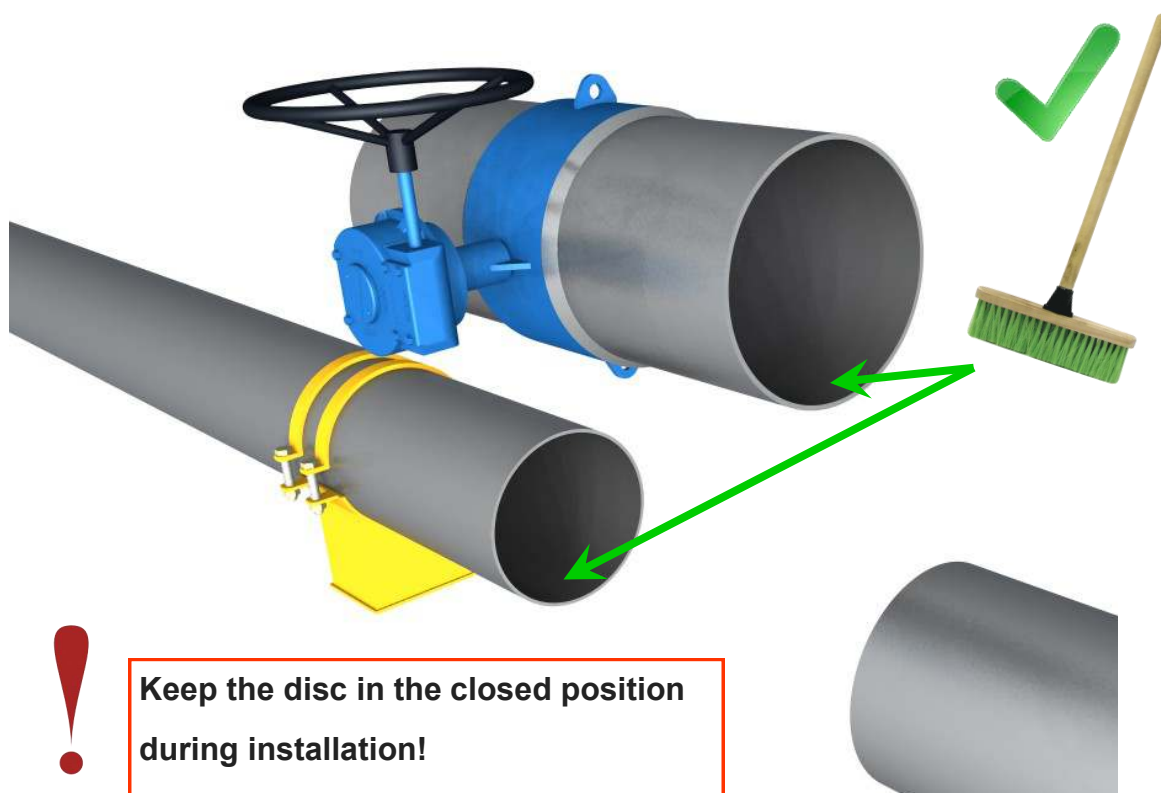
Not recommended position

Recommended mounting

When installing with the recommended pipe insertions, which are welded in the workshop, the insertion length is 0.2 - 1.4 meters depending on the DN of the pipeline.



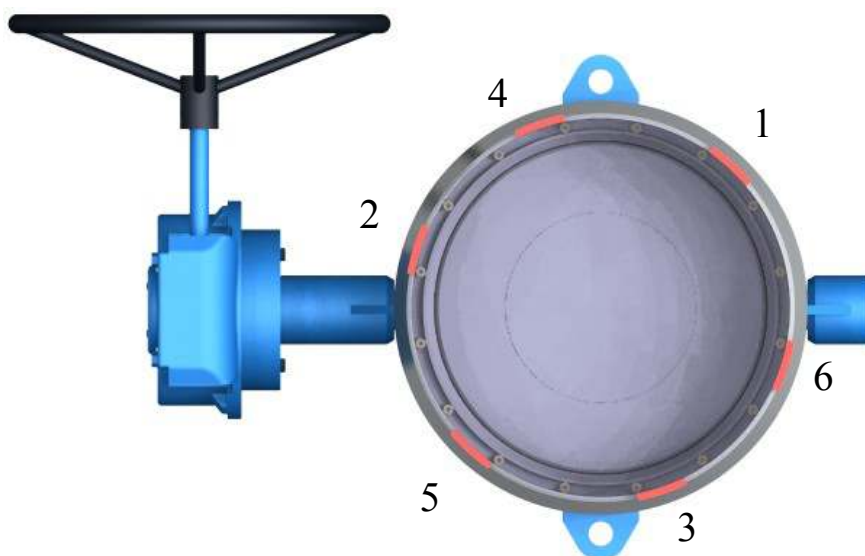
Clean the pipes before mounting.



Welding

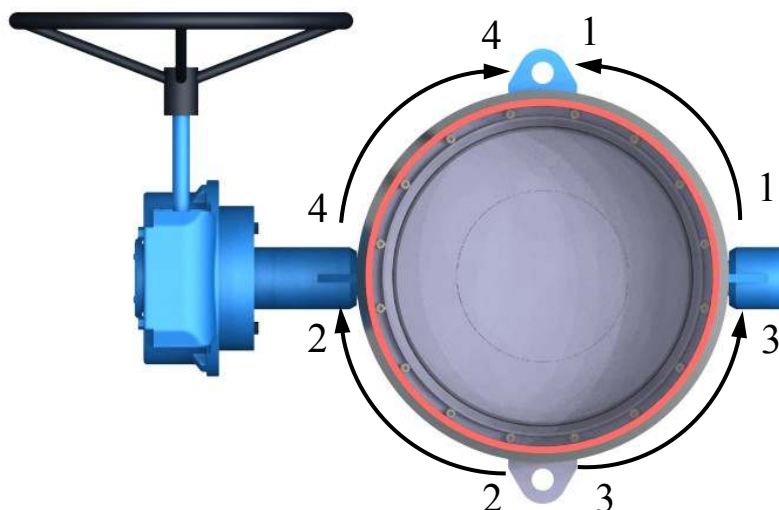
Welding surface is covered with a layer of anticorrosion protection. Please remove it prior to welding by using organic solvent, or mechanically.

Connect the pipe and the valve together with 4-8 tack welds, depending on the size of the valve DN. Single tack weld length maximum 80 mm. Tack welding order is counterclockwise 1-2-3-4-5-6 as shown below.

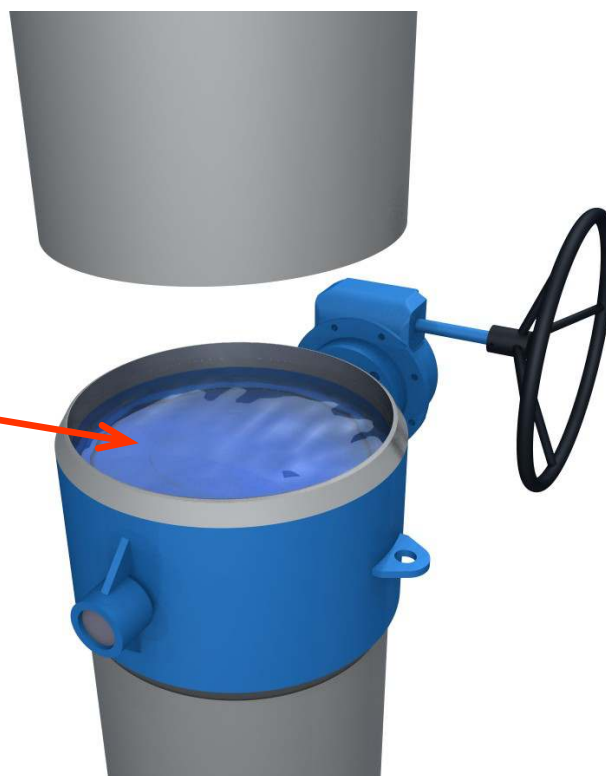


Welding root, filling and final pass order 1-2-3-4 counterclockwise as shown below.

Note! Ensure that the valve body is not deformed by welding.



When the valve is mounted in vertical pipeline, cover the valve disk with 100-150mm water cushion.



The valve disc must remain in a closed position during the whole welding process.

Flushing

After installation, please flush the pipeline to remove impurities.

Flushing is done by adding pressure and flow in the pipeline.

Set the valve disc to the open position of 25-30 degrees to reach the maximum flow velocity at valve seat area.



Start-up

Use the by-pass valve for filling the pipeline. By-pass valve is required for DN400 and more.



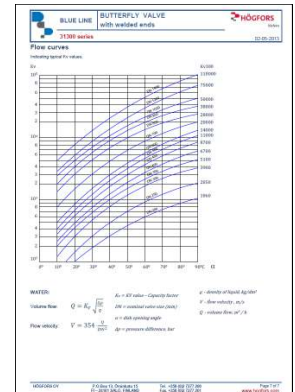
! The valve disc must remain in closed position until the pipeline is completely filled.

The by-pass valve size depends on the length of the pipeline. If using too small DN size by-pass valve it will be impossible to fill the pipeline within a reasonable (given) time. The recommended DN size of the by-pass valve is 10% - 20% of the size of the main valve DN.

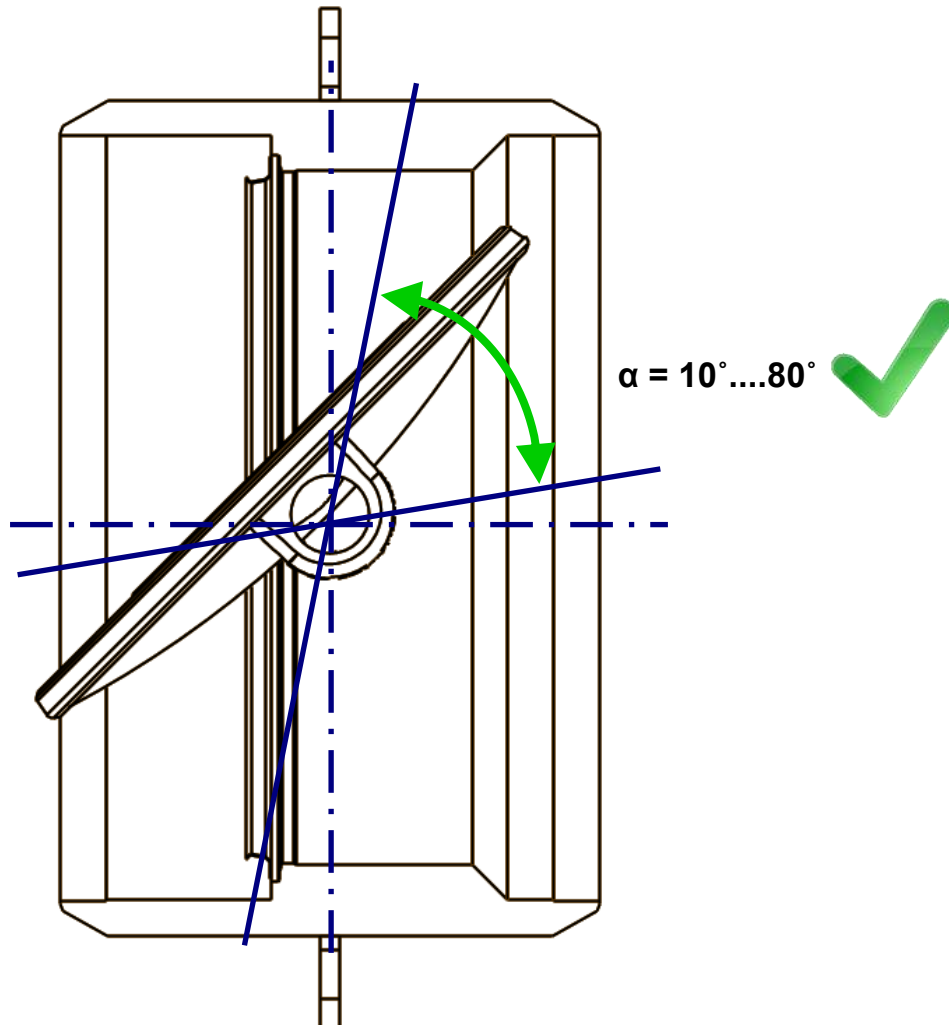
Control use

The Högfors valves are suitable for shut-off and for control use. Operating angle range of the disk for control is $10^\circ - 80^\circ$.

Flow KV values for the valves and the formula for the flow KV calculation can be found in the product card.



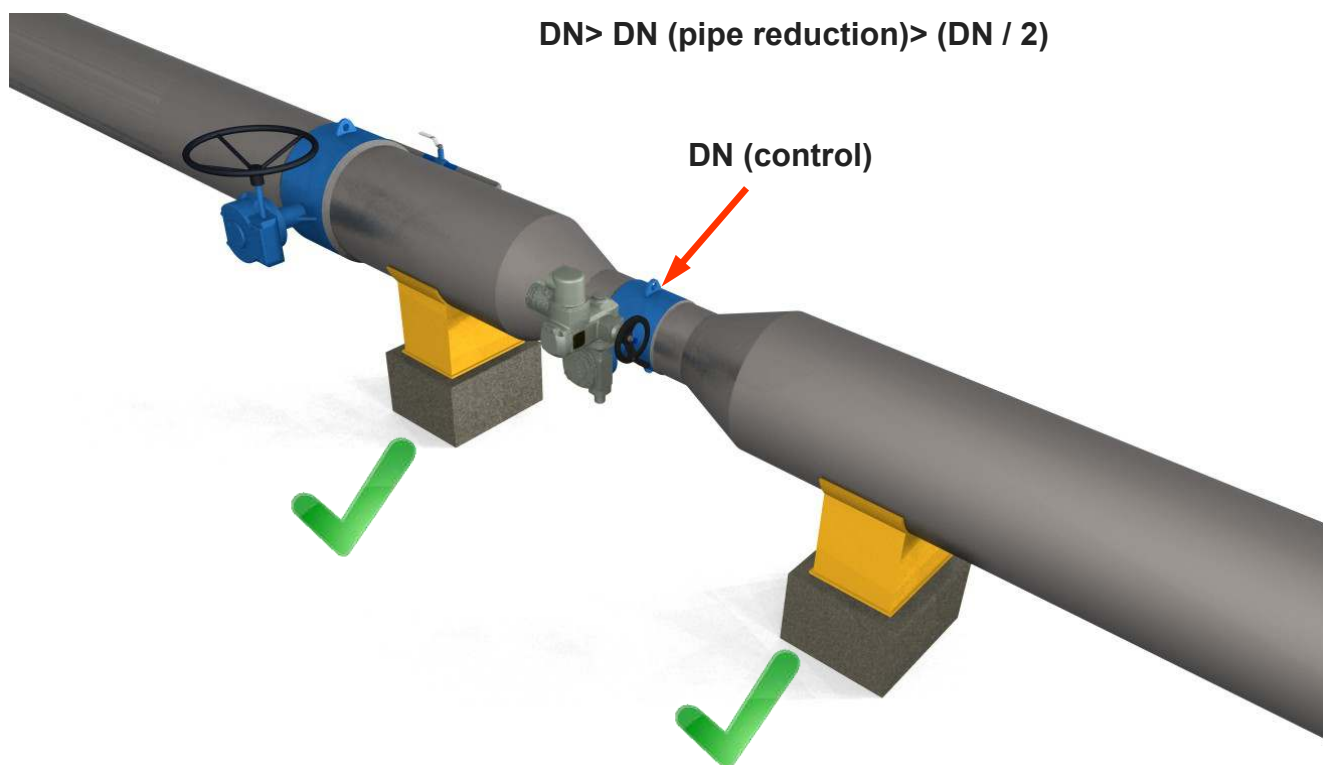
Disc opening angles below $< 10^\circ$ are not suitable for control.



In case of difficulty in the selection of control valve, please contact your local Högfors representative.

When using the pipeline reduction with the valve position please consider the increased mechanical stresses affecting the valve. Please use additional supports.

! Pipeline reduction DN size should not be less than 50% of the DN main pipe.



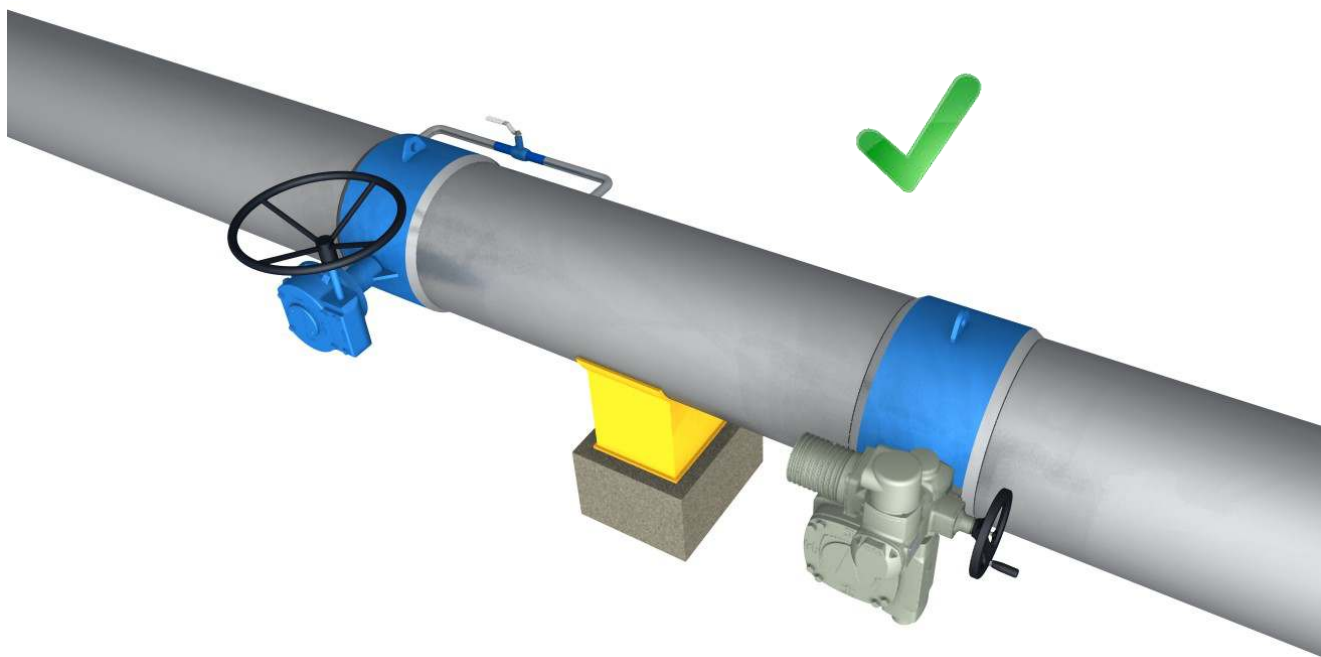
Pipeline reduction leads to an acceleration in the flow:

The acceptable flow rate for water:

- Recommended velocity - 2 m / s,
- Maximum allowable - 5 m / s,
- Short-time maximum allowable - 7.5 m / s.

! The flow rate should not exceed the values above.

In operation, the long term use of valve for control may affect the seat tightness class. In order to improve the reliability of the network, please use additional valve for Shut-off use. 1st valve for control 2nd for shut-off.



Cavitation

Operation valve under continuous nt cavitation conditions can lead to accelerated wear of valve parts and significantly shorten the life of the valve.

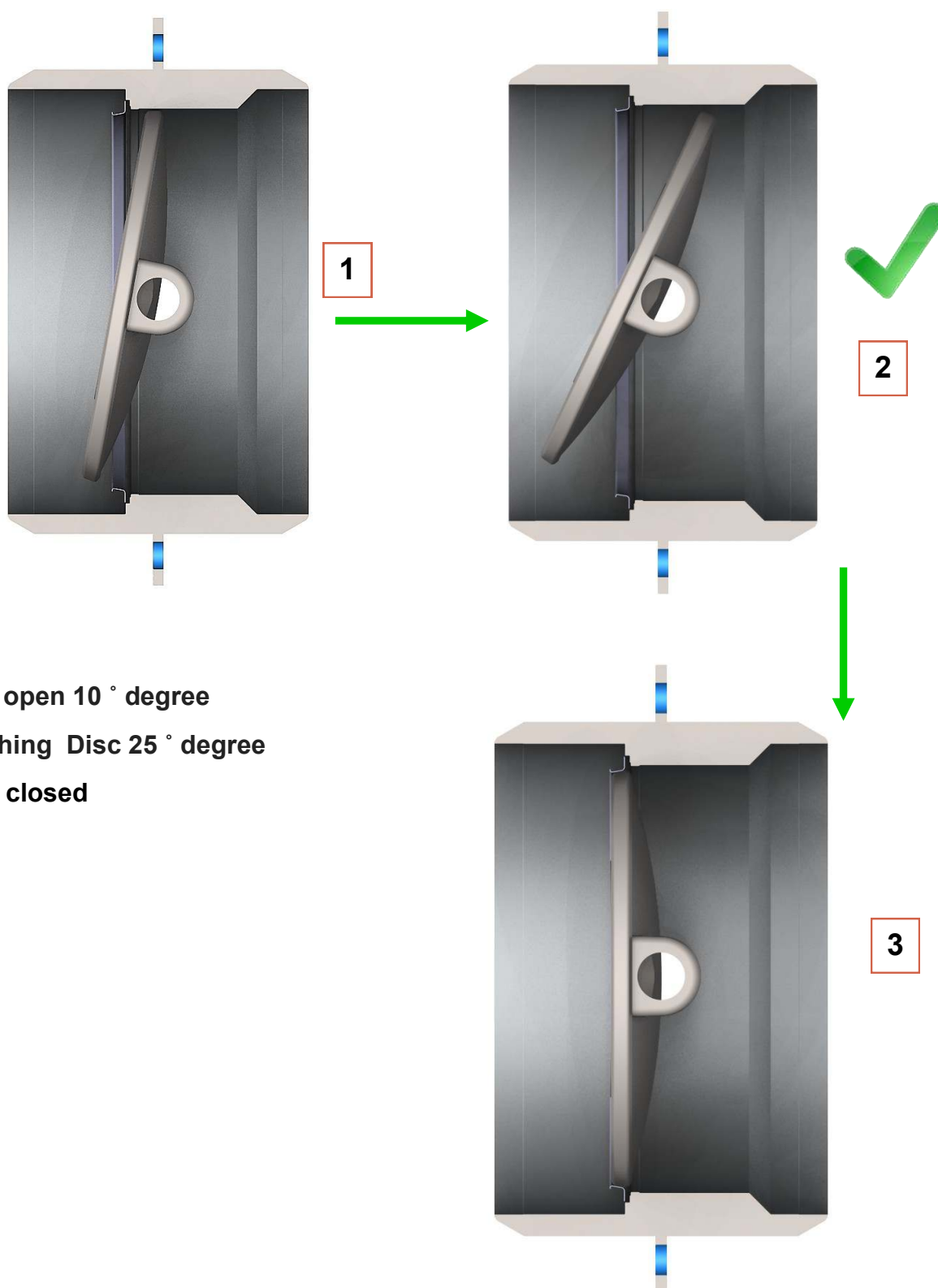
Appearance of the cavitation is usually accompanied by, a sharp increase in acoustic noise and vibrations occur.



Avoid continuous cavitation conditions.

In most cases, the risk of cavitation can be significantly reduced by constructive measures in the design of the pipeline.

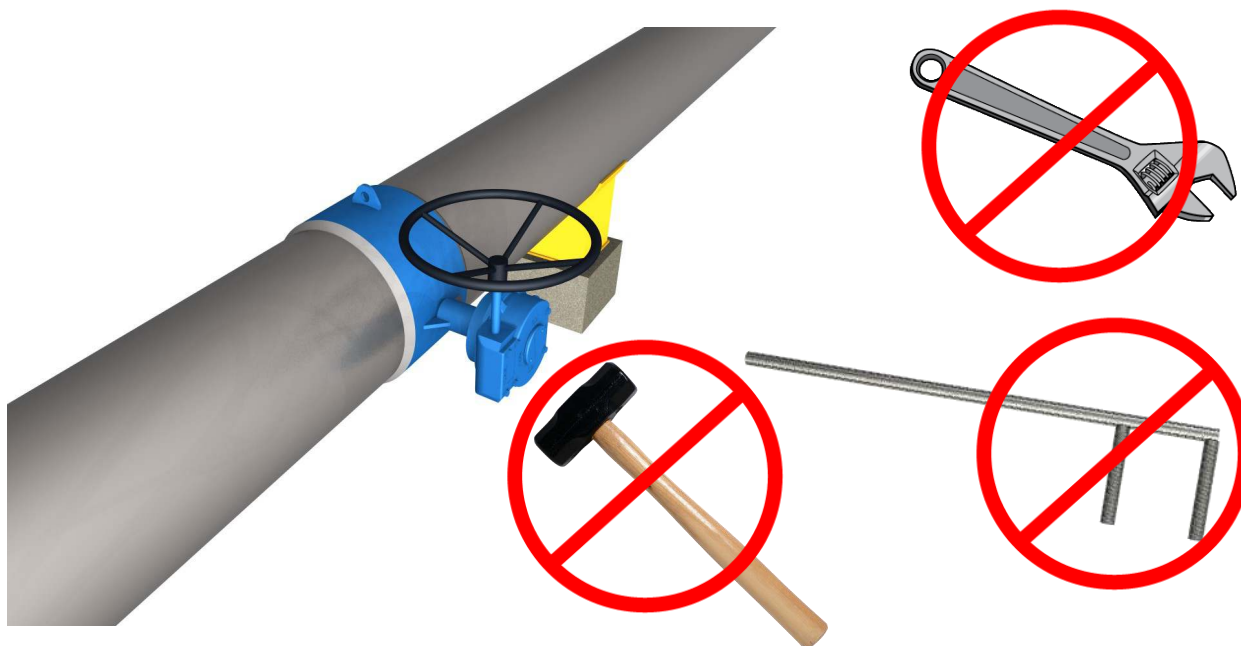
If the disk is in the open position by a small angle (0-10 °), then before closing it is necessary to open the disk to a larger angle (25 ° -30 °) for flushing impurities that may have been collected between the disk and the seat.



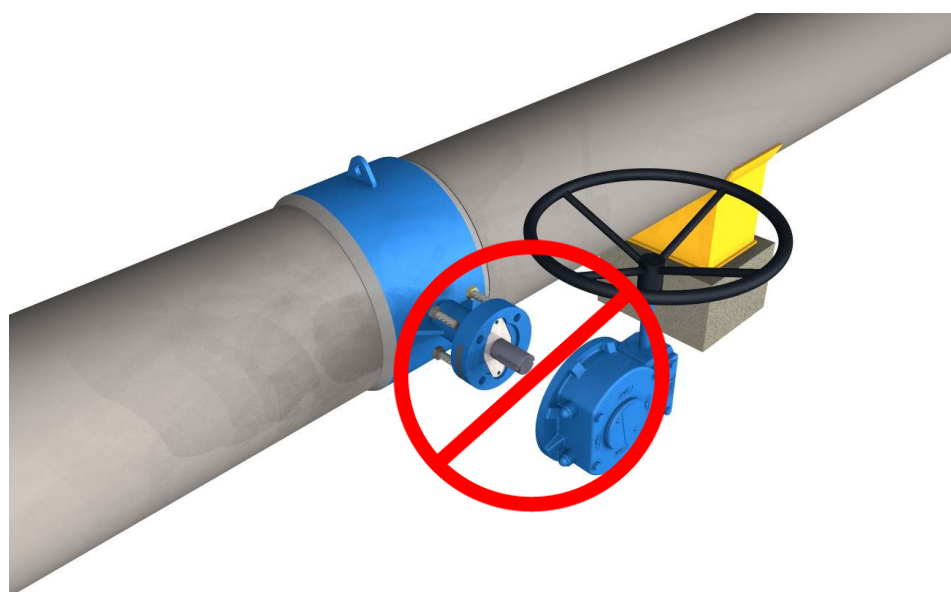
1. Disc open 10 ° degree
2. Flushing Disc 25 ° degree
3. Disc closed

Valve operation

Do not use excessive force to rotate the wheel gear. Only 1 person is needed to operate the gear and handwheel. Do not use any tools to operate the valve. Do not try to adjust the actuator settings.



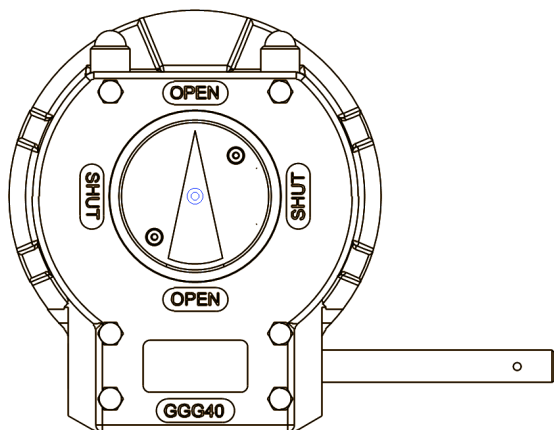
Disconnecting the actuator will lead to the loss of the factory settings of the actuator. When reinstalling the actuator it requires reconfiguration.



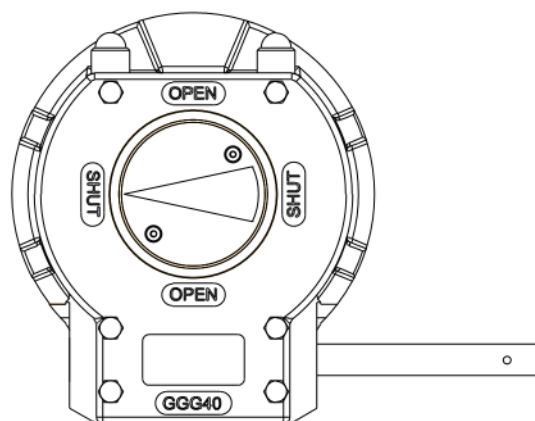
Prohibited the remove the actuator when there is pressure in the pipeline.

Each manual gearbox and an electric actuator have a mechanical position indicator.

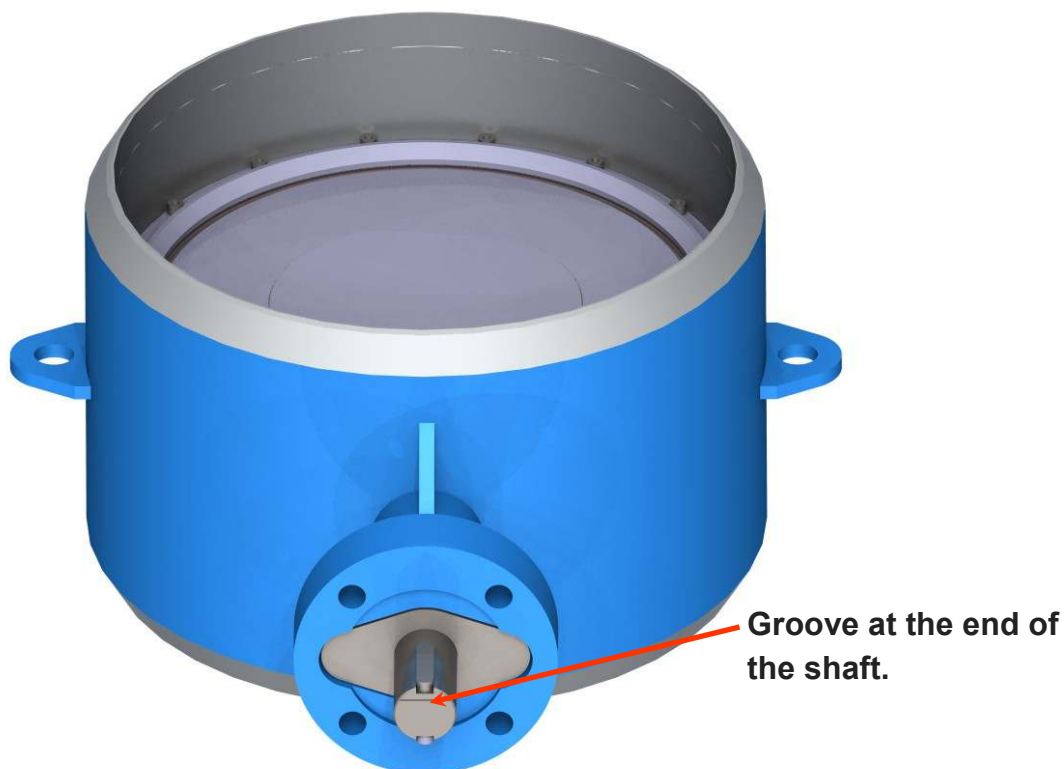
Position "OPEN"



Position "SHUT"



If the valve is already installed in the pipeline, the approximate position of the disk can be determined by the groove at the end of the shaft.



Troubleshooting Högfors 31300 series.

Troubleshooting should be performed only by qualified personnel. Before starting the work, the staff should read carefully and understand the document: “Instructions for installation and operation of Högfors valves”.

Contact Högfors representative if you have any questions or need advice.

Trouble	Probable cause	Solution
Leakage immediately after installation of valve	Deformation of the valve body caused by welding.	Flush the disk seal by opening the disc by 25-30°. Repeat 3 times. If the leak still persists, then dismantle the valve and inspect the internal parts.
	The disk was in open position during welding. Damage of the sealing surfaces caused by welding.	
	Mounting debris between the disc and seal.	
The valve is not tight.	Leakage through by-pass.	Make sure that by-pass is closed.
	The disk is not in «shut» position.	Check position of the disk by mechanical indicator on actuator.
	Impurities between the disc and seal.	Flush the disk seal by opening the disc by 25-30°. Repeat 3 times.
	The seat ring and/or disk are worn or damaged.	Replace seat ring. Clean and check the sealing surface of the disk.
Sharp increasing noise and vibration.	Choked or cavitation flow due to valve misuse or error in pipeline design.	Consult the Högfors representative.
The disc “jams” in certain position.	Mechanical damage of the worm gear.	Consult the Högfors representative. Troubleshooting depends on the model of the actuator.
	Corrosion of the internal parts of a worm gear.	
The valve is leaking between the flanges of the valve and the gear.	Leaking through stem sealing.	Tighten bolts of the valve stem seals.

Trouble	Probable cause	Solution
Valve can't be opened.	Malfunction of the actuator.	Consult the Högfors representative. Troubleshooting depends on the model of the actuator.
	Actuator is blocked.	
	Foreign particles between the disc and seal packages.	Consult the Högfors representative.
	Too high operation torque.	Use by-pass to reduce pressure difference.
When you rotate the hand wheel the position of the disc does not change.	Keys on the stem have become loose.	Check the position and condition of keys between the actuator and the valve stem. Consult the Högfors representative.
	Destruction / damage of the actuator	Consult the Högfors representative.

For complete information regarding the installation, operation, maintenance and repair of the valve please see the full version of the instructions for installation, operation and maintenance of Högfors valves.

BLUE LINE
 ИНСТРУКЦИЯ ПО МОНТАЖУ И ЭКСПЛУАТАЦИИ
 ЗАТВОРА ДИСКОВОГО ПОВОРОТНОГО
 Артикул 31300, 31301


 20-08-2023

ЗАТВОР ДИСКОВЫЙ ПОВОРОТНЫЙ
 артикул 31300, 31301

ИНСТРУКЦИЯ ПО МОНТАЖУ,
 ЭКСПЛУАТАЦИИ И ОБСЛУЖИВАНИЮ



1. Введение

Внимательно изучите данную инструкцию перед монтажом и вводом в эксплуатацию дисково-поворотного затвора. Храните инструкцию вблизи арматуры в месте, доступном для обслуживающего персонала.

HÖGFORS OY не несет ответственности за ущерб, полученный в результате неправильной транспортировки, ввода в эксплуатацию, монтажа или эксплуатации дисково-поворотного затвора.

Гарантия на герметичность затвора действительна только для затворов, уплотняемых ручными или другими исполнительными механизмами на заводе-изготовителе, и только в том случае, если привод не снимался с затвора и не регулировался потребителем.

Гарантийный срок эксплуатации 12 месяцев со дня ввода в эксплуатацию, но не более 24 месяцев со дня поставки, если в договоре не указано иное.

2. Маркировка

Шильдик завода-изготовителя приклеен на корпус затвора на фланце для присоединения привода. Запорное уплотнение находится на противоположной стороне корпуса, относительно шильдика. Маркировочный лис на торце штока указывает положение диска. Затвор закрывается в направлении по часовой стрелке и открывается в направлении против часовой стрелки. Код открытия и закрытия - 90 градусов.



Рис. 1: Шильдик завода-изготовителя.

Завод - изготовитель
 1. тип арматуры
 2. номинальное давление
 3. макс. перед. давления
 4. температура макс / мин
 5. год изготовления
 6. заводской номер

3. Приемка, складирование и транспортировка.

При приеме следует убедиться, что затвор и привод не были повреждены во время транспортировки. Складирование следует проводить таким образом, чтобы затворы были

HÖGFORS OY P.O. Box 11, Oulunkylä, 16 Tel. +358 (0)2 7277 200 Fax +358 (0)2 7277 201 www.hogfors.com

22