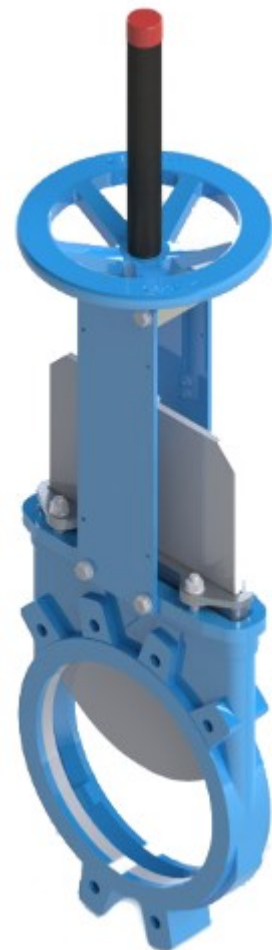
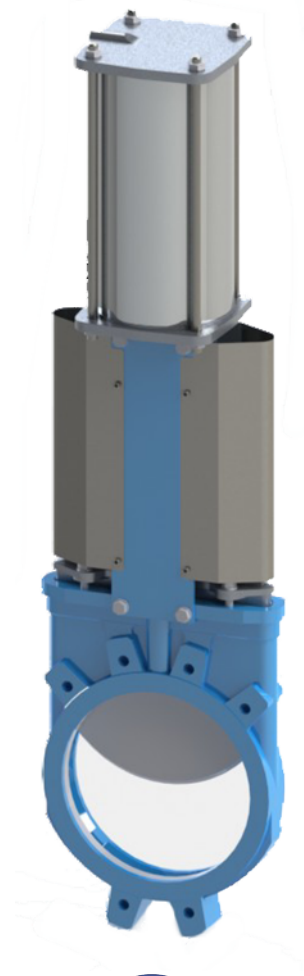
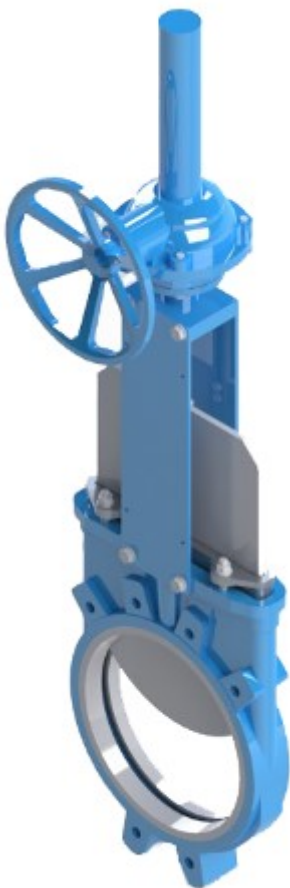


MODEL 200 KNIFE GATE VALVES

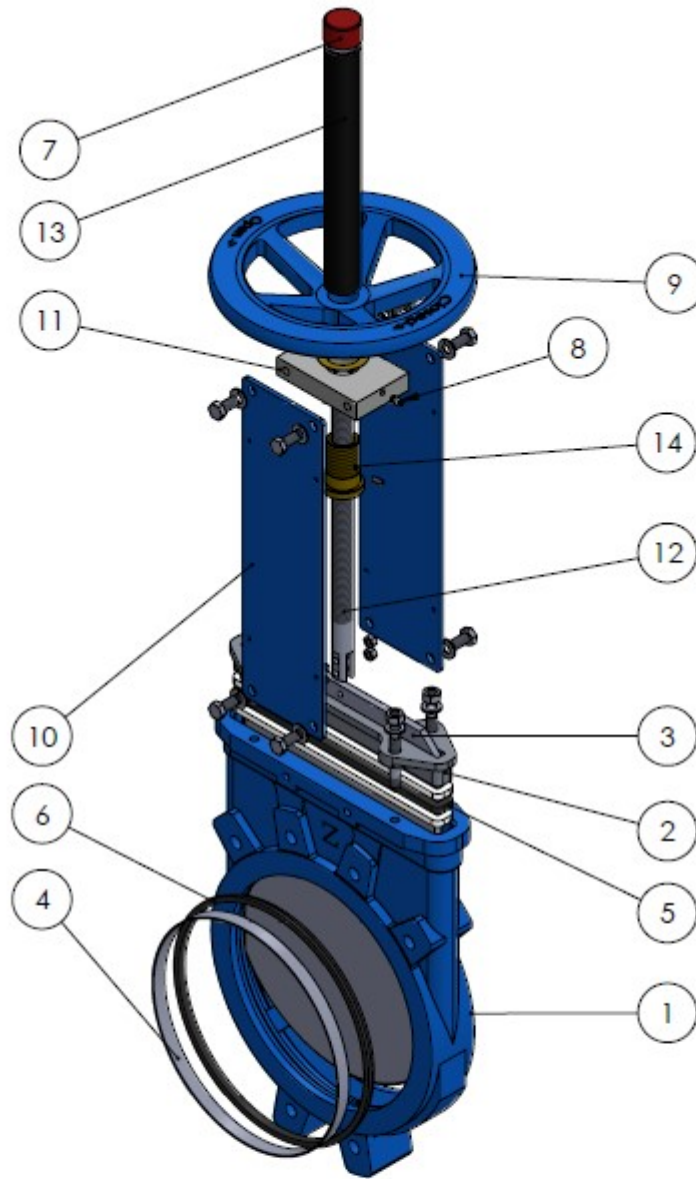
INSTALLATION & MAINTENANCE MANUAL



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1. List of components / General arrangement



| | |
|------------------------|--------------------------|
| 1.Body | 8.Grease Nipple |
| 2.Gland follower | 9.Handwheel |
| 3. Knife gate | 10.Support plates |
| 4. Seat retaining ring | 11.Support bridge |
| 5.Packing set x3 | 12.Stem |
| 6.Seat | 13. Stem protection tube |
| 7.Protection cap | 14.Bronze drive bush |

2. Description

The model 200 knife gate valve is unidirectional or bidirectional depending on the type of closure that has been chosen commonly used for fluids with suspended solids.

The Model 200 complies with the following European directives:

- 2006/42/CE (Machinery Directive)
- 2014/68/EU (PED)

3. Handling

It is important to pay attention to the following points when handling the valve.

Do not lift the valve by the actuator or by the guards as they are not designed for it, you should use eyebolts threaded into threaded holes in the body. It is also not advised to hold the valve through the bore of the valve as this could damage or dislodge the seat.

It is advisable to use slings for lifting and handling valves where the weight exceeds that stated as acceptable in the Health & Safety Manual Handling Codes.

4. Installation

For proper installation of the Model 200 valves it is important to consider the following:

Personnel handling and installing the valves must be trained and must comply with all necessary safety regulations.

Prior to installation of the valve is important to inspect and verify that it has not suffered any damage or harm during shipping and/or storage.

Make sure that the internal bore of the valve is clean and free from debris, also that the adjoining areas where it will be installed are free from dirt, weld deposits and that the flange facings are clean – suitable gaskets are too used.

The distance between the connection flanges must be correctly aligned and parallel as any defects will cause difficulties in the operation. Special care should be taken to maintain the correct distance between the flanges and to ensure that they are parallel to the valve body.

Incorrect alignment of the valve can cause deformations, which can lead to difficulties in operation.

Tighten bolts with caution, so that tensions in the body do not cause any cracking or breaking.

No tilting, steady crosswise tightening. Bolts torques are to be observed.

At the time of installation, especially if valve is chosen unidirectional the valve must be mounted so that the higher pressure pushes the gate against the seat as shown in the image. Despite the valve being unidirectional it can also be used in the 'off seat' direction of the flow where the valve will work with pressures up to 1/3 of the recommended pressure against seat.



**Note that the direction of fluid need not always be equal to the direction of pressure.*

As a general rule, the valve should be installed vertically on horizontal pipe whenever possible. However it is also possible to mount it in any other position as long as you consider that any actuators fitted to the valve are adequately supported when the position is horizontal or inclined.

Once the valve has been installed and securing the flanges are tight, operate the valve under pressure and check the seal under load. It is important to note that during transportation or storage of the valve the gland material might have settled so that in the event of leak, tighten the gland nuts gradually and in a crosswise pattern. Only tighten just enough to prevent any leakage, if the gland is overtighten, as this reduces the life of the gland and increase the force required to operate the valve, possibly causing damage.

5. Actuators / Operation

Hand Wheel

To open the valve turn the hand wheel counterclockwise, to shut valve turn the hand wheel clockwise.

Lever

To operate the valve first loosen the quick release locking screw and then operate the lever in the direction of opening or closing. To secure the position tighten the quick release locking lever.

Cylinder

For pneumatically operated valves, there are option for double-acting and single-acting, in both cases the recommended air pressure is 5 to 6 bar.

We recommend that the compressed air is dry, filtered and lubricated for proper operation and longevity of the cylinder.

Hydraulic

Where valves are operated with hydraulic cylinders is important to use clean hydraulic and to maintain the cylinders on a regular basis. It is recommended specifying low temperature oils in areas where the valves are constantly exposed to cold temperatures.

Gear-box

The operation with a gearbox is similar to the drive wheel. For best performance it is recommended to lubricate the gear every six months. Where valves are in storage it is recommended to operate every 4 months.

Electric

Recommended electric actuator rpm for Zubi T200 valve is 45rpm, higher speed rpm under end user responsibility.

6. Maintenance

In general the valves only require maintenance for changing the packing and changing the seats on both the unidirectional and bidirectional valves when leakage is detected across the valve when fully closed. To maintain easy operation it is recommended that the threaded valve stem be cleaned and greased through the bronze drive bush housed in the bridge.

a) Changing the packing

It is important to change the packing, either on a regular basis (depending on the number of operations and on the circulating fluid) or due to the deterioration thereof. The packing change must be made as follows:



* We should note that this process will release the valve drive so it would be interesting using a crane if deemed necessary.

1. Next, loosen the lower bolts to the support plate.



2. Undo the bolts holding the gate to the stem and remove the operator.
3. Then, loosen the nuts holding the gland follower to remove that part.



4. Remove old packing, clean out packing box and replace with new gland.



5. Replace the gland follower tightening the nuts in a crosswise pattern. **Do not overtighten.**
6. Replaced the stem connecting bolts and the support plate bolts.
7. Operate the valve several times to check the possible leaks. Adjust gland as previously instructed if leaks appear.

b) Replacing the seat

The seats are in place only in valves where leak tight closure is required or on bidirectional type. It is important to make changes either for regular maintenance (depending on the number of operations and the state of the circulating fluid) or due to the detection of leakage across the valve. The seat must be changed as follows:

1. Remove the valve from the pipeline, making sure the line is not under pressure before removing.
2. Fully open the valve
3. With a drift remove the seat retaining ring. Remove the old seat and clean the body of debris.



4. After replacing the seat is replaced making sure the join is in the upper body. It is recommended to apply some grease to the seat to ease into the body and to keep in place.



5. With care replace the seat retaining ring, tapping with a drift all round the edge until ring is back in place



6. Close the valve tightly against the seat, checking contact between gate and seat.
7. Operate several times to assist alignment and to check for possible leaks



**To replace a Teflon (PTFE) seat it is recommended to preheat at 50° to soften and ease of replacement.*

c) Maintenance of pneumatic cylinders

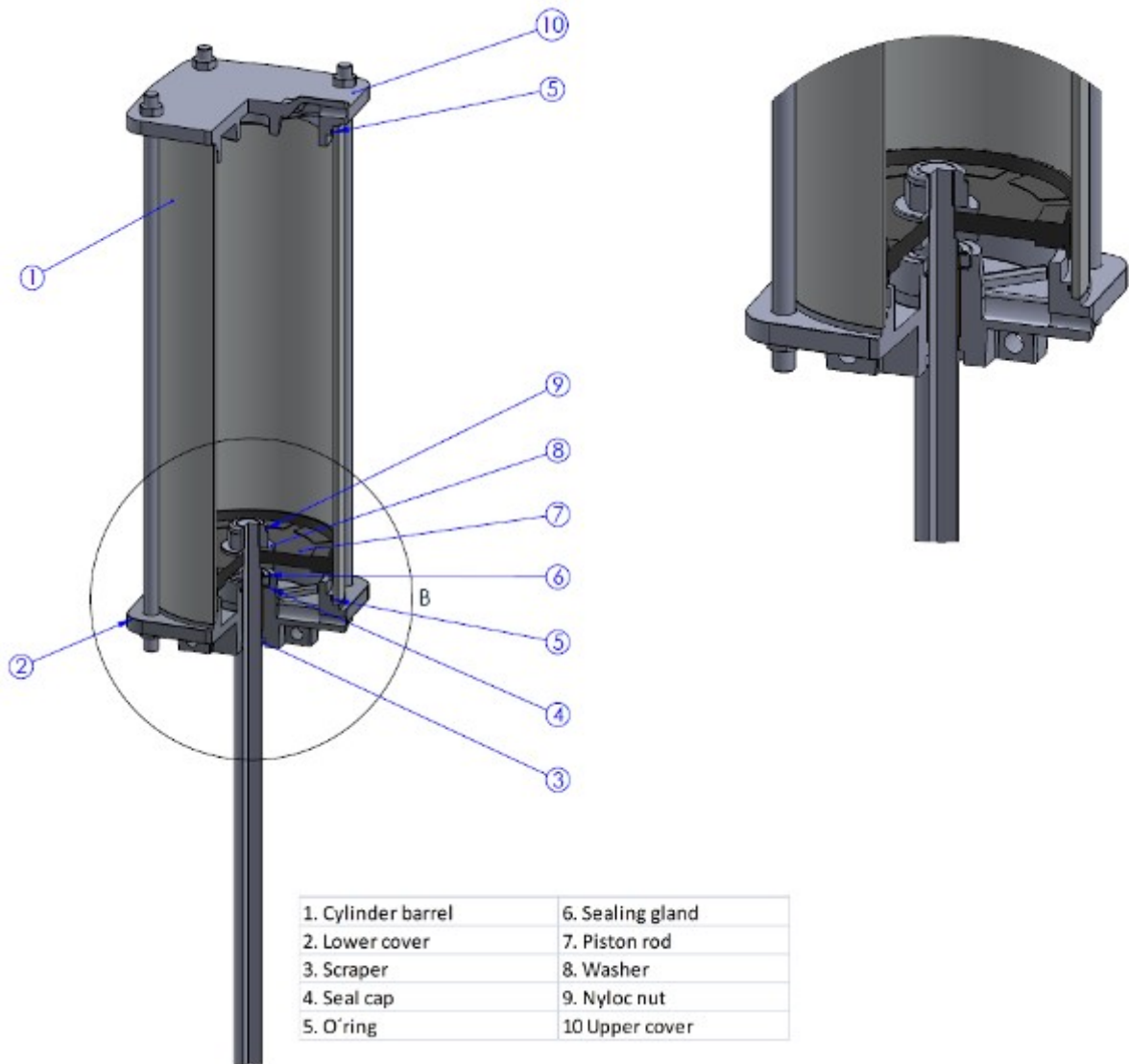
The actuators seals must be replaced if leaking is detected between the two cylinder chambers. This leak is due to the deterioration of the seals or cylinder liner.

Complete replacement of the cylinder must be made as follows:

1. Disconnect the cylinder from the air supply with the valve in the closed position; make sure all the air is drained out of the cylinder.
2. Loosen and remove the lower bolts on the support plates.
3. Disconnect the shaft from the gate.
4. Next, install the new drive, reconnecting the shaft to the gate.
5. Replace the support plates and tighten the bolts.
6. Operate the valve several times before placing back in line, pressurise with air not exceeding 7 bar or less than 5, thus proving the proper functioning of the cylinder.

When replacing the cylinder components, you must follow the guidelines above as 1-2-3 then as follows:

- To renew the o-rings on the covers, undo the tie rod nuts; carefully remove cover tapping gently upwards trying not to damage the barrel or cap. Remove old o-ring clean cap, insert new o-ring and replace cap. Tighten the nuts on the tie rods diagonally.
- To replace the piston remove the upper cover and the cylinder barrel leaving the piston exposed inside. Subsequently undo the nyloc nut and washer holding the piston to the piston rod, removed the damaged piston, clean thread and replace with new piston washer and new nyloc nut.
- To replace the seal cap, bottom cover came loose and scraper, leaving open the damaged board.



7. Recommendations

For proper maintenance of the valves, we recommend periodic changes as mentioned the valve components. Its duration will depend on the working conditions, temperature and chemical corrosion to which they are subjected to.

8. Storage

- Valves should be stored in a well ventilated place at a temperature not exceeding 30°C, especially in long-term storage because seats & gaskets may deteriorate.
- It is recommended to store the valves under cover but if this is not possible and they have to be stored outside, it is advisable to leave in the plastic covered crates the valves are delivered in and cover the crates with suitable tarpaulins.
- Areas of valve movement, especially the shaft must remain greased for it is important to conduct periodic inspections and grease as needed. Valves will need to be operated to make greasing effective.