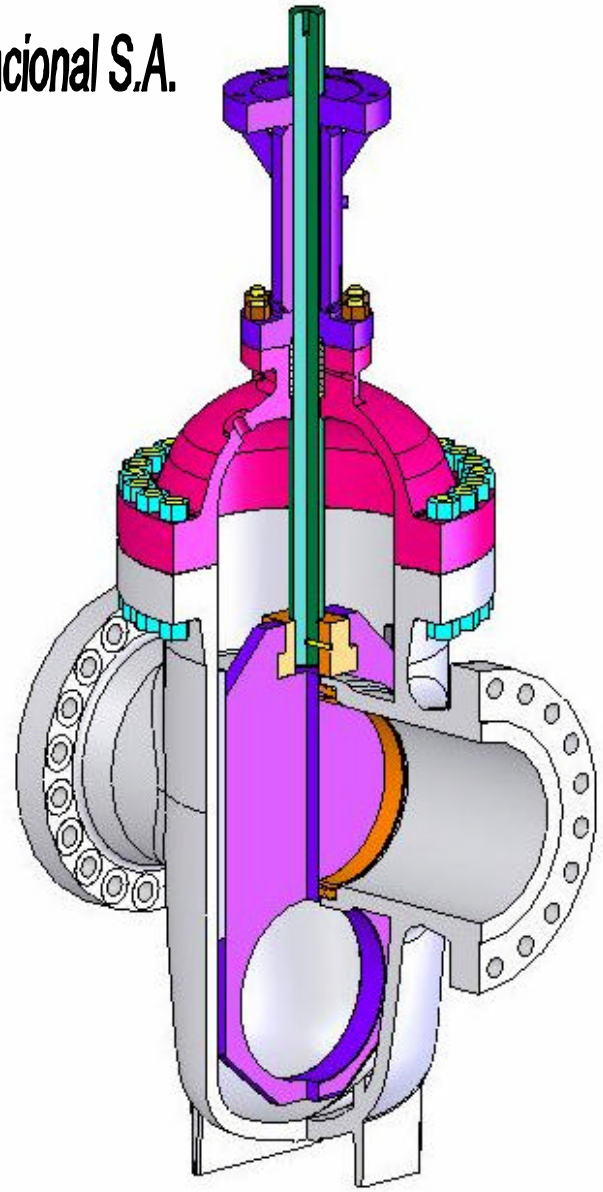
POLÍGONO INDUSTRIAL KALZADAKO (SARATXO)
01468 AMURRIO – ÁLAVA
☎- +34 945 891 561 FAX: +34 945 892 227
E-MAIL: INFO@LAZAROITUARTE.COM

Lázaro Ituarte Internacional S.A.



Operation and Maintenance Manual - Through Conduit and Expanding Gate Valves

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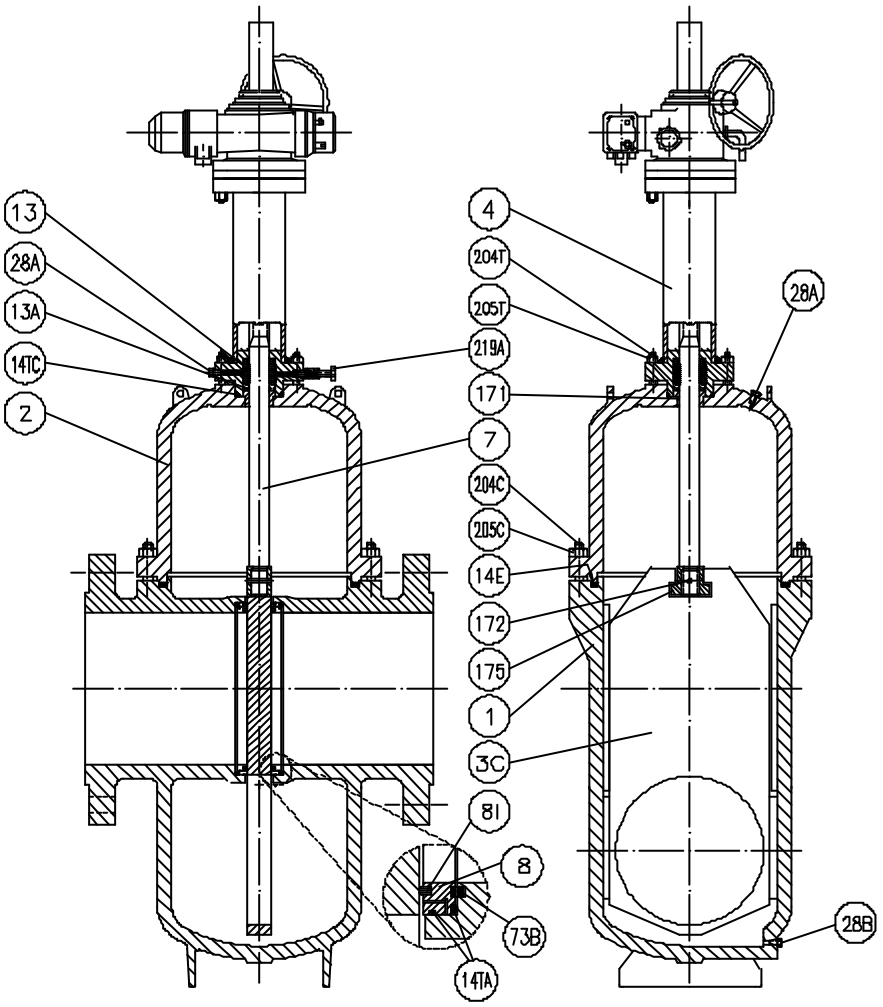
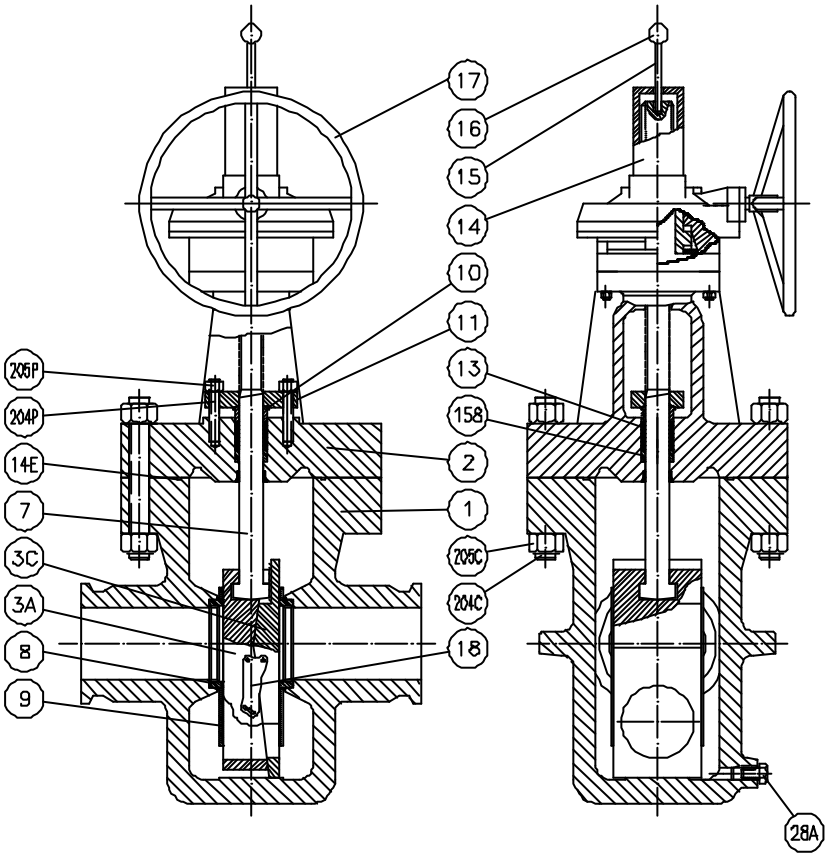
1.- THROUGH CONDUIT GATE VALVE



219A	INJECTOR
205T	YOKE NUT
205C	BONNET NUT
204T	YOKE BOLT
204C	BONNET BOLT
175	T – HEAD
172	PIN
171	BUSHING
73B	SPRING
28B	PLUG
28A	PLUG
14TC	O'RING
14E	GASKET
14TA	O'RING
13A	CHEVRON–PACKING
13	PLASTIC–PACKING
81	PRIMARY SEAL RING
8	BODY RING
7	STEM
4	YOKE
3C	GATE
2	BONNET
1	BODY

2.- EXPANDING GATE VALVE



ITEM	NAME
18	GATE CENTRALIZER
17	HANDWHEEL
16	INDICATOR ROD BALL
15	INDICATOR ROD
14	TUBE
205P	GLAND NUT
204P	GLAND BOLT
205C	BONNET NUT
204C	BONNET BOLT
28A	PLUG (1" NPT)
14E	GASKET
158	PACKING WASHER
13	PACKING RING
11	GLAND FLANGE
10	GLAND
9	SEAT SKIRT
8	BODY RING
7	STEM
3C	GATE
3A	SEGMENT
2	BONNET
1	BODY

3.- INTRODUCTION

3.1.- GENERAL NOTES

This Operation and Maintenance Manual has been prepared by the Engineering Department of *Lázaro Ituarte Internacional, S.A* in order to give to the user the storage, operation, maintenance, handling and installation instructions for the supplied valves .

In case the user may require any scope of manipulation in the valve, it is required to contact firstly and beforehand the manufacturer in order to avoid defects resulting from wrong manipulation of the valve.

WARNING

This operation and maintenance manual describes the most suitable procedures for a correct handling, installation and maintenance for the valves manufactured by Lazaro Ituarte. These procedures must be followed step by step and thoughtfully to prevent damage caused by any misuse or manipulation.

The valves as all the equipment subject to pressure can be dangerous if not correctly handled.

Do not dismantle any valve device unless prior approval from the manufacturer.

4. - SERVICE REQUIREMENT AND USE

4.1.- SERVICE REQUIREMENT

The Trough Conduit and Expanding Gate Valves manufactured by LAZARO ITUARTE INTERNACIONAL are designed according to API 6D. The tight seal on the valve's parallel seats is produced by the action of the fluid itself.

The Through Conduit valves have floating seats with PTFE inserted into the seat faces, making maintenance work much easier seeing as how all of the valve components can be removed without having to take the valve body off the pipe line.

Both valves are double block & bleed valves. These are used to prevent different types of fluids from mixing. The valves provide a seal in both directions at pressures ranging from zero to maximum working pressure, regardless of fluctuations in pressure, pressure differentials or the direction of flow.

They are actuated by hand wheel, with or without gear box. Other type of actuation by means of direct hydraulic, pneumatic or motor actuators.

These kind of valves shall work in full open/full close position.

4.2.- USER INDICATIONS

- The user will have to select the adequate material to avoid corrosion risks.
- The user will have to select the valve's "class" according to pressure and temperature data in accordance to standards (ASME B16.34 or any applicable standard) in order not to produce efforts above the acceptable limits.
- When the valve works at a temperature higher than 454ºC or lower than -24ºC, the user will have to select the adequate material for the bolting.
- The valve should not be subjected to pressures and temperatures higher than those indicated by standards (ASME B16.34 or any applicable standard).
- The valves should not be used for throttling purpose, in order to prevent seat damages.
- It should not cause short closing which can cause water hammers.
- When required, the stem of the valve should be protected with covers to prevent solid particles from settling on it and damaging it.
- In case of actuator pneumatic, electric or hydraulic actuators with high speed of closing, is recommended coupling of a damper at the end of the course to avoid impacts which can cause damages in the valve.

5. HANDLING AND STORAGE

Unless otherwise specified and agreed the valve is packed in closed position in standard pallets.

5.1.- HANDLING

The valves with weight lower than 50kg can be handled manually through the wheel, as it is shown on the picture.

For valves with weight 55 kg. and above correct handling is shown in pictures. Do not attempt to handle the valve from the hand wheel, the gear box or the actuator.
In case of using lifting lugs the handling must be as shown picture on the left.
In case of using slings the handling is through the yoke, at the right picture.

In order to avoid damage in any part of the valve, we recommend the use of a polyester slings . Using a steel slings, you must especially pay attention to steel in contact with the important parts of the valves, especially the stem. The choice of the sling must be adequate with the weight of the valve.

For stainless steel valves never handle, brush or manipulate with material other than stainless steel. The use of dissolvent halogen ad is not permitted .

For valves with wheel, those should not be actuated with bars, key of nut, or others similar.

5.2.- STORAGE BEFORE INSTALLATION

Valve shall be completely closed and both ends calked with plastic or wood protections attached to the valve's body, these protections must be only withdrawn at the time of the installation.

Stem surface shall be well lubricated and protected with adhesive tape and packing paper.

When the valve is going to be stored for a long period of time, the valves will be kept in the same packages delivered from the workshop, kept dry, stored in covered or enclosed premises. It's recommended to protect the valves introducing in the packages non-humidity bags.

6. INSTALLATION

A wrong valve installation can bring serious consequences; a bad handling can require expensive services to repair it. When receiving the valve, verify that no external damages exist which could have caused damages in the valve.

6.1.- CHEKING BEFORE INSTALLATION

- Check on the valve's plate: size, class and trim and make sure that those are adequate for the installation.
- Valve with wheel: open and close fully to test the ease of opening.
- All the precautions necessary must be taken to avoid the introduction of external elements into the valve which can cause serious damage on the seat surface before and after installation.
- The end's protections must be withdrawn in order to clean the inner surface by fluxing. At this time the wheel should not be operated.
- It's very important to clean the piping before the installation: small pieces of metal, deposits of welding in the piping can produce a damage on the seat surface of the valve.
- When the valve works with high or low temperature, the valve should not be manipulated before it would be technically equilibrated it could create a loss of seal and in case of galling on stem and the seats.
- It must be remembered that during the installation the thermal stress piping and the fluid's weight produce considerable mechanical stress to the valve. Therefore, it can produce distortions in the body of the valve causing backlash in the seats and consequently the leaks.
- During the procedure of valve's ends welding to the pipe take attention that metal does not fall on the seat surface. It is also necessary to take into account the high temperature which can deform the seat of the valve.

Once checking made of all those different points, the valve is ready to being installed.

6.2.- ENDS CONNECTIONS

- The valve's ends will be aligned parallel to the ends of the piping to avoid strong force.
- Once placed you will proceed with a partial tightening of all bolting, per pair opposed diametrically around the support.
- You will proceed with the same manner for the total tightening .
- The final tightening will be corresponding to the size and material of the bolting.

6.3.- BUTT WELDING CONECCTIONS

- The ends of the valve will be aligned parallel to the ends it piping to avoid efforts.
- To close the valve before proceeding to the welding for protect surface of base.
- When it has been produced changes material structure and thermal stress in the body of the valve during the ends welding process , it will be done a post weld heat treatment.

6.4.- CONSIDERATIONS AFTER INSTALLATION

- Once the valve is installed, the seat surfaces are still vulnerable to foreign particles like sand, deposit of welding in the system of piping. For that it is recommended to carry out cleaning of the system with all the valves open (the back seat must be completely closed) before the plant functions.

6.4.1. Special considerations in high temperature applications

- The selection of the electric actuator should be according to the service conditions of the valve.
- The regulation of the electric actuator at the factory will be by limit, as open as close.
- Don't operate the valve (open/close) until the same temperature is uniform in all the valve.
- When the valve is installed in high temperature systems, it is advised to verify the closing of nuts and packing screws after a short initial operating period.

7. MAINTENANCE

By programming a periodic maintenance of the valve, potential problems can be detected and therefore it is possible to extend the life of the valve. The periodic maintenance program must be prepared by the engineering department. The frequency of these revisions must be based on the user's experience who installs the equipment. Lazaro Ituarte International recommends the revision of the following parts:

PACKING:

The leaking by the packing box is the most common problem which arrives when the valve is under pressure.

Regular inspection of this element avoids the leaking through the gland which can damage the stem of the valve.

If the leakages occur:

- Through Conduit Valves:

Inject plastic packing through the injector (219A).

- Expanding Gate Valves:

Tight the gland (10) through the nuts (205P). Be careful that nuts are not over tightened as this can increase packing friction which can adversely affect the valve performance.

BOLTING:

The systems of piping are subject to certain vibrations which can loosen and disassemble the bolting, therefore, all bolting (204C – 205C) will have to be checked and inspected regularly.

AUXILIARY EQUIPMENTS:

When the valve is equipped with a bevel gear actuator , electric actuator … this equipment should also be lubricated regularly according to manufacturer's recommendations.

8. RECOMMENDED SPARE PARTS

When ordering spares or requesting any information about the valves ensure that the following information is quoted:

- type, size and rating valve
- valve serial number

Above information is stamped on the valve and also specified in the nameplate.

7.1.- Through Conduit Valves

The recommended spare parts by Lázaro Ituarte Internacional, S.A. for Through Conduit gate valves are as follows:

- O'rings (14TC and 14TA)
- Gasket (14E)
- Chevron – packing (13A)
- Primary seal ring (81)
- Plastic – packing (13)

7.1.- Expanding Gate Valves

The recommended spare parts by Lázaro Ituarte Internacional, S.A. for Expanding gate valves are as follows:

- Gasket (14E)
- Packing ring(13)