



## GUILLOTINE VALVES

## T-TAPPI SERIES

04/09/2012

### UNIDIRECTIONAL Guillotine Valve

- Unidirectional "LUG" guillotine valve, designed in accordance with standards TAPPI TIS 405-8 and MSS-SP-81.
- Monobloc cast body with interior slides for optimum movement of the gate during operation.
- Provides high flow rates with low pressure drop.
- Various seat and packing materials available.
- Face-to-face dimension in accordance with TAPPI standard.
- Has an arrow on the body indicating the flow direction.

#### General Applications:

- This guillotine valve is suitable to work with liquids with a maximum concentration of solids of 6%. If used for solids, we recommend installing with the body which indicates the contrary flow direction:
- Bulk transport                      - Draining plants                      - Paper industry
- Water treatment                      - Chemical plants                      - Food sector
- Mining

**Sizes:** ND50 - 2" to ND1200 - 48"  
(larger sizes on request).

|                                      |                          |                       |
|--------------------------------------|--------------------------|-----------------------|
| <b>Work (<math>\Delta P</math>):</b> | ND50-2" to ND600-24"     | 10 kg/cm <sup>2</sup> |
|                                      | ND700-28" to ND900-36"   | 8 kg/cm <sup>2</sup>  |
|                                      | ND1000-40" to ND1200-48" | 4 kg/cm <sup>2</sup>  |

- The pressures shown in the table are valid when the duct pressure direction coincides with the body arrow direction; when they do not coincide, they are designed to work correctly at 30% of the pressure shown in the table.

**Drilling:** DIN PN10 and ANSI B16.5 (150 LB)

**Other common flanges:** DIN PN 16                      JIS standard                      Australian standard  
DIN PN 6                      DIN PN25                      British standard

#### Directives:

- Machinery Directive: **DIR 2006/42/EC (MACHINERY)**
- Pressure Equipment Directive: **DIR 97/23/EC (PED) ART.3, P.3**
- Potentially Explosive Atmospheres Directive (optional): **DIR 94/9/EC (ATEX) CAT.3 ZONE 2 and 22 GD** , for information on categories and zones please contact CMO Technical-Sales Department.

#### Quality dossier:

- All valves are tested hydrostatically at CMO and material and test certificates can be provided.
- Body test = working pressure x 1.5.
- Seat test = working pressure x 1.1.

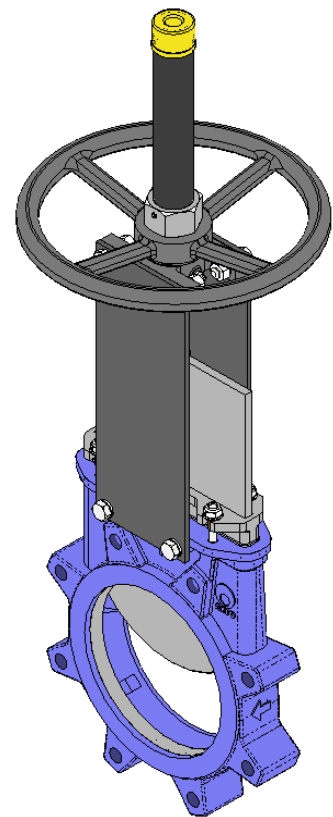


fig. 1

## GUILLOTINE VALVES

## T-TAPPI SERIES

### Advantages of CMO "Model T-TAPPI"

When a knife gate valve remains open for long periods of time and the body's internal walls are parallel a very large torque is required to close it. The inside of the **T-TAPPI** body is conically shaped, providing greater space. This way, when the valve is closed the solids stored inside it can be easily removed.

This valve is defined as unidirectional and in this type of valves of other suppliers there is the risk of the gate bending due to the existence of counterpressure. This cannot happen with the CMO valve because it contains internal slides that support the knife gate and allow it to work under counter-pressure of 30% of the maximum working pressure, without the knife gate becoming deformed.

The stem protection hood is independent from the handwheel securing nut, this means the hood can be disassembled without the need to release the handwheel. This advantage allows regular maintenance operations to be performed, such as lubricating the stem, etc.

The CMO valve stem is made from stainless steel 18/8. This is another additional benefit, since some manufacturers supply it with 13% chrome, which quickly rusts.

The operating wheel is manufactured in nodular cast GJS-500. Some manufacturers supply it in common cast-iron, which can lead to breakage in the event of very high operation torque or a bang. The yoke is has a compact design with the bronze actuator nut protected in a sealed and lubricated box. This makes it possible to move the valve with a key, even without the handwheel (in other manufacturers' products this is not possible).

The pneumatic actuator's upper and lower covers are made of GJS-400 nodular cast iron, making them highly shock resistant. This characteristic is essential in pneumatic actuators.

The pneumatic cylinder's seals are commercial products and can be purchased worldwide. This means it is not necessary to contact CMO every time a seal is required.

| STANDARD COMPONENTS LIST |               |                         |
|--------------------------|---------------|-------------------------|
| COMPONENT                | STEEL VERSION | STAINLESS STEEL VERSION |
| 1- Body                  | A216WCB       | CF8M                    |
| 2- Gate                  | AISI304       | AISI316                 |
| 3- Packing gland         | CF8M          | CF8M                    |
| 4- Support plates        | STEEL         | STEEL                   |
| 5- Seal                  | EPDM          | EPDM                    |
| 6. Ring                  | AISI316       | AISI316                 |
| 7- Stem                  | AISI303       | AISI303                 |
| 8- Yoke                  | GJS500        | GJS500                  |
| 9- Handwheel             | GJS500        | GJS500                  |
| 10- Stem nut             | BRONZE        | BRONZE                  |
| 11- Stopper Nut          | STEEL         | STEEL                   |
| 12- Packing seal.        | EPDM          | EPDM                    |
| 13- Packing              | SYNT + PTFE   | SYNT + PTFE             |
| 14- Hood nut             | 5.6 ZINC      | 5.6 ZINC                |
| 15 Hood                  | STEEL         | STEEL                   |
| 16- Protection cap       | PLASTIC       | PLASTIC                 |
| 17- Slides               | RCH1000       | RCH1000                 |

table 1

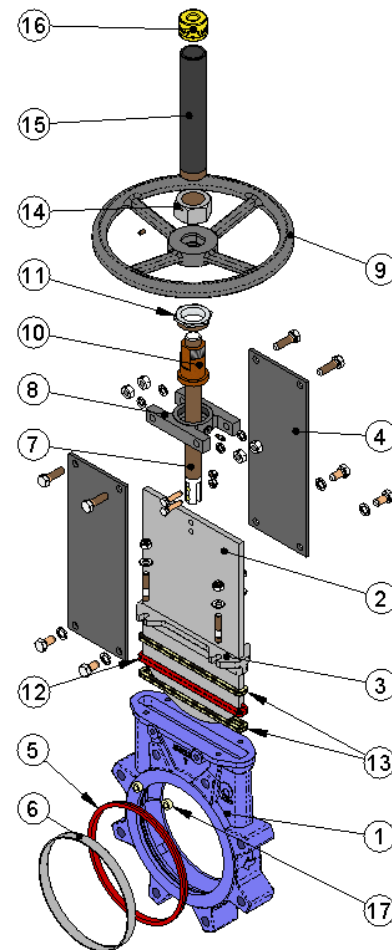


fig. 2



## GUILLOTINE VALVES

## T-TAPPI SERIES

### DESIGN CHARACTERISTICS

#### 1- BODY

Monobloc "LUG" cast body with interior slides for optimum movement of the gate and wedges for improved seal tightness. D in accordance with Standards MSS-SP-81 and TAPPI TIS 405-8.

Designed with full passage to provide large flows with small losses of load.

The body's internal design prevents any build up of solids in the seat area.

The standard manufacturing materials are A216WCB carbon steel and CF8M stainless steel. Other materials and stainless steel alloys (AISI316Ti, Duplex, 254SMO, Uranus B6....) are available upon request. As standard, carbon steel valves are painted with an anti-corrosive protection of 80 microns of EPOXY (colour RAL 5015). Other types of anti-corrosive protections are available on request.

#### 2- GATE

The standard manufacturing materials are AISI304 stainless steel in valves with carbon steel body and AISI316 stainless steel in valves with CF8M body. Other materials or combinations can be supplied on request.

The gate is polished on both sides to provide a smooth contact surface with the resilient seat. At the same time, the gate is rounded to prevent the seat from being cut. Different degrees of polishing, anti-abrasion treatments and modifications are available to adapt the valves to the customer's requirements.

#### 3- SEAT: (seal-tight)

Six types of seats are available according to the working application:

**-Seat 1:** Metal / metal seat. This type of seat does not include any kind of resilient seat and the estimated leakage (considering water as the test fluid) is 1.5% of the pipe flow.

**-Seat 2:** Standard soft-seated valve. This type of seat includes a resilient seat which is fixed to the inside of the body via an AISI316 stainless steel retaining ring.

**-Seat 3:** Soft-seated valve with reinforced socket. This type of seat includes a resilient seat which is fixed to the inside of the body via a reinforced retaining ring with two functions (to protect the valve from abrasion and clean the gate when working with solids that can stick to it).

**-Seats 4, 5 and 6:** The same as seats 1, 2 and 3 but including a deflector. The deflector is an O-ring located at the valve input with two functions: firstly to protect the valve from abrasion and secondly to guide the flow to the centre of the valve.

**\*Note:** Three materials are available for the reinforced socket and the deflector: Steel CA-15, CF8M and Ni-hard.

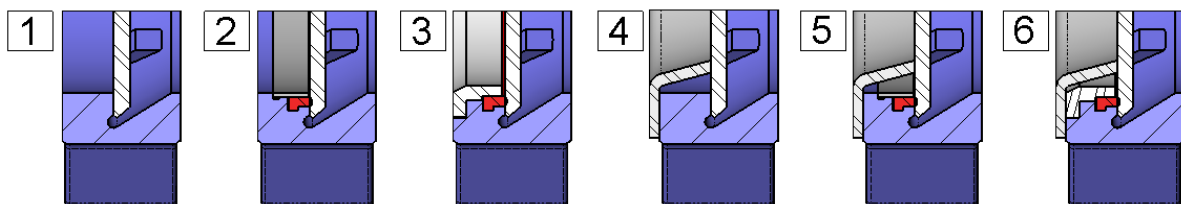


fig. 3



## GUILLOTINE VALVES

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### Resilient seat materials

#### **EPDM**

This is the standard resilient seat fitted on CMO valves. It can be used in many applications, however, it is generally used for water and products diluted in water at temperatures no higher than 90°C\*. It can also be used with abrasive products and it provides the valve with 100% watertight integrity.

#### **NITRILE**

It is used in fluids containing fats or oils at temperatures no higher than 90°C\*. It provides the valve with 100% watertight integrity.

#### **VITON**


Suitable for corrosive applications and continuous high temperatures of up to 190°C and peaks of 210°C. It provides the valve with 100% watertight integrity.

#### **SILICONE**

Mainly used in the food industry and for pharmaceutical products with temperatures no higher than 200°C. It provides the valve with 100% watertight integrity.

#### **PTFE**

Suitable for corrosive applications and pH between 2 and 12. Does not provide the valve with 100% watertight integrity. Estimated leakage: 0.5% of the tube flow.

 **Note:** In some applications other types of resilient materials are used, such as hypalon, butile or natural rubber. Please contact us if you require one of these materials.

### **4- PACKING**

CMO standard packing is composed of three lines with a specially designed EPDM seal in the middle which provides seal-tightness between the body and the gate, preventing any type of leakage to the atmosphere. It is located in an easily accessible place and can be replaced without dismantling the valve from the pipeline. Below we indicate various types of packing available according to the application to be given to the valve:

#### **GREASED COTTON (Recommended for hydraulic services)**

This packing is composed of braided cotton fibres soaked in grease both inside and out. It is for general use in hydraulic applications in both pumps and valves.

#### **DRY COTTON**

This packing is composed of cotton fibres. It is for general use in hydraulic applications with solids.

#### **COTTON + PTFE**

This packing is composed of braided cotton fibres soaked in PTFE both inside and out. It is for general use in hydraulic applications in both pumps and valves.

#### **SYNTHETIC + PTFE**

This packing is composed of braided synthetic fibres soaked in PTFE both inside and out. It is for general use in hydraulic applications in both pumps and valves and in all types of fluids, especially corrosive ones, including concentrated and oxidising oils. It is also used in liquids with solid particles in suspension.

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### LUBRICATED PTFE

It is made with PTFE filaments and designed to work at great speed. It is braided with a diagonal system. Suitable for valves and pumps which work with almost all types of fluids, particularly with the most corrosive, such as: oxidant and concentrated oils. It is also used in liquids with solid content.

### GRAPHITE

This packing is composed of high-purity graphite fibres. A diagonal braiding system is used and it is impregnated with graphite and lubricant which helps to reduce porosity and improve operation.

It has a wide range of applications as graphite is resistant to steam, water, oils, solvents, alkali and most acids.

### CERAMIC FIBRE

This packing is composed of ceramic material fibres. Its main applications are with air or gas at high temperatures and low pressures.

They are located in an easily accessible place and can be replaced without dismantling the valve from the pipeline.

| SEAT/SEALS   |              |                                    | PACKING          |        |              |      |
|--------------|--------------|------------------------------------|------------------|--------|--------------|------|
| Material     | Max. T. (°C) | Applications                       | Material         | P(bar) | Max. T. (°C) | pH   |
| Metal/Metal  | >250         | High temp./Low watertight integ.   | Greased cotton   | 10     | 100          | 6-8  |
| EPDM (E)     | 90 *         | Non-mineral oils, acids and water. | Dry cotton (AS)  | 0.5    | 100          | 6-8  |
| Nitrile (N)  | 90 *         | Hydrocarbons, oils and greases     | Cotton + PTFE    | 30     | 120          | 6-8  |
| Viton (V)    | 200          | Hydrocarbons and solvents          | Synthetic + PTFE | 100    | -200+270     | 0-14 |
| Silicone (S) | 200          | Food Products                      | Graphite         | 40     | 650          | 0-14 |
| PTFE (T)     | 250          | Resistant to corrosion             | Ceramic Fibre    | 0.3    | 1400         | 0-14 |

NOTE: More details and other materials available on request.

\* → EPDM and nitrile: is possible until serving temperature Max.: 120°C under request.

table 2

### 5- STEM

The CMO valve stem is made from stainless steel 18/8. This characteristic makes it highly resistant and provides excellent properties against corrosion.

The valve design can be rising stem or non-rising stem. When a rising stem is required for the valve, a stem hood is supplied to protect the stem from contact with dust and dirt, besides keeping it lubricated.

### 6- PACKING GLAND

The packing gland allows uniform force and pressure to be applied to the packing to ensure seal-tightness.

As standard, CMO T-TAPPI serial valves have the CF8M gland.

### 7- ACTUATORS

All types of actuators can be supplied, with the advantage that thanks to the CMO design they are fully interchangeable. This design allows the customer to change the actuators themselves and no extra assembly accessories are required. A design characteristic of CMO S.L. valves is that all actuators are interchangeable.

#### Manual:

Handwheel with rising stem  
Handwheel with non-rising stem  
Chainwheel  
Lever  
Geared motor  
Others (square nut, etc)

#### Automatic:

Electric actuator  
Pneumatic cylinder  
Hydraulic cylinder



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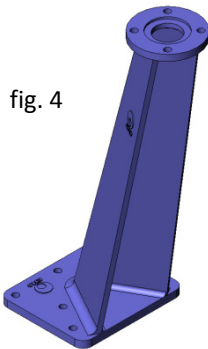


fig. 4

### Wide range of accessories available:

- Mechanical stops
- Locking devices
- Emergency manual actuators
- Electrovalves
- Positioners
- Limit switches
- Proximity switches
- Straight floor stands (fig. 5)
- Leaning floor stand (Fig. 4)

...

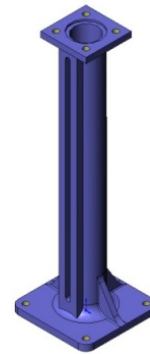
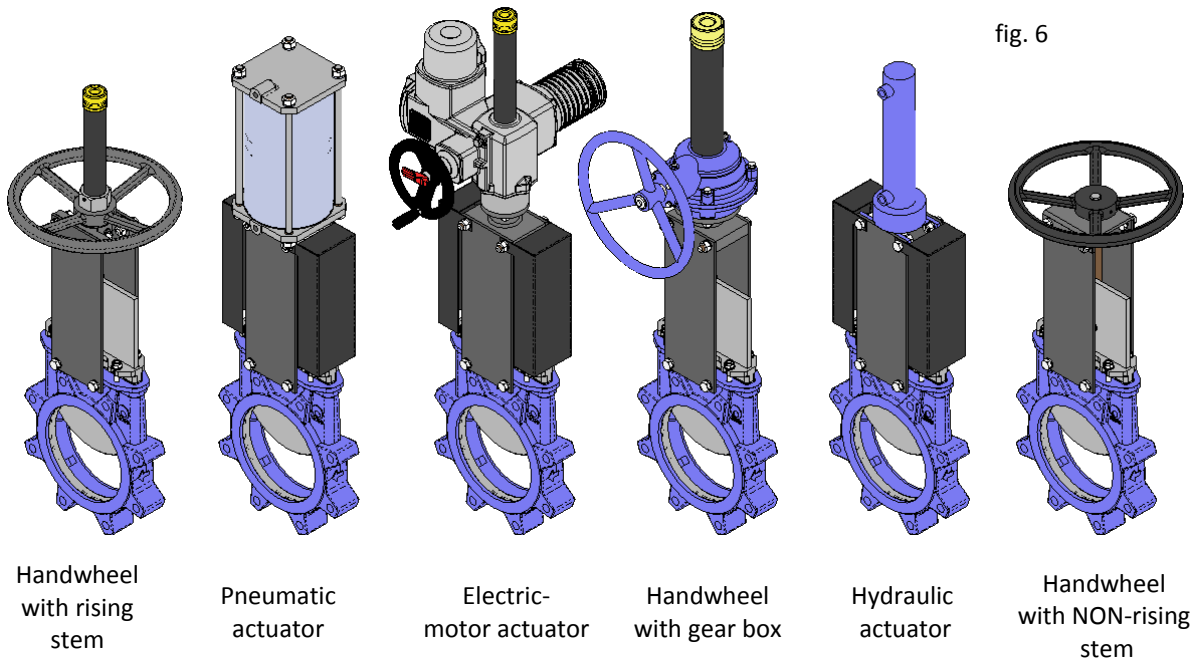


fig. 5

Stem extensions have also been developed, allowing the actuator to be located far away from the valve, to suit all needs. Please consult our technicians beforehand.



## ACCESSORIES AND OPTIONS

Different accessories are available to adapt the valve to specific working conditions such as:

### Mirror Polished Gate:

The mirror polished gate is especially recommended in the food industry and, as standard, in applications in which solids can stick to the gate. It is an alternative to ensure the solids slide off and do not stick to the gate.

### PTFE Lined Gate:

As with the mirror polished gate, it improves the valve's resistance to products that can stick to the gate.

### Stellited Gate:

Stellite is added to the gate's internal circle to protect it from abrasion.



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### Scraper in the packing:

Its function is to clean the gate during the opening movement and prevent possible damage to the packing.

### Air injections in the packing gland:

By injecting air in the packing, an air chamber is created which improves the seal-tightness.

### Heating Jacket:

Recommended in applications in which the fluid can harden and solidify inside the valve's body. An external jacket keeps the body temperature constant, preventing the fluid from solidifying.

### Flushing holes in body:

Several holes are drilled in the body to flush air, steam or other fluids out with the aim of cleaning the valve seat before sealing.

### Electrovalves (Fig. 7):

For air distribution to pneumatic actuators.

### Connection boxes, wiring and pneumatic piping:

Units supplied fully assembled with all the necessary accessories.

### Mechanical limit switches, inductive switches and positioners:

Limit switches or inductive switches are installed to indicate precise valve position, as well as positioners to indicate continuous position (Fig. 7).

### Mechanical Locking Device:

Allows the valve to be mechanically locked in a set position for long periods.

### Stroke limiting mechanical stops:

They allow the stroke to be mechanically adjusted, limiting the valve run

### Emergency Manual Actuator (Hand Wheel /Gear Box) (Fig. 7):

Allows manual operation of the valve in the event of power or air failure.

### Triangular (V-Notch) and Pentagonal Diaphragm with Indication Rule:

Recommended for application in which it is necessary to regulate the flow, it allows flow control according to the valve's opening percentage.

### Interchangeable actuators:

All actuators are easily interchangeable.

### Actuator or yoke support:

Made of EPOXY-coated steel (or stainless steel on request), its robust design gives it great rigidity in order to resist the most adverse operation conditions.

### Epoxy coating:

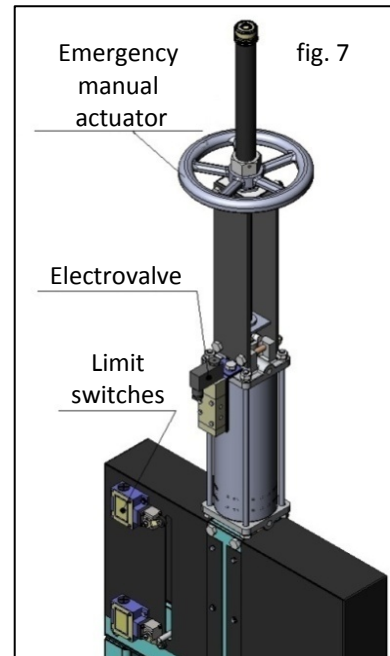
All carbon steel bodies and components of CMO valves are EPOXY coated, giving the valves great resistance to corrosion and an excellent surface finish. CMO's standard colour is blue RAL-5015.

### Gate safety protection:

In accordance with European Safety Standards ("EC" marking), CMO automated valves are equipped with gate guards, to prevent any objects from being accidentally caught or dragged in the gate.

### Bonnet:

Provides total seal-tightness to the outside, reducing the packing maintenance required.



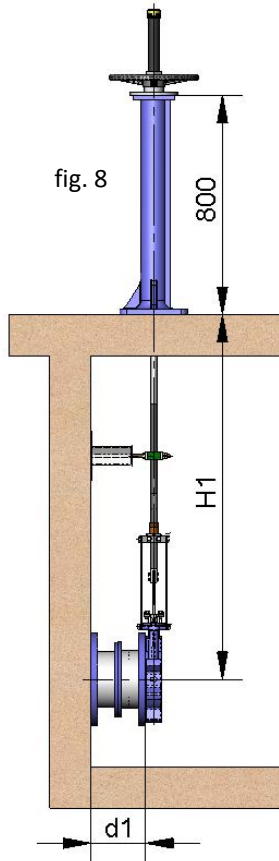


# GUILLOTINE VALVES

# T-TAPPI SERIES

## TYPES OF EXTENSION

When the valve needs to be operated from a distance, the following different types of actuators can be fitted:



### 1 - Extension: Floor Stand.

This extension is performed by coupling a rod to the stem. By defining the length of the rod, the desired extension is achieved. A floor stand is normally installed to support the actuator.

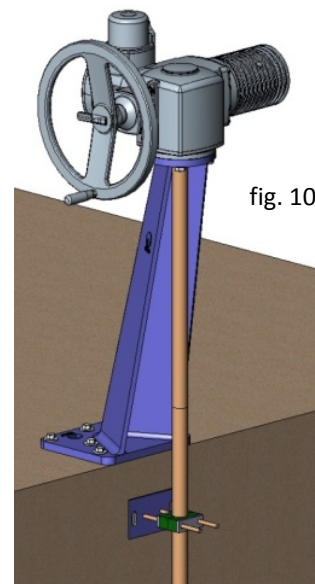
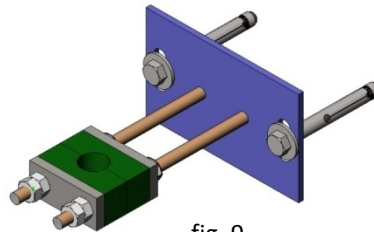
The definition variables are as follows:

**H1:** Distance from the valve shaft to the base of the stand.

**d1:** Separation from the wall to the end of the connecting flange.

### Characteristics:

- It can be coupled to any type of actuator.
- A stem support-guide is recommended (fig. 9) every 1.5 m.
- The standard floor stand is 800 mm high (fig. 8). Other floor stand measurements available on request.
- A position indicator can be fitted to determine the valve's percentage of opening.
- Possibility of leaning floor stand (fig. 10).



| COMPONENTS LIST |                                 |
|-----------------|---------------------------------|
| Component       | Standard Version                |
| Stem            | AISI 303                        |
| Stem            | AISI 304                        |
| Support-Guide   | Carbon steel with EPOXI coating |
| Slide           | Nylon                           |
| Floor Stand     | GJS-500 with EPOXY coating      |

Table 3





## GUILLOTINE VALVES

## T-TAPPI SERIES

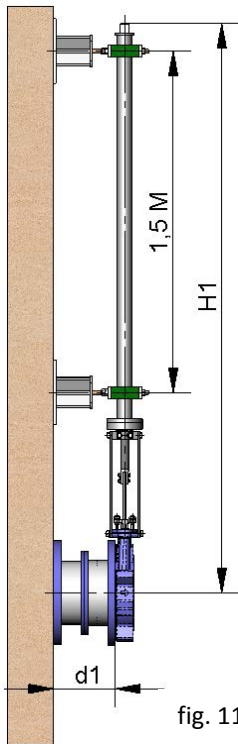


fig. 11

### 2 - Extension: Pipe (fig. 11)

Consists of raising the actuator. The pipe will rotate with the wheel or key when the valve is operated, although this will always remain at the same height.

The definition variables are as follows:

**H1:** Distance from the valve shaft to the desired height of the actuator.

**d1:** Separation from the wall to the end of the connecting flange.

#### Characteristics:

- Standard actuators: Handwheel and "Square Nut".
- A pipe support-guide is recommended every 1.5m.
- The standard materials are: EPOXY coated carbon steel or stainless steel.

### 3 - Extension: Extended Support Plates (Fig. 12)

When a short extension is required, it can be achieved by extending the support plates. An intermediate yoke can be fitted to reinforce the support plates' structure.

fig. 12

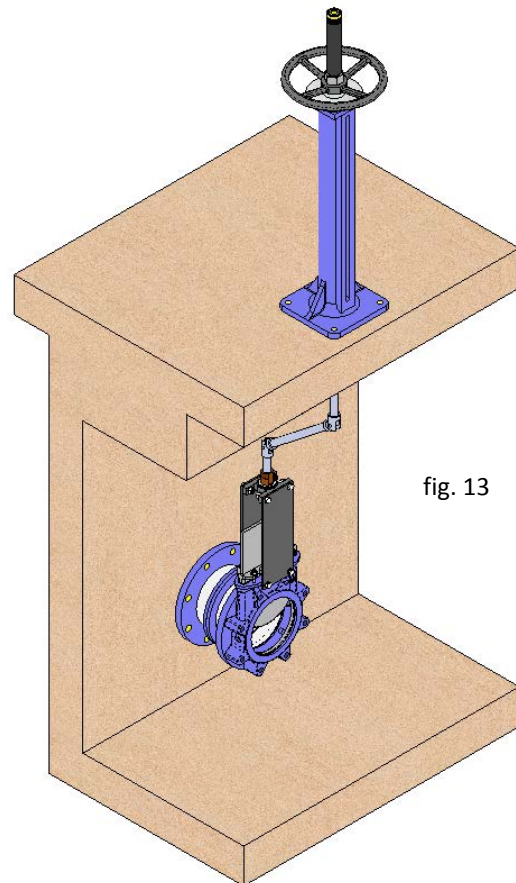
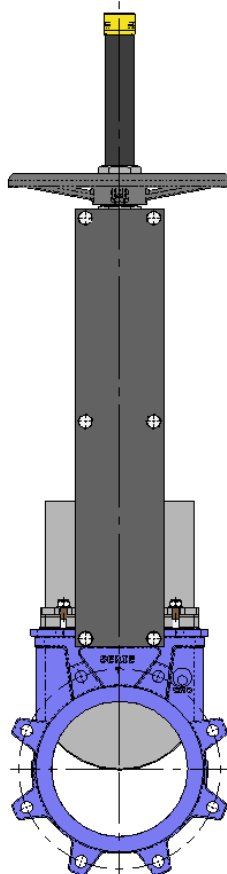


fig. 13

### 4 - Extension: Universal Joint (Fig. 13)

If the valve and the actuator are not in correct alignment, the problem can be resolved by fitting a universal joint.

## GUILLOTINE VALVES

## T-TAPPI SERIES

### HANDWHEEL with rising stem

- **B = Max.** width of the valve (without actuator).
- **D = Max.** height of the valve (without actuator).
- Options:
  - Locking devices.
  - Extensions: stand, pipe, plates, etc.
  - DN higher than those shown in the table.
- Actuator including:
  - Handwheel.
  - Stem.
  - Nut.
  - Stem protection hood.
- Available: ND50 - 2" to ND1200 - 48", other ND on request.
- From ND350 - 14" the actuator is with geared motor.

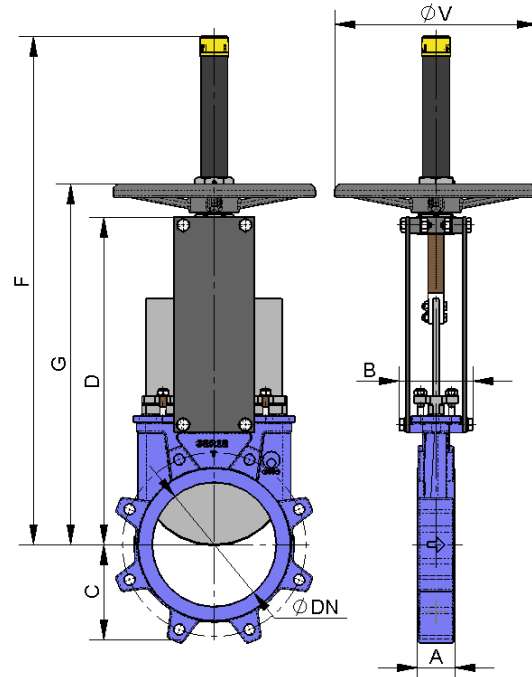


fig. 14

| DN   | ND     | ΔP<br>(Kg/cm <sup>2</sup> ) | DRAW<br>(Nw) | TORQUE<br>(Nm) | A     |        | B   | C   | D    | G   | F    | ØV  |
|------|--------|-----------------------------|--------------|----------------|-------|--------|-----|-----|------|-----|------|-----|
|      |        |                             |              |                | (mm)  | (")    |     |     |      |     |      |     |
| 50   | 2"     | 10                          | 830          | 1.91           | 47.6  | 1 7/8" | 91  | 61  | 241  | 280 | 410  | 225 |
| 65   | 2 1/2" | 10                          | 1400         | 3.22           | 47.6  | 1 7/8" | 91  | 68  | 268  | 308 | 437  | 225 |
| 80   | 3"     | 10                          | 2120         | 4.9            | 50.8  | 2"     | 91  | 91  | 294  | 333 | 463  | 225 |
| 100  | 4"     | 10                          | 3320         | 7.61           | 50.8  | 2"     | 91  | 104 | 334  | 373 | 503  | 225 |
| 125  | 5"     | 10                          | 5180         | 11.9           | 57.2  | 2 1/4" | 101 | 118 | 367  | 407 | 586  | 225 |
| 150  | 6"     | 10                          | 7460         | 17.2           | 57.2  | 2 1/4" | 101 | 130 | 419  | 458 | 638  | 225 |
| 200  | 8"     | 10                          | 13300        | 38.1           | 69.9  | 2 3/4" | 118 | 159 | 525  | 578 | 816  | 325 |
| 250  | 10"    | 10                          | 20800        | 59.7           | 69.9  | 2 3/4" | 118 | 196 | 626  | 679 | 1017 | 325 |
| 300  | 12"    | 10                          | 30000        | 86.1           | 76.2  | 3"     | 118 | 231 | 726  | 779 | 1117 | 380 |
| 350  | 14"    | 10                          | 40720        | 159            | 76.2  | 3"     | 290 | 257 | 797  | 906 | 1337 | 450 |
| 400  | 16"    | 10                          | 53310        | 208            | 88.9  | 3 1/2" | 290 | 290 | 903  | --  | --   | --  |
| 450  | 18"    | 10                          | 67450        | 264            | 88.9  | 3 1/2" | 290 | 312 | 989  | --  | --   | --  |
| 500  | 20"    | 10                          | 83470        | 375            | 114.3 | 4 1/2" | 290 | 340 | 1101 | --  | --   | --  |
| 600  | 24"    | 10                          | 120440       | 666            | 114.3 | 4 1/2" | 290 | 398 | 1307 | --  | --   | --  |
| 700  | 28"    | 8                           | 131560       | 730            | 114.3 | 4 1/2" | 320 | 453 | 1506 | --  | --   | --  |
| 750  | 30"    | 8                           | 151010       | 837            | 117.5 | 4 5/8" | 320 | 489 | 1620 | --  | --   | --  |
| 800  | 32"    | 8                           | 172310       | 1136           | 117.5 | 4 5/8" | 320 | 503 | 1720 | --  | --   | --  |
| 900  | 36"    | 8                           | 218060       | 1438           | 117.5 | 4 5/8" | 320 | 583 | 1953 | --  | --   | --  |
| 1000 | 40"    | 4                           | 136460       | 910            | 117.5 | 4 5/8" | 320 | 613 | 2137 | --  | --   | --  |
| 1100 | 44"    | 4                           | 165980       | 1111           | 152.4 | 6"     | 340 | 670 | 2375 | --  | --   | --  |
| 1200 | 48"    | 4                           | 197520       | 1530           | 152.4 | 6"     | 340 | 728 | 2616 | --  | --   | --  |

Table 4



# GUILLOTINE VALVES

# T-TAPPI SERIES

## HANDWHEEL with non-rising stem

- Suitable when no size limitations exist.
- **B = Max.** width of the valve (without actuator).
- **D = Max.** height of the valve (without actuator).
- Options:
  - Square nut.
  - Locking devices.
  - Extensions: stand, pipe, plates,...
  - DN higher than those shown in the table.
- Actuator including:
  - Handwheel.
  - Stem.
  - Guide bushing on the yoke.
  - Nut.
- Available: ND50 - 2" to ND1200 - 48", other ND on request.
- From ND350 - 14" the actuator is with geared motor.

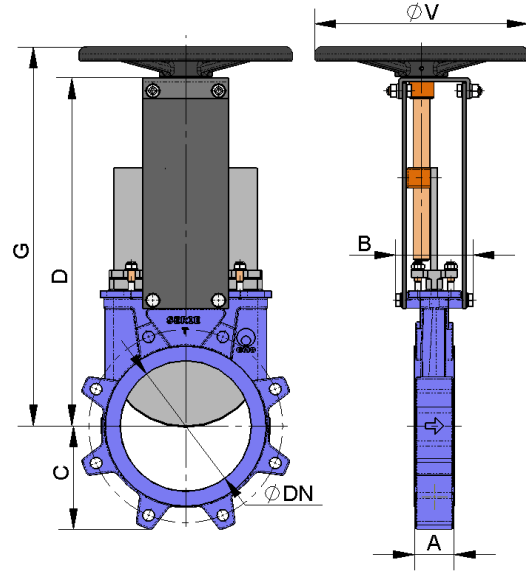


fig. 15

| DN   | ND     | ΔP<br>(Kg/cm <sup>2</sup> ) | DRAW<br>(Nw) | TORQUE<br>(Nm) | A     |        | B   | C   | D    | G   | ØV  |
|------|--------|-----------------------------|--------------|----------------|-------|--------|-----|-----|------|-----|-----|
|      |        |                             |              |                | (mm)  | (")    |     |     |      |     |     |
| 50   | 2"     | 10                          | 830          | 1.91           | 47.6  | 1 7/8" | 91  | 61  | 241  | 280 | 225 |
| 65   | 2 1/2" | 10                          | 1400         | 3.22           | 47.6  | 1 7/8" | 91  | 68  | 268  | 308 | 225 |
| 80   | 3"     | 10                          | 2120         | 4.9            | 50.8  | 2"     | 91  | 91  | 294  | 333 | 225 |
| 100  | 4"     | 10                          | 3320         | 7.61           | 50.8  | 2"     | 91  | 104 | 334  | 373 | 225 |
| 125  | 5"     | 10                          | 5180         | 11.9           | 57.2  | 2 1/4" | 101 | 118 | 367  | 407 | 225 |
| 150  | 6"     | 10                          | 7460         | 17.2           | 57.2  | 2 1/4" | 101 | 130 | 419  | 458 | 225 |
| 200  | 8"     | 10                          | 13300        | 38.1           | 69.9  | 2 3/4" | 118 | 159 | 525  | 578 | 325 |
| 250  | 10"    | 10                          | 20800        | 59.7           | 69.9  | 2 3/4" | 118 | 196 | 626  | 679 | 325 |
| 300  | 12"    | 10                          | 30000        | 86.1           | 76.2  | 3"     | 118 | 231 | 726  | 779 | 380 |
| 350  | 14"    | 10                          | 40720        | 159            | 76.2  | 3"     | 290 | 257 | 797  | 906 | 450 |
| 400  | 16"    | 10                          | 53310        | 208            | 88.9  | 3 1/2" | 290 | 290 | 903  | --  | --  |
| 450  | 18"    | 10                          | 67450        | 264            | 88.9  | 3 1/2" | 290 | 312 | 989  | --  | --  |
| 500  | 20"    | 10                          | 83470        | 375            | 114.3 | 4 1/2" | 290 | 340 | 1101 | --  | --  |
| 600  | 24"    | 10                          | 120440       | 666            | 114.3 | 4 1/2" | 290 | 398 | 1307 | --  | --  |
| 700  | 28"    | 8                           | 131560       | 730            | 114.3 | 4 1/2" | 320 | 453 | 1506 | --  | --  |
| 750  | 30"    | 8                           | 151010       | 837            | 117.5 | 4 5/8" | 320 | 489 | 1620 | --  | --  |
| 800  | 32"    | 8                           | 172310       | 1136           | 117.5 | 4 5/8" | 320 | 503 | 1720 | --  | --  |
| 900  | 36"    | 8                           | 218060       | 1438           | 117.5 | 4 5/8" | 320 | 583 | 1953 | --  | --  |
| 1000 | 40"    | 4                           | 136460       | 910            | 117.5 | 4 5/8" | 320 | 613 | 2137 | --  | --  |
| 1100 | 44"    | 4                           | 165980       | 1111           | 152.4 | 6"     | 340 | 670 | 2375 | --  | --  |
| 1200 | 48"    | 4                           | 197520       | 1530           | 152.4 | 6"     | 340 | 728 | 2616 | --  | --  |

table 5



# GUILLOTINE VALVES

# T-TAPPI SERIES

## CHAINWHEEL

- Widely used in raised installations with difficult access, the handwheel is fitted in vertical position.
- **B = Max.** width of the valve (without actuator).
- **D = Max.** height of the valve (without actuator).
- Options:
  - Locking devices.
  - Extensions: stand, pipe, plates,...
  - Non-rising stem.
  - DN higher than those shown in the table.
- Including:
  - Handwheel.
  - Stem.
  - Nut.
  - Hood.
- Available: ND50 - 2" to ND1200 - 48", other ND on request.
- From ND350 - 14" the actuator is with geared motor, see \* in table.

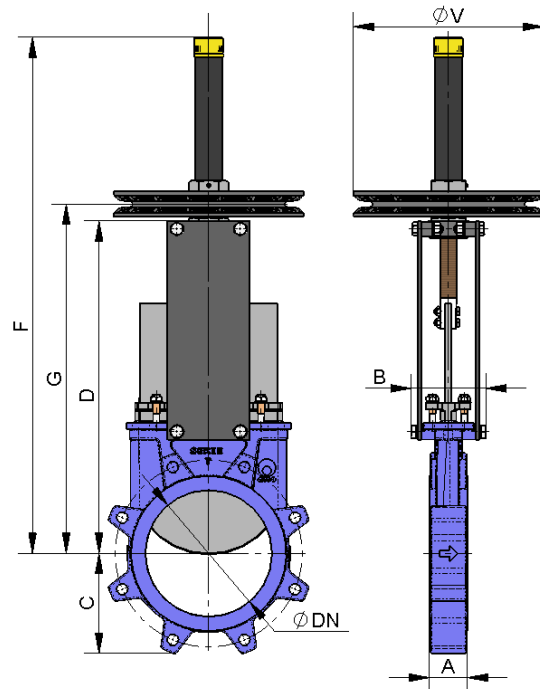


fig. 16

| DN   | ND     | ΔP (Kg/cm <sup>2</sup> ) | DRAW (Nw) | TORQUE (Nm) | A     |        | B   | C   | D    | G    | F    | ØV   |
|------|--------|--------------------------|-----------|-------------|-------|--------|-----|-----|------|------|------|------|
|      |        |                          |           |             | (mm)  | (")    |     |     |      |      |      |      |
| 50   | 2"     | 10                       | 830       | 1.91        | 47.6  | 1 7/8" | 91  | 61  | 241  | 280  | 410  | 225  |
| 65   | 2 1/2" | 10                       | 1400      | 3.22        | 47.6  | 1 7/8" | 91  | 68  | 268  | 308  | 437  | 225  |
| 80   | 3"     | 10                       | 2120      | 4.9         | 50.8  | 2"     | 91  | 91  | 294  | 333  | 463  | 225  |
| 100  | 4"     | 10                       | 3320      | 7.61        | 50.8  | 2"     | 91  | 104 | 334  | 373  | 503  | 225  |
| 125  | 5"     | 10                       | 5180      | 11.9        | 57.2  | 2 1/4" | 101 | 118 | 367  | 407  | 586  | 225  |
| 150  | 6"     | 10                       | 7460      | 17.2        | 57.2  | 2 1/4" | 101 | 130 | 419  | 458  | 638  | 225  |
| 200  | 8"     | 10                       | 13300     | 38.1        | 69.9  | 2 3/4" | 118 | 159 | 525  | 578  | 816  | 300  |
| 250  | 10"    | 10                       | 20800     | 59.7        | 69.9  | 2 3/4" | 118 | 196 | 626  | 679  | 1017 | 300  |
| 300  | 12"    | 10                       | 30000     | 86.1        | 76.2  | 3"     | 118 | 231 | 726  | 779  | 1117 | 300  |
| 350  | 14"    | 10                       | 40720     | 159         | 76.2  | 3"     | 290 | 257 | 797  | 906  | 1337 | 402  |
| 400  | 16"    | 10                       | 53310     | 208         | 88.9  | 3 1/2" | 290 | 290 | 903  | 997  | 1441 | 402* |
| 450  | 18"    | 10                       | 67450     | 264         | 88.9  | 3 1/2" | 290 | 312 | 989  | 1083 | 1677 | 402* |
| 500  | 20"    | 10                       | 83470     | 375         | 114.3 | 4 1/2" | 290 | 340 | 1101 | 1195 | 1789 | 402* |
| 600  | 24"    | 10                       | 120440    | 666         | 114.3 | 4 1/2" | 290 | 398 | 1307 | 1420 | 2108 | 402* |
| 700  | 28"    | 8                        | 131560    | 730         | 114.3 | 4 1/2" | 320 | 453 | 1506 | 1658 | 2406 | 402* |
| 750  | 30"    | 8                        | 151010    | 837         | 117.5 | 4 5/8" | 320 | 489 | 1620 | 1775 | 2565 | 402* |
| 800  | 32"    | 8                        | 172310    | 1136        | 117.5 | 4 5/8" | 320 | 503 | 1720 | 1905 | 2790 | 402* |
| 900  | 36"    | 8                        | 218060    | 1438        | 117.5 | 4 5/8" | 320 | 583 | 1953 | 2115 | 3130 | 402* |
| 1000 | 40"    | 4                        | 136460    | 910         | 117.5 | 4 5/8" | 320 | 613 | 2137 | 2310 | 3440 | 402* |
| 1100 | 44"    | 4                        | 165980    | 1111        | 152.4 | 6"     | 340 | 670 | 2375 | 2565 | 3765 | 402* |
| 1200 | 48"    | 4                        | 197520    | 1530        | 152.4 | 6"     | 340 | 728 | 2616 | 2815 | 4050 | 402* |

table 6



# GUILLOTINE VALVES

# T-TAPPI SERIES

## LEVER

- It is a fast actuator.
- **B = Max. width** of the valve (without actuator).
- **B = Max. height** of the valve (without actuator).
- The actuator includes:
  - Lever.
  - Stem.
  - Guide bushing.
  - External locking devices to maintain the position.
- Available: ND50 - 2" to ND200 - 8", other ND on request.

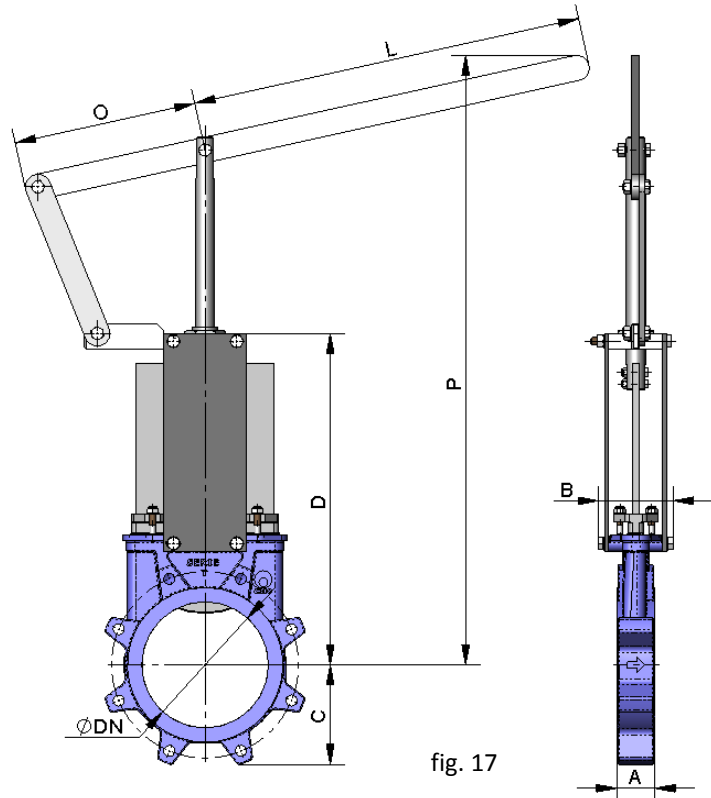


fig. 17

| DN  | ND     | $\Delta P$<br>(Kg/cm <sup>2</sup> ) | DRAW<br>(Nw) | A    |        | B   | C   | D   | L   | O   | P    |
|-----|--------|-------------------------------------|--------------|------|--------|-----|-----|-----|-----|-----|------|
|     |        |                                     |              | (mm) | (")    |     |     |     |     |     |      |
| 50  | 2"     | 10                                  | 830          | 47.6 | 1 7/8" | 91  | 61  | 241 | 325 | 155 | 504  |
| 65  | 2 1/2" | 10                                  | 1400         | 47.6 | 1 7/8" | 91  | 68  | 268 | 325 | 155 | 526  |
| 80  | 3"     | 10                                  | 2120         | 50.8 | 2"     | 91  | 91  | 294 | 325 | 155 | 549  |
| 100 | 4"     | 10                                  | 3320         | 50.8 | 2"     | 91  | 104 | 334 | 325 | 155 | 605  |
| 125 | 5"     | 10                                  | 5180         | 57.2 | 2 1/4" | 101 | 118 | 367 | 425 | 155 | 902  |
| 150 | 6"     | 10                                  | 7460         | 57.2 | 2 1/4" | 101 | 130 | 419 | 425 | 155 | 956  |
| 200 | 8"     | 10                                  | 13300        | 69.9 | 2 3/4" | 118 | 159 | 525 | 620 | 290 | 1027 |

table 7

# GUILLOTINE VALVES

# T-TAPPI SERIES

## GEAR BOX

- It is recommendable for ND greater than 350 - 14".
- **B = Max.** width of the valve (without actuator).  
**B = Max.** height of the valve (without actuator).
- Options:
  - Chainwheel.
  - Locking devices.
  - Extensions: stand, pipe, plates,...
  - Non-rising stem.
- Actuator including:
  - Stem.
  - Yoke.
  - Cone-shaped gear box.
  - Handwheel.
- Standard reduction ratio = 4 to 1.
- Available: ND 50 - 2" to ND 1200 - 48", other ND on request.

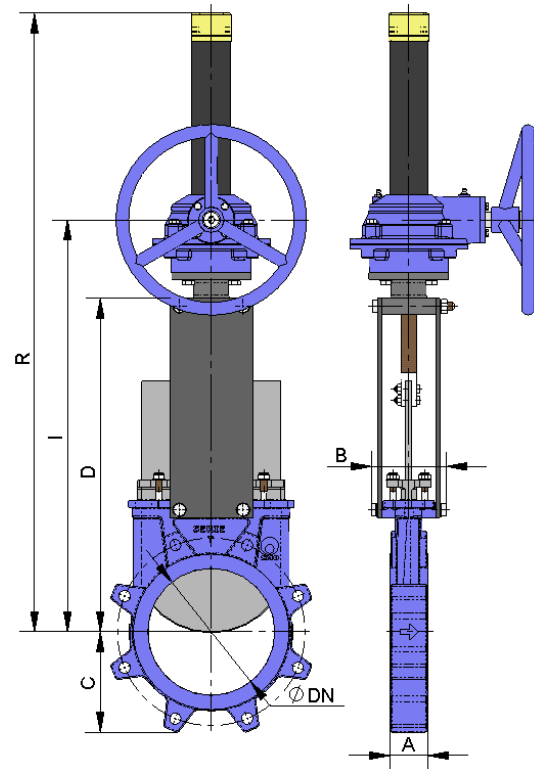


fig. 18

| DN   | ND     | $\Delta P$<br>(Kg/cm <sup>2</sup> ) | DRAW<br>(Nw) | TORQUE<br>(Nm) | A     |        | B   | C   | D    | I    | R    |
|------|--------|-------------------------------------|--------------|----------------|-------|--------|-----|-----|------|------|------|
|      |        |                                     |              |                | (mm)  | (")    |     |     |      |      |      |
| 50   | 2"     | 10                                  | 830          | 1.91           | 47.6  | 1 7/8" | 91  | 61  | 241  | 366  | 540  |
| 65   | 2 1/2" | 10                                  | 1400         | 3.22           | 47.6  | 1 7/8" | 91  | 68  | 268  | 392  | 566  |
| 80   | 3"     | 10                                  | 2120         | 4.9            | 50.8  | 2"     | 91  | 91  | 294  | 418  | 592  |
| 100  | 4"     | 10                                  | 3320         | 7.61           | 50.8  | 2"     | 91  | 104 | 334  | 458  | 632  |
| 125  | 5"     | 10                                  | 5180         | 11.9           | 57.2  | 2 1/4" | 101 | 118 | 367  | 491  | 665  |
| 150  | 6"     | 10                                  | 7460         | 17.2           | 57.2  | 2 1/4" | 101 | 130 | 419  | 543  | 717  |
| 200  | 8"     | 10                                  | 13300        | 38.1           | 69.9  | 2 3/4" | 118 | 159 | 525  | 648  | 942  |
| 250  | 10"    | 10                                  | 20800        | 59.7           | 69.9  | 2 3/4" | 118 | 196 | 626  | 749  | 1043 |
| 300  | 12"    | 10                                  | 30000        | 86.1           | 76.2  | 3"     | 118 | 231 | 726  | 849  | 1193 |
| 350  | 14"    | 10                                  | 40720        | 159            | 76.2  | 3"     | 290 | 257 | 797  | 891  | 1335 |
| 400  | 16"    | 10                                  | 53310        | 208            | 88.9  | 3 1/2" | 290 | 290 | 903  | 997  | 1441 |
| 450  | 18"    | 10                                  | 67450        | 264            | 88.9  | 3 1/2" | 290 | 312 | 989  | 1083 | 1677 |
| 500  | 20"    | 10                                  | 83470        | 375            | 114.3 | 4 1/2" | 290 | 340 | 1101 | 1195 | 1789 |
| 600  | 24"    | 10                                  | 120440       | 666            | 114.3 | 4 1/2" | 290 | 398 | 1307 | 1420 | 2108 |
| 700  | 28"    | 8                                   | 131560       | 730            | 114.3 | 4 1/2" | 320 | 453 | 1506 | 1658 | 2406 |
| 750  | 30"    | 8                                   | 151010       | 837            | 117.5 | 4 5/8" | 320 | 489 | 1620 | 1775 | 2565 |
| 800  | 32"    | 8                                   | 172310       | 1136           | 117.5 | 4 5/8" | 320 | 503 | 1720 | 1905 | 2790 |
| 900  | 36"    | 8                                   | 218060       | 1438           | 117.5 | 4 5/8" | 320 | 583 | 1953 | 2115 | 3130 |
| 1000 | 40"    | 4                                   | 136460       | 910            | 117.5 | 4 5/8" | 320 | 613 | 2137 | 2310 | 3440 |
| 1100 | 44"    | 4                                   | 165980       | 1111           | 152.4 | 6"     | 340 | 670 | 2375 | 2565 | 3765 |
| 1200 | 48"    | 4                                   | 197520       | 1530           | 152.4 | 6"     | 340 | 728 | 2616 | 2815 | 4050 |

table 8



# GUILLOTINE VALVES

# T-TAPPI SERIES

## DOUBLE-ACTING PNEUMATIC CYLINDER

- The air supply pressure to the pneumatic cylinder is a minimum of 6 Kg/cm<sup>2</sup> and a maximum of 10 Kg/cm<sup>2</sup>, the air must be dry and lubricated.
  - 10 Kg/cm<sup>2</sup> is the maximum admissible air pressure. For air pressures below 6 Kg/cm<sup>2</sup>, please check with CMO.
  - For ND50 - 2" to ND200 - 8" valves, the cylinder's jacket and covers are made of aluminium, the rod of AISI304, the piston of rubber-coated steel and the O-ring seals are made of nitrile.
  - For valves larger than ND200 - 8" the covers are made of nodular cast iron or carbon steel.
- On request, we can also supply the actuator made entirely of stainless steel, especially for installation in corrosive atmospheres.
- **B = Max.** width of the valve (without actuator).
  - **D = Max.** height of the valve (without actuator).
- Available: ND50 - 2" to ND750 - 30", other ND on request.

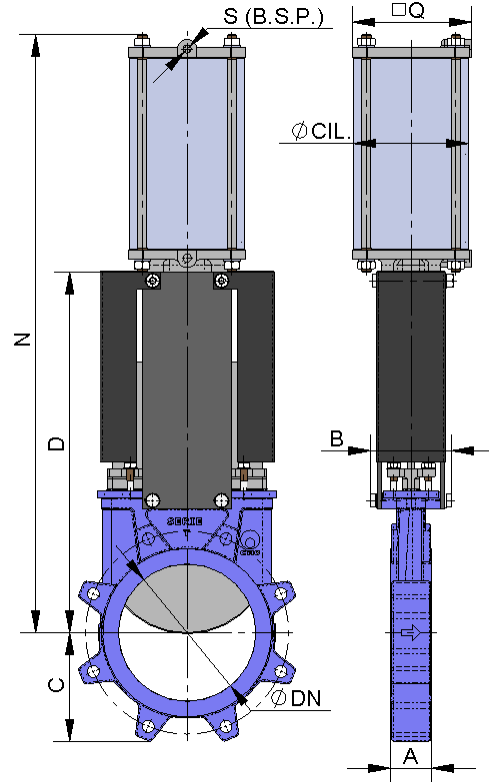


fig. 19

| DN  | ND     | ΔP (Kg/cm <sup>2</sup> ) | DRAW (Nw) | A     |        | B   | C   | D    | N    | Q   | Ø CYL. | Ø STEM | S (B.S.P.) |
|-----|--------|--------------------------|-----------|-------|--------|-----|-----|------|------|-----|--------|--------|------------|
|     |        |                          |           | (mm)  | (")    |     |     |      |      |     |        |        |            |
| 50  | 2"     | 10                       | 830       | 47.6  | 1 7/8" | 91  | 61  | 241  | 416  | 90  | 80     | 20     | 1/4"       |
| 65  | 2 1/2" | 10                       | 1400      | 47.6  | 1 7/8" | 91  | 68  | 268  | 456  | 90  | 80     | 20     | 1/4"       |
| 80  | 3"     | 10                       | 2120      | 50.8  | 2"     | 91  | 91  | 294  | 498  | 90  | 80     | 20     | 1/4"       |
| 100 | 4"     | 10                       | 3320      | 50.8  | 2"     | 91  | 104 | 334  | 562  | 110 | 100    | 20     | 1/4"       |
| 125 | 5"     | 10                       | 5180      | 57.2  | 2 1/4" | 101 | 118 | 367  | 636  | 135 | 125    | 25     | 1/4"       |
| 150 | 6"     | 10                       | 7460      | 57.2  | 2 1/4" | 101 | 130 | 419  | 723  | 170 | 160    | 30     | 1/4"       |
| 200 | 8"     | 10                       | 13300     | 69.9  | 2 3/4" | 118 | 159 | 525  | 886  | 215 | 200    | 30     | 3/8"       |
| 250 | 10"    | 10                       | 20800     | 69.9  | 2 3/4" | 118 | 196 | 626  | 1133 | 270 | 250    | 40     | 3/8"       |
| 300 | 12"    | 10                       | 30000     | 76.2  | 3"     | 118 | 231 | 726  | 1278 | 382 | 300    | 45     | 1/2"       |
| 350 | 14"    | 10                       | 40720     | 76.2  | 3"     | 290 | 257 | 797  | 1383 | 444 | 350    | 45     | 1/2"       |
| 400 | 16"    | 10                       | 53310     | 88.9  | 3 1/2" | 290 | 290 | 903  | 1532 | 508 | 400    | 50     | 1/2"       |
| 450 | 18"    | *                        | *         | 88.9  | 3 1/2" | 290 | 312 | 989  | 1704 | 508 | 400    | 50     | 1/2"       |
| 500 | 20"    | *                        | *         | 114.3 | 4 1/2" | 290 | 340 | 1101 | 1867 | 508 | 400    | 50     | 1/2"       |
| 600 | 24"    | *                        | *         | 114.3 | 4 1/2" | 290 | 398 | 1307 | 2173 | 508 | 400    | 50     | 1/2"       |
| 700 | 28"    | *                        | *         | 114.3 | 4 1/2" | 320 | 453 | 1506 | 2520 | 508 | 400    | 50     | 1/2"       |
| 750 | 30"    | *                        | *         | 117.5 | 4 5/8" | 320 | 489 | 1620 | 2685 | 508 | 400    | 50     | 1/2"       |

\* → Consult

table 9

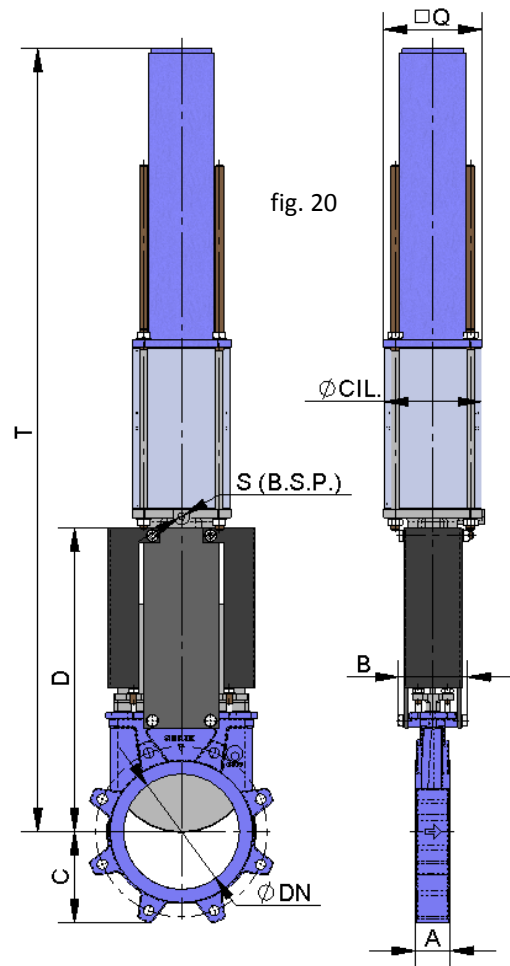


# GUILLOTINE VALVES

# T-TAPPI SERIES

## SINGLE-ACTING PNEUMATIC CYLINDER

- The air supply pressure to the pneumatic cylinder is a minimum of 6 Kg/cm<sup>2</sup> and a maximum of 10 Kg/cm<sup>2</sup>, the air must be dry and lubricated.
- 10 Kg/cm<sup>2</sup> is the maximum admissible air pressure. For air pressures below 6 Kg/cm<sup>2</sup>, please check with the manufacturer.
- Available for opening or closing in case of air supply failure (spring opening or closing).
- The jacket is made of aluminium, the covers of nodular cast iron or carbon steel, the rod of AISI304, the piston of rubber-coated steel, the O-ring seals of nitrile and the spring is made of steel.
- The **actuator design is spring activated** for valves with diameters **up to ND200 - 8"**. For larger diameters the actuator contains a double-acting cylinder and an air tank which stores the volume of air necessary to perform the last movement in the event of an air supply failure.
- **B = Max.** width of the valve (without actuator).  
**D = Max.** height of the valve (without actuator).
- Available: ND50 - 2" to ND200 - 8", other ND on request.
- Please see the "CMO Pneumatic Actuators" catalogue if you require further information.



| DN  | ND     | ΔP (Kg/cm <sup>2</sup> ) | DRAW (Nw) | A    |        | B   | C   | D   | Q   | T    | Ø CYL. | Ø STEM | S (B.S.P.) |
|-----|--------|--------------------------|-----------|------|--------|-----|-----|-----|-----|------|--------|--------|------------|
|     |        |                          |           | (mm) | (")    |     |     |     |     |      |        |        |            |
| 50  | 2"     | 10                       | 830       | 47.6 | 1 7/8" | 91  | 61  | 241 | 135 | 781  | 125    | 25     | 1/4"       |
| 65  | 2 1/2" | 10                       | 1400      | 47.6 | 1 7/8" | 91  | 68  | 268 | 135 | 806  | 125    | 25     | 1/4"       |
| 80  | 3"     | 10                       | 2120      | 50.8 | 2"     | 91  | 91  | 294 | 135 | 833  | 125    | 25     | 1/4"       |
| 100 | 4"     | 10                       | 3320      | 50.8 | 2"     | 91  | 104 | 334 | 135 | 873  | 125    | 25     | 1/4"       |
| 125 | 5"     | 10                       | 5180      | 57.2 | 2 1/4" | 101 | 118 | 367 | 170 | 910  | 160    | 30     | 1/4"       |
| 150 | 6"     | 10                       | 7460      | 57.2 | 2 1/4" | 101 | 130 | 419 | 215 | 1265 | 200    | 30     | 3/8"       |
| 200 | 8"     | 10                       | 13300     | 69.9 | 2 3/4" | 118 | 159 | 525 | 270 | 1800 | 250    | 40     | 3/8"       |

table 10





## GUILLOTINE VALVES

## T-TAPPI SERIES

### ELECTRIC ACTUATOR

- This actuator is automatic and includes the following parts:
  - Electric motor.
  - Stem.
  - Yoke.
- The electric motor includes:
  - Emergency manual handwheel.
  - Limit switches.
  - Torque limiters.
- Options:
  - Different types and brands.
  - Non-rising stem.
- ISO 5210 / DIN 3338 Flanges.
- Available: ND50 - 2" to ND1200 - 48", other ND on request.
- From ND300 - 12" the motor is assisted with a gear box.

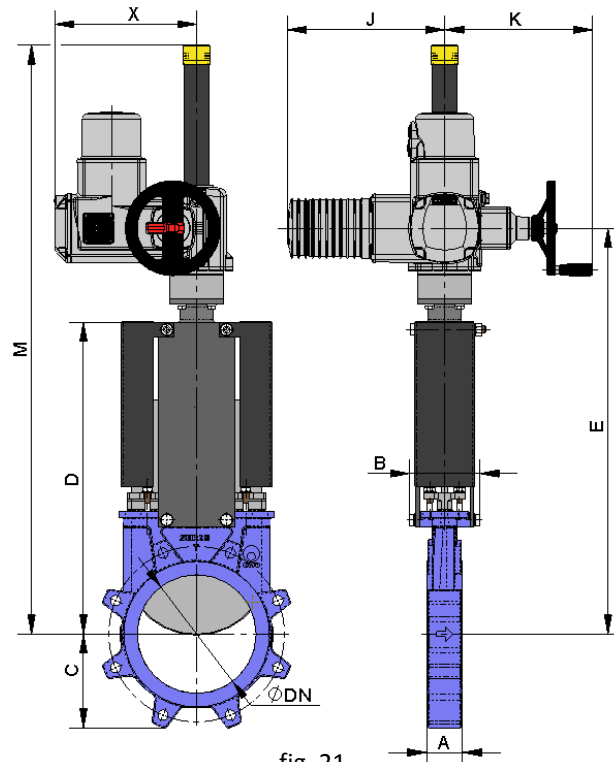


fig. 21

| DN   | ND     | ΔP<br>(Kg/cm <sup>2</sup> ) | DRAW<br>(Nw) | TORQUE<br>(Nm) | A     |        | B   | C   | D    | E    | J   | K   | M    | X   |
|------|--------|-----------------------------|--------------|----------------|-------|--------|-----|-----|------|------|-----|-----|------|-----|
|      |        |                             |              |                | (mm)  | (")    |     |     |      |      |     |     |      |     |
| 50   | 2"     | 10                          | 830          | 1.91           | 47.6  | 1 7/8" | 91  | 61  | 241  | 400  | 265 | 250 | 581  | 238 |
| 65   | 2 1/2" | 10                          | 1400         | 3.22           | 47.6  | 1 7/8" | 91  | 68  | 268  | 426  | 265 | 250 | 607  | 238 |
| 80   | 3"     | 10                          | 2120         | 4.9            | 50.8  | 2"     | 91  | 91  | 294  | 452  | 265 | 250 | 632  | 238 |
| 100  | 4"     | 10                          | 3320         | 7.61           | 50.8  | 2"     | 91  | 104 | 334  | 492  | 265 | 250 | 672  | 238 |
| 125  | 5"     | 10                          | 5180         | 11.9           | 57.2  | 2 1/4" | 101 | 118 | 367  | 525  | 265 | 250 | 705  | 238 |
| 150  | 6"     | 10                          | 7460         | 17.2           | 57.2  | 2 1/4" | 101 | 130 | 419  | 577  | 265 | 250 | 757  | 238 |
| 200  | 8"     | 10                          | 13300        | 38.1           | 69.9  | 2 3/4" | 118 | 159 | 525  | 683  | 265 | 250 | 988  | 238 |
| 250  | 10"    | 10                          | 20800        | 59.7           | 69.9  | 2 3/4" | 118 | 196 | 626  | 774  | 265 | 250 | 1089 | 238 |
| 300  | 12"    | 10                          | 30000        | 86.1           | 76.2  | 3"     | 118 | 231 | 726  | 874  | 283 | 255 | 1189 | 248 |
| 350  | 14"    | 10                          | 40720        | 159            | 76.2  | 3"     | 290 | 257 | 797  | 931  | 265 | 250 | 1335 | 422 |
| 400  | 16"    | 10                          | 53310        | 208            | 88.9  | 3 1/2" | 290 | 290 | 903  | 1037 | 265 | 250 | 1441 | 422 |
| 450  | 18"    | 10                          | 67450        | 264            | 88.9  | 3 1/2" | 290 | 312 | 989  | 1123 | 265 | 250 | 1677 | 422 |
| 500  | 20"    | 10                          | 83470        | 375            | 114.3 | 4 1/2" | 290 | 340 | 1101 | 1245 | 283 | 255 | 1789 | 424 |
| 600  | 24"    | 10                          | 120440       | 666            | 114.3 | 4 1/2" | 290 | 398 | 1307 | 1470 | 283 | 255 | 2108 | 479 |
| 700  | 28"    | 8                           | 131560       | 730            | 114.3 | 4 1/2" | 320 | 453 | 1506 | 1708 | 283 | 255 | 2406 | 479 |
| 750  | 30"    | 8                           | 151010       | 837            | 117.5 | 4 5/8" | 320 | 489 | 1620 | 1825 | 283 | 255 | 2565 | 479 |
| 800  | 32"    | 8                           | 172310       | 1136           | 117.5 | 4 5/8" | 320 | 503 | 1720 | 1955 | 283 | 255 | 2790 | 605 |
| 900  | 36"    | 8                           | 218060       | 1438           | 117.5 | 4 5/8" | 320 | 583 | 1953 | 2165 | 283 | 255 | 3130 | 605 |
| 1000 | 40"    | 4                           | 136460       | 910            | 117.5 | 4 5/8" | 320 | 613 | 2137 | 2377 | 389 | 335 | 3440 | 479 |
| 1100 | 44"    | 4                           | 165980       | 1111           | 152.4 | 6"     | 340 | 670 | 2375 | 2642 | 389 | 335 | 3765 | 605 |
| 1200 | 48"    | 4                           | 197520       | 1530           | 152.4 | 6"     | 340 | 728 | 2616 | 2882 | 389 | 335 | 4050 | 605 |

table 11



## GUILLOTINE VALVES

## T-TAPPI SERIES

### HYDRAULIC ACTUATOR (Oil pressure: 135 Kg/cm<sup>2</sup>)

- **B = Max.** width of the valve (without actuator).
- **D = Max.** height of the valve (without actuator).
- The hydraulic actuator includes:
  - Hydraulic cylinder.
  - Yoke.
- Available: ND50 - 2" to ND1200 - 48".
- Different types and brands available according to customer's requirements.

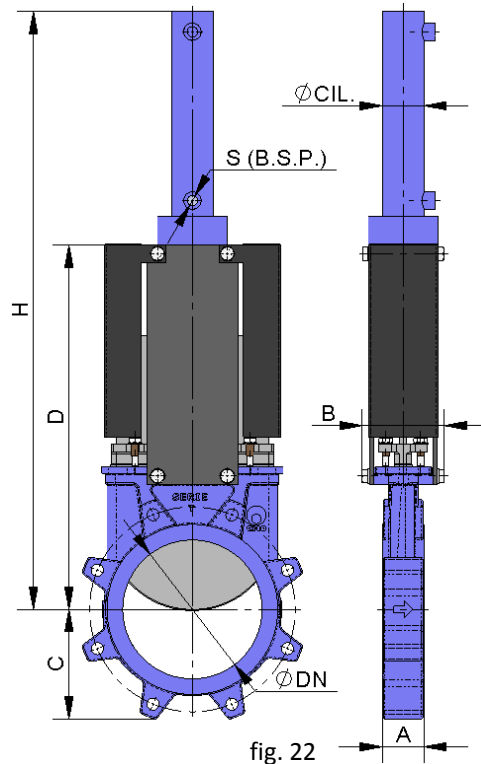


fig. 22

| DN   | ND     | ΔP (Kg/cm <sup>2</sup> ) | DRAW (Nw) | A     |        | B   | C   | D    | H    | Ø CYL. | Ø STEM | S (B.S.P.) | Oil cap. (dm <sup>3</sup> ) |
|------|--------|--------------------------|-----------|-------|--------|-----|-----|------|------|--------|--------|------------|-----------------------------|
|      |        |                          |           | (mm)  | (")    |     |     |      |      |        |        |            |                             |
| 50   | 2"     | 10                       | 830       | 47.6  | 1 7/8" | 91  | 61  | 241  | 457  | 25     | 18     | 3/8"       | 0.03                        |
| 65   | 2 1/2" | 10                       | 1400      | 47.6  | 1 7/8" | 91  | 68  | 268  | 500  | 25     | 18     | 3/8"       | 0.04                        |
| 80   | 3"     | 10                       | 2120      | 50.8  | 2"     | 91  | 91  | 294  | 560  | 25     | 18     | 3/8"       | 0.04                        |
| 100  | 4"     | 10                       | 3320      | 50.8  | 2"     | 91  | 104 | 334  | 620  | 32     | 22     | 3/8"       | 0.09                        |
| 125  | 5"     | 10                       | 5180      | 57.2  | 2 1/4" | 101 | 118 | 367  | 683  | 32     | 22     | 3/8"       | 0.11                        |
| 150  | 6"     | 10                       | 7460      | 57.2  | 2 3/4" | 101 | 130 | 419  | 755  | 40     | 28     | 3/8"       | 0.2                         |
| 200  | 8"     | 10                       | 13300     | 69.9  | 2 3/4" | 118 | 159 | 525  | 926  | 50     | 28     | 3/8"       | 0.42                        |
| 250  | 10"    | 10                       | 20800     | 69.9  | 2 3/4" | 118 | 196 | 626  | 1077 | 63     | 36     | 3/8"       | 0.81                        |
| 300  | 12"    | 10                       | 30000     | 76.2  | 3"     | 118 | 231 | 726  | 1246 | 80     | 45     | 3/8"       | 1.56                        |
| 350  | 14"    | 10                       | 40720     | 76.2  | 3"     | 290 | 257 | 797  | 1376 | 100    | 56     | 1/2"       | 2.87                        |
| 400  | 16"    | 10                       | 53310     | 88.9  | 3 1/2" | 290 | 290 | 903  | 1532 | 100    | 56     | 1/2"       | 3.26                        |
| 450  | 18"    | 10                       | 67450     | 88.9  | 3 1/2" | 290 | 312 | 989  | 1707 | 125    | 70     | 1/2"       | 5.71                        |
| 500  | 20"    | 10                       | 83470     | 114.3 | 4 1/2" | 290 | 340 | 1101 | 1869 | 125    | 70     | 1/2"       | 6.32                        |
| 600  | 24"    | 10                       | 120440    | 114.3 | 4 1/2" | 290 | 398 | 1307 | 2202 | 160    | 70     | 1/2"       | 12.37                       |
| 700  | 28"    | 8                        | 131560    | 114.3 | 4 1/2" | 320 | 453 | 1506 | 2525 | 160    | 70     | 1/2"       | 14.38                       |
| 750  | 30"    | 8                        | 151010    | 117.5 | 4 5/8" | 320 | 489 | 1620 | 2670 | 160    | 70     | 1/2"       | 15.38                       |
| 800  | 32"    | 8                        | 172310    | 117.5 | 4 5/8" | 320 | 503 | 1720 | 2818 | 160    | 70     | 1/2"       | 16.39                       |
| 900  | 36"    | 8                        | 218060    | 117.5 | 4 5/8" | 320 | 583 | 1953 | 3193 | 200    | 90     | 1/2"       | 28.75                       |
| 1000 | 40"    | 4                        | 136460    | 117.5 | 4 7/8" | 320 | 613 | 2137 | 3437 | 160    | 70     | 1/2"       | 20.41                       |
| 1100 | 44"    | 4                        | 165980    | 152.4 | 6"     | 340 | 670 | 2375 | 3775 | 160    | 70     | 1/2"       | 22.42                       |
| 1200 | 48"    | 4                        | 197520    | 152.4 | 6"     | 340 | 728 | 2616 | 4161 | 200    | 90     | 1/2"       | 38.17                       |

table 12



## GUILLOTINE VALVES

## T-TAPPI SERIES

### INFORMATION ON FLANGE DIMENSIONS

#### EN 1092-2 PN10

| DN   | ÄP<br>(Kg/cm <sup>2</sup> ) | Qty.<br>● | Metric | P  | ØK   |
|------|-----------------------------|-----------|--------|----|------|
| 50   | 10                          | 4         | M 16   | 10 | 125  |
| 65   | 10                          | 4         | M 16   | 10 | 145  |
| 80   | 10                          | 8         | M 16   | 12 | 160  |
| 100  | 10                          | 8         | M 16   | 12 | 180  |
| 125  | 10                          | 8         | M 16   | 12 | 210  |
| 150  | 10                          | 8         | M 20   | 17 | 240  |
| 200  | 10                          | 8         | M 20   | 16 | 295  |
| 250  | 10                          | 12        | M 20   | 19 | 350  |
| 300  | 10                          | 12        | M 20   | 19 | 400  |
| 350  | 10                          | 16        | M 20   | 28 | 460  |
| 400  | 10                          | 16        | M 24   | 28 | 515  |
| 450  | 10                          | 20        | M 24   | 28 | 565  |
| 500  | 10                          | 20        | M 24   | 34 | 620  |
| 600  | 10                          | 20        | M 27   | 26 | 725  |
| 700  | 8                           | 24        | M 27   | 25 | 840  |
| 750  | 8                           | 24        | M 30   | 23 | 900  |
| 800  | 8                           | 24        | M 30   | 22 | 950  |
| 900  | 8                           | 28        | M 30   | 21 | 1050 |
| 1000 | 4                           | 28        | M 33   | 21 | 1160 |
| 1100 | 4                           | 32        | M 33   | 25 | 1270 |
| 1200 | 4                           | 32        | M 36   | 30 | 1380 |

table 13

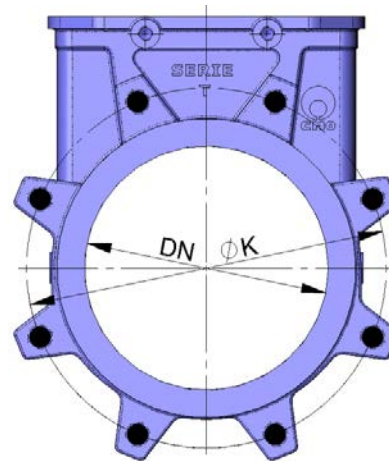


fig. 23

● BLIND TAPPED HOLE

#### ANSI B16.5, class 150

| ND     | ÄP<br>(psi) | Qty.<br>● | R<br>UNC | P       | ØK      |
|--------|-------------|-----------|----------|---------|---------|
| 2"     | 150         | 4         | 5/8"     | 3/8"    | 4 3/4"  |
| 2 1/2" | 150         | 4         | 5/8"     | 3/8"    | 5 1/2"  |
| 3"     | 150         | 4         | 5/8"     | 15/32"  | 6"      |
| 4"     | 150         | 8         | 5/8"     | 15/32"  | 7 1/2"  |
| 5"     | 150         | 8         | 3/4"     | 15/32"  | 8 1/2"  |
| 6"     | 150         | 8         | 3/4"     | 21/32"  | 9 1/2"  |
| 8"     | 150         | 8         | 3/4"     | 21/32"  | 11 3/4" |
| 10"    | 150         | 12        | 7/8"     | 3/4"    | 14 1/4" |
| 12"    | 150         | 12        | 7/8"     | 3/4"    | 17"     |
| 14"    | 150         | 12        | 1"       | 1 1/8"  | 18 3/4" |
| 16"    | 150         | 16        | 1"       | 1 1/8"  | 21 1/4" |
| 18"    | 150         | 16        | 1 1/8"   | 1 1/8"  | 22 3/4" |
| 20"    | 150         | 20        | 1 1/8"   | 1 5/16" | 25"     |
| 24"    | 150         | 20        | 1 1/4"   | 1"      | 29 1/2" |
| 28"    | 125         | 28        | 1 1/4"   | 1"      | 34"     |
| 30"    | 125         | 28        | 1 1/4"   | 7/8"    | 36"     |
| 32"    | 125         | 28        | 1 1/2"   | 7/8"    | 38 1/2" |
| 36"    | 125         | 32        | 1 1/2"   | 7/8"    | 42 3/4" |
| 40"    | 50          | 36        | 1 1/2"   | 7/8"    | 47 1/4" |
| 44"    | 50          | 40        | 1 1/2"   | 1"      | 51 3/4" |
| 48"    | 50          | 44        | 1 1/2"   | 1 3/16" | 56"     |

table 14

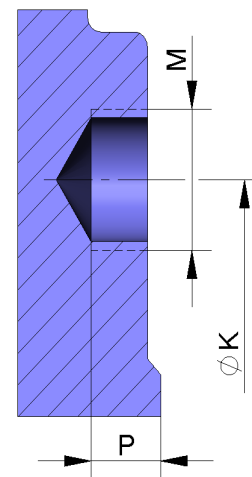


fig. 24