



Series DT Guillotine Valve

Unidirectional Wafer Knife Gate Valve

- Unidirectional "LUG" guillotine valve.
- 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 MSS-SP-81 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
- Water Treatment
- Mining
- Draining Plants
- Chemical Plants
- Paper Industry
- Food Sector

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

Working (ΔP):

	Maximum PN
ND50-2" to ND600-24"	10kg/cm ²
D700- 28" to ND900- 36"	8kg/cm ²
ND1000- 40" to ND1200- 48"	4kg/cm ²

The mentioned working pressures are just valid for the pressures applied on the direction of the arrow marked on the body. As the valve is designed with gate support guides, the valves are able to support a 30% of these pressures from the opposite direction without any damage on them. In these cases, the valves are not 100% water tight. To obtain total water tightness in these conditions, it is necessary to incorporate additional supports.

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



Fig. 1

Other Common Flanges:

DIN PN 6 • DIN PN 16 • DIN PN25 • JIS Standard • Australian Standard • British Standard

Directives:

- Machinery Directive: **DIR 2006/42/EC (MACHINERY)**
- Pressure Equipment Directive: **DIR 97/23/EC (PED) ART.3, P.3**
- Potential Explosive Atmospheres Directive: **DIR 94/9/EC (ATEX) CAT.3 ZONE 2 and 22 GD**

Quality dossier - All valves are tested hydrostatically and material and test certificates can be provided.

- Body test = working pressure x 1.5.
- Seat test = working pressure x 1.1.

Advantages of our Series DT Valve

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 DT 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 counter-pressure. This cannot happen with the Arnett 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 Arnett 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 Arnett every time a seal is required.

Standard Components List		
Component	Cast Iron Version	Stainless Steel Version
1. Body	GA216WCB	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	GJS-500	GJS-500
9. Handwheel	GJS-500	GJS-500
10. Stem Nut	BRONZE	BRONZE
11. Stopper Nut	STEEL	STEEL
12. Packing Seal	EPDM	EPDM
13. Packing	SYNT + PTFE	SYNT + PTFE </td
14. Hood Nut	5.6 ZINC	5.6 ZINC
15. Hood	STEEL	STEEL
16. Protection Cap	PLASTIC	PLASTIC
17. Slides	RCH1000	RCH1000

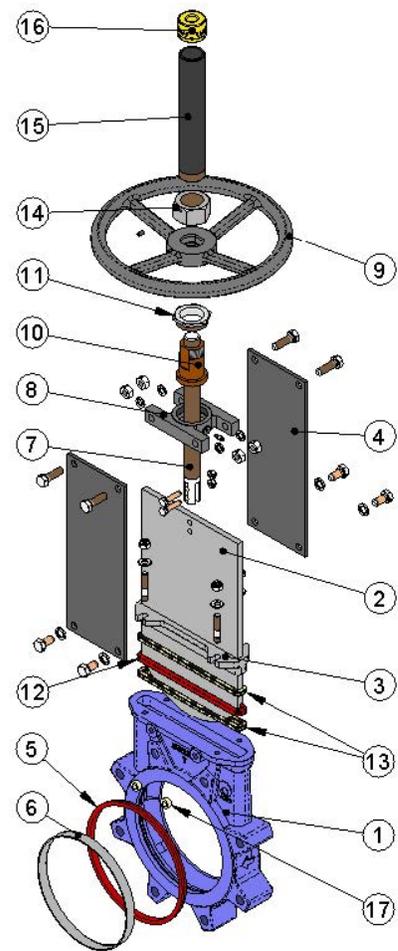


Fig. 2

Design Characteristics

1. BODY

Monobloc “LUG” cast body with interior slides for optimum movement of the gate and wedges for improved seal tightness. Face- to- face dimension in accordance with MSS- SP- 81 standard. 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. 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: (watertight)

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 an AISI316 stainless steel 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 a O- ring located at the valve's entrance with two functions (to protect the valve from abrasion and guide the flow to the center of the valve).

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

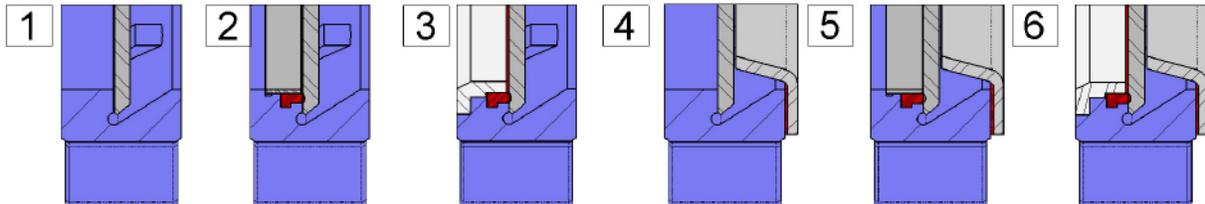


Fig. 3

Resilient seat materials

EPDM - This is the standard resilient seat fitted on Arnett 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

Our standard packing is composed of a specially designed EPDM O-ring which provides watertight integrity between the body and the gate, preventing any type of leakage to the atmosphere. It also has a greased packing strip to help the valve's operation during the

opening and closing functions. They are located in an easily accessible place and can be replaced without dismantling the valve from the pipeline. Scraper in the packing is also available, which functions to clean the gate during the opening movement and prevent possible damage to the packing.

GREASED COTTON (Recommended for hydraulic services): This packing is composed of braided cotton fibers 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 fibers. It is for general use in hydraulic applications with solids.

COTTON + PTFE: This packing is composed of braided cotton fibers 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 fibers 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 oxidizing oils. It is also used in liquids with solid particles in suspension.

LUBRICATE + 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 fibers. 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 FIBER: This packing is composed of ceramic material fibers. Its main applications are with air or gas at high temperatures and low pressures.

5. STEM

The stem on the Arnett valve is made of 18/8 stainless steel. This characteristic provides high resistance and excellent corrosion-resistant properties. 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 watertight integrity. As standard, serial valves have the CF8M packing glands.

7. ACTUATORS

All types of actuators can be supplied, with the advantage that thanks to the Arnett 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 Arnett valves is that all actuators are interchangeable.

Manual	Automatic
Handwheel with rising stem	Electric actuator
Handwheel with non-rising stem	Pneumatic actuator
Chainwheel	Hydraulic cylinder
Lever	
Gearbox	
Others (square stem, etc.)	

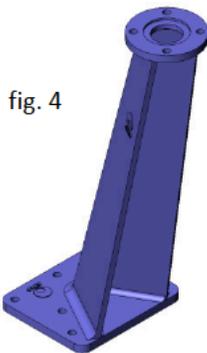


fig. 4

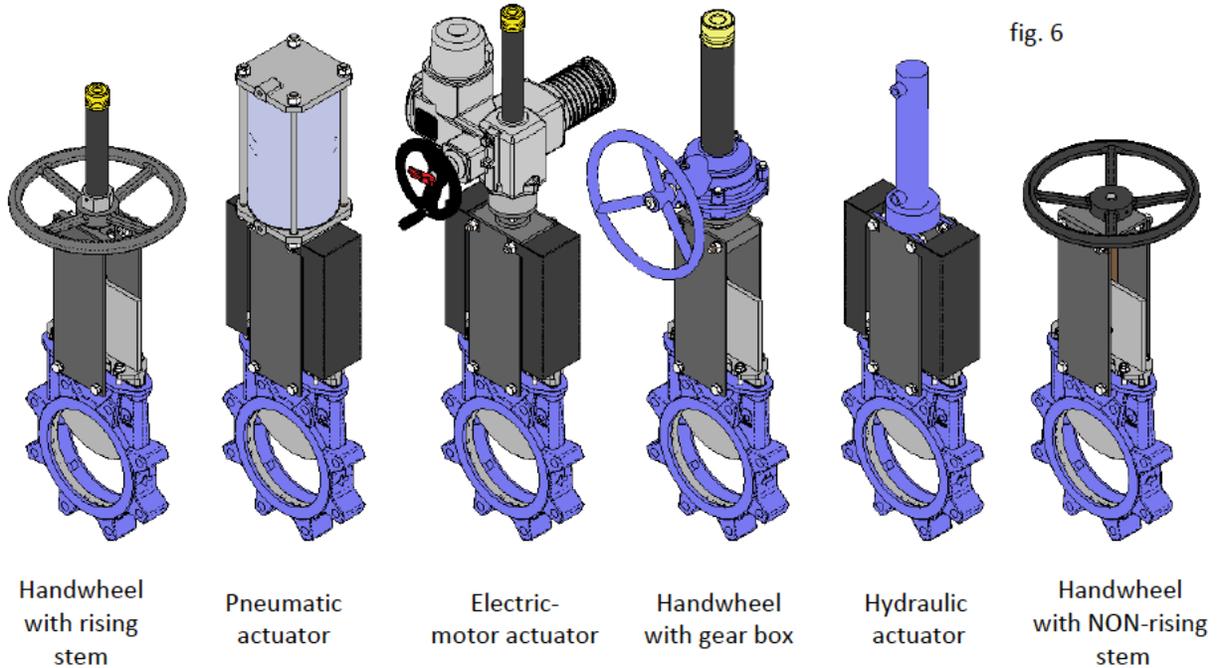
Wide range of accessories available:

- 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 & Options

Different types of 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 lower edge to protect it from abrasion.

Scraper in the Packing

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

Air Injection in the Packing Gland

By injecting air in the packing, an air chamber is created which improves the watertight integrity.

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 (fig. 8)

Several holes can be drilled in the body to flush air, steam or other fluids out in order to clean the valve seat before sealing.

Electrovalves

For air distribution to pneumatic actuators

Connection Boxes, Wiring and Pneumatic Piping

Fully assembled units can be supplied 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.

Mechanical Locking Device

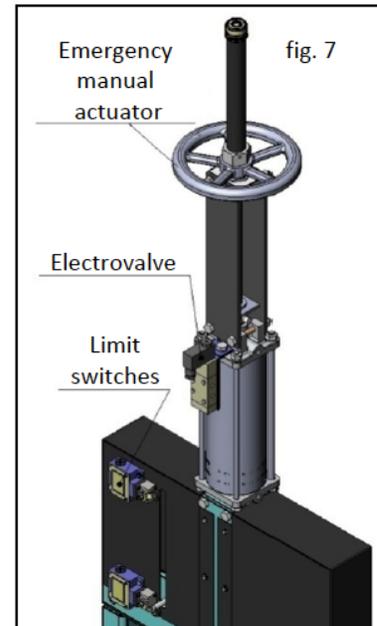
Allows the valve to be mechanically locked in a set position for long periods of time.

Stroke Limiting Mechanical Stops

They allow the stroke to be mechanically adjusted, limiting the valve's desired 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

Recommended for applications in which flow regulation is required. 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 cast iron and carbon steel bodies and components on Arnett valves are EPOXY coated, giving the valves great resistance to corrosion and an excellent finish.

Gate Safety Protection

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

Bonnet (fig. 10)

The bonnet provides total watertight integrity to the outside, reducing the packing maintenance required.

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