

G17

Knife Gate Valve

Bidirectional Sealing

Product Description

DENZ-G17 Knife Gate valve is a shut-off valve, which is used to start and stop the flow through a pipeline. It is mainly used in fluid-based applications and settings, especially those that involve a dense material. The stainless steel “knife” blade that is built in the valve uses its sharp edges to cut through tough or sticky material. The valve uses a pressure drop function to achieve this function and stop the flow when required.

This makes sure that the valve's sealing is not compromised due to the material being stuck between its components. It also ensures that any excess material is not creating any deadlock which effects the function of the valve.



Application Areas

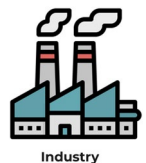
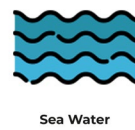
- Water treatment plants
- Sewage applications
- Slurry fluids
- Industrial applications
- Mining industry
- Waste water

Operation Versions

- Handwheel
- Bare shaft
- Operation cap
- ISO top flange
- Gearbox and handwheel
- Gearbox and top flange
- Electrical actuator
- Pneumatic actuator

Production References

Size Range	DN50 – DN1200
Pressure Range	PN10/16
Temperature	-10°C to +80°C (EPDM Sealed)
Face to face	EN558 Series 20
Design	EN 1171 / EN 1074
Connection	Lug Type - EN1092-2
Coating	Electrostatic Powder Epoxy
Testing	EN 12266-1
Marking	EN 19

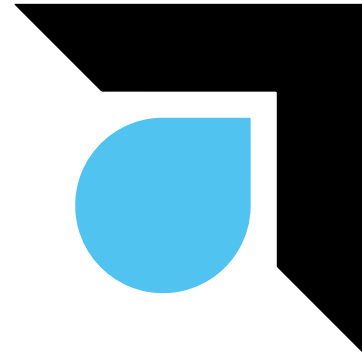




Product Features

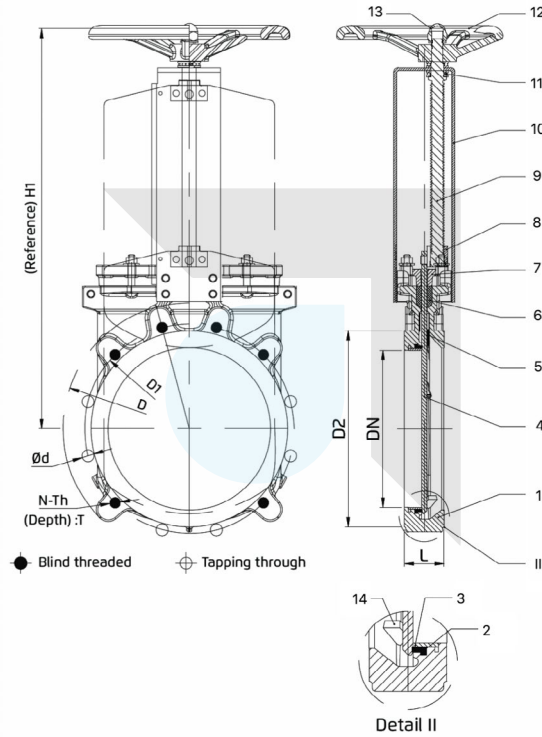


- EN-GJS-500-7 Ductile iron body and bonnet for high strength and impact resistance.
- As a result of the full-port valve, the flow transition is very smooth.
- There are no restrictions on the position of the valve. Ideally, the stem should be perpendicular to the ground and the handwheel should be located on top.
- The length of the valve is shorter, even when the nominal diameter is large.
- Economical and convenient to use.
- There are types of knife valves that are suitable for high pressures.
- Easy to maintain.
- Knife, stem, bolts are of SS304 material. Different material grades available upon request
- During installation, it is important to follow the flow direction arrow for G16, which is designed for unidirectional use
- DENZ-G17 is the bidirectional type of knife gate valves.
- Using a mechanical position indicator, it is possible to observe the operation
- The standard type is non-rising stem. Up to demand, rising stem can be also provided.
- Body and seat designs ensure non-clogging shutoffs
- High flow rates, low pressure drop, and increased energy efficiency are provided by this valve
- The knife gate valve is suitable for liquids containing a maximum of 5% suspended solids
- It is possible to replace the bonnet sealing gasket on the line
- The stem is made of stainless steel with threads for high strength
- As a result of the precision machined stem, low torque requirements are required during operation
- The brass stem nut ensures that the stem is held in place and permits low torques to be applied.
- There is a full coating on the disc and body, both internally and externally, with an average thickness of 250 microns. When necessary, higher coating thicknesses are available.
- We are able to provide WRAS-approved coatings upon request
- It is suitable for the purpose of shutting off and isolating. Regulation purposes is not recommended for the knifegate valves.
- An additional ISO5211 top flange may be used to connect the electrical actuator
- It is suitable for applications above and below ground. It is capable of being operated by handwheel, gearbox, pneumatic actuator, electrical actuator and extension spindle.
- 100% of the valves are subjected to Hydrostatic tests according to EN 12266-1. Pressure for seat: PN x 1.1 , for shell: PN x 1.5

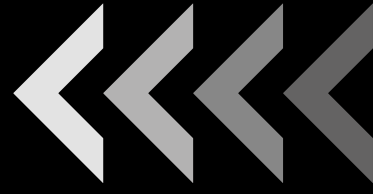




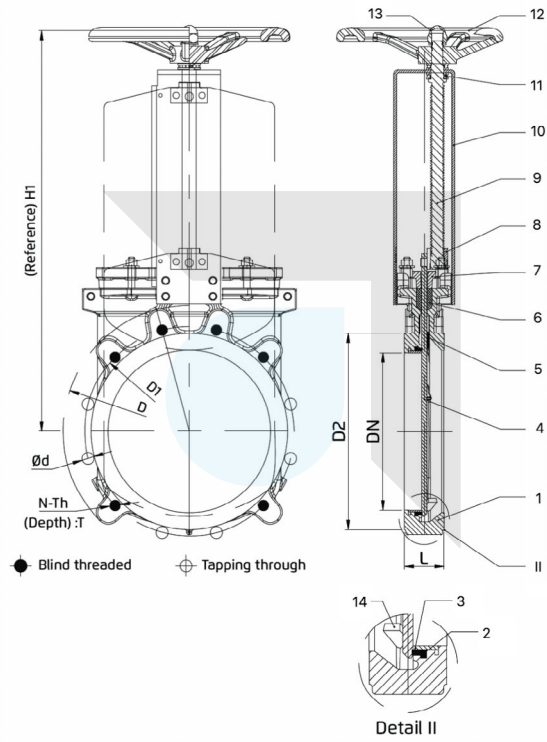
Materials



#	Part	Material
1	Body	Ductile Iron EN-GJS-400/500 (GGG40/50)
2	Seat	EPDM
3	Ring	Stainless Steel AISI 304
4	Disc	Stainless Steel AISI 304
5	Guide Pad	PTFE
6	Packing	PTFE
7	Packing Gland	WCB
8	Nut	Brass MS58 / Bronze
9	Stem	Stainless Steel AISI 420
10	Yoke	Q235
11	Bearing	Gcr15
12	Handwheel	Ductile Iron EN-GJS-400/500 (GGG40/50)
13	Cap	Q235
14	Wedge	Ductile Iron EN-GJS-400/500 (GGG40/50)



Dimensions



DN	L	D	D1	D2	D0	N-Th	T	d	H1
50	48	165	125	99	180	4-M16	12	Ø18	292
65	48	185	145	118	200	4-M16	12	Ø18	320
80	51	200	160	132	200	8-M16	12	Ø18	348
100	51	220	180	156	240	8-M16	12	Ø18	395
125	57	250	210	184	260	8-M16	14	Ø18	450
150	57	285	240	211	280	8-M20	14	Ø23	504
200	70	340	295	266	300	8-M20	18	Ø23	617
250	70	395	350	319	320	12-M20	18	Ø23	758
300	76	445	400	370	350	12-M20	20	Ø23	857
350	76	505	460	429	400	16-M20	20	Ø23	946
400	89	565	515	480	450	16-M20	24	Ø27	1023
500	114	670	620	582	450	20-M24	27	Ø27	1210

Units: mm / indicative dimensions & weights





User Health and Safety



This product is designed and manufactured using good workmanship and materials, and meets all applicable industry standards. This product should be used only as recommended by a DENZ engineer.

Qualifications and training

The personnel responsible for the assembly, operation, inspection, and maintenance of the valve must be appropriately qualified. The operating company must do the following tasks:

- Define the responsibilities and competency of all personnel handling this equipment.
- Provide instruction and training.

• Ensure that the contents of the operating instructions have been fully understood by the personnel.

Instruction and training can be carried out by either DENZ or the reseller of the valve by order of the operating company.

Non-compliance risks

Failure to comply with all safety precautions can result in the following conditions:

- Serious injury due to electrical, mechanical, and chemical influences
- Environmental damage due to the leakage of dangerous materials
- Product damage
- Property damage
- Loss of all claims for damages

Operational Safety Precautions



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- Be aware of these safety precautions when operating this product: Do not leave hot or cold components of the product unsecured against contact if they are a source of danger.
- Do not remove the contact guard for moving parts when the product is in operation. Never operate the valve without the contact guard installed.
- Do not hang items from the valve. Any accessories must be firmly or permanently attached.
- Do not use the product as a step or hand hold.
- Do not paint over the identification tag, warnings, notices, or other identification marks associated with the valve.

Maintenance Safety Precautions



Be aware of these safety precautions when performing maintenance on this product:

- You must decontaminate the valve if it has been exposed to harmful substances such as caustic chemicals.
- You must immediately fit or reactivate all safety and protective equipment upon completion of work.
- You must use the appropriate lock-out procedures to isolate the valve from all power sources before performing maintenance on externally actuated valves.

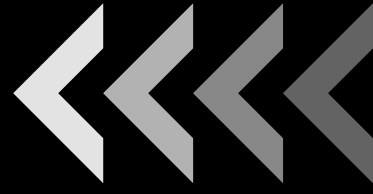
Use of Unauthorized Parts



Reconstruction or modification of the product is only permissible after consultation with DENZ. Genuine spare parts and accessories authorized by DENZ serve to maintain safety. Use of non-genuine DENZ parts can annul liability of the manufacturer for the consequences. DENZ parts are not to be used in conjunction with products not supplied by DENZ as this improper use can annul all liability for the consequences.

Unacceptable modes of operation

The operational reliability of this product is only guaranteed when it is used as designated. The operating limits given on the identification tag and in the data sheet may not be exceeded under any circumstances. If the identification tag is missing or worn, contact DENZ for specific instructions.



Handling Guidelines

Follow these guidelines when handling the product to prevent damage:

- Use care when handling the product.
- Leave protective caps and covers on the product until installation.

Unpacking Guidelines

Follow these guidelines when unpacking the product:

1. Inspect the package for damaged or missing items upon delivery.
2. Note any damaged or missing items on the receipt and freight bill.
3. If anything is out of order, file a claim with the shipping company.

Lifting the Valve

1. Raise the valve into a vertical position. To lift larger valves, loop a lifting strap around one of the yoke legs.
2. Prepare the valve for lifting:

If the valve is:

Handwheel- operated: Loop the lifting strap under the yoke. Take care that the lifting strap does not bind or tighten against any part of the handwheel. Refer to the Handwheel- operated valve figure below.

Gear-operated: Loop the lifting strap(s) under the yoke. Refer to the Bevel gear-operated valve figure below.

Cylinder-operated: Attach two lifting eyes to the portion of the cylinder tie rods that extend above the top plate of the cylinder. Attach lifting hooks to the lifting eyes. Take care that all chains are free and not bound before you lift the valve. Refer to the Cylinder-operated valve figure below.

Slowly take up the slack in the lifting straps to ensure that the straps are clear and not binding against the valve or valve top-works.

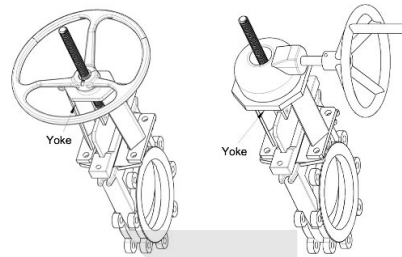


Figure 1: Handwheel-operated valve

Figure 2: Bevel gear-operated valve

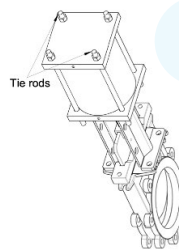


Figure 3: Cylinder-operated valve





Storage

The package is designed to protect the valve only during shipping. If you are not installing the valve immediately after delivery, then you must store it according to these requirements. This information describes requirements for short-term and long-term valve storage.

Storage Period

Storage period	Requirements
Less than 6 months	Do not expose the valve to direct sunlight.
	Do not expose the valve to weather conditions.
	Do not expose the valve to temperature extremes.
	Do not stack the valves on top of each other.
	Make sure the gate is in the full-open position.
More than 6 months	Store in accordance with the short-term action items.
	Contact DENZ sales or engineering team for the long term procedure.

Troubleshooting

Symptom	Cause	Remedy
There is seepage past the packing upon installation.	The valve may have been subject to wide temperature variations during shipment. There is normal packing wear.	Adjust the packing by tightening the packing screws.
The fully-closed valve is leaking past the seat.	The seat or gate is damaged.	Replace the seat or gate with a genuine DENZ replacement
The fully-closed valve is leaking past the seat.	The seal is not compressed correctly.	Set the stroke.
Excessive force is required to open and close the valve.	The valve is not lubricated properly.	-
Excessive force is required to open and close the valve.	There is misalignment between stem and gate.	1. Loosen the actuator and yoke. 2. Check the alignment. 3. Retighten the hardware.
Excessive force is required to open and close the valve.	The packing is too tight.	Consult the factory.

