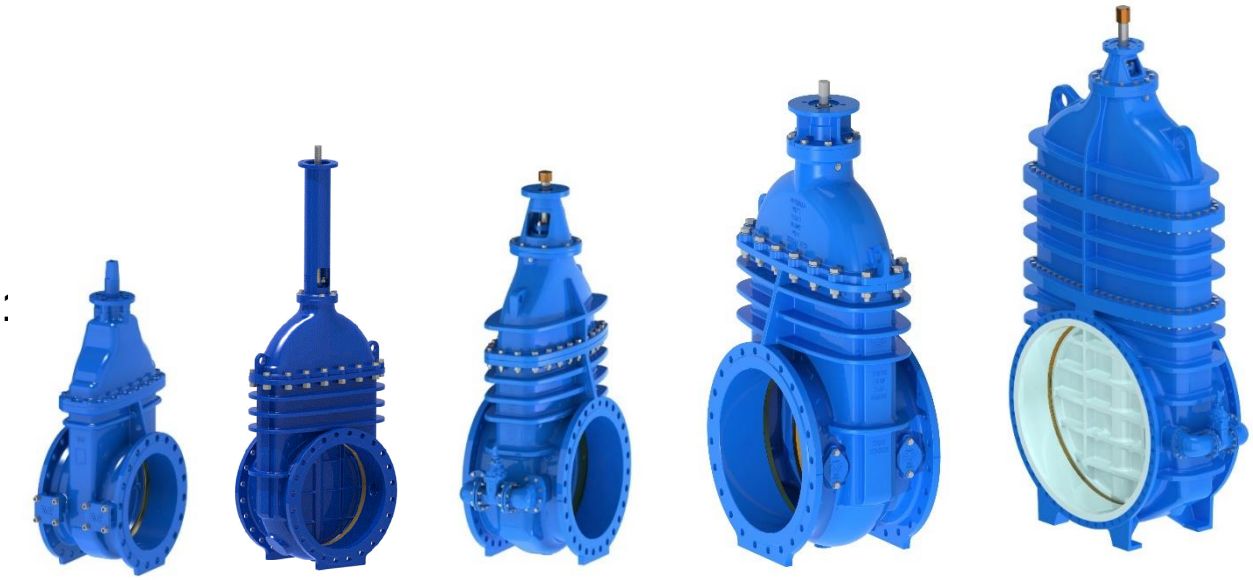
Installation, Operation and Maintenance Manual - Original Version

AVK Series 54 Metal Seated Gate Valve

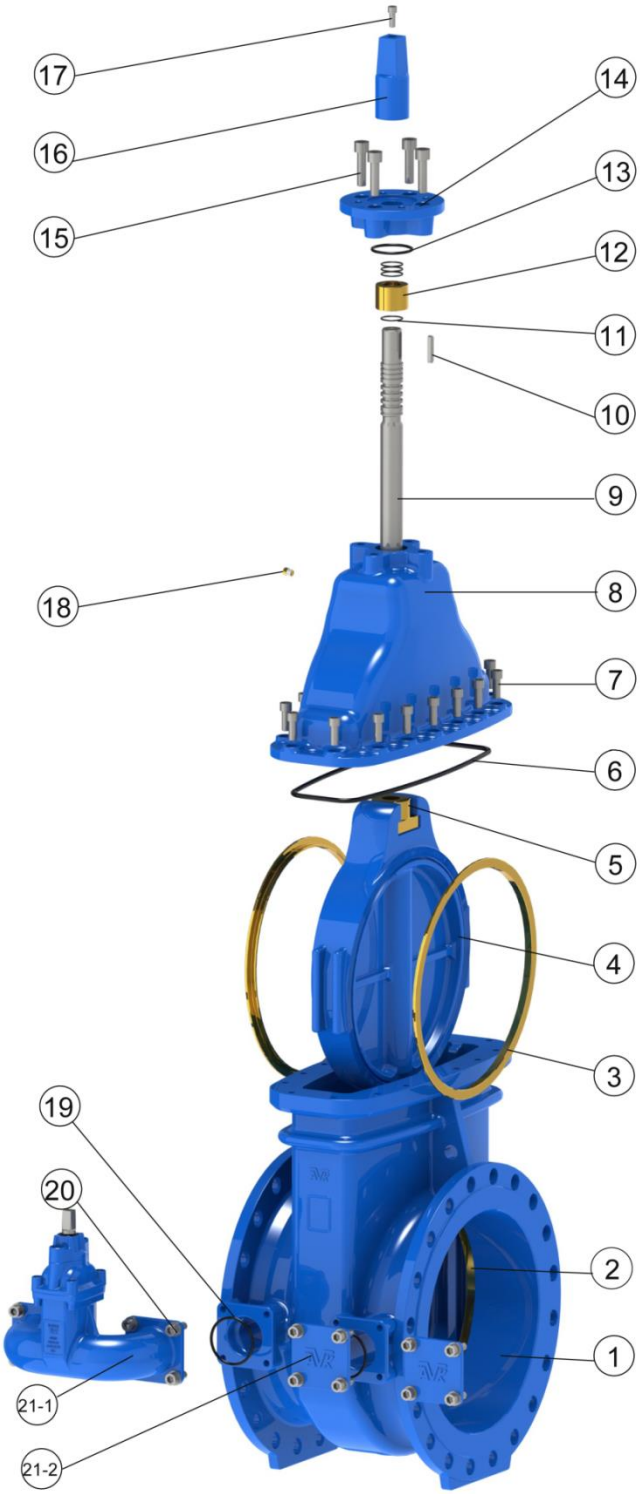
AVK metal seated wedge gate valves are primarily designed for the flow isolation of a length of pipeline, or piece of equipment. It is therefore used in the fully open or fully closed position and so is unsuitable for prolonged throttling or flow control. Flow against a partially open wedge of a metal faced gate valve, may induce vibration and chattering which could result in damage to the sealing faces, and throttling can cause premature wear or even failure of the sealing rings and body/ wedge guides or stem/ stem nut.



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AVK series 54 exploded view

DN350-600 PN10/PN16/PN25 NRS（WITH THRUST BEARING） EXPLODED VIEW



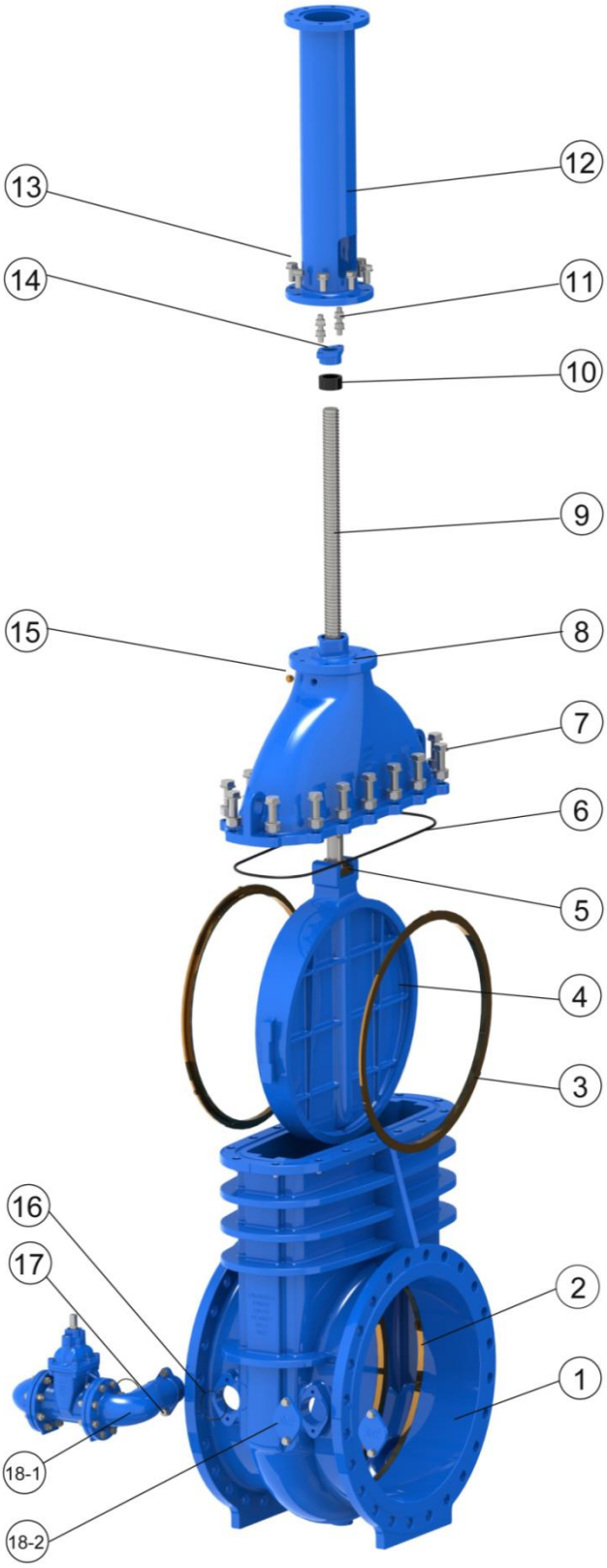
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2. AVK series 54 parts list

No.	Description	Material
1	Body	Ductile Iron GJS-500-7 (GGG-50)
2	Seat Ring	Aluminum Bronze Gunmetal
3	Face Ring	Aluminum Bronze Gunmetal
4	Wedge	Ductile Iron GJS-500-7 (GGG-50)
5	Stem Nut	Aluminum Bronze
6	Bonnet O-cord	EPDM
7	Bonnet Bolt	Stainless Steel / Steel, Hot Dip Galvanized
8	Bonnet	Ductile Iron GJS-500-7 (GGG-50)
9	Stem	Stainless Steel
10	Key	Stainless Steel
11	O-Ring	EPDM
12	Thrust Collar	Aluminum Bronze
13	O-Ring	EPDM
14	Gland	Ductile Iron GJS-500-7 (GGG-50)
15	Gland Bolt	Stainless Steel
16	Stem Cap	Gray Iron
17	Stem Cap Bolt	Stainless Steel
18	Air plug	Stainless Steel
19	By-pass O-ring	EPDM
20	By-pass Bolt	Stainless Steel / Steel, Hot Dip Galvanized
21-1	By-pass Valve (Optional)	/
21-2	Blind Flange (Optional)	Ductile Iron GJS-500-7 (GGG-50)

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DN700-DN1000, PN10/PN16, OS&Y EXPLODED VIEW

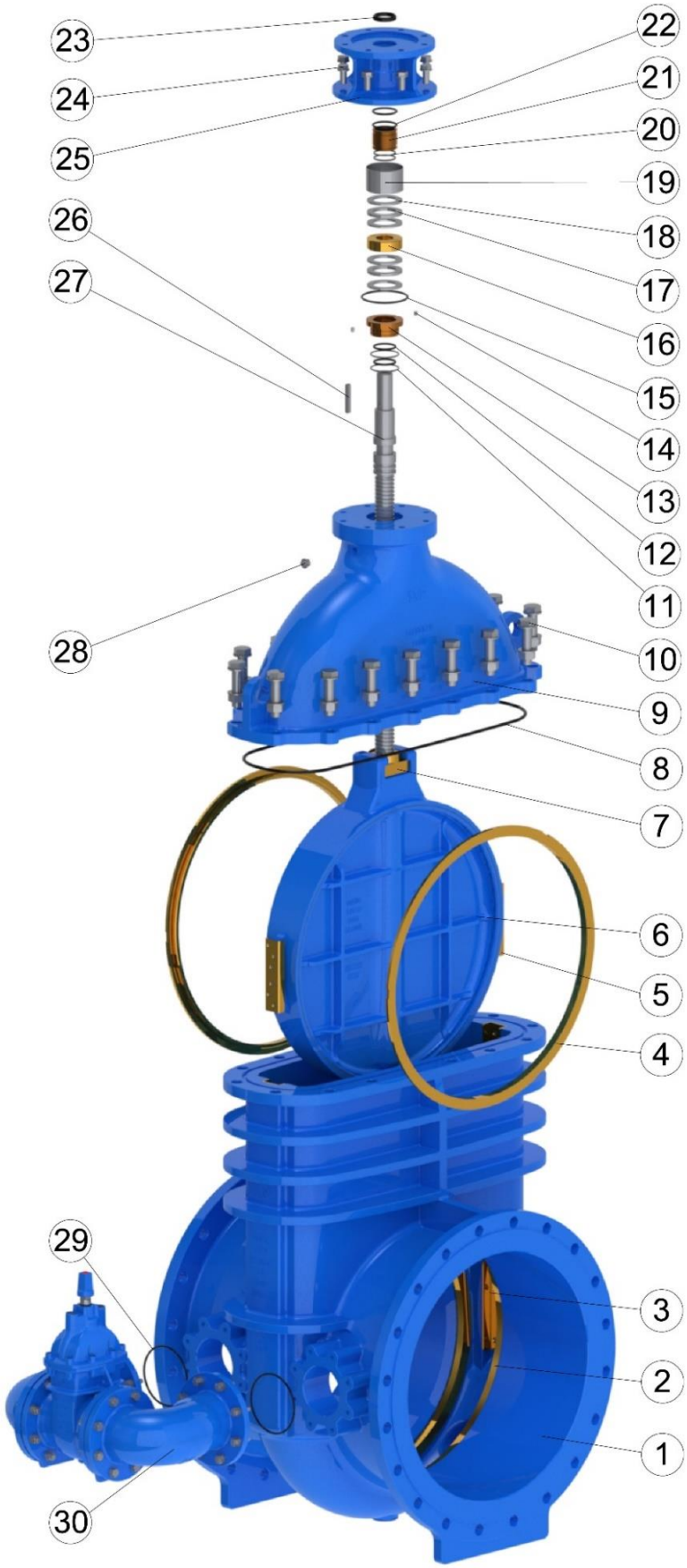


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No.	Description	Material
1	Body	Ductile Iron GJS-500-7 (GGG-50)
2	Seat Ring	Aluminum Bronze Gunmetal
3	Face Ring	Aluminum Bronze Gunmetal
4	Wedge	Ductile Iron GJS-500-7 (GGG-50)
5	Stem Nut	Aluminum Bronze BS EN1982 CC333G
6	O-Cord	EPDM
7	Bonnet Bolt	Stainless Steel / Steel, Hot Dip Galvanized
8	Bonnet	Ductile Iron GJS-500-7 (GGG-50)
9	Stem	Stainless Steel
10	Packing	PTFE
11	Gland Bolt	Stainless Steel / Steel, Hot Dip Galvanized
12	Stool	Ductile iron GJS-500-7 (GGG-50)
13	Stool Bolt	Stainless Steel / Steel, Hot Dip Galvanized
14	Gland	Ductile Iron GJS-500-7 (GGG-50)
15	Air Plug	Stainless Steel
16	O-Ring	EPDM
17	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
18-1	By-pass Valve (Optional)	/
18-2	Blind Flange (Optional)	Ductile Iron GJS-500-7 (GGG-50)

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DN700-1200 PN16 NRS（WITH THRUST BEARING）EXPLODED VIEW

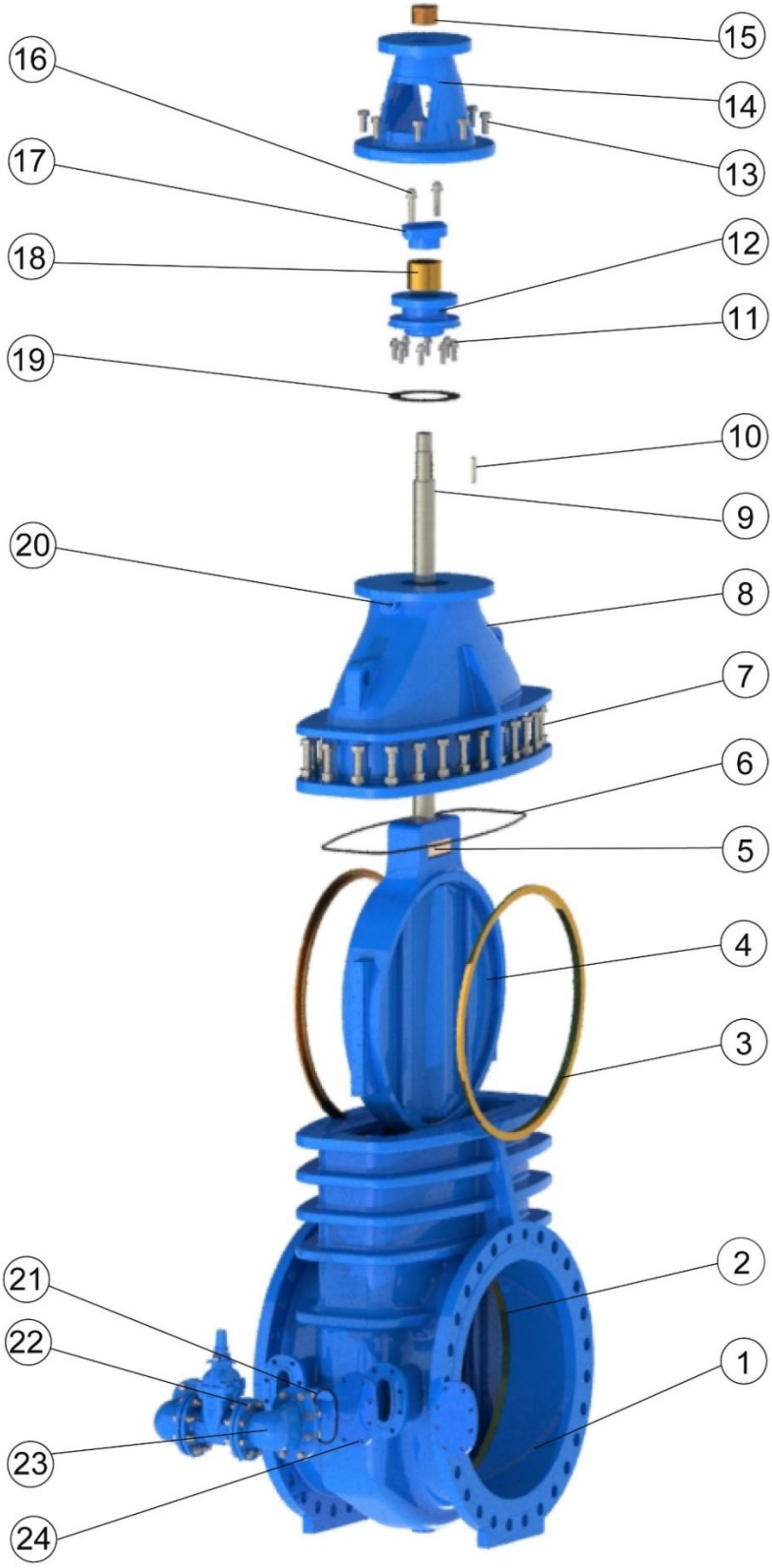


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No.	Description	Material
1	Body	Ductile Iron GJS-500-7(GGG-50)
2	Seat Ring	Aluminum Bronze Gunmetal
3	Channel	Gunmetal
4	Face Ring	Aluminum Bronze Gunmetal
5	Shoe	Gunmetal
6	Wedge	Ductile Iron GJS-500-7(GGG-50)
7	Stem Nut	Aluminum Bronze
8	O-Cord	EPDM
9	Bonnet	Ductile Iron GJS-500-7(GGG-50)
10	Bolt	Stainless Steel/Steel
11	O-Ring	EPDM
12	O-Ring	EPDM
13	Stem Bushing	Gunmetal
14	Pin	Stainless Steel/Steel
15	O-Ring	EPDM
16	Thrust Collar	Aluminum Bronze
17	Thrust Bearing	PTFE
18	Thrust Washer	Steel
19	Bearing Support Shell	PA6.6
20	O-Ring	EPDM
21	Slide Bearing	Gunmetal
22	O-Ring	EPDM
23	Wiper Ring	NBR
24	Bolt	Stainless Steel/Steel
25	Thrust Housing	Ductile Iron GJS-500-7(GGG-50)
26	Key	Stainless Steel
27	Stem	Stainless Steel
28	Air Plug	Stainless Steel
29	O-Ring	EPDM
30	By-pass Valve	/

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DN700-DN1800 PN10/PN16 NRS & DN700-DN1200 PN25（WITHOUT THRUST BEARING）EXPLODED VIEW

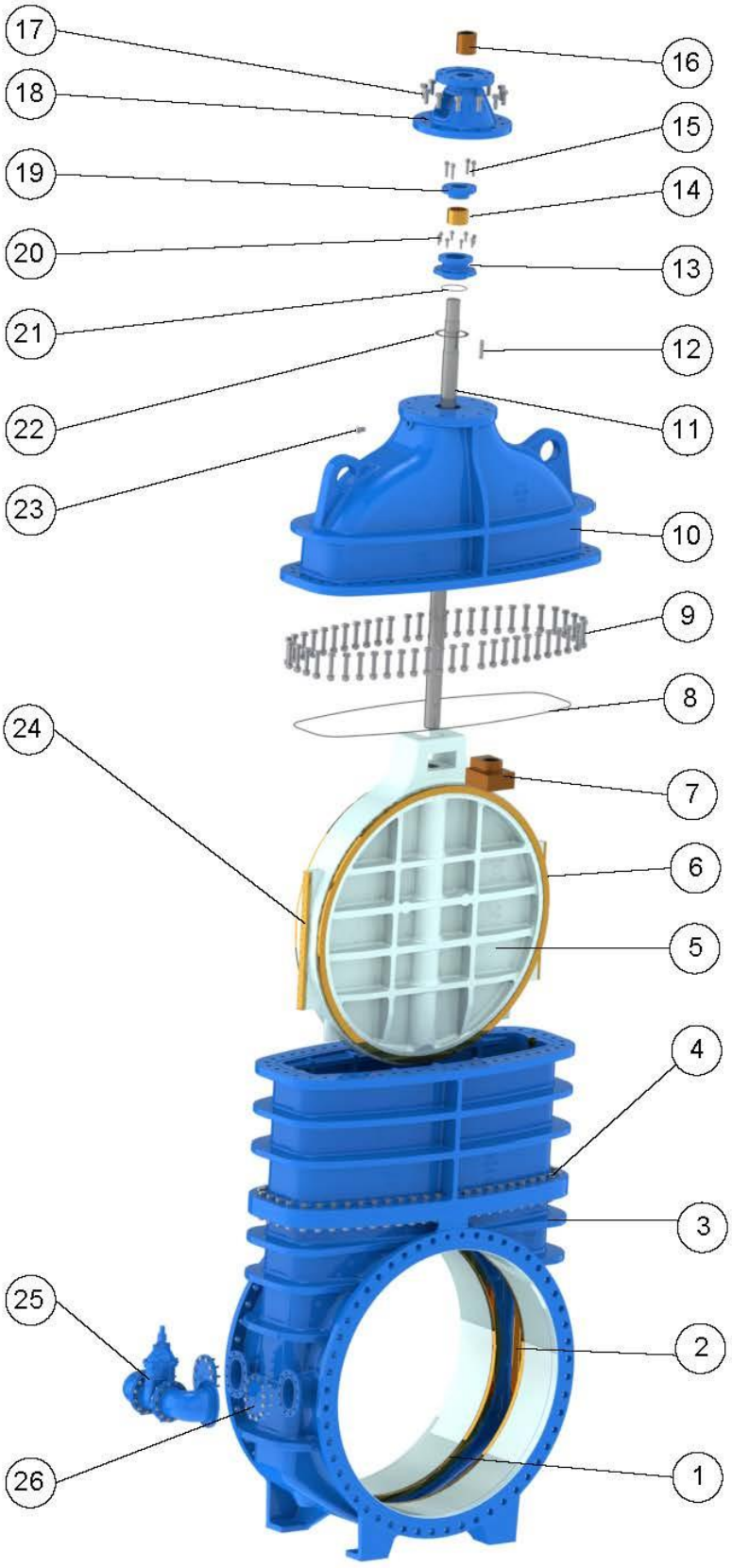


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No.	Description	Material
1	Body	Ductile Iron GJS-500-7 (GGG-50)
2	Seat Ring	Gunmetal Bronze (PN25 Valves)
3	Face Ring	Gunmetal Bronze (PN25 Valves)
4	Wedge	Ductile Iron GJS-500-7 (GGG-50)
5	Stem Nut	Aluminum Bronze BS EN1982 CC333G
6	O-Cord	EPDM
7	Bonnet Bolt	Stainless Steel / Steel, Hot Dip Galvanized
8	Bonnet	Ductile Iron GJS-500-7 (GGG-50)
9	Stem	Stainless Steel
10	Key	Stainless Steel
11	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
12	Stuffing Box	Ductile Iron GJS-500-7 (GGG-50)
13	Stool Bolt	Stainless Steel / Steel, Hot Dip Galvanized
14	Stool	Ductile Iron GJS-500-7 (GGG-50)
15	Thrust Nut	Aluminum. Bronze BS EN12163; CW307G
16	Gland Bolt	Stainless Steel / Steel, Hot Dip Galvanized
17	Gland	Ductile Iron GJS-500-7 (GGG-50)
18	Packing	PTFE
19	Gasket	EPDM
20	Air plug	Stainless Steel
21	O-ring	EPDM
22	By-pass Bolt	Stainless Steel
23	By-pass Valve (Optional)	/
24	Blind Flange (Optional)	Ductile Iron GJS-500-7 (GGG-50)

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DN2200 PN10/6 NRS（WITHOUT THRUST BEARING）EXPLODED VIEW



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No.	Description	Material
1	Seat Ring	Aluminum Bronze Gunmetal
2	Channel	Aluminum Bronze Gunmetal
3	Body	Ductile Iron GJS-500-7 (GGG-50)
4	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
5	Wedge	Ductile Iron GJS-500-7 (GGG-50)
6	Face Ring	Aluminum Bronze Gunmetal
7	Stem Nut	Aluminum Bronze BS EN1982 CC333G
8	O-Cord	EPDM
9	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
10	Bonnet	Ductile Iron GJS-500-7 (GGG-50)
11	Stem	Stainless Steel
12	Key	Stainless Steel
13	Stuffing Box	Ductile Iron GJS-500-7 (GGG-50)
14	Packing	PTFE
15	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
16	Thrust Nut	Aluminum. Bronze BS EN12163; CW307G
17	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
18	Stool	Ductile Iron GJS-500-7 (GGG-50)
19	Gland	Ductile Iron GJS-500-7 (GGG-50)
20	Bolt	Stainless Steel / Steel, Hot Dip Galvanized
21	O-ring	EPDM
22	Gasket	EPDM
23	Air plug	Stainless Steel
24	Shoe	Aluminum Bronze Gunmetal
25	By-pass Valve (Optional)	/
26	Blind Flange (Optional)	Ductile Iron GJS-500-7 (GGG-50)

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4. Principle of operation

For different applications, it is vital to use the correct valve. There are basically two design options for Gate Valves, Metal Seated and Resilient Seated.

Gate Valve Selection

Metal Seated

Metal seated gate valves series 54 use a ductile iron gate that houses Bronze rings to ensure a watertight seal. These are recommended for use with ALL NEUTRAL LIQUIDS AND SEWAGE due to their ability to deal with contaminants that lodge in the waterway and on the seats. They are not recommended for sludge (greater than 25% solids).

The Metal seated valves can also be split into two categories, Inside Screw and Outside Screw.

Inside Screw / Non-Rising（NRS）

The standard wedge gate valve for underground waterworks use is of the inside screw (non-rising stem) design, which ensures that the stem thread is adequately lubricated by the water passing through the valve. In essence, the whole internals are water dependent for lubrication, a factor that safeguards the longevity of the valve.

Outside Screw / Outside screw & Yoke（OS&Y）

Wedge gate valves that are intended for use with fluids that may foul or attack the stem threads or provide inadequate lubrication (e.g.: high viscosity fluids) will benefit by being of the outside screw rising stem design. This design leaves only the plain part of the stem inside the pressure chamber of the valve and in contact with the fluid.

The stem is non-rotating and carries its threaded portion outside the valve, an external-revolving nut being employed to impart the operation thrust. Because the thread is external to the valve casing, it has the added advantage of permitting easy visual inspection and lubrication. Another advantage of the outside screw is that the rising stem provides ready indication of the gate position.

However, this valve is not generally used as an underground valve as more headroom is required.

Our Series 54 range of metal seated gate valves have been designed and tested in full accordance with EN1074 Parts 1 & 2. For any special application requirements outside this Standard, please contact your local AVK representative

5. Health and safety at work

Make sure all relevant Health and Safety issues and regulations are adhered to prior to and during installation or maintenance work carried out on this product. It is the end user's responsibility to ensure that safe working practices are followed at all times.

Whenever AVK's products are installed, operated or maintained the inherent dangers of pressurised liquids and gasses must be addressed. Before work on a valve or other piping component is undertaken, that may involve the release of internal pressure, the valve or line must

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be fully isolated, depressurised and drained prior to commencing the work. FAILURE TO COMPLY WITH THIS MAY RESULT IN SEVERE INJURY OR DEATH.

All workers handling the product must be aware of the weight of the components or assemblies to be handled and manipulated during installation and maintenance.

It is essential that staff undertaking these operations are adequately trained and it is the responsibility of the end user that only trained and competent staff undertake these duties.

This manual has been designed to assist, but it cannot replace quality training in the workplace. However, the AVK technical staff is always available and ready to answer questions relating to specific problems that may not be covered by this manual.

AVK's products are designed to be fit for purpose and to a high reliability standard. This provides a safe, low risk product when used correctly for the purpose for which it was designed. However, this assumes that the equipment is used and maintained in accordance with this manual, and the user is advised to study it and to make it available to all staff that may need to refer to it.

AVK cannot be held responsible for incidents arising from incorrect installation, operation or maintenance. The responsibility for this rests wholly with the end user.

6. Receiving and storage

Unloading must be carried out carefully. The load must be put gently to the ground without dropping. Lift only by means of shackles in the flange bolt holes or slings around the body casting.

If a forklift is used it shall have sufficient capacity to lift the required weight and have a valid inspection certificate.

All workers involved in the unloading shall be able to perform their functions. They shall wear safety boots, safety vest, safety goggles and hard hat.

All slings used for the lifting shall be of sufficient strength. A record shall document that they have been stored under cool, dry conditions away from sunlight and chemical atmosphere, and that they still perform according to their marked strength.

Immediately after unloading the item should be inspected for compliance with specifications and damage in shipment.

Compliance with specification check shall as a minimum comprise size, pressure class, etc.

Damage in shipment check shall as a minimum comprise: coating, seating and sealing surfaces, etc., etc. or accessories or any other evidence of mishandling during shipment.

Each item should be operated through one complete open-close cycle in the position in which it is to be installed.

Storage shall be under dry, cool conditions, away from direct sunlight and corrosive or otherwise chemically active atmosphere.

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7. Installation and commissioning

WARNING: Prior to installation make sure that all pressurized lines involved in the installation are isolated, depressurized and drained before starting any work. Failure to do so may result in sudden pressure release and subsequent severe injury or death.

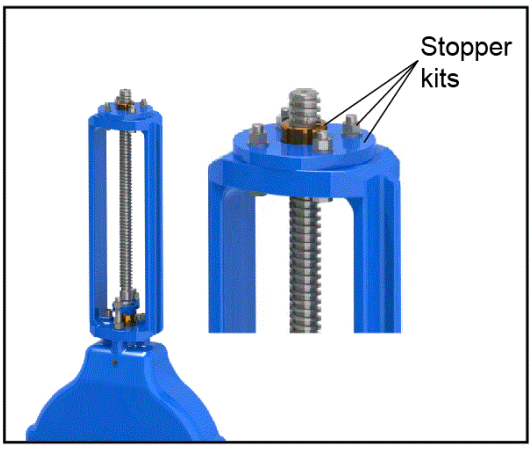
Before installing the valve into the pipeline:

- Only suitably qualified and experienced engineers should install valves.
- All special packing material must be removed.
- When large valves are provided and lifting lugs, plates or eye nuts, these must be used to lift the valve.
- Ensure that the pipeline is completely free of debris or foreign matter (the pipeline should be flushed out if possible).
- Check direction of operation.
- Check the function of the valve, by operating it two or three times to ensure freedom of spindle rotation and movement of wedge (gate).
- For a metal seated gate valve, ensure that there is no foreign matter lodged in the recess in the bottom of the valve. Similarly, for a resilient seated valve, clear any debris in waterway directly under wedge.
- To ensure adequate sealing it is important to select the correct type of gasket for the medium concerned.
- Check the gasket material. For flange joints using low strength bolting, such as may be provided for iron flanges, metal gaskets (flat, grooved, jacketed, corrugated or spiral wound) should not be used.
- Check the gaskets for freedom from injurious defects or damage.
- Check for flow direction arrows particularly on parallel faced valves or valves having bearing plates on the wedge.
- If the valve is not installed vertically, shoe and channel have to fitted to avoid seizure.

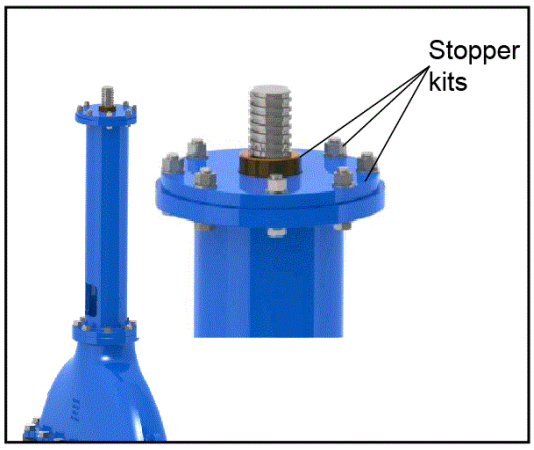
For OS&Y valve application:

If only bare shaft valve is delivered and gearbox will be installed on site, please remove shaft stopper kit before installing gearbox.

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DN350-600



DN700-1200

If valve together with gearbox are delivered, there is no extra shaft stopper kits provided.

Installing

- Use the correct bolt diameter, length and material for the particular pipeline system being used. For details refer to Flange Comparison Page 13.
- When installing the gate valves, ensure that the seats and the flange faces are clean.
- Large gate valves should be suitably supported. This will avoid excessive loading of the pipe and valve which can lead to operational issues.
- When valves are provided with lifting lugs, plates or eye nuts, these must be used to lift the valve.
- Place valve between pipe flanges, and insert the bolts.
- Tighten bolts loosely.
- Tighten bolts in a diagonal sequence to ensure flanges are pulled parallel.
- Finally tighten bolts to correct torque levels.

Once the valve has been installed (Commissioning)

- Check that the valve still functions correctly by operating it for a minimum of five turns.
- Direct mounted electric actuator open and close positions are pre-set at the works, and should not need adjustment but torque settings may need adjustment by a suitably qualified engineer.
- Pedestal mounted actuators must be set on site.
- Where pedestals are fitted with open / close indicators, attention must be made during connection to ensure that they correctly reflect the position of the valve.

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- Where a venting plug or valve is fitted, this should be used to remove the air from the valve. Alternatively, where this is not provided, air can be removed by loosening the gland bolts. (See page 21).

- When all the air has been safely vented, the cap, valve or gland bolts must be re-tightened ensuring that any gaskets or washers are correctly seated.

- If the valve is fitted with a jacking screw ensure that this is retracted after use and before attempting to close the valve

- When the pipeline has been charged, inspect the valve for any leaks and adjust as necessary in accordance with maintenance instructions.

- All external debris and foreign matter should be cleaned off from the external surfaces of the valve.

- Any paint/ coating which has been damaged during installation should be appropriately touched up.

8. Application hazards

Please consider the following points when selecting your valve:

- Consideration should be given at the design stage where valves will be located to give access for operation, adjustment, maintenance and repair.

- The valve should (ideally) be installed in a horizontal pipeline with the spindle vertically upwards. Where alternative installation orientations are required, non-ferrous channel guides may be fitted to the wedge and/ or body, or close tolerance machined guides may be utilized.

- If a valve is installed less than 6 diameters downstream of an elbow or tee etc., it will experience very high-localised velocities that are far in excess of the average velocity. This high velocity will result in excessive forces being necessary to operate the valve; therefore installation in this area must be avoided.

- Valves must be provided with adequate support. Adjoining pipework must be supported to avoid the imposition of pipeline strains on the body which may impair its performance

- Heavy Valves may need independent support or anchorage

- Maximum average flow velocity on normal and wash out duties is approx. 5 m/sec.

When used for scour duties or end of line duties, a metal-faced valve is recommended. A valve used on this duty is sometimes regarded as sacrificial. The recommended average flow velocity for scour duty is 10 m/sec. Valves used for this duty must have screwed and pinned seats.

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9. Operation and maintenance

9.1 Operation

The Series 54 gate valves are suitable for use with clean water or neutral liquids up to70°C; minimum liquid temperature must be above freezing. Insulation is essential for use with low external temperatures.

The valves can be operated manually either by handwheel, gearbox or electric actuation.
DN 700 and larger which have no thrust bearing must always be operated by a gearbox or an actuator that can provide the necessary axial force.

Direction of closing is on the ISO Mounting Gland Flange and the Gland Flange of a By-pass Valve if fitted.

Note: These valves are not designed for "end of line" services. In the event of a valve being mounted on the end of a pipeline, we strongly advise the use of blanking flange or plug.

9.2 Maintenance

WARNING: Prior to any maintenance work that requires disassembly make sure that the pressurized line involved is isolated, depressurized and drained before starting any disassembly. Failure to do so may result in sudden pressure release and subsequent severe injury or death. To improve the life of the Series 54 Gate Valve and ensure satisfactory working all times the following procedures should be carried out at regular intervals throughout the life span of the product (every 6 months).

Although some procedures can be carried out with the valve under pressure, it is strongly recommended that there is no pressure in the pipeline whenever possible.

- The stuffing box should be checked to conclude that there is no leakage from the packing. An additional strand might be required after a period of service and occasionally repacking may be needed.
- Care should be taken to ensure the gland is tightened up evenly to prevent binding of the spindle, and should be tightened up just enough to prevent leakage.
- If the valve has been left standing un-operated for lengthy periods and conditions allow, monthly or more frequent operation of the screw throughout the length of its travel should be carried out. Failing this, at least operation through part of the travel should be effected if at all possible. Prior to operation the exposed stem thread should be lightly lubricated with an appropriate grease.
- The bolts on the valve should be checked for tightness, after long periods of operation, where vibration is experienced.
- Visual checks of coating for any signs of damage or corrosion.

9.3 Repair of valve

Fault Finding
Faults that develop in gate valves can be divided into two main categories.

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1. External faults such as:

- Leaking joints and gland packing seals· Broken Castings such as thrust housings, gearboxes etc. Stem seal leak: broken stem seal components.

2. Internal faults such as:

Jammed wedge, bent stem, loose facings, distorted thrust nut threads, debris in the valve. NB: Visible faults are generally easier to find and rectification will range from the simple adjustment of gland nuts or tightening joint bolting to the more difficult tasks as replacement of castings requiring the shutdown of the main. Internal faults are more difficult to identify and an assessment has to be made from the known circumstances.

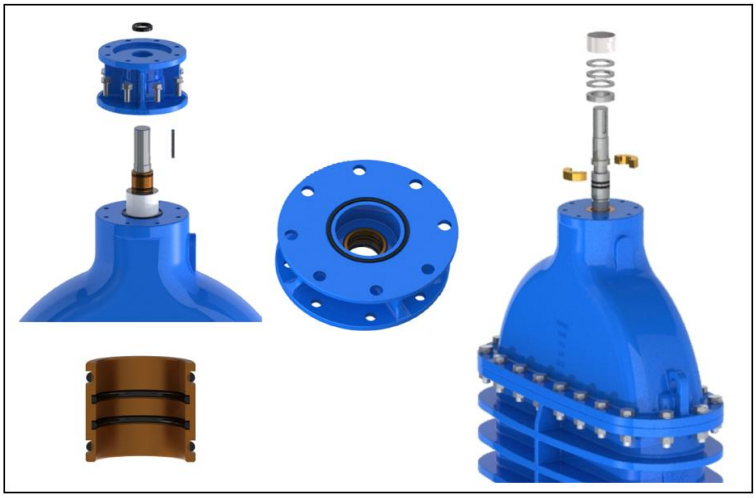
External Faults

It is always recommended that wherever work is being carried out on a valve that the valve is fully depressurised prior to carrying it out, and for convenience draining of the line may be beneficial.

It is essential that the user of the valve is aware of the weight of the components and / or assemblies that must be handled and manipulated during installation and maintenance. It is the users' responsibility to ensure that safe working practices are followed at all times.

Stem seal components (For NRS valve with thrust bearing)

- Remove key
- Remove gland flange bolts, gland flange with wiper ring
- Verify the location of the upper stem seal O-rings and the seal retainer. They may be located on the stem, or in the counter bore of the gland flange
- Turn the stem in a close direction until the stem rise.
- Remove bearing shell, thrust washer, thrust bearing, thrust collar and the lower stem seal O-ring.
- Inspect and replace any damaged parts. Use a food grade grease that contains no acetate or silicone to lubricate the O-rings, reassemble in reverse order



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Packed Gland (For NRS valve without thrust bearing and OS&Y valve)

Packed glands are the traditional method of sealing stems from the line pressure and are extremely reliable over a long period of time. However, they do require an initial adjustment during the commissioning period and for this reason we cannot guarantee "no leakage" until the valve is installed and adjusted.

Adjustment is a simple matter of alternately tightening the gland nuts by a small amount until any weeping ceases, this can be safely carried out whilst under pressure. If the gland is already down and further adjustment is not available or does not stop the leak, then the gland will need re-packing. If this is necessary, the pressure in the pipeline should be shut off at another point, and the line drained.

To repack the valve, complete the following:

- Undo the gland nuts and then remove the gland and the packing
- Lubricate the spindle with WRC Approved Grease
- Repack the gland using the correct size and type of packing and ensure that there is a snug fit between the spindle and the stuffing box wall, and that all joints are staggered by 120 degrees.
- Secure the gland but do not tighten the nuts more than necessary to prevent leakage

For OS&Y valve:



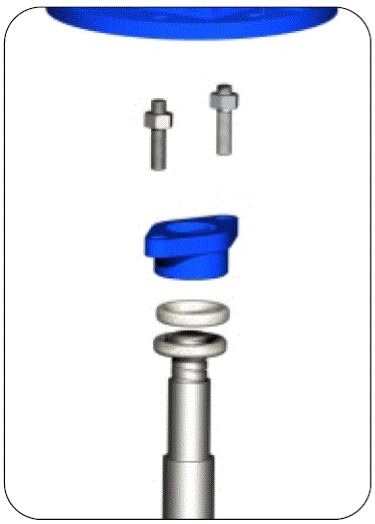
Left: Exploded view of Stem/ Packing/ Gland/ Studs and Bolts.

Right: Reassembled position of gland packing assembly.



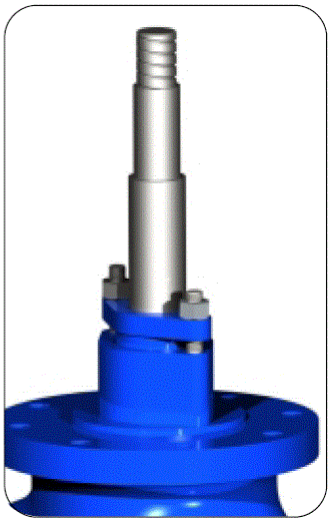
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For NRS valve:



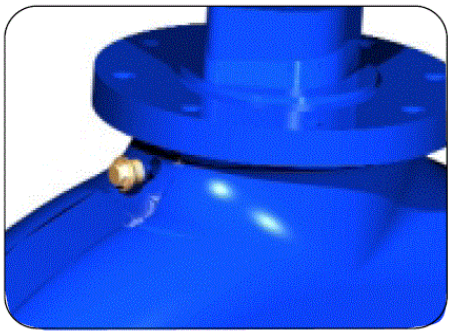
Left: Exploded view of Stem/ Packing/ Gland/ Studs and Bolts.

Right: Reassembled position of gland packing assembly.



After a very long period (years)-new packing rings may be added to maintain efficient sealing. To comply with safe testing procedures valves shall be purged of air when being hydrostatically tested.

Valves tested and installed in the upright position therefore necessitate the slackening of the air release plug to permit venting of air from the body cavity.



Air Release Plug.

In recognition of the operational conditions the gland may not be seepage tight at the test pressure. Subsequent adjustment when the valve is installed will compensate for the packing shrinkage in storage and transit and ensure optimum gland sealing at the working pressure.

Blank Flange (Applies to All sizes)

If a leak is apparent between the cover and the body then this is cured by tightening down the cover flange bolts this can be safely carried out whilst the valve is under pressure. If the leak continues then the 'O' seal or gasket needs to be replaced. Depressurisation is necessary to accomplish this.

Internal Faults

These are more difficult to identify and an assessment has to be made from the known circumstances. However, if an internal fault is suspected then please notify our technical services department.

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9.4 Renewal of spindle and nut

It is always recommended that wherever work is being carried out on a valve that the valve is fully depressurised prior to carrying it out, and for convenience draining of the line may be beneficial.

It is essential that the user of the valve is aware of the weight of the components and / or assemblies that must be handled and manipulated during installation and maintenance. It is the users' responsibility to ensure that safe working practices are followed at all times.

Please study these procedures carefully before attempting the work. If in doubt please contact our Technical Department. The Valve must be removed from the line to carry out this procedure.
Ensure that the valve is upright and securely held to prevent toppling. A chain hoist or other suitable lifting device and two substantial trestles are required. All necessary tools should be to hand and in good condition.

- Open the valve about 75mm (about 6 turns)
- Remove cover bolts/ nuts and washers
- ·Lift cover and all its attachments until nut box at top of wedge is clear of top flange of body ensuring that the guides on the wedge are still entered into the channel guides in the. Body

NOTE： When lifting Series 54 covers with attachments, do not use the lifting lugs, as this will cause the cover to be top heavy. Ensure that lifting straps are used around the top flange of the cover.

- Place a wooden block into the bore and under the wedge still leaving a clearance of approximately 15-20mm between the block and the wedge.
- Revolve the cover until the spindle is clear of the barrel of the wedge.
- Lower whole assembly gently until wedge comes to rest on wooden block and stem nut in Nut box becomes slack
- Push whole assembly side ways until nut is clear of nut box
- Lift whole of upper assembly away and place onto trestles
- Remove stem nut
- Slacken gland and remove stuffing box/ thrust housing set screws
- Change spindle
- Fit new joints on valve body flange and fit new joint to stuffing box flange (all joints supplied)
- Replace stuffing box/ thrust housing
- Replace bolts into cover

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- Replace stem nut so that bottom face of nut and bottom face of spindle (stem) are flush
- Lift assembly and guide to the body
- Carefully replace nut back into nut box
- Rotate cover six turns
- Lower assembly into body and tighten all bolts and nuts
- Tighten stuffing box nuts

When tightening down bolts, proceed until reasonable resistance is obtained initially. Final tightening is to be carried out after installation and pressurisation to correct all leaks which are likely to occur.

10. Decommissioning

When decommissioning the product, it should be disposed of according to local regulations and in a way that allows as much recycling of materials as possible.

11. Trouble shooting

Symptom:	Valve leaking around gland
Cause:	Bolts loose
Cure:	Tighten gland bolts
Cause:	Worn packings,
Cure:	Replace packings
Symptom:	Valve leaking around body and bonnet
Cause:	Bonnet bolts loose
Cure:	Tighten bonnet bolts
Cause:	Damaged O-cord
Cure:	Replace O-cord
Symptom:	Valve hard to operate
Cause:	If the valve has not been operated over a prolonged period of time, build-up may occur on the internal parts.
Cure:	Open or close the valve one turn at a time until fully opened or closed. Repeat the process a few times then flush the system to remove any debris.

12. Recommended spare parts

Only genuine AVK spare parts should be used.

AVK accepts no responsibility for damage caused by failing non-AVK parts.

The use of inferior materials or parts in a valve can have serious consequences. It is AVK policy therefore, to use only materials of the highest quality, manufactured to our own designs and thoroughly checked and tested in accordance with our internal Quality Assurance system that is approved to ISO 9001:2000. It is absolutely essential therefore, that in order to guarantee the

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highest level of safety and performance, only genuine AVK spare parts are used. AVK can accept no responsibility whatsoever for the fitting and subsequent failure of any non-AVK or non-approved parts.

AVK recommend that these spare parts are purchased when ordering series 54 gate valve

- Full set of gaskets and seals
- Gland packing
- Grease for stem
- Touch up paint

For more information contact AVK technical department.

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