



CLARKSON KNIFE GATE VALVES

FIGURE 952

Installation and maintenance instructions

GENERAL APPLICATION

The Clarkson F952 is designed for a wide range of applications such as:

- Pulp and paper
- Mining
- Effluent handling plants
- Chemical plants
- Food and beverage
- Fly ash handling plants
- Bulk conveying
- Corrosive environments

TECHNICAL DATA

Size range: DN 50 - 600 (NPS 2 - 24)
 Temperature rating: 150°C (300°F) RTFE seated
 150°C (300°F) FKM seated
 230°C (445°F) 316 S/S seated
 Pressure rating: 1000 kPa/10 bar (150 psi) at cold working pressure (non-shock)

FEATURES

- Compact design
- Self-aligning gland box
- 316 S/S valve body construction for superior corrosion resistance
- One piece integral cast body, chest and lugs.
- Integral cast in gate wedges minimize flow obstructions
- High quality gate finish for optimum sealing
- High flow rates with low pressure drops
- Integral RTFE gate scraper
- Gate guides to support gate
- A range of seat options available
- Complies with MSS SP-81 face-to-face dimensions
- All valves are pressure tested to MSS SP-81
- Maintenance friendly



LABEL CONTENTS

Item	Description	Example
Trim	Trim Option	170
MAWP	Maximum Allowable Working Pressure	150 psi / 1 MPa
COO	Country of Origin	Made in Australia

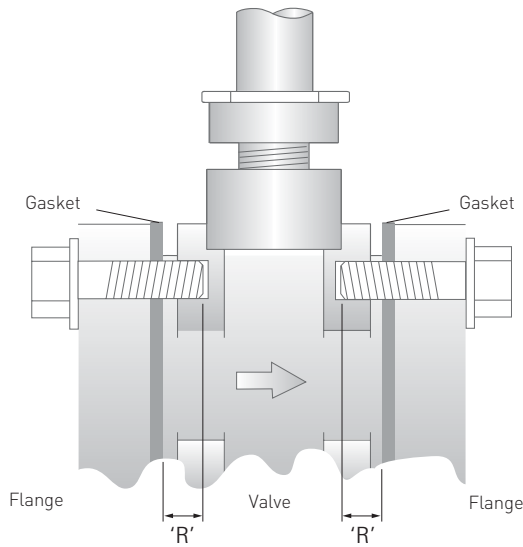
COMPLIANCE LABEL



CLARKSON FIGURE 952 KNIFE GATE VALVES

STORAGE AND INSTALLATION

FIGURE 1



THREAD DEPTHS

Valve size DN (NPS)	Thread depth	
	mm	inches
50 (2)	10	3/8
65 (2½)	10	3/8
80 (3)	11	7/16
100 (4)	11	7/16
125 (5)	14	7/16
150 (6)	14	7/16
200 (8)	16	5/8
250 (10)	16	5/8
300 (12)	16	5/8
350 (14)	16	5/8
400 (16)	19	3/4
450 (18)	24	15/16
500 (20)	19	3/4
600 (24)	19	3/4

INITIAL INSPECTION

1. Examine entire valve and report any damage or discrepancies to supplier prior to installation.
2. Inspect accessories, if any, including solenoids, limit switches, positioners, etc. for functionality prior to installation.
3. Large manual hand wheels may sometimes be shipped loose in container.
4. Packing screws should be checked and adjusted to torque stated in IOM as these could loosen during transport — overtightening will reduce seal life.

⚠ WARNING

Take safety precautions to avoid risk to personnel from unexpected leakage through packing when valve is first exposed to pressure.

STORAGE

Important

Do not remove any identification or instruction tags. For optimum protection, store valve undercover.

Valves

Flange faces should be protected at all times with wooden or heavy cardboard shields. On iron bodied valves, lubricate threaded flange bolt holes to prevent rusting. Apply protective coating to seating faces of metal to metal seated valves. Valves should be stored flat with the flow arrow pointing downwards and in the closed position, (but not jammed tight) to protect seating faces and gate from damage. Handwheel spindle threads should NOT be lubricated otherwise dirt will accumulate in threads.

Actuators

All air line and electrical cable entries should be plugged. If cylinders are not fitted to a valve, they should be stored with the piston rod fully retracted. Cylinders are assembled with a light coating of grease on internal components.

Spare parts

Seats and packings should be carefully stored and protected from sharp or heavy objects which will damage sealing faces.

HANDWHEEL OPERATION

On standard valves, turn handwheel anti-clockwise to open valves, and clockwise to close valves.

FLANGE BOLTS

⚠ CAUTION

It is critical that flange bolts do not bottom out in valve body otherwise valve damage will occur.

To determine bolt length for the blind holes in the upper chest area of the valve, add dimension 'R' + gasket + flange thickness + any washers etc. (plus deflection cone and gasket when used).

1. Stud bolts can be used in the blind holes in the chest area of the valve body to alleviate the risk of flange bolts bottoming out.
2. Coating of flange bolt threads with an anti-seize compound (Loctite® 729 etc.) is recommended to prevent bolt seizure, particularly when using S/S bolts with S/S valves, or when using steel bolts in iron valves.

CLARKSON FIGURE 952 KNIFE GATE VALVES

STORAGE AND INSTALLATION

INSTALLATION INSTRUCTIONS

NOTE

Heavy valves will require a chain block or crane to assist. In difficult locations, large cylinder actuators can be removed from valve and re-fitted after installation if necessary, but check cylinder to gate alignment carefully and that valve seats correctly. (Refer cylinder fitting instructions).

1. Close valve.
2. Check valve size is correct and that there is adequate clearance to install valve.
3. Check flange faces are clean and smooth and that bolt hole patterns on pipe flanges are the same as the valve, and are in line.
4. Check bolt sizes and threads are clean and compatible with the valve. (Separate technical data is available.)
5. Check gaskets match flanges and are suitable for the service.
6. Check that the pipeline, upstream and downstream, is correctly aligned.
7. If a deflector cone is being used, fit it to upstream side of valve with the cone nozzle pointing downstream, prior to installation. Metal (chrome iron) cones must have gaskets fitted between the cone and valve, and between cone and flange. Resilient urethane cones do not require these gaskets.
8. Spread flanges to clear valve, check flow arrow on side of valve is in the right direction. (Valve seating face and gate are downstream). Lower valve into position. Insert gaskets, 1 each side.
9. Insert flange bolts. On wafer valves, insert bolts into the threaded bolt holes in the chest of the valve first but do not tighten until all bolts are fitted. Tighten bolts in a diagonal sequence (refer Figure 2).
10. Ensure bolts in the chest area of the valve are not bottoming out in the blind holes.
11. Open and close valve to check it is operating correctly.
12. After pipe line is pressurized, check for flange leaks and for gland leaks, adjust as necessary.

FIGURE 2

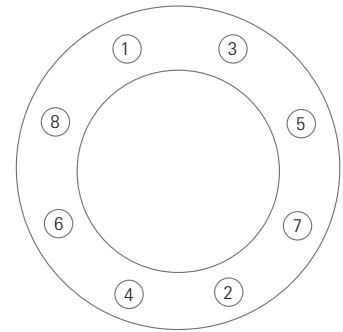
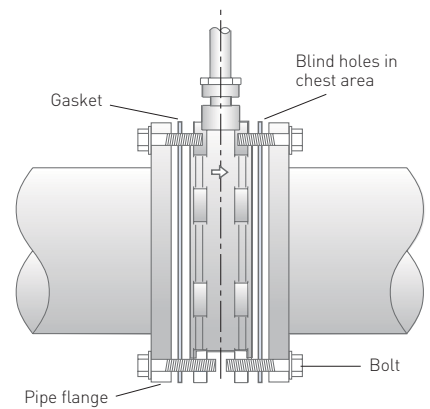


FIGURE 3



VERTICAL PIPE APPLICATIONS

Figure 952 is a unidirectional valve utilizing three RTFE-tipped gate guides positioned on the upstream side of the gate surface to ensure optimum alignment with seating surface throughout the full valve stroke.

A backpressure ring may be recommended to replace the gate guides in applications where backpressure is likely to occur as part of normal operating conditions, or where the valve is installed in a horizontal orientation (most commonly with a vertical pipe – refer Figure 5 and 6) with gate not supported by the seating surface.

The backpressure ring ensures the gate position is maintained in close contact with seating surface in the closed position and throughout the full valve stroke.

FIGURE 5

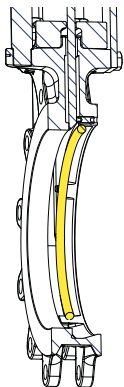


FIGURE 6

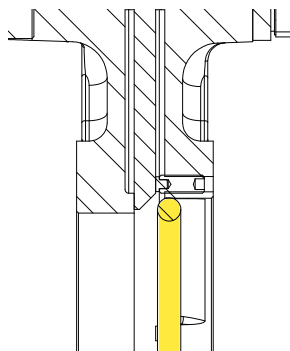
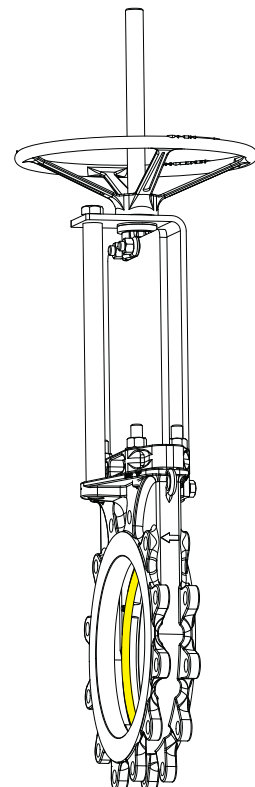


FIGURE 4



CLARKSON FIGURE 952 KNIFE GATE VALVES

STORAGE AND INSTALLATION

PURGE PORTS (WHERE FITTED)

Optional stainless steel purge nozzles can be fitted in lower part of body. If sedimentation occurs preventing gate from closing fully, purge with compressed air or water. Alternatively, connect permanent installation to purge ports and purge periodically. Purge port hole is 3 mm (1/8 in) BSPP.

GLAND ADJUSTMENT

The gland on new and repaired valves may require final adjustment after installation and pressurisation of the valve. If packing leaks, tighten gland nuts equally until leaking ceases. A 32 mm (1 1/4 in) AF spanner fits DN 50 - 600 (NPS 2 - 24) valve size.

If gland leakage persists, check that pipeline is not pressurized above rating of valve. Alternatively, packing may be damaged, wrongly installed or have foreign matter caught between gate and packing.

Disassemble, inspect and repair or replace as necessary.

CAUTION

Do NOT over tighten gland packing as it will cause excessive resistance to gate movement.

SAFETY

The gland on new and repaired valves may require final adjustment after installation and pressurisation of the valve.

Actuated valves are generally operated from a remote location, caution should be exercised if working in close proximity to any moving parts.

NOTE

To minimize risk to personnel, Emerson recommend the use of purpose built guards and shrouds. Refer to the Emerson data sheet or consult factory for details.

CLARKSON FIGURE 952 KNIFE GATE VALVES

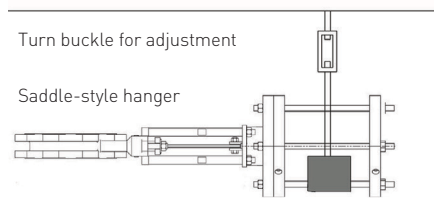
STORAGE AND INSTALLATION

CYLINDER SUPPORT METHODS FOR HORIZONTALLY OR OFF-VERTICAL MOUNTING

1. Pneumatic and hydraulic cylinders require additional support when mounted in an orientation other than vertical, and failure to do so could lead to failure of cylinder and/or valve.
2. Suggested methods included in this document are conceptual in nature, and design of supporting structures is responsibility of user.
3. It is important that linear actuator and gate are aligned axially.
4. Supports shall be designed to maintain alignment and carry bulk weight of actuator and own weight considering all loads.

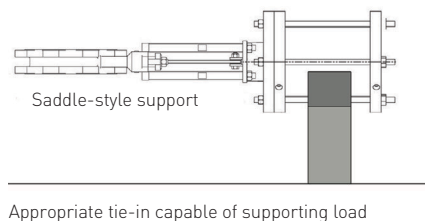
INSTALLATION A

FIGURE 7



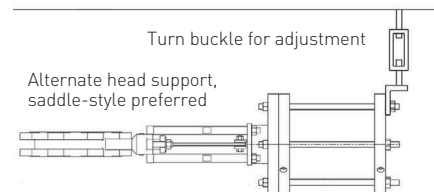
INSTALLATION B

FIGURE 8



INSTALLATION C

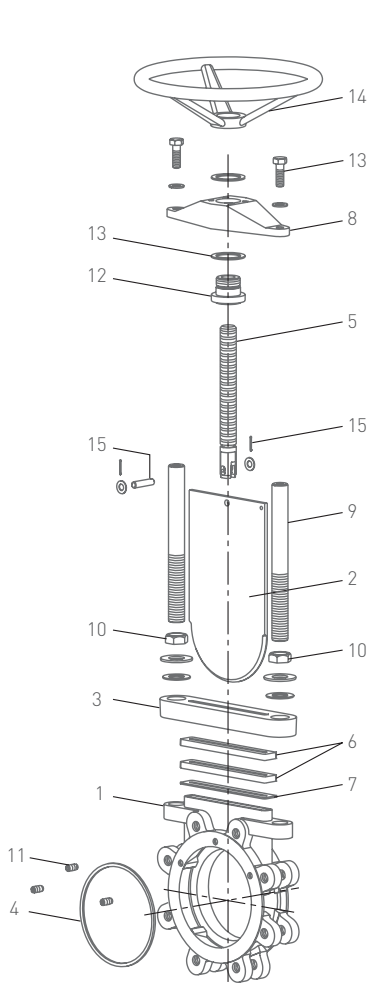
FIGURE 9



CLARKSON FIGURE 952 KNIFE GATE VALVES

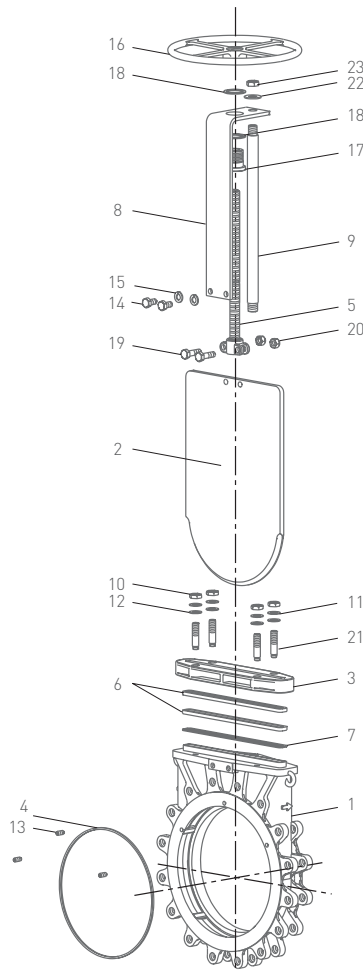
REMOVAL, DISASSEMBLY AND INSPECTION

FIGURE 10



Note: DN 50 - 200 (NPS 2 - 8) valve illustrated.

FIGURE 11



Note: DN 250 - 600 (NPS 10 - 24) valve illustrated.

REMOVAL AND DISASSEMBLY

1. Ensure pipeline is not pressurized and that any hazardous medium is drained away.
2. Large valves need a chain block or crane to assist. If large, heavy cylinders are fitted, they can be removed first if felt necessary:
 - Disconnect actuator air lines and power supplies etc.
 - Support actuator, disconnect actuator rod from valve gate, undo bridge bolts or hold down bolts, remove actuator from valve.
3. Support valve body and remove all flange bolts.
4. Remove valve and gaskets from the pipeline.
 - For DN 50 - 200 (NPS 2 - 8) valves**
 - Loosen gland box nuts (10) to end of pillar (9) threads. Remove clevis fastener (15). Remove both bridge nuts (13).
 - Remove handwheel (or actuator assembly). Unscrew both pillars (9) and remove.
 - For DN 250 - 600 (NPS 10 - 24) valves**
 - Remove gland box nuts (10) and washers (11, 12). Remove clevis fasteners (19, 20).
 - Remove upright bolts (14) and washers (15) at valve body (1). Remove pillar nut (23) and washer (22).
5. Withdraw gland box (3) and gate (2) assembly.
6. Remove gate guides (13) from valve body (1).

RISING SPINDLE VALVES

- Ensure all parts are clean and free of foreign material, particularly the chest area between the gland and valve bore.
- For optimum leak-free service, gate faces and edges must be smooth, and free of galling or burring. Repair or replace if excessively worn or damaged.
- Seating faces in valve bore must be smooth and undamaged otherwise leakage is likely to occur. Replace if necessary.
- Check gland sealing faces on top of valve body. They should be smooth and undamaged. Repair if necessary.

- Check threads on spindles and bolts - repair/replace if necessary.
- Replace Nyloc nuts if threads are stripped or weakened. These are used as protection against vibration.
- Check and replace gate guides (13) if necessary.

CLARKSON FIGURE 952 KNIFE GATE VALVES

REMOVAL, DISASSEMBLY AND INSPECTION

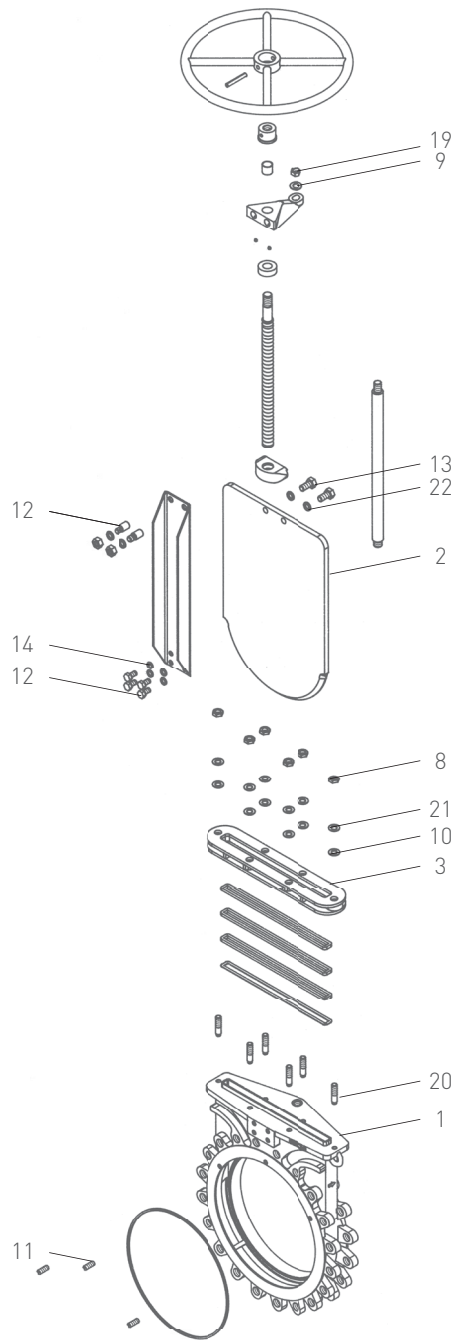
NON - RISING SPINDLE VALVES

- Ensure all parts are clean and free of foreign material, particularly the chest area between the gland and valve bore.
- For optimum leak-free service, gate faces and edges must be smooth, and free of galling or burring. Repair or replace if excessively worn or damaged.
- Seating faces in valve bore must be smooth and undamaged otherwise leakage is likely to occur. Replace if necessary.
- Check gland sealing faces on top of valve body. They should be smooth and undamaged. Repair if necessary.
- Check threads on spindles and bolts - repair / replace if necessary.
- Replace Nyloc nuts if threads are stripped or weakened. These are used as protection against vibration.
- Check and replace gate guides (11) if necessary.

REMOVAL AND DISASSEMBLY

1. Ensure pipeline is not pressurized and that any hazardous medium is drained away.
2. Large valves need a chain block or crane to assist. If large, heavy cylinders are fitted, they can be removed first if felt necessary:
 - Disconnect actuator air lines and power supplies etc.
 - Support actuator, disconnect rod from valve gate, undo bridge bolts or hold down bolts, remove actuator from valve.
3. Support valve body and remove all flange bolts.
4. Remove valve and gaskets from the pipeline.
 - Remove gland box nuts (8) and washers (21, 10). Remove clevis fasteners (13) and washers (22).
 - Remove upright mounting bolts (12) and washers (14) at valve body (1). Remove pillar nut (19) and washer (9).
5. Withdraw gland box (3) and gate (2) assembly.
6. Remove gate guides (11) from valve body (1).

FIGURE 12

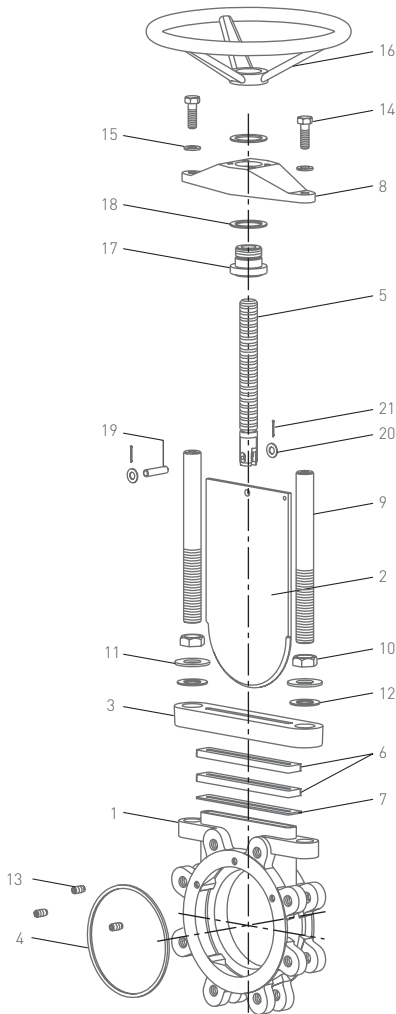


Note: DN 250 - 600 (NPS 10 - 24) non-rising spindle valve illustrated.

CLARKSON FIGURE 952 KNIFE GATE VALVES

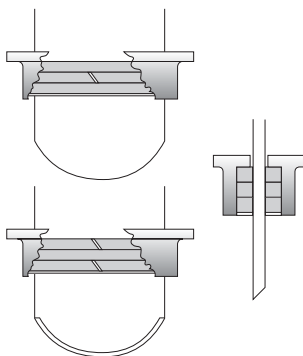
GLAND PACKING REPLACEMENT - DN 50 - 200 (NPS 2 - 8)

FIGURE 13



Note: DN 50 - 200 (NPS 2 - 8) valve illustrated.

FIGURE 14



PACKING REPLACEMENT

For optimum performance, the packing material should be replaced whenever the valve has been disassembled for routine maintenance. This is a very simple procedure which can be done leaving the valve in the pipeline.

Correct packing is essential for leak-free operation. Use Emerson's preformed and pre-cut packing replacement kits for best results. Kits are available in the following types:

K-LON - Standard packing material.

D-LON - Food grade packing.

G-LON - High cyclic packing.

H-LON - Abrasive service packing.

Ensure packing material selected is suitable for the service.

DISASSEMBLY PROCEDURE

1. Ensure the pipeline is not pressurized and any hazardous medium is drained away.
 2. Close valve. Loosen gland box nuts (10) to end of pillar (9) threads.
 3. Remove clevis fastener (19).
 4. Remove both bridge bolts (14).
 5. Remove bridge sub-assembly (handwheel, handwheel nut, spindle and bridge or cylinder actuator and bridge).
- NOTE**
Heavy valves will require a chain block or crane to assist.
6. Unscrew both pillars (9).
 7. Unscrew gate guides approximately 2 turns (not applicable on polyurethane trim valves).
 8. Withdraw gland box (3) and gate (2) sub-assembly.
 9. Remove scraper (7) (not fitted on polyurethane trim valves) and packing segments (6) from the gland box (3), noting the number of layers.
 10. Clean gland box (3) and gate (2). Check gate for irregularities or abrasion on the seating side. If excessive, discard and replace.

PACKING PROCEDURE

NOTE

Care should be taken to stagger the mitred joints in each layer of packing to the opposite side of the gland box, e.g.;

- 1st packing layer joint to the front of the valve
- 2nd packing layer joint to the rear of the valve
- (On larger valves) 3rd packing layer joint to the front of the valve.

1. Press first layer of gland packing (6) into gland box (3) cavity by hand, then repeat the process with the second layer ensuring the joints of the two layers are on opposing sides of the cavity.
2. Push gate (2) (rounded edge first) gently through top of gland box with packing underneath, then turn upside down and push gland box to 25 mm (1 in) from the end of the gate. Firmly press packing in with fingers around gate then fit the RTFE scraper blade (7) (not fitted on polyurethane trim valves) in bottom of gland box.

CLARKSON FIGURE 952 KNIFE GATE VALVES

GLAND PACKING REPLACEMENT - DN 50 - 200 (NPS 2 - 8)

ASSEMBLY PROCEDURE

1. With bevelled edge (not applicable on polyurethane trim valves) of gate up stream and away from the seating face, place gland box / gate sub-assembly into body and push gate down until firmly wedged at bottom of valve.
2. Screw the gland box nuts (10) onto each pillar (9), add washers (11) and (12). Coat threads with anti-seize compound. Put each pillar sub-assembly through gland box holes and screw them into the valve body lug until pillar is level with the bottom of the body lug. Height of pillars (9) should be equal.

NOTE

For polyurethane trimmed valves, ignore steps 3 through 5.

3. Screw in the gate guides (13) until they contact the gate, do not over tighten.
4. With gate firmly wedged into bottom of valve, push top of gate towards downstream side to ensure it is firmly up against seat (4), then tighten pillar nuts.
5. Check gate alignment (gate closed).

If correctly fitted and aligned:

- Gate will be fitting firmly and evenly up against seating face in valve body.
- Gate and gland box will be approximately centred with the valve body viewed from front and sides.
- Gate will be true and parallel to valve body axis viewed from the side.
- Gate will not have significant movement when rocked backwards and forwards (upstream and downstream, not sideways).

If not fitted correctly:

- Gate is not seating properly into the wedges in the base of the valve and/or the gate guides in the upper body of the valve are badly worn, missing or incorrectly adjusted - repair as necessary.
6. Fit bridge sub-assembly (handwheel, handwheel nut, spindle and bridge or cylinder actuator and bridge) to the top of the pillars and secure using bridge bolts (14).
 7. To fit the clevis pin (19) adjust the spindle (5) until the holes in the spindle and the gate are aligned.
 8. Assembly is complete, actuate to check all is functioning as desired and gate reseats itself into the wedges at bottom of the valve body. If re-seating does not occur, loosen gland box nuts (8) and remove gland box, clean and repeat steps.

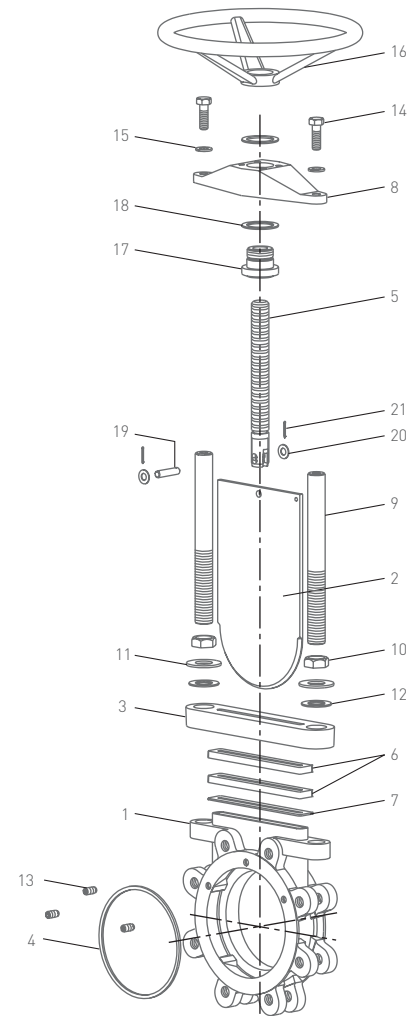
NOTES

1. At commissioning or plant start-up, open and close valve to check it is operating correctly - gland nuts (8) may require adjustment. Please ensure to tighten equally.
2. To minimize risk to personnel, Emerson recommends the use of purpose built guards and shrouds. Refer to the Emerson data sheet or consult factory for details.

CAUTION

Do NOT over tighten gland packing as it will cause excessive resistance to gate movement.

FIGURE 15

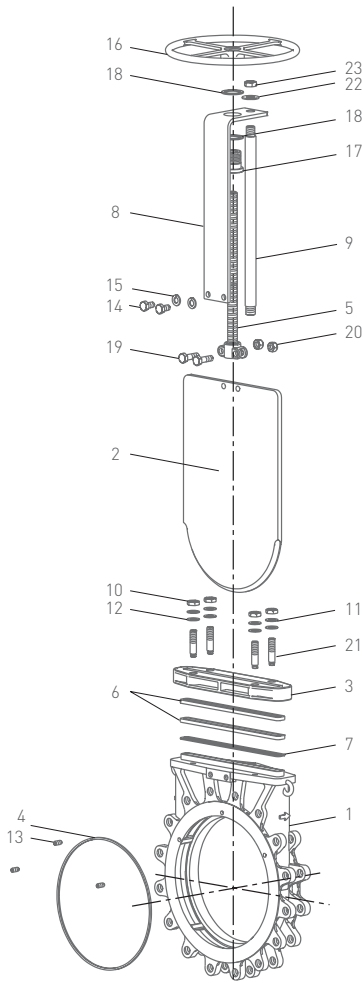


Note: DN 50 - 200 (NPS 2 - 8) valve illustrated.

CLARKSON FIGURE 952 KNIFE GATE VALVES

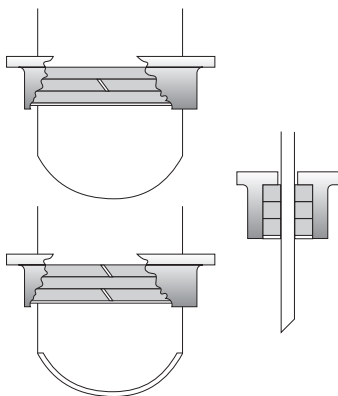
GLAND PACKING REPLACEMENT - DN 250 - 600 (NPS 10 - 24)

FIGURE 16



Note: DN 250 - 600 (NPS 10 - 24) valve illustrated.

FIGURE 17



PACKING REPLACEMENT

For optimum performance, the packing material should be replaced whenever the valve has been disassembled for routine maintenance. This is a very simple procedure which can be done leaving the valve in the pipeline.

Correct packing is essential for leak-free operation. Use Emerson's preformed and pre-cut packing replacement kits for best results.

Kits are available in the following types:

K-LON - Standard packing material.

D-LON - Food grade packing.

G-LON - High cyclic packing.

H-LON - Abrasive service packing.

Ensure packing material selected is suitable for the service.

DISASSEMBLY PROCEDURE

1. Ensure the pipeline is not pressurized and any hazardous medium is drained away.
2. Close valve.
3. Remove gland box nuts (10) and washers (11, 12). A 32 mm (1¼ in) AF spanner suits all valve sizes.
4. Remove clevis bolts (19) and nuts (20).
5. Remove pillar nut (23) and washer (22).
6. Remove upright mounting bolts (14) and washers (15) at valve body (1).
7. Remove handwheel (16) upright (8) and spindle (5) as an assembly.
8. Remove gland box (3) from gate (2) leaving the gate in the valve body.
9. Remove scraper (7) (not fitted on polyurethane trim valves) and packing segments (6) from gland box, noting number of layers.
10. Clean gland box (3).

NOTES

Although not essential, valve gate can also be removed for inspection at this stage.

For optimum leak-free service, gate faces and edges must be smooth, and free of galling or burring.

Repair or replace if excessively worn or damaged.

When re-fitting gate, ensure bevelled edge of knife gate is upstream and away from seating face.

CLARKSON FIGURE 952 KNIFE GATE VALVES

GLAND PACKING REPLACEMENT - DN 250 - 600 (NPS 10 - 24)

PACKING PROCEDURE

NOTE

Care should be taken to stagger the mitred joints in each layer of packing to the opposite side of the gland box, e.g.;

- 1st packing layer joint to the front of the valve
- 2nd packing layer joint to the rear of the valve
- 3rd packing layer joint to the front of the valve.

1. Press first layer of gland packing (6) into gland box (3) cavity by hand, then repeat the process with the second layer ensuring the joints of the two layers are on opposing sides of the cavity.
2. Fit the RTFE scraper blade (7) (not fitted on polyurethane trim valves) in bottom of gland box.

ASSEMBLY PROCEDURE

1. Using masking tape, hold packing in place temporarily by passing tape through gland box slot around packing onto edge of gland box (one piece per side minimum recommended).
2. Coat gland box studs (21) with nickel based anti-seize compound.
3. Place the gland box (3) over gate (2), sliding the gland box down to make contact with the body and remove temporary holding tape.
4. Tighten gland box nuts equally (10) ensuring nylon washer (12) is positioned between metal washer (11) and gland box (3).
5. Replace handwheel (16), upright (8) and spindle (5) assembly.
6. Replace pillar bolts (14) and washers (15) at valve body (1).
7. Replace pillar nut (23) and washer (22) ensuring thread is coated with nickel based anti-seize compound.
8. Lower the spindle clevis (5) onto the gate (2) and replace clevis mounting bolts (19) and nuts (20).
9. Check the alignment of spindle, upright and pillar and tighten fasteners (14 and 23).
10. Assembly is complete, actuate to check all is functioning as desired and gate reseats itself into the wedges at bottom of the valve body.

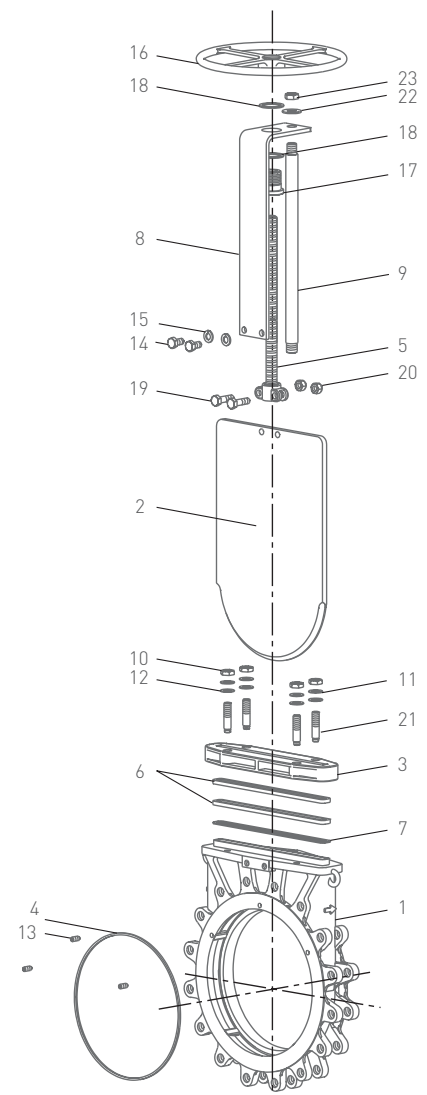
NOTES

1. At commissioning or plant start-up, open and close valve to check it is operating correctly - gland nuts (8) may require adjustment. Please ensure to tighten equally.
2. To minimize risk to personnel, Emerson recommend the use of purpose built guards and shrouds. Refer to the Emerson data sheet or consult factory for details.

CAUTION

Do NOT over tighten gland packing as it will cause excessive resistance to gate movement.

FIGURE 18

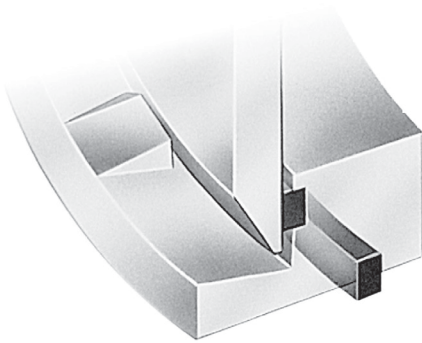


Note: DN 250 - 600 (NPS 10 - 24) valve illustrated.

CLARKSON FIGURE 952 KNIFE GATE VALVES

RTFE AND FKM SEAT REPLACEMENT

FIGURE 19



RTFE seat illustrated

RTFE SEAT REPLACEMENT

Seats are bonded into a groove in the valve body.

1. Cut through seat (4) and remove from valve body using a narrow bladed chisel or screwdriver.
2. Remove all burrs and sharp edges from seat groove in body (1) and ensure it is free of any oil or dirt or bonding residues.
3. With a clean rag or brush, wipe seat groove clean. Then apply Cyberbond bonding agent (2241) in a small (1 mm [$1/16$ in]) continuous bead. Avoid excessive adhesive as it could remain in groove, causing seat to warp or build up on seating face, resulting in valve leakage.
4. Check replacement seat (4) is not damaged and place into groove. Apply pressure to displace excess bonding agent.
5. Wipe off excess adhesive from seating face.
6. Apply a light film of petroleum jelly or lubricant to gate to cover seating face.
7. Insert gate (2) into valve body (1) in the fully closed position so that it covers seat fully.
8. Apply a light clamping pressure (approx. 5 kg (10 lbs) on DN 50 - 200 (NPS 2 - 8) valves and approx. 15 kg (30 lbs) on DN 250 - 600 (NPS 10 - 24) valves) to center of gate ensuring load is applied to total seat surface. Maintain for 1 hour.
9. Remove gate (2) and clean thoroughly.
10. Check seat is even and that no bonding agent residues are on it.
11. Seat fitting is now complete.
12. Refer valve assembly and installation instructions.

FKM SEAT REPLACEMENT

FKM seats are retained in a dovetail groove in the valve body.

1. Cut through seat (4) and remove from valve body using a narrow bladed chisel or screwdriver.
2. Remove all burrs and sharp edges from seat groove in body (1).
3. With a clean rag or brush, wipe seat groove and ensure it is free of any oil or dirt.
4. Check replacement seat (4) is not damaged and place into groove. Check seat is evenly entrapped by the dovetail groove.
5. Seat fitting is now complete.
6. Refer valve assembly and installation instructions.

STORAGE

Seats should be stored on a shelf away from sharp or heavy objects that may cause damage.

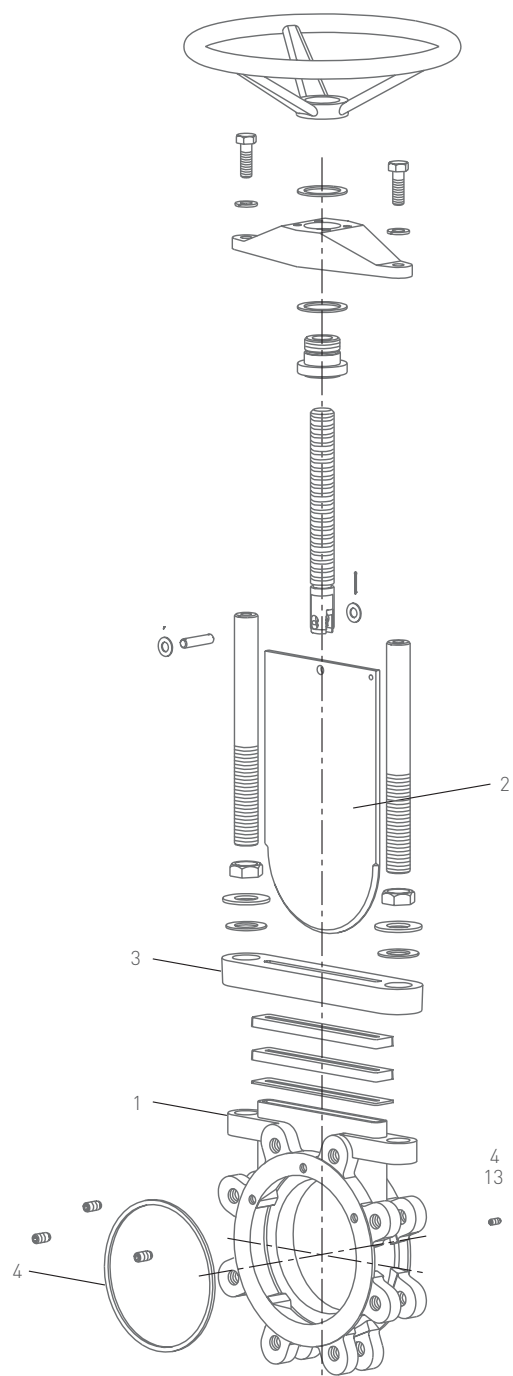
GENERAL NOTES

If the valve is leaking downstream and seat is damaged or badly worn, it should be replaced. To replace seats the valve needs to be removed from the pipeline and disassembled (refer instructions).

CLARKSON FIGURE 952 KNIFE GATE VALVES

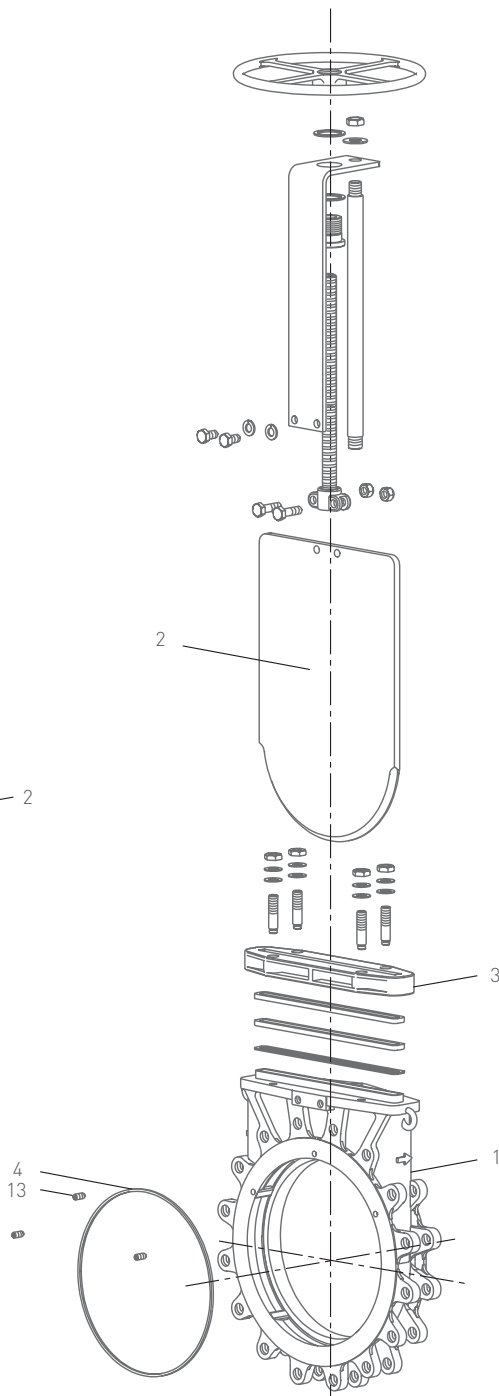
RTFE AND FKM SEAT REPLACEMENT

FIGURE 20



Note: DN 50 - 200 (NPS 2 - 8) valve illustrated.

FIGURE 21



Note: DN 250 - 600 (NPS 10 - 24) valve illustrated.

CLARKSON FIGURE 952 KNIFE GATE VALVES

HIGH TEMPERATURE VARIANT

HIGH TEMPERATURE VARIANT

Trim code 170 metal-seated valves are available in a high temperature configuration which increases allowable valve operating temperature up to 650°C (1200°F) with certain limitations.

Emerson engineering department should be consulted for all applications with expected temperatures of 427°C (800°F) or greater.

Material substitutions for high temperature construction:

- RTFE gate scraper replaced with 316 S/S
- KLON gland packing replaced with high temperature graphite-based variant
- RTFE-tipped gate guides replaced with 316 S/S backpressure ring
- Nylon thrust washers replaced with LG2 bronze
- Nylon glandbox washer replaced with 316 S/S
- All high temperature gates have a face-milling operation to remove residual surface stresses from rolling operation.

Figure 952 high temperature variant - with CF8M body, gland, yoke and hardware and 316 S/S gate may be used in applications with 100% solids up to 650°C (1200°F), no sealing performance on leak rate, and with no allowance for solid particles bonding to gate or body preventing gate cycling 100% open port to 100% closed port.

Packing materials used are rated to 850°C (1562°F), with no other non-metals in valve. At temperatures above 200°C (392°F) pressure rating reduces to a maximum of 3 bar (43.5 psi) at 650°C (1200°F). Valves operating at temperatures \geq 427°C (800°F) are subject to intergranular corrosion (reference ASME B16.34 clause 5.2.1). Therefore cracks could develop in body and or gate in presence of tensile stress and are not covered by Emerson warranty.

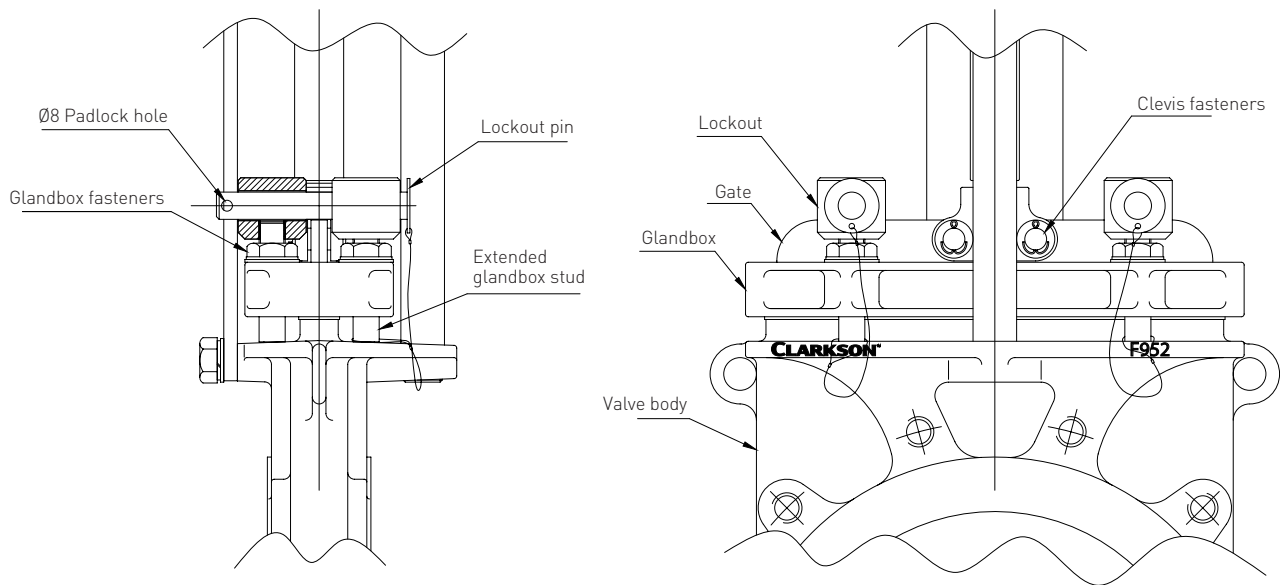
CLARKSON FIGURE 952 KNIFE GATE VALVES

LOCKOUT KIT INSTALLATION - DN 250-600 (NPS 10-24)

To install on existing valves

1. Ensure pipeline is not pressurized and that any hazardous medium is drained away.
2. Fully close valve. Remove clevis fasteners and actuate cylinder or handwheel so clevis lifts clear of gate.
3. Remove glandbox fasteners, then lift glandbox off gate.
4. Remove all glandbox studs. Care should be taken to avoid damage to the gate.
5. Ensure threaded glandbox stud holes are clean, then install extended length studs using Loctite® provided.
6. Loop the free end of the lockout pin connecting wire over each stud on one side of the valve.
7. Check the condition of the packing. Replace if necessary (separate instructions available).
8. Reinstall the glandbox and fasteners. An anti-seize compound should be used on the nuts. Do not over tighten the fasteners.
9. Install the lockout bosses on the studs using Loctite®, and screw down until the bottom of the hole is in line with the top of the gate.
10. Insert the pins to verify installation. The gap between the top of the gate and the bottom of the pins should be kept to a minimum.
11. After pipe is pressurized, adjust gland as necessary.

FIGURE 22



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