



KENNEDY VALVE

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KENNEDY VALVE RESILIENT WEDGE GATE VALVE MAINTENANCE MANUAL

This Kennedy Valve general maintenance guide is intended to cover AWWA (C509 & C515), UL (262) and FM (1120/1130) valves.

The Kennedy Valve Resilient Wedge Gate Valve requires no routine maintenance except that the valve must be operated at least once a year to prevent stem binding due to rust and encrustation.

Kennedy Valve does not recommend stocking any spare parts for the Resilient Wedge Gate Valve.

To obtain correct components it is necessary to furnish the following information to Kennedy Valve or an authorized distributor.

1. Model (Ken-seal II, KS-FW, KS-RW and KS300)
2. Valve Size.
3. Year of manufacture.

INSTALLATION:

Install the resilient wedge gate valve like any other gate valve, following the recommendations of AWWA and NFPA.

BEFORE INSTALLING THE VALVE:

1. Wipe away any dirt and grit from the inside of the valve
2. Flush the line completely.
3. Check the operation of the valve – full open to full closed when installing the valve.
4. Cover the valve with burlap or similar material while backfilling to protect the coating after installing the valve.
5. Open the valve about five turns and allow the flow an opportunity to flush any trash and debris from the line.

GENERAL OPERATION:

The operation of resilient wedge gate valve is not like that of a double disc gate valve. Resilient wedge gate valves require considerable torque to fully shut off the flow through the valve but are easily opened. Closing torque to close the valve can be expected to be as follows:

2"	20 ft-lb	6"	110 ft-lb
2½"	28 ft-lb	8"	150 ft-lb
3"	52 ft-lb	10"	185 ft-lb
4"	75 ft-lb	12"	225 ft-lb

TOOLS:

All repair of a Kennedy Valve resilient wedge gate valve may be accomplished with only:

1. A ½" drive socket set.
2. A 12" adjustable ("Crescent") wrench.
3. A small pry bar (a soft faced hammer is occasionally useful).

STOCKING SPARE PARTS:

Kennedy Valve does not recommend stocking any repair parts for resilient wedge valves.

COMPONENT REPLACEMENT:

If the valve has not been abused, the stem packing is the only item that might ever be replaced and instructions are included below.

There have been occasions where a disc has been replaced and instructions for disc replacement are included but this should not be considered normal maintenance.

PACKING PROCEDURE:

I. Non-Rising Stem (NRS) Valves:

Before beginning repacking, contact Kennedy Valve or an authorized distributor to obtain:

- A. Stem sealing o-rings: - #R6 (2) req'd.
- B. One stuffing box gasket/o-ring - #R7 (1) req'd.

-- NRS Repacking Procedure:

1. Open the valve tightly (50 ft-lb for valves 3" and smaller, 100 ft-lb for valves 4" and larger).

2. Remove the bolts retaining the stuffing box.
3. Gently pry the stuffing box from the valve (if necessary, separate the stuffing box from the cap (bonnet) by tapping the stuffing box with a soft faced hammer).
4. Remove and replace the o-rings. Wipe all grit and dirt from the bore of the stuffing box and stem. Lubricate the bore of the stuffing box, the stem, and the stem seal o-rings before installing the stem seal o-rings.

Two o-rings (item #R6) on the shank of the stem and

One o-ring/gasket seal (item #R7) on the bottom of the stuffing box. It is desirable to retain the gasket/o-ring with "Ply-bond" or similar cement during reinstallation.

5. Replace the stuffing box – tighten all bolts uniformly and carefully so that the stuffing box is flat and snug against the cap (bonnet) and the gap between the cap and stuffing box does not exceed 0.015" (normally there should be no gap) and is uniform. Check the stem for binding.

II. Outside Screw & Yoke (OS&Y):

Before attempting to repack the valve, first attempt to stop the leakage by tightening the brass nuts on the packing gland. Tighten both nuts snugly and uniformly to about 60 ft-lb. Operate the valve a time or two to determine if the leakage has stopped.

Before beginning repacking, contact Kennedy Valve or an authorized distributor to obtain packing (packing supplied by Kennedy Valve may come in one continuous coil or in segments).

--OS&Y Packing Procedure:

1. Open the valve tightly (50 ft-lb for valves 3" and smaller, 100 ft-lb for valves 4" and larger)
2. Remove the nuts retaining the packing gland. Item # R8.
3. Lift the packing gland. If necessary, lever the packing gland with a crow bar or similar tool.

4. Remove and replace the packing (if the packing is in multiple or individual rings, be sure to stagger the adjoining ends from one layer to the next).

Engineering prefers to use two threaded rods the same diameter as the packing gland bolts and about 6" long. Remove the bolts from the packing gland and replace them with threaded rods through the packing gland and place nuts on the free ends of the threaded rods. Tighten the nuts with a deep well socket until all leakage stops then remove the rods and replace them with the packing gland bolts and nuts.

5. Reinstall the packing gland bolts and nuts, tightening the nuts uniformly, one side then the other so that the packing gland pulls down evenly. Tighten the nuts until all leakage past the packing stops. Operate the valve once or twice to check for stem binding and to be certain that there is no leakage.

RESILIENT DISC REPLACEMENT:

1. It is necessary to take the valve fully out of service to replace the disc but it is not necessary to remove the valve from the line.
2. It is very unusual to have to replace a disc. Discs normally can be expected to last for many years and thousands of cycles. Before replacing a disc, first check to see if the operation personnel are closing the valve tightly. If the valve is closed tightly, open the valve about five turns and attempt to cause the maximum flow through the valve to flush any debris from the seating area. If it is necessary to replace a disc suspect that there is some systematic problem causing the disc failure such as stones in the line.
3. Before attempting to replace the disc, contact Kennedy Valve or an authorized distributor to obtain:
 - A. Cover O-ring
 - B. Disc

-- Disc Replacement Procedure:

1. Partially open the valve.
2. Remove the cap (bonnet) bolts and nuts.
3. Lift the cap, stem, stuffing box, disc assembly from the body. .
4. Remove and replace the disc.
5. Replace the cap sealing o-ring (not always necessary) – Retain the o-ring with a flexible adhesive such as "Plybond".

6. Replace the cap, stem, stuffing box, disc assembly – taking care to start the disc into the guides cast into the body.
7. Place the bolts through the holes in the body and cap – taking care to line the bolt holes up.
8. Snug the cap bolts finger tight and then tighten them. First tighten two bolts diagonally opposite with wrist torque. Then go to another bolt opposite the first two and tighten. Then work around the bolt pattern tightening the bolts.
9. Operate the valve fully open to fully closed before backfilling.

Suggested Bolt Torqs 'KS-RW', 'KS-FW', 'KS-300', KenSeal II (a.k.a. "KS II")

VALVE SIZE	COVER BOLTS			OSY Gland Follower			NRS Follower Plate		
	Nut Size	Wrench Opening	TORQUE	Nut Size	Wrench Opening	TORQUE	Nut Size	Wrench Opening	TORQUE
2 & 2 1/2	1/2	3/4	40 - 50 ft-lb	1/2 Hvy-Hex	7/8	As Required	1/2	3/4	50 - 60 ft-lb
3	1/2	3/4	40 - 50 ft-lb	1/2 Hvy-Hex	7/8	As Required	5/8	15/16	70 - 80 ft-lb
4	1/2	3/4	50 - 70 ft-lb	1/2 Hvy-Hex	7/8	As Required	5/8	15/16	70 - 80 ft-lb
6	5/8	15/16	80 - 100 ft-lb	1/2 Hvy-Hex	7/8	As Required	5/8	15/16	80 - 100 ft-lb
8	1/2	3/4	50 - 70 ft-lb	1/2 Hvy-Hex	7/8	As Required	5/8	15/16	80 - 100 ft-lb
10 & 12	5/8	15/16	80 - 100 ft-lb	5/8 Hvy-Hex	1 1/16	As Required	7/8	1 5/16	100 - 120 ft-lb

All dimensions U.S. inches – all torqs U.S. foot-pounds(force)