



FLAPPER TYPE UPPER KELLY VALVES OPERATION AND MAINTENANCE PROCEDURE REV 1 –

06/05

ASSEMBLY PROCEDURE FOR THE FLAPPER VALVE

1.0 SCOPE

1.1 This procedure will provide general instructions regarding assembling the Flapper Type Valves KV800 / KV900 / KV1000.

2.0 REFERENCES

2.1 The latest revision of the following specifications may be used to obtain additional information regarding this procedure.

- Packard Quality Procedures Manual.
- API Specification 7-1 latest edition.
- Bill of materials.

3.0 ASSEMBLY PROCEDURE

- 3.1 Clean valve body and all internal parts.
- 3.2 Assemble Ram Rubber, Retainer Plate and Retainer Plate Screws to Ram Body.
- 3.3 Insert Ram Shaft into Valve Body. Insert Ram Key into Ram Shaft. Slide Ram Shaft (with Ram Key) through assembled Ram Body.
- 3.4 Insert both Male Junk Rings onto the Ram Shaft, one on each side of the Ram Body. "V" surface should face O.D. of Valve Body.
- 3.5 Install Shaft Packing through shaft hole in Valve Body, (both sides), to fit flush against Male Junk Ring. Shaft Packing V should be installed to mate with Male Junk Ring V.
- 3.6 Slide Female Junk Ring through shaft hole in Valve Body onto Ram Shaft, (both ends). Female Junk Ring V should mate with Shaft Packing V.
- 3.7 Slide Shaft Spacer onto Ram Shaft, (both ends).
- 3.8 Slide Friction Ring onto Ram Shaft, (both ends).
- 3.9 Install Blind Nut Key onto Ram Shaft, (both ends).

- 3.10 Install Blind Nut onto Ram Shaft, (both ends).
- 3.11 Install Shaft Washer onto Ram Shaft, (both ends).
- 3.12 Screw Shaft Capscrew into Ram Shaft, (both ends).
- 3.13 Install a shaft washer onto cap screw.
- 3.14 Insert the shaft cap screw into the ram shaft.

4.0 HYDROSTATIC VALVE TEST (Per API 7-1 Class1)

- 4.1 **Shell Test:** Test valve with ram open to the max shell test hydrostatic pressure.
- 4.2 **Seat Test:** Test valve with ram closed to the minimum working pressure.

| HYDROSTATIC TESTING PRESSURES | | | | |
|-------------------------------|---------------------------------|-------|---|-------|
| VALVE | MINIMUM PRESSURE WORKING RATING | | MAXIMUM HYDROSTATIC SHELL TEST PRESSURE | |
| | # | psi | MPa | psi |
| KV800 | 5000 | 34.5 | 10,000 | 68.9 |
| KV900 | 10,000 | 68.9 | 15,000 | 103.4 |
| KV1000 | 15,000 | 103.4 | 22,500 | 155.1 |

NOTE: TEST PRESSURE SHALL BE STABILIZED PRIOR TO THE TIMING START FOR HOLDING PRESSURE.

5.0 INSTALL LOWER SUB

- 5.1 Apply some thread compound to the lower box connection of the valve, and to the upper pin connection of the lower sub. Recommended: Dope base to include 40% to 60% (by weight) finely powdered zinc or lead.
- 5.2 Mate these two threads together by hand and use a chain tong to ensure "face up" between the connections.



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6.0 TORQUE LOWER SUB TO VALVE

- 6.1 Place the valve on the bucking machine with the upper box connection in the vise and the lower box connection in front of the "V" block, with the lower sub hanging over the front of the "V" block.
- 6.2 Torque the connection to:

| FLAPPER TYPE | TORQUE IN FT/LBS +500 / -0 |
|--------------|-------------------------------|
| KV800 | 51,400 |
| KV900 | 84,500 |
| KV1000 | 84,500 |

DISASSEMBLY PROCEDURE FOR THE FLAPPER VALVE

1.0 SCOPE

- 1.1 This procedure will provide general instructions regarding disassembly of the Flapper Valve.

2.0 REFERENCES

- 2.1 The latest revision of the following specifications may be used to obtain additional information regarding this procedure.
 - Packard Quality Procedures Manual.
 - API Specification 7-1 latest edition.
 - Bill of materials.

3.0 DISASSEMBLY PROCEDURE

- 3.1 "Break" Lower Sub from Upper Sub.
- 3.2 Unscrew Upper Sub from Lower Sub.
- 3.3 Remove Shaft Cap Screw, Shaft Washer, Blind Nut, Blind Nut Key, Friction Ring, and Shaft Spacer from both ends of Ram Shaft.
- 3.4 Force Ram Shaft and Ram Key out of Ram assembly.
- 3.5 Remove and disassemble Ram Assembly, (Ram Rubber, Ram Body, Retainer Plate, and Retainer Plate Screws.)
- 3.6 Thoroughly clean all parts and Valve Body and Sub. Used parts should be inspected prior to re-use.

ASSEMBLY METHOD FOR A RAM BODY ASSEMBLY.

1.0 SCOPE

- 1.1. Applicable to all personnel involved in the assembly of a Ram Body Assembly.

2.0 REFERENCES

- 2.1. The latest revision of the following specifications may be used to obtain additional information regarding this procedure.
 - Packard Quality Procedures Manual.
 - API Specification 7-1 latest edition.
 - Bill of materials.

3.0 ASSEMBLY PROCEDURE

- 3.1. Apply a small amount of grease to ram body where ram rubber is to fit.
- 3.2. Place retainer plate on top of ram rubber and drive two retainer plate screws through retainer plate and ram rubber.
- 3.3. Apply PERMATEX or equivalent thread sealer to the end of each screw and tighten into ram body.

Note: Do not over tighten screws, as this will cause the ram rubber to distort.

PREPARING THE FLAPPER VALVE FOR INSTALLATION

1.0 SCOPE

- 1.1 This procedure will provide general instructions regarding installation of the KV800.

2.0 REFERENCES

- 2.1 The latest revision of the following specifications may be used to obtain additional information regarding this procedure.

- Packard Quality Procedures Manual.
- API Specification 7-1 latest edition.
- Bill of materials.

3.0 INSTALLATION PROCEDURE

- 3.1 Clean shipping thread dope from threaded connections and apply thread dope suitable for drill string use.
- 3.2 Recommended: Dope base to include 40% to 60% (by weight) finely powdered zinc or lead.

NOTE: Failure to follow the above procedure explicitly may result in damage and subsequent premature valve failure.



ISO9001:2008 # 0163 API # 7-1-0207