



# SINGLE PIECE KELLY VALVES OPERATION AND MAINTENANCE PROCEDURE REV 2 –

02/08

## ASSEMBLY PROCEDURE FOR THE SINGLE PIECE KELLY VALVE

### 1.0 SCOPE

1.1 This procedure will provide general instructions regarding assembling the LKSP50 / LKSP63 / LKSP65 / KVSP80.

### 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 Fit operator, lower seat, upper seat, and retainer with new "O" rings. "O" ring elastomers must be compatible with drilling environment.
- 3.3 Insert Belleville Spring into valve body. O.D. contact point of spring should touch valve body, and I.D. contact point of spring should touch Lower Seat.
- 3.4 Insert Lower Seat. The Ball will ride on radial surface of seat.
- 3.5 Insert Operator (Stem). The tang should be parallel with valve bore, representing "closed" position of Ball.
- 3.6 Insert Ball in "closed" position.
- 3.7 Insert Upper Seat with radial surface toward Ball.
- 3.8 Insert Snap Ring (supplied with Assembly / Disassembly kit) into I.D. of Upper Seat.
- 3.9 Use Assembly / Disassembly Tool Kit to compress spring, by pulling against Snap Ring inserted into I.D. of Upper Seat.
- 3.10 With Belleville Spring compressed, insert Split Retainer.

- 3.11 Insert Retainer (Funnel).
- 3.12 Remove Assembly / Disassembly Tool Kit. Remove Snap Ring from I.D. of Upper Seat. Insert this snap ring into I.D. of Retainer.
- 3.13 Use Assembly / Disassembly Tool Kit to compress spring, by pulling against Snap Ring inserted into I.D. of Retainer.
- 3.14 Insert large snap ring into valve body to hold Retainer in position.
- 3.15 Remove Assembly / Disassembly Tool Kit.
- 3.16 Remove Snap Ring from I.D. of Retainer.
- 3.17 Follow "Maintenance" instructions to grease valve properly.

### 4.0 HYDROSTATIC TEST VALVE

4.1 Testing shall be performed in accordance with the test pressure and procedures outlined in API Specification 7-1 latest edition.

HYDROSTATIC TESTING PRESSURES			
MINIMUM PRESSURE WORKING RATING		MAXIMUM HYDROSTATIC SHELL TEST PRESSURE	
psi	MPa	psi	MPa
5000	34.5	10,000	68.9
10,000	68.9	15,000	103.4
15,000	103.4	22,500	155.1

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

- 4.2 Install the test plugs and cap on both box and pin connections of the valve assembly to be tested.
- 4.3 Install the pressure line to the bottom (Pin) connection of the valve.
- 4.4 With bleed valve on the top of the test plug in the open position, fill the body with water until it bleeds through the open valve. Actuate the valve several times to eliminate any trapped air in the valve body.
- 4.5 Close the bleed valve.
- 4.6 With the wrench turn the Kelly valve to the half-open position.

- 4.7 Conduct the Hydrostatic test per the lasted revision of API Specification 7-1.
- 4.7.1 Engage pump and increase pressure to test pressure from Table above and stabilize. After stabilization of pressure, the valve will be held at pressure for three (3) minutes minimum with no detectable pressure drop or leakage.
- 4.7.2 At the elapse of three minutes, the pressure will be reduced to zero.
- 4.7.3 Engage pump a second time to increase the pressure to the test pressure per Table 1.1 and hold for a minimum of 10 minutes.
- 4.8 Release the pressure on the assembly, assign the serial number, and complete the test chart

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## DISASSEMBLY INSTRUCTIONS FOR THE SINGLE PIECE KELLY VALVE

### 1.0 SCOPE

- 1.1. This procedure will provide general instructions regarding disassembly of the Single Piece Kelly 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. Install Snap Ring supplied with Assembly / Disassembly Tool Kit into I.D. of Retainer (Funnel).
- 3.2. Compress Belleville Spring by pulling against Snap Ring installed in I.D. of Retainer with Assembly / Disassembly Tool Kit.
- 3.3. Remove large Snap Ring from I.D. of valve body.

- 3.4. Remove Assembly / Disassembly Tool Kit from valve body.
- 3.5. Remove Snap Ring from I.D. of Retainer.
- 3.6. Remove all internal parts.
- 3.7. Thoroughly clean all parts and valve body.

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## PREPARING THE SINGLE PIECE KELLY VALVE FOR INSTALLATION

### 1.0 SCOPE

- 1.1 This procedure will provide general instructions regarding installation of the Single Piece Kelly 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 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