ASSEMBLY PROCEDURE FOR THE REVERSE FLOW CHECK VALVES

1.0 SCOPE

1.1. This procedure will provide general instructions regarding assembling the IB475 / IB525 / IB625 / IB637 / IB650 / IB750 / IB800 Reverse Flow Check valves.

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 Upper and Lower Subs and all internal parts.

3.2. Fit Dart Valve with new "O" ring. "O" ring elastomer must be compatible with environment.

3.3. Insert Spring into the Lower Sub.

3.4. Insert Dart Valve over spring in the Lower Sub.

3.5. Insert Seat into the Upper Sub. Without damaging Seat, lightly press or lightly hammer into position.

3.6. Insert Release Rod through I.D. of Release Cap and through hole in top of Release Cap.

3.7. Screw Rod Lock Screw into Release Cap. (At this time, do not lock Release Rod.)

3.8. Apply thread dope to connections on Upper Sub and Lower Sub and Release Cap. Recommended: Dope base to include 40% to 60% (by weight) finely powdered zinc or lead.

3.9. Screw the Upper Sub into the Lower Sub and make up shoulders with chain tongs or equivalent. Torque the Upper Sub to the Lower Sub to per Table 3.9.1:

3.10. Screw Release Cap (with Release Rod) into the Upper Sub. Ensure Release Rod properly contacts Dart Valve. Tighten with chain tongs or equivalent.

3.11. Depress Release Rod to position Dart Valve as desired and clamp Release Rod in place by tightening the Rod Lock Screw.

Table 3.9.1

REVERSE FLOW CHECK VALVE	TORQUE IN FT/LBS +500 / -0
IB475	7,300
IB525	11,500
IB625	24,000
IB637	28,000
IB650	30,500
IB750	57,209
IB800	45,750

4.0 HYDROSTATIC TEST REVERSE FLOW CHECK VALVE

4.1. Testing shall be performed in accordance with the test pressure and procedure stipulated in API SPEC 7-1.

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. Dope pin and box connections of valve.

4.3. Install test plugs on both box and pin connections of valve assembly to be tested.

4.4. With valve hanging Pin up and Box down, install pressure line to bottom of valve (box connection).

4.5. With bleed valve on top of test plug in the open position, fill valve with water until water bleeds through the open valve. Actuate bleed valve several times to eliminate any trapped air in the valve body.

4.6. Close bleed valve.

4.7. Pressure up Valve body to the recommended pressure per API SPEC 7-1.

4.7.1. Engage pump and pressure to required test pressure from section 4.1 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 the three minutes, the

pressure will be reduced to zero.

4.7.3. Engage pump a second time to required test pressure per section 4.1 and hold for a minimum of 10 minutes.

4.8. If pressure held, release pressure. After pressure is released open bleed valve on top of test plug and release pressure trapped on top side

4.9. Turn valve over and remove test plug from upper sub. Install pressure line to bottom (pin) connection of valve.

4.10. Using release rod, push against dart valve and fill with water. Water level is to be above parts. Release dart valve.

4.11. Pressure up valve to working pressure. Hold pressure for five minutes.

4.12. Release pressure on accepted assembly.

4.13. If the valve does not test, disassemble, clean, reassemble, and retest the valve to the requirements as outlined in this procedure.

5.0 INSTALLING RELEASE ASSEMBLY

5.1. Insert release rod through I.D. of release cap and through hole in top of release cap.

5.2. Screw rod lock screw into release cap and tighten hand tight.

5.3. Apply thread dope to connections on upper sub and release cap. **Recommended: Dope base to include 40% to 60% (by weight) finely powdered zinc.**

5.4. Screw release cap into upper sub and tighten by hammering lightly on release cap.

5.5. Loosen rod lock screw and push release rod into valve as far as it will go and lock rod lock screw down by tapping lightly with hammer.

DISASSEMBLY PROCEDURE FOR THE REVERSE FLOW CHECK VALVE

1.0 SCOPE

2.0 This procedure will provide general instructions regarding disassembly of the Reverse Flow Check Valves.

- Packard Quality Procedures Manual.
- API Specification 7.1 latest edition.
- Bill of materials.

3.0 REFERENCES

3.1. 2.1 The latest revision of the following specifications may be used to obtain additional information regarding this procedure.

4.0 DISASSEMBLY PROCEDURE

4.1. "Break" Lower Sub from Upper Sub and Release Cap from Upper Sub.

4.2. 3.2 Unscrew Upper Sub from Lower Sub and Release Cap from Upper Sub.

4.3. Remove all internal parts. (Remove Dart Seat only if it is damaged.)

4.4. Thoroughly clean all parts and valve body. Used parts should be inspected prior to re-use.

PREPARING THE REVERSE FLOW CHECK VALVE FOR INSTALLATION

1.0 SCOPE

1.1. This procedure will provide general instructions regarding installation of the Reverse Flow Check 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
3.2. Apply thread dope suitable for drill string use.
3.3. Recommended: Dope base to include 40% to 60% (by weight)
3.4. Finely powdered zinc or lead.

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

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