V46 and V47 Valves (2 in. and 2-1/2 in. Size) and V246 Valves (2 in. Size) Repair Kits

Installation Instructions

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Refer to the QuickLIT Web site for the most up-to-date version of this document.

Applications

After long periods of use, valve components may become worn, pitted, or wiredrawn, preventing the valve from completely closing. Follow these guidelines and procedures to inspect and service the valves.

This document covers diaphragm replacement kits and seat replacement kits for V46 and V47 Valves in 2 in. and 2-1/2 in. size, and V246 Valves in 2 in. size.

Installation

WARNING: Risk of Personal Injury.
Shut off the liquid supply and relieve pressure in the line before servicing the valve. Contents of liquid lines could be under pressure and the release of liquid under pressure may cause severe personal injury.

WARNING: Risk of Personal Injury.
Protect eyes. Do not remove the two screws on the sides of the spring housing. Disassembly can cause a compressed spring to fly out and may result in serious eye injuries, blindness, or other severe injury.

CAUTION: Risk of Environmental Damage.
Provide proper containment for any potential release of refrigerant, solvent, or oil. Such hazardous materials can be harmful to the environment if they are released.

IMPORTANT: After installing the valve, evacuate pneumatic and pressure connection lines to remove air, moisture, and other contaminants in a manner consistent with applicable environmental regulations and standards.

IMPORTANT: Using excessive force to turn the range adjustment screw beyond the stop point damages the screw thread. Do not turn the range adjustment screw beyond the stop point.

Manually flush the valve and fluid piping (Figure 1) before and after installing, repairing, or replacing a valve. Flushing the valve removes filings, chips, or other foreign matter.

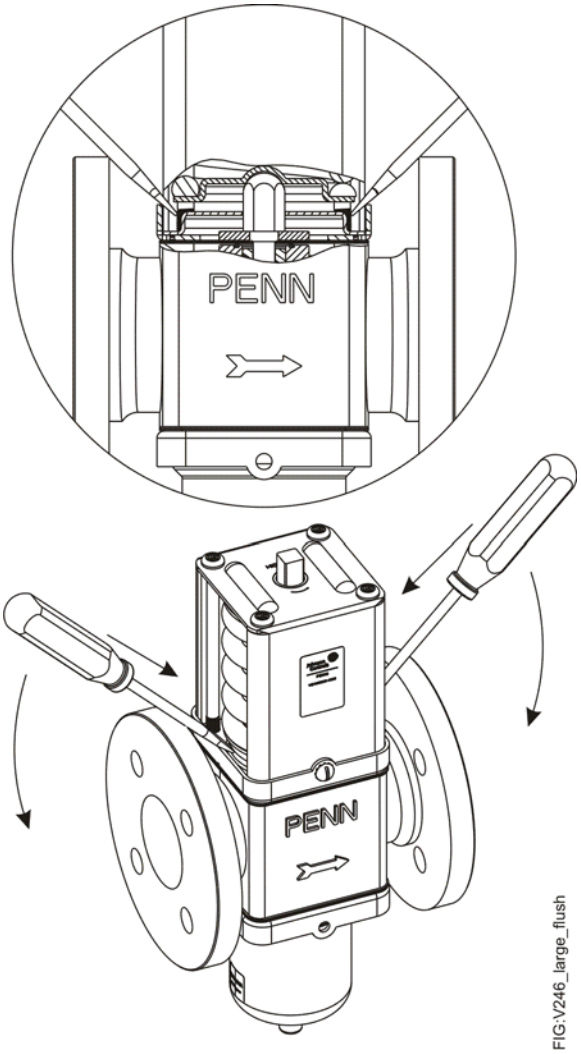

Figure 1: Manual Flushing

Use a silicon-based grease to lubricate the diaphragms and O-rings. Lubricate around the center hole of the diaphragms on top and bottom. Lubricate both sides of an O-ring and the groove in the valve body. See Figure 2.

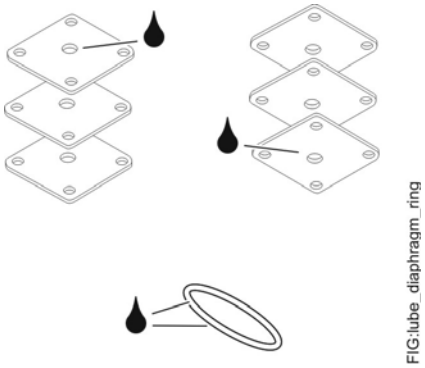

Figure 2: Lubricating Diaphragms and O-rings

Table 1: Valve Torque Specifications

Valve Size, in.	Torque, lb•in (N•m)		
	1 [1]	2	3 [1]
2	90–95 (10.2–10.7)	50–55 (5.6–6.2)	90–95 (10.2–10.7)
2-1/2			

1. Retorque after 24 hours.

Table 2: Parts Quantities for V46 and V47 Valves (2 in. and 2-1/2 in. Size) and V246 Valves (2 in. Size)

Callout	Part Description	Diaphragm Kits	Seat Kits - Commercial			Seat Kits - Maritime/Navy	
		DPM17A-601R	STT18A-600R, V46, V47 2 in.	STT18A-601R, V46, V47 2-1/2 in.	STT18A-620R, V246 2 in.	STT18A-602R, V46, V47 2 in., 2-1/2 in.	STT18A-622R, V246 2 in.
1	Stem Bolt		1	1	1	1	1
2	Push Rod Disc		1	1	1	1	1
3	Diaphragm	5	5	5	5	5	5
4	O-ring		2	2	2	2	2
5	Disc Cup		1	1	1	1	1
6	Seat Disc		1	1	1	1	1
7	Extension Sleeve		1	1	1	1	1
8	Valve Seat		1	1	1	1	1
9	Guide Plate Gasket	1	1	1	1	1	1
10	Bellows Seal Ring	1	1	1	1	1	1

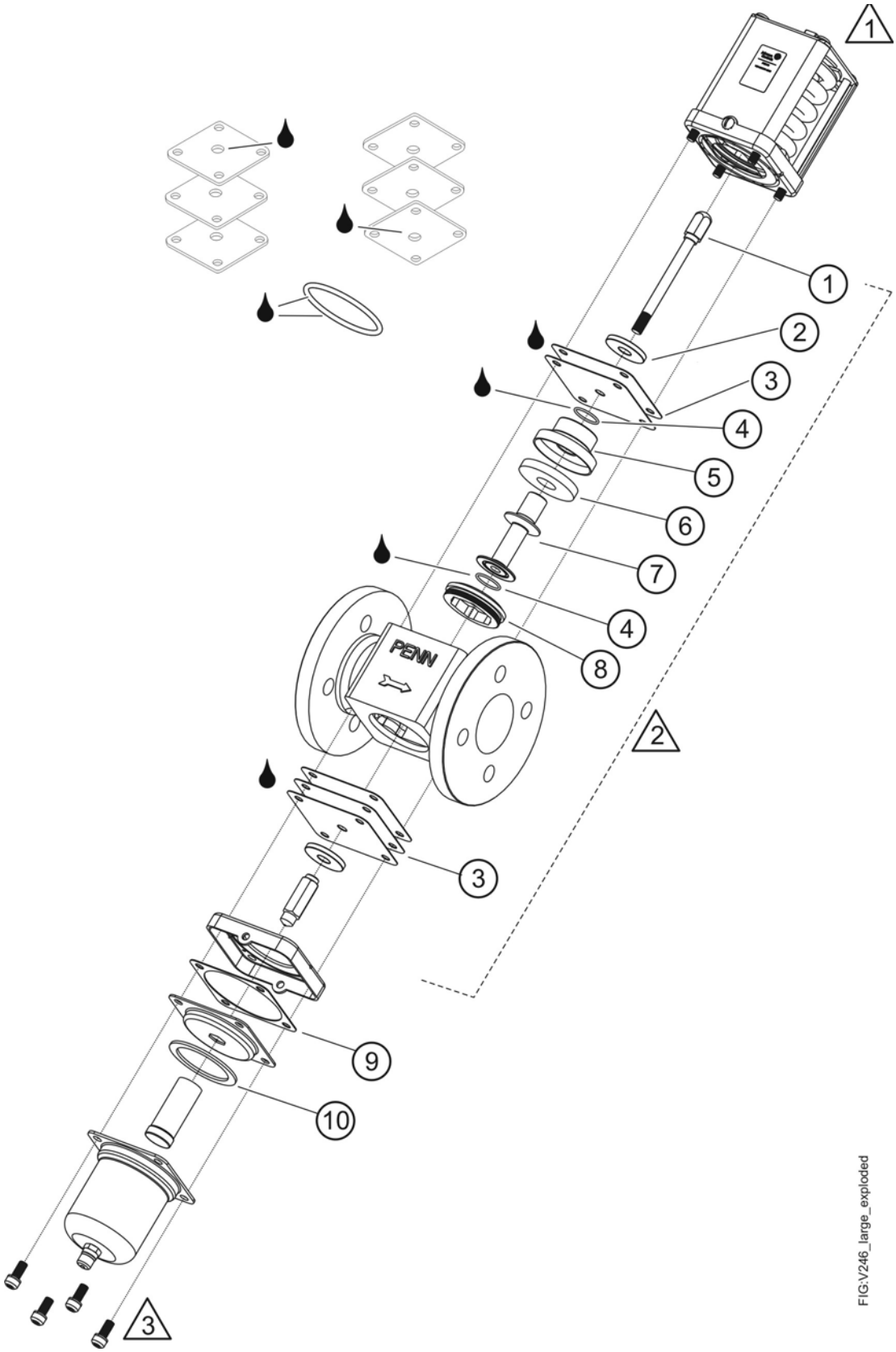

Figure 3: V246 Valves, 2 in. Size, Exploded View

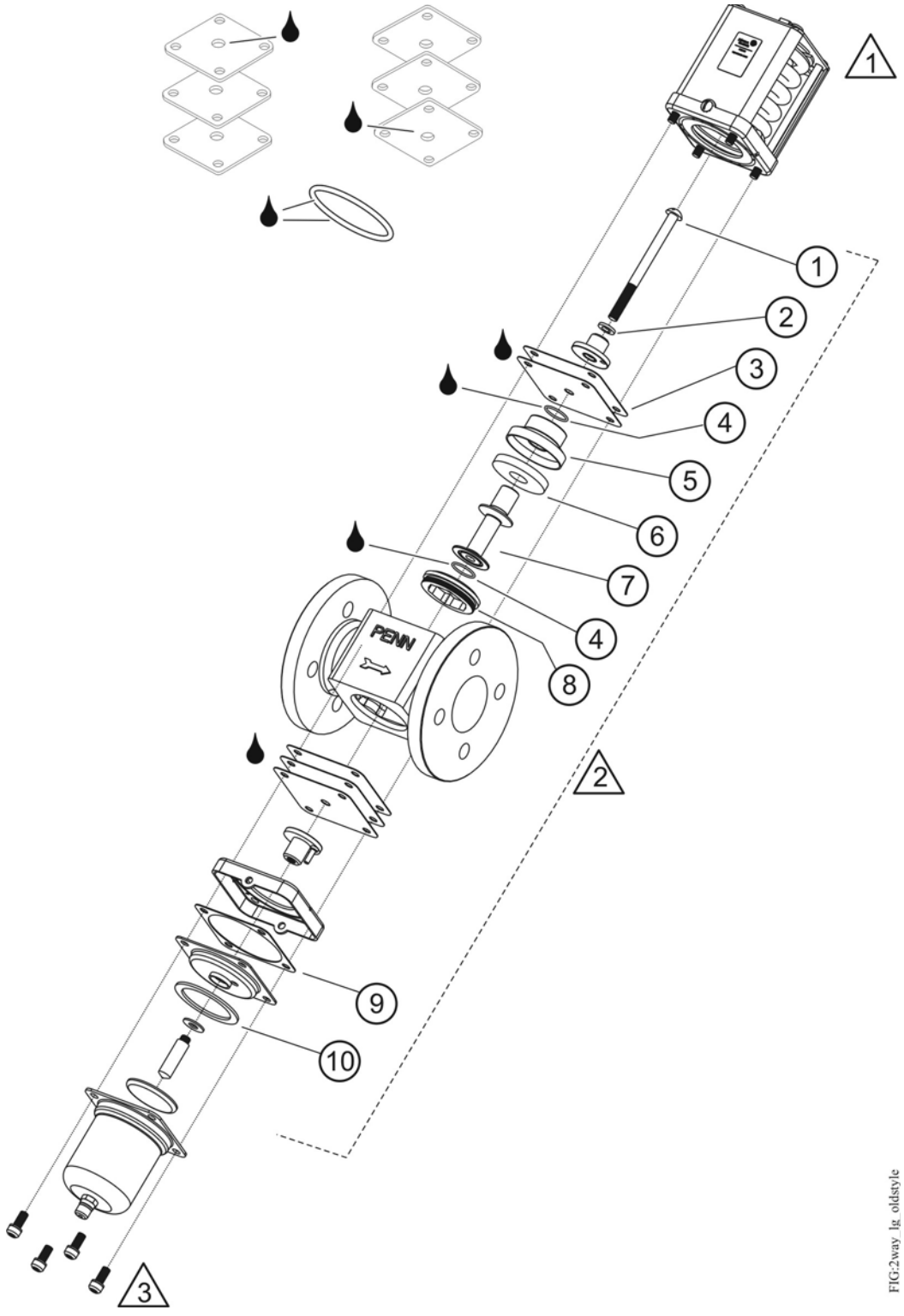

Figure 4: V46 and V47 Valves, 2 in. and 2-1/2 in. Size, Exploded View

Pressure Connections

Connect the refrigerant-side flare connector to the appropriate high-side pressure tap point. If additional capillary tubing is necessary, use 1/4 in. copper tubing.

Follow these guidelines when making pressure connections:

- Use pressure tap points located on the top side of the refrigerant lines to reduce the possibility of oil, liquids, or sediment accumulating in the pressure connection line or valve bellows, which could cause valve malfunction.
- Avoid sharp bends in the capillary tubes. Sharp bends can weaken or kink capillary tubes, which may result in refrigerant leaks or restrictions.
- Allow for slack in the capillary tubes to dampen vibration. Mechanical vibration can weaken or damage the capillary tubes.
- Avoid contact between the capillary tubing and sharp or abrasive objects. Vibration or rubbing of sharp or abrasive objects in contact with capillary tubes can cause leaks.
- Coil and secure excess capillary tubing away from contact with sharp or abrasive objects or surfaces. Carefully loop any excess capillary tube into smooth, circular coils (minimum 2 in. [5 cm] diameter). Securely fasten the coiled capillary tube.
- Do not overtighten flare nuts on pressure connection line fittings. Overtightening flare connections may damage the threads on the flare nuts or flare connectors, and result in refrigerant leaks. Do not exceed 10 lb·ft (14 N·m) of torque when tightening brass flare connections.
- Avoid severe pressure pulsation at pressure tap points. Install pressure connection lines to pressure tap points away from the compressor discharge, to minimize the effects of pressure pulsation from reciprocating compressors.

Checkout Procedure

Before leaving the installation, observe at least one complete operating cycle to be sure that all components are functioning correctly.

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