



## **BU-3174**

### **MAINTENANCE INSTRUCTIONS FOR 30V166V NEEDLE VALVES**

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## 1.0 REFERENCE

- 1.1 Assembly Drawing C-2295, latest revision for 30V166V
- 1.2 Stem Assembly Drawing B-2462, latest revision.

## 2.0 PURPOSE

- 2.1 To establish maintenance instructions for 30V166V needle valve.

## 3.0 SCOPE

- 3.1 This maintenance instruction (BU-3174) is to be used for all 30V166V needle valves.

## 4.0 INSTRUCTIONS

### 4.1 Disassembly

- 4.1.1 Remove valve from system.

**CAUTION: Vent all pressure from system before removing valve for maintenance.**

- 4.1.2 Secure the valve assembly in a vise equipped with "soft jaws".
- 4.1.3 Turn the valve handle counterclockwise until the valve stem is in the full open position.
- 4.1.4 Loosen the jam nuts (items 12) and set screws (items 11) securing the handle and hub (item 14) to the stem (item 2).
- 4.1.5 Remove the slotted machine screw (item 9) and locking device (item 10) from the body (item 1).
- 4.1.6 Loosen and remove the packing gland (item 3) and stem with attached packing components from the valve body.
- 4.1.7 Remove the packing gland from the stem by turning counterclockwise until the threads are disengaged.
- 4.1.8 Loosen and remove the adapter (item 8) holding the seat (item 7) in the body.



## 4.2 Assembly:

4.2.1 Examine the repair kit components for damage and cleanliness.

**CAUTION: All damaged components are to be replaced.**

4.2.2 Apply an approved lubricant (anti-galling) to the stem and packing components as follows:

4.2.2.1 The outside edge of the bottom washer (item 6).

4.2.2.2 The external threads of the stem (item 2).

4.2.2.3 The first three external threads of the packing gland (item 3).

4.2.3 Grasp the lubricated stem with your fingers and insert it into the packing gland. Rotate the packing gland clockwise until the internal threads are completely engaged.

4.2.3.1 Important - Rotate the packing gland clockwise until the stem threads top out in the packing gland.

4.2.4 Install the packing gland and stem/packing components into the body. Tighten packing gland finger tight.

4.2.5 Apply lubricant to the external threads of the adapter (item 8) and to the conical surface of the seat (item 7).

**Caution: The following steps are important to prevent damage to the seat.**

4.2.6 Seat Assembly Instructions

4.2.6.1 Re-attach the hub (item 14) and handle and secure with the set screws (items 11) and jam nuts (items 12). **Align the handle with the machined flats on the stem before tightening.** Turn the handle clockwise to fully expose the stem tip. Drop the seat (item 7) onto the tapered part of the stem plug. The seat will be elevated on the stem in the body seat retainer cavity.

4.2.6.2 Engage the adapter (item 8) into the body to just lightly touch the elevated seat. Turn the stem to retract the elevated seat approximately one turn further into the body. Further tighten the seat retainer until it contacts the elevated seat again.

4.2.6.3 Repeat the steps 4.2.6.1 and 4.2.6.2 until seat no longer retracts into the body seat retainer cavity and the stem disengages from the stem. The stem and seat will be in perfect alignment.



4.2.6.4 Continue to turn the stem counterclockwise until the tops out in the packing gland.

4.2.6.5 Using a torque wrench tighten the adapter to 140–150 lb-ft.

4.2.8 Tighten the packing gland to 140–150 in-lbs.

4.2.9 Reattach and tighten the locking device (items 8 and 9).

4.2.10 Verify full stroke capability. This design has a stroke of approximately 13 turns.

**CAUTION: Align the handle with the machined flats on the stem before tightening.**

4.2.11 Loosen vise and remove refurbished valve assembly.

**General Note:**

Butech Pressure Systems recommends that the user pressure test refurbished valves before returning the valves to service.



**RECORD OF REVISION**

REV NO	DESCRIPTION OF CHANGES	DATE	BY	APPR
0	Original document	12-Nov-03	DTG	DTG