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# BU-3094

## Maintenance Instructions for a DHP16F-LT

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**1.0 Reference**

**1.1 Applicable valve assembly drawing C-1117, latest revision**

**1.2 Applicable stem assembly drawing B-2621, latest revision**

**2.0 Purpose**

**2.1 To establish maintenance instructions for all Butech Valves Catalog Number DHP16F-LT.**

**3.0 Scope**

**3.1 These maintenance instructions are to be used for all Butech Valves Catalog Number C-1986-01.**

**4.0 Instructions**

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

**4.1 Disassemble**

**4.1.1 Remove valve assembly from system and place valve body (item no. 1) in vise equipped with “Soft Jaws” and tighten vise.**

**4.1.2 Turn valve handle (item no. 14) counterclockwise until the valve stem is in the full open position.**

**Note: Maintain the open position to avoid damage to the cone ring (item no. 6) or the lower stem (item no. 1).**

- 4.1.3 Insert standard flat-blade screwdriver into the slotted fillister head machine screw(s) (item no. 18) and turn screwdriver counterclockwise until screw(s) are loosened. Remove fillister head machine screw(s) (item no. 18) and locking device (item no.19) from valve body (item no. 1).**
- 4.1.4 Place appropriate open ended wrench on the flats of the gland (item no. 7) at base of housing (item no. 3). Turn the gland counterclockwise until loosened and the threads are disengaged from body (item no. 1).**
- 4.1.5 Carefully remove housing sub-assembly (item no. 3), gland (item no. 7), collar (item no. 8) and cone ring (item no. 6) from the body (item no. 1).**
- 4.1.6 Remove the valve body (item no. 1) from vise and secure the housing sub-assembly (item no. 3) in the vise equipped with soft jaws.**
- Caution: The housing (item no. 3) sub-assembly is to be placed in the vise at approximately 45 degrees  
To ensure free movement of the cone ring (item no. 6) and the lower stem (item no. 1).**
- 4.1.7 Place appropriate open ended wrench on hex gland nut (s) (item no. 16) and turn wrench counterclockwise until nut (s) are loosened. Insert standard 3/16 inch hex wrench into the hex soc set scr(s) (item no. 15) and turn the screws counterclockwise until handle (item no. 14) is disengaged from housing (item no. 3) sub-assembly.**
- 4.1.8 Place appropriate open ended wrench on hex gland nut (item no. 4) and turn counterclockwise until gland nut is loosened and disengaged from housing (item no. 3) sub-assembly.**

**4.1.9 Place appropriate open ended wrench on the hex jam nut(s) (item no. 7) and turn counterclockwise until jam nut(s) are loosened and disengaged from stem assembly (item no. 2). With your fingers, grasp the bearing washer and remove it from the stem assembly (item no. 2).**

**4.1.10 With your fingers, grasp the stem sleeve (item no. 4), and the insert (item no. 5) and remove them from the stem assembly (item no. 2).**

**Caution: Note location of insert (item no. 5) on stem sleeve (item no. 4).**

**4.1.11 Remove the insert (item no. 5) from the stem sleeve (item no. 4)**

**4.1.12 With your fingers push up lower stem (item no. 1) until 1/8 inch dia, pin (item no. 3) is exposed. Knock out pin to disengage lower stem (item no. 1) and cone ring (item no. 6) from housing (item no. 3) sub-assembly.**

**4.1.13 Knock out the pin(s) (item no. 12) from the housing (item no. 3) sub-assembly. Remove the top packing washer (item no.9), the packing (item no. 10) and the bottom washer (item no. 11) ) from the housing (item no. 3) sub-assembly.**

## **4.2 Assembly**

**4.2.1 The assembly technician shall, as a minimum, check all repair kit components for the following:**

**4.2.1.1 Cleanliness**

**4.2.1.2 Nicks, dents and/or scratches**

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

**4.2.2 The assembly technician shall lubricate all components, of the stem assembly (item no. 2), with an approved lubricant as follows:**

**4.2.2.1 Bearing washers (items no. 5 & 6) shall be lightly lubricated on each face**

**4.2.2.2 Stem sleeve (item no. 4) shall be lightly lubricated on the external threads.**

**4.2.3 The assembly technician shall lubricate all remaining components with an approved lubricant as follows:**

**4.2.3.1 Cone ring (item no. 6) shall be lightly lubricated on both faces.**

**4.2.3.2 Lightly lubricate the external threads of the gland (item no. 7).**

**4.2.3.3 Lightly lubricate the lower stem (item no. 1) in the area of the packing (item no. 10).**

**4.2.3.4 Lightly lubricate the internal threads of the insert (item no. 5) and the internal threads of the gland nut (item no. 4).**

- 4.2.4 Slide the cone ring (item no. 6) over the lower stem (item no. 1). Push the lower stem shank with the cone ring through the housing (item no. 3) bore.
- 4.2.5 Slide the bottom washer (item no. 11), the packing (item no. 10) and the top packing washer (item no. 9) over the exposed shank of the lower stem (item no. 1) and into the packing bore of the housing (item no. 3).
- 4.2.6 *Referencing Dwg. B-2621*, engage the upper sleeve (item no. 2) with the exposed shank of the lower stem (item no. 1). Carefully align the “pre-drilled” holes and press the dowel pin (item no. 3) into the pre-drilled holes to secure the upper and lower stems sections.
- 4.2.7 Press the insert locator pins (item no. 12) into the housing (item no. 3) and slide the insert (item no. 5) over the upper stem engaging the slots at the bottom of the insert with the pins.
- 4.2.8. *Referencing Dwg. B-2621*, slide the lower bearing washer (item no. 5) onto the upper stem (item no. 2). Slide the stem sleeve (item no. 4) over the upper stem (item no. 2). Rotate the stem sleeve (item no. 4) clockwise until it engages the internal threads of the insert (item no.5) and continue to turn until it contacts the bottom bearing washer (item no.5). Slide the upper bearing washer (item no.6) onto the upper stem (item no. 2). Install the hex jam nut(s) (item no. 7) onto the upper stem (item no. 2).

**Caution:** Install hex jam nut(s) (item no. 7) finger tight.

- 4.2.9 Slide the gland nut (item no. 4) over the upper stem and tighten to approximately 150 ft lbs..

**4.2.10 Remove the housing sub-assembly (item no. 3) from vise and secure the body (item no. 1) in the vise equipped with soft jaws.**

**4.2.11 Carefully align the housing (item no. 3) sub-assembly with the opening in the valve body (item no. 1). Rotate the gland (item no. 7) until the external threads are engaged with the body's (item no. 1) internal threads. Tighten threads to approximately 100 ft. lbs.**

**4.2.12 Referencing Dwg. B-2621, using an appropriate open-ended wrench on the flats of the stem sleeve (item no.4) rotate the stem sleeve counterclockwise until the valve is in the "fully-open" position. Now rotate the stem clockwise two complete revolutions.**

**4.2.13 Referencing Dwg. B-2621, set the backlash necessary for the proper performance of the anti-rotation features of the valve stem by first tightening the lower hex nut (item no. 7) against the stem sleeve (item no. 4). Back off the lower hex nut (item no. 7) approximately 1/4 of a turn. Next tighten the upper hex nut against the lower hex nut.**

**4.2.14 Reattach the locking device (item no. 19) and the fillster head machine screw (item no. 18) and tighten accordingly.**

**4.2.15 Reattach the handle and hub assembly.**

**4.2.15.1 Insert standard 3/16 inch hex wrench into the hex soc set scrs (item no. 15) and tighten the screws.**

**4.2.15.2 Place an appropriate open-ended wrench on the flats of the hex jam nuts (item no, 16) and tighten.**

**4.2.16 Turn handle (item no. 14) clockwise to close valve. Loosen vise and remove refurbished valve assembly.**

**General Note: Butech Pressure Systems recommends that refurbished valves be pressure tested before being returned to service.**

# **Record Of Revisions**

<b>Rev. No.</b>	<b>Description of Changes</b>	<b>Date</b>	<b>Approved By</b>
<b>0</b>	<b>Original Document</b>	<b>03-10-99</b>	