

PRESSURE TESTING TOOLS

B PRESSURE TESTING CHUCK

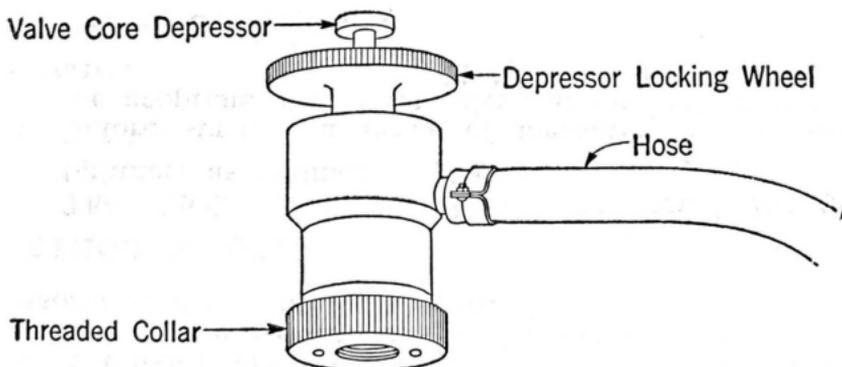
Contents	Page
1. General	1
2. Description	1
3. Method of Use	2
4. Testing and Maintenance	5

1. GENERAL

- 1.01 This section describes the B Pressure Testing Chuck which permits connection of sensitive pressure testing instruments to cable with minimum disturbance of the gradient.
- 1.02 The chuck is a precision tool and should be handled carefully to avoid damage.
- 1.03 In order to obtain the benefits of this tool, it must be used precisely as outlined.

2. DESCRIPTION

2.01 The B chuck, illustrated below, provides a screw connection to the valve stem and has a tough neoprene washer to ensure a good seal at the end of the valve before the valve is opened. The valve core is depressed by means of a plunger which can be locked to hold the valve open.



2.02 The tool is made of stainless steel to prevent corrosion and ensure free action of the threaded collar, core depressor and depressor locking wheel.

3. METHOD OF USE

3.01 The chuck should occasionally be tested for gas-tightness as outlined in Part 4.

3.02 Before starting a series of measurements, examine the neoprene washer and clean as outlined in Part 4, if necessary.

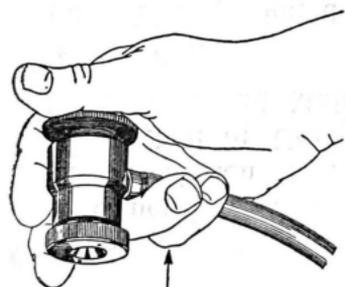
3.03 Making Connections

(1) Loosen the locking wheel to make sure the core depressor on the chuck is released.

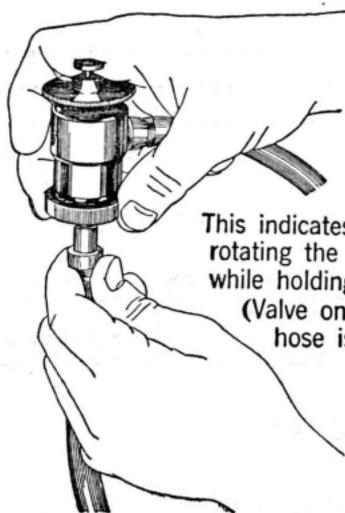
(2) Make sure that the valve threads are clean and that the rounded surface at the end of the valve stem is clean and free of roughness as either may interfere with proper seating or may cause rapid wear of the neoprene washer. Also check the valve core for leaks in the usual manner.

(3) The method of holding the chuck shown in the following illustrations is convenient and helps in maintaining correct alignment with the valve stem.

(4) Hold the chuck in line with the valve stem and rotate the threaded collar clockwise, as illustrated below.

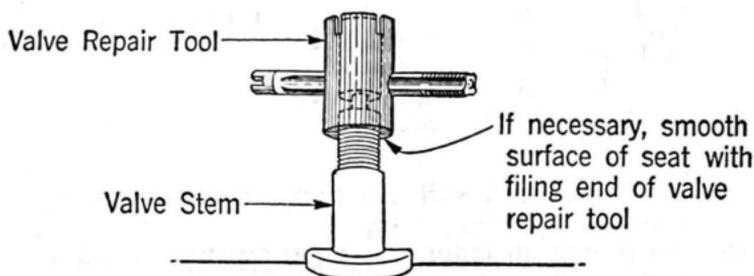


Support the chuck by gripping as shown. Fingers around hose will prevent turning of chuck while tightening.



This indicates method of rotating the collar while holding the chuck. (Valve on extension hose is shown)

(5) The collar should turn easily; if not, it is possible that the threads in the valve stem are damaged and should be reconditioned with the valve repair tool; or the threads are being crossed, in which case the chuck should be realigned and started correctly.



(6) Take three or four turns on the screw to bring the valve stem in light contact with the neoprene washer. (This point can readily be found by feel after a little experience.) Then tighten the chuck by taking an extra $1/4$ to $1/2$ turn on the screw. **Do not overtighten** as this will cause rapid wear of the washer, and may interfere with free flow of the gas through the chuck by blocking the small openings.

(7) To open the valve, hold the chuck as illustrated below and operate the valve core depressor.

This method of holding the chuck and operating the depressor avoids unnecessary strain on soldered valves.



(8) Lock the depressor in place by tightening the locking screw as illustrated. Make sure the depressor stays down, otherwise the reading will not be correct. If the chuck is connected to the cable through a length of soft

hose, pinching the hose on the cable side of the chuck should cause movement of the needle or liquid in the measuring instrument. This will show that the passage through the chuck is open.

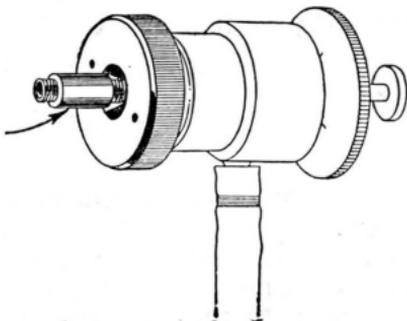
To lock the core depressor, turn locking wheel clockwise and tighten firmly.



Keep chuck from turning by firm hold with one hand, to avoid disturbing gas seal and prevent rapid wear of sealing washer.

- (9) To avoid the possibility of losing the gas seal, do not disturb the chuck after it is connected.
- (10) After the measurement has been made, hold the chuck carefully and loosen the depressor locking screw. (The depressor will snap out promptly.) Then, if a series of readings are being made, tighten the screw to avoid inadvertent loss of gas from the instrument.
- (11) The chuck can now be unscrewed from the valve stem.
- (12) If the chuck is not to be used again soon, or if it is to be stored, the opening should be closed by means of a valve stem as shown below. This will prevent entrance of dirt which may block the gas passages.

C Valve with core in place used to seal chuck opening.



4. TESTING AND MAINTENANCE

4.01 **Replacement Washer and Tool:** The following lists the replacement part available for this chuck and the special pliers required to install the washer.

Washer, Neoprene, for B Pressure Testing Chuck

Pliers, Internal Type, No. 1, Truarc

4.02 Check for gas-tightness as follows:

- (1) Seal the opening in the base of a C valve by soldering and connect the chuck to it in the usual manner as described in Paragraph 3.03.
- (2) Operate the valve core depressor and lock in position.
- (3) Apply a pressure of about 10 pounds through the hose and lower the chuck into a container of clear water.
- (4) Observe for one or two minutes and if no bubbles rise, the seal to the end of the valve is satisfactory. If a persistent leak is found, examine the washer as covered in Paragraph 4.03.
- (5) Now loosen the depressor locking wheel, remove the C valve and again lower into the water.
- (6) Observe for one or two minutes and if no bubbles rise, the internal valve seal is satisfactory. If a leak is found, it is probably due to dirt lodged in the valve. In this event, proceed as covered in Paragraph 4.05.
- (7) Following the water test, the chuck should be thoroughly blown out with nitrogen to clear the water from the various openings.

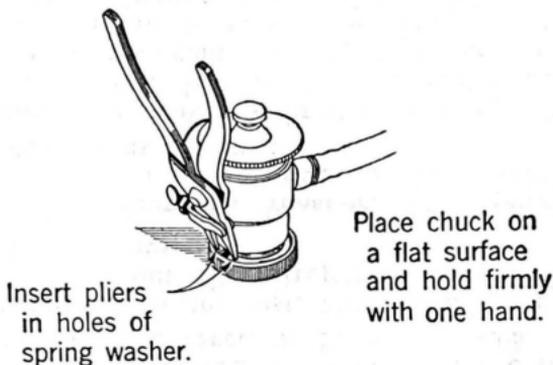
4.03 **Examining Neoprene Washer:** If a persistent leak develops which is not due to the condition of the valve stem, proceed as follows:

- (1) Examine the washer through the opening in the threaded collar. If any dirt or metal particles are adhering to the neoprene washer, clean the washer with a cloth at the end of a wood toothpick or equivalent; if necessary, first dislodge the particles with a toothpick.

- (2) If this does not correct the condition, or if it is found that the washer is badly worn, it can be replaced as described below.

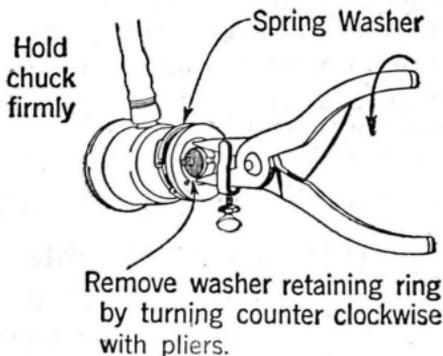
4.04 Replacing Washer

- (1) Rest the chuck on a flat surface, and insert the special needle-point pliers in the holes of the internal spring washer, as illustrated below.



- (2) Compress the spring washer to release it from the undercut in the threaded collar. The body of the chuck can now be lifted from the threaded collar.

- (3) Holding the chuck in the one hand, the pliers can then be used to unscrew the washer retaining ring as shown below.



(4) Remove the worn washer and install the new washer. Then screw in the clamping ring clockwise until it is seated tightly against the new washer.

(5) Rest the threaded collar on the flat surface and lower the chuck body into position. Hold the chuck firmly, insert the pliers in the holes of the spring washer and squeeze to compress the spring sufficiently to lower it until it registers with the undercut groove.

(6) Release the grip on the pliers and allow the spring washer to engage the groove.

(7) Make sure by careful visual examination that the spring washer is correctly engaged. (The threaded collar will turn freely when the washer is in its correct position.)

4.05 **Clearing Internal Valve:** If the water test indicates a leak of the internal valve, proceed as follows:

(1) Remove the hose from the chuck.

(2) Operate the core depressor and lock in position.

(3) Using a valve stem with core removed as a jet on the pressure testing hose, blow nitrogen alternately through the hose connection of the chuck and the valve opening. This should dislodge foreign particles and clear the internal valve.

(4) Then replace the hose and repeat the water test.

(5) If this does not clear the condition, the chuck should be returned through customary channels for reconditioning where the necessary tools are available.

4.06 **Lubrication:** It is necessary occasionally to apply a drop of lubricant on the threads of the depressor locking device to avoid drying. Do not overlubricate.

4.07 **Valve Core Depressor:** As the shaft of the valve core depressor becomes dirty it should be cleaned using a kerosene moistened cloth.