



# How to Repair a Flow Style Bleed-Down Valve

## #11331

These instructions will demonstrate how to replace components of a Flow Style Bleed-Down Valve with kit #11331



## INTRODUCTION

Hypertherm is in no way affiliated with the above mentioned manufacturer

### TOOLS:

- [5/8" wrench](#) (1)
- [3/4" wrench](#) (1)
- [7/8" wrench](#) (1)
- [13/16" wrench](#) (1)
- [1-1/16" wrench](#) (1)
- [1-1/4" wrench](#) (1)

### PARTS:

- [Repair Kit #11331](#) (1)
- [Seal Hoop #11323 \(included in kit\)](#) (1)
- [Needle #11322 \(included in kit\)](#) (1)
- [Seal #11321 \(included in kit\)](#) (1)
- [Bushing #11324 \(included in kit\)](#) (1)
- [High-Vacuum Grease #11447 \(included in kit\)](#) (1)
- [Oil Seal #11359 \(included in kit\)](#) (1)
- [Seat #11325 \(included in kit\)](#) (1)
- [O-ring #12880-908 \(included in kit\)](#) (1)
- [O-ring #12880-912 \(included in kit\)](#) (1)
- [O-ring #11679-114 \(included in kit\)](#) (1)
- [O-ring #11680-114 \(included in kit\)](#) (1)
- [Piston Assembly #11778](#) (1)
- [Actuator Housing #11779](#) (1)
- [Valve Body #11594](#) (1)
- [Outlet Adapter #11742](#) (1)
- [Collar #13157-60-6](#) (1)
- [Mounting Collar #11780](#) (1)
- [3/8" to 1/4" Adapter #11394](#) (1)
- [Blue Goop #11111](#) (1)
- [O-ring Lube #13969](#) (1)
- [Isopropyl Alcohol](#) (1)

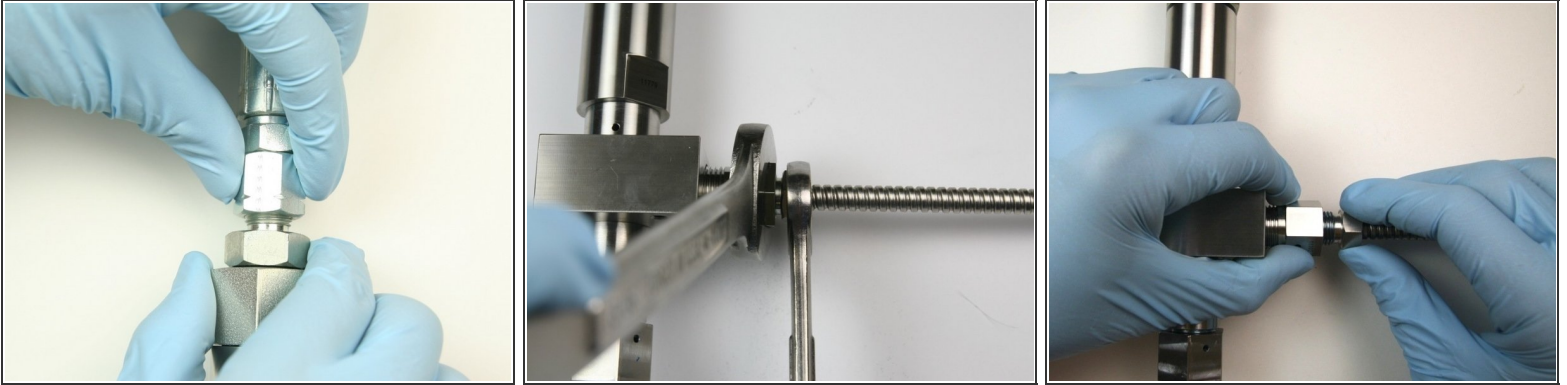
## Step 1 — How to Repair a Flow Style Bleed-Down Valve #11331



**⚠** Always make sure that all high-pressure water has been removed from the valve by following the machine manufacturers' safety instructions. Failure to do so can cause severe injury or death.

- Turn OFF all hydraulic and water pressure to the bleed-down valve.
- Loosen the hydraulic hose from the hydraulic fitting using a 7/8" and 3/4" wrench.

## Step 2



- Unthread the hydraulic hose from the hydraulic fitting.
- Loosen the gland nut on the high-pressure tubing at the high-pressure inlet port of the bleed-down valve using a 13/16" and 5/8" wrench.
- Unthread the gland nut from the outlet fitting at the high-pressure inlet port of the bleed-down valve.

## Step 3



- Clean the gland nut of all Blue Goop with isopropyl alcohol or a similar cleaning agent.
- Loosen the gland nut from the outlet fitting (connected to the valve body) using a 13/16" and 5/8" wrench.
- Unthread the gland nut from the outlet fitting (connected to the valve body).

## Step 4



- Clean the gland nut of all the Blue Goop.
- Loosen the hydraulic fitting from the adapter fitting using a 1-1/4" and 7/8" wrench.
- Unthread the hydraulic fitting from the adapter fitting.

## Step 5



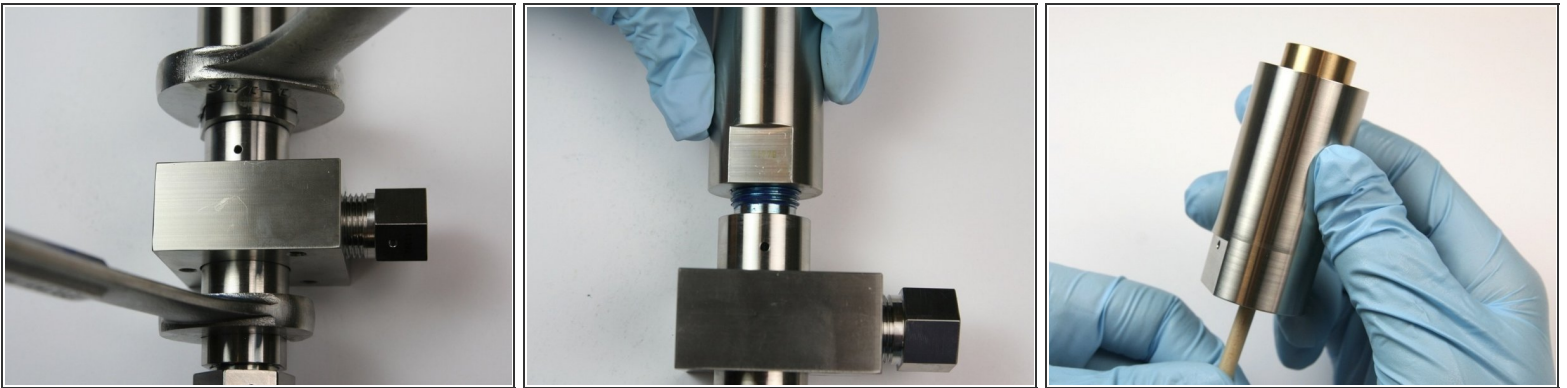
- Apply an O-ring lubricant to the O-ring from the kit for the hydraulic fitting.
- Replace the O-ring around the hydraulic fitting with the O-ring from the kit (the smallest O-ring from the kit).
- Loosen the adapter fitting from the actuator housing using a 1-1/4" and 1-1/16" wrench.

## Step 6



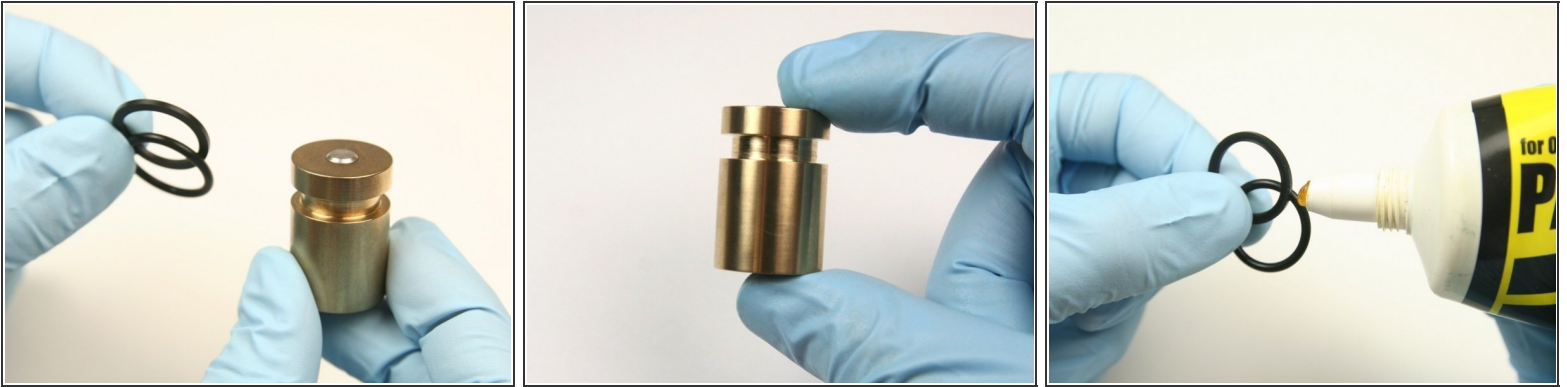
- Unthread the adapter fitting from the actuator housing.
- Apply an O-ring lubricant to the largest O-ring from the kit.
- Replace the O-ring on the adapter fitting with the largest O-ring from the kit.

## Step 7



- Loosen the actuator housing from the [valve body](#) using a 1-1/16" and 7/8" wrench.
- Unthread the actuator housing from the valve body.
- Push the [piston](#) out of the actuator housing through the oil port using the included dowel.

## Step 8



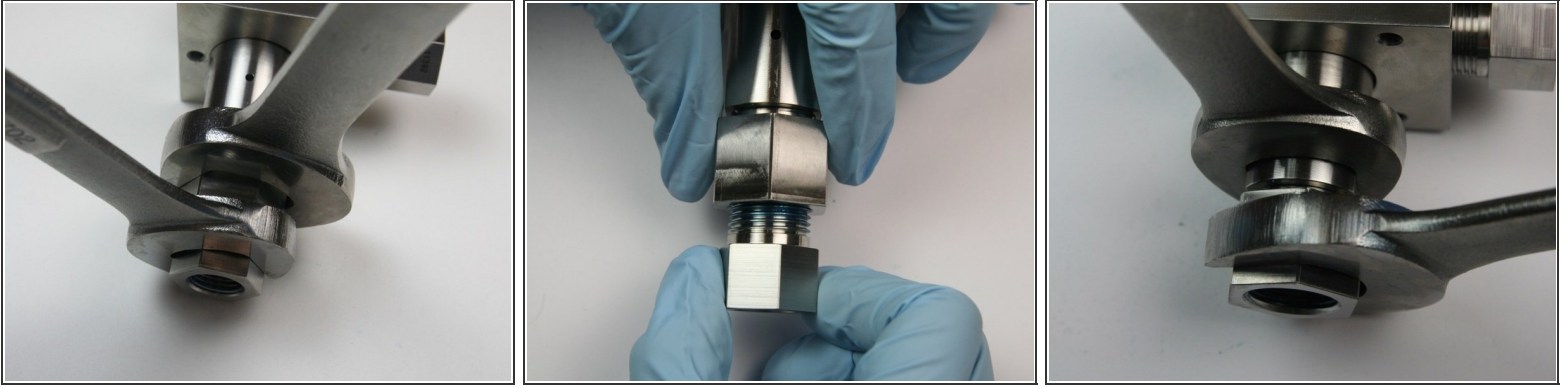
- Discard the O-ring and the back-up ring from the piston.
- Inspect the piston, if damage is visible, replace.
- Apply an O-ring lubricant to cover all of the O-ring and the back-up ring.

## Step 9



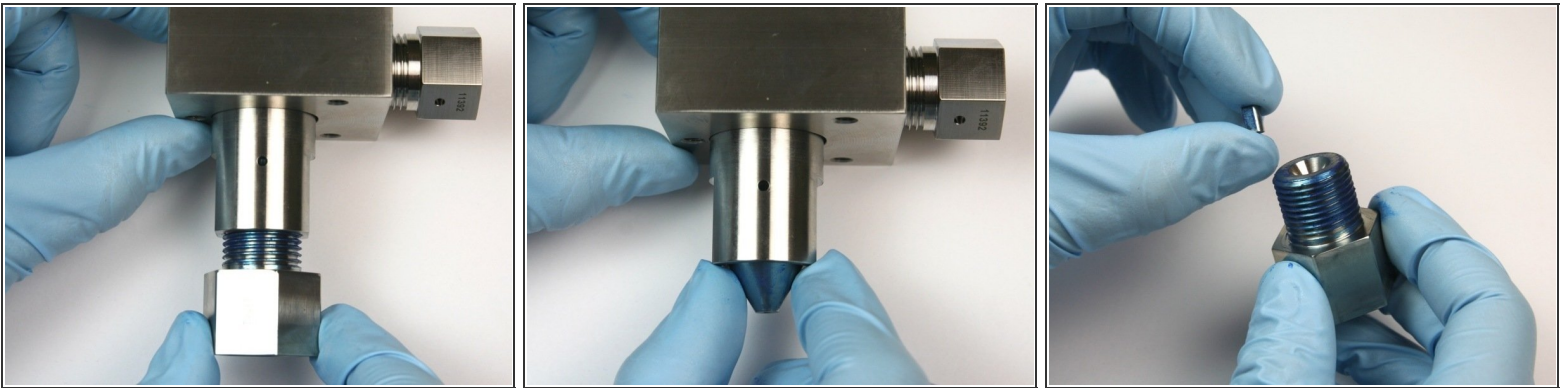
- Slide the new back-up ring (flat) to the groove of the piston.
- Slide the new O-ring (rounded) to the groove of the piston.
- ⓘ Make sure the concave side of the back-up ring is towards the O-ring.
- Put the piston assembly into the actuator housing the the groove side first and push the piston with the included dowel until the piston bottoms out.

## Step 10



- Loosen the 3/8" to 1/4" adapter from the [outlet fitting](#) using a 7/8" and 13/16" wrench.
- Unthread the 3/8" to 1/4" adapter from the outlet fitting.
- Loosen the outlet fitting from the bleed down valve body using a 7/8" and 13/16" wrench.

## Step 11



- Unthread the outlet fitting from the bleed down valve body.
- Remove the [high-pressure seat](#) from the bleed down valve body.
- Remove the [flow reducer](#) from the outlet adapter.

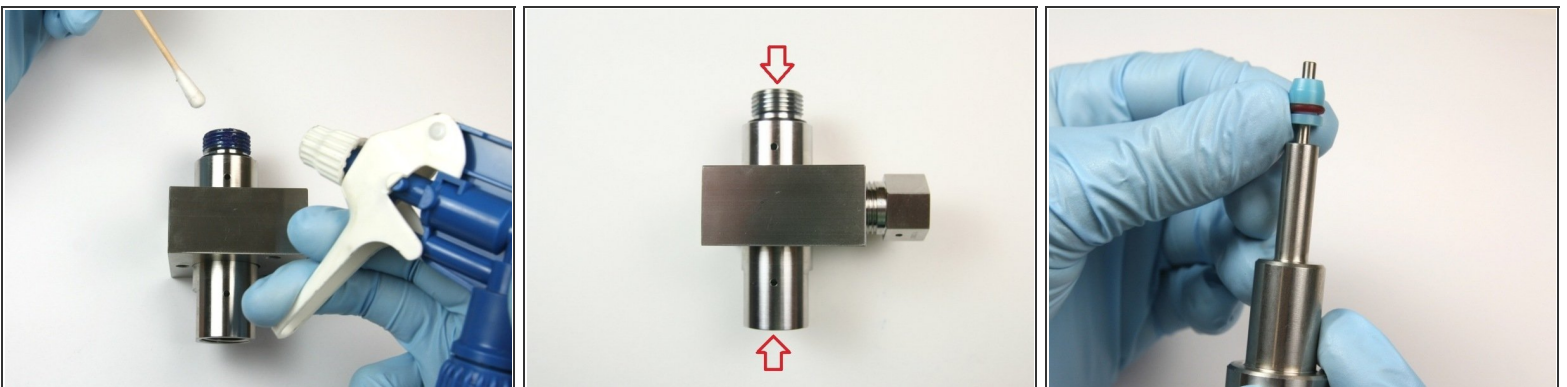


## Step 12



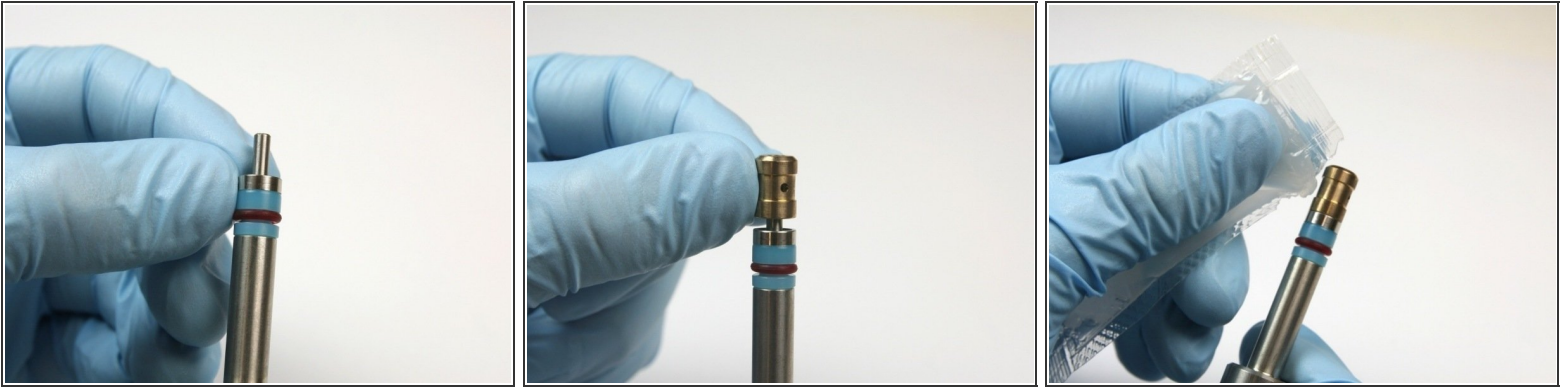
- Clean the outlet adapter of all the Blue Goop.
- Clean the high-pressure seat of all the Blue Goop.
- With the bleed down valve tool push through the bleed-down valve body to remove all components.
- ⓘ The oil seal can also be removed by the bleed down valve tool.

## Step 13



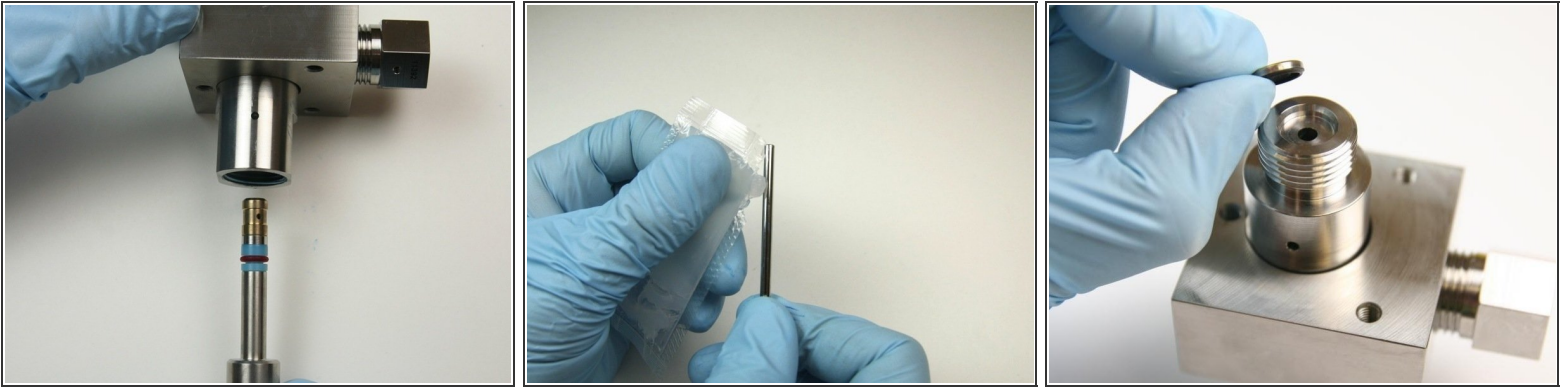
- Thoroughly clean the valve body before replacing the components.
- Visually inspect the top/bottom of the valve body, if excessive wear or cracks are visible, replace the [valve body](#).
- Put the [high-pressure seal](#) on to the bleed-down valve tool with the O-ring towards the bleed down valve tool.

## Step 14



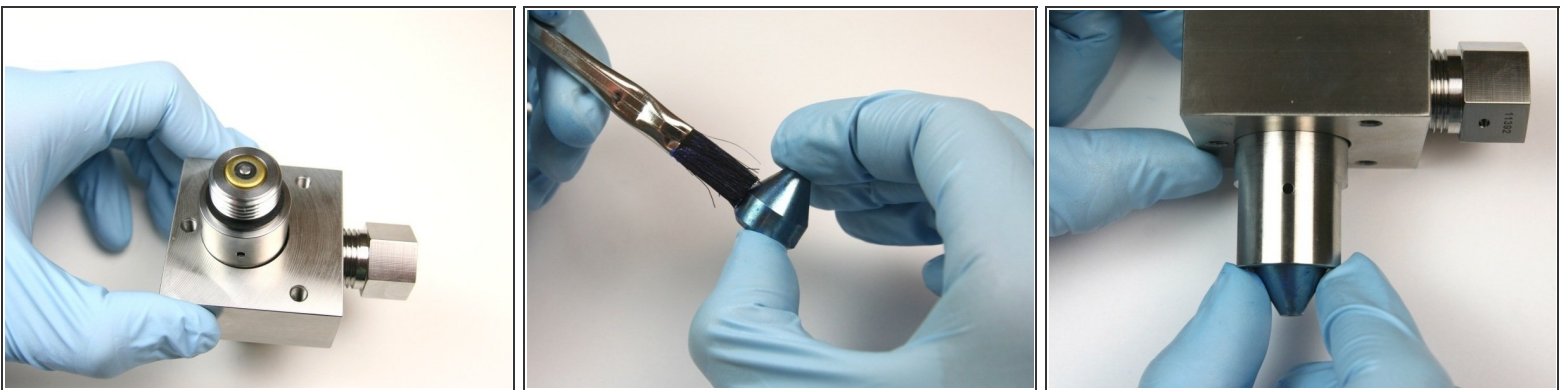
- Slide the [hoop](#), with the sharp edge first, on to the bleed-down valve tool behind the high-pressure seal.
- Slide the [bushing](#) on the bleed-down valve tool with the chamfer side away from the hoop.
- Apply a [high-pressure lubricant](#) to the high-pressure seal, hoop, and bushing.
- ⓘ The O-ring on the high-pressure seal can pinch or strip when installing into the valve body.

## Step 15

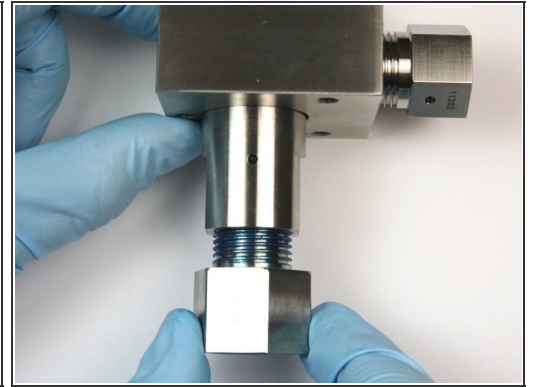
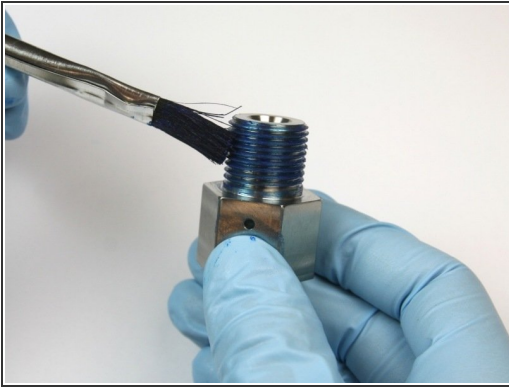


- Put the bleed-down valve tool with the parts into the bottom of the valve body until the tool reaches the bottom of the valve.
- ⚠ Be aware that the inner diameter of the valve body has a small step, it can pinch or strip the O-ring from the high-pressure seal during installation.
- Apply a high-pressure lubricant to the stem.
- Replace the [oil seal](#), place on the top of the valve body.
  - Put the concave (rubber) side down towards the valve body.

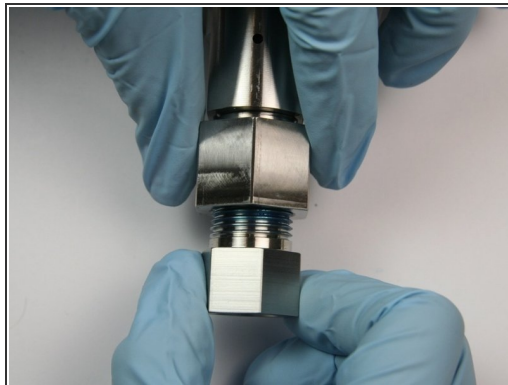
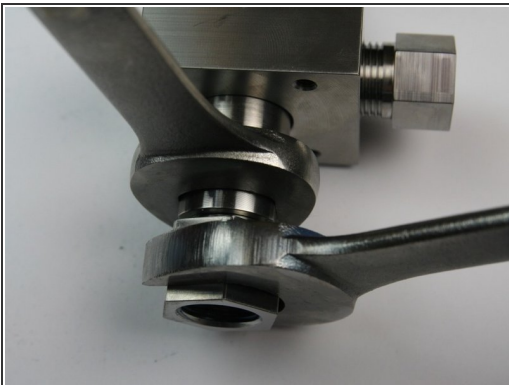
## Step 16



- Put the stem through the high-pressure seal until it is flush with the oil seal.
- Apply Blue Goop to all surfaces of the high-pressure seat.
- Put the high-pressure seat at the bottom of the bleed-down valve body with the pointed end out.

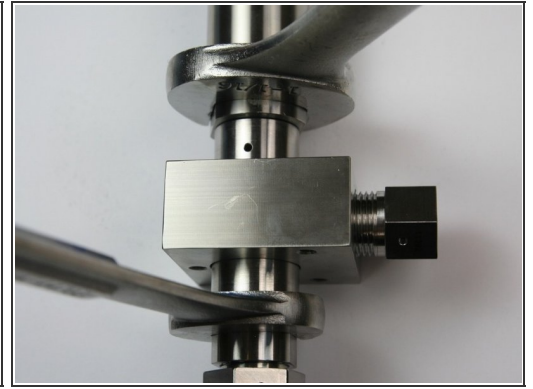
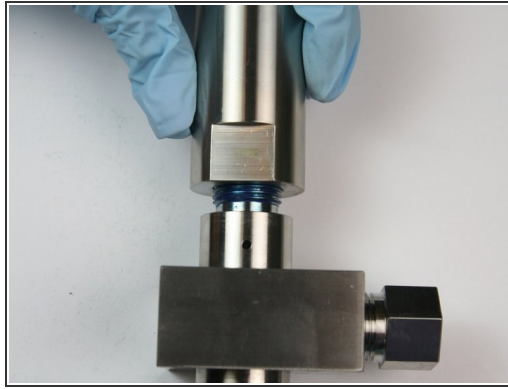
**Step 17**

- Apply Blue Goop to the outlet adapter threads.
- Put the flow reducer in the outlet adapter.
- Thread the outlet adapter into the valve body.

**Step 18**

- Tighten the outlet adapter to the valve body using a 7/8" and 13/16" wrench.
- Thread the 3/8" to 1/4" adapter to the outlet adapter.
- Tighten the 3/8" to 1/4" adapter to the outlet adapter using a 7/8" and 13/16" wrench.

## Step 19



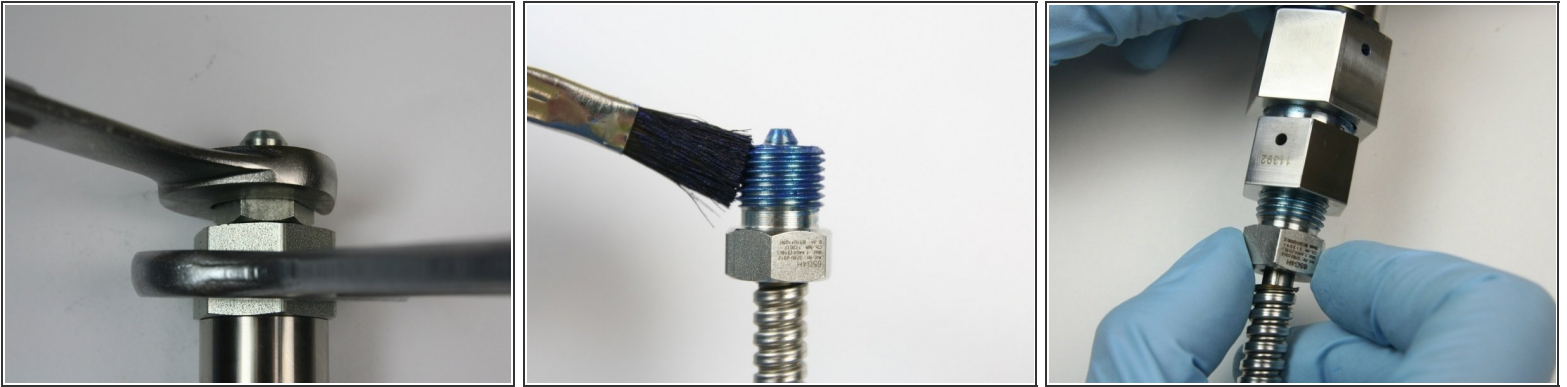
- Apply Blue Goop to the top threads of the valve body.
- With the piston assembly installed, thread the actuator housing onto the valve body.
- Tighten the actuator housing to the valve body using 1-1/16" and 7/8" wrench.

## Step 20



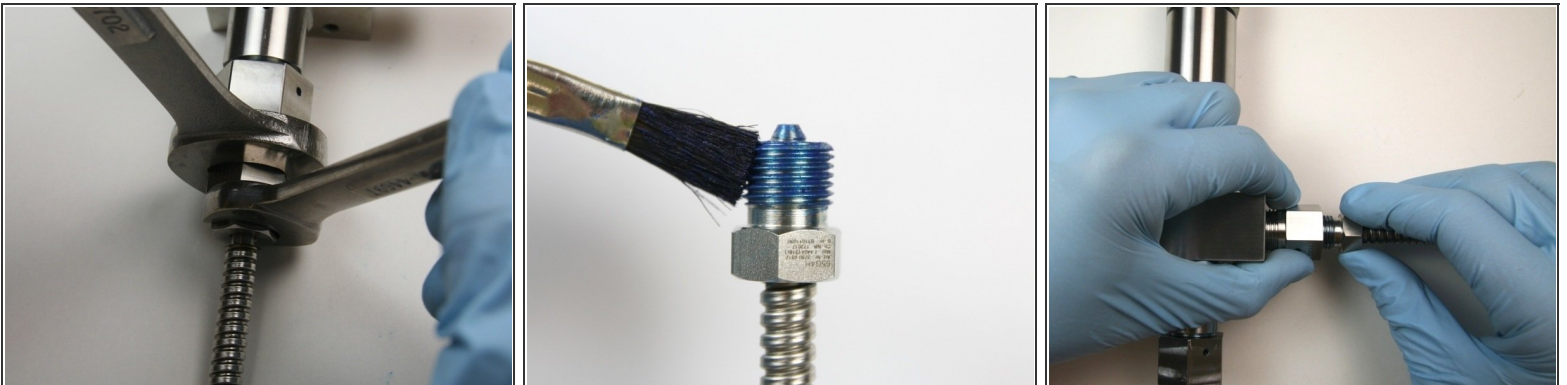
- Thread the adapter fitting into the actuator housing.
- Tighten the adapter fitting into the actuator housing using 1-1/4" and 1-1/16" wrench
- Thread the hydraulic adapter into the adapter fitting.

## Step 21



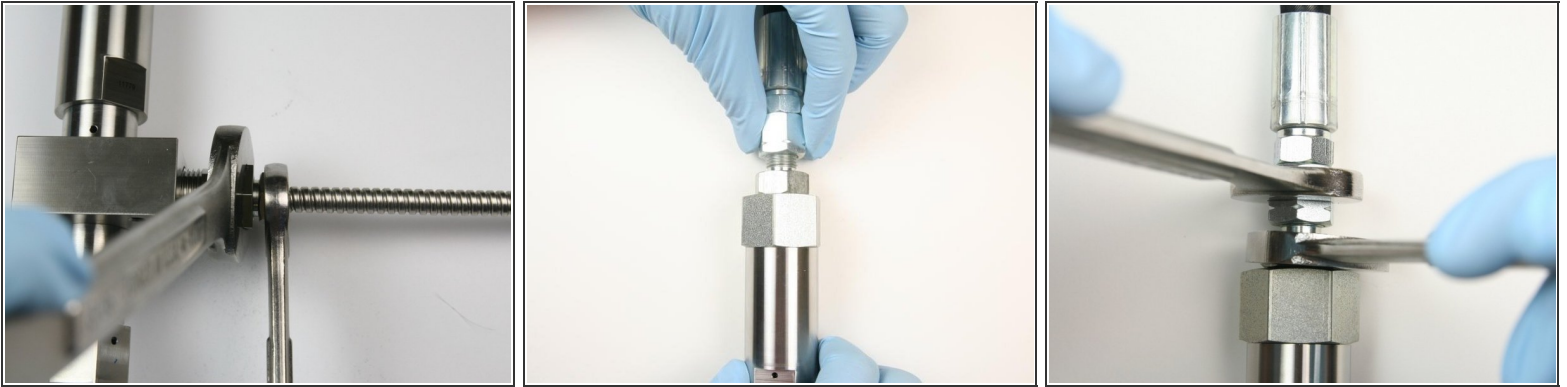
- Tighten the hydraulic fitting into the adapter fitting using 1-1/4" and 7/8" wrench.
- Apply Blue Goop to the threads of the gland nut.
- Thread the gland nut into the outlet fitting (connected to the valve body).

## Step 22



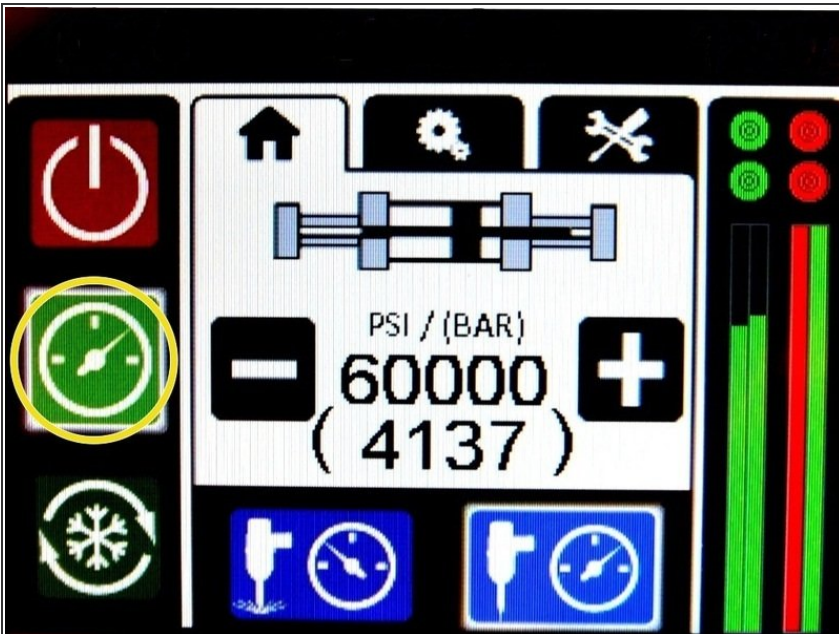
- Tighten the gland nut to the outlet fitting (connected to the valve body) using 13/16" and 5/8" wrench.
- Apply Blue Goop to the gland nut threads.
- Thread the gland nut into the outlet fitting (connected to the collar).

## Step 23



- Tighten the gland nut into the outlet fitting (connected to the collar) using a 13/16" and 5/8" wrench.
- Thread the hydraulic hose on to the hydraulic fitting.
- Tighten the hydraulic hose to the hydraulic fitting using a 7/8" and 3/4" wrench.

## Step 24



- Turn the pump ON and continue the cutting process.