



# How to Repair a KMT Style High-Cycle On/Off Valve Using Kit #13689

These instructions will demonstrate how to replace components of a KMT Style High-Cycle On/Off Valve with kit #13689

Written By: Adam Dumas



## INTRODUCTION

Hypertherm is in no way affiliated with the above mentioned manufacturer.

### TOOLS:

- 1-1/4" wrench (1)

### PARTS:

- High-Cycle On/Off Valve Repair Kit #13689 (1)
- O-ring #11240 (included in kit) (1)
- Seat #11099 (included in kit) (1)
- Stainless Steel Back-up Ring #12733 (included in kit) (1)
- Brass Back-up Ring #11104 (included in kit) (1)
- Seal Assembly #11100 (included in kit) (1)
- Actuator #12089 (1)
- High-Pressure Gland Fitting #12347 (1)
- Valve Body #11320 (1)
- Nozzle Tube #11436 (1)
- Blue Goop #11111 (1)
- Isopropyl Alcohol (1)

## Step 1 — How to Repair a KMT Style High-Cycle On/Off Valve Using Kit #13689



**⚠** Always make sure 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.

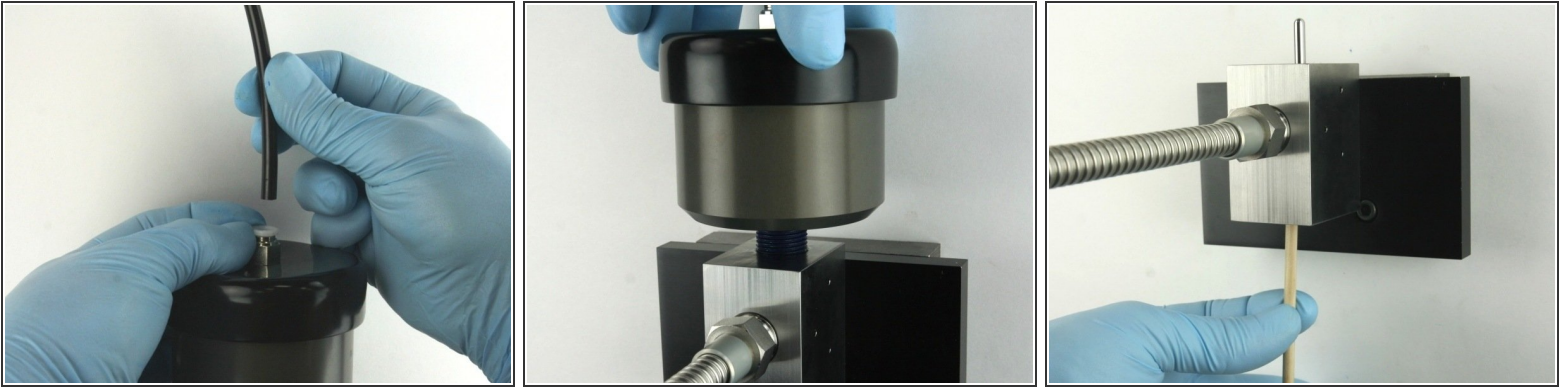
- Turn OFF all water pressure to the on/off valve.
- Turn the on/off valve ON to raise the valve stem (13688, included in kit) from the [seat](#).

## Step 2



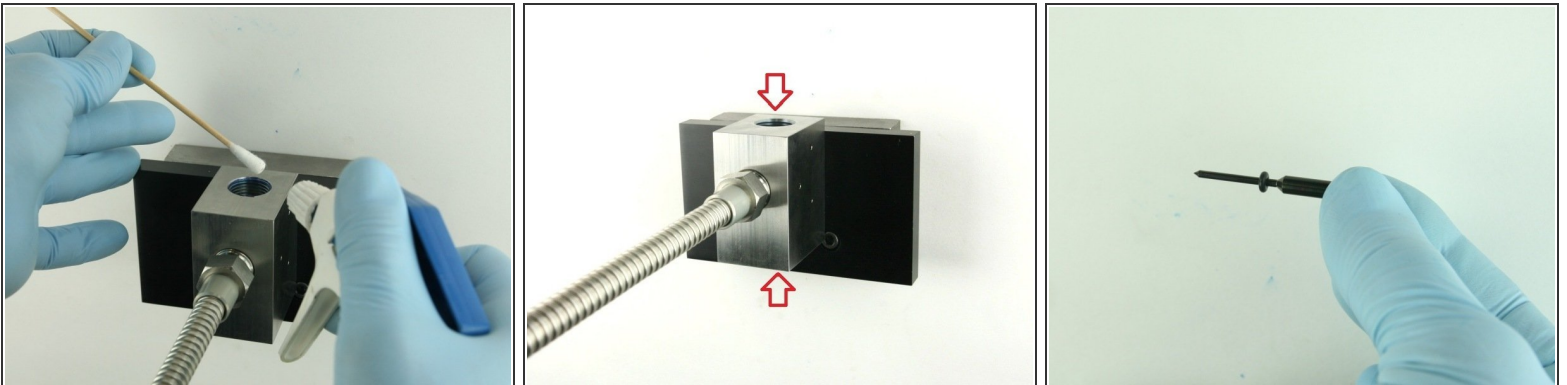
- The valve components can be replaced with the [valve body](#) mounted to the table.
- Loosen the [high-pressure gland fitting](#) using a 1-1/4" wrench.
- Turn the air to the [actuator](#) OFF at the controls.

### Step 3



- Disconnect the air line from the actuator.
- Unthread the actuator from the valve body.
- Remove all the valve components from the valve body with the included dowel.

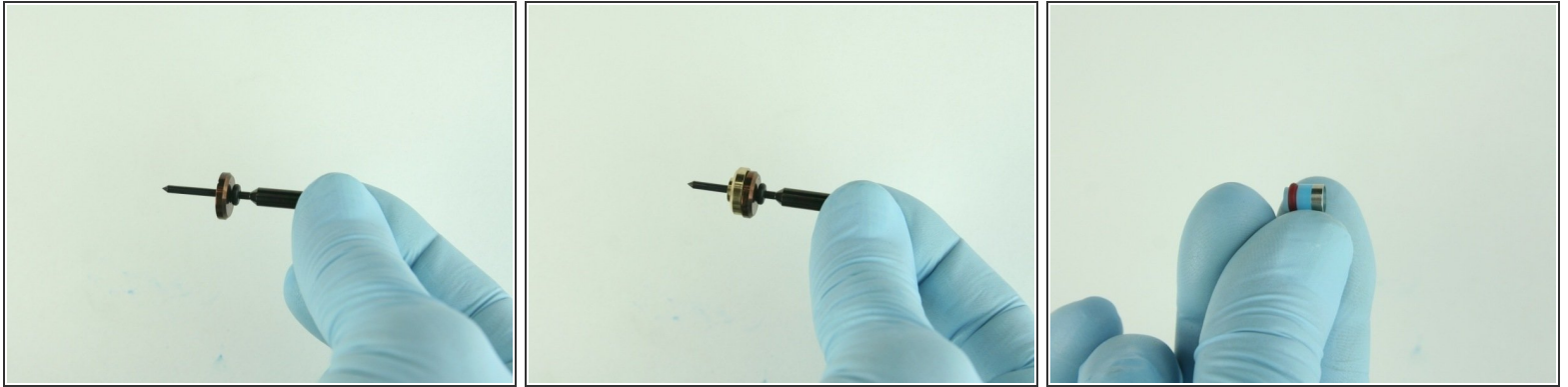
### Step 4



- Thoroughly clean the interior of the valve body with isopropyl alcohol or a similar cleaning agent before replacing the components.
- ⓘ Visually inspect the top and bottom of the valve bore for cracks/blemishes. If excessive wear or cracks are visible, replace the [valve body](#).
- Slide the [O-ring](#) on to the point of the valve stem.

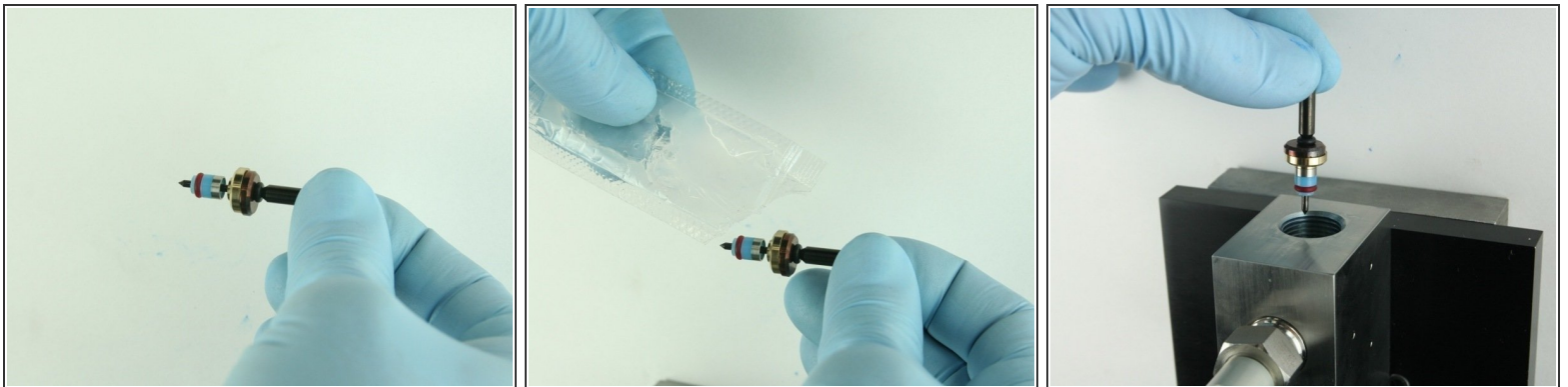


## Step 5



- Slide the [stainless steel back-up ring](#) on to the valve stem point with the chamfer side towards the O-ring.
- Slide the [brass back-up ring](#) on to the valve stem point with the chamfer side away from the stainless steel back-up ring.
- Put the [hoop](#) on the [high-pressure seal](#) with the sharp edge of the hoop towards the seal.

## Step 6



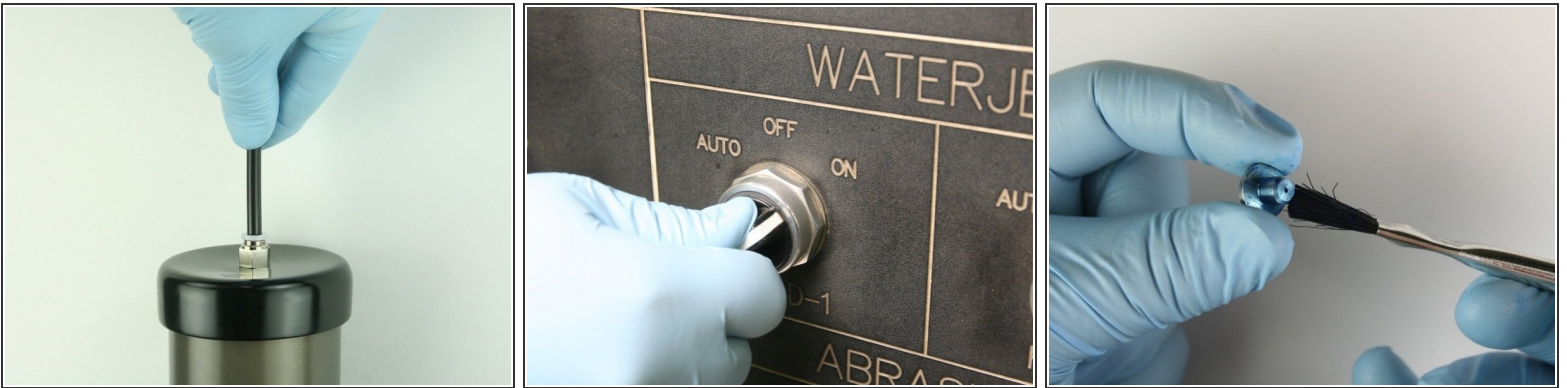
- Slide hoop and the high-pressure valve seal onto the valve stem with the hoop towards the brass back-up ring.
- Apply high-pressure lubricant to the outside diameter of the high-pressure valve seal.
- Put the point of the valve stem into the valve body.

## Step 7



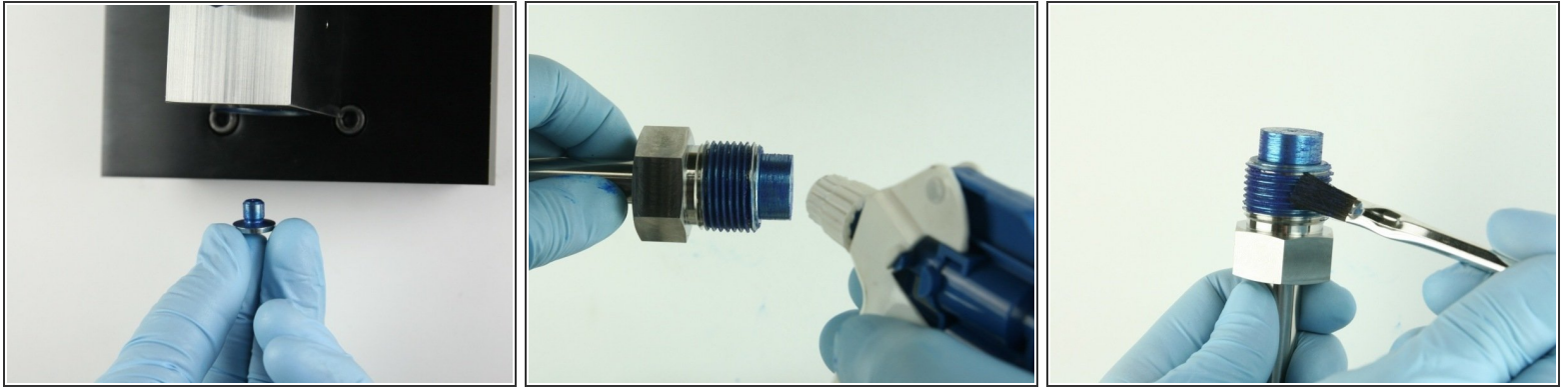
- Push the valve stem with the dowel until it bottoms out.
- Apply [Blue Goop](#) to the actuator threads.
- Thread (hand tighten) the actuator into the top of the valve body until it bottoms out.

## Step 8



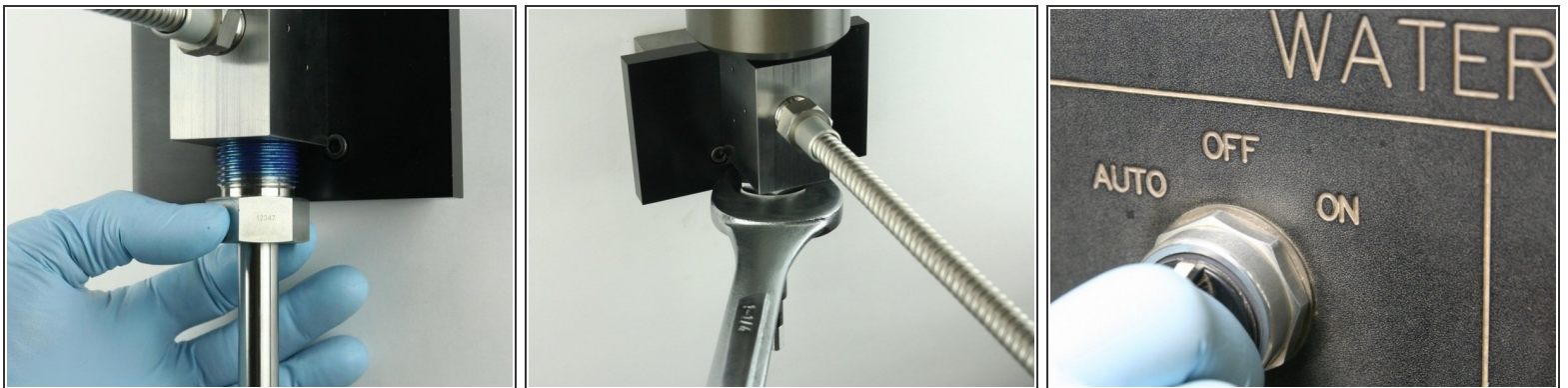
- Reconnect the air line to the top of the actuator.
- Turn the air to the actuator ON at the controls.
- Apply Blue Goop to all surfaces of the seat.

## Step 9



- Put the seat into the bottom of the valve body.
- Clean the valve nut threads and the top of the [nozzle tube](#) of all Blue Goop.
- Reapply Blue Goop to the threads of the high-pressure gland fitting and to the top of the nozzle tube.

## Step 10



- Thread the high-pressure gland fitting into the bottom of the valve body.
- Tighten the high-pressure gland fitting using a 1-1/4" wrench.
- Turn the air to the actuator OFF at the controls.



**Step 11**

- Apply water pressure to the valve assembly to verify there are no leaks.
- Quickly cycle the valve on and off a few times to purge the system of all contaminants before installing the cutting head.
- Re-install the cutting head and continue the cutting process.