How to Repair a Flow Style High-Cycle On/Off Valve (Insta 1 & H2O Hybrid) Using Kit #13685

These instructions will demonstrate how to replace components of a Flow Style High-Cycle On/Off Valve (Insta 1 & H2O Hybrid) with kit #13685

Written By: Adam Dumas
# INTRODUCTION

Hypertherm is in no way affiliated with the above mentioned manufacturer

## TOOLS:
- 1-1/8" wrench (1)
- 7/8" wrench (1)
- 3/4" wrench (1)

## PARTS:
- On/Off Valve Repair Kit #13685 (1)
- Poppet Seat #11141 (included in kit) (1)
- O-ring #11145 (included in kit) (1)
- High-Pressure Valve Seal #11142 (Included in Kit) (1)
- Back-up Ring #11143 (included in kit) (1)
- Actuator #12128 (1)
- Valve Body #13380 (1)
- Nozzle Tube #11358-4 (1)
- Blue Goop #11111 (1)
- Isopropyl Alcohol (1)
Step 1 — How to Repair a Flow Style High-Cycle On/Off Valve (Insta 1 & H2O Hybrid) Using Kit #13685

⚠️ 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 poppet stem from the high-pressure seat.
### Step 2

The **valve kit** components can be replaced with the **valve body** in the mounting collar.

- Loosen the **nozzle tube** from the valve body using a 3/4" and 7/8" wrench.
- Unthread the nozzle tube from the valve body.

### Step 3

- Turn the air to the actuator OFF at the controls.
- Disconnect the air line from the **actuator**.
- Unthread the actuator from the valve body using a 1-1/8" wrench.
Step 4

- Remove the old valve components from the valve body with the included dowel.
- Thoroughly clean the interior/exterior of the valve body with isopropyl alcohol or similar cleaning agent before replacing the components.
- Visually inspect the top and bottom of the bore for cracks/blemishes. If excessive wear or cracks are visible, replace the valve body.

Step 5

- With the O-ring towards the point of the poppet stem, slide the high-pressure valve seal on to the poppet stem.
- Apply a high-pressure lubricant or similar (11336) to the outside diameter of the high-pressure valve seal.
- Slide the back-up ring on to the poppet stem behind the high-pressure valve seal.
Step 6

- Put the poppet stem, with the point down, at the top of the valve body.
- Use the dowel to push the poppet stem down until the back-up ring is flush with the top of the bore.
- Apply Blue Goop to the top threads of the valve body.

Step 7

- Thread (hand tighten) the actuator to the top of the valve body.
- Reconnect the air line to the top of the actuator.
- Turn the air to the actuator ON to relieve the pressure from the poppet stem.
Step 8

- Apply Blue Goop to all surfaces of the high-pressure seat.
- Put the high-pressure seat at the bottom of the valve body.
- Put the O-ring behind the high-pressure seat so it will be held in place within the valve body.

Step 9

- Thoroughly clean the nozzle tube of all the Blue Goop.
- Reapply Blue Goop to the threads of the nozzle tube.
- Thread the nozzle tube into the bottom of the valve body.
Step 10

- Tighten the nozzle tube to the valve body using a 3/4" and 7/8" wrench.
- Turn the air to the actuator OFF to set the poppet stem into the high-pressure seat.
- Apply water pressure to the valve assembly to verify there are no leaks.

Step 11

- 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.