

# ***PAC120 Torch***

***Cap On Sensor  
Microswitch***

***Field Alignment  
Bulletin  
801690 - Rev 0***



# **PAC120 Torch Cap On Sensor Microswitch**

**Field Alignment Bulletin  
IM-169  
(P/N 801690)**

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# PAC120 TORCH - CAP ON SENSOR MICROSWITCH

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## Purpose

The PAC120 torch field alignment bulletin provides the procedure to align the cap on sensor microswitch to the plunger by using the microswitch alignment fixture. This alignment serves two purposes: to enable the torch to fire and shut off safely and to enable the cap on safety circuit to shut down the power supply if the retaining cap on the torch is loose.

**Note that this procedure will only work on microswitches that are mounted to the torch main body with a locking screw and pin. This alignment procedure cannot be used with microswitches mounted with two set screws.**

## Customer Required Tools

# 1 Phillips head screwdriver  
# 2 Phillips head screwdriver  
Multimeter (optional)  
DC light test fixture (optional)

## Hypertherm Parts

Microswitch Adjustment Fixture, # 045076

## Align Microswitch to Plunger

To align the microswitch to the plunger, refer to the following procedure.

1. Shut the power off at the MAX42, MAX43 or MAX40cs power supply and unplug power cord. Shut off the gas supply to power supply.
2. Remove the five (5) screws which secure the torch handle halves together and separate. Remove the torch main body and torch switch (see Figure 1).
3. Disconnect the bullet receptacles and plugs connecting the two blue wires from the torch lead to the white wires from the cap sensor microswitch.
4. Disconnect the terminals connecting the two white wires from the torch lead to the black plunger wire from the torch main body.
5. Ensure that the consumables are in the torch and that the retaining cap is tightened in place. **Do not overtighten retaining cap.**
6. Loosen the microswitch locking screw enough, so that the microswitch can pivot slightly.
7. Position the microswitch alignment fixture on to the torch main body (see Figure 2). To do this proceed as follows:
  - Position the black plunger lead out of the way, if required.

## PAC120 TORCH - CAP ON SENSOR MICROSWITCH

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- Turn the adjustment knob counterclockwise, so that the shaft does not contact the lever.
  - Install the fixture on to the torch main body. Ensure the fixture sits flush against the top surface of the torch main body.
  - Ensure the fixture also sits flush against the side of the microswitch with the locking screw.
8. Start by turning the adjusting knob clockwise; the lever should contact the corner of the microswitch causing the switch to pivot and align with the plunger. Listen for the microswitch close as you keep turning (see Figure 3). If the microswitch does not close, ensure that the lever is contacting the corner of the microswitch.

Instead of listening for the switch closure, a multimeter (on the ohms scale) or a DC light test fixture can be used to indicate the switch closure. Connect the test leads to the microswitch leads with with alligator clips.

9. After the microswitch closes, turn the adjusting knob an additional .006 inch (six increments on the adjusting knob) in a continuing clockwise direction. Note that each increment on the adjustment knob is .001 inch.
10. Tighten the locking screw. Remove the fixture from the torch main body.
11. Check the microswitch and plunger alignment by loosening and tightening the retaining cap. Either listen for the microswitch opening and closing or verify by use of a multimeter or DC test light. If the microswitch opens and closes, go to step 12. Do not forget to tighten the retaining cap. A good rule is to tighten the retaining cap until the nozzle cannot be turned. **Do not overtighten retaining cap.**

Note: When loosening the retaining cap, sometimes you will hear more than one click. The last click indicates the microswitch is open. Using a multimeter or DC test light provides a positive indication of the microswitch opening.

If the microswitch does not open and close, repeat steps 6 through 11.

12. Connect the bullet receptacles and plugs connecting the two blue wires from the torch lead to the white wires from the cap sensor microswitch.
13. Connect the terminals connecting the two white wires from the torch lead to the black plunger wire from the torch main body.
14. Install the torch main body and torch switch into one of the handle halves. While aligning the handle halves, be careful not to pinch any leads. Secure the handle halves together with five (5) screws.
15. The torch is now ready for operation.

# PAC120 TORCH - CAP ON SENSOR MICROSWITCH

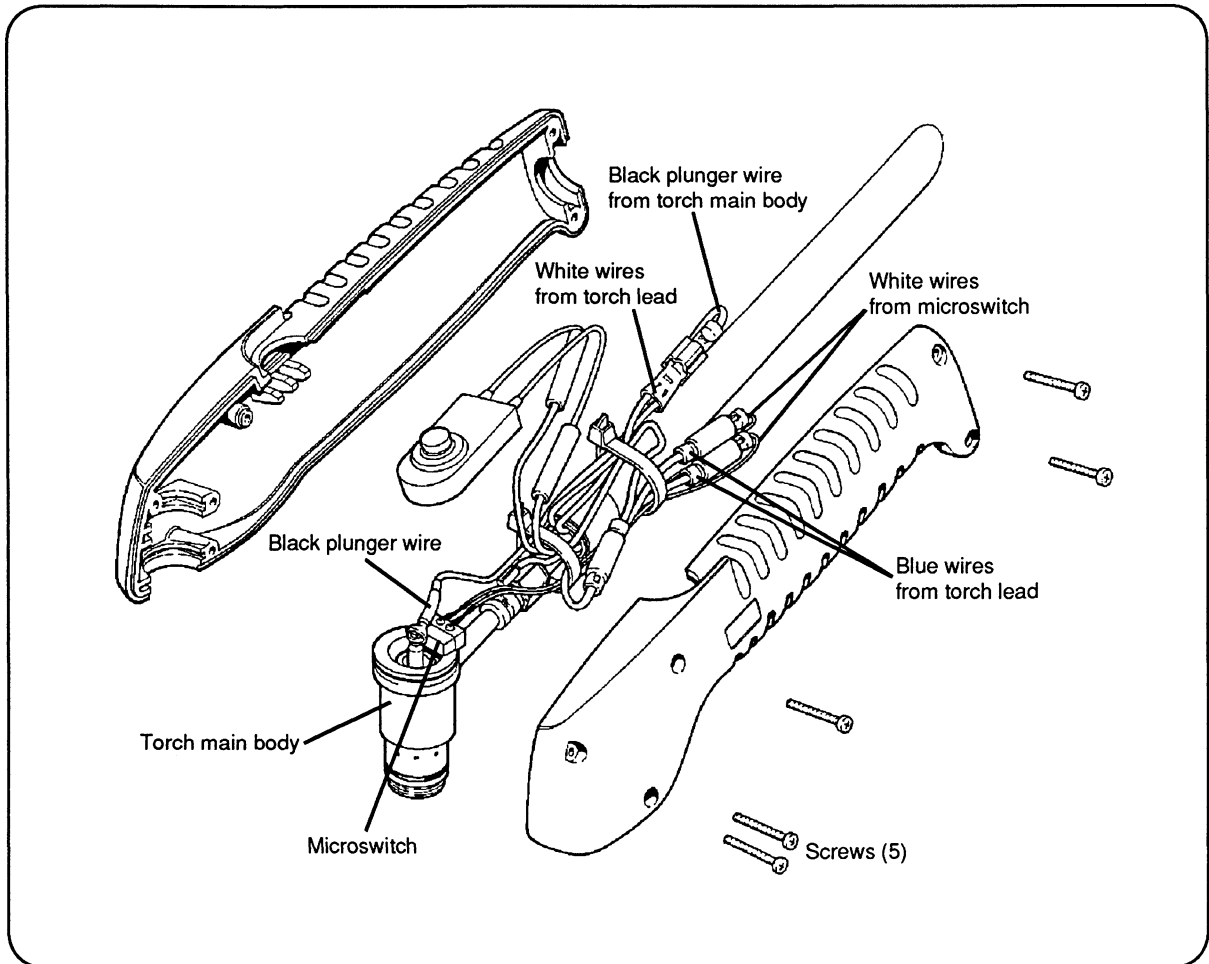


Figure 1 PAC120 Torch Exploded View

# PAC120 TORCH - CAP ON SENSOR MICROSWITCH

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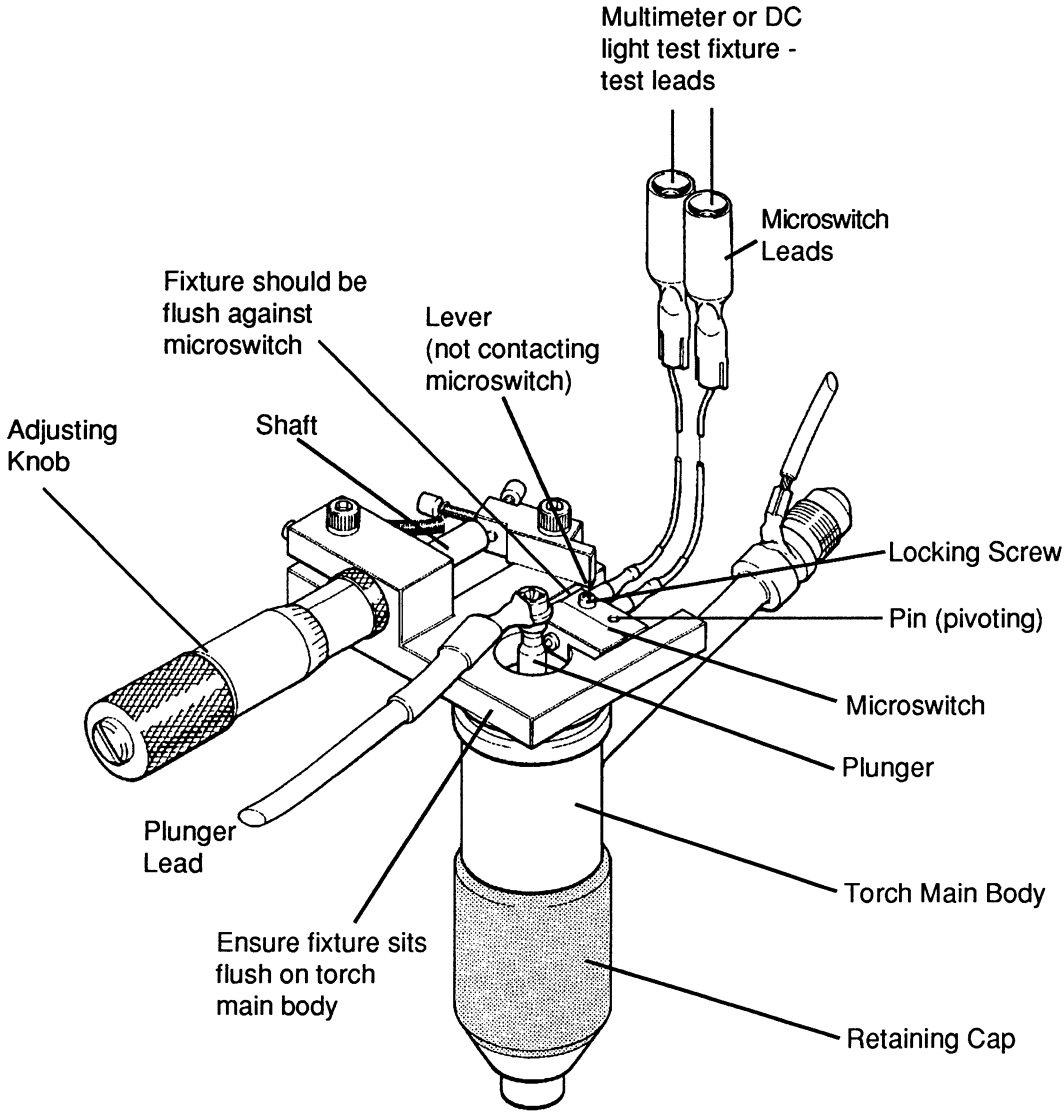


Figure 2 Microswitch Alignment Set Up

# PAC120 TORCH - CAP ON SENSOR MICROSWITCH

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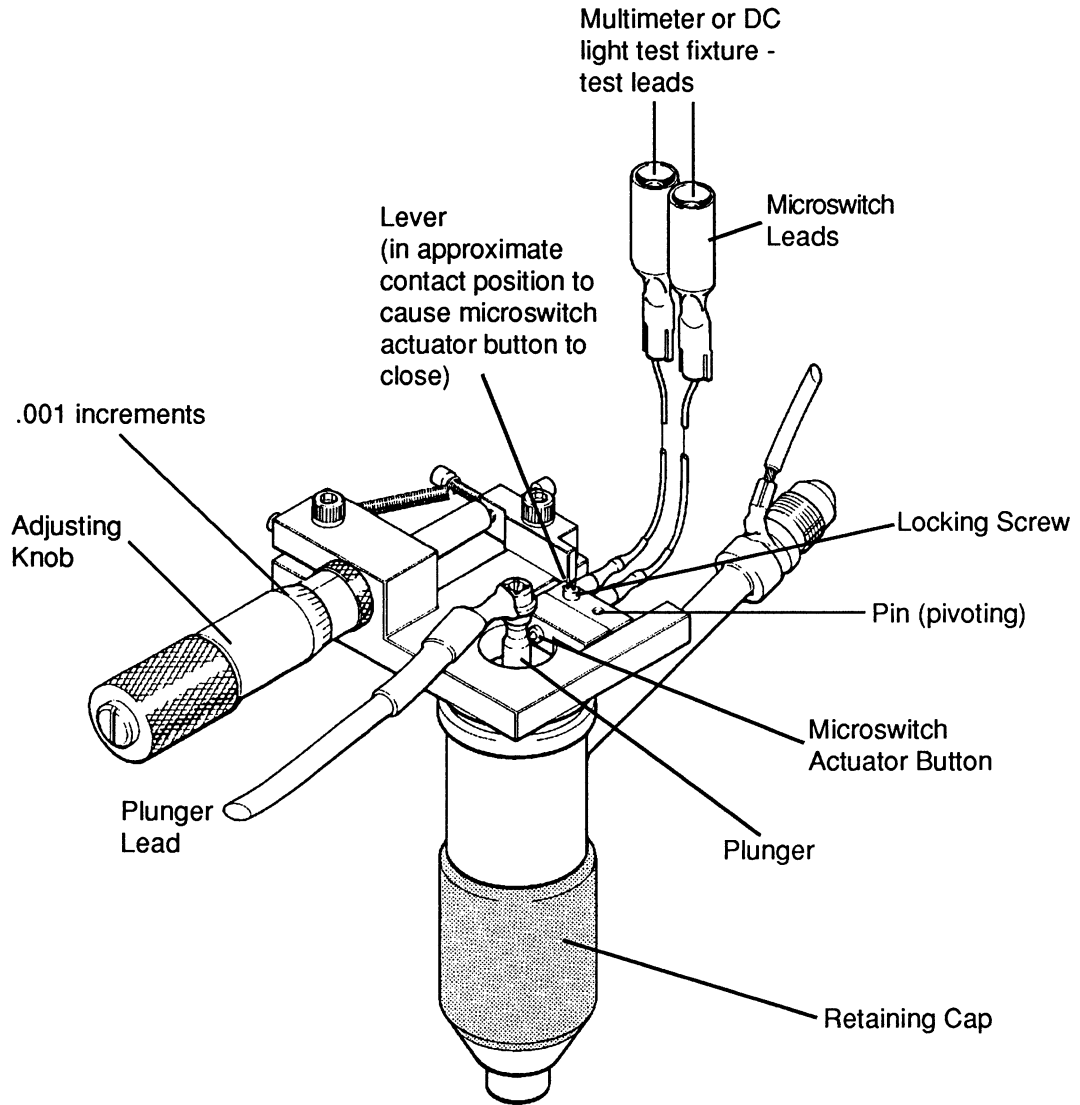


Figure 2 Microswitch Alignment



# PAC120 TORCH - CAP ON SENSOR MICROSWITCH

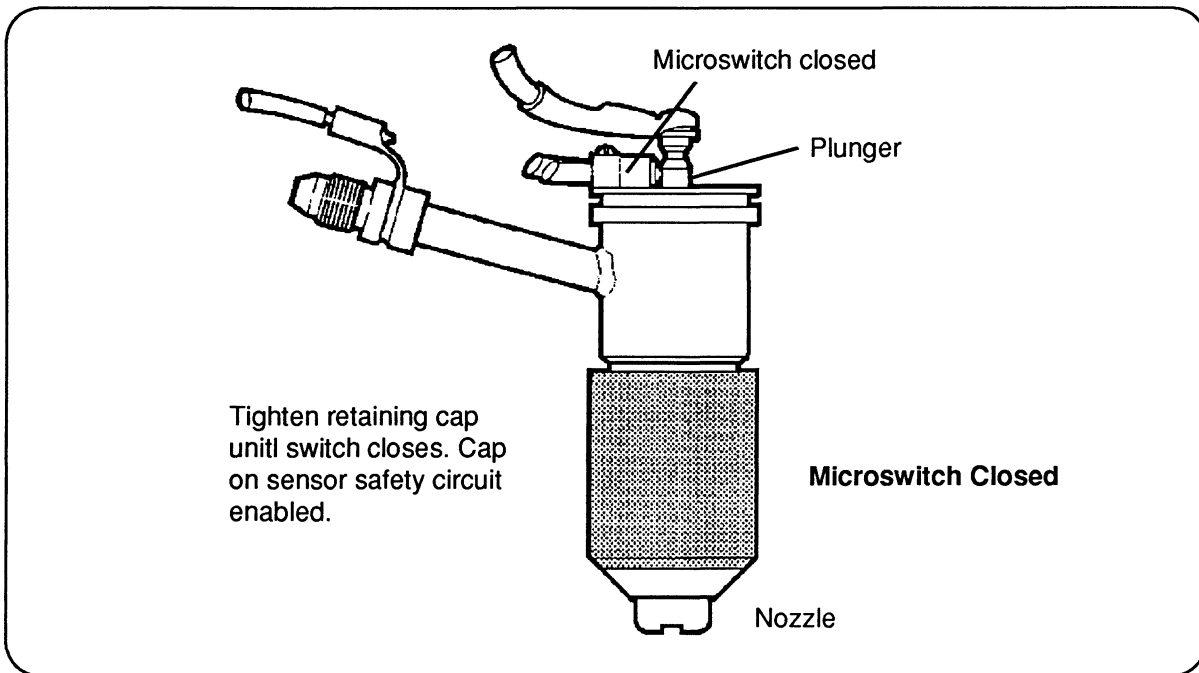
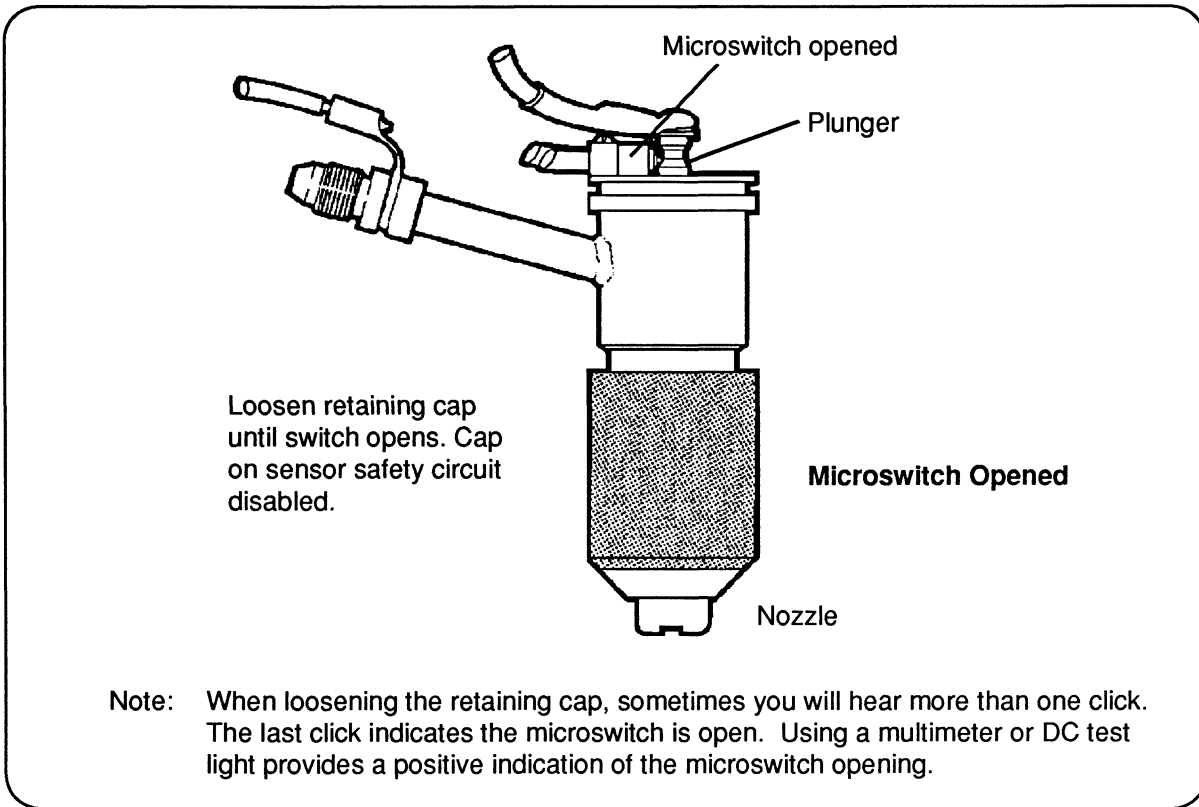


Figure 4 Microswitch Opened and Closed Checkout