

UNDERWATER FLAME ADJUSTMENT
(IF LIGHTING THE TORCH TOPSIDE)

Practice on the Surface is a tub of water, with a piece of flat steel in the water.

1. Use a 3H tip.
2. Adjust heat sink so that the copper end of the tip is 3 mm (1/8 inch) below the heat sink surface.
3. Set oxygen pressure to 80 psi. Gasoline to 20 psi.
4. Open oxygen preheat valve 1/2 turn.
5. Purge the high pressure oxygen line.
6. Open gasoline valve until you see a spray.
7. Light the spray.
8. Using only the gasoline valve, adjust the flame so that it just stops shaking.
9. A flame that shakes a lot is too rich. A flame that is very, very stable is too lean.
10. When adjusted, the flame should extend 3 mm (1/8 inch) past the surface of the heat sink.
11. If not at 3 mm, adjust both gas and oxy until the flame is stable at 3 mm.
12. Press the heat sink flat against the steel in the tub. A slight tilt is ok.
13. If all goes well, you should see the underwater flame brighten considerably in about twelve seconds, as the steel melts.
14. If you do not see an orange light in 12 seconds, change something in the mixture and try again.
15. Press the cutting lever and a very, very bright flame means you are cutting steel.