

Pyrotechnic Line Cutter

LV2c 11/5/08

Materials:

- Cutter: O2 hardening tool steel, round bar
- Body: 6061-T6 Aluminum
- Bolt: off the shelf hardware store bolt
- Nylon Washer between bolt and body
O.D. = 0.5, I.D. = 5/16, thickness=0.062
- Stop Screw: Steel, 4-40, allen cap, 0.75" long
- Stop: UHMWPE or HDPE 3/8 round rod
- Sheer Pin: Soft plastic rod, O.D.=0.060"
- 3/16 Clear heat shrink tube
- REI accessory line, O.D. approx 0.175"

Notes:

- Grind and harden cutter, finish edge with wetstone
- 4mm line passes through 7/32" OD heat shrink, not shrunk
- Tip of cutter should slightly penetrate stop before the vents are cleared by end of cutter
- Countersinking on 5/16 threading is for clearance of COTS bolt not fully threaded
- Plumbbers putty directly under igniter
- Initial testing done with approx 0.4 grams of smokless powder
- Final I.D. of body to be done with 3/8" reamer
- Put radius on sharp edge parameter of cutter such that it won't bite into inner wall of body
- To insert plastic sheer pin, dip in PVC glue such that the plastic slightly melts and insert into sheer pin hole and thru cutter
- Charge is 56 granules of IMR-7828 cylindrical smokeless powder
- During assembly, use drill bit or music wire thru 5/32 alignment hole and into side of cutter to align cutter sheer pin hole

(Vent Holes) #53

(Shear Pin) 1/8"

