



Plasma Cutter

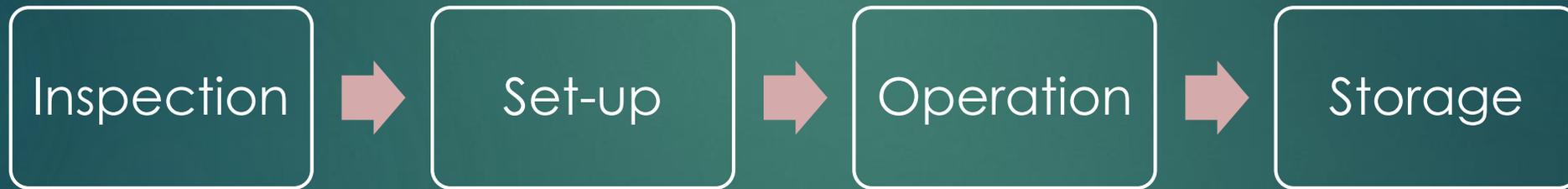
BEST PRACTICES

Tool Uses

- ▶ Primarily used for making clean cuts in metal
- ▶ High speed and precision cuts
- ▶ Cutting aluminum
- ▶ Cutting completely through material

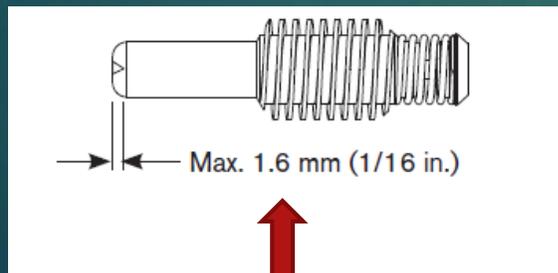
- ▶ Advantages vs Propylene Torch
 - ▶ Cleaner
 - ▶ Easier to control depth of cut
 - ▶ Can cut aluminum

Best Practice - Tooling

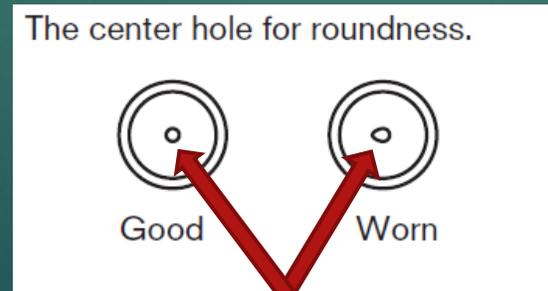


Inspect Before Use

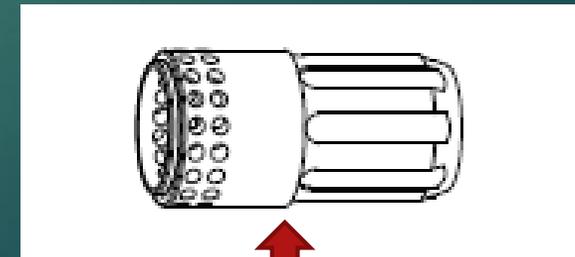
- ▶ What to check for
 - ▶ Damage to hoses
 - ▶ Loose connections with hoses
 - ▶ Consumables connected tightly
 - ▶ Check shield and nozzle center holes for roundness
 - ▶ If electrodes pit depth is greater than 1/16" must be replaced
 - ▶ Replace swirl ring if any gas holes are blocked



Electrode



Center Hole



Swirl Ring

Safety

- ▶ Long sleeves/Jacket
- ▶ Skull Caps
- ▶ Leather Gloves
- ▶ Tinted glasses
- ▶ Darkened Mask



Darkened Mask



Welding Gloves



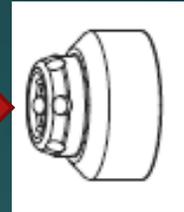
Flame Resistant Jacket

Set-Up

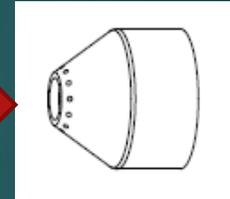
- ▶ Select correct shield
- ▶ Set operating mode to correct setting
- ▶ Apply ground connection (use work lead)

Shields

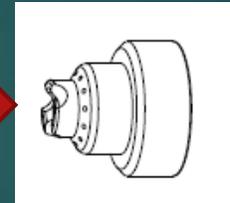
Fine Cut



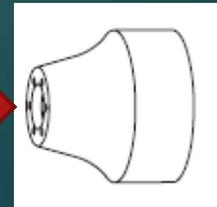
Max-Removal Gouging



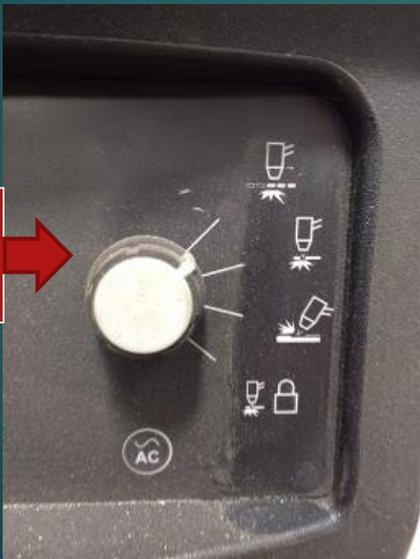
Drag-Cutting



Max-Control Gouging



Operating Mode

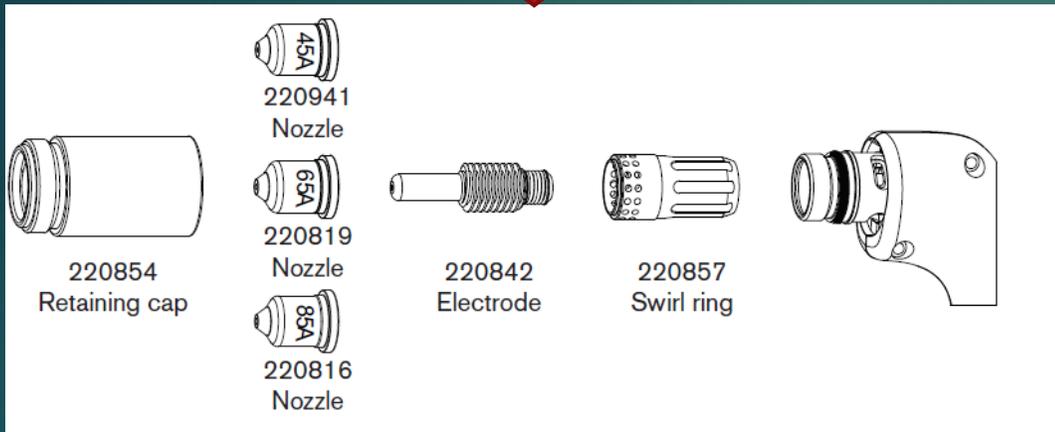


Work Lead

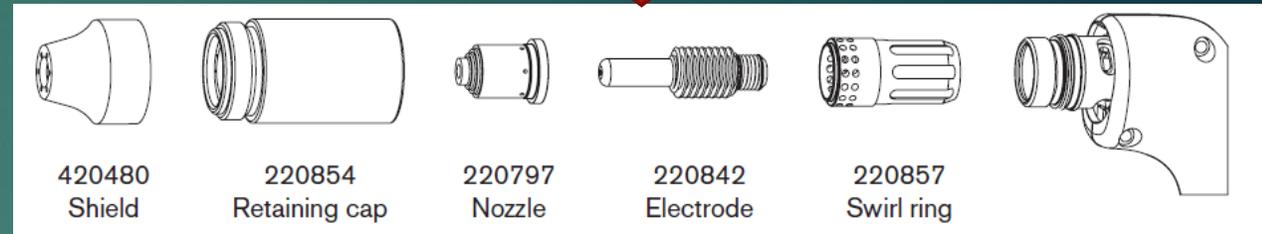


Hand Torch Consumables

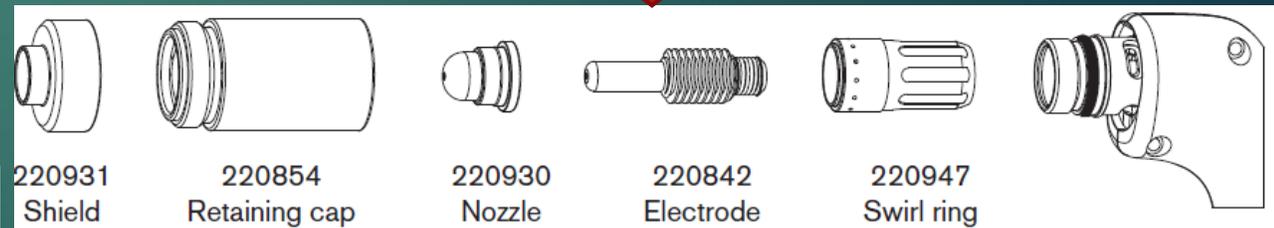
Drag Cutting



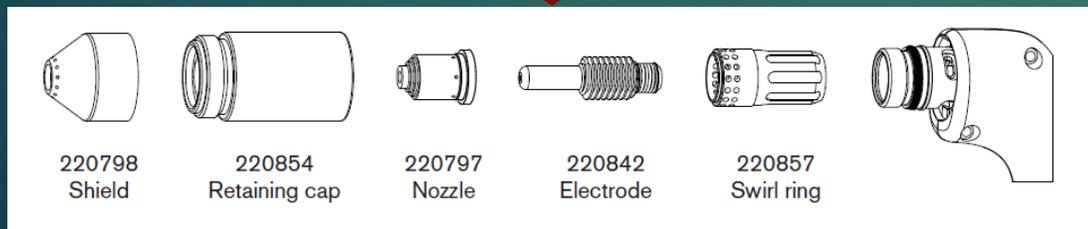
Max Control Gouging



Fine Cutting



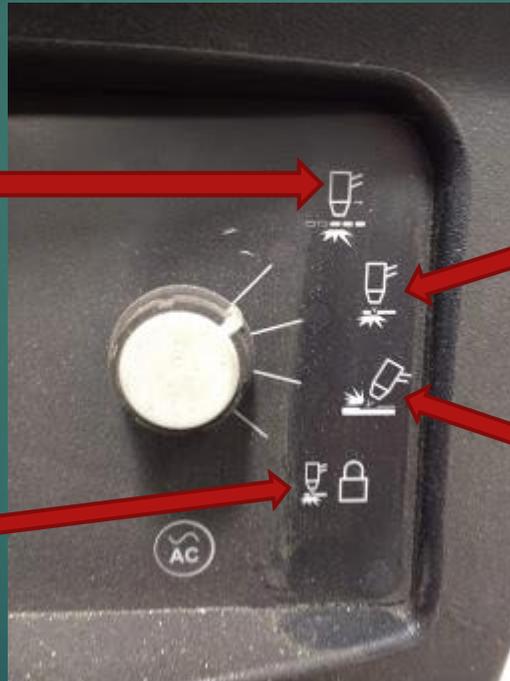
Max Removal Gouging



Operating Modes

Continuous Pilot Arc (cuts expanded metal or grate)

Torch Lock (cuts or pierces, torch is locked in on position during cut)



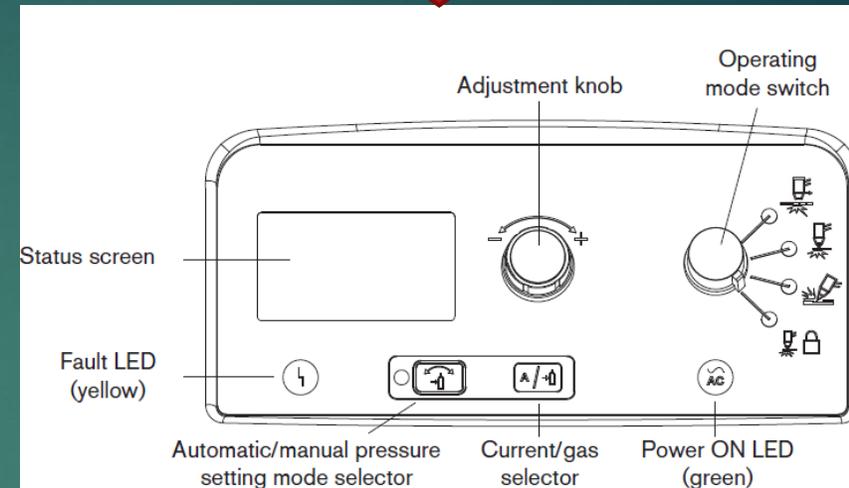
Drag Cutting (cutting or piercing)

Gouge (gouges metal plate)

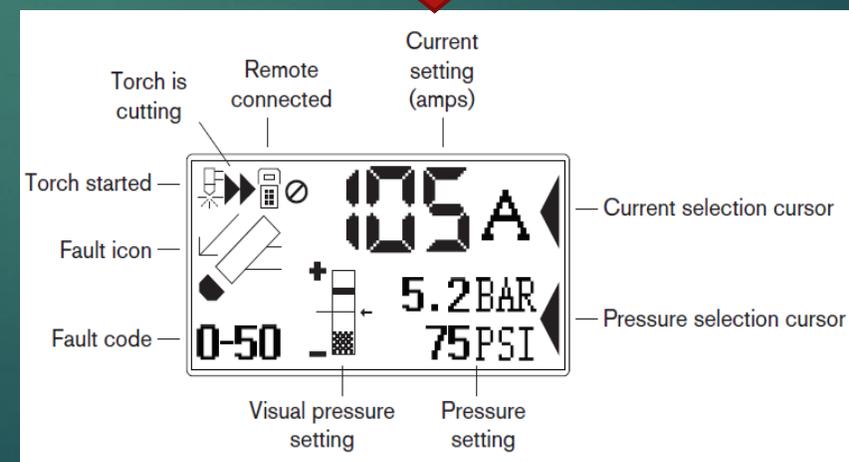
Controls

- ▶ Control Set Up
 - ▶ Plug in power cord
 - ▶ Connect gas supply line
 - ▶ Connect torch and work lead
 - ▶ Attach work lead as close to area being cut as possible
 - ▶ Ensure the work clamp and work piece make metal to metal contact
 - ▶ Set on/off switch to on
 - ▶ Set operation mode
- ▶ Verify
 - ▶ Green power On LED on front of power supply is illuminated
 - ▶ The Fault LED is not illuminated
 - ▶ No error icons appear in status screen

Front Controls/ LEDs



Status Screen

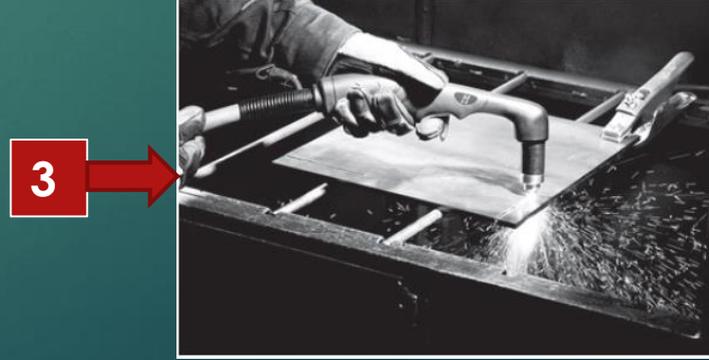


Gas Pressure/ Current

- ▶ Manually Adjusting Gas Pressure
 - ▶ Press the pressure setting mode selector so LED illuminates
 - ▶ Press current/gas selector until the selection cursor is opposite the gas pressure setting in status screen
 - ▶ Turn the adjustment knob to adjust gas pressure to desired level
 - ▶ Watch arrows in pressure bars as you adjust pressure
- ▶ Adjusting Current (Amperage)
 - ▶ Press the current/ gas selector until the selection cursor is opposite the amperage setting in status screen
 - ▶ Turn adjustment knob to change amperage
 - ▶ If you wish to exit manual mode, press automatic/manual pressure setting mode selector. LED goes off (returns to previous mode)

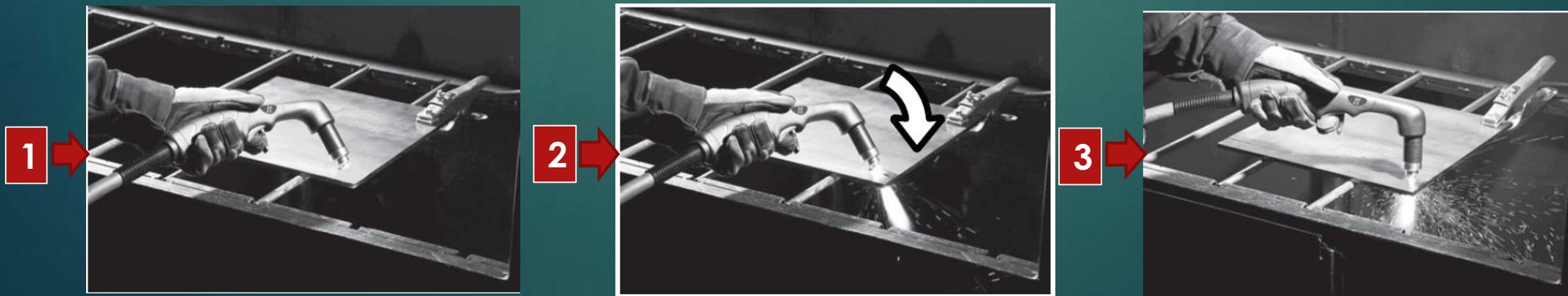
Starting a Cut From Edge

- ▶ With the work lead attached to the work piece, hold torch nozzle at 90° to edge of work piece
- ▶ Pull trigger and pull or drag along line you want to cut
- ▶ Make sure sparks exit through bottom of work piece
- ▶ If sparks spray up, move torch slower or set the output higher
- ▶ Maintain a steady even pace



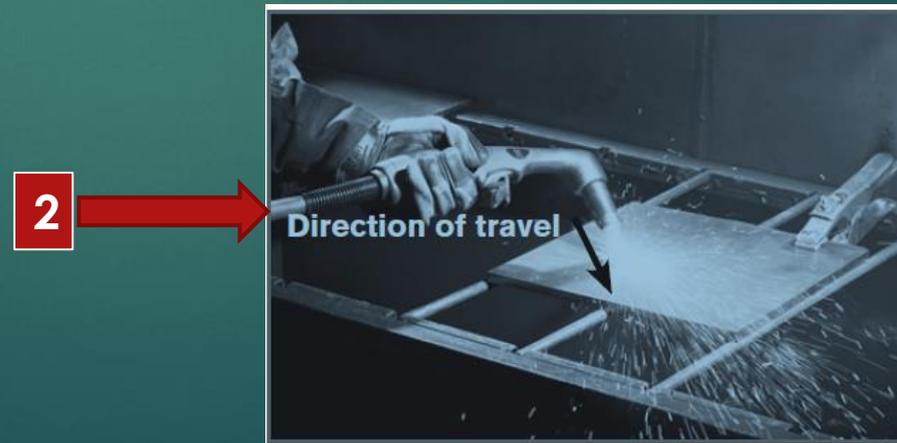
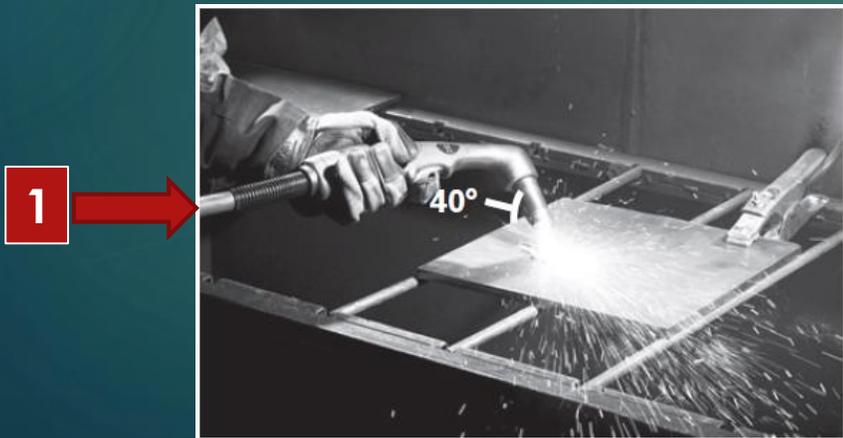
Pierce Work Piece

- ▶ Attach lead to work piece
- ▶ Hold torch at approximately 30° angle with torch tip within 1/16" of work piece
- ▶ Fire torch while still at angle and slowly rotate to 90° position
- ▶ Hold the torch in place until sparks exit bottom of the work piece
- ▶ Drag nozzle along work piece slowly to proceed with cut



Gouge a Work Piece

- ▶ Attach lead to work piece
- ▶ Hold torch at 45° angle with small gap between torch tip and work piece
- ▶ Press trigger and obtain pilot arc
- ▶ Transfer arc to work piece
- ▶ Maintain approximate 45° angle as you feed into gouge
- ▶ Push arc in direction of gouge you want to create



Varying Gouge Profile

- ▶ **Increasing speed**= decrease width & depth
- ▶ **Increasing standoff**= increase width, decrease depth
- ▶ **Increasing angle**= decrease width, increase depth
- ▶ **Increasing current**= decrease width & depth

Watch Out For...

- ▶ Worn consumables
- ▶ Cutting on Reefer (shoot sparks down, not into insulation)
- ▶ Too fast of speed
- ▶ Cutting too thick of metal with not enough amperage
- ▶ Work clamp not being applied correctly
- ▶ Gas pressure or flow rate being too low
- ▶ Flammables near cutting area
- ▶ Bad ventilation
- ▶ Other people in shop that you may not be aware of

Instructional Videos

- ▶ Hypertherm Powermax65/Powermax85



<https://www.youtube.com/watch?v=VsGjBoMMsts>

Maintenance and Repair

- ▶ Inspect consumables and replace any worn parts
- ▶ Lubricate torch O-ring with a thin layer of silicone lubricant if dry
- ▶ Replace O-ring if worn

Tool Storage

- ▶ Unplug power cord
- ▶ Wait for torch to cool
- ▶ Clean the shield and consumables
- ▶ Wrap up power cord and air hose
- ▶ Store in a clean dry area

Training

Training Quiz



- ▶ <https://www.flexiquiz.com/SC/N/da11aeab-fb17-413d-8de2-0f92f97fe376>