

SAFE WORK PRACTICES

GAS WELDING & CUTTING - LIGHTING UP & SHUTTING DOWN *Page 1 of 2*

**This information does not take precedence over OH&S. All employees should be familiar with the Saskatchewan Employment Act and the OH&S Regulations.*

General: Use torch as described in manufacturer's instructions. A procedure for one torch is not always safe for another. Ensure that all fittings are snug and torch handle is fully assembled. **Always ensure that flashback arrestors (one way check valves) are installed at regulator end of hoses before putting torch into service.**

Pressure Setting:

1. Open the oxygen cylinder valve slowly and fully.
2. Open the fuel gas cylinder valve about $\frac{3}{4}$ of a turn but not more than 1 $\frac{1}{2}$ turns.
3. For welding, open the oxygen torch valve, turn the pressure-adjusting screw on oxygen regulator to desired pressure and close torch oxygen valve. For cutting, adjust oxygen regulator pressure when both the torch oxygen valve and the cutting oxygen valve are open.
4. Open the fuel torch valve $\frac{1}{4}$ turn. Adjust fuel gas to working pressure. (Refer to manufacturer's recommendations for pressure settings.) Set gas pressures as low as possible.

Purging: Purging removes mixed gases in hoses which can cause a flashback when lighting up.

1. Do not purge equipment in confined spaces or in the presence of any ignition source.
2. To purge, in turn open and close each torch valve for 1 second for every 3 m (10 ft) of hose.
3. Purge hoses before using and after each shut down of more than $\frac{1}{2}$ hour.

Lighting Up: (Always wear gloves when lighting the torch)

1. Ensure tip is clean and all orifices are clear. Open the torch fuel gas valve about $\frac{1}{4}$ turn. Do not open fuel and oxygen valves at the same time. Make sure that the torch is not pointed at any person, cylinder or combustible material.
2. Immediately light the gas at the tip/nozzle with a spark lighter or a pilot flame. **Do not** use matches, bic lighters, hot metal or welding arc. Be prepared for a fast ignition of the fuel gas. (Be ready to pull away hand with spark lighter.)
3. Increase the fuel gas flow until the flame stops smoking and separates from torch tip.
4. Open the torch oxygen valve slowly and adjust the flame to that required for the process.
5. Check the regulator, set pressures and adjust if necessary.
6. When the flame is adjusted to the manufacturer's recommendations but is too large (hot) or small (cold) to do the job, shut the torch down, change the tip size and repeat steps 1-5 until appropriate flame is achieved.

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GAS WELDING & CUTTING - LIGHTING UP & SHUT DOWN *Page 2 of 2*

Shutting Off Torch:

1. Close torch fuel gas valve then close oxygen valve. This is satisfactory for temporary stops not involving leaving the equipment. (Check the manufacturer's recommendations. Some recommend closing oxygen valve first.)
2. In case of backfire or flashback, close torch oxygen valve first. This cuts off the oxygen supply to the internal flame.

Closing Down:

1. Shut off torch as described above.
2. Close fuel gas cylinder valve and then close oxygen cylinder valve.
3. Drain fuel gas line by opening torch fuel gas. When both gauge needles have fallen to "0", close the fuel gas torch valve.
4. Drain oxygen line by opening torch oxygen valve. Allow both gauge needles to fall to "0". Close the torch oxygen valve.
5. Back off regulator pressure adjusting screw until no spring tension is felt.
6. Regulators and torches can now be disconnected or, if shut down temporarily, hang up the torch and hoses to prevent damage.

DO:

- Shut off the gas at the regulators to change torches, do not crimp the hose.
- Close cylinder valves when work is finished. Put valve protection caps in place and release pressure in regulators and hose lines before cylinders are moved or placed in storage.
- Mark completed pieces "HOT" with chalk.

DON'T:

- Put down a torch until the valves have been completely shut off.
- Hang torches from a regulator or other equipment so that they come in contact with the sides of gas cylinders. If the flame is not out or if a leaking torch ignites, it may heat the cylinder.
- Leave the hoses pressurized. Always turn off the supply from the cylinder, bleed the lines and with lines open, back off the regulator. Lines should then be coiled without kinks.
- Relight torches from hot work. If gases do not light instantly, ignition may be violent.