

THE SMALL TORCH™

OXY-FUEL APPARATUS

For Brazing, Soldering & Heating

IMPORTANT SAFETY PRECAUTION TO REMEMBER

Instructions and Operation Manual

KNOW AND USE ALL SAFETY PRECAUTIONS BEFORE ANY BRAZING, SOLDERING OR HEATING OPERATION!!

There are many hazards to be considered when using oxy-fuel brazing, soldering and heating equipment. GENSTAR products should only be used by well-trained professional technicians.

This handbook is offered as a practical guide for the safe operation of this equipment.

READ THOROUGHLY BEFORE OPERATING EQUIPMENT.

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- **Use designated fuel gas only.**
- Always have a fire extinguisher handy.
- Secure cylinder to cart, wall or post to prevent them from falling.
- All industrial cylinders should be used and stored in an upright position.
- Never drop or strike a cylinder or use a damaged cylinder.
- Never use oil or grease on any inlet or outlet connections or cylinder valves.
- Examine hoses for cuts, burns or worn areas before each use. Also inspect fittings and replace any found damaged.
- Do not repair hose with tape.
- Always wear gloves made of leather or suitable substitute.
- Always wear goggles with at least shade #4 filter lens for brazing, #2 for soldering and heating.
- Always wear appropriate protection clothing such as aprons, safety shoes. Do not wear torn or ragged clothes. Sparks can ignite ragged end.
- Never use oxygen or fuel gas to blow soot or dirt off clothes.
- Never test for gas leaks with a flame. Use approved leak-detector products.
- Upon completion of work, inspect area for any possible fire or smoldering material.
- Acetylene is highly flammable. Working pressure on acetylene regulator should never be set above 15 PSIG.
- Operate equipment in an open, well-ventilated area. Prepare your work area by moving out of the vicinity, any combustible material.
- Refer to ANSI Standard Z49-1, "Safety in Welding & Cutting".
- Do not heat or solder any pressurized container or vessel.

Note: SAVE THESE INSTRUCTIONS.

GENERAL INFORMATION

1. The Small Torch is designed to provide a stable and precise concentrated feather flame to braze and solder material from the tiniest to 1/8" thick steel.
2. The Small Torch can be used with most commonly available fuel gases, such as acetylene, propane, MAPP(and hydrogen, with oxygen.
CAUTION: When using natural gas, a minimum of 6 PSI is required.

SETUP AND OPERATING GUIDE

ATTACH REGULATORS

1. Secure cylinder. (As noted in safety precautions.)
2. For industrial cylinders, while standing to one side, "crack" each cylinder valve by quickly opening and closing the valve, allowing gas to escape and clear the valve of any foreign material, such as accumulated dirt.

WARNING! If oil or grease is found, discontinue use of cylinder immediately and contact your supplier.

3. Attach regulators to proper cylinders. If necessary, a wrench should be used to insure tight connections. Make sure they are tightened in correct directions. [Normally counterclockwise (left-hand) for fuel gas and clockwise (right-hand) for oxygen.]
For preset regulators onto disposable cylinders, be sure that the regulators are in the "off" position.
For high-pressure regulators onto industrial cylinders, the adjusting screws or knobs should be turned counterclockwise to relieve pressure on diaphragm before opening industrial cylinder valves. If this is not done, pressure from cylinder can damage diaphragm and render regulator inoperable.

WARNING! Never stand in front of or in back of a regulator when opening a industrial cylinder valve.

4. Both cylinder valves and regulator connections should be checked for leaks. An approved leak detector should be used.

For preset regulators on disposable cylinders, check the regulator and cylinder connections for leaks.

For high-pressure regulators onto industrial cylinders, stand so the cylinder valve is between you and the regulator. Slowly open cylinder valve.

CAUTION! Acetylene industrial cylinder valve should be opened a maximum of one turn.

CONNECT HOSES (WITH TORCH HANDLE)

1. Connect proper hose to regulator. (Green to oxygen and red to acetylene) Tighten nuts securely with a 11/16" wrench.

WARNING! If any sign of oil or grease is found, discontinue use immediately.

2. Close both the oxygen and fuel gas valves on torch handle.

PURGING THE HOSE AND TORCH HANDLE

Do this in a well-ventilated area to avoid creating conditions for fires or explosions.

1. Turn adjusting screw of oxygen regulator to 5 PSI (for **preset** regulators on disposable cylinders, turn adjusting knob to full open. **DO NOT FORCE**).
2. Open the oxygen valve on torch for 3 seconds to purge the hose.
3. Repeat these steps for fuel gas.

Note: New hose contains preservative talc that must be blown out before using.

SELECT AND CONNECT TIPS

Connect tip of proper size and gas service for job to torch handle. (**Refer to Technical Data of Tips**) Tighten nuts securely with a 5/16" wrench.

WARNING! Always check connection end of tip and torch head for damage or oil and grease presence. If either is found, discontinue use immediately and contact your supplier.

CHECK LEAKAGE

Check for leakage with an approval leak detect solution. If leakage is found, check the connection and retighten the leaking connections. Do not light the torch if leaks are present. If leaks still persist, discontinue use immediately and contact your supplier.

WARNING! Never set acetylene regulator above 15 PSI working pressure. Gloves, goggles, appropriate protection clothing such as aprons and safe shoes must be worn at all times when operating the torch.

LIGHT AND ADJUST FLAME

1. Refer to Technical Data to determine the proper regulator pressures.
2. Adjust the regulators to the desired working pressure (for **preset** regulators on disposable cylinders, turn adjusting knob to full open. **DO NOT force**).
3. Open fuel gas torch valve slightly (1/4 turn). Light the torch with striker in gloved hand.

WARNING! Never light the flame using matches or a cigarette. Always point torch away from any person.

4. Slowly open the oxygen valve until the flame becomes neutral.
5. To achieve larger flame, increase fuel gas with another 1/8 turn. Then increase the oxygen until the flame becomes neutral.
6. Repeat the procedure to obtain the desired flame.

WARNING! Flame setting is increased by opening torch control valves or increasing the operating pressure. **Never** reduce the flame setting. This will cause the tip to overheat which will result flashback. If less heat is required, use a smaller tip.

7. To avoid overheating the tip end, hold the torch in proper distance to object.

WARNING! If you experience a **backfire or flashback** (a shrill hissing sound caused by the flame burning inside), **turn off the oxygen valve immediately and then the fuel valve**. Following the shut down procedures. Allow the equipment to cool off before attempting to reuse. If the problems reoccur, bring the equipment to a qualified repair technician.

SHUTTING DOWN EQUIPMENT

1. Turn off oxygen valve on torch. Then turn off acetylene valve on torch.
2. Close both cylinder valves tightly (for preset regulators on disposable cylinders, turn regulator adjusting knob to full closed position).
3. Remove the tip from torch handle.

Steps 4 to 6 are for high pressure regulators on industrial cylinders.

4. Open oxygen torch valve to release the pressure in the hose and regulator until the low pressure gauge indicates "0". Close the oxygen torch valve.
5. Turn the pressure adjusting screw on the oxygen regulator counter clockwise until there is no pressure on the adjusting spring and the screw turns freely.
6. Repeat step 4 and 5 for fuel gas.

Steps 7 and 8 are for preset regulators on disposable cylinders.

7. Open oxygen torch valve to release the pressure in the hose and regulator. Then close the oxygen torch valve.
8. Open fuel gas torch valve to release the pressure in the hose and regulator. Then close the fuel gas torch valve.

Remove all equipment from cylinder with wrench. Store the equipment in compliance with state or local regulations.

TECHNICAL DATA OF TIPS

Part # (Model #)	Gas Service	Gas Pressure (PSI)	
		Oxygen	Fuel
120501011 (22-10STP-2)	Acetylene	5	3
120501012 (22-10STP-3)	Acetylene/ Propane/ MAPP/ Propylene	6	3
120501013 (22-10STP-4)		7	3
120501014 (22-10STP-5)		8	3.5
120501015 (22-10STP-6)		9	4
120501016 (22-10STP-7)		12	4.5