

GLASS TORCH TECHNOLOGIES, INC.



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INSTRUCTIONS FOR SCORPION TORCHES

To Attach your Lines to the Torch:

- The **Fuel Line** goes on the stud located by the **Red Valve**. *4-stud models: The front stud (toward the head of the torch) is for the center fire and the back stud is for the outer fire.*
- The **Oxygen Line** goes on the stud located by the **Green Valve**. *4-stud models: The front stud (toward the head of the torch) is for the center fire and the back stud is for the outer fire.*
- Secure the Lines on the studs with clamps.
- Secure the Torch Base to the table either by clamping or bolting to secure the Burner. Also, try to secure the main lines so the full weight of the lines is not pulling directly on the burner studs. Keep lines under the table edge so hot glass will not hit them.
- Check that the valves on the torch are closed and then open the main tank valve(s). Set regulators to the recommended setting, then check the hoses and the torch for leaks. Smell and listen for any gas or oxygen leaks. Another way to check is to open the main tank valve, set gauge to recommended pressure, then shut off the main tank valve and watch the needle on the pressure gauge for about 5 minutes to see if there is any drop in pressure.
- If you are using an oxygen concentrator(s), be sure to warm up the concentrator(s) each time by running it with the oxygen valves open for approx. 5 - 10 minutes before running the torch. Set the flow meter .5 – 1 LPM lower than the highest number on the flow meter unless the manufacturer recommends otherwise. This will usually provide the greatest purity of oxygen to the torch. Due to the differences in oxygen concentrators there may be some variations in the above recommendations depending on the concentrator, flow, purity and working pressure. The Scorpion can be run on lower flow and pressure as long as the candle lengths are kept at ¼” or longer for certain applications.
- Always make it a habit to check for leaks if you ever smell gas or propane while you are running any torch. Shut off the valves on the torch. Then shut off the Main Fuel Tank valve followed by the Main Oxygen Tank valve. Look until you find the source of the leak and immediately correct it.

Pressure Settings for the Scorpion:

- Set **Fuel Gas Pressure** to **5 PSI** if using tanked fuel. If using natural gas the Scorpion is capable of running on a minimum of ½ **PSI**.
- Set **Oxygen Pressure** to **5 - 10 PSI** if using tanked oxygen.

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- Torches with independent Center Fire and Outer Fire will have 4 control valves. 2 Red valves for Gas Control and 2 Green valves for Oxygen Control. The 2 front valves control the Center Fire. The 2 back valves control the Outer Fire.
- **Red Valves** are for fuel control.
- **Green Valves** are for Main Outer Oxygen control. If a Green Valve is not set right, the flame ignition will burn too close and the burner jet orifices will glow orange. If you notice orange streaking in the blue flame, it means that you are running the flame too low. Turn up the Green Valve(s) a little more until the orifices stop glowing. When running slow, soft or lazy type flames you must pay close attention until you get used to adjusting the torch.
- **To light the torch.** Using the 2 front valve control knobs (the Red and Green valves that control the Center Fire), start off by slowly opening the front Red Knob until you get the torch lit. Once the torch is lit, get about a 7 inch yellow flame going. Next, open the front Green Valve, slowly adjusting it until you get the long yellow candles cleaned up. You will notice the flame start to tighten up and get narrower. If the flame starts to hiss or crack, this means you've opened the valve too much. If it does hiss or crack, back down the Green Valve until it quiets down and the flame is not distorted. From this point you can control the gas valve to get a wide range of flames once oxygen is set. If you want to get a Micro Small Flame, turn the Red valve down until the flame is about 1.5 – 2 inches long. Adjustment of the Green valve may be necessary to get a smooth small flame. The candles in the flame will be about 1/8" long and all blue in this flame type. This will not hurt the torch as long as there is no glowing on the face.
- **If you want a soft brushy type of flame**, use the Red and Green Valve controls to adjust the flame to the desired type. Long yellow candles usually indicate a reduction flame that is required for some types of glass or finishes. Some yellow tips on the candles indicate a neutral flame that is what most glass works well in. No yellow tips indicate an oxidized flame. An oxidized flame is useful for some types of glass that require an oxidizing flame.
- **To Start the Outer Fire**, never run Outer Fire with the Center Fire off. The Center Fire must be running while operating the Outer Fire. First turn the Center Fire flame to the desired setting. Next, turn on the back Red Valve until you get about a 6 inch long yellow flame. Next, turn on the back Green Valve and learn how to adjust the Outer Fire with the Red and Green Valves. Use the Red and Green Valves on until you have the desired flame setting. **DO NOT run the Outer fire without the Center fire running.** You will have to experiment with these settings until you become familiar with it.
- **If you want a soft brushy flame**, do not run a short low soft flame. You can run a long soft brushy flame safely. The Green Valve must always be on when using Outer Fire.
- **The Barrel of the Scorpion will get hot to the touch.** Do NOT touch the silver part of the barrel (first 2 1/4" from the front) of the torch while or immediately after running the torch IT WILL BE HOT. SEVERE BURNS MAY OCCUR IF THE BARREL IS TOUCHED. Some discoloration on and near the head is normal, it should be a brownish color. If the head of the torch has glowing speckles or glows it indicates that a bad flame is being run and the flame must be changed to avoid damage to the torch.
- **Tips and Tricks:**
 1. Center fire enhancement. With the center fire running at a large flame size, turn on the outer fire oxygen only. This will stabilize and enhance the center fire flame for a larger neutral flame. This will also allow the addition of more fuel in the center fire flame for a larger cleaner center fire flame.
 2. Pinpoint detail flame. With the center fire running turn the fuel valve down until the flame reaches about 1.5 – 2 inches. If the flame hisses turn the oxygen down until the flame comes to a point. The candles in the flame should be about 1/8" and all blue. This flame is great for detail work and will not hurt the torch.

3. Largest flame on the Scorpion. Light the center fire and the outer fire as described above. After the outer fire is at its largest setting without hissing, then adjust the center fire larger until the flame remains in the flame type desired. Some noise will be heard from the flame, but the main flame should be stable.

Start off by learning how to adjust torch and understand how it operates before working glass in front of it.

WARNINGS:

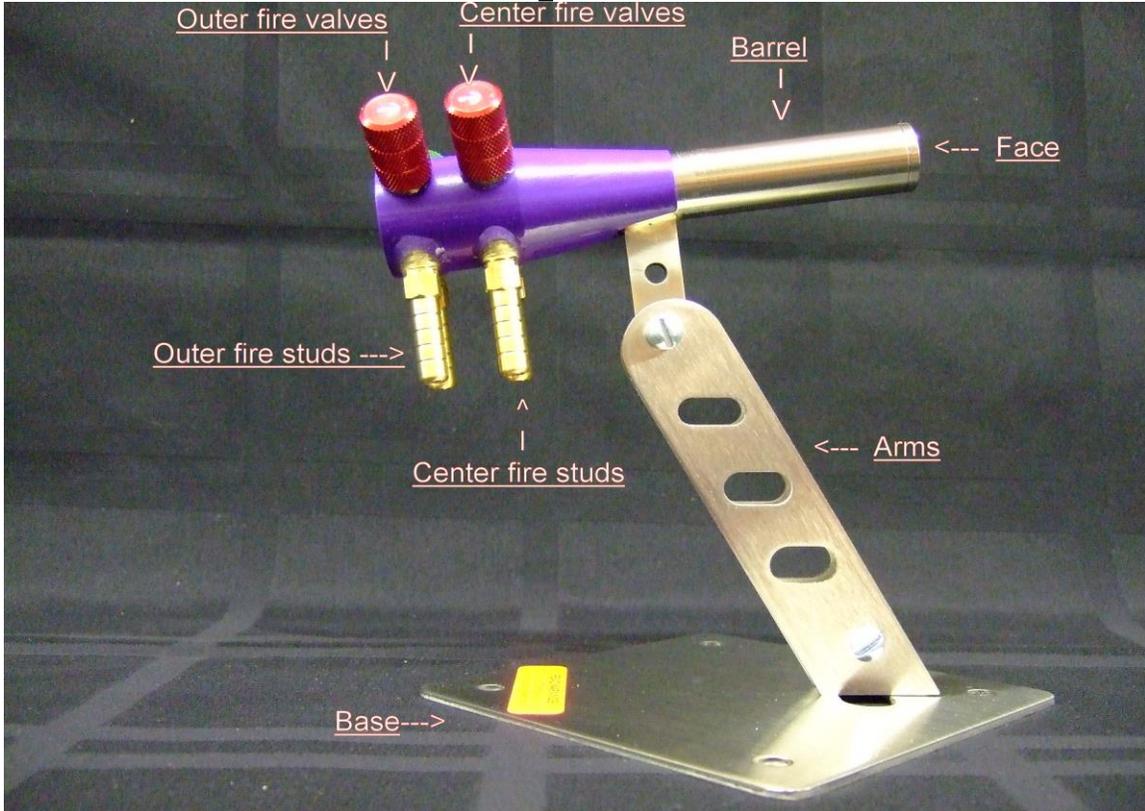
1. **Never leave the area with the torch running.**
2. **Never leave the main tank valves turned on if you leave the area for an extended period of time.**
3. **Always make sure torch base and lines are anchored and secure.**
4. **Always be alert for gas and oxygen leaks. Fix them right away no matter how insignificant they may seem.**
5. **Have good exhaust ventilation in work area.**
6. **Keep flammable objects and lighters away from work table area.**
7. **Have non-flammable tabletop and back wall.**
8. **Secure gas and oxygen tanks with strap or chain them to wall; never let tanks free standing.**
9. **Always have a small container of water by your work area to put hot glass scraps in.**
10. **Always use Phillips Safety Eyewear or Didymium Glasses to protect your eyes from glare and flying pieces of glass.**
11. **Always keep a fire extinguisher close by in the work area.**
12. **Use fire resistant clothing or apron while working with the torch.**

**FAILURE TO OBSERVE SAFETY RULES
COULD RESULT IN INJURY OR DEATH.**

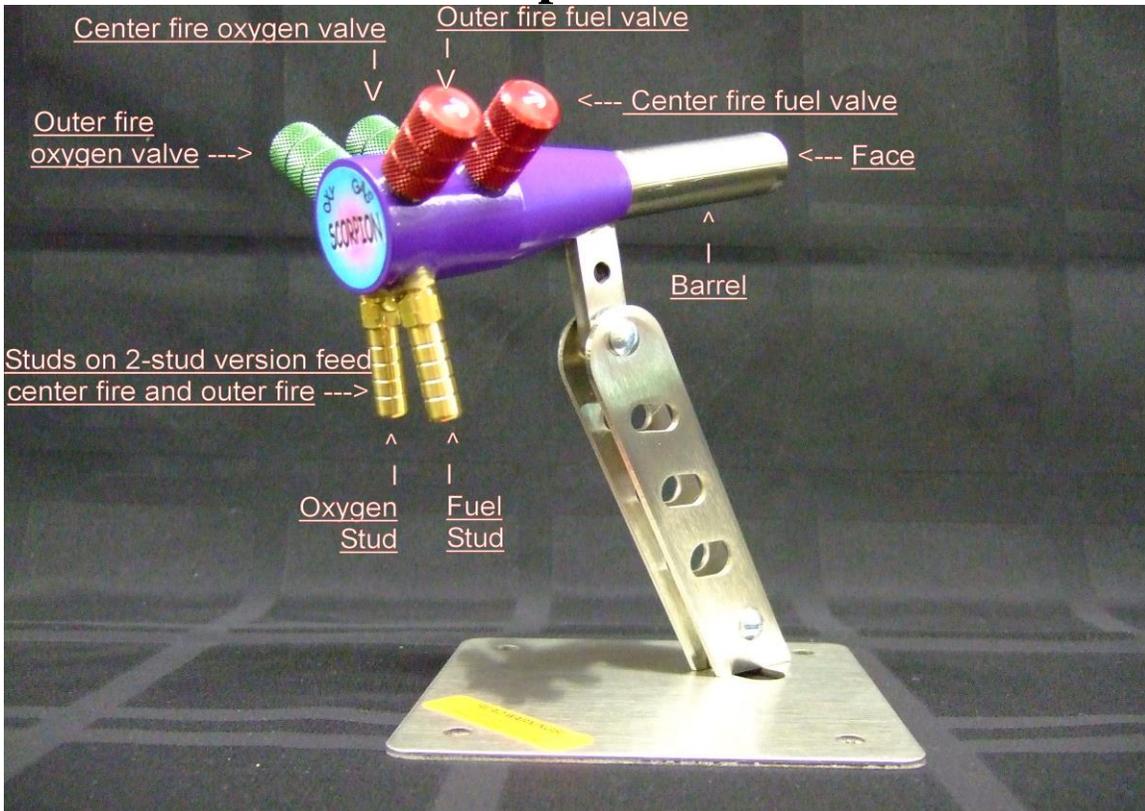
**We recommend taking a glass working class.
Any questions call: (570) 835-9777.**

PORT CLEANING WIRE

4-Stud Scorpion Schematic



2-Stud Scorpion Schematic



WARNINGS

Never leave the area with the torch running.

Never leave the main tank valves turned on if you leave the area, be sure to relieve pressure off torch.

Always make sure torch base and lines are anchored and secure.

Always be alert for gas and oxygen leaks. Fix them right away no matter how insignificant they may seem.

Have good exhaust ventilation in work area.

Keep flammable objects and lighters away from work table area.

Have non-flammable tabletop and back wall.

Secure gas and oxygen tanks with strap or chain them to wall; never let tanks free standing.

Always have a small container of water by your work area to put hot glass scraps in.

Always use Phillips Safety Eyewear or Didymium Glasses to protect your eyes from glare and flying pieces of glass.

Always keep a fire extinguisher close by in the work area.

Never get any oil or grease on the lines or connections.

Never touch the torch on the barrel or nozzle end while it is running, or for 15 minutes or more after running.

Use hose clamps or other approved connectors on the hose adaptors. Always check for and beware of any leaks and correct them immediately.

Never remove adaptors or any component with filter screens present. Removing filter screens may allow foreign material into the torch potentially damaging valve seats and clog internal components.

Do not strike torch with glass or other hard object. Dents or damage may occur.

Do not subject the torch to excessive heat, flame, kilns, ovens or hand torches.

Do not install premix torches in the same supply hose with any other torch. Flashback can occur and damage the other torches. If a premix torch is installed it MUST have flashback arrestors installed on the premix torch hoses *before* the connection to the main supply hose. Flashback arrestors placed at the tank will only protect the tank and regulators, not other torches in the system.

DO NOT REMOVE ANY FACTORY INSTALLED COMPONENTS. FAILURE TO FOLLOW DIRECTIONS AND WARNINGS WILL VOID FACTORY WARRANTY.

FAILURE TO OBSERVE SAFETY RULES
COULD RESULT IN INJURY OR DEATH.