










PROPER SET-UP AND USE OF HEATING TIPS

We ask you to work like a pro – and pros weld and cut safely. Please read and comply with the sample safety procedures outlined in this document and the equipment Owner's Manual.

-  **Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted welding and cutting equipment. Make sure levers and valves work properly, threads on equipment are clean (no grease or oil) and not deformed, gauges are intact and easy to read, regulator is clean and free of oil or dirt, and fittings are properly sized for the cylinder. Make sure hoses are clean (no grease or oil). Be sure all connections are tight and there are no leaks in the system.**
-  **Read the instructions supplied with the equipment. Understand the gas flows and pressures required to safely and properly operate the selected heating tips.**
-  **Select regulators with sufficient flow capacity. Be sure there are no restrictions that could impede required gas flows (such as length and diameter of hoses).**
-  **When adjusting torch flame, do not starve the tip of gas flow. Do not use oxidizing flames.**
-  **Heating tips must be used in conjunction with high flow flashback arrestors. It may also be necessary to increase regulator outlet pressures to compensate for flow restrictions caused by flashback arrestors.**
-  **Manifolding Cylinders: When required flows (scfh) exceed the recommended withdrawal rate from one cylinder, then additional cylinders must be manifolded to provide safe and efficient operation. Acetylene must not be withdrawn at more than 1/7 of the cylinder capacity (50 scfh for a 350 cu. ft cylinder). Consult your gas supplier regarding manifolded instructions for the gases and cylinders being used.**
-  **Visit the Metal Cutting section of MillerWelds.com to obtain gas consumption rates for various heating tips.**

CYLINDER GAS FLOW INFORMATION



Failure to force a sufficient amount of fuel gas through the tip will cause the tip to overheat and may cause a flashback or backfire. Alternate fuel gas tips require a specific gas flow from the cylinder to operate correctly. The table below illustrates the gas flow capacity from the cylinder at various temperatures. Do not exceed the flow capacity of the cylinder. Gas consumption rates can be found for various tip models in the Metal Cutting section of MillerWelds.com.

As the table shows, temperature has a dramatic effect on the flow capability of alternate fuel gas cylinders. For example, a 60 lb cylinder of propane gas can produce 77 cubic feet of gas per hour (scfh) at 70° F. However, at 0° F this same 60 lb cylinder will only produce 30 cubic feet of gas per hour. The larger the cylinder and the warmer the temperature, the higher the flow capability. Also, note that a 100 lb cylinder of propane at 70° F can produce a maximum of 300,000 BTUs per hour and a 20 lb gas cylinder (typical for gas grills) can produce a maximum of 92,000 BTUs per hour.

Propane Cylinder Size – Lb	Approximate Propane Withdrawal Rate – scfh				
	0°F	10°F	30°F	50°F	70°F
100	46	56	77	94	120
80	38	46	64	81	95
60	30	37	50	64	77
40	22	27	37	47	57
20	15	17	24	30	37
10	11	13	17	22	27