

# Technical Data

## Fuel Gas Cylinder Tip Capacity

### FUEL GAS CHART

Generic Name	Trade Name
Acetylene	—
Methylacetylene-Propadiene (MPS)	MAPP®
Propane, Propane-Based Mixtures	Propane-butane, Flamex, Acetogen, Florida Industrial Gas, Hy-Temp, Fuel Gas, I.G. Gas, Chem-Gas, Chemtane
Propylene	HPG, Apachi, B-Plus, Chem-O-Lene, Gulf HP Gas, HEF, B.T.U., Liquifuel
Natural Gas (Methane)	Natural Gas, City Gas

#### WARNING!

Excessive overheating of cutting, welding and especially heating tips, can cause flashback conditions. Flashbacks can be caused when a tip becomes overheated and ignites the gas before passing out of the tip. The flame is then burning internally rather than on the outside of the tip, usually identified by a “whistling” sound.

**This flashback condition can cause damage to equipment, property and, in some cases, personal injury.**

The major cause of excessive overheating and flashbacks is gas starvation. Each tip is designed to operate at a predetermined volume of gas. If a tip is operated at less than the required volume of gas, starvation will occur, which can lead to tip overheating and a possible flashback. Incorrect tip size, obstructed tip orifices can also cause overheating or flashback conditions.

Recommended procedures to guard against overheating or flashbacks:

1. Refer to the manufacturer’s recommended tip size for the work being performed.
2. Refer to the manufacturer’s recommended gas pressure settings for each tip being used.
3. Do not use hose which is excessively long with multiple splices or which is too small in diameter (refer to manufacturer’s recommendation).
4. Provide the correct volume of gas for each tip as recommended by the manufacturer. This may require manifolding of cylinders.
5. All cylinders have a limited capacity to deliver gas to the tip. This is especially true of acetylene gases.

#### Acetylene Withdrawal Rates

Acetylene is limited to a maximum continuous withdrawal rate of 1/7 of the cylinder’s rated capacity when full. Example: An acetylene cylinder that has a capacity of 330 cubic feet has maximum withdrawal rate of 47 cubic feet. This is determined by dividing 330 cubic feet (represents cylinder capacity) by 7 (represents 1/7 cylinder capacity).

#### Liquid Fuel Gases

SCFH of liquid fuel gases such as propane will vary depending upon cylinder size, contents remaining and temperature of cylinder.

*Example:* A 100 pound propane cylinder at 60 degrees F and 1/3 full will provide 46 SCFH. This flow rate would be considerably less at a temperature of 0 degrees F.

This chart below is a condensed guide to match tip flow requirements to cylinder maximum continuous withdrawal rates. If you do not see your specific tip/cylinder combination listed, get the acetylene SCFH flow for the tip size and metal thickness to be worked on. Your fuel supplier can provide withdrawal rate information for the cylinder and gas being used.

Acetylene Cylinder Capacity (Cubic Feet)	Maximum Continuous Withdrawal Rate (1/7 Capacity) SCFH	Cylinder(s) needed to Operate Tips	Welding Tips	Cutting Tips	Heating Tips
304 - 330	43.4 - 47 SCFH	1	SW201-SW210, MW201-MW210, AW2000-AW210	SC12-00-SC12-7, SC56-1-SC56-3, MC12-00-MC12-5	MT603, AT605
		2	SW211-SW212, MW211-MW212	SC56-4-SC56-6	ST603, ST605, MT605, MT610
		3	SW213-SW214	SC56-7-SC56-8	ST610
		4		SC56-9	
130 - 135	18.5 - 19 SCFH	1	SW201-SW208, MW201-MW208, AW2000-AW208	SC12-000-SC12-4, MC12-00-MC12-5	
		2	SW209, SW210, MW209-MW210	SC12-5-SC12-7, SC56-1, SC56-2	MT603, AT605
100 - 111	14.3-15.9 SCFH	1	SW201-SW207, MW201-MW207, AW2000-AW207	SC12-000-SC12-4, MC12-00-MC12-4	
75	10.7 SCFH	1	SW201-SW206, MW201-MW206, AW2000-AW206	MC1200-MC12-4	
60	8.6 SCFH	1	SW201-SW205, MW201-MW205, AW2000-AW205	SC12-00-SC12-1, MC12-00-MC12-1	
40	5.7 SCFH	1	SW201-SW204, MW201-MW204, AW2000-AW204	MC12-00, MC12-0	
10	1.4 SCFH	1	AW2000-AW200		