





# Miller now offers oxy-fuel equipment.

As the leader in welding and cutting technology, Miller has always made it a top priority to provide the very best solutions to the industry — no matter how challenging the application. With that very principle in mind, we are expanding our metal cutting technology offering to include oxy-fuel equipment.

# This expansion is a result of transitioning the Smith Equipment® brand to Miller.



Smith Equipment has long been known for its premium torches and tips, and you will continue to

receive the same high quality oxy-fuel equipment you've come to know and trust from the brand. The only difference — the name on the product will change to another trusted brand in welding and cutting: Miller.

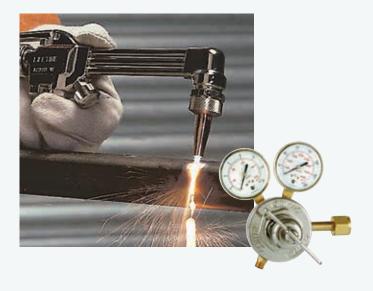
The first step in fully transitioning the Smith Equipment product lines to the Miller brand can be found in the oxy-fuel equipment in this catalog.

Miller and Smith Equipment have a mutual commitment to manufacturing the most reliable



equipment in the industry, as well as providing the best technical and customer service support.

Based on these common goals, you can be assured that you'll now find the best products to meet your oxy-fuel equipment needs, whether you're a professional or a do-it-yourselfer.







Outfits include just about everything you need to get started on your cutting, welding, brazing or heating projects. Our heavy-duty, medium-duty and Versa-Torch™ torches are covered by our True Blue® lifetime torch warranty — the best in the industry, and the only warranty that covers normal wear and tear. The Toughcut™ and Tag-A-Long™ torches are backed by a 3-year limited warranty.



# Heavy-Duty Outfits (pages 4-5)

Our premium heavy-duty outfits are capable of performing almost any cutting, welding, brazing or heating operation with the widest array of general and special-purpose tip options available. The rugged high-flow torch is capable of cutting up to 8-inch-thick steel and accommodates large heating tips, while the one-piece hand-cutting torches will cut up to 12 inches. These robust torches and regulators provide maximum durability even in the harshest environments.



### Toughcut™ Outfits (page 7)

Toughcut medium-duty outfits are value priced and capable of cutting, welding, brazing or heating. The torch design provides excellent agility for precision cutting operations of up to 6 inches. This series includes many of the features of more expensive outfits, while remaining an economical, yet highly flexible option.



# Medium-Duty Outfits (page 6)

Our medium-duty outfits are capable of a wide range of cutting, welding, brazing or heating applications, and provide excellent agility for precision cutting operations of up to 6 inches. These outfits feature quality construction throughout, and the torch and regulators are built to provide years of reliable service.



Tag-A-Long™ and Versa-Torch™ Outfits (page 8)

These complete, portable oxy-acetylene outfits weigh less than 35 pounds, and are housed in polyethylene carriers designed for mobility and ease of storage. Outfits are capable of performing many welding, brazing or soldering operations, as well as precision cutting. The Versa-Torch with a broad selection of attachments available, is ideal for many specialty applications.

# **Heavy-Duty Cutting, Welding & Heating**



Cuts up to 8 inches (203 mm) with optional tips Welds up to 1/2 inch (13 mm) with optional tips

These premium heavy-duty outfits feature our proven in-tip gas mixing technology and *include torch-mount flashback arrestors*. This combination greatly improves operator safety and increases torch life. The outfits feature rugged, highly accurate brass regulators. Outfits with Series 40™ regulators feature 2.5-inch (Series 30™, 2-inch) corrosion-resistant gauges and shatterresistant polycarbonate lenses. Outfits are complete with safety and operations manual.

Note: Welding may require additional equipment depending on which outfit is ordered. See chart below.



Torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

Regulators are covered by a three-year limited warranty.





HBA-40510 / HBA-40300 with heavy-duty regulators



HBA-30510 / HBA-30300 with medium-duty regulators



HBA-30510LP / HBA-30510MP with medium-duty regulators

Note: All outfits packaged in outfit box shown above. Cutting capacity with tips supplied in acetylene outfits is up to 1-1/4 inches (32 mm).

		Torch	Cutting	Cutting	Welding	Heating	Oxygen	Fuel Gas	
Stock Number	Fuel Gas	Handle	Attachment	Tip	Tip	Tip	Regulator	Regulator	Includes
HBA-40510	Acetylene	WH200A	SC209	SC12-1 SC12-2	SW205	ST602	40-175-540 CGA 540	40-15-510 CGA 510	25-ft. (7.6 m) 1/4-in. (6 mm) twin hose, lighter, safety glasses, tip cleaner,
HBA-40300								40-15-300 CGA 300	H743 torch-mount flashback arrestors, operations manual
HBA-30510	Acetylene	WH200A	SC209	SC12-1	SW205	ST602	30-100-540 CGA 540	30-15-510 CGA 510	Propane/Propylene (LP/MP) outfits include 20-ft. (6.1 m) 1/4-in. (6 mm)
HBA-30300								30-15-300 CGA 300	"T" grade hose and check valves, not flashback arrestors
HBA-30510LP	Propane or Natural Gas	WH200A	SC209	SC40-1	-	ST615	30-100-540 CGA 540	30-50-510 CGA 510	
HBA-30510MP	Propylene	WH200A	SC209	SC60-1	-	ST815			

# **Heavy-Duty Cutting**





### Cuts up to 12 inches (305 mm) with optional tips

Hand cutting torch outfits are built for the toughest jobs. They feature a SC229 nickel-plated cutting torch with a reversible cutting lever and an ease-on oxygen design for smooth starts and restarts. These outfits come with heavy-duty Series 40™ regulators which feature 2.5-inch polished brass gauges for corrosion resistance, shatter-resistant polycarbonate lenses, and stainless steel diaphragms for extended service life in the toughest applications. The HB190 Hard Hat™ gauge/regulator guards are made from rugged steel. Outfits are complete with safety and operations manual.



Torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

Regulators are covered by a three-year limited warranty.



### Cuts up to 12 inches (305 mm) with optional tips

Hand cutting torch outfits are built for the toughest jobs. They feature a SC229 nickel-plated cutting torch with a reversible cutting lever and an ease-on oxygen design for smooth starts and restarts. These outfits come with medium-duty Series 30™ regulators which feature 2-inch corrosion-resistant gauges and shatter-resistant polycarbonate lenses. Outfits are complete with safety and operations manual.



Note: Cutting capacity with tips supplied in HBAS outfit is up to 1-1/4 inches (32 mm). Cutting capacity with tips supplied in HBAS outfit is up to 5/8 inch (16 mm).

Stock Number	Fuel Gas	Cutting Torch	Cutting Tip	Oxygen Regulator	Fuel Gas Regulator	Includes
HBS-H510S	Acetylene	SC229	SC12-2	40-175-540S CGA 540	40-15-510S CGA 510	HB190 Hard Hat gauge/regulator guard, operations manual
HBS-H300S					40-15-300S CGA 300	
HBAS-30510	Acetylene	SC229	SC12-1	30-100-540 CGA 540	30-15-510 CGA 510	20-ft. (6.1 m) 3/16-in. (5 mm) twin hose, lighter, safety glasses, tip cleaner,
HBAS-30300					30-15-300 CGA 300	H743 torch-mount flashback arrestors, operations manual

# **Medium-Duty Cutting, Welding & Heating**



Cuts up to 6 inches (153 mm) with optional tips Welds up to 3/8 inch (9.8 mm) with optional tips

These premium medium-duty outfits feature quality construction throughout and are built to provide reliability and extended service. Outfits feature our proven in-tip gas mixing technology and *include torch-mount flashback arrestors*. This combination greatly improves operator safety and increases torch life. Outfits feature rugged, highly accurate Series 30™ regulators with 2-inch gauges constructed with Sure Seat™ technology and shatterresistant polycarbonate lenses. Outfits are complete with safety and operations manual.

Note: Welding may require additional equipment depending on which outfit is ordered. See chart below.



Torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

Regulators are covered by a three-year limited warranty.









Note: All outfits packaged in outfit box shown above. Cutting capacity with tips supplied in acetylene outfits is up to 5/8 inch (16 mm). Welding capacity is up to 1/8 inch (3 mm).

		Torch	Cutting	Cutting	Welding	Heating	0xygen	Fuel Gas	
Stock Number	Fuel Gas	Handle	Attachment	Tip	Tip	Tip	Regulator	Regulator	Includes
MBA-30510	Acetylene	WH100	MC509	MC12-0	MW205	MT603	30-100-540	30-15-510	20-ft. (6.1 m) 3/16-in. (5 mm) twin hose,
				MC12-1			CGA 540	CGA 510	lighter, safety glasses, tip cleaner,
MBA-30300								30-15-300	H743 torch-mount flashback arrestors,
								CGA 300	operations manual
MBA-30510LP	Propane or	WH100	MC509	MC40-1	-	MT805	30-100-540	30-50-510	Propane/Propylene (LP/MP) outfits
	Natural Gas						CGA 540	CGA 510	include 20-ft. (6.1 m) 1/4-in. (6 mm)
MBA-30510MP	Propylene	WH100	MC509	MC60-1	-	MT805			"T" grade hose and check valves,
									not flashback arrestors

# **Toughcut™ Cutting, Welding & Heating**



# Cuts up to 6 inches (153 mm) with optional tips Welds up to 3/8 inch (9.8 mm) with optional tips

Versatile Toughcut outfits include many features found on more expensive outfits. The Toughcut series is perfect for a multitude of applications such as farm, ranch, hobby, automotive, refrigeration, light fabrication, and repair. Outfits feature rugged, reliable Series  $30^{\text{\tiny M}}$  medium-duty regulators, and are complete with safety and operations manual.

Note: Welding and heating may require additional equipment depending on which outfit is ordered. See chart below.



Torches and regulators are covered by a three-year limited warranty.









MB54A-510 / MB54A-300

Note: All outfits packaged in clam shell shown above. Cutting capacity with tips supplied in acetylene outfits is up to 5/8 inch (16 mm). Welding capacity is up to 1/8 inch (3 mm).

Stock Number	Fuel Gas	Torch Handle	Cutting Attachment	Cutting Tip	Welding Tip	Heating Tip	Oxygen Regulator	Fuel Gas Regulator	Includes
MB55A-510	Acetylene	CW5A	CC509P	MC12-1	MW205	MT603	30-100-540 CGA 540	30-15-510 CGA 510	20-ft. (6.1 m) 3/16-in. (5 mm) twin hose, lighter, safety glasses,
MB55A-300								30-15-300 CGA 300	safety check valves, operations manual
MB54A-510	Acetylene	CW5A	CC509P	MC12-1	MW205	_	30-100-540 CGA 540	30-15-510 CGA 510	
MB54A-300								30-15-300 CGA 300	
MB54A-B9 British fitting	Acetylene	CW5A	CC509P	MC12-1	MW205	_	30-100-B9 G5/8A-14RH	30-15-B9 G5/8A-14LH	
MB54-510L	Acetylene	CW5A	CC509P	MC12-1	MW205	_	30-100-540 CGA 540	30-15-510 CGA 510	Safety glasses, safety check valves, operations manual
MB54-300L								30-15-300 CGA 300	
MB54A-510LP	Propane	CW5A	CC509P	MC40-1	_	_	30-100-540 CGA 540	30-50-510 CGA 510	20-ft. (6.1 m) 1/4-in. "T" grade hose, lighter, safety glasses, safety check
MB54A-510MP	Propylene	CW5A	CC509P	MC60-1	_	_			valves, operations manual

# Tag-A-Long™ and Versa-Torch™



Versa-Torch torch is covered by our lifetime warranty when used with authentic Miller | Smith tips. Tag-A-Long torch and all regulators are covered by a three-year limited warranty.

### TL-550/TL-500 Tag-A-Long Outfits (Acetylene)

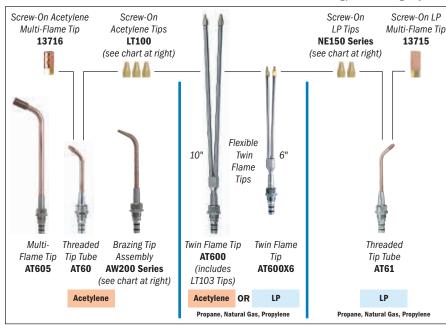
Portable, lightweight Tag-A-Long cutting and welding outfits are ready to go where you need them. Compact design stores easily for road travel or when not in use. Series 30™ regulators provide efficient and dependable control of gases. The high-density polyethylene carrier is extremely durable and includes a hose wrap and covered storage compartment for accessories. Outfit also includes reverse flow check valves for added safety plus safety and operations manual.

### **VT-4T Versa-Torch Outfit**

This is one of the most versatile systems on the market. A broad selection of cutting, welding and specialty attachments (see below) makes the Versa-Torch ideal for manufacturing, maintenance and repair, air conditioning, refrigeration, plumbing, metal fabrication, jewelry, metal sculpture and many other applications. The Versa-Torch outfit features a lightweight nickel-plated torch handle and cutting attachment. The high-density polyethylene carrier is rugged and lightweight. Outfit also includes reverse flow check valves for added safety plus safety and operations manual.

Both the Tag-A-Long and Versa-Torch outfits use "MC" medium-duty cutting tips.

# **Versa-Torch Brazing/Soldering Tip Selection**



Tip Number	Brazing Capacity Copper Pipe Dia. Inches (mm)	Drill Size
AW201	1/4 - 3/8 (6 - 10)	71
AW203	3/8 – 5/8 (10 – 16)	67
AW205	1/2 - 7/8 (12 - 22)	57
AW207	5/8 - 1-3/8 (16 - 35)	54
AW209	3/4 - 2-1/8 (19 - 54)	49
AW210	7/8 – 2-5/8 (22 – 65)	44
LT103	1/2 – 3/4 (12 – 19)	63
LT104	5/8 – 1 (16 – 25)	56
LT106	3/4 - 1-1/2 (19 - 38)	52
NE153	5/8 – 1 (16 – 25)	44
NE154	7/8 - 1-5/8 (22 - 41)	36
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Tip	Output	Consumption (SCFH)			
Number	BTU/Hour	Oxygen	Fuel		
AT605	41,230	32	29		
13716	16,080	17	17		
13715	16,600	38	12		

See page 11 for standard for **AW1A** Versa-Torch torch handle. See page 38 for Kevlar brazing hose **14779-4-10**.

Cutting capacity with tips supplied in outfits is up to 3/8 inch (10 mm). Welding capacity is up to 1/8 inch (3 mm).

Stock		Torch	Cutting	Cutting	Welding/	<b>O</b> xygen	Fuel Gas	
Number	Fuel Gas	Handle	Attachment	Tip	<b>Brazing Tip</b>	Regulator	Regulator	Includes
TL-500	Acetylene	CW5A	CC509P	MC12-0	MW203	30-100-540	30-15-200	12.5-ft. (3.8 m) 3/16-in. (5 mm) twin hose, carrier, lighter,
(No Tanks)						CGA 540	CGA 200	safety glasses, regulator-mount safety check valves,
TL-550								operations manual, "R" 20-cuft. oxygen and "MC" 10-cuft.
								acetylene cylinders (cylinders not included with TL-500)
VT-4T	Acetylene	AW1A	AC309	MC12-00	LT103	30-100-540	30-15-200	12.5-ft. (3.8 m) 3/16-in. (5 mm) twin hose, carrier, lighter,
					LT104	CGA 540	CGA 200	safety glasses, regulator-mount safety check valves,
					LT106			operations manual, "R" 20-cuft. oxygen and "MC" 10-cuft.
								acetylene cylinders, AT60 tip tube, 13716 heating head

# **Combination Torch and Tip Packages**



16206 heavy-duty



16205 medium-duty





**16281** medium-duty

# Combination torch with cutting, welding and heating tips plus flashback arrestors

**Heavy-duty** 

Cuts up to 8 inches (203 mm) with optional tips Welds up to 1/2 inch (13 mm) with optional tips

**Medium-duty** 

Cuts up to 6 inches (153 mm) with optional tips Welds up to 3/8 inch (9.8 mm) with optional tips

These premium, versatile kits come with tips to do most jobs. They include either our classic SC or MC cutting assembly with a heating tip, welding tip, cutting tip and torch-mount flashback arrestors, plus safety and operations manual. Torches are capable of cutting up to 5/8 inch (16 mm) with tip included. Our thick-wall welding and heating tips hold up well to excess heat and are capable of providing years of service. The Graf-Tite® cutting tip seats hold up far longer and require less replacement than traditional metal-to-metal seats. Torches may be used with alternate fuel gases and tips designated for alternate fuel.



Torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

# Combination torch with cutting tips plus flashback arrestors

**Heavy-duty** 

Cuts up to 8 inches (203 mm) with optional tips Welds up to 1/2 inch (13 mm) with optional tips

**Medium-duty** 

Cuts up to 6 inches (153 mm) with optional tips Welds up to 3/8 inch (9.8 mm) with optional tips

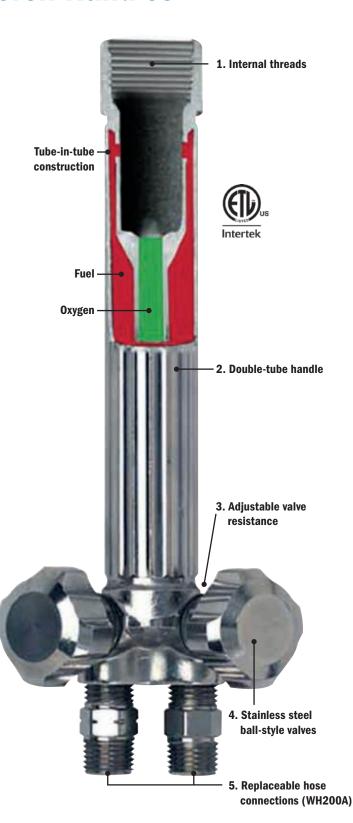
These premium kits come with either our classic SC or MC cutting assembly with two cutting tips and torch-mount flashback arrestors, plus safety and operations manual. Torches in the acetylene outfits are capable of cutting up to 5/8 inch (16 mm) with tips included. The Graf-Tite® cutting tip seats hold up far longer and require less replacement than traditional metal-to-metal seats. Torches may be used with alternate fuel gases and tips designated for alternate fuel.

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16280 heavy-duty

Stock Number	Fuel Gas	Torch Handle	<b>Cutting Attachment</b>	Cutting Tip	Welding Tip	Heating Tip	Includes
<b>16206</b> (Heavy-duty)	Acetylene	WH200A	SC209	SC12-1	SW203	ST602	H743 torch-mount
						(40,000 Avg. BTU/Hr.)	flashback arrestors,
<b>16205</b> (Medium-duty)	Acetylene	WH100	MC509	MC12-1	MW203	MT603	operations manual
						(40,000 Avg. BTU/Hr.)	
<b>16280</b> (Heavy-duty)	Acetylene	WH200A	SC209	SC12-0, SC12-1	_	_	H743 torch-mount
<b>16281</b> (Medium-duty)	Acetylene	WH100	MC509	MC12-0, MC12-1			flashback arrestors,
16280LP (Heavy-duty)	Propane	WH200A	SC209	SC40-0, SC40-1			operations manual
16281LP (Medium-duty)	Propane	WH100	MC509	MC40-0, MC40-1			

# **Torch Handles**



Our torch handles are 100-percent tested and inspected. They are available in three capacities to match any job requirement: heavy-duty, medium-duty and standard-duty.

Torches have silver-brazed joints to provide overall strength and rigidity for safe performance under rugged conditions. Torch handles are individually tested to maintain our reputation for quality and dependable performance.



Torch handles are covered by our lifetime warranty when used with authentic Miller | Smith tips.

CW5A Toughcut™ handle has a 3-year limited warranty.

# **Construction features**

- 1 Internal threads
  Threads are protected from damage if the torch is dropped, eliminating costly torch repair, replacement or downtime.
- Double-tube handle Tube-within-a-tube design provides strength while reducing weight. Internal tube is silver brazed for extra protection, strength and leak resistance.
- 3 Adjustable valve resistance
  Special PTFE packing provides a gas-tight seal while allowing the "drag" to be adjusted to the individual preference.
- 4 Stainless steel ball-style valves
  Corrosion-resistant balls and brass seating surfaces provide gall resistance and positive, chatter-free seating.
- 5 Replaceable hose connections (WH200A)
  Connections are easily replaced if damaged on the heavy-duty WH200A handle.

# **Fuel Gas Chart**

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

# **Heavy-Duty Handle**



### Valve assembly replacement

G729-5A (also for SW1A, SW1B and WH200)

### **WH200A**

Heavy-duty handle allows high gas flow for large cutting tips and heating tips. Heavy-duty handles have replaceable hose connections. "B"-size inlet connections are 9/16"-18. WH200A torch handle is covered by our lifetime warranty when used with authentic Miller | Smith tips.

### **Compatible cutting attachments**

SC209, SC200, SC205, SC509, DG205, DG209 and DG200

### **Compatible tips**

Welding: SW200 and SW400 Series Heating: ST600 and ST800 Series

# **Medium-Duty Handles**



Handle diameter: 15/16 inch (24 mm)

Valve assembly replacement LW17 (also for MW5 and MW5A)

# WH100

### CW5A (Toughcut<sup>™</sup> handle)

Easy handling, high-quality mid-size torch handle. Handles all but the highest volume heating and heaviest welding needs. Features rugged silver-brazed construction, forged brass butt and precision machined brass head. Stainless steel ball-type valves reduce uneven valve wear and provide easy flame adjustment. "B"-size inlet connections are 9/16"-18 right and left hand. WH100 torch handle is covered by our lifetime warranty when used with authentic Miller | Smith tips.

Note: CW5A Toughout handle has a 3-year limited warranty and is not covered by our lifetime warranty.

# **Compatible cutting attachments**

MC505, MC509 and DG109A

### **Compatible tips**

Welding: MW200 and MW400 Series Heating: MT600 and MT800 Series

# **Standard-Duty Handle**



### AW1A

Length: 5.75 inches (146 mm) Weight: 0.37 lb. (0.17 kg)

Handle diameter: 11/16 inch (17 mm)

### Valve assembly replacement

AW11A

### **AW1A Airline™**

Specially designed to handle standard-duty welding, brazing, cutting and fabricating. Light weight and compact size provide easy handling, even in confined areas. Needle valves located at front end for easy one-hand flame adjustment. "A"-size inlet connections are 3/8"-24 right and left hand. AW1A torch handle is covered by our lifetime warranty when used with authentic Miller | Smith tips.

# Compatible cutting attachment

AC309

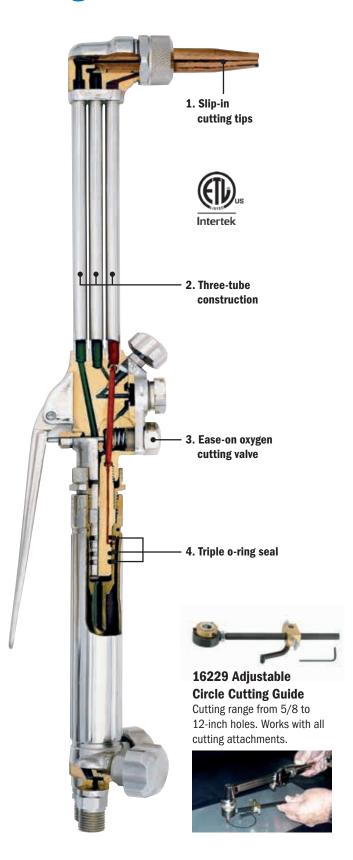
### Compatible tips

Welding: AW200 and AW400 Series

Heating: AT600 Series

Twin Flame Tips: AT600 and AT600X6

# **Cutting Attachments**



Our premium-quality cutting attachments are 100-percent tested and inspected. They are available in three capacities to match any job requirement: heavy-duty, medium-duty and standard-duty.

Cutting attachments have silver-brazed joints to provide overall strength and rigidity for safe performance under rugged conditions. Attachments are individually tested to maintain our reputation for quality and dependable performance.



Cutting attachments are covered by our lifetime warranty when used with authentic Miller | Smith tips.

CC509P Toughcut™ attachment has a 3-year limited warranty.

# **Construction features**

1 Slip-in cutting tips

Save time when changing tips — no wrench needed.

Resilient Graf-Tite® seat material protects tip from nicking and maintains positive seating. Requires less replacement than metal-to-metal seat designs.

2 Three-tube construction

Gases are kept separated, eliminating mixing tube burnout. Our thick-wall, high-capacity stainless steel tubes provide high gas flow and superior strength.

3 Ease-on oxygen cutting valve
Allows smooth piercing and keyhole free starts and restarts.

4 Triple o-ring seal

Provides positive gas seating, and allows rotation during operation eliminating hose resistance during cutting.

# **Cutting Tip Compatibility**

Attachment Number	Tip Compatibility
SC205 and	Acetylene: SC12-00 thru SC12-5, SC56-1 thru SC56-5
SC209	Propane and Propane-Based: SC40-0 thru SC40-4,
	SC46-2 thru SC46-5, SC50-00 thru SC50-5
	Propylene: SC60-0 thru SC60-5, SC36-1 thru SC36-4
	SC Series Special-Purpose Tips (except SC112 and SC83)
MC505,	Acetylene: MC12-00 thru MC12-5 (AC309: thru MC12-4)
MC509, and	Propane and Propane-Based: MC40-00 thru MC40-4
CC509P*	Propylene: MC60-0 thru MC60-4
AC309	MC Series Special-Purpose Tips

# **Heavy-Duty Attachments**



### SC205 and SC209

Length: 12.5 inches (318 mm) Weight: 1.83 lb. (0.83 kg)

Head angle: 75 degrees (SC205), 90 degrees (SC209)

### Repair kit

SC101 (also for DG200 Series)

### SC200 Series

Cuts up to 8-inch (203 mm) thick steel. Solid silver-brazed construction. Features o-ring seating and easy-to-change slip-in Graf-Tite® cutting tips with cost-saving soft seats. Use with any industrial fuel gases — acetylene, propane, natural gas, propylene, hydrogen, and many others. Several models of standard and special-purpose tips are available for use in SC200 Series cutting attachments. SC200 series torch handles are covered by our lifetime warranty when used with authentic Miller | Smith tips.

### **Compatible handles**

WH200A, WH200, SW1B, SW1A and SW1

### **Compatible cutting tips**

See SC Series tips on pages 28-30

# **Medium-Duty Attachments**



### MC505, MC509 and CC509P

Length: 11.25 inches (286 mm)

Weight: 1.1 lb. (0.5 kg)

Head angle: 75 degrees (MC505), 90 degrees (MC509)

# Repair kit

MC101 (also for DG100 Series)

# MC500 Series CC509P (Toughcut™ attachment)

Popular medium-duty cutting attachment easily cuts up to 6-inch (153 mm) steel. Solidly constructed to last a lifetime — silverbrazed joints, stainless steel tubes, brass forged butt and head. This torch has the same quality features and construction as the larger and heavier Miller | Smith cutting attachments. Use with any industrial fuel gases — acetylene, propane, butane, natural gas, propylene, hydrogen and many others. MC500 series torch handles are covered by our lifetime warranty when used with authentic Miller | Smith tips.

Note: CC509P Toughcut attachment has a 3-year limited warranty and is not covered by our lifetime warranty.

### **Compatible handles**

WH100, CW5A, MW5A and MW5

# **Compatible cutting tips**

See MC Series tips on page 31

# Standard-Duty Attachment



### AC309

Length: 8.5 inches (216 mm) Weight: 1 lb. (0.44 kg) Head angle: 90 degrees

### AC309 Airline™

Small, lightweight cutting attachment with cutting capacity up to 3-inch thick (76 mm) steel. This torch has the same quality construction and features built into each Miller | Smith cutting attachment. AC309 torch handle is covered by our lifetime warranty when used with authentic Miller | Smith tips.

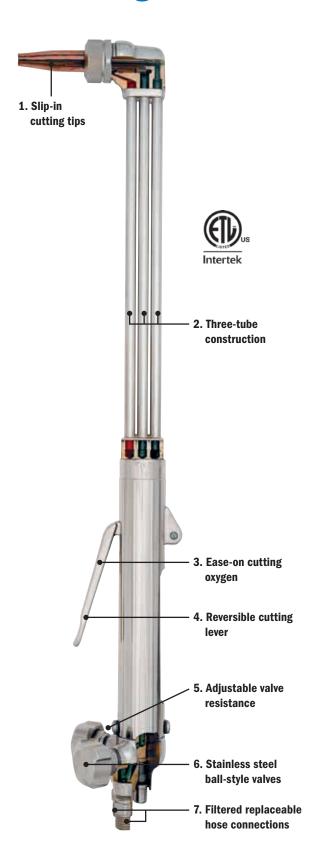
### **Compatible handles**

AW1A and AW10A

# **Compatible cutting tips**

See MC Series tips on page 31

# **Hand Cutting Torches**



# Our hand cutting torches are heavy-duty capacity, and 100-percent tested and inspected.

Cutting torches feature solid construction and ease of operation for hundreds of jobs in construction, fabricating, shipyards, salvage and other related industries. Torches have silver-brazed joints throughout, heads and butts are machined from dense forgings, and stainless steel ball-style control valves provide positive gas shut-off. Torches are individually tested to maintain our reputation for quality and dependable performance.



Cutting torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

# **Construction features**

1 Slip-in cutting tips

Save time when changing tips — no wrench needed.

Resilient Graf-Tite® seat material protects tip from nicking and maintains positive seating. Requires less replacement than metal-to-metal seat designs.

2 Three-tube construction

Gases are kept separated, eliminating mixing tube burnout. Our thick-wall, high-capacity stainless steel tubes provide high gas flow and superior strength.

3 Ease-on cutting oxygen

Exceptionally smooth application of cutting oxygen reduces keyholing and slag blowback without sacrificing extremely high cutting capacity.

4 Reversible cutting lever

Top- or bottom-mount lever for ease of use.

5 Adjustable valve resistance
Special PTFE packing provides a gas-tight seal while allowing the "drag" to be adjusted to the individual preference.

6 Stainless steel ball-style valves

Provides smooth adjustment and positive seating.

7 Filtered replaceable hose connections

Connections are easily replaced if damaged. Filters keep debris from entering the cutting mechanism and high-pressure seat.

# **Heavy-Duty Torches**





### SC175 and SC179

Length: 17 inches (432 mm) Weight: 2.6 lb. (1.18 kg) Head angle: 75 degrees (SC175) 90 degrees (SC179)

### SC225, SC225S, SC229, SC229S and SC220

Length: 20.5 inches (521 mm) except SC220 21 inches (533 mm) for SC220

Weight: 2.7 lb. (1.22 kg)

Head angle: 75 degrees (SC225 and SC225S) 90 degrees (SC229 and SC229S) 180 degrees (SC220)

### SC365, SC369 and SC360

Length: 36 inches (914 mm) Weight: 3.3 lb. (1.5 kg) Head angle: 75 degrees (SC365) 90 degrees (SC369)

90 degrees (SC369) 180 degrees (SC360)

### Repair kit

SC100 (also for DG100, DG200 and DG300 Series)

### Valve assembly replacement

LW14B-1 (also for SW1 and DG200 Series)

### **SC Series**

Cuts up to 12-inch (305 mm) thick steel. Features sintered metal inlet filters, o-ring seating and easy-to-change slip-in Graf-Tite® cutting tips with cost-saving soft seats. Super-tough, thick-wall brass forged heads reduce warping and distortion. SC225S and SC229S have even thicker-walled heads for more severe service and applications. Use with any industrial fuel gases — acetylene, propane, natural gas, propylene, hydrogen, and many others. Several models of standard and special purpose tips are available for use in SC Series cutting torches. Cutting torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

### **Cutting Tip Compatibility**

Torch	
Number	Tip Compatibility (see pages 28–30)
All SC	Acetylene: SC12-00 thru SC12-6, SC56-1 thru SC56-5
Series	Propane and Propane-Based: SC40-0 thru SC40-4,
Torches	SC46-2 thru SC46-6, SC50-00 thru SC50-6
	Propylene: SC60-0 thru SC60-6, SC36-1 thru SC36-6
	SC Series Special-Purpose Tips

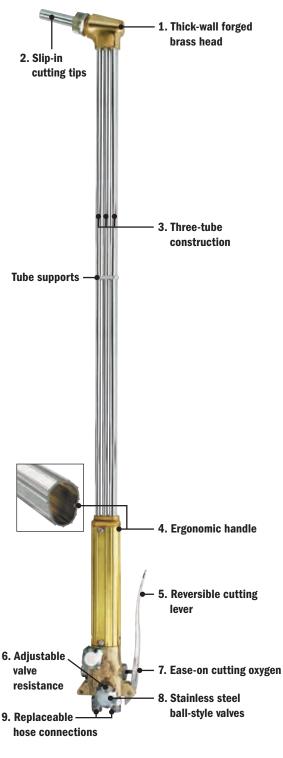


# 16229 Adjustable Circle Cutting Guide

Cutting range from 5/8 to 12-inch holes. Works with all hand cutting torches.



# **Gas Axe™ Hand Cutting Torches**







# **CAUTION: Flashback arrestors**

Gas Axe torches must be used in conjunction with high-flow flashback arrestors.

# Gas Axe™ extra-heavy-duty torches are 100-percent tested and inspected, and are ideal for scrap and demolition cutting.

Safety engineered; designed for severe applications. Excellent for use with propane or natural gas. Works with all gases including propane/propylene-based fuels, natural gas and acetylene. Extra-high-capacity cuts up to 24 inches (610 mm) with acetylene. Cuts up to 20 inches (508 mm) with propane.

# **Construction features**

- Thick-wall forged brass head Super-tough, thick-walled head reduces heat warping and damage.
- Slip-in cutting tips Save time when changing tips — no wrench needed. Resilient Graf-Tite® seat
- material protects tip from nicking and maintains positive seating. Requires less replacement than metal-to-metal seat designs. Three-tube construction
- high-capacity stainless steel tubes provide high gas flow and superior strength. **Ergonomic handle** Thick, durable brass raised-rib handle for comfort and positive grip. Adds comfort and reduces operator fatigue.

Gases are kept separated, eliminating mixing tube burnout. Our thick-wall,

- **Reversible cutting lever** Top- or bottom-mount lever for ease of use.
- Adjustable valve resistance Special PTFE packing provides a gas-tight seal while allowing the "drag" to be adjusted to the individual preference.
- **Ease-on cutting oxygen** Exceptionally smooth application of cutting oxygen reduces keyholing and slag blowback without sacrificing extremely high cutting capacity.
- Stainless steel ball-style valves For easy shut-off, smooth adjustment and positive seating.
- Replaceable hose connections Connections are easily replaced if damaged.

### **Cutting Tip Compatibility**

	Head			
Stock	Angle in	Length		
Number	Degrees	Inches (mm)		
SC929	90	21 (533)		
SC935	75	36 (914)		
SC939	90			
SC930	180			
SC945	75	48 (1219)		
SC949	90			
SC940	180			
SC965	75	72 (1829)		
SC969	90			

Torch Repair Kit 15772 Valve Assembly Replacement LW14B-1

180

SC960

Torch Number	Tip Compatibility (see pages 28–30)
All Gas Axe (SC900	<b>Acetylene:</b> SC12-00 thru SC12-6, SC56-1 thru SC56-9
Series)	Propane and Propane-Based:
Torches	SC40-0 thru SC40-4, SC46-2 thru SC46-6,
	SC50-00 thru SC50-9  Propylene: SC60-0 thru SC60-6,
	SC36-1 thru SC36-6
	Special-Purpose Tips: SC2-2, SC2-4

### **Recommended High-Flow Regulators**

Torch Number	Recommended Regulator
All Gas Axe	<b>Oxygen:</b> 40-175-540 or 40-275-540
(SC900	(Cylinder), 46-175 (Manifold)
Series)	LP Gas: 40-50-510 (Cylinder),
Torches	46-50 (Manifold)

# **Machine Cutting Torches**





two-hose torch

two-hose torch



SC781A three-hose torch

Our heavy-duty machine torches provide superior performance. Ease-on cutting lever reduces blowback in piercing and keyholing in restarts, extending tip life and providing high-quality precision cuts. Torch barrels easily adjust to four positions at 90-degree increments. Barrel diameters are 1-3/8 inches (9.5 mm) to fit most machines. Rack pitch is 32-10 teeth per inch. Stainless steel ball-type valves provide fine adjustment and positive shut-off.



Machine cutting torches are covered by our lifetime warranty when used with authentic Miller | Smith tips.

SC770 and SC772A two-hose machine cutting torches are industrial grade and capable of cutting up to 12 inches (305 mm) with acetylene, LP or natural gas. SC781A three-hose machine cutting torch is high capacity and capable of cutting up to 24 inches (610 mm) with acetylene and up to 20 inches (508 mm) with LP or natural gas.

	Stock Number	Stock Number (32 Pitch Rack only)	Overall Torch Length Inches (mm) 8 (203)	
Two-Hose Models	SC770	4769-1 Rack*		
	SC772A	15599 (Includes mounting screws)	13.75 (349)	
Three-Hose Model	SC781A	SC781-1 (Includes mounting screws)	15.5 (394)	

<sup>\*</sup>Requires stock number **4770** — two mounting screws.

Note: Overall length is measured from rear of hose connections to front of tip nut.

# **Cutting Tip Compatibility**

Torch Number	Tip Compatibility (see pages 28–30)
Two-Hose Models	Acetylene: SC12-00 thru SC12-6, SC56-1 thru SC56-9
SC770 and SC772A	Propane and Propane-Based: SC40-0 thru SC40-4, SC46-2 thru SC46-6,
	SC50-00 thru SC50-9
	Propylene: SC60-0 thru SC60-6, SC36-1 thru SC36-6

Torch Number	Tip Compatibility (see pages 28–30)			
Three-Hose Model	Acetylene: SC12 Series, SC56 Series			
SC781A Propane and Propane-Based: SC40-0 Series, SC46 Series, SC50 Se				
	Propylene: SC60-0 Series, SC36 Series			



### **SC290 Bevel Cutting Attachment**

Make bevel cuts without moving the angle of the torch. Bevel attachment makes bevel cuts up to 90 degrees either side of vertical. Compatible with our two- and three-hose machine torches.



Note: Cutting tip not included.

# Series 40 regulator shown. 1. Resin 5. Nickel-plated bonnet insert bonnet 2. Stainless steel diaphragm 6. Shatter-resistant Note: Series 30 has gauge lenses neoprene composite diaphragm. 3. Color-coded labels 4. External 7. Dual filters relief valve including **Sure Seat Sure-Seat filtered**

Flow data may be obtained from MillerWelds.com/flowdata

high-pressure seat assembly

# Stock Number Definition (Example: 40-15-510)

- 40 Series
- 15 Maximum outlet pressure
- **510** Cylinder CGA connection

# **Construction features**

1 Resin bonnet insert

Allows smooth, easy adjustment even at high-pressure levels.

2 Stainless steel diaphragm

Resists corrosion, leaking and freeze-up if used with liquid (cryogenic) gases for extended service life.

Note: Series 30 has neoprene composite diaphragm.

3 Color-coded labels

Supply performance capabilities, easy gas service identification and technical information.

4 External relief valve

Protects regulator from damage due to inadvertent high-pressure surge. Relief valve will release excessive pressure and automatically reset.

5 Nickel-plated bonnet

Along with brass body protect against corrosion.

6 Shatter-resistant gauge lenses

 $2.5\mbox{-inch corrosion-resistant polished brass gauges with shatter-resistant polycarbonate lenses.}$ 

Note: Series 30 has 2-inch painted steel gauges.

**7** Dual filters including Sure Seat™

Protect high-pressure seat from debris for reliable operation and long service life.

# **Heavy-Duty Single-Stage**



# Series 40™





### Brass construction for dependable service in corrosive atmospheres.

Series 40 single-stage regulators comprise a complete line of versatile regulators for welding, cutting, heating and other industrial applications. Heavy-duty construction and simplified design provide high gas flow and longer trouble-free operation. Stainless steel diaphragm allows use with liquid gases.

		Delivery	Gauges (2.5 inch/64 mm)		Inlet	Outlet	Max Inlet
Stock Number	Gas	Pressure	Inlet	Outlet	Connection	Connection	Pressure
40-175-540	Oxygen	0-175 PSIG	4000 PSIG	200 PSIG	CGA 540	9/16"-18 RH	3000 PSIG
40-175-540\$*		0-12 Bar	276 Bar	14 Bar		"B"	207 Bar
40-275-540		0-275 PSIG		400 PSIG			
		0-19 Bar		28 Bar			
40-15-300	Acetylene	0-15 PSIG	400 PSIG	30 PSIG	CGA 300	9/16"-18 LH	400 PSIG
40-15-300S*		0-1 Bar	28 Bar	2 Bar		"B"	28 Bar
40-15-510					CGA 510		
40-15-510S*							
40-50-510	LP Gas	0-50 PSIG	400 PSIG	60 PSIG	CGA 510	9/16"-18 LH	400 PSIG
	(Propane,	0-3 Bar	28 Bar	4 Bar		"B"	28 Bar
	Propylene or						
	Natural Gas)						
40-275-580	Nitrogen	0-275 PSIG	4000 PSIG	400 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
		0-19 Bar	276 Bar	28 Bar		Internal	207 Bar

<sup>\*</sup>Includes HB190 Hard Hat gauge guard.

# **Medium-Duty Single-Stage**



# Series 30™





Sure-Seat™ filtered high-pressure seat assembly.



Series 30 regulator shown with H195 Hard Hat™ gauge/regulator guard.

# Rugged medium-duty industrial-grade regulators.

Series 30 single-stage regulators are extremely durable and contain our exclusive Sure Seat™ filtered seat technology for extended seat and regulator life. Filtered seats prevent contamination from entering the seating area, reducing repair costs and downtime. These highly accurate regulators are manufactured with a rugged forged body, corrosion-resistant bright nickel-plated bonnet and a highly durable neoprene composite diaphragm.

Stock		Delivery	Gauges (2 i	nch/51 mm)	Inlet	Outlet	Max Inlet
Number	Gas	Pressure	Inlet	Outlet	Connection	Connection	Pressure
30-100-540	Oxygen	0-100 PSIG	4000 PSIG	150 PSIG	CGA 540	9/16"-18 RH	3000 PSIG
		0-7 Bar	276 Bar	10 Bar		"B"	207 Bar
30-20-540		0-20 PSIG		30 PSIG			
		0-1 Bar		2 Bar			
30-100-9		0-100 PSIG		150 PSIG	G5/8"A-14 RH		
British fitting		0-7 Bar		10 Bar	British fitting		
30-15-510	Acetylene	0-15 PSIG	400 PSIG	30 PSIG	CGA 510	9/16"-18 LH	400 PSIG
30-15-300		0-1 Bar	28 Bar	2 Bar	CGA 300	"B"	28 Bar
30-15-520					CGA 520		
30-15-200					CGA 200		
30-15-9					G5/8"A-14 RH		
British fitting					British fitting		
30-50-510	LP Gas	0-50 PSIG	400 PSIG	60 PSIG	CGA 510	9/16"-18 LH	400 PSIG
30-50-9	(Propane,	0-3 Bar	28 Bar	4 Bar	G5/8"A-14 RH	"B"	28 Bar
British fitting	Propylene				British fitting		
	or Natural						
	Gas)						
30-150-580	Argon/	0-150 PSIG	4000 PSIG	200 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
	Nitrogen	0-10 Bar	276 Bar	14 Bar		Internal	207 Bar
30-100-320	CO <sub>2</sub>	0-100 PSIG		150 PSIG	CGA 320		
30-100-350	Hydrogen/	0-7 Bar		10 Bar	CGA 350	9/16"-18 LH	
	Methane					"B"	

# Series 30™ Single-Stage Regulator Twin Packs



 $\operatorname{HTP2}-\operatorname{CGA}$  510 inlet connection for acetylene and LP cylinders

HTP5 — CGA 300 acetylene inlet connection

# **Feature benefits**

- 1. Solid brass industrial construction
- 2. Durable PTFE high-pressure seat
- 3. Convenient and economical
- 4. 100-percent tested and inspected

Stock Number	Gas	Regulator	Specs
HTP2	Oxygen	30-100-540	Delivery Pressure: 0-100 PSIG Inlet Connection: CGA 540
	LP Of Acetylene	30-15-510	Delivery Pressure: 0-15 PSIG Inlet Connection: CGA 510
НТР5	Oxygen	30-100-540	Delivery Pressure: 0-100 PSIG Inlet Connection: CGA 540
	Acetylene	30-15-300	Delivery Pressure: 0-15 PSIG Inlet Connection: CGA 300

# **Two-Stage**

# TRUEBLUE 31R.WARRANTY

# Series 30™



Series 30 two-stage regulators drop cylinder pressure to working pressure in two stages for consistent and accurate outlet pressure and flow regardless of inlet pressure. Recommended where outlet pressure and flow must be maintained without variation.

Stock		Delivery	Gauges (2 in	Gauges (2 inch/51 mm)		Outlet	Max Inlet
Number	Gas	Pressure	Inlet	Outlet	Connection	Connection	Pressure
35-125-540	Oxygen	0-125 PSIG	4000 PSIG	150 PSIG	CGA 540	9/16"-18 RH	3000 PSIG
		0-9 Bar	276 Bar	10 Bar		"B"	207 Bar
35-15-510	Acetylene	0-15 PSIG	400 PSIG	30 PSIG	CGA 510	9/16"-18 LH	400 PSIG
		0-1 Bar	28 Bar	2 Bar		"B"	28 Bar
35-50-580	Inert	0-50 PSIG	4000 PSIG	60 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
		0-3 Bar	276 Bar	4 Bar		Internal	207 Bar

# **Single-Stage Station**



# Series 46<sup>™</sup> (Heavy-Duty) and Series 36<sup>™</sup> (Medium-Duty)



Series 46 and Series 36 brass line regulators are rugged, accurate and corrosion-resistant with shatter-resistant polycarbonate gauge lenses. The Series 46 regulators feature a stainless steel diaphragm and 2.5-inch (64 mm) gauges while the Series 36 has a neoprene composite diaphragm and 2-inch (51 mm) gauges.

	Stock Number	Gas	Delivery Pressure	Gauges Diameter Inches (mm)	Inlet Connection	Outlet Connection	UL Listed Max Inlet Pressure
ì	46-175	Oxygen	0-175 PSIG	2.5 (64)	CGA024	9/16"-18 RH	200 PSIG / 14 Bar
	36-150		0-12 Bar	2 (51)		"B"	500 PSIG / 35 Bar
	46-15	Acetylene	0-15 PSIG	2.5 (64)	CGA025	9/16"-18 LH	100 PSIG / 7 Bar
	36-15		0-1 Bar	2 (51)		"B"	200 PSIG / 14 Bar
	46-50	LP Gas	0-50 PSIG	2.5 (64)	CGA025	9/16"-18 LH	100 PSIG / 7 Bar
	36-50		0-3 Bar	2 (51)		"B"	500 PSIG / 35 Bar

Oxygen "C" size inlet connection CGA024 (7/8"-14 RH). Fits station valve NCG No. M960R, Rego. No. 7160. Fuel gases "C" size inlet connection CGA025 (7/8"-14 LH). Fits station valve NCG No. M961R, Rego. No. 7161. Note: Body inlet is 1/4-inch (6 mm) NPT.

# Three-Stage Nitrogen Low-Pressure Blanketing This preset regulator is specially designed to deliver a high



**16391** without pressure switch

**16347-3** with pressure switch

This preset regulator is specially designed to deliver a highly accurate and consistent low-pressure supply of nitrogen to oil-filled power transformers. Available with or without electronic pressure switch. The regulator will deliver and maintain 0.50 PSIG in the head space of oil-filled transformers. A built-in self-relieving valve set at 8 PSIG protects the system from over-pressurization due to temperature variation. Both models come with rapid-fill bypass pressure valve allowing rapid filling of the transformer with 6 PSIG of pressure.

	Preset Outlet Pressure			Bypass			
Stock	1st 2nd Stage Stage		2nd 3rd Stage		Inlet	Outlet	Max Inlet
Number			(delivery pressure)	Purge	Connection	Connection	Pressure
16391 (without	150	8 PSIG	0.4-0.6 PSIG	6 PSIG	CGA580	1/2" FNPT	3000 PSIG
pressure switch)	PSIG	into 3rd	into outlet				
16347-3	into 2nd	stage					
(with pressure	stage						
switch)							

Note: Operation temperature: -40° to +180° Fahrenheit.

Operation voltage (model 16347-3): 5 amps at 12/24 volts DC or 125 volts AC. 3 amps at 250 volts. Pressure switch setting: Adjustable from 70–300 PSIG (ships preset at 250 PSIG), 3/32-inch Allen head screw switch. Switch wiring: Normally open or normally closed (DPDT), three 18-inch flying leads.

# **HVAC/Refrigeration Purge/Leak Test**





Our single-stage nitrogen regulator is specially designed to meet the specifications of HVAC refrigerant purging applications. This regulator is used with nitrogen to test HVAC systems to locate leaks and to purge an area for installation and repair. Its compact size is suitable for use where space is limited.

- Economical and accurate
- Solid brass body provides durability
- Large durable nylon knob for easy pressure adjustment
- Highly accurate 2-inch (51 mm) gauges with shatter-resistant lenses
- Special option: Heavy-duty charging hose has 7/16"-20 RH connections with core (see page 38)

Stock		Delivery	Gauges (2 inch/51 mm) Inlet Outlet (		Gauges (2 inch/51 mm)		Inlet	Outlet	Max Inlet
Number	Gas	Pressure			Connection	Connection	Pressure		
<b>30-450-580</b> Nitrogen		0-450 PSIG	4000 PSIG	600 PSIG	CGA 580	7/16"-20 External	3000 PSIG		
		0-31 Bar	276 Bar	41 Bar		Flair Fitting	207 Bar		

# **Heavy-Duty High-Pressure**



Due to specific configurations, we cannot accept returns of 820 Series regulators.

# 820 Series



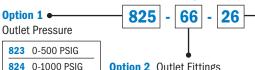
820 Series high-pressure regulators are for use on cylinders with a wide variety of non-corrosive inert gases. Piston-sensor design gives structural reliability in high-pressure use. Low-torque-control adjusting screw permits easy adjustment of pressures in closed or dead end systems.

Model	Delivery	Inlet Gauge (2.5	Gauge (2.5 inch/64 mm) Outlet Gauge		5 inch/64 mm)	Max Inlet
Series	Pressure	Range	Graduations	Range	Graduations	Pressure
823	0-500 PSIG	0-10,000 PSIG	200 PSIG	0-1000 PSIG	100 PSIG	6000 PSIG
824	0-1000 PSIG			0-4000 PSIG		
825	0-2000 PSIG			0-4000 PSIG		
826	0-4000 PSIG			0-6000 PSIG		
827	0-6000 PSIG			0-6000 PSIG		

### **Typical applications**

- High-pressure testing
- Purging and charging
- Calibration kits
- Airline charging carts
- Chemical plants
- Manufacturing processes
- Research and development
- Laboratories

# **Model Configuration**



**Option 2** Outlet Fittings

825	0-2000 PSIG	00	None
826	0-4000 PSIG	66	Stainless steel needle valve
827	0-6000 PSIG		with 1/4" (6 mm) MPT

 Option 3 CGA Inlet Fittings (Additional inlet fittings available. SS=stainless steel.)

00	None		
08	CGA 540 (Oxygen)	3000	Max CGA
09	CGA 580 (Inert)	3000	Inlet
26	CGA SS 347	5500	Pressure
27	CGA SS 677	7500	(PSIG)
28	CGA SS 680	5500	(1 010)

# **Rear-Entry Liquid Cylinder**

# 250 Series



### **Features**

- Rear-entry connection provides clearance of liquid cylinder ring allowing easier gauge reading
- Easy-to-read single-scale 2.5-inch gauge

- Ideal for non-corrosive high-purity applications
- Nickel-plated brass body for corrosion resistance
- Large 1-7/8-inch SST diaphragm for precise control of pressure
- Easy-to-adjust hand knob

Note: Use Series 40<sup>™</sup> heavy-duty regulators constructed with a stainless steel diaphragm for high-volume or liquid (cryogenic) cylinder applications.

Due to specific configurations, we cannot accept returns of 250 Series regulators.

Model	Delivery	Outlet Gauge (2.	Max Inlet	
Series Pressure		Range	Graduations	Pressure
252	0-100 PSIG	0-200 PSIG	5 PSIG	3500 PSIG
254	0-200 PSIG	0-400 PSIG	10 PSIG	
255	0-350 PSIG	0-400 PSIG	10 PSIG	
256	0-500 PSIG	0-1000 PSIG	20 PSIG	

### **Model Configuration**

08 Option 1 **Outlet Pressure Option 2** Outlet Fittings

252	0-100 PSIG
254	0-200 PSIG
255	0-350 PSIG
256	0-500 PSIG

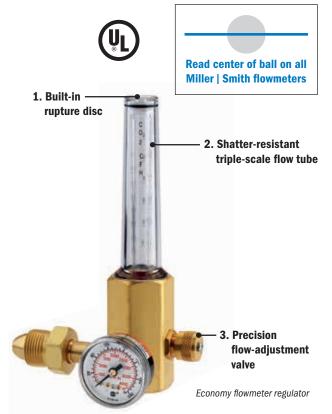
00	1/4" (6 mm) FNPT
20	Chrome needle valve with
	1/4" (6 mm) male NPT
82	9/16"-18 RH "B"

**CGA Inlet Fittings** 00 1/4" (6 mm) FNPT 02 CGA 320 **08** CGA 540 **09** CGA 580

Option 3

# **Flowmeter Regulators**





Flow data may be obtained from MillerWelds.com/flowdata

# **Stock Number Definition** (Example: 32-80-580)

32 Series

80 Maximum outlet pressure

580 Cylinder CGA connection

# Our flowmeter regulators are 100-percent tested and inspected, and provide unmatched gas control and accuracy.

Flowmeter regulators are available in multiple scales for use with all major shielding gases to cover most MIG or TIG welding applications. Our premium flowmeter regulators feature an exclusive self-centering ball guide which provides accurate readings even if tipped. This ensures optimum weld quality and gas savings. Others use a non-self-centering flow tube ball that tends to float off center causing actual gas flow to be over two times greater than indicated.

> Miller | Smith self-centering ball guide





**Others** 



Regulators are covered by our 3-year limited warranty.

# **Premium flowmeter regulator construction features**

**Protective housing** 

Flow tubes are protected from accidental damage while offering unobstructed view of flow reading.

**Extra-long flow tube** 

Expanded scales are easy to read and accurate within five percent of full reading. Can be attached to regulators or pipeline installations.

**Shatter-resistant multi-scale flow tube** 

Tubes are made of shatter-resistant polycarbonate resin and feature multiple scales.

Sure Seat™ filtered high-pressure seat assembly

Protects high-pressure seat from debris for reliable operation and long service life.

**Auto-reset pressure-relief valve** 

Protects regulator from damage due to inadvertent highpressure surge. Relief valve will release excessive pressure and automatically reset.

### Selec-O-Gas™ flowmeter regulator (option)

Four separate, easy-to-read scales for argon and argon/CO<sub>2</sub> mix, CO<sub>2</sub>, helium and a general scale for other non-corrosive gases. Rotate outer tube to desired scale.

# **Economy flowmeter regulator construction features**

**Shatter-resistant triple-scale flow tube** 

Tubes are made of shatter-resistant polycarbonate resin and can be rotated to position desired scale for easy reading. Scaled for CO<sub>2</sub>, argon and argon/CO<sub>2</sub> mix, and helium.

**Built-in rupture disc** 

Reduces possibility of flow tube damage due to inadvertent highpressure surge. Must be replaced if ruptured — not auto-resetting.

**Precision flow-adjustment valve** 

Allows easy adjustment to desired setting.

# **Premium Flowmeter Regulators**





Rugged medium-duty industrial-grade regulators provide efficient and accurate regulation, and include our exclusive self-centering flowball. They are constructed with our exclusive Sure Seat™ filtered seat technology for extended seat and regulator life. Filtered seats prevent contamination from entering the seating area, reducing repair costs and downtime. Filtered seats also reduce CO₂ freeze-up. Provides high argon flow capacity up to 80 SCFH.

Stock				Preset Delivery	Inlet	Outlet	Max Inlet
Number*	Flowmeter	Gas	Flow Range	Pressure	Connection	Connection	Pressure
32-80-580	H1105	Argon, CO <sub>2</sub>	10-80 SCFH	80 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
32-80-320		CO <sub>2</sub>	5-38 LPM	6 Bar	CGA 320	Internal	207 Bar
32-30-580	H1240	Argon, CO <sub>2</sub>	10-60 SCFH	30 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
Selec-0-Gas**			5-28 LPM	2 Bar		Internal	207 Bar
		Helium	20-190 SCFH				
			10-90 LPM				
		General/	0-10 Range				
		Any Gas	Scale				
35-30-320	H1240	CO <sub>2</sub>	10-80 SCFH	30 PSIG	CGA 320	5/8"-18 RH	3000 PSIG
			5-38 LPM	2 Bar		Internal	207 Bar

<sup>\*</sup>Add "-6" to end of part number to include 6-ft. x 1/4-inch inert gas hose.

# **Economy Flowmeter Regulators** (Single-Stage)



# **H2051 Series**

**35-30-320** two-stage high-flow carbon dioxide

(reduces high-flow

CO<sub>2</sub> freeze-up)



Exceptional value and compact design. Provides precise shielding gas regulation for MIG and TIG welding applications and more. Shatter-resistant polycarbonate flow tube is repositionable for easy reading and features triple-scale for argon, helium and  $argon/CO_2$ . It has a packless o-ring flow tube seal which reduces maintenance and a built-in rupture disc reduces possibility of flow tube damage due to high-pressure inlet surge. Precision flow-adjustment valve allows easy adjustment to desired setting.

Stock	Gas		Preset Delivery	Inlet	Outlet	Max Inlet
Number	(3 Scales)	Flow Range	Pressure	Connection	Connection	Pressure
H2051B-580	CO <sub>2</sub>	0-50 SCFH	50 PSIG	CGA 580	5/8"-18 RH	3000 PSIG
H2051B-580H*		0-24 LPM	3 Bar	G5/8"A-14 RH	Internal	207 Bar
H2051B-B9	Helium	0-160 SCFH		British fitting on		
British fitting		0-78 LPM		H2051A-B9		
	Argon,	0-60 SCFH				
	Argon/CO <sub>2</sub> Mix	0-28 LPM				

<sup>\*</sup> Includes 6-ft. (1.8 m) hose with inert hose fittings. Note: When using  $argon/CO_2$  mix, read argon scale.

# **Dual Flowmeter Regulator** (Single-Stage)



# Series 30™



33A-50-580

Dual flowmeter regulator has a back-pressure compensated flow tube with shatter-resistant polycarbonate cover. It is repositionable for easy reading and features triple scale for argon, helium and argon/CO<sub>2</sub>. Features include sensitive needle valve for fine adjustment and a 2-inch (51 mm) gauge.

Stock Number	Flowmeter	Gas (3 Scales)	Flow Range	Preset Delivery Pressure	Inlet Connection	Outlet Connection	Max Inlet Pressure
33A-50-580	H2230A	CO <sub>2</sub>	0-50 SCFH 0-24 LPM	50 PSIG 3 Bar	CGA 580	5/8"-18 RH Internal	3000 PSIG 207 Bar
		Helium	0-160 SCFH 0-78 LPM				
		Argon, Argon/CO <sub>2</sub> Mix	0-60 SCFH 0-28 LPM				

Note: When using argon/CO<sub>2</sub> mix, read argon scale.

<sup>\*\*</sup>Selec-O-Gas™ regulator does the job of more than three common flowmeters. Features four separate scales: argon, CO<sub>2</sub>, helium and general gas which allows the use of several different non-corrosive gases.

Note: When using argon/CO<sub>2</sub> mix, read argon scale.

# **Flowmeters**

# 31R.WARRANTY

# **Premium Heavy-Duty**



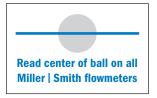
**Standard-Duty** 



Premium flowmeter models are designed to operate at inlet pressures of 80 PSIG (model H1105) and 30 PSIG (Selec-O-Gas model H1240). They can be attached to regulators or pipeline installations. Features include an extra-long flow tube made of shatter-resistant polycarbonate resin that is accurate to within five percent of the full scale reading. Flow tubes have a unique ball guide which centers the ball in the tube and keeps it centered (competitors use a ball floating in a non-centering tube which allows the ball to float off-center resulting in greater flows than the reading indicates). Our exclusive Selec-O-Gas™ flow tube has separate scales for argon, CO₂, helium and general non-corrosive gas. Just rotate the outer tube to the scale you desire.

	Stock	Tube			Inlet	Outlet	Recommended
	Number	Number	Gas	Flow Range	Connection	Connection	Inlet Pressure
Heavy-Duty	H1105*	13220	Argon,	0-80 SCFH	1/4" NPT Male	5/8"-18 RH	80 PSIG
Flowmeters			$CO_2$	0-38 LPM		Internal	6 Bar
	H1240	14254	Argon,	10-80 SCFH	1/4" NPT Male	5/8"-18 RH	30 PSIG
	Selec-0-Gas*		CO <sub>2</sub> ,	5-38 LPM		Internal	2 Bar
			Helium,				
			General				
Standard-	H2230A	N/A	CO <sub>2</sub>	0-50 SCFH	1/4" NPT Male	5/8"-18 RH	50 PSIG
Duty	Multi-Scale			0-24 LPM	on H2230	Internal	3 Bar
Flowmeters	H2231A		Helium	0-160 SCFH	5/8"-18 RH		
	Multi-Scale			0-78 LPM	External on		
			Argon,	0-60 SCFH	H2231		
			Argon/	0-28 LPM			
			CO <sub>2</sub> Mix				

\*H1105 supersedes H1103; H1240 supersedes H1230E. Note: When using argon/ $CO_2$  mix, read argon scale.





# **Single-Stage Flow Gauge Regulators**



# Series 30™





Single-stage flow gauge regulators are compact and feature a forged brass body with 2-inch diameter gauges and a self-reseating pressure relief valve. They also include a Sure Seat $^{\text{\tiny{M}}}$  protective inlet filter and a durable neoprene-composite diaphragm.

Stock			Gauges (2 i	nch/51 mm)	Inlet	Outlet	Max Inlet
Number	Gas	Flow Range	Inlet	Outlet	Connection	Connection	Pressure
31-50-580	Argon	10-50 SCFH	0-4000	10-50	CGA 580	5/8"-18 RH	3000 PSIG
31-50-580-6*			PSIG	SCFH		Internal	207 Bar
31-50-320	CO <sub>2</sub>				CGA 320		
<b>31-50-9</b> British fitting	Argon				G5/8"A-14 RH British fitting		

<sup>\*</sup>Comes with 6-ft. x 1/4-inch inert gas hose.

# **Fixed-Flow Adaptors and Surge Protectors**



**H1400-20** fixed-flow adaptor

**15001-30** surge protector

### **H1400 Series Fixed-Flow Adaptors**

Designed for welding operations or other applications requiring fixed gas flows. Installs in regulator outlet or directly on 30 PSIG pipeline outlet without regulator. Set regulator at 30 PSIG and be assured of correct gas flow. Inlet filter protects orifice from debris. Female thread size 5/8"-18 UNF, male thread size 1/4-inch (6 mm) NPT.

### **15001 Series Surge Protectors**

Fixed-flow surge protectors designed for MIG welding applications eliminate sudden surges of shielding gas into the wire feeder. Flows listed are at 30 PSIG inlet pressure. Female thread size 5/8"-18 UNF, male thread size 5/8"-18 UNF (connects directly to wire feeder or welder).



	Stock	Flow (SCFH) @ 30 PSIG Inlet Pressure							Orifice
	Number	CO <sub>2</sub>	Air	Argon	Helium	Nitrogen	Hydrogen	0xygen	Diameter
Fixed Flow	H1400-20	20	24	21	65	25	91	23	.026
Adaptors	H1400-30	30	37	32	100	38	140	35	.032
	H1400-40	39	48	41	129	49	182	46	.037
	H1400-50	50.5	62	53	167	63	234	59	.042
Surge	15001-20	20	24	21	65	25	91	23	.026
Protectors	15001-30	30	37	32	100	38	140	35	.032
	15001-40	39	48	41	129	49	182	46	.037

# **Premium-Quality Gauges**

2-inch (51 mm)

gauge



Note: All gauges have 1/4-inch (6 mm) NPT bottom stem.

# **Replacement Gauges**

Pressure gauges (PSI/Bar) and flow gauges (CFH/LPM) have dual scale readings and are manufactured in accordance with our rigid quality standards. All gauges feature precision watch-type movements for optimum accuracy and 1/4-turn lens rings. They also feature one-piece shatter-resistant polycarbonate lenses with protective lips to prevent damage to the high-visibility cupped faces.

Brass Case Gauges (2.5 inch/64 mm)						
Stock Number	Pressure Calibration					
GA026-07 Red zone	30 PSI/2 Bar					
GA029-07	60 PSI/4 Bar					
GA033-07	200 PSI/14 Bar					
GA037-07	400 PSI/28 Bar					
GA043-07	4000 PSI/280 Bar					

Black Case Gauges (2 inch/51 mm)							
Stock Number	Pressure Calibration						
GA136-03	50 CFH/25 LPM						
GA134-03 Red zone	30 PSI/2 Bar						
GA141-03	30 PSI/2 Bar						
GA135-03	60 PSI/4 Bar						
GA143-03	100 PSI/7 Bar						
GA137-03	150 PSI/10 Bar						
GA140-03	200 PSI/14 Bar						
GA138-03	400 PSI/28 Bar						
GA142-03	600 PSI/40 Bar						
GA139-03	4000 PSI/280 Bar						
GA145-03	6000 PSI/400 Bar						



16266 Electronic Alarm Gauge

This device is designed to send an alarm alerting the operator when the pressure from the cylinder into the regulator falls below a designated level. The alarm switch has an adjustable range of 50–450 PSI (3–31 Bar). It is factory preset at 250 PSI (17 Bar). 2.5-inch (64 mm) gauge has a maximum inlet pressure of 3500 PSI (241 Bar). Three-lead switch wiring: normally open or normally closed (DPDT). **NOT for use with oxygen.** 

Note: See Three-Stage Nitrogen Low-Pressure Blanketing Regulator on page 20 for more detailed information.

# **Proportional Standard Two-Gas Mixer**





299-006-1C

Stock Number	Gas	Adjustment % Range	Flow Range	Inlet and Outlet Connections	Required Inlet Pressures	Outlet Pressure Without Flow
299-006-1C	Argon/	0-100%	10-180 SCFH	5/8"-18 RH	105-115 PSIG	50 PSIG
	CO <sub>2</sub>	100%-0		Internal	7.3-7.9 Bar	3.5 Bar

**3291** Mixer Inlet Filters (mixer protection only). 60 micron nominal.

Note: Outlet pressure factory set at no flow. All gases used with the mixers must be compatible with Buna-N, Copolymer Acetal, Nylon and Polyethylene.

- Requires no electricity
- Dimensions

Height: 7.5 in. (191 mm) Width: 5.5 in. (140 mm) Depth: 10.5 in. (267 mm)

■ Weight: 7.6 lb. (3.45 kg)



# Accurate TIG and MIG weld shielding gas mixing

Various welding processes require different gas mixes for the best performance. Our proportional gas mixer provides accurate mixing ( $\pm 2\%$  of scale), and allows custom mixtures for producing optimal welds. Convenient chart on top provides proper settings for argon/CO<sub>2</sub>, argon/helium, argon/oxygen and CO<sub>2</sub>/oxygen.

### Easy operation, training and supervision in welding applications

Whether you are using a single welder or a manifold system supplying many welders, operation is simple and easy to use. Ideal for training all personnel regarding shielded gas mixtures because they can see the effect of various gas mixtures on weld appearance, quality and penetration.

### Eliminates stocking and handling pre-mixed gases

On-site mixing of gases with our proportional gas mixer eliminates stocking and handling of costly premixed gases. Individual gases can be mixed for specific welding or other industrial requirements resulting in improved performance.

### **Reduces set-up time**

No need to change cylinders, regulators, flowmeters or hoses when changing from one range of mixed gas to another. Just turn the dial for whatever mixture you need.

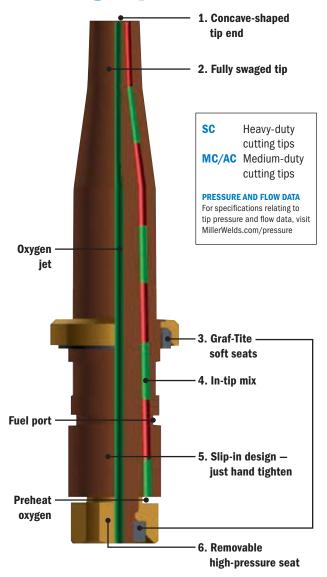
### No gas separation!

Pre-mixed gases may separate (stratify) into the individual gases within the cylinder. Our proportional gas mixer eliminates gas stratification to always give you an accurate mixture.

Mixers may be shipped to Miller for recalibration, reconditioning and gas mix certification. Contact customer service at 1-800-426-4553 to obtain information on costs and return goods instructions.

# Tips

# **Cutting Tips**



# **Fuel Gas Chart**

sufficient gas flows.

Generic Name	Trade Name
Acetylene	_
Propane and	Propane-butane, Flamex, Acetogen,
Propane-Based	Chem-O-Lene, Florida Industrial Gas, Hy-Temp,
Mixtures	Fuel Gas, I.G. Gas, Chem-Gas, Lingas, Chemtone
Propylene	HPG, Apachi, B-Plus, Gulf HP Gas,
	HEF, Liquifuel, B.T.U.
Natural Gas	Natural Gas, City Gas
(Methane)	

CAUTION: Liquid oxygen
When using liquid oxygen, tips may require
greater gas volume than a single cylinder is capable
of producing. External evaporators or manifolding
multiple cylinders may be necessary to supply

CAUTION: Manifolding cylinders

When required flows (cubic feet per hour — SCFH) exceed the recommended withdrawal rate from one cylinder, then additional cylinders must be manifolded to provide safe and efficient operation.

# Our tips are 100-percent tested and inspected and are the longest lasting tips you can buy.

Whatever your application, whatever your fuel gas, we have a tip that provides fast, economical and quality cutting. Select the tip to match the job. It's faster, gives a cleaner cut, cuts expensive labor time, and saves on cleanup, machining and gas. Select from quality tips for dependable performance with acetylene, natural gas (city gas), propane and propylene-based fuels.

Authentic Miller | Smith tips must be used. To qualify for warranty repair, Miller | Smith torches *must be returned with tip*. Aftermarket tips are often the cause of poor performance or malfunction.

# **Construction features**

- 1 Concave-shaped tip end
  Reduces backfire and resists flameout when making accidental contact
  with base metal during cutting operations.
- Fully swaged tip Mirror-smooth gas passages minimize turbulence to deliver stable gas flows for fast starts and precision cuts. Also minimizes slag build-up and reduces clean-up time.
- Graf-Tite® soft seats
  Resilient Graf-Tite® seat material protects tip seatings areas from nicking to maintain positive seating. Requires less replacement than metal-to-metal seat designs. Compressible soft seats are practically indestructible and withstand extremely high temperatures, resulting in longer tip life.
- 4 In-tip mix
  Each tip is a precision engineered mixer for combining preheat oxygen and fuel gas to attain maximum efficiency. Adds resistance to flashback.
- 5 Slip-in tip design just hand tighten
  After the first tightening with a wrench, only hand tightening is required to seat the tip, saving time when changing tips. Quick and easy tip changes encourage use of right tip for the job.
- 6 Removable high-pressure seat Allows cleaning from back of tip.

### **Tip Usage Chart**

Tip Series	Applications and Characteristics
SC12, MC12	General cutting operations, medium preheat.
SC46, SC36	Dirty, heavily coated metal. Rugged use (scrapping, heavy construction).
	Used where excessive reflected heat is present.
SC56	Dirty, coated metal. Heavy preheat for faster starts.
	CAUTION: Manifolding may be necessary for large tips with acetylene.
SC50	Coated metal. Heavy preheat for faster starts. Excellent for scrapping.
SC40, SC60	General cutting operations, medium preheat.
MC40, MC60	

### **↑ CAUTION: Hoses**

Do not use excessively long hoses or hoses with many hose unions; either will restrict gas flow and pressure causing lower cutting efficiency and possibly leading to dangerous operating conditions.

# SC12

# **Heavy-Duty Cutting Tips**

# **SC12 Series**



Acetylene

Preheat cutting tips for general hand and machine cutting. This series provides excellent preheat characteristics required for machine cutting.

### **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC12-5)
- All SC and DG Series hand torches and machine torches

	Metal	Con	sumption (S	SCFH)	
Tip	Thickness	Оху	gen	Acetylene	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	<b>Cutting Jet</b>
SC12-00	3/16 (5)	24	7	6.5	68
SC12-0	1/4 (6)	40	7.5	7	62
SC12-0	3/8 (10)	50	7.5	7	62
SC12-1	1/2 (13)	75	11	9.5	56
SC12-1	5/8 (16)	85	11	9.5	56
SC12-2	3/4 (19)	105	12	10.5	54
SC12-2	1 (25)	115	12	10.5	54
SC12-2	1-1/4 (32)	135	12	10.5	54
SC12-3	1-1/2 (38)	170	14	12	51
SC12-3	2 (51)	180	14	12	51
SC12-4	2-1/2 (64)	240	15	13	45
SC12-4	3 (76)	265	15	13	45
SC12-4	4 (102)	315	16	14	45
SC12-5	5 (127)	420	30	26	41
SC12-5	6 (152)	485	30	26	41
SC12-5	8 (203)	550 30		26	41
SC12-6	10 (254)	750	32	28	32
SC12-6	12 (305)	975	32	28	32

**CAUTION:** High gas withdrawal rates require cylinder manifolding. Consult gas supplier.

# **SC56 Series Heavy Preheat**





Acetylene

Heavy preheat cutting tips designed for cutting coated metals, heavy piercing, fast preheating and cutting thick steel sections up to 24 inches.

### **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC56-5)
- All SC and DG Series hand torches
- Two-hose machine torches (maximum size SC56-7)
- Three-hose machine torch

	Metal	Cons	Consumption (SCFH)				
Tip	Thickness	Оху	gen	Acetylene	Drill Size		
Number	Inches (mm)	Cutting	Preheat	Preheat	<b>Cutting Jet</b>		
SC56-1	1/2 (13)	75	33	30	56		
SC56-1	5/8 (16)	85	33	30	56		
SC56-2	3/4 (19)	105	33	30	54		
SC56-2	1 (25)	115	33	30	54		
SC56-2	1-1/4 (32)	135	33	30	54		
SC56-3	1-1/2 (38)	170	43	39	51		
SC56-3	2 (51)	180	50	45	51		
SC56-5	2-5 (127)	420	57	52	41		
SC56-5	6 (152)	485	66	60	41		
SC56-5	8 (203)	550	72	65	41		
SC56-7	8-14 (356)	1250	110	100	28		
SC56-9	14-20 (508)	2150	145	130	3		
SC56-9	24 (610)	2600	175	160	3		

\*Metal thicknesses up to 2 inches: one 350-cu.-ft. cylinder required.

Metal thicknesses from 2 to 14 inches: two 350-cu.-ft. cylinders required.

Metal thicknesses from 14 to 20 inches: three 350-cu.-ft. cylinders required.

Metal thicknesses from 20 to 24 inches: four 350-cu.-ft. cylinders required.

CAUTION: High gas withdrawal rates require cylinder manifolding. Consult gas supplier.

# SC40 Series (Two-Piece)





Propane or Natural Gas

Two-piece medium preheat cutting tips for general hand and machine cutting with propane, propane-based fuel gases and natural gas.

### **Compatible cutting attachments and torches**

 All SC and DG Series cutting attachments, hand torches and machine torches

	Metal	Con	sumption (S	CFH)	
Tip	Thickness	Оху	gen	Fuel	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	Cutting Jet
SC40-0	1/4 (6)	40	38	8	62
SC40-0	3/8 (10)	50	38	8	62
SC40-1	1/2 (13)	75 38		8	56
SC40-1	5/8 (16)	85	38	8	56
SC40-2	3/4 (19)	105	38	8	54
SC40-2	1 (25)	115	38	8	54
SC40-2	1-1/4 (32)	135	38	8	54
SC40-3	1-1/2 (38)	170	38	8	51
SC40-3	2 (51)	180	38	8	51
SC40-4	2-1/2 (64)	240	65	15	45
SC40-4	3 (76)	265	65	15	45
SC40-4	4 (102)	315	65	15	45

# **SC36 Series Rugged Duty**





Propylene

One-piece cutting tips designed for cutting dirty or heavily coated metals. For rugged duty including scrapping, heavy construction, or where excessive reflected heat is present.

# **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC36-4)
- All SC and DG Series hand torches and machine torches

	Metal	Con			
Tip	Thickness	Оху	gen	Propylene	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	Cutting Jet
SC36-1	1/2 (13)	75	70	15	56
SC36-1	5/8 (16)	85	70	15	56
SC36-2	3/4 (19)	105 70		15	54
SC36-2	1 (25)	115 70		15	54
SC36-2	1-1/4 (32)	135	70	15	54
SC36-3	1-1/2 (38)	170	70	15	51
SC36-3	2 (51)	180	70	15	51
SC36-4	2-1/2 (64)	240	70	15	45
SC36-4	3 (76)	265	70	15	45
SC36-4	4 (102)	315	70	15	45
SC36-6	10 (254)	750 105		22	32
SC36-6	12 (305)	975	105	22	32



# **Heavy-Duty Cutting Tips**

# SC50 Series Heavy Preheat (Two-Piece)



### **Propane or Natural Gas**

Heavy preheat two-piece cutting tip series for hand and machine cutting up to 20-inch thick steel.

### **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC50-5)
- All SC and DG Series hand torches
- Two-hose machine torches (maximum size SC50-6)
- Three-hose machine torch

**CAUTION:** When using liquid oxygen, tips may require greater gas volume than a single cylinder is capable of producing. External evaporators or manifolding multiple cylinders may be necessary to supply sufficient gas flows.

	Metal	Oxygen/Propane Consumption (SCFH)			Oxy Coi			
Tip	Thickness	Оху	gen	Propane	Оху	gen	Natural Gas	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat*	Cutting	Preheat	Preheat	<b>Cutting Jet</b>
SC50-00	3/16 (5)	24	47	13	24	58	36	68
SC50-0	1/4 (6)	40	47	13	40	62	38	62
SC50-0	3/8 (10)	50	47	13	50	62	38	62
SC50-1	1/2 (13)	75	70	15	75	70	40	56
SC50-1	5/8 (16)	85	70	15	85	70	40	56
SC50-2	3/4 (19)	105	70	15	105	70	40	54
SC50-2	1 (25)	115	70	15	115	70	40	54
SC50-2	1-1/4 (32)	135	75	16	135	70	40	54
SC50-3	1-1/2 (38)	170	75	16	170	70	40	51
SC50-3	2 (51)	180	75	16	180	70	40	51
SC50-4	2-1/2 (64)	240	75	16	240	75	45	45
SC50-4	3 (76)	265	75	16	265	75	45	45
SC50-4	4 (102)	315	80	17	315	75	45	45
SC50-5	5 (127)	420	80	17	420	82	50	41
SC50-5	6 (152)	485	80	17	485	82	50	41
SC50-5	8 (203)	550	90	20	550	82	50	41
SC50-6	10 (254)	750	230	50	750	120	75	32
SC50-6	12 (305)	975	280	60	975	165	100	32
SC50-7	14 (354)	1250	330	62	1250	200	120	28
SC50-8	16 (406)	1500	375	80	1500	220	135	17
SC50-8	18 (457)	1800	400	85	1800	250	150	17
SC50-9	20 (508)	2150	420	90	2150	250	150	3

<sup>\*</sup>Metal thicknesses up to 8 inches: one 100-lb. cylinder required (approximately 120 SCFH at 70°). Metal thicknesses greater than 8 inches: two 100-lb. cylinders required (approximately 120 SCFH at 70°).

# **SC46 Series Rugged Duty**



# **Propane or Natural Gas**

One-piece cutting tips designed for cutting dirty or heavily coated metals. For rugged duty including scrapping, heavy construction, or where excessive reflected heat is present.

### **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC46-4)
- All SC and DG Series hand torches and machine torches

	Metal	Oxygen/Propane Consumption (SCFH)			Ox:			
Tip	Thickness		gen	Propane	Consumption Oxygen		Natural Gas	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	Cutting	Preheat	Preheat	Cutting Jet
SC46-2	3/4 (19)	105	70	15	105	70	41	56
SC46-2	1 (25)	115	70	15	115	70	41	56
SC46-2	1-1/4 (32)	135	70	15	135	70	41	56
SC46-4	2-1/2 (64)	240	70	15	240	70	41	56
SC46-4	3 (76)	265	70	15	265	70	41	56
SC46-4	4 (102)	315	70	15	315	70	41	56
SC46-5	5 (127)	420	105	22	420	52	52	54
SC46-5	6 (152)	485	105	22	485	52	52	54
SC46-5	8 (203)	550	105	22	550	52	52	54
SC46-6	10 (254)	750	105	22	750	52	52	54
SC46-6	12 (305)	975	105	22	975	52	52	54

# **SC60 Series Medium Preheat (Two-Piece)**



### **Propylene**

Two-piece medium preheat cutting tips designed to provide optimum performance with propylene or propylene-based fuel gases.

### **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (maximum size SC60-5)
- All SC and DG Series hand torches
- Two-hose machine torches (maximum size SC60-6)
- Three-hose machine torch

	Metal	Consumption (SCFH)			
Tip	Thickness	Оху	gen	Propylene	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	Cutting Jet
SC60-1	1/2 (13)	75	38	9	56
SC60-1	5/8 (16)	85	38	9	56
SC60-2	3/4 (19)	105	38	9	54
SC60-2	1 (25)	115	38	9	54
SC60-2	1-1/4 (32)	135	38	9	54
SC60-3	1-1/2 (38)	170	38	9	51
SC60-3	2 (51)	180	38	9	51
SC60-4	2-1/2 (64)	240	58	15	45
SC60-4	3 (76)	265	58	15	45
SC60-4	4 (102)	315	58	15	45
SC60-5	5 (127)	420	58	15	41
SC60-5	6 (153)	485	58	15	41
SC60-5	8 (203)	550	58	15	41
SC60-6	10 (254)	750	58	15	32
SC60-6	12 (305)	975	58	15	32











# **Extra Long Cutting** SC12-4X9

Tip for hard-to-reach areas. Size 4.

# Gouging SC13-3 and SC13-5

For edge preparation, removal of welds or gouging cracked metals.

# **Rivet/Riser Cutting** SC14-3

Cuts heads of bolts and rivets. It can also be used in 180-degree head cutting torch to cut out boiler tubes. Works equally well for cutting risers and bulk heads.

# **Rivet Blowing and Metal** Washing - SC15-2

Quickly removes large quantities of metal. Heavy preheat primarily used as a rivet blowing tip, but can be used for stud removal, metal washing, gouging, veeing and groove cutting.

Tip		Capacity	Consumption (SCFH)	
Number	Purpose			Acetylene
SC12-4x9	Cutting	4 (102)	331	14
SC13-3	Gouging	3/8 (10) wide	151	35
		1/4 (6) deep		
SC13-5	Gouging	1/2 (13) wide	246	50
		3/8 (10) deep		
SC14-3	Riser	1-1/2 (38) rivets	190	20
SC15-2	Washing	1/2 (13) wide	336	40

	Cutting			
Tip		Average	Consumpt	ion (SCFH)
Number	Purpose	BTU/Hour	0xygen	Acetylene
SC83	Heating	83,000	58	52*

3/8 (10) deep

3/8 (10)

55

4

Plate or

Thin

SC17-0

# **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (except SC83)
- All SC and DG Series hand torches and machine torches

### Plate Cutting — SC17-0

"Drag"-style step tip cuts thin sheet metal with absolute minimum burn over and plate warpage.

### **Heating — SC83**

Delivers large volume of heat quickly for bending, straightening, shrinking, forming and other heating applications. It allows heating with a one-piece cutting torch. Not recommended for use with cutting attachments.

# **Propane or Natural Gas**

**Propylene** 







# **General Gouging (Propane)** SC2-2 and SC2-4

For removing old welds or cracks, veeing and groove cutting.

# **Heavy-Duty Gouging** SC23-3 (Propane) SC23-3M (Propylene)

For removing old welds or cracks, veeing and groove cutting.

# **Heating (Propane)** SC112

Provides lots of heat fast with economical LP gas and oxygen. Not recommended for use with cutting attachments.

Tip		Capacity	Consumption (SCFH)	
Number	Purpose	Inches (mm)	0xygen	Fuel
SC2-2	Gouging	5/16 (8) wide	389 53	
		1/8 (3) deep		
SC2-4	Gouging	3/8 (10) wide	564 53	
		1/4 (6) deep		
SC23-3	Gouging	3/8 (10) wide	174 31	
		1/4 (6) deep		
SC23-3M	Gouging	1/4 (6) wide	174 31	
		3/8 (10) deep		

Tip		Average	Consumption (SCFH)	
Number	Purpose	BTU/Hour	0xygen	Propane
SC112	Heating	289,000	495	125*

<sup>\*</sup>Two 100-lb. cylinders required.

# **Compatible cutting attachments and torches**

- SC200 and DG200 Series attachments (except SC112)
- All SC and DG Series hand torches and machine torches

<sup>\*</sup>Two 350-cu.-ft. cylinders required.



# **Medium-Duty and Standard-Duty Tips**

# **MC12 Series**



Acetylene

Slip-in cutting tips for general medium-duty hand cutting. Use with medium pressure acetylene and oxygen.

### **Compatible cutting attachments**

■ MC509, CC509P, DG109A, AC309 (AC309: maximum size MC12-4)

	Metal	Consumption (SCFH)			
Tip	Thickness	Оху	gen	Acetylene	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	<b>Cutting Jet</b>
MC12-00	1/8 (3)	30	7	6	68
MC12-00	3/16 (5)	30	7	6	68
MC12-0	1/4 (6)	40	7	6	62
MC12-0	3/8 (10)	46	7	6	62
MC12-1	1/2 (13)	75	9	7	55
MC12-1	5/8 (16)	81	9	7	55
MC12-2	3/4 (19)	107	11	9	54
MC12-2	1 (25)	118	11	9	54
MC12-3	1-1/2 (38)	170	12	10	51
MC12-3	2 (51)	181	12	10	51
MC12-4	2-1/2 (64)	249	14	12	45
MC12-4	3 (76)	267	14	12	45
MC12-4	4 (102)	320	15	13	45
MC12-5	5 (127)	420	15	13	41
MC12-5	6 (152)	485	15	13	41

# MC13-3 Gouging



For edge preparation, removal of old welds or defects in steel. Heavy preheat.

### **Compatible cutting attachments**

■ MC505, MC509, CC509P, AC309 and DG109A

Tip		Capacity	Consumption (SCFH)	
Number	Purpose	Inches (mm)	0xygen	Acetylene
MC13-3	Gouging	3/8 (10) wide	115	24*
		1/4 (6) deep		

<sup>\*</sup>One 350-cu.-ft. cylinder required.

# MC40 Series (Two-Piece)





**Propane** 

Two-piece medium preheat cutting tips for hand cutting with propane and propane-based fuel gases.

### **Compatible cutting attachments**

■ MC505, MC509, CC509P, AC309 and DG109A

	Metal	Consumption (SCFH)			
Tip	Thickness	Оху	gen	Propane	Drill Size
Number	Inches (mm)	Cutting	Preheat	Preheat	<b>Cutting Jet</b>
MC40-00	3/16 (5)	24	35	7	68
MC40-0	1/4 (6)	40	35	7	62
MC40-0	3/8 (10)	46	35	7	62
MC40-1	1/2 (13)	75	35	7	55
MC40-1	5/8 (16)	81	35	7	55
MC40-2	3/4 (19)	107	35	7	54
MC40-2	1 (25)	118	35	7	54
MC40-2	1-1/4 (32)	133	35	7	54
MC40-3	1-1/2 (38)	170	35	7	51
MC40-3	2 (51)	181	35	7	51
MC40-4	2-1/2 (64)	249	35	7	51
MC40-4	3 (76)	267	35	7	51
MC40-4	4 (102)	320	35	7	51

See data note at right.

# MC60 Series (Two-Piece)





Propylene

Two-piece medium preheat cutting tips for hand cutting with propylene or propylene-based fuel gases.

### **Compatible cutting attachments**

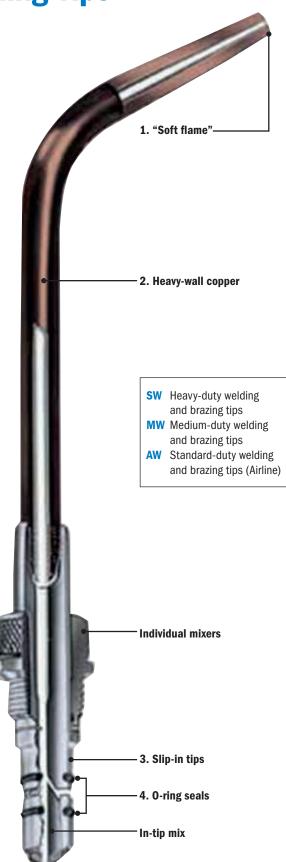
■ MC505, MC509, CC509P, AC309 and DG109A

	Metal	Consumption (SCFH)				
Tip	Thickness	Оху	gen	Propylene	Drill Size	
Number	Inches (mm)	Cutting	Preheat	Preheat	<b>Cutting Jet</b>	
MC60-1	1/2 (13)	75	26	7	55	
MC60-1	5/8 (16)	81	26	7	55	
MC60-2	3/4 (19)	107	26	7	54	
MC60-2	1 (25)	118	26	7	54	
MC60-2	1-1/4 (32)	133	26	7	54	
MC60-3	1-1/2 (38)	170	42	11	51	
MC60-3	2 (51)	181	42	11	51	
MC60-4	2-1/2 (64)	249	42	11	45	
MC60-4	3 (76)	267	42	11	45	
MC60-4	4 (102)	320	42	11	45	

Data based on 25-ft. (7.6 m) of 3/16-in. (5 mm) ID hose for cutting up to 1-1/2-inch (38 mm) steel and 25-ft. (7.6 m) of 1/4-in. (6 mm) ID hose for cutting 2-in. (51 mm) steel and above.

# **Tips**

# **Welding Tips**



# Our "soft flame" welding tips are 100-percent tested and inspected, and make welding easier.

Our welding tips are quality engineered to provide easy handling, high performance and added protection in welding, brazing and soldering operations. Each tip is individually tested on our automatic testing machines and must pass stringent requirements for flame characteristics, gas flow and resistance to backfire or flashback.

### **Construction features**

"Soft flame"

Our "soft flame" welding tips provide concentrated heat for better "puddle" control — the turbulent-free flame eliminates puddle chasing. Soft flame provides deep, even penetration without burning through base metal for strong, dependable welds. Molten metal is protected from atmospheric oxidation by smooth, even flame envelope.

2 Heavy-wall copper

Heavy-wall copper gives greater resistance to reflected heat, permits cooler operation, and dissipates more heat than thin-wall copper. Heat-absorbing tips provide longer life, and the long straight-away design permits tip refacing after excessive wear or abuse.

3 Slip-in tips

Tips may be rotated 360 degrees for convenient positioning, eliminating hose resistance during operation. Slip-in tips can be changed in just seconds. Hand tighten, no wrench needed. O-rings provide gas-tight seal keeping gases separate until they mix in the tip.

4 0-ring seals

O-rings provide gas-tight seal with no metal seating surface to damage if dropped. Gases are kept separate until entering the mixing chamber.

# **Fuel Gas Chart**

Generic Name	Trade Name
Acetylene	_
Propane and	Propane-butane, Flamex, Acetogen,
Propane-Based	Chem-O-Lene, Florida Industrial Gas, Hy-Temp,
Mixtures	Fuel Gas, I.G. Gas, Chem-Gas, Lingas, Chemtone
Propylene	HPG, Apachi, B-Plus, Gulf HP Gas,
	HEF, Liquifuel, B.T.U.
Natural Gas	Natural Gas, City Gas
(Methane)	

CAUTION: Manifolding cylinders

When required flows (cubic feet per hour – 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 per hour (50 SCFH for
a 350 cu. ft. cylinder). Consult your gas supplier for manifolding
instructions for the gases and cylinders supplied to you.



# **Heavy-Duty Tips**

# **SW200 Series**



The SW200 Series is for general and heavy welding and brazing. Swaged construction provides greater heat concentration for improved "puddle" control. Tips are bent to 63.5-degree angle. O-ring replacement: LW15 (package of 25).

# **Compatible torch handles**

■ WH200A, WH200, SW1B, SW1A and SW1

These tips may also be used for brazing with acetylene-based fuels and propylene-based fuel gases. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene.

Tip	Welding Capacity	Consumption (SCFH)*		
Number	Inches (mm)	0xygen	Acetylene	Drill Size
SW201	1/32 (0.7)	2.3	2.3	71
SW203	5/64 (1.9)	3.2	3.2	67
SW205	1/8 (3)	6	6	57
SW207	3/16 (5)	12	12	54
SW209	3/8 (10)	23	23	49
SW210	1/2 (13)	36	36	44

<sup>\*</sup>Consumption (SCFH: cubic feet per hour) figures represent the average volumes of gases consumed when acetylene is added until sooty smoke just disappears from the acetylene flame prior to opening the oxygen valve and adjusting to a neutral flame.

# **Medium-Duty Tips**

# **MW200 Series**



The MW200 Series is for general purpose medium-duty welding which features our "soft flame" for easier puddle control and better penetration. Tips are bent to 63.5-degree angle. O-ring replacement: MW15 (package of 25).

### **Compatible torch handles**

■ WH100, MW5A and CW5A

### **Fuel gases**

These tips may also be used for brazing with acetylene-based fuels and propylene-based fuel gases. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene.

Tip	Welding Capacity	Consumption		
Number	Inches (mm)	<b>O</b> xygen	Acetylene	Drill Size
MW201	1/32 (0.7)	2.3	2.3	71
MW203	5/64 (1.9)	3.2	3.2	67
MW205	1/8 (3)	6	6	57
MW207	3/16 (5)	12	12	54
MW209	3/8 (10)	23	23	49

\*Consumption (SCFH: cubic feet per hour) figures represent the average volumes of gases consumed when acetylene is added until sooty smoke just disappears from the acetylene flame prior to opening the oxygen valve and adjusting to a neutral flame.

# **Medium-Duty Tips**

### MW411



General-purpose medium-duty brazing tips designed specifically for use with propane or propane-based mixture fuel gases with oxygen. Used for brazing applications and casting platinum. O-ring replacement: MW15 (package of 25).

# **Compatible torch handles**

■ WH100, MW5A and CW5A

	Tip Welding Range Number Inches (mm)		Consumption (SCFH)		
			0xygen	Fuel	
	MW411	1/2-5/8 (13-16)	51.9	13	

# **Standard-Duty Tips**

# AW200 Airline™ Series



General-purpose standard-duty welding/brazing tips. Shorter, lighter and easier to handle. O-ring replacement: AW15 (package of 25).

### **Compatible torch handles**

■ AW1A and AW10A

### **Fuel gases**

These tips may also be used for brazing with acetylene-based fuels and propylene-based fuel gases. When using these gases, select a tip two sizes larger than recommended for the same work as acetylene.

Tip	Welding Capacity	Consumpti	Consumption (SCFH)*	
Number	Inches (mm)	0xygen	Acetylene	Drill Size
AW201	Up to 1/32 (0.7)	2.3	2.3	71
AW203	5/64 (1.9)	3.2	3.2	67
AW205	1/8 (3)	6	6	57
AW207	3/16 (5)	12	12	54
AW209	3/8 (10)	23	23	49
AW210	1/2 (13)	36	36	44

\*Consumption (SCFH: cubic feet per hour) figures represent the average volumes of gases consumed when acetylene is added until sooty smoke just disappears from the acetylene flame prior to opening the oxygen valve and adjusting to a neutral flame.

# **Heating Tips**

# Heating tips used in torch handles provide significant cost savings in many applications.

Heating tips do jobs faster and cut labor time to a minimum by providing great amounts of quick, concentrated heat. For proper performance, use the recommended pressures for each tip and an adequate gas supply.

ST Heavy-duty heating tipsMT Medium-duty heating tipsAT Standard-duty heating tips

### **Fuel Gas Chart**

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

CAUTION: Manifolding cylinders

When required flows (cubic feet per hour — 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 per hour (50 SCFH for a 350-cu.-ft. cylinder). Consult your gas supplier for manifolding instructions for the gases and cylinders supplied to you.

CAUTION: Flashback arrestors

Heating tips must be used in conjunction with high-flow flashback arrestors. It may be necessary to increase outlet pressures to compensate for flow restrictions that may be created by flashback arrestors.

# **Heavy-Duty Tips**

### ST600 Series

Acetylene

Multi-flame heating tips for our heavy-duty torch handles. Used for heat treating, bending, straightening, pre-heating, brazing, shrinking, forming, etc. Heads are manufactured from solid copper.



■ WH200A, WH200, SW1B, SW1A and SW1

ST605		Actual Size	The state of the s
1			
	ST603	ST605	ST610

Tip	Average	Consumption (SCFH)		Drill	350 Cu. Ft. Fuel	Overall Length
Number	BTU/Hour	0xygen	Acetylene	Size	Cylinders Required	Inches (mm)
ST602	40,125	31	28	64	1	16 (406)
ST603	71,750	55	50	56	1	16 (406)
ST605	124,670	96	87	57	2	19 (483)
ST610	194,890	150	136	54	3	19 (483)

# Actual Size ST615 ST625/ST635

Propane or Natural Gas

**Propylene** 

Medium pressure oxy-propane or propane-based heating tips provide high heating performance with low-cost fuel gases including natural gas and propane-based gases.

### **Compatible torch handles**

■ WH200A, WH200, SW1B, SW1A and SW1

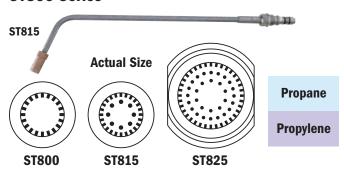
Tip Average		Cons	sumption (SCFH)	Overall Length	Torch Head
Number	ber BTU/Hour Oxygen Fuel Gas		Inches (mm)	Number	
ST615	244,000	225-535	70-160 (propane)	16 (406)	1495
	155,145	175-450	96-267 (natural gas)		
	280,000	235-430	100-160		
ST625	455,000	480-1000	140-280 (propane)	31.5 (800)	1504
	313,950	390-785	200-450 (natural gas)		
ST635*	614,195	670-1580	185-480 (propane)	31.5 (800)	1499

<sup>\*</sup>ST635 requires 3/8-inch (10 mm) I.D. hose and 40-50-510 propane cylinder regulator.



# **Heavy-Duty Tips**

# ST800 Series



Medium pressure oxy-propane or propane-based heating tips provide high heating performance with low-cost fuel gases including natural gas and propane-based gases.

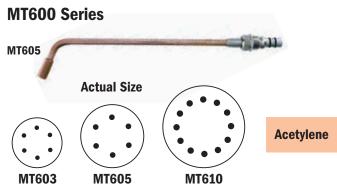
### **Compatible torch handles**

■ WH200A, WH200, SW1B, SW1A and SW1

Tip	Average	Consumption (SCFH)		Overall Length	Torch Head	
Number	BTU/Hour	0xygen	Fuel Gas	Inches (mm)	Number	
ST800	<b>ST800</b> 58,000 107-108		22-24	15.5 (394)	16317	
	75,000	118-138	31-34			
ST815	273,000	390-655	120-235	16 (406)	4642	
ST825	830,000	580-1500	225-525	31 (787)	4639	

Note: Use 3/8-inch (10 mm) I.D. hose.

# **Medium-Duty Tips**



Versatile multi-flame heating tips for the popular medium-duty torch handles. Used for general heating of metals, brazing, hard surfacing, etc. Heads are manufactured from solid copper.

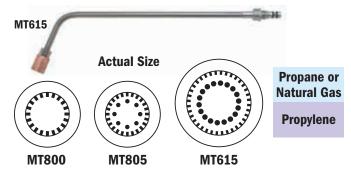
### **Compatible torch handles**

■ WH100, MW5A and CW5A

		Consumption (SCFH)			350 Cu. Ft. Fuel	Overall Length
Tip	Average			Drill	Cylinders	Inches
Number	BTU/Hour	<b>O</b> xygen	Acetylene	Size	Required	(mm)
MT603	40,125	31	28	64	1	10 (254)
MT605	73,085	57	51	56	1	16 (406)
MT610	128,970	100	90	57	2	18 (457)

# **Medium-Duty Tips**

# MT800 Series and MT615



Medium pressure oxy-propane or propane-based heating tips provide high heating performance with low-cost fuel gases including natural gas and propane-based gases.

### **Compatible torch handles**

■ WH100, MW5A and CW5A

		Consumption (SCFH)		Overall Length	Torch
Tip	Average			Inches	Head
Number	BTU/Hour	<b>O</b> xygen	Fuel Gas	(mm)	Number
MT800	93,000	.000 119-121 36-38 (propane)		12.5 (318)	16317
	123,000	135-146	51-56		
MT805	208,000	206-230	80-100 (propane)	15 (381)	4642
	280,000	242-270	120-135		
MT615	MT615 269,000 225-535 70-160 (propane		70-160 (propane)	15 (381)	1495
	182,000	175-450	96-267 (natural gas)		
	280,000	235-430	100-160		

# **Standard-Duty Tips**

# AT605



Handy light-duty multi-flame tip for heating, brazing and applying hard facing metals. Uses medium pressure acetylene and oxygen. Heads are manufactured from solid copper.

### **Compatible torch handles**

■ AW1A and AW10A

		Consumption (SCFH)			200 Cu. Ft. Fuel	Overall Length
Tip	Average			Drill	Cylinders	Inches
Number	BTU/Hour	0xygen	Acetylene	Size	Required	(mm)
AT605	41,550	32	29	64	1	10 (254)

Note: Tips may also be used with oxygen/hydrogen.

# Compi

# **Heavy-Duty Special-Purpose Heating Tips**

# **Compressed Air Heating Tip**



# **Propane or Natural Gas**

Produces concentrated flame not normally possible with low-cost natural gas. Ideal for a wide range of heating applications including die casting. Produces temperatures of 3400 degrees Fahrenheit with natural gas and 3500 degrees Fahrenheit with propane. Operates on gas pressures of 2–10 PSIG and 10–100 PSIG compressed air. For maximum heat output, a minimum of 30 PSIG air is required.

# **Compatible torch handles**

■ WH200A, WH200, SW1B, SW1A and SW1

Tip	Tip Consists of				
Number	Gas Mixer	Tip Head	Gooseneck		
NE170	ST625B	NE171	NE171-1		
		86,000 BTU/hour			

Note: Hex tip tube adaptor is part number 15855.

# Railroad Heating Tip (Preheat for Thermite Rail Welding)



### **Propane**

Five-minute-style preheating tip for rail welding. May also be used for additional heating applications.

### **Compatible torch handles**

■ WH200A, WH200, SW1B, SW1A and SW1

Tip	Average	Consumption (SCFH)			
Number	BTU/Hour	0xygen	Propane		
15674	150,000	275	70		

**CAUTION:** Liquid oxygen

When using liquid oxygen, tips may require greater gas volume than a single cylinder is capable of producing. External evaporators or manifolding multiple cylinders may be necessary to supply sufficient gas flows.

CAUTION: Manifolding cylinders

When required flows (cubic feet per hour — SCFH) exceed the recommended withdrawal rate from one cylinder, then additional cylinders must be manifolded to provide safe and efficient operation.

**CAUTION:** Flashback arrestors

Heating tips must be used in conjunction with high-flow flashback arrestors. It may be necessary to increase outlet pressures to compensate for flow restrictions that may be created by flashback arrestors.

# **Accessories**

# **Welding Protection**





### INDURA® Cloth Jacket

### Men's

**#258 095** Small **#258 099** X-Large **#258 102** 4X-Large **#258 097** Medium **#258 100** 2X-Large **#258 104** 5X-Large

**#258 098** Large **#258 101** 3X-Large

Women's

**#264 379** Small **#264 381** Large **#264 383** 2X-Large

**#264 380** Medium **#264 382** X-Large

- INDURA flame-resistant cotton (flame resistance guaranteed for life of jacket) and Nomex® flame-resistant thread
- Allows for patented bib/apron attachment

### Combo Sleeves #231 096

- INDURA flame-resistant cotton/top grain leather
- 21-inch (533 mm) length

# **MIG Gloves (Lined)**

#263 330 X-Small (Women's) #263 333 Large #263 331 Small (Women's) #263 334 X-Large #263 332 Medium

- Dual-padded, fleece-insulated palm with foam-insulated back
- Cow grain palm, pig split back and goat grain inner fingers

### **Multitask Gloves**

**#263 352** Small **#263 354** Large **#263 355** X-Large

- Dual-padded palm with wool-insulated back
- Premium goat grain leather

### Safety Glasses (shade 5)

**#235 658** Black **#235 657** Blue **#235 659** Orange

- Form fitting orbital eye coverage
- ANSI Z87.1 compliant

# **GASAVER**<sup>™</sup>







Note: NOT for use with one-piece cutting torch. Contact factory for pilot options available for alternate fuels.



# Save money, save time and improve safety.

Ideal for production brazing and welding applications, our GASAVER can help you realize huge savings by eliminating wasted gas during torch start-up/shut-down and between flame applications. Save time by eliminating repeated torch adjustment. GASAVER gives you a safe place to temporarily put your torch and is used by America's largest production plants. Torch flame is automatically extinguished when torch is not in use. Simply pass torch over pilot flame to re-light.

**WDW100** is standard GASAVER for use with propylene gas and oxygen. Equipped with adjustable pilot light.

**WDW101** is GASAVER for general use with acetylene and oxygen. Can be installed in any convenient location on the line between regulators and torch. The closer the torch, the greater the savings in oxygen and acetylene. Equipped with adjustable pilot light.

**WDW103** is GASAVER equipped with separate adjustable pilot fuel inlet for use with low-pressure gas with injector type torches. Separate source of high-pressure pilot gas required. May also be used with hydrogen gas, however propane or natural gas is recommended to supply the adjustable pilot light.

**WDW104** is standard GASAVER equipped with adjustable pilot light for use with propane or natural gas at 4 PSI or more.

# **Hoses and Hose Fittings**



**IMPORTANT:** "R"-Grade welding hose is for use with acetylene only, as specified by the RMA-CGA Hose Standard. "T"-Grade hose must be used with all other gases.



**CAUTION:** Do not exceed the maximum working pressures (regulator setting) listed for the hoses during welding and cutting operations.

Oxygen (150 PSIG max.) Acetylene (15 PSIG max.)

Propane, propylene and all other fuel gases (40 PSIG max.)



14389



# **Hose Adaptors and Connections**

Product	Stock Number	Туре	Thread
Hose Adaptors ("B" regulators to	14389	Oxygen	3/8"-24 RH (male thread)
"A" hose fitting)	14390	Fuel Gas	9/16"-18 RH (female thread)
Torch Hose Connections (Nickel plated for use with all heavy-duty torch handles and hand torches)	3060-1	Oxygen	9/16"-18 RH
	3060-2	Fuel Gas	9/16"-18 LH



# Sintered Filter (10 pack) 15775-10

Sintered filter to prevent debris from entering torch. Installs inside "B" torch inlet connections. Not for use with Gas Axe torches.

### Twin Hoses (Two-In-One)

	Stock		ID	Connections		
Hose Type	Number	Length	Diameter	To Regulators	To Torches	
"R"-Grade (for Acetylene only)	RL1131	25 ft. (7.6 m)	1/4 in. (6 mm)	R11 (Oxygen) R12 (Fuel) 9/16"-18 ("B")	R11 (Oxygen) R12 (Fuel) 9/16"-18 ("B")	
	RL921	12.5 ft. (3.8 m)	3/16 in. (5 mm)	R13D (Oxygen) R14D (Fuel)	R13D (Oxygen) R14D (Fuel)	
	RL935	20 ft. (6.1 m)	3/16 in. (5 mm)	9/16"-18 ("B")	9/16"-18 ("B")	
	RA921	12.5 ft. (3.8 m)	3/16 in. (5 mm)	R13D (Oxygen) R14D (Fuel) 9/16"-18 ("B")	R13 (Oxygen) R14 (Fuel) 3/8"-24 ("A")	
<b>"T"-Grade</b> (for LP, Propane, Propylene, Acetylene)	TRL1131	20 ft. (6.1 m)	1/4 in. (6 mm)	R11 (Oxygen) R12 (Fuel) 9/16"-18 ("B")	R11 (Oxygen) R12 (Fuel) 9/16"-18 ("B")	
Kevlar® Brazing Hose (for AW1A handle only)	14779-4-10	10 ft. (3 m)	1/8 in. (3 mm)	R13D (Oxygen) R14D (Fuel) 9/16"-18 ("B")	R13 (Oxygen) R14 (Fuel) 3/8"-24 ("A")	

# **Single Hoses**

Hose Type	Stock Number	Length	ID Diameter	Connections	For Use With
"R"-Grade (for Acetylene only)	RL121	12.5 ft. (3.8 m)	3/16 in. (5 mm)	9/16"-18 LH ("B")	NE180 Handi-Heat torch
Black Hose (for Inert gas)	7294-1	6 ft. (1.8 m)	1/4 in. (6 mm)	5/8"-18 RH Male	Flow gauges and flowmeter regulators
Heavy-Duty Charging Hose (for use with Nitrogen for HVAC purging apps)	RL260	6 ft. (1.8 m)	1/4 in. (6 mm)	7/16"-20 RH Internal to regulator, 7/16"-20 RH with core to A/C unit	30-450-580 regulators (depress to open Schraeder valve)

# **Oxy Accessories**



N230 cylinder wrench



N250 tip cleaner



N113ANB lighter



13493 torch and cylinder carrier

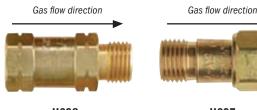
Stock Number	Product		
N230	Cylinder Wrench		
N250	Tip Cleaner (sharp point spiral)		
N113ANB	Flint Lighter (N113-3 replacement flints) (5 per pkg.)		
13493	Caddy Carrier with hose wrap and storage compartment for MC acetylene and 20 cu. ft. oxygen cylinders.		
NE135B	Two-Hose Manifold — oxygen "B" connections		
NE136B	Two-Hose Manifold — fuel "B" connections		
16229	Circle Cutting Guide cuts from 5/8" to 12" diameter holes. Works with all SC and MC style cutting tips.		



# Accessories

# **Safety Accessories**





H698 regulator-mount style (attach to regulator outlet fitting)

**H697** torch-mount style (attach to torch handle)

We cannot accept return of check valves or flashback arrestors as these products are subject to controls that may be compromised after shipping.

### Hard Hat™ Regulator Guards

Protect regulators from costly gauge replacement with our Hard Hat gauge guards. Promotes safety... designed to help prevent broken gauges which can lead to gas leaks. Time and cost savings... helps prevent costly equipment down time and expensive repairs.

HB190 Hard Hat is made from rugged steel with a bright yellow, baked-enamel finish. Quickly and easily attaches to regulator. Fits Series 40™, HB1500 and HB2100 Series brass regulators.

**H195 Hard Hat** is formed from extremely tough, impact-resistant polycarbonate resin with a bright, safety-yellow finish. Fits Series 30™ and 1700 Series singlestage regulators.

Note: Will not work with flow gauge regulators.

# **Reverse-Flow Check Valves**

Reverse-flow check valves are an important part of any oxy-fuel system. Without check valves, reverse flow of oxygen and fuel gases can occur when a tip becomes clogged, or when one cylinder empties during use. This could allow the higher pressure gas to back up into the other hose and into the regulator, thereby creating conditions which could lead to a regulator explosion. Our reverse-flow check valves close automatically when outlet pressures drop below 1/2 PSIG, preventing reverse flow of gases.

Check Valve Type	Stock Number	Gas	Inlet Connection	Outlet Connection
Regulator Mount	H698	Pair	9/16"-18 LH and RH Internal	9/16"-18 LH and RH External
Torch Mount	H697	Pair	9/16"-18 LH and RH External	9/16"-18 LH and RH Internal

Note: Check valves should be replaced on a regular basis.

# H753

**CAUTION:** Flashback arrestors will contribute to significant pressure drop in a system, causing reduced flow. Pressure increase may be required to maintain equivalent flow rates after installing flashback arrestors in an oxy-fuel system.

# **Oxygen Flow Capacity Oxygen Flashback Arrestors** 160 140 120 100 80

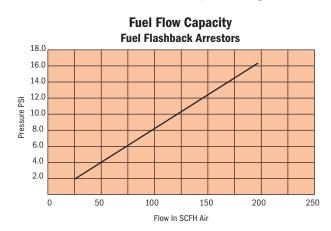
60 40 20 200 1200 1600 Flow In SCFH Air

# **Flashback Arrestors**

- May be used with acetylene, propane, propylene, hydrogen and natural gas
- Built-in check valve prevents the reverse flow of gas
- Requires no manual reset
- Easy to install attaches to standard "B" fittings
- High-quality brass construction, case is rugged and corrosion-resistant
- Sintered stainless steel filter stops flashback fire

Flashback Arrestor Type	Stock Number	Gas
Regulator Mount (for use with CGA "B" male fitting)	H753	Oxygen and fuel gas pair
<b>Torch Mount (High Flow)</b> (do NOT exceed 15 PSIG when using acetylene gas)	H743	Oxygen and fuel gas pair

Note: Flashback arrestors should be tested and inspected on a regular basis.



# Blue and you.

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