The Little Torch[™] Kit

Equipment

Quick **Specs**

Applications

Jewelry manufacturing and repair Electronics manufacturing and repair Precision metal work Hobby and crafts Plumbing Plastic polishing

Oxy-Fuel Processes

Brazing Soldering Heating Welding

Fuel Gases

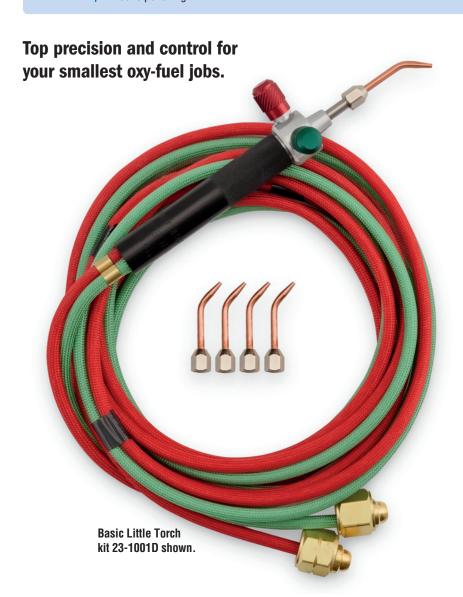
Acetylene Propane Propylene Natural gas Hydrogen

Torch

Net weight: 0.75 lb. (0.34 kg) Length: 4.625 in. (118 mm)

Curved Tip

Length: 1.5 in. (38 mm) Angle: 45 degrees





Designed for Precision

Light weight at 1.5 ounces for infinite control on small-part soldering and brazing.

3.6 times smaller than conventional torches to easily maneuver in tight areas.

No. 2 and 3 tip orifices are fitted with laser-drilled synthetic sapphire for accurate gas flow and consistent flame.

Produces thread-thin flame hot enough to melt weldable metals, glass and ceramics.

Unmatched Flexibility

Range of tip orifices provide wide spectrum of flame length and heat output for various metals and thickness.

Variety of settings produces controlled flame that melts up to three ounces of gold or silver.

Works with different tank sizes of commercially available oxy-fuel systems from large pressurized cylinders to smaller disposable types.

Superior flexible hoses connect to standard pressure regulator for a variety of projects.

Meets Strict Manufacturing Standards

Certified by leading nationally recognized testing authorities ensuring that you are using a safe, properly designed and manufactured product.



Underwriters Laboratories (UL) Listed for gas pressure regulators.



Electrical Testing Laboratories (ETL) Listed for oxy-fuel torches and tips.



Warranted for one year, parts and labor.



Miller Electric Mfg. LLC

An ITW Welding Company 1635 West Spencer Street P.O. Box 1079 Appleton, WI 54912-1079 USA

Equipment Sales US and Canada

Phone: 866-931-9730 FAX: 800-637-2315

International Phone: 920-735-4554 International FAX: 920-735-4125









Little Torch™ Kits



Basic Little Torch Kits

Net weight for each kit is 0.75 lb. (0.34 kg).

23-1001D With "B" hose fittings (oxygen: 9/16"-18 RH, fuel: 9/16"-18 LH)
23-1013A With Australian hose fittings oxygen: 5/8"-18 RH, (fuel: 5/8"-18 LH)
239-047B With British hose fittings (oxygen G-3/8"-19 RH, fuel: G-3/8"-19 LH)
239-048A With European hose fittings (oxygen: G-1/4"-19 RH, fuel: G-3/8"-19 LH)

Component	Description
Little Torch	Anodized aluminum body with separate inlet nipples
Curved Tips	No. 3, 4, 5, 6, 7
Covered Hoses	8 ft. (2.4 m) length / 1/8 in. (3.2 mm) inside diameter



Little Torch with Regulators Kits

Use regulators to provide low regulated pressures and flows necessary for fine flame adjustment and stability. Net weight for each kit is 7.15 lb. (3.24 kg).

23-1003 With oxygen regulator (30-20-540), and fuel regulator (30-15-200) with CGA 200 inlet connection for 10 cu. ft. "MC" acetylene cylinder

23-1003B With oxygen regulator (30-20-540), and fuel regulator (30-15-520) with CGA 520 inlet

connection for 40 cu. ft. "B" acetylene cylinder

23-1003P With oxygen regulator (30-20-540), and fuel regulator (30-15-510) with CGA 510 inlet connection for larger propane/acetylene cylinder

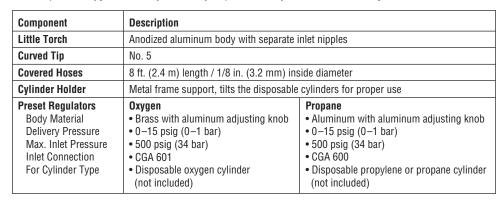
Component	Description	Description					
Little Torch	Anodized aluminum body with separate inle	Anodized aluminum body with separate inlet nipples					
Curved Tips	No. 3, 4, 5, 6, 7						
Check Valves	1 pair (fuel and oxygen), reverse-flow, regu	ulator-mounted					
Covered Hoses	8 ft. (2.4 m) length / 1/8 in. (3.2 mm) insid	8 ft. (2.4 m) length / 1/8 in. (3.2 mm) inside diameter					
Regulators Body Material Delivery Pressure Max. Inlet Pressure Outlet Connection Inlet Connection For Cylinder Type Gauge Size Gauge Outlet Gauge Inlet	Oxygen Forged brass 0-20 psig (0-1 bar) 3,000 psig (207 bar) 9/16"-18 RH "B" CGA 540 OC20 20 cu. ft. cylinder 2 in. (51 mm) 30 psig (2 bar) 4,000 psig (276 bar)	Fuel Gas Forged brass O-15 psig (0-1 bar) 400 psig (28 bar) 9/16"-18 LH "B" See kit descriptions above See kit descriptions above in. (51 mm) 30 psig (2 bar) 400 psig (28 bar)					

23-1003B

Little Torch for Disposable Tanks Kit

Maximum portability in locations where larger pressurized cylinders are not allowed. Kit may be used with disposable propylene or propane and oxygen cylinders (cylinders not included). Net weight for kit is 1.75 lb. (0.79 kg).

Note: Disposable oxygen and fuel cylinders may be purchased at your local hardware or gas distributors.





23-1014

Little Torch™ **Kits** (Continued)



Little Torch Caddy Kits

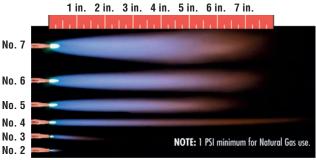
The complete works in a handy self-contained lightweight unit. These highly portable kits come complete with everything you need for your soldering or brazing operations.

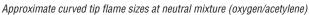
- **23-1015P** With oxygen regulator (30-20-540), fuel regulator (30-15-510) with CGA 510 inlet connection for large propane/acetylene cylinder, 20 cu. ft. oxygen cylinder (0C20), 5 lb. refillable propane cylinder (13558) and powder-coated metal carrier (13787A). Net weight for kit is 40.7 lb. (18.46 kg).
- **23-1004A** With oxygen regulator (30-20-540), fuel regulator (30-15-200) with CGA 200 inlet connection for 10 cu. ft "MC" acetylene cylinder, 20 cu. ft. oxygen cylinder (0C20), 10 cu. ft. acetylene cylinder (2329E), and plastic caddy carrier (13493). Net weight for kit is 36.1 lb. (16.37 kg).
- **23-1010P** With oxygen regulator (30-20-540), preset propane regulator (249-500B), 20 cu. ft. oxygen cylinder (0C20) and plastic caddy carrier (13493). Required 14.1 oz. disposable propane cylinder is NOT included. Net weight for kit is 26.15 lb. (11.86 kg).

Component	Description							
Little Torch	Anodized aluminum body with sep	arate inlet nipples						
Curved Tips	No. 3, 4, 5, 6, 7							
Check Valves	1 pair (fuel and oxygen), reverse-f	low, regulator-mounted						
Covered Hoses	8 ft. (2.4 m) length / 1/8 in. (3.2 m	m) inside diameter						
Cylinder Type	See kit descriptions above	See kit descriptions above						
Regulators Body Material Delivery Pressure Max. Inlet Pressure Outlet Connection Inlet Connection Gauge Size Gauge Outlet Gauge Inlet	Oxygen (All Kits) • Forged brass • 0-20 psig (0-1 bar) • 3,000 psig (207 bar) • 9/16"-18 RH "B" • CGA 540 • 2 in. (51 mm) • 30 psig (2 bar) • 4,000 psig (276 bar)	Fuel Gas (23-1015P Kit) Forged brass 0-15 psig (0-1 bar) 400 psig (28 bar) 9/16"-18 LH "B" CGA 510 2 in. (51 mm) 30 psig (2 bar) 400 psig (28 bar)	Fuel Gas (23-1004A Kit) • Forged brass • 0-15 psig (0-1 bar) • 400 psig (28 bar) • 9/16"-18 LH "B" • CGA 200 • 2 in. (51 mm) • 30 psig (28 bar) • 400 psig (28 bar)	Fuel Gas (23-1010P Kit) • 360 brass • 0-15 psig (0-1 bar) • 500 psig (35 bar) • 9/16"-18 LH "B" • CGA 500 • N/A • N/A				

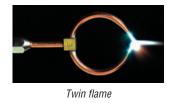


Tips (All tips are 100 percent flame tested.)





Curved Tip





Twin Flame Tip



Three-inch Flexible Tip Extension 2327-3SP For customizing angle and distance from handle.

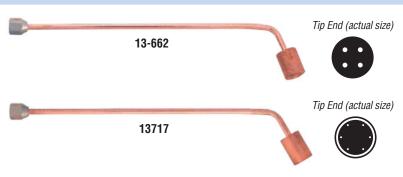
Tip Stock Type Number	Stock		Use with Oxygen and:	Orifice	Drill	Gas Pressure (psi)		Gas Consumption (cfh)			Brazing Capacity	
		Size		Diameter	Size	Oxygen	Fuel	Fuel	Oxygen	Btu/Hour	Copper Pipe	
Curved	12-1401-02	No. 2*	Acetylene or hydrogen only	.006 in.	97	2	2	.09	.11	130	_	
	12-1401-03	No. 3*	Any fuel gas	.011 in.	85	4	4	.78	.94	1,150	Up to 1/8 in.	
	12-1401-04	No. 4		.020 in.	76	5	5	1.57	1.88	2,300	1/4-3/8 in.	
	12-1401-05	No. 5		.029 in.	69	6	6	2.58	3.1	3,800	5/16-5/8 in.	
	12-1401-06	No. 6		.037 in.	63	6	6	4.48	5.38	6,585	3/8-3/4 in.	
	12-1401-07	No. 7		.047 in.	56	8	8	6.27	7.52	9,200	1/2-7/8 in.	
Twin	12-1402-04	No. 4	Any fuel gas	.020 in.	76	5	5	2.91	3.49	4,300	1/4-5/8 in.	
Flame	12-1402-05	No. 5		.029 in.	69	6	6	4.70	5.64	6,900	5/16-3/4 in.	
	12-1402-06	No. 6		.037 in.	63	6	6	6.50	7.8	9,550	3/8-7/8 in.	

Note: All values in chart are determined using acetylene gas.

Heating Tips (All tips are 100 percent flame tested.)



Heating tip (rosebud)



Heating tips melt up to three ounces of gold or silver.

			Gas Pi	Gas Pressure (psi)		sumption (cfh)		
Stock Number	Length	Fuel Gas	Oxygen	Fuel Gas	Oxygen	Fuel Gas	Flame Average Btu/Hour	
13-662	6 in. (153 mm)	Acetylene	15	10	6.0	5.5	8,000	
		Hydrogen			5.5	11.0	3,500	
		Propylene			2.3	0.5	1,200	
13717	6 in. (153 mm)	Propane	15	10	5.0	2.4	6,000	
		Natural gas	7	5	3.0	3.0	3,000	

Note: Heating tips are not for use with disposable oxygen cylinders.



^{*}Due to the extremely small orifice diameter tips No. 2 and 3, they are fitted with a laser-drilled synthetic sapphire to assure accurate gas flow and consistent flame characteristics.

Accessories and Replacement Parts



Magnetic Torch Stand and Tip Organizer 14014

Solid metal stand comes with holes drilled and numbered for No. 2-7 tips. Just a twist of the wrist removes the torch from the magnet. Magnetic clip mounts easily on the Little Torch body. Torch and tips sold separately.

Replacement Parts



Little Torch™

11-1101C "B" 9/16"-18 hose fittings 11-1107 Australian hose fittings 11-1104C British hose fittings **11-1110** European hose fittings Replacement torch with 8 ft. (2.4 m) oxygen

and fuel hoses. Hoses come crimped onto torch handle with appropriate fittings.







Little Torch™ Valve Assemblies

7345 Green, oxygen **7346** Red, fuel 7348 PTFE valve packing

Replacement valves control the flow of oxygen and fuel gas.



Cylinder Holder 13296

Disposable cylinder holder. Metal frame support tilts the disposable cylinders for proper use. Torch and cylinders not included.



30-15-200 Regulator CGA 200 regulator.



30-15-520 Regulator CGA 520 regulator.



30-15-510 Regulator CGA 510 regulator.



Preset Regulators 249-499B Green, oxygen **249-500B** Red, propane Disposable cylinder regulators.





Reverse-Flow Check Valves H698

Regulator-mount check valves close automatically when outlet pressure drops below 0.5 psig.



Covered Hoses (red/green)

13254-4-8 "B" 9/16"-18 hose fittings

13254-5-8 Australian hose fittings

13254-6-8 British hose fittings

13254-7-8 European hose fittings

8 ft. (2.4 m) length, 1/8 in. (3.2 mm) inside diameter. Each covered hose set includes two hose ferrules and one crimping tool.

Bulk Hose

13254-1 Green

13254-3 Red

1/8 in. (3.2 mm) inside diameter. Ferrules and crimping tool NOT included.

Hose Fittings



16173



16174

Hose Nuts

16173 Oxygen "B" fitting, 9/16"-18 RH 16174 Fuel "B" fitting, 9/16"-18 LH For 1/8 in. (3.2 mm) inside diameter hose.



Hose Tailpiece 1882

Oxygen/fuel "B" fitting (barbed) for oxygen and fuel connections. For 1/8 in. (3.2 mm) inside diameter hose.



Hose Ferrule 7582-1

For oxygen and fuel hoses. Secures hose to torch. 3/16 in.

(5 mm) inside diameter. 9/32 in. (7 mm) length. Use crimping tool below to crimp ferrule onto torch hose.



Crimping Tool 7799

Tool for crimping ferrule above to secure hose to torch.



$\textbf{FAQs} - \textbf{Little Torch}^{\!\scriptscriptstyle{\mathsf{M}}}$

Hoses

How do I replace my Little Torch hose?	There are step-by-step instructions, along with a ferrule (brass hose retainer band) and ferrule replacement tool that accompany all replacement hose assemblies. For in-depth instructions, reference your owner's manual. *Recommendation: Replace hoses every five years.
What are the part numbers for the Little Torch replacement hose assemblies?	Depending on the hose fittings, you will need the following hose assembly: 13254-4-8 Standard "B" 9/16"-18 hose fittings 13254-5-8 Australian hose fittings 13254-6-8 British hose fittings 13254-7-8 European hose fittings Each hose assembly includes an 8-foot (green) oxygen hose, 8-foot (red) fuel hose, two hose ferrules, one crimping tool and a manual. Recommendation: Replace hoses every five years.

Tips										
Can the orifice in the Little Torch tips be cleaned?		If the orifice is obstructed by flux, often they can be cleaned by boiling them in water for approximately 10 minutes. Other methods used to clean dirty tips involve the use of a jeweler's-type steam cleaner or an ultrasonic cleaner.								
Why is it hard to light or keep my size No. 2 size tip lit?		This is typically due to excessive gas pressures. A maximum of just two psi outlet pressure is recommended for both gases and the use of an open flame makes lighting the tiny flame much easier.								
What are the twin flame tips used for?					re both sides of an object ca n heating for complete, more		peed up the			
What are the flame sizes and	Tip Size	Orifice Diameter	Orifice Drill Size	Btu/Hour	Recommended Pressures for Both Gases (psi)	Approximate Overall Flame Length	Brazing Capacity Copper Pipe			
orifice diameters	No. 2	.006 in.	97	130	2	.125 in.	_			
of the tips?	No. 3	.011 in.	85	1,150	4	1.5 in.	Up to 1/8 in.			
or the tips:	No. 4	.020 in.	76	2,300	5	5.5 in. (thin)	1/4-3/8 in.			
	No. 5	.029 in.	69	3,800	6	5.5 in.	5/16-5/8 in.			
	No. 6	.037 in.	63	6,585	6	6.5 in.	3/8-3/4 in.			
	No. 7	.047 in.	56	9,200	8	7 in.	1/2-7/8 in.			
What are the applications for the multi-flame heating (rosebud) tips?	heating. Both the enameli	They are use acetylene and ng and plasti	ed predomin nd propane r cs polishing	ately in the jo nodels can c	, more widely dispersed flameweler industry for annealing ast up to three ounces of goo	, reticulation and castin	g of gold or silver.			



$\textbf{FAQs} - \textbf{Little Torch}^{\!\scriptscriptstyle{\mathsf{M}}}$

Fuel

What fuel gas will work with the Little Torch?	The Little Torch may be operated with most commercially used welding gases including acetylene, propane, hydrogen and propylene. It may be used with city gas (natural gas) if the minimum pressure required for the tip is sufficient. Caution: Most city gas lines only produce less than one psi.
Which fuel gas should I use with my Little Torch, acetylene or propane?	Most Little Torch operators use either acetylene or propane with each offering specific advantages and disadvantages. Acetylene produces a very concentrated, pinpoint high-temperature flame (approximately 6,000°F) whereas the other gases tend to spread the head produced throughout the outer flame. The acetylene flame produces soot during combustion and the propane gases tend to burn much cleaner. Acetylene gas is lighter than air and in the event of a gas leak it will tend to dissipate in the atmosphere with any air flow. Propane gas is heavier than air and will fall to the floor and may collect in low spots thereby creating a potentially combustible hazard.
Can the gas valves be replaced if they are damaged or worn out?	Yes. The complete torch valve assembly may be replaced for oxygen and fuel gas. Using an open-end wrench, remove the valve assembly from the torch body. There is a white packing ring (7348) under the valve that should be replaced. Green identifies the oxygen valve assembly (7345) and red identifies the fuel valve assembly (7346).

Regulators and Cylinders

Does my Little Torch require any adaptors to fit my cylinder regulators?	For most regulators, adaptors are not required. The Little Torch hose assemblies have standard "B" 9/16-inch welding hose connections and attach to most industrial welding gas regulators.
Where can I use the Little Torch Caddy Kits' cylinders?	Individuals using the cylinders inside should contact their insurance carriers and research fire codes for their locations.
How long will the oxygen and fuel gas last in disposable cylinders?	The Little Torch for Disposable Tanks Kit (23-1014) is available for use with disposable propane (or propylene) and oxygen cylinders. Disposable propane cylinders have 7.50 cfh of gas. Disposable oxygen cylinders have 1.05 cfh of gas. This means that a No. 5 tip (12-1401-05) at 2.58 cfh propane and 3.1 cfh oxygen consumption would use up an oxygen cylinder in 20 minutes and a propane cylinder in three hours. Note: Disposable oxygen and fuel cylinders may be purchased at your local hardware or gas distributors.



Ordering Information

Little Torch Kits	Stock No.	Description	Qty.	Price
Basic Little Torch™ Kits (Includes torch, curved tips and covered hoses)	23-1001D 23-1013A 239-047B 239-048A	With "B" hose fittings (fuel: 9/16"-18 LH, oxygen: 9/16"-18 RH) With Australian hose fittings (fuel: 5/8"-18 LH, oxygen: 5/8"-18 RH) With British hose fittings (fuel: G-3/8"-19 LH, oxygen G-3/8"-19 RH) With European hose fittings (fuel: G-3/8"-19 LH, oxygen: G-1/4"-19 RH)		
Little Torch™ with Regulators Kits (Includes torch, curved tips, covered hoses, check valves and regulators)	23-1003 23-1003B 23-1003P	With 30-15-200 fuel regulator with CGA 200 inlet connection for 10 cu. ft. "MC" cylinder With 30-15-520 fuel regulator with CGA 520 inlet connection for 40 cu. ft. "B" cylinder With 30-15-510 fuel regulator with CGA 510 inlet connection for larger propane/acetylene cylinders		
Little Torch™ for Disposable Tanks Kit (Includes torch, curved tips, covered hoses, regulators and cylinder holder)	23-1014	Can be used with disposable propylene or propane and oxygen cylinders (cylinders not included)		
Little Torch™ Caddy Kits (Includes torch, curved tips, covered hoses, check valves, regulators and carrier)	23-1015P 23-1004A 23-1010P	With 30-15-510 propane regulator, propane cylinder and powder-coated metal carrier With 30-15-200 acetylene regulator, acetylene cylinder and plastic caddy carrier With 249-500B preset propane regulator and plastic caddy carrier (propane cylinder NOT included)		
Tips		See page 4		
Accessories				
Magnetic Torch Stand and Tip Organizer	14014	Torch and tips sold separately		
Replacement Parts				
Little Torch	11-1101C 11-1107 11-1104C 11-1110	Includes torch and hoses. "B" 9/16"-18 hose fittings Includes torch and hoses. Australian hose fittings Includes torch and hoses. British hose fittings Includes torch and hoses. European hose fittings		
Little Torch Valve Assemblies	7345 7346 7348	Green, oxygen Red, fuel PFTE valve packing		
Powder-Coated Metal Carrier	13787A	Replacement carrier for 23-1015P kit		
Plastic Caddy Carrier	13493	Replacement carrier for 23-1004A and 23-1010P kits		
Cylinder Holder	13296	Metal frame support tilts the disposable cylinders for proper use		
Regulators	30-15-200 30-15-520 30-15-510	CGA 200 regulator CGA 520 regulator CGA 510 regulator		
Preset Regulators	249-499B 249-500B	Green, oxygen. Can be used with 23-1014 Little Torch for Disposable Tanks kit Red, propane. Can be used with 23-1014 Little Torch for Disposable Tanks kit		
Reverse-Flow Check Valves	H698	Regulator mount		
Cylinders	0C20 2329E 13558	20 cu. ft. oxygen, 17.75 in. height / 5.25 in. diameter 10 cu. ft. "MC" acetylene, 14.5 in. height / 4.125 in. diameter 5 lb. propane, 12.5 in. height / 8 in. diameter		
Covered Hoses (red/green)	13254-4-8 13254-5-8 13254-6-8 13254-7-8	"B" 9/16"-18 hose fittings. 8 ft. (2.4 m) length, 1/8 in. (3.2 mm) inside diameter Australian hose fittings. 8 ft. (2.4 m) length, 1/8 in. (3.2 mm) inside diameter British hose fittings. 8 ft. (2.4 m) length, 1/8 in. (3.2 mm) inside diameter European hose fittings. 8 ft. (2.4 m) length, 1/8 in. (3.2 mm) inside diameter		
Hose Fittings				
Hose Nuts	16173 16174	Oxygen "B" fitting, 9/16"-18 RH Fuel "B" fitting, 9/16"-18 LH		
Hose Tailpiece	14186 1882	Oxygen/fuel "A" fitting (barbed) Oxygen/fuel "B" fitting (barbed)		
Hose Ferrule	7582-1	Secures hose to torch		
Crimping Tool	7799	Crimps ferrule to secure hose to torch		1

Date: Total Quoted Price:

Distributed by:

