Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with these instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.

Plasma 375

Description

The Plasma 375 is an IGBT inverter plasma cutter with thermal overload protection, a Trafimet torch and a built-in gas regulator. This easy to use plasma cutter has the power to cut up to 3/8 in. materials and a pilot arc that makes cutting expanded metal possible. This machine required single-phase 230V (220V-240V), 60 Hz input power.



Specifications and Dimensions

1ph-230V-60HZ
340V
15-40A
35% @ 40A
4.5 CFM@ 60 PSI
250VAC 30Amps
17.7"x6.7"x9"
21 lbs

Removing from carton

- 1.1 Remove cartons, bags or Styrofoam containing the welder and accessories.
- 1.2 Check the contents with the packing list below.

Plasma Cutter	1 unit
Grounding Cable	1 pc
TRAFIMET Cutting Torch	1 pc
Electrode	3 pcs
Nozzle	3 pcs
Operator's Manual	1set

1.3 After unpacking unit, inspect carefully for any damage that may have occurred during transit. Check for loose, missing, or damaged parts. Shipping damage claim must be filed with carrier.

Know your Welder



Gas Pressure Display

The built-in gas display is used for reading the output gas pressure when cutting. Gas Pressure Adjustor

It is used for adjusting the gas pressure. The gas pressure can be read from the gas pressure display on the front panel. Normally, the pressure should be adjusted between 55-90psi.

Work Indicator

When cutting, this light is on to show the unit is on working mode.

Cutting Current Adjustor

Variable adjust the output cutting current. The higher output matches the thicker metal. The maximum cutting thickness is up to 3/8" for this unit. Please note that the maximum cutting thickness varies depending on the material type you are cutting. See the following table for reference.

Material	Maximum Cutting Thickness
Carbon Steel	3/8"
Aluminium	1/4"
Stainless Steel	1/4"
Copper	1/8"

MAX/MIN Switch

Thermal India

Ground Cal

PLASMA 375

Low Gas Indicator Light

This light will be on when the gas flow is low.

Ground Cable Connection

Connect the ground cable to the postive (+) receptacle on the front of the plasma cutter. The ground cable clamp connects to your work piece.

Torch Control Cable Connection

The black cable on the torch connects to the 3-Prong receptacle on the front of the machine. Push on to snap in place. This is the control cable for the torch.

Torch Arc Starting Cable Connection

This connector is for the red cable of the torch. It is used to help the arc starting.

Torch Connection

Connect the torch to the negative (-) receptacle.

Protection indicator Light

When the unit is in thermal overload, is over voltage or lacking voltage, the indicator will be on and the machine will stop working. When the unit is cooled down and voltage stabilizes, the unit will return to work automatically.

Power indicator Light

This light will turn on when the input power cord is plugged into the power supply and the power switch on the back of the plasma cutter is in the "ON" position.

Gas Hose Connection

The gas hose connection is on the back panel of the plasma cutter. This connections requires a 1/4 inch NPT connection (Not supplied). The other end of the gas hose connects to an air compressor or compressed air supply.

Power switch

It is the on/off switch. After the machine is connected to the input power supply, turn on this switch. The power indicator on the front panel will turn on.

Power cord

There is a 50 amp plug on this cable. Plug this into a 230V, 50amp circuit breaker power supply

Specification Table

The specification table is located on the back panel of the plasma cutter. The Serial Number of this unit is listed on the specification table.

General Safety Information

1.1 Your Welding/Cutting Environment

- -Keep the environment that you will be welding/cutting in free from flammable materials.
- -Always keep a fire extinguisher within reach.
- -Always have a qualified person install and operate this equipment.
- -Make sure the area is clean, dry and well ventilated. Do not operate the plasma cutter in humid, wet or poorly ventilated areas.
- -Always have your plasma cutter maintained by a qualified technician in accordance with local, state and national codes.
- -Always be aware of your work environment. Be sure to keep other people, especially children, away from you while you are cutting.

PLASMA 375

- -Keep harmful arc rays shielded from the view of others.
- -Mount the plasma cutter on a secure bench or cart that will keep the welder secure and prevent it from tipping over or falling.

1.2 Your Plasma Cutter's Condition

- -Check all cables, power cord and torch to be sure the insulation is not damaged. Always replace or repair damaged components before using the plasma cutter.
- -Check all components to ensure they are clean and in good operating condition before use.

1.3 Use of Your Plasma Cutter

A CAUTION

Do not operate the plasma cutter if the torch is wet. Do not immerse the plasma torch. Do not stand in water while using this plasma cutter. These components and the plasma cutter must be completely dry before attempting to use it.

- -Follow the instructions in this manual.
- -Keep the plasma cutter in the off position when not in use.
- -Connect ground lead as close to the area being cut as possible to ensure a good ground.
- -Do not allow any body part to come in contact with the material being cut, or to the ground or electrode from another plasma cutter or welder.
- -Do not cut if you are in an awkward position. Always have a secure stance while cutting to prevent accidents. Wear a safety harness if working above ground.
- -Do not drape cables over or around your body.
- Wear eye protection (see ANSI Z49.1 safety standard) while cutting to protect your eyes from harmful UV and IR ray's.
- -Wear proper gloves and protective clothing to prevent your skin from being exposed to hot metals, UV and IR rays.
- -Do not overuse or overheat your plasma cutter. Allow proper cooling time between duty cycles.
- -Keep hands and fingers away from moving parts.
- Do not point the Plasma torch at any body part or at anyone else.
- -Always use this plasma cutter in the rated duty cycle to prevent excessive heat and failure.

1.4 Specific Areas of Danger,

Caution or Warning



Electrical Shock AWARNING

Plasma cutters can produce a shock that can cause injury or death. Touching electrically live parts can cause fatal shocks and severe burns. While cutting, all metal components connected to the wire

are electrically hot. Poor ground connections are a hazard, so secure the ground lead before cutting.

- -Wear dry protective apparel: coat, shirt, gloves and insulated footwear.
- -Insulate yourself from the work piece. Avoid contacting the work piece or ground.
- Do not attempt to repair or maintain the plasma cutter while the power is on.

PLASMA 375

- -Inspect all cables and cords for any exposed wire and replace damaged or wore cables immediately.
- -Use recommended replacement cables and cords.
- -Always attach the ground clamp to the work piece or work table as close to the cutting area as possible.
- -Do not touch the torch and the ground or grounded work piece at the same time.

Fumes and Gases

2

AWARNING

- -Fumes emitted from the plasma cutting process displace clean air and can result in injury or death.
- -Do not breathe in fumes emitted by the plasma cutting process. Make sure your breathing air is clean and safe.
- -Work only in a well-ventilated area or use a ventilation device to remove plasma cutting fumes from the environment where you will be working.
- -Do not plasma cut on coated materials (galvanized, cadmium plated or containing zinc, mercury or barium). They will emit harmful fumes that are dangerous to breathe. If necessary use a ventilator, respirator with air supply or remove the coating from the material in the area to be cut.
- -The fumes emitted from some metals when heated are extremely toxic. Refer to the material safety data sheet for the manufacturer's instructions.
- -Do not weld/cut near materials that will emit toxic fumes when heated. Vapors from cleaners, sprays and degreasers can be highly toxic when heated.





A DANGER

The plasma cutting arc produces ultraviolet (UV) and infrared (IR) rays that can cause injury to your eyes and skin. Do not look at the plasma cutting arc without proper eye protection.

- Always use safety glasses, a shield or a helmet that meets ANSI Z49.1 standards for plasma cutting.
- Cover all bare skin areas exposed to the arc with protective clothing and shoes. Flame-retardant cloth or leather shirts, coats, pants or coveralls are available for protection.
- -Use screens or other barriers to protect other people from the arc rays emitted from your plasma cutting arc.
- -Warn people in your cutting area when you are going to strike an arc so they can protect themselves.

Fire Hazards



AWARNING

Do not cut on containers or pipes that contain or have had flammable, gaseous or liquid combustibles in them. Plasma cutting creates sparks and heat that can ignite flammable and explosive materials.

-Do not operate any plasma cutter in areas where flammable or explosive materials are present.

PLASMA 375

- -Remove all flammable materials within 35 feet of the plasma cutting arc. If removal is not possible, tightly cover them with fireproof covers.
- -Take precautions to ensure that flying sparks do not cause fires or explosions in hidden areas, cracks or areas you cannot see.
- -Keep a fire extinguisher close in the case of fire.
- -Wear garments that are oil-free with no pockets or cuffs that will collect sparks.
- -Do not have on your person any items that are combustible, such as lighters or matches.
- -Keep the work lead connected as close to the plasma cutting area as possible to prevent any unknown, unintended paths of electrical current from causing electrical shock and fire hazards.



Hot Materials

A CAUTION

Plasma cut materials are hot and can cause severe burns if handled improperly.

- -Do not touch plasma cut materials with bare hands.
- Do not touch torch tip after cutting until it has had time to cool down.



Sparks/Flying Debris

▲ CAUTION

Plasma cutting creates hot sparks that can cause injury. Chipping slag off cuts can create flying debris.

-Wear protective apparel at all times: ANSI-approved safety glasses or shield, a welder's hat and ear plugs to keep sparks out of ears and hair.

Electromagnetic Field

▲ CAUTION

- -Electromagnetic fields can interfere with various electrical and electronic devices such as pacemakers.
- -Consult your doctor before using any plasma cutting device
- -Keep people with pacemakers away from your plasma cutting area while cutting.
- -Do not wrap cable around your body while plasma cutting.
- Wrap plasma torch cable and ground cable together whenever possible.
- Keep plasma torch and ground cables on the same side of your body.



Shielding Gas Cylinder Can Explode

▲WARNING

High pressure cylinders can explode if damaged, so treat them carefully.

- -Never expose cylinders to high heat, sparks, open flames, mechanical shocks or arcs
- -Do not touch cylinder with plasma torch.
- -Do not plasma cut on the cylinder.
- -Always secure cylinder upright to a cart or stationary object
- -Keep cylinders away from welding/cutting or electrical circuits.
- -Use the proper regulators, gas hose and fittings for the specific application

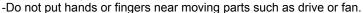
PLASMA 375



Proper Care, Repair and Maintenance

AWARNING

- -Always have power disconnected when working on internal components.
- -Do not touch or handle PC board without being grounded with a wrist strap. Put PC board in static proof bag to move or ship.





Proposition 65 Warnings

AWARNING

- Plasma cutting equipment produces fumes or gases which contain chemicals known to the state of California to cause birth defects and, in some cases, cancer. (California Health & Safety code section 25249.5 et seq.)

Installation

1. Power requirement

AC single phase 230 (220-240V) 60HZ fused with a 50amp time delayed fuse or circuit breaker is required. DO NOT OPERATE THIS UNIT if the ACTUAL power source voltage is less than 170 volts AC or greater than 250 volts AC.

AWARNING

• High voltage danger from power source! Consult a qualified

electrician for proper installation of receptacle. This cutter must be Grounded while in use to protect the operator from electrical shock.

• Do not remove grounding prong or alter the plug in any way. Do not use any adapters between the cutter's power cord and the power source receptacle. Make sure the POWER switch is OFF when

connecting your cutter's power cord to a properly grounded 230 VAC, 60Hz, 1 phase, 50 amp input power supply.

INSTALLING THE CUTTING TORCH

1. Prepare all the necessary components.



2. Screw in the electrode to the cutting torch.



3. Slide on the diffuser.



4. Line the electrode and nozzle and slide on.

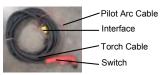


5. Install the cover to the torch and screw on.



INSTALLING THE TORCH

1. Connect the red cable with the red terminal on the front side of the plasma cutter.



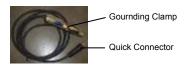


Connector for Torch Control Cable Output Connector for Torch Connector for Grounding Cable Conntector for Pilot Arc Cable

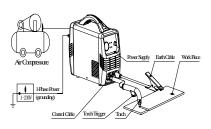
- 2. Connect the torch control cable to the black, round, 3-pronged connector on the front of the plasma cutter. Be certain to properly align the knotch in the connector with the grove in the plug.
- 3. Connect the torch to the negative (-) receptacle.
- 4. The right connection



5. Connect the grounding cable to the positive (+) receptacle.



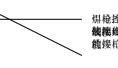
6. Illustration of Complete Assembly



Operation AWARNING

High voltage danger from power source! Consult a qualified electrician for proper installation of receptacle at the power source. This cutter must be grounded while in use to protect the operator from electrical shock. If you are not sure if your outlet is properly grounded, have it checked by a qualified electrician. Do not cut off the grounding prong or alter the plug in any way and do not use any adapters between the cutter's power cord and the power source receptacle. Make sure the POWER switch is OFF then connect your welder's power cord to a properly grounded 230 Vac (220v-240v), 60Hz, single phase, 50 amp power source.

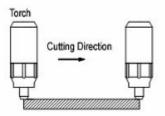
1. Set up



- Check the plasma cutter to see if it has been connected correctly and is in good working condition as described in Section 1 on Safety and that it complies with safe operation requirements.
- Switch on the power supply switch of the cutter to observe if the operation is normal. If it is normal, the fan should start up and the Power Supply Indicator Light should be on. If there is no compressed air or the air pressure is low the Low Pressure Indicator Light will be on.
- Adjust the air supply valve until the air pressure is up to the cutting torch requirement. (Lowest pressure should be no less than 50PSI), the Low Pressure Indicator Light will not be lit up in those conditions.
- Adjust the air flow to be sure it is consistent.
- Pull the torch trigger. The cutting operation begins after the cutting plasma pilot arc is made.

2. Cutting Operation

- 2.1. Metal Sheet Cutting
- Put the torch's nozzle at the start of the work piece. Turn on the torch switch to ignite the plasma pilot. After the work piece is cut thorough, move the torch along the cutting direction uniformly. The cutting speed is determined by watching to see if the cutting goes all the way through. If the speed is too fast, the work piece won't be cut thorough, or if too slow, the cut quality would be affected, excessive warping may occur, or the arc could stop.



- When you've completed the cutting process, turn off the torch; the plasma pilot arc will stop.
- 2.2. Metal Mesh Cutting
- -Fix the work piece and connect the earth cable with the work piece.
- -Put the cutting nozzle onto the work piece, lift torch up slightly from the work piece and turn on the switch to cut.
- 2.3. Notice while cutting
- Unnecessary igniting of the pilot arc in the air will reduce the life-span of the torch's electrode and nozzle.
- It is best to start cutting at the edge of the work piece, unless you are piercing the work piece.
- Keep a space between the nozzle and the work piece. Pressing the nozzle on the work piece could cause the nozzle to stick, reducing the smoothness of the cutting action creating an undesirable result.
- Keep the torch's nozzle vertical against the work piece, and watch to be sure the arc is moving along the cutting line.
- For thin materials reduce the amperage setting to get the best cutting quality, reduce excessive warping and to extend the life of the electrode and nozzle.
- Do not rapidly switch the torch trigger on and off; this will damage the pilot arc system and work piece.

- The plasma cutter's working air pressure range is 40-90psi. Notice: the internal pressure switch will shut off when the air pressure falls below 50psi. The switch only works when the pressure rises to 50psi or above.
- Every 4-8 hours, check the air filter on your air supply and remove excess moisture. Too much moisture in the cutter or torch may lead to operational trouble.

▲WARNING

- Always unplug the power supply before checking for and removing moisture.

3. Safety Requirements

- Never allow the torch to be aimed at any part of a body.
- Make sure to wear protective glasses and gloves while operating.
- Work only in well-ventilated areas. If necessary, use exhaust/ventilation fans to keep fumes or emissions away from the breathing zone.
- Do not touch the work piece while cutting.
- Do not cut a pipes, containers, or other materials that contain, or have ever contained, flammable or explosive materials.
- Do not work underwater or in wet/moist environments.
- Do not bend the torch cable sharply; this may damage the air hose.
- Nobody other than the operator should be allowed to access the working area.
- Always turn off the power supply prior to repairing or moving the machine.
- Always turn off the power supply prior to repairing or installing any

- spare parts (e.g., torch, electrode, nozzle, ground clamp, etc.).
- Never allow a person with a cardiac pacemaker close to the working area without the permission of a doctor. The magnetic field produced by plasma cutters during operation can disrupt pacemakers and similar devices.
- Do not allow the ground cable to be pinched or damaged. If damaged, replace immediately.
- Never clean the slag off the torch head by hitting it against a hard object.

Please read and save these instructions. Read through this owner's manual carefully before using product. Protect yourself and others by observing all safety information, warnings, and cautions. Failure to comply with these instructions could result in personal injury and/or damage to product or property. Please retain instructions for future reference.

Plasma 375

Trouble shooting Chart				
Power Indicator Light is off after turning on the power supply.	 The light is broken. Fuse is blown. Not 230V Input Voltage. Power supply switch is broken. Controlling board or cutter is damaged. 	1.Replace. 2.Replace. 3.Connect the 230V Input cable. 4.Replace. 5.Examine and repair.		
Fan doesn't work after turning on the power supply.	1.Fan is damaged. 2.Fan's ground lead is broken. 3.Fan's blade is blocked 4.Transformer is damaged.	1.Replace. 2.Examine and repair. 3.Clean the block. 4. Replace.		
Low Pressure Indicator Light is on	1.No input compressed air 2.Air/gas pressure valve is adjusted to 0 or broken. 3.Air/gas pressure circuit is blocked 4.Air/gas pressure valve is damaged	1.Examine and repair. 2.Adjust or replace. 3.Clean the block. 4.Replace.		
No Air/gas check function.	1.Air/Gas valve is ruined. 2.Air/Gas circuit is blocked. 3.Air/Gas check switch is ruined 4.Ground lead is broken.	1.Replace. 2.Clean the block. 3.Replace. 4.Examine and repair.		
Can't cut or no high frequency output.	1.Discharge gap is too big. 2.High pressure mica capacitance damaged. 3.Pilot transformer is damaged. 4.Main controlling board is damaged. 5.Ground lead is broken	1.Adjust to suitable gap. 2.Replace. 3.Replace. 4.Examine and repair. 5.Examine and repair.		
No response after turning on the torch switch.	1.Switch and ground-lead are broken. 2.Switch board is broken. 3.Main controlling board is damaged. 4.Transformer is damaged. 5.Ground lead is broken.	1.Examine and repair or replace. 2.Examine and repair or replace. 3.Examine and repair or replace. 4.Replace.		
		5.Examine and repair.		

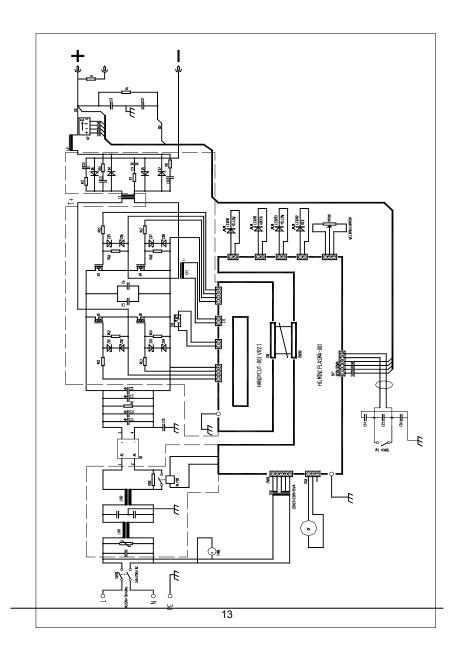
No response after turning on power supply.	1.Power cord hooked up wrong. 2.Power supply switch is broken. 3.Fuse is damaged. 4.Transformer is broken. 5.Main controlling board is ruined.	1.Examine and repair. 2.Replace. 3.Replace. 4.Replace. 5.Examine and repair or replace.
Protection indicator Light comes on.	1.High/low voltage 2.The High/low voltage setting is incorrect. 3.Over heating from exceeding the duty cycle. 4.The bad or broken connection in the thermal relay. 5.Main PCB board is broken.	1.The tolerant voltage range is 170V ~ 250V. The machine will stop working and indicator will come on if the input power voltage is not between 170V and 250V AC. Please check the voltage with a volt meter. 2.Please open the case to adjust the potentiometer VR101 (for high voltage setting) and VR102 (for low voltage setting) on the main control PCB. Note: VR 101 should be adjusted clockwise, the VR 102 should be adjusted counter clockwise. 3.Wait until the machine cools down. 4.Repaired by the qualified people. 5.Replace.
Other problem.		Please contact customer service number on the outside of the manual

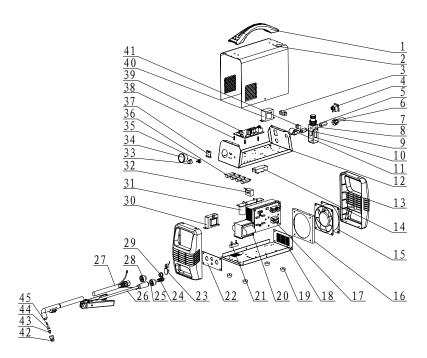
- Please provide the following:

 Model Number

 Serial Number (if any)

 Part description and number as shown on parts list





No	Description	Specification	Code
1	Handle	CUT40IIPH-2(G20CUT=)	2.05.08.019
2	Enclosure	G20CUT40IIPH.1	1.51.401.01
3	Power cord holder	38*16*8(CUT40IIPH.3-8)	2.05.17.020
4	Main Switch	R210-C2-BG green cover	2.07.80.213
5	Gas valve connector	G20CUT40	1.51.401.14
6	Power cord holder	EG-13.5(PG13.5)	2.04.30.102
7	Power cord plug	12AWG/50A/250V*2.8M	2.03.05.148
8	Gas valve	XR4-0.63	2.07.55.104

9	Gas connector II	CUT30PH.3-3	1.51.030.03-03
10	Gas valve board	CUT40IIPH.3-4	1.51.042.03-4
11	Gas valve	CUT30PH.3.7	1.51.030.03-7
12	Middle board	G20CUT40IIPH.3.1	1.51.401.03-1
13	plastic panel	CUT40IIPH-1(CUT front/back)	2.05.05.039
14	Rectifier	MDQ5010 50A/1000V	2.07.37.501
15	Fan	G12038HA1SL 110V/60HZ	2.07.89.400
16	Fan bracket	G20CUT40IIPH.8.7-1	1.51.401.08-7-1
17	Heat Sink	G20CUT40IIPH.8.6	1.51.401.08-6
18	Bottom	G20CUT40IIPH.8-5	1.51.401.08-5
19	Feet	NULL	2.05.05.016
20	Main transformer	G20CUT40IIP.8.4	1.51.401.08-4
21	Load wire bunch	G20CUT40IIP.8.1	1.51.401.08-1
22	Front lower panel	CUT40IIPH.13.1	1.51.042.13-1
23	Arc control PCB	G20CUT40IIP.13.3	1.51.401.13-3
24	Connection pole	SJ333(red)	2.05.03.104
25	Quick connector	DKJ-2/10-25	2.07.57.123
26	Grounding cable	CUT30PH.9	1.51.030.09
27	Cutting torch	S45	2.20.08.258
28	Output power PCB	CUT30PH.8.1	1.51.030.08-1
29	Socket	XS16K3Y	2.07.54.114
30	Chock	CUT40IIP.8.8	1.51.409.08-8
31	Capcitance Board	G20CUT40IIPH.8.9	1.51.401.08-9
32	Hall sensor	CUT40IIPH.3.10	1.51.042.03-10
33	Potentiometer Knob	KDJII23-16-4J red cover	2.07.11.017
34	Regulator	φ40 grey with holder	2.07.55.105
35	Potentiometer	G20CUT40IIP.3.7	1.51.401.03-7
36	Resistance	RX24N 50W 18Ω	2.07.02.003
37	Power indicating	CUT40IIPH.3.5	1.51.042.03-5

	board		
38	Bolt	M3*15	2.06.01.701
39	Main PCB	CUT40IIP.3.2	1.51.409.03-2
40	Control Transformer	G20CUT40IIP.3.3	1.51.401.03-3
41	Pressure switch	G20CUT40IIP.3.10	1.51.401.03-10
42	Cutting Nozzle	PC0116 S25-S45	2.20.04.901
43	Tip nozzle	PD0116-0.8 S25-S45	2.20.04.902
44	Whirlpool Ring	PE106 S25-45	2.07.42.010
45	Cutting Tip	PR0110 S25-S45(S30-S45)	2.20.06.301

Other Safety and Standards Information

This manual is designed to inform the operator of safety and general use of this model only. For further information about welding safety refer to the following standards and comply with them where applicable.

• ANSI Standard Z49.1 — SAFETY IN WELDING AND CUTTING obtainable from: American Welding Society 550 NW Le Jeune Road, Miami, FL 33126 Tel. (800) 443-9353 Fax (305) 443-7559 www.amweld.org or www.aws.org

• ANSI Standard Z87.1 — SAFE PRACTICE FOR OCCUPATION AND EDUCATIONAL EYE AND FACE PROTECTION Obtainable from: American National Standards Institute (ANSI) 11 West 42nd St. New York, NY 10036 Tel. (212) 642-4900 Fax (212) 398-0023 www.ansi.org

• NFPA Standard 51B — CUTTING AND WELDING PROCESS obtainable from: National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101 Quincy, MA 02269-9101 Tel. (617) 770-3000 Fax (617) 770-0700 www.nfpa.org

• OSHA Standard 29 CFR, Part 1910, Subpart Q. —WELDING, CUTTING AND BRAZING obtainable from your state OSHA office or from: U. S. Dept. of Labor OSHA, Office of Public Affairs Room N3647, 200 Constitution Ave. NW Washington, DC 20210 www.osha.gov

• CSA Standard W117.2 — Code for SAFETY IN WELDING AND CUTTING Obtainable from: Canadian Standards Association, 178 Rexdale Blvd., Etobicoke, Ontario M9W 1R3 www.csa.ca

• American Welding Society Standard A6.0
—WELDING AND CUTTING CONTAINERS
WHICH HAVE HELD COMBUSTIBLES
Obtainable from: American
Welding Society, 550 NW Le Jeune Road
Miami, FL 33126
Tel. (800) 443-9353
Fax (305) 443-7559
www.amweld.org or www.aws.org