



OM-251341E

2022-01

Processes



Oxy-Fuel Welding and Cutting

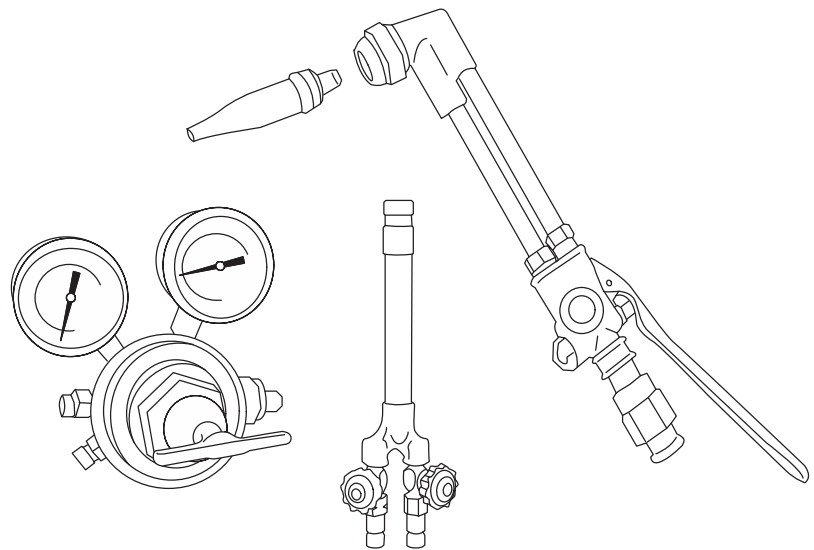
Description



Accessory

Oxy-Fuel Outfits

Medium Duty (770502) And
Heavy Duty (770974)



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OWNER'S MANUAL

From Hobart to You

Thank you and congratulations on choosing Hobart. Now you can get the job done and get it done right. We know you don't have time to do it any other way.

This Owner's Manual is designed to help you get the most out of your Hobart products. Please take time to read the Safety Precautions. They will help you protect yourself against potential hazards on the worksite. We've made installation and operation quick and easy. With Hobart, you can count on years of reliable service with proper maintenance. And if for some reason the unit needs repair, there's a Troubleshooting section that will help you figure out what the problem is. The parts list will then help you to decide the exact part you may need to fix the problem. Warranty and service information for your particular model are also provided.

Hobart Welders manufactures a full line of welders and welding-related equipment. For information on other quality Hobart products, contact your local Hobart distributor to receive the latest full line catalog or individual specification sheets. **To locate your nearest distributor or service agency call 1-800-332-3281, or visit us at www.HobartWelders.com on the web.**



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ISO 9001
Quality

Hobart is registered to the ISO 9001 Quality System Standard.




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SECTION 1 – SAFETY PRECAUTIONS – READ BEFORE USING

 Protect yourself and others from injury—read, follow, and save these important safety precautions and operating instructions.

1-1. Symbol Usage

 **DANGER!** – Indicates a hazardous situation which, if not avoided, will result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.

 Indicates a hazardous situation which, if not avoided, could result in death or serious injury. The possible hazards are shown in the adjoining symbols or explained in the text.


NOTICE – Indicates statements not related to personal injury.


 Indicates special instructions.





This group of symbols means Warning! Watch Out! ELECTRIC SHOCK, MOVING PARTS, and HOT PARTS hazards. Consult symbols and related instructions below for necessary actions to avoid these hazards.


1-2. Welding, Cutting, Brazing, And Heating Hazards

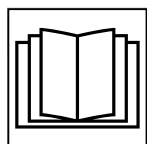
 The symbols shown below are used throughout this manual to call attention to and identify possible hazards. When you see the symbol, watch out, and follow the related instructions to avoid the hazard. The safety information given below is only a summary of the more complete safety information found in the Principal Safety Standards. Read and follow all Safety Standards.

 Only qualified persons should install, operate, maintain, and repair this equipment. A qualified person is defined as one who, by possession of a recognized degree, certificate, or professional standing, or who by extensive knowledge, training and experience, has successfully demonstrated the ability to solve or resolve problems relating to the subject matter, the work, or the project and has received safety training to recognize and avoid the hazards involved.

 During operation, keep everybody, especially children, away.

 Do not use this equipment unless you are trained in its proper use or are under competent supervision. Follow the procedures described in this manual every time you use the equipment. Failure to follow these instructions can cause fire, explosion, asphyxiation, property damage, or personal injury. This equipment must be used in accordance with all Federal, State, and local regulations as well as DOT (Department of Transportation) and CGA (Compressed Gas Association) regulations. Contact your gas supplier for more information on the proper use of compressed gases.

 In this document, the phrase "welding and cutting" also refers to other oxy-fuel operations like brazing and heating.



READ INSTRUCTIONS.

- Read and follow all labels and the Owner's Manual carefully before installing, operating, or servicing unit. Read the safety information at the beginning of the manual and in each section.
- Use only genuine replacement parts from the manufacturer.
- Perform installation, maintenance, and service according to the Owner's Manuals, industry standards, and national, state, and local codes.



HOT PARTS can burn.

- Do not touch hot parts bare handed.
- Allow cooling period before working on equipment.
- To handle hot parts, use proper tools and/or wear heavy, insulated welding gloves and clothing to prevent burns.



FUMES AND GASES can be hazardous.

Welding and cutting produces fumes and gases. Breathing these fumes and gases can be hazardous to your health.

- Keep your head out of the fumes. Do not breathe the fumes.
- Ventilate the work area and/or use local forced ventilation at the flame to remove welding and cutting fumes and gases. Some gases (natural gas and acetylene) are lighter than air and will collect in high areas. Other gases (propane and butane) are heavier than air and will collect in low areas. Heavier-than-air gases are more difficult to diffuse and are more likely to accumulate. The recommended way to determine adequate ventilation is to sample for the composition and quantity of fumes and gases to which personnel are exposed.
- If ventilation is poor, wear an approved air-supplied respirator.
- Read and understand the Safety Data Sheets (SDSs) and the manufacturer's instructions for adhesives, coatings, cleaners, consumables, coolants, degreasers, fluxes, and metals.
- Work in a confined space only if it is well ventilated, or while wearing an air-supplied respirator. Always have a trained watchperson nearby. Welding and cutting fumes and gases can displace air and lower the oxygen level, causing injury or death. Be sure the breathing air is safe. Test atmospheres in confined spaces for explosive and toxic gases before using oxy-fuel equipment.
- Do not weld or cut in locations near degreasing, cleaning, or spraying operations. The heat from welding or cutting flame can react with vapors to form highly toxic and irritating gases.
- Do not weld or cut on coated metals, such as galvanized, lead, or cadmium-plated steel unless the coating is removed from the affected area, the area is well ventilated, and while wearing an air-supplied respirator. The coatings and any metals containing these elements can give off toxic fumes if welded or cut.
- Do not weld or cut on sealed air conditioning or refrigeration systems unless all refrigerants have been removed from the system.



LIGHT RAYS can burn eyes and skin.

Light rays from the welding and cutting process produce intense visible and invisible (ultraviolet and infrared) rays that can burn eyes and skin. Sparks fly off from the weld.

- Wear approved face protection fitted with a proper shade of filter lenses to protect your face and eyes from light rays and sparks when welding, cutting, or watching (see ANSI Z49.1 and Z87.1 listed in Safety Standards).
- Wear welding goggles, or wear welding helmet/welding faceshield over approved goggles/safety glasses with side shields.

- Use protective screens or barriers to protect others from flash, glare and sparks; warn others not to watch the welding or cutting.
- Wear body protection made from leather or flame-resistant clothing (FRC). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.



WELDING AND CUTTING can cause fire or explosion.

Welding and cutting on closed containers, such as tanks, drums, or pipes, can cause them to blow up. Sparks can fly off from the welding or cutting operations.

The torch flame, flying sparks, hot workpiece, and hot equipment can cause fires and burns. Check and be sure the area is safe before doing any welding or cutting.

- Do not use this welding and cutting equipment with gases and pressures other than those for which it is intended. Oxygen is not flammable; however, the presence of pure oxygen will drastically increase the speed and force with which burning takes place. Oxygen must never be allowed to contact grease, oil, or other petroleum-based substances; therefore, be sure there is no oil or grease on the regulator, cylinder, valves, or equipment. Do not use petroleum-based pipe sealants. Do not use sealants on metal-to-metal seals, such as hose and CGA cylinder connections; use PTFE-based sealant (PTFE tape) on pipe threads. Do not use or store near excessive heat (above 125° F/51.5° C) or open flame. Do not refer to oxygen as air and do not use oxygen as a substitute for compressed air. Do not use oxygen to clean clothes or work area, for ventilation, or to operate pneumatic tools. Open oxygen cylinder valves slowly. Be sure regulator adjusting handle is in the full out (off) position before opening oxygen cylinder valve.
- Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted welding and cutting equipment. Make sure levers and valves work properly, threads on equipment are clean (no grease or oil) and not deformed, gauges are intact and easy to read, regulator is clean and free of oil or dirt, and fittings are properly sized for the cylinder. Make sure hoses are clean (no grease or oil) and ferrules are properly installed so the fitting does not slip inside the hose. Be sure all connections are tight.
- It is recommended that a reverse-flow check valve or a flashback arrestor be installed between the torch handle and the regulator. Check valves do not prevent the propagation of a flame upstream (flashback) but are designed to prevent the unintentional backflow of gases into the cutting attachment, torch, hoses, or regulator which could cause an explosion or fire. A flashback arrestor can be installed on the torch handle instead of a check valve. Miller flashback arrestors have a reverse flow check valve and prevent the propagation of a flame upstream. If a flashback arrestor is installed, a check valve is not necessary. Using a flashback arrestor and a check valve can reduce gas flow and affect torch operation. To help prevent the reverse flow of gases, be sure the cylinders contain enough gas to complete the work.
- Understand the properties and applications of a gas, and how to safely use a gas, before placing it in service.
- Perform work only in an area with a fireproof floor (concrete). Do not heat concrete because it can expand and explode violently.
- Perform work on a fireproof surface. Use heat resistant shields to protect nearby walls and flooring.
- Do not use if grease or oil is present on equipment or if equipment is damaged. Have equipment cleaned/repared by a qualified person.
- Do not open a cylinder valve quickly or the regulator can be damaged and cause a fire.
- Do not open acetylene cylinder valve more than 1–1/2 turns. (For all gases except acetylene, open cylinder valve fully to backseat the cylinder valve.) Keep cylinder wrench on the cylinder for quick shut-off.
- Do not slightly open or "crack" fuel cylinder valve to blow debris from the valve outlet. Remove the debris using nitrogen, air, or a clean, oil-free rag.
- Always purge gas from the system before lighting torch. Purge gas in a well-ventilated area and away from flame or sparks.

- Keep torch flame or sparks away from cylinder, regulator, and gas hose.
- Use only the gases recommended by the manufacturer of the oxy-fuel equipment being used.
- Never light a torch with matches or a lighter. Always use a striker.
- Do not use acetylene above 15 psi (103 kPa) flowing. It is acceptable to use acetylene regulators that indicate a static pressure up to 22 psi (151 kPa).
- Do not withdraw acetylene from a cylinder at a rate exceeding 1/7 of the cylinder capacity per hour (50 SCFH for a 350 ft³ cylinder). Maximum withdrawal rate for a half-full 100 lb propane cylinder at 70°F is 75 SCFH (2124 lph).
- When required flows (SCFH) exceed the recommended withdrawal rate from one cylinder, then additional cylinders must be manifolded to provide safe and efficient operation.
- 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.
- Do not use long gas hoses or hoses with multiple connections because they restrict gas flow and reduce gas pressure. These conditions can cause backfires and flashbacks, and reduce equipment efficiency.
- Do not use torch if you smell gas. Check oxy-fuel system for leaks with an approved leak detection solution or leak detector. Never test for gas leaks with a flame.
- Remove all flammables within 35 ft (10.7 m) of the welding or cutting operation. If this is not possible, tightly cover them with approved covers.
- Do not weld or cut where flying sparks can strike flammable material.
- Protect yourself and others from flying sparks and hot metal.
- Be alert that welding and cutting sparks and hot materials from welding and cutting can easily go through small cracks and openings to adjacent areas.
- Watch for fire, and keep a fire extinguisher nearby.
- Be aware that welding or cutting on a ceiling, floor, bulkhead, or partition can cause fire on the hidden side.
- Do not cut or weld on tire rims or wheels. Tires can explode if heated. Repaired rims and wheels can fail. See OSHA 29 CFR 1910.177 listed in Safety Standards.
- Do not weld or cut on containers that have held combustibles, or on closed containers such as tanks, drums, or pipes unless they are properly prepared according to AWS F4.1 (see Safety Standards).
- Do not weld or cut where the atmosphere can contain flammable dust, gas, or liquid vapors (such as gasoline).
- Wear body protection made from leather or flame-resistant clothing (FRC). Body protection includes oil-free clothing such as leather gloves, heavy shirt, cuffless trousers, high shoes, and a cap.
- Do not use fuel gases to clean clothes or work area.
- Remove any combustibles, such as a butane lighter or matches, from your person before doing any welding or cutting.
- After completion of work, inspect area to ensure it is free of sparks, glowing embers, and flames.
- Follow requirements in OSHA 1910.252 (a) (2) (iv) and NFPA 51B for hot work and have a fire watcher and extinguisher nearby.



CYLINDERS can explode if damaged.

Compressed gas cylinders contain gas under high pressure. If damaged, a cylinder can explode. Since gas cylinders are normally part of the welding or cutting process, be sure to treat them carefully.

- Protect compressed gas cylinders from excessive heat, mechanical shocks, physical damage, slag, open flames, and sparks.

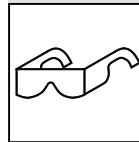
- Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping. Do not lay acetylene cylinders on their sides or acetone will flow out of the cylinder and damage the equipment.
- Keep cylinders away from any arc welding, cutting, or other electrical circuits.
- Never drape a welding or cutting torch over a gas cylinder.
- Never weld or cut on a pressurized cylinder - explosion will result.
- Use only correct compressed gas cylinders, regulators, hoses, and fittings designed for the specific application; maintain them and associated parts in good condition. Do not use compressed gas cylinder unless an approved gas regulator is attached to the gas valve.
- Turn face away from valve outlet when opening cylinder valve. Do not stand in front of or behind the regulator when opening the valve.
- Keep protective cap in place over valve except when cylinder is in use or connected for use.
- Use the proper equipment, correct procedures, and sufficient number of persons to lift, move, and transport cylinders.
- Store compressed gas and oxygen cylinders in separate locations.
- Store empty cylinders with valves closed and caps in place.

- Do not modify or repair cylinders or valves. Store leaking acetylene cylinders outdoors in a safe area. Identify leaking cylinders and return them to the supplier.
- Dispose of used disposable cylinders according to the manufacturer's recommendations. Do not throw cylinders in fire.
- Follow instructions provided by the gas supplier and on compressed gas cylinders, associated equipment, and in Compressed Gas Association (CGA) publication P-1 listed in Safety Standards.



BUILDUP OF GAS can injure or kill.

- Shut off compressed gas supply when not in use.
- Always ventilate confined spaces or use approved air-supplied respirator.



FLYING METAL or DIRT can injure eyes.

- Welding, cutting, chipping, wire brushing, and grinding cause sparks and flying metal.
- Wear welding goggles, or wear welding helmet /welding faceshield over approved goggles/safety glasses with side shields.

1-3. California Proposition 65 Warnings

⚠ WARNING – This product can expose you to chemicals including lead, which are known to the state of California to cause cancer and birth defects or other reproductive harm.

For more information, go to www.P65Warnings.ca.gov.

1-4. Principal Safety Standards

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: <http://www.aws.org>.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1. Website: <http://www.aws.org>.

Recommended Practices for Safe Oxyfuel Gas Cutting Torch Operation, American Welding Society Standard C4.2/C4.2M, and *Recommended Practices for Safe Oxyfuel Gas Heating Torch Operation*, American Welding Society Standard C4.3/C4.3M. Website: <http://www.aws.org>

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

Acetylene CGA Pamphlet G-1 from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: www.csagroup.org.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute. Website: www.ansi.org.

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B from National Fire Protection Association. Website: www.nfpa.org.

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: www.osha.gov.

OSHA *Important Note Regarding the ACGIH TLV, Policy Statement on the Uses of TLVs and BEIs*. Website: www.osha.gov.

Applications Manual for the Revised NIOSH Lifting Equation from the National Institute for Occupational Safety and Health (NIOSH). Website: www.cdc.gov/NIOSH.

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SECTION 2 – CONSIGNES DE SÉCURITÉ - LIRE AVANT UTILISATION

⚠ Pour écarter les risques de blessure pour vous-même et pour autrui — lire, appliquer et ranger en lieu sûr ces consignes relatives aux précautions de sécurité et au mode opératoire.

2-1. Symboles utilisés

⚠ **DANGER!** – Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

⚠ Indique une situation dangereuse qui si on l'évite pas peut donner la mort ou des blessures graves. Les dangers possibles sont montrés par les symboles joints ou sont expliqués dans le texte.

AVIS – Indique des déclarations pas en relation avec des blessures personnelles.

👉 Indique des instructions spécifiques.



Ce groupe de symboles veut dire Avertissement! Attention! DANGER DE CHOC ELECTRIQUE, PIÈCES EN MOUVEMENT, et PIÈCES CHAUDES. Reportez-vous aux symboles et aux directives ci-dessous afin de connaître les mesures à prendre pour éviter tout danger.

2-2. Soudage, coupage, brasage, risques de surchauffe

⚠ Les symboles représentés ci-dessous sont utilisés dans ce manuel pour attirer l'attention et identifier les dangers possibles. En présence de ce symbole, prendre garde et suivre les instructions afférentes pour éviter tout risque. Les consignes de sécurité présentées ci-après ne font que résumer l'information contenue dans les Normes de sécurité principales. Lire et suivre toutes les Normes de sécurité.

⚠ L'installation, l'utilisation, l'entretien et les réparations ne doivent être confiés qu'à des personnes qualifiées. Une personne qualifiée est définie comme celle qui, par la possession d'un diplôme reconnu, d'un certificat ou d'un statut professionnel, ou qui, par une connaissance, une formation et une expérience approfondies, a démontré avec succès sa capacité à résoudre les problèmes liés à la tâche, le travail ou le projet et a reçu une formation en sécurité afin de reconnaître et d'éviter les risques inhérents.

⚠ Au cours de l'utilisation, tenir toute personne à l'écart et plus particulièrement les enfants.

⚠ Ne pas utiliser cet équipement à moins d'avoir été formé à son usage adéquat ou d'être sous la supervision d'une personne qualifiée. Respecter les procédures décrites dans le présent livret pour toute utilisation de l'équipement. Le non-respect de ces procédures peut causer des risques d'incendie, d'explosion, d'asphyxie, de dommages matériels ou de blessures. Cet équipement doit être utilisé dans le respect de toutes les réglementations fédérales, provinciales et municipales, ainsi que celles du Ministère des Transports et de l'association CGA (Compressed Gas Association). Pour plus d'information sur l'utilisation adéquate de gaz comprimé, communiquez avec votre fournisseur de gaz.

👉 Dans ce document, l'expression « soudage et coupage » fait également référence à d'autres opérations oxy-combustibles comme le brasage et le chauffage.



LES PIÈCES CHAUDES peuvent provoquer des brûlures.

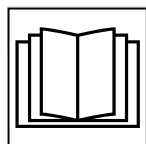
- Ne pas toucher des parties chaudes à mains nues.
- Prévoir une période de refroidissement avant de travailler à l'équipement.



LES FUMÉES ET LES GAZ peuvent être dangereux.

Le soudage et le coupage produisent des vapeurs et des gaz. Respirer ces fumées et ces gaz peut être dangereux pour votre santé.

- Ne pas toucher aux pièces chaudes, utiliser les outils recommandés et porter des gants de soudage et des vêtements épais pour éviter les brûlures.
- Garder la tête à l'extérieur des vapeurs et des fumées et ne pas les respirer.
- Ventiler le lieu de travail ou avoir recours à une ventilation aspirante installée près de la flamme pour évacuer les vapeurs et les gaz de soudage et de coupe. Certains gaz (gaz naturel et de l'acétylène) sont plus légers que l'air et s'accumulent en hauteur. D'autres gaz (propane et butane) sont plus lourds que l'air et s'accumulent à un niveau inférieur. Les gaz plus lourds que l'air sont plus difficiles à diffuser et sont plus susceptibles de s'accumuler. Pour déterminer la bonne ventilation, il est recommandé de procéder à un prélèvement pour la composition et la quantité de fumées et de gaz auxquels est exposé le personnel.
- Si la ventilation est médiocre, porter un respirateur à adduction d'air approuvé.
- Lire et comprendre les fiches de données de sécurité et les instructions du fabricant concernant les adhésifs, les revêtements, les nettoyeurs, les consommables, les produits de refroidissement, les dégraissages, les flux et les métaux.
- Ne travailler dans un espace confiné que s'il est bien ventilé, ou en portant un appareil respiratoire à adduction d'air pur. Ne soudez pas ou ne coupez pas près de zones où sont effectuées des opérations de dégraissage, nettoyage ou pulvérisation. Les vapeurs de soudage et de coupage peuvent déplacer de l'air et abaisser le niveau d'oxygène, cause de lésion ou de mort. Assurez-vous que l'air ambiant est sain pour la santé. Tester les atmosphères dans les espaces clos pour les gaz explosifs et toxiques avant d'utiliser l'équipement d'oxycoupage.
- Ne soudez pas ou ne coupez pas près de zones où sont effectuées des opérations de dégraissage, nettoyage ou pulvérisation. La chaleur et les rayons d'arc peuvent réagir avec les vapeurs et former des gaz hautement toxiques et irritants.



LIRE LES INSTRUCTIONS.

- Lire et appliquer les instructions sur les étiquettes et le Mode d'emploi avant l'installation, l'utilisation ou l'entretien de l'appareil. Lire les informations de sécurité au début du manuel et dans chaque

section.

- N'utiliser que des pièces de remplacement provenant du fabricant.
- Effectuer l'installation, l'entretien et toute intervention selon les manuels d'utilisateurs, les normes nationales, provinciales et de l'industrie, ainsi que les codes municipaux.

- Ne soudez pas ou ne coupez pas des métaux enrobés tels que des métaux galvanisés, contenant du plomb ou de l'acier plaqué au cadmium, à moins que l'enrobage ne soit ôté de la surface de soudage, que l'endroit où vous travaillez ne soit bien ventilé, ou, si nécessaire, que vous ne portiez un respirateur alimenté en air. Les revêtements et tous les métaux renfermant ces éléments peuvent dégager des fumées toxiques en cas de soudage.
- Ne pas souder ou couper sur des systèmes de climatisation ou de réfrigération fermés à moins que tous les réfrigérants aient été retirés du système.



LES RAYONS DE L'ARC peuvent provoquer des brûlures dans les yeux et sur la peau.

Les rayons d'arc issus des procédés de soudage et de coupage produisent des rayons visibles et invisibles intenses (ultraviolets et infrarouges) qui peuvent entraîner des brûlures aux yeux et à la peau. Des étincelles sont projetées pendant le soudage.

- Portez un casque de soudage approuvé muni de verres filtrants appropriés pour protéger visage et yeux contre les rayons et les étincelles d'arc pendant le soudage, le coupage ou la surveillance (voir ANSI Z49.1 et Z87.1 énuméré dans les Normes de Sécurité).
- Porter des lunettes de soudage, ou porter un écran facial/casque de soudage sur des lunettes/lunettes de sécurité approuvées avec écrans de protection latéraux.
- Avoir recours à des écrans protecteurs ou à des rideaux pour protéger les autres contre les rayonnements les éblouissements et les étincelles ; prévenir toute personne sur les lieux de ne pas regarder l'arc.
- Porter une protection corporelle en cuir ou des vêtements ignifuges (FRC). La protection du corps comporte des vêtements sans huile, comme des gants de cuir, une chemise solide, des pantalons sans revers, des chaussures hautes et une casquette.



Le SOUDAGE ET le COUPAGE présentent un risque d'incendie ou d'explosion.

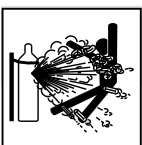
Les récipients fermés, comme les réservoirs, les fûts ou les tuyaux, peuvent éclater lorsqu'ils sont soumis à des travaux de soudure ou de coupage. De tels travaux peuvent produire des étincelles. La flamme de la torche, les étincelles, les pièces de travail chauffées, et les équipements chauds peuvent causer des brûlures et des incendies. S'assurer que le lieu ne présente pas de danger avant d'effectuer le soudage ou la coupe.

- Ne pas utiliser cet équipement de soudage et de coupage avec des gaz et des pressions autres que celles pour lesquelles il est prévu. L'oxygène est pas inflammable, cependant, la présence d'oxygène pur augmentera considérablement la vitesse et la force avec laquelle la combustion a lieu. L'oxygène ne doit jamais être autorisé à entrer en contact avec de la graisse, de l'huile ou d'autres substances à base de pétrole. Par conséquent, assurez-vous qu'il n'y a pas d'huile ou de graisse sur le régulateur, le cylindre, les valves ou l'équipement. Ne pas utiliser de produits d'étanchéité de tuyaux à base de pétrole. Ne pas utiliser de produits d'étanchéité sur les joints métal-métal, tels que les raccords de tuyaux et de cylindres CGA; utiliser un produit d'étanchéité à base de PTFE (ruban PTFE) sur les filetages des tuyaux. Ne pas utiliser ou entreposer à proximité d'une chaleur excessive (supérieure à 1255 F/ 51,55 C) ou d'une flamme ouverte. Ne pas appeler l'oxygène de l'air et ne pas utiliser l'oxygène comme un substitut à l'air comprimé. Ne pas utiliser l'oxygène pour nettoyer les vêtements ou la zone de travail, pour la ventilation, ou pour faire fonctionner des outils pneumatiques. Ouvrir les valves de bouteille d'oxygène lentement. Inspecter tous les équipements avant utilisation.
- Inspecter tous les équipements avant utilisation. Ne pas utiliser des équipements de soudage et de coupage endommagés, défectueux ou mal réglés. S'assurer que les leviers et les robinets fonctionnent bien, que les filets d'équipements sont propres (aucune graisse ou huile) et inaltérés, que les cadrans sont intacts et

faciles à lire, que les régulateurs sont propres (sans saleté ou huile), et que les raccords sont de bonne taille pour la bouteille. S'assurer que les flexibles sont propres (sans graisse ou huile) et que les bagues d'extrémité sont adéquatement installées pour que les connecteurs ne glissent pas à l'intérieur des boyaux. S'assurer que tous les raccords sont serrés.

- L'installation d'un clapet anti-retour ou d'un intercepteur de rentrée de flamme entre la poignée de la torche et le régulateur est recommandée. Les clapets anti-retour ne font pas obstacle à la propagation d'une flamme en amont (retour de flamme), mais sont conçus pour empêcher le reflux non intentionnel des gaz dans l'équipement de coupe, torche, tuyaux ou un régulateur, qui pourrait provoquer une explosion ou d'incendie. Un intercepteur de rentrée de flamme peut être installé sur la poignée de la torche au lieu d'un clapet anti-retour. Les pare-flashback Miller ont un clapet anti-retour d'écoulement inverse et empêchent la propagation d'une flamme en amont. Si un intercepteur de rentrée de flamme est installé, un clapet anti-retour n'est pas requis. L'utilisation d'un intercepteur de rentrée de flamme et d'un clapet anti-retour peut réduire le débit de gaz et affecter le fonctionnement de la torche. Pour aider à prévenir le débit de gaz en sens inverse, s'assurer que les bouteilles d'alimentation contiennent suffisamment de gaz pour faire le travail au complet.
- Bien s'assurer de comprendre les propriétés et les applications d'un gaz, et comment l'utiliser en toute sécurité avant de le mettre en service.
- Ne travailler que dans des lieux où le plancher est à l'épreuve du feu (béton). Ne pas chauffer le béton, car c'est un matériau expansible qui peut exploser violemment.
- Effectuer des travaux sur une surface anti-feu. Utiliser des boucliers résistants à la chaleur pour protéger les murs et les planchers à proximité.
- Ne pas l'utiliser si de la graisse ou de l'huile est présente sur l'équipement ou si l'équipement est endommagé. Faire nettoyer/réparer l'équipement par une personne qualifiée.
- Ne pas ouvrir rapidement le robinet de bouteille sinon le régulateur pourrait être endommagé et causer un incendie.
- Ne pas ouvrir la vanne de la bouteille d'acétylène plus de 1-1/2 de tour. (Pour tous les gaz, à l'exception de l'acétylène, ouvrir la valve de la bouteille entièrement). Garder la clé sur le cylindre pour une fermeture rapide.
- Ne pas entrouvrir la valve de la bouteille de carburant pour souffler les débris de la sortie de la valve. Retirer les débris à l'aide d'azote, d'air ou d'un chiffon propre et exempt d'huile.
- Toujours purger le gaz du système avant d'allumer la torche. Purger le gaz dans un endroit bien aéré et à l'abri des flammes ou des étincelles.
- Garder la flamme ou les étincelles de la torche à l'écart de la bouteille, du régulateur et du tuyau de gaz.
- Utiliser uniquement les gaz recommandés par le fabricant de l'équipement d'oxycoupage utilisé.
- Ne jamais allumer une torche avec des allumettes ou un briquet. Toujours utiliser un dispositif à friction.
- Ne pas utiliser de l'acétylène au-dessus de 15 psi (103 kPa). Il est acceptable d'utiliser des régulateurs d'acétylène qui indiquent une pression statique allant jusqu'à 22 psi (151 kPa).
- Ne pas retirer l'acétylène d'un cylindre à un taux supérieur à 1/7 de la capacité du cylindre par heure (50 SCFH pour un cylindre de 350 pi³). Le taux de prélèvement maximal pour un cylindre de propane à moitié plein de 100 lb à 70 °F est de 75 SCFH (2 124 l/h).
- Lorsque les débits requis (SCFH) dépassent le taux de prélèvement recommandé d'un cylindre, des cylindres supplémentaires devront être raccordés pour assurer un fonctionnement sécuritaire et efficace.
- Lors de l'utilisation d'oxygène liquide, les becs pourront nécessiter un volume de gaz plus important qu'un seul cylindre n'est pas en mesure de produire. Des évaporateurs externes ou des cylindres multiples pourront être nécessaires pour fournir des débits de gaz suffisants.

- Ne pas utiliser de longs tuyaux de gaz ou des tuyaux à connexions multiples, car ceux-ci limitent le débit de gaz et réduisent la pression de gaz. Ces conditions peuvent provoquer des retours de flamme et des retours de courant de soudage, et réduire l'efficacité de l'équipement.
- S'il y a odeur de gaz, n'utilisez pas la torche. Contrôler le système de gaz oxygéné pour détecter toute fuite à l'aide d'une solution de détection de fuites ou d'un détecteur de fuites approuvé. Ne jamais tester les fuites de gaz avec une flamme.
- Écarter tout produit inflammable situé à moins de 35 pieds (10,7 m) de l'arc de soudage ou de coupage. Si cela n'est pas possible, bien les recouvrir en utilisant des bâches approuvées.
- Ne soudez pas ou ne coupez pas dans un endroit où des étincelles pourraient atteindre des matières inflammables.
- Se protéger et d'autres personnes de la projection d'étincelles et de métal chaud.
- Assurez-vous qu'aucune étincelle ni matière chaude provenant du soudage ou du coupage ne peut se glisser dans de petites fissures ou tomber dans d'autres pièces contiguës.
- Afin d'éliminer tout risque de feu, soyez vigilant et gardez toujours un extincteur à portée de main.
- Si vous soudez ou coupez sur un plafond, un plancher ou une cloison, soyez conscient que cela peut entraîner un incendie de l'autre côté.
- Ne pas couper ni souder sur les jantes de pneus ou les roues. Les pneus peuvent exploser s'ils sont chauffés. Les jantes et les roues réparées peuvent avoir une défektivité. Vous reporter à la liste OSHA 29 CFR 1910.177 dans les normes de sécurité.
- N'effectuez pas de soudage ou de coupage sur des conteneurs ayant stocké des combustibles ou sur des conteneurs fermés tels que des réservoirs, tambours, ou conduites, à moins qu'ils n'aient été préparés correctement conformément à AWS F4.1 (voir les Normes de Sécurité).
- Ne soudez pas ou ne coupez pas si l'air ambiant est chargé de particules, gaz, ou vapeurs inflammables (vapeur d'essence, par exemple).
- Porter une protection corporelle en cuir ou des vêtements ignifuges (FRC). La protection du corps comporte des vêtements sans huile, comme des gants de cuir, une chemise solide, des pantalons sans revers, des chaussures hautes et une casquette.
- Ne pas utiliser de gaz carburant pour nettoyer les vêtements ou la zone de travail.
- Avant le soudage ou coupage, retirez tout combustible de vos poches, par exemple un briquet au butane ou des allumettes.
- Une fois le travail achevé, assurez-vous qu'il ne reste aucune trace d'étincelles incandescentes ni de flammes.
- Suivre les consignes de OSHA 1910.252 (a) (2) (iv) et de NFPA 51B pour travaux de soudage et prévoir un détecteur d'incendie et un extincteur à proximité.



LES BOUTEILLES peuvent exploser si elles sont endommagées.

Les bouteilles de gaz comprimé sont sous haute pression. Une bouteille endommagée peut exploser. Du fait que les bouteilles de gaz font normalement partie du procédé de soudage, les manipuler avec précaution.

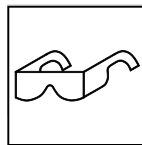
- Protégez les bouteilles de gaz comprimé contre la chaleur excessive, les chocs, les dommages physiques, le laitier, les flammes nues et les étincelles.

- Placer les bouteilles debout en les fixant dans un support stationnaire ou dans un porte-bouteilles pour les empêcher de tomber ou de se renverser. Ne pas poser les bouteilles d'acétylène sur le côté, sinon de l'acétone coulera de la bouteille et endommagera l'équipement.
- Les bouteilles ne doivent pas être près de la zone de soudage à l'arc ou de coupage ni de tout autre circuit électrique.
- Ne placez jamais une torche de soudage ou de coupage sur une bouteille de gaz.
- Ne soudez ou coupez jamais sur une bouteille pressurisée – une explosion en résulterait.
- Utiliser seulement des bouteilles de gaz comprimé, régulateurs, tuyaux et raccords convenables pour cette application spécifique ; les maintenir ainsi que les éléments associés en bon état. Ne pas utiliser de bouteille de gaz comprimé, à moins qu'un régulateur de gaz approuvé soit fixé à la valve de gaz.
- Ne pas tenir la tête en face de la sortie en ouvrant la soupape de la bouteille. Ne pas se tenir devant ou derrière le régulateur lors de l'ouverture de la vanne.
- Maintenir le chapeau de protection sur la soupape, sauf en cas d'utilisation ou de branchement de la bouteille.
- Utiliser le bon équipement, les bonnes procédures et suffisamment de personnes pour soulever, déplacer et transporter les bouteilles.
- Stocker les bouteilles de gaz et d'oxygène comprimé dans des endroits séparés.
- Stocker les bouteilles vides avec les valves fermées et les bouchons en place.
- Ne pas modifier ou réparer les bouteilles ou les valves. Stocker les bouteilles d'acétylène qui fuient à l'extérieur dans une zone sûre. Identifier les bouteilles qui fuient et les retourner au fournisseur.
- Éliminer les bouteilles à usage unique usagées selon les recommandations du fabricant. Ne pas jeter les bouteilles dans le feu.
- Lire et suivre les instructions sur les bouteilles de gaz comprimé, l'équipement connexe et le dépliant P-1 de la CGA (Compressed Gas Association) mentionné dans les principales normes de sécurité.



LES ACCUMULATIONS DE GAZ risquent de provoquer des blessures ou même la mort.

- Fermer l'alimentation du gaz comprimé en cas de non utilisation.
- Veiller toujours à bien aérer les espaces confinés ou se servir d'un respirateur d'adduction d'air homologué.



DES PIÈCES DE METAL ou DES SALETES peuvent provoquer des blessures dans les yeux.

- Le soudage, l'écaillage, le passage de la pièce à la brosse en fil de fer, et le meulage génèrent des étincelles et des particules métalliques volantes.
- Porter des lunettes de soudage, ou porter un écran facial/casque de soudage sur des lunettes/lunettes de sécurité approuvées avec écrans de protection latéraux.

2-3. Proposition californienne 65 Avertissements

⚠ AVERTISSEMENT – Ce produit peut vous exposer à des produits chimiques tels que le plomb, reconnus par l'État de Californie comme cancérigènes et sources de malformations ou d'autres troubles de la reproduction.

Pour plus d'informations, consulter www.P65Warnings.ca.gov.

2-4. Principales normes de sécurité

Safety in Welding, Cutting, and Allied Processes, American Welding Society standard ANSI Standard Z49.1. Website: <http://www.aws.org>.

Safe Practices for the Preparation of Containers and Piping for Welding and Cutting, American Welding Society Standard AWS F4.1. Website: <http://www.aws.org>.

Recommended Practices for Safe Oxyfuel Gas Cutting Torch Operation, American Welding Society Standard C4.2/C4.2M, and *Recommended Practices for Safe Oxyfuel Gas Heating Torch Operation*, American Welding Society Standard C4.3/C4.3M. Website: <http://www.aws.org>

Safe Handling of Compressed Gases in Cylinders, CGA Pamphlet P-1 from Compressed Gas Association. Website: www.cganet.com.

Acetylene CGA Pamphlet G-1 from Compressed Gas Association. Website: www.cganet.com.

Safety in Welding, Cutting, and Allied Processes, CSA Standard W117.2 from Canadian Standards Association. Website: www.csagroup.org.

Safe Practice For Occupational And Educational Eye And Face Protection, ANSI Standard Z87.1, from American National Standards Institute. Website: www.ansi.org.

Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, NFPA Standard 51B from National Fire Protection Association. Website: www.nfpa.org.

OSHA, Occupational Safety and Health Standards for General Industry, Title 29, Code of Federal Regulations (CFR), Part 1910.177 Subpart N, Part 1910 Subpart Q, and Part 1926, Subpart J. Website: www.osha.gov.

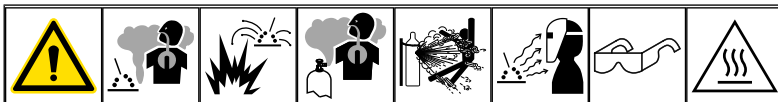
OSHA *Important Note Regarding the ACGIH TLV, Policy Statement on the Uses of TLVs and BEIs*. Website: www.osha.gov.

Applications Manual for the Revised NIOSH Lifting Equation from the National Institute for Occupational Safety and Health (NIOSH). Website: www.cdc.gov/NIOSH.

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SECTION 3 – ADDITIONAL SAFETY PRECAUTIONS

3-1. Hazardous Events



The following events are very hazardous and can occur in any oxy-fuel system. It is important to understand these hazards and know how to prevent them.

Backfire: The return of the flame into the torch, usually accompanied by a popping sound. The flame may be extinguished or it may re-appear at the tip end.

Sustained Backfire: The return of the flame into the torch that continues to burn inside the torch with a hissing or squealing sound.

Flashback: The return of a flame into and through the torch or into the hose. In some instances it can reach the regulator and even enter the cylinder. This is generally caused by the mixing of the oxygen and fuel gas in the system. This is a very dangerous situation that can cause an explosion anywhere in the system. This is why purging is so important (see Sections 6-1 and 6-2).

3-2. Associated Hazards Of Recompressing Pure Oxygen



⚠ Open oxygen cylinder valves slowly. Opening an oxygen cylinder valve quickly can cause a fire or explosion. Be sure regulator adjusting handle is in the full out (off) position before opening an oxygen cylinder valve.

Recompressing high pressure oxygen in a low pressure cavity may create heat, resulting in combustion. For combustion to occur, oxygen, fuel, and kindling temperatures must be present. All of these components may be present when oxygen is recompressed by opening the tank valve too quickly.

Oxygen: High purity oxygen accelerates the rate of combustion, increases heat output, and lowers the combustible point at which various materials will burn.

Fuel: The fuel for combustion may be the regulator itself if enough heat is produced to reach the kindling temperature of the regulator's components.

Kindling Temperatures: Enough heat may be generated to ignite the regulator components by the friction created when recompressing high-pressure oxygen. This heat is known as the heat of recompression.

⚠ If an internal fire or flashback occurs (indicated by a whistling sound or inverted flame), do the following:

- Turn off the torch oxygen valve immediately.
- Turn off the torch fuel valve.
- Turn off the oxygen cylinder valve.
- Turn off the fuel gas cylinder valve.

Do not relight the torch until the equipment has cooled to the touch and the flashback cause has been determined and corrected.

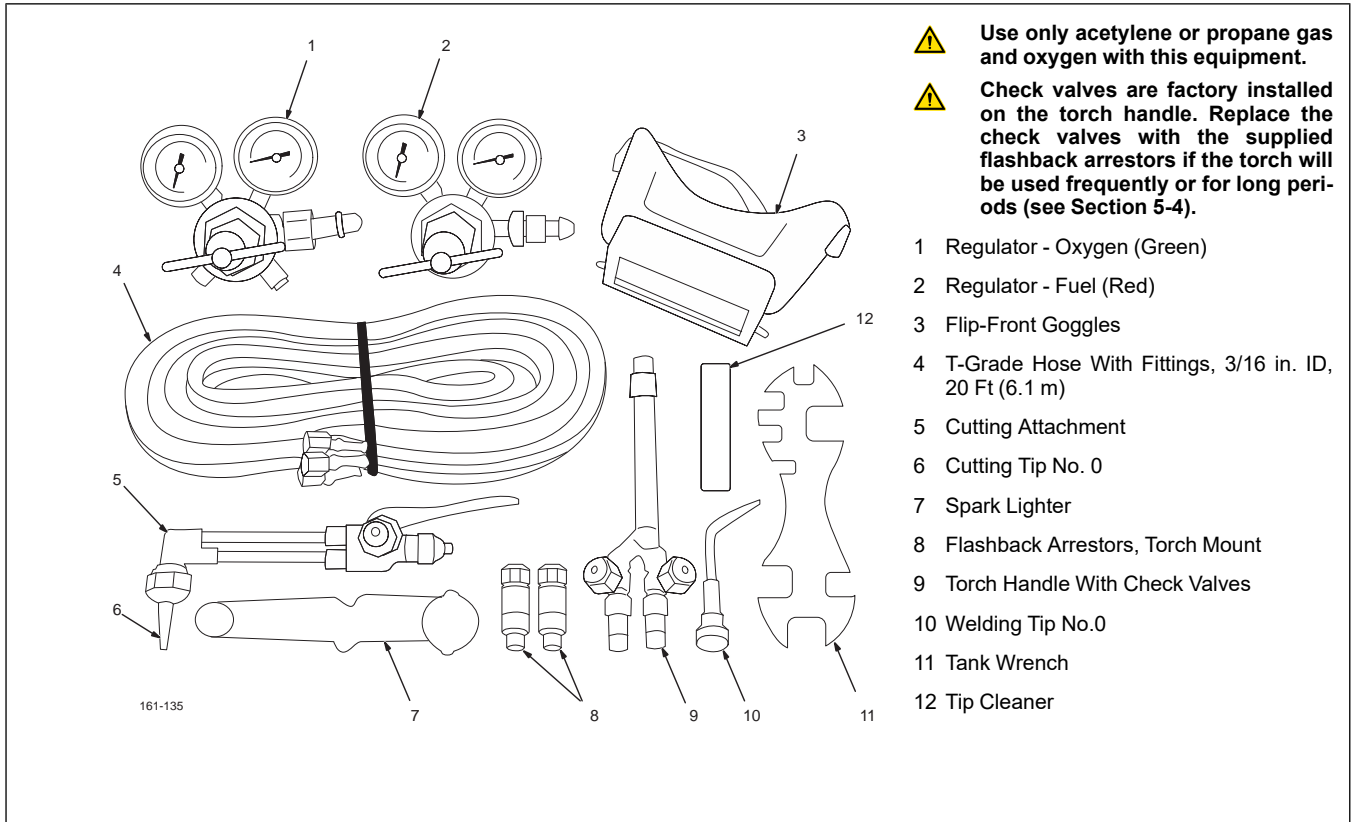
3-3. Inspecting The Equipment Before Use

⚠ Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted welding and cutting equipment. Make sure levers and valves work properly, threads on equipment are clean (no grease or oil) and not deformed, gauges are intact and easy to read, regulator is clean and free of oil or dirt, and fittings are properly sized for the cylinder. Make sure hoses are clean (no grease or oil) and ferrules are properly installed so the fitting does not slip inside the hose. Be sure all connections are tight and there are no leaks in the system.

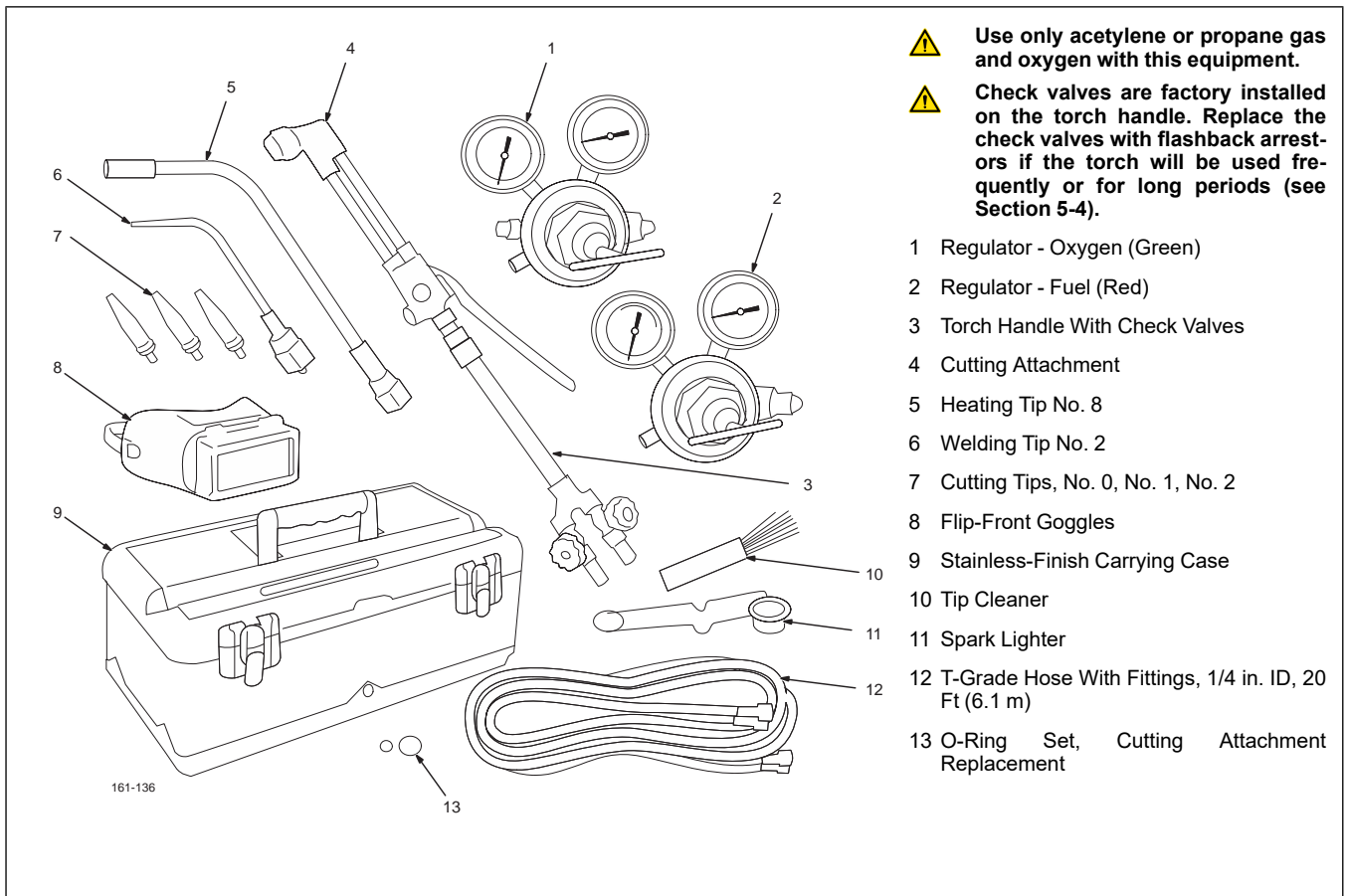
This manual offers basic information regarding the Medium-Duty and Heavy-Duty Oxy-Acetylene Cutting and Welding Outfits. Given reasonable care, this equipment will provide trouble-free use for many years.

SECTION 4 – SPECIFICATIONS

4-1. Equipment Included With Medium-Duty Outfit 770502



4-2. Equipment Included With Heavy-Duty Outfit 770974



4-3. Equipment Specifications

Description	Fuel Gas	Cutting Capacity	Heating Capacity	Welding Capacity	Accessories
770502 Medium-Duty Outfit Cutting, Welding	Acetylene (Tips In Outfit) Propane (Tips Optional)	Cuts Up To 1/2 in. (13 mm) Metal Thickness	Not Applicable	Welds Up To 5/64 in. (2 mm) Metal Thickness	Goggle Flip Front Shade No. 5 2 x 4.25 in. (51 x 108 mm) T-Grade All-Fuel Hose 20 ft (6 m) Case (HD Only) 17 x 13.4 x 11.8 in. (45 x 35 x 30 cm) Max Load 50 lb (23 kg)
770974 Heavy-Duty Outfit Cutting, Heating, Welding		Cuts Up To 1-1/2 in. (38 mm) Metal Thickness	Heats up to 117600 BTU Per Hour	Welds Up To 1/8 in. (3 mm) Metal Thickness	

4-4. Cutting Tip And Gas Pressure Guide — Acetylene

Medium Duty Cutting – Acetylene													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Acet. Pressure		Acet. Cosum.	Orifice Size	Speed IPM	Kerf Width
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
770153	3-101	0	3/8	10	25 - 30	172 - 207	55 - 60	3 - 5	21 - 34	5 - 8	0.04	24 - 28	0.06
770153	3-101	0	1/2	13	30 - 35	207 - 241	60 - 65	3 - 5	21 - 34	6 - 10	0.04	20 - 24	0.06
770154	3-101	1	3/4	19	30 - 35	207 - 241	80 - 85	3 - 5	21 - 34	8 - 13	0.05	17 - 21	0.07
770155	3-101	2	1	25	35 - 40	241 - 276	140 - 150	3 - 6	21 - 41	10 - 16	0.06	15 - 19	0.09
770155	3-101	2	1-1/2	38	40 - 45	276 - 310	150 - 160	3 - 7	21 - 48	12 - 18	0.06	13 - 17	0.09
770993	3-101	3	2	51	40 - 45	276 - 310	210 - 225	4 - 9	28 - 55	14 - 22	0.07	12 - 15	0.11
770993	3-101	3	2-1/2	64	45 - 50	310 - 345	225 - 240	4 - 10	28 - 69	16 - 26	0.07	10 - 13	0.11
Heavy Duty Cutting – Acetylene													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Acet. Pressure		Acet. Cosum.	Orifice Size	Speed IPM	Kerf Width
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
770975	1-101	0	3/8	10	25 - 30	172 - 207	55 - 60	3 - 5	21 - 34	5 - 8	0.04	24 - 28	0.06
770975	1-101	0	1/2	13	30 - 35	207 - 241	60 - 65	3 - 5	21 - 34	6 - 10	0.04	20 - 24	0.06
770163	1-101	1	3/4	19	30 - 35	207 - 241	80 - 85	3 - 5	21 - 34	8 - 13	0.05	17 - 21	0.07
770164	1-101	2	1	25	40 - 45	276 - 310	150 - 160	3 - 7	21 - 48	12 - 18	0.06	13 - 17	0.09
770164	1-101	2	1-1/2	38	40 - 45	276 - 310	150 - 160	3 - 7	21 - 48	12 - 18	0.06	13 - 17	0.09
770165	1-101	3	2	51	40 - 45	276 - 310	210 - 225	4 - 9	28 - 55	14 - 22	0.07	12 - 15	0.11
770165	1-101	3	2-1/2	64	45 - 50	310 - 345	225 - 240	4 - 10	28 - 69	16 - 26	0.07	10 - 13	0.11
770994	1-101	4	3	76	40 - 50	276 - 345	270 - 320	5 - 10	34 - 69	18 - 30	0.08	9 - 12	0.12

4-5. Cutting Tip And Gas Pressure Guide — Propane And Natural Gas

Medium Duty Cutting – Propane And Natural Gas													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Propane Pressure		Propane Consum.	Orifice Size	Speed IPM	Kerf Width
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
770162	3-GPN	2	1	25	35 - 40	241 - 276	115 - 125	4 - 8	28 - 55	12 - 15	0.06	14 - 18	0.09
770162	3-GPN	2	1-1/2	38	40 - 45	276 - 310	115 - 125	5 - 9	34 - 55	12 - 15	0.06	14 - 18	0.09
Heavy Duty Cutting – Propane And Natural Gas													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Propane Pressure		Propane Consum.	Orifice Size	Speed IPM	Kerf Width
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
770166	1-GPN	1	3/4	19	30 - 35	207 - 241	70 - 80	4 - 6	28 - 41	10 - 12	0.05	15 - 20	0.08
770167	1-GPN	2	1	25	35 - 40	241 - 276	115 - 125	4 - 8	28 - 55	12 - 15	0.05	14 - 18	0.09
770167	1-GPN	2	1-1/2	38	40 - 45	276 - 310	125 - 135	5 - 9	34 - 55	12 - 15	0.05	14 - 18	0.09

4-6. Heating Nozzle And Gas Pressure Guide — Acetylene

Medium Duty Heating — Acetylene										
Hobart No.	Victor Style	Tip Size	BTU Per Hour	Oxygen Pressure		Oxygen Consumption	Acetylene Pressure		Acetylene Consumption	Length in. (mm)
				psig	kPa	SCFH	psig	kPa	SCFH	
770169	MFA-1	6	20580 - 58800	10 - 15	69 - 103	15 - 44	8 - 12	55 - 83	14 - 40	11 (279)
Heavy Duty Heating — Acetylene										
Hobart No.	Victor Style	Tip Size	BTU Per Hour	Oxygen Pressure		Oxygen Consumption	Acetylene Pressure		Acetylene Consumption	Length in. (mm)
				psig	kPa	SCFH	psig	kPa	SCFH	
770977	MFA	8	44100 - 117600	20 - 30	138 - 207	33 - 88	10 - 15	69 - 103	30 - 80	12.5 (318)

4-7. Welding (Brazing) Nozzle And Gas Pressure Guide — Acetylene

Medium Duty Welding — Acetylene													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Acetylene Pressure		Acetylene Consum.	Orifice Size	Length in. (mm)	Flame Character
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
—	W-1	0	5/64	2	3 - 5	21 - 34	2 - 4	3 - 5	21 - 34	2 - 4	0.04	5.1 (131)	Long Cone
770149	W-1	2	1/8	3	3 - 5	21 - 34	6 - 11	3 - 5	21 - 34	5 - 10	0.05	6.6 (167)	Long Cone
Heavy Duty Welding — Acetylene													
Hobart No.	Victor Style	Tip Size	Metal Thickness		Oxygen Pressure		Oxygen Consum.	Acetylene Pressure		Acetylene Consum.	Orifice Size	Length in. (mm)	Flame Character
			in.	mm	psig	kPa	SCFH	psig	kPa	SCFH			
770891	W	1	3/32	2	3 - 5	21 - 34	3 - 7	3 - 5	21 - 34	3 - 6	0.05	6.2 (156)	Long Cone
770976	W	2	1/8	3	3 - 5	21 - 34	6 - 11	3 - 5	21 - 34	5 - 10	0.05	6.9 (175)	Long Cone
770988	W	3	3/16	5	4 - 7	28 - 48	9 - 20	3 - 6	21 - 41	8 - 18	0.06	7.7 (195)	Long Cone

4-8. Combination Torch

 Use the appropriate tip for the fuel gas.

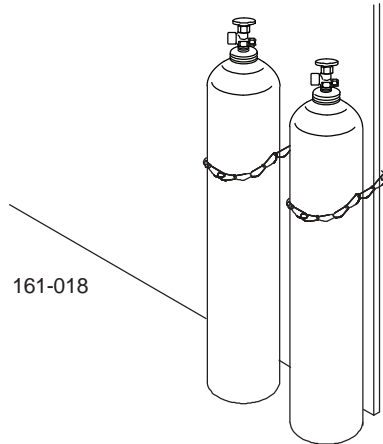
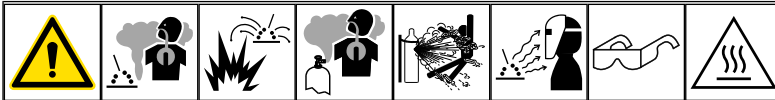
Medium Duty Combination Torch							
Hobart No.	Victor Style	Fuel Gas	Description	Hose Connection	Weight lb (kg)	Length in. (mm)	Head Angle
770200	100	All	Torch Handle	9/16 - 18 in. B Size	0.96 (0.44)	8.59 (226)	—
770201	100	All	Cutting Attachment	—	0.89 (0.40)	8.0 (203)	90°
Heavy Duty Combination Torch							
Hobart No.	Victor Style	Fuel Gas	Description	Hose Connection	Weight lb (kg)	Length in. (mm)	Head Angle
770979	300	All	Torch Handle	9/16 - 18 in. B Size	1.4 (0.64)	9.5 (240)	—
770978	300	All	Cutting Attachment	—	1.9 (0.87)	10.5 (267)	90°

4-9. Regulators — Single Stage

Medium Duty Regulators													
Hobart No.	Victor Style	Fuel Gas	Delivery Pressure		Max Inlet Press.	Connection		Gauges (psig)			Diaphragm in. (mm)	Weight lb (kg)	Dimension WxHxD in. (mm)
			psig	kPa		psig	Outlet	Inlet	Outlet	Inlet			
770503	SR 250	Oxy.	145	1000	2900	9/16 in.-RH	CGA 540	200	4000	Steel 2 (51)	Neoprene 2.15 (55)	2.9 (1.3)	6.38 x 5 x 4.25 (162 x 127 x 108)
770504	SR 250	Acet./LP	14.5	100	220	9/16 in.-LH	CGA 510	30	400	Steel 2 (51)	Neoprene 2.15 (55)	2.9 (1.3)	6.38 x 5 x 4.25 (162 x 127 x 108)
Heavy Duty Regulators													
Hobart No.	Victor Style	Fuel Gas	Delivery Pressure		Max Inlet Press.	Connection		Gauges (psig)			Diaphragm in. (mm)	Weight lb (kg)	Dimension WxHxD in. (mm)
			psig	kPa		psig	Outlet	Inlet	Outlet	Inlet			
770980	SR 450	Oxy.	145	1000	2900	9/16 in.-RH	CGA 540	200	4000	Steel 2.5 (63)	SST 3.38 (86)	5.11 (2.3)	7.25 x 7 x 5.13 (184 x 178 x 130)
770981	SR 450	Acet./LP	14.5	100	220	9/16 in.-LH	CGA 510	30	400	Steel 2.5 (63)	SST 3.38 (86)	5.11 (2.3)	7.25 x 7 x 5.13 (184 x 178 x 130)

SECTION 5 – INSTALLATION

5-1. Installing Cylinders



⚠ Install cylinders in an upright position by securing to a stationary support or cylinder rack to prevent falling or tipping. Maintain a clear path from the cylinders to the work area.

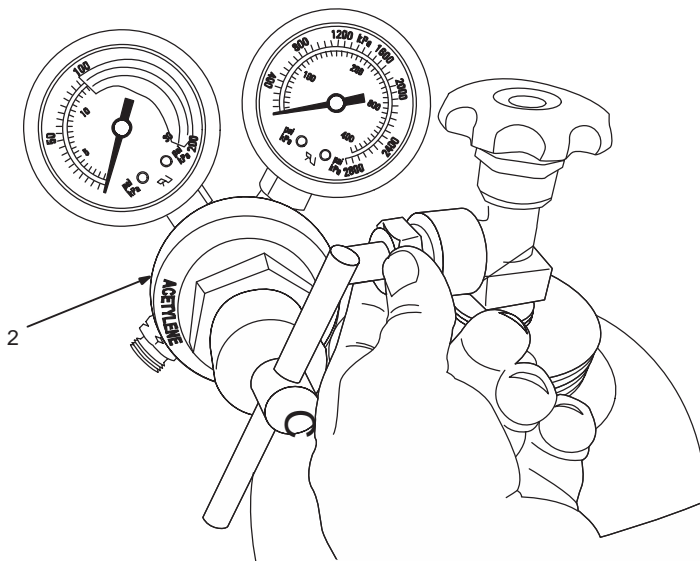
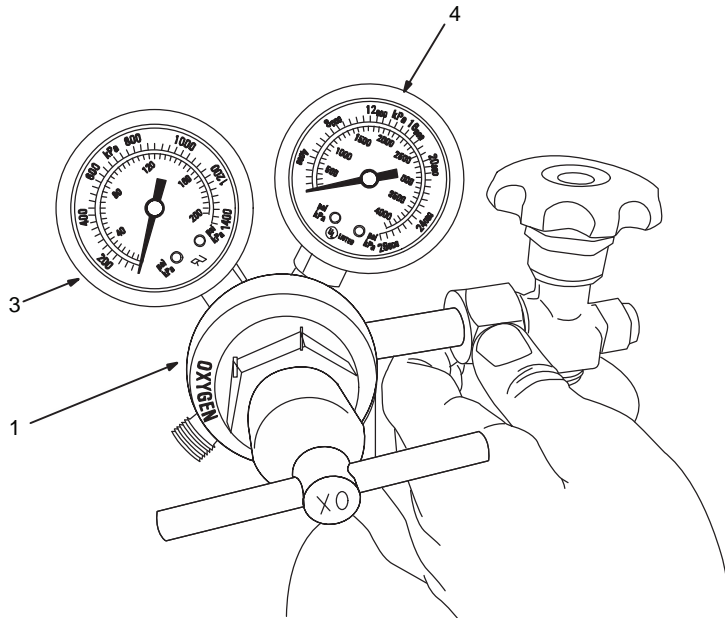
⚠ Inspect equipment before use. Do not use if grease or oil is present on equipment or if equipment is damaged. Have equipment cleaned/repaired by a qualified person.

⚠ Do not slightly open or "crack" fuel cylinder valve to blow debris from the valve outlet. Remove the debris using nitrogen, air, or a clean, oil-free rag.

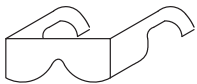
Remove the protective cap from the cylinder valve.

Use nitrogen, air, or a clean oil-free rag to remove dust or debris from valve outlet. These particles can damage regulators or cause a fire or explosion.

5-2. Installing Regulators On Cylinders



161-027 / 029



1 in.

- ⚠ Use only acetylene or propane gas and oxygen with this equipment.
- ⚠ Do not slightly open or "crack" fuel cylinder valve to blow debris from the valve outlet. Remove the debris using nitrogen, air, or a clean, oil-free rag.
- ⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.
- ⚠ Do not handle oxygen regulators with oily hands and never apply oil to any part of an oxygen regulator.

☞ Do not use cylinder adaptors to connect regulators to cylinders. Regulators have CGA connections (manufactured to standards of the Compressed Gas Association) which allow the regulator to only be installed on the appropriate cylinder valve for the intended gas.

- 1 Oxygen Regulator(Green Label)
- 2 Fuel Regulator(Red Label)

☞ The hex nut on the fuel regulator has notches on the corners. The hex nut corners are smooth on the oxygen regulator.

Install the two-piece fitting of the oxygen regulator (green) on the corresponding fitting on the oxygen cylinder. The oxygen cylinder has right-hand (clockwise) threads. Use a wrench to tighten hex nut.

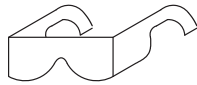
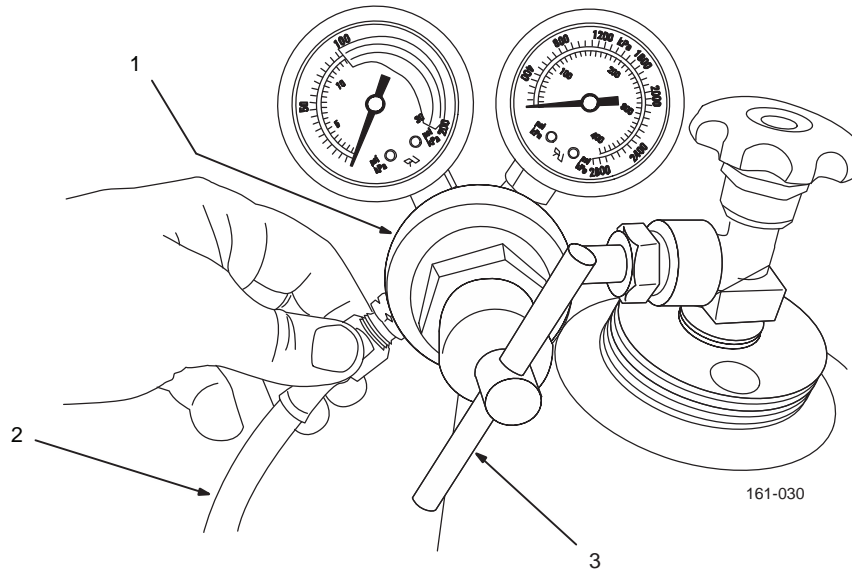
Install the two-piece fitting of the fuel regulator (red) on the fuel cylinder (acetylene or propane only). The fuel cylinder has left-hand (counterclockwise) threads. Use a wrench to tighten hex nut.

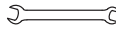
☞ Contact the gas supplier if the regulator fittings do not match the cylinder fittings.

- 3 Working Pressure Gauge
- 4 Cylinder Pressure Gauge

Each regulator has two gauges. The gauge closest to the cylinder shows the pressure in the cylinder. The other gauge shows the outlet pressure going to the torch handle.

5-3. Connecting Hoses To Regulators



 11/16 in.

⚠ Use only industrial grade hose. Grade T hose (supplied with outfits) is acceptable for all fuel gases including acetylene. Grade R hose is for acetylene only.

⚠ Replace hoses at the first sign of any defects, flaws, or damage. The hoses should otherwise be replaced every four years. Inspect hoses for damage or leaks before each operation. Do not allow hoses to come in contact with hot metal, molten solder, or corrosive chemicals. Do not expose hoses to fluxing agents as these agents will deteriorate the hose materials and cause them to leak.

⚠ Do not splice or use damaged hoses.


⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.

1 Regulator

2 Hose

3 Adjustment Handle

Connect green hose to the regulator on the oxygen cylinder. Connect red hose to the regulator on the fuel gas cylinder.

 *The fuel fittings have left-handed threads.*

Use a wrench to tighten fittings.

NOTICE – Before opening the cylinder valves, turn regulator adjusting handles counterclockwise to the off position and there is no resistance on the adjusting handle. This action is necessary to release pressure on the regulator diaphragm. Pressure may damage the regulators.

Stand with the oxygen cylinder valve between you and the regulator. Slowly open the oxygen cylinder valve 1/4 turn until the tank pressure stabilizes, then fully open the oxygen valve to seat it in the open position.

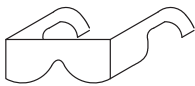
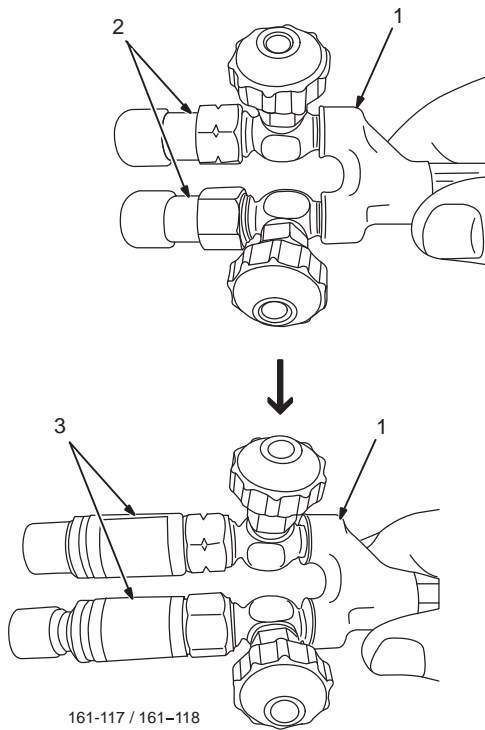
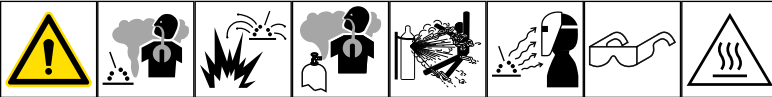
Tighten the adjustment handle (on the regulator adjustment screw) to bring the pressure up to 5 psi (34 kPa). Allow oxygen to flow through hose for about 10 seconds. Stop oxygen flow by turning adjustment handle counterclockwise.

Stand with the fuel cylinder valve between you and the regulator. Slowly open the fuel cylinder valve 1/4 turn until the tank pressure stabilizes, then open the fuel valve to a maximum of one full turn (acetylene) or fully open (all other fuel gases).

Tighten the adjustment handle (on the regulator adjustment screw) to bring the pressure up to 5 psi (34 kPa). Allow fuel gas to flow through hose for about 10 seconds. Stop fuel gas flow by turning adjustment handle counterclockwise.

Use the correct tip for the gas and metal thickness. Do not exceed the recommended pressures in the Tip and Gas Pressure Guide tables (see Section 4).

5-4. Replacing Torch Check Valves With Flashback Arrestors



11/16 in.

⚠ Remove the factory-installed check valves from the torch handle and replace them with the supplied flashback arrestors.

⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.

☞ Check valves are designed to protect against the reverse flow of gas into the hose and regulator of the other gas when there is sudden loss of pressure on one of the gases.

Flashback Arrestors protect against reverse flow and flashback. Flashback occurs when the flame travels upstream from the torch to the gas source.

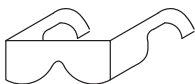
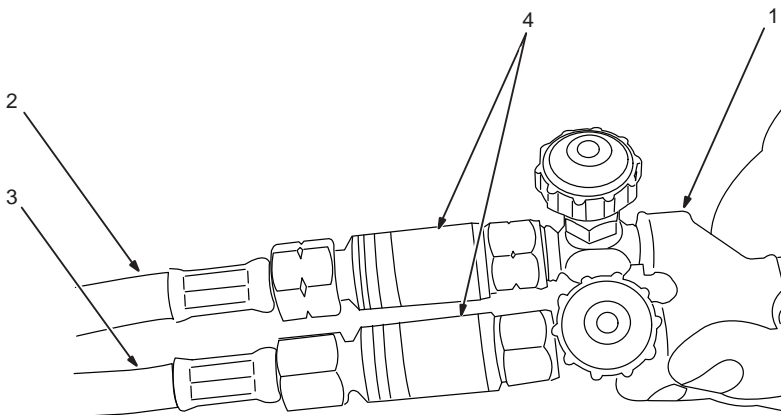
- 1 Torch Handle
- 2 Check Valves
- 3 Flashback Arrestors

Remove check valves from torch handle.

Install fuel flashback arrestor (red) in fuel fitting on torch handle. Install oxygen flashback arrestor (blue) in oxygen fitting on torch handle.

☞ The oxygen check valve has right-hand threads and the fuel check valve has left-hand threads.

5-5. Connecting Hoses To Torch Check Valves Or Flashback Arrestors



11/16 in.

⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.

☞ The hex nut on the fuel hose has notches on the corners. The hex nut corners are smooth on the oxygen hose.

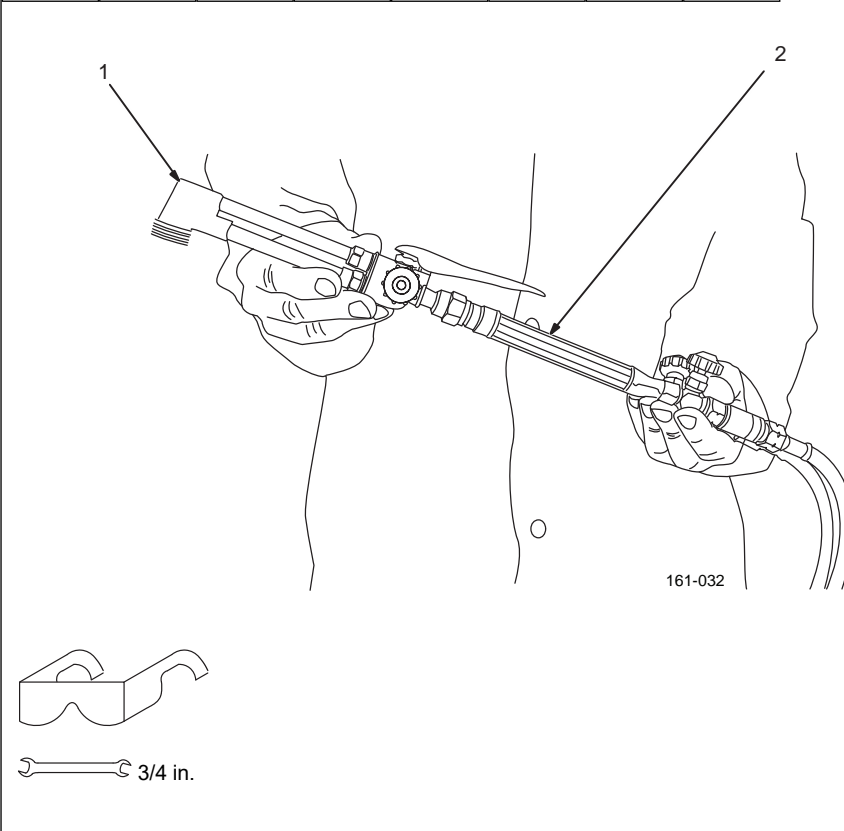
- 1 Torch Handle
- 2 Fuel Hose (Red)
- 3 Oxygen Hose (Green)
- 4 Flashback Arrestors/Check Valves

Attach fuel hose (red) to fuel inlet fitting on torch check valve or flashback arrestor. The nut on the fuel hose has left-hand threads.

Attach oxygen hose (green) to oxygen inlet fitting on torch check valve or flashback arrestor. The nut on the oxygen hose has right hand threads.

Use a wrench to tighten connections.

5-6. Installing Cutting Attachment On Torch Handle



⚠ Do not use cutting attachment if the o-rings are missing or damaged.

⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.

👉 See Section 5-8 for attaching brazing tip to torch handle.

1 Cutting Attachment

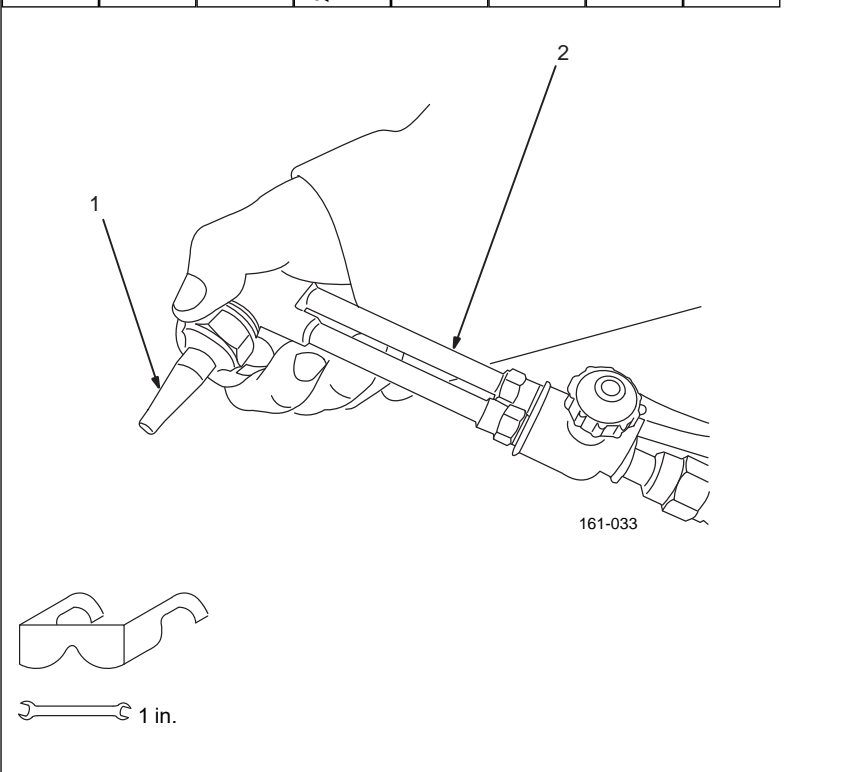
2 Torch Handle

The cutting attachment uses two o-rings to seal the connection to the torch handle. If replacing the cutting attachment, be sure the o-rings are properly installed.

Attach cutting attachment to torch handle.

Use a wrench to tighten connections.

5-7. Installing Cutting Tip On Cutting Attachment



⚠ Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.

NOTICE – Do not drop or mishandle the cutting tip or the seating surface may be damaged.

Cutting tips are available in different sizes to accommodate various metal thicknesses. Use the tables in Sections 4-4 and 4-5 to select the correct tip, and to determine the correct fuel and oxygen pressures.

Inspect cutting tips for damage and to ensure that the cutting orifice and preheat holes are not blocked with dirt or slag.

👉 A No. 0 cutting tip is already installed in the cutting attachment with the Medium Duty Outfit.

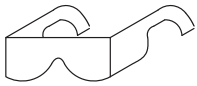
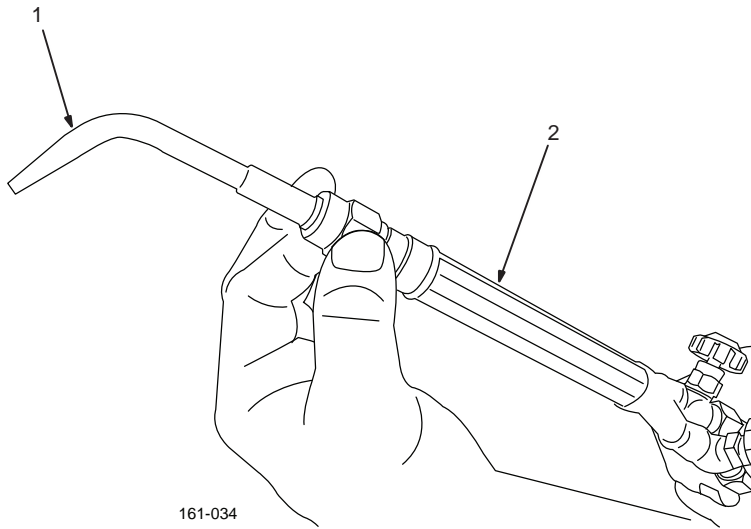
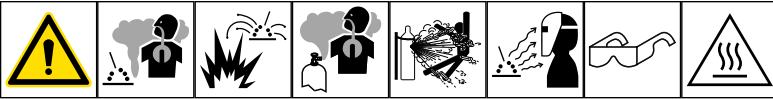
1 Cutting Tip


2 Cutting Attachment


Install correct cutting tip in cutting attachment.

Use a wrench to tighten connections.


5-8. Installing Welding/Brazing Tip On Torch Handle



 3/4 in.

 **Do not use pipe sealants on metal to metal fittings, such as hose and torch connections and CGA cylinder connections.**

Welding/brazing tips are available in different sizes to accommodate various metal thicknesses. Use the table in Section 4-7 to select the correct tip, and to determine the correct fuel and oxygen pressures.

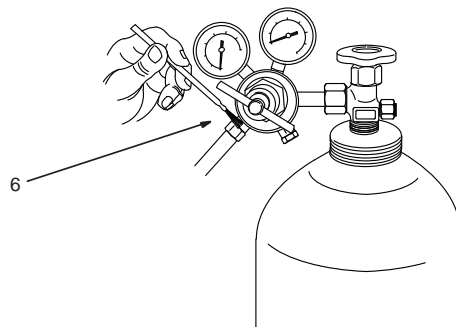
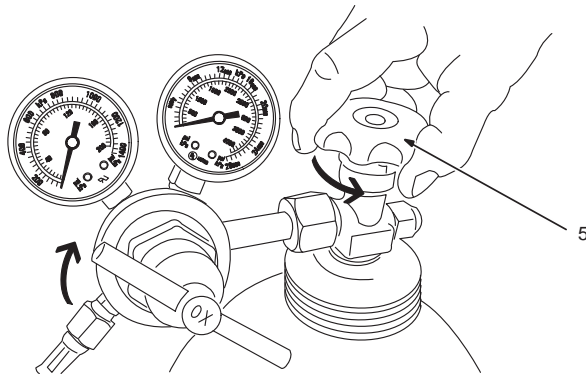
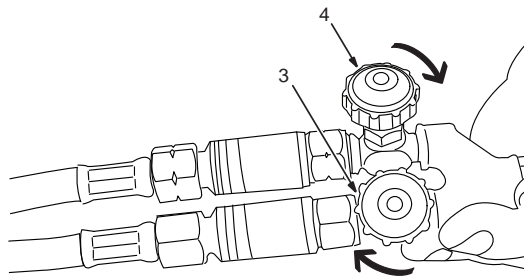
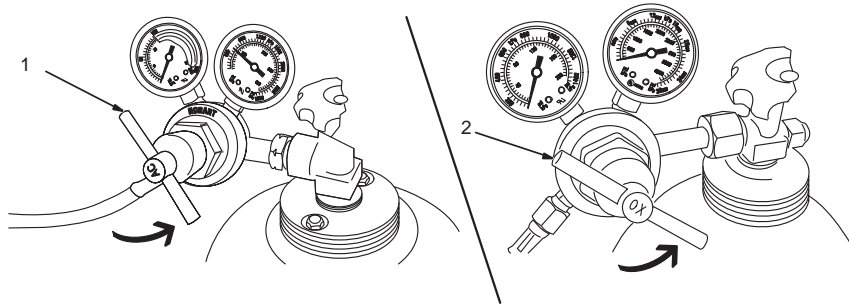
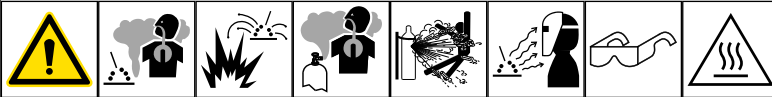
 *A No. 0 welding/brazing tip with mixer is supplied with the medium duty outfit.
A No. 2 welding/brazing tip with mixer is supplied with the heavy duty outfit.*

- 1 Welding/Brazing Tip With Mixer
- 2 Torch Handle

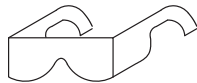
Attach welding/brazing tip to torch handle.

Use a wrench to tighten connections.

5-9. Testing The System For Leaks



161-013 / 031 / 035 / 036



11/16, 3/4, 1 in.

⚠ Leak test the system before lighting the torch. Repeat this procedure every time the equipment is set up or a cylinder is changed.

⚠ Use an approved oil-free leak detection fluid or leak detector to locate possible leaks.

⚠ Do not stand in front of or behind the regulator when opening the cylinder valve. Never open a cylinder valve suddenly as this can damage a regulator or cause an oxygen regulator fire.

- 1 Fuel Regulator Adjustment Handle
- 2 Oxygen Regulator Adjustment Handle
- 3 Torch Handle Fuel Valve
- 4 Torch Handle Oxygen Valve
- 5 Oxygen Cylinder Valve (Fuel Cylinder Valve Is Not Shown)
- 6 Checking System For Leaks

Step 1. Turn the fuel and oxygen regulator adjustment handles to the Off position (counterclockwise).

Step 2. Close the fuel and oxygen valves on the torch handle.

Step 3. Slowly open the oxygen cylinder valve one turn and adjust pressure to 20 psi (138 kPa) by turning oxygen regulator adjustment handle clockwise.

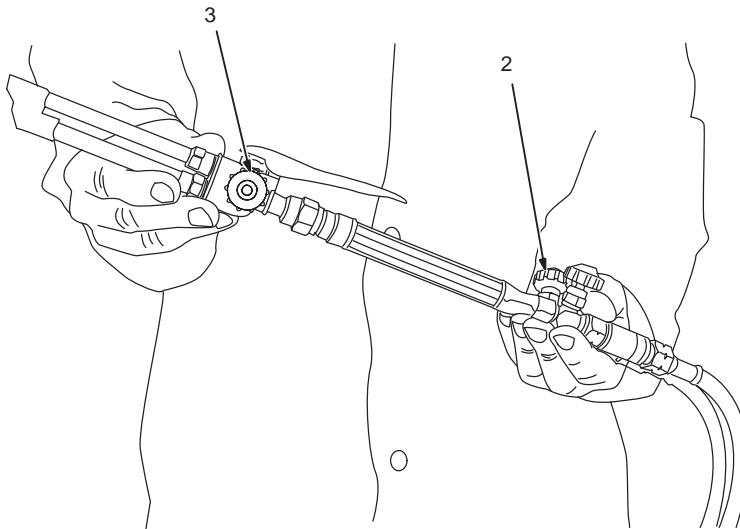
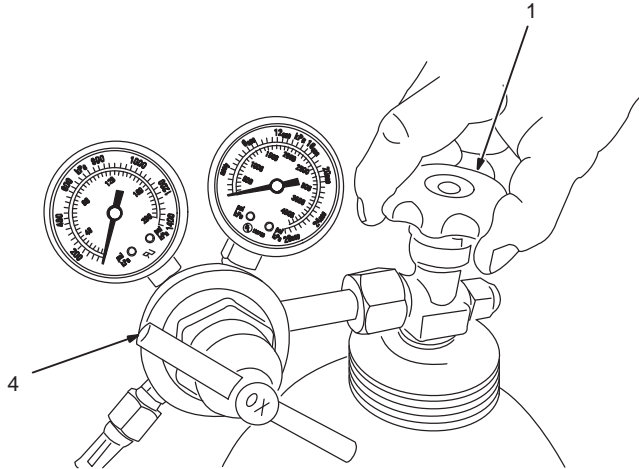
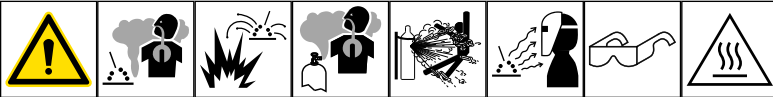
Step 4. Slowly open the fuel cylinder valve and adjust pressure to 10 psi (69 kPa) by turning fuel regulator adjustment handle clockwise.

Step 5. Check **every** connection and joint from the cylinder valve to the torch tip with an approved oil-free leak detection fluid or leak detector. If leaks are detected, eliminate them before proceeding. If leaks cannot be eliminated, do not put the equipment into service until it has been repaired or replaced.

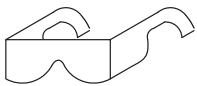
Step 6. Close cylinder valves.

SECTION 6 – OPERATION

6-1. Purging Oxygen From The System And Adjusting Oxygen Pressure



161-032 / 036



⚠ Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted welding and cutting equipment. Make sure levers and valves work properly, threads on equipment are clean (no grease or oil) and not deformed, gauges are intact and easy to read, regulator is clean and free of oil or dirt, and fittings are properly sized for the cylinder. Make sure hoses are clean (no grease or oil). Be sure all connections are tight and there are no leaks in the system.

⚠ Always purge gas from the system before lighting torch to prevent a possible mixed-gas explosion. Purge gas in a well ventilated area and away from flame or sparks.

👉 See Section 4 for oxygen and fuel pressure recommendations.

👉 Purge fuel from the system according to Section 6-2.

Purging Oxygen And Setting Oxygen Pressure

- 1 Oxygen Cylinder Valve
- 2 Torch Handle Oxygen Valve
- 3 Preheat Oxygen Valve
- 4 Oxygen Regulator Adjustment Handle

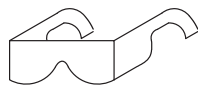
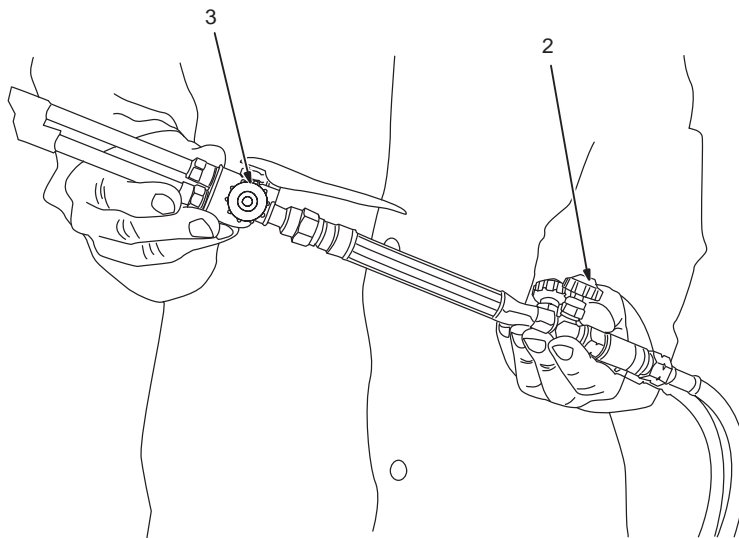
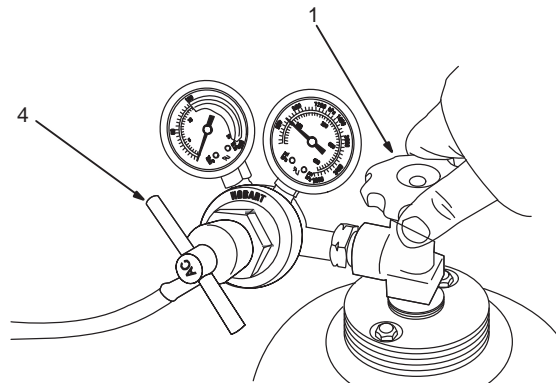
Step 1. Slowly open the oxygen cylinder valve until valve is fully open.

Step 2. Open oxygen valve on torch 1/4 turn for five to ten seconds. (If using welding attachment, also open preheat oxygen valve.) While the oxygen is flowing, turn the adjustment handle on the oxygen regulator to achieve the desired working pressure.

Step 3. Close the oxygen valve and the preheat oxygen valve on the torch handle.

Step 4. Purge fuel from the system and adjust fuel pressure according to Section 6-2.

6-2. Purging Fuel From The System And Adjusting Fuel Pressure



⚠ Inspect all equipment before use. Do not use damaged, defective, or improperly adjusted welding and cutting equipment. Make sure levers and valves work properly, threads on equipment are clean (no grease or oil) and not deformed, gauges are intact and easy to read, regulator is clean and free of oil or dirt, and fittings are properly sized for the cylinder. Make sure hoses are clean (no grease or oil). Be sure all connections are tight and there are no leaks in the system.

⚠ Always purge gas from the system before lighting torch to prevent a possible mixed-gas explosion. Purge gas in a well ventilated area and away from flame or sparks.

⚠ Do not use acetylene above 15 psi (103 kPa) flowing.

👉 See Section 4 for oxygen and fuel pressure recommendations.

👉 Purge oxygen from the system according to Section 6-1.

Purging Fuel And Setting Fuel Pressure

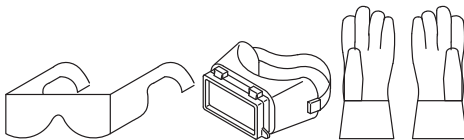
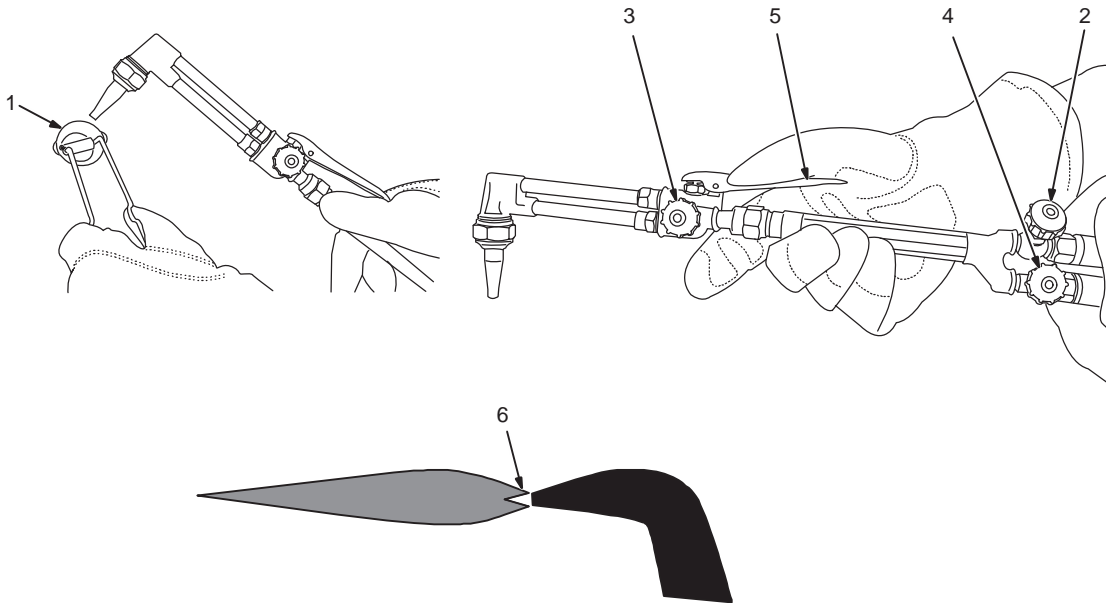
- 1 Fuel Cylinder Valve
- 2 Torch Handle Fuel Valve
- 3 Preheat Oxygen Valve
- 4 Fuel Regulator Adjustment Handle

Step 1. Slowly open the fuel cylinder valve one turn maximum (for acetylene). Fully open fuel cylinder valve for all other fuel gases.

Step 2. Open fuel valve on torch 1/4 turn for five to ten seconds. (If using welding attachment, also open preheat oxygen valve.) While the fuel is flowing, turn the adjustment handle on the fuel regulator to achieve the desired working pressure.

Step 3. Close the fuel valve and the preheat oxygen valve on the torch handle.

6-3. Lighting And Using The Cutting Torch



- ⚠** Always purge gas from the system before lighting torch to prevent a possible mixed-gas explosion. Purge gas in a well ventilated area and away from flame or sparks. See Sections 6-1 and 6-2.
- ⚠** Do not use matches or a cigarette lighter to ignite the gas.

☞ See Sections 6-1 and 6-2 for oxygen and fuel pressure recommendations.

- 1 Spark Lighter
- 2 Oxygen Valve
- 3 Preheat Oxygen Valve
- 4 Fuel Valve
- 5 Cutting Lever
- 6 Neutral Flame — Even Mixture Of Fuel And Oxygen

Lighting The Torch

Step 1. Hold the spark lighter near torch tip.

Step 2. Slowly open the fuel valve on the torch handle 1/4 turn and quickly squeeze the spark lighter to light the flame.

Step 3. Slowly open the oxygen valve on the torch to the desired pressure.

Step 4. Continue to open the fuel valve until the black sooty smoke disappears and the flame begins to move away from the tip.

- ⚠** Failure to force a sufficient amount of fuel gas through the tip will cause the tip to overheat and may cause a flashback or backfire.

Step 5. Slowly open the preheat oxygen valve on the cutting attachment; a white-hot feather (flame) appears.

Step 6. Slowly add oxygen until the feather begins to disappear into the bright cone at the end of the tip. This produces a neutral flame (ratio of fuel to oxygen is 1:1).

Operating The Cutting Torch

Step 1. Hold the torch tip about 1/4 in. (6 mm) from the metal to be cut.

Step 2. Heat the metal until it is bright red (about 1550° F or 843° C).

Step 3. Slowly depress the cutting lever on the cutting attachment. Let the oxygen stream burn through the metal, then completely depress the lever to begin the cutting process.

When Finished Cutting

NOTICE – Shut down the torch in the correct sequence or the torch may be damaged. Oxygen must be released from the system first or residual fuel in the handle or fuel hose may burn. Fuel cannot burn without oxygen.

Step 1. When finished cutting, release the cutting lever. Close the oxygen preheat valve on the torch handle first and then close the fuel valve on the torch handle.

Step 2. Turn valves at fuel and oxygen cylinders clockwise to the closed position.

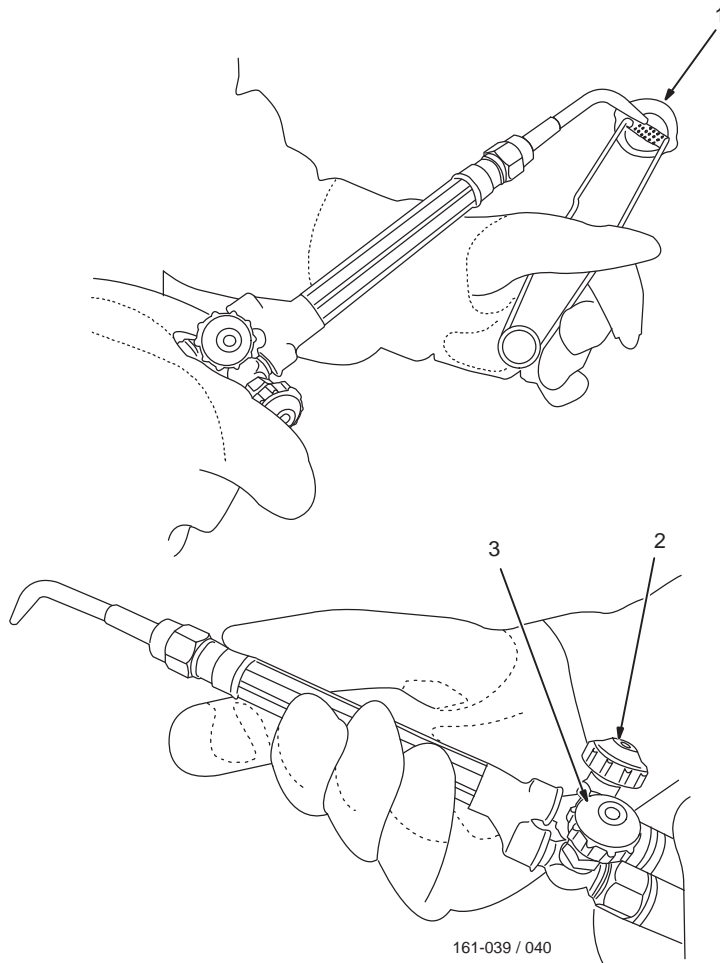
Step 3. Open the fuel valve on the torch handle to relieve pressure; both gauges on the fuel regulator should indicate zero (0) pressure. Close the fuel valve on the torch handle.

Step 4. Turn fuel regulator adjustment handle counterclockwise until there is no pressure on the regulator diaphragm.

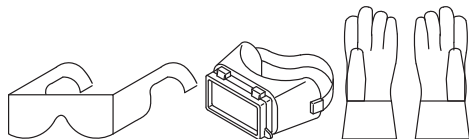
Step 5. Open the preheat oxygen valve on the torch handle to relieve pressure; both gauges on the oxygen regulator should indicate zero (0) pressure. Close the preheat oxygen valve and oxygen valve on the torch handle.

Step 6. Turn oxygen regulator adjustment handle counterclockwise until there is no pressure on the regulator diaphragm.

6-4. Lighting And Using The Brazing Torch



161-039 / 040



⚠ Always purge gas from the system before lighting torch to prevent a possible mixed-gas explosion. Purge gas in a well ventilated area and away from flame or sparks. See Sections 6-1 and 6-2.

⚠ Do not use matches or a cigarette lighter to ignite the gas.

⚠ Do not allow the flame to touch the brazing tip or allow the brazing tip to overheat.

👉 See Sections 6-1 and 6-2 for oxygen and fuel pressure recommendations.

- 1 Spark Lighter
- 2 Oxygen Valve
- 3 Fuel Valve

Lighting The Torch

Step 1. Hold the spark lighter near torch tip.

Step 2. Slowly open the fuel valve on the torch handle about 1/8 turn and quickly squeeze the spark lighter to light the flame.

Step 3. Slowly open the oxygen valve on the torch to neutralize the flame.

Step 4. Open the fuel valve on the torch handle another 1/8 turn and then increase the oxygen to neutralize the flame.

Step 5. Continue this procedure until the maximum amount of fuel gas is used and the desired flame is present.

When Finished Welding/Brazing

NOTICE – Shut down torch in correct sequence or the torch may be damaged. Oxygen must be released from the system first or residual fuel in the handle or fuel hose may burn. Fuel cannot burn without oxygen.

Step 1. When finished welding/brazing, close the oxygen valve on the torch handle

first and then close the fuel valve on the torch handle.

Step 2. Turn valves at fuel and oxygen cylinders clockwise to the closed position.

Step 3. Open the fuel valve on the torch handle to relieve pressure; both gauges on the fuel regulator should indicate zero (0) pressure. Close the fuel valve on the torch handle.

Step 4. Turn fuel regulator adjustment handle counterclockwise until there is no pressure on the regulator diaphragm.

Step 5. Open the oxygen valve on the torch handle to relieve pressure; both gauges on the oxygen regulator should indicate zero (0) pressure. Close the oxygen valve on the torch handle.

Step 6. Turn oxygen regulator adjustment handle counterclockwise until there is no pressure on the regulator diaphragm.

5/3/1 WARRANTY



Effective January 1, 2022

5/3/1 WARRANTY applies to all Hobart welding equipment, plasma cutters and spot welders with a serial number preface of NC or newer.

This limited warranty supersedes all previous Hobart warranties and is exclusive with no other guarantees or warranties expressed or implied.

LIMITED WARRANTY - Subject to the terms and conditions below, Miller Electric Mfg. LLC, dba Hobart Welding Products, Appleton, Wisconsin, warrants to its original retail purchaser that new Hobart equipment sold after the effective date of this limited warranty is free of defects in material and workmanship at the time it is shipped. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

Within the warranty periods listed below, Hobart/Miller will repair or replace any warranted parts or components that fail due to such defects in material or workmanship. Hobart/Miller must be notified in writing within thirty (30) days of such defect or failure, at which time Hobart/Miller will provide instructions on the warranty claim procedures to be followed. Notifications submitted as online warranty claims must provide detailed descriptions of the fault and troubleshooting steps taken to diagnose failed parts. Warranty claims that lack the required information as defined in the Miller Service Operation Guide (SOG) may be denied by Miller.

Hobart/Miller shall honor warranty claims on warranted equipment listed below in the event of a defect within the warranty coverage time periods listed below. Warranty time periods start on the delivery date of the equipment to the original retail purchaser, or 12 months after the equipment is shipped to a US or Canada distributor, or 18 months after the equipment is shipped to an international distributor, whichever occurs first.

1 5 Years — Parts and Labor

- Original Main Power Rectifiers only to include SCRs, diodes, and discrete rectifier modules in non-inverter products
- Reactors
- Stabilizers
- Transformers

2 3 Years — Parts and Labor Unless Specified

- Drive Systems
- Idle Module
- PC Boards
- Rotors, Stators and Brushes
- Solenoid Valves
- Switches and Controls

3 1 Year — Parts and Labor Unless Specified(90 days for industrial use)

- Accessories (Kits)

- Field Options (NOTE: Field options are covered for the remaining warranty period of the product they are installed in, or for a minimum of one year — whichever is greater.)

- HF Units
- MIG Flowgauge Regulators (No Labor)
- MIG Guns/TIG Torches
- Plasma Cutting Torches
- Remote Controls
- Replacement Parts (No labor) - 90 days
- Running Gear/Trailers
- Spoolguns

4 6 Months — Parts

- 12 Volt Automotive-Style Batteries

5 Engines and tires are warranted separately by the manufacturer.

Hobart's 5/3/1 Limited Warranty shall not apply to:

1. **Consumable components; such as contact tips, cutting nozzles, contactors, brushes, relays, work station table tops and welding curtains, or parts that fail due to normal wear. (Exception: brushes and relays are covered on all engine-driven products.)**
2. Items furnished by Hobart/Miller, but manufactured by others, such as engines or trade accessories. These items are covered by the manufacturer's warranty, if any.
3. Equipment that has been modified by any party other than Hobart/Miller, or equipment that has been improperly installed, improperly operated or misused based upon industry standards, or equipment which has not had reasonable and necessary maintenance, or equipment which has been used for operation outside of the specifications for the equipment.
4. Defects caused by accident, unauthorized repair, or improper testing.

HOBART PRODUCTS ARE INTENDED FOR COMMERCIAL AND INDUSTRIAL USERS TRAINED AND EXPERIENCED IN THE USE AND MAINTENANCE OF WELDING EQUIPMENT.

The exclusive remedies for warranty claims are, at Hobart's/Miller's option, either: (1) repair; or (2) replacement; or, if approved in writing by Hobart/Miller, (3) the pre-approved cost of repair or replacement at an authorized Hobart/Miller service station; or (4) payment of or credit for the purchase price (less reasonable depreciation based upon use). Products may not be returned without

Hobart's/Miller's written approval. Return shipment shall be at customer's risk and expense.

The above remedies are F.O.B. Appleton, WI, or Hobart's/Miller's authorized service facility. Transportation and freight are the customer's responsibility. TO THE EXTENT PERMITTED BY LAW, THE REMEDIES HEREIN ARE THE SOLE AND EXCLUSIVE REMEDIES REGARDLESS OF THE LEGAL THEORY. IN NO EVENT SHALL HOBART/MILLER BE LIABLE FOR DIRECT, INDIRECT, SPECIAL, INCIDENTAL OR CONSEQUENTIAL DAMAGES (INCLUDING LOSS OF PROFIT) REGARDLESS OF THE LEGAL THEORY. ANY WARRANTY NOT PROVIDED HEREIN AND ANY IMPLIED WARRANTY, GUARANTY, OR REPRESENTATION, INCLUDING ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE, ARE EXCLUDED AND DISCLAIMED BY HOBART/MILLER.

Some US states do not allow limiting the duration of an implied warranty or the exclusion of certain damages, so the above limitations may not apply to you. This warranty provides specific legal rights, and other rights may be available depending on your state. In Canada, some provinces provide additional warranties or remedies, and to the extent the law prohibits their waiver, the limitations set out above may not apply. This Limited Warranty provides specific legal rights, and other rights may be available, but may vary by province.

Warranty Questions?

Call 1-800-332-3281
8 AM – 5 PM EST

Service

You always get the fast, reliable response you need. Most replacement parts can be in your hands in 24 hours.

Support

Need fast answers to the tough welding questions? Contact your distributor or call 1-800-332-3281. The expertise of the distributor and Hobart is there to help you, every step of the way.

Assistance

Visit the Hobart website:
www.HobartWelders.com

Owner's Record

Please complete and retain with your personal records.

Model Name _____ Serial/Style Number _____

Purchase Date _____ (Date which equipment was delivered to original customer.) _____

Distributor _____

Address _____

City _____

State _____ Zip _____



Thank you for purchasing Hobart. Our trained technical support team is dedicated to your satisfaction. For questions regarding performance, operation, or service, contact us!

Resources Available

Always provide Model Name and Serial/Style Number.

To locate a Service Center:

Call 1-800-332-3281

or visit our website at www.HobartWelders.com/wheretobuy

For Technical Assistance:

Call 1-800-332-3281

8 AM to 5 PM EST – Monday through Friday

Miller Electric Mfg. LLC

An Illinois Tool Works Company
1635 West Spencer Street
Appleton, WI 54914 USA

For Assistance:
Call 1-800-332-3281

