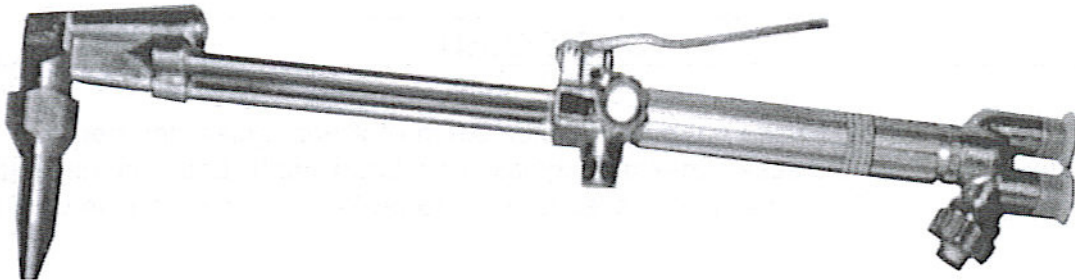


CHICAGO welding
ELECTRIC® systems

ACETYLENE CUTTING TORCH

Model 96290

ASSEMBLY AND OPERATION INSTRUCTIONS



Due to continuing improvements, actual product may differ slightly from the product described herein.



3491 Mission Oaks Blvd., Camarillo, CA 93011

Visit our website at: <http://www.harborfreight.com>

**TO PREVENT SERIOUS INJURY, READ AND UNDERSTAND
ALL WARNINGS AND INSTRUCTIONS BEFORE USE.**

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For technical questions or replacement parts, please call 1-800-444-3353.

SPECIFICATIONS

Construction	All-Cast Brass to the Frame Stainless Steel Triple Feed Tubes Rubber Sealing O-Rings Copper Cutting Tip
Torch Inlet Thread	9/16" X 18 L/H For Acetylene 9/16" X 18 R/H For Oxygen
Controls	Fuel Adjustment Knob Mixture Adjustment Knob
Overall Length	18-1/4" L
Cutting Tip Style	Rose Bud
Net Weight	2 lb. 9 oz
Maximum Cutting Thickness	Approximately 1"



Save This Manual

You will need this manual for the safety warnings and precautions, assembly, operating, inspection, maintenance and cleaning procedures, parts list and assembly diagram. Keep your invoice with this manual. Write the invoice number on the inside of the front cover. Write the product's serial number in the back of the manual near the assembly diagram, or write month and year of purchase if product has no serial number. Keep this manual and invoice in a safe and dry place for future reference.

GENERAL SAFETY RULES

 **WARNING!**

READ AND UNDERSTAND ALL INSTRUCTIONS
Failure to follow all instructions listed below may result in
fire, and/or serious injury.
SAVE THESE INSTRUCTIONS

WORK AREA

1. **Keep your work area clean and well lit.** Cluttered benches and dark areas invite accidents.
2. **Do not operate the Acetylene Cutting Torch in explosive atmospheres, such as in the presence of flammable liquids, gases, or dust.** This Cutting Torch may ignite dust or fumes.
3. **Keep bystanders, children, and visitors away while operating.** Distractions can cause you to lose control. Protect others in the work area from intense heat. Do not

allow others close enough to look at the flame as eye damage is a real possibility. Provide barriers or shields as needed.

PERSONAL SAFETY

1. **Stay alert. Watch what you are doing, and use common sense when operating this Cutting Torch. Do not use while tired or under the influence of drugs, alcohol, or medication.** A moment of inattention while operating may result in serious personal injury.
2. **Dress properly. Do not wear loose clothing or jewelry. Contain long hair. Keep your hair, clothing, and gloves away from the flame of the Torch.** Loose clothes, jewelry, or long hair can catch on fire caused by direct flame, sparks or small bits of molten metal.
3. **Do not overreach. Keep proper footing and balance at all times.** Proper footing and balance enables better control of the Cutting Torch in unexpected situations.
4. **Use safety equipment. Always wear eye protection.** See Specific Warnings 20 & 21 on page 5.

TOOL USE AND CARE

1. **Use clamps (not included) or other practical ways to secure and support the workpiece to a stable platform.** Holding the work by hand or against your body is unstable and may lead to loss of control, fire and or personal injury.
2. **Use the correct tool for your application.** The correct tool will do the job better and safer at the rate for which it is designed. Do not force the tool and do not use the tool for a purpose for which it is not intended.
3. **Do not use the Acetylene Cutting Torch if the gas does not turn off completely when the Lever (12) is released and both the Oxygen Control Valve (21D) and Acetylene Control Valve (28D) are turned off.** Leakage of gas from the tip can be a substantial safety risk. If gas to the Torch cannot be turned off, it is dangerous and must be replaced.
4. **Store the idle Cutting Torch out of reach of children and other untrained persons.** Tools are dangerous in the hands of untrained users. Never allow children to come in contact with this product.
5. **Maintain this Cutting Torch with care.** Properly maintained tools are easier to control. Do not use a damaged tool. Tag damaged tools "Do not use" until repaired.
6. **Check for loose gas connections, hose leaks and damage, any other condition that may affect the Cutting Torch operation. If damaged, have it serviced before using.** Many accidents are caused by poorly maintained tools.

7. **Use only accessories that are recommended by the manufacturer for your model Cutting Torch.** Accessories that may be suitable for one tool may become hazardous when used on another tool. Only use proper gas hoses.

SERVICE

1. **Acetylene Cutting Torch service must be performed only by qualified repair personnel.** Service or maintenance performed by unqualified personnel could result in a risk of injury.
2. **When servicing, use only identical replacement parts. Follow instructions in the “*Inspection, Maintenance, And Cleaning*” section of this manual.** Use of unauthorized parts or failure to follow maintenance instructions may create a risk of fire or injury.

SPECIFIC SAFETY RULES

1. **WARNING! To prevent serious injury or Death:**
2. **Use reverse-flow check valves on Cutting Torch and regulator (not included).**
3. **DO NOT USE FLAME TO DETECT LEAKS.**
4. **Set acetylene regulator (not included) to 15 PSI or less.**
5. **Wear fire-resistant clothing, boots and gloves with ANSI-approved safety goggles & NIOSH-approved respirator under a properly-shaded welding helmet.**
6. **Use only with proper ventilation.**
7. **Use with oxygen and acetylene gases only.**
8. **Examine welding hoses for cuts, cracks or damage before each use.** Do not use if damaged.
9. **Do not use dented or damaged cylinders.**
10. **DANGER! DO NOT USE OIL OR GREASE ON CONNECTORS. USING OIL OR GREASE ON CONNECTORS AT ANY TIME IS DANGEROUS.**
11. **Do not touch tip or weld until cool.**
12. **Remove combustible material from work area.**
13. **Keep welding hoses away from moving parts.**
14. **Maintain labels and nameplates on the Acetylene Cutting Torch.** These carry important information. If unreadable or missing, contact Harbor Freight Tools for a replacement.

15. **Avoid unintentional starting.** Make sure you are prepared to begin work before turning on gas supply or igniting the flame of this Acetylene Cutting Torch.
16. **Never leave the Cutting Torch unattended when it is attached to a gas supply.**
17. **Beware of leaking gas. If while you are using this Cutting Torch you notice the odor of acetylene, IMMEDIATELY shut off the oxygen first, then the acetylene gas supply to the Torch.** Extinguish all open flames and carefully check all hoses and connections for leaks using soapy water. NEVER check for leaks using a flame. If the odor continues do not use the Torch. Call your local acetylene dealer for assistance.
18. **Acetylene gas is extremely flammable and it is under pressure.** Do not store acetylene gas in temperatures 120 degrees Fahrenheit. Keep the acetylene cylinder upright when using or storing. **NEVER PUNCTURE OR SET FIRE TO AN EMPTY ACETYLENE CYLINDER.** Contact local solid waste authorities for instructions on correct disposal or recycling of an acetylene cylinder.
19. **Always allow sufficient time for the Cutting Torch to completely cool before storing.** Do not store flammable liquids or any combustible materials in the area surrounding the Cutting Torch.
20. **Prevent eye injury and burns.** Wearing and using personal safety clothing and safety devices reduce the risk of injury. Always wear ANSI-approved safety impact goggles with a welding helmet featuring at least a number 5 shade lens rating. Wear leather leggings. Fire resistant shoes or boots should be worn when using this Torch. Do not wear pants with cuffs, shirts with open pockets, or any clothing that can catch and hold molten metal or sparks. Keep clothing free of grease, oil, solvents or any other flammable substances. Wear dry, insulating leather welding gloves and protective clothing. Wear an approved head covering to protect head and neck. Use aprons, cape, sleeves and shoulder covers, and bibs designed and approved for welding and cutting procedures. When welding or cutting overhead or in confined spaces, wear flame resistant ear plugs or ear muffs to keep sparks out of ears.
21. **Avoid overexposure to fumes and gases.** Always keep your head out of the fumes. Do not breathe fumes. Use enough ventilation or exhaust, or both to keep fumes and gases away from your breathing area. Where ventilation is questionable, have a qualified technician take an air sampling to determine the need for corrective measures. If necessary, use mechanical ventilation to improve air quality. If this is not possible, use an approved respirator. Do not work in confined areas unless they are well ventilated or you are wearing an air supplied ventilator. Always follow OSHA guidelines for Permissible Exposure Limits (PEL's) for various fumes and gases. Follow the American Conference of Governmental Industrial Hygienists recommendations for the Threshold Limit Values (TLV's) for fumes and gases. Have a recognized specialist in Industrial Hygiene or Environmental Services check

the operation and air quality and make recommendations for the specific welding or cutting situation.

22. **Prevent accidental fires.** Remove any combustible material from the work area. When possible, move the work to a location well away from combustible materials. If relocation is NOT possible, protect the combustibles with a cover made of fire resistant material. Remove or make safe all combustible materials for a radius of 35 feet (10 meters) around the work area. Use a fire resistant material to cover or block all open doorways, windows, cracks, and other openings. Enclose the work area with portable fire resistant screens. Protect combustible walls, ceilings, floors, etc., from sparks, molten metal and heat with fire resistant covers. If working on a metal wall, ceiling, floor, etc., prevent ignition of combustibles on the other side by moving the combustibles to a safe location. If relocation or the combustibles is NOT possible, designate someone to act as a fire watch equipped with a fire extinguisher during the welding or cutting process and for at least one half hour after the welding or cutting project is completed. Do not place the Cutting Torch on any material other than bare concrete until it has cooled completely. Do not weld or cut any material that has a combustible coating or a combustible internal structure, such as walls or ceilings without an approved method for eliminating the hazard. Do not dispose of hot slag in containers holding combustible materials. Keep a fully charged fire extinguisher close by and know the proper way to use it. After welding or cutting, make a thorough check for evidence of fire and be aware the easily visible flame or smoke may not be present for some time after a fire has started. Do not weld or cut in atmospheres containing dangerously reactive or flammable gases, vapors, liquids, or dust. Do not apply heat to a container that has held an unknown substance or a combustible material whose contents, when heated, can produce flammable or explosive vapors. Clean and purge containers before applying heat. Vent closed containers, including castings, before preheating, welding, or cutting.
23. **Always keep gas supply hoses (not included) away from sharp and hot parts of the workpiece and moving parts of the welding or cutting equipment.** Examine the gas supply hoses for cuts, burns, or worn areas before each use. If any areas are found, replace the hose or hoses immediately before using the Cutting Torch.
24. **Read and understand all instructions and safety precautions as outlined in the manufacture's manual for the material you will weld or cut.**
25. **Proper cylinder care.** Secure cylinders to a cart, wall, or post to prevent them from falling. All cylinders should be used and stored in an upright position. Do not use cylinders that have dents. Cylinder caps should be used when moving or storing cylinders. Empty cylinders should be kept in specified areas and clearly marked "empty". **NEVER DROP OR STRIKE A CYLINDER.**
26. **NEVER USE OIL OR GREASE ON ANY INLET CONNECTOR, OUTLET CONNECTOR, OR CYLINDER VALVES.**

27. **Inspect the tapered seating surfaces on the Cutting Tip, and the Tip Head (1).** Have a qualified technician resurface the seat area if it has dents, burrs, or is burned. A poor seating surface may result in backfire or flashback.
28. **Backfire and flashback.** When the flame goes out with a loud “pop”, it is called a **backfire**. Backfire can be caused by:
- operating the Cutting Torch at lower pressures than required for the Tip used,
 - touching the Tip against the workpiece,
 - overheating the Tip, or
 - an obstruction in the Tip.
- If backfire occurs, shut off the Torch Handle Valves (oxygen first, then acetylene) and after remedying the cause, relight the torch. A **flashback** is a condition that results when the flame flashes back into the Torch and burns inside with a shrill hissing or squealing noise. If flashback occurs, close the Torch Handle Valves (oxygen first, then acetylene) **IMMEDIATELY!** Flashback generally indicates a problem that should be repaired before proceeding with the job at hand. A clogged Tip, improper functioning of the Valves, or incorrect acetylene/oxygen pressure could lead to flashback. Make sure to find the cause before relighting the Torch. If the cause is not found, have the Cutting Torch serviced by a qualified technician before returning to your project.
29. **Any material discharged from the work area during use will be extremely hot.** Use care to not get burnt by slag or other waste products. Also see **Specific Safety Warning 14 on page 5 of this manual regarding accidental fire prevention.**
30. **WARNING: This product, when used for cutting and similar applications, contains or produces a chemical known to the State of California to cause cancer and birth defects (or other reproductive harm).** (California Health & Safety code § 25249.5, *et seq.*)
31. **WARNING:** The brass components of this product contain lead, a chemical known to the State of California to cause birth defects (or other reproductive harm). (California Health & Safety code § 25249.5, *et seq.*)

UNPACKING

When unpacking, check to make sure that the item is intact and undamaged. If any parts are missing or broken, please call Harbor Freight Tools at the number shown on the cover of this manual as soon as possible.

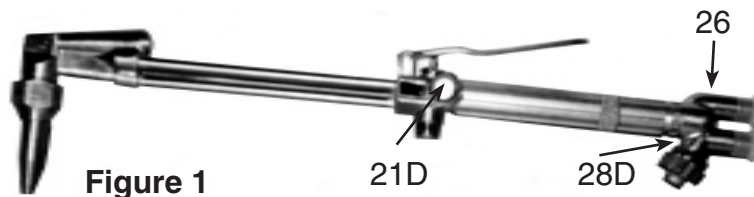
ASSEMBLY INSTRUCTIONS

⚠ WARNING! Turn the Oxygen and Acetylene Control Valves fully clockwise to their OFF position (oxygen first and acetylene second) before making any adjustments or performing any inspection or service to this Cutting Torch.

NOTE: For additional information regarding the parts listed in the following pages, refer to the Assembly Diagram on page 14 of this manual.

WARNING! The following instructions are for acetylene gas only. Contact your gas supplier for instructions on the use of other gases. This Cutting Torch is NOT recommended for use with other fuel gases.

1. Before attaching the Cutting Torch to the oxygen and acetylene hoses, attach the Cutting Tip (29) to the Torch Head (3) by unscrewing the Cutting Tip Holder Nut (1), inserting the Copper Cutting Tip (29) and carefully threading the Cutting Tip Holder Nut (1) back onto the Cutting Torch Head (3).
2. Fully close the cylinder regulators (not included) on both the oxygen and acetylene cylinders (oxygen first, then acetylene).
3. **DANGER! AVOID ANY GREASE OR OILY SURFACES ON ALL CONNECTIONS.**



4. Turn the Oxygen Control Valve (21D) clockwise to fully closed. Then turn the Acetylene Control Valve (28D) clockwise to its fully closed position also.
5. To attach an oxygen supply hose and acetylene supply hose (neither included), remove the Thread Protector Covers (27 - see Assembly Diagram). Wrap each of the two threaded portions of the Body "Y" (26) with about 3" of thread sealant tape (not included). See **Figure 1**

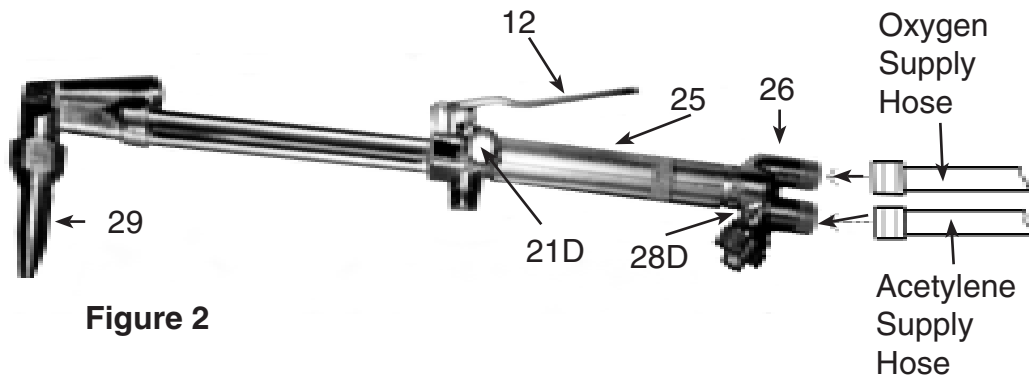


Figure 2

5. Screw the oxygen supply hose (not included) firmly onto the TOP threaded portion the the Body “Y” (26). Then screw the acetylene supply hose (not included) firmly onto the BOTTOM threaded portion of the Body “Y” (26). Acetylene has a left handed thread and Oxygen has a right handed thread. See **Figure 2**.
6. Adjust the cylinder acetylene regulator and cylinder oxygen regulator to their normal operating pressure. **WARNING! DO NOT adjust acetylene regulator (not included) over 15 PSI or the oxygen regulator (not included) over 125 PSI.**
7. Check all connections of the welding/cutting equipment for leaks using an approved leak detection solution. If leaks are found, tighten the connections more securely. If a leak still persists, discontinue use disconnect all gas hoses, and call your gas supplier. **Do not operate the Cutting Torch until all leaks are stopped and no gas odors can be detected.**

OPERATION INSTRUCTIONS

1. **WARNING!** Always use an appropriate welding helmet and additional safety equipment when welding or cutting. See number 20 of the “**Specific Safety Rules**” section of this manual.

LIGHTING THE CUTTING TORCH

1. Purge the system using the directions on page 10 of this manual.
2. Hold the Cutting Torch by its Handle (25) in one hand and a flint lighter (not included) in the other hand. See **Figure 2**.
3. **WARNING! DO NOT EVER ATTEMPT TO IGNITE ACETYLENE GAS WITH EITHER A MATCH OR A CIGARETTE LIGHTER.**
4. Open Torch acetylene valve approximately one half turn and ignite the gas using a flint lighter (not included).

5. Keep opening the acetylene valve until the flame stops excessive smoking and leaves the end of the tip about 1/8", then reduce slightly to bring the flame back to the tip.
6. Open the Acetylene Control Valve (28D) of the Cutting Torch about 1/4 turn and ignite the acetylene gas coming out of the Cutting Tip. **Always point the cutting tip away from yourself and others when lighting.**
7. Slowly open the Oxygen Control Valve until a brilliant *neutral* flame is reached. (If the flame has a smooth inner cone, the flame is called *neutral*.)
8. To increase the intensity of the flame, depress the High Pressure Lever (12). To decrease the intensity, decrease pressure on the High Pressure Lever (12).

CUTTING

1. Set the proper pressure on both the acetylene gas regulator (not included) and the oxygen regulator (not included).
2. Follow lighting procedures, numbers 2 through 8 in "LIGHTING THE CUTTING TORCH" section on page 9.
3. Move flame to edge of steel and position preheat cones just above metal.
4. When steel becomes red, slowly depress High Pressure Lever (12) to release oxygen stream to cut all the way through.
5. Slowly move the Torch in the direction of the cut.
6. Once the cutting job is completed, turn off the Oxygen Control Valve (21D) first, then turn off the Acetylene Control Valve (28D). Reversal of this shutoff procedure may cause damage to the cutting torch parts. See **Figure 2**.
7. Turn off the cylinder oxygen regulator and then the cylinder acetylene regulator.
8. Be sure to allow complete cooling of the Cutting Torch before storing.

PURGING THE SYSTEM

1. **WARNING! Purge only in a well ventilated area. Do not direct flow of any gas towards any person or animal, or any flammable materials. Do not purge near open flames or any source of ignition.**
2. Slowly open oxygen supply valve, then open fully and adjust regulator to proper pressure with torch valve closed.
3. Open torch valve and allow gas to flow about one second for each ten feet of hose. Close torch valve after purging.

4. Slowly open Acetylene supply valve not more than one full turn, then adjust regulator to proper pressure with torch valves closed.
5. Open torch valve and allow gas to flow about one second for each 10 feet of hose. Close torch valve after purging.

INSPECTION, MAINTENANCE, AND CLEANING

⚠ WARNING! Make sure the Cutting Torch is cool to the touch and disconnected from its oxygen and acetylene hoses before performing any inspection, maintenance, or cleaning procedures. **KEEP ALL GREASE AND OIL AWAY FROM ALL CONNECTIONS.**

1. **BEFORE EACH USE**, inspect the general condition of the Cutting Torch. Check for loose hose connections, cracked or broken hoses, and any other condition that may affect its safe operation. If any abnormal condition occurs or is noticed, have the problem corrected before further use. **Do not use damaged equipment.**
2. Periodically use a tip cleaner (not included) to clean out dirt and debris from the Cutting Tip (1).
3. To clean the outer body of the Cutting Torch, use a clean, dry, cloth. Do not immerse any part of the Cutting Torch in ANY liquid. **Do not use solvents or other flammable agents to clean the Cutting Torch.**

MAINTENANCE CHART		
Maintenance Type	Before Use	After Use
Inspect tool for damage (see #1 above)	X	X
Wipe off with clean, dry cloth NEVER USE SOLVENTS TO WIPE DOWN THIS CUTTING TORCH. (See #3 above)		X

TROUBLESHOOTING

Problem	Possible Causes	Probable Solutions
Before turning on Cutting Torch, gas odor is noticed.	<ol style="list-style-type: none"> 1. Hose connections may be loose. 2. Hose may be cracked. 3. Cylinder may be leaking around neck. 	<ol style="list-style-type: none"> 1. Tighten all connections for security. 2. Check hoses. If any cracks are found, replace the entire hose. DO NOT PATCH OR TAPE GAS HOSES. See #7 under “Specific Safety Warnings” in this manual. 3. Check neck area of cylinders. If cracks or damage is found, do not use. Replace cylinders before proceeding with work.
Flame is irregular	Cutting Tip may be dirty	Turn off gas, oxygen first, then acetylene. Let Cutting Torch cool down completely. Remove the Cutting Tip, check for dirt or debris. Clean and/or replace if necessary.

WARRANTY

LIMITED 90 DAY WARRANTY

Harbor Freight Tools Co. makes every effort to assure that its products meet high quality and durability standards, and warrants to the original purchaser that this product is free from defects in materials and workmanship for the period of 90 days from the date of purchase. This warranty does not apply to damage due directly or indirectly, to misuse, abuse, negligence or accidents, repairs or alterations outside our facilities, criminal activity, improper installation, normal wear and tear, or to lack of maintenance. We shall in no event be liable for death, injuries to persons or property, or for incidental, contingent, special or consequential damages arising from the use of our product. Some states do not allow the exclusion or limitation of incidental or consequential damages, so the above limitation of exclusion may not apply to you. THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTIES OF MERCHANTABILITY AND FITNESS.

To take advantage of this warranty, the product or part must be returned to us with transportation charges prepaid. Proof of purchase date and an explanation of the complaint must accompany the merchandise. If our inspection verifies the defect, we will either repair or replace the product at our election or we may elect to refund the purchase price if we cannot readily and quickly provide you with a replacement. We will return repaired products at our expense, but if we determine there is no defect, or that the defect resulted from causes not within the scope of our warranty, then you must bear the cost of returning the product.

This warranty gives you specific legal rights and you may also have other rights which vary from state to state.

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444-3353**

PLEASE READ THE FOLLOWING CAREFULLY

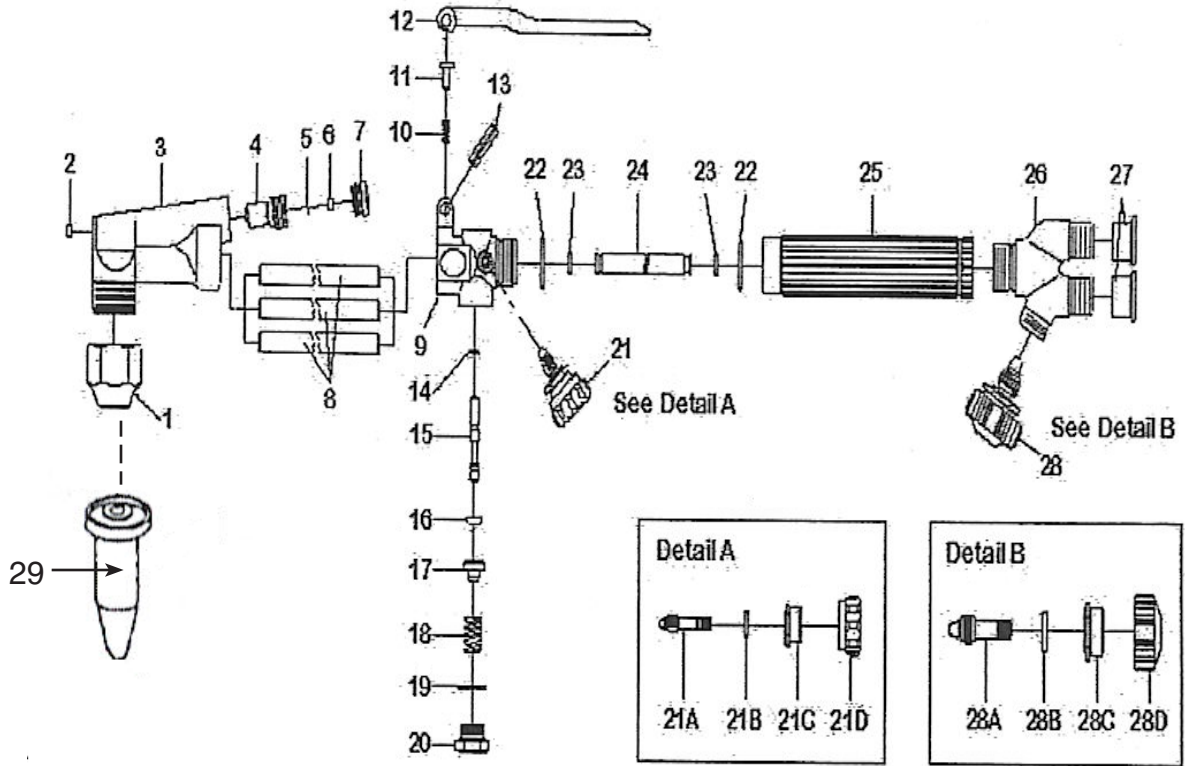
THE MANUFACTURER AND/OR DISTRIBUTOR HAS PROVIDED THE PARTS LIST AND ASSEMBLY DIAGRAM IN THIS MANUAL AS A REFERENCE TOOL ONLY. NEITHER THE MANUFACTURER OR DISTRIBUTOR MAKES ANY REPRESENTATION OR WARRANTY OF ANY KIND TO THE BUYER THAT HE OR SHE IS QUALIFIED TO MAKE ANY REPAIRS TO THE PRODUCT, OR THAT HE OR SHE IS QUALIFIED TO REPLACE ANY PARTS OF THE PRODUCT. IN FACT, THE MANUFACTURER AND/OR DISTRIBUTOR EXPRESSLY STATES THAT ALL REPAIRS AND PARTS REPLACEMENTS SHOULD BE UNDERTAKEN BY CERTIFIED AND LICENSED TECHNICIANS, AND NOT BY THE BUYER. THE BUYER ASSUMES ALL RISK AND LIABILITY ARISING OUT OF HIS OR HER REPAIRS TO THE ORIGINAL PRODUCT OR REPLACEMENT PARTS THERETO, OR ARISING OUT OF HIS OR HER INSTALLATION OF REPLACEMENT PARTS THERETO.

PARTS LIST

Part	Description	Q'ty
1	Cutting Tip Holder Nut	1
2	Plug	1
3	Head	1
4	Head Mixer (AC)	1
5	Filter	1
6	Fixed Ring	1
7	Cap	1
8	Steel Tube	3
9	Body	1
10	Spring	1
11	Buffer	1
12	High Pressure Lever	1
13	Spiral Pin	1
14	O-Ring	1
15	Valve	1
16	O-Ring	1
17	Spring Retainer	1
18	Spring	1
19	Washer	1

Part	Description	Q'ty
20	Cap	1
21	Valve Assembly Stem	1
21A	Valve	1
21B	Washer	1
21C	Nut	1
21D	Oxygen Control Valve	1
22	O-Ring	2
23	O-Ring	2
24	Inner Tube	1
25	Handle	1
26	Body "Y"	1
27	Thread Protector Cover	2
28	Valve Assembly Stem	1
28A	Valve	1
28B	Washer	1
28C	Nut	1
28D	Acetylene Control Valve	1
29	Copper Cutting Tip	1

ASSEMBLY DIAGRAM



Record Product's Serial Number Here: _____

Note: If product has no serial number, record month and year of purchase instead.

Note: Some parts are listed and shown for illustration purposes only, and are not available individually as replacement parts.