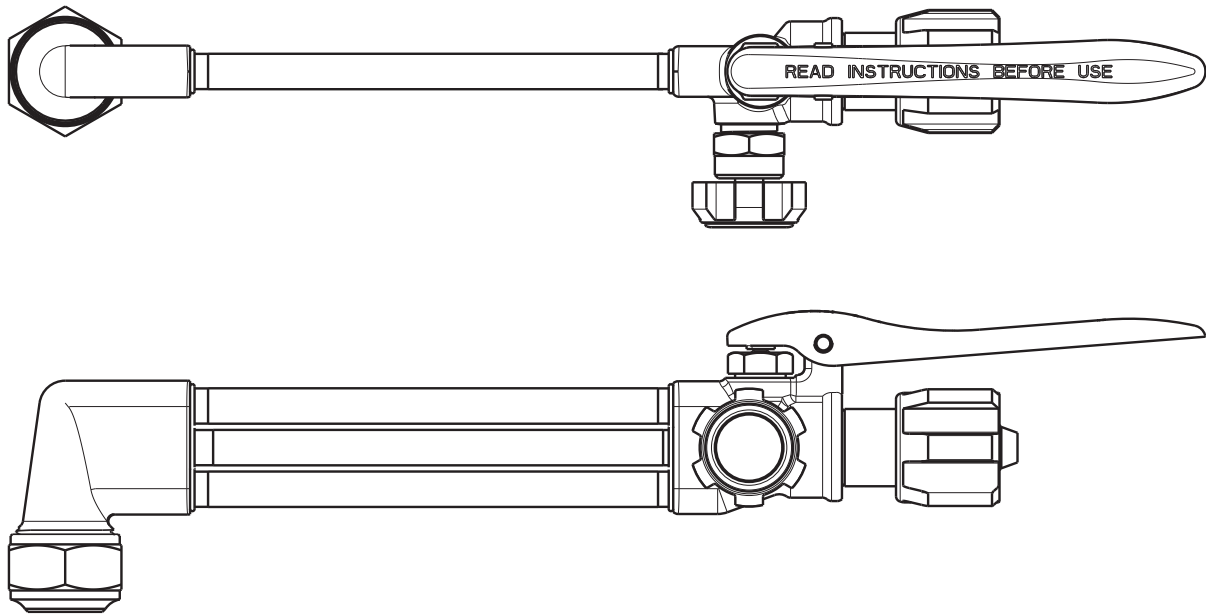


VICTOR

CA411-3

PARTS, SERVICE & REPAIR BULLETIN



400 SERIES MEDIUM DUTY CUTTING ATTACHMENT, TIP SERIES 3

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SECTION 1: GENERAL SAFETY INFORMATION

Read and understand all safety and operating instructions provided before using this apparatus. RETAIN THESE INSTRUCTIONS IN A READILY AVAILABLE LOCATION FOR FUTURE REFERENCE.

WARNING

DO NOT attempt to use this apparatus unless you are trained in its proper use or are under competent supervision. For your safety, practice the safety and operating procedures described in this booklet every time you use the apparatus. Deviating from these procedures may result in fire, explosion, property damage, and/or operator injury. If at any time the apparatus you are using does not perform in its usual manner, or you have any difficulty in the use of the apparatus, STOP using it immediately. DO NOT use the apparatus until the problem has been corrected!

WARNING

Apparatus improperly operated, maintained or repaired can be dangerous. Some parts and accessories manufactured by others may fit VICTOR apparatus but not conform to VICTOR's exacting standards. For your own protection, specify and use ONLY VICTOR-made parts and accessories with your VICTOR apparatus.

WARNING

Service or repair of apparatus should be performed only by a qualified repair technician capable of servicing gas apparatus in strict accordance to applicable Part and Service bulletins for VICTOR manufactured products. Improper service repair, or modification of the product could result in damage to the product or injury to the operator.

WARNING

WARNING: This product contains chemicals, including lead, known to the State of California to cause birth defects and other reproductive harm. **Wash hands after handling.**

1.01 COMMONLY USED TERMS

BACKFIRE - The return of the flame into the torch, producing a popping sound. The flame will either extinguish or reignite at the tip.

SUSTAINED BACKFIRE - The return of the flame into the torch with continued burning within the torch. This condition may be accompanied by a popping sound followed by a continuous hissing or whistling sound.

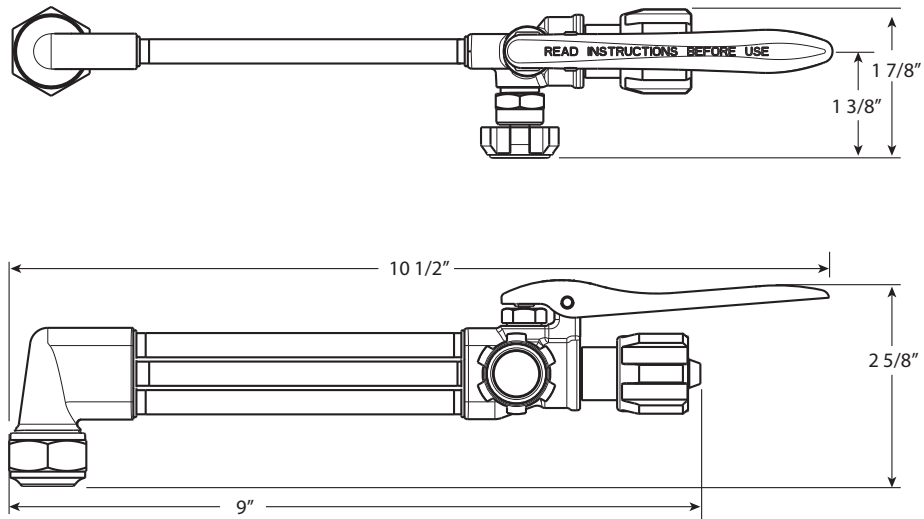
FLASHBACK - The return of the flame through the torch into the hose and even into the regulator. It may also reach the cylinder. This condition could possibly cause an explosion in the system.

SECTION 2: SPECIFICATIONS

2.01 CA411-3 VICTOR CUTTING ATTACHMENT

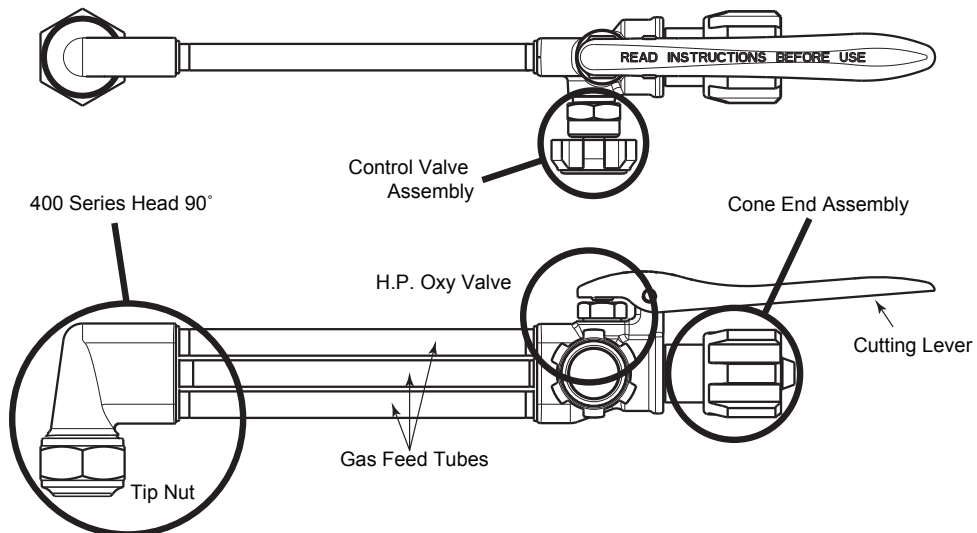
Cutting Tip Series 3

- Intuitive knobs: color coded, clearly marked lettering with increase/decrease label. Understandable in any language.
- Improved Stainless Lever provides increased comfort and reduced operator hand fatigue.
- Redesigned inlet nut increases grip for Hand Tightening.
- Uses #000 - #5 cutting tips. One torch for All Fuel Gases (with proper tip).
- Inline stainless tubes for better visibility and reduced profile vs triangular design.
- Efficient Universal Head Mixer reduces Torch Profile for Better Visibility. Optimized to use 1 Cutting Attachment for All Fuel Gases.



All dimensions are approximate.

2.02 REPAIR PARTS LIST



CA411-3

SECTION 3: SERVICE & REPAIR INSTRUCTIONS

3.01 RECOMMENDED TOOLS & SUPPLIES FOR REPAIR PROCEDURES

5/8", 9/16", 11/16", and 1/2" Open-End Wrenches	Vise
1" Box-End Wrench	45% Silver Solder
5/32" Drift Punch	Silver Solder Flux
Small Hammer	Loctite® #222 (Part Number 0028-0081)
Cone End Assembly Clamp RT-108	Christo-Lube 129 (Part Number 0034-0021)
Brazing Torch	Hand Reamer RT-58
Pliers	Air Hose

NOTE

Disconnect cutting torch from any gas lines or other hardware before beginning any service or repair.

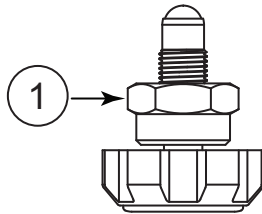
3.02 CLEANING PROCEDURES

Contact your local chemical supplier for recommended cleaning solvents applicable to the metals used in this product. Always use cleaning solvents in accordance with the manufacturer's instructions.

WARNING

DO NOT allow nonmetal components (Seat, O-Rings, Dust Seal, Gaskets) to contact cleaning solvents! Cleaning solvents cause elastomeric and plastic parts to swell and stress crack. If these parts require cleaning, use a mild soap solution, followed by a thorough rinsing in water. Dry these parts completely before installing. REPLACE NONMETAL PARTS THAT HAVE COME IN CONTACT WITH OIL, GREASE OR ANY OTHER PETROLEUM-BASED SUBSTANCE! Petroleum-based substances become dangerously flammable in the presence of oxygen.

3.03 CONTROL VALVE REPAIR KIT



Control Valve

Item No.	Description	Part number	Qty
	Control Valve Repair Kit	0390-0086	1
1	Valve Stem Assembly	0662-0102*	1

*Sold as part of kit only

Service

- Wipe with dry cloth. **Do not use any cleaning solvents.**
- Check for leaks.

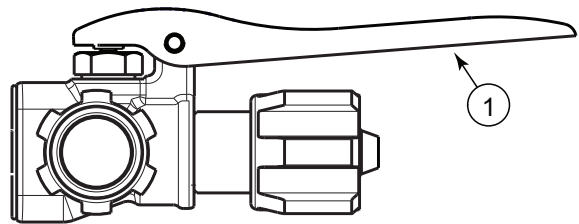
Disassembly

1. Place torch in a vise.
2. Use a wrench to unscrew the Control Valve Nut.

Assembly

1. Apply Christo-Lube to threads.
2. Screw Control Valve Assembly into Cutting Torch Body.
3. Use a wrench to tighten the Control Valve Nut.
4. Apply green colored "O" (Oxygen) decal on knob.
5. Remove from vise.

3.04 CUTTING LEVER



Cutting Lever

Item No.	Description	Part number	Qty
1	Cutting Lever	0307-0035	1

Service

- Check Roll Pin for wear.
- Check Lever Tabs for alignment to Oxy Valve Groove.

Disassembly

1. Using Punch, tap Roll Pin out of Lever Handle and Cutting Torch Body. Inspect and discard Roll Pin if deformed.

NOTE

Replacement Roll Pin part number is 1404-0047.

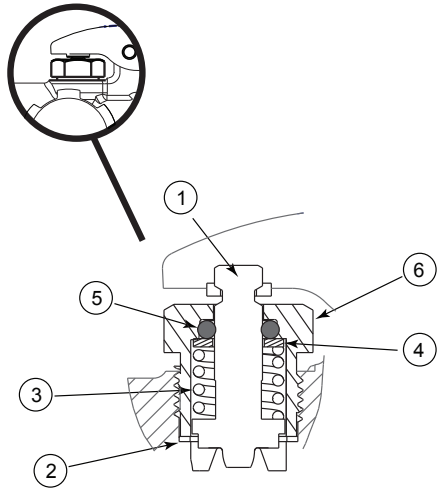
2. Slide Lever Handle forward.

Assembly

If Roll Pin was discarded, acquire a replacement Roll Pin before beginning this step.

1. Align Lever Tabs with Valve Stem.
2. Confirm Lever Tabs align with Valve Stem Groove and insert Roll Pin into Lever and Torch Body.
3. Gently tap in Roll Pin.

3.05 H.P. OXY VALVE REPAIR KIT



H.P. Oxy Valve

Item No.	Description	Part number	Qty
	H.P. Oxy Valve Repair Kit	0390-0016	1
1	Seat Assembly	0320-0103	1
2	Gasket	1408-0093	1
3	Spring	0320-0072	1
4	Washer	1406-0107	1
5	O-Ring	1407-0005	1
6	Valve Cap	0320-0104	1



CAUTION

Discard used O-Ring, Seat Assembly, Gasket and Washer. Replace them each time you reassemble a Cutting Torch.

Service

- Wipe with dry cloth. **Do not use any cleaning solvents.**
- Check for leaks.

Disassembly

Remove the Cutting Lever before beginning the task.

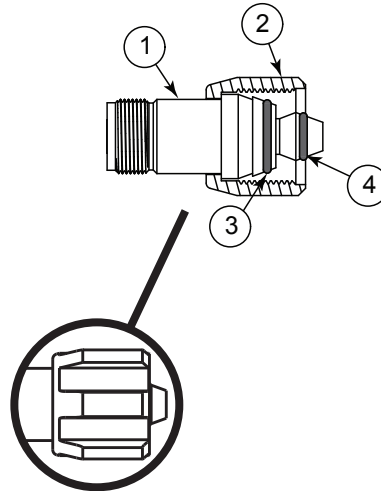
1. Place torch in a vise.
2. Use a wrench to loosen and unscrew the Oxy Valve Assembly from the Cutting Torch Body.
3. Remove the Oxy Valve Assembly from the Cutting Torch Body.

Assembly

1. Install the Spring followed by the Washer and O-Ring on the Valve Stem.
2. Apply Christo-Lube to the outside of the O-Ring and along the Valve Stem.
3. Insert the Seat Assembly with Spring, Washer, and O-Ring in through the Valve Cap.
4. Check and clean the H.P. Oxy opening on the torch body.
5. Gently drop the Gasket in the opening of the torch body. Make sure that it is flat against the bottom.

6. Screw the Oxy Valve Assembly into the torch body and wrench tighten.
7. Reattach the Cutting Lever. (See Section 3.04, Cutting Lever)
8. Remove from vise.
9. Check for leaks.

3.06 CONE END ASSEMBLY REPAIR KIT



Cone End Assembly

Item No.	Description	Part number	Qty
	Cone End Assembly Repair Kit	0390-0087	1
1	Cone End	0317-0008*	1
2	Coupling Nut	0309-0136*	1
3	O-Ring	1407-0178	1
4	O-Ring	1407-0177	1

*Sold as part of kit only.



WARNING

There **MUST** be two (2) sealing O-Rings in good condition on the Cone End. The absence of either O-Ring creates a condition that allows pre-mixing of oxygen and fuel gases.

Service

- Use an air hose to clear any debris from opening.
- Replace O-Rings on Cone End.
- Check for leaks.

Disassembly

Remove the Cutting Lever before beginning the task.

1. Place torch in RT-108 by mounting Cone End in fixture.
2. Use a wrench to loosen and unscrew the Cone End Assembly.
3. Clean opening in Cutting Torch Body.
4. Discard old Cone End from RT-108.

Assembly

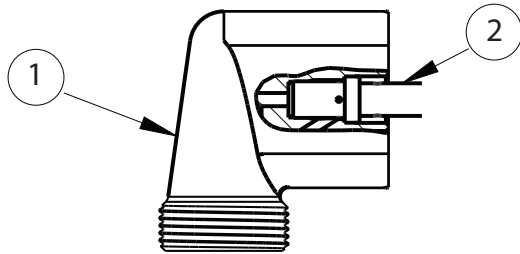
1. At the beginning of the Cone Assembly thread, apply a small amount of Loctite®. Loctite® *must completely cover* the beginning two threads of the Cone Assembly end.
2. Screw Cone End Assembly into Cutting Torch Body.
3. Place torch in RT-108 by mounting Cone End in fixture.
4. Immediately use a wrench to tighten the Cone End Assembly into the Cutting Torch Body. Consider using a small hammer to tap wrench tighter to seat threads and set Loctite®.
5. Remove from RT-108.
6. Reattach Cutting Lever. (See Section 3.04, Cutting Lever)
7. Check for leaks.

3.07 400 SERIES HEAD REPAIR KIT



CAUTION

Always wear gloves when handling heated parts.



400 Series Head

Item No.	Description	Part number	Qty
	90° Victor Series 3 Head Repair Kit	0390-0089	1
1	400 Series-3 Head-90° Victor	0302-0257*	1
2	Mixer	0305-0334*	1

**Sold as part of kit only.*

Service

- Remove Tip Nut and Tip and use an air hose to clear any debris from opening. Reattach Tip Nut and Tip.

NOTE

Repair kit does not include Tip Nut. Tip Nut part number is 0309-0003.

Disassembly

Remove the Tip, Tip Nut, Cutting Lever, Control Valve Assembly, and H.P. Oxy Valve before beginning this task.

1. Place the torch body in a vise, positioned so that you have full access to the 400 Series Head.
2. Heat the Gas Feed Tubes until solder liquefies. Use pliers to remove 400 Series Head.

Assembly

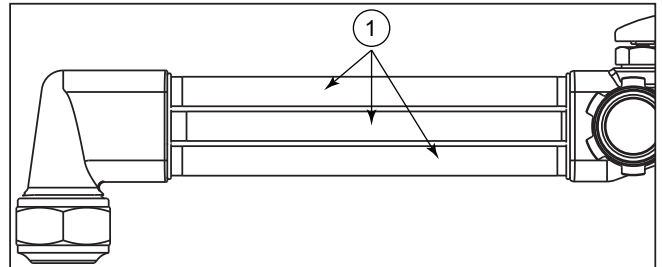
1. Clean Gas Feed Tube ends of all solder and debris.
2. Place new 400 Series Head on Gas Feed Tubes. Confirm correct orientation to 400 Series body.
3. Ensure that the center tube is pressed firmly against the mixer of the head.
4. Solder fittings and allow to cool before beginning the next step.
5. Use RT-58 to finish hand reaming torch seat.
6. Remove all chips and debris around seat area.
7. Reattach the Control Valve Assembly (See Section 3.03, Control Valve Repair Kit) and H.P. Oxy Valve (See Section 3.05, H.P. Oxy Valve Repair Kit).
8. Reattach the Cutting Lever (See Section 3.04, Cutting Lever), Tip Nut, and Tip.
9. Check for leaks.

3.08 GAS FEED TUBES



CAUTION

Always wear gloves when handling heated parts.



Gas Feed Tubes

Item No.	Description	Part number	Qty
	Gas Feed Tubes	0390-0091	1
1	5/16" Tube	0303-0190*	3

**Sold as part of kit only.*

Service

- Check tubes for leaks and wear.

Disassembly

Remove the Tip, Tip Nut, Cutting Lever, Control Valve Assembly, H.P. Oxy Valve, Cone End, and 400 Series Head before beginning this task.

1. Place the torch body in a vise, positioned so that you have full access to the Gas Feed Tubes.
2. Heat the Gas Feed Tubes until solder liquefies. Use pliers to remove all tubes.
3. Allow the torch body to cool before beginning assembly.

Assembly

1. Clean the torch body of all solder and debris.
2. Place a new 400 Series Head in a vise, positioned so that the tube bores face up.
3. Insert the Gas Feed Tubes into the 400 Series Head, followed by the torch body. Confirm correct orientation to the 400 Series Head.
4. Ensure that the center tube is pressed firmly against the mixer of the head.
5. Solder the fittings around the 400 Series Head and repeat for the torch body side. Allow to cool before beginning the next step.
6. Complete steps 5 - 9 in Section 3.07, 400 Series Head Repair Kit, Assembly.

SECTION 4: TEST PROCEDURES

4.01 RECOMMENDED TOOLS & SUPPLIES FOR TEST PROCEDURES

Oil-free air or dry nitrogen supplies	2-3-101 Cutting tip
Oxygen and acetylene gas supplies	5/8", 9/16", 11/16", and 1/2" Open-End Wrenches
Small water tank	1" Box-End Wrench

4.02 LEAK TEST THE GAS REGULATOR

1. Close the Cylinder Valves.
2. Turn the Pressure Adjusting Screws one turn counterclockwise. If the High Pressure Gauge reading drops, there is a leak in the Cylinder Valve, Inlet Fitting, or High Pressure Gauge. If the Low Pressure Gauge drops, there is a leak in the Torch Handle Valve, Hose, Hose Fitting, Outlet Fitting, or Low Pressure Gauge. If the High Pressure Gauge drops, and at the same time the Low Pressure Gauge rises, there is a leak in the Regulator Seat. Have a qualified repair technician repair the Regulator.
3. Use an approved leak detector solution to check for leaks.

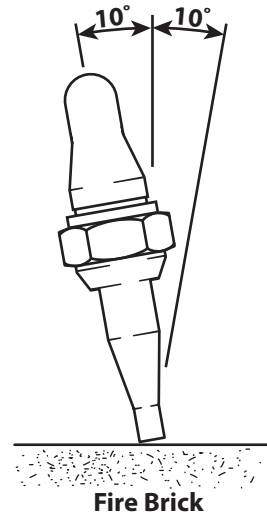
4.03 LEAK TESTING THE TORCH

1. Connect the Torch to oil-free air or dry nitrogen supply lines with matching type regulator.
2. Insert a plugged cutting tip into Torch.
3. Pressurize the hoses to 50+/-5 PSIG.
4. Completely submerge the Torch in water.
5. Open the Valve Stem Assemblies. Check for leaks around all external connections. Observe the Valve Stem Assemblies. If bubbles are escaping from around the Valve Stem Assembly packing, tighten the Packing Nut until it takes 1-1/4 to 2 in-lbs of torque to adjust the Valve Stem Assembly knobs.
6. Close the Valve Stem Assembly knobs to a torque of 7-8 in-lbs.
7. Remove the Plugged Cutting Tip from the torch. Observe the Torch Head. If bubbles appear at the Torch Head, one or both of the Valve Stem Assemblies is leaking. Ream the Valve Seating surface using RT-33 reseating tool. Repeat steps 2 through 7.

4.04 FLAME TESTING THE TORCH

1. Remove the Torch from the water. Open the Valve Stem Assemblies for 10 seconds. Once all the water has been removed from the Torch, disconnect the hoses from the oil-free air or dry nitrogen supply. Attach them to oxygen and acetylene gas supplies.
2. Install a 2-3-101 cutting tip in the head. Tighten the Tip Nut to 10-15 ft-lbs of torque.
3. Adjust the oxygen to deliver 40+/-5 PSIG. Adjust the acetylene to deliver 8+/-3 PSIG.
4. Open the Oxygen Valve and purge the oxygen line for five seconds. Then, close the Oxygen Valve. Open the Fuel Valve and purge the fuel line for five seconds.

5. Open the Fuel Valve Stem Assembly about 1/8 of a turn. Ignite the gas with a spark lighter. Continue opening the Fuel Valve until the flame stops smoking.
6. Open the Oxygen Valve until a bright neutral flame appears.
7. Place the Tip on a fire brick at approximately 10° from the vertical (see Figure). Depress the Cutting Oxygen Lever. Rock the Torch from side to side for 5-8 seconds. The Torch will “pop” during this operation.



⚠ WARNING

*If you experience a backfire or backflash (flame disappears suddenly and/or a hissing sound IS heard when the flame is burning inside the torch), IMMEDIATELY turn OFF **first** the Oxygen Valve and **then** the Fuel Valve. Allow the Torch to cool before reusing it. If the trouble reoccurs, disassemble the Torch. Replace any damaged parts.*

8. After testing is completed, release the Cutting Oxygen Lever. Close the Oxygen Valve and the Fuel Valve.
9. Close the Cylinder Valve or Gas Supply.
10. Open the Oxygen Valve. Release the oxygen from the system. Once all the oxygen is released from the system, close the Oxygen Valve.
11. Open the Fuel Valve. Release the fuel gas from the system. Once all the fuel gas is released from the system, close the Fuel Valve.
12. Remove the Hoses from the Torch.

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