

# ***Pump Replacement, Motor Replacement, and Inlet Tube Upgrade***

***Field Service Bulletin  
802560 - Rev. 2***

***Hypertherm***  
*The world leader in  
plasma cutting technology*

# **Pump Replacement, Motor Replacement, and Inlet Tube Upgrade**

**Kits: 128385, 128384, 129080**

**Field Service Bulletin  
IM-256  
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## Section 1

### INTRODUCTION and COOLANT DRAINING

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#### INTRODUCTION



##### Purpose

This bulletin serves 3 purposes:

- To aid technicians in the replacement of the 031114 pump (kit 128384)
- To aid technicians in the replacement of the 031113 motor (kit 128385)
- To upgrade older pump systems with a larger diameter tube from the reservoir to the pump (kit 129080) If your pump is noisy, fails to work properly, or if the pump housing is pitted, the inlet tube upgrade portion of these instructions will be beneficial for your system.

##### Customer Required Tools

Phillips head screwdriver  
5/8" wrench or adjustable wrench  
13/16" or adjustable wrench  
clean, empty 5-gallon container

		<b>WARNING</b>
<b>Installation must be performed only by Hypertherm distributors or qualified technicians!</b>		
<b>SHOCK HAZARD: Always turn off power and wait 5 minutes before removing any cover of the power supply. If power unit is directly connected to a line disconnect box, place line disconnect switch to OFF position. Lock out and tag out switch before proceeding!</b>		

# Pump or Motor Replacement and Inlet Tube Upgrade

## DRAIN COOLANT FROM RESERVOIR

The system coolant must be drained before replacing the pump, motor or inlet tubing.

1. TURN OFF ALL POWER TO THE PLASMA ARC SYSTEM! See warning on previous page.
2. Remove rear cover of power supply to expose motor, pump, reservoir and associated plumbing.
3. Place a 5-gallon container at the rear of the power supply near the pump.
4. Using 5/8" or adjustable wrench, loosen tubing fitting at the pump.
5. Move tubing over 5-gallon container and allow reservoir to drain.

Remove hose at this point  
to drain coolant from reservoir.

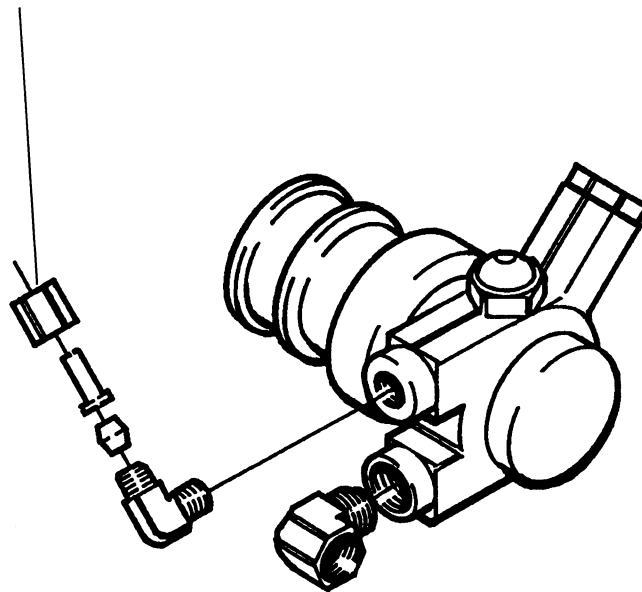


Figure 1-1 Draining the Coolant

### REPLACING THE MOTOR

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#### KIT 128385 CONTENTS

Part Number	Description
031113	Motor: 1/3 hp
129471	Clamp SA
802560	FSB: Pump or Motor Replacement and Inlet Tube Upgrade

#### REPLACING THE MOTOR

1. Remove all tubing and components that are connected to but not part of the pump and motor assembly.
2. Remove the pump and motor assembly from the power supply.
3. Loosen the clamp that secures the pump to the motor. Discard the old clamp.
4. Remove the old motor.
5. Insert the brass coupler (031122) into the new motor and pump as shown.

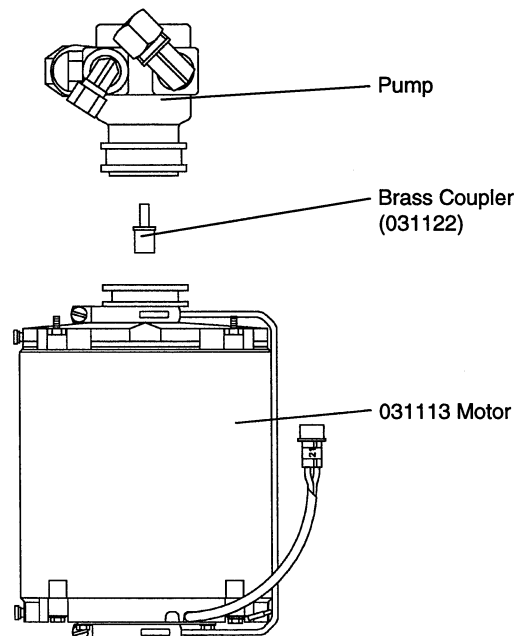
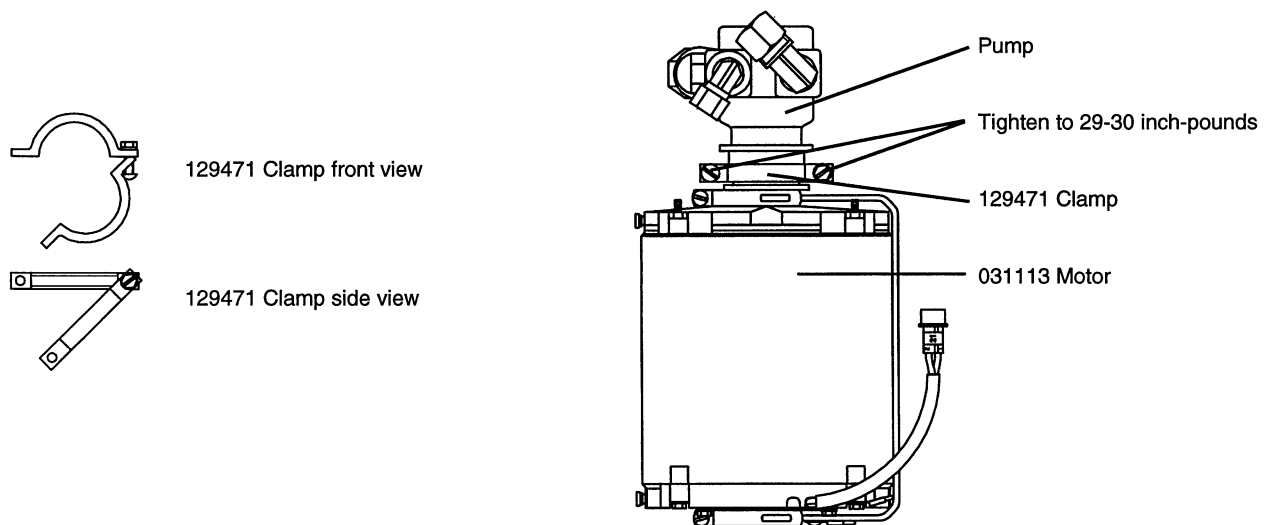


Figure 2-1 Motor Replacement - 1 of 2

# Pump or Motor Replacement and Inlet Tube Upgrade

6. Mount the pump to the motor making sure that shafts are aligned correctly and that the pump can rest on the flange while tightening. Make sure that the ring flanges on the pump and the motor are properly engaged and that they are flush against one another.
7. Add the 129471 clamp and tighten to the point where the pump can be rotated by hand to the correct position. Make sure the clamp is fully seated around the entire circumference of the pump and motor flanges.
8. After the pump is in proper alignment, tighten the clamp nuts using 29-30 inch-pounds of torque.
9. Reinstall the motor/pump assembly to the power supply, and make all the proper connections.



**Figure 2-1 Motor Replacement - 2 of 2**

## **FILL RESERVOIR WITH COOLANT**

1. Remove the reservoir cap.
2. Pour coolant into the reservoir.
3. Place line disconnect switch to the ON position.
4. Press and hold the power supply ON (I) button until the coolant flow status LED on the control panel indicates the normally operating condition.
5. Check for leaks. Tighten connections, if necessary.

### REPLACING THE PUMP

#### KIT 128384 CONTENTS

Part Number	Description
031114	Pump: 70 gpm 200 psi
129471	Clamp SA
802560	FSB: Pump or Motor Replacement and Inlet Tube Upgrade

#### REPLACING THE PUMP

1. Remove all tubing and components that are connected to but not part of the pump and motor assembly.
2. Remove the pump and motor assembly from the power supply.
3. Loosen the clamp that secures the pump to the motor. Discard the old clamp.
4. Remove the old pump.
5. Insert the brass coupler (031122) into the new motor and pump as shown.

#### Notes:

- Do not remove the shipping plugs from the port until the fittings are ready to be installed.
- Carefully remove any burrs or raised metal from the pump to make sure that the pump will seat correctly and be aligned properly with the motor.
- Use Loctite pipe sealant #57141 on all mating fittings.

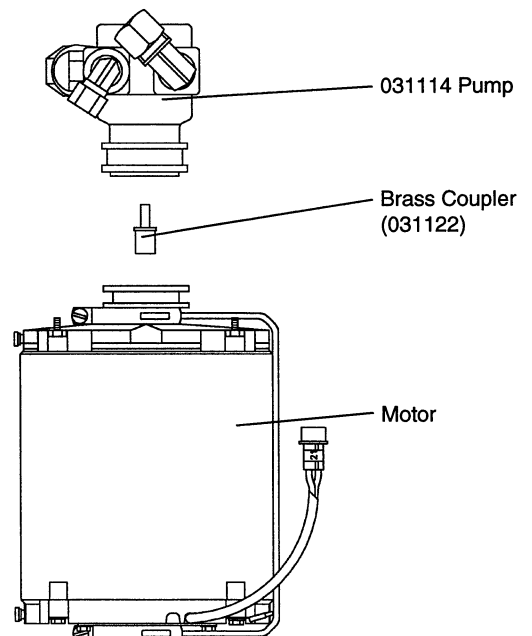
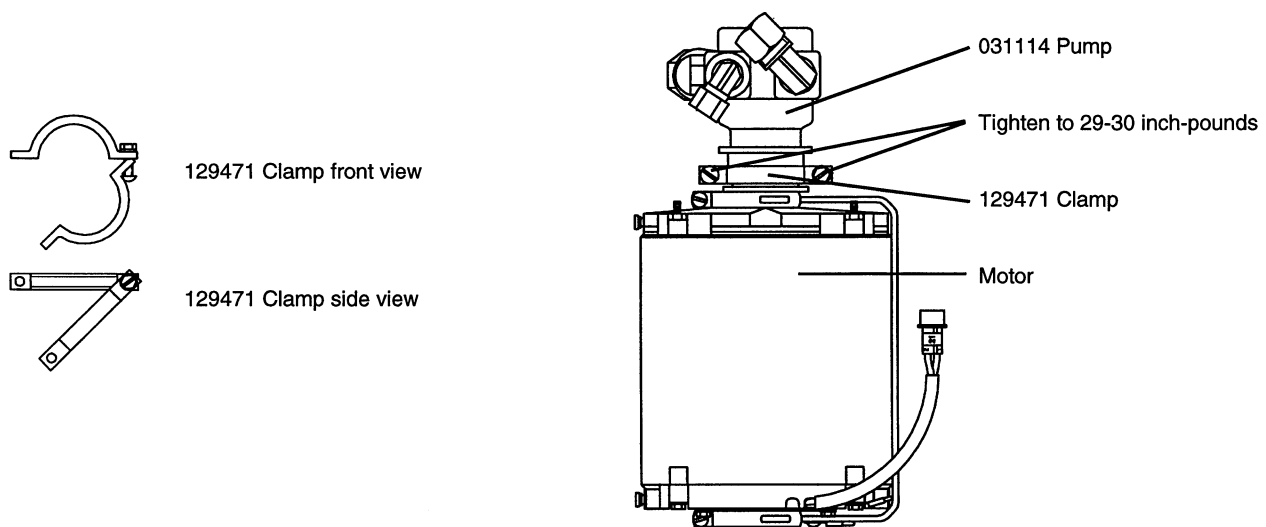


Figure 3-1 Pump Replacement - 1 of 2



# Pump or Motor Replacement and Inlet Tube Upgrade

6. Mount the pump to the motor making sure that shafts are aligned correctly and that the pump can rest on the flange while tightening. Make sure that the ring flanges on the pump and the motor are properly engaged and that they are flush against one another.
7. Add the 129471 clamp and tighten to the point where the pump can be rotated by hand to the correct position. Make sure the clamp is fully seated around the entire circumference of the pump and motor flanges.
8. After the pump is in proper alignment, tighten the clamp nuts using 29-30 inch-pounds of torque.
9. Reinstall the motor/pump assembly to the power supply, and make all the proper connections.



**Figure 3-1 Pump Replacement - 2 of 2**

## **FILL RESERVOIR WITH COOLANT**

1. Remove the reservoir cap.
2. Pour coolant into the reservoir.
3. Place line disconnect switch to the ON position.
4. Press and hold the power supply ON (I) button until the coolant flow status LED on the control panel indicates the normally operating condition.
5. Check for leaks. Tighten connections, if necessary.

### INLET TUBE UPGRADE

#### KIT 129080 CONTENTS

Part No.	Description	Qty.
129080	Water Pump Inlet Tube Upgrade Kit	
015120	Adapter:1/4 NPT x 1/2 Compression 90°	1
015292	Adapter:1/2 NPT x 1/2 Compression 90°	1
015125	Sleeve:1/2 Plastic Tube	2
015126	Insert:1/2 Plastic Tube	2
015293	Adapter:3/8 NPT x 1/2 Compression 90°	1
046043	Tubing:1/2" OD .063W Black Nylon	10"
802560	FSB: Pump or Motor Replacement and Inlet Tube Upgrade	1

#### REMOVE OLD TUBING FROM RESERVOIR TO PUMP

1. Loosen tubing fittings from reservoir to pump .
2. Remove tubing.

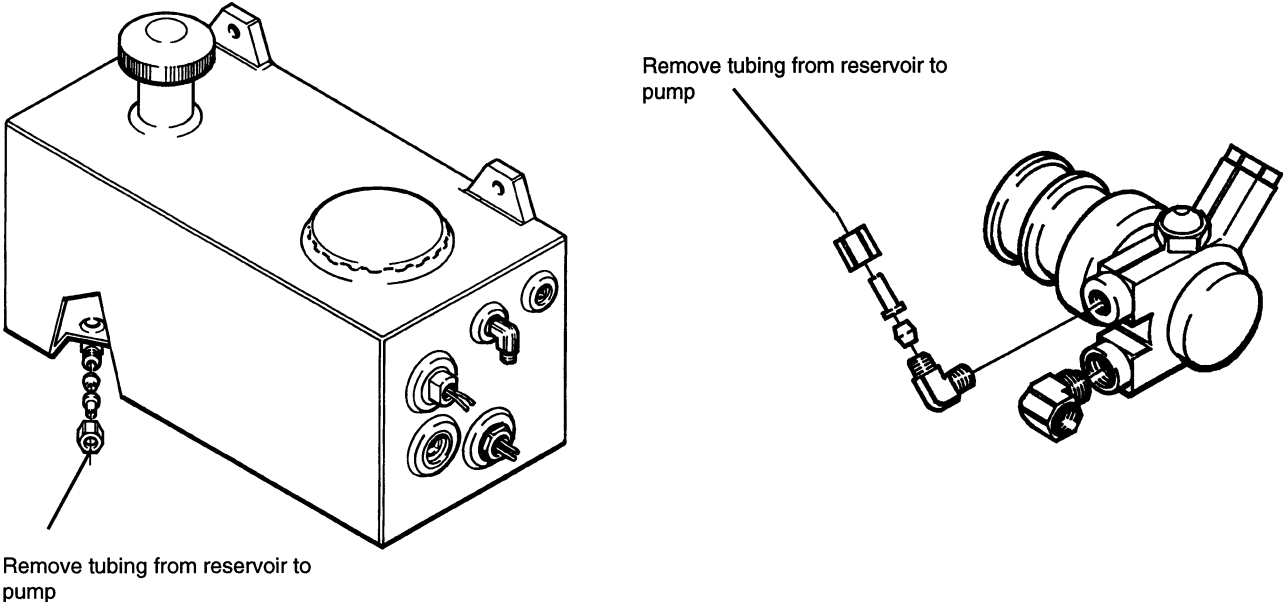
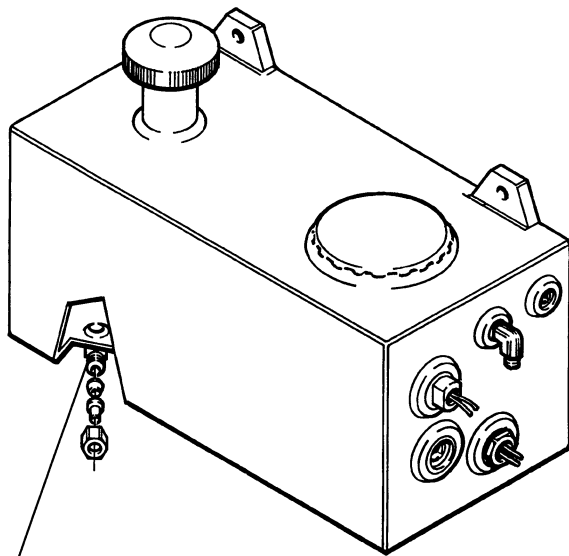


Figure 4-1 Removing Old Tubing from Reservoir to Pump

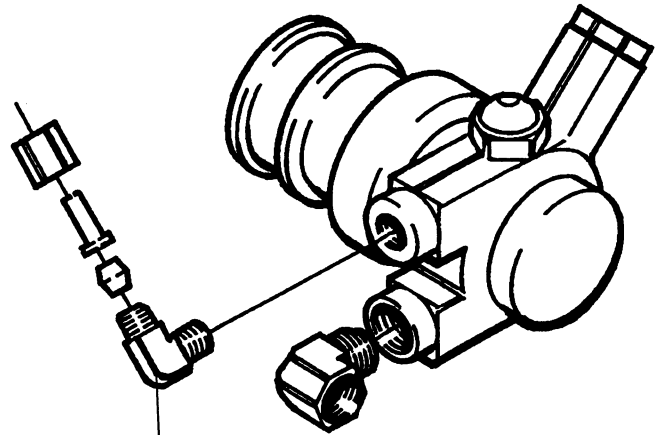
# Pump or Motor Replacement and Inlet Tube Upgrade

## REPLACE ADAPTERS ON RESERVOIR AND PUMP

1. Remove 90° 3/8" adapters at pump and at reservoir.
2. Install 90° 1/4" x 1/2" adapter (015120) at reservoir.
3. Install 90° 3/8" x 1/2" adapter (015293) at pump.



Replace 90° reservoir adapter with  
015120 90° adapter



Replace 90° pump adapter with  
015293 90° adapter

Figure 4-2 Replacing Adapters at Reservoir and at Pump

# Pump or Motor Replacement and Inlet Tube Upgrade

## INSTALL NEW TUBING FROM RESERVOIR TO PUMP

1. Unscrew 1/2" compression fitting from the adapter (015293) on the pump.
2. Remove the brass sleeve that is inside the fitting.
3. Place inserts (015126) in both ends of the tubing (046043).
4. Slide one of the 1/2" compression fittings on one end of the tubing.
5. Slide a plastic sleeve (015125) into the compression fitting with the shorter beveled end of the fitting facing the compression fitting.
6. Press tube in place against the adapter at the pump and slide the compression fitting to join at the adapter.
7. Using a 13/16" wrench or adjustable wrench, tighten the compression fitting back onto the adapter at the pump.

Repeat steps 4-7 to connect tubing to the reservoir. See Figure 4-2 for location of the reservoir adapter.

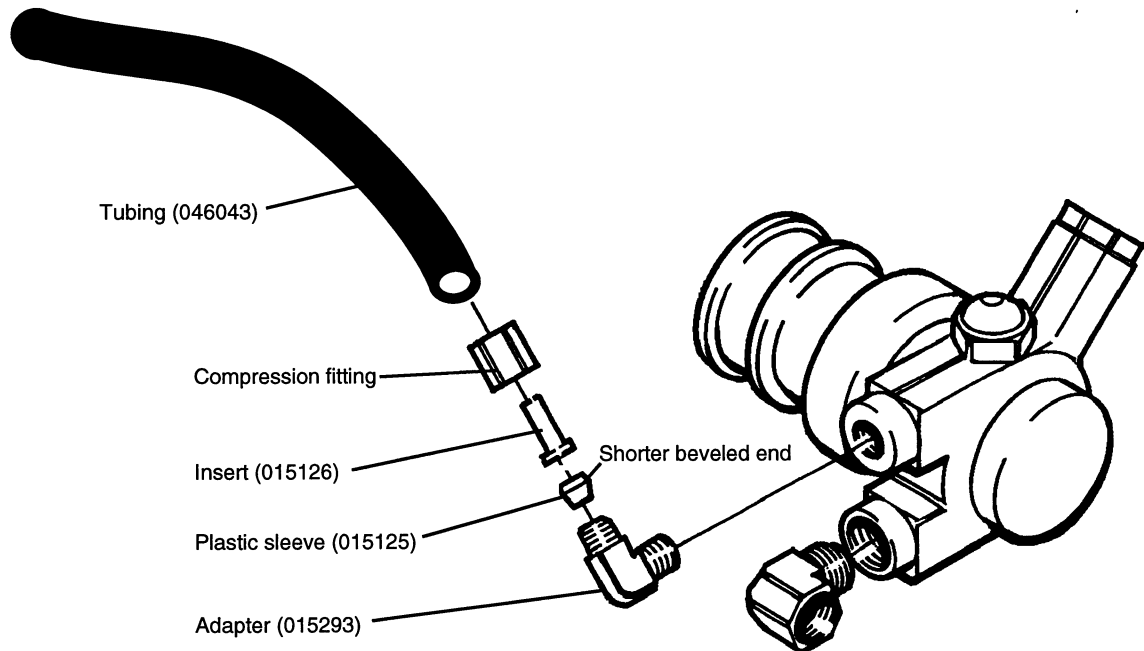


Figure 4-3 Installing New Tubing to Pump

# **Pump or Motor Replacement and Inlet Tube Upgrade**

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## **FILL RESERVOIR WITH COOLANT**

1. Remove the reservoir cap.
2. Pour coolant into the reservoir.
3. Place line disconnect switch to the ON position.
4. Press and hold the power supply ON (I) button until the coolant flow status LED on the control panel indicates the normally operating condition.
5. Check for leaks. Tighten connections, if necessary.