



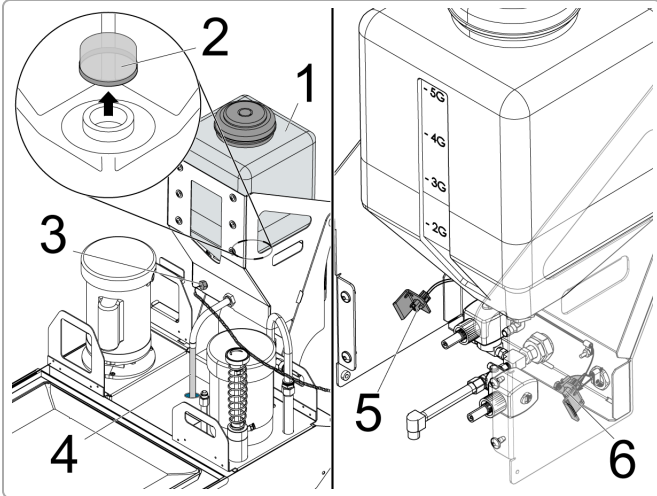
# Coolant Refill Option - How it Works and Troubleshooting Guide

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## How it Works

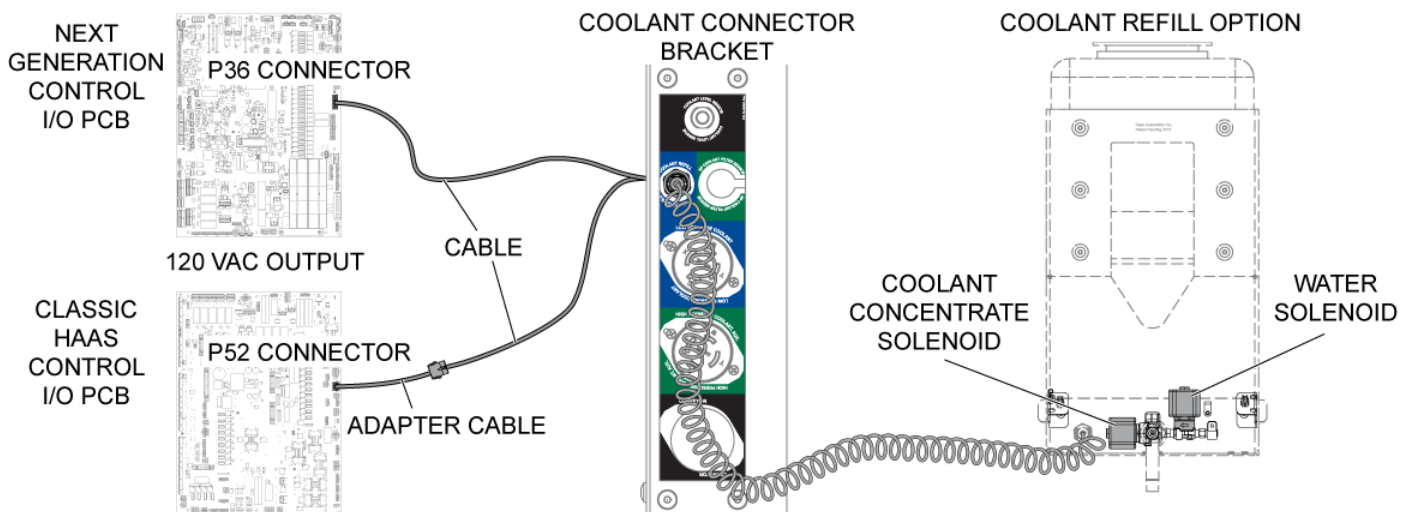


The Haas Coolant Refill Option (CRO) automatically monitors the machine coolant level and adds correctly mixed coolant to the coolant tank. It operates only when the coolant tank level is below 80%. The five-gallon coolant concentrate reservoir lets the CRO operate unattended for long periods of time. The Haas control also notifies you when the unit needs maintenance.

1. Coolant concentrate tank
2. Strainer
3. Solenoid cable
4. Filler hose
5. Water solenoid cable
6. Coolant concentrate solenoid cable

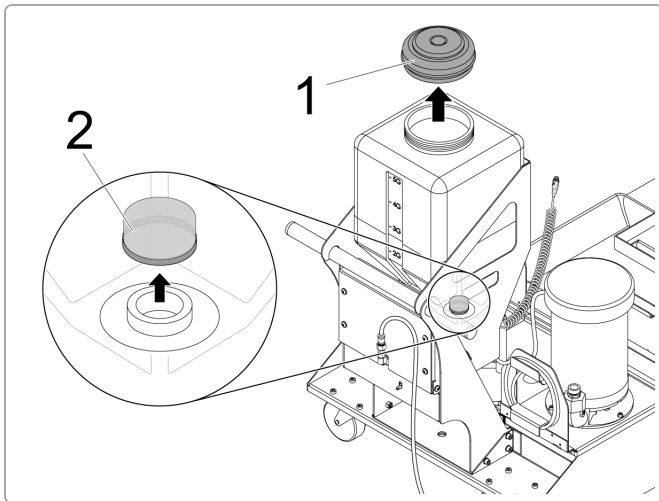
The CRO unit has (2) solenoids, both located below the coolant concentrate tank. When the unit is commanded to operate, the water supply solenoid activates to add water to the coolant tank. The coolant concentrate solenoid pulses on and off every 0.25 seconds. The combined operation of these solenoids results in the correct coolant mixture being added to the coolant tank.

If you are troubleshooting an incorrect coolant concentration in the coolant tank, put a bucket under the filler pipe. This allows you to test the concentration of the coolant that the CRO produces.



Symptom	Possible Cause	Corrective Action	Section
The coolant concentration in the coolant tank is incorrect.	The coolant concentrate tank is empty.	Fill the coolant concentrate tank.	1
	There is insufficient water pressure.	Check the incoming water pressure.	2
	The CRO is not calibrated.	Calibrate the CRO.	3
	The water supply or coolant concentrate solenoid does not receive voltage.	Measure the voltage to the solenoids.	4
	The water supply or coolant concentrate solenoid is contaminated and stays on.	Clean the solenoids.	5
The CRO does not power on.	The water supply or coolant concentrate solenoid does not receive voltage.	Measure the voltage to the solenoids.	4
	The coolant level sensor does not operate correctly.	Troubleshoot the coolant level sensor.	6
The coolant tank overfills.	The water supply or coolant concentrate solenoid is contaminated and stays on.	Clean the solenoids.	5
	The coolant level sensor does not operate correctly.	Troubleshoot the coolant level sensor.	6

## Section 1



**Symptom:** The coolant concentration in the coolant tank is too low.

**Possible Cause:** The coolant concentrate tank is empty.

The CRO tank does not have a level sensor. The control estimates the concentrate level based on the coolant consumption. The control displays a low concentrate icon when it estimates the concentrate level is low.

**Corrective Action:**

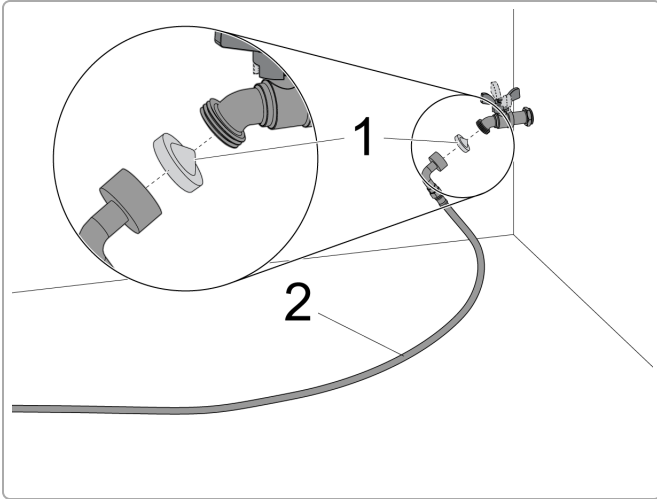
Check the coolant concentrate level in the coolant concentrate tank.

- Remove the cap [1].
- Remove the strainer [2] from the bottom of the tank.
- Clean it with water.
- Install the strainer [2] in the bottom of the tank.
- Fill the concentrate tank to the 5 gallon mark.
- Update the concentrate refill status on the **Coolant Refill** display.

To correct the batch of coolant that is in the coolant tank, refer to the video [Machine Tool Coolant - Top Up Low Concentration - Video](#)

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## Section 2



**Symptom:** The coolant concentration in the coolant tank is too high.

**Possible Cause:** There is insufficient water pressure.

**Corrective Action:**

Make sure that the water supply has the correct pressure. The water supply must have a pressure of 40-100 psi (2.8-6.9 bar) to produce the desired coolant concentration.

Make sure the water supply screen [1] is not clogged. Clean the screen [1] if it is clogged. Make sure the cone side of the screen points toward the water supply. Make sure that the hose [2] is straight and does not have kinks.

If an aftermarket water filter is installed, make sure it is not clogged.

To correct the batch of coolant that is in the coolant tank, refer to the video [Machine Tool Coolant - Top Up High Concentration - Video](#)

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## Section 3

**Symptom:** The coolant concentration in the coolant tank is incorrect.

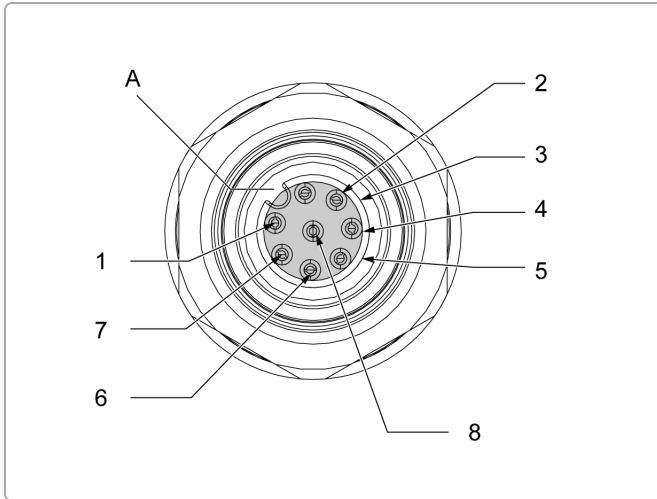
**Possible Cause:** The CRO is not calibrated.

**Corrective Action:**

Calibrate the CRO to produce the correct coolant concentration.

For calibration instructions, refer to [Coolant Refill - Calibration](#), or search for the document by keywords on [diy.haascnc.com](http://diy.haascnc.com).

## Section 4




**Symptoms:** The coolant concentration in the coolant tank is incorrect. The CRO does not power on.

**Possible Cause:** The water supply or coolant concentrate solenoid does not receive voltage.

### Corrective Action:

Disconnect the cable from the CRO unit to the coolant connector bracket on the side of the machine.

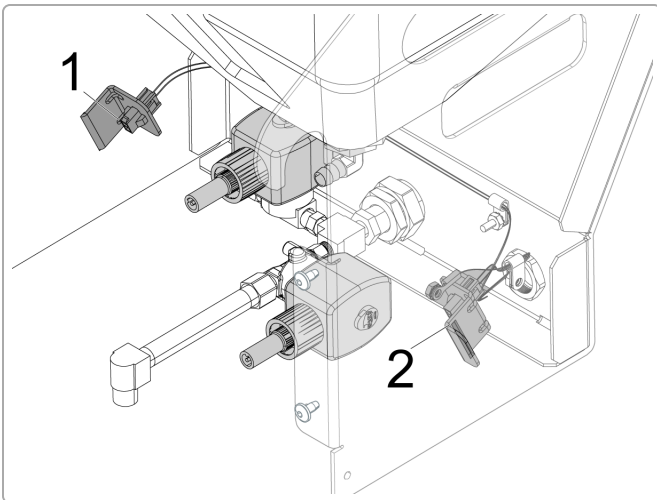
For this section, complete all voltage measurements with the CRO unit commanded ON. On the **Coolant Refill** display, press **[F3]** to **Add 5 gallons of coolant**. Press **[F3]** again when you are ready to stop the CRO.

 **Note:** Use the notch [A] in the connector as a reference to find the correct pin.

**Measure the voltage to the water supply solenoid [1]:** The voltage across pins 2 and 5 of the connector on the coolant connector bracket must measure 120 VAC.

**Measure the voltage to the coolant concentrate solenoid [2]:** The voltage across pins 1 and 4 of the connector on the coolant connector bracket pulses on and off for 0.25 seconds each time it activates. Set your multimeter to Min/Max.

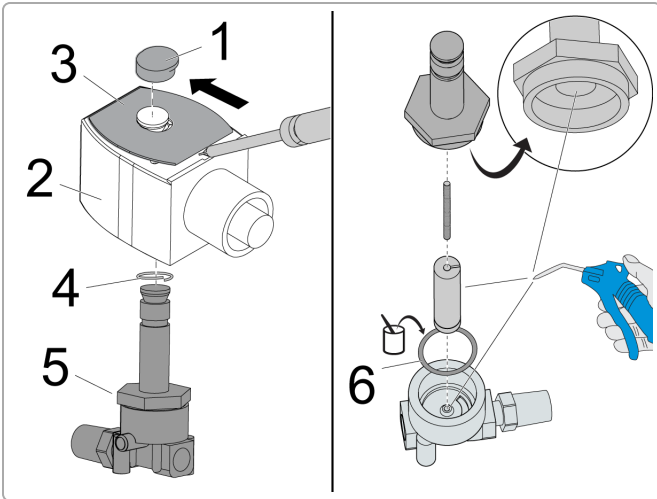
### If the voltage is correct at the connector bracket:



1. Connect the cable from the CRO to the coolant connector bracket.
2. Shut off the water source.
3. Measure for the voltage at the solenoid connectors [1 and 2]. They must measure 120 VAC. If there is no voltage at the solenoids, the solenoid cable from the CRO to the coolant connector bracket is at fault.
4. If the voltage to the solenoids is correct, clean the solenoids. Go to Section 5.

**If there is no voltage at the coolant connector bracket:** Go to [diy.haascnc.com](http://diy.haascnc.com) to troubleshoot the I/O PCB.

## Section 5



valve. Apply a thin coat of high-grade silicone grease to the body gasket [6].

Assemble the components in the opposite order they were removed.

**Symptom:** The coolant concentration in the coolant tank is incorrect. The coolant tank overfills.

**Possible Cause:** The water supply or coolant concentrate solenoid is contaminated and stays on.

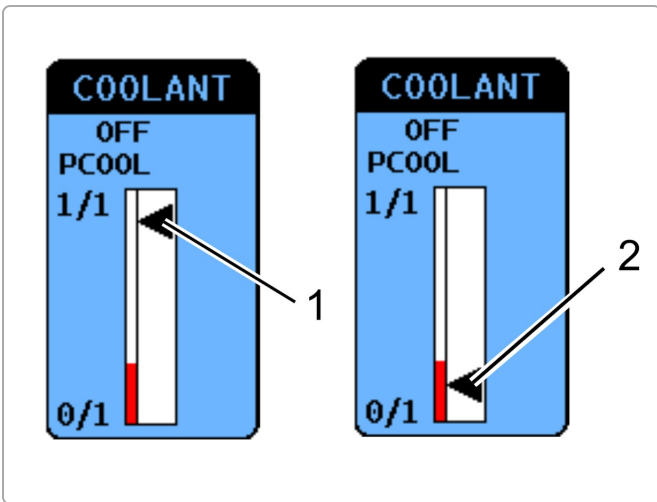
**Corrective Action:**

**Clean the solenoid:** Remove the red cap [1]. Push the solenoid coil assembly [2] down to compress the split spring [4] inside.

Remove the specification plate [3]. Remove the split spring [4] and valve subassembly [5] from the coil assembly [2].

Disassemble the valve subassembly [5]. Clean the parts with compressed air. Be sure to remove all debris from inside the

## Section 6



**Symptom:** The CRO does not power on. The coolant tank overfills.

**Possible Cause:** The coolant level sensor does not operate correctly.

**Corrective Action:**

Troubleshoot the coolant float sensor. Go to [diy.haascnc.com](http://diy.haascnc.com) for troubleshooting instructions.