Haas Technical Documentation

# Wired Probe System (CHC) - How it Works and Troubleshooting Guide

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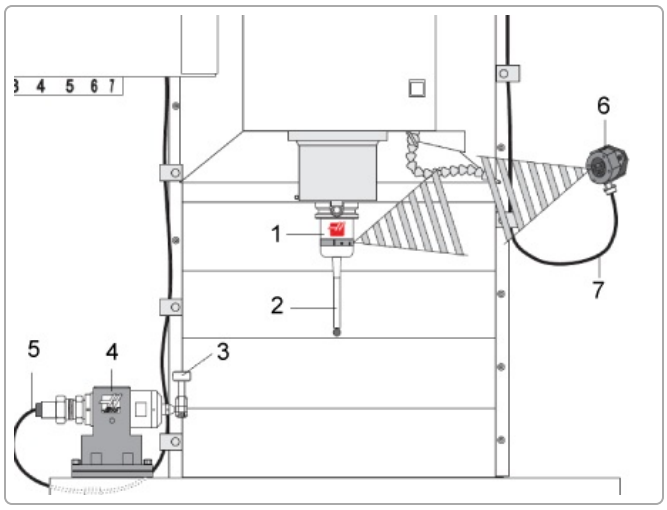
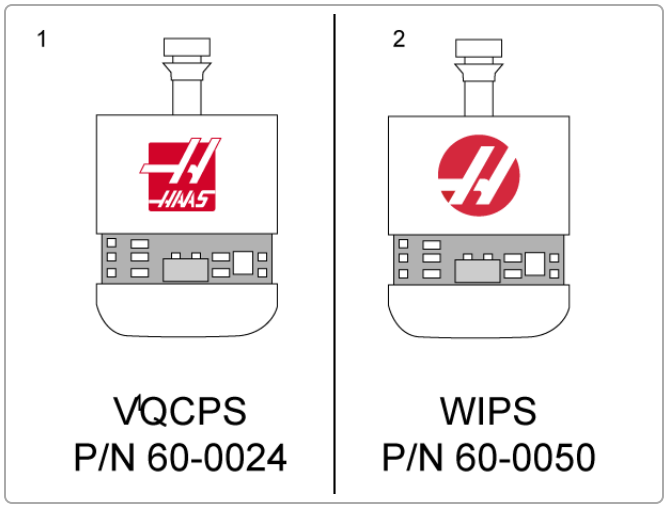
Translation Available

## How it Works

The Visual Quick Code Probing System (VQCPS) for the Classic Haas Control (CHC) includes two touch probes: a wireless OMP40 work probe and a wired TS27R tool probe. A touch probe is a precise, calibrated switch. When the stylus of the probe is touched or pressed, the probe provides a “skip” signal to the machine control. The machine software accurately records the position of the X,Y, or Z axes at the precise moment it receives the skip signal. The work probe communicates through infrared signals with the OMI optical interface mounted inside the machine enclosure. The OMI interface also switches the work probe on and off.




1. **OMP40 work probe:** A spindle-mounted wireless probe that communicates with an optical interface.
2. **Work probe stylus:** The part of the work probe that touches parts during measurement.
3. **Tool probe stylus:** The part of the tool probe that tools touch during measurement. Tools touch the top and side of the stylus when the probe measures tool length and diameter.
4. **TS27R tool probe:** The table-mounted TS27R has no batteries or optical interface. This is a wired probe.
5. **Tool probe cable:** This cable carries signals from the tool probe to the CNC control.
6. **OMI Optical Machine Interface:** The wireless interface for the OMP40 work probe. The OMI uses infrared light to communicate with the CNC control and switch the probe on or off.
7. **OMI cable:** This cable connects the OMI to the CNC control.

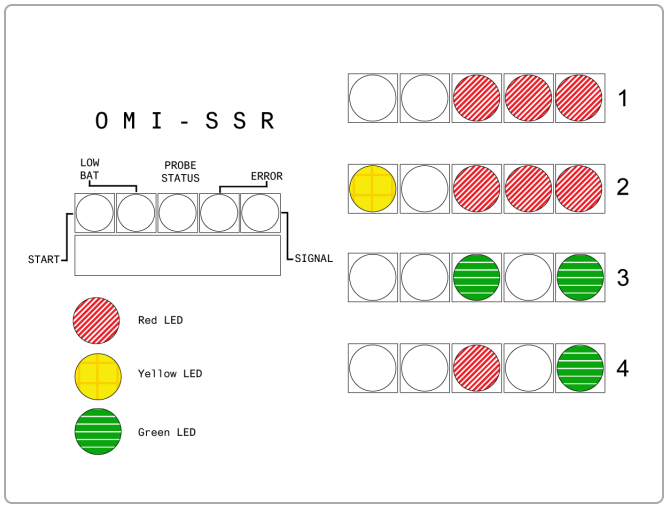



Work probes for Wireless Probe System (WIPS) do not work in the wired probe systems (VQCPS).

- The VCQPS work probe (P/N 60-0024) has a square Haas logo.
- The WIPS work probe (P/N 60-0050) has a round Haas logo.

| Work Probe Operation | Tool Probe Operation |
|---|---|
| To power on the work probe, enter this program in MDI:<br>%<br>M53;<br>%<br>%<br>G04 P2.;<br>%<br>Push **[CYCLE START]**.<br>The LEDs on the work probe flash green when the probe is powered on and ready for use. When the probe stylus is touched, a “beep” sound is made by the CNC control. The LEDs on the work probe flash red each time the stylus is touched.<br>To power off the work probe, enter this code in MDI:<br>%<br>M63;<br>% | To power on the wired tool probe, enter this program in MDI:<br>%<br>M52;<br>%<br>Push **[CYCLE START]**.<br>When the stylus on the tool probe is touched, the CNC control makes a "beep" sound.<br>The tool probe does not have any LEDs.<br>To power off the wired tool probe, enter this program in MDI:<br>%<br>M62;<br>% |

### OMI Operation




[1] CNC control is powered on. The probe is not in use.

[2] **M53** commanded. The OMI is sending a start signal to the work probe to power it on or power it off.

[3] The work probe is powered on and ready for use.

[4] The stylus has been touched. The OMI is sending a skip signal to the CNC control.

| Symptom | Possible Cause | Corrective Action | Section |
|---|---|---|---|
| Alarm **1101** PROBE STARTUP FAILURE. | Bad batteries. | Replace the batteries. | 1 |
| | The macros are corrupted. | Reload the macros | 3 |
| | Settings in the work probe are not correct. | Correct the settings. | 4 |
| Alarm **1092** PROBE OPEN. Alarm **1093** PROBE FAIL. | Interference from the work lights. | Adjust the work lights. | 2 |
| | Settings in the work probe are not correct. | Correct the settings. | 4 |
| | The surface of the part was not found. | Edit the program. | 6 |
| The tool probe does not beep/activate. | The macros are corrupted. | Reload the macros | 3 |
| The OMI LEDs do not turn green. | The macros are corrupted. | Reload the macros | 3 |
| Incorrect measurements. | The probe is not calibrated. | Calibrate the probe. | 5 |

## Section 1

**Symptom:** Alarm **1101** PROBE STARTUP FAILURE.

**Possible Cause:** Bad batteries

**Corrective Action:**

Battery replacement is always the first step in probe troubleshooting. Replace both batteries at the same time. Test the batteries before you install them.

The batteries in the work probe have a life span of about (8) months, and must be replaced regularly. If the batteries are low, the work probe's green and blue LEDs may flash. If the batteries are completely dead, the red LED may constantly be on.

Do not rely on a multimeter for testing the batteries. The lithium batteries in the probe may read 3.6 Volts from a multimeter, even though they are low.

Write the date on newly installed batteries for future reference.

**Note:** Do not touch the stylus during battery replacement. If the stylus is touched, the probe may power on in the setting mode. Settings can be accidentally changed in this mode.

## Section 2

**Symptom:** Alarm **1092** PROBE OPEN. Alarm **1093** PROBE FAIL.

**Possible Cause:** Interference from the work lights.

**Corrective Action:**

Turn the work lights off to begin troubleshooting.

Make sure the work lights inside the machine are not aimed at the probe or the OMI.

Bright lights can interfere with the work probe. Make sure no bright lights are aimed at the machine.

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## Section 3

**Symptom:** Alarm **1101** PROBE STARTUP FAILURE. The tool probe does not beep/activate. OMI LEDs do not turn green.

**Possible Cause:** The macros are corrupted.

**Corrective Action:**

The wired probe system uses Renishaw VQCPS macro version 1.9. Download the file that has these macros from diy.haascnc.com.

Click on the search tab in the upper right corner. Type **Probing**.

Select **Renishaw – Probe Macro – Haas VQC – Wired Table Probe, English Inch/MM, V1.9**

After you load this program file into the CNC control, make sure Setting **26**, **9xxx PROGS EDIT LOCK**, is set to ***1***. This prevents all of the Macro programs from being edited or deleted.

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## Section 4

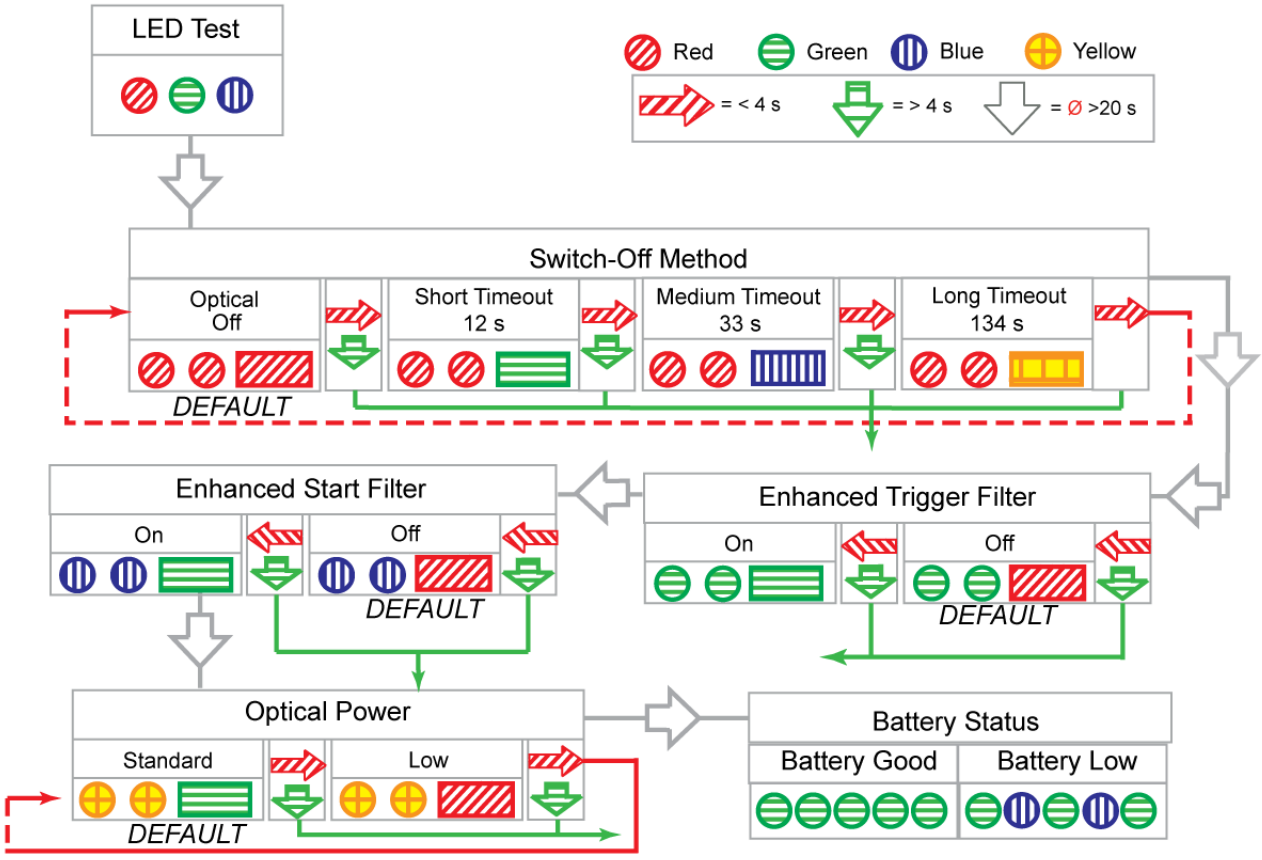
**Symptom:** Alarm **1092** PROBE OPEN. Alarm **1093** PROBE FAIL.

**Possible Cause:** Settings in the work probe are not correct.

**Corrective Action:**

A procedure to verify the probe settings is included in the Renishaw Probes Installation guide. Go to Mill - Renishaw Probes - Installation on diy.haascnc.com.

**Note:** Do not touch the stylus when you install the batteries. This can change the settings.




To change the probe settings you move the stylus in a specified order. Refer to the illustration to see the specified order.

| The Illustration shows these symbols: | The symbols tells you this: | This gives this result: |
|---|---|---|
| A red arrow that points to the right. | Move and hold the stylus for less than (4) seconds. | Selects the next option within a group. |
| A green arrow that points down. | Move and hold the stylus for more than (4) seconds. | Moves from one group to another. |
| A white arrow that points down. | Do not touch the stylus for (20) seconds or more. | Exits the set up. |

## Section 5

**Symptom:** Incorrect measurements.

**Possible Cause:** The probe is not calibrated

**Corrective Action:**

The probes need to be calibrated anytime a stylus has been replaced, the table probe has been moved, or if the CNC control generates alarms during probe routines. Follow the procedure for calibrating the Table Probe and the Spindle Probe. Go to Mill - Probing with VQC Templates on diy.haascnc.com for probing with VQC templates.

This procedure includes instructions for calibrating the probes. The probes must be calibrated in this order:

1. Table Probe
2. Spindle Probe Length
3. Spindle Probe Diameter

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## Section 6

**Symptom:** Alarm **1092** PROBE OPEN. Alarm **1093** PROBE FAIL.

**Possible Cause:** The surface of the part was not found.

**Corrective Action:**

Edit the program to start the probe closer to the part.