



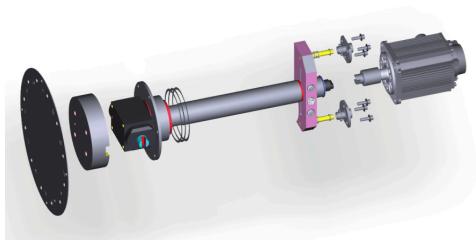
BMT65/75 - Live Tooling - Troubleshooting Guide

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Introduction

⚠ Download and fill out the BMT65 Live Drive Inspection Report Checklist below before replacing any parts.

BMT65 LIVE DRIVE INSPECTION CHECKLIST



Refer to the manufacturers [LIVE DUTY CYCLE](#) by selecting the Benz & Exsys Live Tool Duty Cycles drop down tab.

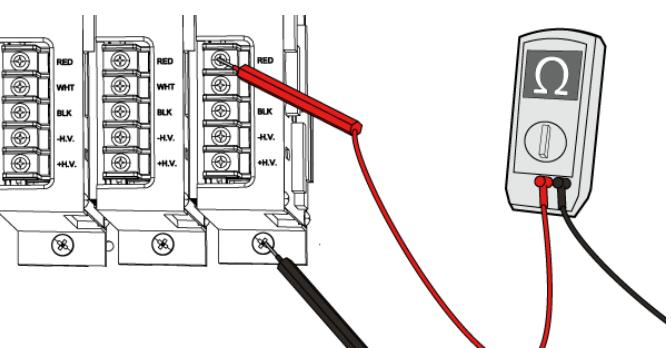
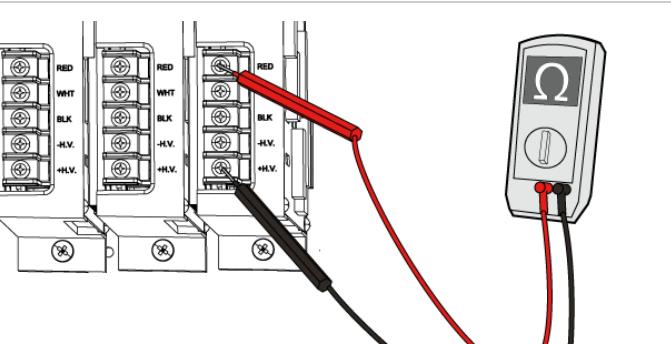
Symptom Table

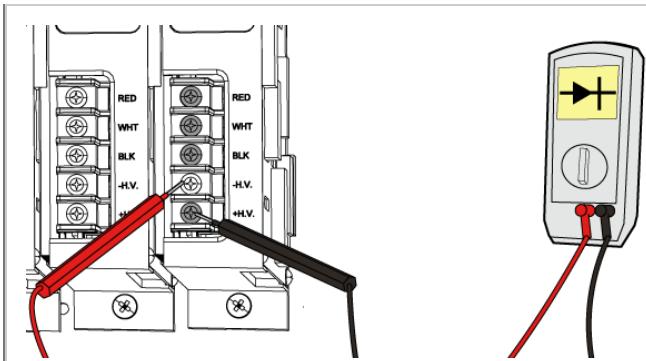
Symptom	Possible Cause	Corrective Action
Live Tooling Alarms 10.993, 10.103, and 10.9959	The servo motor has a fault	Refer to the Sigma 5 Servo Motor Troubleshooting Guide .
	The amplifier has a fault.	Refer to the Amplifier Troubleshooting Guide . Note: If a short-circuit is found, inspect the cable and motor for a short circuit before installing a new amplifier.
Alarms 10.9918, 10.217, and 838 CHC	Grease level is too high in gearbox.	Drain the grease and refill to the correct level. Replace damaged components. Refer to the Lubricant Table for the latest information.

<p>Alarm 10.116 LT (Live Tool) Spindle Orientation Fault</p> <p>A tool change from a half station with an adjacent pocket that has a live tool to any other tool generates alarm 10.116 LT (Live Tool) Spindle Orientation Fault after updating software.</p>	<p>Software Issue.</p> <p>Lathes with the following specifications may have this issue:</p> <ul style="list-style-type: none"> Machines with Old MOCON (Parameter 2100 = 0/False) Press Diagnostic and navigate to the System tab. The MOCON version will be in the Software section. MOCON Version 1.16 or 1.16 .K is the Old MOCON Version. 24 Pocket BMT65 turret option. Software version 100.22.000.1020 to 100.22.000.2000. 	<p>Workaround #1: Machines with Old MOCON and 24 Pocket BMT65 turrets should not upgrade to software version 100.22.000.1020 to 100.22.000.2000. If the machine has been upgraded, downgrade to Software Version 100.22.000.1016. An Option 5 Software Update must be performed to downgrade software.</p> <p>Workaround #2: A patch can be applied to the machine that disables the half station pockets. Contact Haas Service to have the patch applied.</p> <p>Workaround #3: A new Software Version will be released that fixes this issue in a few weeks. All machines should upgrade to this software version once released.</p> <p>HSG-A 4-18-2023</p>
Noise/Vibration	The drive is out of alignment.	Re-align the live tooling drive.
	A drive bearing has failed.	Perform a Vibe Test .
The Live Tooling temperature exceeds 154°F (68°C).	The RPM is over 4500 and exceeds the duty cycle.	Refer to the manufacturers Live Duty Cycle by selecting the Benz & Exsys Live Tool Duty Cycles drop down tab.

Amplifier Short Circuit Inspection

Check the amplifier for a short. Power off the machine. Disconnect the cables for the axis servo motor at the amplifier that generates the alarm.

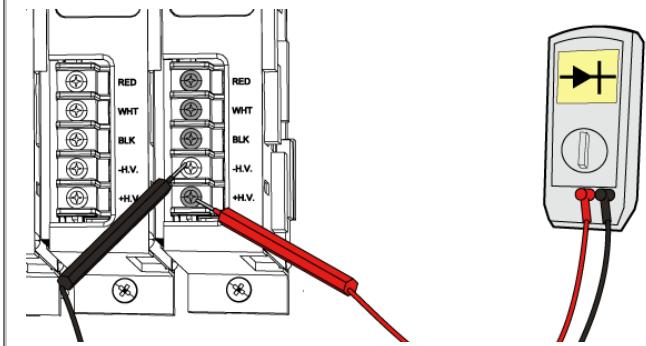
Place MultiMeter Leads Here	Instructions
	<p>Set the meter to ohms, and take the following readings:</p> <p>Ground screw to RED, WHT, and BLK terminals</p> <p>If the meter does not show open (o.l) the amplifier is damaged.</p>
	<p>Set the meter to Ohms, and take the following readings:</p> <p>Black lead on HV (+) and Red lead to HV (-), RED, WHT, and BLK terminals</p> <p>If the meter does not show mega ohms or higher the amplifier is damaged.</p>



Set the meter to diode test mode, and take the following readings:

Red lead on HV (-) and black lead to HV (+), RED, WHT, and BLK terminals

If the meter does not show a voltage drop ranging from 0.2 to 0.8 volts the amplifier is damaged.

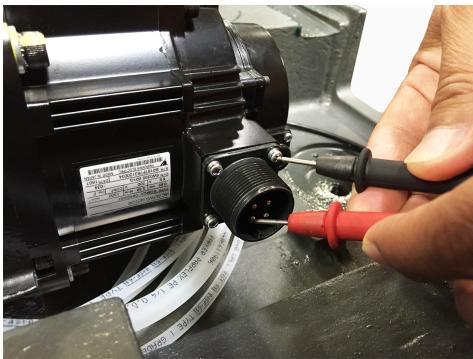


Set the meter to diode test mode, and take the following readings:

Black lead on HV (-) and red lead to HV (+), RED, WHT, and BLK terminals

If the meter does not show an open circuit (O.L) the amplifier is damaged.

Servo Motor Short Circuit Inspection



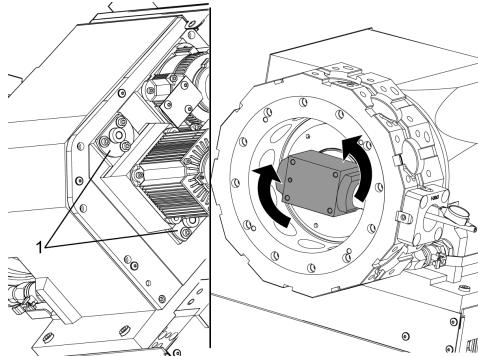
Corrective Action:

Check the cables for a short: Make sure the axis servo motor cables are not contaminated or pinched. Contaminated or pinched cables can cause a short. Replace the cables if necessary.

Inspect the servo motor. Disconnect and inspect the power cable connector at the motor. Make sure that there is no coolant contamination. Coolant contamination can cause this alarm and damage the amplifier. Measure the resistance from the pins labeled A, B and C at the motor connector to chassis ground.

- The reading should show an open circuit.
- If there is not open resistance, the servo motor is at fault.

Drive Alignment



Run the live tooling without a driven tool in place. If the noise is gone or reduced check the live tooling drive alignment.

Follow the [ALIGNMENT PROCEDURE](#) fully.

Vibration Analyzer



For a detailed procedure see [BMT LIVE DRIVE TURRET VIBRATION TEST](#)

Install an empty live tool holder in tool #1. Install the accelerometer on the driven tool with the unit centered over axis of rotation to see maximum results.

Set the Averages to 8.

Right click on the plot and highlight X-Axis, click on CPM.

Right click on the plot and highlight Y-Axis, click on Vibration Displacement.

Right click on the plot and highlight Y-Axis, Scaling, click on .1 mil.

Run the live tooling at 6000 RPM and start the vibe test. NTE 0.01 MIL at 6000 CPM (RPM)

If the plot is out of tolerance, re-align the drive and test again.

Use another driven tool to verify that it is not causing the issue.

Verify alignment with the correct tooling before any parts are replaced.

Possible parts that cause vibration are the bearing and [LIVE DRIVE SHAFT](#) or the servo motor and coupler. Another cause could be a coolant leak in the turret. Verify that no coolant is found in the turret if replacing parts. Coolants leaks happen if there is porosity in the turret.