



6 - BF - Troubleshooting

Haas Bar Feeder - Service Manual

6.1 HAAS BAR FEEDER - TROUBLESHOOTING

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Introduction

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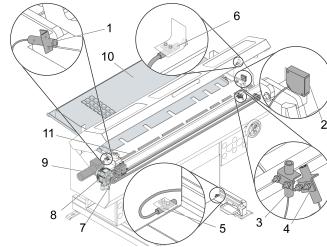
Maintenance

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Troubleshooting

6.1 HAAS BAR FEEDER - TROUBLESHOOTING

Components



Haas Bar Feeder

1. Home switch
2. EOB (End of Bar) switch
3. Load "Q" switch
4. Load bar switch
5. In-position switch
6. Door switch
7. Trolley, belt, and belt tensioner assembly
8. Servo motor (trolley)
9. DC motor (bar loader)
10. Charging tray
11. Transfer tray

Symptom Table

Symptom	Possible Cause	Corrective Action
Alarm 702 V AXIS POSITION ERROR	The trolley hit an obstruction.	Adjust the charging tray.
	A bar is stuck.	Clear bar path.
Alarm 712 V AXIS SERVO OVERLOAD	The belt skipped teeth.	Grid offset/zero return and check for belt damage.
	The servo motor does not operate correctly.	Troubleshoot the servo motor.
Alarm 452 SERVO BAR MOTOR TIMEOUT	The bar feeder lifter hit an obstruction.	Remove obstructions from the lifter.
	The DC motor brushes are worn.	Measure resistance of the DC motor.
Alarm 423 SERVO BAR EOB SWITCH POSITION	The proximity sensor does not operate correctly. (Load bar)	Check if sensor state changes in the I/O page. If it does not. Measure voltage to the proximity sensor.
	There is no voltage to the DC motor.	Measure voltage to the DC motor.
Alarm 175 GROUND FAULT DETECTED	Noise or electrical interference from high-power cables.	Apply a ferrite bead to the sensor cables at the I/O board.
	The proximity sensor does not operate correctly. (EOB switch)	Check if sensor state changes in the I/O page. If it does not. Measure voltage to the proximity sensor.
Alarm 175 GROUND FAULT DETECTED	Cables are damaged or there is a contaminated electrical connection.	Check for connector damage.
	The brushes are contaminated or there is a carbon buildup.	Check for contamination and remove dust.

	The proximity sensor does not operate correctly (Load "Q").	Check if sensor state changes in the I/O page. If it does not. Measure voltage to the proximity sensor.
Alarm 1015 (CHC) CHECK SENSOR OR BAR	The belt skipped teeth.	Grid offset/zero return and check for belt damage.
	Noise or electrical interference from high-power cables.	Apply a ferrite bead to the sensor cables at the I/O board.
	The bar feeder is not latched into position.	Relatch the bar feeder and check the pedal.
Alarm 9984 BAR FEEDER OUT OF POSITION	The proximity sensor does not operate correctly (In position switch).	Check if sensor state changes in the I/O page. If it does not. Measure voltage to the proximity sensor.
	Noise or electrical interference from high-power cables.	Apply a ferrite bead to the sensor cables at the I/O board.
	The proximity switches have not been activated	Inspect for proper function of the proximity switches, the associated cables and the trip flag located on the end of the bar loader mechanism
Alarm 9986 BAR LOADER MECHANISM OUT OF POSITION	There is a mechanical blockage	Inspect the bar feeder for mechanical failure or obstruction
	The motor or drive clutch are not functioning properly	Test the function of the motor and check to see that the drive clutch is not slipping
	Noise or electrical interference from high-power cables.	Apply a ferrite bead to the sensor cables at the I/O board.
Machine generates multiple Alarm 20014.1 SIO TOOL CHANGER PCB IS NOT PRESENT and 20014.0 SIO TOOL CHANGER PCB PRESENT after the I/O TC PCB is installed.	The I/O or TC PCB firmware is outdated.	Update I/O Main and TC firmware version to the latest. Refer to Next Generation Control - I/O PCB Main Firmware - Update .
Intermittent Alarms: 452, 1015 (CHC), 9984, 9986.	Noise or electrical interference from high-power cables.	Apply a ferrite bead to the sensor cables at the I/O board.
Noisy	The bearing on the idle pulley is damaged.	Check for bearing damage.
Inconsistent push lengths	Affected by previous push, pushrod timing delay, spindle liner size, chuck jaw size or grip strength.	Troubleshoot the pusher.
	Bar used is too light.	Contact Haas service department.
Belt skips on motor pulley.	Damaged belt or pulley.	Troubleshoot the motor pulley and belt. Install Idler Pulley. See Belt Skipping - Idler Pulley Upgrade section below.

	A bar is stuck.	Chamfer the bar, Orient the chuck.
	The bar feeder offset is incorrect.	Zero return the bar feeder. Reset the bar feeder TC offset.
	There is a mechanical bind in the bar loader arm.	Check for worn or bent components on the pusher assembly and arm supports.
	Push rod does not locate onto Cue Blade locating pins.	Update to the Cue Blade Holder Block with Bull Nose Dowel Pins.
Bent Push Rod	The Push Rod Arms lower or raise out of sync.	<p>Check the Push Rod Alignment. If it is correct and the issue continues. Upgrade the Bar Feeder with the Haas Bar Feeder - Torsion Bar Upgrade Kit. This kit connects both Push Rod Arms together to keep them in sync when raising and lowering the Push Rod.</p>
	Torsion bar is installed and the push rod is bending.	<p>Check the Push Rod Alignment. If it is correct and the issue continues.</p>
	Torsion bar is installed and the push rod arms are not sitting flush in the push rod arm stops causing misalignment	<p>If the Torsion Bar assembly is factory installed or 93-3384 or 93-3384A - BARFEEDER TORSION BAR SERVICE KIT is installed. Upgrade to the 93-3384B - BARFEEDER TORSION BAR SERVICE KIT assembly by installing the following components:</p> <ul style="list-style-type: none"> • 20-10966 BULKHEAD BUSHING NON-DRIVE END BARFEEDER • 20-9598A TORSION BAR ARM BARFEED
Bar not detected	Bar Feeder is not correctly aligned to machine.	See the Alignment sections of Haas Bar Feeder - Installation - NGC
	Bar material is reflective.	Spray paint or scuff the end of the bar.
	Machine generates message "NO MATERIAL FOUND" during calibration.	Update I/O Main and TC firmware version to the latest. Refer to Next Generation Control - I/O PCB Main Firmware - Update .

Bar Feeder Trolley

Corrective Action:

Make sure the bar feeder charging tray is not too high. When the tray is too high, the bar feeder can attempt to load two bars. Refer to the bar feeder manual for more information.

For machines with software version 11.26 or higher, zero return all axes.

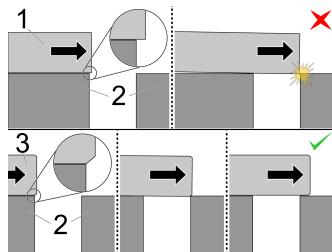
For machines with software version 11.25 or lower, set the grid offset. Refer to [AXIS SERVO MOTOR - SET GRID OFFSET PARAMETER](#).

Bar Feeder Lifter

Corrective Action:

The DC motor (bar load) motor moves the lifter. If there is a physical obstruction blocking the movement of the lifter, the motor has a slip clutch that will allow the motor to continue to move. If there is an obstruction, the proximity sensors will not be activated. Remove any obstruction from the path of the bar feeder lifter.

A Bar is Stuck



The bar can get stuck when:

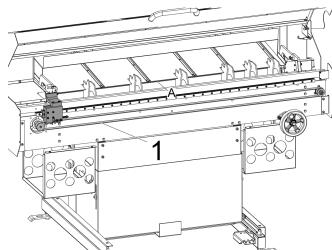
- **The bar is not chamfered:** Bars must have a smooth path. Any sharp corner in the bar path must be removed. Sharp corners can cause problems when you load a bar. Collets and chucks must have lead-in corners chamfered. Leading ends of a bar must be chamfered. When you create liners or use bar discs, use a generous lead-in chamfer.
- **The bar feeder is not aligned correctly:** Refer to the bar feeder manual; it has specific instructions on how to correctly position the bar feeder and adjust the transfer tray.
- **The bar is caught on the chuck jaw:** When you load a new bar, add an M19 code to your program to orient the chuck, and give the bar clearance to pass the chuck jaws.

For machines with software version 11.26 or higher, zero return all axes.

For machines with software version 11.25 or lower, set the grid offset. Refer to [AXIS SERVO MOTOR - SET GRID OFFSET PARAMETER](#).

Clear the bar. Find and correct the root cause of the problem.

Belt Inspection



Corrective Action:

For machines with software version 11.26 or higher, zero return all axes.

For machines with software version 11.25 or lower, set the grid offset. Refer to [AXIS SERVO MOTOR - SET GRID OFFSET PARAMETER](#).

Check the belt [1] for visible signs of damage. If there is staggered V Axis motion, the belt [1] might be loose.

Belt Skipping - Idler Pulley Upgrade



If the belt is skipping, causing the pusher and bar to misposition. Perform the following troubleshooting:

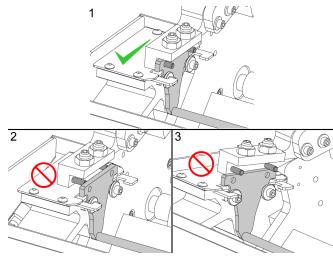
Check that the belt tension is set correctly. See the [HAAS BAR FEEDER - DRIVE BELT - REPLACEMENT](#) procedure for checking and adjusting the belt tension.

With the bar pusher at home. Draw a line on the Motor Shaft, Motor Pulley Collar (not the flange), and Belt.

Run the bar feeder pusher until the belt skips and mispositions. If the motor shaft and motor pulley are misaligned, and the motor pulley and belt are aligned. Replace the motor pulley with the [SET SCREW MOTOR PULLEY](#).

If the motor shaft and motor pulley are aligned, and the motor pulley and belt are misaligned. Install the [IDLER PULLEY](#).

Push Rod Locating Pins Upgrade

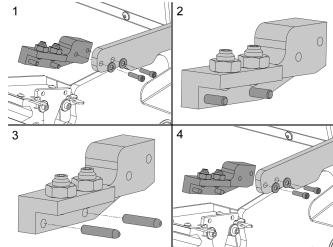


If the push rod does not locate onto the Cue Blade locating pins. The push rod will lift causing the push rod to bend.

Upgrade the Bar Feeder Cue Blade Holder Block with Bull Nose Dowel Pins.

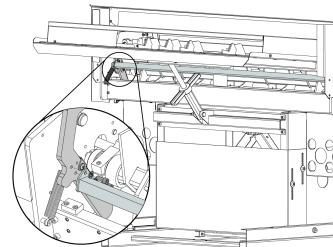
Part Numbers:

2 x **20-9518**



Remove the holder block [1]. Press the original dowel pins out of the holder block [2]. Press the bull nose dowel pins into the holder block [3]. Reinstall the holder block [4].

Haas Bar Feeder - Torsion Bar - Installation



Corrective Action:

Check the [PUSH ROD ALIGNMENT](#). If it is correct and the issue continues.

Upgrade the Bar Feeder with the [HAAS BAR FEEDER - TORSION BAR UPGRADE KIT](#).

This kit connects both Push Rod Arms together to keep them in sync when raising and lowering the Push Rod.

Note: If the Torsion Bar assembly is factory installed or **93-3384** - BARFEEDER TORSION BAR SERVICE KIT is installed. Upgrade to the **93-3384A** - BARFEEDER TORSION BAR SERVICE KIT assembly by installing the following components:

- **20-10020** SHAFT DRIVEN PUSH ROD ARM BARFEED
- **20-9840** PUSH ARM STOP RIGHT BARFEED

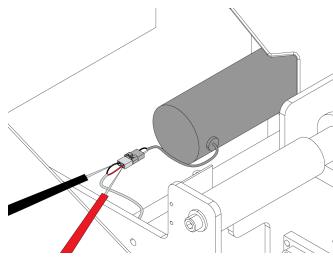
Servo Motor

Corrective Action:

Make sure the motor connections are properly seated and the cables are not damaged.

Go to [SERVO AMPLIFIER - TROUBLESHOOTING GUIDE](#) and [SIGMA 5 - AXIS SERVO MOTOR AND CABLES - TROUBLESHOOTING GUIDE](#). Check for shorts to the motor.

DC Motor and Clutch Inspection



DC Motor Inspection:

Run the DC motor: use G105 Q9 (Load Bar Stock) or G105 Q8 (Unload Bar Stock). Measure for DC voltage at the connector on the motor:

Adjust the multimeter range to 0.0 and set it for Min/Max. The power to the motor will only be on for one second before an alarm is generated and the power is shut off. The reading must be

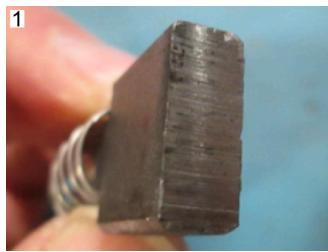
a minimum of 160 VDC, or show a signal change, when it is commanded to run. Some multimeters are not fast enough to read the voltage before the alarm occurs. It should still show a signal change or OL before the alarm is generated.

If there is no voltage and the signal does not change, go to [I/O PCB - TROUBLESHOOTING GUIDE \(CLASSIC HAAS CONTROL\)](#).

Clutch Inspection:

If the motor is functioning correctly but there is no motion of the Bar loader, check to see if the drive clutch is slipping. If the clutch is slipping, remove the clutch and retorque the assembly to 40 ft lbs

Motor Brushes



Corrective Action:

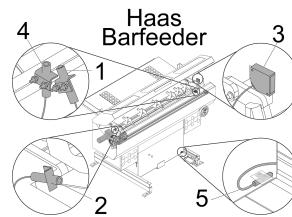
1. Normal wear
2. Excessive wear

Disconnect the motor from the connector. Measure the resistance from pin to pin. The resistance must be between 5-20 Ohms. Measure the resistance from one of the pins to the motor chassis.

The resistance must be greater than 100k Ohms. If the measurements are less, there is not a good contact between the brushes and the commutator. Clean any contamination between the brushes and the commutator. Brushes that have too much wear are faulty. New brushes are approximately 0.6" (15.4 mm) in length.



Proximity Sensors



Corrective Action:

Test the sensor for correct operation: hold a steel object in front of the sensor. If the sensor lights up, the sensor is not faulty. If the sensor does not light up, continue to further troubleshoot the proximity sensor.

Find the correct sensor to troubleshoot:

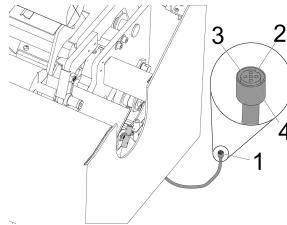
1. Load bar (Alarm 452) (Alarm 9986)
2. Home switch (Alarm 469)
3. EOB switch (Alarm 423)
4. Load "Q" (Alarm 1015 CHC)

5. In-position (Alarm 9984) -

Before you attempt to troubleshoot the In-position switch, unlatch and re-latch the bar feeder using the foot pedals.

6. Door switch (No alarm) -

When the door switch detects the door is open, the bar feeder will operate at 25% normal speed. If this switch does not operate correctly, it will operate at 25% normal speed while the door is closed.



Disconnect the cable [1] from the sensor. Use the marker [2] on the cable connector to measure the correct pins. Measure the voltage between the pins [3] and [4] on the cable connector. Make sure to use a multimeter with needle tipped probes.

The correct voltage is 12 VDC.

If voltage is correct, the sensor is at fault. Go to [PROXIMITY SENSOR - TROUBLESHOOTING GUIDE](#) to further troubleshoot the proximity sensor.

If there is no voltage, go to [I/O PCB - TROUBLESHOOTING GUIDE \(CLASSIC HAAS CONTROL\)](#).

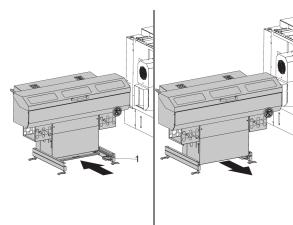
Electrical Cables



Corrective Action:

Perform a visual inspection of the motor cable and connectors. Make sure that the cable is in good condition and that the connectors are clean and secure.

Barfeeder is not Latched

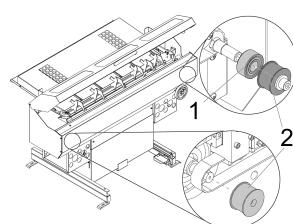


Corrective Action:

Relatch the bar feeder and check the release pedal.

Step on the release pedal [1] and move the bar feeder to the Lockout/Lathe Setup position. Then move it back to the Feed/Auto position.

Idler Pulley Inspection



Corrective Action:

A damaged bearing can cause excessive noise.

Remove the bearing [1] from the idle pulley. Check the bearing for any rough movement or loose components.

Check for wear on the pulleys [2] on both ends of the belt.

Inconsistent Push Lengths

Corrective Action:

The length of the push can be affected by the previous push: If the previous part over-shoots, the next push will be shorter. If the previous part slides back into the chuck, the next part will be long.

The pushrod moves away from the bar too soon: If the push rod moves away before the chuck can close, it can cause the bar to move back. This is more common with the collet chuck. Adjust **Parameter 249** CHUCK CLAMP DELAY.

The spindle liner is too big, or there is no spindle liner: The chuck does not pull the bar against the rod when clamping or the chuck jaws are thinner. The thin jaws can cause the material to rock on the open jaws and fall forward or backwards. Material can also hit the back of the chuck and spring forward. Adjust the spindle liner to the correct size for the bar.

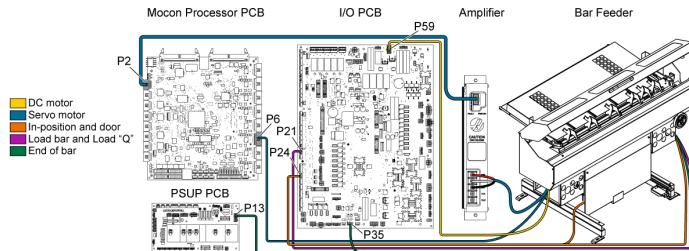
The bar moves after the pusher stops: Reduce the push speed: Adjust **Parameters 316, 317, and 323**.

Bar Loader Arm

Corrective Action:

There is mechanical binding in the bar loader arm: Check for worn or damaged latch plates [1] on the pusher assembly. The latch must open fully when the pusher retracts. Check both of the loader arms for loose hardware [2] and excessive movement. They should have approximately 1/4" of side-to-side movement. Check for binding on the arm stop block [3].

CHC Bar Feeder Electrical Diagram



Feedback