

Haas CNC Alarm Codes:

How Haas alarm numbers work

On **Classic Haas Control**, alarms often appear as simple numbers such as 103, 108, or 123. On **Next Generation Control**, many axis-related alarms use a prefix before the decimal point. For example, 1.108 means alarm group 108 on axis group 1, which is X on a typical mill/lathe; 2.xxx is Y, 3.xxx is Z, 4.xxx is the main spindle, 5.xxx is A, 6.xxx is B, 7.xxx is C, and 11.xxx is the servo tool changer arm on many machines. Haas states that the number before the decimal designates the axis and the number after the decimal is the alarm group.

General / safety / utilities

Code	Alarm / description	Practical troubleshooting
101	Communication failure with MOCON / MOCON memory fault	Legacy/control communication fault. Power-cycle once, then check low-voltage supply, ribbon/communication cables, grounding, and board seating. If it returns, treat as a control-electronics fault.
102	Servos off	Often a condition , not the root cause. Check for companion alarms, E-stop, door/safety chain, low air, drive faults, tool changer faults, or axis faults. Clear the underlying alarm before chasing 102.
107	Emergency stop	Release all E-stop buttons, including pendant, RJH, robot/APL/fence devices, and external E-stops. Check the E-stop chain and safety-device wiring. Do not bypass safety devices.
120	Low air pressure or flow	Verify shop air pressure/flow at the machine, regulator, dryer, leaks, and air demand during tool changes. Haas notes contamination or a defective 150 PSI pressure sensor can also cause intermittent 120 alarms.
121	Low lube / low pressure	Check lube reservoir level, pump function, pressure switch, lines, metering units, and leaks. Prime the system if air is present.
134	Tool clamp fault / low hydraulic pressure, machine-dependent	On mills, check air volume, TRP/tool-release piston, clamp/unclamp switches, solenoid, drawbar, and ground connections. On some lathes, check HPU pressure, oil level, filters, pump, pressure switch, and temperature.

175	Ground fault detected	Power off and inspect motor/cable insulation, coolant intrusion, pinched cables, and amplifier/vector-drive outputs. Megger testing should be done only by qualified personnel.
253 / 20012	Electronics overheat / cabinet temperature warning	Check cabinet fans, filters, ambient temperature, blocked vents, and cabinet cooler if installed.
292	High-voltage power supply / 320 VDC / vector-drive fault	Check DC bus voltage on diagnostics, incoming voltage, transformer taps, regen circuit, vector drive, and servo amplifiers.
552	Tripped circuit breaker	Identify the circuit, inspect for shorted devices/cables, reset only after cause is found.
937	Input line power fault	Check incoming AC line stability, phase loss, transformer taps, and power-fail detection wiring.
9916	Excessive thermal compensation distance	Check thermal sensor input for fluctuation, sensor cable damage, electrical noise, ferrites, and loose connections.
9940	Axis thermal sensor fault	Check thermal sensor/cable, diagnostics input, firmware level, and electrical noise sources. Haas links this to sensor faults or noise on the signal.

Axis / servo alarms

For NGC machines, replace the leading axis prefix as needed: **1 . xxx** = X, **2 . xxx** = Y, **3 . xxx** = Z, **5 . xxx** = A, **6 . xxx** = B, **7 . xxx** = C, etc. Haas specifically notes that NGC servo overload alarms use group **108** with the axis designation before the decimal, replacing many separate CHC overload numbers.

Code / family	Alarm / description	Practical troubleshooting
103 / 104 / 105 / 106, or axis.103	X/Y/Z/A axis servo error too large	Axis cannot follow commanded position. Check for crash damage, mechanical binding, chips in way covers, bad ballscrew/linear guide, brake not releasing, encoder fault, cable fault, bad motor, or too-aggressive program. Haas notes zero-return 103 can be caused by a home sensor made at the wrong time, such as chips on the sensor.

108 / 109 / 110 / 111 / 188 / 271 / 674, or axis.108	Servo overload	Reduce feed/speed/load, check dull tooling, clear mechanical blockage, inspect axis lubrication, brake release, rotary brake, amplifier, and motor. For rotaries, Haas lists high feeds/speeds, damaged tooling, blocked travel, internal obstruction, brake/solenoid issues, and amplifier problems as causes.
135 / 136 / 137 / 138	Axis motor overheat	Check excessive duty/load, motor fan if applicable, encoder cable, temperature sensor, low-voltage supply, and incorrect parameters.
139–142, 190, 273	Motor Z fault	Check encoder Z-pulse channel, encoder cable, connector contamination, motor encoder, and electrical noise.
153–156	Z channel missing	Inspect encoder cable and connectors; reseal; check for damaged encoder or missing Z-pulse signal.
161–164	Axis drive fault	Inspect servo amplifier, power cable, motor, coolant contamination, shorted phases, grounding, and drive output. Haas's CHC servo guide groups these with amplifier, power-cable, and motor faults.
182–185, 194, 278	Axis encoder cable fault	Inspect encoder cable end-to-end, connectors at Maincon/MOCON and motor, coolant intrusion, stiffness, damaged pins, and grounding.
217–219	Axis phase error	Check encoder feedback, motor phasing, power cable wiring, motor/encoder mismatch, and amplifier/motor connections.
224–228	Axis transition fault	Inspect encoder feedback, motor encoder, cable shielding, noise, and correct configuration.
270	C-axis servo error too large	Same approach as other servo-error alarms; also check C-axis engagement/brake, rotary mechanics, and encoder feedback.
271	C-axis servo overload	Reduce load, check C-axis brake/engagement, binding, lubrication, and amplifier.
272	C-axis motor overheat	Check C-axis load/duty cycle, brake drag, motor cooling, encoder/thermal wiring.

986 or axis.986	Amplifier calibration fault	Check command cable from Maincon to amplifier and 320 VDC to amplifier; power-cycle. Persistent fault may indicate amplifier issue. Haas lists command cable and 320 VDC checks for this alarm.
991 or axis.991	Amplifier over-temperature	Check servo amplifier cooling fan, cabinet temperature, filters, and load.
9911 or axis.9911	Axis amplifier cable disconnected	Check Maincon-to-amplifier drive cable, both ends seated, cable damage.
992 or axis.992	Amplifier over-current	Look for crash, mechanical blockage, shorted motor/cable, or overload. Clear axis path and inspect ballscrew/linear guides.
993 or axis.993	Amplifier short circuit / short circuit	Inspect motor power cable, coolant contamination, pinched cable, motor winding short, and amplifier. Haas provides a motor/cable/amplifier isolation method: disconnect the motor-side power cable, reset/jog, and use resulting alarms to separate motor, cable, and amplifier.
994 or axis.994	Amplifier overload	Reduce load, check feeds/speeds, tool condition, mechanical blockage, and amplifier health.
9804	240 VAC ground fault	Check short circuit in the corresponding motor/cable, especially coolant intrusion; inspect cable at most-flexed locations for intermittent shorts. Haas associates 9804/993/103 combinations with possible coolant intrusion on axis servo motors.
9719 / 9720 families	Primary/secondary encoder serial fault	Update software if needed, then check encoder cable, grounding, ferrites, noise from high-power cables, faulty encoder, and scale/cable contamination.
9918 / 9922 / 9923 / 9930 / 9959	Encoder internal data, motion channel, software detected encoder fault, poor communication, disconnect	Check encoder cable connection, ferrite filters, grounding, noise, encoder damage, and software level. Haas lists these as serial encoder alarm families and notes noise from high-power cables and faulty encoder as causes.
9948 / 9949 / 9950 / 9951 / 9960	Secondary encoder/scale serial faults	Check scale cable, secondary encoder/linear scale, coolant contamination, noise, configuration file, scale type, and motor type.

Spindle / vector drive / regen alarms

Code / family	Alarm / description	Practical troubleshooting
119	Input AC line overvoltage	Check incoming line voltage and transformer taps.
123	Spindle drive fault	Inspect spindle motor cables, vector drive, Wye/Delta contactors, spindle motor, encoder belt, and drive display/diagnostics. Haas lists internal spindle motor short, vector drive fault, loose cable, shorted spindle motor cable, Wye/Delta issues, and encoder belt damage as possible causes.
160	Low incoming AC line voltage	Check incoming AC, transformer taps, DC bus, and vector-drive DC bus reading. Haas groups 123 and 160 with DC bus problems in the vector-drive guide.
200	High-voltage power supply over-temperature	Check vector-drive cooling fan, cabinet cooling, filters, ambient temperature, and heat sink.
236	Spindle motor overload	Reduce load/duty cycle, check dull tools, spindle bearings, motor cables, vector drive, and Wye/Delta contactors.
237	Spindle following error	Check spindle encoder feedback, belt, vector drive, motor load, regen/DC bus, and program load.
254 or 4.254	Spindle motor overheat	Reduce spindle load/duty cycle, check spindle fan/cable, analog temperature sensor, electrical noise, and ferrite filter. Haas notes over-aggressive application, fan failure, and missing ferrite as possible causes.
4.103	Spindle axis servo error too large	Check spindle encoder alignment, encoder ring, encoder cable contamination, and read-head grounding. Haas's spindle encoder guide lists these causes.
4.116	Spindle orientation fault	Check spindle encoder, belt, orientation parameters, drive output, and mechanical orientation mechanism.
4.153	Spindle zero channel missing	Check encoder alignment, encoder ring, cable contamination, and grounding.
4.182	Spindle axis encoder cable fault	Check spindle encoder cable, ferrites, vector-drive cable routing, rubbing/damage, and contamination.

4.971 9	Spindle encoder serial fault	Check encoder cable, ferrite, grounding, contamination, encoder read head, and software; power-cycle and take an error report if persistent.
4.993	Spindle short circuit	Inspect vector drive, spindle motor cable, Wye/Delta contactors, and spindle motor.
4.997 5	Spindle motor temperature critical overheat	Check built-in overheat switch, cable damage, Maincon channel connection, spindle cooling, and motor load.
444	Regen remained on too long	Check incoming AC power, regen load, vector drive, decel settings, and bus voltage. Haas points to incoming AC checks for this alarm.
647	Regen load shorted	Measure regen resistance and inspect regen circuit/wiring.
648	DC bus shorted	Inspect regen circuit and vector drive; check for shorted servo amplifier or spindle drive.
650	DC bus overvoltage	Check incoming voltage, regen load, deceleration, and vector drive.
4136	Motor configuration file not selected	Configuration issue after motor/kit/software update; take error report and contact HFO for correct spindle motor brand/configuration. Haas lists missing configuration files and HFO contact for this alarm.

Tool changer / ATC alarms

Code / family	Alarm / description	Practical troubleshooting
266	Tool changer fault	Enter tool changer recovery, clear mechanical obstruction, check air pressure, sensors, arm/carousel position, and recover before running.
267	Tool door out of position	Check tool door switch/prox, door air cylinder, solenoid, chips, and alignment.
269	Tool arm fault	Check arm position, switches, cambox/belt, air, and recovery sequence.
291	Low air volume/pressure during ATC	Check shop air supply, regulator, leaks, air flow under demand, and air system restrictions.

297	ATC shuttle overshoot	Check shuttle switches, motor, brake/stop, debris, and recovery.
298	ATC double arm out of position	Check CW/CCW switches, arm alignment, cambox, obstruction, and tool-change recovery.
299	ATC shuttle out of position	Check shuttle mark switch, mechanism binding, motor, debris, and tool changer recovery.
622	Tool changer arm fault	Haas notes the arm may not be at origin or may not have recovered correctly. Do tool-change recovery, then test proximity sensors/cables and cambox condition.
625	Carousel positioning error	Check carousel motor, pocket mark sensor, pocket count, belt/gearbox, debris, and recovery.
626	Tool pocket slide error	Check pocket up/down cylinder, solenoid, check valve, prox sensors, air pressure, and debris.
627	ATC arm motion timeout	Test cambox proximity sensors/cables in recovery; inspect belt and mechanical binding. Haas lists bad sensor/cable connection and worn/damaged cambox belt as causes.
628 / 673	ATC/TA arm positioning error	Check obstruction, double-arm alignment, spindle orientation, cambox, safe tool-change position, and parameters on servo-driven SMTC.
694	ATC switch fault	Conflicting switch states. Check sticky/damaged switches, prox sensors, wiring, debris, and recover ATC.
695	ATC double-arm cylinder timeout	Check air pressure/volume, cylinder movement, solenoid, flow controls, and mechanical binding.
696	ATC motor timeout	Check ATC motor, motor power, relays/drive, mechanical binding, and carousel/arm position.
697	ATC motor fault	Check ATC motor, cable, relays, I/O output, and mechanical load.
698	ATC parameter error	Verify tool changer type, grid/tool-change offsets, and related parameters/configuration.
855	ATC arm drive-train failure	Check obstruction, cambox, belt, arm alignment, and recovery.
2066	Tool changer home position fault	Haas lists incorrect pocket up/down switch states, sensor contamination/damage/loose connections, debris, and pocket mechanism issues. Clean/inspect sensors and recover the tool changer.

Lubrication / coolant / air-related alarms

Code / family	Alarm / description	Practical troubleshooting
2011	Low gearbox oil level	Fix leaks, fill correct oil, check oil-level switch.
2012	Low gearbox oil flow	Check oil level, pump, inlet screen, flow switch, orifices, and pump motor/coupler.
2073	Axis lubrication pressure not detected	Haas says the control expects lubrication pressure to be detected shortly after the solenoid is commanded; after repeated failures it generates 2073. Check reservoir, pressure switch, solenoid, check valves, leaks, and clogged manifold.
2075	Axis lubrication reservoir empty	Check reservoir level, air in lines, check valves, debris near pressure sensor, leaks, and prime lines. Haas lists air in lube lines, sticking check valves, debris, and incorrect check-valve configuration as causes.
2081	Low tool air blast pressure	Check incoming air supply, TAB consumption, leaks, regulator, orifice size, and air pressure during blast.
20022	Coolant level fell below 50%	Fill coolant, check float/sensor, leaks, pump cavitation, and concentration system if equipped.
20023	Coolant level restored above 50%	Informational recovery message.
20024	Air pressure warning threshold	Check incoming air before it becomes a hard low-air alarm.
20025	Air pressure exceeded threshold	Check regulator/sensor calibration and shop-air spikes.

Programming / G-code / file alarms

Code / family	Alarm / description	Practical troubleshooting
302	Invalid R in G02/G03	Check arc geometry. Try I/J/K center format instead of R, verify plane, start/end point, and units.

303	Invalid X/Y/Z or X/B/Z in G02/G03	Check arc endpoint coordinates, plane selection, and post output.
304	Invalid I/J/K in G02/G03	Check arc center values, radius consistency, G17/G18/G19 plane, and units.
305 / 306	Invalid Q or I/J/K/Q in canned cycle	Check canned-cycle parameters; Q/I/J/K usually must be valid and nonzero where required.
307	Subroutine nesting too deep	Reduce nested M97/M98/G65 calls.
308	Invalid tool offset	Check H/D/T offset numbers, tool table, geometry/wear offsets, and lathe tool nose data.
309	Exceeded max feedrate	Reduce F value; verify inch/mm mode and Setting 9 units.
310	Invalid G code	Unsupported G-code or post output. Check machine options, control generation, macro aliasing, and post processor.
311	Unknown code	Typo, unsupported address, bad post output, or corrupted program line.
312	Program end	Subprogram ended without proper return, often missing M99.
313	No P code	Add required P address for M96/M97/M98/G65 or relevant cycle.
314	Subprogram not in memory	Load the subprogram, verify O-number, file location, extension/case, and memory device.
315	Invalid P code	Correct P value/program number for subprogram or canned cycle.
316 / 317 / 318 / 319, or axis.316	Over travel range	Programmed move exceeds travel. Check work offset, tool length, G52/G92, rotary offsets, units, and safe retract. Haas has current alarm pages for NGC over-travel titles such as 2.316 Y-Axis Over Travel Range .
320	No feed rate	Add a valid F word before feed/interpolation moves. Haas has a specific "Alarm 320 - No Feed Rate" alarm page/video.
322	Subprogram without M99	Add M99 at the end of the called subprogram.

338–342	Arc/cutter compensation geometry errors	Check G17/G18/G19, lead-in/lead-out, cutter comp start/end moves, arc geometry, and CAM tolerance.
432–436	File/program name, empty file, insufficient memory, abort, file not found	Check filename/O-number, memory space, USB/network device, file extension, and directory.
485 / 486 / 487	USB reset, timeout, device inappropriately unmounted	Use a known-good USB, wait for file operations to finish, avoid removing USB during read/write, reformat if needed.
501–542	Macro expression / assignment / DO-END / GOTO / DPRNT errors	Check brackets, variables, undefined variables, assignments, IF/THEN syntax, DO/END matching, DPRNT syntax, and macro option availability.
600–618	Lathe canned-cycle / PQ / G71/G72 / address errors, or auxiliary-axis alarms on mills	Check lathe PQ block order, monotonic X/Z motion, canned-cycle syntax, address values, and machine-specific meaning. Some numbers differ by mill vs. lathe.

Lathe / bar feeder / APL / pallet alarms

Code / family	Alarm / description	Practical troubleshooting
437	Tailstock undershoot	Check tailstock position, hydraulic/servo tailstock pressure, obstruction, and commanded position.
439	Tailstock found no part	Check part length, tailstock force/pressure, sensor, and program position.
440–442	Servo bar max parts/bars/length reached	Reset counters or adjust bar feeder setup/job data.
448	Servo bar out of bars	Load stock, check remnant settings and bar feeder sensor.
450	Bar feeder fault	Check bar feeder alarms, sensors, air, pusher, liner, and communication.
452	Servo bar gearmotor timeout	Check gearmotor, drive, mechanical jam, and sensor feedback.
453 / 454	C-axis engaged / not engaged	Check C-axis engage/disengage command, air/hydraulic actuation, switches, and spindle orientation.

459	APL door fault	Check APL door/fence interlock, switches, and safety state.
460	APL illegal code	Check APL job/program syntax and supported M-codes.
461	APL gripper timeout	Check gripper air, part presence, sensors, solenoid, and gripper travel.
629–644	APC / pallet changer family	Check pallet clamped/unclamped switches, pin clear, door open/closed switches, air pressure, pallet location, chain position, and recovery procedure.
701–728	MOCON2 / secondary-axis servo error, overload, motor overheat	Troubleshoot like axis servo alarms: motor, amplifier, cable, encoder, brake, mechanical load.

20000-series informational messages

Haas states that **20000-series alarms are informational messages**, usually generated at power-up and shown in alarm history; they typically do not require service action, with SD memory card failure being an exception.

Code	Message	What to do
20000	Parameter change	Audit who/what changed parameters. Save backup if intentional.
20001	Initialization event	Usually informational.
20002	Item changed	Usually informational; check recent settings/offset/tool-table changes.
20003	SD not enough space / SD issue	Investigate SD/extended memory if the machine has that option.
20004	Language issue	Check language files/settings.
20005	Offsets changed	Audit work/tool offsets.
20006	Info message	Review history; no action unless repeated with symptoms.
20007	Spindle fan failure	Inspect spindle fan when commanded to run. Haas specifically says to inspect the spindle fan for this message.
20008	Wye/Delta recovery	Check Wye/Delta terminal connections, transformer taps, and whether it occurs during heavy cuts.

20009	CNC power down	Informational power-down history.
20010	No sound card	Usually no service action on machines without audio hardware.
20011	Transformer overheat	Check transformer load, cabinet cooling, ambient temperature, and taps.
20012	Electronics overheat	Check cabinet cooling, fans, filters, and ambient temperature.
20013	Pallet pool not run	Check missing program/pallet and pallet pool schedule.
20014.x	SIO tool changer communication event	Check tool changer PCB/I/O communication if repeated.
20016	Touchscreen not detected	Check touchscreen option, cable, and configuration.
20017	Security key event	Review service key/security-key use.
20020	Specified APL job not run	Check missing NC program or APL job setup.
20021	Robot event	Review robot warning/subcode and robot troubleshooting.
20026	Surge protector event	Check surge protector status and incoming power quality.
20027	Software event	If repeated with symptoms, take an error report and contact HFO.