GOMAN SPIDER LIFT
Troubleshooting & Repair Guide

English edition01 2026.11

| Electrical • Hydraulic • Calibration • Powertrain • Alarm Codes |

Safety first

• **Switch off power**; **Release the stored hydraulic pressure before service**; **Support raised structures independently with mechanic hardware**—never rely on a hydraulic cylinder alone during repair.

• **Wear suitable gloves and goggles**. Electrical testing under power must be performed only by qualified personnel .

• For a ruptured high-pressure hose, smoke from the control box, unexpected movement or loss of holding pressure: stop working, keep clear and contact Goman service. Never search for hydraulic leaks with bare hands: trapped high pressure fluid may be hazardous when bursting out.

• The source includes pressure adjustments, valve disassembly and safety-related sensor calibration: these are critical to the safety, and technician-only operations, following approved model-specific service instructions.

1 Electric troubleshooting (always reference to wiring schematics)

Symptom	Possible cause	Inspection / correction	Tools	Caution
No power in screen	Power supply fault	Check 12 V supply output.	Multimeter	Isolate power for repairs.
No power in system	Wiring fault Battery less than 10V	Check PA-labeled fuses and 010/020 circuits; trace main switch, E-stop and selector.	Multimeter	Live checks. Replace or charge the battery.
No power to machine	Blown fuse	Check or replace with new one	Multimeter; fuse	Isolate power.
Display all "0"	20 A fuse blown	Check fuse and replace it	Multimeter; fuse	Use matching fuse.
Large voltage fluctuations	Loose terminals	Check & tighten loose terminals	Crimper; screwdriver	Disconnect power.
Abnormal sensor readings	Failed filter resistor	Measure resistance; replace with same specification.	Multimeter; resistor	Match component rating.
Abnormal sensor readings by +10 codes	Sensor failed or line shorted or 120 Ω missing	Identifying one by one disconnecting the plug.	Hex key; sensor	Calibration required.
Limit switch malfunction	Switch not actuating	Check mechanical alignment and mounting	Wrench; hex key	Maintain correct clearance.
Limit switch malfunction	Switch damaged or *line is broken before the switch*	Check the line and replace defective switch.	Wrench; hex key	Record wire positions.
Diesel throttle inoperative	Not specified	No diagnostic procedure supplied in original.	—	Service review required.
Remote pairing fails	Receiver not powered	Check 20 A fuse/ power supply	Multimeter	—
Remote pairing fails	Interference by faulty sensor	Inspect other faulty sensors.	Multimeter	—
Trancell weighing alarm	Resistance not 120 Ω, or line is broken or shorted	Replace resistor; check the continuity of lines	Resistor/ Multimeter	Confirm circuit specification.
20 A fuse repeatedly blows	Short circuit	Measure the continuity of 020 to GND by disconnecting connector one by one	Multimeter	Do not up-rate fuse.

2 Hydraulic troubleshooting (always use the cap to keep the fittings clean)

Symptom	Possible cause	Inspection / correction	Tools	Caution
Oil leak at hose fitting	Loose fitting	Clean and observe for 30 minutes; check/tighten to specified torque.	Open-end wrench; absorbent paper	Do not repair with tape or glue.
Oil leaks at crimp	Loose hose crimp	Replace it as per the type and length or re-crimped.	Wrench; tape measure	Isolate and depressurize hydraulic system.
Hydraulic oil deteriorated	Water contamination	Drain contaminated oil; flush the system & refill with clean oil	Oil container; pump; oil	Check reservoir cap seal and oil compatibility.
Hydraulic oil deteriorated	Mixed oils	Clean tank thoroughly and replace with approved compatible hydraulic oil.	Oil container; pump; oil	Maintain oil cleanliness.

Abnormal hydraulic motor noise	Pump running without oil	Verify reservoir ball valve is open; inspect suction filter for blockage.	Adjustable wrench; filter	Install filter in correct direction.
Abnormal hydraulic motor noise	Worn coupling	Inspect and replace pump coupling or accessories	Hex key; coupling	Maintain specified coupling clearance.
No upper/lower machine movement	Function selector valve stuck	Check valve return; technician to clean or repair valve.	Hex key	Record assembly order.
Movement too fast	Proportional valve not returning	Check proportional valve return;	Wrench	Do not alter settings without specifications.
Cylinder pressure loss	Load-holding valve failure	Inspect cylinder lock valve; technician to replace or repair.	Socket wrench	Do not adjust hydraulic lock screw.
Hydraulic manifold leaking	Worn fitting, plug or seal	Inspect fittings; replace correct seals as required.	Wrench; seals	Match seal material and size.
Cylinder leaking or drifting	Damaged piston rod	Inspect rod for scoring and wiper for oil traces.	Clean cloth	Secure boom; avoid unprotected pressure test
Cylinder leaking or drifting	Worn seals	Replace cylinder seals and lubricate during reassembly.	Seal kit	Prevent contamination.
Platform jerky on lifting/lowering	Air in hydraulic system	Move 5 times; verify model-approved bleeding procedure and suction leaks.	—	Keep platform stable.
Platform jerky on lift/lower	Unstable relief pressure	Observe pressure gauge for oscillation; check relief valve.	Gauge; wrenches	Do not adjust pressure without specification.
Directional valve response delayed	Contaminated spool	Inspect spool, clean and check for scoring.	cleaner	Clean and dry to approved procedure.

3 Sensor calibration

CAUTION: Calibration affects machine safety and must only be carried out by authorized technicians after verifying the exact controller software and sensor configuration. Values below reproduce the source instructions; no independent validation has been performed.

Device	Source calibration steps (verify)	Precondition
Angle sensor	Select zeroing page; set offset equal to ADC analog value.	Boom horizontal.
Draw-wire length sensor	Select page; enter 5000 + ADC1 into ADC2; enter number of telescopic sections × 500 into ACT2.	Boom fully retracted.
Load sensor	Select page; set ADC1 = ADC; enter 100 + ADC1 into ADC2; enter 1000 into ACT2.	Basket unloaded.
Slew encoder	Select page; enter ADC1 into ADC; rotate boom 180°; enter ADC1 + ADC into ADC2; enter 18 into ATC2 (source notation).	Start at central / fully lowered position.
Sensor wiring	No procedure provided in source.	Refer to wiring schematic.

4 Engine and electric motor troubleshooting

Symptom	Cause	Check / action	Tools	Notes
Engine will not start	Electrical circuit	Check cranking battery voltage and starter relay status.	Multimeter	Verify 12/24 V configuration.
Engine will not start	Fuel circuit	Check fuel level, fuel pump, clean fuel and restrictions.	Fuel; screwdriver	Inspect fuel path.
Engine will not start	Starting / ignition system	Gasoline: spark plug and ignition coil; diesel: starter motor.	Socket; wrench	Check voltage rating.
Engine will not stop	Shutdown wiring	Inspect shutdown wiring and relay operation.	Multimeter	Check shutdown switch.
Engine will not stop	Stop solenoid	Inspect wiring and solenoid operation / sticking.	Multimeter; solenoid	Avoid unintended movement.
Engine stalls repeatedly	Insufficient fuel	Inspect fuel pump and supply line for leakage/blockage.	Clean cloth; hose	Observe return flow.
Engine stalls repeatedly	Restricted air intake	Check and replace clogged air filter.	Air filter	Record assembly sequence.
Electric motor will not start	Motor controller fault	Check controller input/output voltage and fuse.	Multimeter; fuse	Match fuse rating.
Electric motor will not start	Thermal protection	Check temperature with IR thermometer; original suggests 20-minute cool-down.	IR thermometer	Never cool by pouring water.
Emergency stop does not stop engine	Not specified	No procedure supplied.	—	Remove machine from service.
Code 103 cannot be cleared	Cable-chain wiring cross-connection	Inspect cable-chain wiring per schematic.	Multimeter	Qualified technician only.

5 Alarm code reference (codes below 100 is for reminding, not issues)

Code	Description	Inspection / action
100	Engine or electric motor not started	Start using remote-control start button.
101/102	Chassis X/Y tilt exceeds ±1°	Level chassis so X and Y are within ±1°.
103	Basket tilt exceeds 10°	Manually level basket.
104	Lower boom angle >5°; lowered-position switch not released	Check position switch, lower-boom angle sensor and wiring (as stated in source).
105	Angle between upper and lower booms >5°; lowered-position switch not released	Check position switch, lower-boom angle sensor and wiring (as stated in source).
106	Lower boom extension >10; retracted-position switch not released	Check position switch, lower-boom angle sensor and wiring (as stated in source).
107	Upper boom extension >10; retracted-position switch not released	Check position switch, lower-boom angle sensor and wiring (as stated in source).
108	Lower boom dual angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
109	Upper boom dual angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
110	Lower boom dual length discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
111	Upper boom dual length discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
112	Dual slew encoder discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
113	Dual basket angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
114	Dual chassis x angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
115	Dual chassis y angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
116	Dual jib angle discrepancy >50	Check both sensors and wiring; recalibrate as authorized.
117	Outrigger #1: dual ground switches disagree	Check 2 ground-contact switches and wiring.
118	Outrigger #2: dual ground switches disagree	Check 2 ground-contact switches and wiring.
119	Outrigger #3: dual ground switches disagree	Check 2 ground-contact switches and wiring.
120	Outrigger #4: dual ground switches disagree	Check 2 ground-contact switches and wiring.
121	Outrigger #1: width-position switch disagreement	Check width switches and wiring.
122	Outrigger #2: width-position switch disagreement	Check width switches and wiring.
123	Outrigger #3: width-position switch disagreement	Check width switches and wiring.
124	Outrigger #4: width-position switch disagreement	Check width switches and wiring.
125	Lower boom angle 1 sensor fault	Check sensor and associated wiring.
126	Lower boom angle 2 sensor fault	Check sensor and associated wiring.
127	Upper boom angle 1 sensor fault	Check sensor and associated wiring.
128	Upper boom angle 2 sensor fault	Check sensor and associated wiring.
129	Lower boom length 1 sensor fault	Check sensor and associated wiring.
130	Lower boom length 2 sensor fault	Check sensor and associated wiring.
131	Upper boom length 1 sensor fault	Check sensor and associated wiring.
132	Upper boom length 2 sensor fault	Check sensor and associated wiring.
133	Slew encoder 1 sensor fault	Check sensor and associated wiring; recalibrate.
134	Slew encoder 2 sensor fault	Check sensor and associated wiring; recalibrate.
135	Basket angle 1 sensor fault	Check sensor and associated wiring.
136	Basket angle 2 sensor fault	Check sensor and associated wiring.
137	Chassis x angle 1 sensor fault	Check sensor and associated wiring.
138	Chassis x angle 2 sensor fault	Check sensor and associated wiring.
139	Chassis y angle 1 sensor fault	Check sensor and associated wiring.
140	Chassis y angle 2 sensor fault	Check sensor and associated wiring.
141	Jib angle 1 sensor fault	Check sensor and associated wiring.
142	Jib angle 2 sensor fault	Check sensor and associated wiring.
143	Display CAN-bus fault	Check display and wiring.
144	Lower boom angle 1 CAN-bus fault	Check sensor and wiring.
145	Lower boom angle 2 CAN-bus fault	Check sensor and wiring.
146	Upper boom angle 1 CAN-bus fault	Check sensor and wiring.
147	Upper boom angle 2 CAN-bus fault	Check sensor and wiring.
148	Lower boom length 1 CAN-bus fault	Check sensor and wiring.
149	Lower boom length 2 CAN-bus fault	Check sensor and wiring.
150	Upper boom length 1 CAN-bus fault	Check sensor and wiring.
151	Upper boom length 2 CAN-bus fault	Check sensor and wiring.
152	Slew encoder 1 CAN-bus fault	Check sensor and wiring; recalibrate.
153	Slew encoder 2 CAN-bus fault	Check sensor and wiring; recalibrate.
154	Basket angle 1 CAN-bus fault	Check sensor and wiring.
155	Basket angle 2 CAN-bus fault	Check sensor and wiring.
156	Chassis x angle 1 CAN-bus fault	Check sensor and wiring.
157	Chassis x angle 2 CAN-bus fault	Check sensor and wiring.
158	Chassis y angle 1 CAN-bus fault	Check sensor and wiring.
159	Chassis y angle 2 CAN-bus fault	Check sensor and wiring.
160	Jib angle 1 CAN-bus fault	Check sensor and wiring.
161	Jib angle 2 CAN-bus fault	Check sensor and wiring.
162	Remote receiver CAN-bus fault	Check receiver and wiring.
163	Remote E-stop pressed or remote disconnected	Check pairing, remote battery and receiver.

164	Boom not fully stowed in transport position	Check lower/upper lowered switches, retraction and slew center (within ±0.5°).
165	outriggers no ground pressure in boom mode	Check outrigger ground lamps and contact.
166	Basket load sensor 1 fault	Check load sensor and wiring.
167	Basket load sensor 2 fault	Check load sensor and wiring.
168	Basket load sensor 1 CAN fault	Check load sensor and wiring.
169	Basket load sensor 2 CAN fault	Check load sensor and wiring.
170	Dual basket load readings differ by >50	Check load sensors and wiring.
171-176	Remote joystick not neutral within 3 seconds of pairing	Confirm joystick neutral; inspect for damage.
200	Lower boom angle sensor value fault	No sensor-value change for 1.5 seconds during movement.
201	Lower boom extension sensor value fault	No sensor-value change for 1.5 seconds during movement.
202	Upper boom angle sensor value fault	No sensor-value change for 1.5 seconds during movement.
203	Upper boom extension sensor value fault	Push power +P button to clear
204/205	Chassis x/y angle sensor value fault	No sensor-value change for 1.5 seconds during movement.
206	Encoder value fault	Push power +P button to clear
401	Lower boom not fully lowered in transport position	Check limit switch in lower boom support,or wiring
402	Upper boom not fully lowered in transport position	Check limit switch in lower upper support,or wiring
403	Turntable not centered in transport position	Check the limit/center switch,or wiring
404	Upper boom not fully retracted in non-boom mode	Check relevant limit/center switch,or wiring
411	Outrigger #1 not grounded in boom mode	Check related ground switch and wiring.
412	Outrigger #2 not grounded in boom mode	Check related ground switch and wiring.
413	Outrigger #3 not grounded in boom mode	Check related ground switch and wiring.
414	Outrigger #4 not grounded in boom mode	Check related ground switch and wiring.

6 Tips

Automatic outrigger leveling does not work

Check if outrigger proportional valve is restored after manual operation, and if the selection valve is restored. Outrigger switch malfunction.

Basket auto-leveling delayed

Level basket manually and assess automatic response. The balance valve holding the basket maybe need to be replaced.

Bypass 117,118,119,120

Two outrigger switches can be bypassed by connecting BR to BK wires in case of proximity switch, or BR to BL wire in case of micro switch.

7 Input diagnostics — limit switches

Machine motion is interlocked by limit switches and sensors. The source distinguishes photoelectric proximity switches (power, signal and ground) and mechanical travel switches (power and signal); nominal control voltage is generally 12 V.

- On the controller display, open Data Monitoring → Input Data. Locate the input for the relevant function.
- A green indication means the switch is actuated; no light may indicate non-actuation or a fault.
- Trace the switch wiring to its connector; Check connector pins for damage, moisture and loose contact in case of no response when you manipulate the switch. If wiring is sound and the input does not change, replace the defective switch.

8 Output diagnostics — motion-control valves

Open Data Monitoring → Output Data. Command a movement with the remote and observe the associated output. If the output and relevant valve coils actuate but movement does not occur, inspect the hydraulic circuit. If no output is present, inspect the electrical command and interlock circuit.

The function selector valve switches between boom and undercarriage circuits. Boom valves control boom elevation/extension, slew, jib, basket leveling and basket rotation. Undercarriage valves control outriggers, track lift and travel. If a solenoid is energized but no movement occurs, the source directs inspection of the corresponding hydraulic lock or cylinder.

9 CAN-bus and remote-control diagnostics

After pairing the remote, use Data Monitoring → Bus Data to observe mode selectors, side buttons, joysticks and knobs while operating the controls. The source indicates that page 1 shows selectors and side buttons, and page 2 shows joystick/knob values.

For sensor faults, compare the main-screen reading with CAN-bus data. The source associates an abnormally large main-screen reading with missing bus data with wiring faults, and fluctuating main-screen and bus values with sensor faults. Treat these as diagnostic clues, not definitive tests.

Sensor functions illustrated in the original: chassis inclination; boom angle; draw-wire boom extension; turntable slew encoder; basket load sensor; single-axis basket tilt switch.