SMARTlift Troubleshooting Manual

V0908

STEELBRO

Container Handling Solutions

Contents

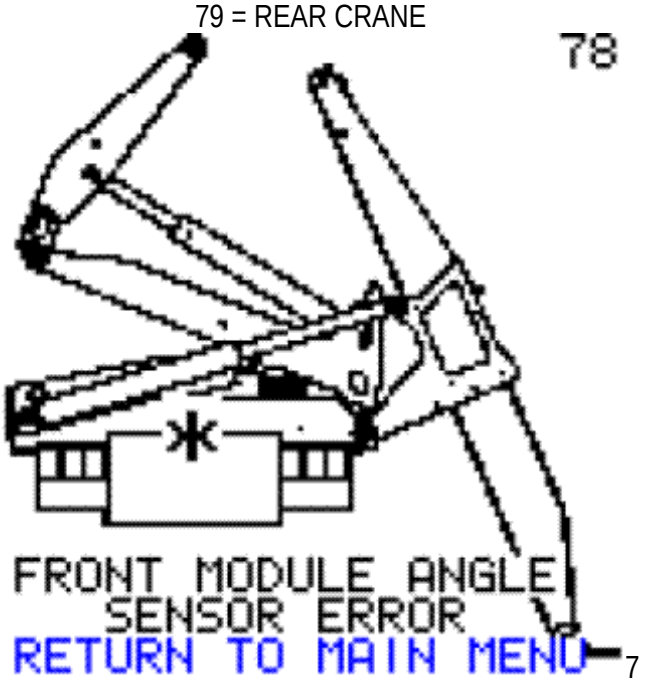
LCD Error or Warning Screens

This section references each of the error or warning screens and possible causes and fixes.

If contacting Product Support over a system issue, it is very helpful to be able to give them the number of the screen or screens that have displayed.

Module Angle Sensor Error F78 R79

78 = FRONT CRANE
79 = REAR CRANE



Front (or Rear) ECU is receiving an angle sensor signal outside 0.5 .. 4.5V range

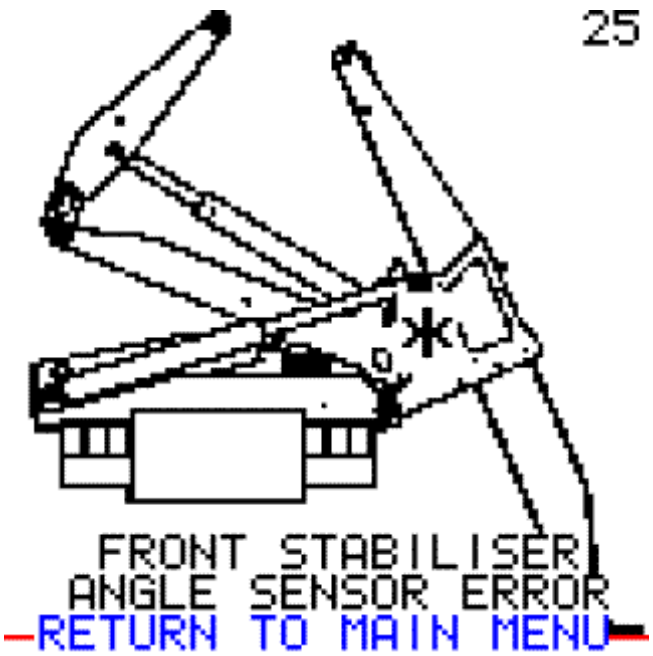
The module angle sensor measures the elevation and camber of the trailer.

Check:

- For damage to the sensor cable and ingress of moisture into connecting plug
- Replace the sensor (correct orientation is important) and recalibrate using procedure SL0005_2GB
- With the trailer parked on level ground the elevation should be 0° and the camber should be 0°. These values can be seen at View Sensor Values
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Stabiliser Angle Sensor Error F25 R26

25 = FRONT CRANE
26 = REAR CRANE



Front (or Rear) ECU is receiving an angle sensor signal outside 0.5 .. 4.5V range

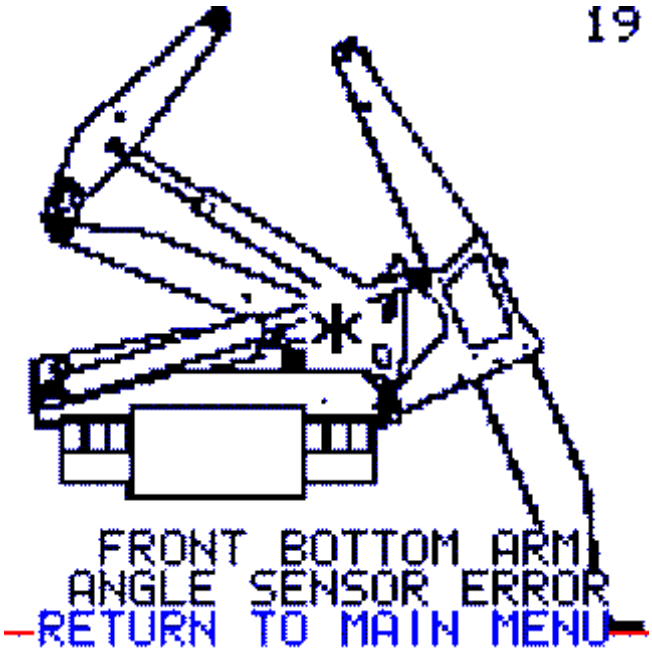
The Stabiliser Angle Sensor measures the angle of the stabiliser.

Check:

- For damage to the sensor cable and ingress of moisture into connecting plug
- Replace the sensor (correct orientation is important i.e. with the cable pointing upwards) and recalibrate using procedure SL0005_2GB
- Check the calibration by hanging a Plumb-Bob from the L-Pin and move the Stabiliser so that L-Pin is vertical to the H-Pin
- With the diesel engine not running but SMARTlift switched on, go to **MANUFACTURERS AREA – VIEW PIN DISTANCES-VIEW FRONT OR REAR PIN DISTANCES-VIEW HORIZONTAL DISTANCE HL**.The distance should be zero +/- 10mm.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Bottom Arm Angle Sensor Error F19 R20

19 = FRONT CRANE
20 = REAR CRANE



Fault detected between Crane Junction Box and Bottom Arm Angle Sensor

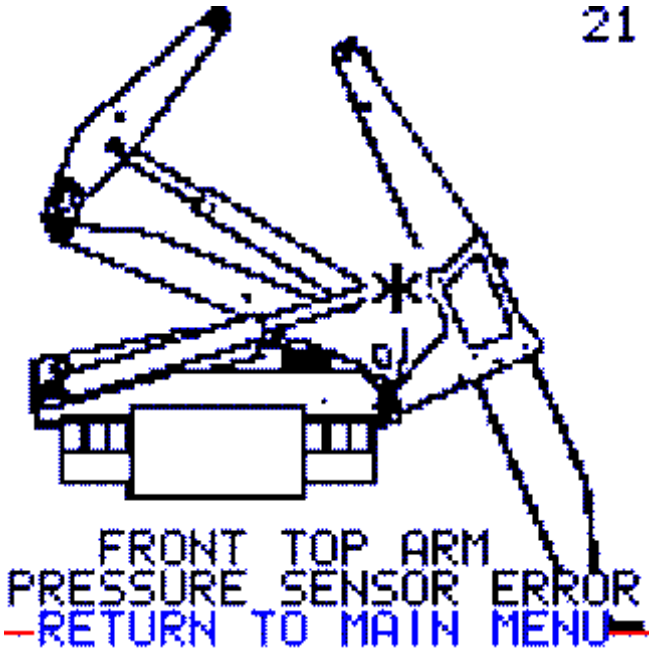
The Bottom Arm Angle Sensor measures the angle of the bottom arm.

Check:

- For damage to the sensor cable and ingress of moisture into connecting plug.
- Replace the sensor (correct orientation is important i.e. with the cable. pointing upwards) and recalibrate using procedure SL0005_2GB.
- Check the calibration by hanging a Plumb-Bob from the D-Pin and position the bottom arm in the vertical position so that the D-Pin is vertical to the A-Pin.
- With the diesel engine not running but SMARTlift switched on, go to **MANUFACTURERS AREA – VIEW PIN DISTANCES-VIEW FRONT OR REAR PIN DISTANCES-VIEW HORIZONTAL DISTANCE AD**. The distance should be zero +/- 10mm.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Top Arm Pressure Sensor Error F21 R23

21 = FRONT CRANE
23 = REAR CRANE



Front (or Rear) ECU is receiving a Pressure Sensor signal outside 4.20mA range

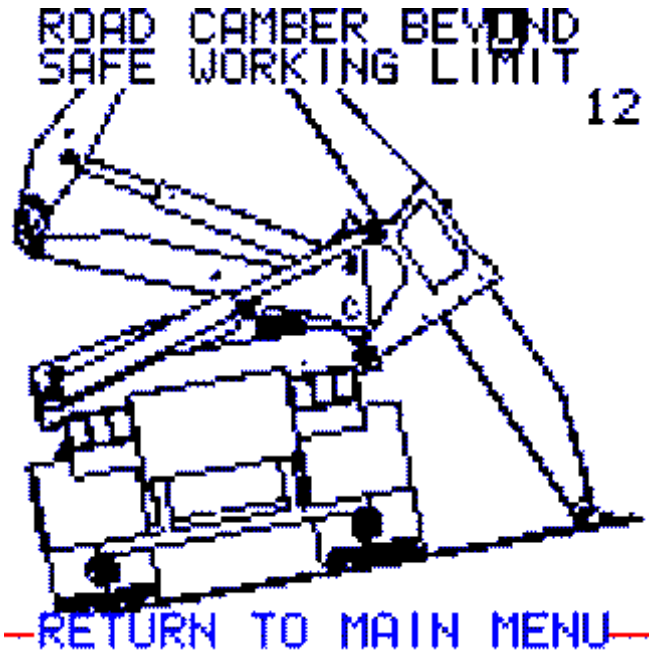
The Pressure Sensor measures the hydraulic pressure in the piston side of the top arm cylinder and is located on the A-port of the top arm lifting cylinder.

Check:

- For damage to the sensor cable and ingress of moisture into connecting plug
- Go to **VIEW SENSOR VALUES, VIEW FRONT** (or **REAR**) **ANGLE SENSORS** and check that when the top arm is fully extended that the pressure reading increases as expected
- Replace sensor if pressure does not change or is incorrect when cross checked with the analogue pressure gauge mounted on the rear crane

Top Arm Angle Sensor Error F11 R18

11 = FRONT CRANE
18 = REAR CRANE



Fault detected between Crane ECU and Top Arm Angle Sensor

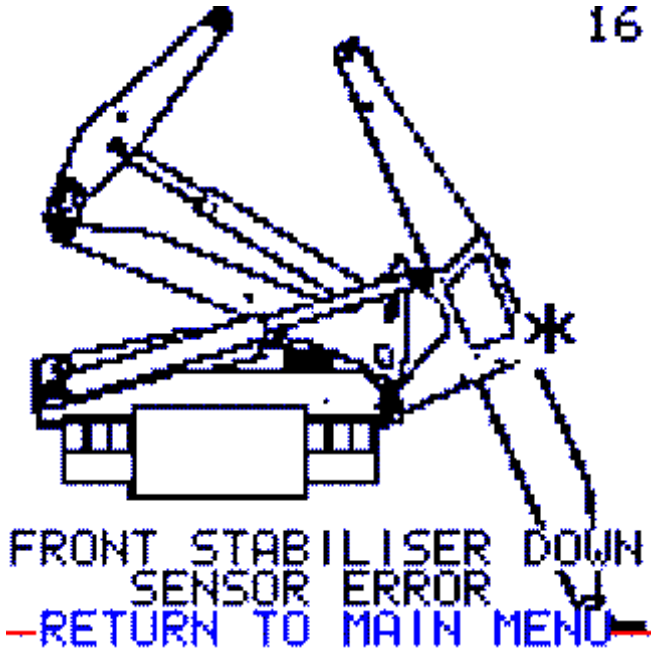
The Top Arm Angle Sensor measures the angle of the Top Arm.

Check:

- For damage to the sensor cable and ingress of moisture into connecting plug
- Replace the sensor (correct orientation is important i.e. with the cable pointing upwards) and recalibrate using procedure SL0005_2GB
- Check the calibration by hanging a Plumb-Bob from the G-Pin and position the bottom arm in the vertical position so that the G-Pin is vertical to the D-Pin
- With the diesel engine not running but SMARTlift switched on, go to **MANUFACTURERS AREA – VIEW PIN DISTANCES-VIEW FRONT OR REAR PIN DISTANCES-VIEW HORIZONTAL DISTANCE DG**. The distance should be zero +/- 10mm
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Stabiliser Down Sensor Error F16 R15

16 = FRONT CRANE
15 = REAR CRANE

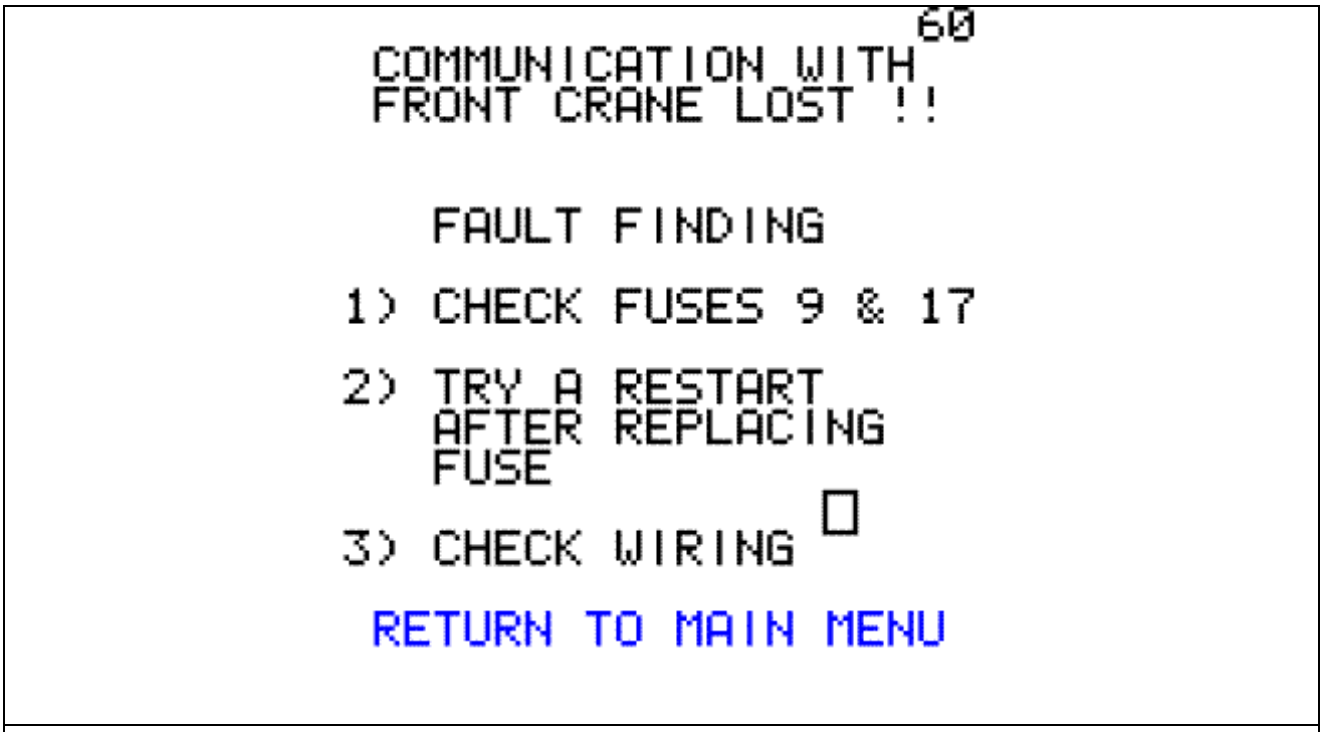


Stabiliser Down Microswitch is not operating correctly

The microswitch has a Normally Open (NO) and a Normally Closed (NC) contact.

- On the LCD screen go to **VIEW SENSOR VALUES** then **FRONT** (or **REAR**) **STABILISER EXTENSION SENSORS**. At the bottom of the screen the switch state is displayed
- With the Stabiliser on the ground NO = 1 and NC = 0, with the stabiliser foot not in contact with the ground NO = 0 and NC = 1
- If NO=0 and NC=0, or NC=1 and NO=1 if then the above error page will be displayed

Communication With Front Crane Lost! 60

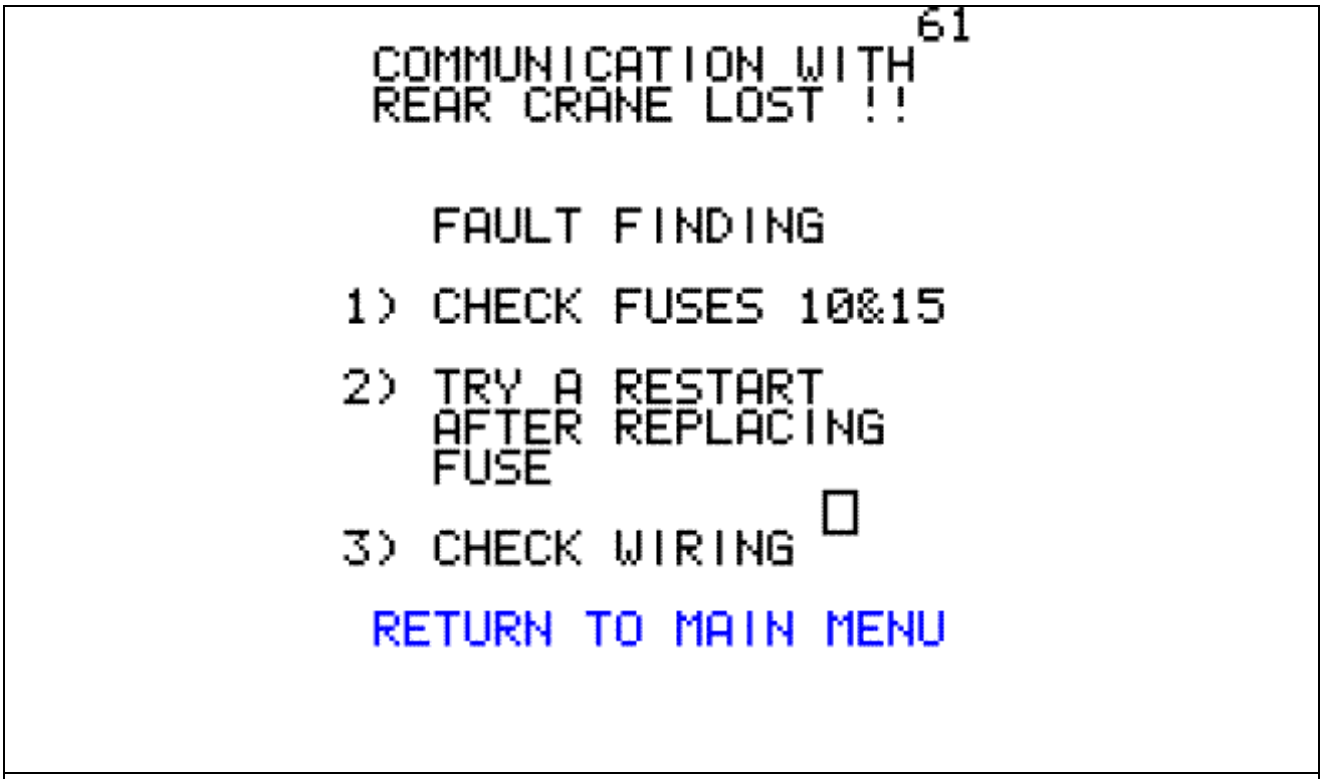


The rear crane ECU has lost communication with the front crane ECU

Possible causes:

- Check fuses, blown fuse could be caused by a pinched sensor wire
- Power has been lost to the ECU, check:
  - ECU D+, Pin 28
  - ECU UE, Pin 54
  - ECU Ground, Pin 55
- Check CANbus continuity by measuring resistance between CAN-H and CAN-L at the diagnostic plug, remember to turn key switch off before trying this. 60Ω = good, 120 Ω = break in CANbus

Communication With Rear Crane Lost ! 61



The front crane ECU has lost communication with the rear crane ECU.

Possible causes:

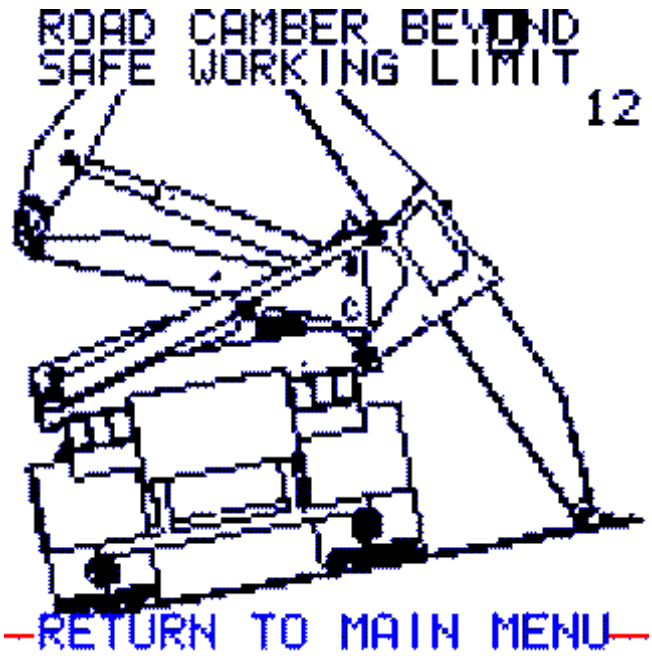
- Check fuses, blown fuse could be caused by a pinched sensor wire
- Power has been lost to the ECU, check:
  - ECU D+, Pin 28
  - ECU UE, Pin 54
  - ECU Ground, Pin 55
- Check CANbus continuity by measuring resistance between CAN-H and CAN-L at the diagnostic plug, remember to turn key switch off before trying this. 60Ω = good, 120 Ω = break in CANbus

Low Control System Voltage 62

The voltage in the motorbike battery located on the Kubota engine frame has fallen to below 11V

- This is caused by the system being left 'ON' while the Kubota engine is not running
- The motorbike battery is only used to provide a stable voltage to the electronic components of the SMARTlift system while the Kubota engine is being started
- Once the Alternator is spinning the system voltage will rise to 14.2V then current can flow across the diode to allow the motorbike battery to charge from the main battery
- If this message is displayed during operation of the machine check that the Alternator is operating correctly

Road Camber Beyond Safe Working Limit 12

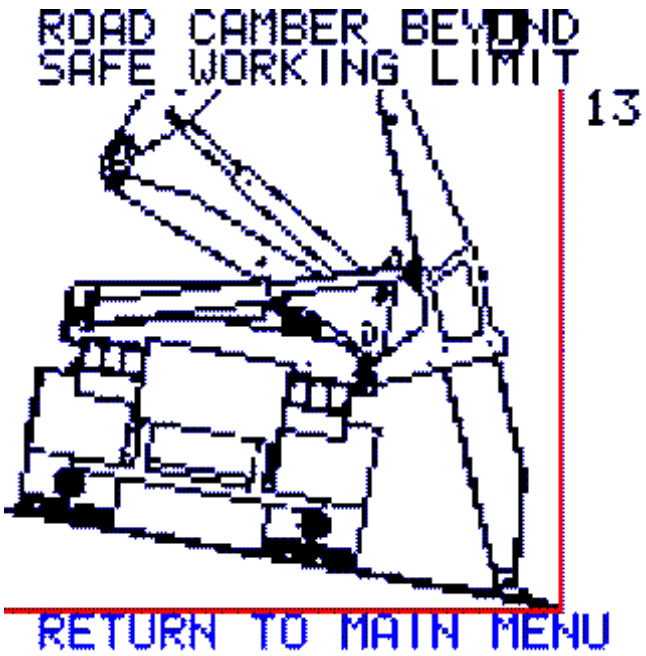


Either the front, rear or both crane bases are angled beyond acceptable limits

If this is clearly not the issue:

- Park the trailer on level ground and go to **VIEW SENSOR VALUES** then **VIEW FRONT** (or **REAR**) **ANGLE SENSORS**
- The trailer camber and elevation angle sensor readings should = 0 degrees
- If not then first check that the angle sensor has not come loose before recalibrating using procedure SL0005_2GB
- If the recalibration fails then check the wiring before replacing the sensor.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Road Camber Beyond Safe Working Limit 13



Either front, rear or both crane bases are angled beyond acceptable limits

If this is clearly not the issue:

- Park the trailer on level ground and go to **VIEW SENSOR VALUES** then **VIEW FRONT** (or **REAR**) **ANGLE SENSORS**
- The trailer camber and elevation angle sensor readings should = 0 degrees.
- If not then first check that the angle sensor has not come loose before recalibrating using procedure SL0005_2GB
- If the recalibration fails then check the wiring before replacing the sensor.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Road Elevation Beyond Safe Working Limit 22

Either front, rear or both crane bases are angled beyond acceptable limits

If this is clearly not the issue:

- Park the trailer on level ground and go to **VIEW SENSOR VALUES** then **VIEW FRONT** (or **REAR**) **ANGLE SENSORS**
- The trailer camber and elevation angle sensor readings should = 0 degrees.
- If not then first check that the angle sensor has not come loose before recalibrating using procedure SL0005_2GB
- If the recalibration fails then check the wiring before replacing the sensor.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Road Elevation Beyond Safe Working Limit 24

Either front, rear or both crane bases are angled beyond acceptable limits

If this is clearly not the issue:

- Park the trailer on level ground and go to **VIEW SENSOR VALUES** then **VIEW FRONT** (or **REAR**) **ANGLE SENSORS**
- The trailer camber and elevation angle sensor readings should = 0 degrees.
- If not then first check that the angle sensor has not come loose before recalibrating using procedure SL0005_2GB
- If the recalibration fails then check the wiring before replacing the sensor.
- Remember, all angle sensors are the same component so it is possible to swap sensors in order to help diagnose faulty wiring or a faulty sensor. Just remember to recalibrate any sensor that is moved!

Warning Angle Sensors Not Calibrated F53 R113

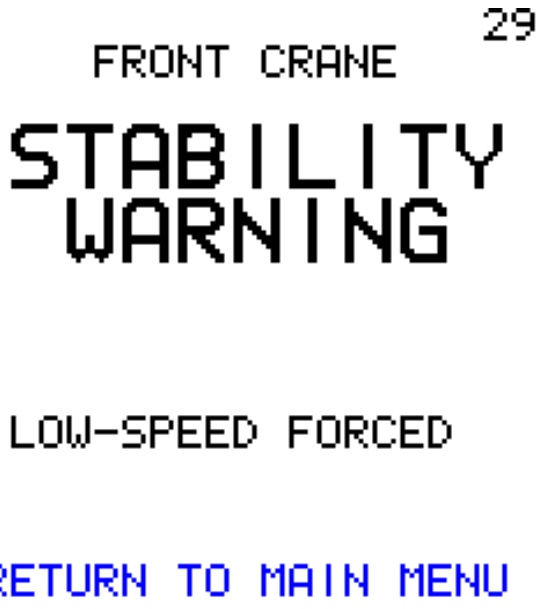
53 = FRONT CRANE
113 = REAR CRANE

The ECU has detected that the angle sensor calibration data has been lost, this may cause unexpected stability alarms to be activated

- Sidelifter should be recalibrated using the Plumb-Bob Calibration Method
- Ensure that the latest software version is being used, confirm with Steelbro
- Report the problem to Steelbro

Stability Warning F29 R32

29 = FRONT CRANE
32 = REAR CRANE



The Arms have been extended within 250mm of the edge of the safe working envelope on the Stabiliser side of the Sidelifter

- If High speed is selected then Low speed automatically activates
- High speed can be re-entered only if the Arm extension is reduced and both joysticks are in the neutral position

If this is clearly not the issue:

- Check that the Stabiliser Extension measurement is operating correctly
- Check the calibration of the Stabiliser, Bottom and Top Arm Angle Sensors. Do this by hanging a plum bob one at a time between pins A&D, D&G and H&L as described in the calibration procedure SL0005_2GB and then go to the **MANUFACTURERS AREA** then **VIEW PIN DISTANCES** and check that the HORIZONTAL DISTANCES, AD, DG and HL are zero mm (±10mm) when the plumb bob is lined up

Stability Alarm F27 F30

27 = FRONT CRANE
30 = REAR CRANE

The arms have been extended to the edge of the Safe Working Envelope on the stabiliser side of the Sidelifter

- All arm functions that could move the load further away from the trailer are disabled
- If the Top Arm is above horizontal, then only Top Arm up will be allowed
- If the Top Arm is below horizontal then only Top Arm Down will be allowed
- Bottom Arm Up is disabled
- Bottom Arm Down is enabled

If this is clearly not the issue:

- Check the operation of the stabiliser extension magnetic counter by going to **VIEW SENSOR VALUES** then **FRONT** (or **REAR**) **STABILISER EXTENSION SENSORS**. As the Stabiliser Extension is deployed the LCD display screen should display a changing count as the magnetic counter reads the magnetic strip. With the Stabiliser Extension fully extended, the magnetic counter should display as 1 and the top reset magnet should display as 0. With the Stabiliser Extension arm fully retracted the magnetic counter should display as 0 and the top reset magnet should display as 1
- Check the calibration of the Stabiliser, Bottom and Top Arm Angle Sensors. Do this by hanging a plum bob one at a time between pins A&D, D&G and H&L as described in the calibration procedure SL0005_2GB and then go to the **MANUFACTURERS AREA** then **VIEW PIN DISTANCES** and check that the HORIZONTAL DISTANCES, AD, DG and HL are zero mm (±10mm) when the plumb bob is lined up

Offside Stability Alarm F28 R31

28 = FRONT CRANE
31 = REAR CRANE

The most likely causes are:

- The lifting pin (G-Pin) has crossed the centreline of the trailer with load
- The operator has lifted the container too high and has come within 200mm of the centreline of the trailer. In this case the operator must lower the container to a more suitable height for landing on the trailer twistlocks

If this is clearly not the issue:

- Check the calibration of the Bottom and Top Arm Angle Sensors. Do this by hanging a plum bob one at a time between pins A&D and D&G as described in the calibration procedure SL0005_2GB and then go to the **MANUFACTURERS AREA** then **VIEW PIN DISTANCES** and check that the HORIZONTAL DISTANCES, AD and DG are zero mm (±10mm) when the plumb bob is lined up.

Stabiliser Not Deployed – Arm Function Disabled F33 R34

33 = FRONT CRANE
34 = REAR CRANE

Arms Mode has been entered without the stabiliser being properly deployed

That is, enough pressure being put on the foot so that the gap between the Stabiliser Extension and Stabiliser Housing closes, thereby activating the Stabiliser Down Microswitch.

If this is clearly not the issue:

- Check that the Stabiliser Down Microswitch is functioning correctly
- On the LCD screen go to **VIEW SENSOR VALUES** then **FRONT** (or **REAR**) **STABILISER EXTENSION SENSORS**. At the bottom of the screen the switch state is displayed
- With the Stabiliser on the ground NO = 1 and NC = 0, with the stabiliser foot not in contact with the ground NO = 0 and NC = 1

Load On Lifting Pin – Stabilisers Cannot Be Deployed F37 R38

37 = FRONT CRANE
38 = REAR CRANE

Stabiliser Mode has been entered while there is still load on the lifting pin (G-Pin)

If this is clearly not the issue:

- Check the Top Arm Pressure Sensor Value by going to **VIEW SENSOR VALUES** then **FRONT** (or **REAR**) **ANGLE SENSORS**. At the bottom of the page the Pressure in the Top Arm Cylinder will be displayed. With no load on the G-Pin the pressure should be less than 20bar
- If the reading is stuck no matter what weight is on the G-Pin then replace the pressure sensor
- When replacing the sensor make sure that the top Arm is fully folded down and that all hydraulic pressure in the cylinder is released by using the manual lever on the Danfoss PVG valve. Wear eye protection

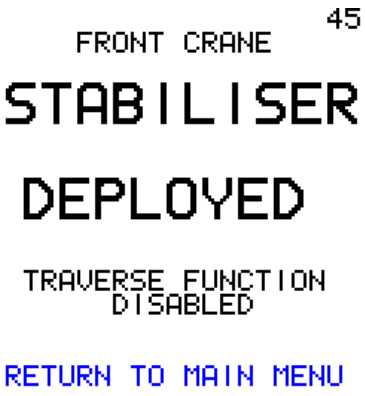
Module Off Station – Stabilisers Cannot Be Deployed F39 R40

39 = FRONT CRANE
40 = REAR CRANE

This is only possible on SB361/401 with rack and pinion crane traverse fitted

Stabiliser Deployed – Traverse Function Disabled F45 R44

45 = FRONT CRANE
44 = REAR CRANE



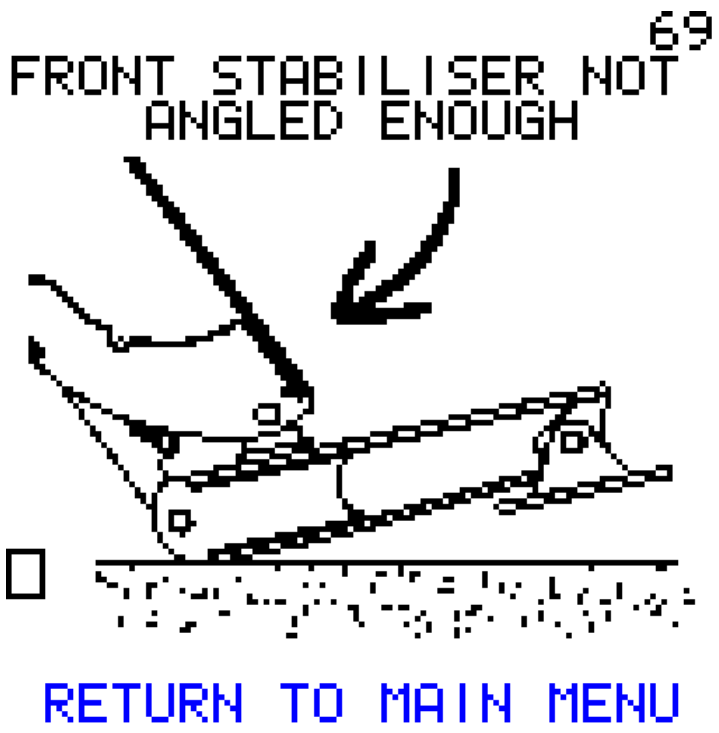
Operator has entered traverse Mode without the Stabiliser first being fully retracted

If this is clearly not the issue:

- On the LCD screen go to **VIEW SENSOR VALUES**, then **FRONT** (or **REAR**) **STABILISER EXTENSION SENSORS**. Check that the foot down micro switch values change when the foot is placed on the ground and lifted off the ground. When the foot is on the ground, the values displayed should read NORMALLY OPEN=1, NORMALLY CLOSED=0. When the foot is off the ground, the values displayed should read NORMALLY OPEN=1, NORMALL CLOSED=1. If the stabiliser is fully folded and retracted, but the foot down switch's indicate that the foot is on the ground check, and if needed, adjust the microswitch on the stabiliser housing
- Check that the magnet located on the side of the stabiliser extension near the foot end is still in place
- Check that the stabiliser counts in and out correctly by looking at the LCD screen during operation of the stabiliser. During retraction the counter should reach zero mm by the end of the magnetic strip. During extension the counter will only start when the first magnet of the magnetic strip is reached
- Go to **VIEW SENSOR VALUES** then **FRONT** (or **REAR**) **STABILISER EXTENSION SENSORS**. With the stabiliser extension fully retracted the values displayed should read MAGNETIC COUNTER =1, RESET MAGNET = 0. With the stabiliser extension fully extended the values displayed should read MAGNETIC COUNTER =1, RESET MAGNET = 1

Stabiliser not angled enough F69 R70

69 = FRONT CRANE
70 = REAR CRANE

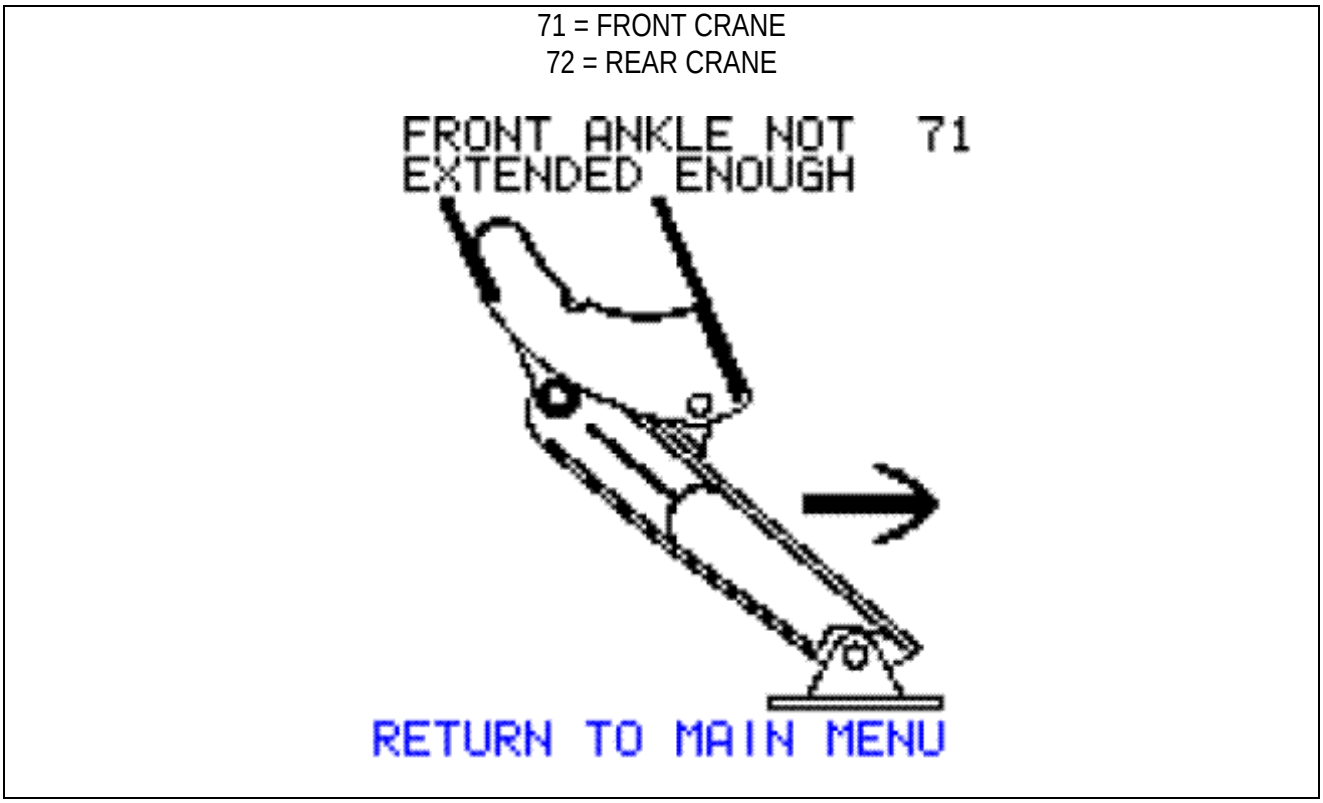


The Stabiliser must be sufficiently angled so that when the Bending Leg is deployed the foot comes into contact with the ground, not the ankle

- The Stabiliser Angle is checked when the **MODE SELECT SWITCH** is turned to **BENDING LEG MODE**.
- If the Stabiliser is already at maximum angle and this message still appears then ensure that the trailer camber is not over +3° (i.e. chassis leaning towards the non-stabiliser side). If this is the case it may not be possible to safely deploy the Bending Leg.
- Check the calibration of the Stabiliser Angle Sensor by hanging a Plumb-Bob from the L-Pin and move the Stabiliser so that L-Pin is vertical to the H-Pin.
- With the diesel engine not running but SMARTlift switched on, go to MANUFACTURERS AREA, VIEW PIN DISTANCES, VIEW FRONT OR REAR PIN DISTANCES, VIEW HORIZONTAL DISTANCE HL. The distance should be zero +/- 10mm.

Ankle not extended enough F71 R72

71 = FRONT CRANE
72 = REAR CRANE



The Bending Leg must be fully deployed (or fully retracted) before any lifting can take place

- When **ARMS MODE** is selected SMARTlift checks if the Bending Leg is fully extended or fully retracted.
- If the Bending Leg is either fully extended or fully retracted but this screen still displays, then it is most likely that either the Bending Leg Fully Extended Sensor or Bending Leg Fully Retracted Sensor is faulty or requires adjustment.
- The easiest method of checking the operation of the sensors is by going to **VIEW SENSOR VALUES**, **VIEW SPECIAL OPTIONS**, **FRONT** (or **REAR**) **ANKLE**.
- Actuate the Bending Leg between the fully retracted and fully extended positions. Observe that the ANKLE POSITION should change from Fully Retracted to Partially Extended to Fully Extended. The individual switch values can also be viewed and they should be as follows.

	Leg Retracted Sensor NO Switch	Leg Retracted Sensor NC Switch	Leg Extended Sensor NO Switch
Fully retracted	CLOSED	OPEN	OPEN
Partially Extended	OPEN	CLOSED	OPEN
Fully extended	OPEN	CLOSED	CLOSED

Ankle Retract Sensor Error F104 R105

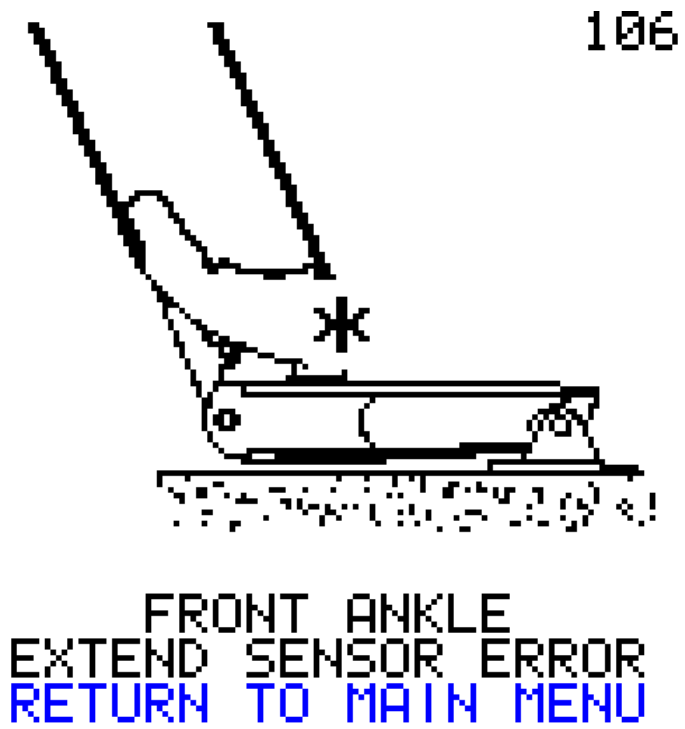
104 = FRONT CRANE
105 = REAR CRANE

The Bending Leg Retract Sensor is faulty

- Check the operation of the sensor is by going to **VIEW SENSOR VALUES**, **VIEW SPECIAL OPTIONS**, **FRONT** (or **REAR**) **ANKLE**.
- The error message appears when the both the Leg Retracted Switches are in the CLOSED state or when both switches are in the OPEN state.
- If both switches are in the CLOSED state then it is most likely there is a wiring fault, a short circuit or a sensor failure.
- If both switches are in the OPEN state then it is most likely there is a damaged wire, a wiring fault, loss of power to the sensor, or a sensor failure.

Ankle Extend Sensor Error F106 R107

106 = FRONT CRANE
107 = REAR CRANE



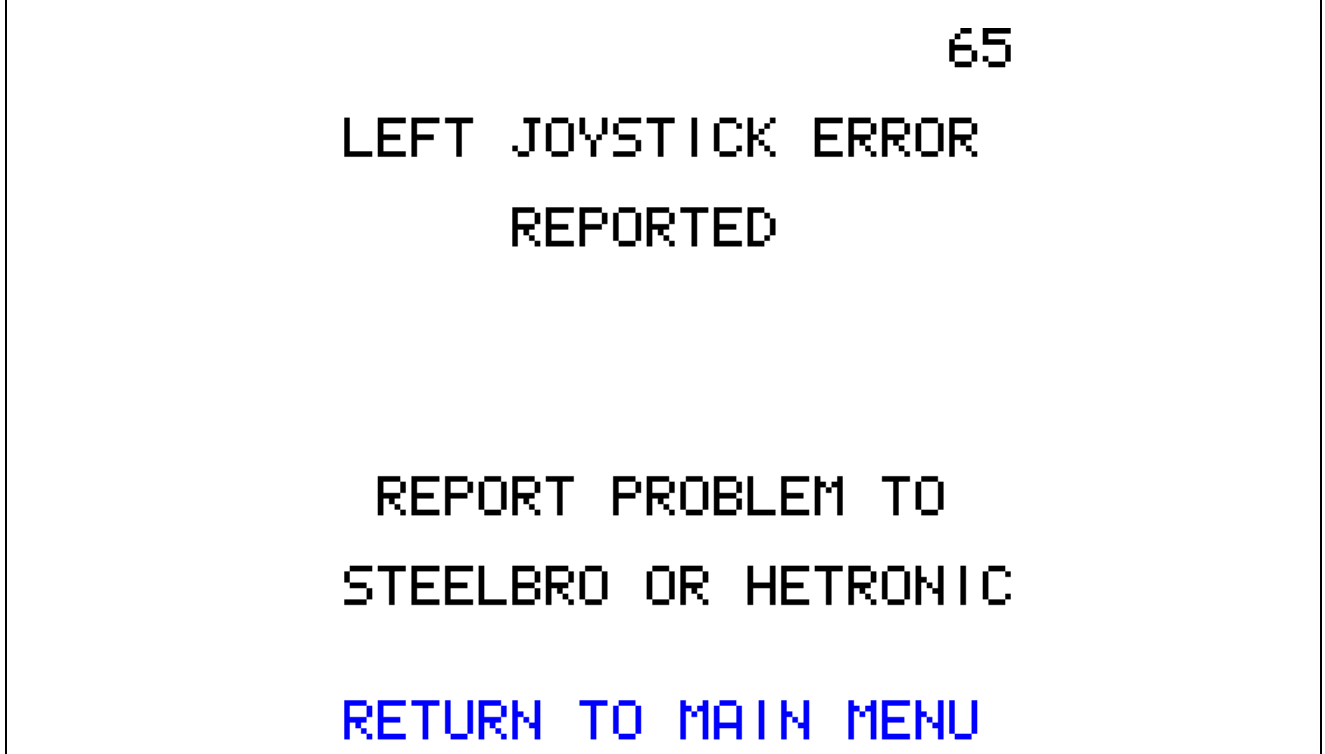
The Bending Leg Extend Sensor may be faulty, or most likely requires adjustment

- This sensor only has one switch, so it cannot be diagnosed in the same way as the Retract Sensor.
- The screen appears when the both the Fully Retract Sensor and the Fully Extend Sensor are sensing the Bending Leg. Clearly it is not possible for the leg to be fully retracted and fully extended at the same time.
- If this error page shows only when the Bending Leg is fully retracted then it is most likely that the Extend Sensor just needs adjusting slightly away from pivot.

▪ Refer to the table below for the correct switch states;	Leg Retracted Sensor NO Switch	Leg Retracted Sensor NC Switch	Leg Extended Sensor NO Switch
Fully retracted	CLOSED	OPEN	OPEN
Partially Extended	OPEN	CLOSED	OPEN
Fully extended	OPEN	CLOSED	CLOSED

Joystick Error Reported L65 R66

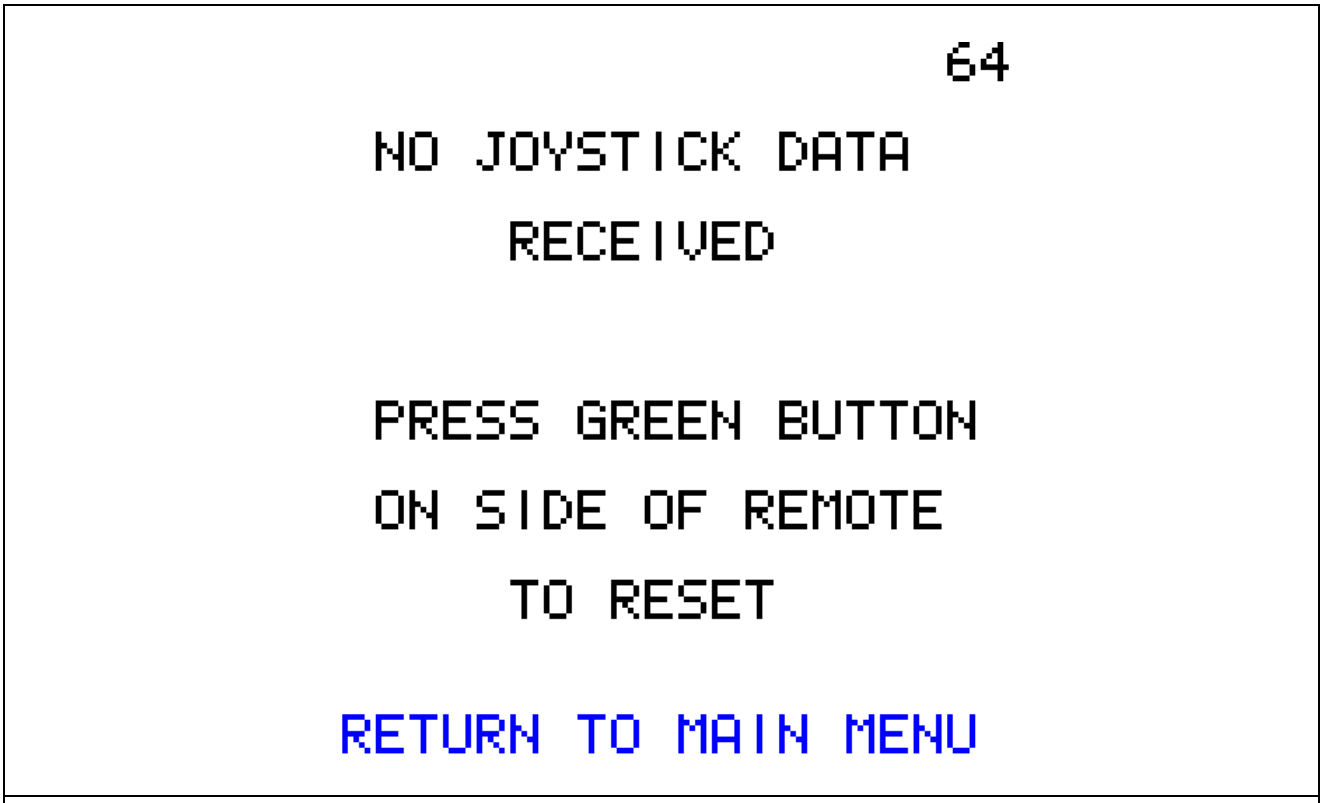
65 = LEFT JOYSTICK
66 = RIGHT JOYSTICK



This error occurs if a Control Pendant Joystick has a fault

- It may appear intermittently, but the Joystick should be replaced
- It is not possible to service the Joystick, it should be returned to Hetronic or Steelbro

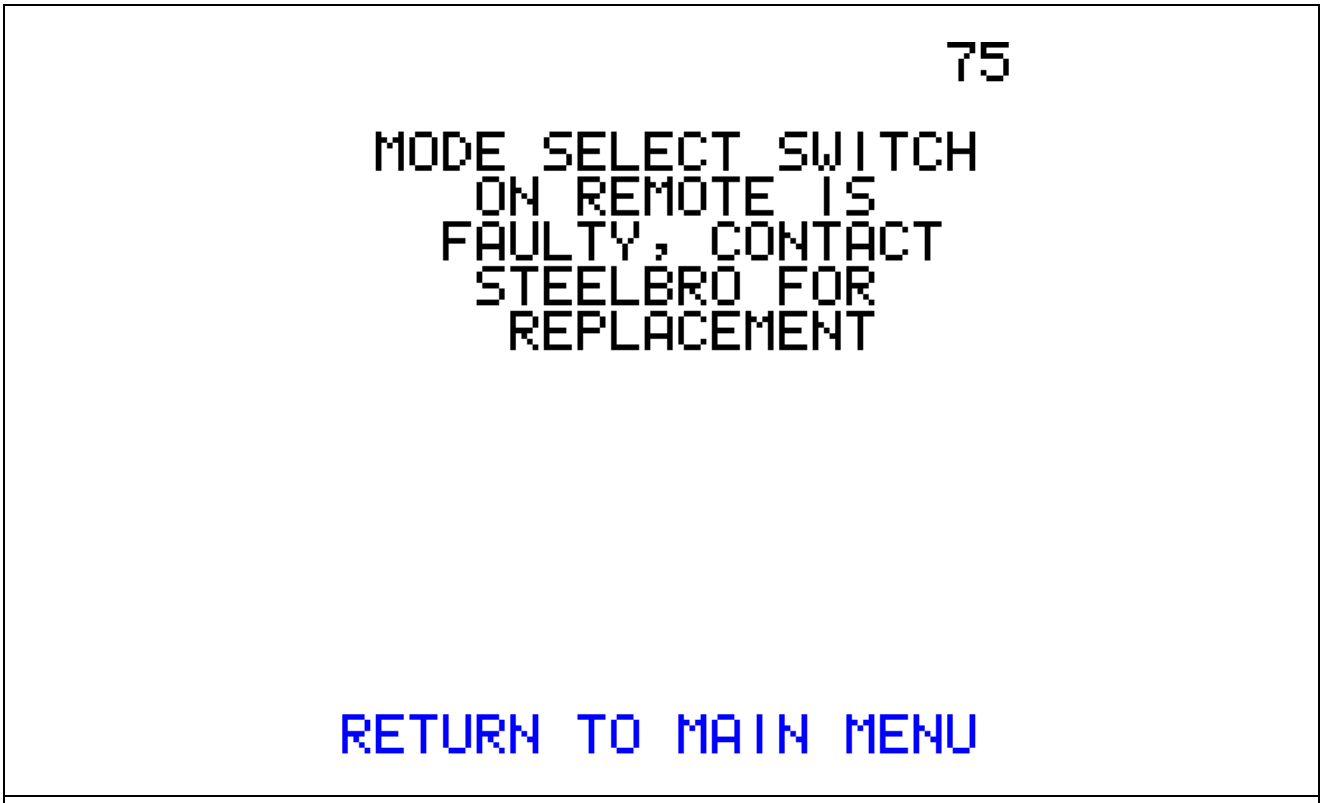
No Joystick Data Received 64



The Hetronic radio has detected minor radio interference, or there has been an internal error with the data from the Hetronic radio receiver

- This has not been sufficient to trigger the E-Stop Circuit, and the problem can be resolved by pressing the Green button on the side of the remote.

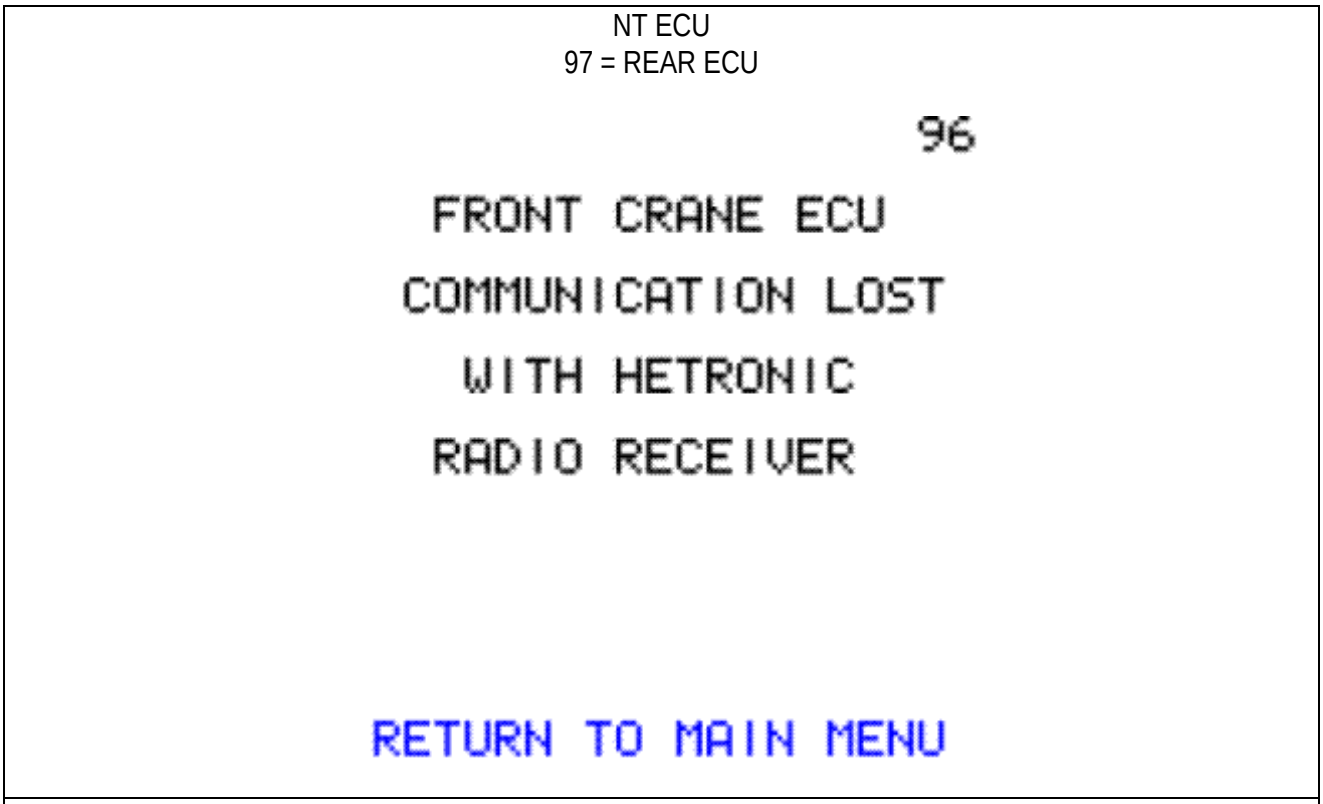
Mode Select Switch Error 75



The Mode Select switch is not in any valid mode

- Valid Modes are (clockwise from the switch OFF position):
  - Off
  - Traverse
  - Stabiliser
  - Arm
  - Off-Side Stabiliser
  - Bending Leg
  - Top Lift Frame
- Go to **VIEW JOYSTICKS**, and observe how the Mode changes on the screen as the rotary switch is rotated. The switch is equipped with a stop pin so that unused modes are not available
- If the Modes are not in the order listed above then the switch is faulty

ECU communication lost with Radio Receiver F96 R97

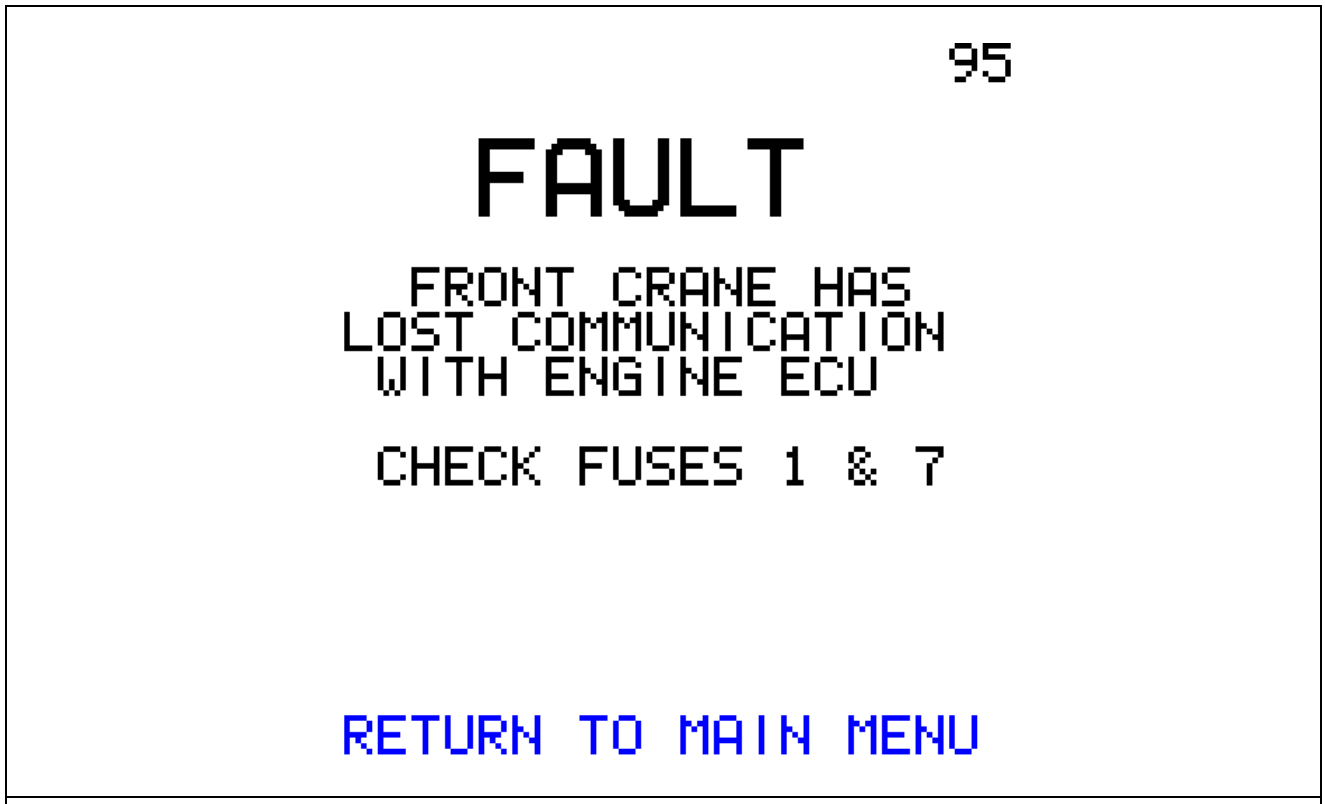


The front (or rear) crane ECU is not receiving any Joystick data on the CANbus from the radio receiver

Check:

- Go to **VIEW JOYSTICKS** to confirm that there is no communication
- Check the integrity of the CANbus
- Check the state of the LED's inside the radio receiver

Front Crane Has Lost Communication with Engine ECU



The front crane ECU has lost communication with the engine ECU

Possible causes:

- Check fuses 1 and 7
- Check CANbus continuity by measuring resistance between CAN-H and CAN-L at the diagnostic plug, remember to turn key switch off before trying this. 60Ω = good, 120 Ω = break in CANbus
- Power may have been lost to the engine ECU, check:
  - ECU UE, Pin 3
  - ECU Ground, Pin 11

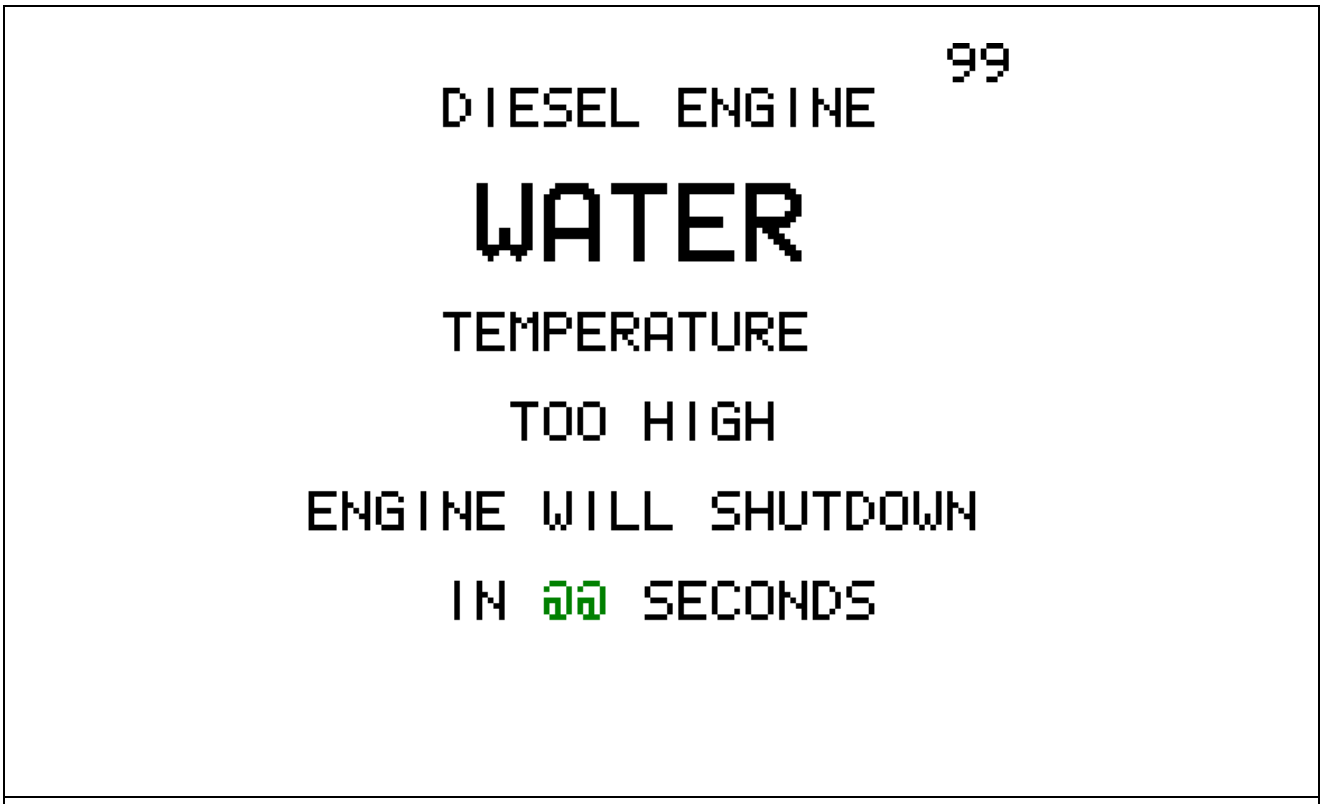
Diesel Engine Oil Pressure too low 100

From SMARTlift 2.0 (SB7661) onward

If the Oil Pressure is too low while the engine is running then this screen will appear and the Sidelifter will shutdown after 20 seconds to protect the engine from further damage.

- Check the oil level.
- If the ORANGE wire to the Oil Pressure switch has continuity with earth while the engine is running (i.e. when the supply voltage is over 13volts) then the screen will appear.
- Check that the Oil Pressure Switch contact does not have continuity with earth when the engine is running.
- Disconnect the orange wire and see if the message disappears, if not check the continuity of the wire between the Oil Pressure Switch and Pin 17 on the Front ECU. There must be no shorts to earth.

Diesel Engine Water Temperature too High 99

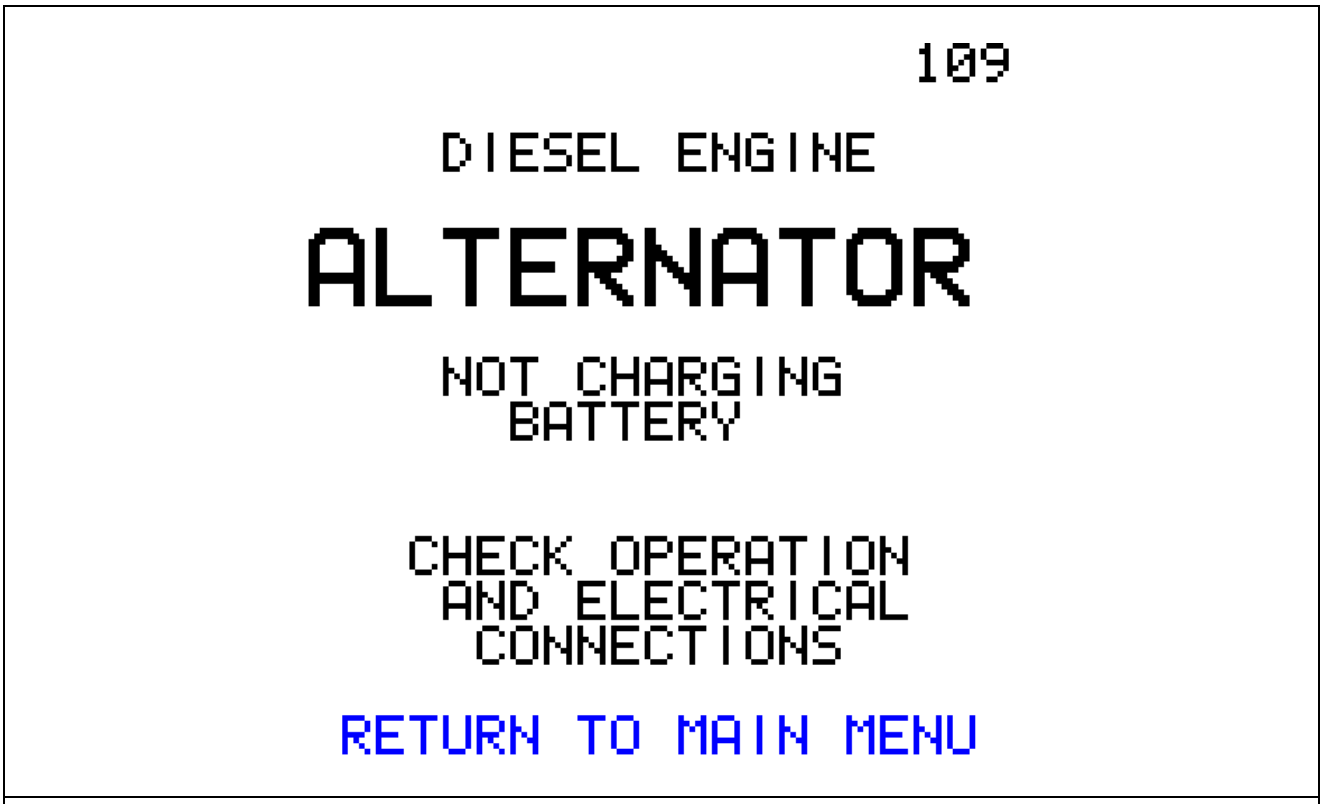


From SMARTlift 2.0 (SB7661) onwards

If the water temperature is too high this screen with appear and the Sidelifter will be shutdown after 20 seconds to protect the engine from damage.

- Allow the radiator to cool before checking the coolant level
- If the YELLOW wire to the Temperature Switch has continuity with earth while the engine is running (i.e. when the supply voltage is over 13volts) then the screen will appear
- Check that the Temperature Switch contact does not have continuity with earth when the engine has cooled
- Disconnect the yellow wire and see if the message disappears, if not check the continuity of the wire between the Temperature Switch and Pin 16 on the Front ECU. There must be no shorts to earth

Alternator Not Charging 109

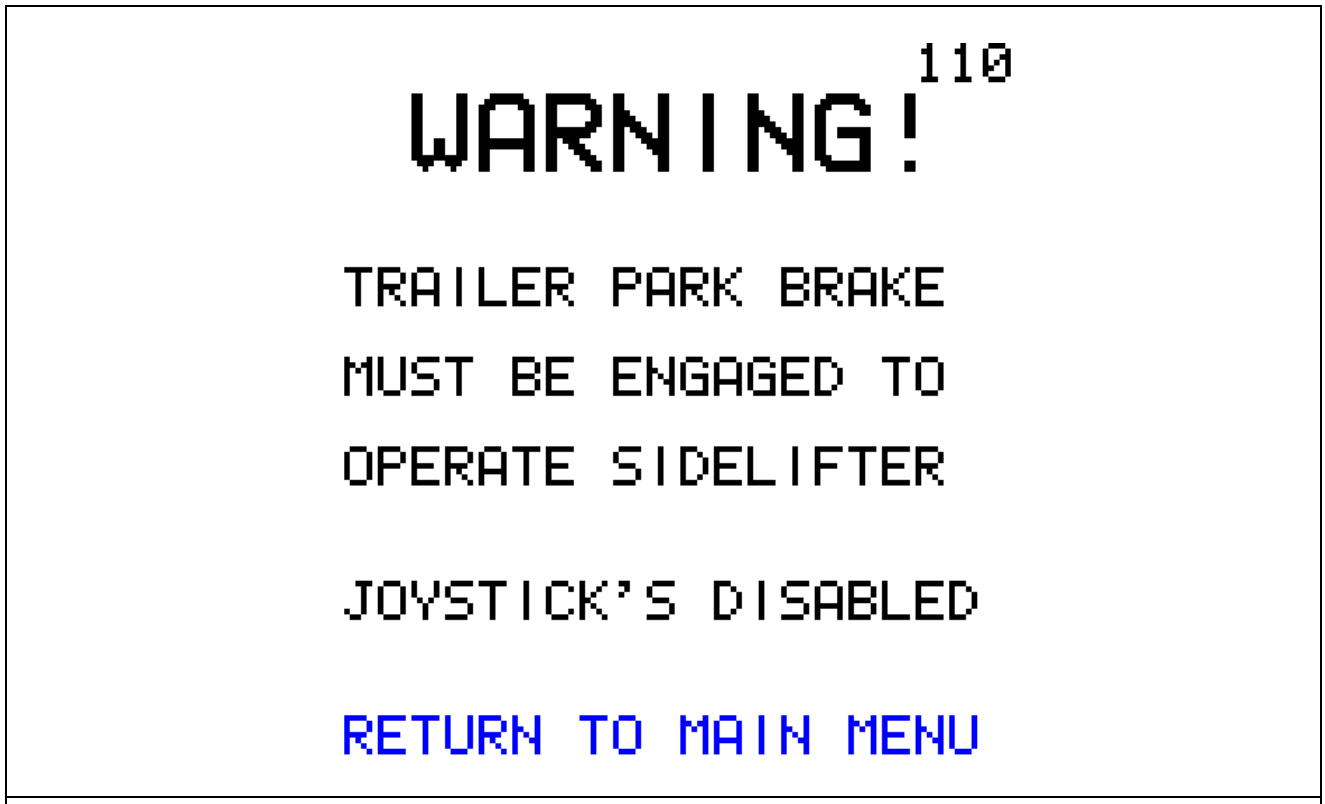


From SMARTlift 2.0 (SB7661) onwards

The Alternator on the Kubota Diesel Engine is not charging the battery.

- If the BLUE wire to the Alternator has continuity with earth while the engine is running (i.e. while oil pressure is sensed) then the above screen will be displayed
- Check the voltage at the Alternator and ensure that it reaches at least 14.1V when the engine is running
- Disconnect the spade connector from the Alternator and see if the message disappears
- If the message does not disappear check the continuity of the wire between the Alternator and Pin 38 on the Rear ECU. There must be no shorts to earth
- Otherwise check directly on the alternator to ensure that the contact floats when the Alternator is spinning

Trailer Park Brake Not Applied 110



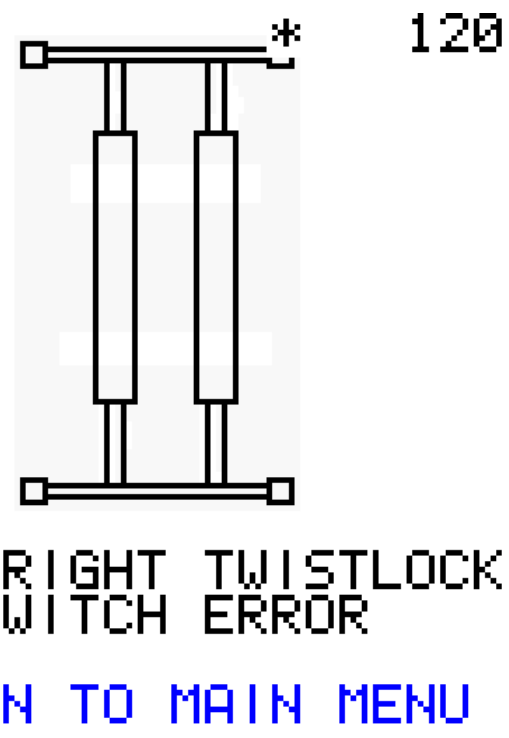
Optional feature

This is an optional feature for customers who may wish to prevent the operation of the Sidelifter until the park brake has been engaged. An additional sensor is added to the brake circuit. This screen shows if the operator attempts to operate the Sidelifter without the Park Brake 'ON'.

- If the sensor becomes disconnected or the connecting wire is damaged then this screen will show
- With the park brake 'ON' the Park Brake sensor closes between contacts 1 & 4. With the park brake 'OFF' between 1 & 2. Contact 1 is connected to the Rear ECU via wire 8. Contact 2 is not connected. Contact 4 is connected to earth in junction box 'E'
- Check the continuity of the wire from contact 1 on the sensor to pin 39 on the rear ECU
- If the switch does not close between contacts 1&4 when the park brake is applied then adjust the switching point by removing the electrical plug and turning the adjusting screw

Top Lift Frame - Twistlock Switch Error FR120 FL121 RR 122 RR 123

120 = FRONT RIGHT
121 = FRONT LEFT
122 = REAR RIGHT
123 = REAR LEFT

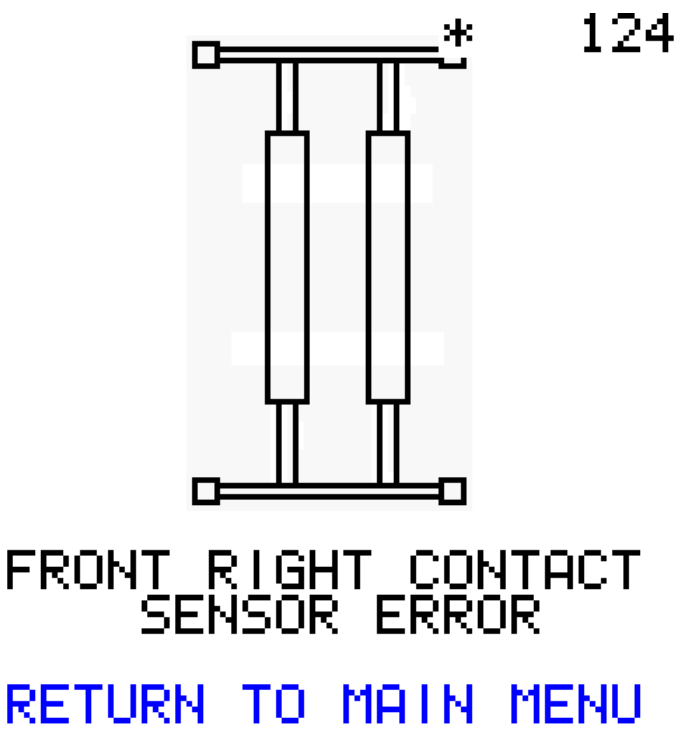


The Twistlock Switches sense the position of the top lift frame twistlocks

- Each individual switch has complementary outputs (i.e. Normally Open and Normally Closed switches). If the Front ECU detects that both switches are the same state then the error screen will be displayed.
- This means that the switch cable is either shorting or broken, or that the switch has failed.
- If unsure swap the switch with another corner and see if the error moves with the switch.

Top Lift Frame - Contact Sensor Error FR124 FL125 RR126 RL127

124 = FRONT RIGHT
125 = FRONT LEFT
126 = REAR RIGHT
127 = REAR LEFT



The Contact Sensors sense when the Top Lift Frame is resting on top of the container. There is a sensor for each corner of the Top lift Frame

- Each individual sensor has complementary outputs (i.e. Normally Open and Normally Closed outputs). If the Front ECU detects that both sensor outputs are the same state then the error screen will be displayed
- This means that the sensor cable is either shorting or broken, or that the sensor has failed
- If unsure swap the sensor with another corner and see if the error moves with the sensor

Top Lift Frame – Twistlocks Are In-between Open and Closed 128

If any of the Twistlocks are sensed to be between the fully open or fully closed positions then the Sidelifter Arms will be disabled

- Enter Top Lift Frame Mode and open or close the twistlocks.

If this is clearly not the issue:

- It is easy to determine which corner of the top lift frame is giving problems by going to **VIEW SENSOR VALUES, VIEW SPECIAL OPTIONS, TOP LIFT FRAME**, **TWISTLOCKS**, here individual twistlock states can be seen. Activate the twistlocks and observe the changing states
- Check the twistlock switches are operating correctly by removing the inspection covers on top of the problem corner

Top Lift Frame Is Not Fitted 129

If the Mode Select Switch on the remote is set to Top Lift Frame Mode but the Top Lift Frame is not fitted then this message will appear

- If the Top Lift Frame is plugged in and this message appears then there is no communication between the Front ECU and the top lift frame controllers
- Check the continuity of the CANbus and also check that power is reaching both top lift frame control cards

Max Rated Load Exceeded 58

Optional feature

This is an optional feature for customers who may want to electronically de-rate their Sidelifter.

The message appears if the operator attempts to lift a load that is greater than the allowed load.

- The maximum rated load can be set via the Manufacturers Area Menu – Change Crane Rating screen. This option will only be effective if the feature has been enabled in the factory
- Note that the maximum rated load will have to be set approximately 1000kg above the actual max load because the force induced in the hydraulic cylinder during lifting is greater than the actual load

Stabiliser Extension Magnetic Counter Sensor F130 R131

30 = FRONT ECU
131 = REAR ECU

If the unit has optical sensors and a castellated plastic strip contact steelbro product support for assistance.

The ECU has counted the number of steps on the plastic strip between the stabiliser fully retracted and the stabiliser fully extended positions and has either over-counted or under-counted compared to the correct number of steps.

This could mean that the magnetic sensor is too close or too far away from the magnets embedded in the plastic strip.

- Check the sensor values screen under stabilisers and observe the count as the leg travels up and down. It is often possible to see where exactly on the strip the magnetic sensor cannot read the magnets properly. A proper set up will count evenly as the leg moves. If the counting stops in certain sections this indicates where the problem might be.
- Ensure the plastic strip is lined up along the length of the leg. To do this, take the magnetic sensor off the stabiliser housing and look through the hole as the leg moves in and out. The plastic strip should remain centered in the hole through the entire length. If it does not it may need to be moved into better alignment.
- If the magnetic sensor is not reading anything at all check wiring and power to the sensor. If there are no problems with the wiring the sensor may be faulty and could need replacing.

Angle Sensor Calibration Failure

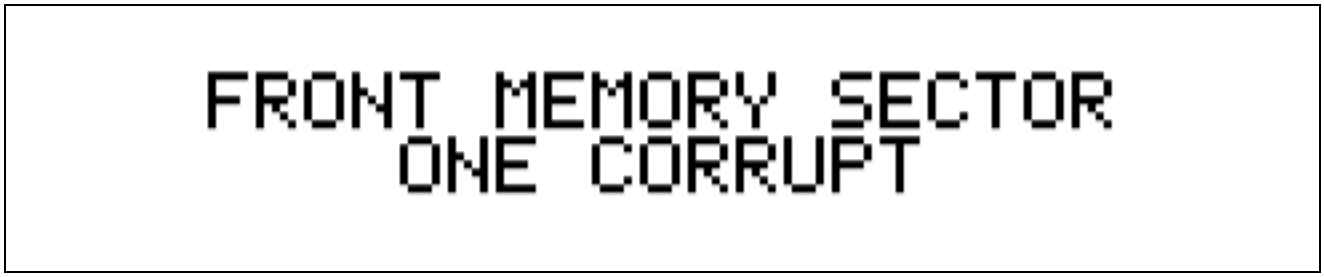
This message can refer to any of the eight angle sensors on the Sidelifter

The message only occurs during angle sensor calibration.

Check:

- The Angle Sensor is bolted to the correct side of the Arm or Stabiliser and that the orientation is correct (i.e. wire pointing upwards)
- The angle sensor selected on the display menu corresponds with the Arm or Stabiliser that has been set-up with the Plumb-Bob
- If difficulty is encountered with calibrating the Top Arm Angle Sensor, then try swapping it with the Bottom Arm Angle Sensor and recalibrate both

Memory Sector One Corrupt



This message can appear for either the Front or Rear ECU

- Memory Sector One of the Rear ECU saves the:
  - Last Stabiliser Extension
  - Last Load
  - Operating Hours
  - Estimated Number of Lifts (only from 2007)
  - Next Service Due
- The Rear ECU Memory Sector One variables are accessible via the LCD screen
- The variables are saved back to memory every time the SMARTlift system is switched off

- Data corruption can occur if the battery supply is interrupted while the system is operating. i.e. The motorcycle battery is disconnected while SMARTlift is 'ON'
- In the event of the Rear Memory Sector being corrupted it is likely that the Operating Hours will need to be reset. Also the Next Service Due Hours should also be reset
- The Front ECU contains a duplicate of the above information but it is **NOT** accessible via the LCD screen

Procedure for resetting the Operating Hours

- Enter the MANUFACTURERS AREA using the PIN 2111

- Using the Dial select the point in the top right hand corner of the screen
- The Change Operating Hours Screen will appear, enter the PIN number (STEELBRO must be contacted for authorisation) using the dial
- Once the PIN number is entered a moving OK will display next to the PIN number
- The Estimated Operating Hours can now be set
- The Service Due Hours can be set in the normal way by following procedure SL0025_1GB

Memory Sector Two Corrupt

This message can appear for either the Front or Rear ECU

- Memory Sector Two of each ECU saves the Angle Sensor Calibration Data
- If this message appears then the Front or Rear Crane will have to be recalibrated according to procedure SL0005_2GB

Memory Sector Three Corrupt

This message can appear for either the Front or Rear ECU

- Memory Sector Three of each ECU saves the Crane Synchronisation Data
- If this message appears then the cranes will have to be re-synchronised according to the procedure described in the Sidelifter Operators Manual