

# DD-220T DISPLAYS OPERATOR MANUAL



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## Revision to Manual

Revision Number	Description of Change	Date
00	New Release	7/5/2011

# DD220T DISPLAYS OPERATOR MANUAL



# **Table of Contents**

## **Carriage Display**

<b>Section 1.....</b>	<b>Screen Navigation</b>
<b>Section 2.....</b>	<b>Diagnostics</b>
<b>Section 3.....</b>	<b>Screen Setup</b>
<b>Section 4.....</b>	<b>Icons</b>
<b>Section 5.....</b>	<b>Fault Messages</b>

## **Rotary Display**

<b>Section 6.....</b>	<b>Screen Navigation</b>
<b>Section 7.....</b>	<b>Diagnostics</b>
<b>Section 8.....</b>	<b>Screen Setup</b>
<b>Section 9.....</b>	<b>Icons</b>
<b>Section 10.....</b>	<b>Fault Messages</b>

## **Wrench/Engine Display**

<b>Section 11.....</b>	<b>Screen Navigation</b>
<b>Section 12.....</b>	<b>Diagnostics</b>
<b>Section 13.....</b>	<b>Screen Setup</b>
<b>Section 14.....</b>	<b>Icons</b>
<b>Section 15.....</b>	<b>Fault Messages</b>

# Section 1

## Section 1

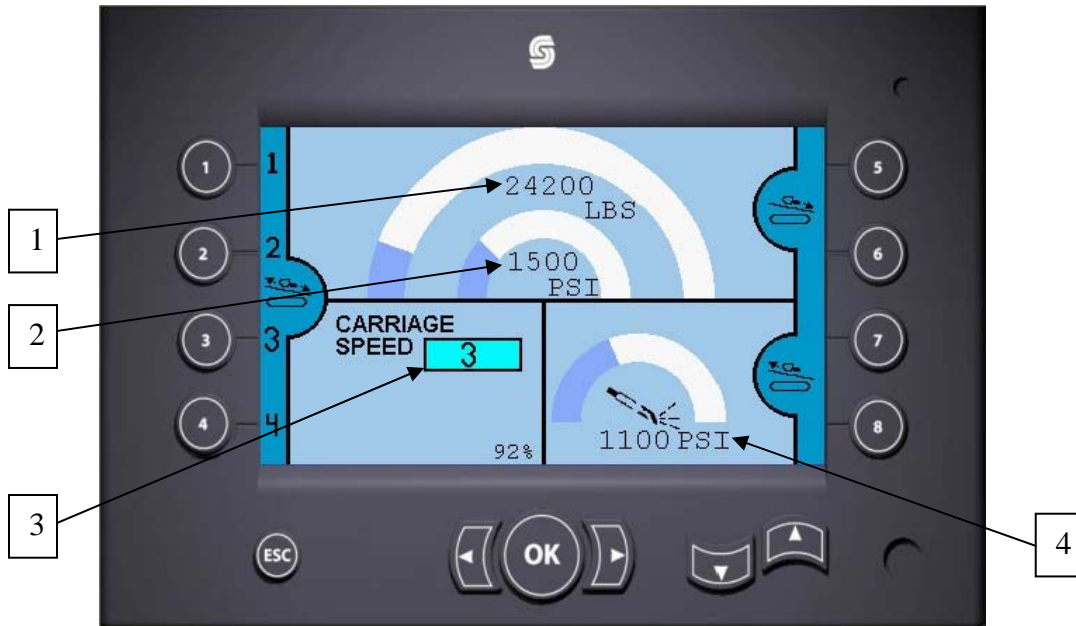
## Carriage Screen Navigation

When you first power up the display, the American Augers Logo appears (screen 1).



After 3 seconds, this screen times out and goes to the Carriage Pressure Screen.

Carriage Pressure Screen (screen 2).



Carriage Pressure Screen displays:

1. Carriage Force
2. Carriage Hydraulic Pressure
3. Carriage Motor Speed
4. Mud Pressure

Screen Options



Goes to Mud Auto Drill Screen (screen 3)



Goes to Yellow Fault Message Screen (screen 5)



Carriage Speed

OR



adjustment



Pulls out the Carriage Thrust/Pullback pressure adjustment

OR

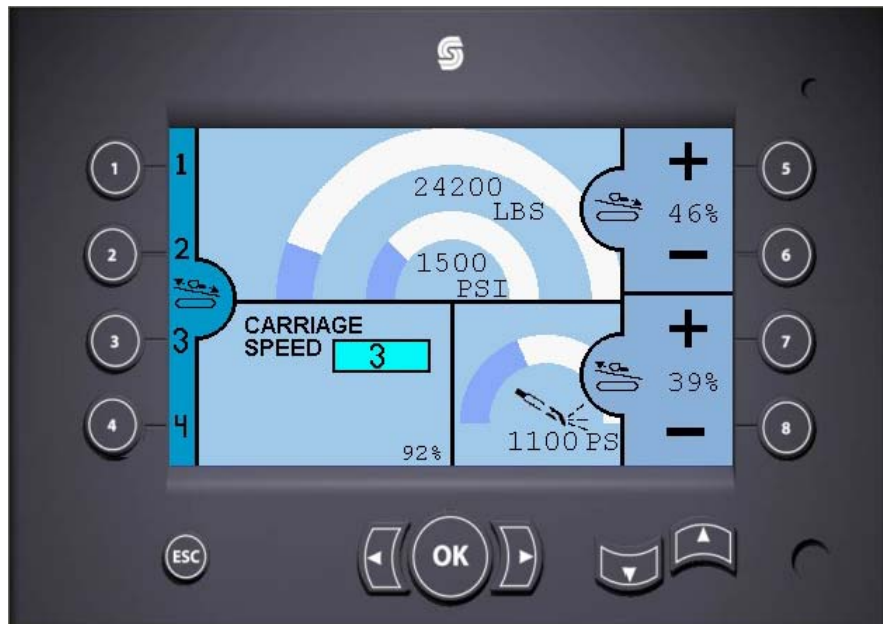


window (screen 2a)



Goes to American Augers Logo (screen 1)

## Carriage Pressure Adjustment Screen (screen 2b).



Allows adjustment of the Carriage Thrust and Pullback pressures. Window will disappear 3 seconds after last button was released.

Screen Options

Increases thrust pressure.



Decreases thrust pressure.

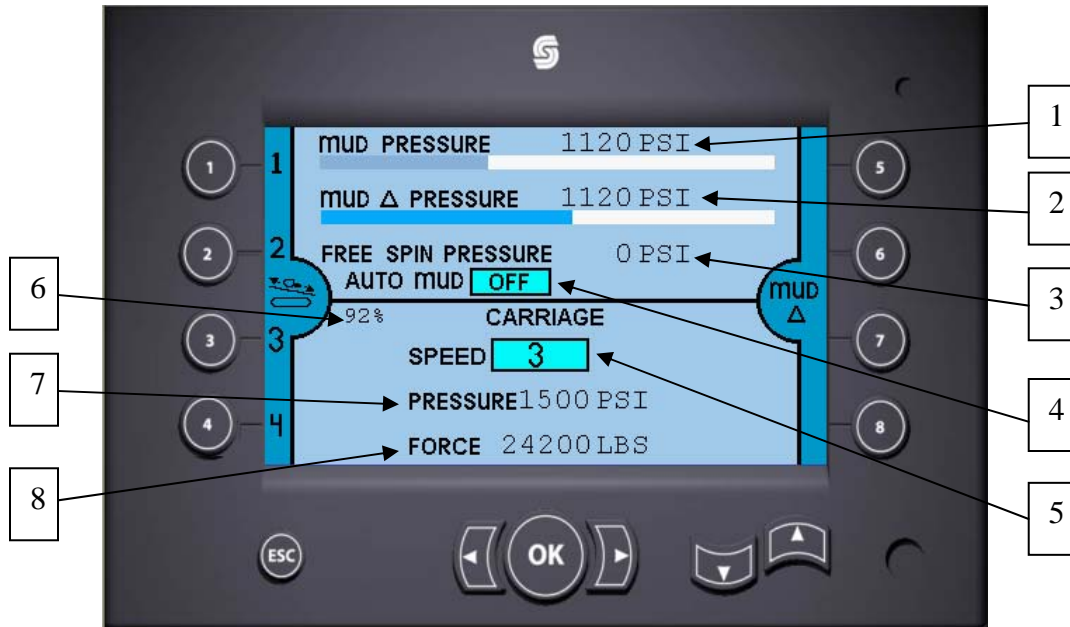


Increases pullback pressure.



Decreases pullback pressure.

Mud Auto Drill Screen (screen 3).



Carriage Force Screen displays:

1. Mud Pressure at Carriage
2. Differential Mud Pressure
3. Free Spin (Off-Face) Mud Pressure
4. Mud Auto-Drill mode
5. Carriage Motor Speed
6. Carriage Joystick Derate
7. Carriage Hydraulic Pressure
8. Carriage Force

Screen Options



Goes to Red Fault Message Screen (screen 4)



Goes to Carriage Pressure Screen (screen 2)



Carriage Speed adjustment

OR



adjustment



Pulls out the Mud Auto-Drill operation

OR

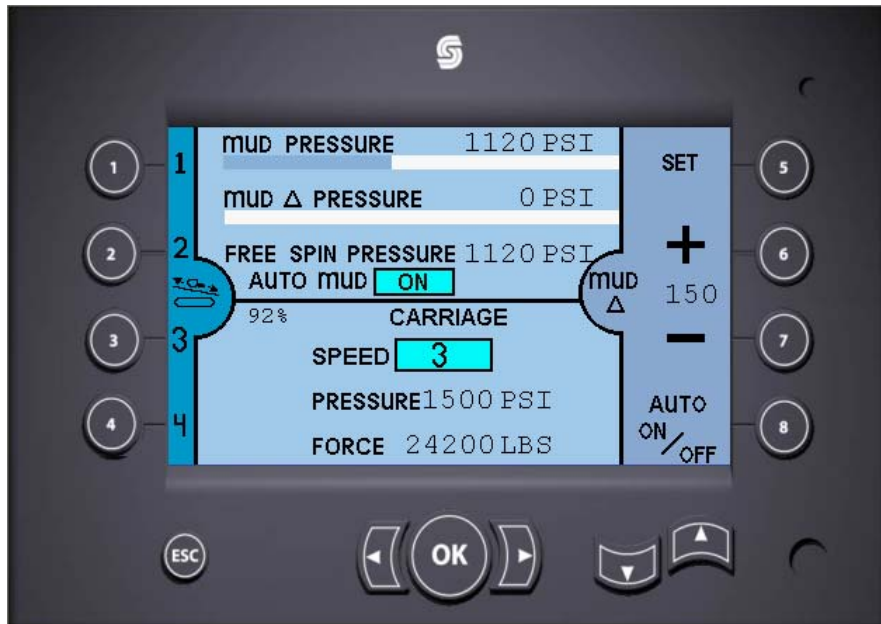


window (screen 3a)



Goes to American Augers Logo (screen 1)

## Mud Auto-Drill Operation Screen (screen 3a).



Allows adjustment of the Mud Auto-Drill operations. Window will disappear 3 seconds after last button was released. Both windows (4a and 4b) can be open at the same time.

Screen Options

Sets free-spin (off-face) mud pressure.



Increases requested differential mud pressure.



Decreases requested differential mud pressure.



Toggles mud auto-drill mode on or off.

**Carriage Red Fault Message Screen (screen 4).**



**Carriage Red Fault Message Screen displays any:**

1. Loss of communication between displays, joysticks, & control modules.
2. Problem with joystick or control module.

**Screen Options**



**Goes to Yellow Fault Message Screen (screen 5)**



**Goes to Mud Auto Drill Screen (screen 3)**



**Goes to Carriage Joystick/Pump Diagnostic Screen (screen 7)**



**Goes to American Augers Logo (screen 1)**

**Carriage Yellow Fault Message Screen (screen 5).**



**Carriage Yellow Fault Message Screen displays any:**

- 1. Solenoids or relay coils that have failed (open).**
- 2. Transducers that have failed (shorted/open).**
- 3. Filters that require service.**

**Screen Options**



**Goes to Carriage Pressure Screen (screen 2)**



**Goes to Red Fault Message Screen (screen 4)**



**Goes to Carriage Joystick/Pump Diagnostic Screen (screen 7)**



**Goes to American Augers Logo (screen 1)**

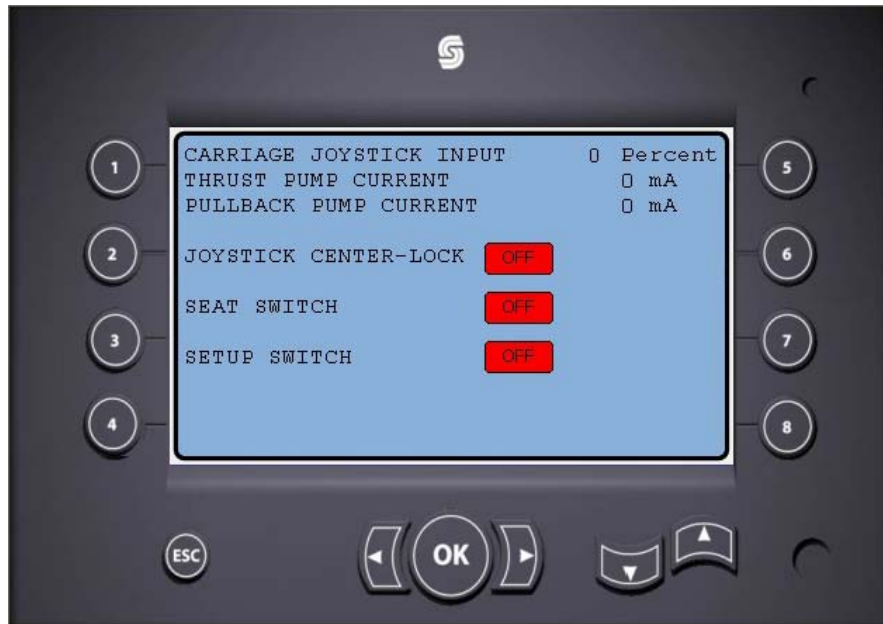
## Section 2

### Section 2

### Carriage Diagnostics

**NOTE:** To access the diagnostic screens, go to either the Red Fault Message screen (screen 4) or Yellow Fault Message screen (screen 5) and then press buttons 1 and 5 at the same time.

#### Carriage Joystick/Pump Diagnostic (screen 7)



**Carriage Joystick** – indicates carriage joystick output. The normal range is from -100% (pullback) to 100% (thrust) with 0 in neutral.

**Actual Thrust/Pullback** – indicates actual processor output current per joystick request.

**Joystick Center Lock** – indicates grip switch position. (Off = no operator)

**Seat Switch** – indicates when operator is present in seat. (Off = no operator)

**Setup Switch** – indicates drill / setup switch mode. (Off = drill mode)

#### Screen Options



Goes to Carriage Pressure Controls Diagnostic Screen (screen 8)



Goes to Carriage Pressure Screen (screen 2)



Goes to American Augers Logo (screen 1)

## Carriage Pressure Controls Diagnostic (screen 8)



**Carriage Pressure Control Outputs** – indicates requested/actual processor output currents to thrust/pullback pressure coils per display request.  
**Carriage Pressure** – indicates the carriage hydraulic pressure.  
**Left/Right Bank Pressure** – indicates the hydraulic pressure into the respective valve banks on the hydraulic tank.

Screen Options

Goes to Tracks Diagnostic Screen (screen 9)



Goes to Carriage Joystick/Pump Diagnostic Screen (screen 7)



Goes to American Augers Logo (screen 1)

## Tracks Diagnostic (screen 9)



**Left and Right Track Joystick** – indicates actual outputs from joysticks, indicates requested and actual outputs for left/right sides and front/rear directions.  
**Track Motor Speed** – indicates actual output to track speed solenoid.  
**Seat switch** – indicates operator presence in machine seat. (Off = no operator)  
**Setup** – indicates drill / setup mode position. (Off = drill mode)

Screen Options

Goes to Left Track Setup/Diagnostic Screen (screen 9a)

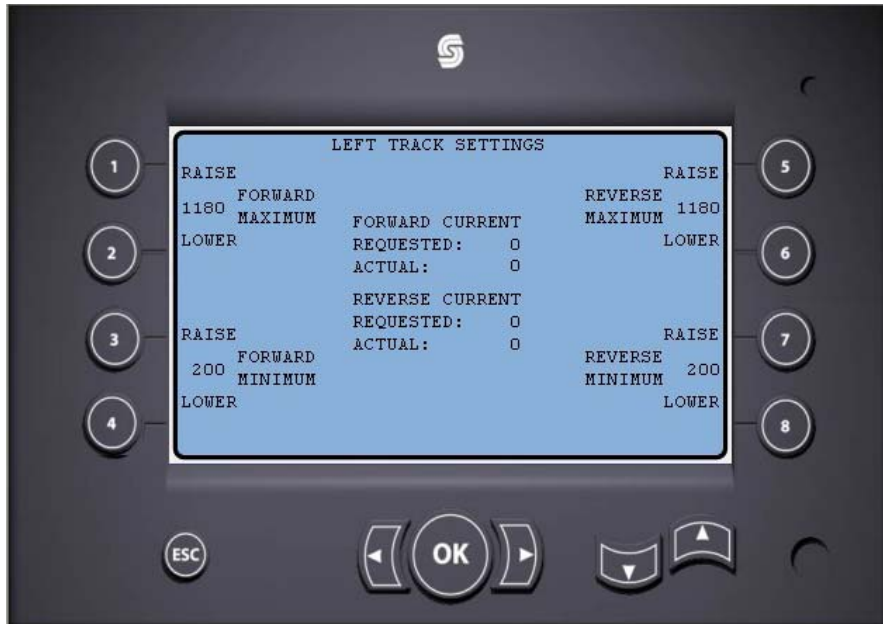


Goes to Carriage Joystick/Pump Screen (screen 8)



Goes to American Augers Logo (screen 1)

## Left Track Setup/Diagnostic (screen 9a)



**Left Track Settings** – allows changing output minimum and maximum settings for left track drives. Indicates requested and actual outputs for front and rear directions.

Screen Options

Goes to Right Track Setup/Diagnostic Screen (screen 9b)

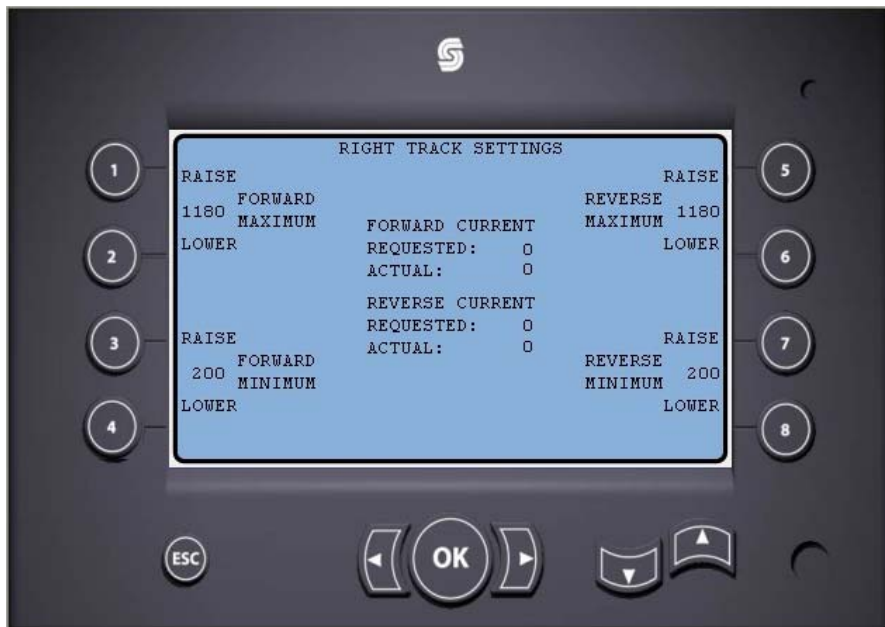


Goes to Tracks Diagnostic Screen (screen 9)



Goes to American Augers Logo (screen 1)

## Right Track Setup/Diagnostic (screen 9b)



**Right Track Settings** – allows changing output minimum and maximum settings for right track drives. Indicates requested and actual outputs for front and rear directions.

Screen Options

Goes to Carriage Pressure Screen (screen 2)



Goes to Left Track Setup/Diagnostic Screen (screen 9a)



Goes to American Augers Logo (screen 1)

## Section 3

### Section 3

### Carriage Screen Setup

Used to adjust the screen brightness and enable key backlight.



Goes to Screen Setup screen (screen 10). Can be used at any time to adjust the screen brightness and/or turn off or on the key backlight. The Key Backlight lights up the buttons to be visible in low light conditions.

### Screen Setup (screen 10)



### Screen Options



Scrolls the highlighted bar up



Scrolls the highlighted bar down



Selects whichever option you have highlighted

**Option 1 – Units of Pressure and Force (screen 10a)**



**Screen Options**



**Selects SAE units of measure**



**Selects metric units of measure**

**Option 1 - Screen Brightness (screen 10b)**



**Screen Options**



**Decreases the screen brightness**



**Increases the screen brightness**



**Exits the screen**

Option 2 – Key Backlight (screen 10c or 10d). A green or red message will automatically appear when the 'OK' button is selected, indicating whether the feature is 'on' or 'off'. The message is active for approximately one second before defaulting back to Screen Setup screen (screen 10). Pressing the 'OK' button will toggle between 'on' and 'off'.

Backlight On (screen 10c)



OR

Backlight Off (screen 10d)



**Screen Options**



**Scrolls the highlighted bar up**



**Scrolls the highlighted bar down**



**Selects whichever option you have highlighted**

**Option 3 – Save and Exit**

**Goes to Carriage Pressure Screen (screen 2)**

## Section 4

### Icons



Error, navigate to Red page using up/down arrow



Error, navigate to Yellow page using up/down arrow



Filter restricted, check Yellow page



Brake applied while the carriage joystick is active

## Section 5

### Section 5

### Carriage Fault Messages

---

**Error      Carriage joystick not communicating with drill**

**Cause      No CAN communication with the carriage joystick**

**Effect      Carriage pumps are disabled**

**Remedy     Check power & CAN wiring  
              Check carriage joystick and connector**

---

**Error      Drill not communicating with carriage display**

**Cause      No CAN communication with the carriage display**

**Effect      Carriage display is disabled**

**Remedy     Check CAN wiring  
              Check power wiring**

---

**Error      Rotary display not communicating with drill**

**Cause      No CAN communication with the rotary display**

**Effect      Rotary display is disabled**

**Remedy     Check power & CAN wiring from Rotary display to terminals  
              Check Rotary display connector**

---

**Error      Wrench/Engine display not communicating with drill**

**Cause      No CAN communication with the wrench/engine display**

**Effect      Wrench/Engine display is disabled**

**Remedy     Check power & CAN wiring from Wrench/Engine display to terminals  
              Check Wrench/Engine display connector**

---

**Error      Carriage not communicating with drill****Cause      No CAN communication with the carriage****Effect      Carriage and rotary pumps are disabled****Remedy    Check power and CAN wiring from carriage module to terminals  
to main junction box**

---

**Error      Drill not communicating with carriage****Cause      No CAN communication with the drill****Effect      Carriage and rotary brakes are disabled****Remedy    Check CAN wiring  
Check power wiring**

---

**Error      A problem has been detected in the power unit  
processor****Cause      Processor signal out of range****Effect      Carriage and rotary pumps are disabled****Remedy    Check CAN wiring  
Check power wiring  
Check processor**

---

**Error      A problem has been detected in the carriage joystick****Cause      Joystick signal out of range****Effect      Carriage pumps are disabled****Remedy    Check CAN wiring  
Check power wiring  
Check joystick operation (use service tool screen #1)**

---

**Error**      **A problem has been detected in the carriage joystick centerlock over-ride switch**

**Cause**      Joystick centerlock over-ride switch not operating properly

**Effect**      Carriage pumps are disabled

**Remedy**    Check CAN wiring  
Check power wiring  
Check joystick operation (use service tool screen #1)

---

**Error**      **Carriage speed solenoid open**

**Cause**      Solenoid is open  
Solenoid is shorted to ground or power

**Effect**      Carriage motor high speed is disabled

**Remedy**    Measure resistance across solenoid, check for open or short  
Check wiring from processor to solenoid

---

**Error**      **Carriage brake solenoid open**

**Cause**      Solenoid is open  
Solenoid is shorted to ground or power

**Effect**      Carriage movement is disabled

**Remedy**    Measure resistance across solenoid, check for open or short  
Check wiring from processor to solenoid

---

**Error**      **Carriage pump (EDC) solenoid open**

**Cause**      Solenoid is open  
Solenoid is shorted to ground or power

**Effect**      Affected pump has little or no output

**Remedy**    Measure resistance across solenoid, check for open or short  
Check wiring from processor to solenoid

---

**Error      Carriage pressure transducer is shorted or open**

**Cause      Transducer is open  
              Transducer is shorted to ground or power**

**Effect      Improper carriage pressure and force gauge indication**

**Remedy     Check transducer and connector  
              Check wiring from processor to transducer**

---

**Error      Carriage pressure has exceeded working pressure**

**Cause      Carriage hydraulic pressure is above 6000psi**

**Effect      Possible component failure  
              Personnel injury or death**

**Remedy     Lower carriage pressure control setting**

---

**Error      Service filter (various)**

**Cause      Filter is restricted  
              Hydraulic oil is below operating temperature**

**Effect      Indication only**

**Remedy     Change filter if restricted  
              During startup, reduce machine load until oil has warmed up**

---

## Section 6

### Section 6

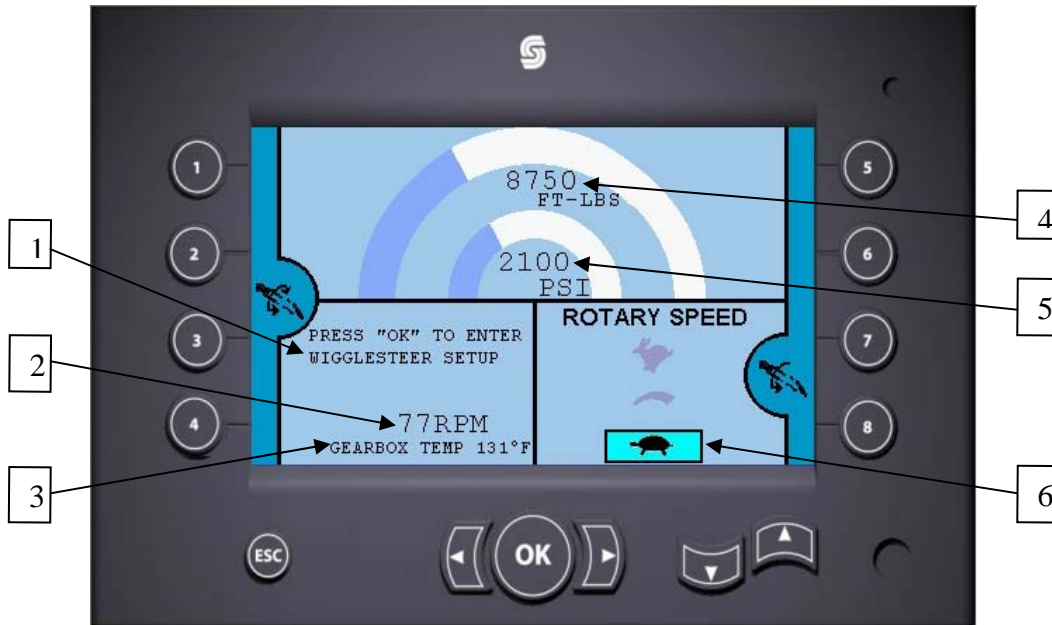
### Rotary Screen Navigation

When you first power up the display, the American Augers Logo appears (screen 21).



After 3 seconds, this screen times out and goes to the Rotary Pressure Screen.

Rotary Pressure Screen (screen 22).



Rotary Pressure Screen displays:

1. Wiggle Steer Indicator
2. Rotary Speed (Rounds per Minute)
3. Rotary Motor Gearbox Temperature (Higher of left or right)
4. Rotary Torque
5. Rotary Pressure
6. Rotary Motor Speed selected

Screen Options



Goes to Red Fault Screen (screen 26)



Goes to Yellow Fault Message Screen (screen 27)



Pulls out the Rotary Motor Speed

OR



adjustment window (screen 22a)



Pulls out the Rotary Makeup

OR



pressure adjustment window (screen 22b)

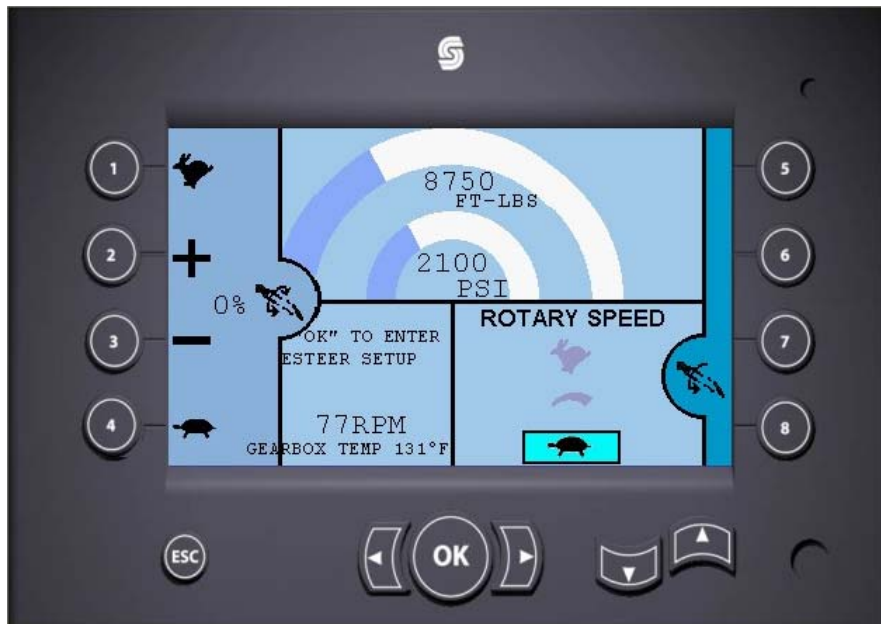


Goes to Wiggle Steer Screen (screen 23)



Goes to American Augers Logo (screen 21)

## Rotary Motor Speed Adjustment Screen (screen 22a).



Allows adjustment of the Rotary Motor Speed. Window will disappear 3 seconds after last button was released.

Screen Options

Shifts rotary motors to high speed.



Varies rotary motors toward high speed.



Varies rotary motors toward low speed.



Shifts rotary motors to low speed.

**Rotary Pressure Adjustment Screen (screen 22b).**



**Allows adjustment of the Rotary Makeup and Breakout pressures. Window will disappear 3 seconds after last button was released.**

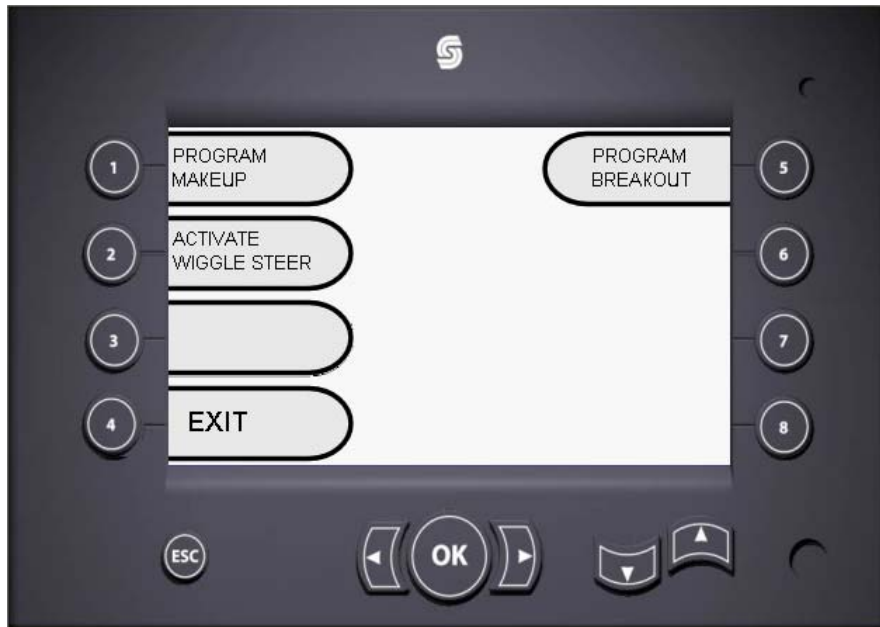
**Screen Options**



**Increases makeup pressure.**



**Decreases makeup pressure.**

**Wiggle Steer Screen (screen 23).****Screen Options**

**Goes to Wiggle Steer Makeup Setup Screen (screen 24)**



**Activates Wiggle Steer.**



**Deactivates Wiggle Steer.**



**Goes to Rotary Pressure Screen (screen 22).**



**Goes to Wiggle Steer Breakout Setup Screen (screen 25)**

Wiggle Steer Makeup Setup Screen (screen 24).



**Screen Options**



**Scrolls the highlighted bar up**



**Scrolls the highlighted bar down**



**Selects whichever option is highlighted**

**Option 1 – Makeup Count reset (screen 24a). A red message will automatically appear when the 'OK' button is selected, indicating that the count is 'reset'. The message is active for approximately one second before defaulting back to Wiggle Steer Makeup Setup screen (screen 24). Pressing the 'OK' button will again 'reset' the count.**



**Option 2 – Makeup Count adjusting screen (screen 24b).**



**Screen Options**



**Increments the desired Makeup wiggle rotation up**



**Increments the desired Makeup wiggle rotation down**



**Goes to Wiggle Steer Makeup Setup Screen (screen 24)**

**Option 3 – Save and Exit**

**Goes to Wiggle Steer Screen (screen 23).**

**Wiggle Steer Breakout Setup Screen (screen 25).**



**Screen Options**



**Scrolls the highlighted bar up**



**Scrolls the highlighted bar down**



**Selects whichever option is highlighted**

**Option 1 – Breakout Count reset (screen 25a). A red message will automatically appear when the 'OK' button is selected, indicating that the count is 'reset'. The message is active for approximately one second before defaulting back to Wiggle Steer Breakout Setup screen (screen 25). Pressing the 'OK' button will again 'reset' the count.**



**Option 2 – Breakout Count adjusting screen (screen 25b).**



**Screen Options**



**Increments the desired Breakout wiggle rotation up**



**Increments the desired Breakout wiggle rotation down**



**Goes to Wiggle Steer Breakoutp Setup Screen (screen 25)**

**Option 3 – Save and Exit**

**Goes to Wiggle Steer Screen (screen 23).**

**Rotary Red Fault Message Screen (screen 26).**



**Rotary Red Fault Message Screen displays any:**

- 1. Loss of communication between displays, joysticks, & control modules.**
- 2. Problem with joystick or control module.**
- 3. Rotary hydraulic pressure errors.**

**Screen Options**



**Goes to Yellow Fault Message Screen (screen 27)**



**Goes to Rotary Pressure Screen (screen 22)**



**Goes to Rotary Joystick/Pump Diagnostic Screen (screen 28)**



**Goes to American Augers Logo (screen 21)**

## Rotary Yellow Fault Message Screen (screen 27).



Rotary Yellow Fault Message Screen displays any:

1. Solenoids or relay coils that have failed (open).
2. Transducers that have failed (shorted/open).
3. Filters that require service.
4. Low fuel/hydraulic oil tank levels.

Screen Options

Goes to Rotary Pressure Screen (screen 22)



Goes to Red Fault Message Screen (screen 26)



Goes to Rotary Joystick/Pump Diagnostic Screen (screen 28)



Goes to American Augers Logo (screen 21)

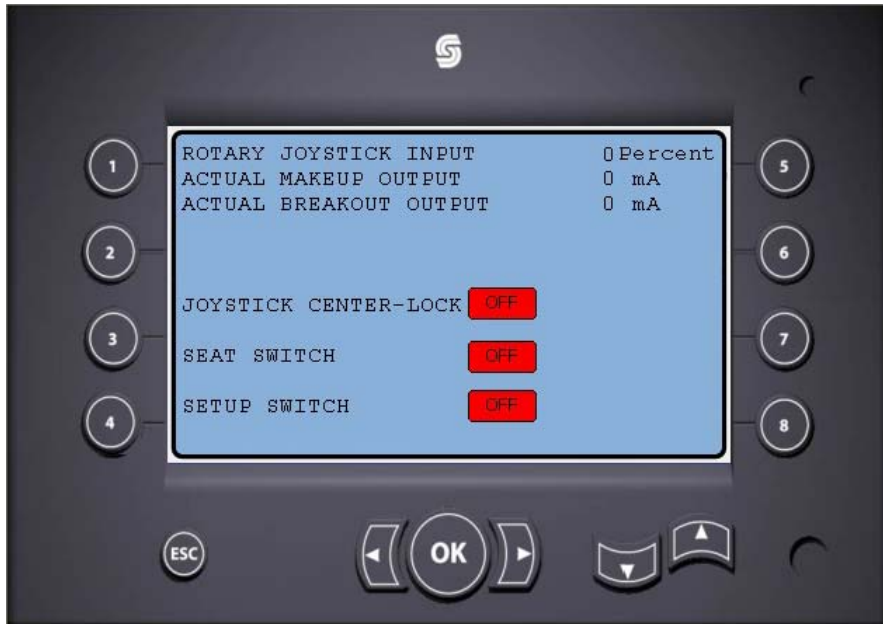
## Section 7

### Section 7

### Rotary Diagnostics

**NOTE:** To access the diagnostic screens, go to either the Red Fault Message screen (screen 26) or Yellow Fault Message screen (screen 27) and then press buttons 1 and 5 at the same time.

#### Rotary Joystick/Pump Diagnostic (screen 28)



**Rotary Joystick** – indicates rotary joystick output. The normal range is from -100% (breakout) to 100% (makeup) with 0 in neutral.  
**Actual Makeup/Breakout** – indicates actual processor output current per joystick request.

**Joystick Center Lock** – indicates grip switch is position. (Off = no operator)

**Seat Switch** – indicates when operator is present is seat. (Off = no operator)

**Setup Switch** – indicates drill / setup switch mode. (Off = drill mode)

#### Screen Options



Goes to Pipe Supports Diagnostic Screen (screen 29)



Goes to Rotary Pressure Screen (screen 22)



Goes to American Augers Logo (screen 21)

## Pipe Supports Diagnostic Screen (screen 29)



**Joystick Top Rockers** – indicates rotary joystick rocker outputs. The normal range is from -100% (lower) to 100% (raise) with 0 in neutral.

**Actual Pipe Supports** – indicates actual processor output per joystick request.

### Screen Options



Goes to Rotary Pressure Controls Diagnostic Screen (screen 30)



Goes to Rotary Joystick/Pump Screen (screen 28)



Goes to American Augers Logo (screen 21)

## Rotary Pressure Controls Diagnostic Screen (screen 30)



**Rotary Pressure Control Outputs** – indicates requested/actual processor output currents to makeup/breakout pressure coils per display request.

**Left/Rotary Gearbox Temperature** – indicates the temperature of the respective rotary planetary gearbox. **NOTE:** The temperature readout is only accurate between 122°F and 257°F.

**Rotary Gearbox Cooler** – indicates whether the rotary planetary gearbox cooling system is turned on or off.

Screen Options

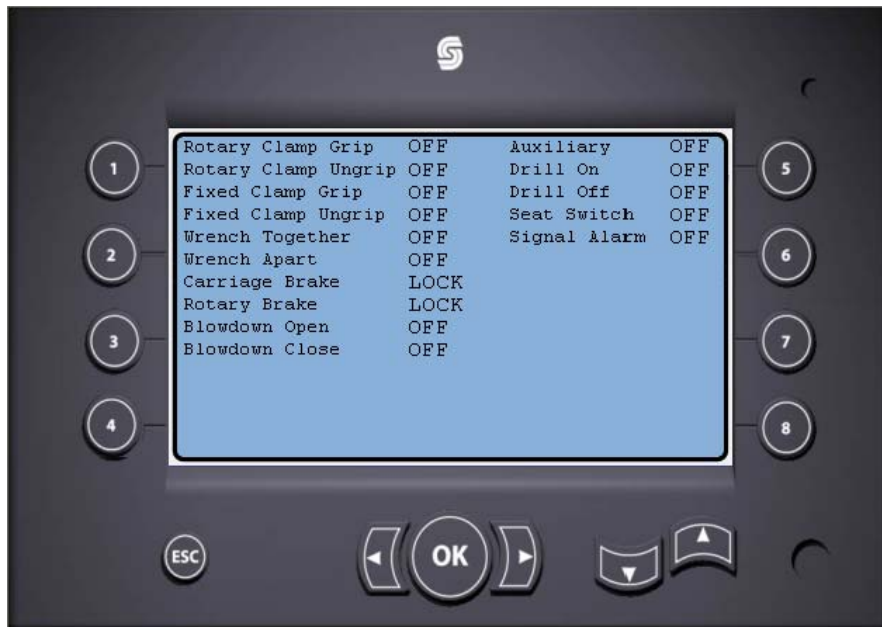
Goes to Drill Console Diagnostic Screen (screen 31)



Goes to Pipe Supports Screen (screen 29)



Goes to American Augers Logo (screen 21)

**Drill Console Diagnostic Screen (screen 31)**

**Console Switches – indicates the inputs from various switches on console.**

**Screen Options**

**Goes to Rotary Motor Speed Control Screen (screen 32)**

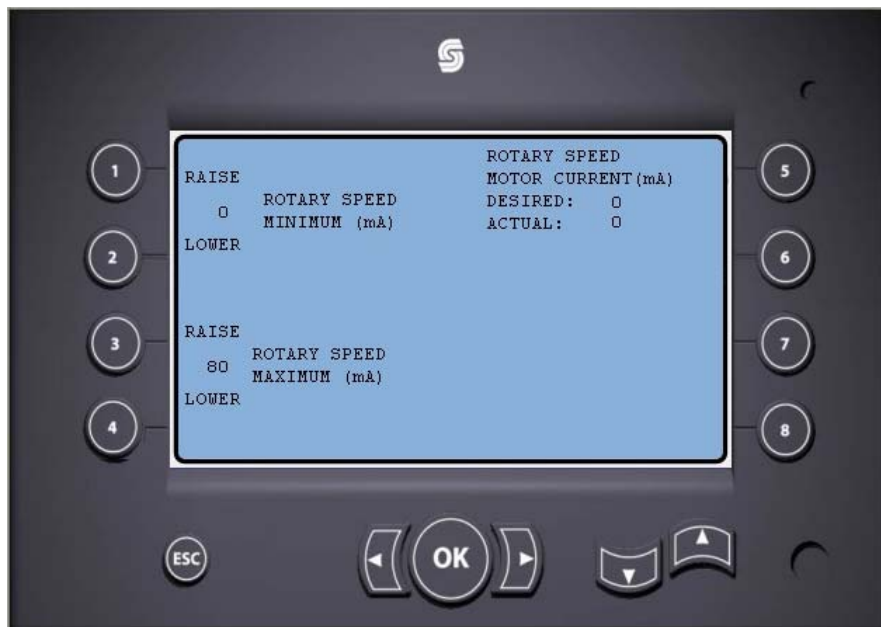


**Goes to Rotary Pressure Controls Diagnostic Screen (screen 30)**



**Goes to American Augers Logo (screen 21)**

## Rotary Motor Speed Control &amp; Diagnostic Screen (screen 32)



**Rotary Motor Speed Control Output** – indicates requested/actual processor output current to rotary motor speed coils per display request.  
**Rotary Motor Speed Settings** – allows changing output minimum and maximum settings for rotary motor speed.

Screen Options

Goes to Rotary Pressure Screen (screen 22)



Goes to Drill Console Diagnostic Screen (screen 31)



Goes to American Augers Logo (screen 21)

## Section 8

### Section 8

### Rotary Screen Setup

Used to adjust the screen brightness and enable key backlight.



Goes to Screen Setup screen (screen 33). Can be used at any time to adjust the screen brightness and/or turn off or on the key backlight. The Key Backlight lights up the buttons to be visible in low light conditions.

### Screen Setup (screen 33)



### Screen Options



Scrolls the highlighted bar up



Scrolls the highlighted bar down



Selects whichever option you have highlighted

**Option 1 – Units of Pressure and Torque (screen 33a)**



**Screen Options**



**Selects SAE units of measure**



**Selects metric units of measure**

**Option 1 - Screen Brightness (screen 33b)**



**Screen Options**



**Decreases the screen brightness**



**Increases the screen brightness**



**Exits the screen**

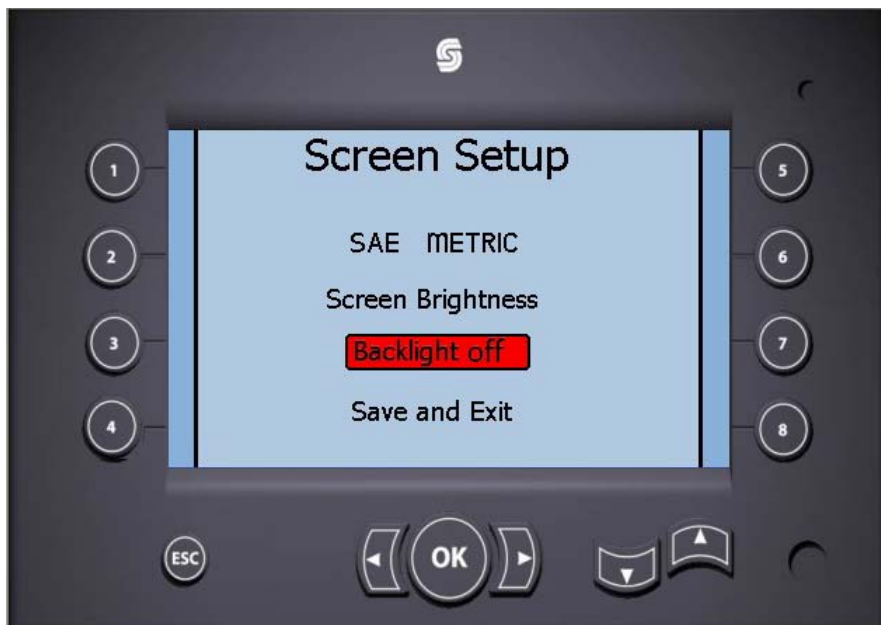
**Option 2 – Key Backlight (screen 33c or 33d).** A green or red message will automatically appear when the 'OK' button is selected, indicating whether the feature is 'on' or 'off'. The message is active for approximately one second before defaulting back to Screen Setup screen (screen 33). Pressing the 'OK' button will toggle between 'on' and 'off'.

**Backlight On (screen 33c)**



OR

**Backlight Off (screen 33d)**



**Screen Options**



**Scrolls the highlighted bar up**



**Scrolls the highlighted bar down**



**Selects whichever option you have highlighted**

**Option 3 – Save and Exit**

**Goes to Rotary Pressure Screen (screen 22)**

# Section 9

## Icons



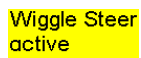
Error, navigate to Red page using up/down arrow



Error navigate to Yellow page using up/down arrow



Filter restricted, check Yellow page



Wiggle Steer mode activated



Brake applied while rotary joystick is active

## Section 10

### Section 10

### Rotary Fault Messages

---

**Error**      **Rotary joystick not communicating with drill**

**Cause**      No CAN communication with the rotary joystick

**Effect**      Rotary pumps are disabled

**Remedy**     Check power & CAN wiring  
Check rotary joystick and connector

---

**Error**      **Drill not communicating with rotary display**

**Cause**      No CAN communication with the rotary display

**Effect**      Rotary display is disabled

**Remedy**     Check CAN wiring  
Check power wiring

---

**Error**      **Carriage display not communicating with drill**

**Cause**      No CAN communication with the carriage display

**Effect**      Carriage display is disabled

**Remedy**     Check power & CAN wiring from Carriage display to terminals  
Check carriage display connector

---

**Error**      **Wrench/Engine display not communicating with drill**

**Cause**      No CAN communication with the wrench/engine display

**Effect**      Wrench/Engine display is disabled

**Remedy**     Check power & CAN wiring from Wrench/Engine display to terminals  
Check wrench/engine display connector

---

**Error**      **A problem has been detected in the rotary joystick**

**Cause**      Joystick signal out of range

**Effect**      Rotary pumps are disabled

**Remedy**    Check CAN wiring  
                 Check power wiring  
                 Check joystick operation (use service tool screen #1)

---

**Error**      **A problem has been detected in the rotary joystick  
centerlock over-ride switch**

**Cause**      Joystick centerlock over-ride switch not operating properly

**Effect**      Rotary pumps are disabled

**Remedy**    Check CAN wiring  
                 Check power wiring  
                 Check joystick operation (use service tool screen #1)

---

**Error**      **A problem has been detected in the power unit  
processor**

**Cause**      Processor signal out of range

**Effect**      Carriage and rotary pumps are disabled

**Remedy**    Check CAN wiring  
                 Check power wiring  
                 Check processor

---

**Error**      **Rotary pressure has exceeded working pressure**

**Cause**      Rotary hydraulic pressure is above 6000psi

**Effect**      Possible component failure  
                 Personnel injury or death

**Remedy**    Lower Rotary pressure control setting

---

**Error      Rotary speed solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Rotary motor high and variable speeds are disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotary brake solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Rotary movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotary pump (EDC) solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Affected pump has little or no output**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotary pressure transducer is shorted or open**

**Cause      Transducer is open  
             Transducer is shorted to ground or power**

**Effect      Improper rotary pressure and torque gauge indication**

**Remedy    Check transducer and connector  
             Check wiring from processor to transducer**

---

**Error      Service filter (various)**

**Cause      Filter is restricted  
Hydraulic oil is below operating temperature**

**Effect      Indication only.**

**Remedy    Change filter if restricted  
During startup, reduce machine load until oil has warmed up**

---

**Error      Fuel tank level low**

**Cause      Low fuel level in tank**

**Effect      Drill functions are shutdown upon loss of fuel pressure to engine(s).**

**Remedy    Add fuel as needed**

---

**Error      Hydraulic oil tank level low**

**Cause      Low hydraulic oil level in tank**

**Effect      Overheating of hydraulic oil  
Erratic machine functioning  
Machine damage**

**Remedy    Add hydraulic oil as needed**

---

# Section 11

## Section 11

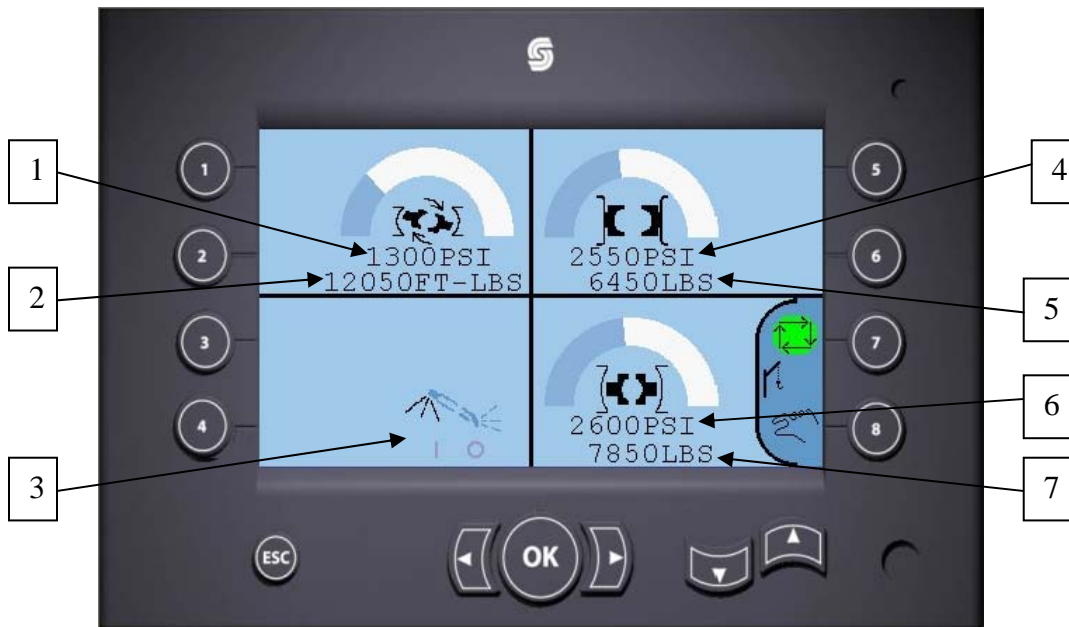
## Wrench/Engine Screen Navigation

When you first power up the display, the American Augers Logo appears (screen 41).



After 3 seconds, this screen times out and goes to the Wrench / Clamps Pressure Screen.

## Wrench / Clamps Pressure Screen (screen 42).



## Wrench / Clamps Pressure Screen displays:

1. Makeup/Breakout Pressure
2. Makeup/Breakout Torque
3. Mud Blowdown position indicator
4. Fixed Clamp Pressure
5. Fixed Clamp Force
6. Rotating Clamp Pressure
7. Rotating Clamp Force

Screen Options

Goes to Engine RPM Screen (screen 43)



Goes to Fuel Level Screen (screen 45)



Selects Automatic Crane Mode of Operation



Selects Manual Crane Mode of Operation



Goes to American Augers Logo (screen 41)

**Engine RPM Screen (screen 43).**



**Engine RPM Screen displays:**

- 1. Engine Rounds per Minute (RPM)
- 2. Engine Oil Pressure
- 3. Engine Coolant Temperature
- 4. Engine Alternator Voltage

**Screen Options**



**Goes to Engine Boost Pressure Screen (screen 44)**



**Goes to Wrench / Clamps Pressure Screen (screen 42)**



**Goes to American Augers Logo (screen 41)**

**Engine Boost Pressure Screen (screen 44).**



**Engine RPM Screen displays:**

1. Engine Intake Air Temperature
2. Engine Boost Pressure

**Screen Options**



**Goes to Fuel Level Screen (screen 45)**

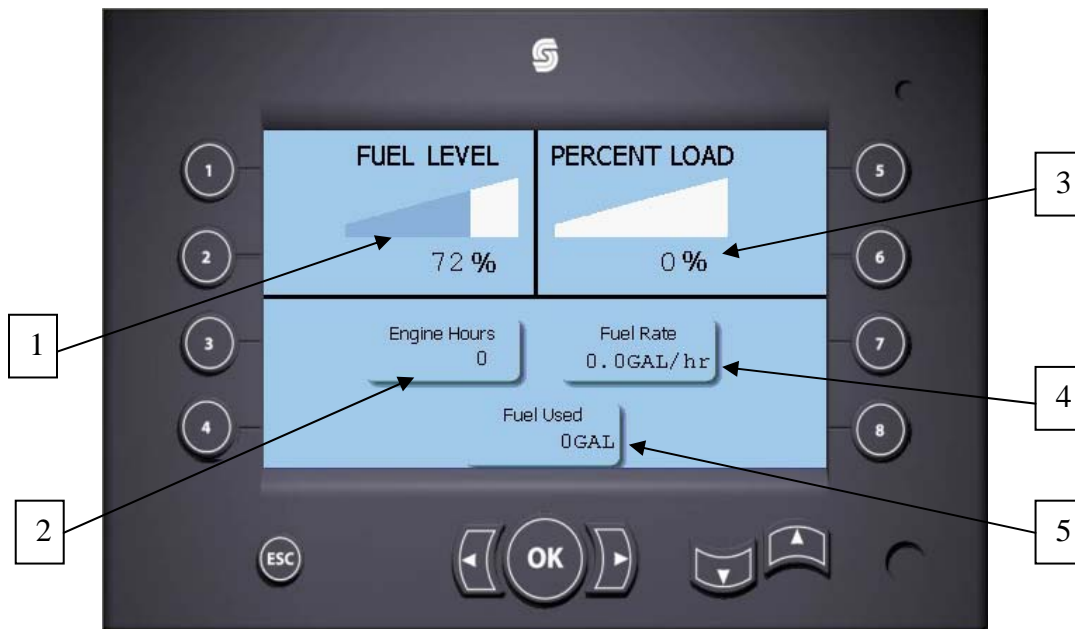


**Goes to Engine RPM Screen (screen 43)**



**Goes to American Augers Logo (screen 41)**

## Fuel Level Screen (screen 45).

**Fuel Level Screen displays:**

1. Fuel Tank Level
2. Engine Hours
3. Engine Load (Percent)
4. Engine Fuel Usage Rate
5. Total fuel used

**Screen Options**

Goes to Wrench Red Fault Message Screen (screen 46)



Goes to Engine Boost Pressure Screen (screen 44)



Goes to American Augers Logo (screen 30)

**Wrench Red Fault Message Screen (screen 46).**

**Wrench Red Fault Message Screen displays any:**

1. Loss of communication between displays & control modules.
2. Fluid level warnings.

**Screen Options**

**Goes to Yellow Fault Message Screen (screen 47)**



**Goes to Fuel Level Screen (screen 45)**



**Goes to Wrench Makeup/Breakout and Travel Diagnostic Screen (screen 49)**



**Goes to American Augers Logo (screen 41)**

**Wrench Yellow Fault Message Screen (screen 47).**

**Wrench Yellow Fault Message Screen displays any:**

1. Solenoids or relay coils that have failed (open).
2. Transducers that have failed (shorted/open).
3. Wrench hydraulic pressure errors.

**Screen Options**

**Goes to Wrench Blue Information Screen (screen 48)**



**Goes to Red Fault Message Screen (screen 46)**

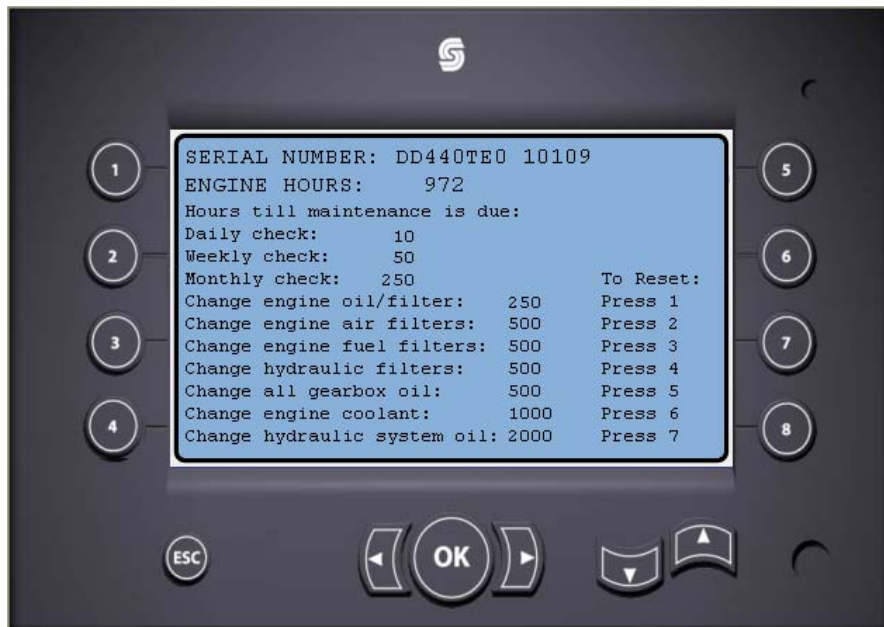


**Goes to Wrench Makeup/Breakout and Travel Diagnostic Screen (screen 49)**



**Goes to American Augers Logo (screen 41)**

## Wrench Blue Information Screen (screen 48).



## Wrench Blue Information Message Screen displays:

1. Machine serial number.
2. Engine operating hours.
3. Time till maintenance due for various machine areas.

Screen Options

Goes to Wrench / Clamps Pressure Screen (screen 42)



Goes to Yellow Fault Message Screen (screen 47)



Goes to Wrench Makeup/Breakout and Travel Diagnostic Screen (screen 49)



Goes to American Augers Logo (screen 41)

## Section 12

### Section 12

### Wrench/Engine Diagnostics

**NOTE:** To access the diagnostic screens, go to either the Red Fault Message screen (screen 46) or Yellow Fault Message screen (screen 47) and then press buttons 1 and 5 at the same time.

**Wrench Makeup/Breakout and Travel Diagnostic Screen (screen 49).**



**Makeup / Breakout** – indicates carriage joystick left top rocker outputs. The normal range is from -100% (makeup) to 100% (breakout) with 0 in neutral. Also indicates actual processor output percentages to makeup/breakout coils.

**Travel Up/Down** – indicates carriage joystick top right rocker outputs. The Normal range is from -100% (down) to 100% (up) with 0 in neutral. Also Indicates actual processor output percentages to travel up/down coils.

### Screen Options



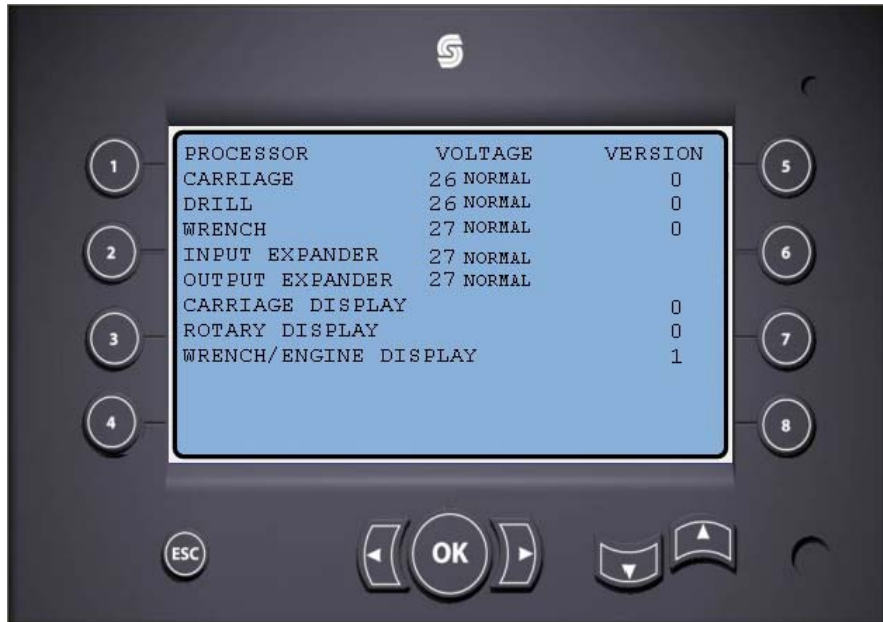
Goes to Processor Voltage Diagnostic Screen (screen 50)



Goes to Wrench / Clamps Pressure Screen (screen 42)



Goes to American Augers Logo (screen 41)

**Processor Voltage & Version Diagnostic Screen (screen 50).**

**Processor Voltages** – indicates the input voltage to each processor.

**Processor Versions** – indicates the version of software used in each processor.

**Screen Options**

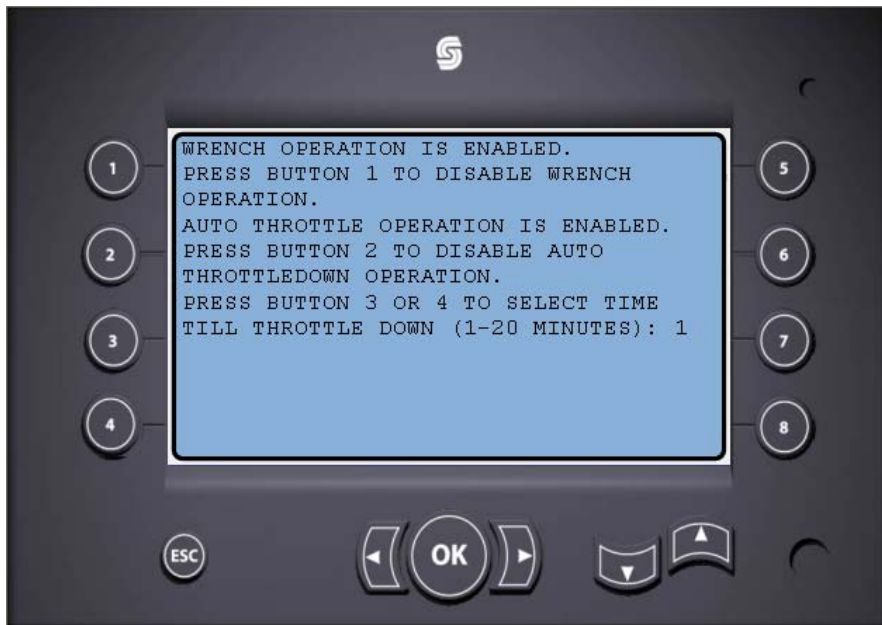
**Goes to Wrench Enable Diagnostic Screen (screen 51)**



**Goes to Wrench Makeup/Breakout and Travel Diagnostic Screen (screen 49)**



**Goes to American Augers Logo (screen 41)**

**Wrench Enable Diagnostic Screen (screen 51).**

**Wrench operation setting – allows enabling or disabling wrench operation.  
Auto-throttle operation setting – allows enabling or disabling auto-throttle operation. Also allows setting the time till auto-throttle down.**

**Screen Options**

**Goes to Wrench / Clamps Pressure Screen (screen 42)**



**Goes to Processor Voltage Diagnostic Screen (screen 50)**



**Goes to American Augers Logo (screen 41)**

## Section 13

### Section 13

### Wrench Screen Setup

Used to adjust the screen brightness and enable key backlight.



Goes to Screen Setup screen (screen 52). Can be used at any time to adjust the screen brightness and/or turn off or on the key backlight. The Key Backlight lights up the buttons to be visible in low light conditions.

### Screen Setup (screen 52)



### Screen Options



Scrolls the highlighted bar up



Scrolls the highlighted bar down



Selects whichever option you have highlighted

**Option 1 – Units of SAE or metric (screen 52a)**



**Screen Options**



**Selects SAE units of measure**



**Selects metric units of measure**

**Option 1 - Screen Brightness (screen 52b)**



**Screen Options**



**Decreases the screen brightness**



**Increases the screen brightness**



**Exits the screen**

**Option 2 – Key Backlight (screen 52c or 52d).** A green or red message will automatically appear when the 'OK' button is selected, indicating whether the feature is 'on' or 'off'. The message is active for approximately one second before defaulting back to Screen Setup screen (screen 52). Pressing the 'OK' button will toggle between 'on' and 'off'.

**Backlight On (screen 52c)**



OR

**Backlight Off (screen 52d)**



**Screen Options**



**Scrolls the highlighted bar up**



**Scrolls the highlighted bar down**



**Selects whichever option you have highlighted**

**Option 3 – Save and Exit**

**Goes to Wrench / Clamps Pressure Screen (screen 42)**

# Section 14

## Icons



Error, navigate to Red page using up/down arrow



Error, navigate to Yellow page using up/down arrow



Error, battery voltage or processor input voltage is low



Maintenance due reminder

## Section 15

### Section 15

### Wrench Fault Messages

---

**Error      Wrench not communicating with drill**

**Cause      No CAN communication with the wrench**

**Effect      All wrench movement is disabled**

**Remedy    Check CAN (2) wiring  
              Check power wiring**

---

**Error      Carriage not communicating with wrench**

**Cause      No CAN communication with the carriage**

**Effect      Wrench travel movement is disabled**

**Remedy    Check CAN (2) wiring  
              Check power wiring**

---

**Error      Drill not communicating with wrench display**

**Cause      No CAN communication with the drill**

**Effect      Wrench display is disabled**

**Remedy    Check CAN wiring  
              Check power wiring**

---

**Error      Carriage display not communicating with drill**

**Cause      No CAN communication with the drill**

**Effect      Carriage display is disabled**

**Remedy    Check power & CAN wiring  
              Check carriage display connector**

---

**Error      Rotary display not communicating with drill**

**Cause      No CAN communication with the drill**

**Effect      Rotary display is disabled**

**Remedy    Check power and CAN wiring  
             Check rotary display connector**

---

**Error      Fuel level low**

**Cause      Low fuel level in tank**

**Effect      Drill functions are shutdown upon loss of fuel pressure to engine.**

**Remedy    Add fuel as required**

---

**Error      Hydraulic oil level low**

**Cause      Low hydraulic oil level in tank**

**Effect      Overheating of hydraulic oil  
             Erratic machine functioning  
             Machine damage**

**Remedy    Add hydraulic oil as required**

---

**Error      Mud pressure too high**

**Cause      Mud system pressure is above 3000psi**

**Effect      Possible component failure  
             Personnel injury or death**

**Remedy    Reduce mud system pressure**

---

**Error**      **Fixed clamp pressure too high**

**Cause**      Fixed clamp system pressure is above 4500psi

**Effect**      Possible component failure  
Personnel injury or death

**Remedy**     Reduce fixed clamp system pressure

---

**Error**      **Rotating clamp pressure too high**

**Cause**      Rotating clamp system pressure is above 4500psi

**Effect**      Possible component failure  
Personnel injury or death

**Remedy**     Reduce rotating clamp system pressure

---

**Error**      **Makeup/breakout pressure too high**

**Cause**      Makeup/breakout system pressure is above 3150psi

**Effect**      Possible component failure  
Personnel injury or death

**Remedy**     Reduce makeup/breakout system pressure

---

**Error**      **Fixed clamp grip solenoid open**

**Cause**      Solenoid is open  
Solenoid is shorted to ground or power

**Effect**      Fixed clamp grip movement is disabled

**Remedy**     Measure resistance across solenoid, check for open or short  
Check wiring from processor to solenoid

---

**Error      Fixed clamp release solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Fixed clamp release movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotating clamp grip solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Rotating clamp grip movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotating clamp release solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Rotating clamp release movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Wrench breakout solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench breakout movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid  
             Check joystick operation (use service tool screen #1)**

---

**Error      Wrench makeup solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench makeup movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid  
             Check joystick operation (use service tool screen #1)**

---

**Error      Wrench separate-together solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench separate-together movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Wrench separate-apart solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench separate-apart movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Wrench downhole travel solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench downhole travel movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid  
             Check joystick operation (use service tool screen #2)**

---

**Error      Wrench uphole travel solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench uphole travel movement is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid  
             Check joystick operation (use service tool screen #2)**

---

**Error      Fixed clamp pressure solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Fixed clamp pressure control is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Rotating clamp pressure solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Rotating clamp pressure control is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Wrench makeup pressure solenoid open**

**Cause      Solenoid is open  
             Solenoid is shorted to ground or power**

**Effect      Wrench makeup pressure control is disabled**

**Remedy    Measure resistance across solenoid, check for open or short  
             Check wiring from processor to solenoid**

---

**Error      Fixed clamp pressure transducer is shorted or open**

**Cause      Transducer is open  
              Transducer is shorted to ground or power**

**Effect      Improper fixed clamp pressure gauge indication**

**Remedy     Check transducer and connector  
              Check wiring from processor to transducer**

---

**Error      Rotary clamp pressure transducer is shorted or open**

**Cause      Transducer is open  
              Transducer is shorted to ground or power**

**Effect      Improper rotary clamp pressure gauge indication**

**Remedy     Check transducer and connector  
              Check wiring from processor to transducer**

---

**Error      Makeup / Breakout pressure transducer is shorted  
              or open**

**Cause      Transducer is open  
              Transducer is shorted to ground or power**

**Effect      Improper makeup / breakout pressure gauge indication**

**Remedy     Check transducer and connector  
              Check wiring from processor to transducer**

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Original Instructions  
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Released July 2011 Revision 00