

# INSTALLATION INSTRUCTIONS - 620202-026 Rev. A

## N-Ject® Liquid Level Sensor

### BEFORE INSTALLATION

**IMPORTANT:** For safety information, refer to the system and machine manuals.

### PARTS LIST

#### Liquid Level Sensor Kit (Single Manifold)

Part Number	Description	Qty
620101-001	Manifold End Plate	1
620127-008	Liquid Level Sensor	1
620202-022	Liquid Level Sensor harness	1
620202-017	Extension Harness - 25 ft	1
620202-016	Extension Harness - 15 ft	1
620112-001	4 mm x 136 mm O-ring	10
715040-178	Cable ties - 12 in	25
715022-901	O-ring Lubrication	1
708000-051	Teflon Tape	1
620202-025	Software on a USB Device	1

#### Liquid Level Sensor Kit (Dual Manifold)

Part Number	Description	Qty
620101-001	Manifold End Plate	2
620127-008	Liquid Level Sensor	2
620202-022	Liquid Level Sensor harness	1
620202-017	Extension Harness - 25 ft	2
620202-016	Extension Harness - 15 ft	2
620202-020	Liquid Level Sensor Adapter Harness	1
620112-001	4 mm x 136 mm O-ring	20
715040-178	Cable ties - 12 in	25
715022-901	O-ring Lubrication	1
708000-051	Teflon Tape	1
620202-025	Software on a USB Device	1

## INSTALL THE LIQUID LEVEL SENSOR

1. If it is necessary, remove the N-Ject® block from the tool bar.

### FIGURE 1:

2. Install the N-Ject® block vertically in a vice or other suitable stand that will let you remove the thread all bolts.

Removal of the bolts can be done horizontally, but vertical gives easier access.

3. Remove all of the existing hardware (1) from the block.
  - Bleeder valve
  - PSI static relief
  - Analog PSI gauge
  - Inlet pressure transducer
4. Remove all of the thread all bolts (2).
5. Remove all of the slices (3).

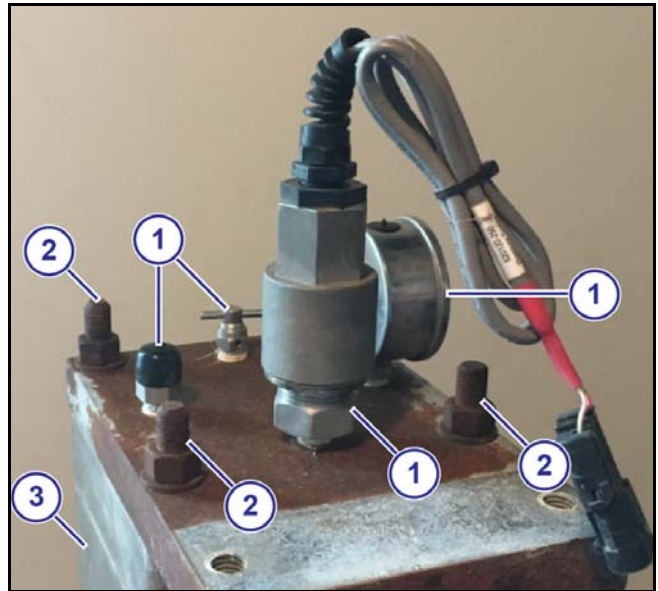


FIGURE 1

### FIGURE 2:

6. Clean the slices thoroughly.
7. Install the supplied O-ring lubrication and O-rings (1) on each slice.



FIGURE 2

### FIGURE 3:

8. Install the new end piece (1).
9. Install the liquid level sensor (2) into the second hole from the bottom of the block.

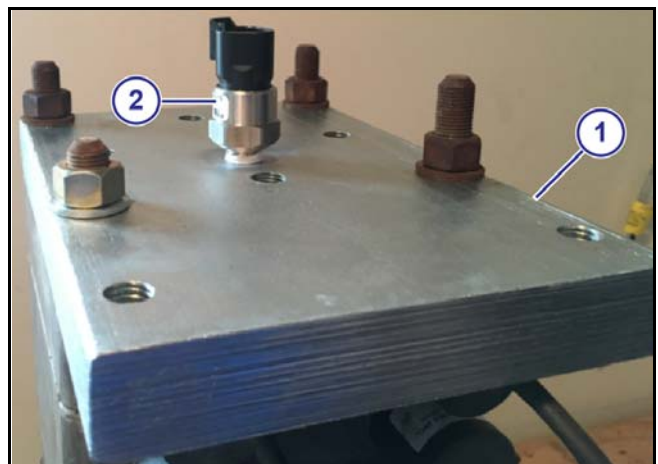
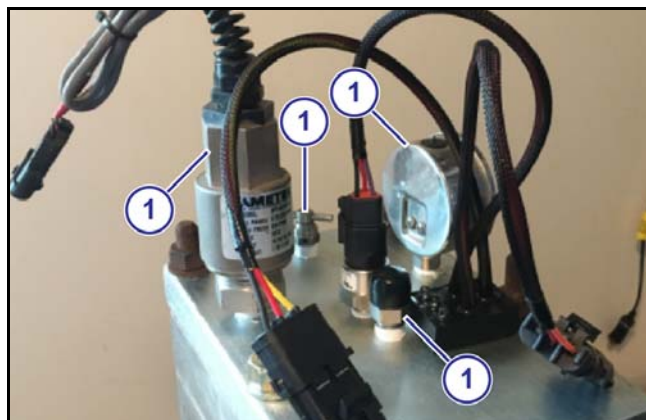


FIGURE 3

**FIGURE 4:**

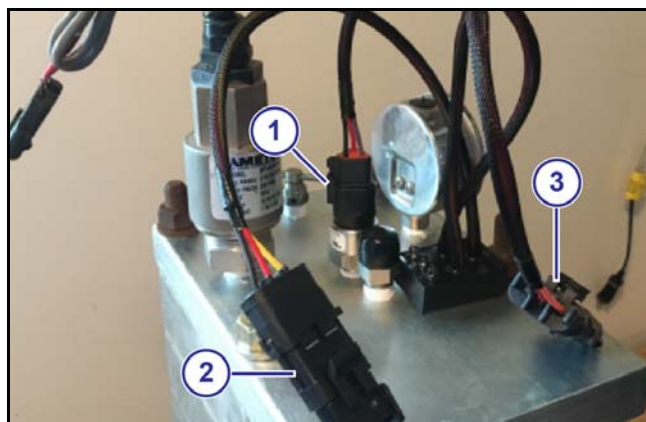
10. Install the remaining hardware (1) as shown.
  - Bleeder valve
  - PSI static relief
  - Analog PSI gauge
  - Inlet pressure transducer
11. If you have a dual manifold system, repeat steps 1 to 10 for the second manifold.



**FIGURE 4**

**FIGURE 5:**

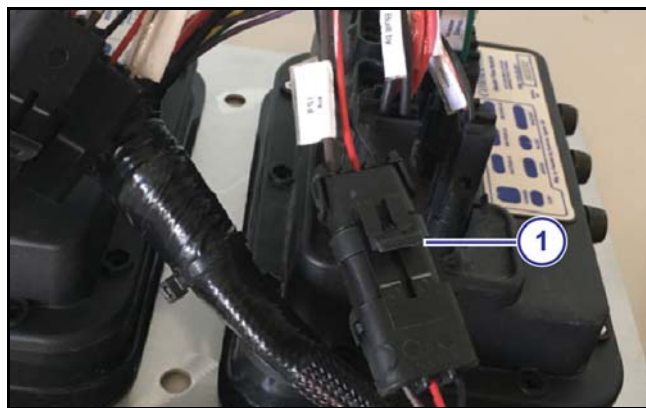
12. Install the adapter module (1) into the liquid level sensor.
13. Install the extension harness (2) into the connector with the yellow signal wire.
14. Route the extension harness toward the electronic module enclosure.
15. If you have a single manifold system, put a dust cap on the second sensor plug (3).



**FIGURE 5**

**FIGURE 6:**

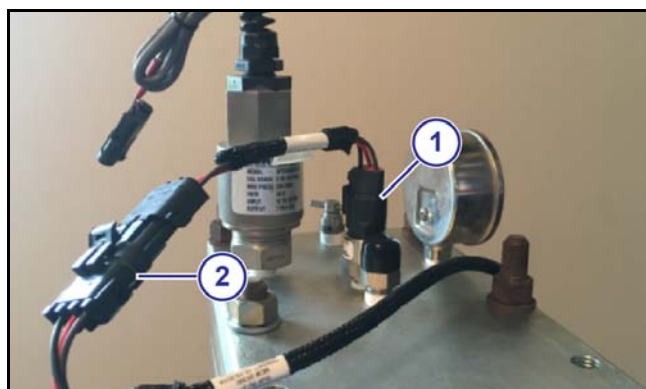
16. Install the end of the extension harness to the modules into the 3-pin AUX PSI weather pack connector (1).



**FIGURE 6**

**FIGURE 7:** If you have a dual manifold system:

17. Connect an extension harness to the second liquid level sensor (1) that has an orange signal wire.
18. Route the extension harness to the second liquid level sensor.
19. Plug in the 3-pin weather pack to the 3-pin Deutsch adapter (2).



**FIGURE 7**

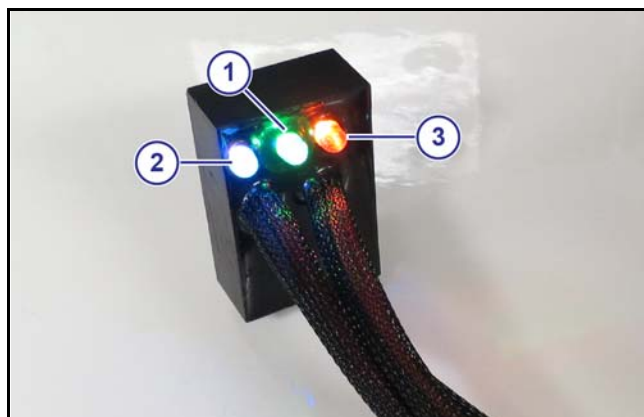
## LIQUID LEVEL SENSOR

**FIGURE 8:** The liquid level sensor has three LED lights:

- (1) Green - Power (12 V)
- (2) Purple - Liquid Level Sensor 1
- (3) Orange - Liquid Level Sensor 2

When the green LED illuminates, there is power to the system.

If the purple or orange LED illuminates, the sensor is not seeing liquid.



**FIGURE 8**

## Test the Sensor Voltages

If there is liquid in the system, but the LEDs stay illuminated, test the sensor voltages.

To test the sensor voltages, drain the system, and remove the sensor(s) from the manifold. Put the sensor(s) in water to test the operation of the sensor.

**FIGURE 9:** Have diagnostic screen open, evaluating the **Liquid Sensor Voltage** (1).

- Both sensors are not in the water - Voltage will show 5.0 volts - (purple and orange lights are on)
- Both sensors are in the water - Voltage will show 1.9 volts - (purple and orange lights are off)
- Sensor 1 is in the water and Sensor 2 is not in water - Voltage will show 2.5 - (orange light is active)
- Sensor 1 is not in the water and Sensor 2 is in the water - Voltage will show 3.0 - (purple light is active)

**NOTE:** When you quickly insert the sensor into water, there can be an air bubble inside the cavity of the sensor and the LED will stay illuminated. Move the sensor side-to-side to remove air bubble and the LED should go off.

Diagnostics	
Hardware Version	1.3
Boot Version	1.0.35
Application Version	1.0.27
System Voltage	12.4
Hour Meter	0.0
Liquid Sensor Voltage	5.0
Inlet Voltage	1.2
Outlet Voltage	1.0

**FIGURE 9**

## N-JECT® CAB BOX SOFTWARE

The cab box must have software version 1.0.27 or after to correctly use the liquid level sensor.

Contact a CapstanAG™ representative to install the correct software version onto the cab box.

A CapstanAG™ representative will need these items to install the correct software onto the cab box.

PART NUMBER	DESCRIPTION
	CapstanAG™ CAN Commander
120050-002	Translator Box and USB Cable
120056-001	Programming Cable

## Update Cab Box Software

**FIGURE 10:**

1. Press the **POWER** button on the display.
2. Connect the translator and the programming cable to the cab box and a computer.
3. On the computer, open the **CAN Commander** program.
4. Select **Cancel** on the window that opens.

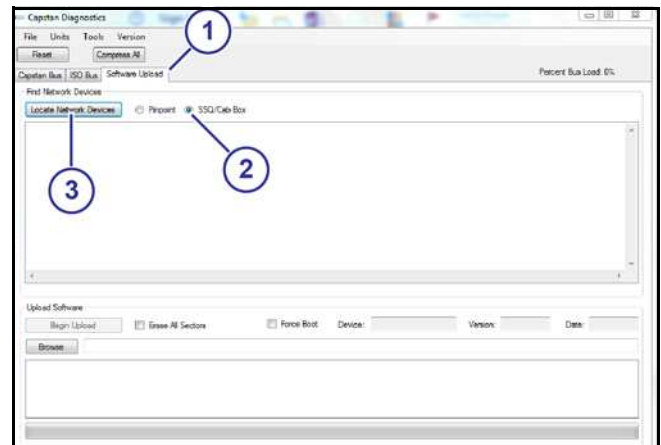
The window will close and the CAN Commander software will open.



**FIGURE 10**

**FIGURE 11:**

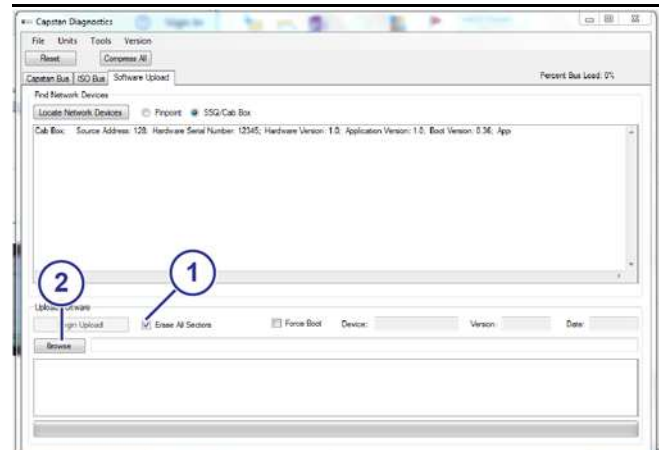
5. Click on the **Software Upload** tab (1).
  6. Click on the circle next to **SSQ/Cab Box** (2).
  7. Click **Locate Network Devices** (3).
- Hardware that is available will show in the list.



**FIGURE 11**

**FIGURE 12:**

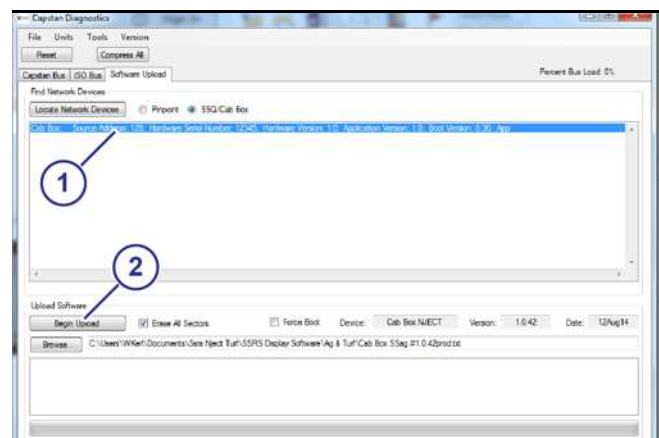
8. Click on the box (1) next to **Erase All Sectors**.  
Make sure that there is a check mark in the box.
9. Click **Browse (2)**.
10. Find and select the desired code to upload.
11. Click **Open**.



**FIGURE 12**

**FIGURE 13:**

12. Click on the hardware information (1).  
The hardware information must be selected and highlighted to begin upload.
  13. Click **Begin Upload (2)**.
- IMPORTANT:** The display will turn off when the upload is complete.
14. Disconnect the programming cable and translator.
  15. Press the **POWER** button on the display.



**FIGURE 13**



## ENABLE A LIQUID LEVEL SENSOR

**FIGURE 14:**

1. Press the **MENU** button to go to the **Main Menu**.
2. Use the **INCREASE** or **DECREASE** buttons to go to **Liquid Sensor 1**.

Main Menu	
1 Backlight	2
2 Alarm Volume	3
3 Liquid Sensor 1	Disabled
4 Liquid Sensor 2	Disabled
5 Liquid Sensors Sensitivity	5 s
6 Diagnostics	
7 Exit	

**FIGURE 14**

**FIGURE 15:**

3. Press the **MENU** button to open the **Liquid Sensor 1** screen.
4. Use the **INCREASE** or **DECREASE** buttons to highlight **Enabled**.
5. Press the **MENU** button.

Liquid Sensor 1	
Default	Selection
Disabled	Enabled
	Disabled
Current	
Enabled	
Range: Enabled or Disabled	

**FIGURE 15**

**FIGURE 16:**

6. If a second liquid level sensor is installed:
  - a. Use the **INCREASE** or **DECREASE** buttons to go to **Liquid Sensor 2**.
  - b. Press the **MENU** button to open the **Liquid Sensor 2** screen.
  - c. Use the **INCREASE** or **DECREASE** buttons to highlight **Enabled**.
  - d. Press the **MENU** button.
7. Exit the **Main Menu**.
  - a. Use the **INCREASE** or **DECREASE** button(s) to highlight **Exit**.
  - b. Press the **MENU** button.

Liquid Sensor 2	
Default	Selection
Disabled	Enabled
	Disabled
Current	
Disabled	
Range: Enabled or Disabled	

**FIGURE 16**

## LIQUID SENSOR SENSITIVITY

**FIGURE 17:** Line 5 - Liquid Sensors Sensitivity

The liquid sensors sensitivity lets you change the settings for all liquid sensors in the system.

Range: 1 to 10 (more sensitive to less sensitive)

Sensor Sensitivity	
Default	Selection
5	10
	9
	8
	7
Current	6
5	5
Range: 1-10	

**FIGURE 17**

## Change The Liquid Sensor Sensitivity

**FIGURE 18:**

1. Press the **MENU** button to go to the **Main Menu**.
2. Use the **INCREASE** or **DECREASE** buttons to go to **Liquid Sensor 1**.

Main Menu	
1 Backlight	2
2 Alarm Volume	3
3 Liquid Sensor 1	Disabled
4 Liquid Sensor 2	Disabled
5 Liquid Sensors Sensitivity	5 s
6 Diagnostics	
7 Exit	

**FIGURE 18**

**FIGURE 19:**

3. Press the **MENU** button to open the **Sensor Sensitivity** screen.
4. Use the **INCREASE** or **DECREASE** buttons to highlight desired level of sensitivity.
5. Press the **MENU** button.
6. Exit the **Main Menu**.
  - a. Use the **INCREASE** or **DECREASE** button(s) to highlight **Exit**.
  - b. Press the **MENU** button.

Sensor Sensitivity	
Default	Selection
5	10
	9
	8
	7
Current	6
5	5
Range: 1-10	

**FIGURE 19**