



# Toolkit Doc21 R130 Receiver Replacement

## June 18, 2010



# Overview

- Using the Joystick, fully raise the Spine.
- Stop the PCs and turn off the power (Red switch).
- Disconnect AC power.
- Use the ESD strap.

The following is a list of the steps required:

- Remove Front and Rear Bottom Panels
- Unscrew lower Rear Bellows and secure
- Remove Run-stop bracket
- Mount the R130 without bolting it down
- Plug in the R130 power connector
- Mount the Run-stop bracket being careful not to disturb the Antenna Adapter
- Add the R130 mounting nuts
- Screw on the Antenna being careful not to rotate the Adapter
- Remount the lower Bellows
- Replace the Rear and then the Front Bottom Panels

# Front Bottom Panel R/R

- Front Bottom Panel, Removal – 2174
- 1. Raise the Spine at least 5cm. (Fig 1)

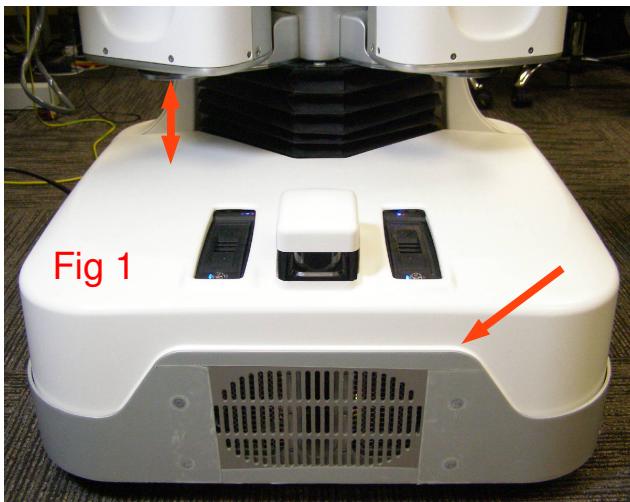


Fig 1

- 2. Clasp the front of the Panel on each side. (Fig 2)



Fig 2

Hokuyo

- 3. Lift the front of the Panel straight up until it clears the Hokuyo.
- 4. Slide the Panel forward about 30cm and lift it from the Robot. (Fig 3)

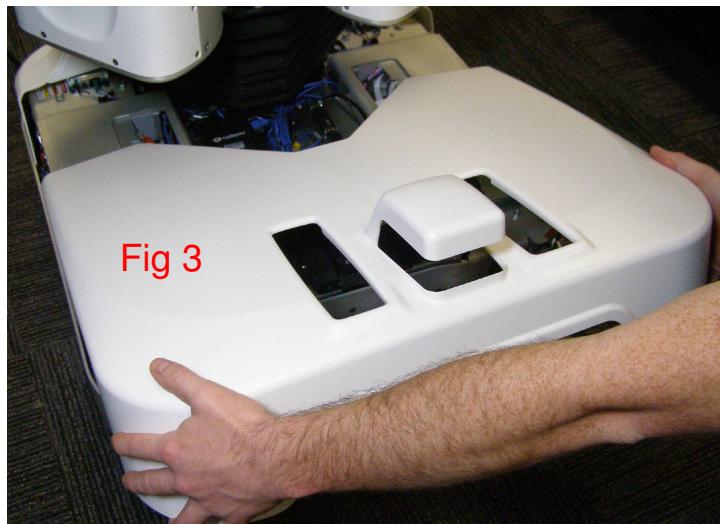


Fig 3

- Front Bottom Panel, Install
- 1. Starting 30cm back, slide the Panel towards the rear making sure that it clears the Hokuyo.
- 2. Make sure the Panel is all the way back and slips under the Rear Bottom Panel edge. (Fig 4)

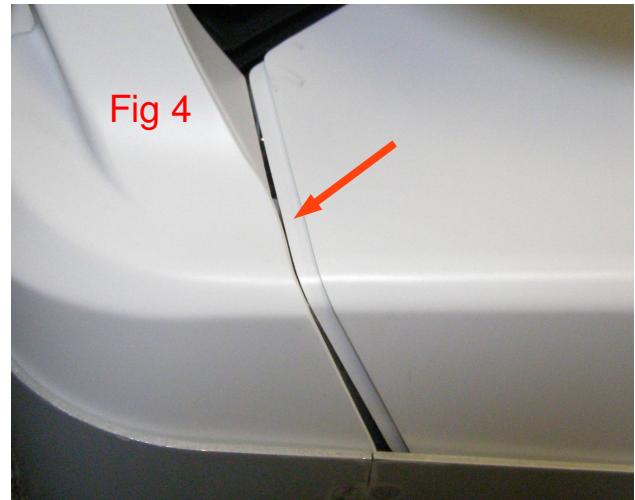


Fig 4

- 3. Lower the front within the confines of the bumpers. (Fig 1)

# Rear Bottom Panel R/R

- Rear Bottom Panel, Removal - 2170

1. Clasp the Panel on each side below the Aluminum boss. (Fig 1)

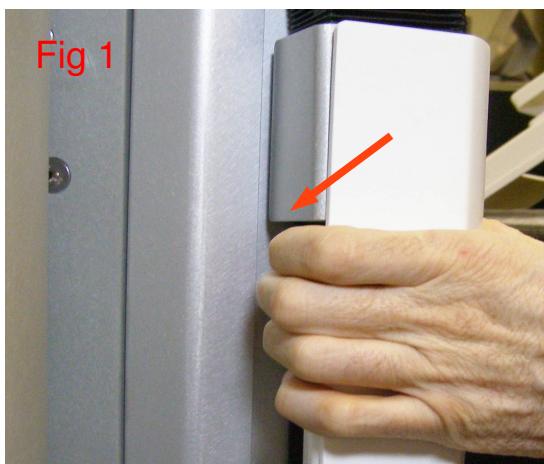


Fig 1

2. Pull back firmly until the 2 snaps release. (Fig 2)



Fig 2

3. Pull the top back until the Panel clears the Aluminum boss. (Fig 3,6)

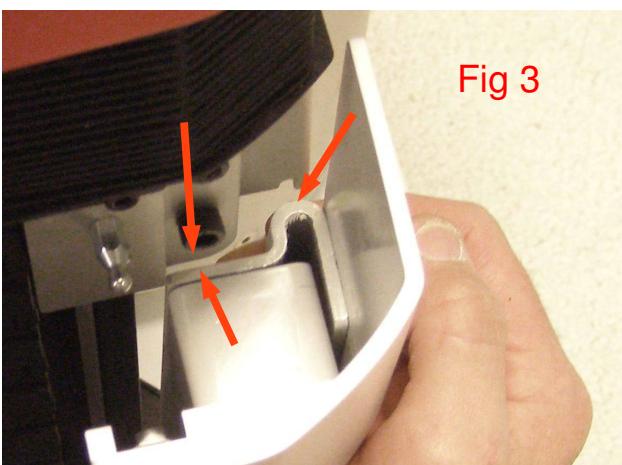


Fig 3

4. Lift the Panel up and out.

- Rear Bottom Panel, Install

1. Clasp the Panel on each side about in the middle.
2. Insert the Panel into the base making sure it is all the way down. (Fig 4)

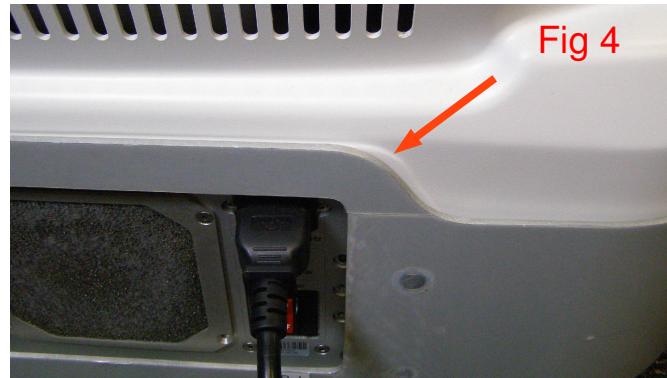


Fig 4

3. Slowly move the Panel forward making sure it clears the Aluminum boss. (Fig 5,6)



Fig 5

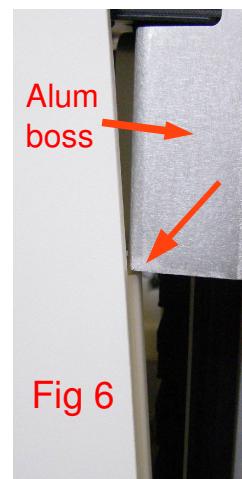


Fig 6

4. Continue pushing the top of the Panel forward until it snaps into place. (Fig 7)

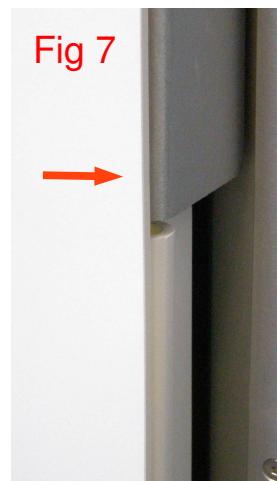


Fig 7

# Bellows + Bracket Removal

- Bellows, Rear, Removal - 4287

1. Using the 3mm bit with the T-handle driver, remove the 4 bottom screws. 2039-08 (Fig 1,2)

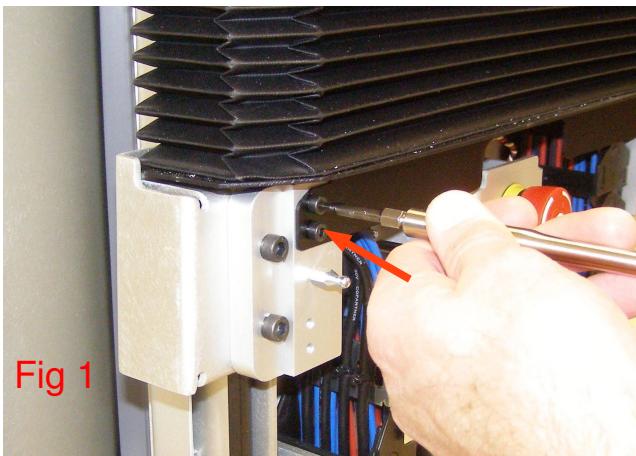


Fig 1

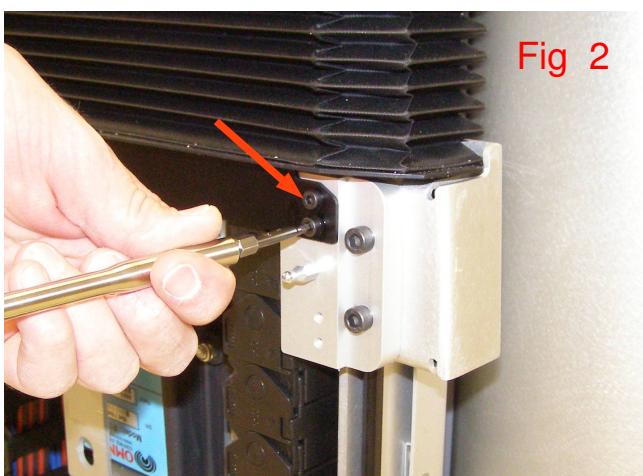


Fig 2

2. Use tape to secure the Bellows up out of the way. (Fig 3)



Fig 3

- Using the 3mm bit with the T-handle driver, remove the 3 Run-stop bracket mounting screws. 2039-08 Using the 10mm socket together with the 3/8 extension and the 3/8 wrench, remove the 2 Nuts on the R130 mounting Studs. 2614 (Fig 4)

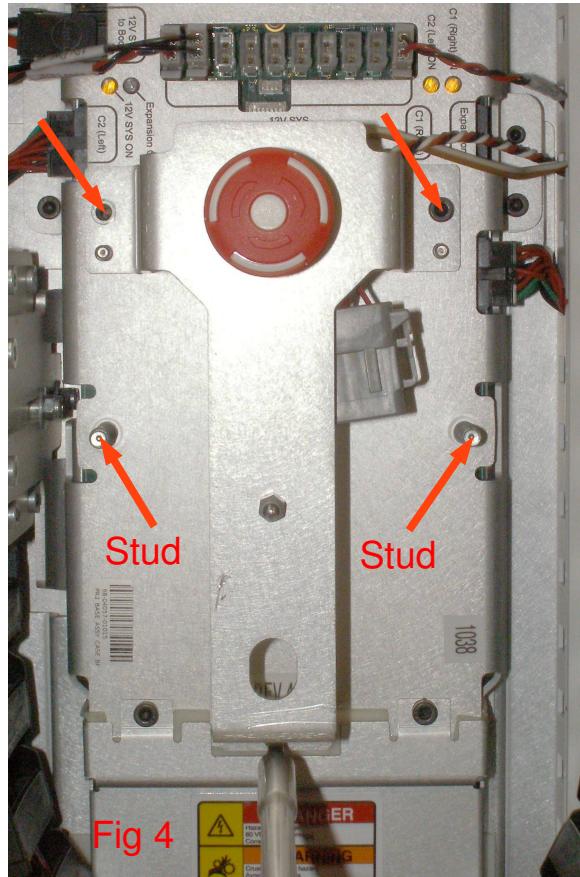


Fig 4

- Move the Bracket out of the way and slide the R130 on to the studs. Plug in the power connector. (Fig 4,5)

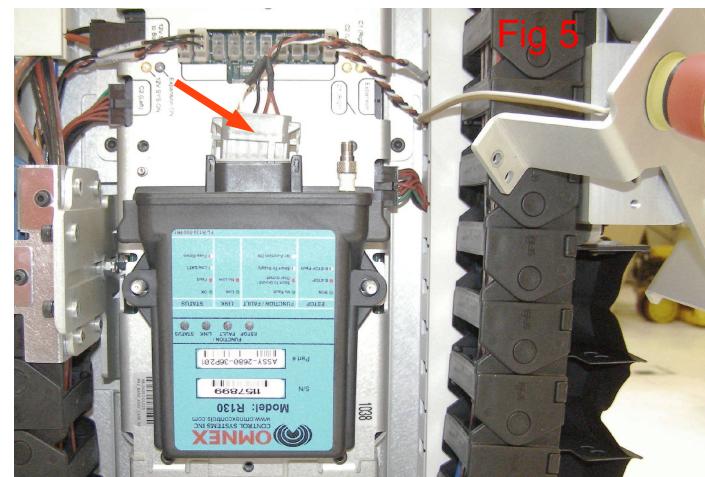


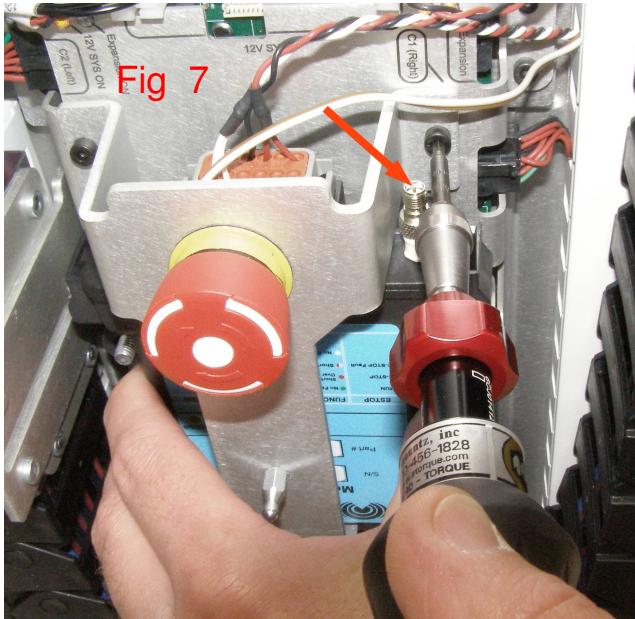
Fig 5

# Bracket + R130 Install

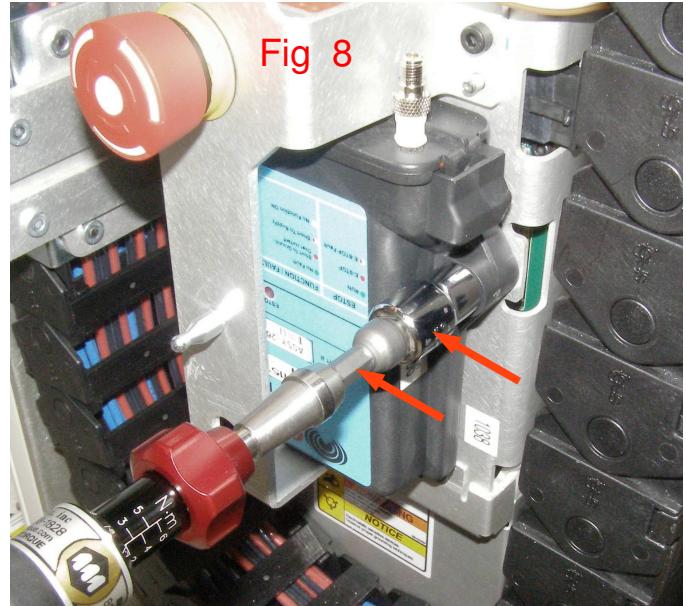
- Carefully place the Run-stop mounting bracket back on the Power Board over the 2 alignment pins, while avoiding the R130 Antenna. (Fig 6)



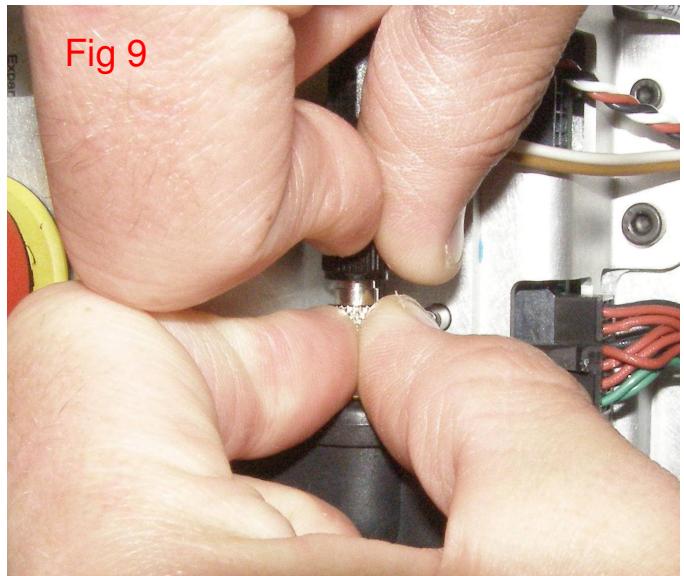
- Using Loctite 248 and avoiding the Antenna, install the 3 Bracket mounting screws and torque to 1.58Nm using the Large torque driver. (Fig 7)



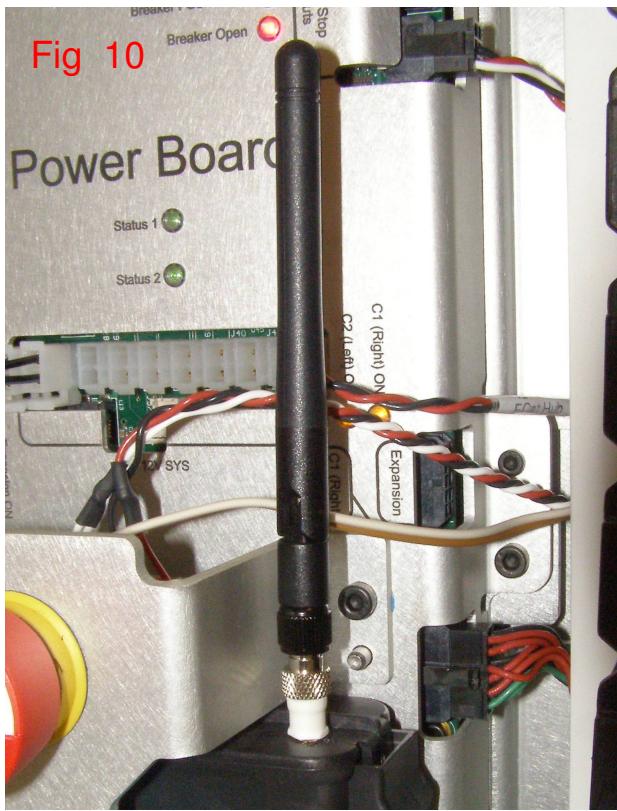
- Using the 10mm socket together with the 3/8 to hex adapter and the Large torque driver install the 2 R130 mounting nuts and torque to 3.17Nm. (Fig 8)



- Keeping the Antenna adapter (Silver) from rotating, screw on the Antenna (Black). (Fig 9,10)



# Bellows and Covers Install



- Following the Rear and Front bottom Panel Install procedures (slides 3 and 4), install the Rear Panel first and then the Front.
- Turn on the Robot and the Run-Stop Transmitter and verify that the R130 Receiver is working correctly.

