



Toolkit Doc17 Head

May 6, 2010



# Head Removal (1)

- Head, Removal - 4040

1. Remove Front and Rear Top Covers.
2. Cut the zip-ties and unplug 7 USB cables (Fig 1)

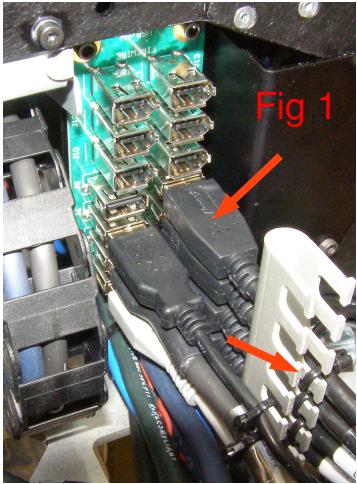


Fig 1

3. Cut the zip-ties for the Gray Speaker USB cable and pull it from underneath the wire bundles. (Fig 2,3,4)

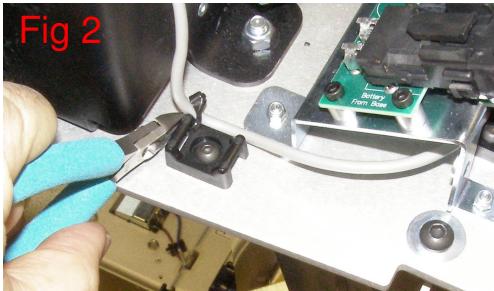


Fig 2

Fig 3

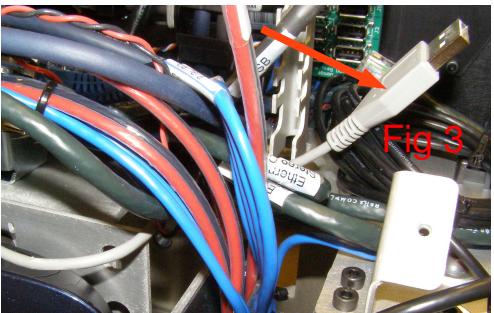
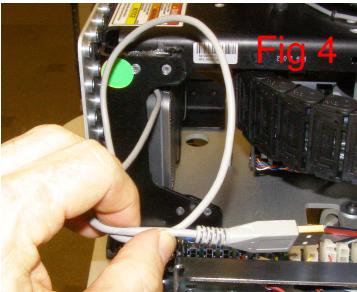


Fig 4



4. Unplug the "72+12v Power Head Lower" cable, 2 connectors. (Fig 5)

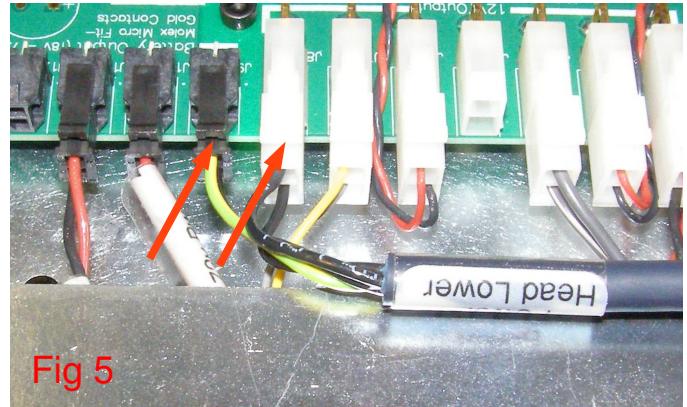


Fig 5

5. Cut the zip-tie under the Head energy chain. (Fig 6)

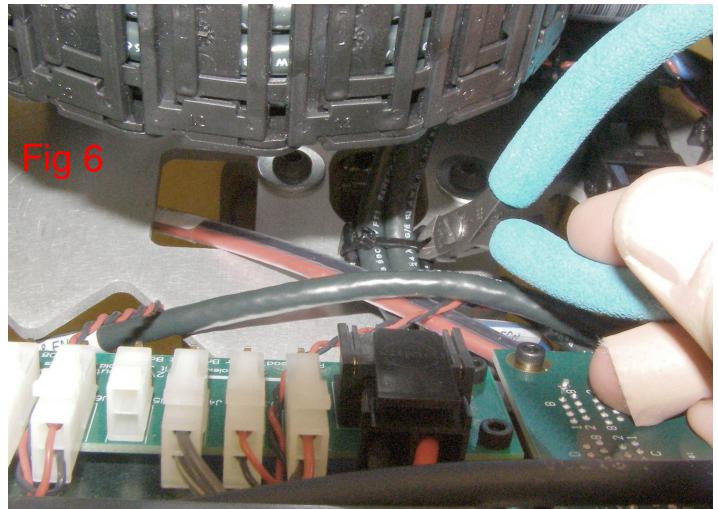


Fig 6

6. Unplug all 8 cables from the Ethernet Hub. (Fig 7)

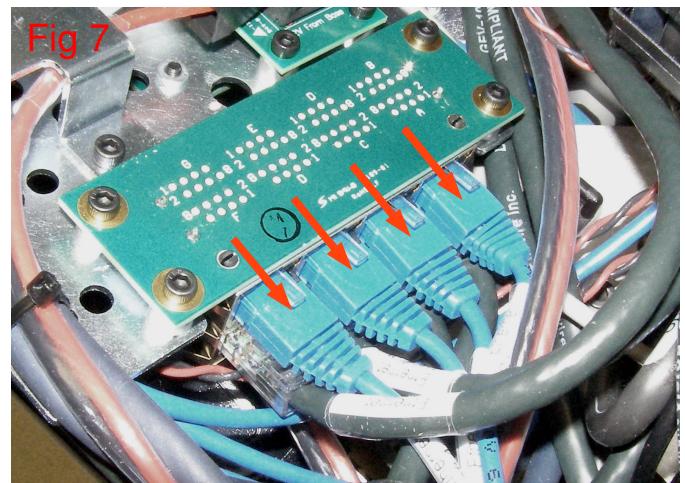


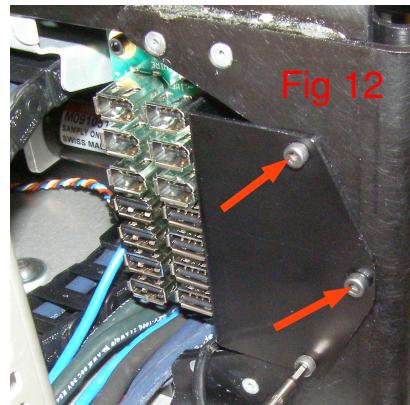
Fig 7

# Head Removal (2)

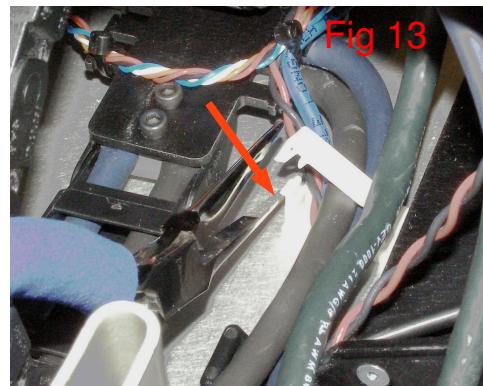
7. Cut zip-ties. (Fig 8,9,10,11)



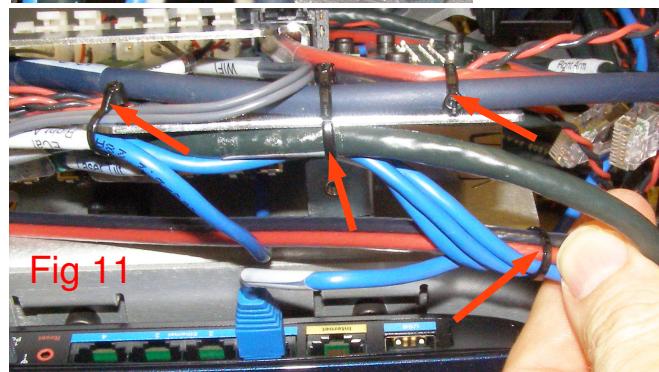
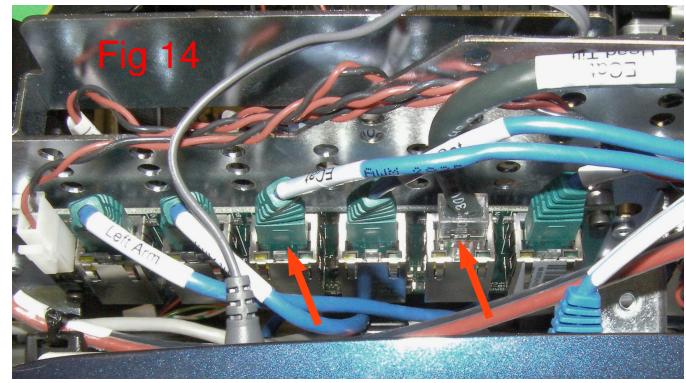
8. Using the 2.5mm bit with the T-handle driver, remove the 3 screws retaining the USB Hub Assembly. 2009-06 (Fig 12)



9. Using the Needle Nose pliers, unsnap the White cable clamp next to the Laser Sled echain. (Fig 13)



10. Unplug "Ecat Head Tilt" and Ecat Head Pan" cables. (Fig 14)



# Head Removal (3)

11. Unplug "72v Pwr Head Pan" cable (Fig 15)

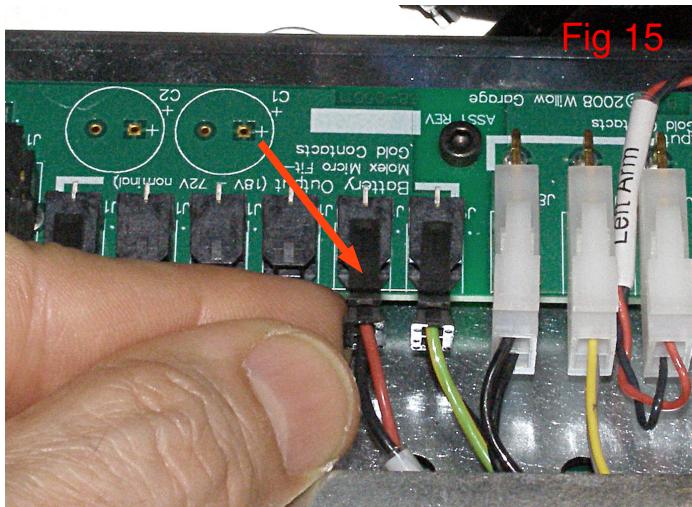


Fig 15



Fig 18

12. Using the 10mm 3/8 drive socket, and the 3/8 extension, and the 3/8 drive ratchet wrench, remove 4 nuts. 1134 (Fig 16,17,18)

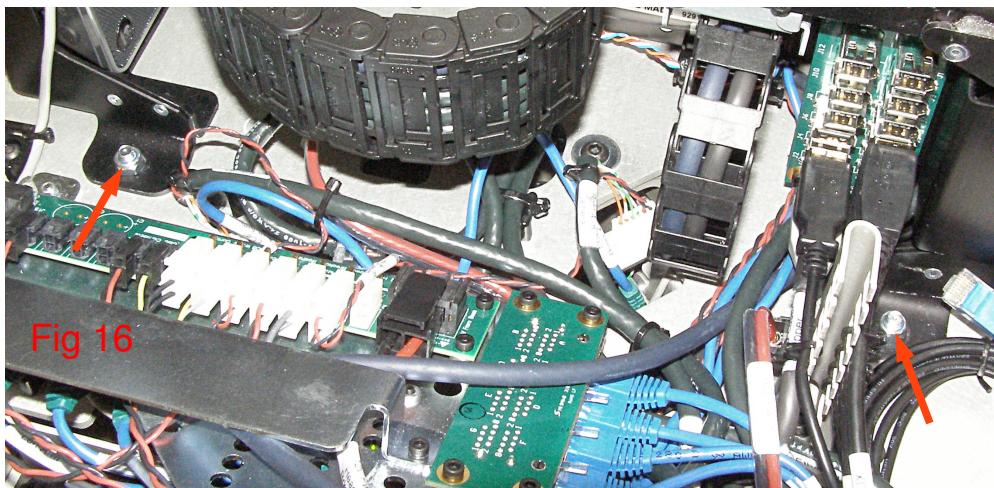


Fig 16

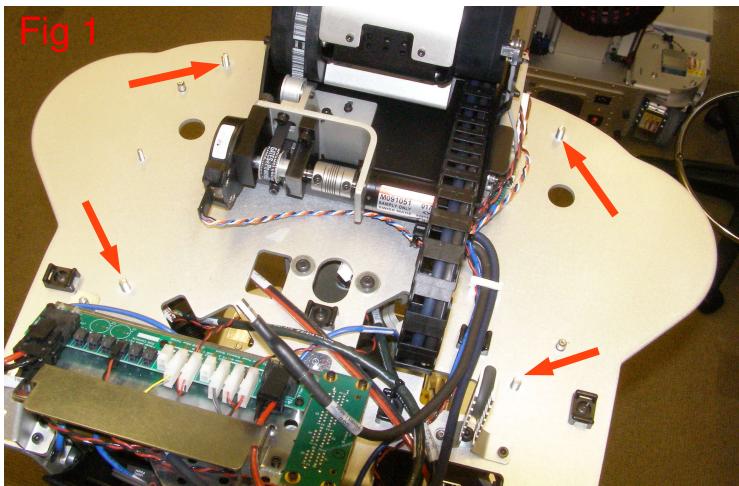


Fig 17

# Head Install

- Head, Install

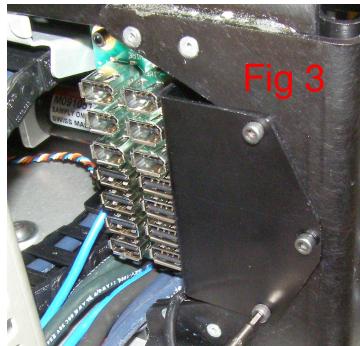
1. Making sure all of the cables are dressed to the rear, place the Head on the 4 studs. (Fig 1)



2. Install the 4 nuts and torque to 11Nm using the Titan Torque wrench together with the 3/8 extension and 10mm socket. (Fig 2)



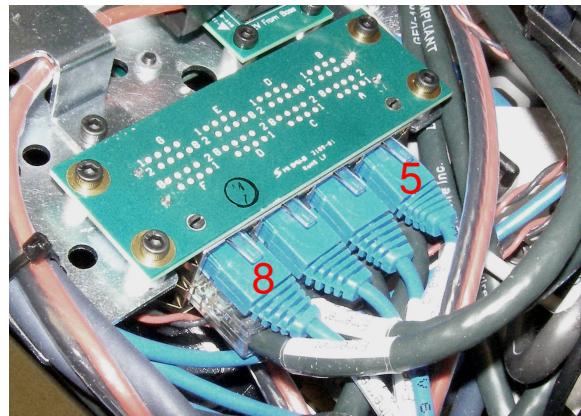
3. Reverse the removal procedure adding zip-ties as needed to replace the cut ones.
4. Using Loctite 248, install the 3 USB Hub Assembly mounting screws and torque to 1.36Nm using the Large torque driver. (Fig 3)



5. The connector order for the Ethernet Hub is:

**Bottom are Dark Green cables**

1. Bottom, front - Gigabit Cam Lower
  2. Bottom – Stereo Cam Lower
  3. Bottom – Right Arm Camera
  4. Bottom – Left Arm Camera
- Top Are Blue cables**
5. Top, front – Gigabit Camera Lower
  6. Top – Stereo Camera Lower
  7. Top – Right Arm Camera
  8. Top – Left Arm Camera



6. The connector order for the USB Hub is:

1. Right, bottom – Speaker
2. Right – Head Laser Lower
3. Right – IMU Lower
4. Right, top – Head Aux
5. Left, bottom – Speaker (Gray)
6. Left – Head Laser Upper
7. Left – IMU
8. Left, top – Empty

