Slip ring replacement

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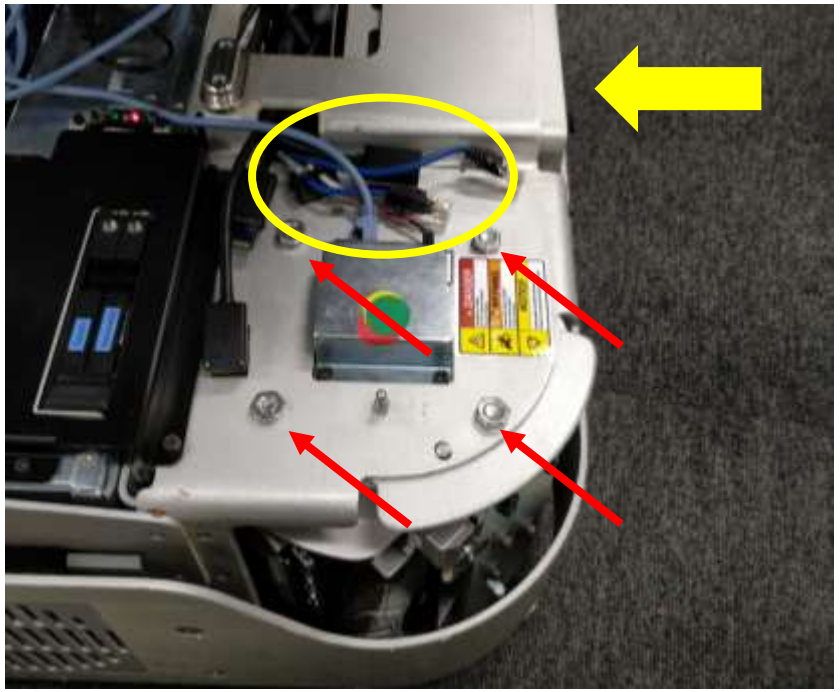
Preparation

- Move torso up
- Run `sudo pr2-shutdown`
- Turn red toggle switch off
- Unplug power cable
- Remove the base cover

Remove Caster

1. Remove the base side bumper
2. Unplug Ethernet cable and power cable (2-pin) from the caster
3. Remove 4 nuts and washers on the top of the caster
4. Move pr2 arm to the same side of the replacing caster (e.g. for FL caster, move arms left side)
5. Locate a jack under the battery container at the same side of PR2 caster and jack it up
6. Remove FL Caster unit from the robot
7. Jack down

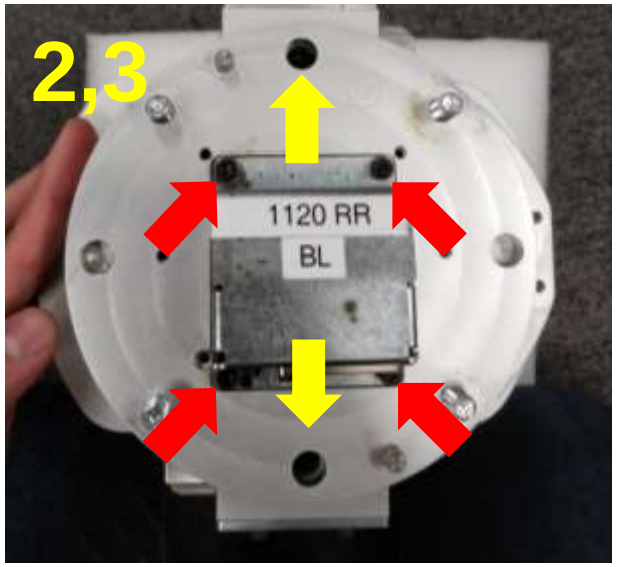
Base side bumper

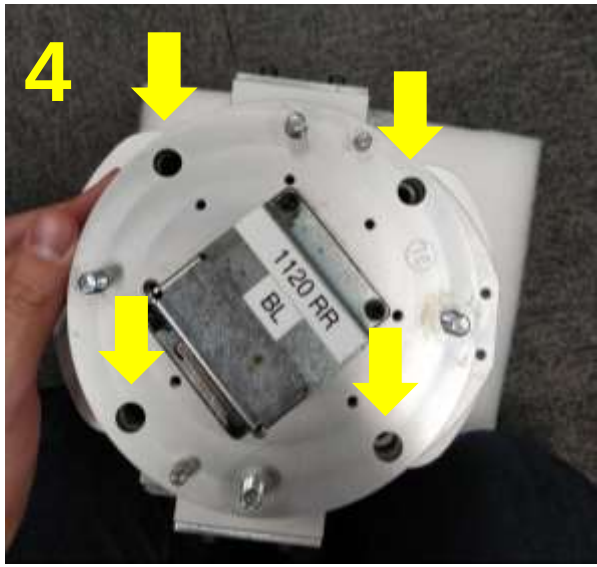


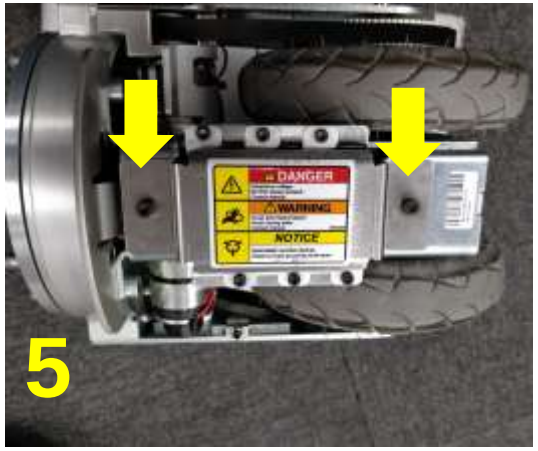
Jack point

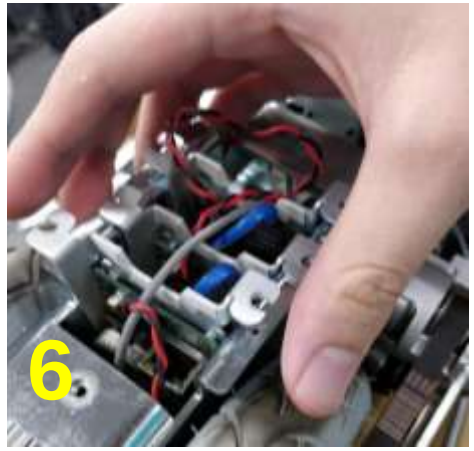
Remove Slip ring

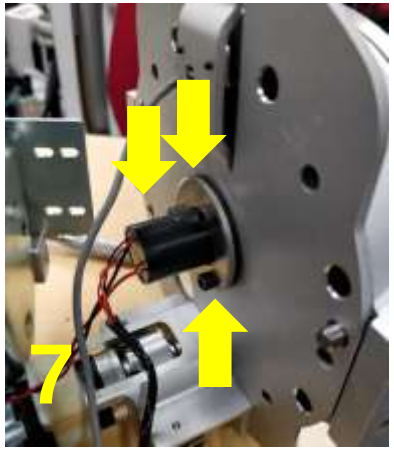
1. Remove 4 screws for each side
2. Remove 4 screws for the top socket cover and unplug the cables from the socket (red)
3. Turn rotational joint to 0° and remove 2 screws in the holes (yellow)
4. Turn rotational joint to 45° and remove 4 screws in the holes
5. Remove 2 screws and remove a cover for motor controllers
6. Remove the cable and remove all the motor controllers
7. Move the top part away from the bottom part
8. Remove 3 screws for the slip ring
9. Push out the rubber bush

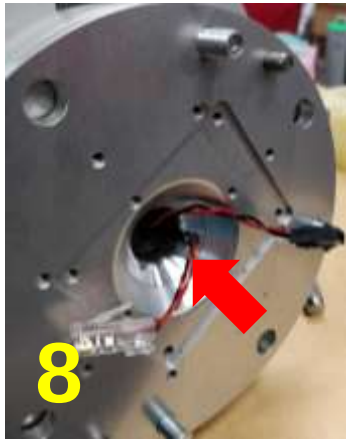






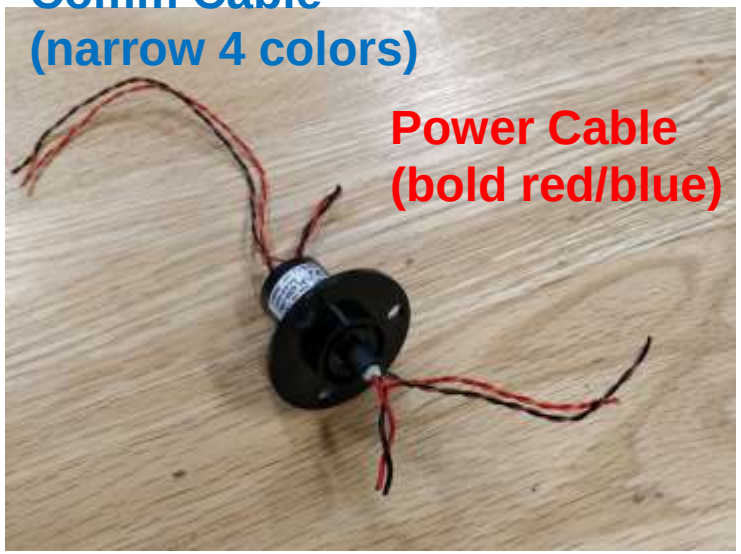






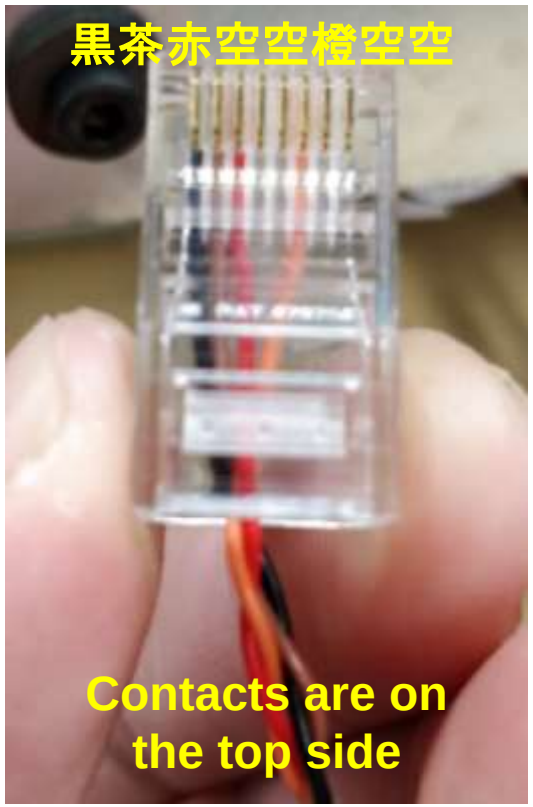
Solder cables

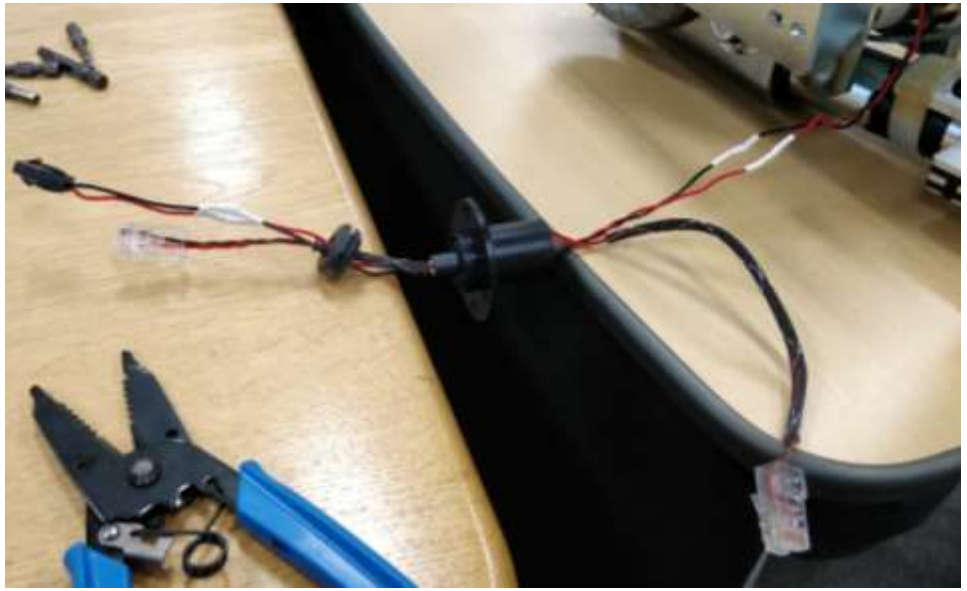
1. Cut all cables of the old slip ring
2. Cut cables to the same length as the old one and twist each pair of cables
3. Crimp RJ45 Connectors for 4 narrow cables and test the connectivity
4. Solider 2 bold power cables



RJ45 Crimper

RJ45 Tester





Re-installation

- Do the previous slides in reverse order
- Then check if it works