

## TOOLS

- 5,6,7 mm drill bit
- Variable speed power drill
- Hook tool (a spoke with a 180° bent end)
- X-acto knife
- Masking tape

## PARTS

- 1 x 10 mm, M5 bolt
- 1 x M5 nylon lock nut
- 2 x M4 nylon lock nuts
- Shimano EW 7972 wiring unit

## PROCEDURE

1. The assembly of the rear brake of the P4 must be completed before the start of this procedure. The bottom bracket cups should be installed but the crank should not.
2. Wrap masking tape around the 1/4 drill bit with the tape 10 mm from the tip of the bit. Wrap the tape around the drill bit until there is a 3 mm build up of tape. This will act as a stopper for the bit so that it only drills 10 mm before the tape bottoms out on the frame.  
**NOTE:** If you do not create this stopper, the weight of the drill will potentially cause the drill to hit the opposite side of the frame and compromise the tube. Any failures in this area will not be covered by warranty.
3. In the centerline of the top tube, drill a 7 mm hole, just behind the headset upper bearing cover on a 2011 P4 (Fig.1), or through the left shifter cable entry hole on a 2009-2010 P4.
4. Insert the front junction wire into the newly drilled top tube hole, and snake the wire to the bottom bracket exit hole.
5. Insert the hooked tool into the bottom bracket shifter cable exit hole and grasp the wire. Pull the wire out of the bottom bracket cable exit hole.
6. Drill a 6 mm hole into the brake stiffener in position A, two 5 mm holes in positions B and C, and one 7 mm hole in position D (Fig.2).
7. Bolt the bottom bracket junction box through the hole in position A and attach with an M5 nylon lock nut. Position the junction box on an angle similar to Fig.3.  
**Note:** Excess wire length can be wound back and forth under the bottom bracket junction box before it is attached to the brake stiffener.  
**Note:** The junction box may sit better against the brake stiffener if the tip of the junction box is removed.
8. Bolt the brake plate through the holes in positions B and C, and secure it with the M4 nylon lock nuts.  
**Note:** The battery mounting bolts should be positioned so that they do not contact, or interfere, with the rear brake cable and boss.
9. Route the front junction wire from the junction box through the D hole; plug it into the junction cable that was routed through the down tube.
10. Install the brake stiffener on the frame.
11. Install the rear derailleur on the rear derailleur hanger; insert the rear derailleur junction wire into the derailleur.
12. Using the adhesive wire covering provided by Shimano, fasten the rear derailleur junction wire to the lower surface of the drive-side chain stay. Cut the adhesive covering so that it ends at the brake stiffener (Fig 4).
13. Install the front derailleur onto the front derailleur hanger and insert the front derailleur junction wire into the front derailleur.
14. Using the adhesive cable covering, affix the front derailleur junction wire to lateral surface of the drive side chain stay similar to Fig 5. An additional adhesive piece can be used to secure the front derailleur wire to the seat tube, if length permits.



Figure 1



Figure 2



Figure 3



Figure 5



Figure 4