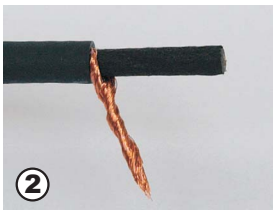
*Version 3 with spiral cable gland and tips and tricks*

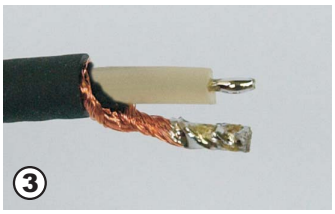
A new coil connector may become necessary if it is defective or if the connection cable is broken close to the connector. Note that the supplied connectors are glued so that they can usually* not be opened and reused.

Tools needed: Wire cutter, sharp knife, heat gun, soldering iron, solder, two 15 mm open ended spanners

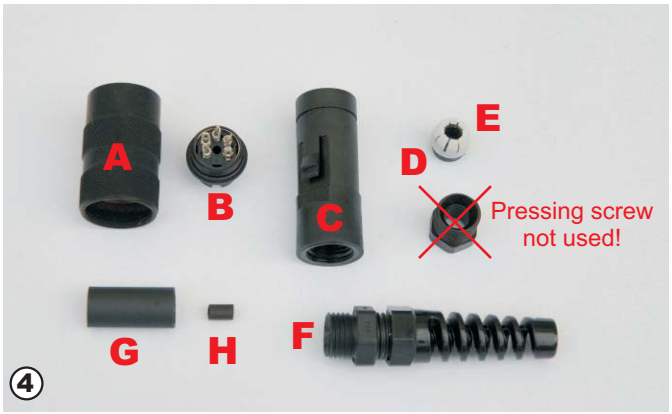
## Step by step instructions

- Cut off the defective plug. In case of a broken cable, make sure that you remove all of the faulty cable section.
- Strip the cable jacket back 20 mm (**photo 1**) with a sharp knife. **WARNING:** Do not cut the shield braid!
- Twist the braid to form a single conductor as shown in **photo 2**. Remove any loose wires from the braid as these could cause a short!
- Remove the black fabric layer (this is conductive!) and strip the inner conductor of the cable back 5 mm. Tin both conductors and cut them to equal length **(photo 3)**. **WARNING:** Do not overheat the braid as this could melt the plastic insulation of the inner conductor and cause a short!

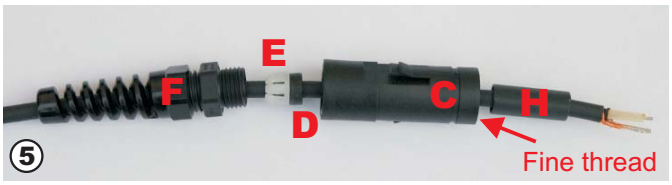



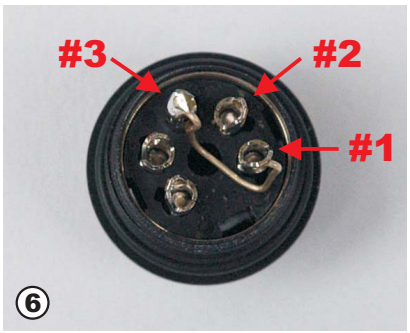

- Open the plastic bag with the connector. As shown in **photo 4**, you will find parts A through E, a spiral cable gland (F), two pieces of shrink tube (G, H) plus a protection cap (see photo 10). Note that the original pressing screw will not be used.




- **IMPORTANT:** Before you continue, slide parts F-E-D-C-G (in this order) over the cable as shown in **photo 5**. Note that the fine thread inside the shell (C) must point towards the cable end! You can not correct this after soldering!



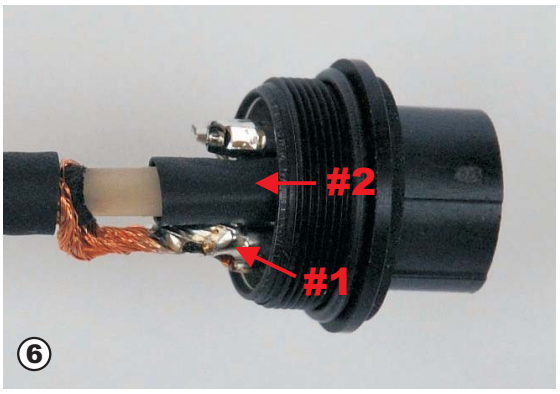

- If the connector is used for the 1 meter coils PS02/PS03, the 2 meter coil PS04, the universal search loop PS05 or the extension cables PS09/PS10/PS30**, you have to connect contacts 1 and 3 by a short wire. Do not connect these contacts for any of the small coils (i.e. the 25 cm coil PS06, the 45 cm coil PS28 and the cylindric probes PS07/PS08). **Photo 6** shows a contact insert with pins 1 and 3 connected. Note: The contact numbers are indicated next to the contacts.




* See page 3 for details

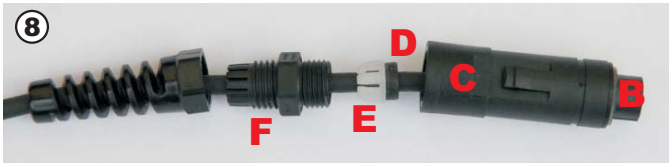
** The connector of the extension cable PS30 has two additional built-in resistors.

- Slide the small shrink tube over the inner conductor. Solder the inner conductor to contact #2 and the twisted braid to contact #1. **Make absolutely sure that no single wire of the braid causes a short between any of the pins!** Move the small shrink tube over contact #2 and shrink it with the heat gun (**photo 6**).

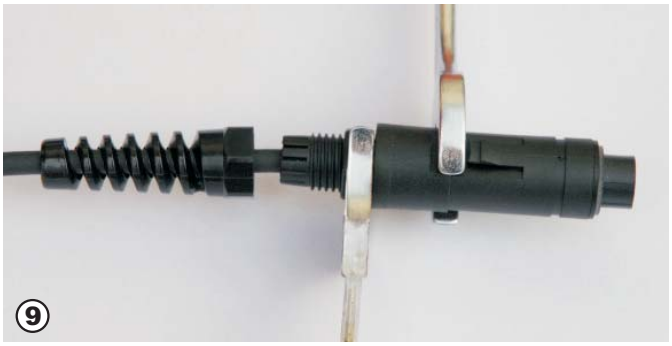



- Move the large shrink tube (H) over the contacts #1 to #3 and shrink it with the heat gun as shown in **photo 7.**


- Let the shrink tube cool down, then push the shell (C) over it and screw it together with the contact insert (B) as shown in **photo 8**. To tighten the connection, you can insert it into the COIL connector at the rear of the PULSE STAR II PRO and then rotate the shell by hand. Do not use a spanner and do not tighten with too much force! There is an o-ring seal which could be destroyed, and also the shell might be deformed! Push the rubber seal (D) with the pinch ring (E) inside the shell (C). Unscrew the spiral part from the cable gland (F) and screw the part with the threads into the shell (C) by hand.




- Use two open ended spanners (15 mm, **photo 9**) to fully tighten the thread part of the cable gland. **IMPORTANT:** Make sure that the cable does not rotate while tightening the cable gland. This could break the cable conductors at the contacts! Only the thread part of the cable gland should rotate, without any relative movement between the cable and the shell with the contact insert!




- Screw the spiral part of the cable gland onto the thread part. Hand-tighten only – too much pressure might damage the cable! Finally, slide the outer metal shell (A) over the plastic shell (C) and fix the protection cap (J) on it (**photo 10**).

## Additional tips & tricks

### 1. How to open and re-use the connector

All connectors have been glued at the tip to prevent unintentional unscrewing by the user. This makes it usually impossible to open a connector, however, it might be possible without destroying it:

- Remove the metal shell and the protection cap
- Remove the thin rubber sealing from the tip
- Unscrew the pressing screw resp. the spiral cable gland at the end of the connector to release the cable
- Heat the tip with the contacts with a hot air fan to about 150°C
- While still hot, plug the connector into the PSIIPRO electronics unit and try to unscrew the plastic shell (turn counterclockwise!). Don't use too much force, this would destroy the contacts part. If it is still impossible to unscrew, remove the connector from the PSIIPRO and heat up the tip further, then try again.

### 2. Causes for broken connection cables and how to prevent

The connection cable may break if it is constantly bended at a too small radius. To reduce the bending at the critical cable entry at the plug, it is advisable to relieve the cable, for example by attaching it to your belt and form a loop from there to the plug at the electronics box.

### 3. How to confirm that the cable is broken and how to locate the defective part:

A) If the coil causes sporadic false signals, connect the coil to the PSIIPRO, lay both coil and the PSIIPRO electronics box down on a neutral ground, retune the PSIIPRO, and then start to bend/pull/push the cable section by section. This usually causes the broken shield of the cable to reconnect temporarily, and this would cause a large audible signal. A cable break most likely occurs close to the connector and can be fixed in this case.

If you were able to locate the faulty cable part, it is recommended to slit open the cable jacket to prove that the braid is broken. See photo below. Then cut off the faulty cable section and repeat the test described above to make sure that there is no further damage.

B) If the coil does not work at all, you may check the resistance between pins 1 and 2 of the connector. This should be around 1 to 2 ohms, but will probably be infinite (open). Please refer to page 1 for the pin numbers. In this case, it is not possible to locate the defective part. You can only cut off the connector and check the open end of the cable for the 1 to 2 ohms resistance. If still open, cut off more cable and measure again. If the cable is too short afterwards, it is possible to extend it (separate instructions available).