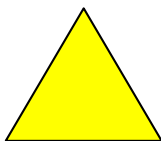


Keeler

Wireless 1

Headband & Charger

Service Manual



ALWAYS READ THE INSTRUCTIONS

A
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COMPANY

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Introduction

This manual covers servicing of both the Wireless 1 Headband and Wireless 1 Charger unit..

There are 2 versions of Headband. The only difference is the method of connection to the Indirect Optics – either directly wired into the Dimmer or by plug into the Dimmer unit

Service Principles

Where a sub-assembly is specified the individual parts are not available as the assembly of the sub-assembly involves the use of specific tooling, jigs and adhesives.

Tools Required

Most of the tools required will be in standard electro-mechanical toolkit.

Precautions

Care should be taken to carry out any repair work on a clean soft surface to minimise damage to the outside of the unit.
Solvents should **not** be used for cleaning.

Anti-static precautions must be used when servicing the electronic components in this product.

Headband

Disassembly

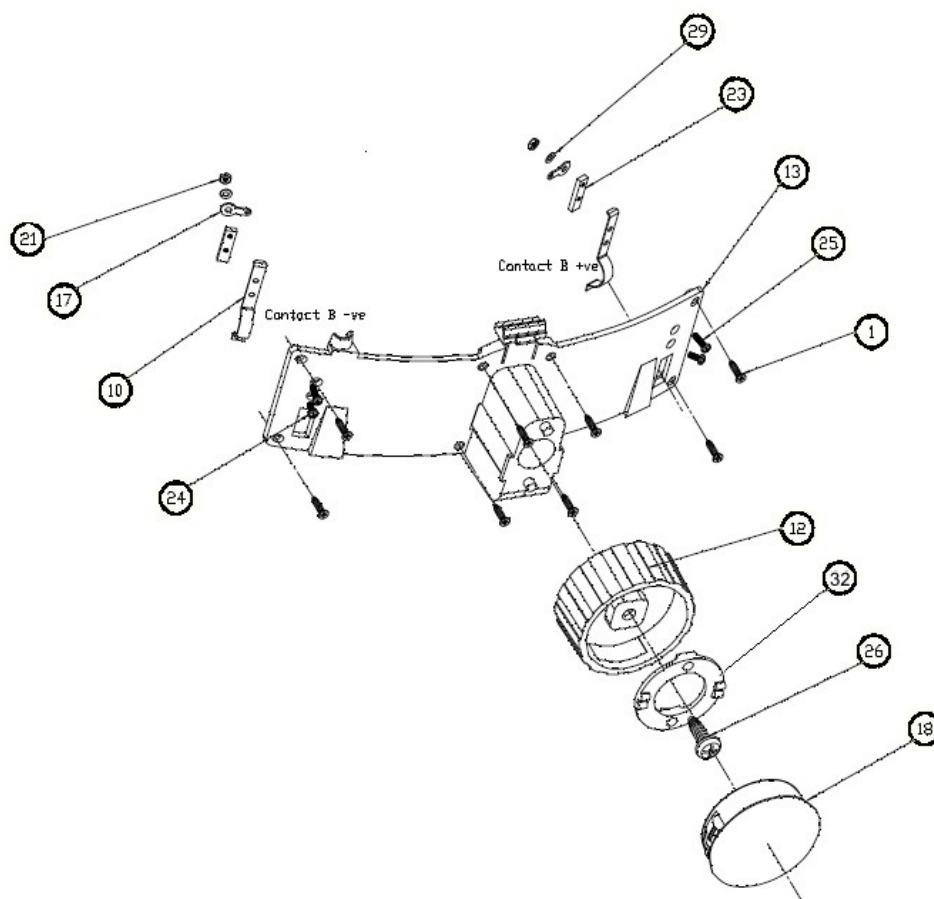
It is easier to work if the Optics Assembly and Browbar are removed by unscrewing the 2 knobs attaching the Browbar to the Headband and unplugging the cable from the Dimmer Block.

If the Control Unit is permanently wired to the Dimmer Block it is not recommended to disconnect the cable but to carefully protect the Optics Assembly whilst carrying out servicing.

The first level of disassembly is required for most repairs

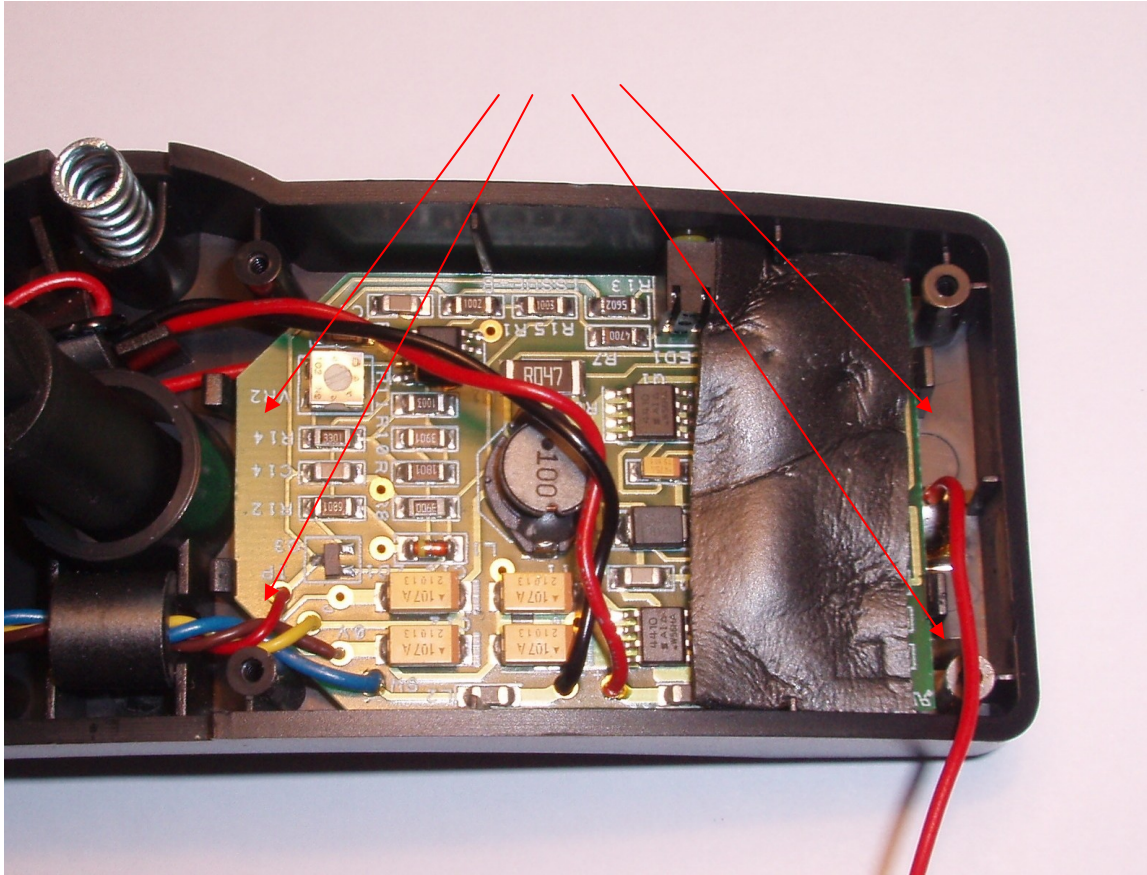
Open the Control Unit

1. Carefully using a sharp blade remove the Knob Cap (18)
2. Remove the Screw (26) from the centre of the Adjusting Knob (12)
3. Remove the Adjusting Knob (12) and the Detent Plate (32)
4. Remove 8 off M2 x 8 Csk PT Screw (1). Note that these screws are fitted parallel to the ends of the Control Box (22) not perpendicular to the surface of the Housing Cover (13).
5. The inside of the Control Unit is now exposed.



Removing the PCB

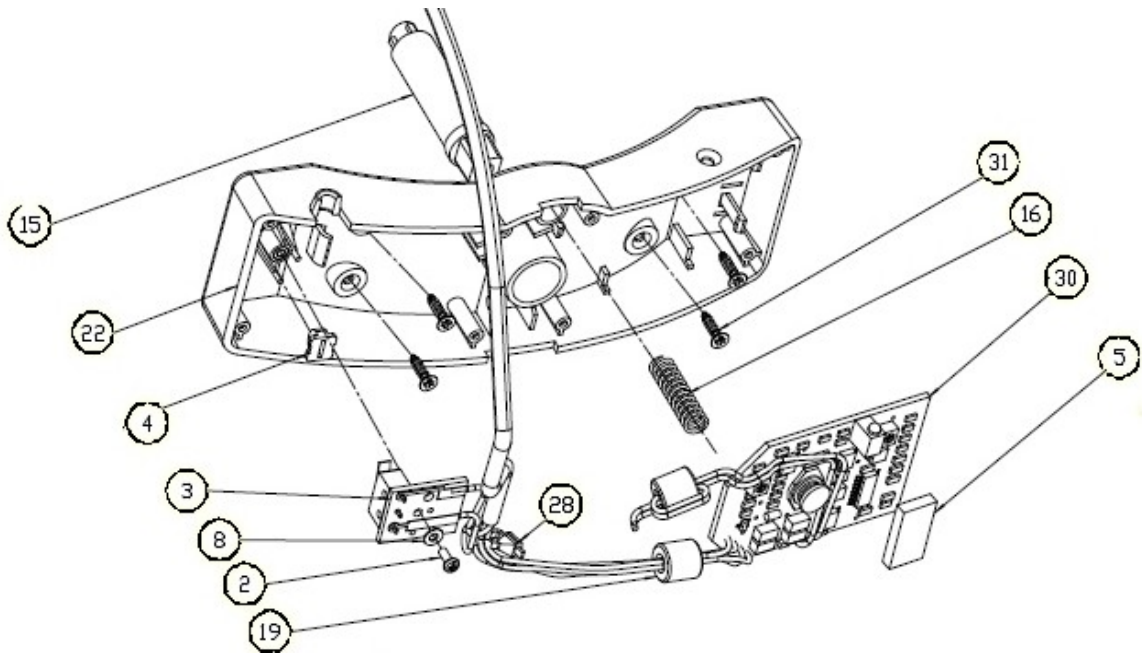
1. Carefully release the 4 clips retaining the PCB (30) taking care to lift the opposite side to the LED first.



Do Not adjust the potentiometers on the PCB – they are set when the PCB is manufactured.

Control Box

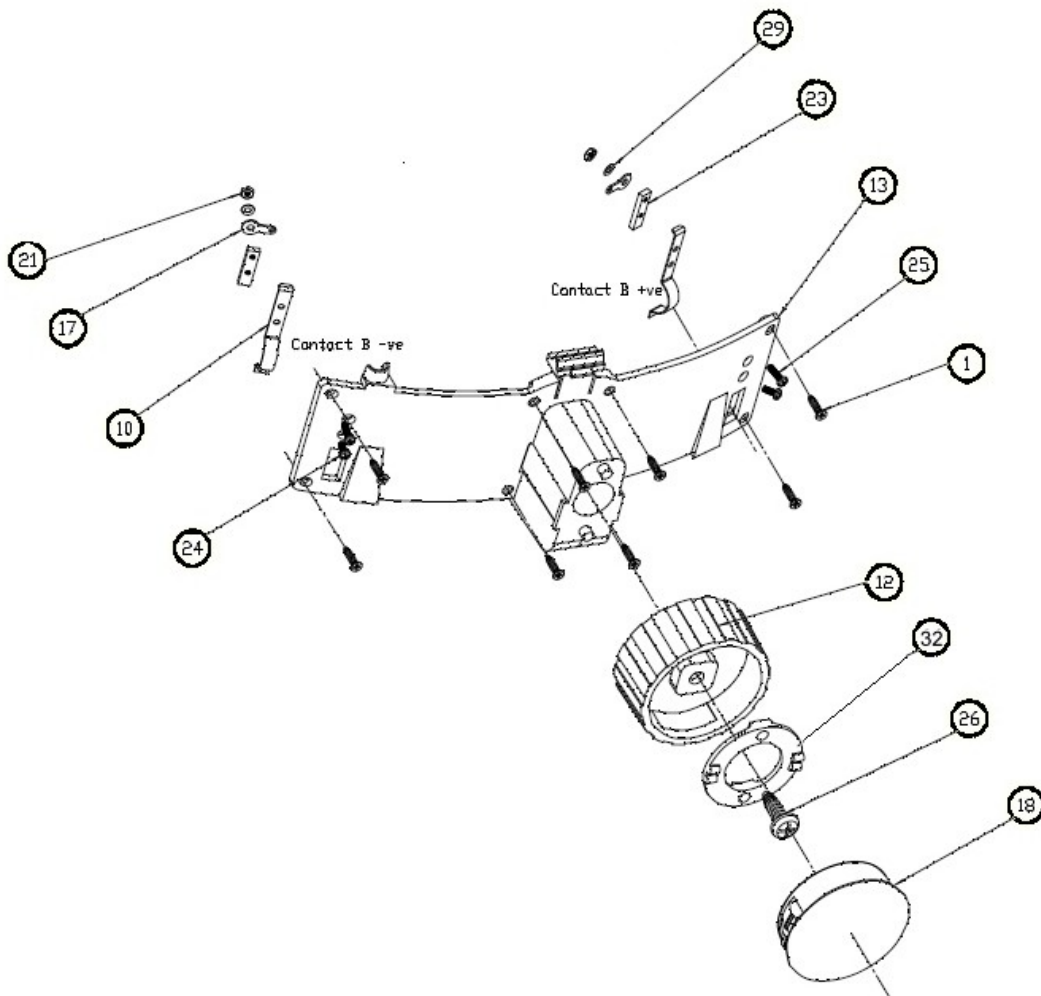
1. Remove 4 off M2.5 x 10 Pozi Csk Screws (31)
2. The Control Box can now be removed from the Headband.



Replacements

Battery Contacts

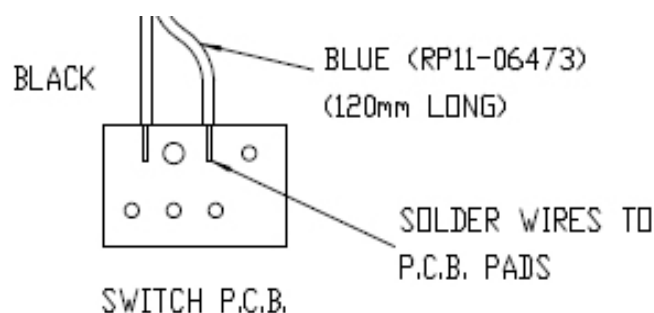
1. Take the Housing Cover (13)
2. Remove 1 off M1.6 Nuts (21) with 2 off M1.6 Washers (29) from each contact
3. Remove 1 off Solder Tag (17) from each contact
4. From the other side of the Housing Cover (13) remove 2 off M1.6 x 6 Pan Head Screw from each Nut Plate (23) and remove the Battery Contact (10).
5. Fit the replacement Battery Contact (10) using 2 off M1.6 x 6 Pan Head Screw screwed from the front of the Housing Cover (13)
6. Ensure that when the screws are tightened the Battery Contact (10) moves freely in its cut-out.
7. Refit the Solder Tags (17) using 1 off M1.6 Washer (29) and 1 off M1.6 Nut (21)



Microswitch PCB

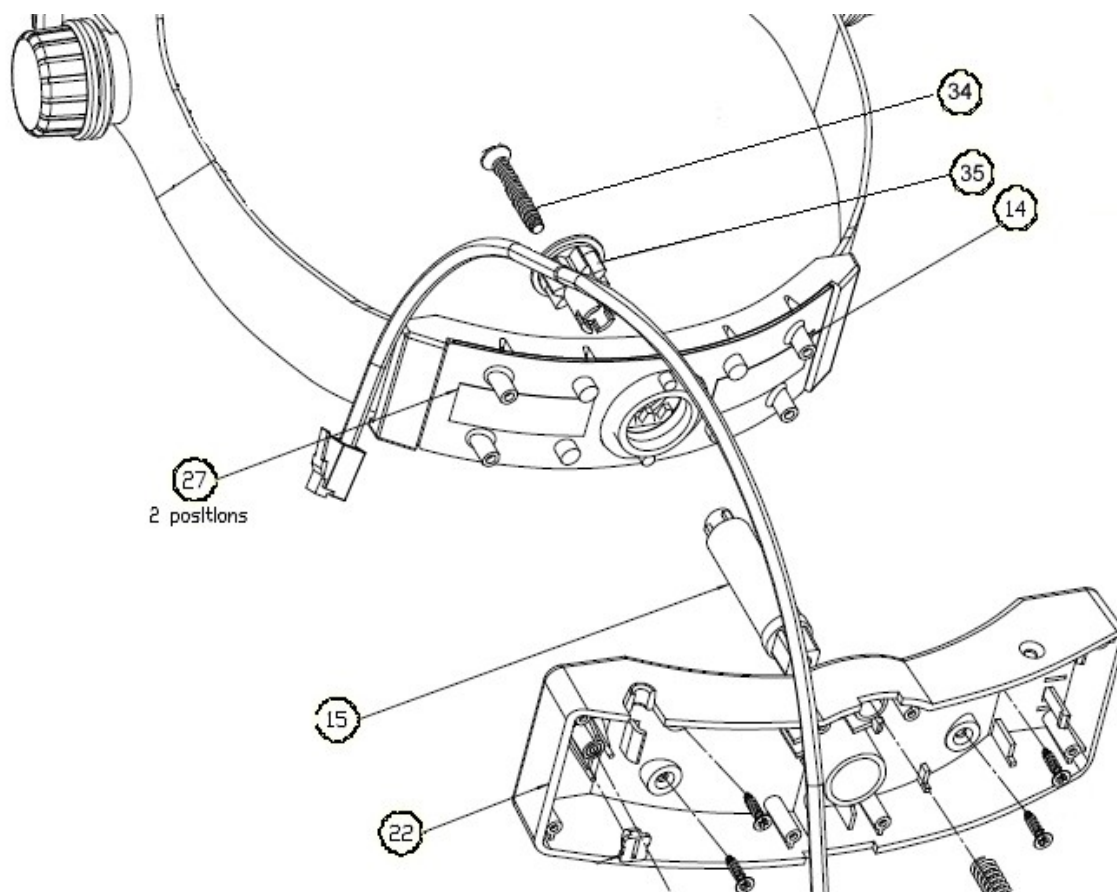
This section also covers replacement of the earlier Microswitch actuator which was an integral plastic finger on the Control Box. This has been replaced by a new Control Box and separate Microswitch Plunger. If the Control Box has the integral actuator a Control Box Upgrade kit will be required (1299-P-7103). The current Microswitch PCB cannot be fitted to the earlier Control Box.

1. Unsolder the Black and Blue wires from the Microswitch PCB (3)
2. Remove the Microswitch PCB (3) by removing 1 off M2 x 5 Pozi Pan head Screw (2) and 1 off M2 Washer (8)
3. Check if there is a separate Plunger. If not an Upgrade Kit will be required.
4. Check that the Microswitch Plunger (4) is in place.
5. Fit the replacement Microswitch PCB using 1 off M2 x 5 Pozi Pan head Screw (2) and 1 off M2 Washer (8)
6. Re-solder the Black and Blue wires



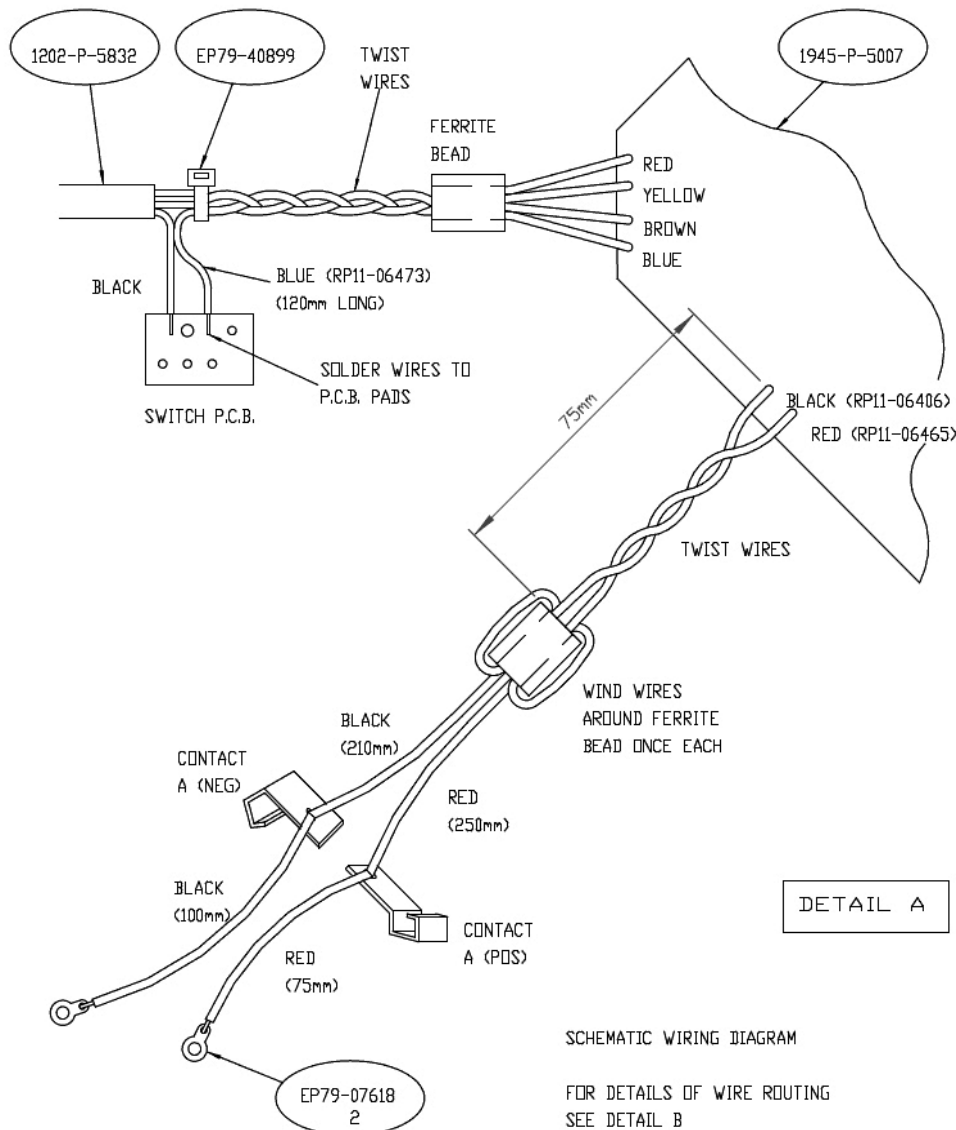
Headband

1. Carefully remove the Comfort Pad (9). Double sided adhesive tape is applied during assembly to retain the pad in place until the Control Box is fitted.
2. Remove 1 off M4 x 25 Pozi Screw (34) from the Headband Adjuster (35) joining it to the Extension Bar (15)
3. It will now be possible to remove both sides of the Headband from the Mounting Plate (14)
4. Feed both side of the replacement Headband into the Mounting Plate.
5. Fit the Adjuster (35) through the back of the Mounting Plate (14) and fit it to the Extension Bar (15) with 1 off M4 x 25 Pozi Screw (34)
6. Meshing of the Adjuster with the Headband will be adjusted after the Control Box has been fitted.



Control PCB

1. Carefully unsolder
 - 1.1. 1 off Red wire and 1 off Black wire going to the fixed contacts in the Control Box.
 - 1.2. 1 off each Red, Yellow, Brown and Blue wires from the Cableform to the Dimmer Block and Microswitch PCB.
2. Solder the Cableform and Control Box wiring to the replacement Control PCB as shown below before fitting the PCB to the Control Box.

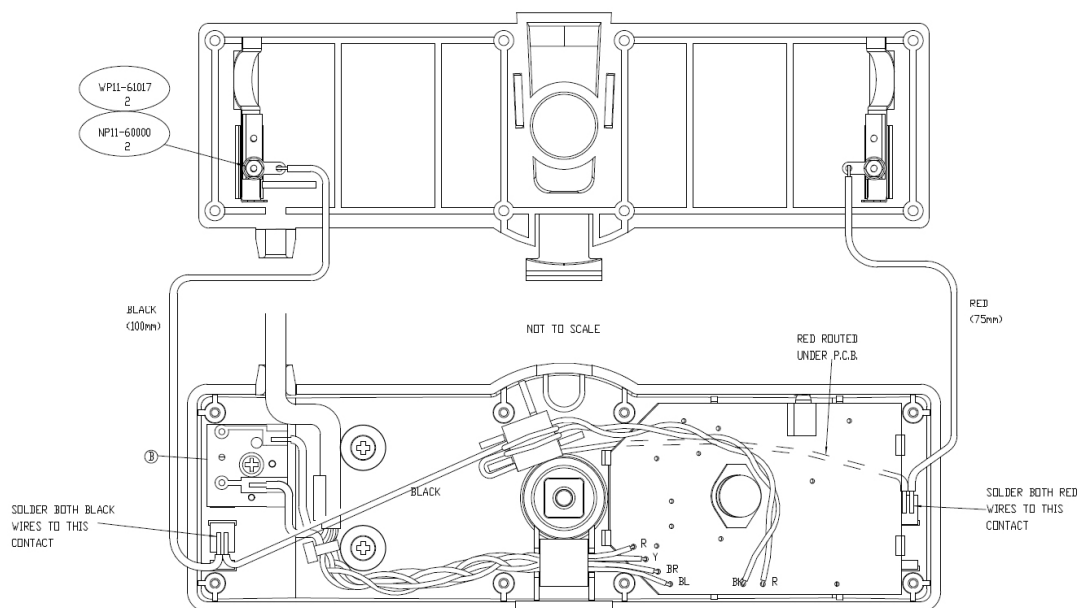


Do Not Adjust the 2 Potentiometers on the PCB. These are adjusted during manufacture of the PCB.

Reassembly

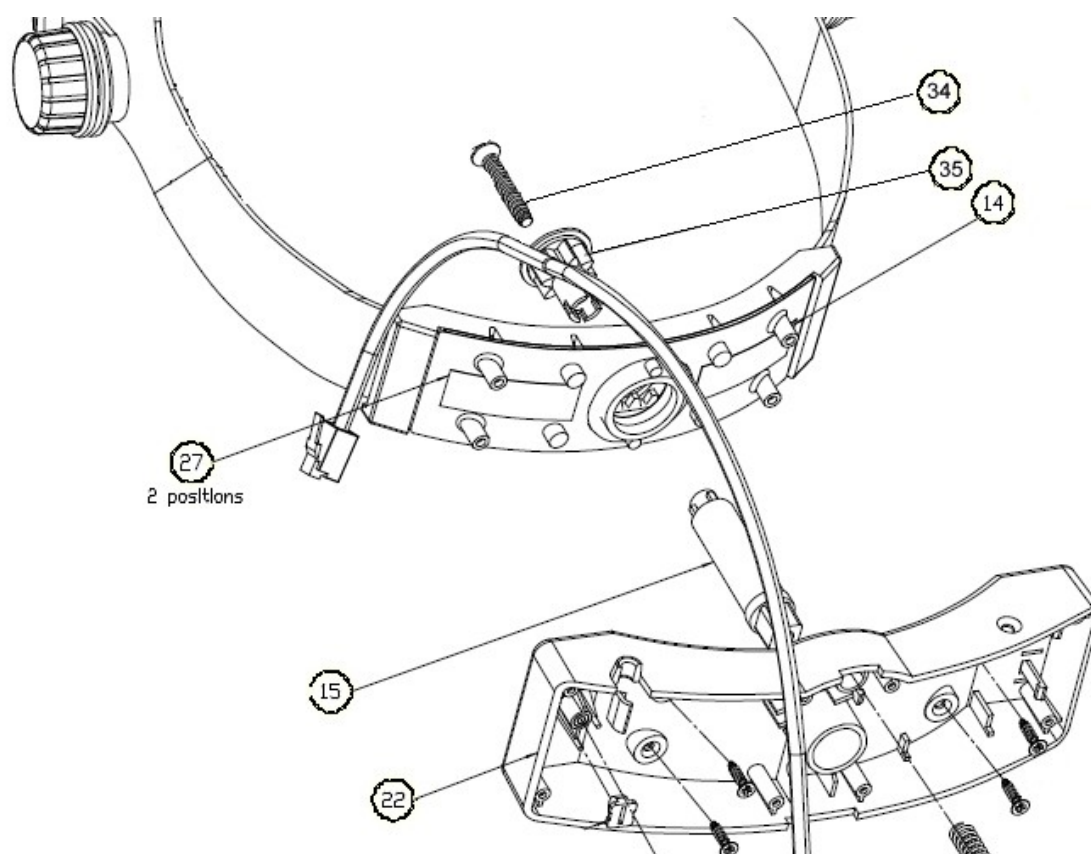
Control Box Wiring

1. Check that the wiring in the Control Box is as shown below and that the Ferrite beads (19) are correctly in place on the wiring. Do not fit the Control PCB at this stage as access is required to fit the screws holding the Control Box to the Mounting Plate.



Fit Comfort Pad

1. Apply 2 pieces of Double Sided Adhesive Tape to the Mounting Plate (14) as shown.
2. Ensure that the Headband Adjuster (35) is tightly fitted to the Extension Bar (15)
3. Fit the Comfort Pad (9) from the rear of the Headband so that the edges fold over the front of the Mounting Plate with the bosses poking through the holes in the Pad and stick the Pad temporarily to the Mounting Plate.



Fit Control Box

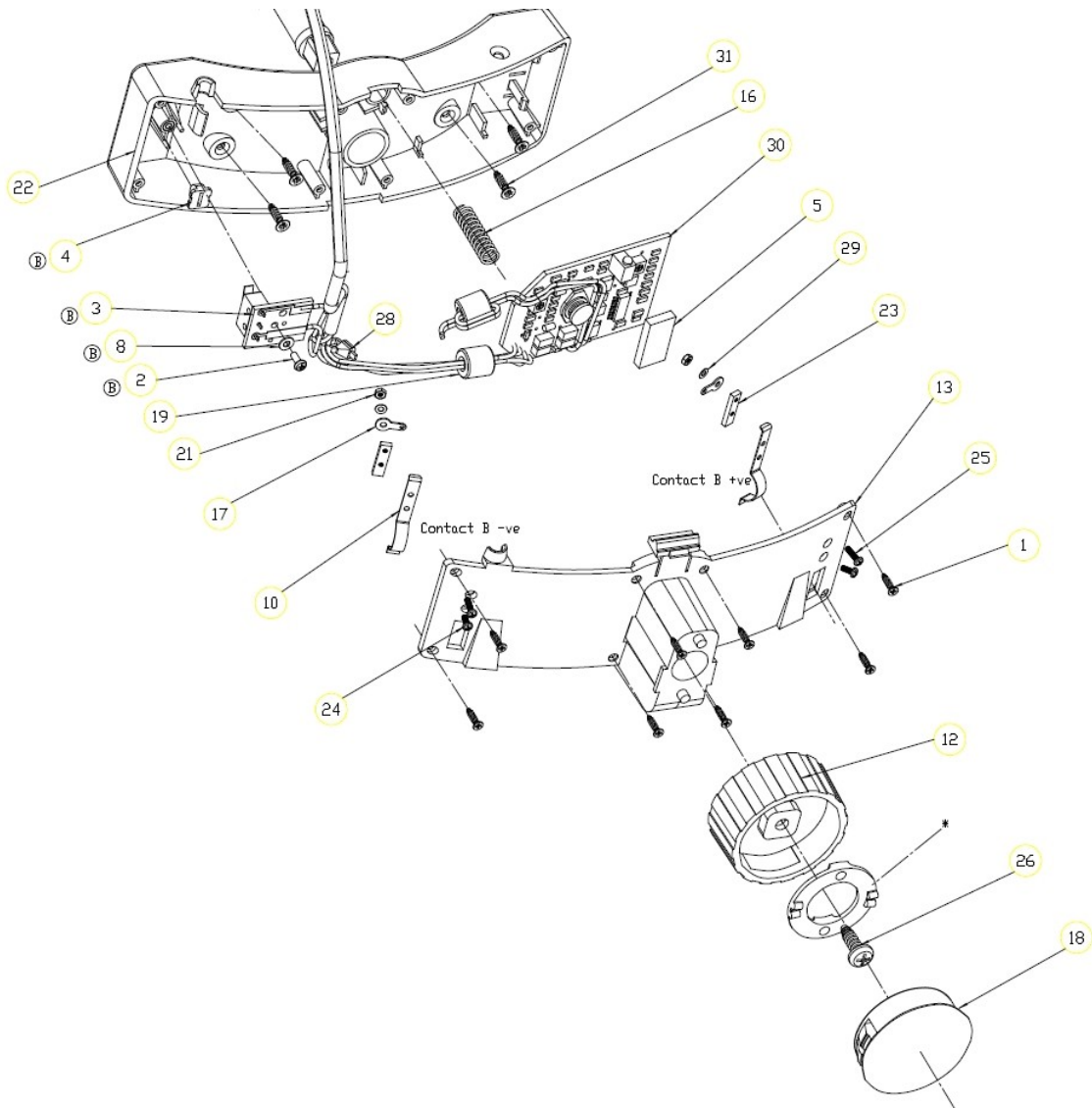
1. Offer the Control Box (22) to the Headband Assy ensuring that it is correctly orientated and that the Comfort Pad (9) is clear of the bosses on the Mounting Plate.
2. Secure the Control box (22) to the Mounting Plate (14) with 4 off M2.5 x 10 Pozi Csk PT Screws (31)

Fit Control PCB

1. Offer the Control PCB (30) into the Control Box by putting the LED into its hole first then pushing the PCB home until the retainers at each end click over the PCB.
2. Fit the Foam Pad (5) over the outside face of the Control PCB if not already fitted.

Fit Housing Cover

1. Check that the wiring loom and Ferrite Beads are correctly placed as shown in Control Box Wiring above and that all wires are clear of the screw bosses.
2. Fit the Spring (16) to the Control Box.
3. Fit the Housing Cover (13) to the Control Box (22) and secure with 8 off M2 x 8 Pozzi Csk PT Screws (1)



Fit Control Knob

1. It is important that the Headband adjustment is set up equally on both sides.
2. Push the Extension Bar in and pull the Headband sides apart.
3. Release the Extension Bar and move the Headband sides slightly together until the Adjuster meshes with the sides and the Extension Bar moves into position to have the Control Knob fitted.
4. Place the Detent Plate (32) over the 2 pegs on the Housing Cover (13)
5. Fit the Control Knob (12) over the Extension Bar (15) and secure it with 1 off M4 x 13 Pozi Pan head PT Screw (26). Ensure the screw is fully home by pressing on the Adjuster through the Comfort Pad.
6. Fit the Knob Cap (18)

Spares

Spare parts can be supplied in accordance with the following list.

The parts indicated with * are only available as part of a Fixings kit.

Current prices for spare parts are available from Technical Service.

Technical Service
Keeler Ltd
Clewer Hill Road
Windsor
Berks
SL4 4AA

Phone +44 (0)1753 827110

Fax +44 (0)1753 827114

Spare Parts List

Item	Part No	Description	
1	SP72-00001	M2 x * Csk PT Screw	*
2	SP12-05002	M2 x 5 Pozi Pan Hd Screw	*
3	EP39-19822	Microswitch PCB	
4	EP39-19988	Microswitch Plunger	
6	SP72-00003	M2 x 4 Pozi Pan Hd Screw	*
7	EP39-70232	Strain Relief Clamp	
8	WP12-01007	M2 Washer	*
9	EP39-15573	Comfort Pad	
10	EP29-05664	Battery Contact	
12	EP29-05680	Adjusting Knob	
13	EP19-02365	Housing Cover	
14	EP29-05672	Mounting Plate	
15	EP39-19021	Extension Bar	
16	EP79-10403	Spring	
17	EP79-07618	Solder Tag	*
18	EP79-10358	Knob Cap	
19	EP79-10374	Ferrite bead	
20	2099-P-5010	Mk2 Headband Assy	
21	NP11-60000	M1.6 Hexagon Nut	*
22	1299-P-7163	Control Box Upgrade Kit	
23	EP39-15602	Nut Plate	
24	SP11-65001	M1.6 x 4 Screw	*
25	SP11-65002	M1.6 x 6 Pan Hd Screw	*
26	SP70-80024	No 8 B x 12.7 Pan Head Screw	*
28	EP79-40899	Cable Tie	*
29	WP11-61017	M1.6 Washer	*
30	1945-P-5007	Control PCB Assy	
31	SP72-50002	M2.5 x 10 Screw	*
32	EP39-19005	Detent Plate	

33	1202-P-5832	Cable Form
	1299-P-7155	Fixings (Marked * above)

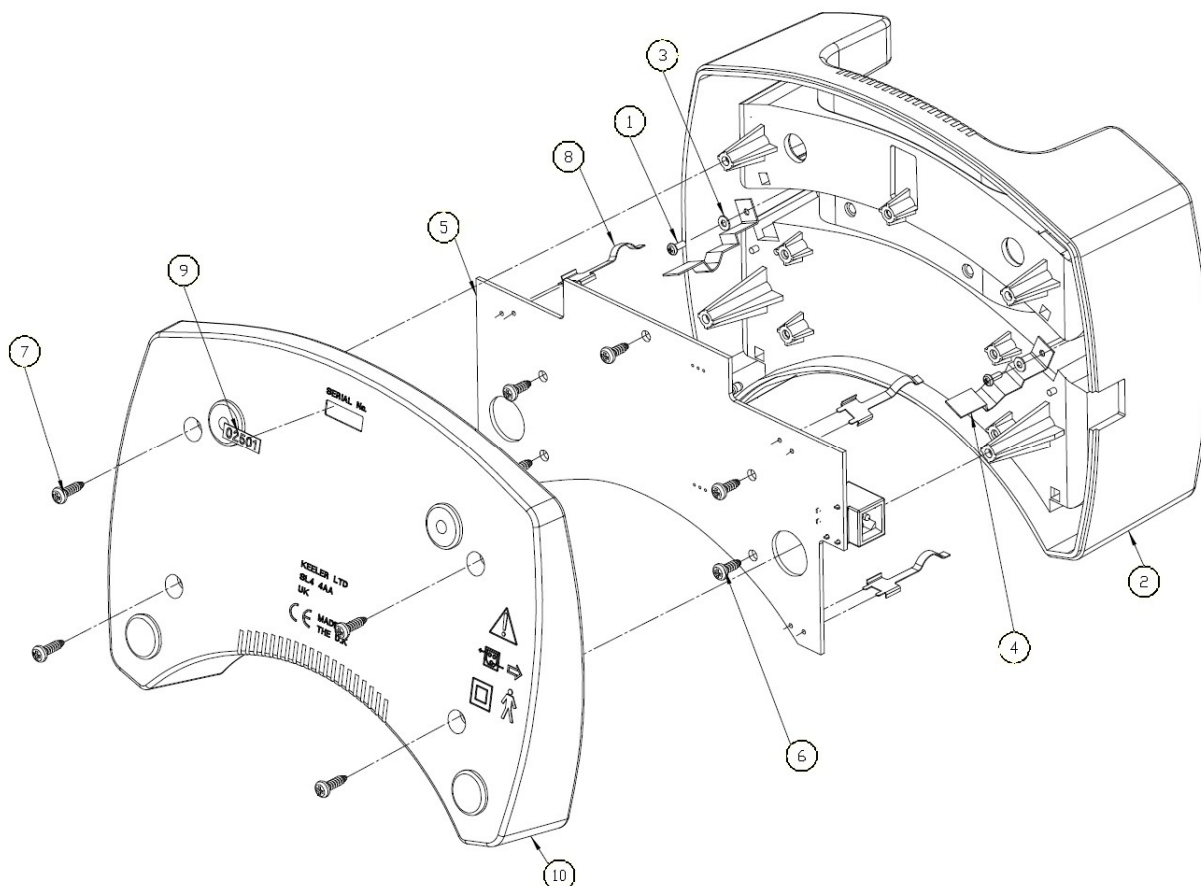
Headband Spares

Item	Part No	Description
	TECHX-HB1	Adjusting Knob Set
	TECHX-HB2	Comfort Sleeve Set
	TECHX-HB3	Browbar Knob Set

Charger

Disassembly

1. Remove 4 off M3 x 10 Pozi Pan head PT Screws (7)
2. Lift off the Back (10)
3. Remove 5 off M3 x 8 Pozi Pan head PT Screws (6)
4. Lift out the PCB (5)



Reassembly

1. Check the Charger Front (2). Earlier versions were equipped with integral plastic springs. These have been replaced by Metal Springs (4). If the plastic springs have failed an upgrade kit will be required. This includes the Cover (2), 2 off Springs (4), Screws (1) and Washers (3)
2. Check the Spring Contacts (8) soldered to the PCB. They should be perpendicular to the PCB (5).
3. Offer the PCB (5) to the Front Cover (2) ensuring that all 4 Spring Contacts (8) fit through their relative cut-outs.
4. Secure the PCB (5) using 5 off M3 x 8 Pozi Pan head PT Screws (6).
5. Offer the Back (10) to the main assembly and secure it with 4 off M3 x 10 Pozi Pan head PT Screws (7).

Spare Parts List

Item	Part No	Description	
1	SP12-05002	M2 x 5 Pozi Pan Head Screw	*
2	1945-P-7012	Charger Front Assy	
3	WP12-01007	M2 Washer	*
4	EP39-19996	Metal Spring	*
5	1941-P-5342	PCB Assembly	
6	SP73-00002	M3 x 8 Pozi Pan Head Screw	*
7	SP73-00003	M3 x 10 Pozi Pan Head Screw	*
10	EP19-02381	Back	
	1945-P-7010	Fixings (Marked * above)	