



2 bzw. 5 zusätzliche Kondensatoren erlauben (je nach Belastung)
30-50 cm Kabellänge zwischen **Akku** & Steller/Regler, oder 30cm bei Verwendung von **nicht** inline gelöteten Akkus (30cm rot + 30cm schw.).

*Our future/smart/slim electronic speed controllers have been designed to operate correctly with a cable length between battery and controller at a maximum of **20 cm (7 inches)** each lead. In some installations it will be necessary to increase the length of the battery cables. In this case it is necessary to install additional low-ESR decoupling capacitors. The installation of these additional capacitors allows the increase in length of the battery cables up to **30 cm (12") max.** (12" pos.+ 12" neg. cable) or up to **50 cm (20 inches) max.** when using side by side soldered packs, depending on motor load.*



- 1) **Serien-future** enthält nur 2 Kondensatoren
1) **Standard future** includes only 2 capacitors

2) Vorbereitung

a) Kondensatoren:

Minuspol nach oben. Becher mit Sekundenkleber aneinanderkleben. Beine gleicher Polarität auf **5 mm** Länge verlöten.

b) Akkukabel: ringförmig abisolieren.



2) Preparation

a) capacitors:

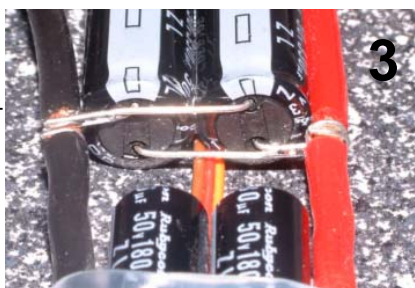
position the capacitors next to each other, neg. bar up. Using a drop of CA, glue the capacitor housings (plastic wrap) together. Bend the negative wires (top) to the left, and the two positive wires (bottom) to the right. Solder the negative wires together as shown (on a length of 5 mm only). Solder also the positive wires together as shown (5 mm).

b) battery cables: using a wire stripper, strip a small amount of insulation at location shown. CAUTION: do not cut the wire itself, only the insulation.

3) Kondensatorbein(e)
1x um abisoliertes Akkukabel wickeln.

3) Wrap the capacitor leads
1 time around the stripped wire. CAUTION:

observe positive '+' and negative '-' on the capacitor. The '+' wires go to the red cable, the '-' wires go to the black cable. Cut off excess lead length of the capacitors.



Kondensatortypen / Capacitor types:

5*220 µF / 63 V - max. 40 Ni-Cd/Ni-MH Zellen

2*330 µF / 50 V - max. 32 Ni-Cd/Ni-MH Zellen

2*330 µF / 16 V - max. 11 Ni-Cd/Ni-MH Cells

Low-ESR (Rubycon ZL Serie / Series)



4) Kondensatorbeine von außen ...

4) Solder capacitor leads on the outside ...



5) ... und Kondensatorbeine auch innen an die Akkukabel anlöten.

5) ... and solder also capacitor terminals on the inside to the battery leads.



6) Fixiere Akkukabel mit Sekundenkleber am Kondensatorgehäuse, Lötstelle mit Klebeband isolieren.

6) Glue battery cables to capacitors using instant glue (CA). Insulate using clear tape or light heat shrink.

für / for **future-9.xx**

Erlaubt unter Umständen die Inbetriebnahme des future-9.06 bzw. des future-9.12 falls dieser durch 4-maliges Piepsen einen „zu schwachen Akku“ (leer oder zu hoher Innenwiderstand) oder zu lange Anschlußkabel signalisiert und nicht scharfschaltet.

*The **future-9** electronic speed controllers have been designed to operate correctly with the supplied cable and with batteries and connectors of low internal resistance. In some installations it will be necessary to install an additional low-ESR decoupling capacitor. This necessity will be indicated by the **future-9** by means of a series of four beeps (“Empty or Weak Battery” or “Battery Cables Too Long”).*

1) **future-9** im Originalzustand + Zusatz-Kondensator

2) Vorbereitung

a) **Kondensatoren:** Minuspol und Pluspol-Beinchen nach außen abwinkeln.

b) **Akkukabel:** ringförmig abisolieren.

3) Kondensatorbein(e) einmal um abisoliertes Akkukabel wickeln, Rest abschneiden.

4) Kondensatorbeine von außen und innen an die Akkukabel löten.

5) Fixiere Akkukabel mit Sekundenkleber am Kondensatorgehäuse, Lötstelle mit Klebeband isolieren.



1) standard **future-9** and additional capacitor

2) Preparation

a) **capacitor:**

Bend legs away from the capacitor as shown.

b) **battery cables:** using a wire stripper, strip a small amount of insulation at location shown. CAUTION: do not cut the wire itself, only the insulation.

3) Wrap the capacitor leads one times around the stripped wire. CAUTION: observe positive (+, often the longer lead) and negative '-' (the recommended capacitor has a white bar) on the capacitor. The '+' wires go to the red cable, the '-' wires go to the black cable. Cut off excess lead length of the capacitor.

4) Solder capacitor leads on the outside and inside to the battery leads.

5) Glue battery cables to capacitor using instant glue (CA). Insulate using clear tape or light heat shrink.



Kondensatortyp:
Capacitor type:
330 µF / 16 V Low-ESR
(Rubycon ZL Serie/s)