en/MK-HexaXL

15

LotharF
MikroKopter.de

This page as an **PDF-Document**? Click on that Symbol and wait a little moment... --->

MikroKopter - HexaKopter XL

- deutsch
- français

See also: assembly Overview

Inhaltsverzeichnis

Info

Please read this manual **carefully**! This can avoid misunderstandings !
Technical knowledge is recommanded! Wrong soldering can cause damage!

⚠ For the first test you should use a regulated power supply and **not** the Lipo (battery) !
Wrong soldering or short circuit can destroy the electronics ! Use a power supply of 12V/500mA.

Rigger

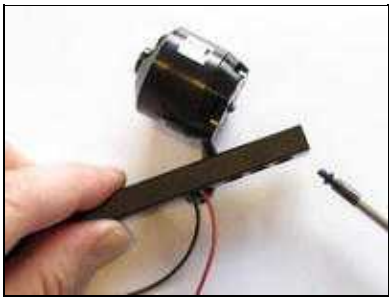
Mounting the Motor

⚠ **Before you mount the three motor cables into the riggers, you have to check and mount the Motor.**
All motors are tested but please check if there is no short circuit between the motor cables and the motor housing.

The motors are mounted with two screws. to avoid loosing the motors, use a little drop of Threadlocker.

⚠ ATTENTION: The screws should be screwed firmly. However, the screw thread in the motor could be overtorqued if too much power!

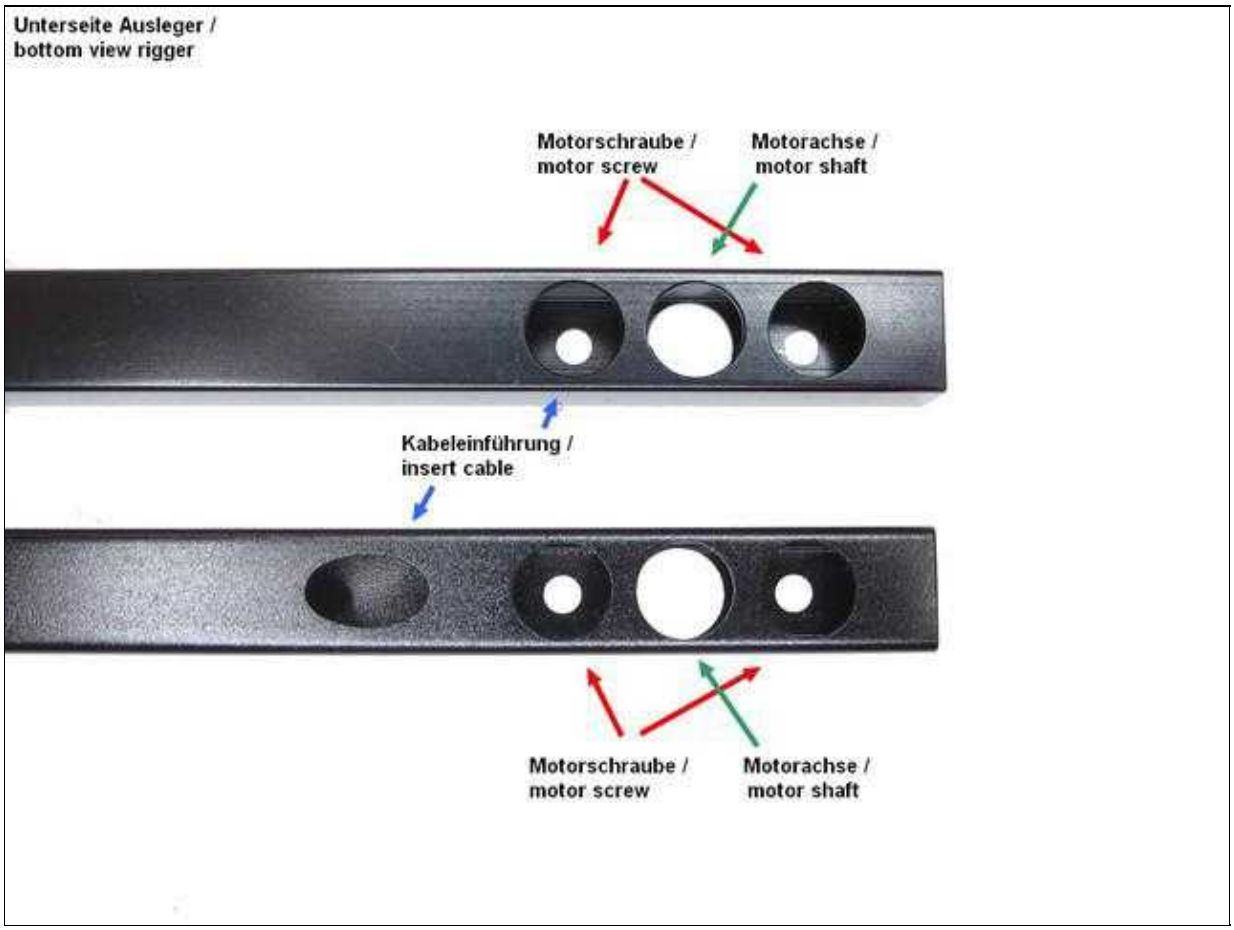
ℹ The threads on the motor (above/below left/right) have different distances!



install the motor-, LED-cables

Also mount the red and one black 0,5mm cable (in suitable length) into the riggers wich obtain a LED-stripe or a buzzer.
Please be carefull while installing the cables.

Insert the cable like you see below.



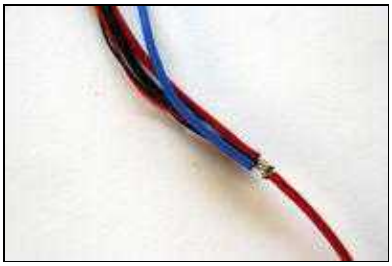
The cable of the Motor comes out of the hole on the left side of the rigger! (see picture)

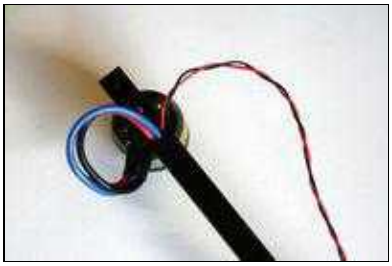
Example picture

Tips:

- Stick or solder wires together before pulling them through the hole.
- if needed, attatch a string to the wires and pull that through first.

Attention: If you connect the motorcables, it is difficult to turn the motor!

Propeller Mount

The three screws of the propeller mount should be firmly screwed. In this case use a suitable screwdriver!
Later you can mount the propeller like the picture show.

Example: MK3538 Motor


mounting and connecting the LED-strip

⚠ **COMMENT**: The color of the LED-strip of the Set can vary. Here we describe it with red and blue LED! The LED-strips of different colors can look equal. Before assembly, the color can be determined by applying a voltage. Terefore a power supply (12V) or a 9V battery that can be used.

⚠ A LED-strip consists of **6 LED's** (it could be, that you have to cut a strip)

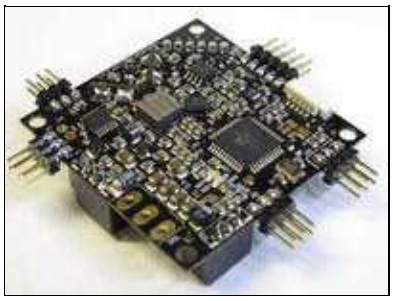
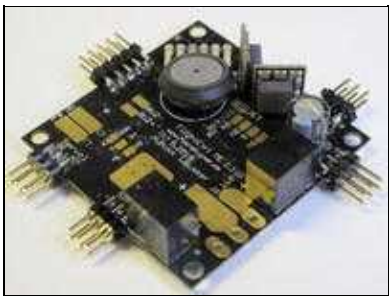
On the red rigger at the front you can put the red LED-strip. Then put the blue LED-strip on the black riggers. Now you can solder the red and black Silicone cable (0.5mm²) in the right polarity ("+" red / "-" black) to the LED-strip .
Finally the LED-strip can be shrinked with the transparent shrink hose.

Example of the lighting		
Kopter	Red	Blue
Quadro	rigger 1	rigger 2,3,4
Hexa	rigger 1	rigger 3,5
Okto	rigger 1	rigger 4,6



Flight Ctrl. 2.1

The FlightCtrl is already fitted with all needed components.

The FCV2.1 can be connected to the powerboard via the molex cable.

When using the Molexkabel between FlightCtrl and powerboard, you **don't** have to solder the I2C bus, the buzzer and the power cable to the FlightCtrl.
Only the power cable for the receiver still has to be soldered to the FlightCtrl.
The buzzer is connected directly to the appropriate solder points of the powerboard (Buzzer / -).
The I2C-bus and the voltage supply are provided from the power distribution via the Molex.
Alternatively, the FC V2.1 can be connected with individual cable to the power distributor. But then you don't have to use the Molexcable.

When mounting the FlightCtrl, the printed arrow shows to the rigger No.1 (red rigger). The PCB populated side facing up.

layout / wiring FC ME 2.1

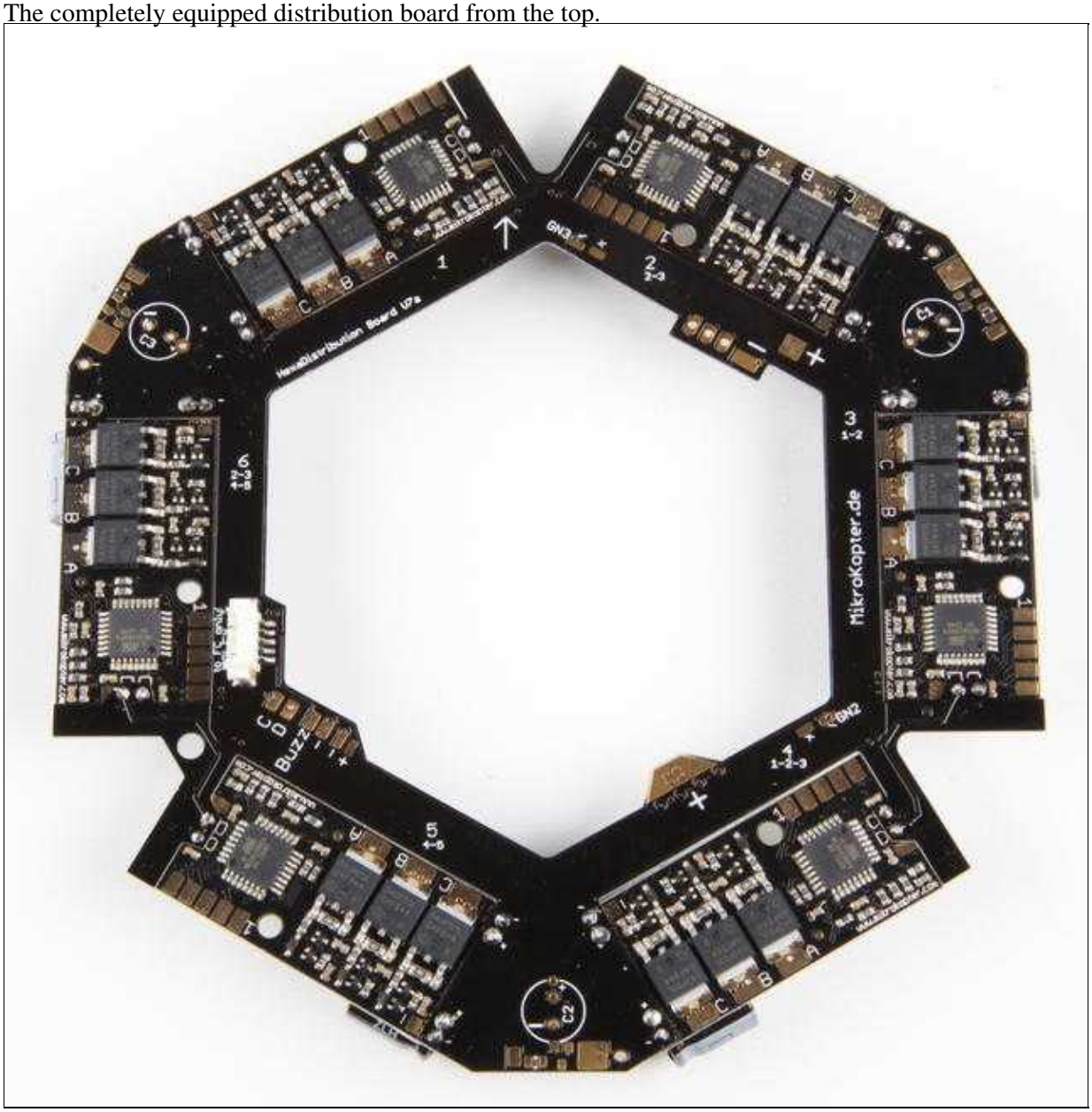
Describes how a receiver is connected to the FlightCtrl: FlightCtrl 2.1

In the XL-Set you have a mounted powerboard. How to mount the powerboard with BL-Ctrl you can read here.

Powerboard

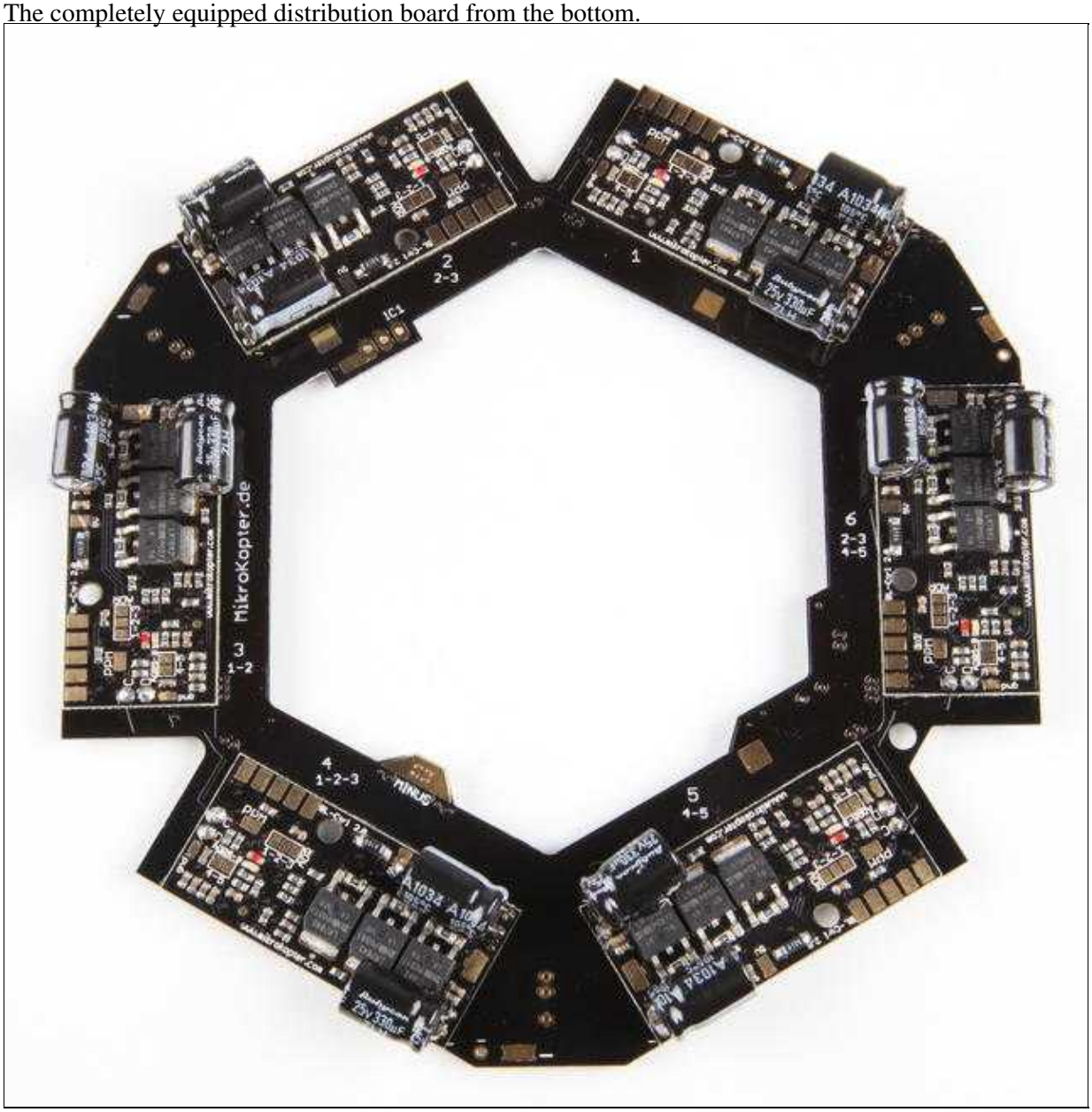
Power Distributor - Top

The completely equipped distribution board from the top.



Power Distributor - Bottom

The completely equipped distribution board from the bottom.



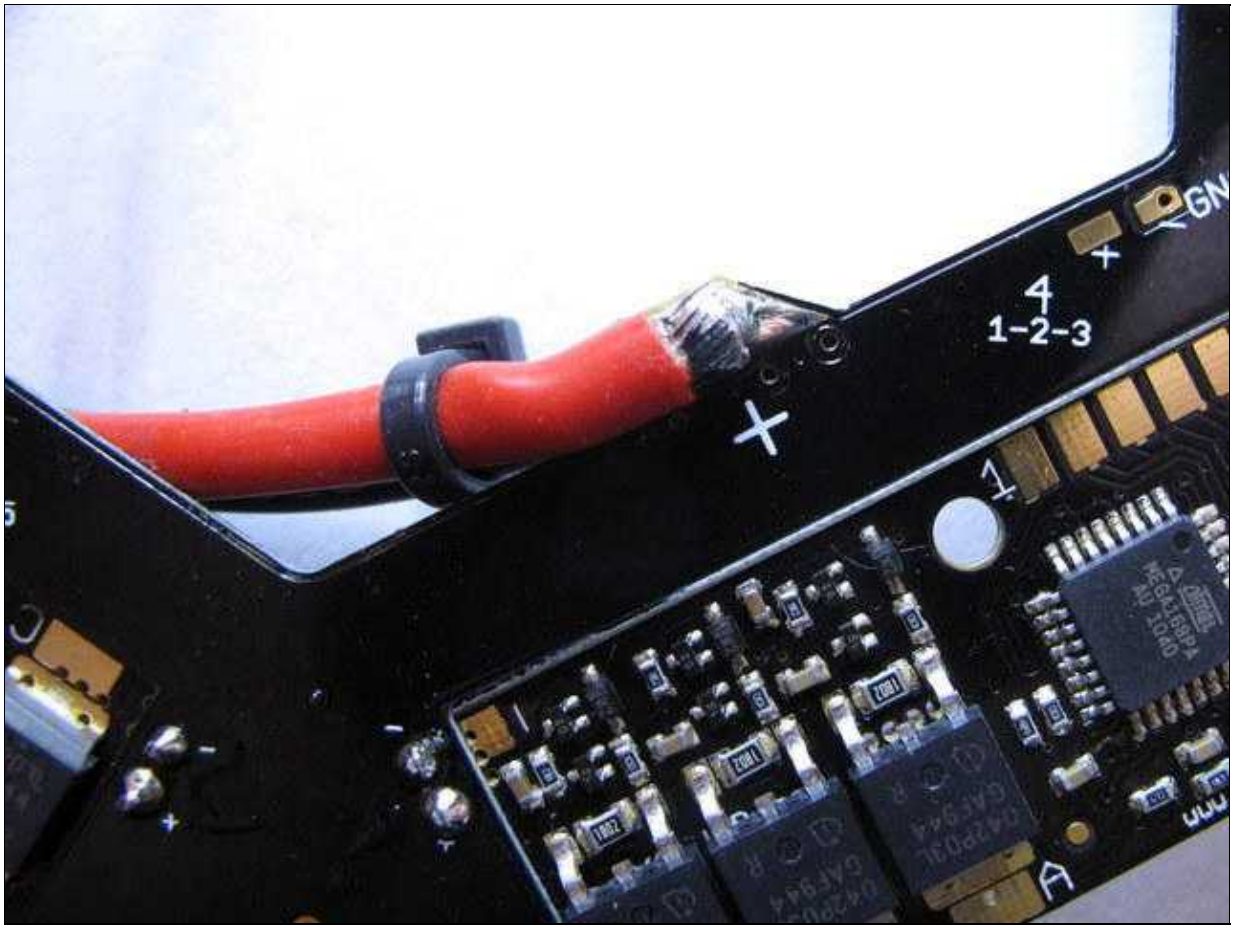
Supply

Connect the batterie cable

On the large "+" and "-" solder pads connect the cable for the Lipo. With a cable tie the cable can be fixed.

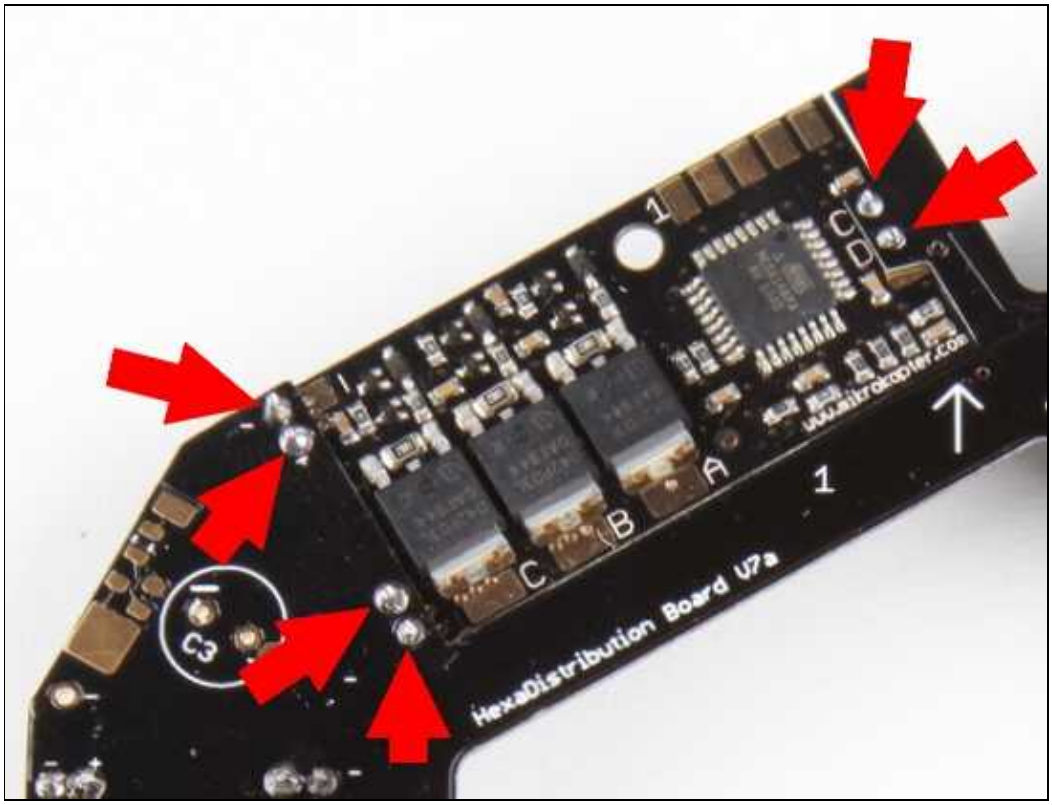
- Plus = red
- Minus = black

do not mix plus and minus here!



Check for short circuit

The contacts (red arrows) are measured with a multimeter. You may not contact or short circuit with each other or have to plus or minus.

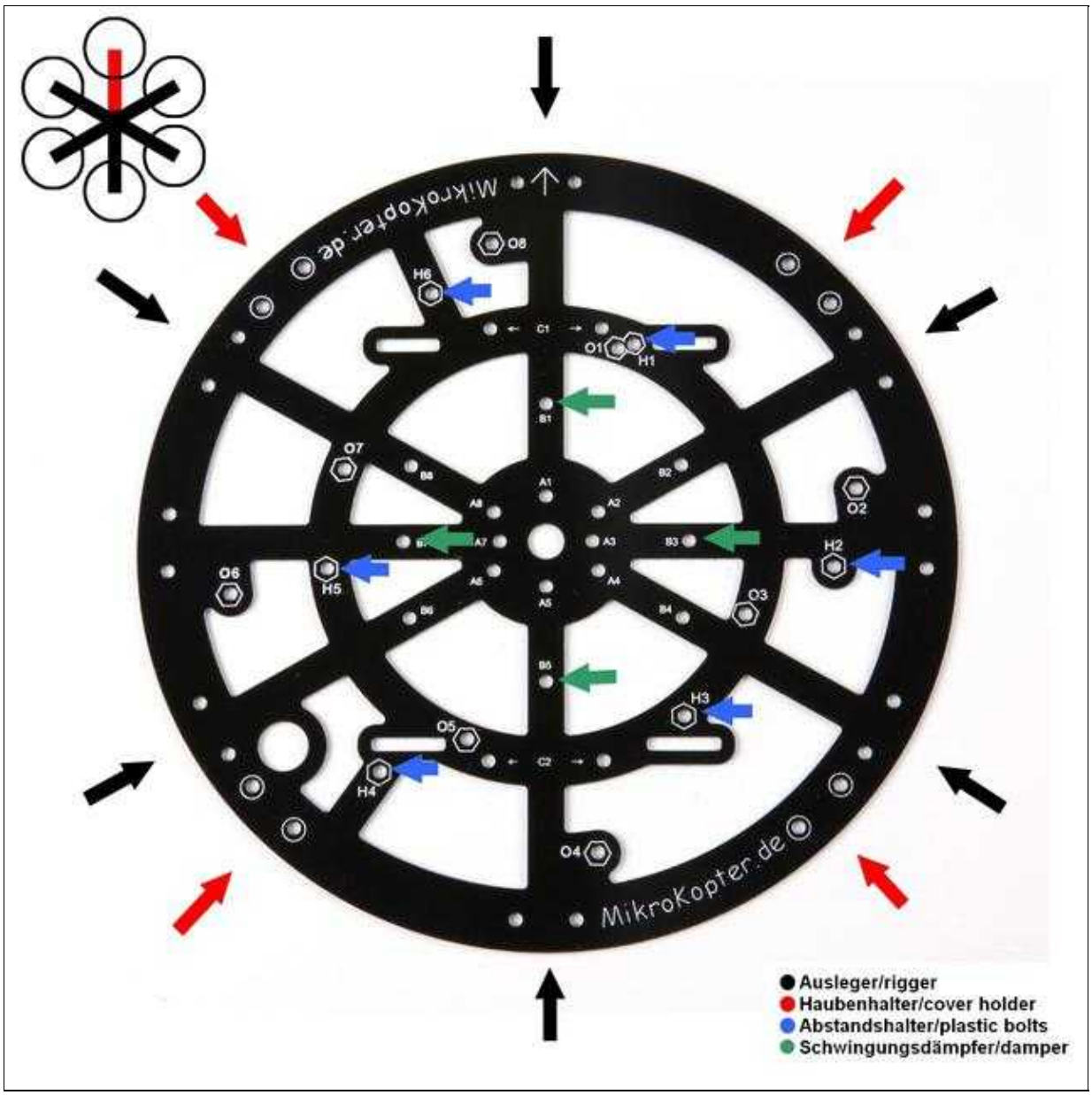


Assembling Centerplate

The two Centerplates are keeping the riggers and the electronics together.

⚠ **The printed side of the Centerplate always shows up. The arrow always points forward.**
⚠ **The red arm is front. The rigger, starting with the red one, clockwise from 1-6.**

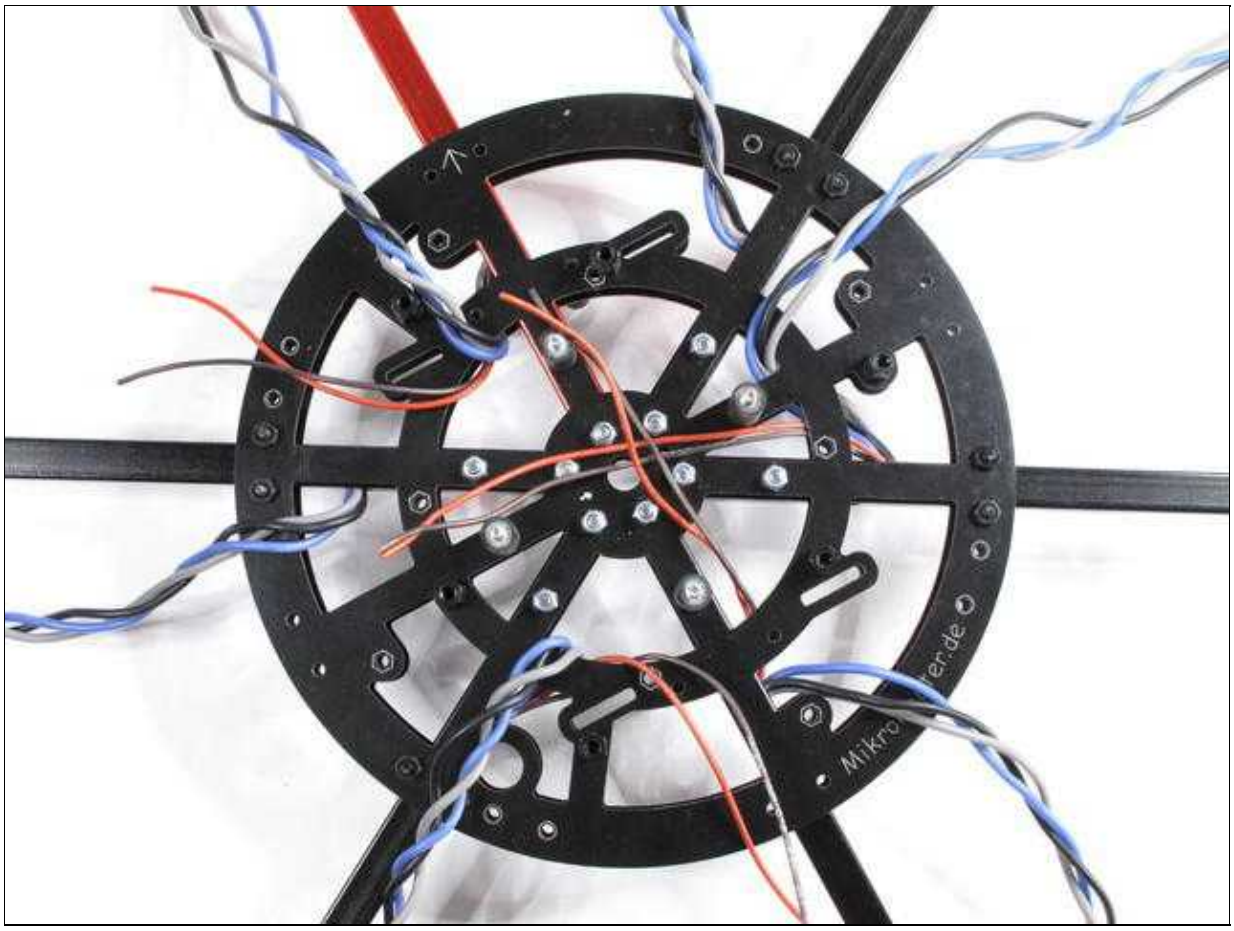
Example


MikroKopter.de
O8
H6
C1
O1
H1
B1
O7
B8
A1
B2
A8
A2
O2
A7
A3
B3
H2
O6
H5
A6
A4
O3
A5
B4
B6
B5
H3
O5
C2
H4
O4
MikroKopter.de
Ausleger/rigger
Haubenhalter/cover holder
Abstandshalter/plastic bolts
Schwingungsdämpfer/damper

At the top centerplate the six spacers (M3x10) are assembled first. Later, the power distributor is mounted on this spacers. Insert the six spacers with the thread into the centerplate (H1-H6) and secured with a nut. Insert now from the bottom of the upper centerplate (through the holes B3 and B7) the short metal or plastic screws and mount two of the rubber dampers (M3x15).
To have a little more space under the FlightCtrl, you can install a nut or a spacer on the rubber damper (e.g.M3x10).
If you will mount a Tower later above the FlightCtrl, take care that it not touch the cover.
In the next step, the lower and the upper centerplate (with the spacers), can be mounted with the cover holder. Therefore you need 2x plastic screws (M3x16) / plastic nuts (M3).

Now you can mount the rigger. These are bolted to a metal screw in the center of the centerplate (A1,A2,A4,A5,A6,A8 + B2,B4,B6,B8). The second metal screw of rigger 1 and 4 is inserted from the bottom (B1,B5) and secured with a rubber damper (M3x15). Those rubber damper are later attached to the FlightCtrl. On each rubber damper is screwed a distance bolt (M3x6) to give the FlightCtrl a little more space.

On the outer ring of the centerplate, all riggers will be attached with two plastic screws(M3x16) / nut (M3).



The cables are led out as in the picture to see.

Wiring of the buzzer cable

assembly with buzzer adapter

The buzzer can also be mounted with the buzzer adapter to the Kopter. But take care that the Buzzer is not mounted too close to the FlightCtrl.
This could disturbe the compass!

We recommend to mount the Buzzer on a 15mm plastic spacer bolt like on the picture. Do not mount it on the Lipo holder. In case of a crash it could cut the cable to the Buzzer.

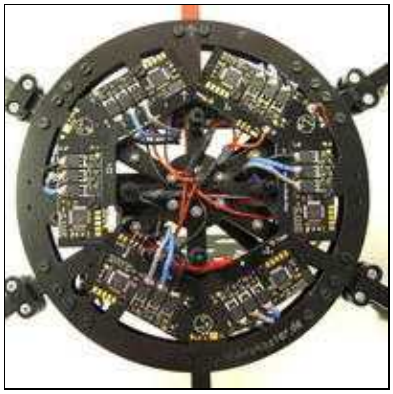
How to mount the buzzer adapter: Buzzer Adapter

Assembly Powerboard

The Lipo cable is inserted through the Center Plate. Later you can fix it with a cable tie.


After the distribution board is screwed onto the six spacers, the motor cables can be soldered onto the BL-Ctrls. The result:

The arrow of the powerboard shows to the red rigger!

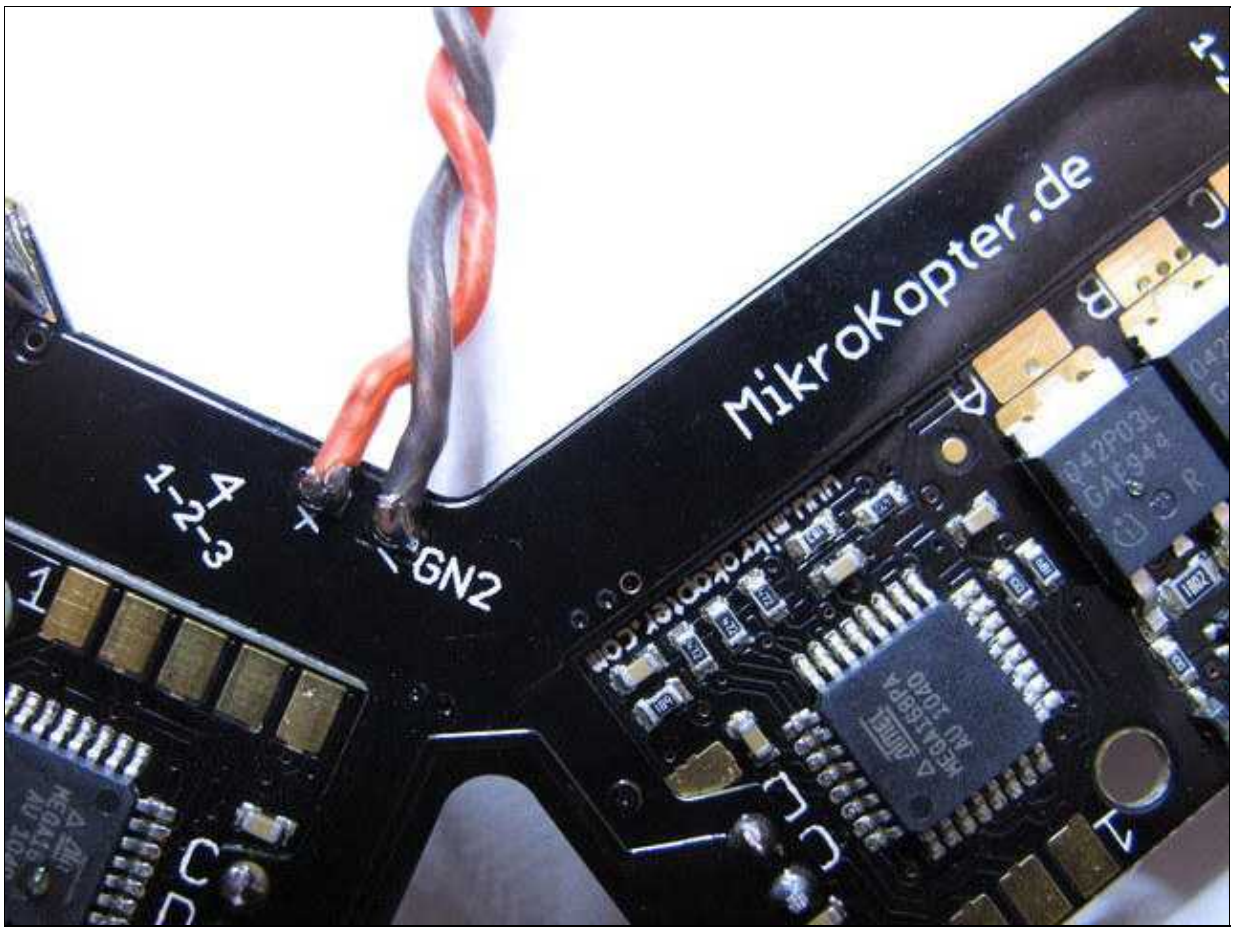



<=Hexa

Info:
Motor connection A = **gray**, B = **blue**, C = **black** cable on the **uneven Motor addresses (clockwise rotation)**
Motor connection A = **blue**, B = **gray**, C = **black** cable on the **even Motor addresses (anticlockwise direction)**.
Just in case during the motor test (later) on motor would turn in the wrong direction, simply exchange two of the three cables.

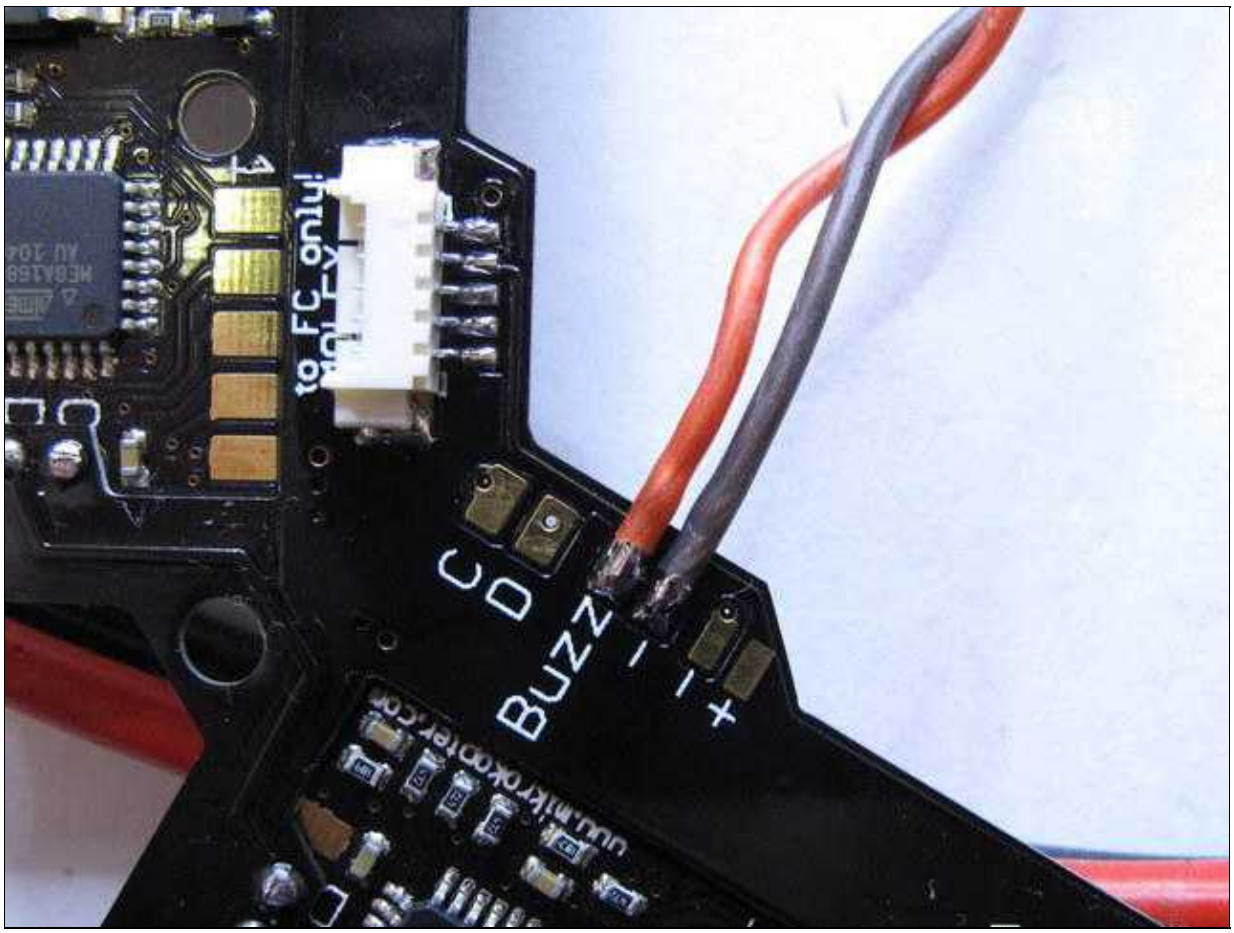
Lighting

The LED cables can now be soldered on the "+"(red) and "-"(brown) pads of the power distributor. It doesn't matter which + / - this is soldered.



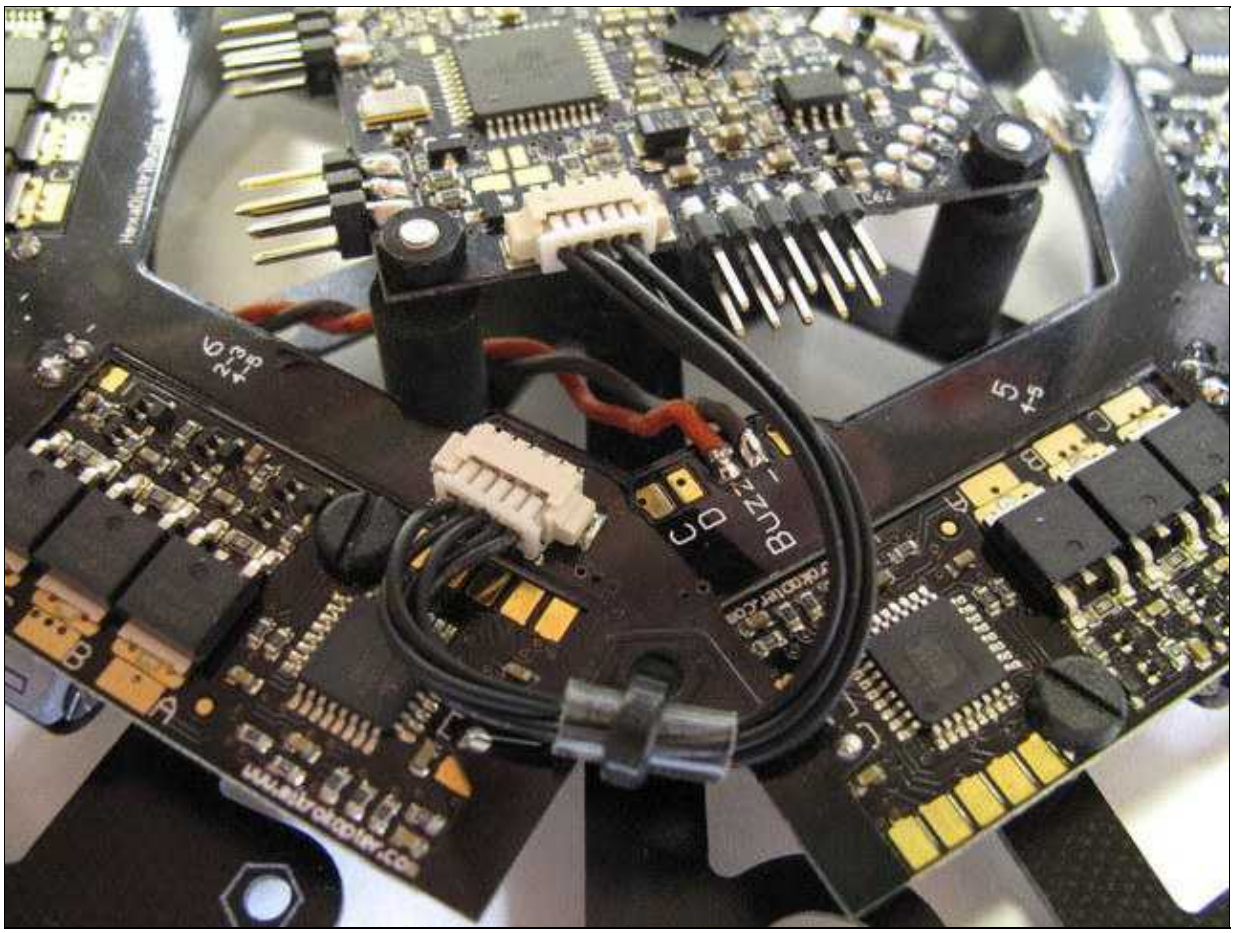
Buzzer

Now the cable of the buzzer can be soldered. (BUZZ = +)



connect the FC

The FlightCtrl2.1 can connected later with the Molex-cable.



The printed arrow on the FlightCtrl must show to the on the rigger No.1 (red rigger) !

Lipoholder

The Lipoholder can be mounted on four bolts of the cover holder.

Mounting HiLander-26

The HiLander-26 can be mounted on each rigger.

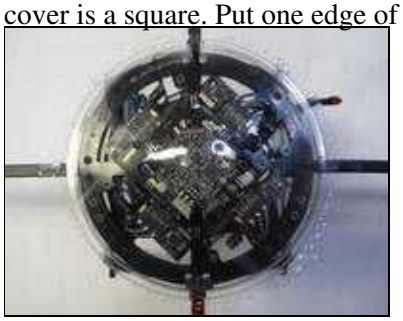
You can mount the HiLander-26 on the rigger 2-3-5-6.

HiLander-26 (Version1)

HiLander-26 (Version2)

mount transparent cover

Put the cover over the riggers for marking. You can fix it by a tape. Please notenthat the upperpart of the cover is a square. Put one edge of this square towards rigger Nr.1



Example mounting on a quadroKopter. On a HexaKopter OktoKopter the sequence is identical!

Now mark the position of the rigger with a pencil.

Now it can be cut with scissors and cut the protruding edge.


The transparent cover is then attached and secured with a screw. For this you can drilling with a 2mm drill to the cover and the cover holder.


If you use the new version of the cover holder you can use the recess on it.
Attention: The recess should be shown up! A matching bolt is located on each motor.

⚠ The transparent cover should be painted in any color from the **inside**. This will save the light-sensitive altitude sensor from malfunction. This can happend, if sun's rays strike on the sensor directly.

Cooling hole in the cover

If you use payload > ca. 700g or you fly in high temperatures, a cooling hole (2cm) in the cover might be useful to avoid heat accumulation.

First start

Now the Kopter is ready assembled and soldered. The next step is now to check and set the Kopter and the function of the transmitter.
For this we use the KopterTool.

Where you can get the KopterTool and what you have to check/set is explained in simple steps.

Here we go to the easy "steps": **Initial startup**

safety

A Kopter can be dangerous. Safety comes first, so read carefully:

- SafetyFirst
- Safety references of LiPos

- KategorieAnleitung