

# 59Antennas.com

## DIY – Do It Yourself

### Electrical-Motor–Antenna

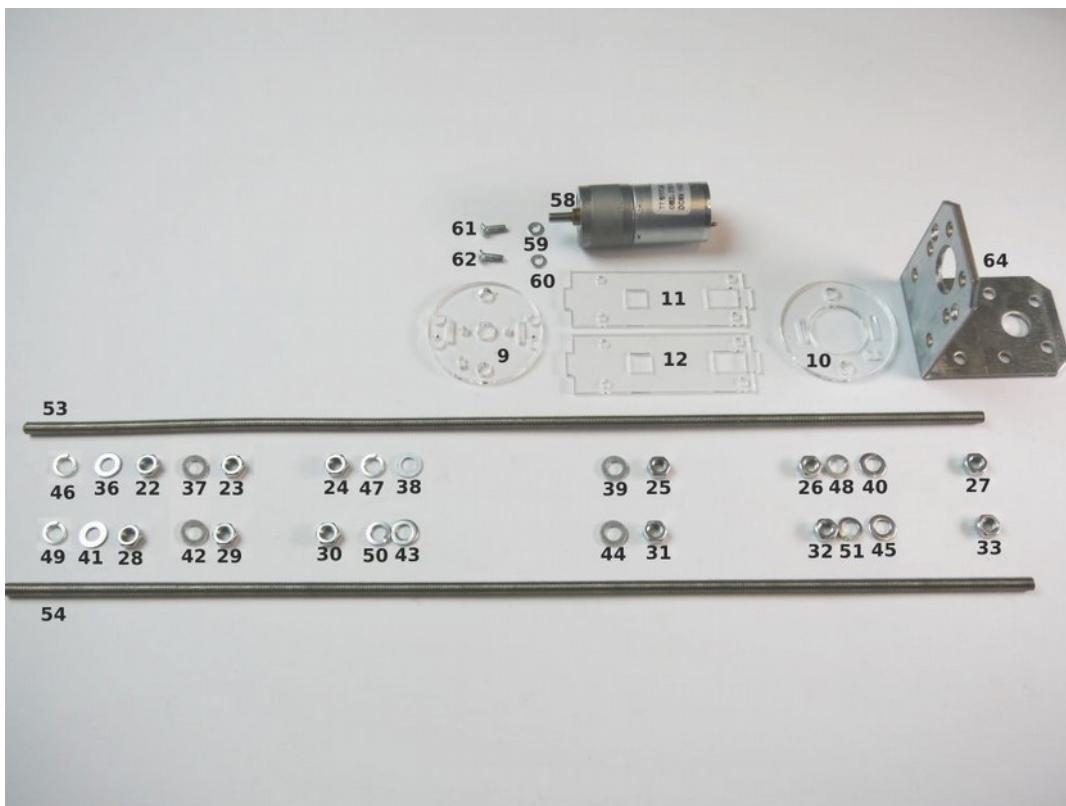
Thank you for choosing the DIY kit Electrical – Motor – Antenna.

Please first check all items in the pack - that everything is inside.

The list of all items is in this paper work.

It is only for indoor use – not rain proof (but there are options to use it outdoor)

Take the items on the picture and bring it in line as shown.

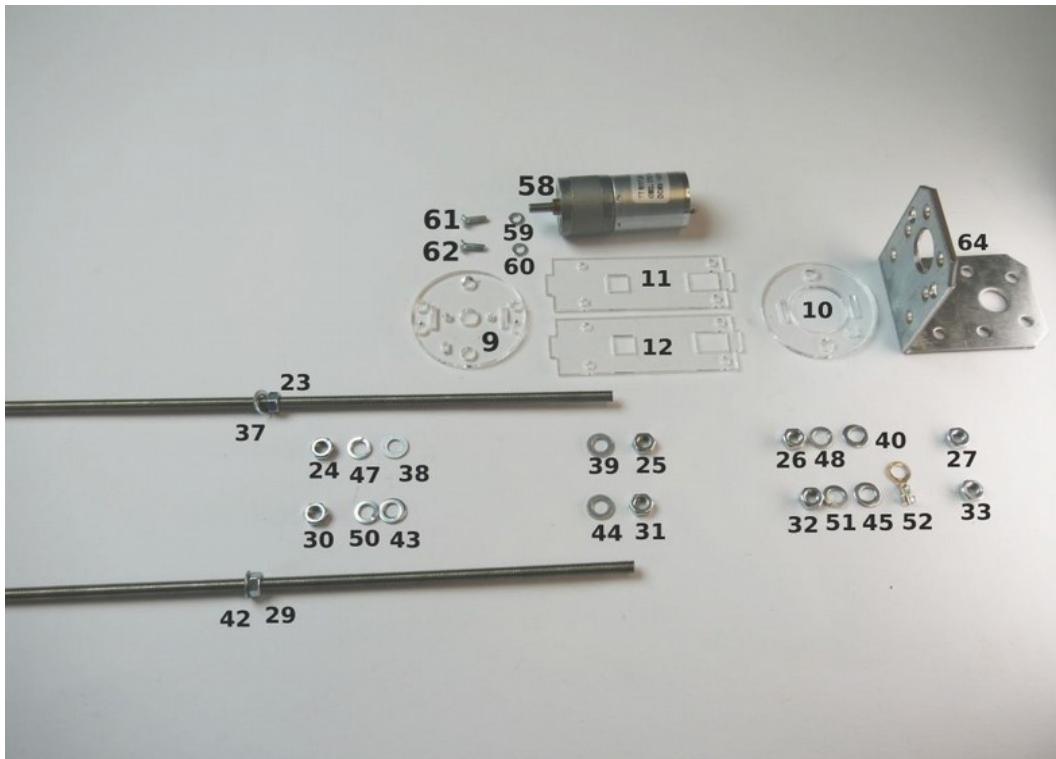


#### ATTENTION DANGER!

- Don't let children play with this Kit! There are small parts to swallow!
- Don't put the DIY-Kit into the Microwave oven!
- Don't star into the Metal Emitter
- Not for outdoor use
- Young people can do this DIY-Kit with 14 years up.
- Have a watch and Help your Children if they doing this DIY-Kit.
- Motor controller is soldered under ROHS

Tabelle1

please install item 37 23 42 29



then install item 24 47 38 30 50 43

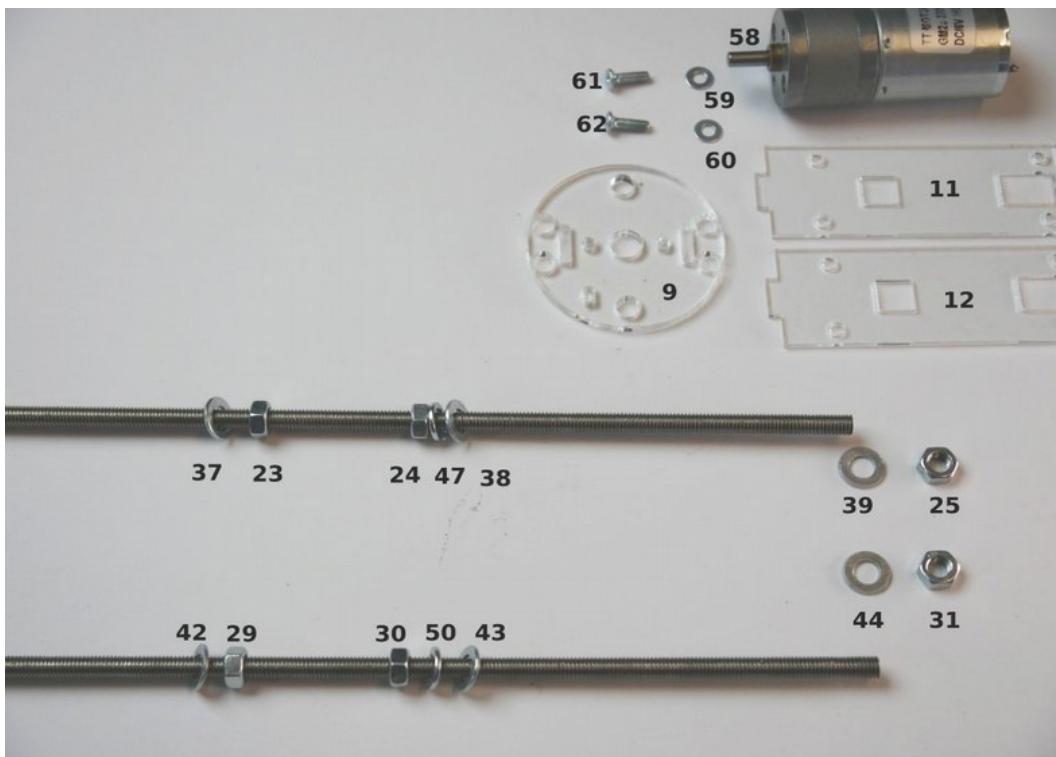
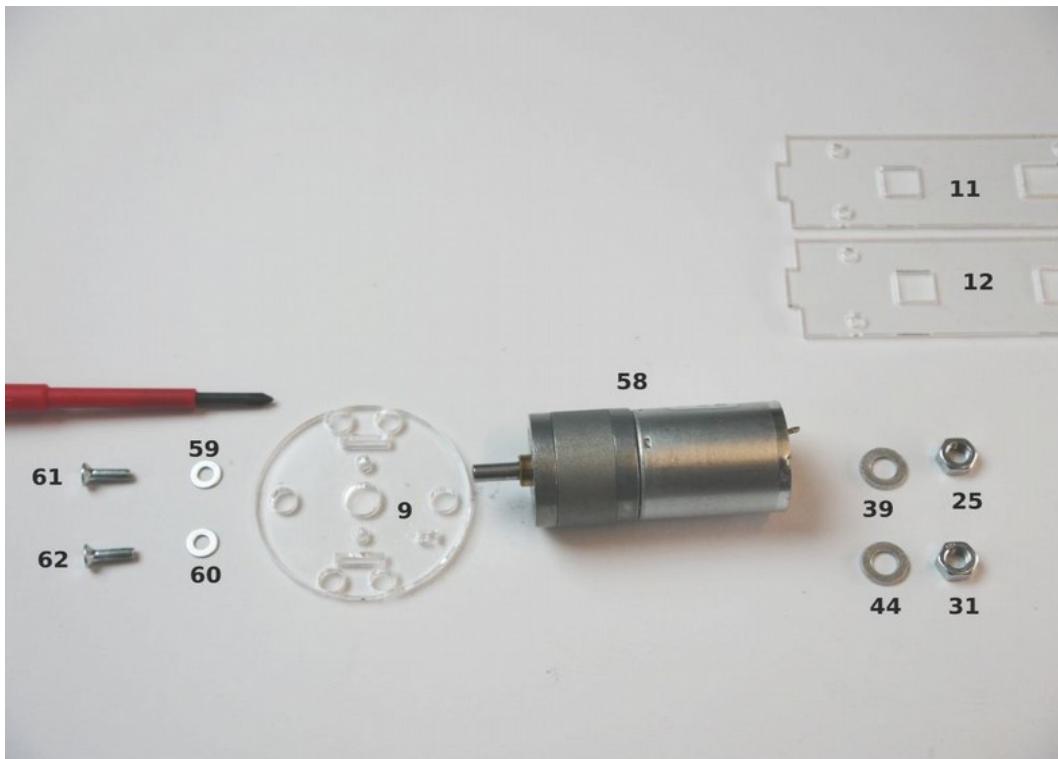


Tabelle1

Mount 61 59 62 60 9 on 58

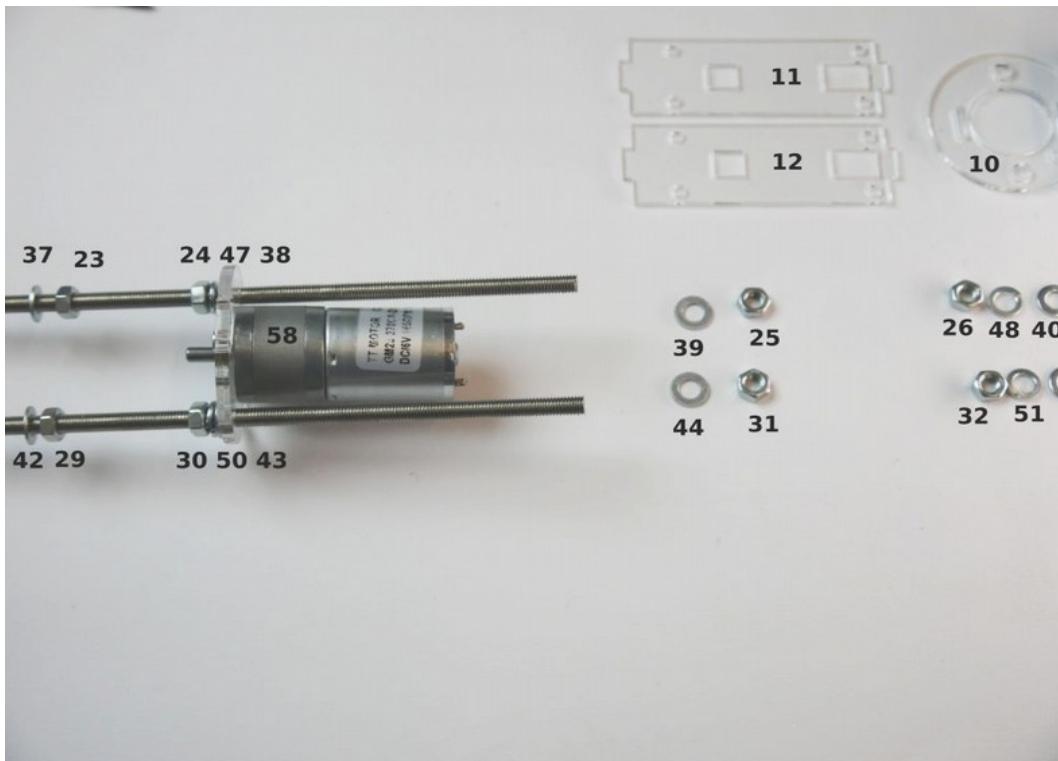


Motor installed



Tabelle1

install Motor 58 on threaded-rod



Install 26 48 40 32 51 45 52

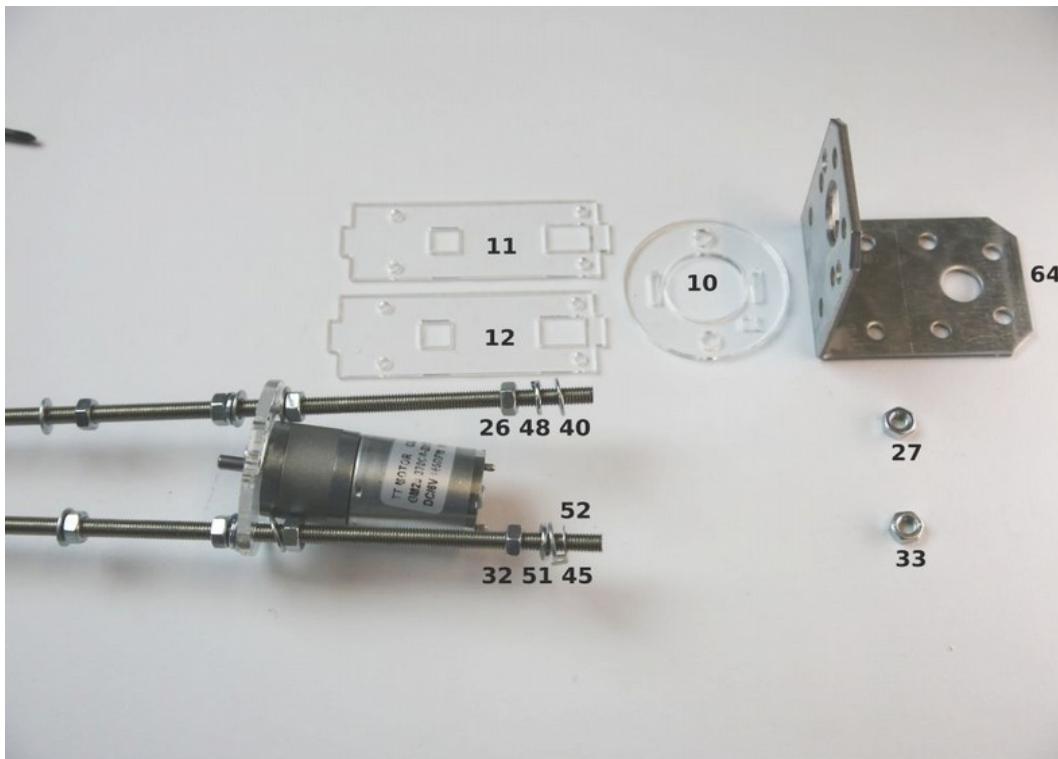
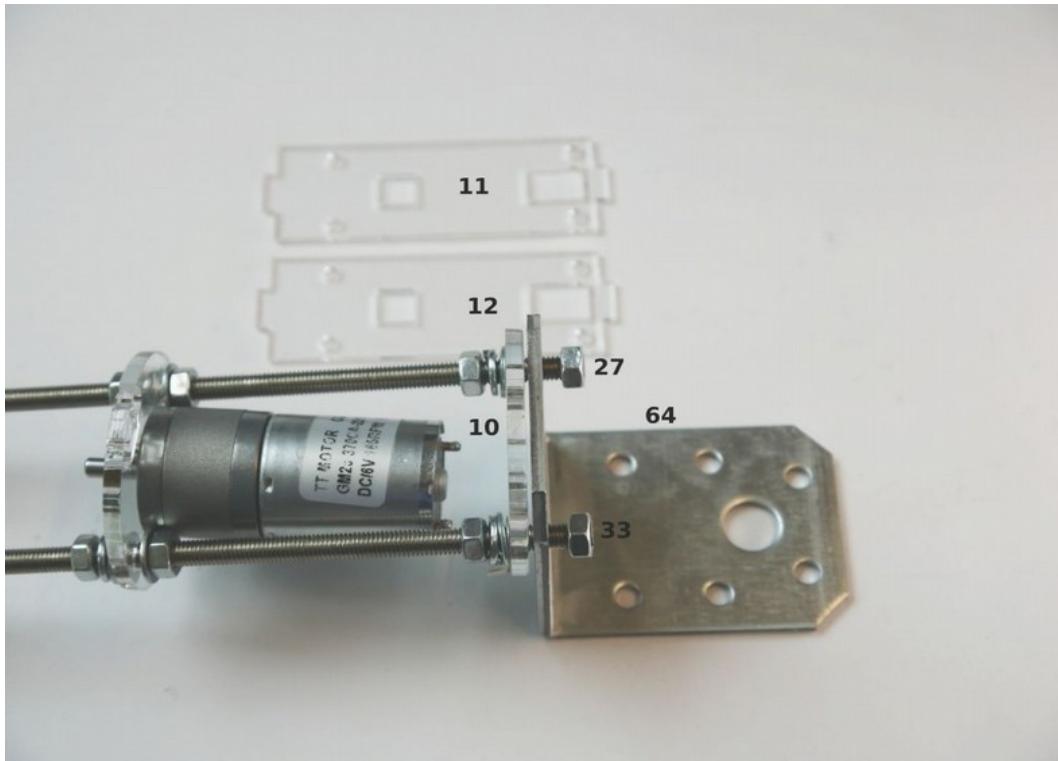


Tabelle1

Install 10 64 27 33 11 12



fix HEX-Nut

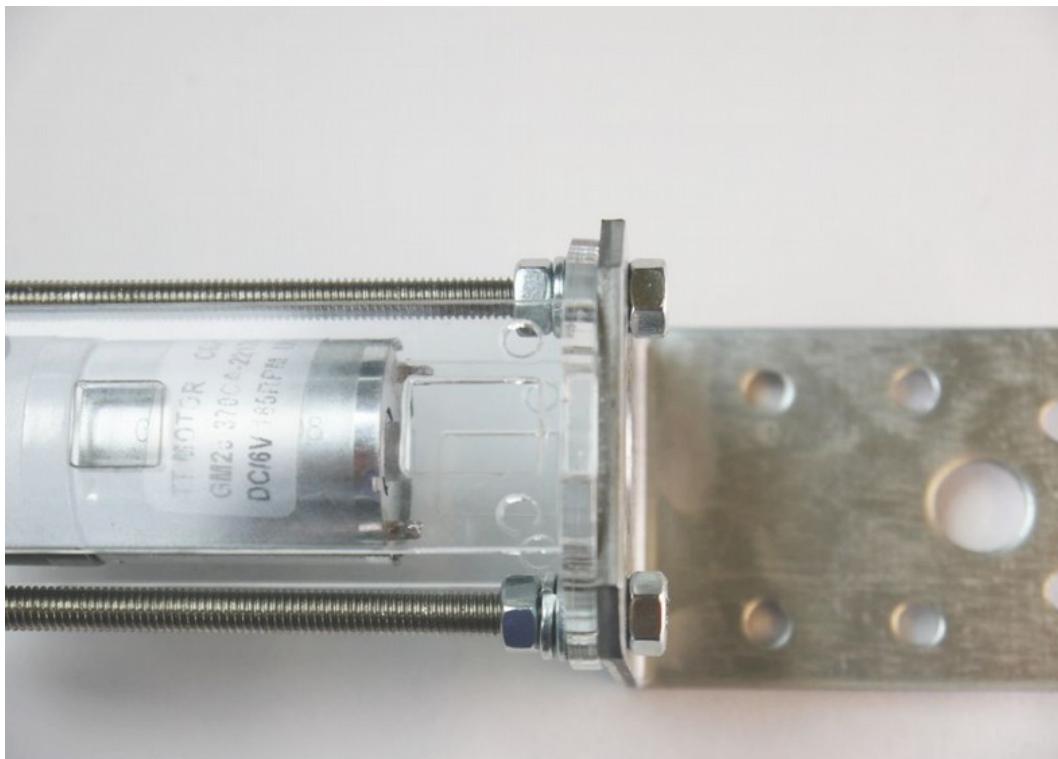
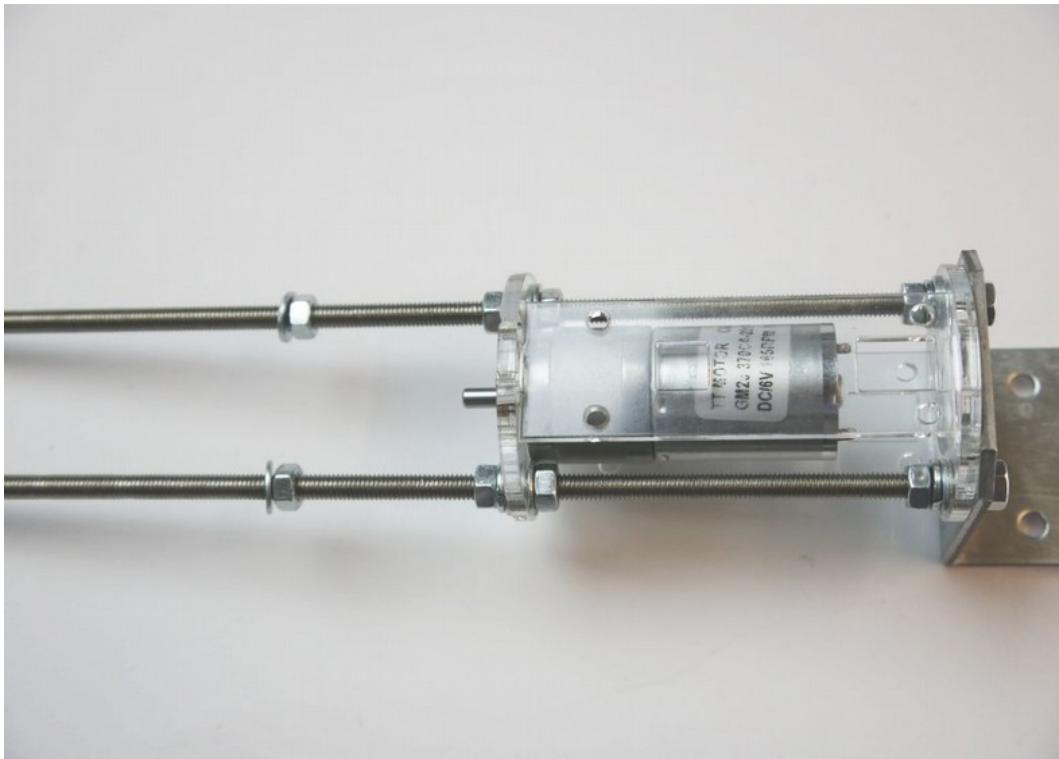


Tabelle1

fix HEX-Nut



Install 7 8

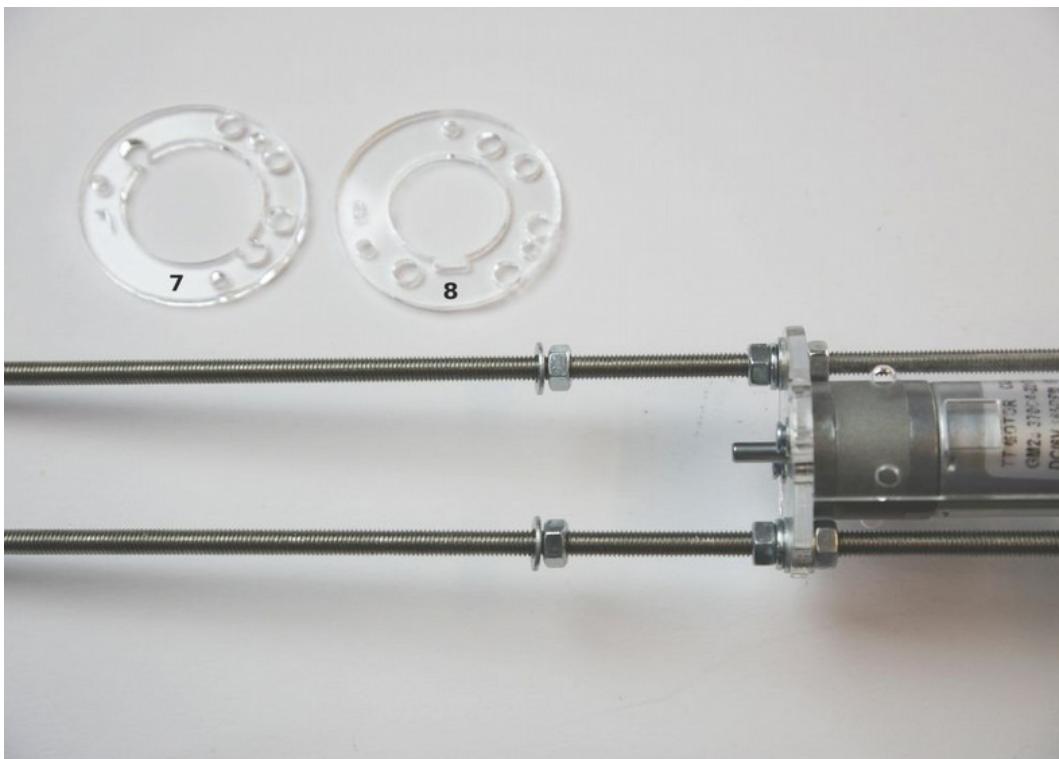
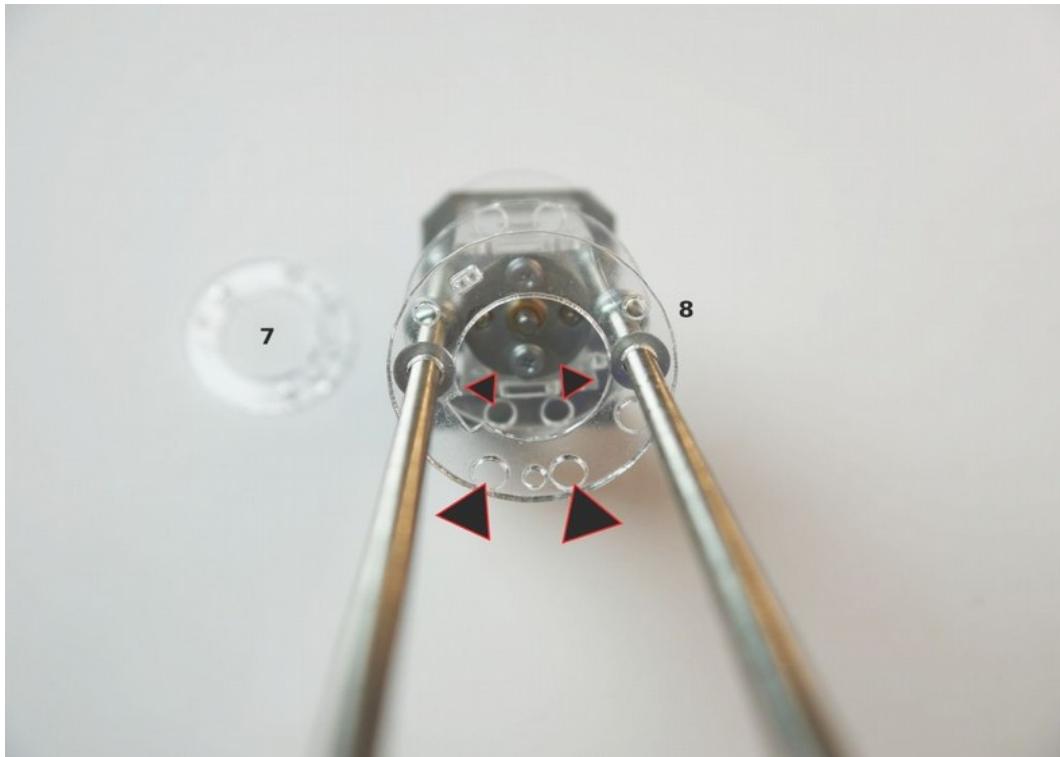


Tabelle1

Install 8 ATTENTION Holes must be here – on the same site



Install 7 The holes must be here on one side

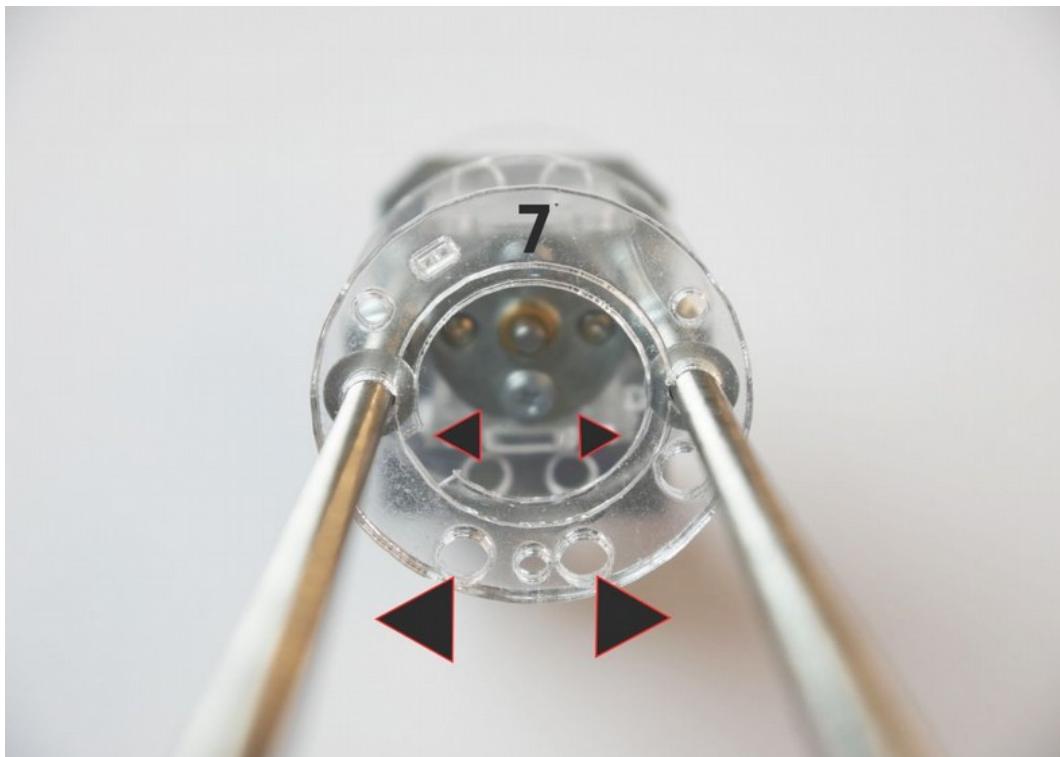


Tabelle1

Ballring install 1 2 3 4 5 6 – 1 is Top till 6 is Bottom



Insert 65 66 67 68 69 70 71 72 73 74 75 76 92 93 94, 95 96 97(Brass)

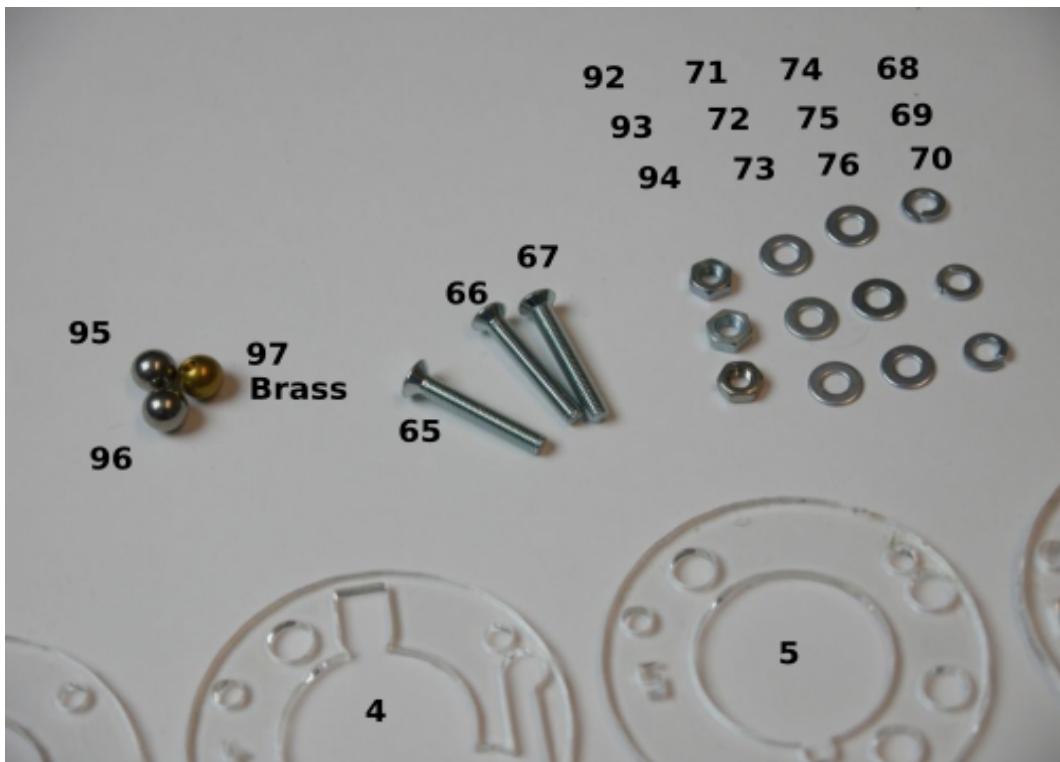
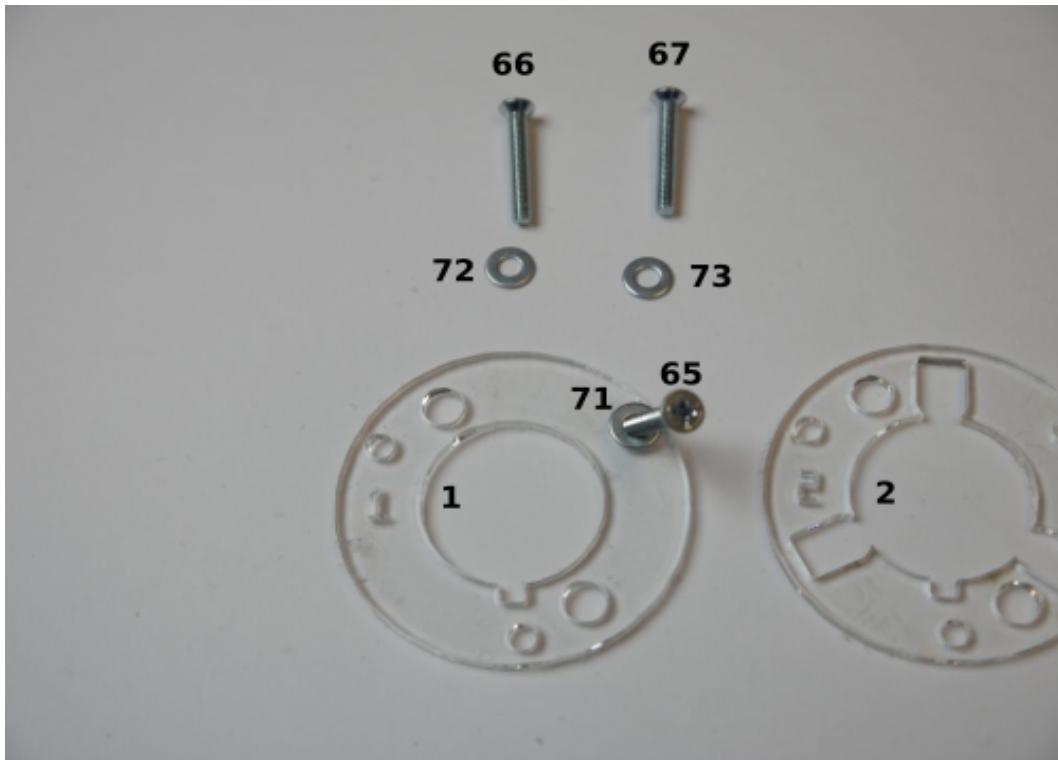


Tabelle1

Insert 65 into 71 into 1



Mirror 1; Mirror 2 stack 2 up 1; insert 73 into 67 and in the rings; insert 72 into 66 and in the rings

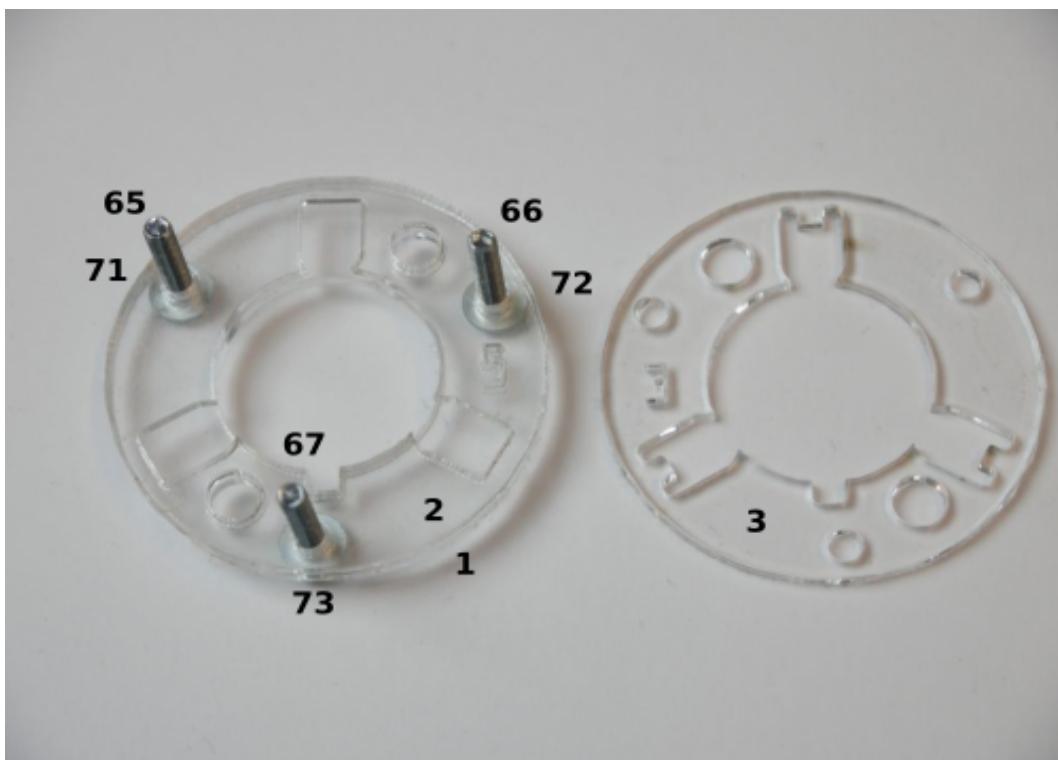
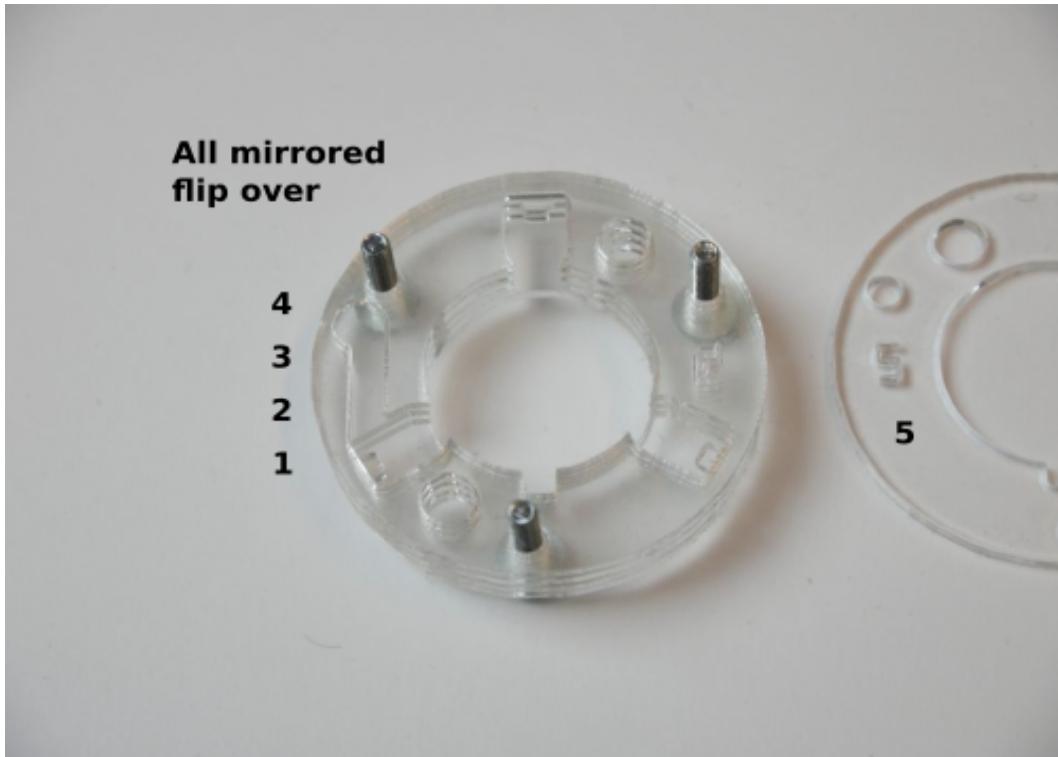


Tabelle1

Mirror 3 stack it up 2; Mirror 4 stack it up 3



Please solder wire into brassball 97 for RF-connection

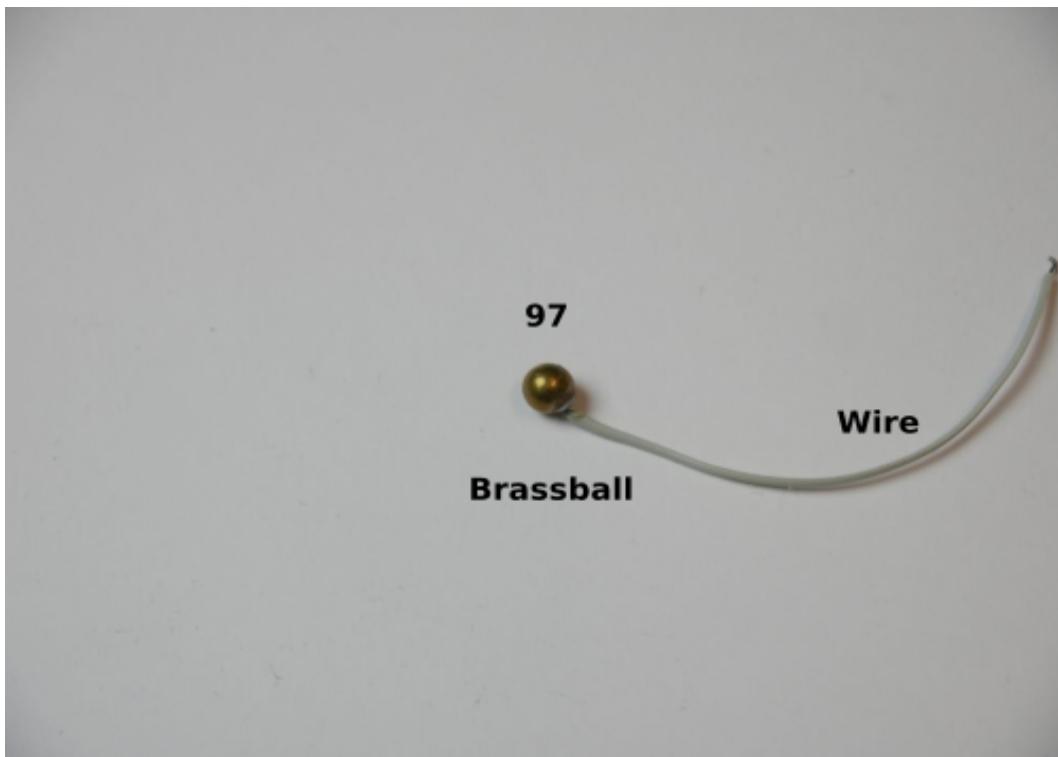
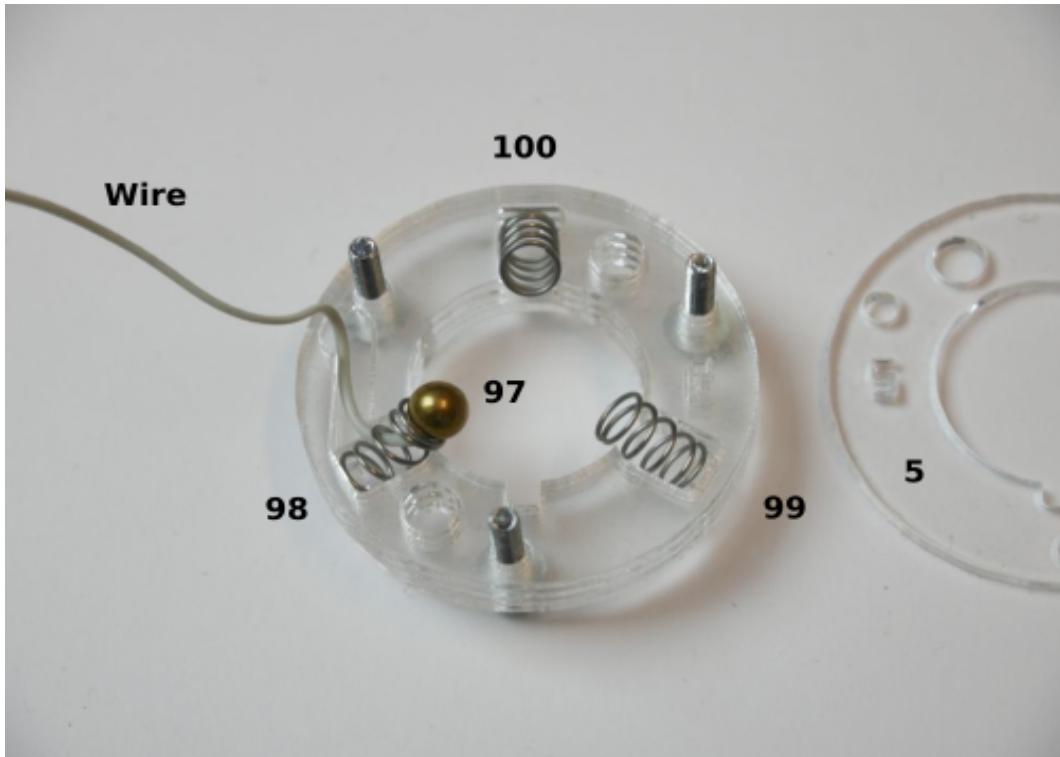


Tabelle1

insert wire into spring 98, insert ball 97 Brass (wire come out in the mid of the spring),  
insert spring 99, 100

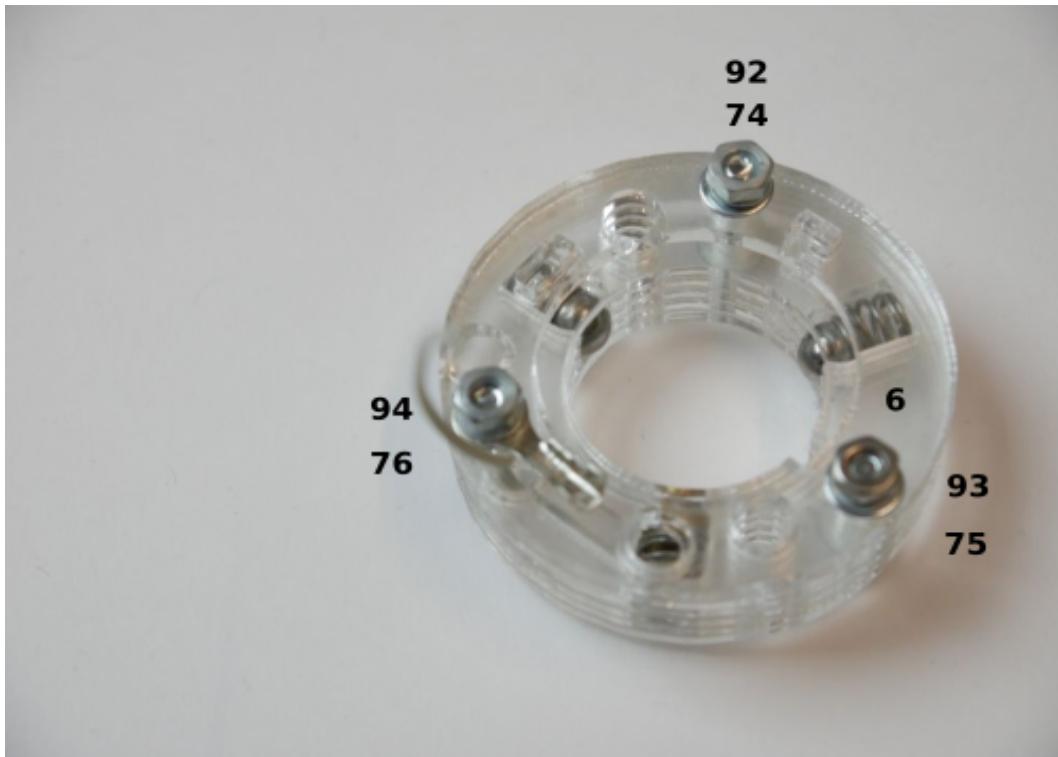


Insert ball 95, 96(silver); mirror 5 stack up 4 – wire must go out of the hole item 5



Tabelle1

Install 74 75 76 92 93 94 and 32 – solder RF-wire to 32



Coil and CopperTube

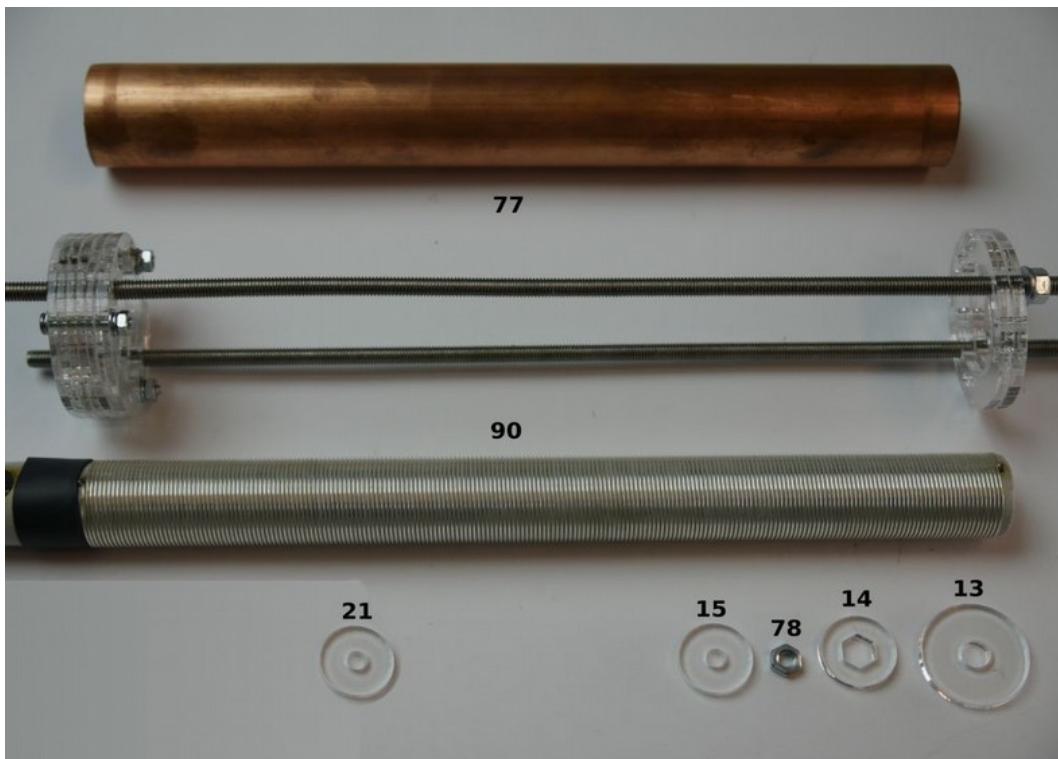


Tabelle1

Coil Bottom Holder and Transport – could be „Already glued“ - is one item



Stack 14 up 13 center

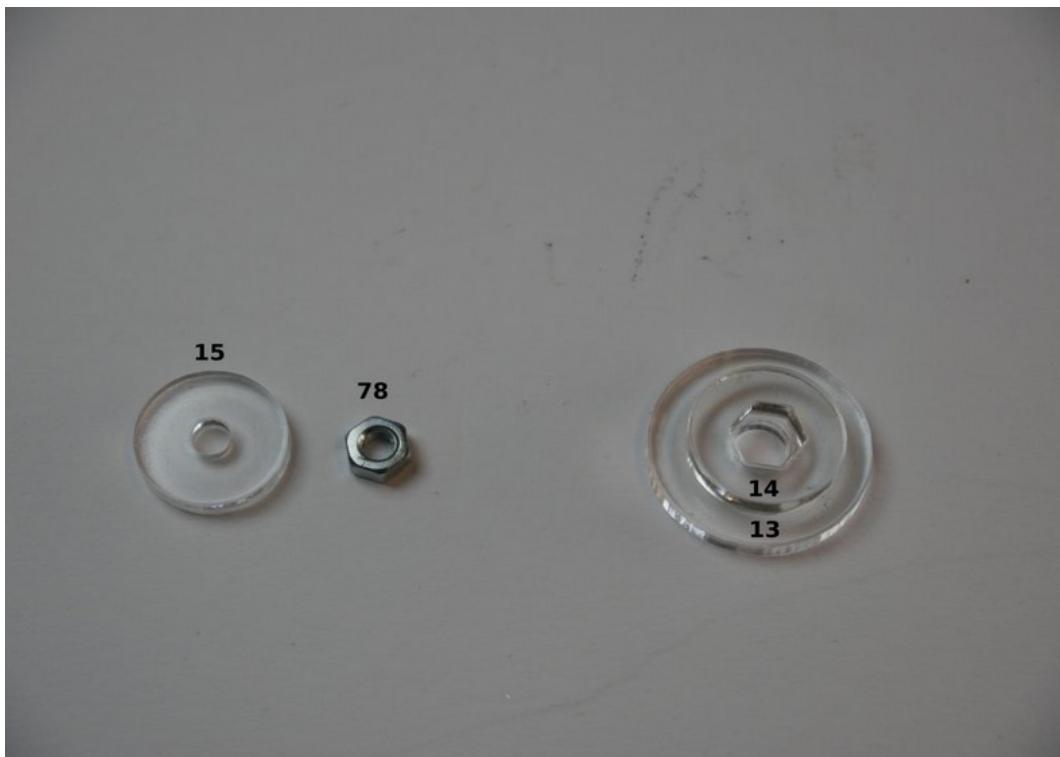


Tabelle1

Insert Hex-Nut M5 into center



Stack 15 up 14



Tabelle1

Methylenchlorid DANGER not include

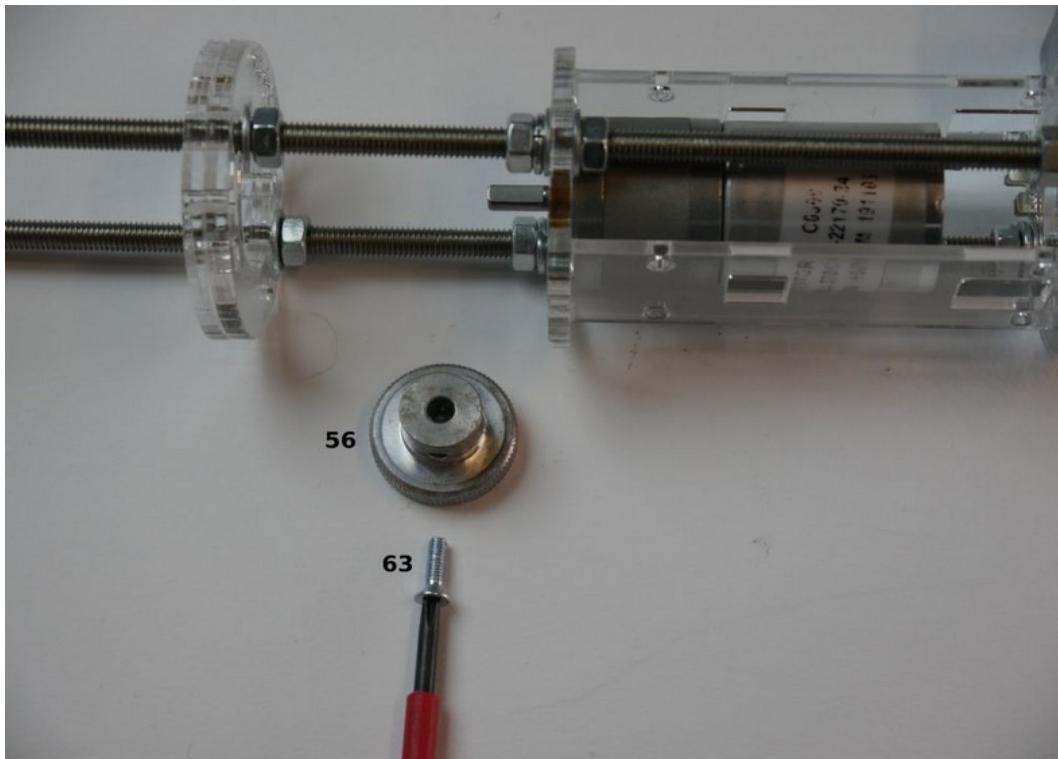


Glue (curing) with Methylenchlorid or a other Acrylic Glue



Tabelle1

mount Motor clutch 56 63



mount motor-cluch on motor axis

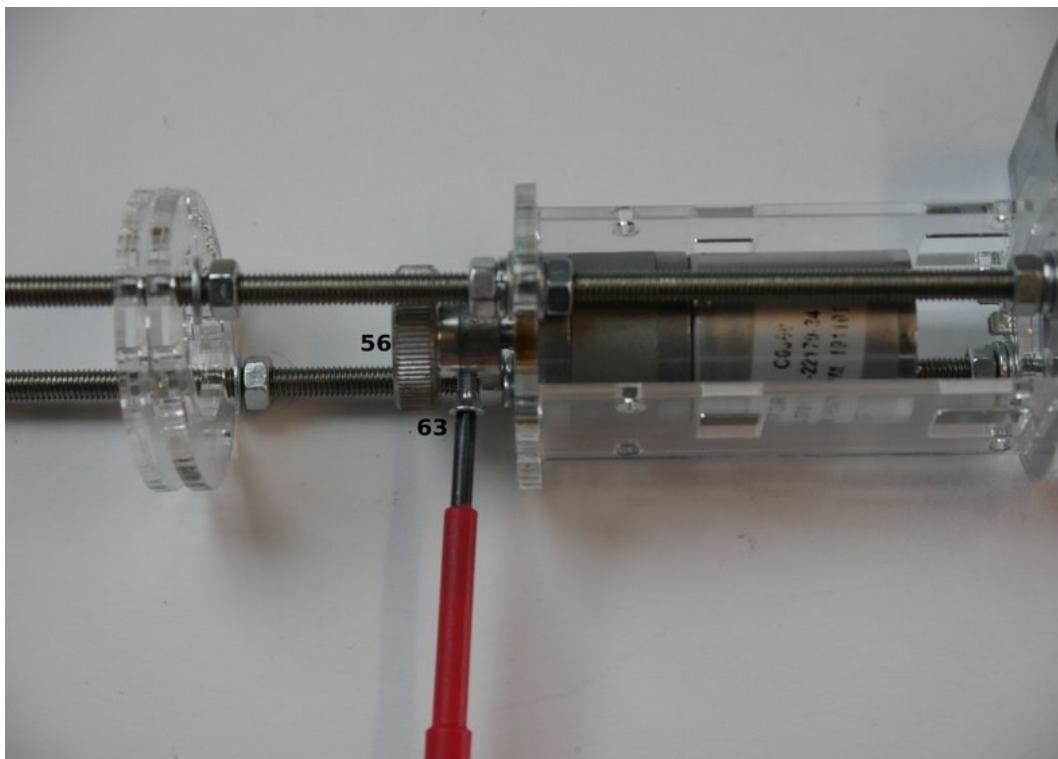
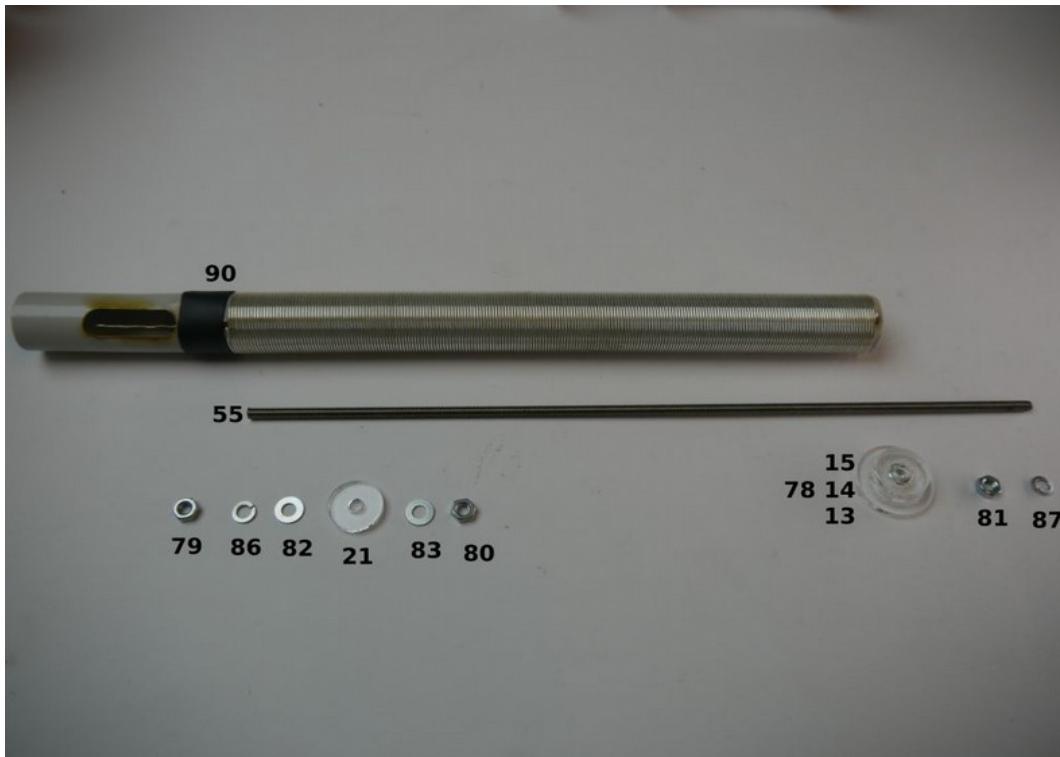


Tabelle1

install stabilizor top and threaded-rod



Install 83 84



Tabelle1

Install 79 86 82 21 stabillizor top



turn Transport on Threaded-Rod

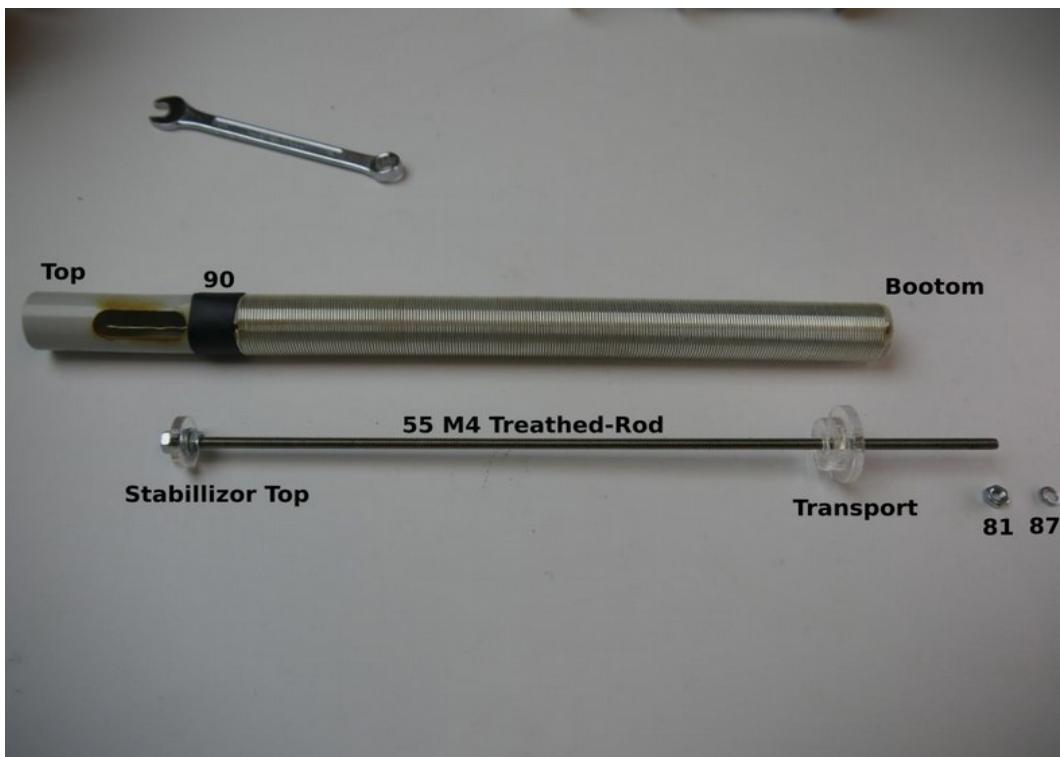
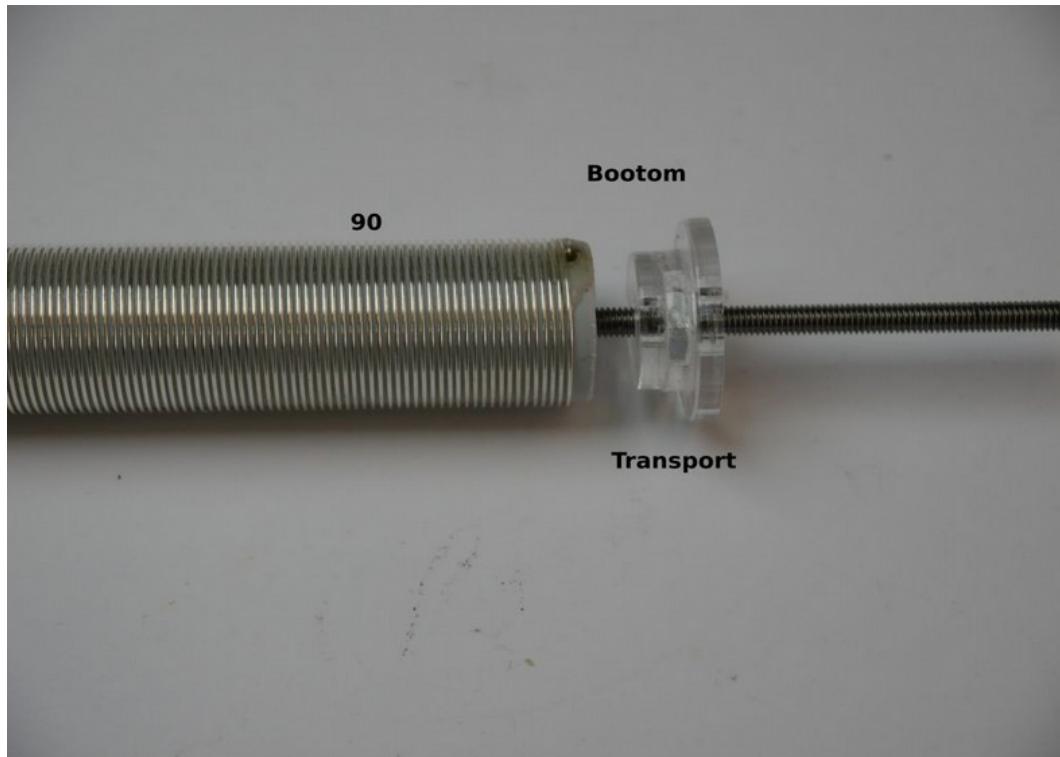


Tabelle1

insert Transport in Coiltube and fix it with Glue



fix the transport and glue it to the coil

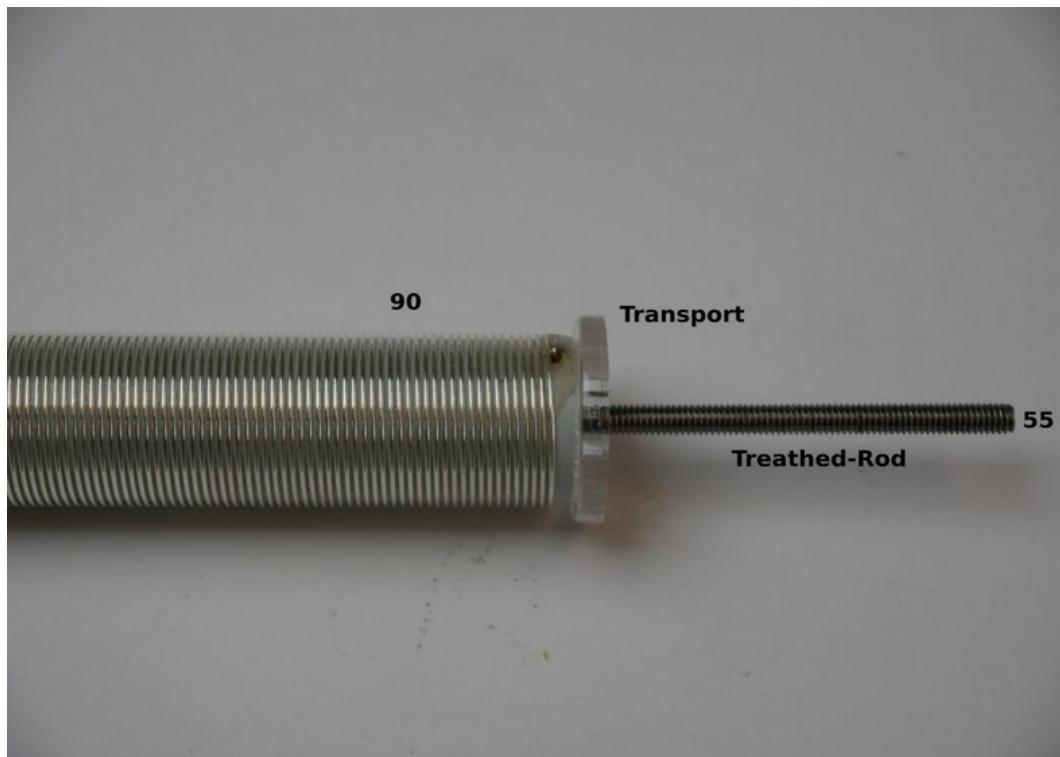


Tabelle1

Install 81 87



Remove Ballhead and insert Coil 90 fix it by tool



Tabelle1

Install 77 and ballhead



Transmitter TOP

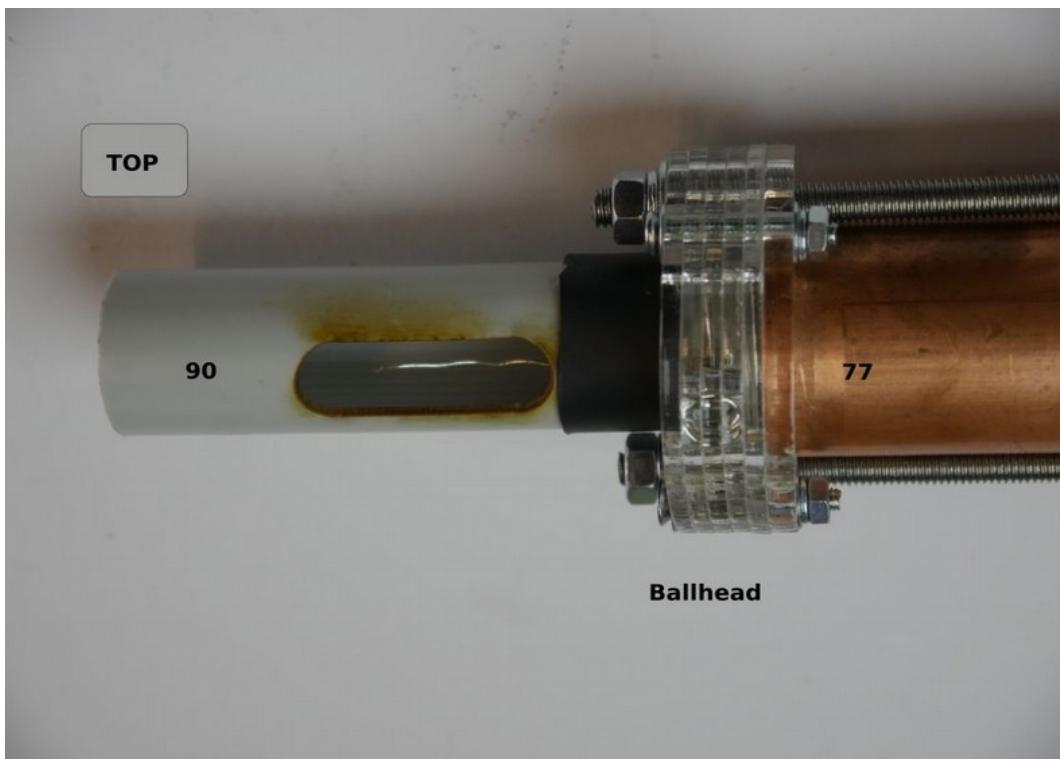
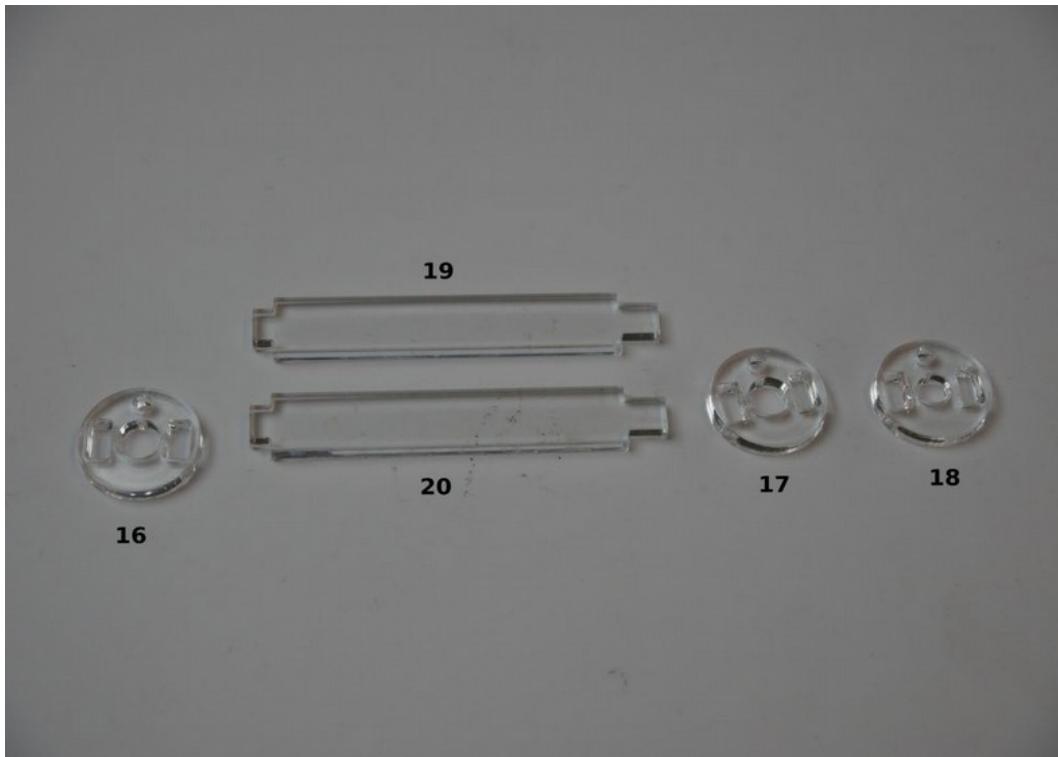


Tabelle1

Stack 17 up 18 insert 19 20 into 17 & 18 – it could be glued

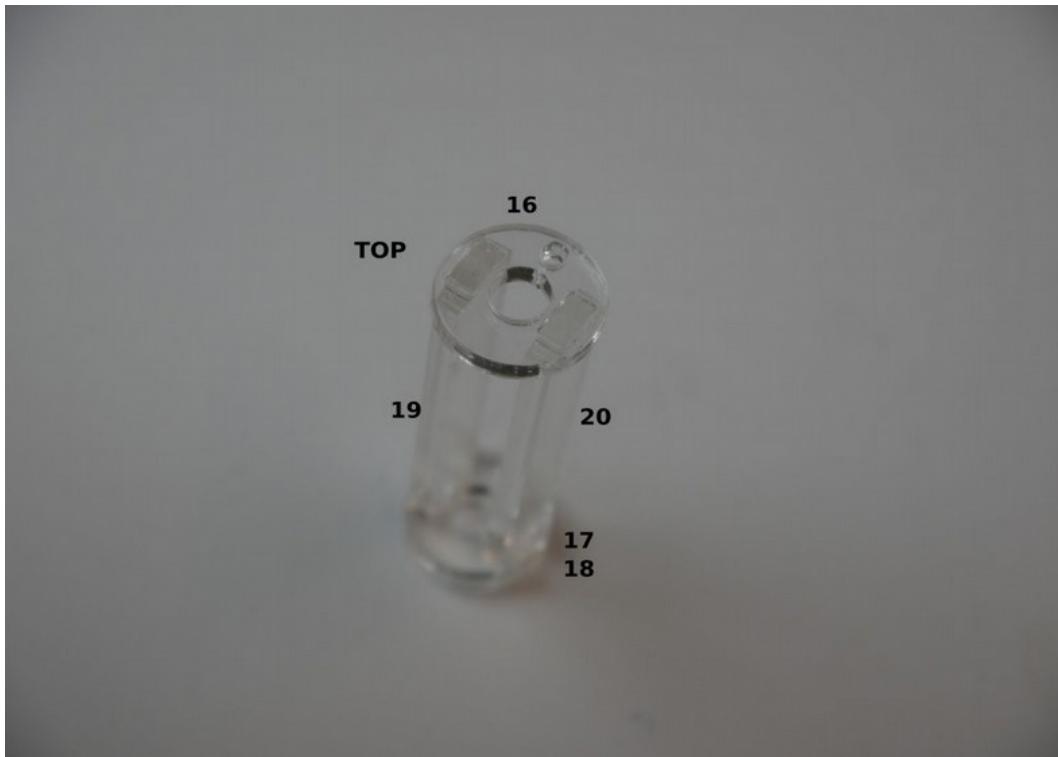


Insert 19 20 into 17 and 18



Tabelle1

Stack 16 up 19 & 20

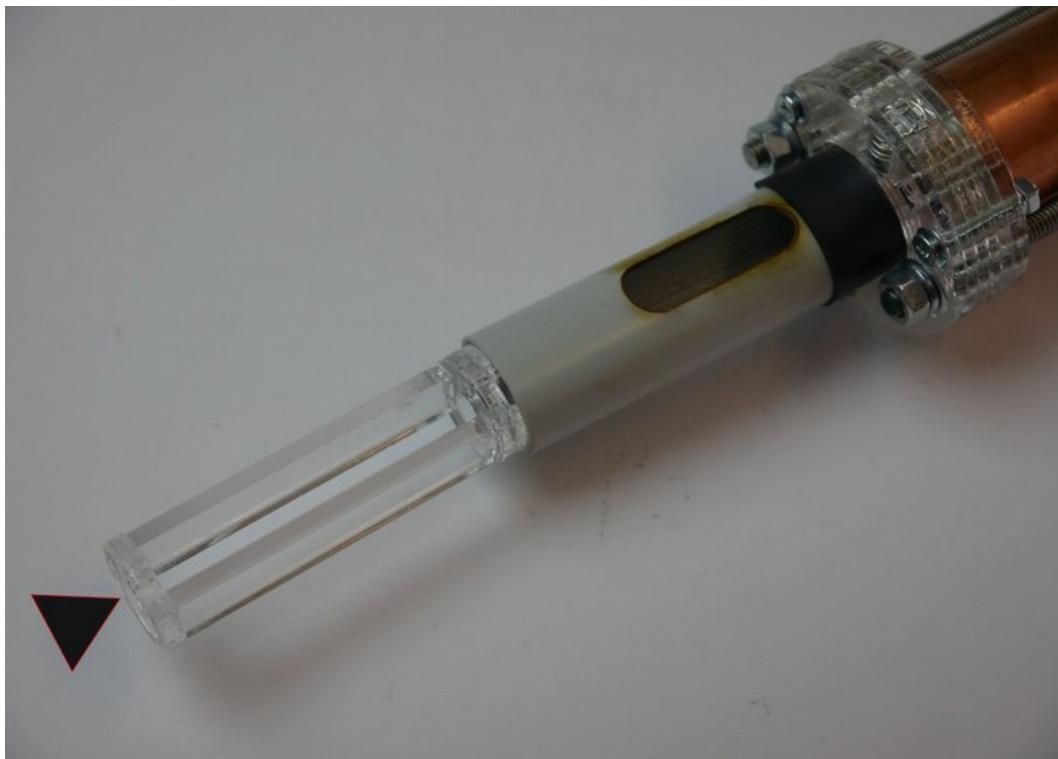


Methylenchlorid Glue it – DANGER take Saftyglasses! Holes on one side



Tabelle1

Heatshrink on top and Insert Emitter Holder



Insert wire

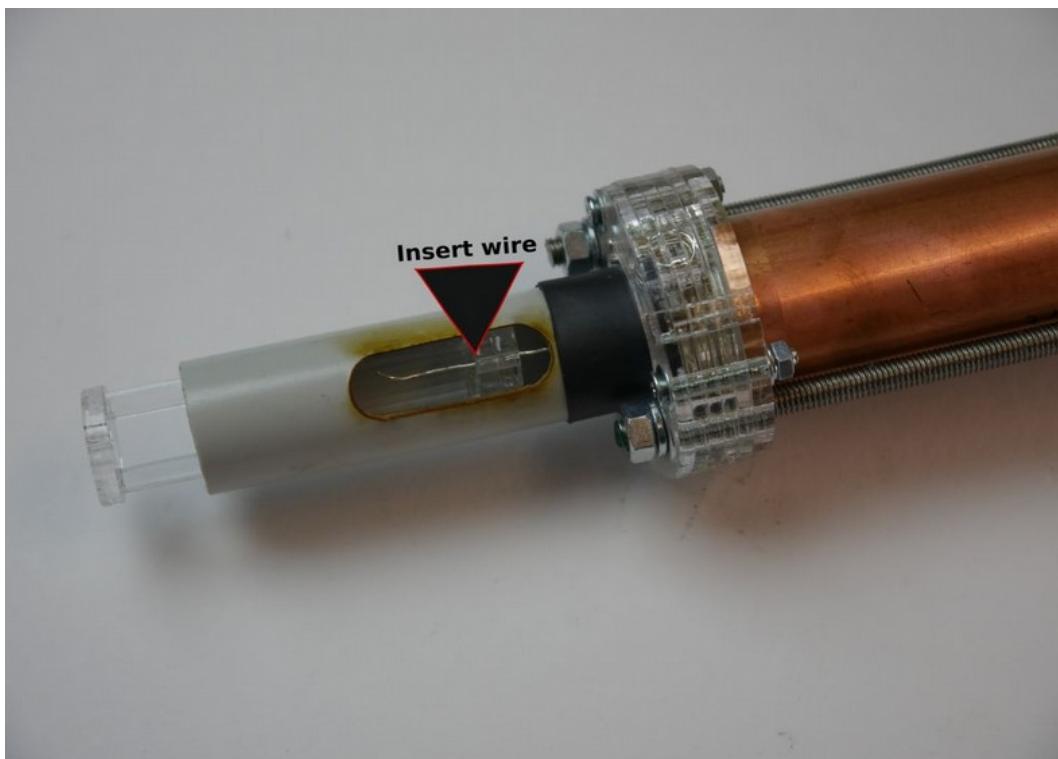


Tabelle1

Insert Emitter Holder

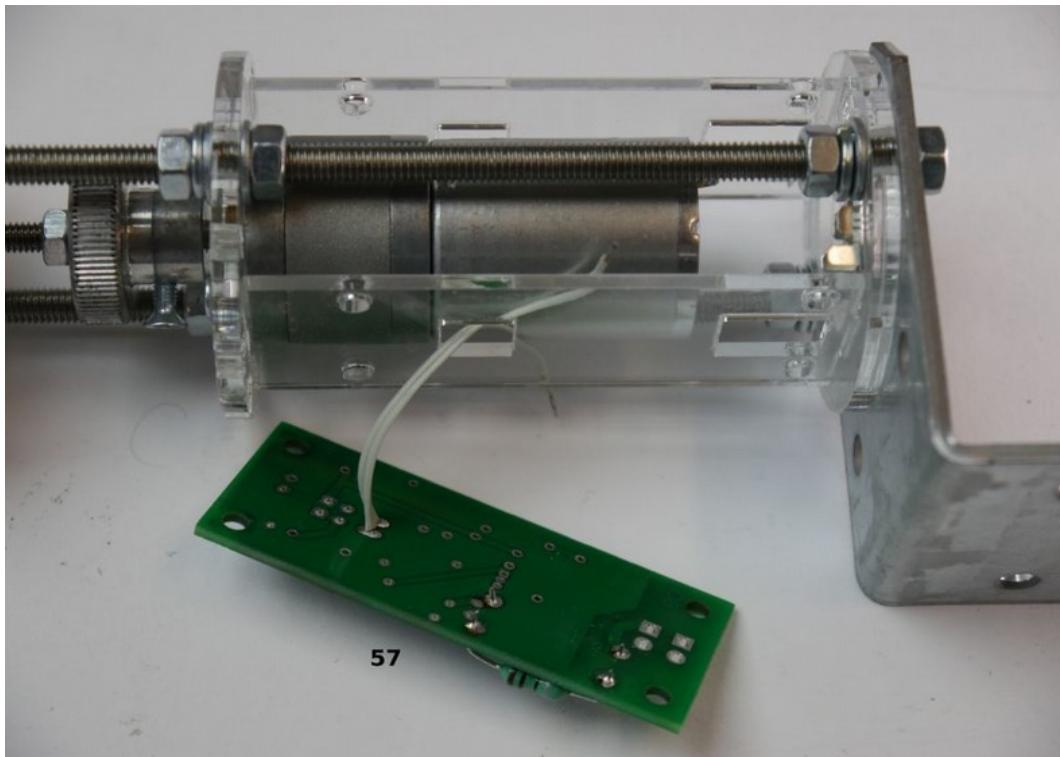


Insert Emitter 6mm Aluminium and connect it with a Zip tie Fix



Tabelle1

Install Motor Controller 57 to thread the cables for the Motor



Fix Motor Controller with 2 zip ties and cut the zip ties

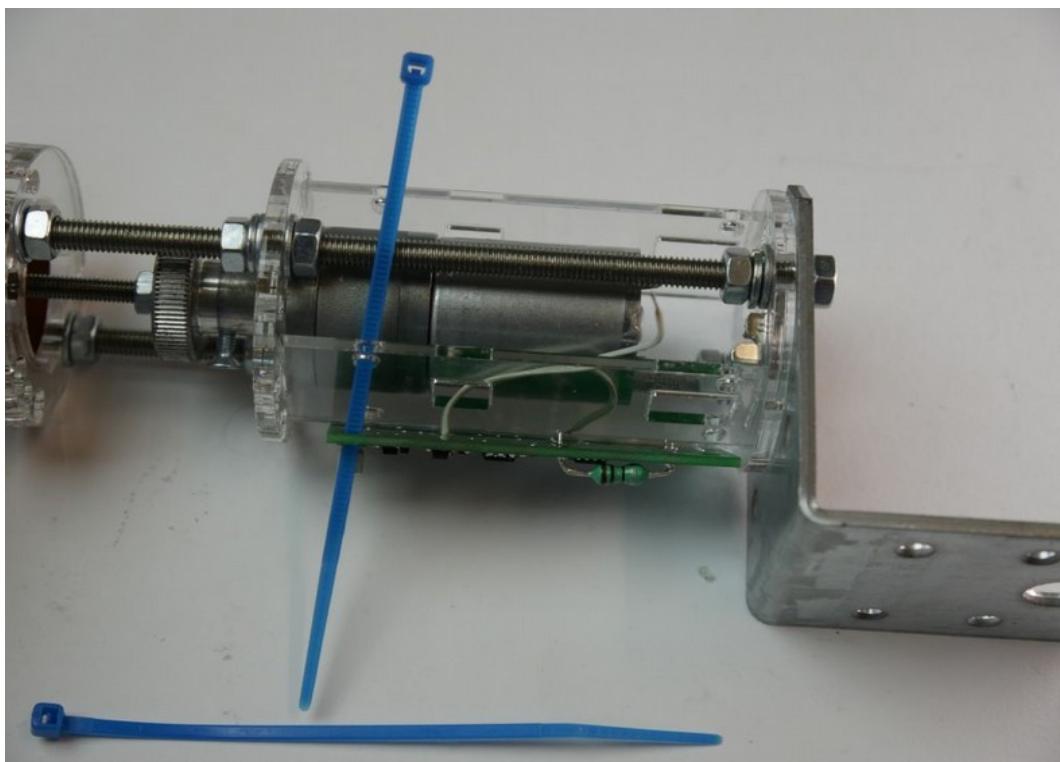
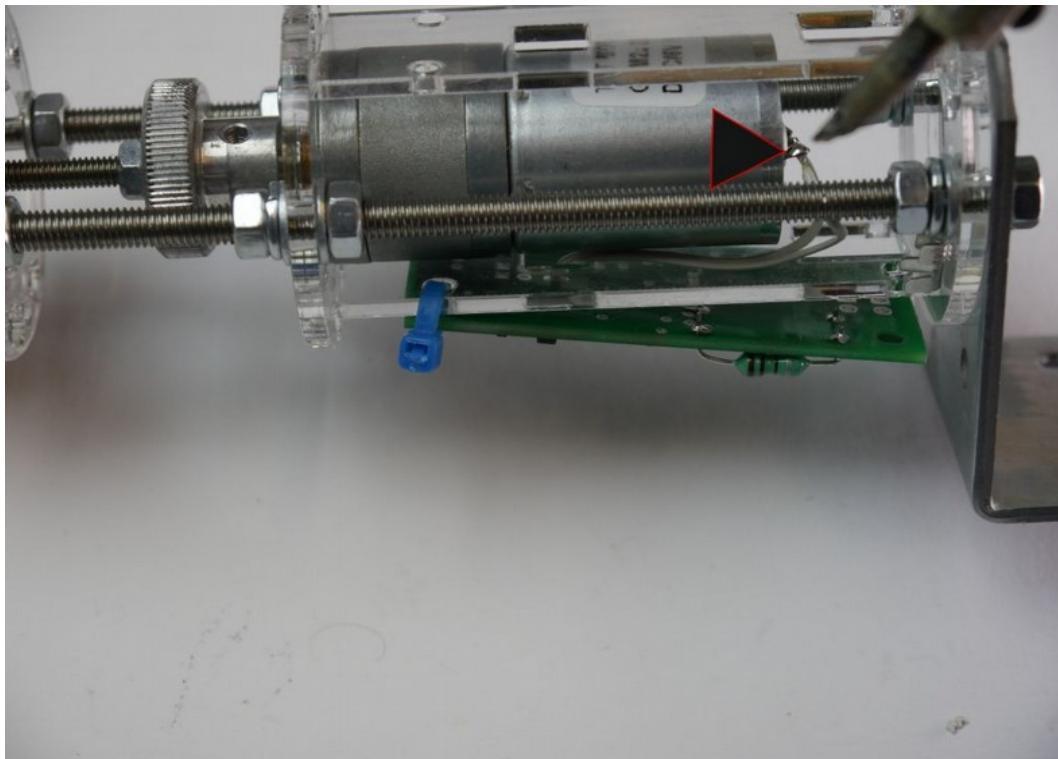


Tabelle1

Solder motor wires – the motor direction depent on the connections



Install 91 - install also the contact ring (not show'n in this picture)

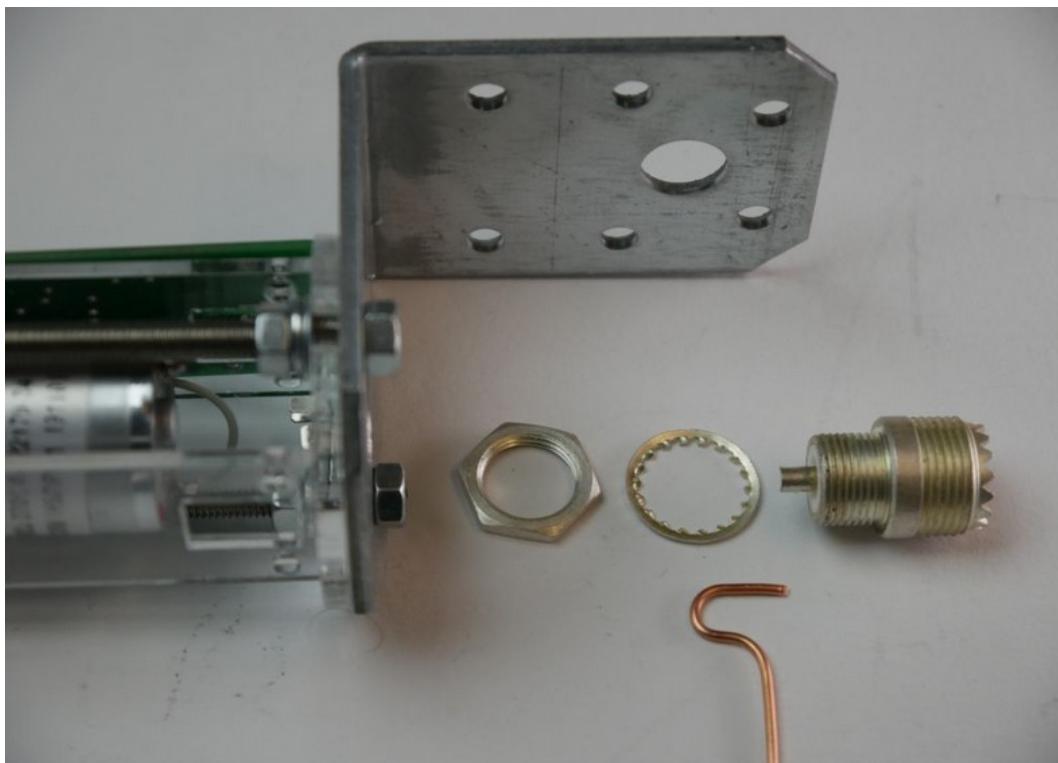
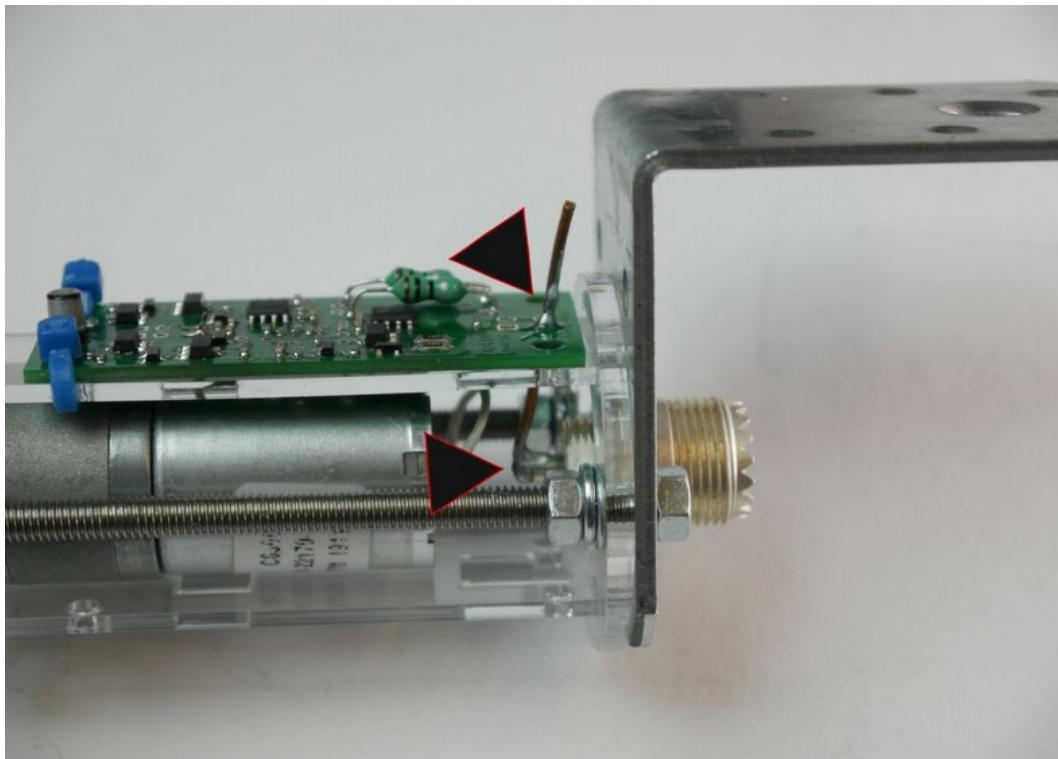


Tabelle1

Solder pin hot UHF-connector and PCB rectangle pin



cut hot rectangel pin

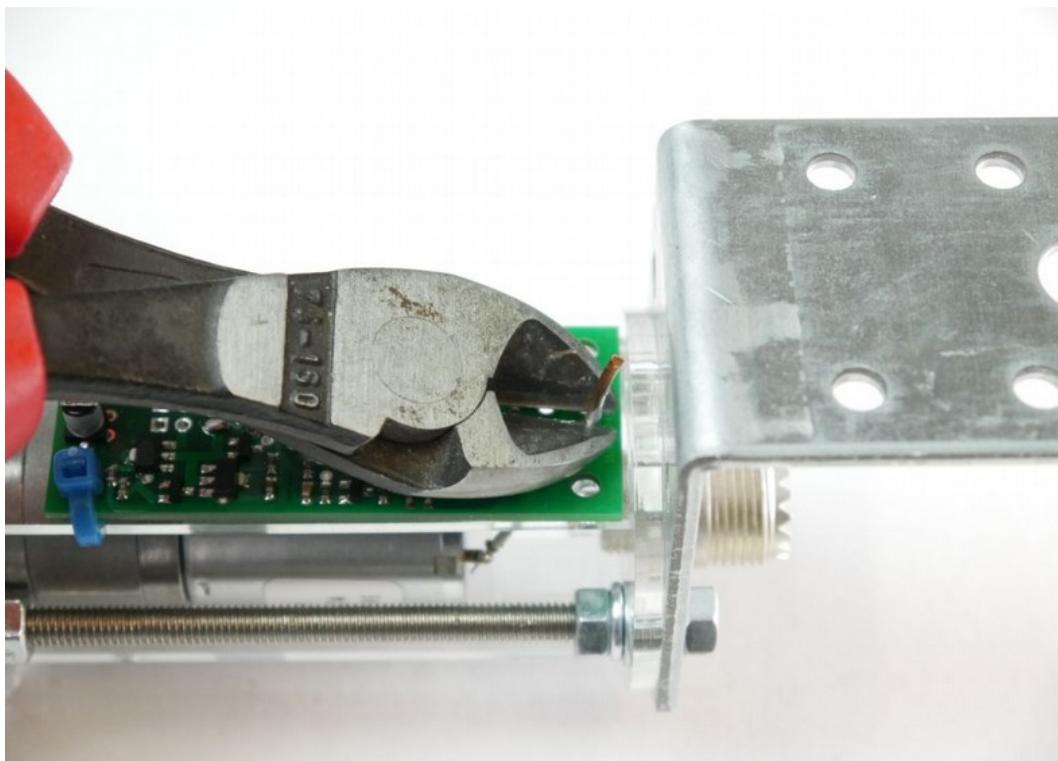
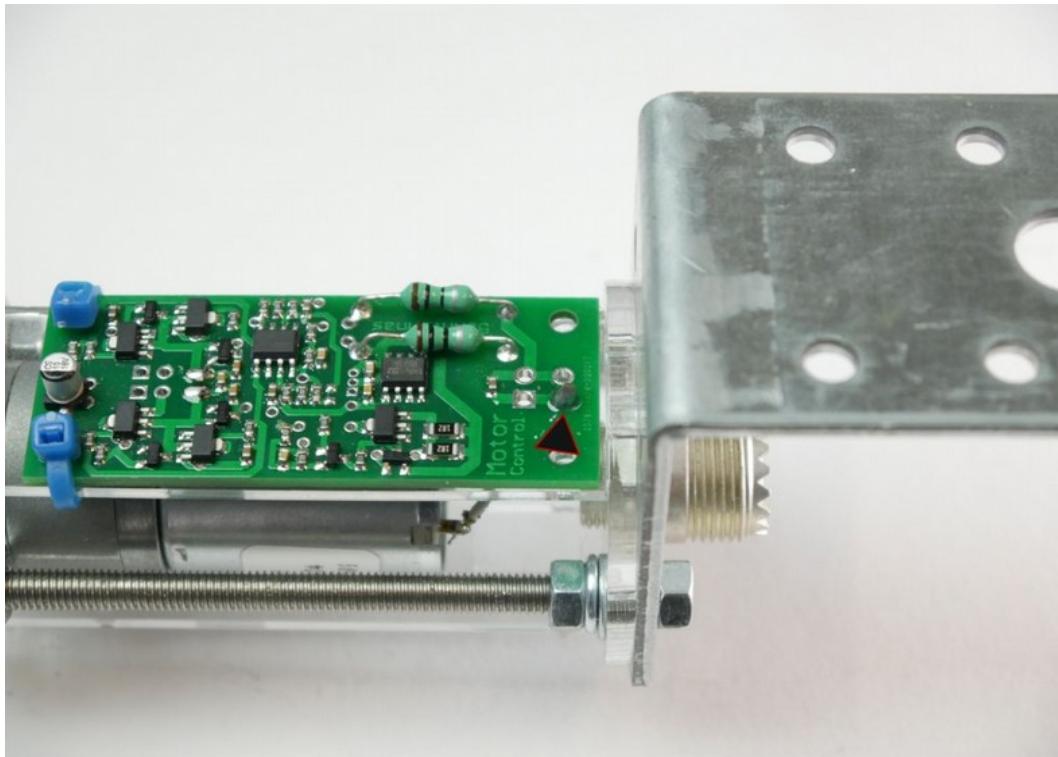


Tabelle1

Rectangle center pin



solder GND pin to the UHF-connector GND (could be also direct to the connector ring)

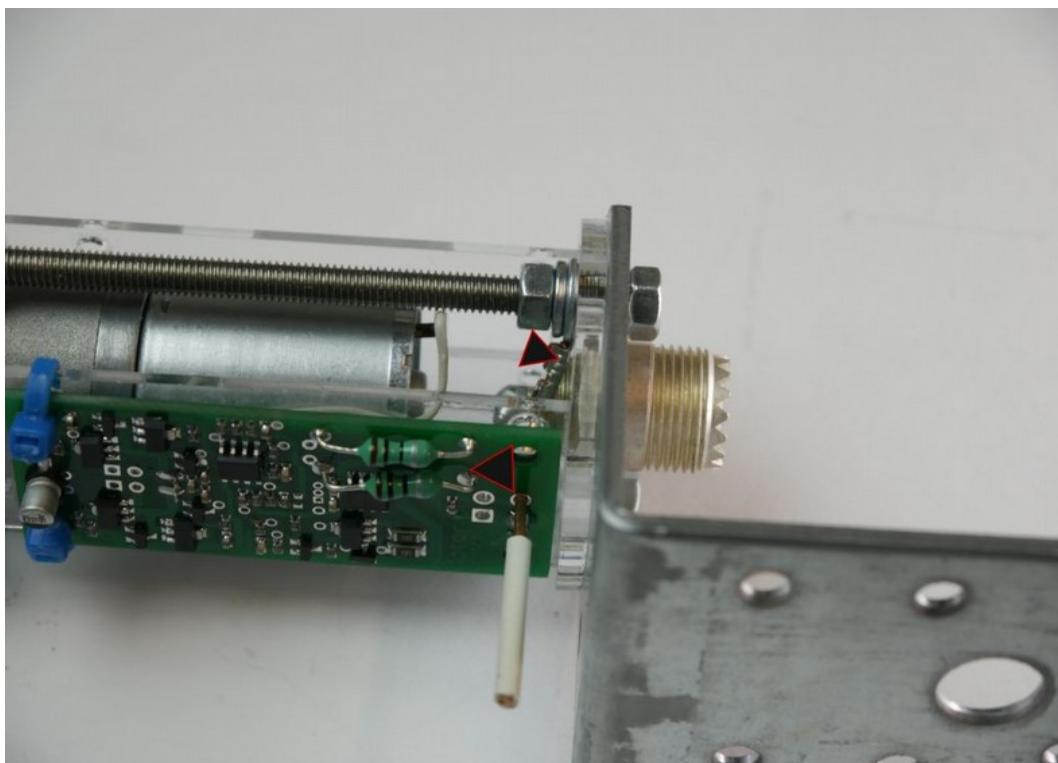
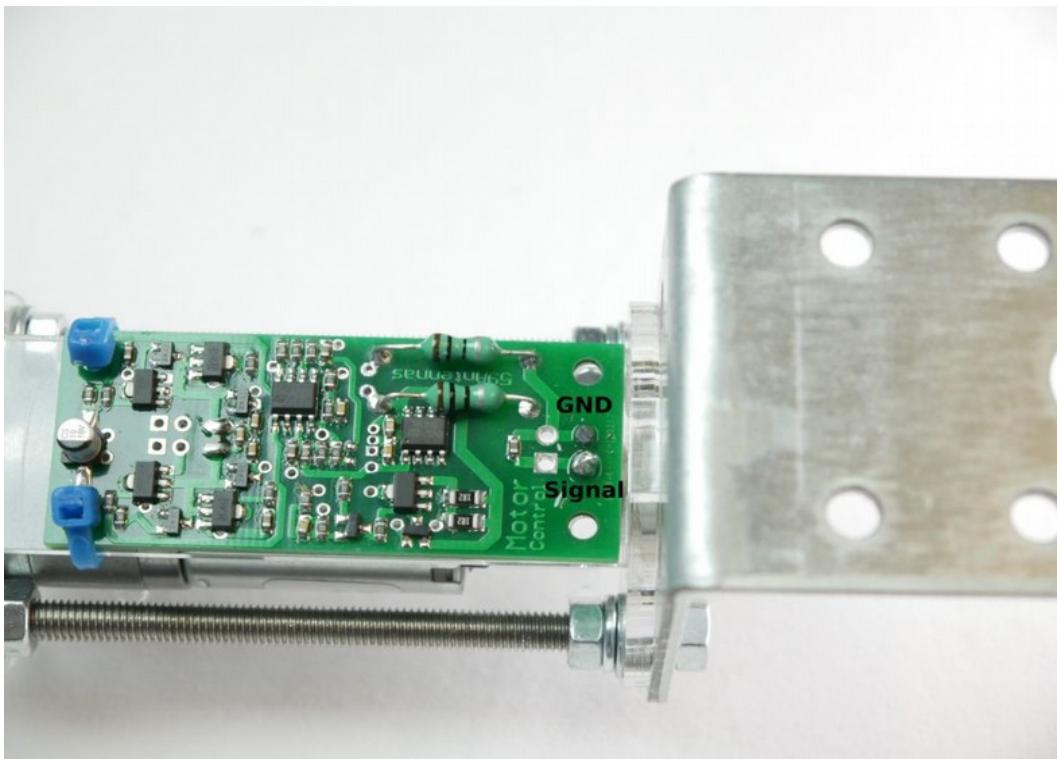


Tabelle1

connection points



insert cable

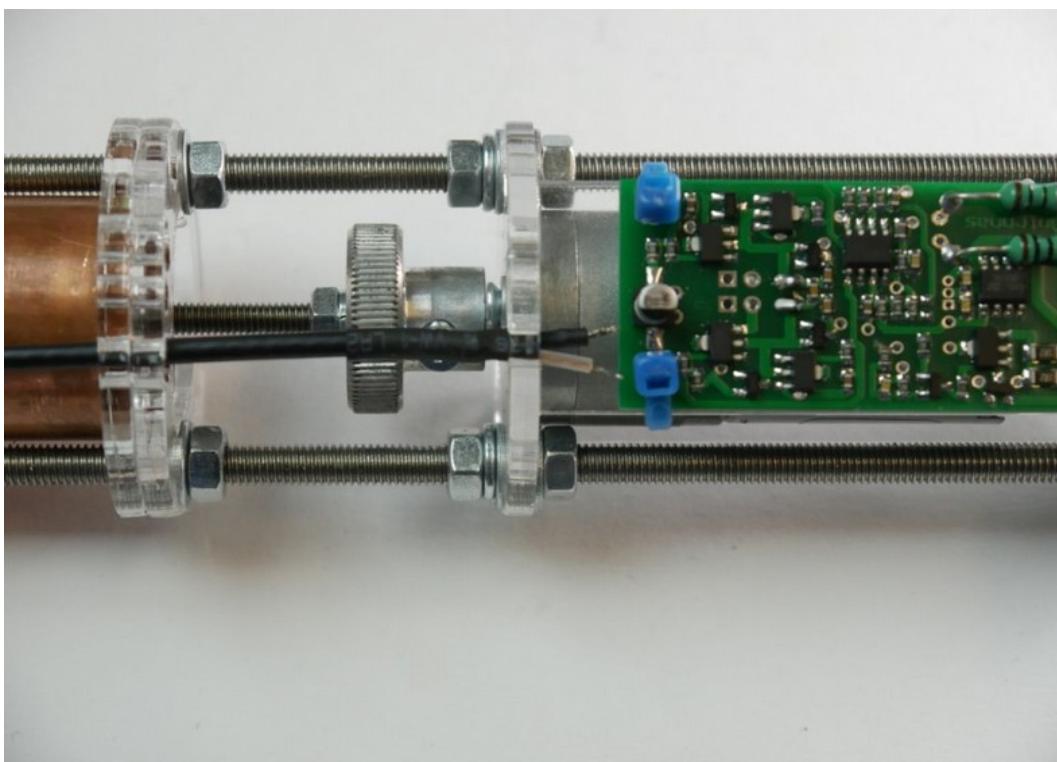
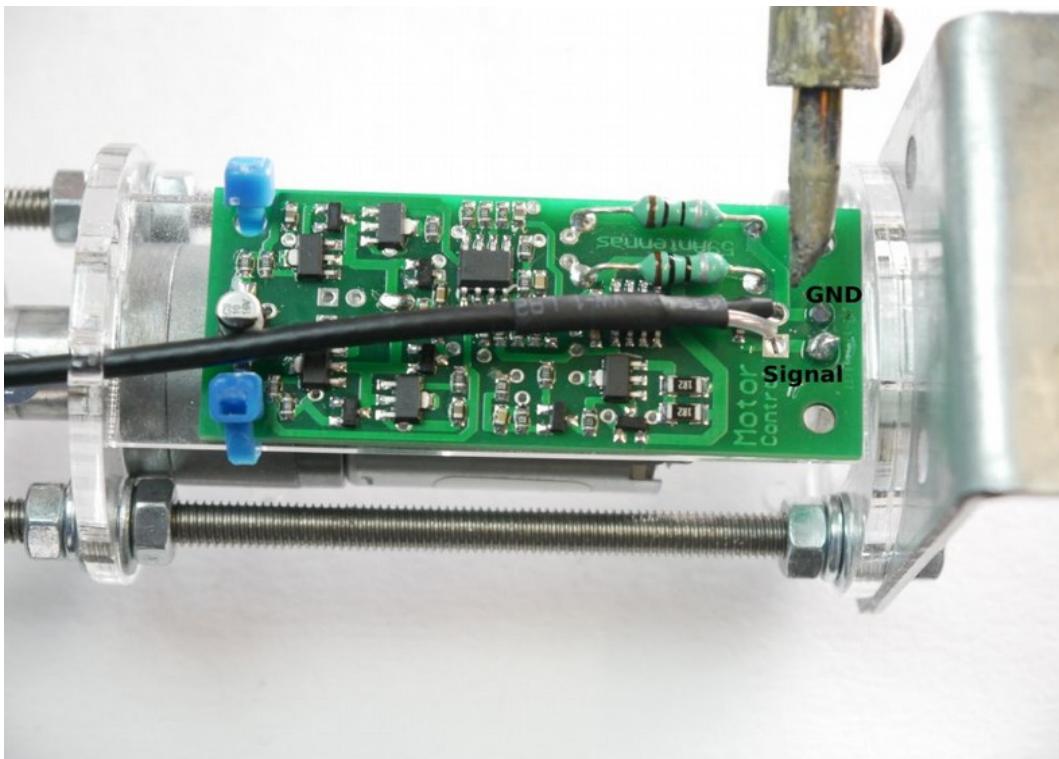


Tabelle1

solder cable to the motor controller board hot signal and shield GND



cut the outside jacket coax cable at apx. 2" (ca.5cm)

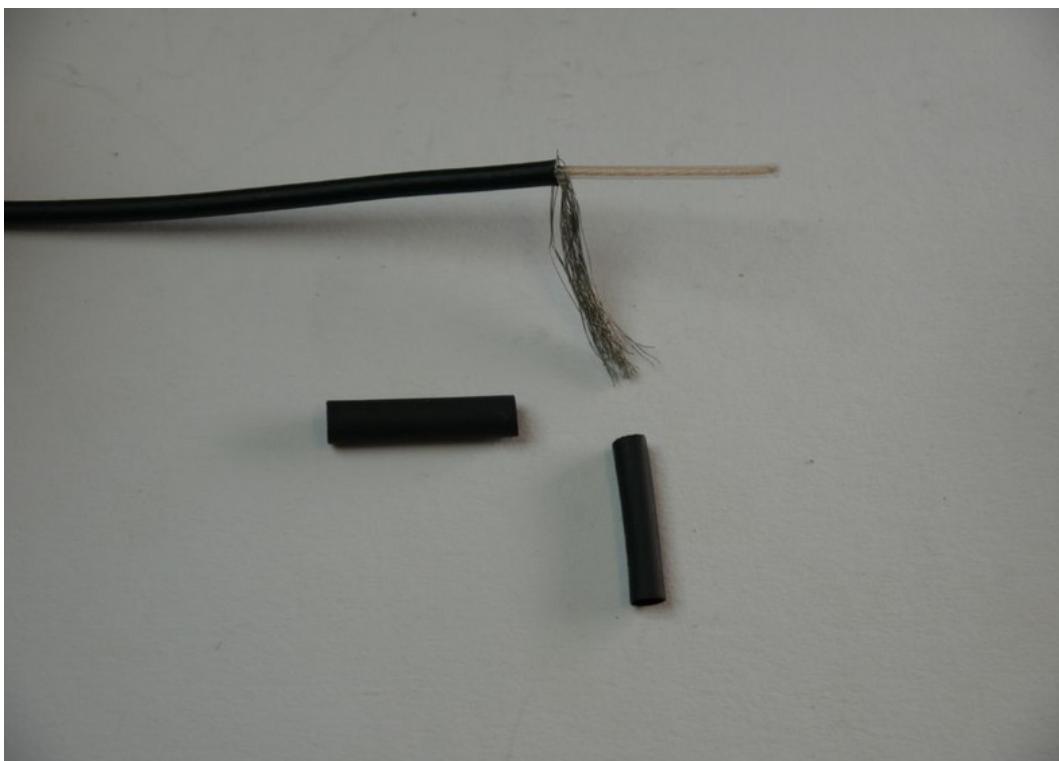


Tabelle1

Install heatshrinkhose and shrink it



shrink and cut it

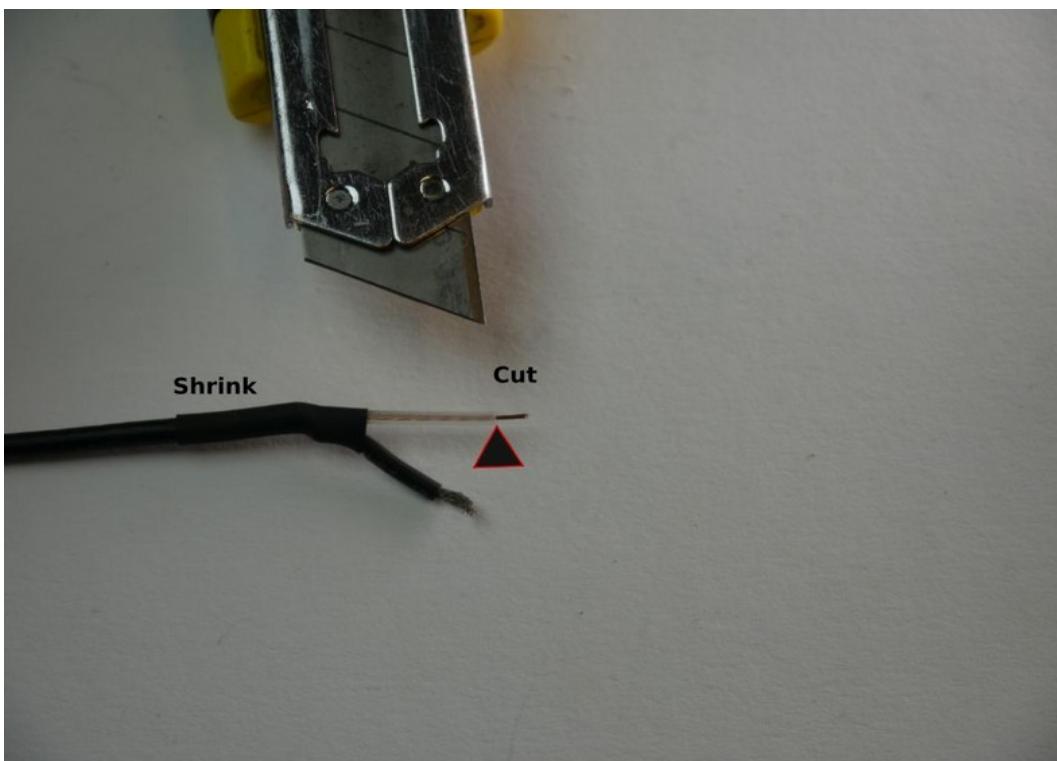
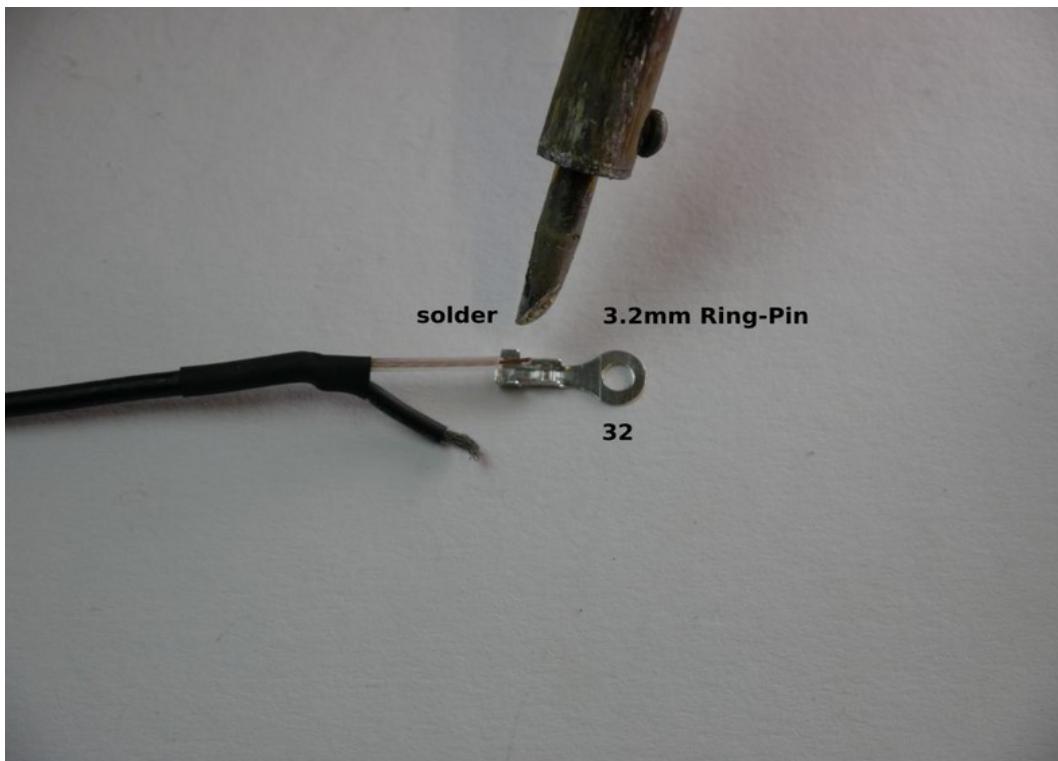


Tabelle1

solder item 32 to cable



solder clamp-shoe 101

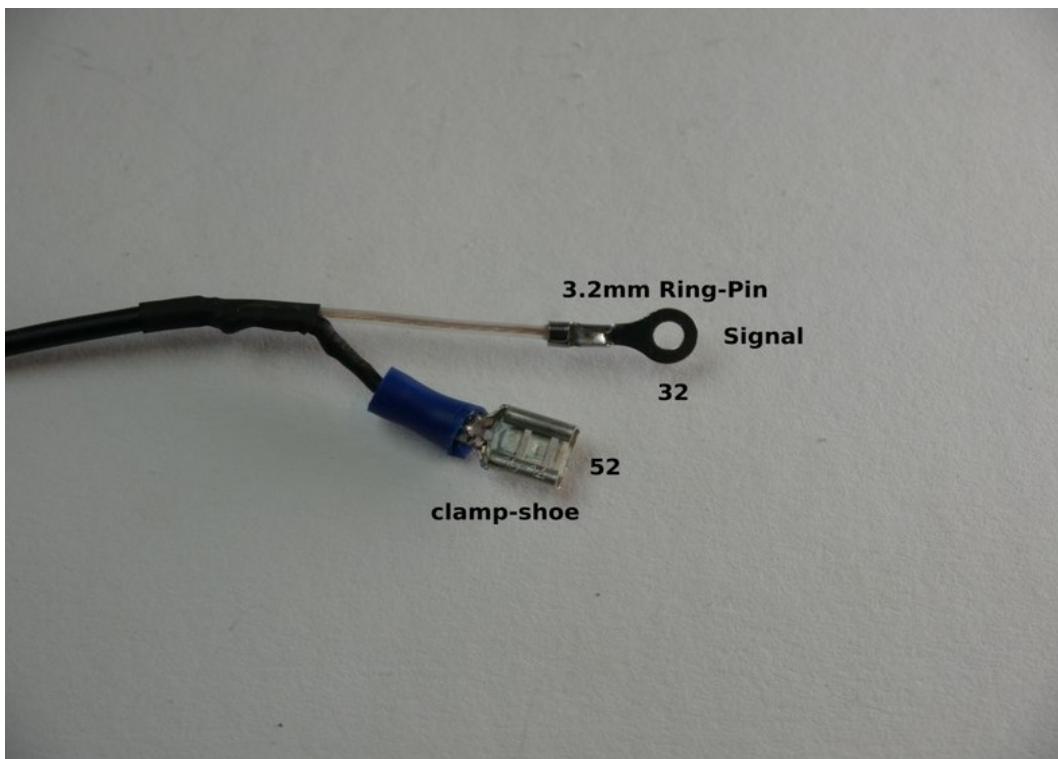
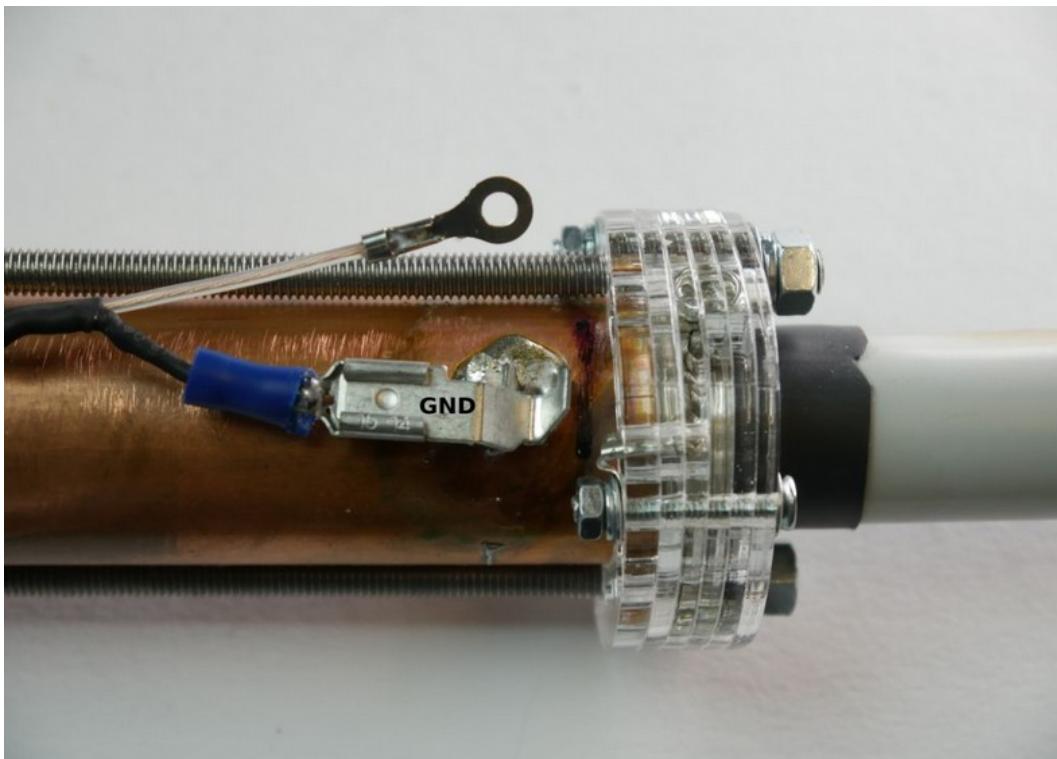


Tabelle1

connect GND to the tube



connect hot signal to ballholder – a cap can make a DC/AC coupling – cap not include!

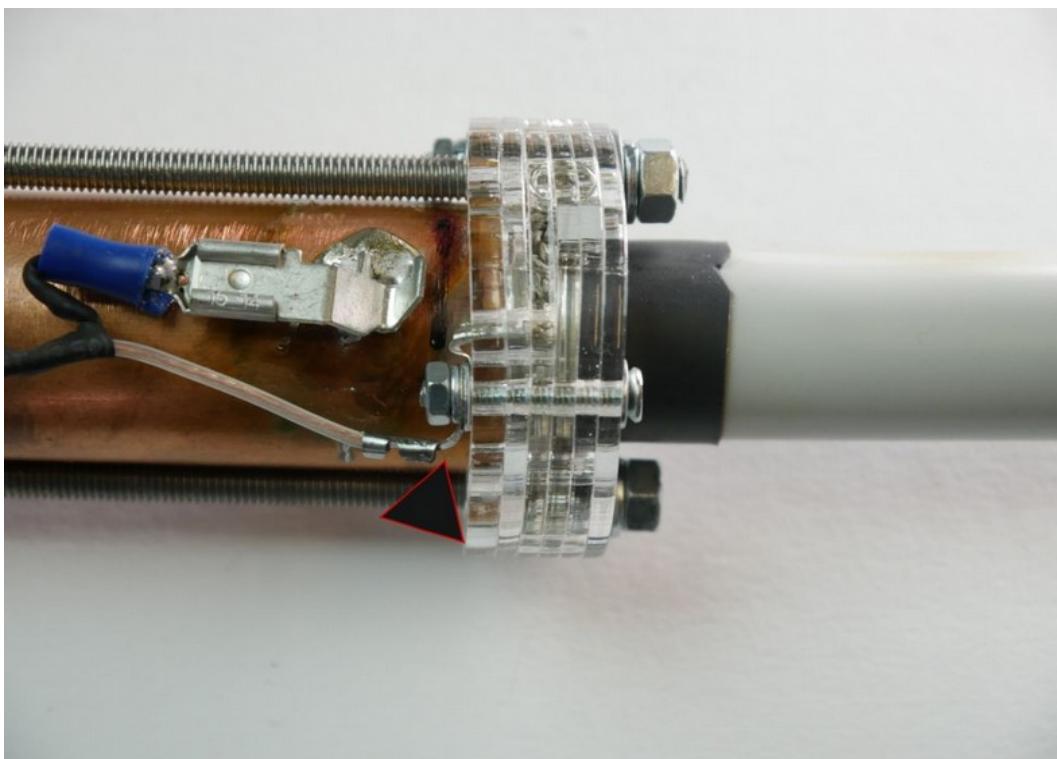


Tabelle1

finish your automatic-motor-antenna

a lot of options are possible to made from your self ideas.

**ATTENTION – only the hot pin is for the voltage control! don't change the polarity**

+8Volt to the hot pin in the center of the connector will move down the coil

+10Volt till +12Volt to the hot pin center will move the antenna up - apx. 230mA will consumed



### Tabelle1

Electrical connection is over a phantom power supply over a coil.

Injection from the power supply into the RF-coax cable as follows

Operation-mode

Voltage(Volt)		direction up/stop/down		current (mA)
+13,8V	Center pin	motor move up		~230mA
+10,5V	Center pin	motor move up		~230mA
+9V	Center pin	stopped	for test coax-connection	~3mA
+8V	Center pin	motor move down		~230mA
0V		GND shield Coax		

Option-end-switch

you can install also a endswitch and interupt the connection on the motor controll board.

the motor will run down and the end-switch turn the motor off – no current come over the motor.

Tabelle1

Number	Item	Type	thick	pcs
1		Item 1 Ballholder Ring Top	2mm	1pcs
2		Item 2 Ballholder Ring Upper	2mm	1pcs
3		Item 3 Ballholder Ring Middle	2mm	1pcs
4		Item 4 Ballholder Ring Wireout	2mm	1pcs
5		Item 5 Ballholder Ring Bottom	2mm	1pcs
6		Item 6 Copper Tube TOP	3mm	1pcs
7		Copper Tube Holder Bottom & Item 13 Ring Tube Bottom Hole=6mm, Dia=25mm	3mm	1pcs
8		Copper Tube Bottom & Item 14 Ring Nut Holder Tube (4mm Nut)=dia 7,9mm; Diameter 17,5mm	3mm	1pcs
9		Item 9 Motor Top	3mm	1pcs
10		Item 10 Motor Bottom & Item15 17,5mm Hole 6mm	3mm	1pcs
11		Item 11 Motor Side1	2mm	

Tabelle1

12		Item 12	Motor Side2	2mm
13		Item 13	Ring inside item 7; 25mm; Hole 6mm	3mm
14		Item 14	Ring inside Item 8; Nut holder 17,5mm	M4- 3mm
15		Item 15	Ring inside item 10; 17,5mm top; Hole 6mm	3mm
16		Item 16	Emitter (Strahler) top 5,8mm/17,5mm	3mm
17		Item 17	Emitter (Strahler) middle 5,8mm/17,5mm	3mm
18		Item 18	Emitter (Strahler) bottom 4,4mm/17,5mm	3mm
19		Item 19	Side part Motor	3mm
20		Item 20	Side part Motor	3mm
21		Item 21	Top inner Stabilizer 17mm; Hole 4,2mm	3mm
22,23,24, 25,26,27, 28,29,30, 31,32,33		Item 22-33	Nut M5 DIN934 ISO4032 1g	5mm
34		item 34	Ring-Pin 3,2mm	3,2mm
35		Item 35	Wattlet Wire	
36,37,38, 39,40,41, 42,43,44, 45		Item 36-45	Flat-Washer 5,4mm DIN125	5,2mm
46,47,48, 49,50,51		Item 46-51	Spring-Ring 5mm DIN127	5,2mm
52		Item 52	Clamp-shoe	

Tabelle1

53	same	Item 53	threaded rod 5mm	36cm
54		Item 54	threaded rod 5mm	36cm
55	same	Item 55	threaded rod 4mm transport	26cm
56		Item 56	Motor Clutch 22/12mm	4mm
57		Item 57	Motor-Controller Electronic	
58		Item 58	Gear DC-Motor 6V 24,5mm 69mm	
59,60		Item 59,60	Flat-Washer 3,2mm DIN125	3,2mm
61,62,63		Item 61,62,63	Skrew Flat-Heat cross 3.0x10mm DIN965	3mm
64		Item 64	Angle 90°	2,5mm
65,66,67		Item 65,66,67	Skrew Flat-Head Cross 3.0 x 20mm DIN965	
68,69,70		Item 68,69,70	Spring-Ring 3,2mm	
71,72,73, 74,75,76		Item 71,72,73,74,7 5,76	Flat-Washer 3,2mm Couper-Tube 28mm/26mm inner	
77		Item 77		
78,79,80		Item 78,79,80	M4 Nut 0,6g DIN934	M4
82,83		Item 82,83	Flat-Washer 4,3mm DIN125	4,4mm

Tabelle1

86,87		Item 86,87	Spring-Ring 4mm DIN127	4,2mm
90		Item 90	Coil Silver coated 0,6mm/28cm/20mm Dia	28cm
91		Item 91	UHF-Connector Jack Female front mount bulkhead RF connector solder 15,8mm inner, 15,8mm outer	15,9mm
92,93,94		Item 92,93,94	M3 Hex-Nut DIN934	M3
95,96,97		Item 95,96,97 & 2pcs Steel	Metal-Ball 6mm 1pcs Brass & 2pcs Steel	6mm
98,99,100		Item 98,99,100	Spring 6mm	6,5x10m m
101		Item 101	Ring-Pin 3,2mm	3,2mm