



re:Mix by Open Funk - Technical description

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Product overview

Open Funk designs and locally manufactures sustainable and circular home electronics that do not compromise on performance, quality and style.

ReMix is our first product - a multifunctional kitchen mixer, smoothie maker and coffee grinder, with an outer casing made of recycled plastics and assembled in Germany.

It features a removable blender head and uses standard glass jars as containers:



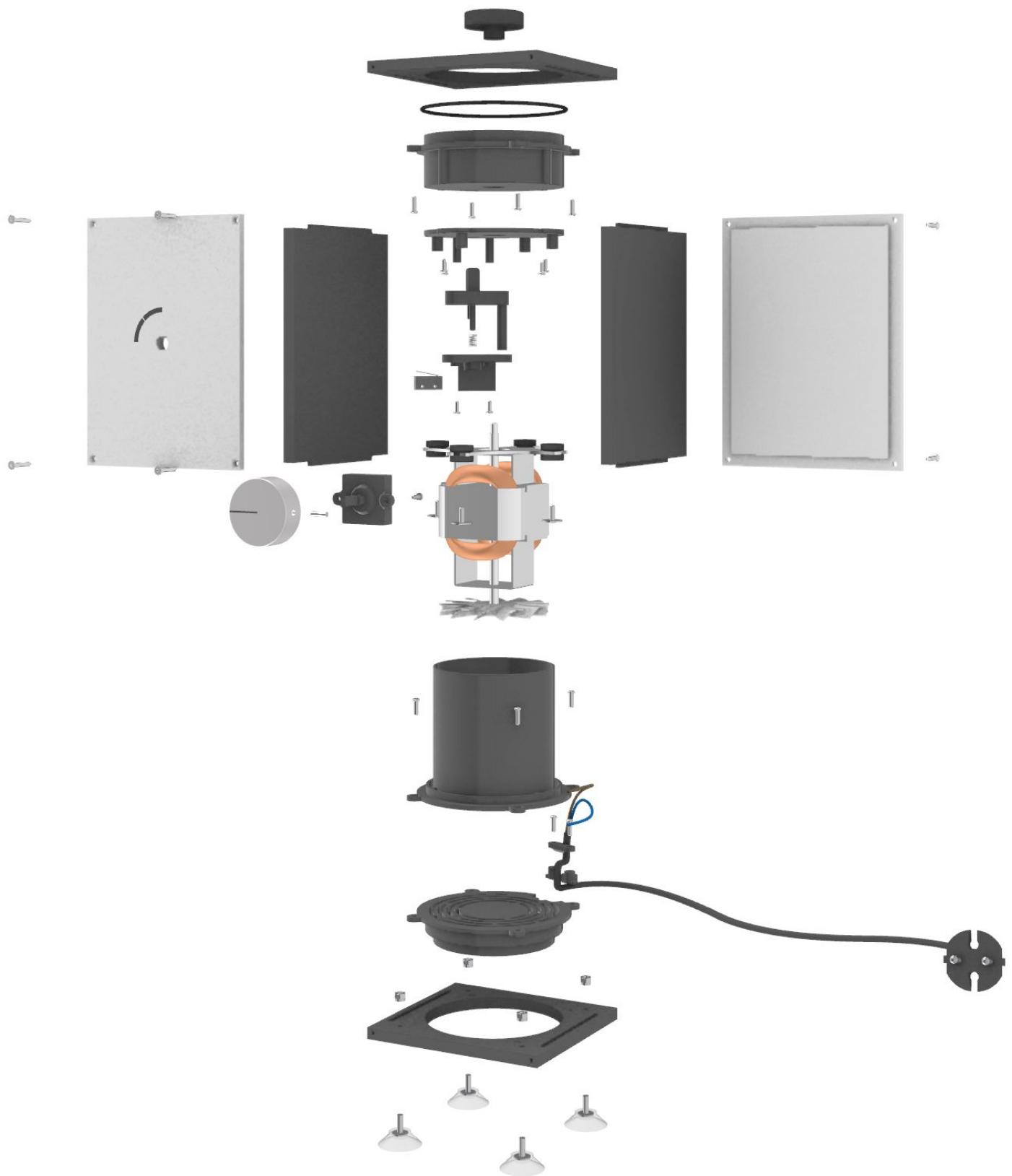
BOM specification



Blender Head and Blade block:



Blender Casing and Assembly:

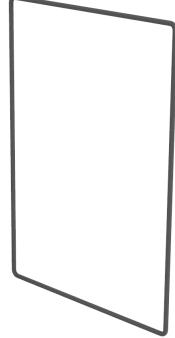


Mechanical BOM:

Part #	3D view	Part name	Qty	Part size	Material & process	Part information
1		Blade	1	Blade: Ø max = 58 Height = 30 Shaft: Ø rod = 6 L = 35	Blade material: Stainless steel 202 Shaft material: Stainless steel 430	Sourced as buy-in component in China
2		Blade Seal	1	Ø outer = 9 Height = 5	Material: Silicone rubber Process: Injection molding Colour: Translucent	Sourced as buy-in component in China
3		Head Seal	1	Ø outer = 78.8 Height = 17.7	Material: Silicon rubber Process: Injection molding Colour: Translucent	Injection molded by us
4		Blender Head	1	L = 124 W = 95 H = 45	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
5		Blade Base	1	Ø outer = 75 Height = 28.2	Material: Stainless steel 304	Sourced as buy-in component in China
6		Slide Bearing	1	Ø outer = 13 Ø inner = 8 Height = 20	Material: Bronze	Sourced as buy-in component in China

7		Blade Locker	1	\varnothing outer = 80.8 Height = 8.4	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
8		Blade Gear	1	\varnothing outer = 33 Height = 11.5	Material: Rubber with steel thread Process: Injection molding	Sourced as buy-in component in China
9		Motor Gear	1	\varnothing outer = 41 Height = 18.3	Material: PA66+GF30% with steel thread Process: Injection molded	Sourced as buy-in component in China
10		Top Panel	1	L = 130 W = 120.4 H = 8 \varnothing inner = 96.7	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled	CNC milled by us on boards from Le Pavé®
11		Socket O-ring	1	\varnothing inner = 90 \varnothing = 2.5	Material: Synthetic rubber Process: Injection molded Colour: Black	Hug Technik
12		Blender Socket	1	L = 106.3 W = 106.3 H = 33.7	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
13		Motor Adaptor	1	L = 102.6 W = 96.3 H = 20.4	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA

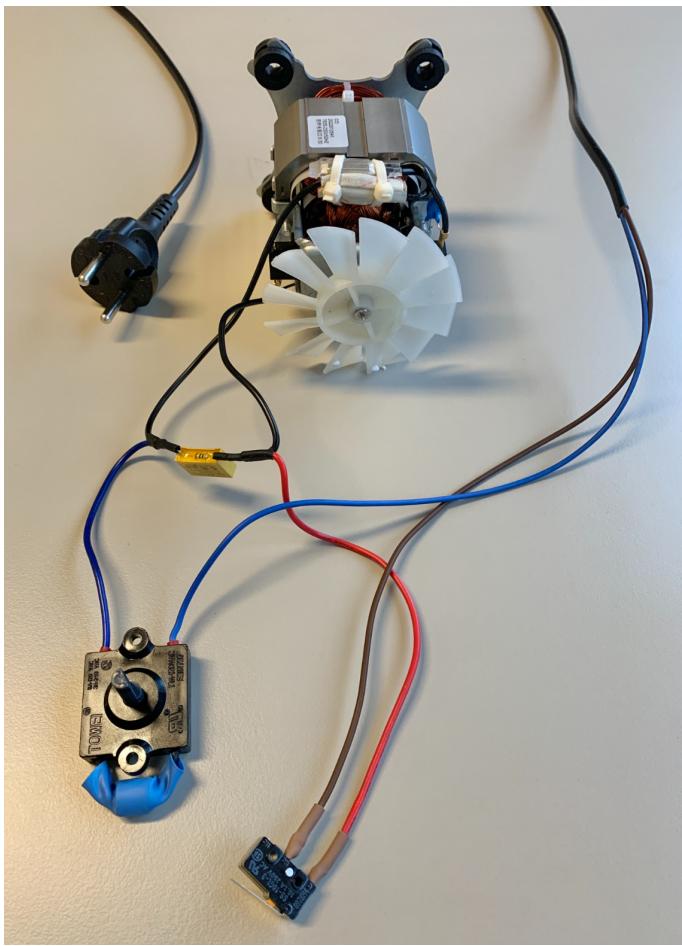
14		Jar Slider	2	L = 24.2 W = 9.3 H = 10	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
15		Stopper	2	L = 27 W = 9.2 H = 13	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
16		Head Slider	1	L = 45.7 W = 20.4 H = 56.5	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
17		Switch Holder	1	L = 50.2 W = 28.7 H = 25.9	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
18		Left Panel	1	L = 165.3 W = 120.4 H = 8	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled	CNC milled by us on boards from Le Pavé®
19		Right Panel	1	L = 165.3 W = 120.4 H = 8	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled	CNC milled by us on boards from Le Pavé®

20		Front Panel	1	L = 175 W = 130 H = 8	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled Process 3: Screen printed	CNC milled by us on boards from Le Pavé®
21		Back Panel	1	L = 175 W = 130 H = 8	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled	CNC milled by us on boards from Le Pavé®
22		Panel O-ring	2	Ø = 2.5 L = 170	Material: Synthetic rubber Process: Injection molded Colour: Black	Hug Technik
23		Switch O-ring	1	inner Ø = 15.5 Ø = 1.5	Material: Synthetic rubber Process: Injection molded Colour: Black	Hug Technik
24		Control Knob	1	Ø outer = 37.8 Depth = 15.9	Material: Aluminum and ABS	OKW

25		Ventilation Pipe	1	L = 113 W = 83.7 H = 92	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
26		Ventilation Grid	1	L = 113 W = 103.3 H = 18.5	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
27		Cable Fixer	1	L = 24.4 W = 8.6 H = 5	Material: Engineering PLA Process: 3D printed (FDM) Colour: Black	3D printed by us on Original Prusa i3 MK3S with Engineering PLA
28		Bottom Panel	1	L = 130 W = 120.4 H = 8 Ø inner = 96.7	Material: Recycled HDPE Process 1: Thermopressed Process 2: CNC milled	CNC milled by us on boards from Le Pavé®
29		Suction Feet	4	Ø outer = 30 Height = 20	Material: TPE-V with stainless steel thread Colour: Black	Vakuplastik
30		Jar	1	Ø outer = 86 Height = 125 V= 565 mL	Model: 13460 Mouth: TO82 Material: Glass	GläserUndFlaschen . Any TO82 will fit.

Parts in blue are in contact with food

Electrical BOM:

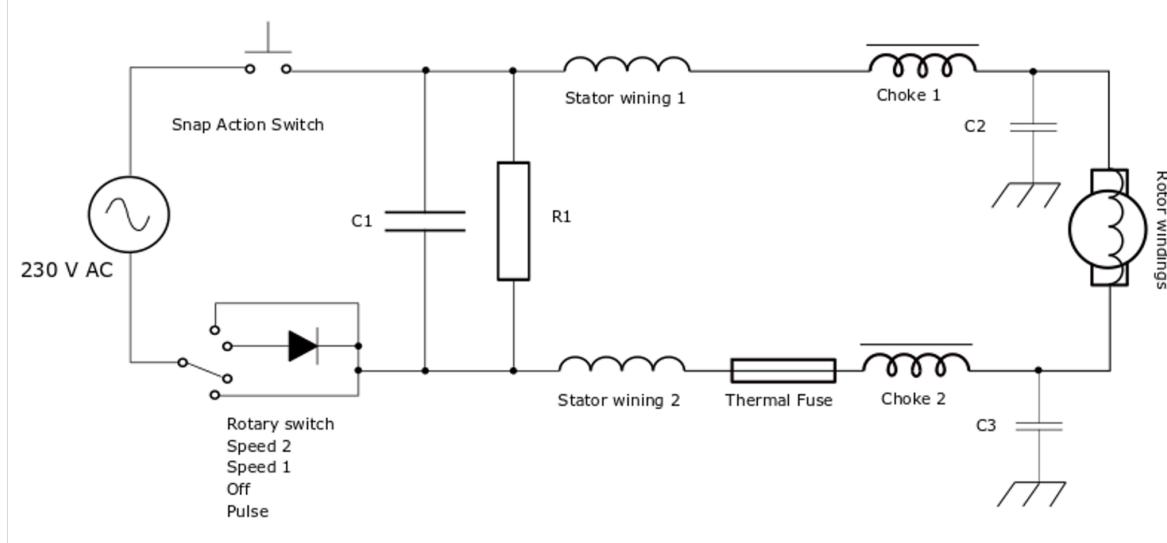


1		Motor	1	Model: 7635 Incl. below components: <ul style="list-style-type: none"> • blue capacitor X1 • heat protector 17AM1+PTC • inductor 4X10 12UH 45 45 • yellow capacitor X2 224 275 +470K • Heat shrink tubes • Wires 	CCY Motor
2		Rotary switch		Model: B3200-411G	Shenzhen Towei Electrics Co., Ltd.
3		Ferrule	2	Model: VT AEHI 1,0-100	Vogt AG Verbindungstechnik
4		Heat shrink tube1	1	Model: SDB 4,8 BL Schrumpfschlauch-Box, 12m, blau, Ø4,8mm	WE EISENACHER

5		Micro switch	1	Model: SS-10GL-3 OMRON	
6		Heat shrink tube 2	2	Model: 1812CA007 DIN VDE 0293-308 Inner diameter 3.2mm	WE EISENACHER
7		Solder	2	LZ FE CSN 1,0 25 Lötzinn bleifrei, Ø 1,0 mm, 250 g	Felder Löttechnik
8		Power Cable	1	Zuleitung H03VVH2-F2x0,75 schwarz 1400mm 110/K 1.S.Typ 110 Zentral-Konturenstecker 2.S. 300/ 5mm verzинnt	Plastro Mayer GmbH

Schematic

Schematic 2023-01-05



Component	Value
R1	1 MΩ
C1	0,22 µF
C2, C3	JY332M (X1 400VAC; Y2 300VAC)
Thermal Fuse	W 17AM1033A5
Choke	38 µH

Technical description

ON/OFF and speed control



OFF position

Knob is set at position O

Speed 1

Turn knob clockwise to position I

The device turns ON and starts spinning at 50% max speed

Speed 2

Turn knob clockwise to position II

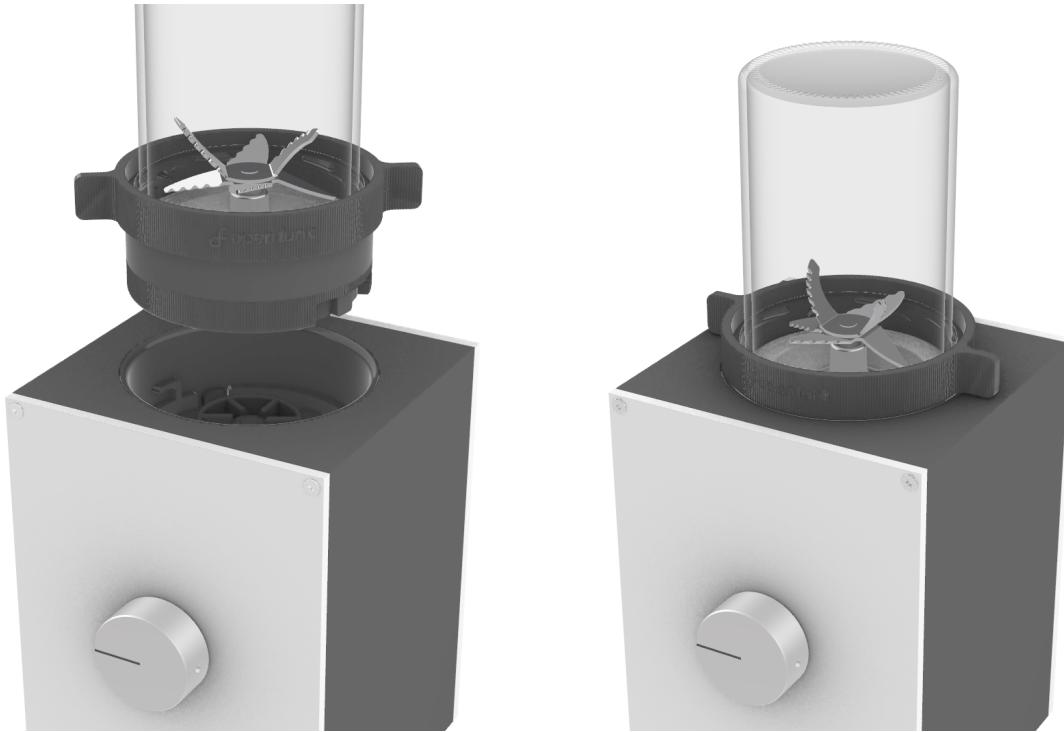
The device starts spinning at max speed

Funk mode

Turn knob counterclockwise to position F

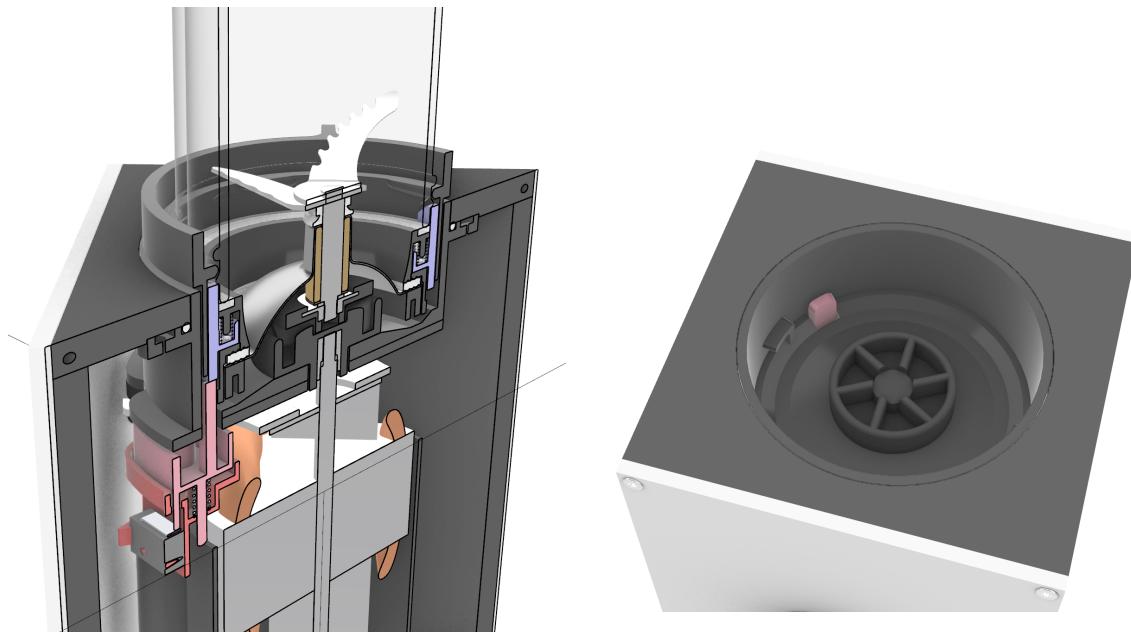
The device starts spinning directly at max speed

Locking of Blender Head into Housing Socket



Slide in the Blender Head into the Blender Socket and twist-lock clockwise firmly using the two handles

Detection of Blender Head and Jar



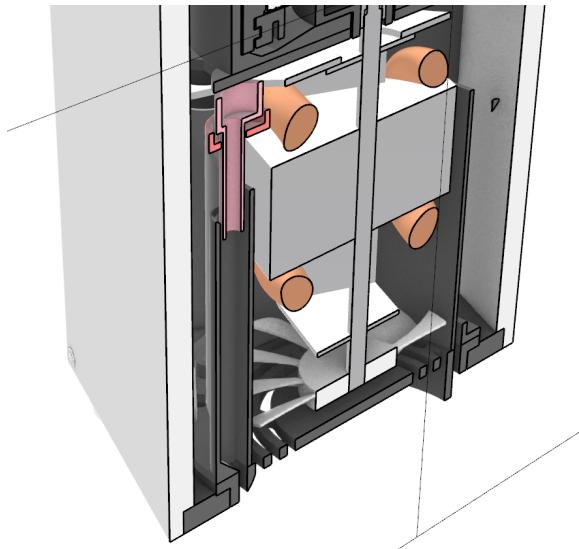
Detection of Blender Head

By Microswitch being pushed by the Head Slider (in pink)

Detection of Jar

By Head Slider (in pink) being pushed by the Jar Slider (in blue)

Water protection and draining



Potential excess water accumulating inside the Socket is being drained safely through the Head Slider, so it comes out through the Ventilation Grid outer holes.

Locking of Blender Head onto Jar

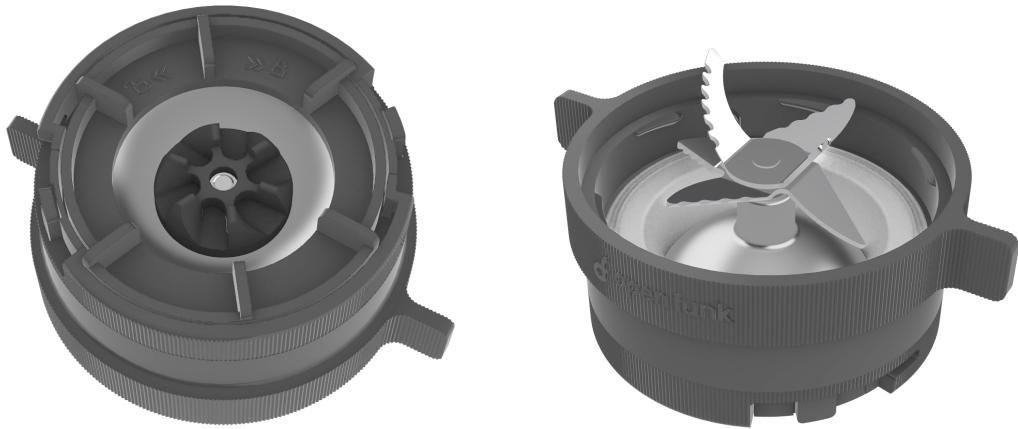


By twist-off lock

Size and fit standard > TO82 glass jars

Twist the Blender Head clockwise onto the Jar mouth to lock and seal the Jar tightly

Locking of Blades into Blender Head



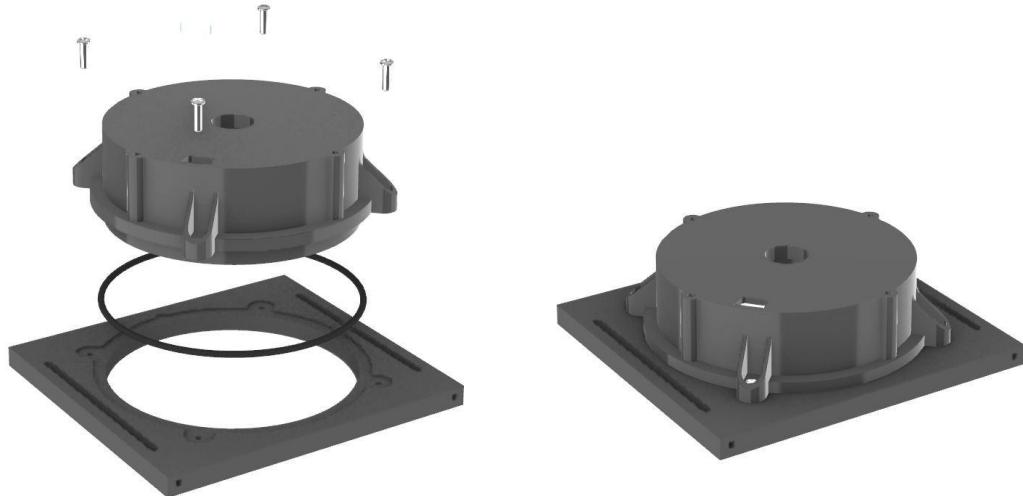
The Blade Gear on the other side of the Blade Rod locks in place the Blades Block together {Blades, Metal Base, Bearing, Rod Seal}

Twist-lock the Head Locker into the Blender Head, so it holds in place the Blades Block and compresses the Head Seal.

Assembly Instructions

Max torque for screwing: 0.25 Nm

1.

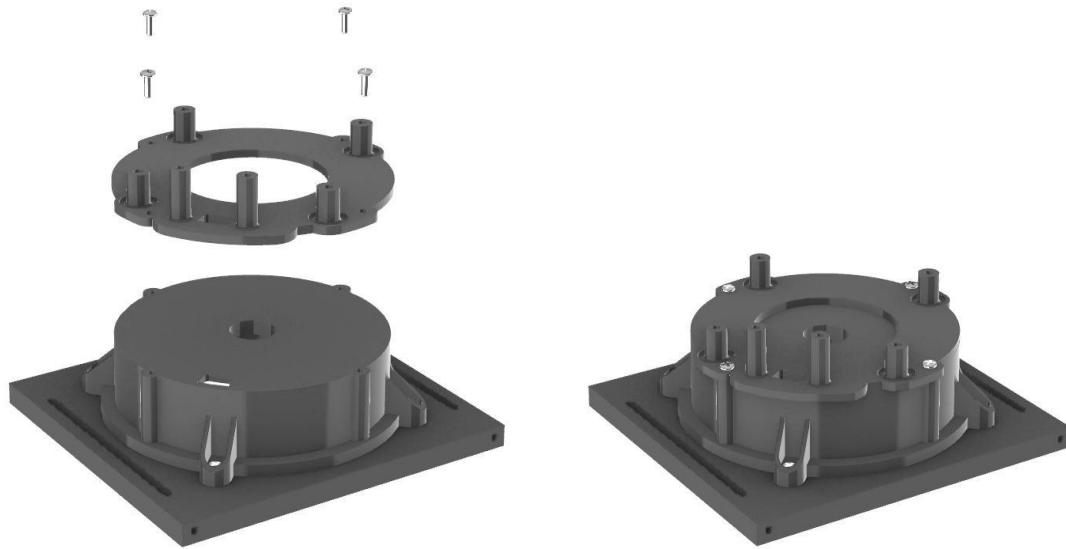


- Place the Socket O-ring into the groove of the Blender Socket
- Place the Blender Socket into the recess of the Top Panel
 - Make sure the positioner is aligned with its housing:

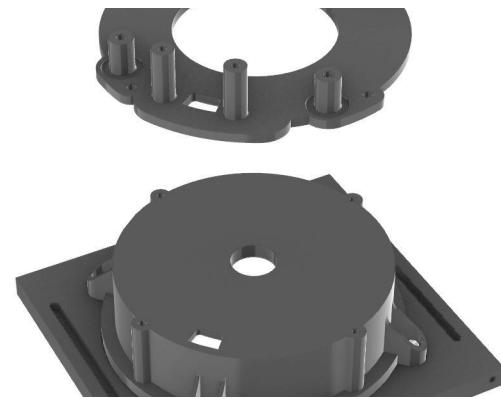


- Fix it with 4 screws (Torque M3.5x10mm)

2.

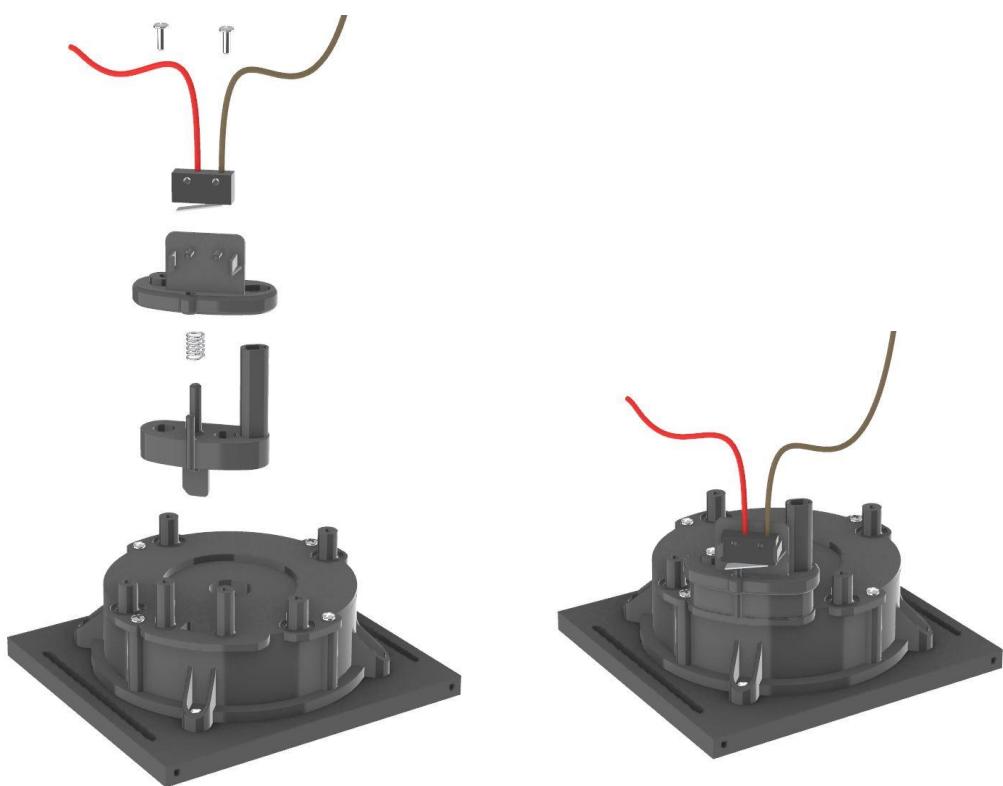


- Place and screw the Motor Adaptor onto the Blender Socket
 - Make sure the two rectangular holes are aligned:



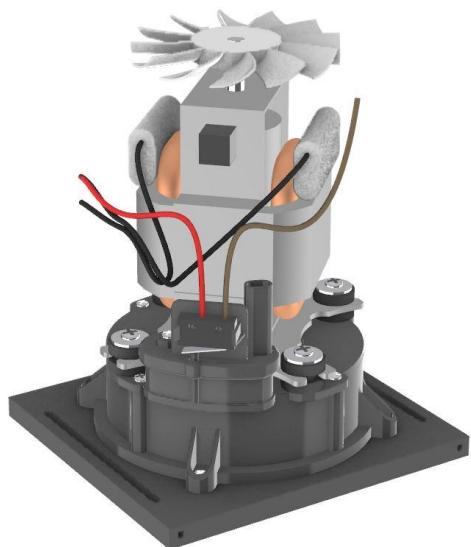
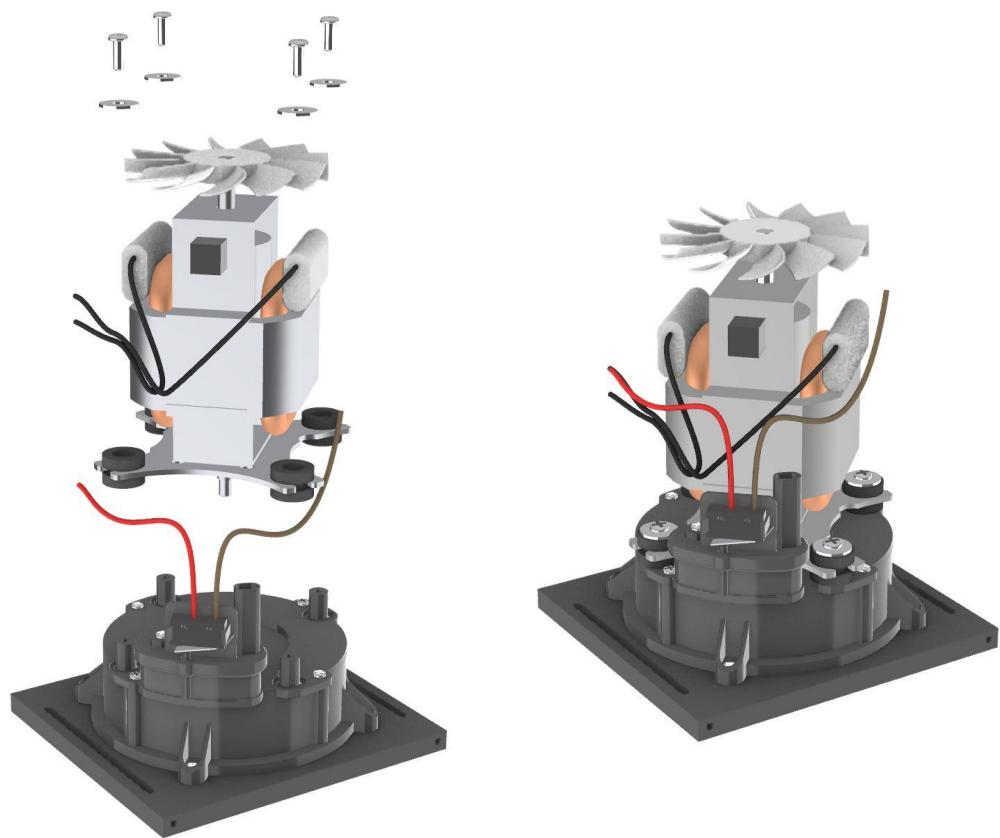
- Fix it with 4 screws (Torque M3x10mm)

3.

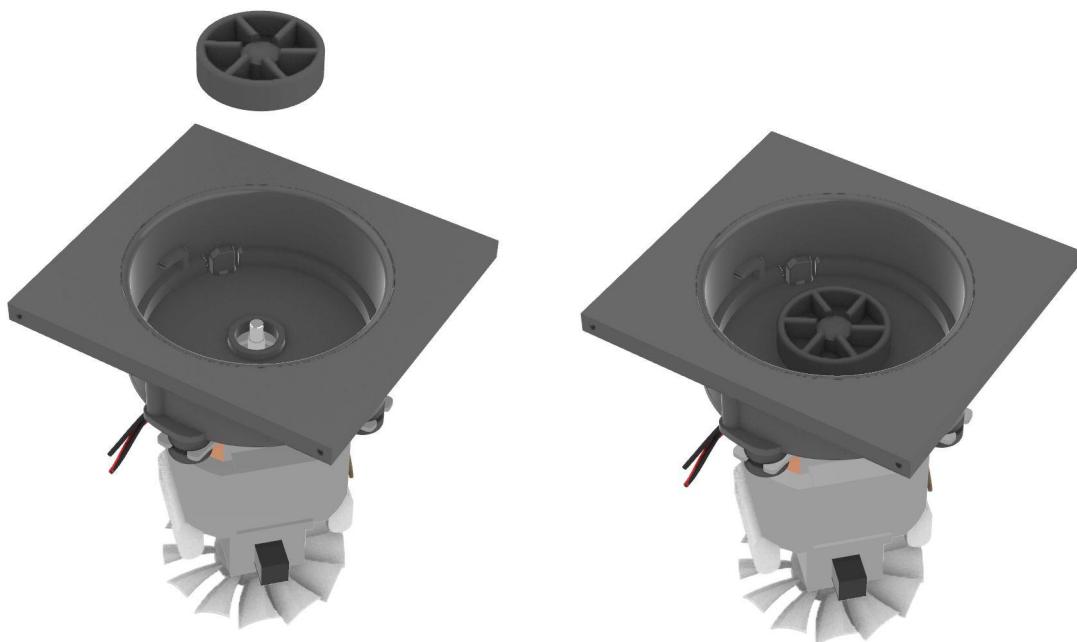


- Place and snap-lock the Microswitch into the Switch Holder
- Place Spring 1 (0.5x6x15mm) around the Head Slider pin
- Insert the Head Slider through the rectangular hole and the two screw towers
- Slide the Switch Holder through the two screw towers
- Fix it with 2 screws (Torque M3x10mm)

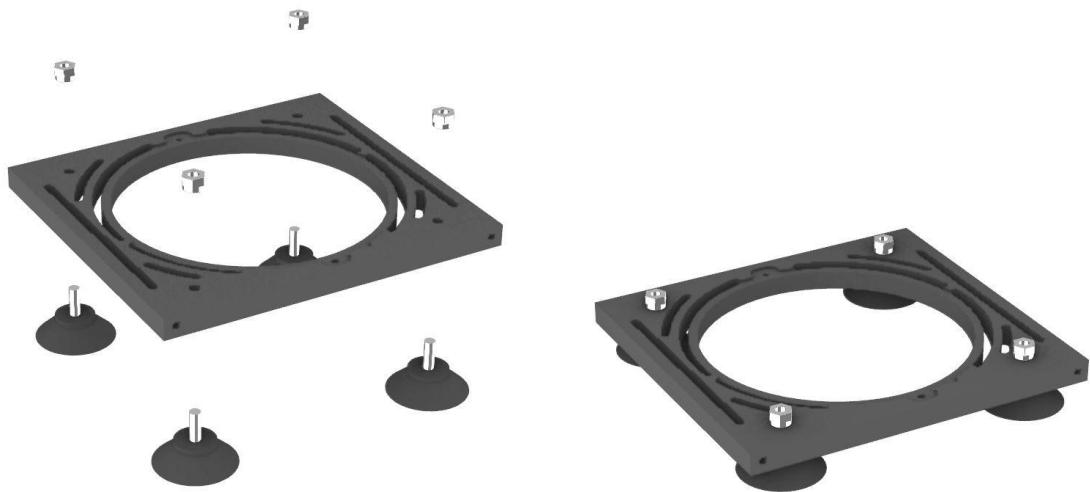
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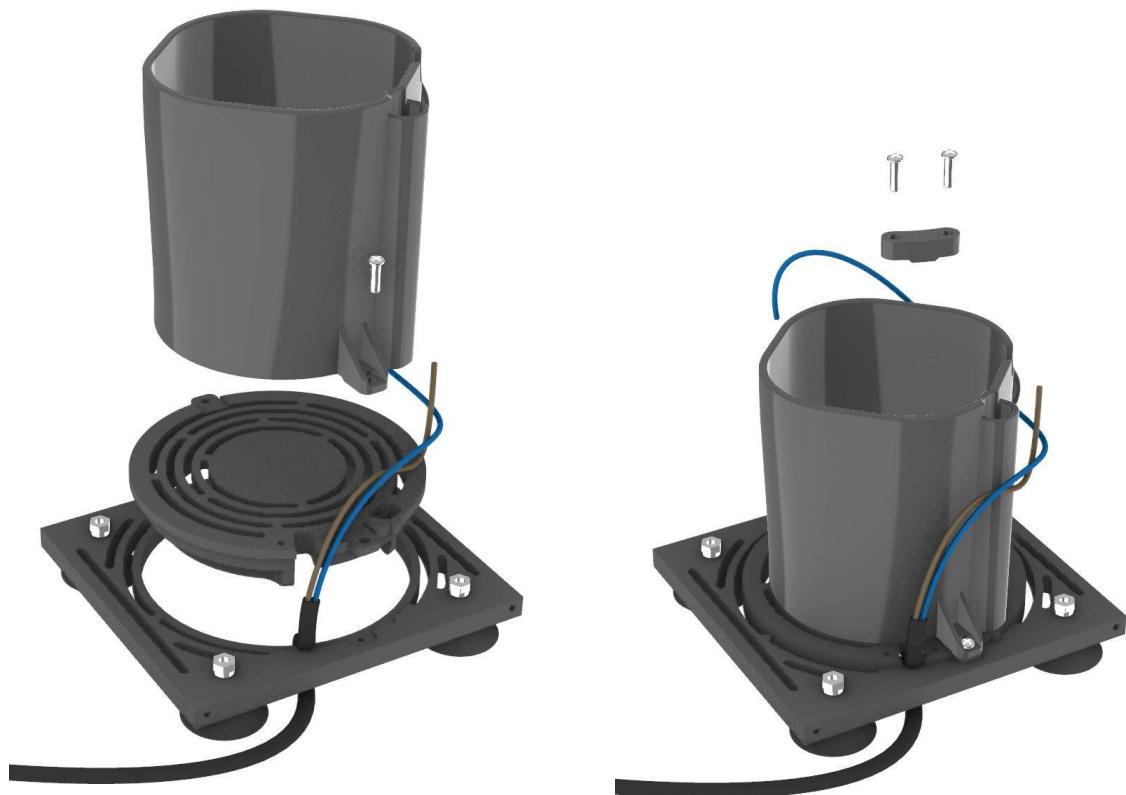
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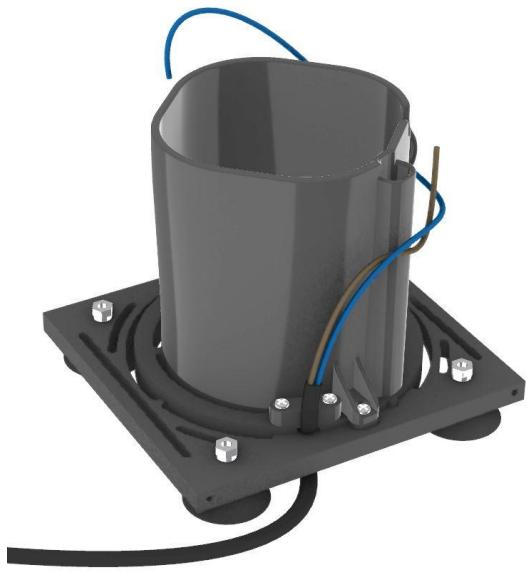


6.

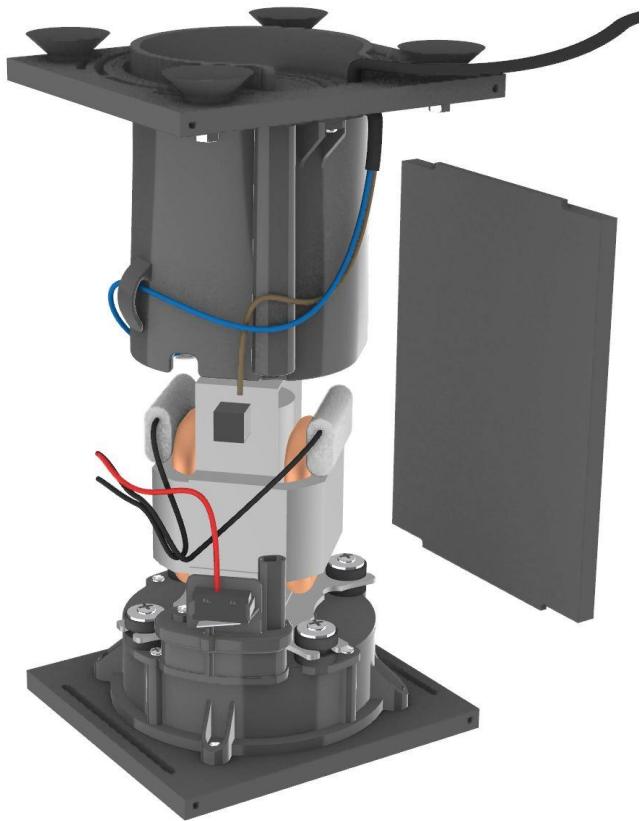


7.





9.

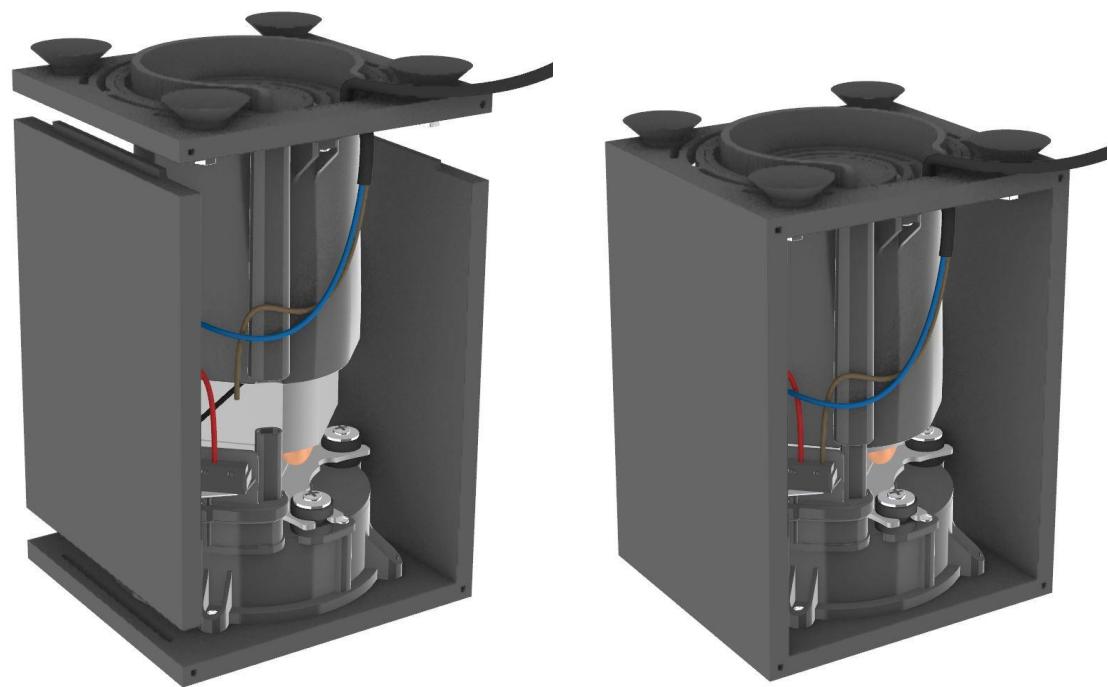


- Flip the Bottom Panel up-side-down and slide the Ventilation Pipe around the motor
 - Make sure the draining pipe is aligned with the Head Slider pipe
- Interlock the Left Panel in between the Top Panel and Bottom Panel
- Place the different electric cables as shown on the pictures

See below picture of last prototype for more details:



10.

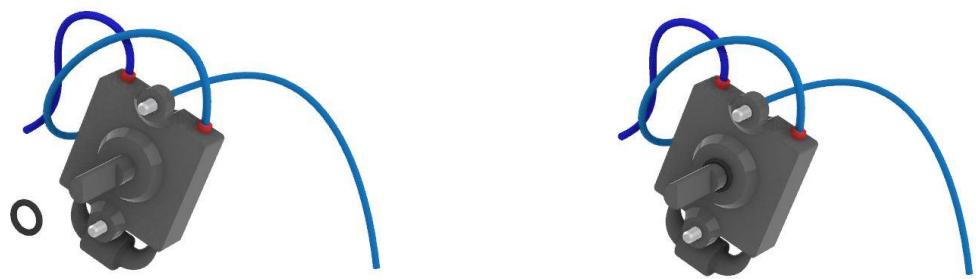


11.

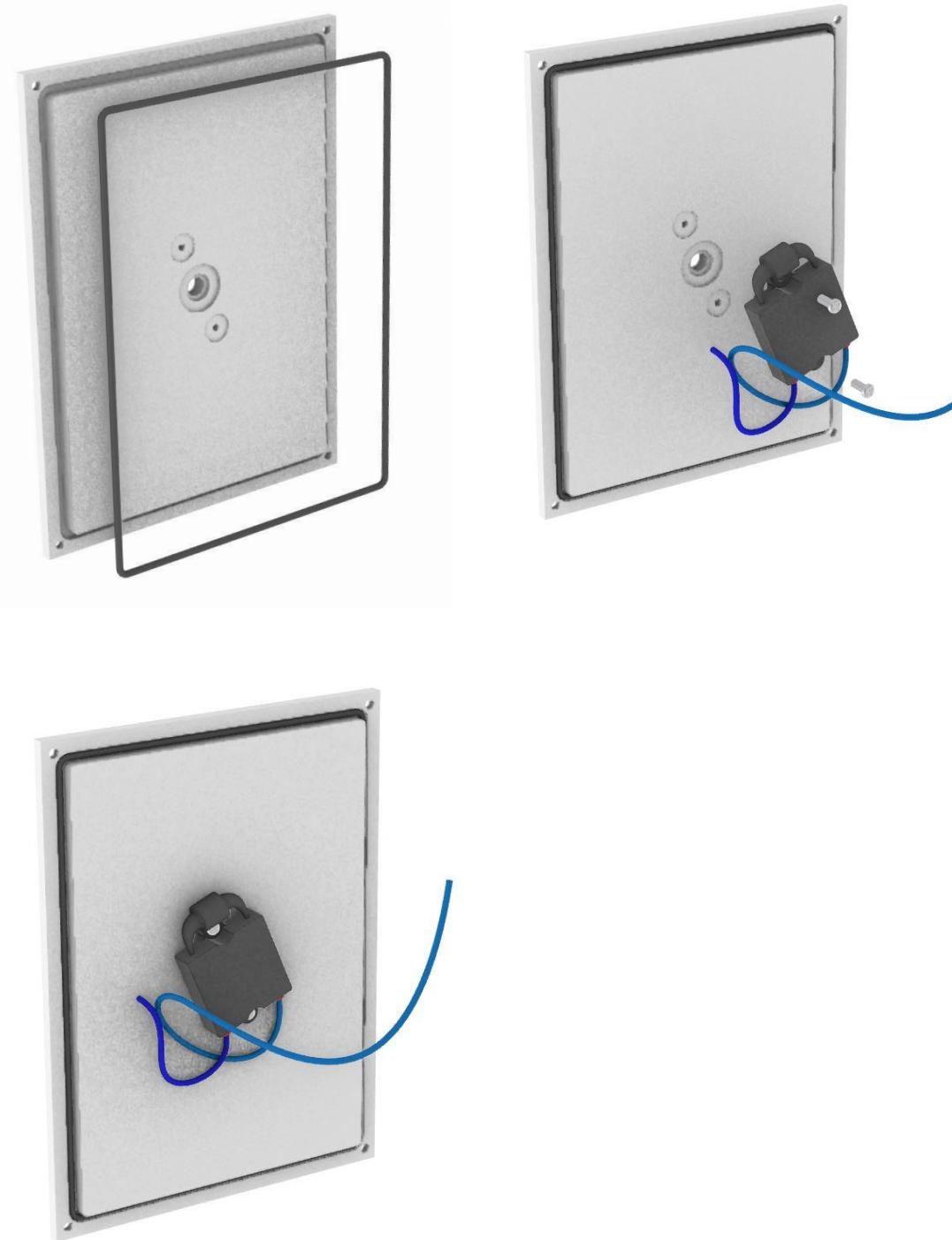




12.



13.



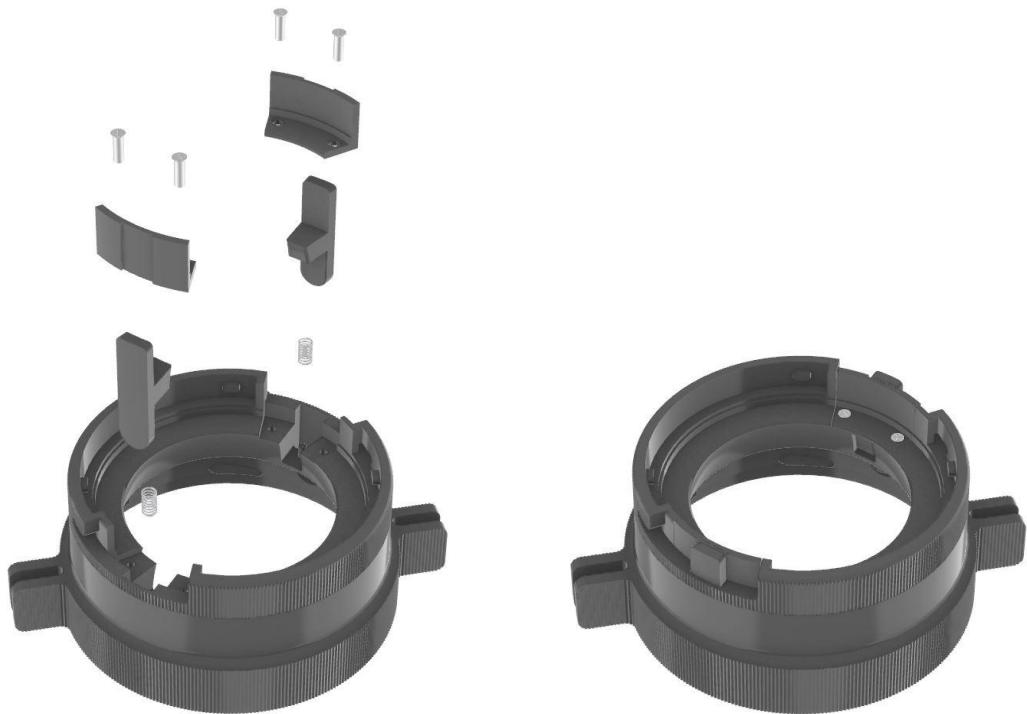
14.



15.



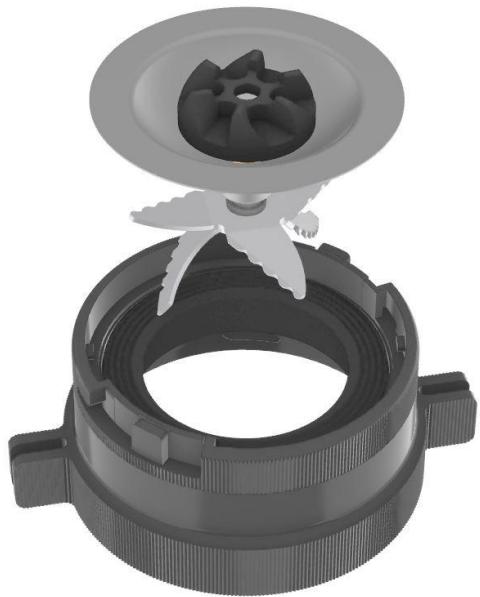
16.



17.

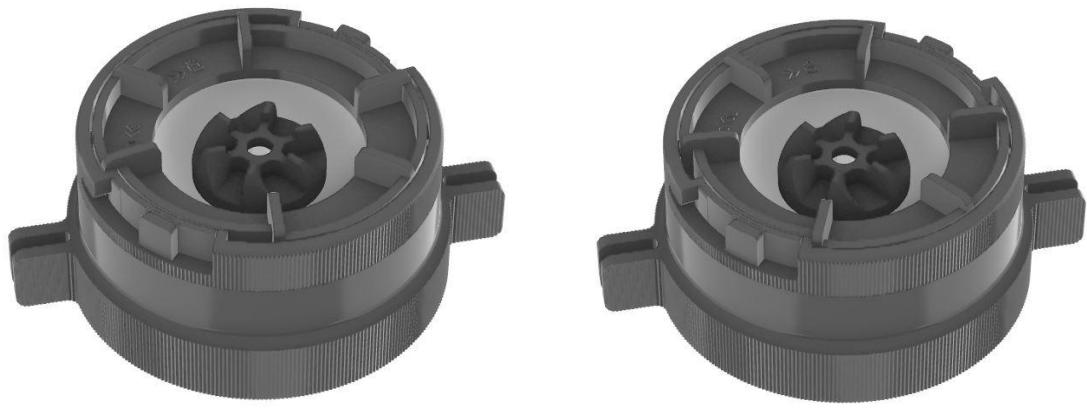


18.



19.



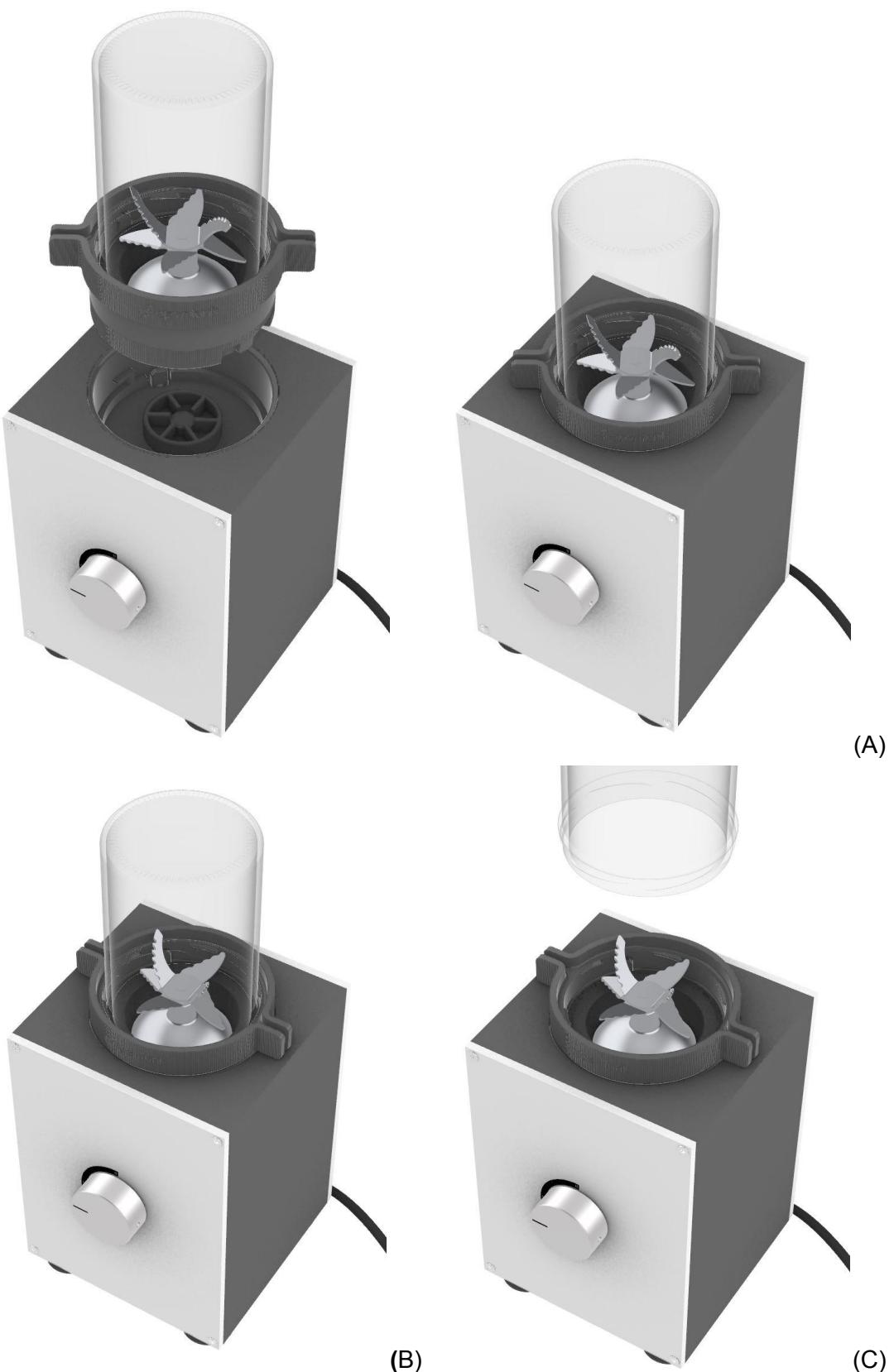


20.



Twist the Blender Head clockwise onto the Jar mouth to lock and seal the Jar tightly

21.



Final assembly quality check:

- Plug the device to power outlet safety test station
 - Place product label in the middle of the Bottom Panel
 - Scan the QR code and run the power safety test
 - Send test report to server (automatically)
 - Verify test PASS
 - If PASS go to next step
 - If not, report defect to Open Funk
 - Slide the Blender Head into the Housing Socket (A)
 - Check no speed control function working on position A
 - Twist and lock the Blender Head into the Housing Socket (B)
 - Check all speed control functions working on position B
 - Remove the Jar from the Blender Head (C)
 - Check no speed control function working on position C
- !! No hands shall be near the blades during this check !!**
- Remove the Blender Head from the Housing Socket



Ready to be further QC tested and packaged.