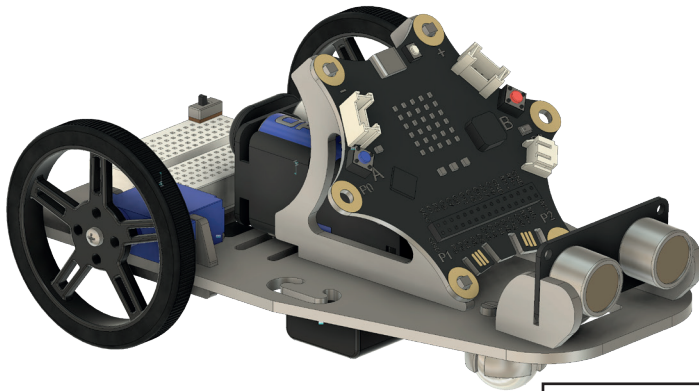


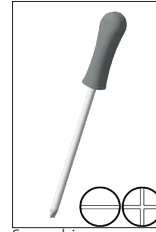
0800 048 8471

OPITEC e-motion set



Additionally required: 4x AA battery, Calliope Mini V3 incl. battery holder

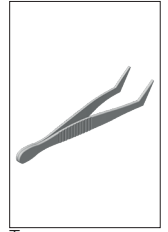
Tools Required:



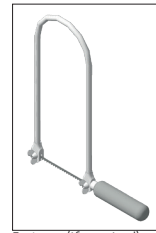
Screwdriver



Pliers



Tweezers



Fretsaw (if required)



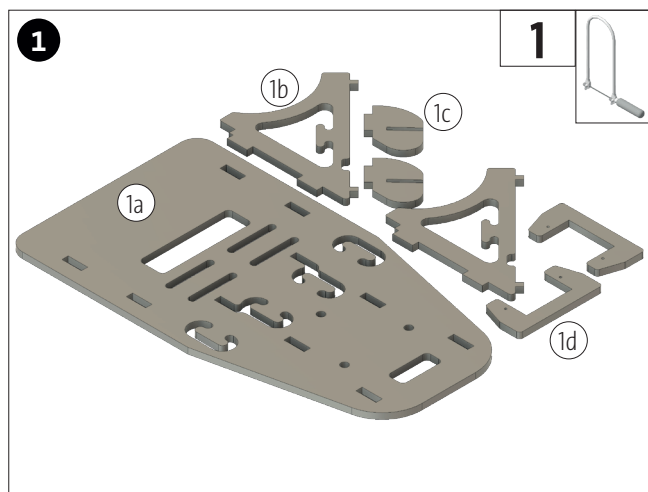
Wood glue (if required)

3D printer
Laser cutter

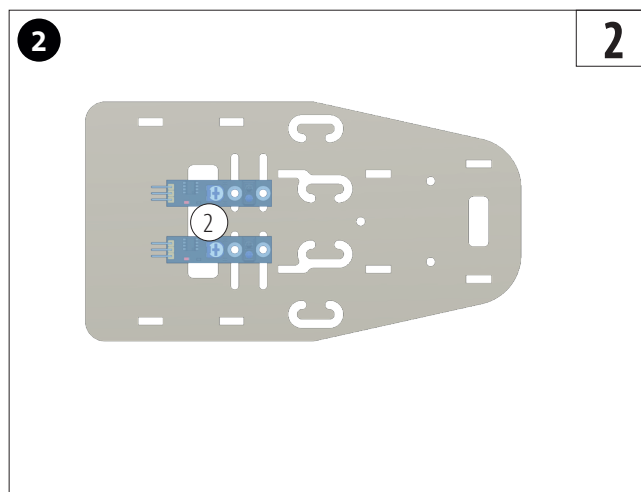
NOTE:

The OPITEC range of projects is not intended as play toys for young children. They are teaching aids for young people learning the skills of Craft, Design and Technology. These projects should only be undertaken and tested with the guidance of a fully qualified adult. The finished projects are not suitable to give to children under 3 years old. Some parts can be swallowed. Danger of suffocation! Not suitable for children under 36 months. Choking hazard!

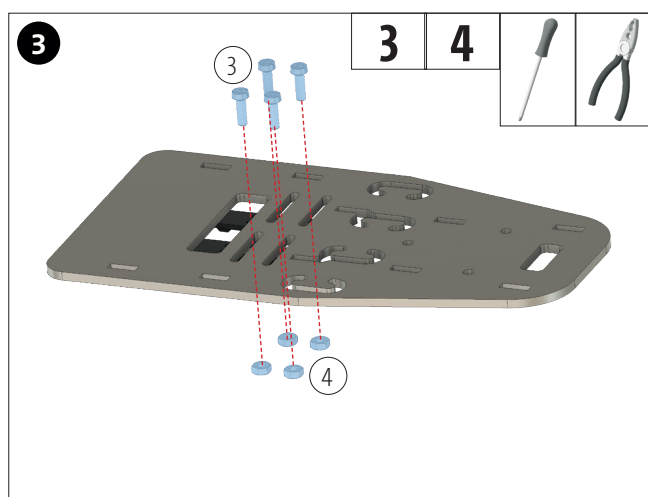
Part List	Quantity	Dimensions (mm)	Description	Part no.
Raw wooden panel (218.977) or laser-cut (218.988)	1		Base plate	1
Line follower sensor	2		Line follower sensor	2
Cylinder head screw	7	M3 x 10	Screw	3
Nuts	7	M3	Nuts	4
Servo motor 360°	2		Servo 360°	5
Rubber tyre with rim	2		Wheel	6
Steel ball	1	18mm	Steel ball	7
Ultrasonic sensor	1		Ultrasonic sensor	8
Mini breadboard	1		Mini breadboard	9
Micro slide switch	1		Switch	10
Battery holder 4x AA	1		Battery holder 4x AA	11
Battery clip	1		Battery clip	12
Wooden Balls	1	25mm	Wooden Balls	13
Jumper cable plug - socket	40	200mm	Jumper cable plug - socket	14
Jumper cable plug - plug	40	200mm	Jumper cable plug - plug	15
Resistor	1	1 kOhm	Resistor	16
LED red	1	5mm	LED	17
Rubber band	10	35mm	Rubber band	18



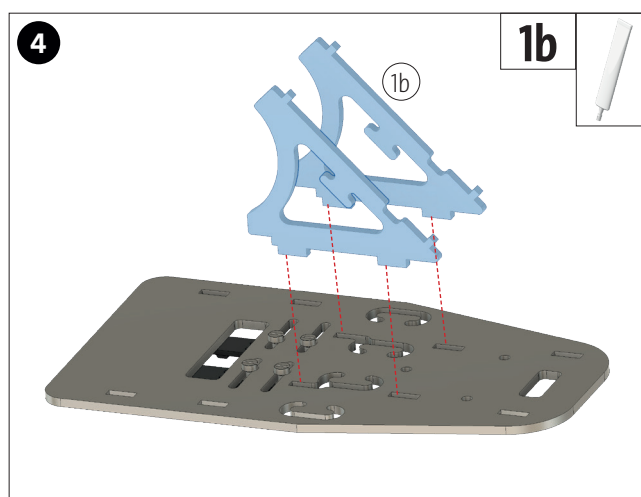
Wooden parts Either laser cut yourself, saw out from raw panel according to template (218.977) or cut out from laser-cut panel (218.988).



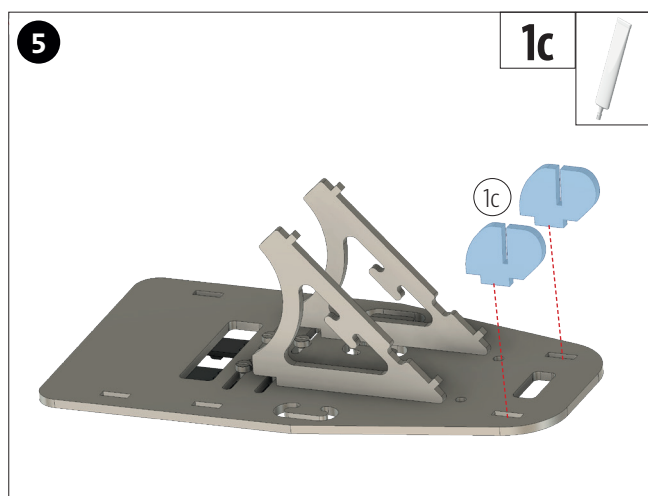
Position the line follower sensors (2) at these slotted holes, spacing the sensors slightly wider than the later line width



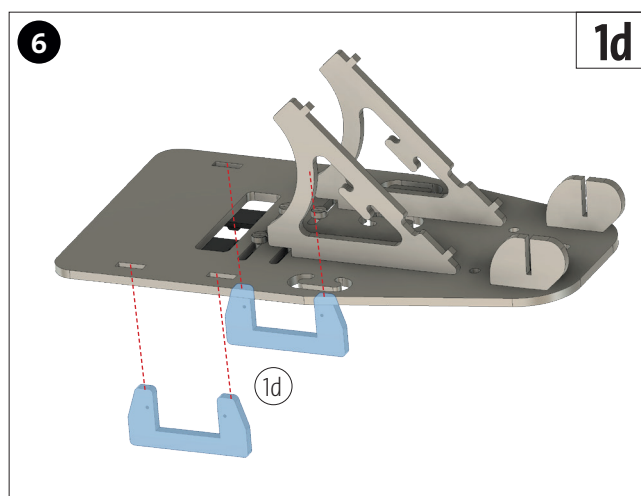
Fasten the sensors with the M3 x 10 screws and M3 nuts



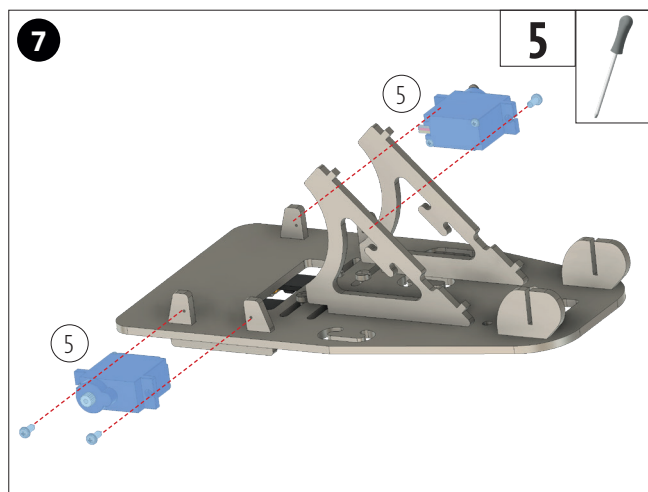
Insert calliope holder 1b into the recesses provided, glue in place if necessary



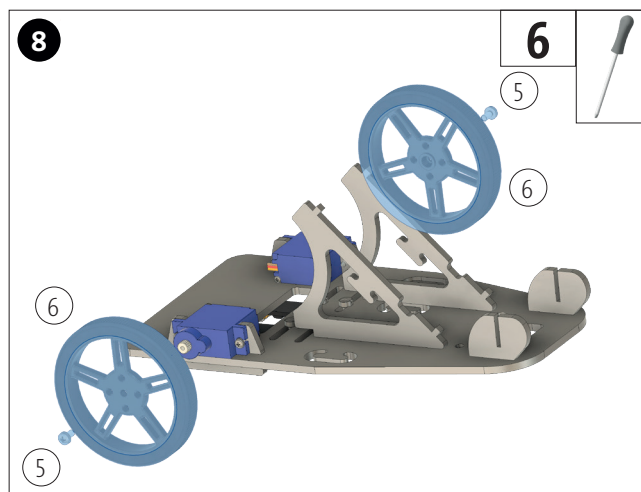
Insert the ultrasonic sensor holder 1c into the recesses provided, glue in place if necessary



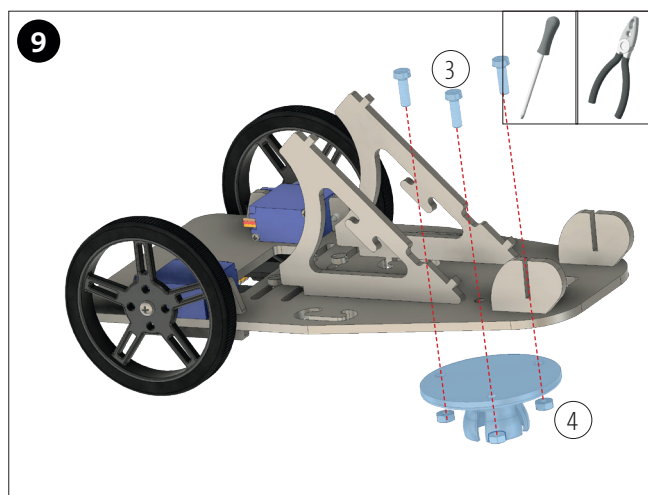
Insert servo holder 1d from below through the recesses provided (do not glue)



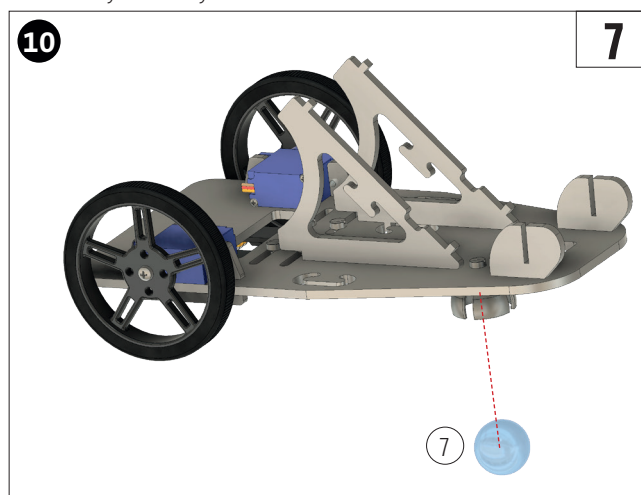
Screw servos 5 to the brackets using the longer servo screws supplied



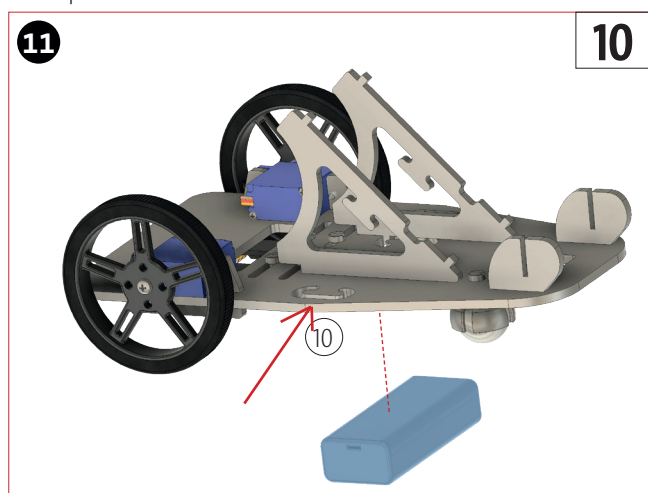
Place the wheels (6) on the servo axles and carefully screw them on with the two short servo screws. Do not overtighten, otherwise the wheels may run stiffly.



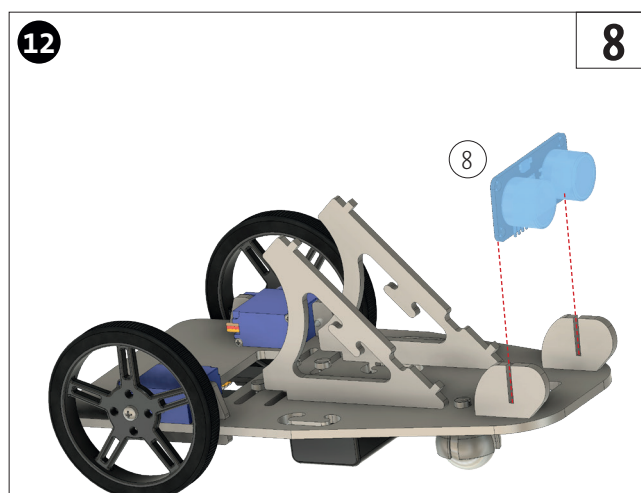
Screw the self-pressurised ball holder to this position using the screws (3) and nuts (4). If no 3D printer is available: Glue the enclosed wooden ball in place.



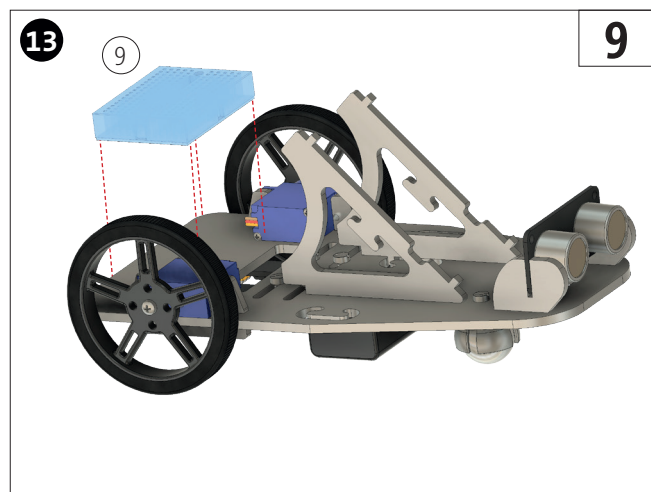
Snap the steel ball into the holder



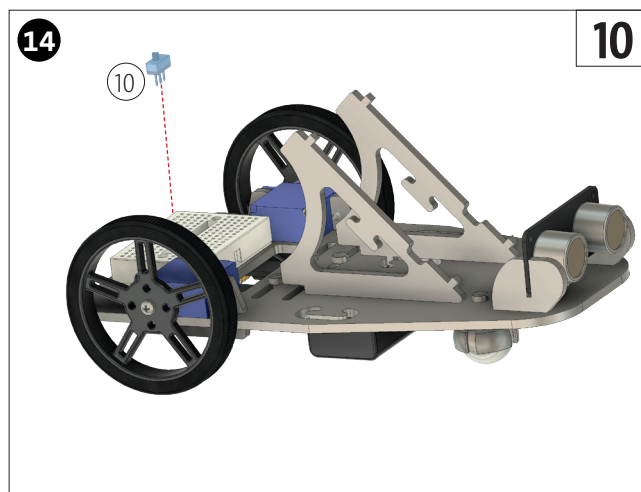
Fasten the Calliope battery holder at this position with a rubber ring (10), use the outer "telephone receiver-shaped" recesses of the base plate



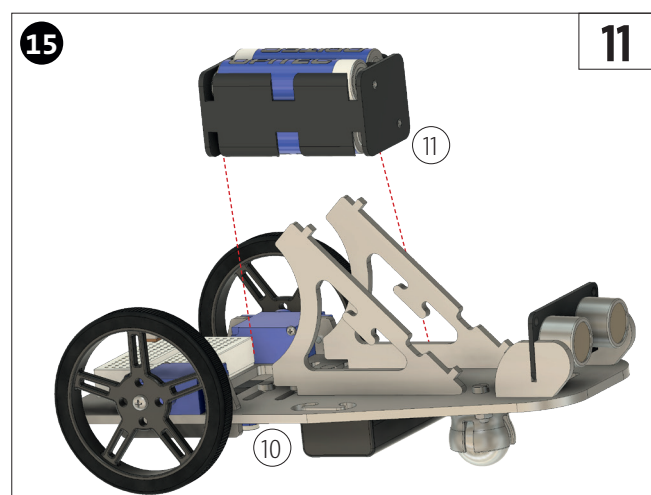
Insert the ultrasonic sensor (8) into the holder slots



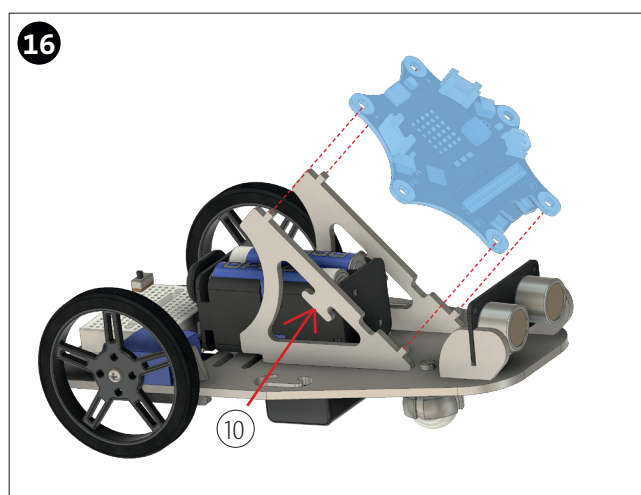
Stick the mini breadboard here in the rear area



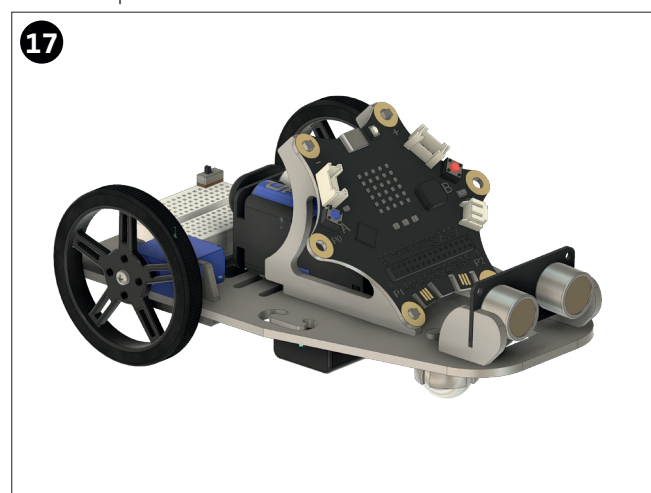
Possible switch position, wiring takes place later according to the diagram



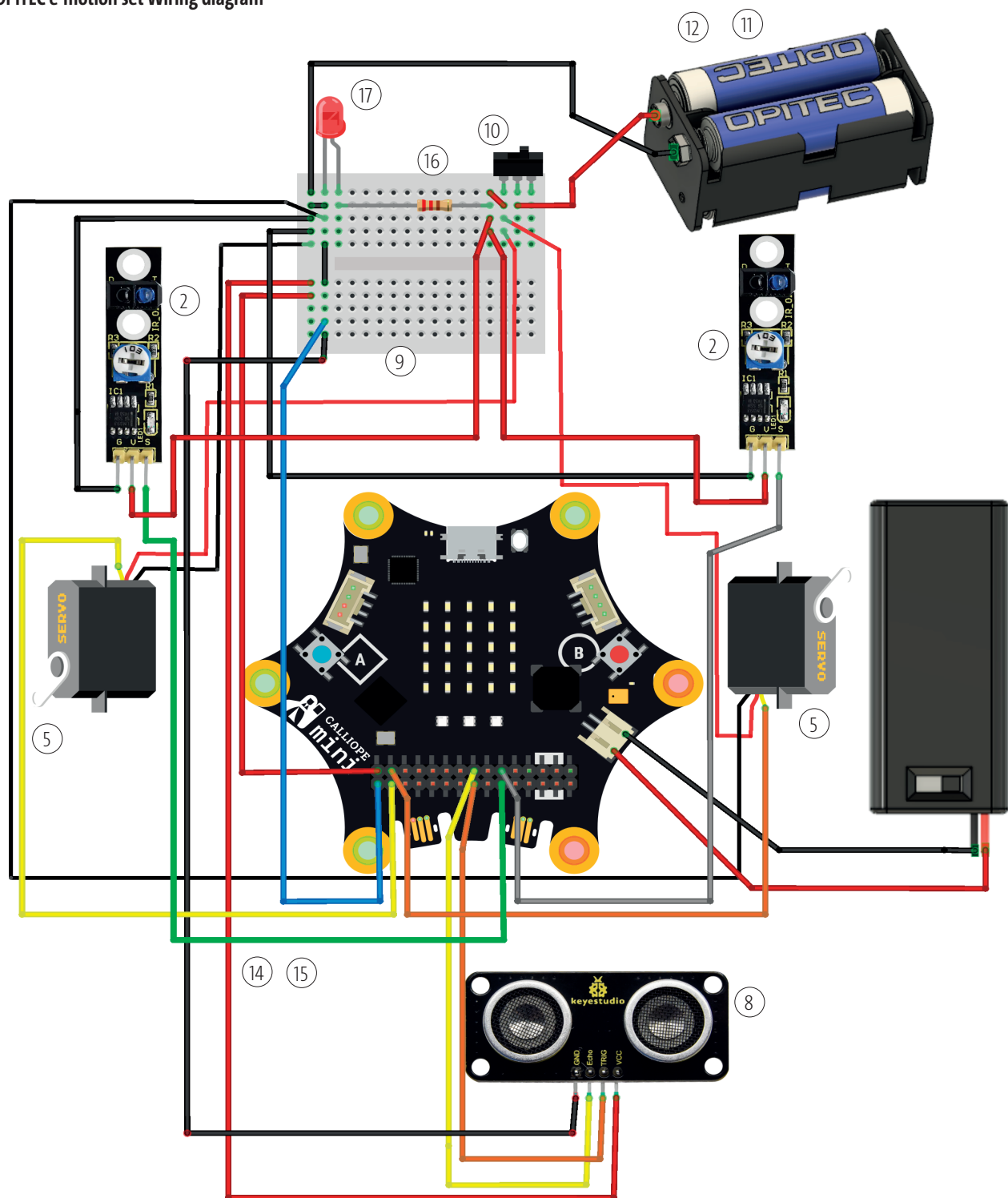
insert the 4-way battery holder (11) with inserted batteries here (contacts to the rear) and secure with a rubber band to the other recesses of the base plate.



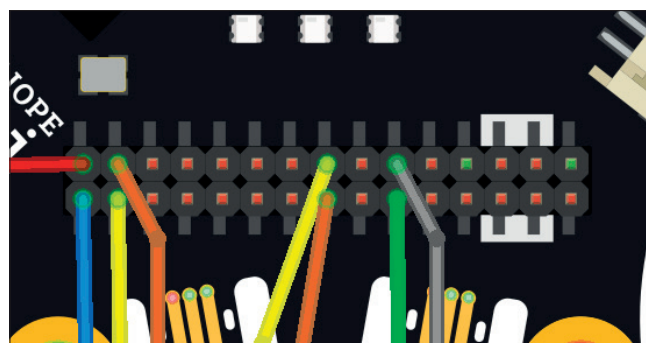
Place the Calliope Mini V3 on these pins and fix it to the holders marked with an arrow using a rubber band.



Carry out wiring according to the diagram, then you can start programming!



DETAIL:



Template 218.977
SCALE 1:1

