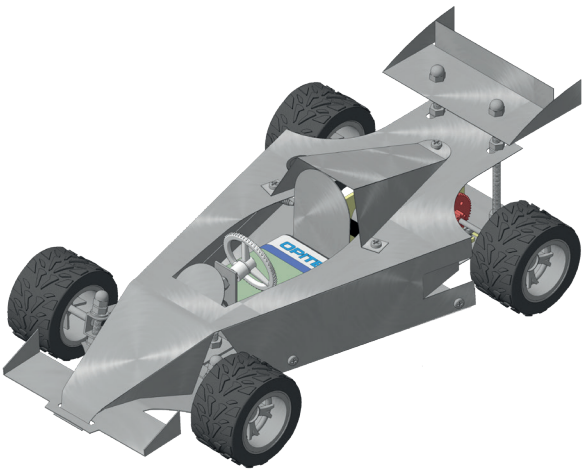
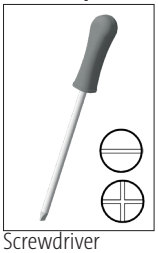
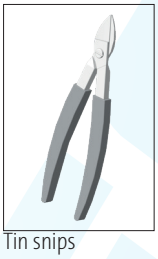
101532

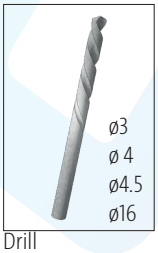
Grand Prix Racer



Tools Required:

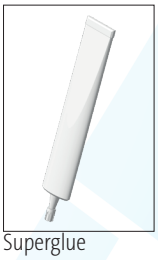

Screwdriver

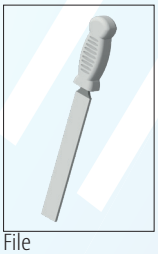

Tin snips

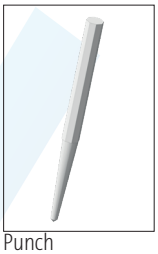


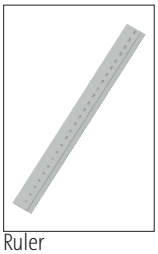
Drill

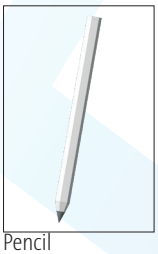

Spanner

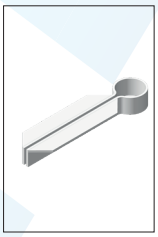

Superglue

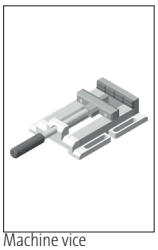

File


Punch

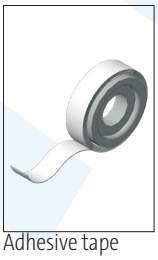

Ruler


Pencil

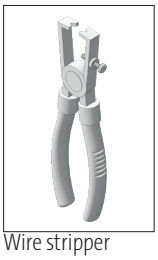


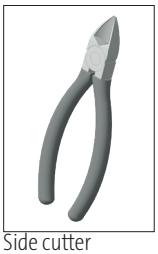

Machine vice


Soldering Iron with Solder


Adhesive tape


Scissors


Wire stripper


Side cutter

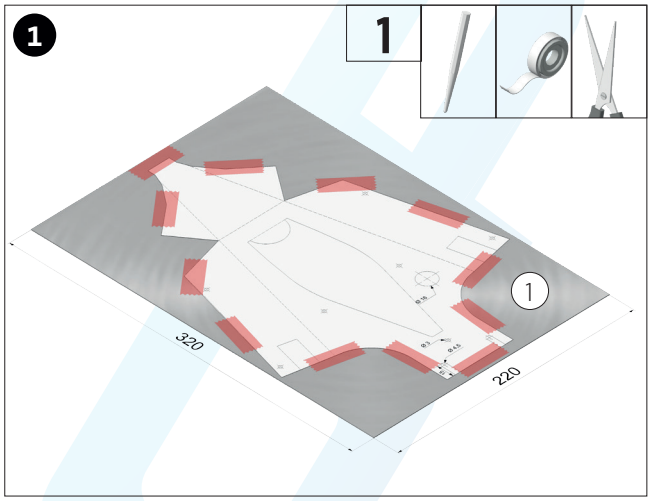
NOTE:

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!

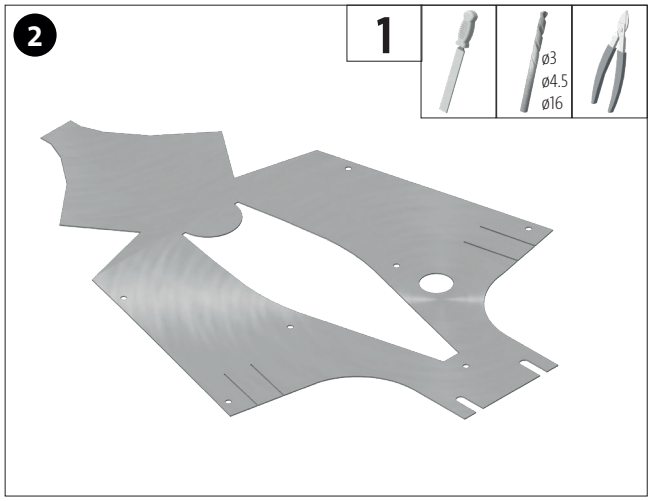
Part List	Quantity	Dimensions (mm)	Description	Part no.
Tin Sheet	1	320x220x0,5	Vehicle top	1
Tin Sheet	1	300x160x0,5	Vehicle Base	2
Tin Sheet	1	150x90x0,5	Seat	3
Tin Sheet	1	120x50x0,5	Rear Spoiler	4
Tin Sheet	1	120x100x0,5	Cover	5
Flat Bar (9-hole)	1	130x15	Tie Rod	6
Flat Bar (5-hole)	1		Steering finger holder/ Steering finger	7
Rocker Switch, round	1	ø 16.3	Switch	8
Metal axle	1	150x3	Axle	9
Flat Receptacle	2		Battery connection	10
Engine R 140	1		Motor	11
Threaded rod	1	100x4	Handlebar	12

OPITEC

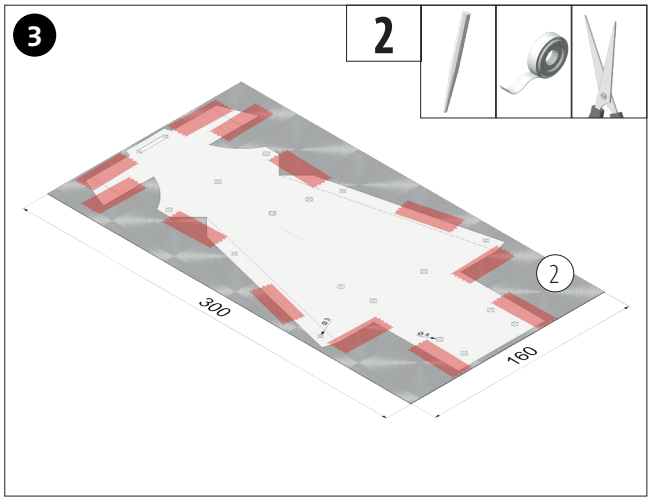
Part List	Quantity	Dimensions (mm)	Description	Part no.
Metal axle	1	70x3	Axle Gear	13
Axle shank	2		Fixing wheels	14
Cross slot head screw	12		Screw connection	15
Cylinder head screw	2	35x3	Screw connection	16
Cylinder head screw	2	70x4	Screw connection	17
Cylinder head screw	15	10x4	Screw Connection	18
Cylinder head screw	2	25x4	Screw connection	19
Nuts	2	M3	Screw connection	20
Nuts	30	M4	Screw connection	21
Capnut	6	M4	Screw connection	22
Washer	4	9/4.3	Screw connection	23
Double Gears	2	50/10	Gear	24
Motor pinion	1	1.9	Motor axle	25
Mounting bracket geared motor	1		Geared motor	26
Spacer disc	1		Geared motor	27
Spacer rolls	2	7/3,6	Geared motor	28
Reducer	2		Fixing wheels	29
Steering wheel	1	ø 37	Steering wheel	30
Perforated metal sheet	1	135x15x1	Attachment front axle	31
Connecting wire	1	500	Wiring	32
Pneumatic tyres with rim	4	ø 52	Wheels	33



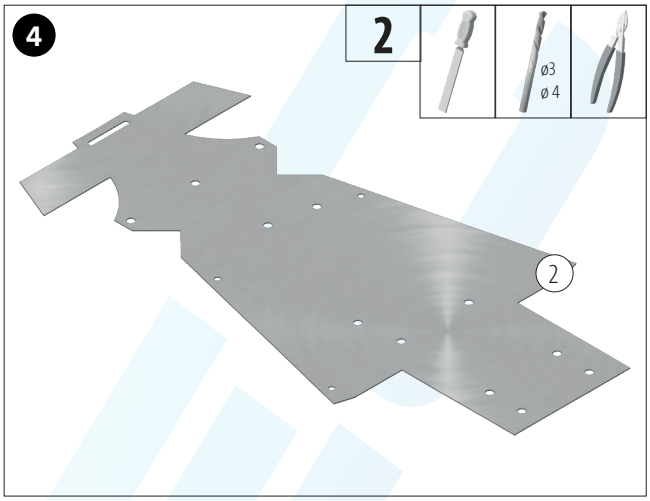
Cut out the template (A) for the upper part of the vehicle (1), glue it together and stick it to the tinplate (1) with adhesive tape. Mark the position of the holes with the centre punch.



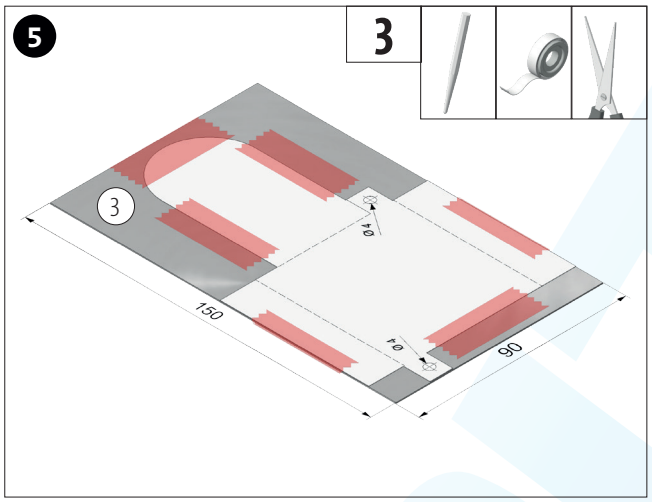
Drill through the holes and then cut out the upper part of the vehicle with tin snips. Deburring saw cuts.



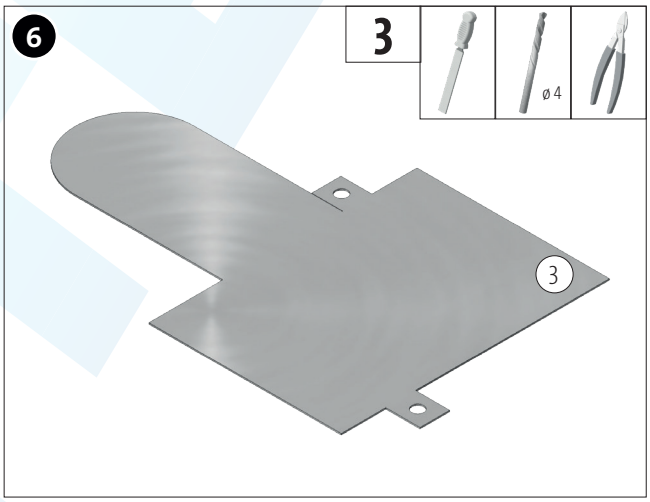
Cut out the template (B) for the lower part of the vehicle (2), glue it together and stick it to the tinplate (2) with adhesive tape. Mark the position of the holes with the centre punch.



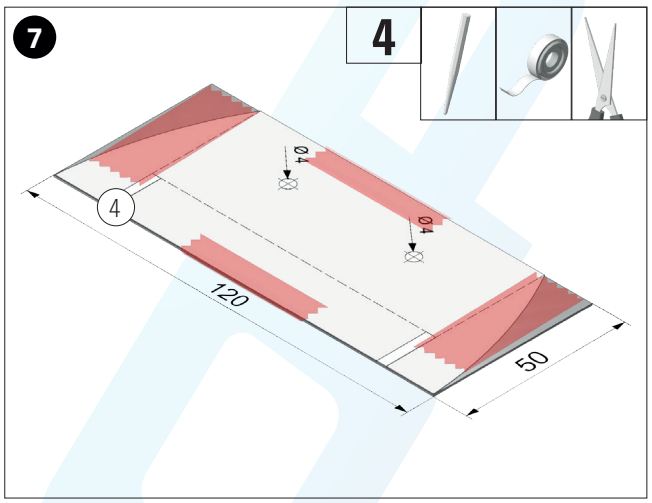
Drill through the holes and then cut out the lower part of the vehicle with tin snips. Deburring saw cuts.



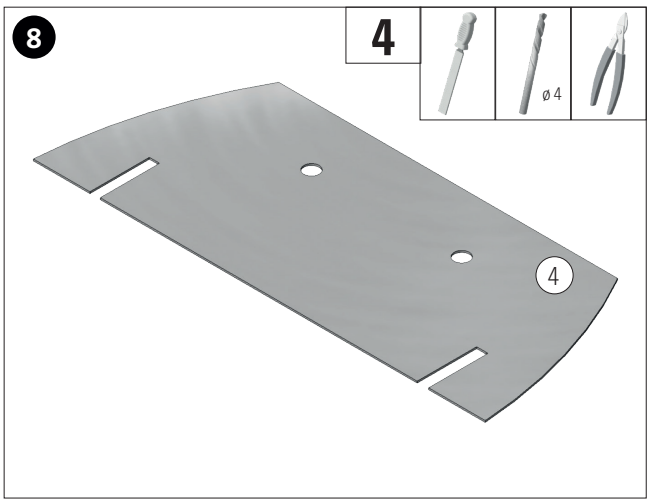
Cut out the template (C) for the seat (3) and stick it to the tinplate (3) with adhesive tape. Mark the position of the holes with the centre punch.



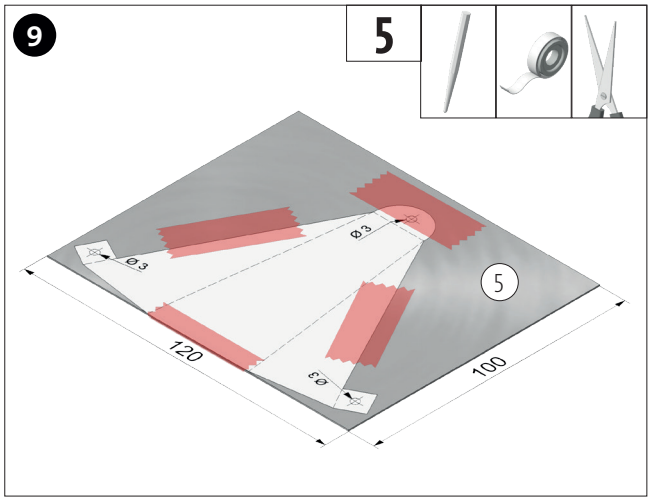
Drill through the holes and then cut out the seat with tin snips. Deburring saw cuts.



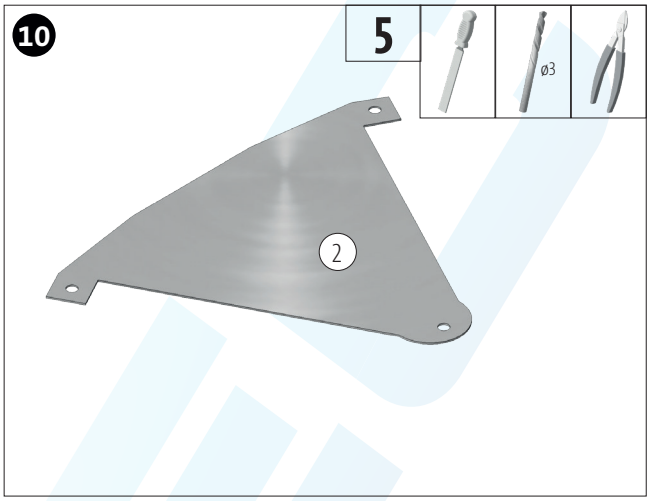
Cut out the template (D) for the rear spoiler (4) and stick it to the tinplate (4) with adhesive tape. Mark the position of the holes with the centre punch.



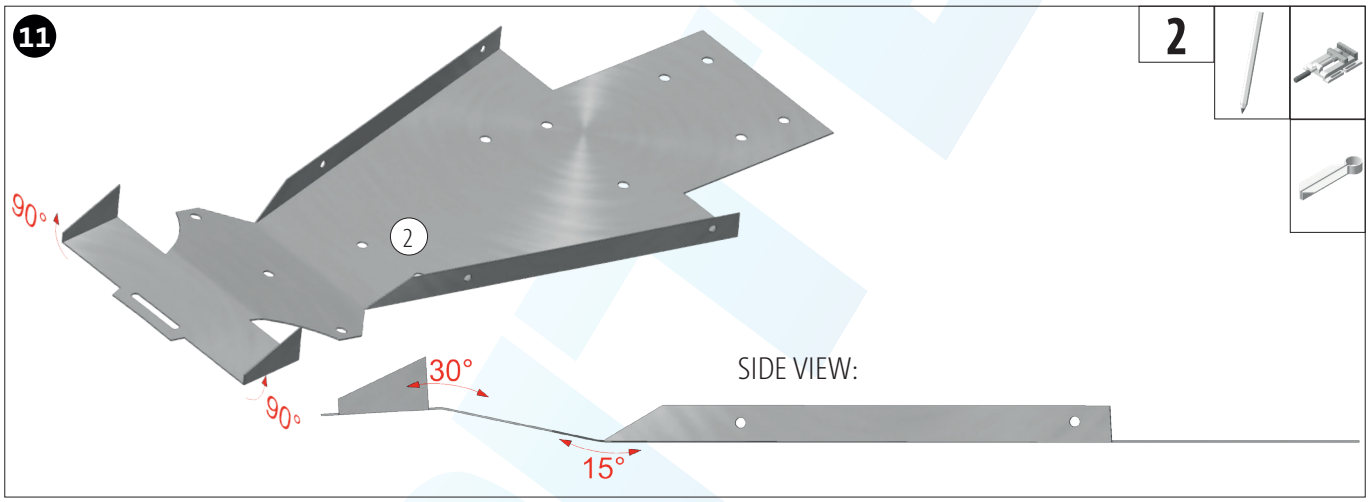
Drill through the holes and then cut out the rear spoiler with tin snips. Deburring saw cuts.



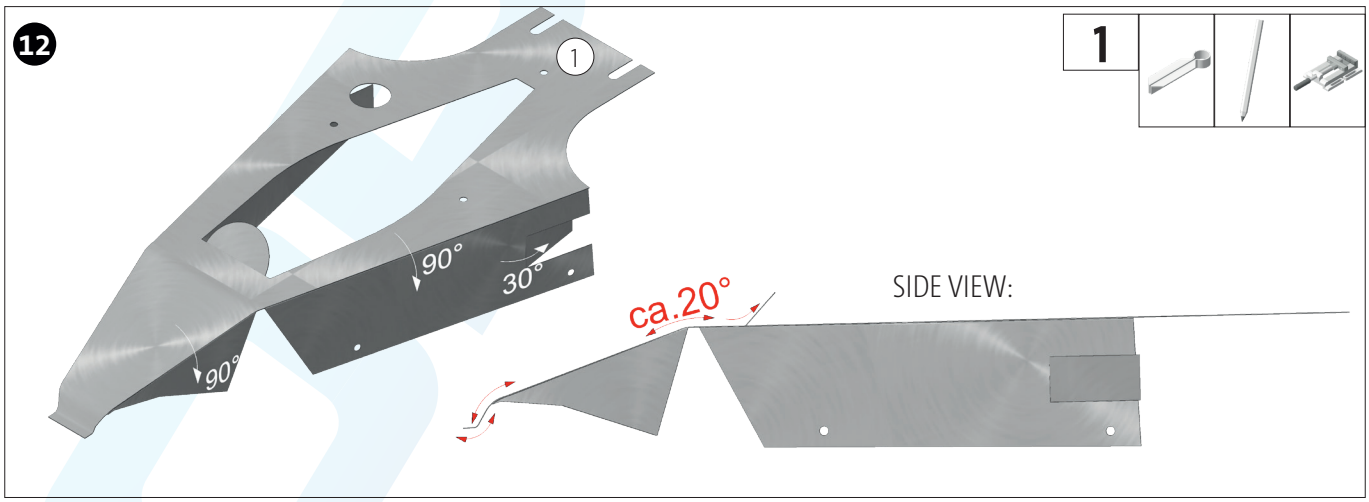
Cut out the template (E) for the cover (5) and stick it to the tinplate (5) with adhesive tape. Mark the position of the holes with the centre punch.



Drill through the holes and then cut out the cover (2) with tin snips. Deburring saw cuts.

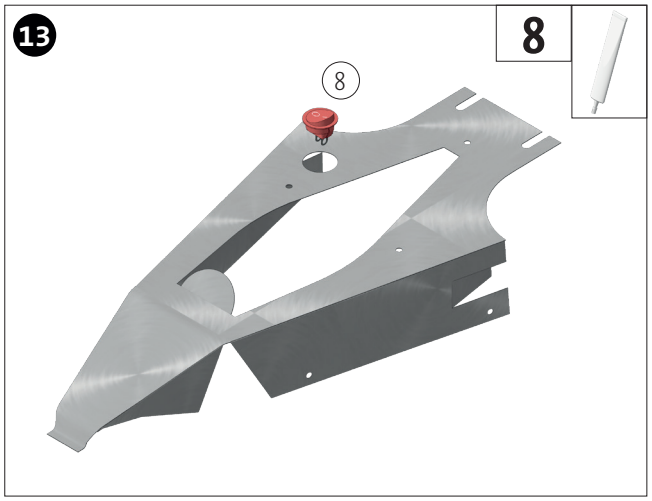


Mark the bending edges according to template (B). Bend the lower section (2) 90° upwards at the side bending edges as shown. Then bend at the horizontal bending edges as shown in the side view.



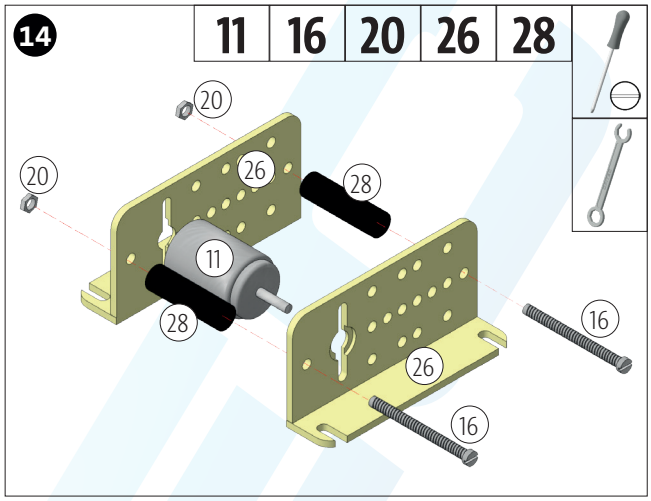
Mark the bending edges according to template (A). Bend the upper section (1) 90° downwards at the side bending edges as shown. Bend the side flaps inwards by approx. 30°. Then bend the horizontal bending edge downwards by 20° as shown in the side view. Bend the front nose slightly downwards and forwards so that it later engages in the opening provided in the lower part.

13 8



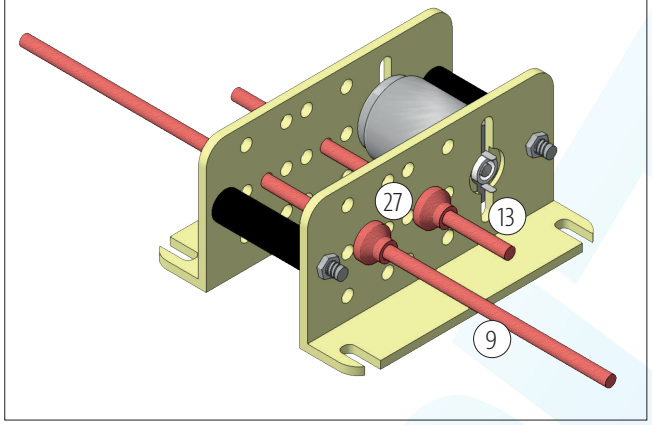
Insert the switch (8) into the hole provided (ø16) and fix in place with superglue if necessary.

14 11 16 20 26 28



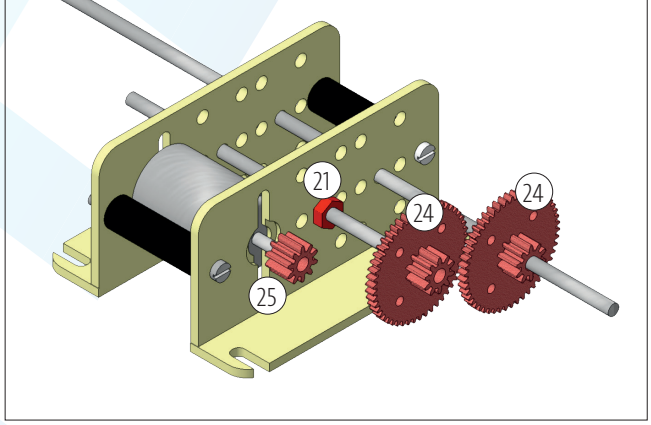
Assemble the mounting brackets (26), the motor (11) and the spacer rollers. Secure with the screws (16) and 2 nuts (20).

15 9 13 27



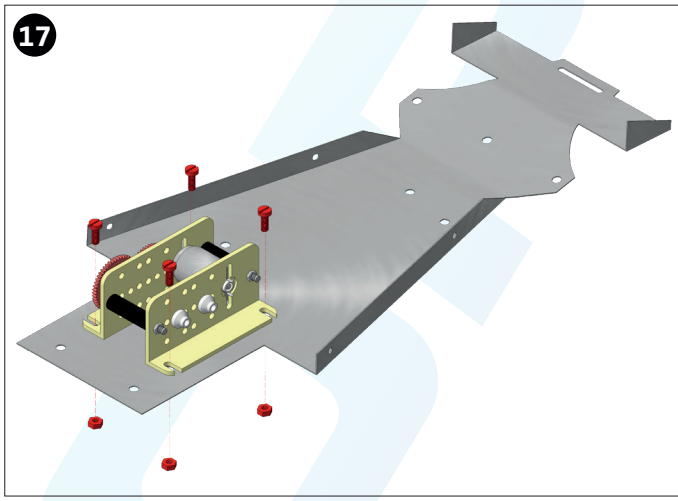
Insert the two metal axles (9/13) through the holes provided in the mounting brackets and centre them. Fix in this position with the two white spacer discs (27).

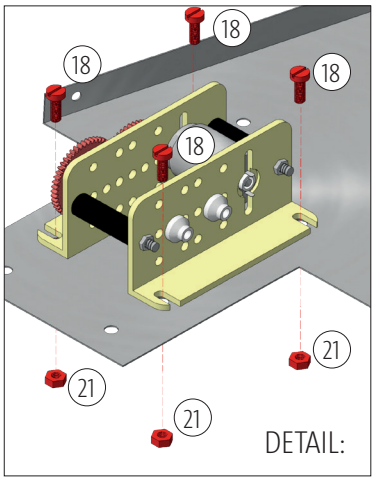
16 21 24 25



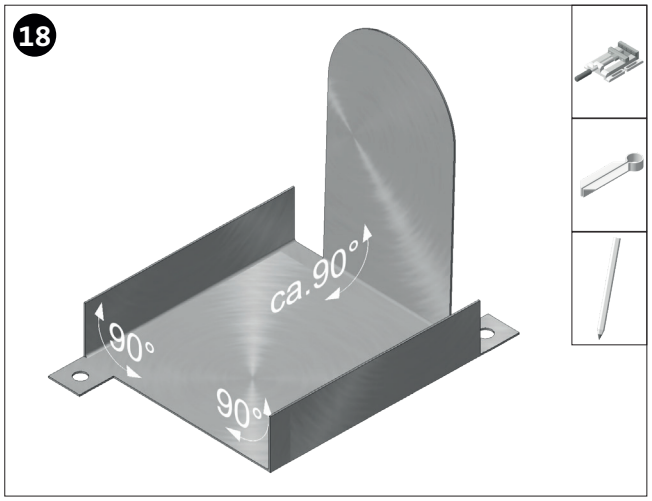
Fit the motor pinion (25) onto the motor axle as shown. Fit a nut (21) and a gear wheel (24) onto the axle (13). Place the second gear wheel (24) on the axle (9).

17 18 21

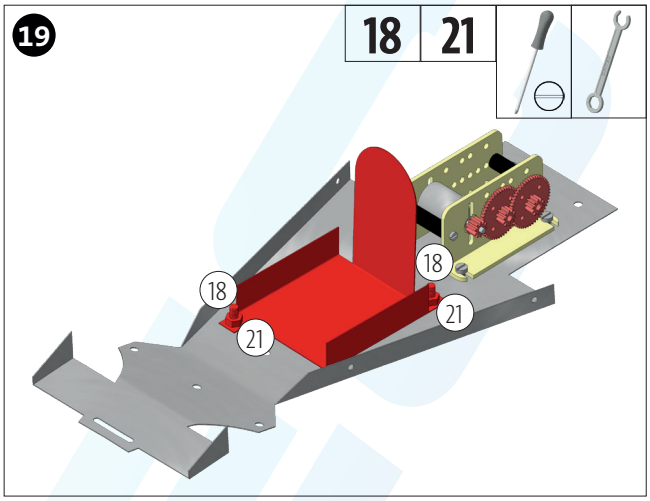




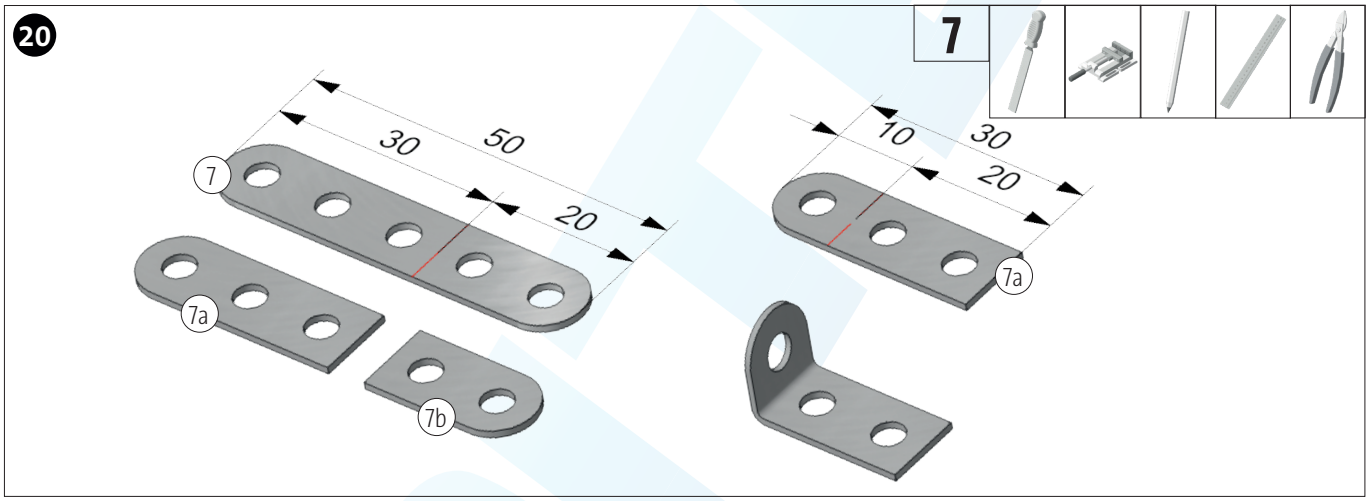
Fasten the finished geared motor in the intended position on the lower part of the vehicle using 4 screws (18) and 4 nuts (21).



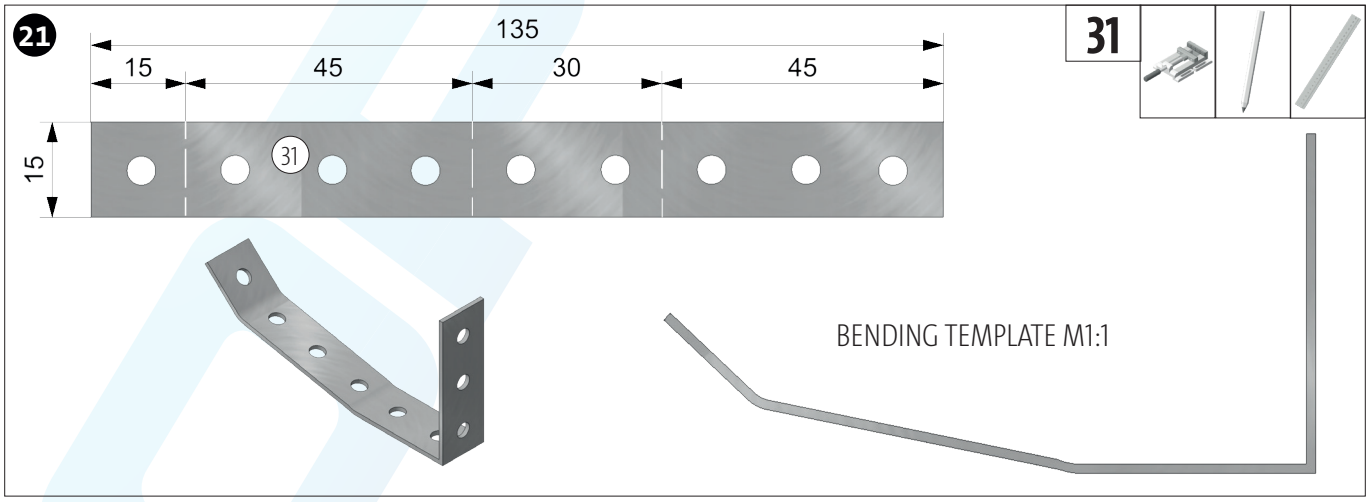
Mark the bending edges and bend as shown.



Fasten the seat in the intended position on the lower part of the vehicle using 2 screws (18) and 2 nuts (21).

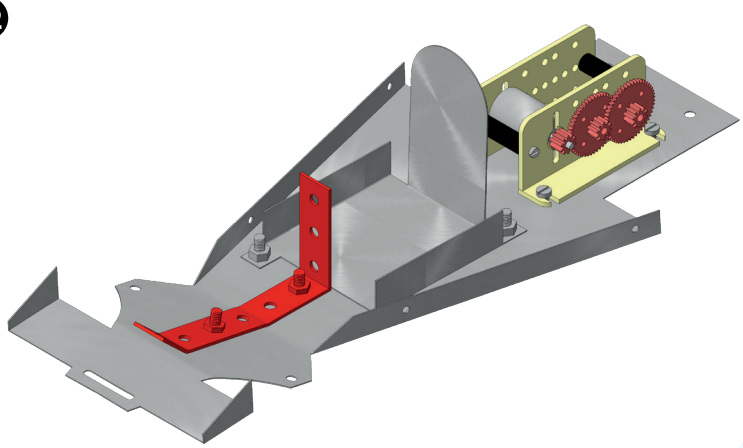


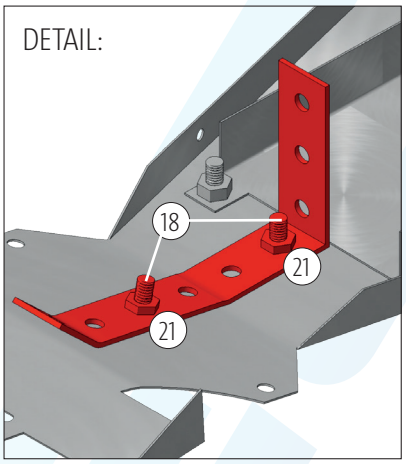
Divide the flat bar (7/5-hole) into 2 parts (7a/7b) according to the dimensions. Deburr the cut edge. Then mark the bending edge on part (7a) and bend 90° as shown.

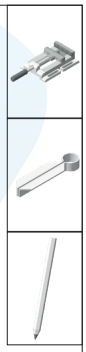


Mark the bending edges on the perforated metal strip (31) according to the dimensions. Then bend according to the bending template.

22



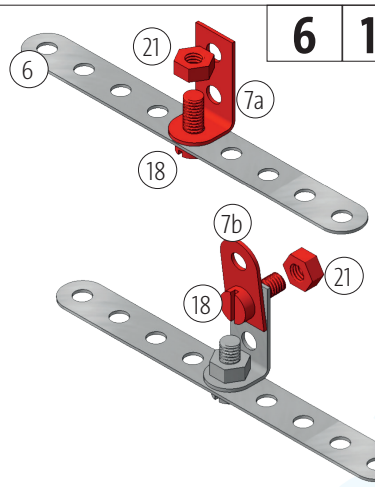


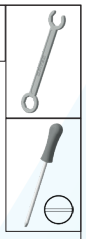


Place and fasten the bent perforated metal strip (3) in the intended position as shown using 2 screws (18) and 2 nuts (21)

23

6	18	21

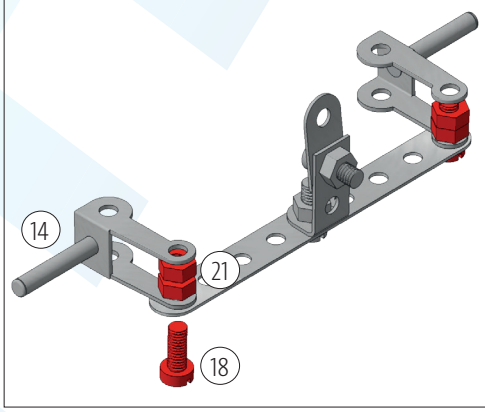


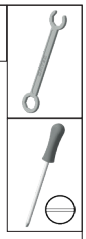


Fasten the steering finger holder (7a) to the centre hole of the track rod (6) using 1 bolt (18) and 1 nut (21). Then attach part (7b) to the steering finger holder (7a) using 1 bolt (18) and 1 nut (21).

24

21	18	14

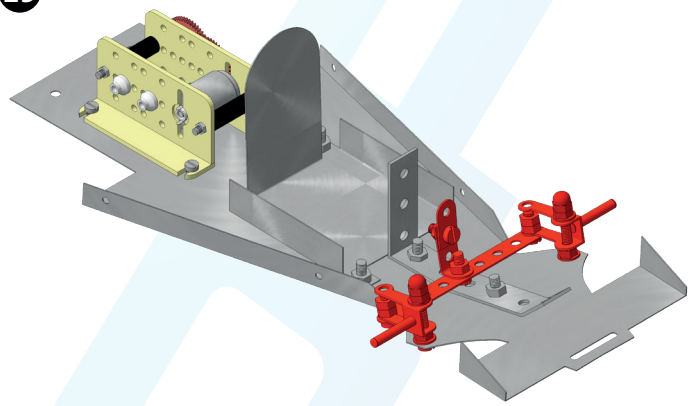


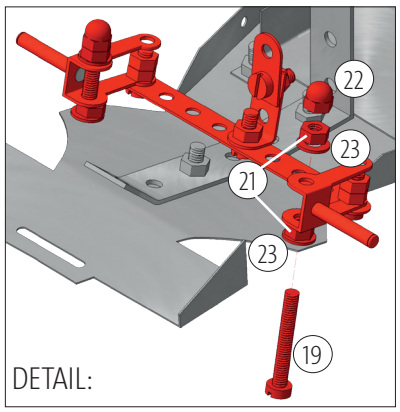


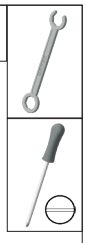
Fasten the two steering knuckles (14) to both ends of the tie rod (6) using 1 bolt (18) and 2 nuts (21). Lock nuts.

25

19	23	21	22

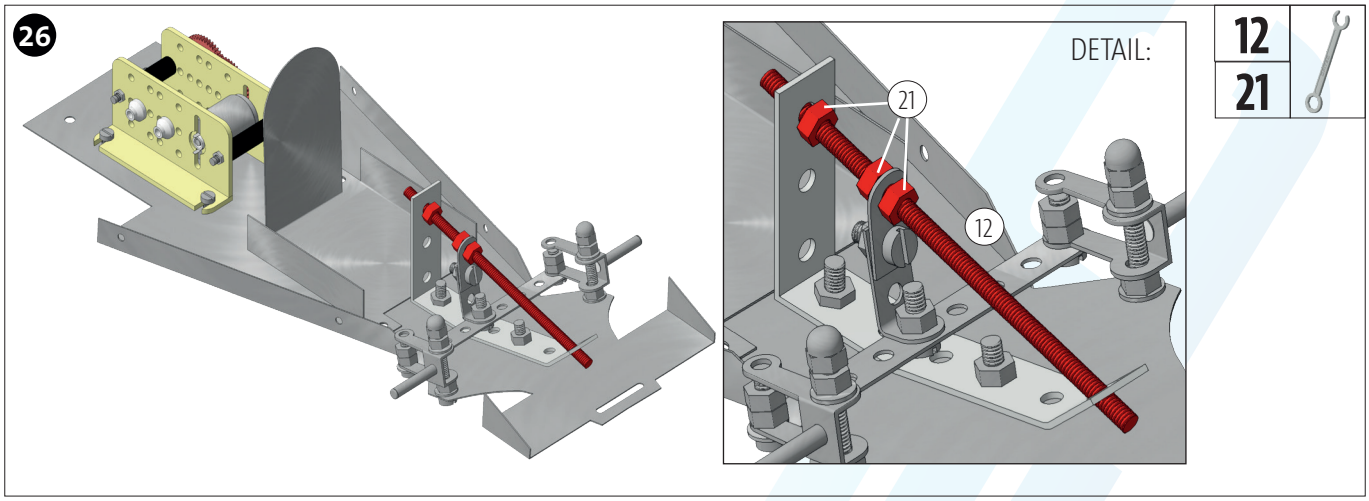




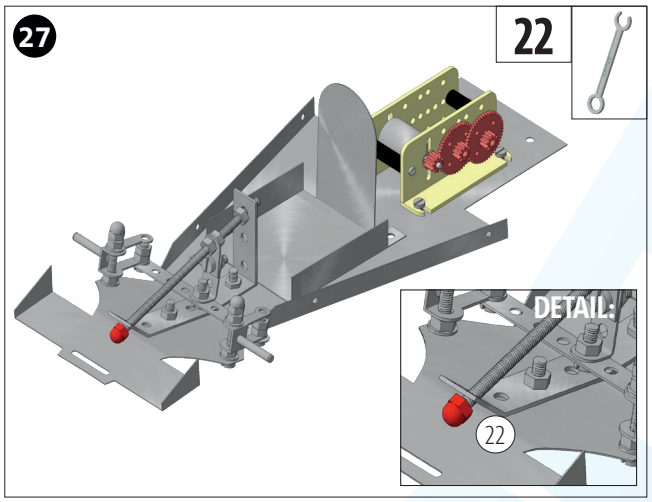


Fasten the finished front axle on both sides with one bolt (19), two nuts (21), 2 washers (23) and one cap nut (22) in the holes provided in the lower part of the vehicle.

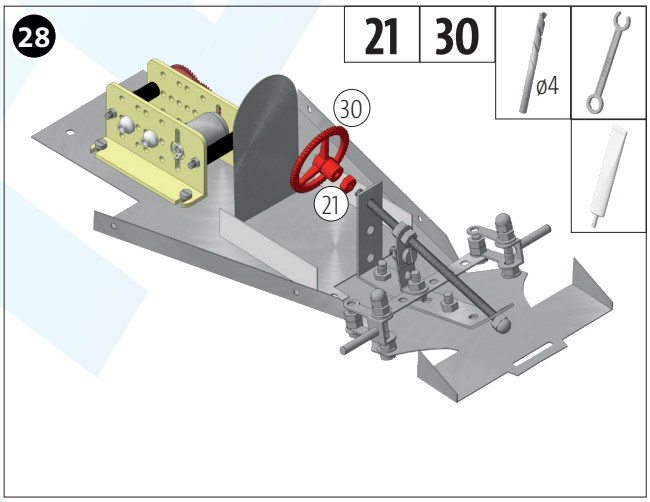
OPITEC



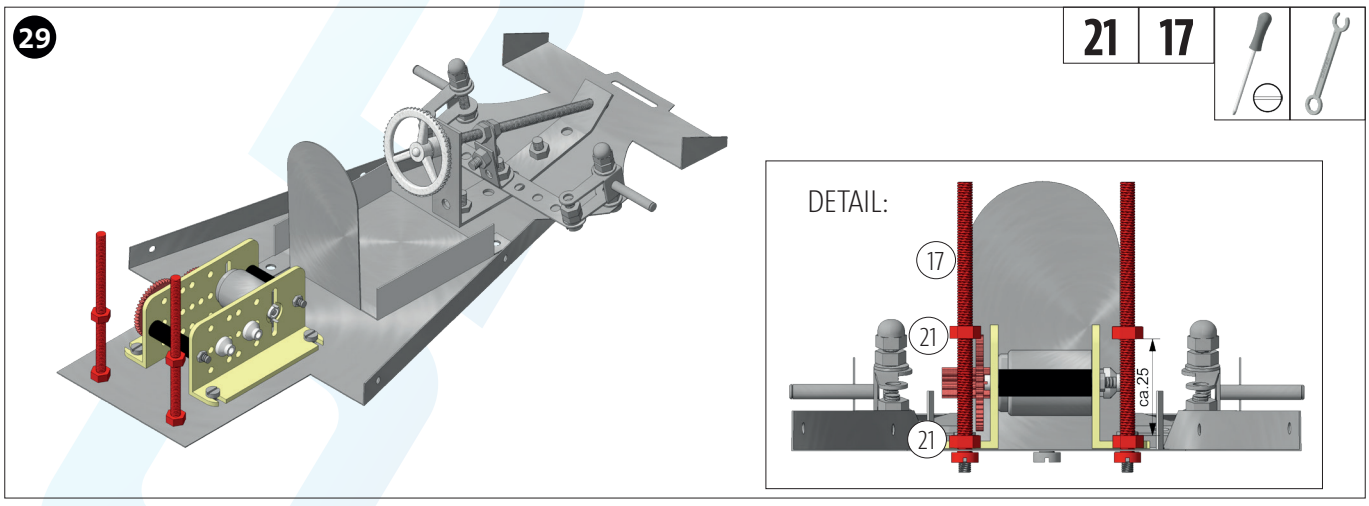
Guide the steering rod (threaded rod/12) through the steering finger hole and the end holes of the perforated plate, align and fix in the centre with 3 nuts (21) as shown in the detail.



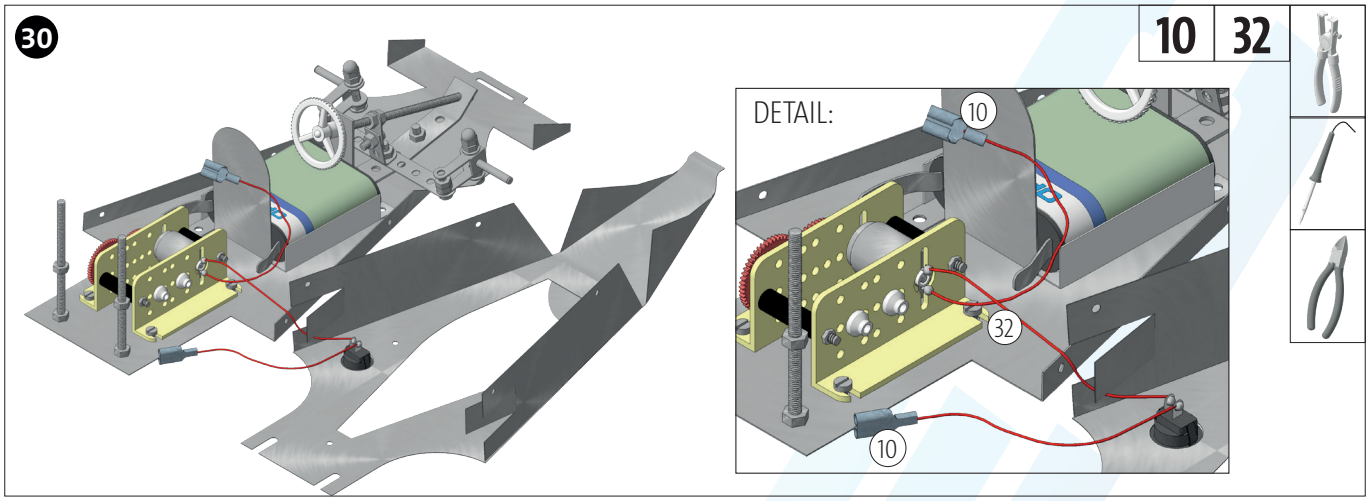
Secure the lower end of the handlebar (12) with a cap nut (22).



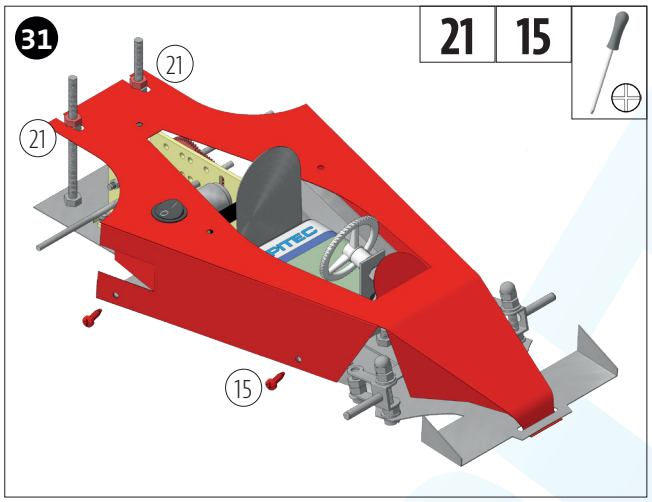
Drill out the hole in the steering wheel (30) to ø4mm. Then screw a nut (21) onto the handlebar and attach the steering wheel. Fix with superglue if necessary.



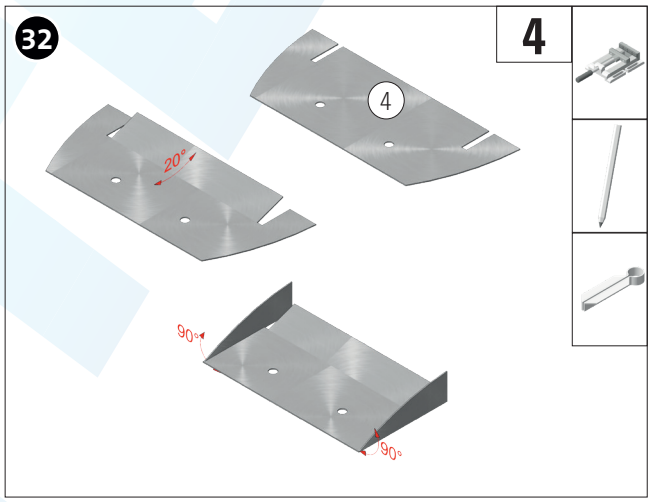
Insert the two screws (17) from below through the holes in the rear and fix them from above with 1 nut (21) each. Screw on 1 further nut (21) at a distance of approx. 25 mm.



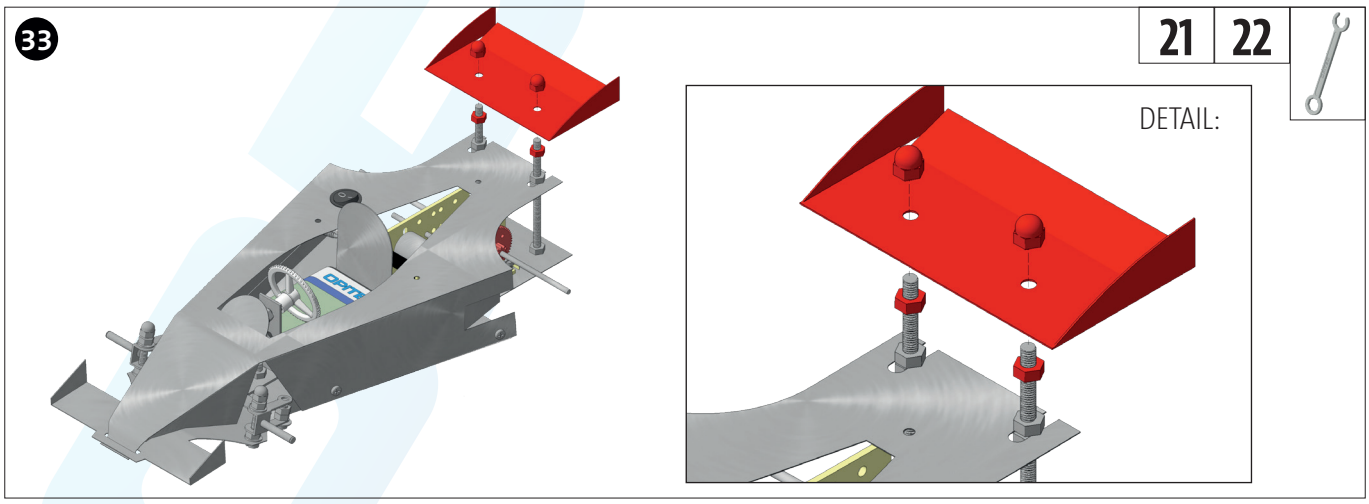
Cut 3 pieces with a length of approx. 100 mm from the switching wire (32) and strip the insulation on both sides. Then solder to the motor, the switch and the blade terminals as shown in the detailed drawing.



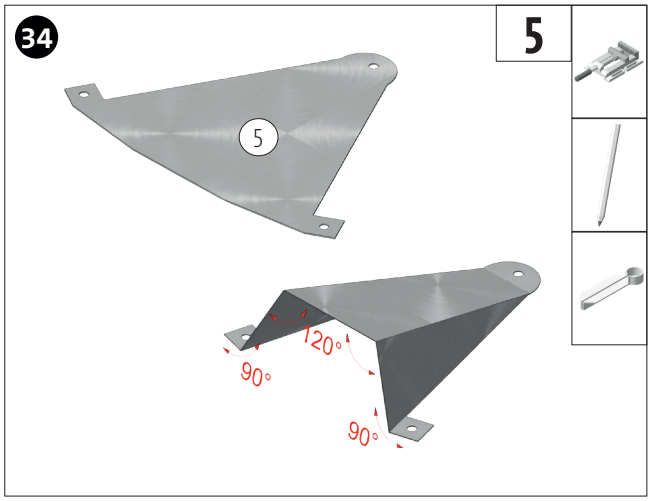
Insert and connect a 4.5 V flat battery on the seat. Check function! Fit the upper section and fasten with 4 Cross slot head screws (15) as shown. Fix the upper section to the rear bolts with 2 nuts (21). Insert the front nose into the lower section.



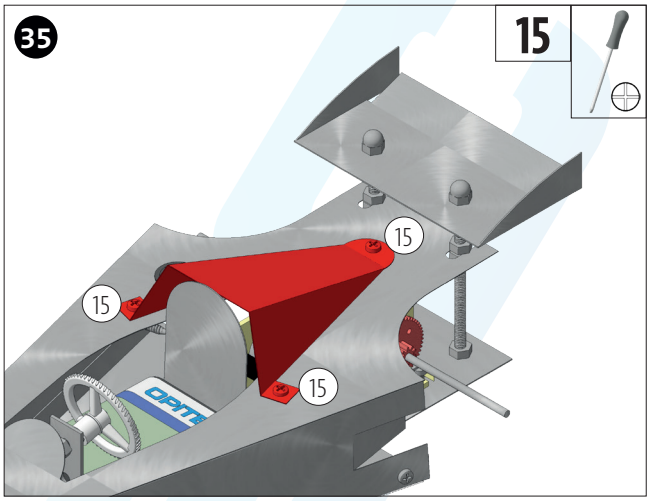
Mark the bending edges on the rear spoiler (4) using the template (D) and bend it as shown.



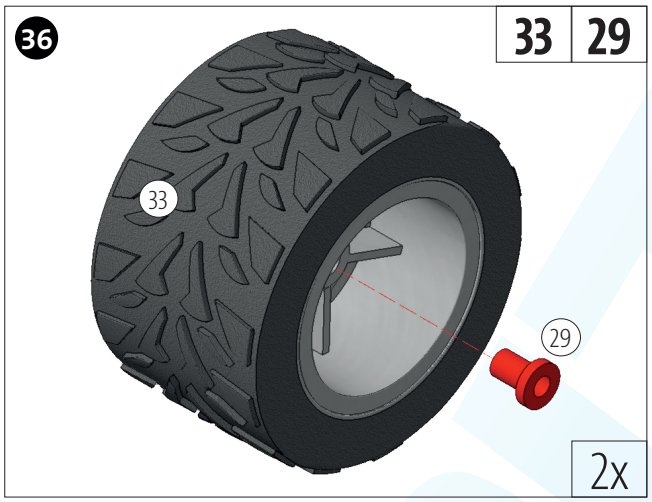
screw 2 nuts (21) onto the rear bolts. Fit the rear spoiler and secure with 2 cap nuts (22).



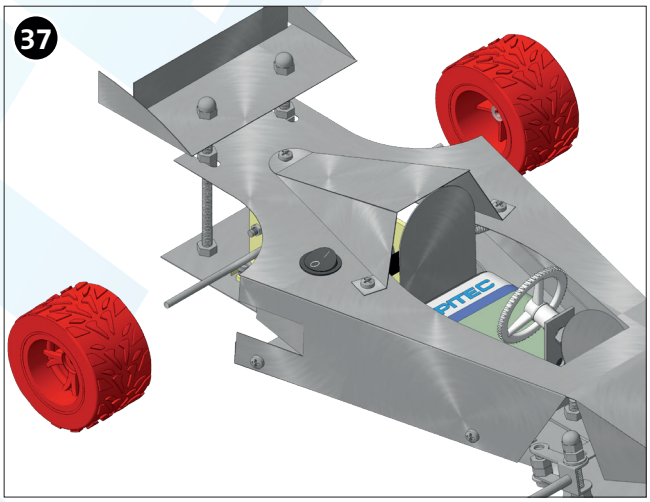
Mark the bending edges according to template (E) and bend the vehicle cover as shown.



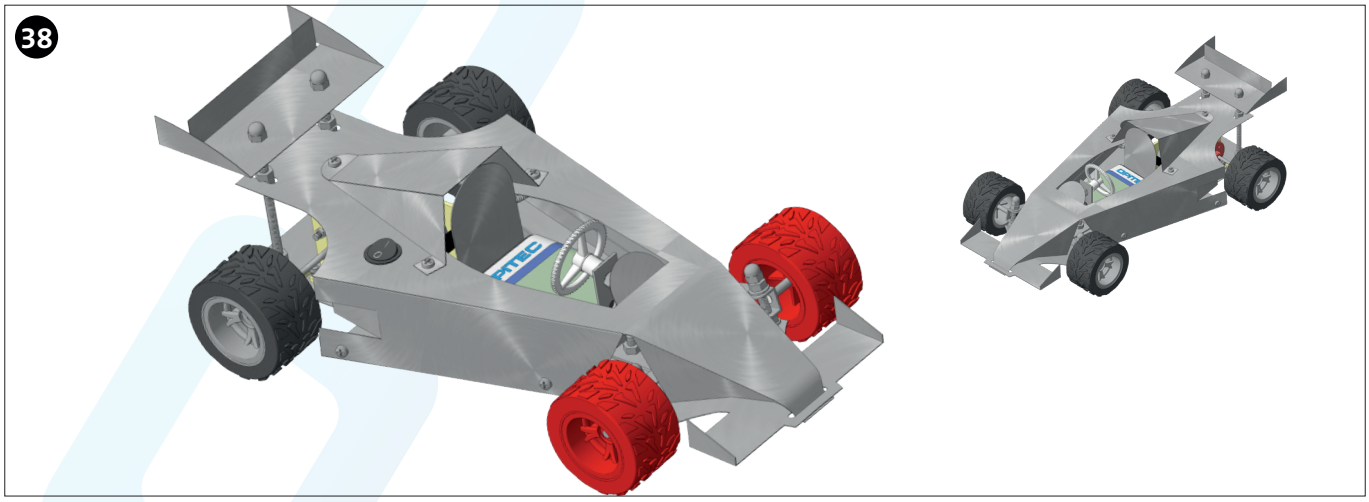
Secure the vehicle cover with 3 cross-head self-tapping screws.



Insert a reducer (29) into each of 2 of the pneumatic tyres (33).



Then attach the pneumatic tyres with the reducers to the gearbox axle from both sides.



Finally, fit the front wheels onto the steering knuckles from both sides. Done!