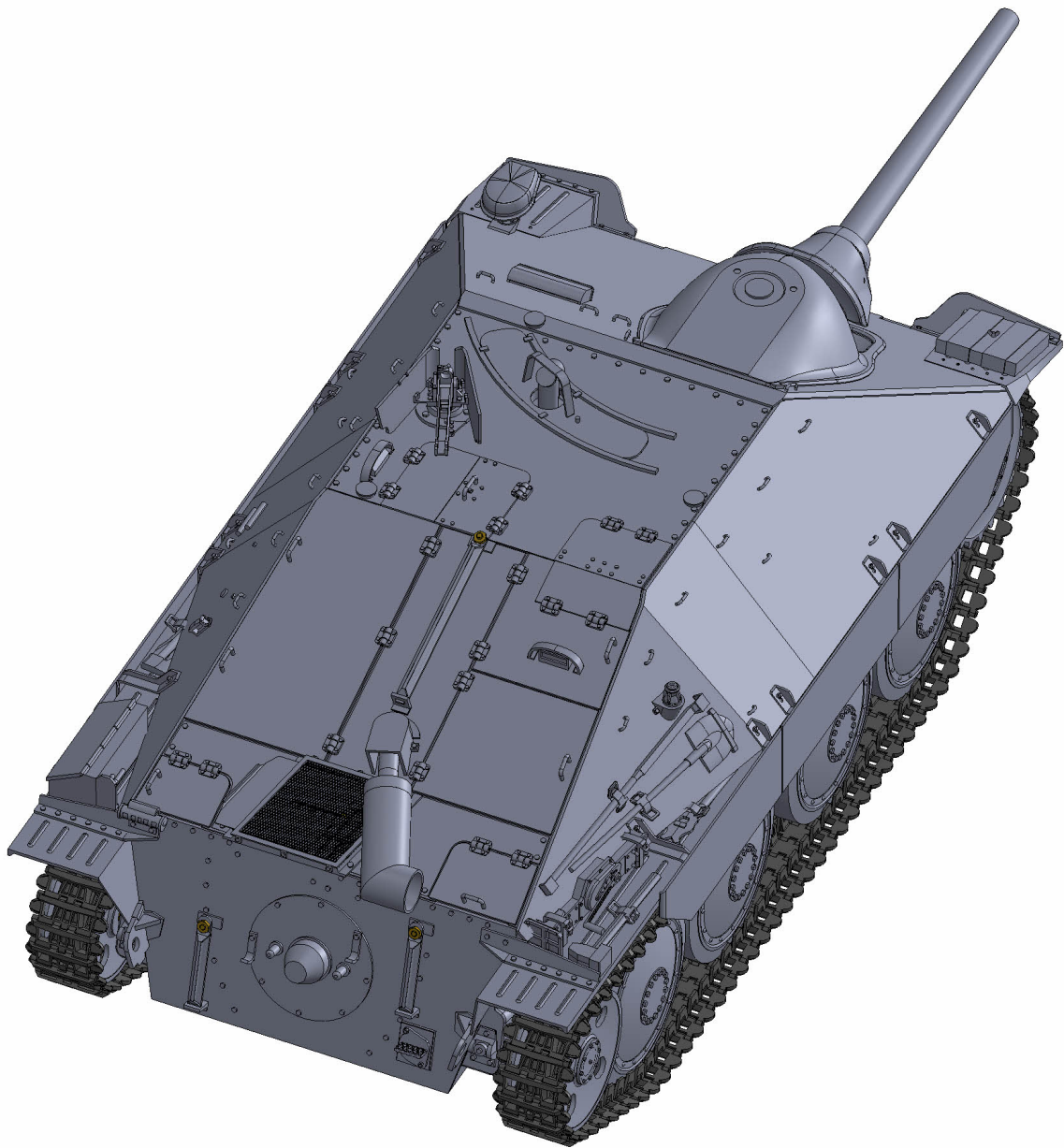


Jagdpanzer 38 (t) Hetzer

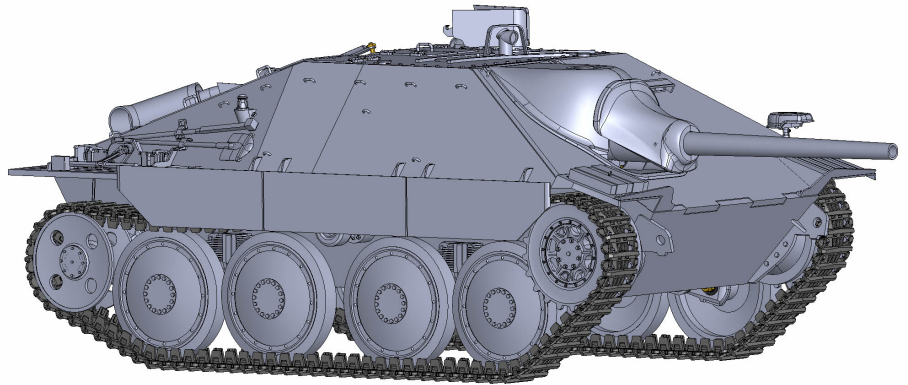
Assembly Guide



1/16 scale RC model by  **WARPRINTS**

Jagdpanzer 38(t)

Assembly guide



Thank you for choosing our model.

We hope that the construction will be smooth and you will enjoy the model. The model is designed to be easy to maintain and modify.

At the same time, we tried to offer wide possibilities and compatibility during construction.

This section of the manual will guide you through the construction of the model. It also includes a list of materials needed for the construction.

For a list of all printed parts, see the second part of the manual titled Jagdpanzer-38 (t) HETZER PRINTING GUIDE.

DON'T worry about the large number of pages in this manual. IT IS FULL OF LARGE PICTURES WHICH TAKE A LOT OF SPACE.

It is prepared so that the position of all parts is clearly visible and each procedure is sufficiently described.

If you encounter problems or uncertainties during construction, please contact us at <https://www.warprints.xyz/forum>

In this manual you will find everything you need to build the model, including the location of mechanical parts such as servomotors, IR receiver or various bearings. The manual is divided into four larger chapters.

All printed parts are numbered according to the order in which they are installed on the model.

Some printed parts are identical or mirrored, but have different numbering to keep the construction clear.

Follow the construction procedure according to the instructions, do not skip or neglect any construction steps.

Failure to follow the procedure may result in further disabling construction or eventually to damage the model in operation !!!

The manuals include all alternative parts and procedures and in the future there may be other alternative parts and features available.

- two types of cannon can be used:

A. cannon movable in two axes with recoil, controlled by three servomotors.

B. cannon compatible with Heng Long compatible unit of elevation.

This cannon is limited to single axis motion without recoil.

- When using a type A cannon, there is a movable gunner sight coupled with moving the cannon.

- possibility to install 360 ° servo for machine gun on the roof.

- preparation for mounting infrared receiver for IR combat.

- possibility to connect the smoke generator to the exhaust..

- a functional headlamp.

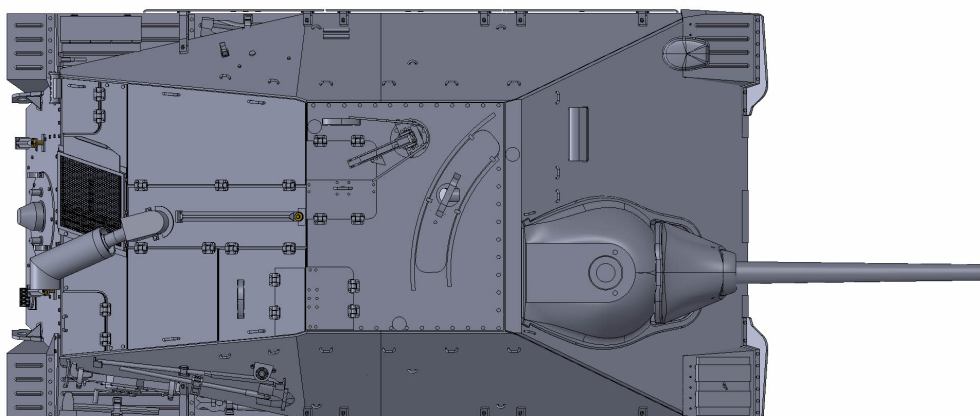
- All hatches are openable. Installation of the hatch covers is essential for the use of the infrared receiver and the smoke generator.

If you do not want to use these options, you can simplify printing and production by using an alternative part for the non-hatch version.

- replacement tracks are actually usable and their holders are functional

- the rims of the wheels can be printed from a flexible material.

At the same time, you have a single wheel in one piece at your disposal if you don't want to or can't print from flexible materials.



The manual contains the whole model except installation of the control unit, transmitter, battery and the final connection of electronics.

The connection of the electronics and especially the control unit depends on the choice of model and part configurations.

The choice of control unit is up to you, it will greatly affect the final price of the model but also its functions.

The model in full configuration requires a sophisticated control unit like MTCU, Elmod or Beier.

You can also use the most common and affordable controllers such as RX-18 type from various manufacturers.

Such a control unit with a type B cannon can be swapped at any time in the future for more advanced (and add a type A cannon at the same time).

This also applies to other advanced options such as 360 ° servo for machine gun or IR receiver.

Due to complexity of the topic of wiring electronics, all schemes and procedures of wiring various variations of electronics will be summarized in our forum.

In our forum we can actively help you not only with the involvement of electronics, but with the whole construction.

At the same time, your questions and answers will help many other modelers who are looking for help.

Therefore, please ask your questions about the construction and use of the model on our forum. Thank you.

<https://www.warprints.xyz/forum>

The model is designed for advanced modelers. Check moving parts regularly.

The bolts on all wheels and arms of the servomotors must be secured against falling out.

Tension the tracks sufficiently using the tensioners on the rear wheels.

When using a moving sight, always be very careful when handling the upper part of the hull (chapter 04).

In this case, the top of the hull can only be installed if the cannon (type A) is in the full left position.

Because of the constraints imposed by the design of the real vehicle and the effort to use the interior space of the model as best as possible, the drive is solved by means of closed tracks.

You can use JGA37-250 engines with 280RPM or 176RPM, depending on your preference.

All necessary components except the control unit, battery, receiver and transmitter can be found in the following lists.

Bill of Materials (BOM) :

This list contains the material needed to build the model in full configuration, including both versions of the cannon.

If you decide not to use some of the model's features therefore not use some parts, you may not need some of the material.

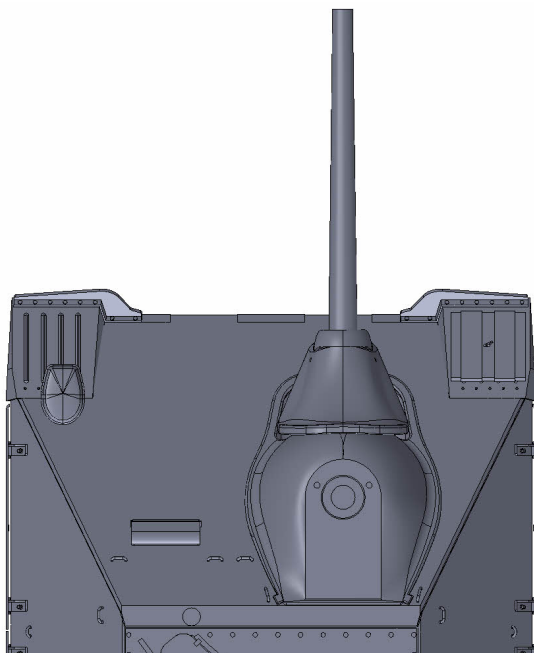
In this case, check the lists of non-printed material listed at the beginning of each chapter in this manual to select only the material you need.

PART	AMMOUNT
M5x60 Hexagonal screw	2x
M3x60 Screw	2x
M3x30 Screw	8x
M3x12 Screw	4x
M3x10 Screw	2x
M3x8 Screw	2x
M2x20 Screw	4x
M2x16 Screw	20x
M2x12 Screw	14x
M2x10 Screw	8x
M2x8 Screw	18x
M2x6 Screw	4x
M1,6x12 Screw	1x
M1,6x8 Screw	2x
M1,6x6 Screw	2x
M1,6x4 Screw	1x
M5 Nut - low profile	10x
M3 Nut	22x
M2 Nut	91x
M1,6 Nut	7x
M2 washer	9x
Wire - 0,5mm diameter and 5mm lenght	19x
Wire - 0,8mm diameter and 19mm lenght	186x

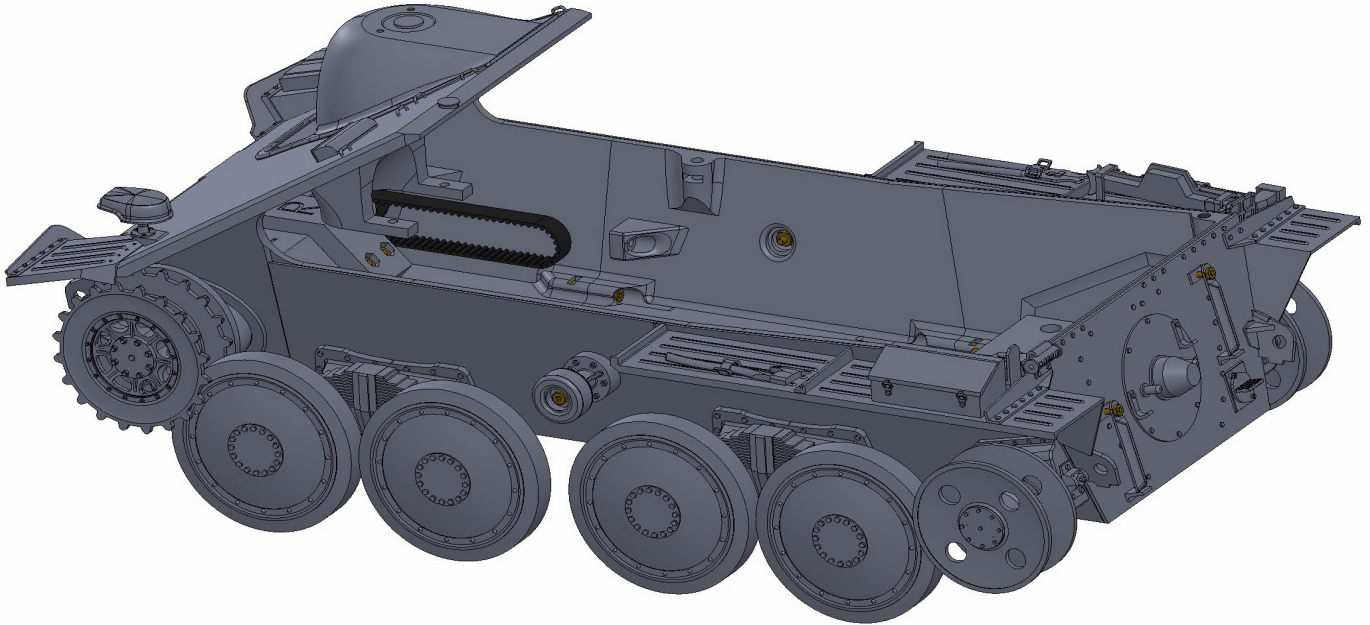
Jagdpanzer 38(t)

Assembly guide

PART	AMMOUNT
F625zz bearing	2x
MF62zz bearing	8x
MR72zz or 602zz bearing	25x
605zz bearing	2x
623zz bearing	10x
Round magnets dia = 4mm - lenght = 4mm	8x
Round magnets dia = 3mm - lenght = 3mm	2x
Closed loop timing belt GT2 lenght 240mm	1x
Closed loop timing belt GT2 lenght 158mm	1x
Pulley 2GT - 20 teeth - bore 5mm	2x
Pulley 2GT - 20 teeth - bore 4mm	2x
JGA25-370 Geared Motor	2x
TOWERPRO® SG90 9g Servo + arm + screw or compatible	3x
TOWERPRO® FR360 9g Servo or compatible	1x
Heng-Long® compatible elevation unit	1x
Heng-Long® compatible elevation spring	1x
3D printer extruder spring 22x9x7mm	2x
1,8x1,2mm mesh	1x

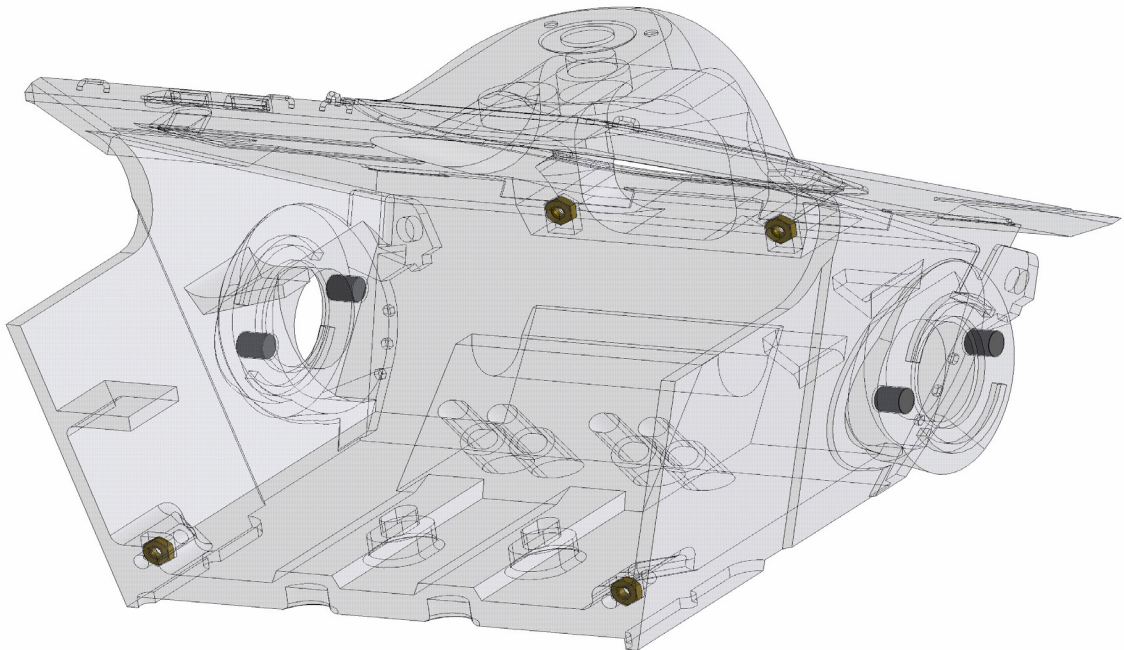
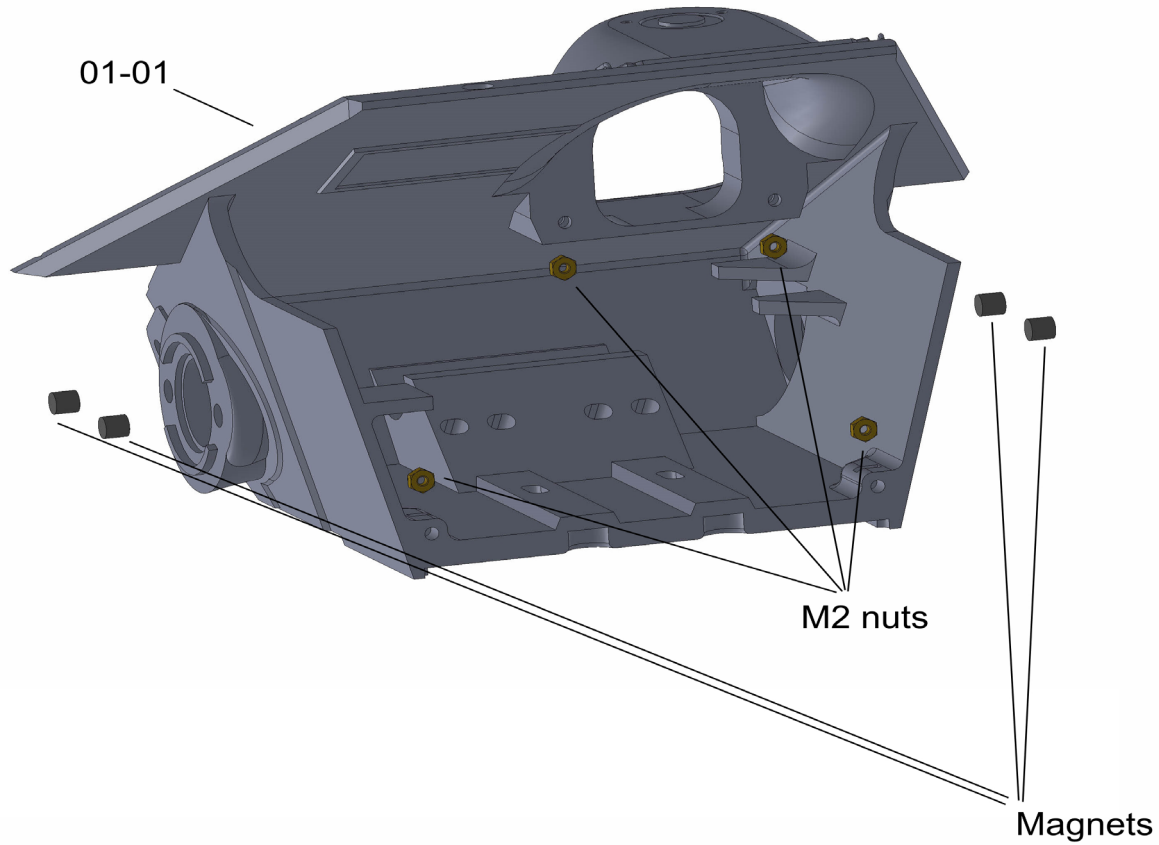


Chapter 01 - Lower hull



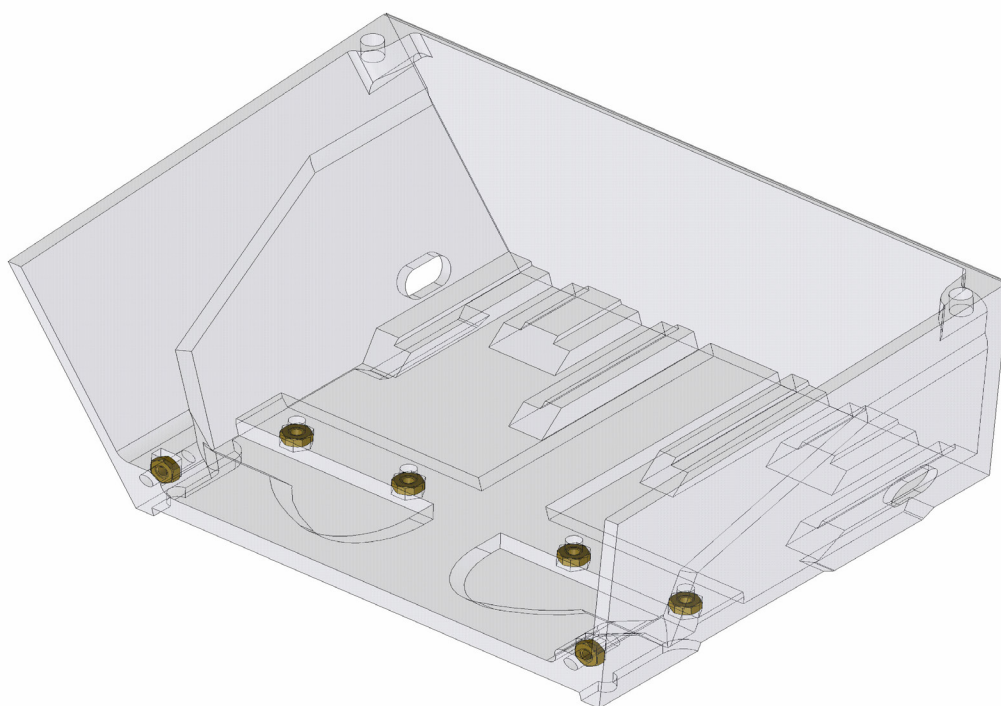
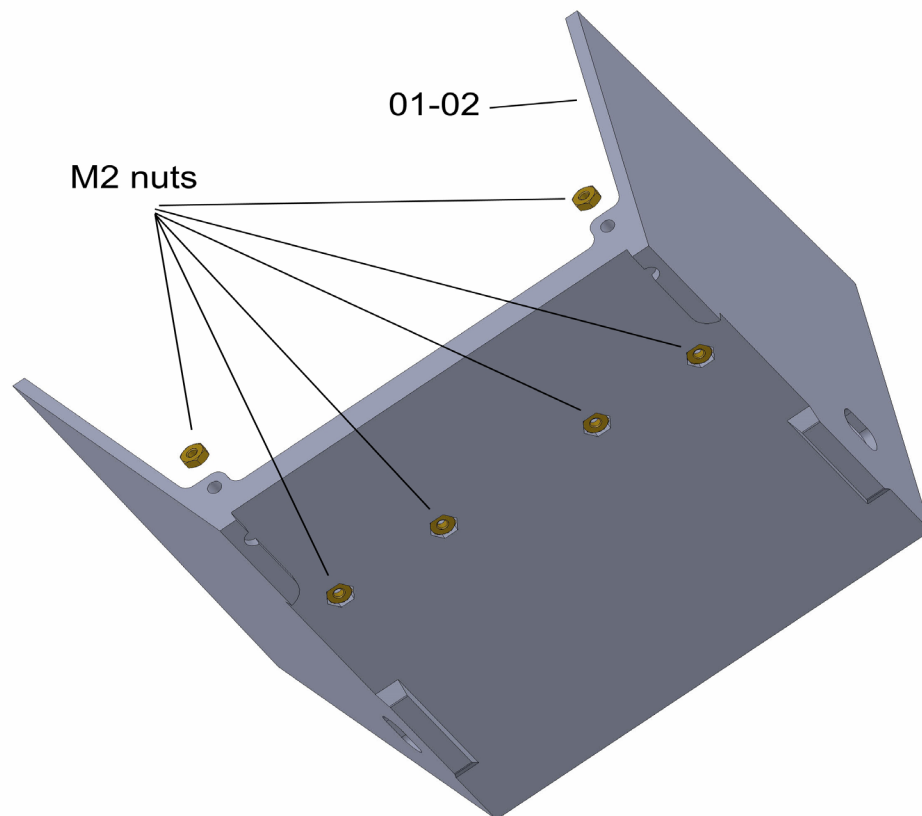
AMOUNT:	1
PRINTED PARTS:	01-01 (1x), 01-02 (1x), 01-03 (1x), 01-04 (1x), 01-05(1x), 01-06 (1x), 01-07 (1x), 01-08 (1x), 01-09 (1x), 01-10 (1x), 01-11 (1x), 01-12 (1x), 01-13 (1x), 01-14 (1x), 01-15 (1x), 01-16 (1x), 01-17 (1x), 01-18 (1x), 01-19 (1x), 01-20A (1x), 01-20B (1x), 01-21 (1x), 01-22 (3x), 01-23 (1x), 01-24 (1x), 01-25 (1x), 01-26A (1x), 01-26B (1x), 01-26C (1x), 01-26D (2x), 01-27A (1x), 01-27B (1x), 01-28A (1x), 01-28B (1x), 01-28C (1x), 01-29 (2x), 01-30 (1x), 01-31 (2x), 01-32 (2x), 01-33 (2x), 01-34 (2x), 01-35 (2x), 01-36 (2x), 01-37 (2x), 01-38 (2x), 01-39 (1x), 01-40 (1x), 01-41 (8x), 01-42 (8x), 01-43A (4x), 01-43B (4x), 01-44A (8x), 01-44B (8x), 01-45A (2x), 01-45B (2x), 01-46 (2x), 01-47 (2x), 01-48 (8x).
OPTIONAL PRINTED PARTS:	01-44_ALT (8x)
NON-PRINTED PARTS:	M5x60 hex screw (2x), M3x60 screw (2x), M3x12 screw (2x), M2x20 screw (2x), M2x16 screw (20x), M2x12 screw (8x), M2x10 screw (4x), M1,6x8 screw (2x), M5 nut - low profile (10x), M3 nut (8x), M2 nut (58x), M1,6 nut (2x), M2 washer (8x), MF62zz bearing (8x), F625zz bearing (2x), MR72zz or 602zz bearing (24x), 605zz bearing (2x), 623zz bearing (4x), 3D printer extruder spring 22x9x7mm (2x), Round magnets dia = 4mm - lenght = 4mm (8x), Round magnets dia = 3mm - lenght = 3mm (2x), Pulley GT2 - 20 teeth - bore 5mm (2x), Closed loop timing belt GT2 lenght 158mm (1x), Closed loop timing belt GT2 lenght 240mm (1x).

Chapter 01 - Lower hull



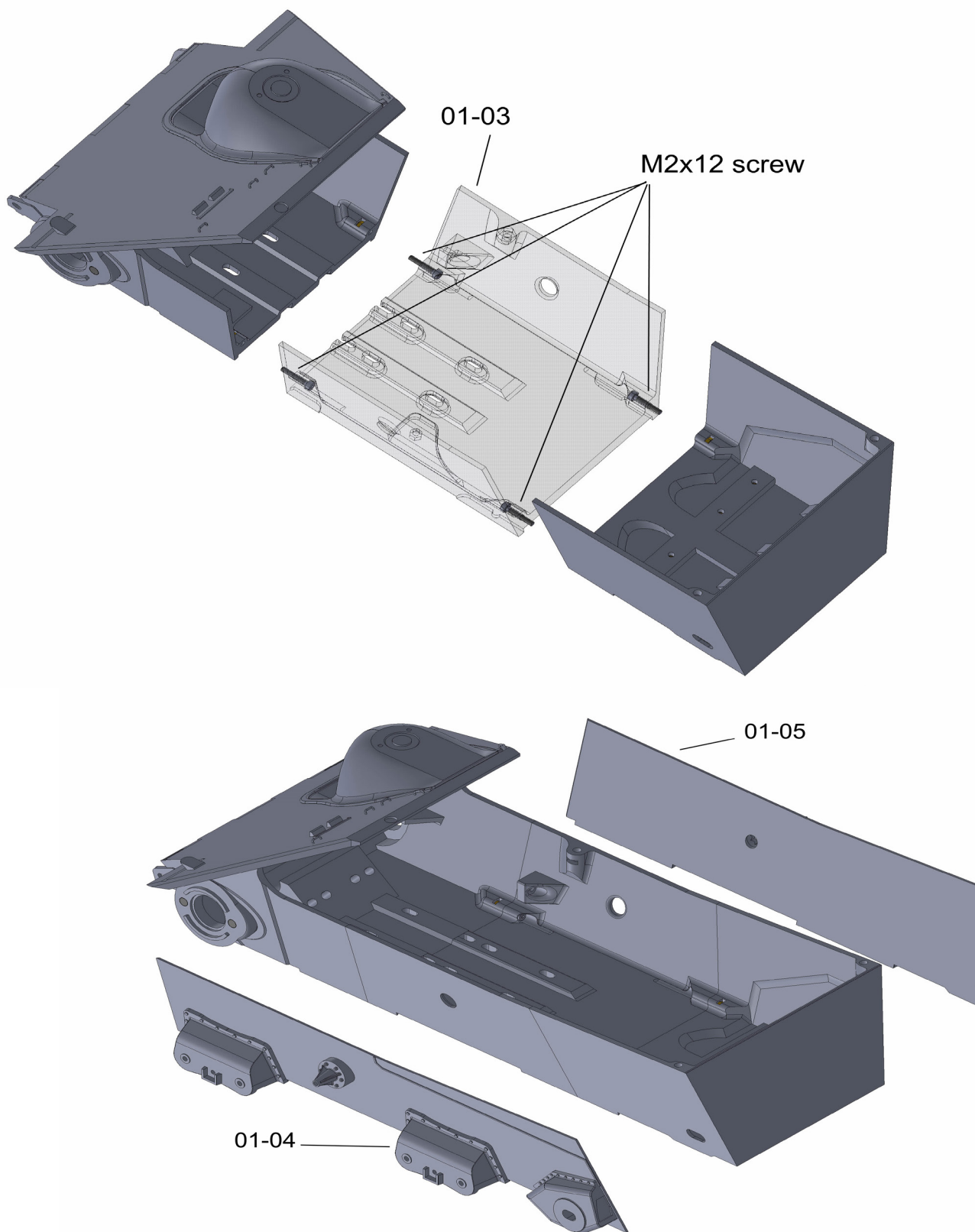
Insert 4 M2 nuts and glue 4 magnets of 4mm diameter and 4mm length into the holes in part 01-01.
This part can be printed in different versions. See the “alternative parts” folder.

Chapter 01 - Lower hull



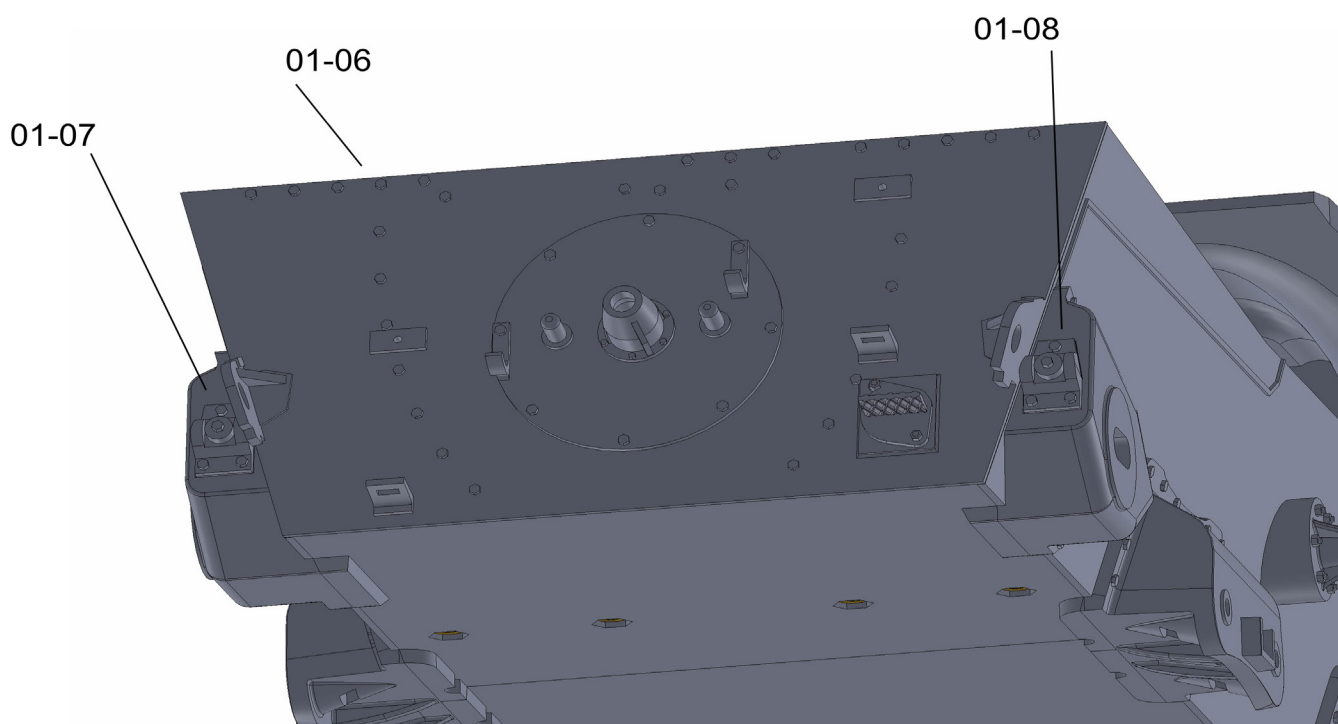
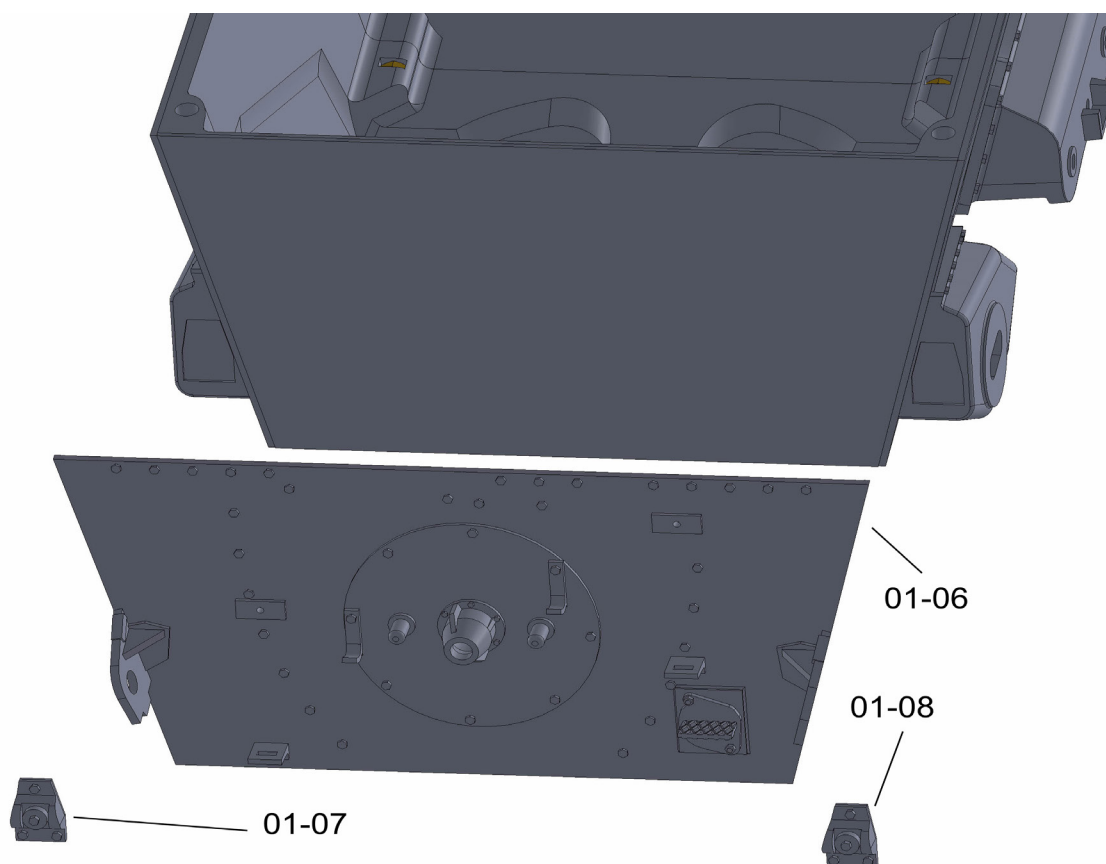
Insert 6 M2 nuts into the holes in part 01-02.

Chapter 01 - Lower hull



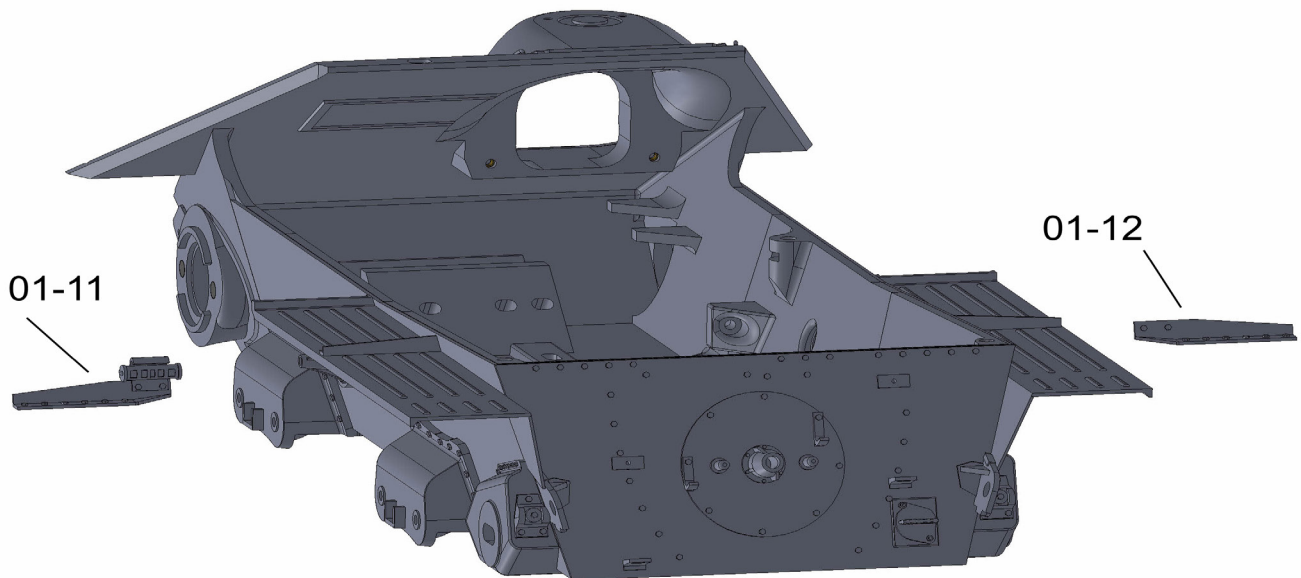
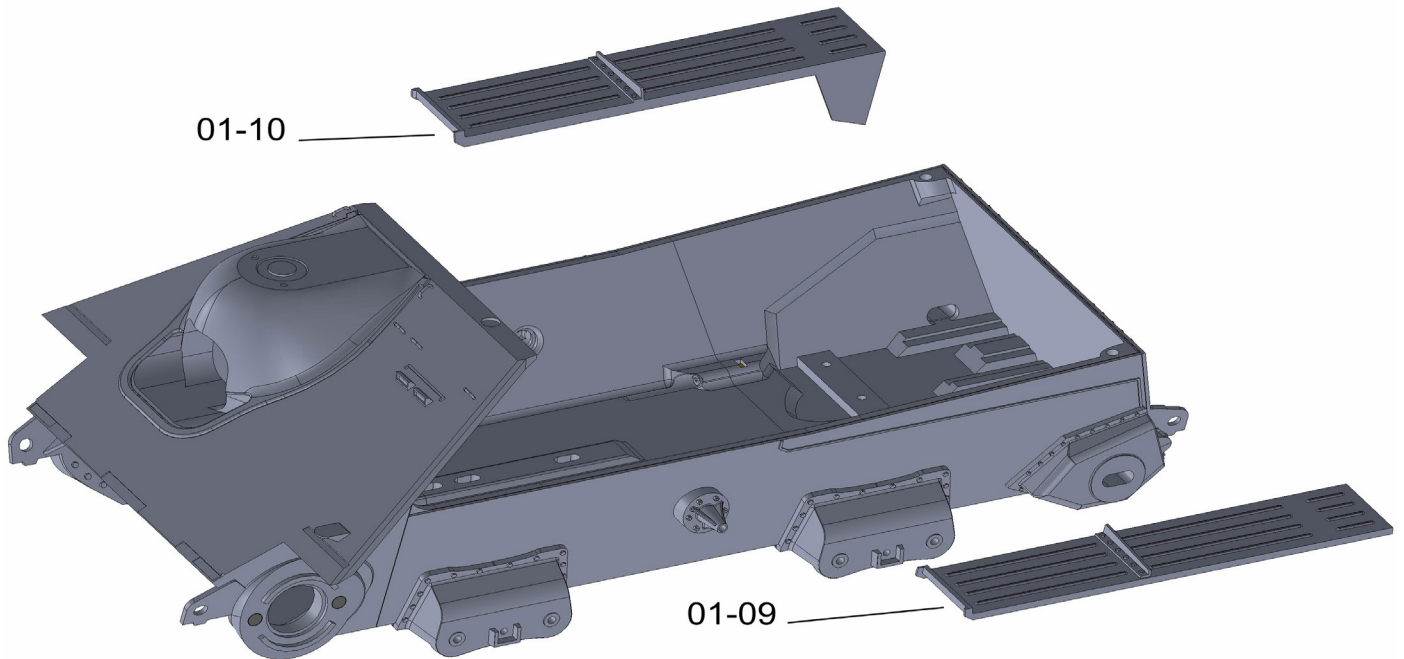
Connect parts 01-01, 01-02 and 01-03 with M2x12mm screws. Align the parts and then glue parts 01-04 and 01-05 on the sides.

Chapter 01 - Lower hull



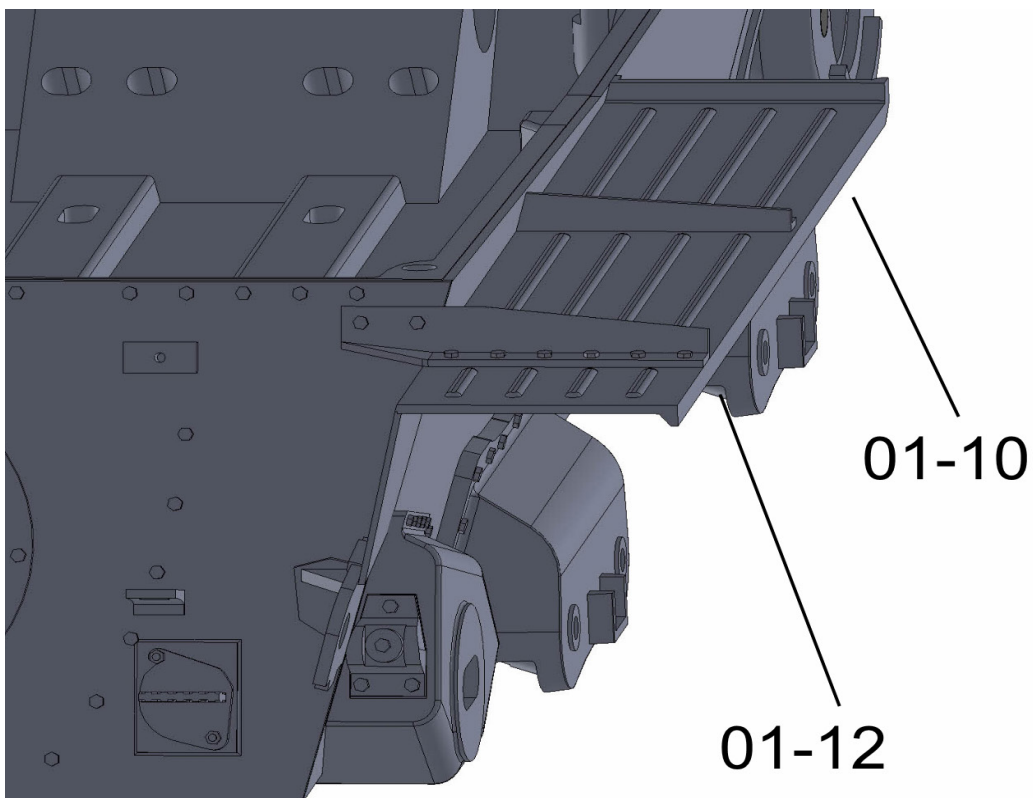
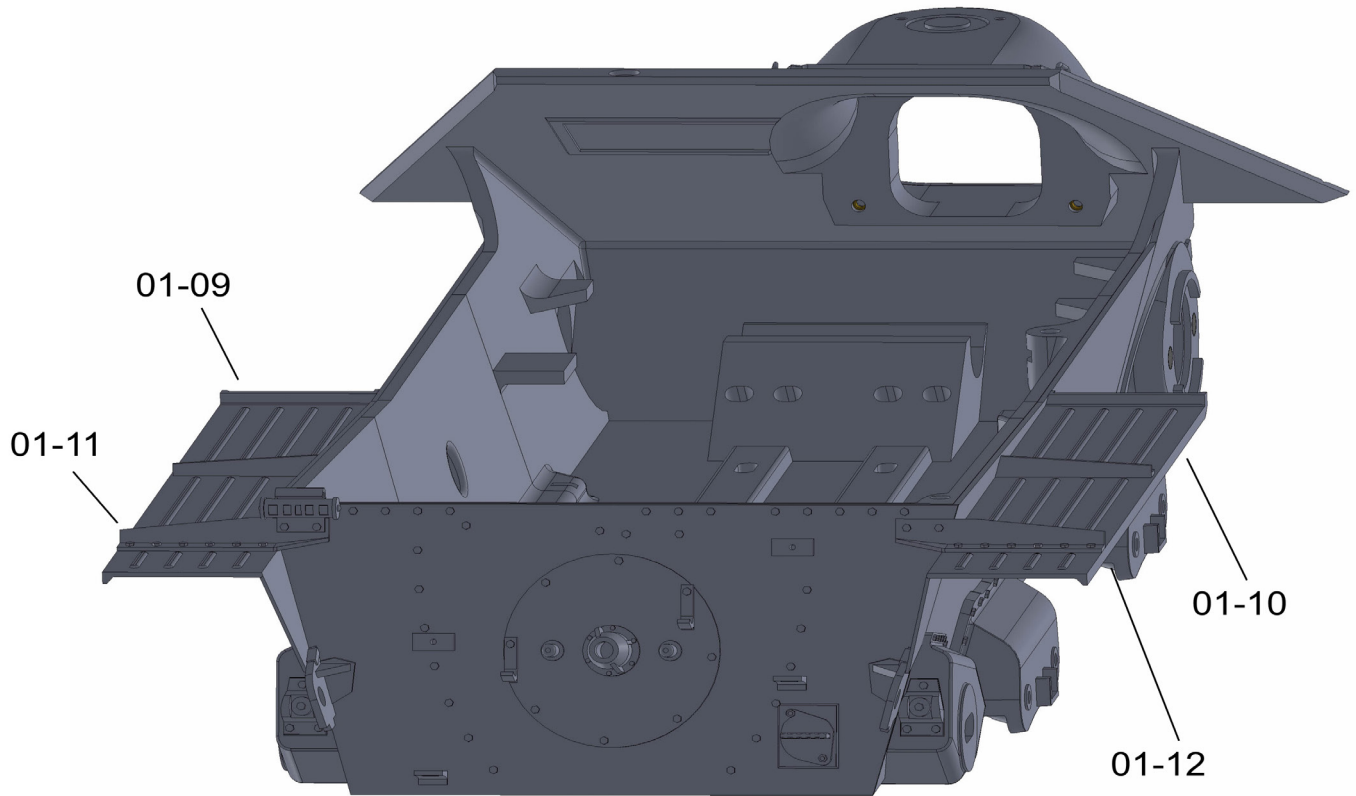
Glue parts 01-06, 01-07 and 01-08.

Chapter 01 - Lower hull



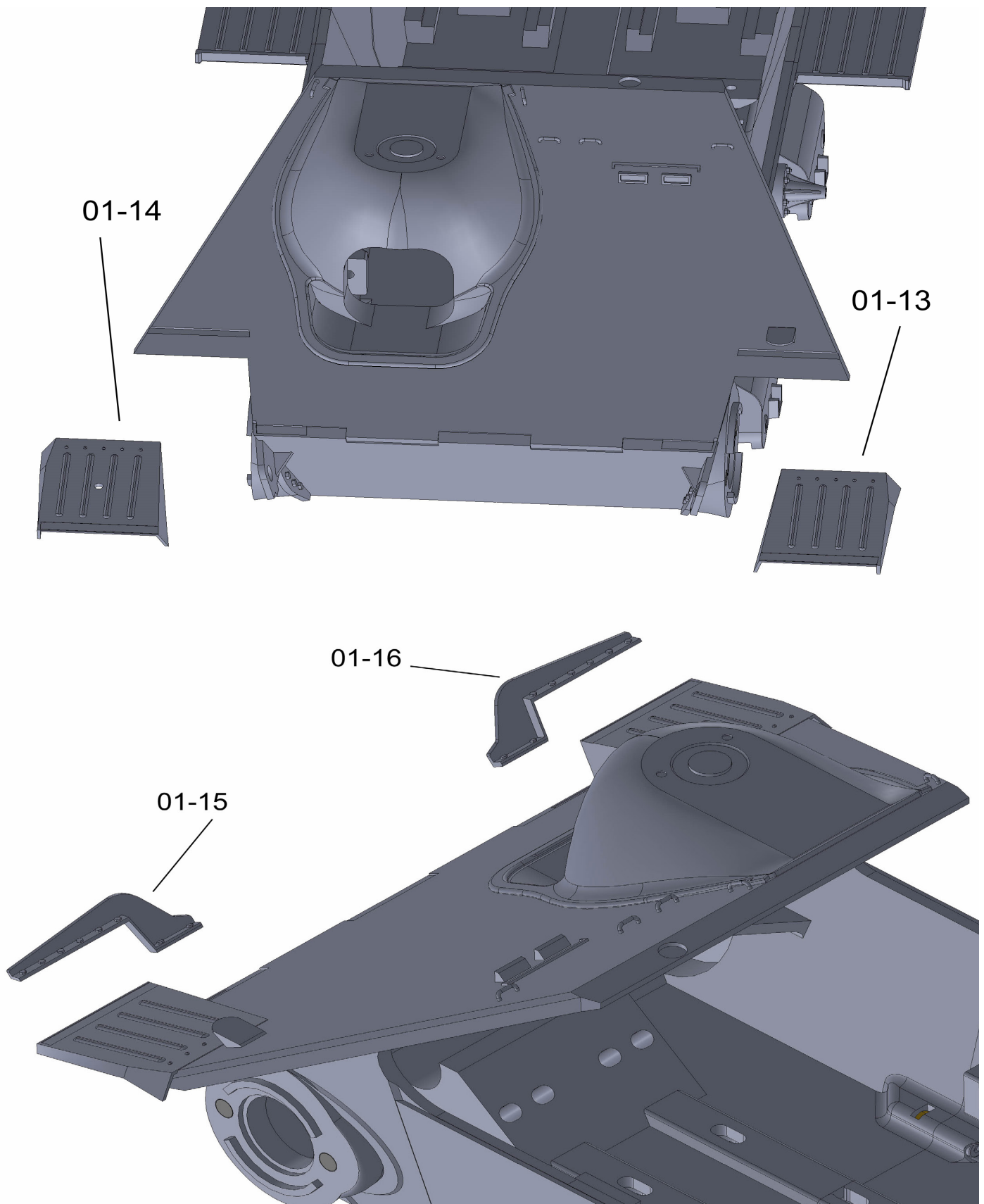
Glue parts 01-09, 01-10, 01-11 and 01-12. You can use the alternate part 01-11_alt.

Chapter 01 - Lower hull



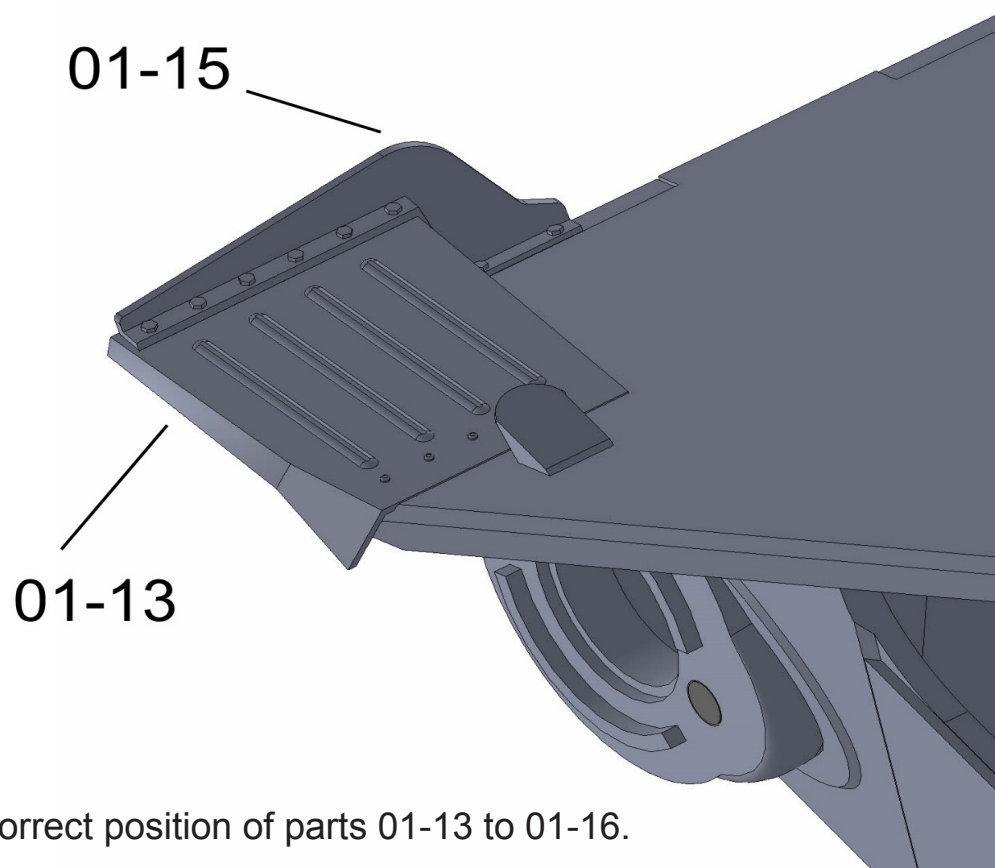
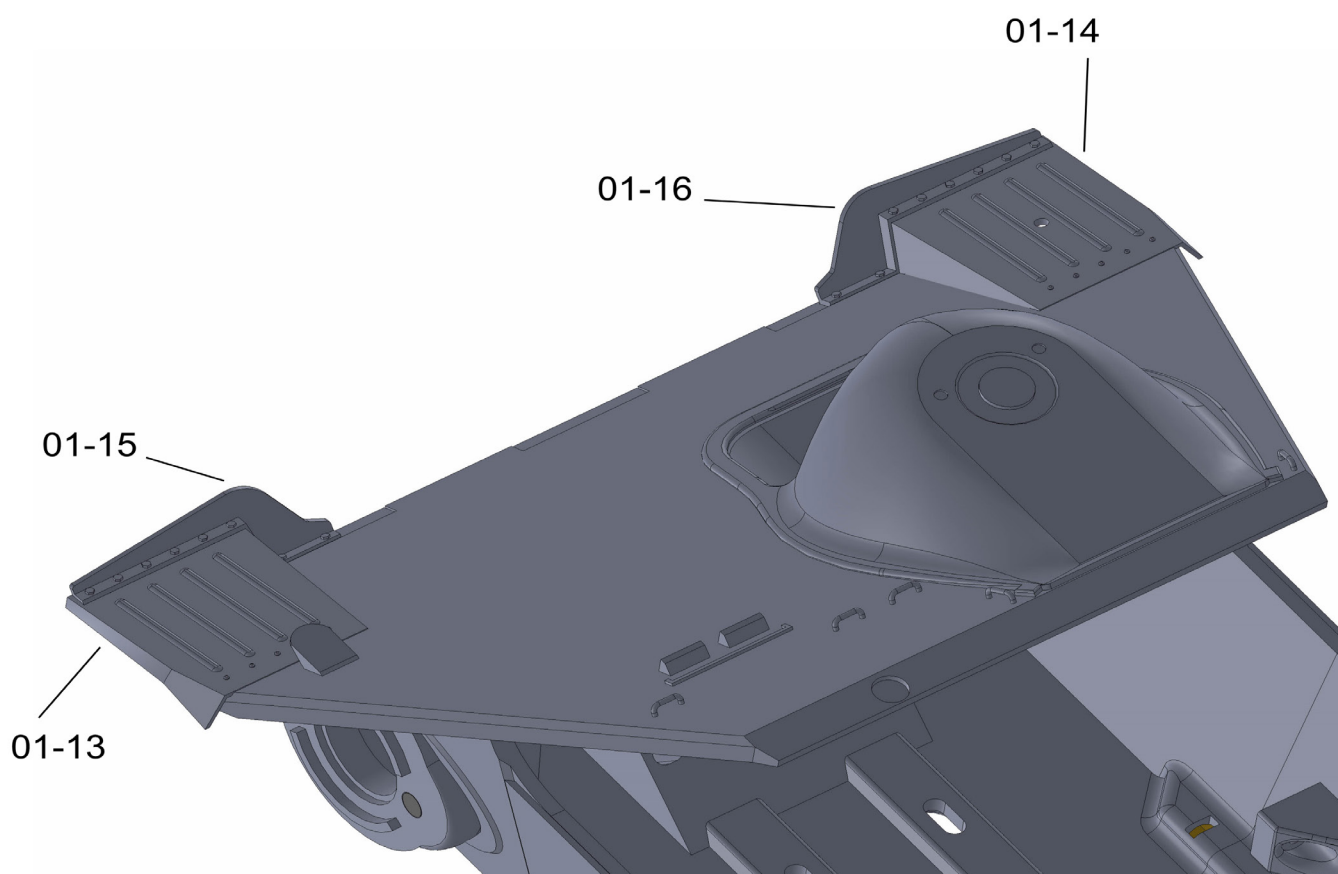
Correct position of the parts 01-09 to 01-12.

Chapter 01 - Lower hull

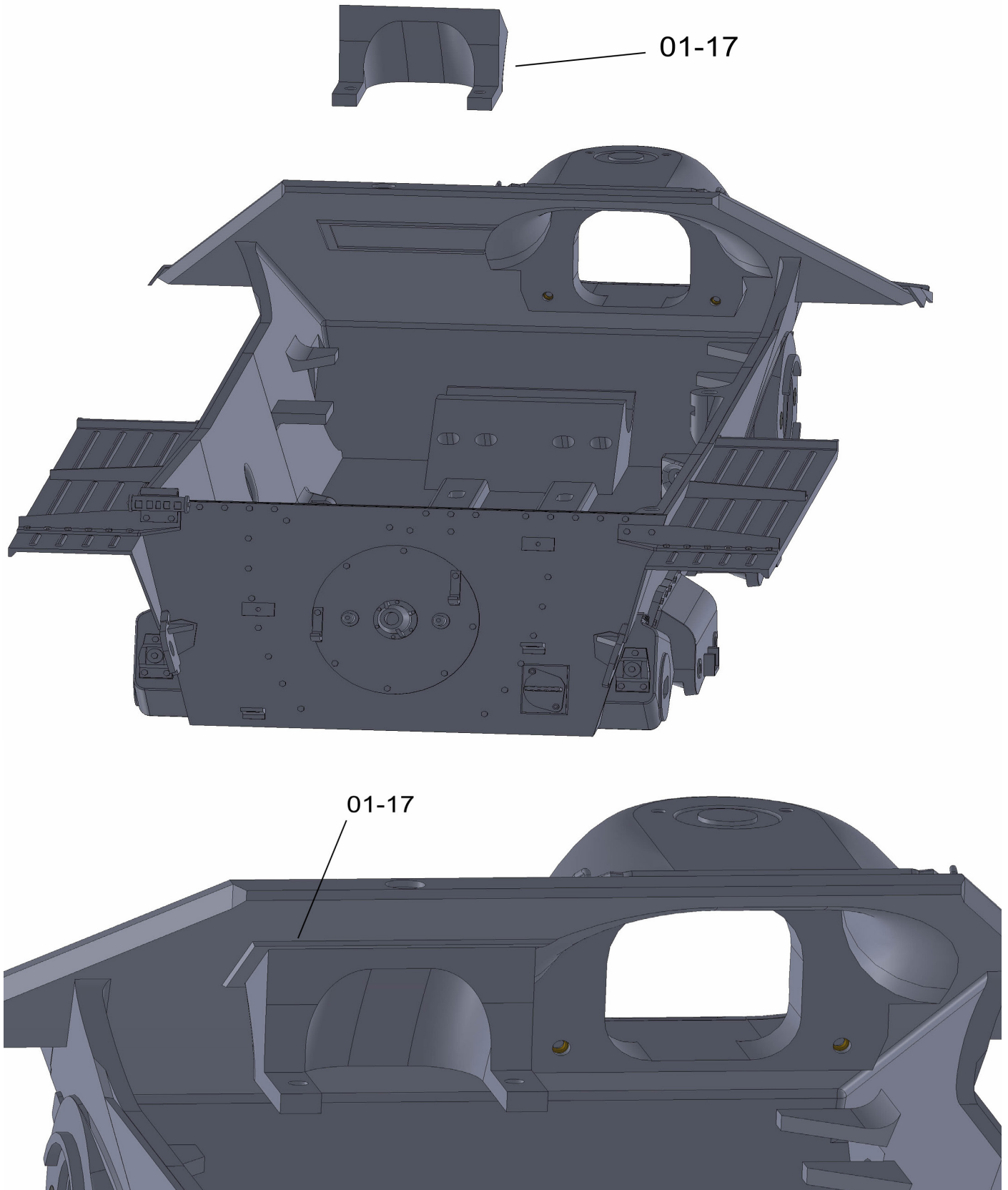


Glue parts 01-13, 01-14, 01-15 and 01-16.

Chapter 01 - Lower hull

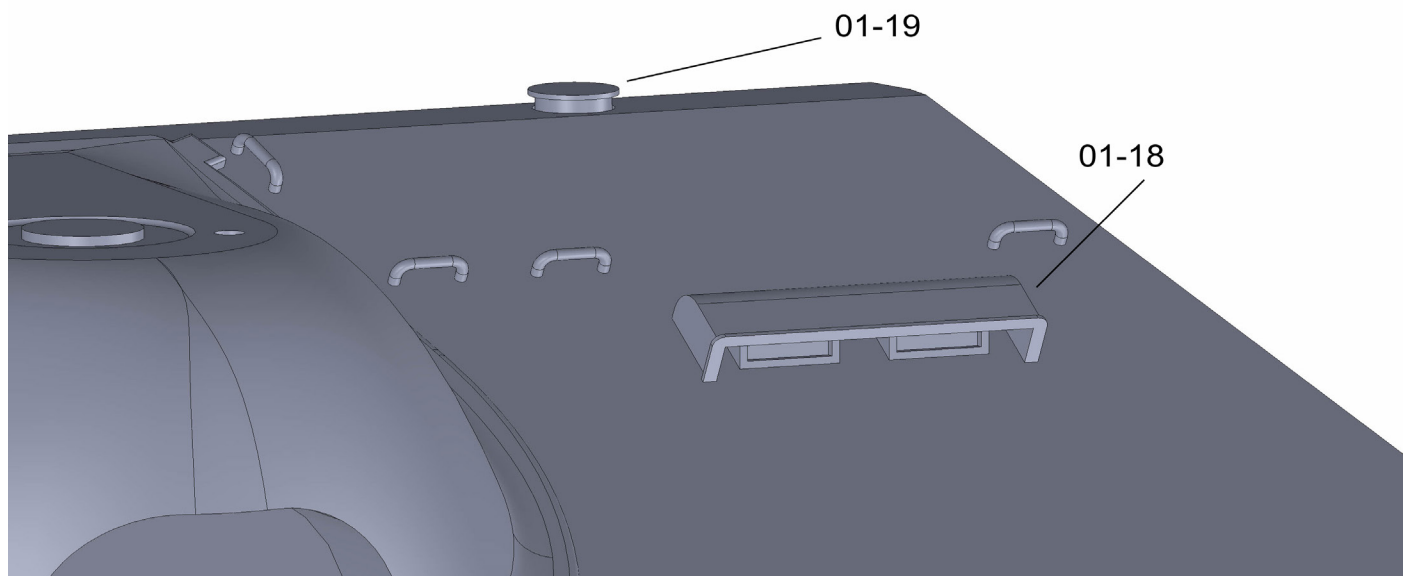
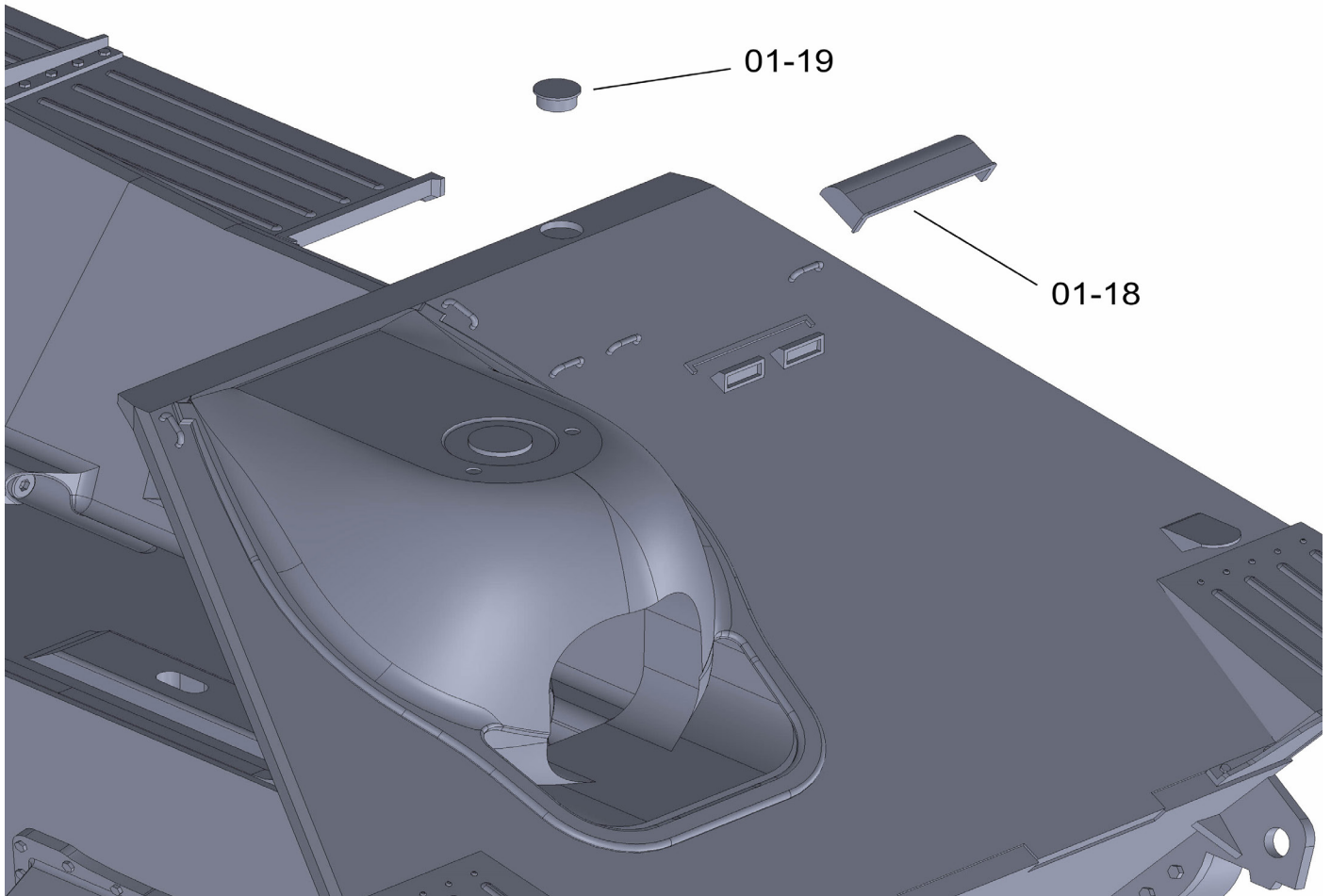


Correct position of parts 01-13 to 01-16.



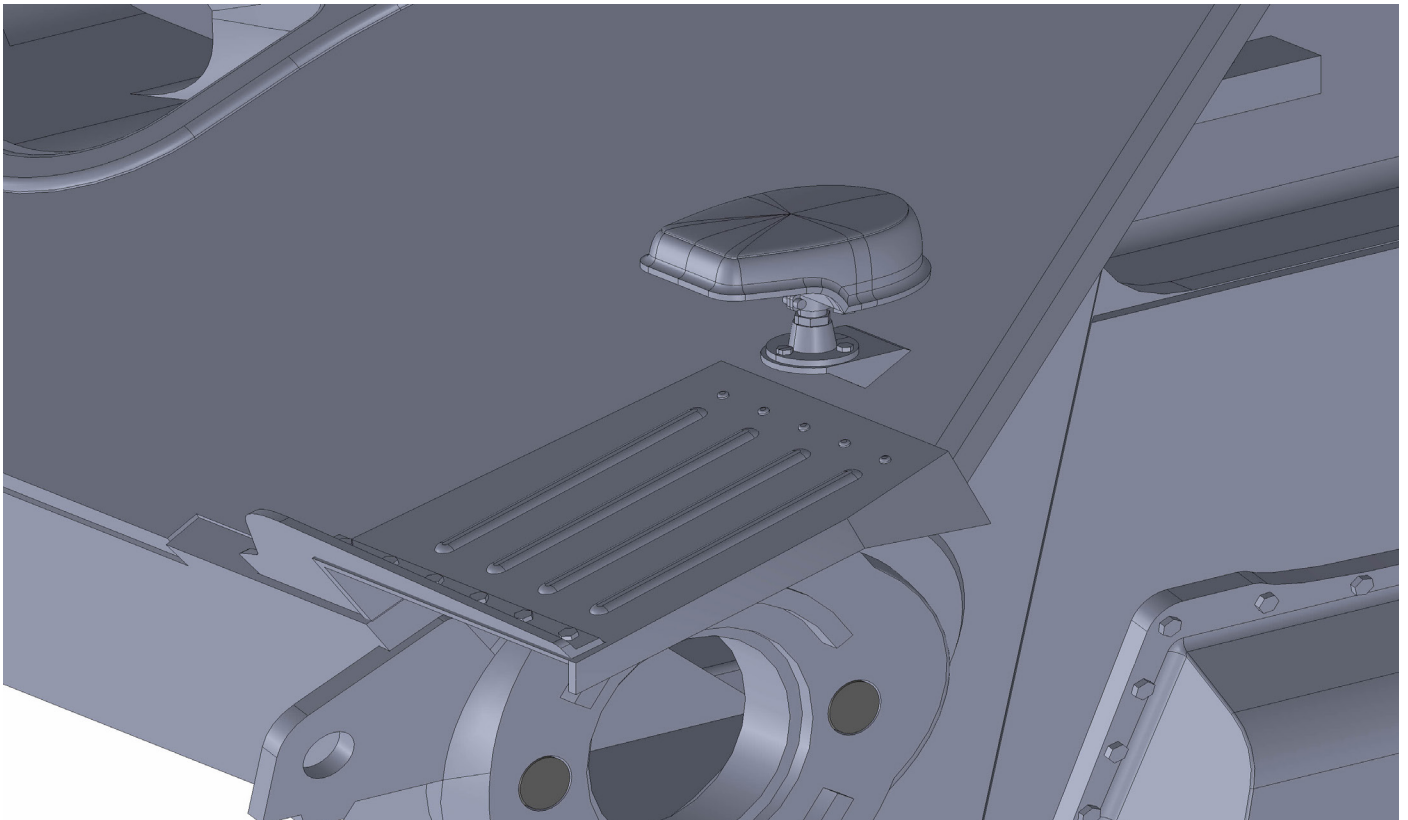
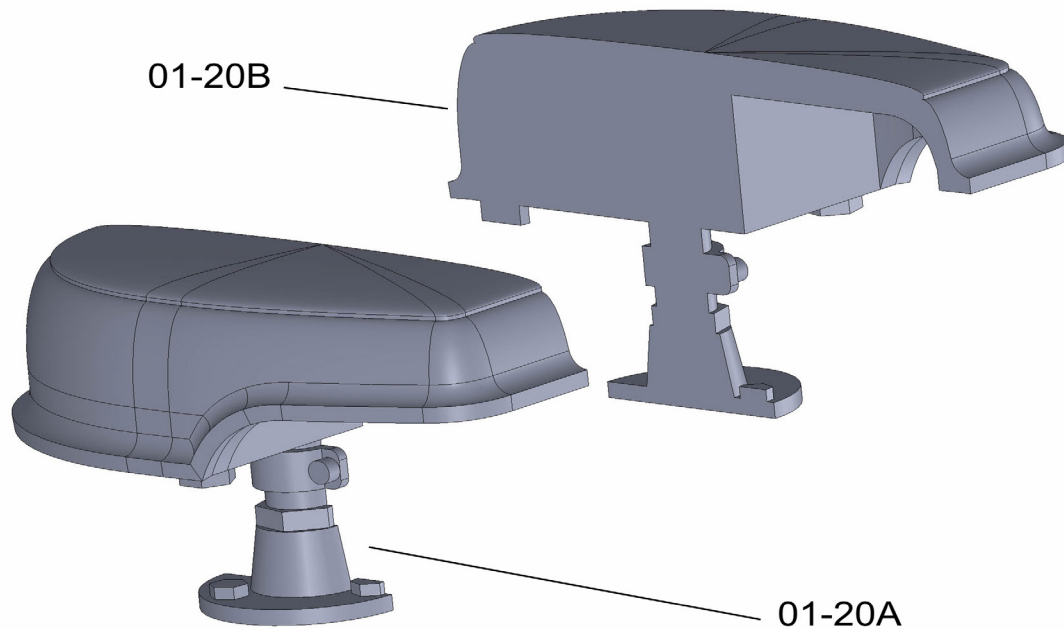
Glue part 01-17.

Chapter 01 - Lower hull

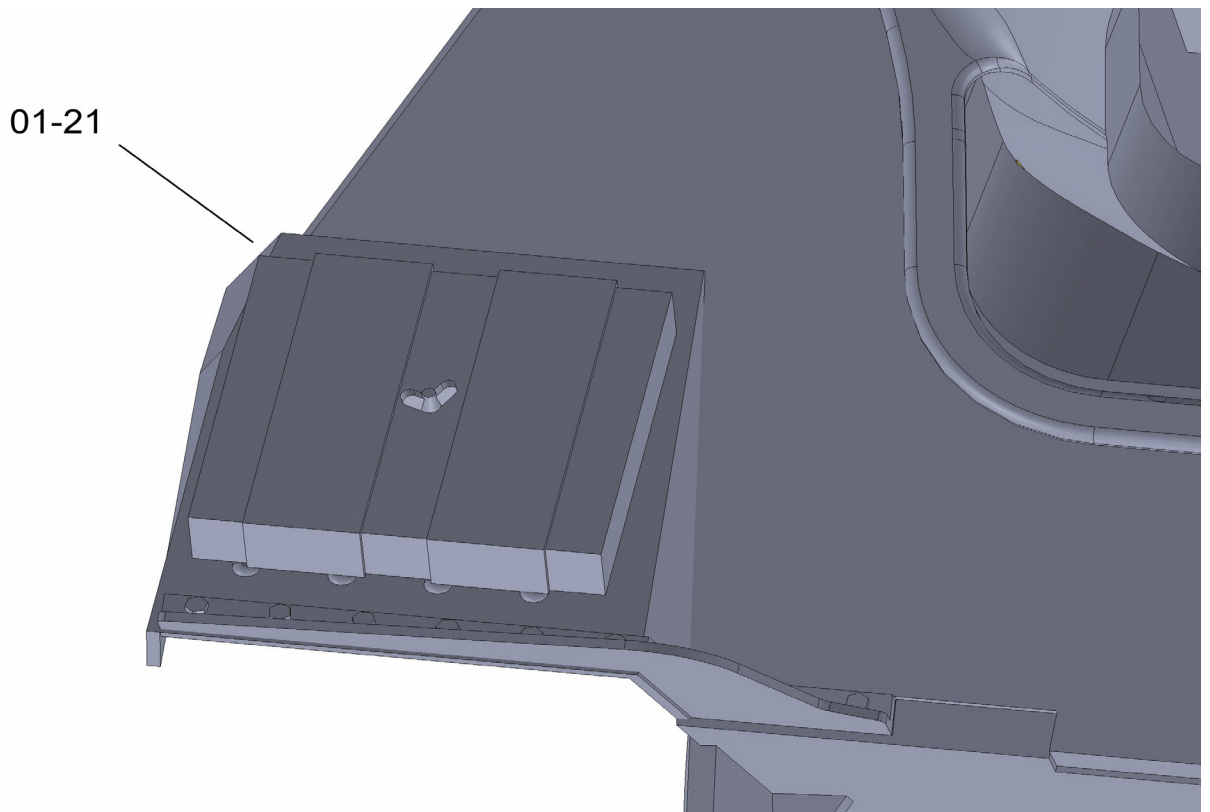
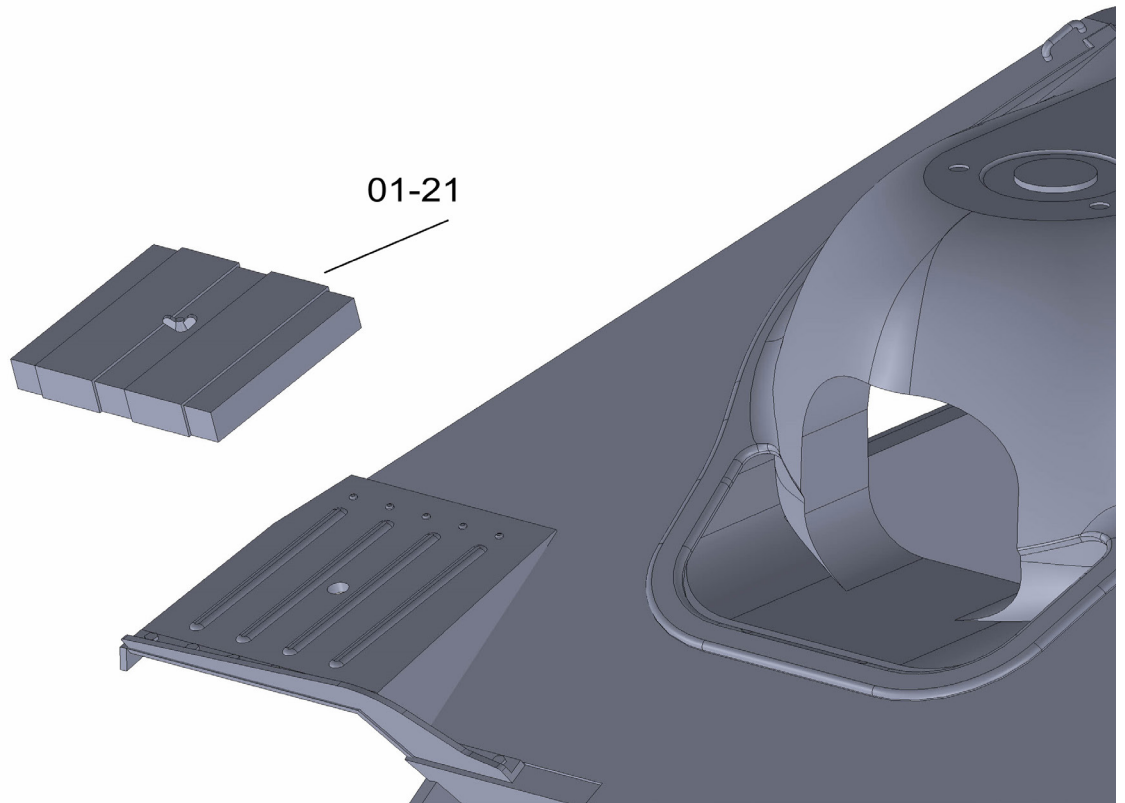


Glue parts 01-18 and 01-19.

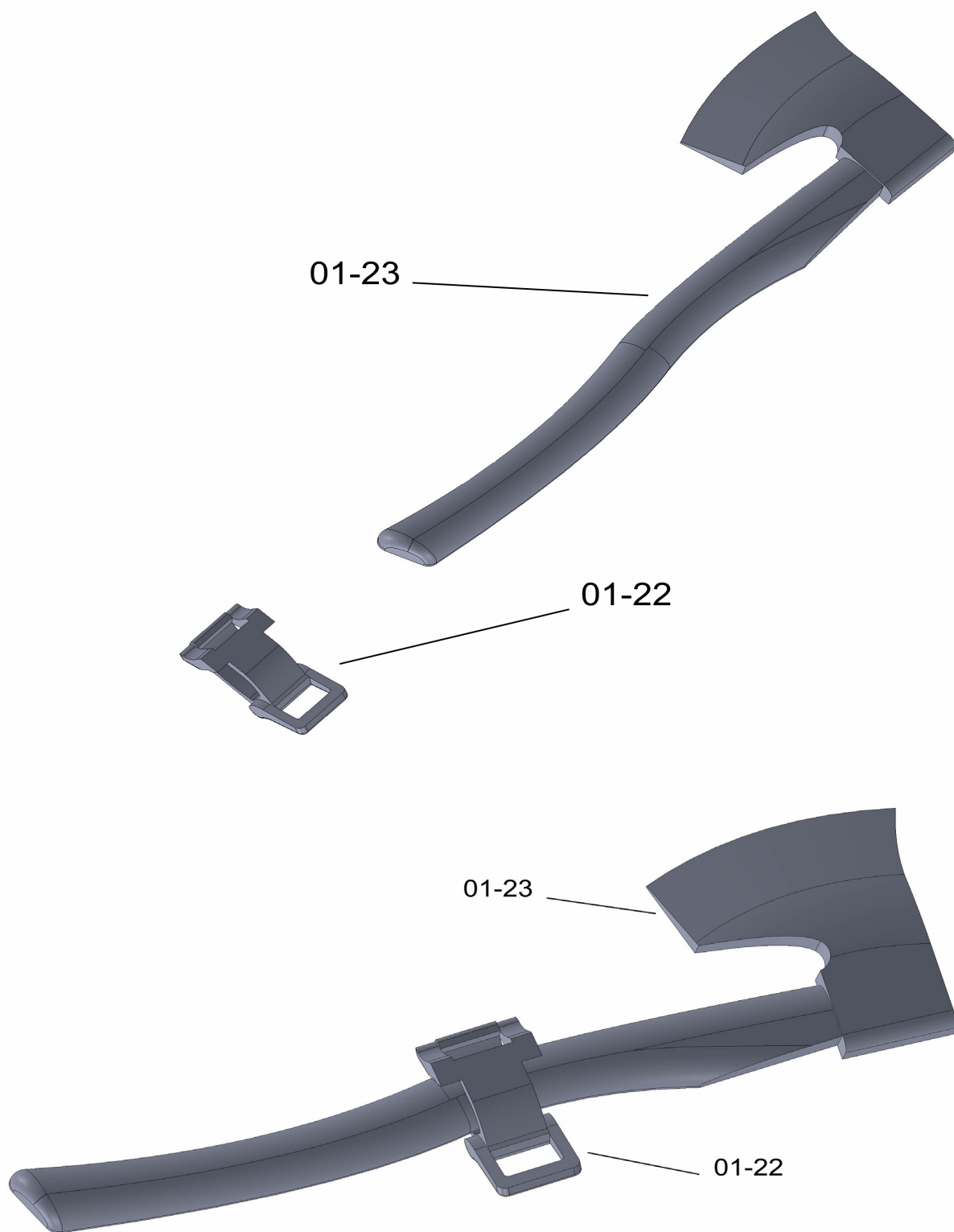
Chapter 01 - Lower hull



Bond parts 01-20A and 01-20B. Glue such unit in place above the fender.
You can use alternative parts 01-20A_alt and 01-20B_alt for 5630 SMD diode.

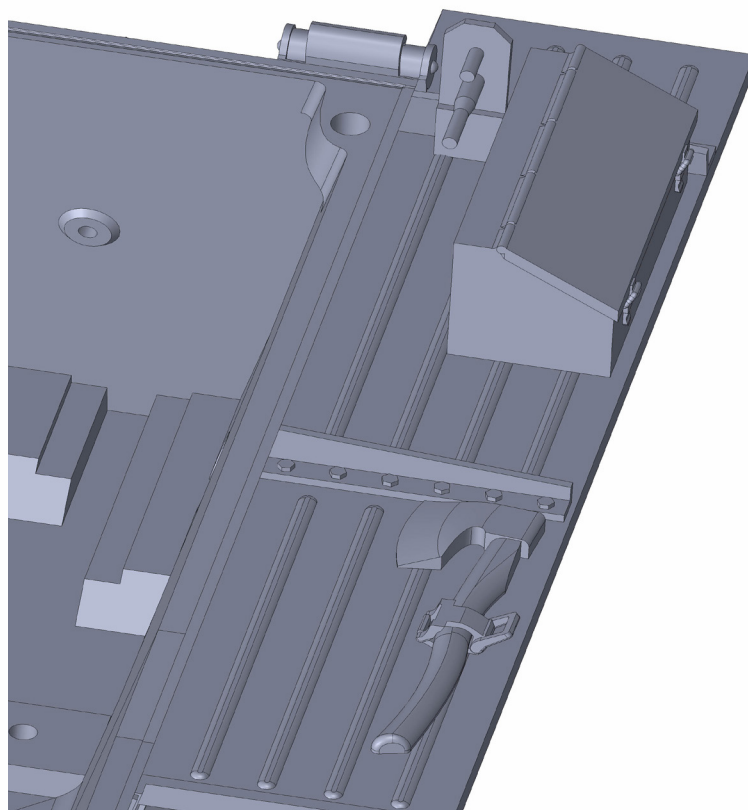
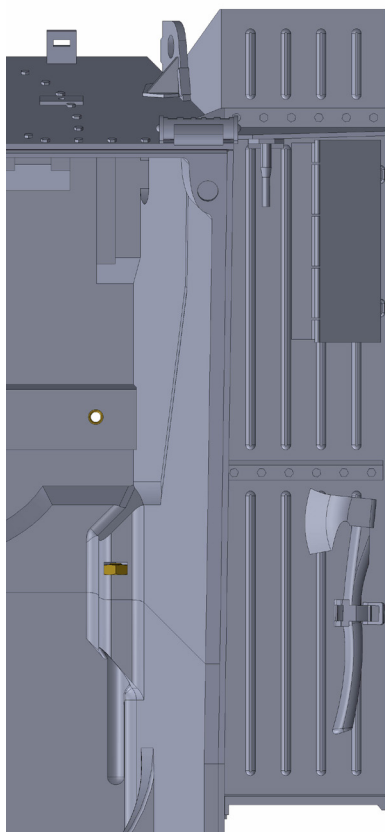
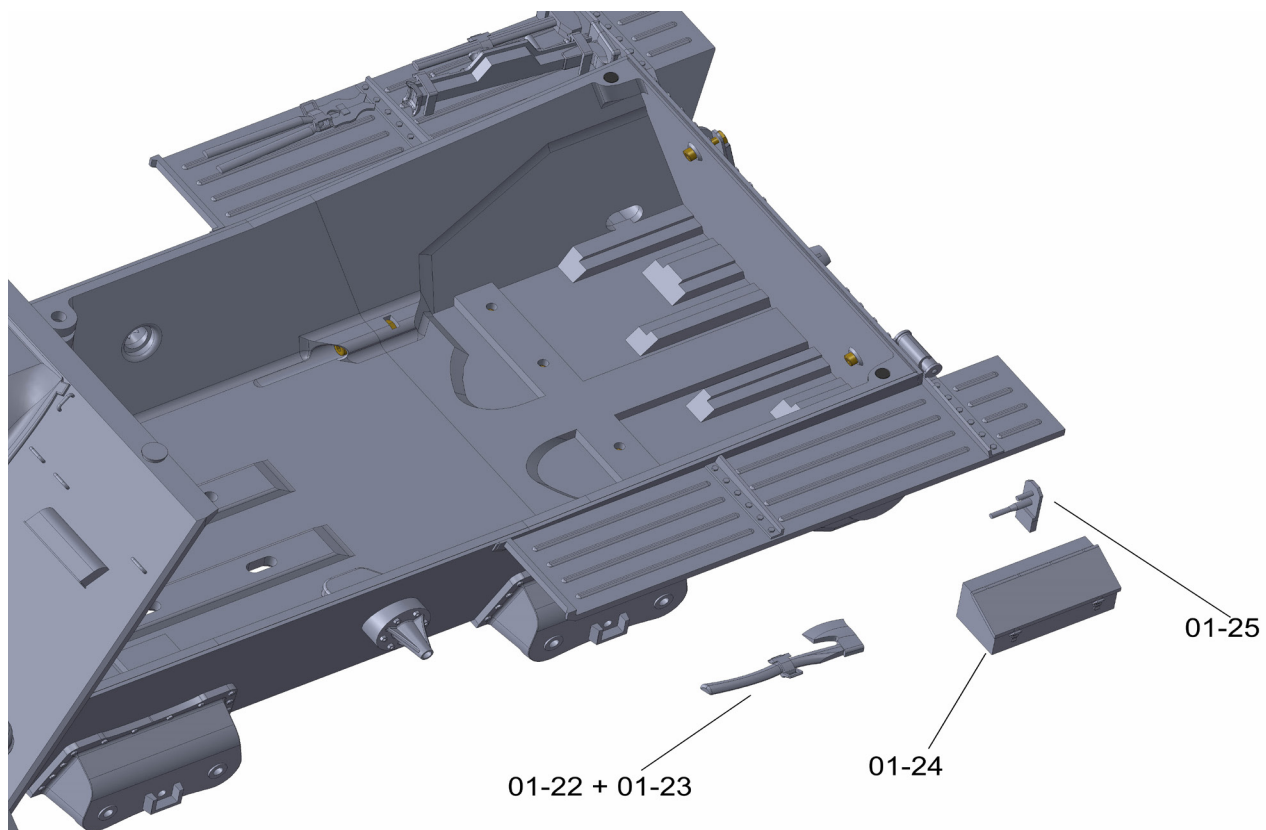


Glue part 01-21.



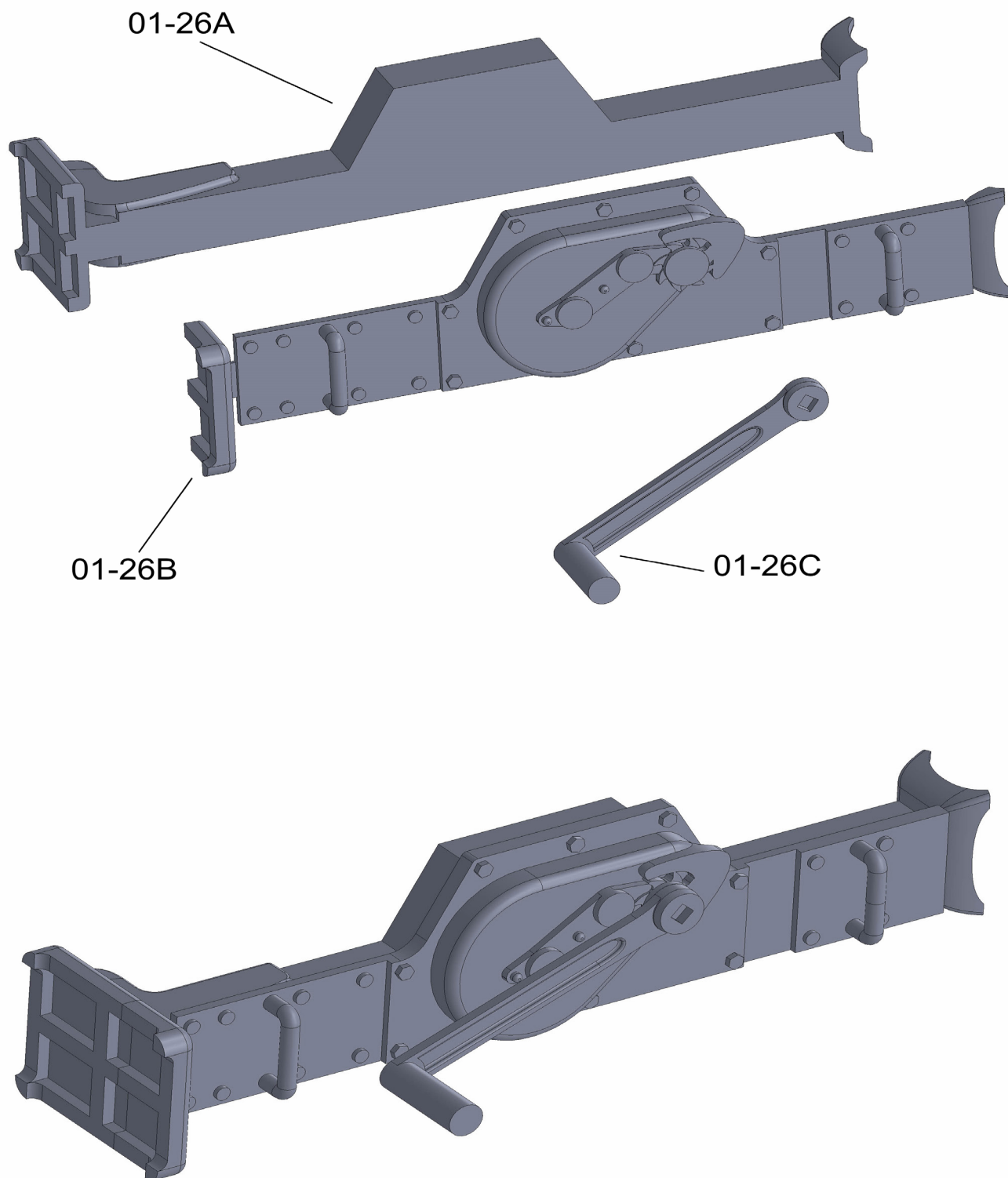
Glue parts 01-22 and 01-23 together.

Chapter 01 - Lower hull



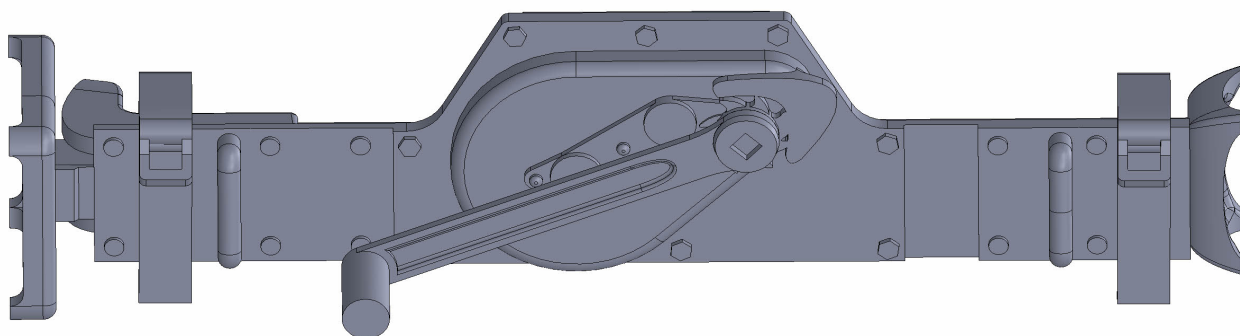
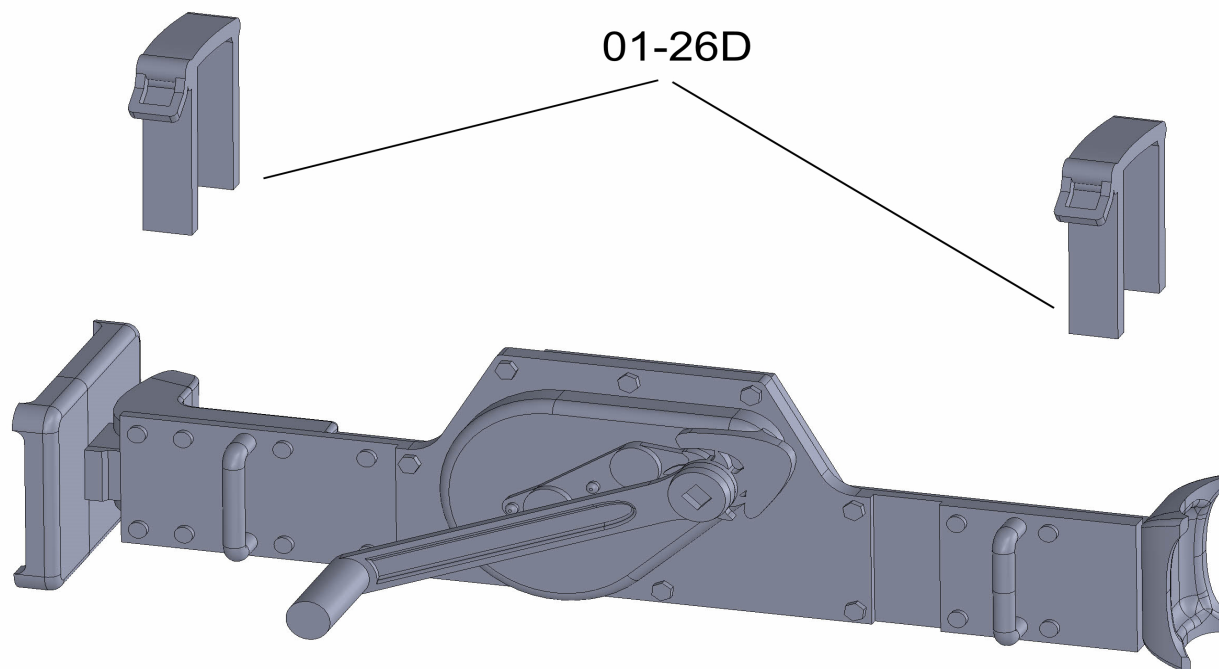
Glue parts 01-22 to 01-25.

Chapter 01 - Lower hull



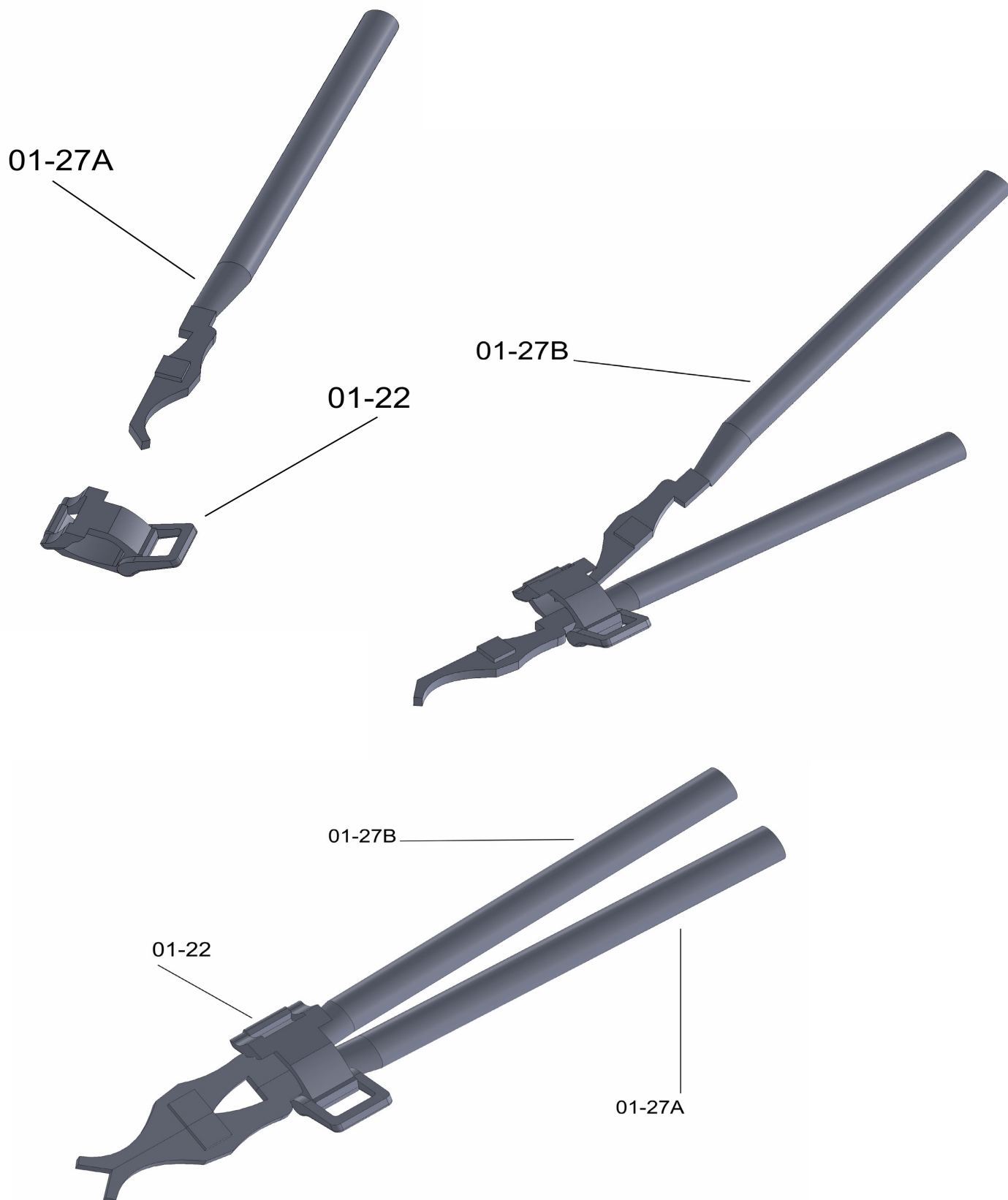
Stick parts 01-26A, 01-26B and 01-26C together.

Chapter 01 - Lower hull



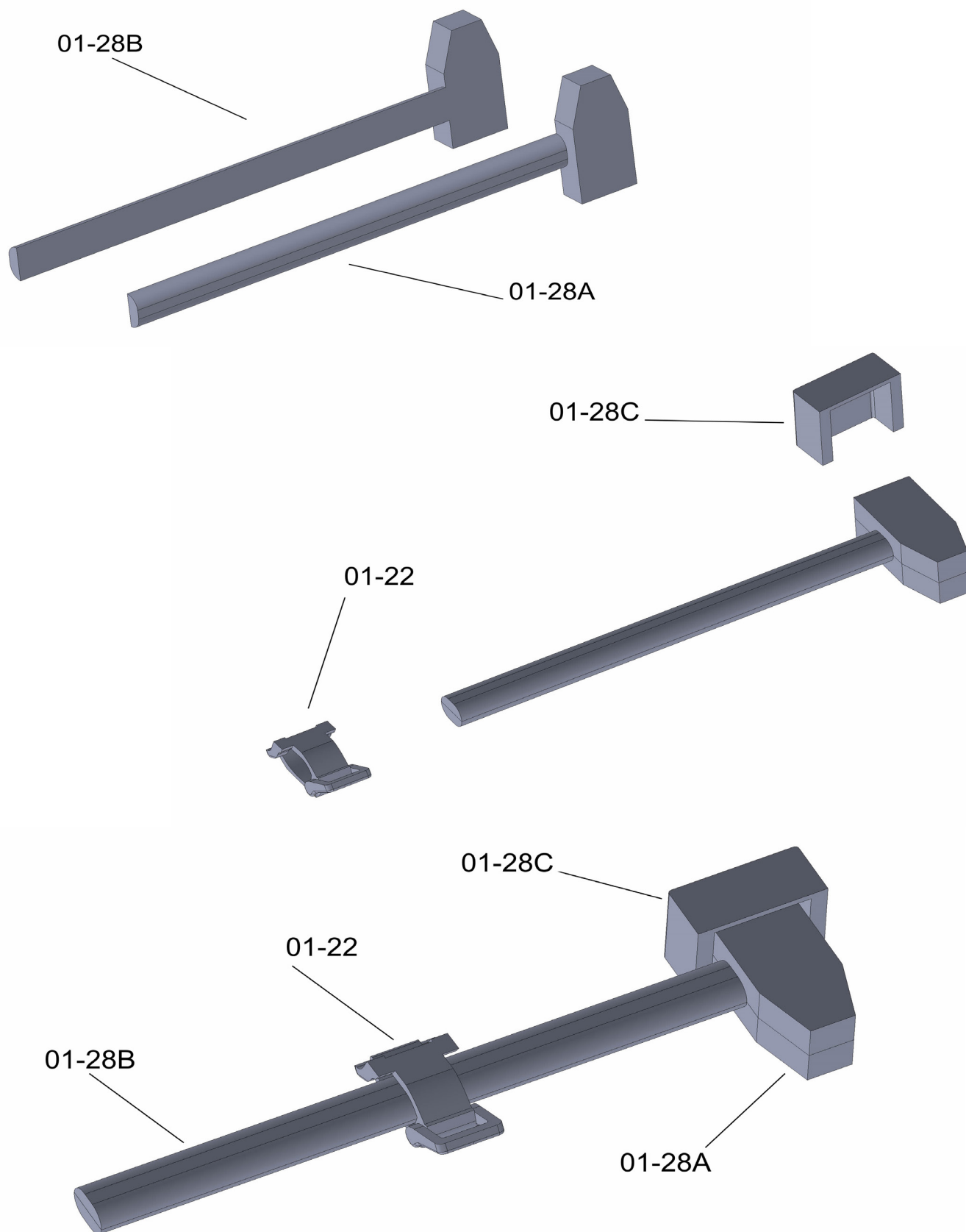
Glue two parts of 01-26D.

Chapter 01 - Lower hull



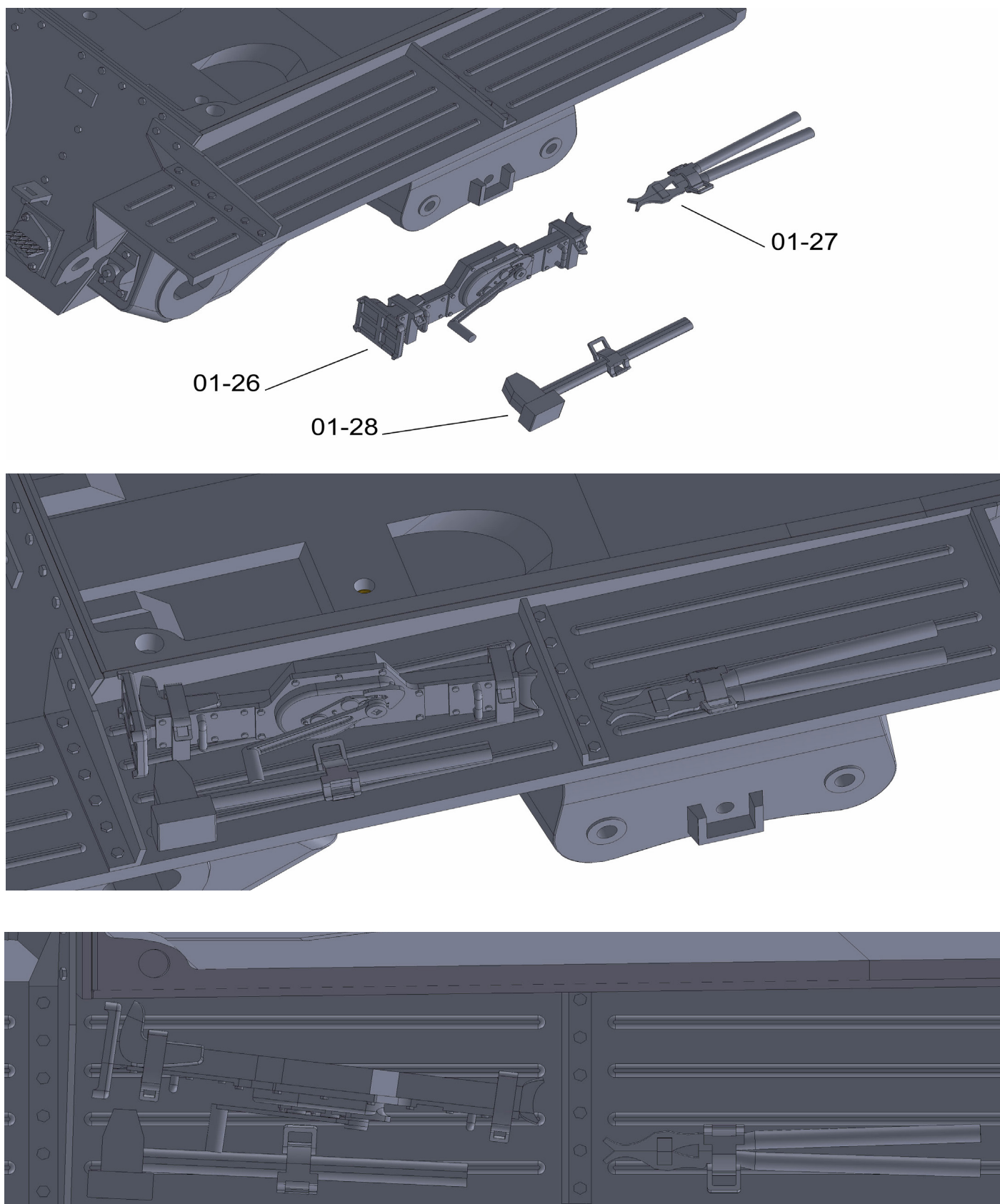
Insert part 01-27A into part 01-22. Then carefully insert part 01-27B.
Glue the whole together.

Chapter 01 - Lower hull



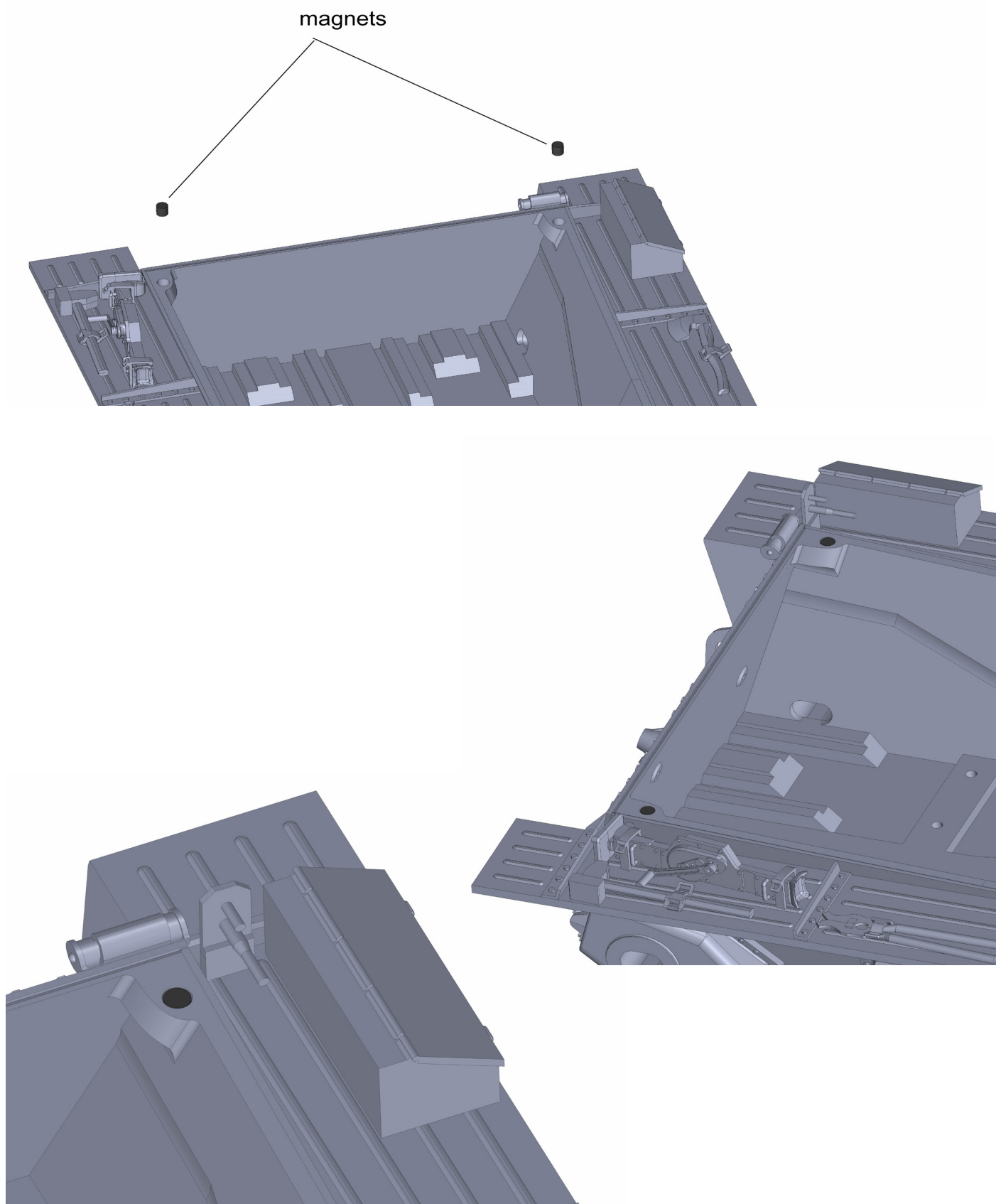
Glue parts 01-28A to 01-28C, together with part 01-22.

Chapter 01 - Lower hull



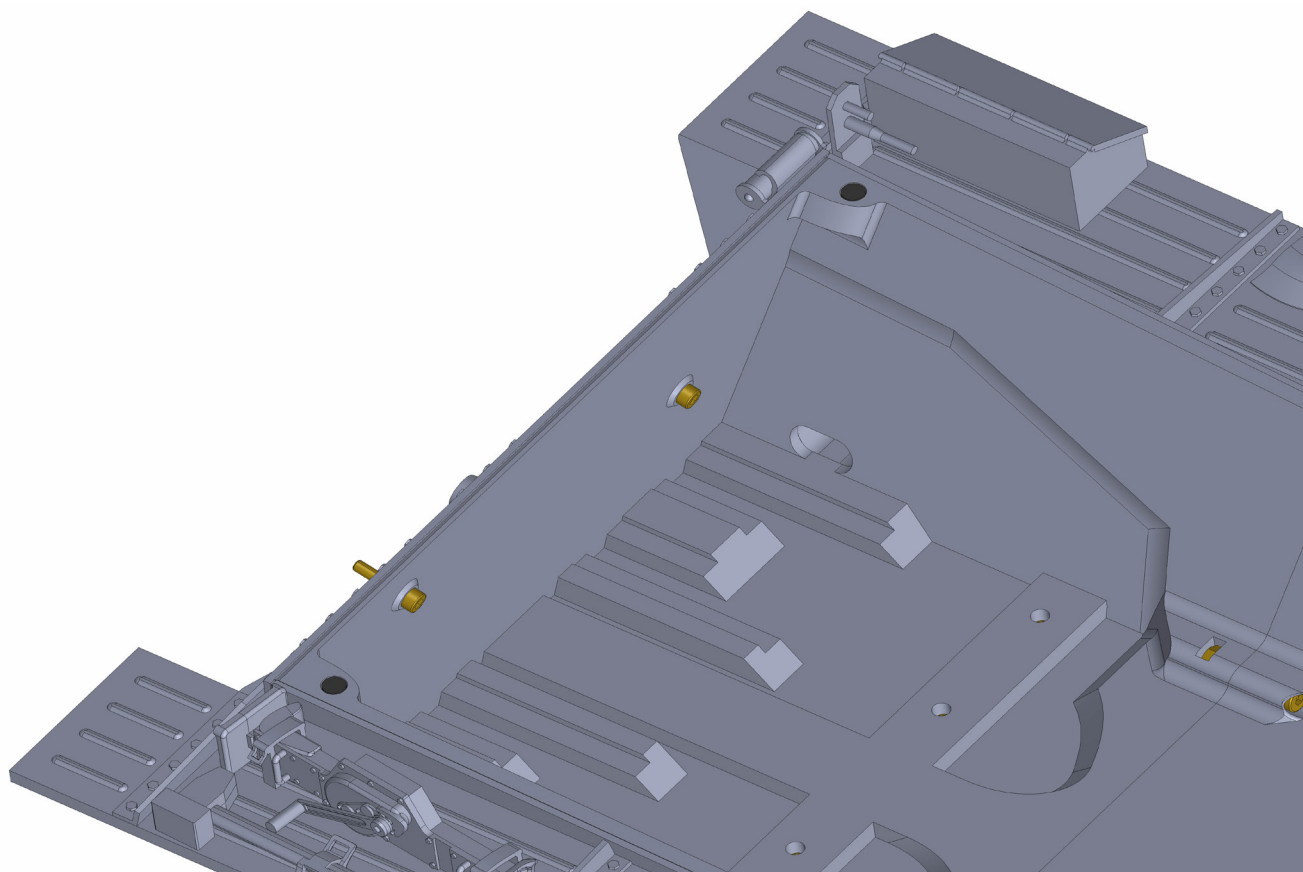
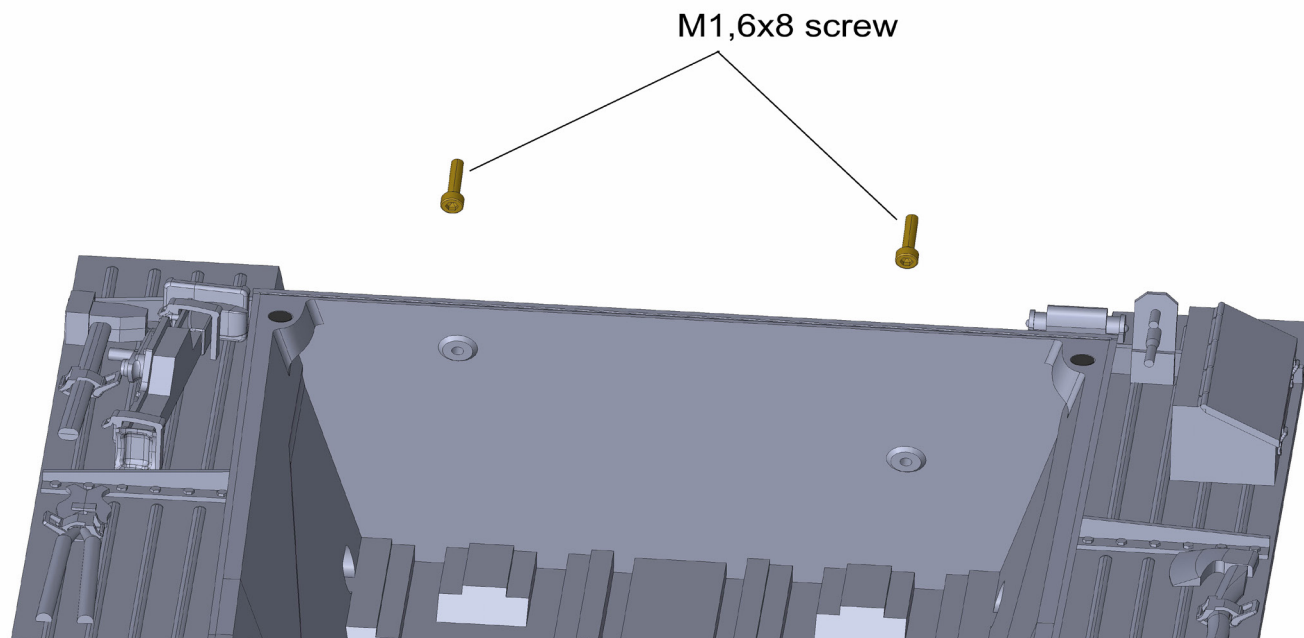
Glue the part wholes of 01-26, 01-27 and 01-28.

Chapter 01 - Lower hull



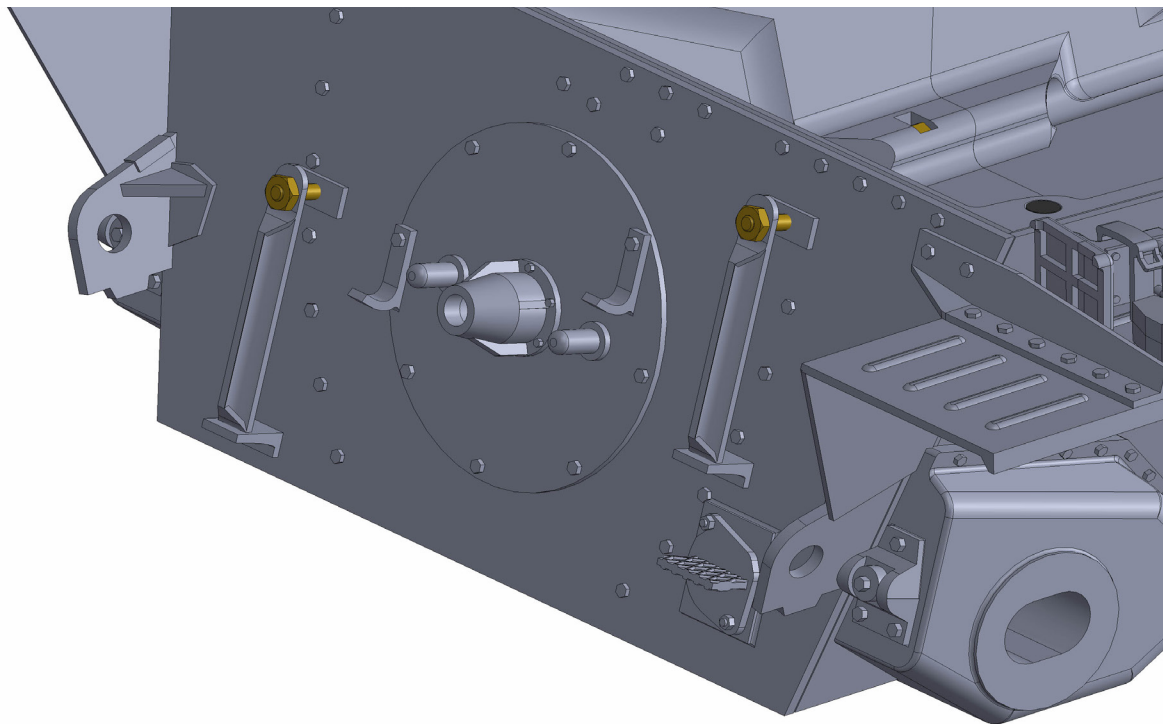
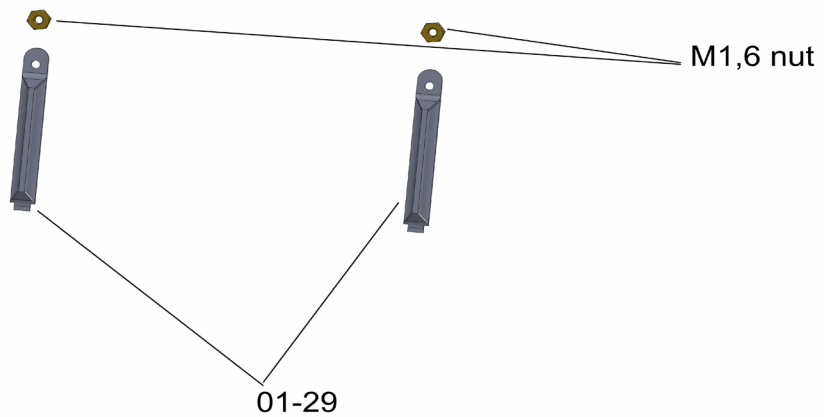
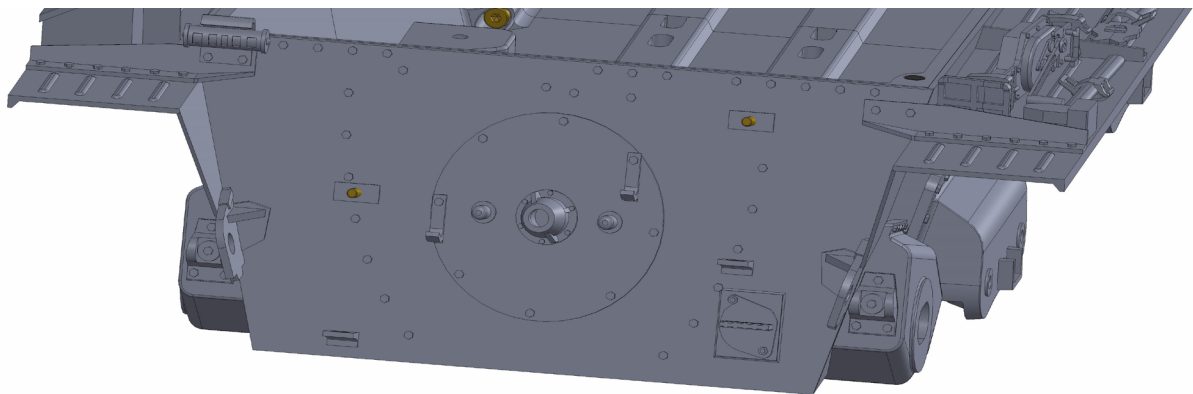
Glue thick cylindrical magnets 3mm in diameter and 3mm in length to part 01-03.

Chapter 01 - Lower hull



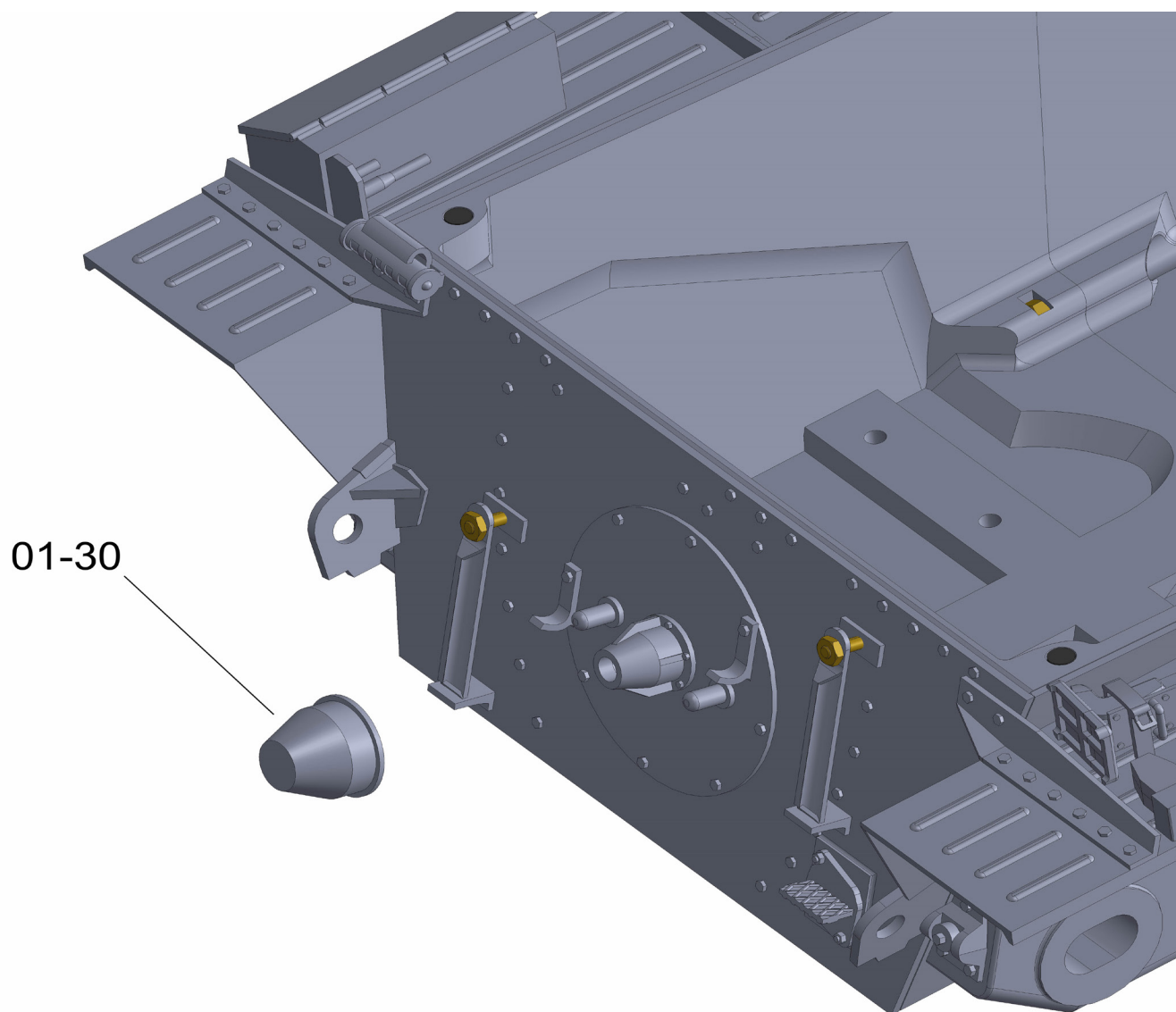
Insert two M1,6 screws on the rear part into part 01-03.

Chapter 01 - Lower hull

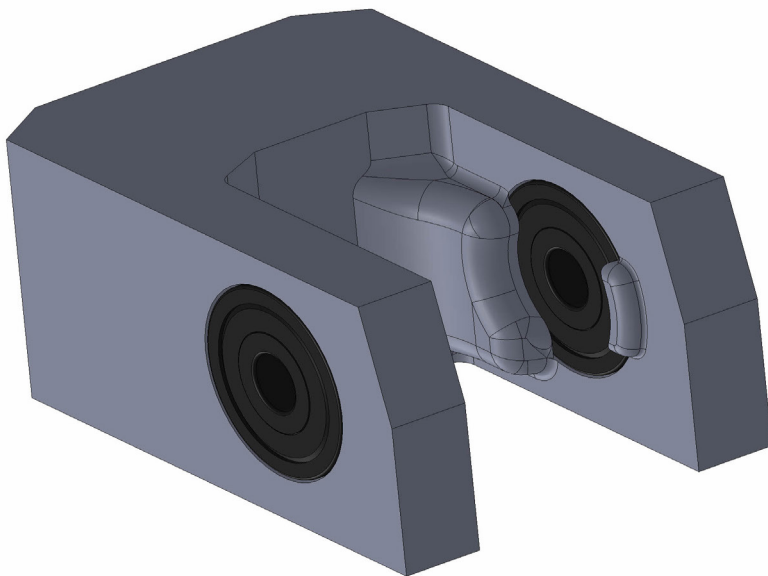
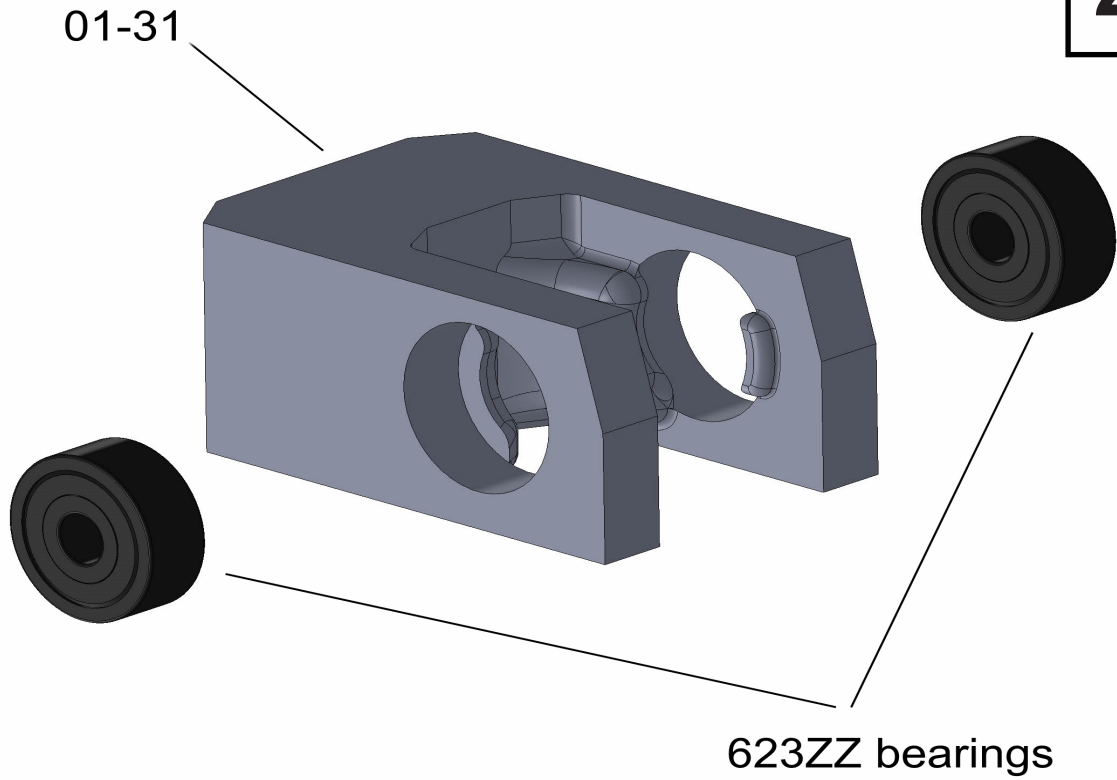


Add parts 01-29. Put them on the screws and secure with nuts M1.6.
You can add a couple of spare tracks later.
Do not glue the part, otherwise it will lose its functionality.

Chapter 01 - Lower hull

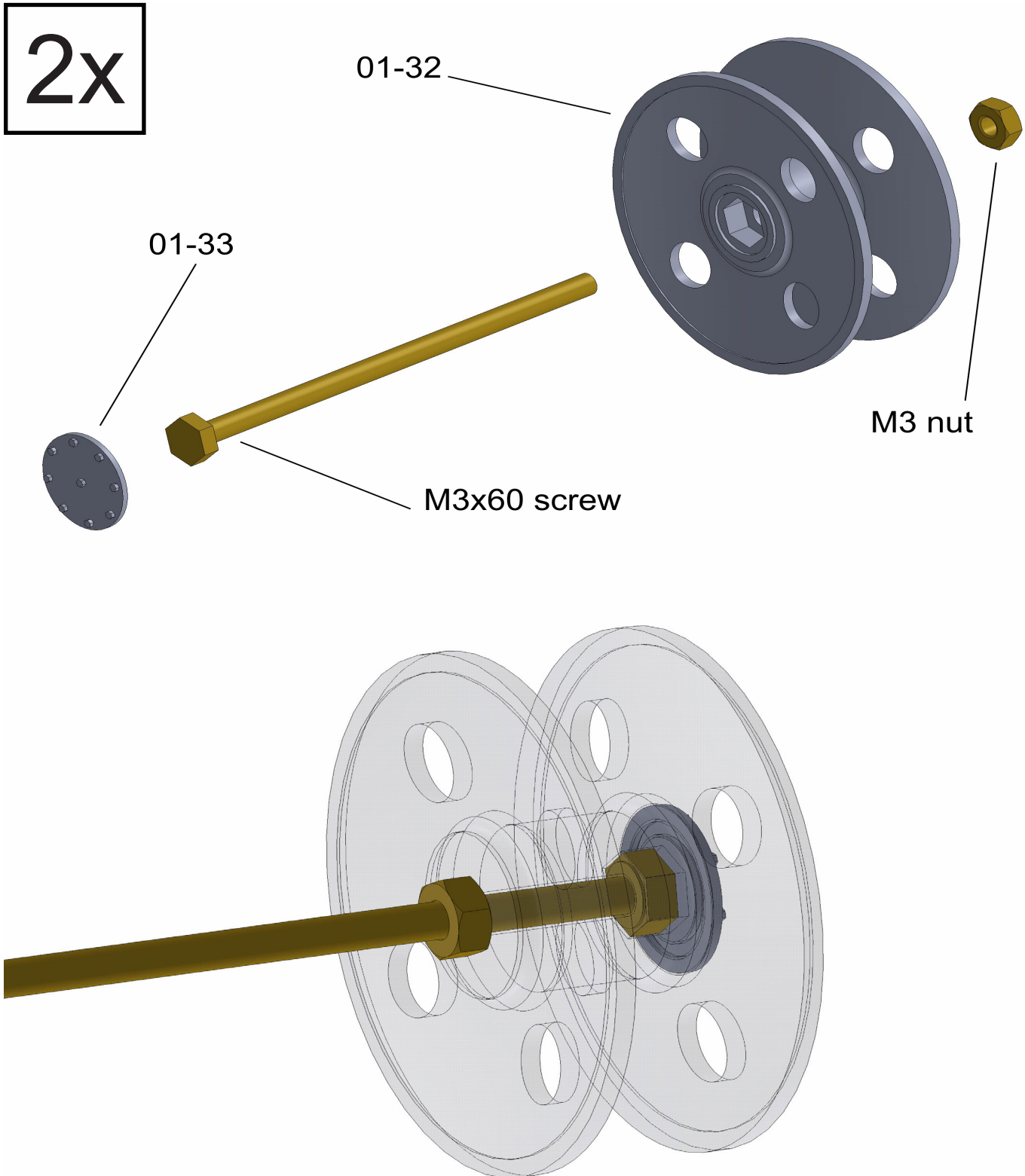


Attach part 01-30. You can glue it but also omit it.

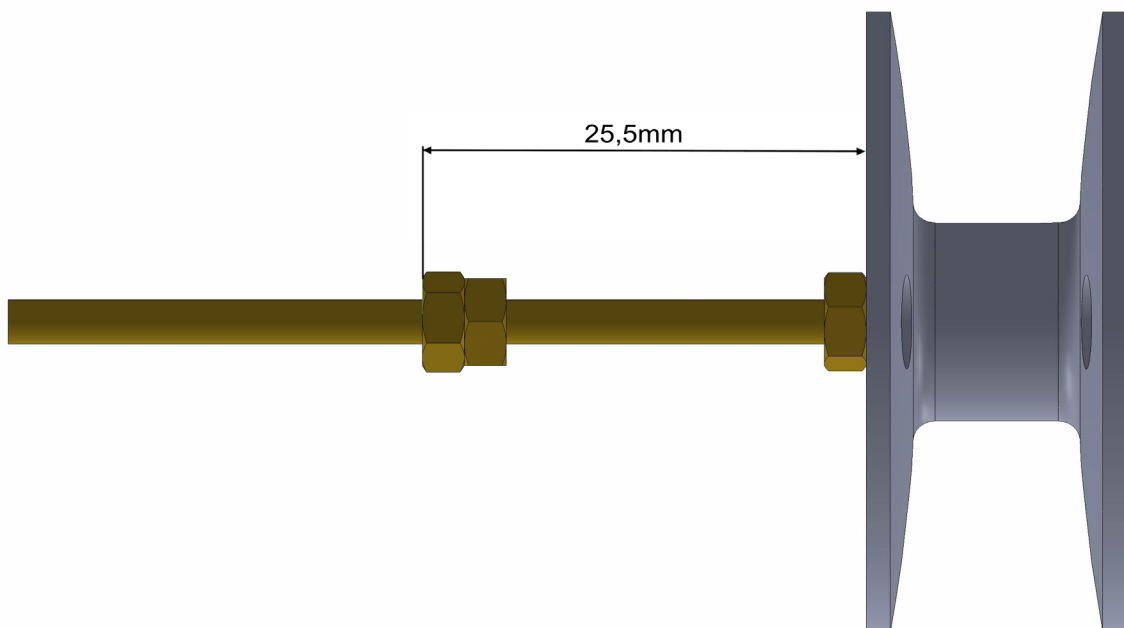
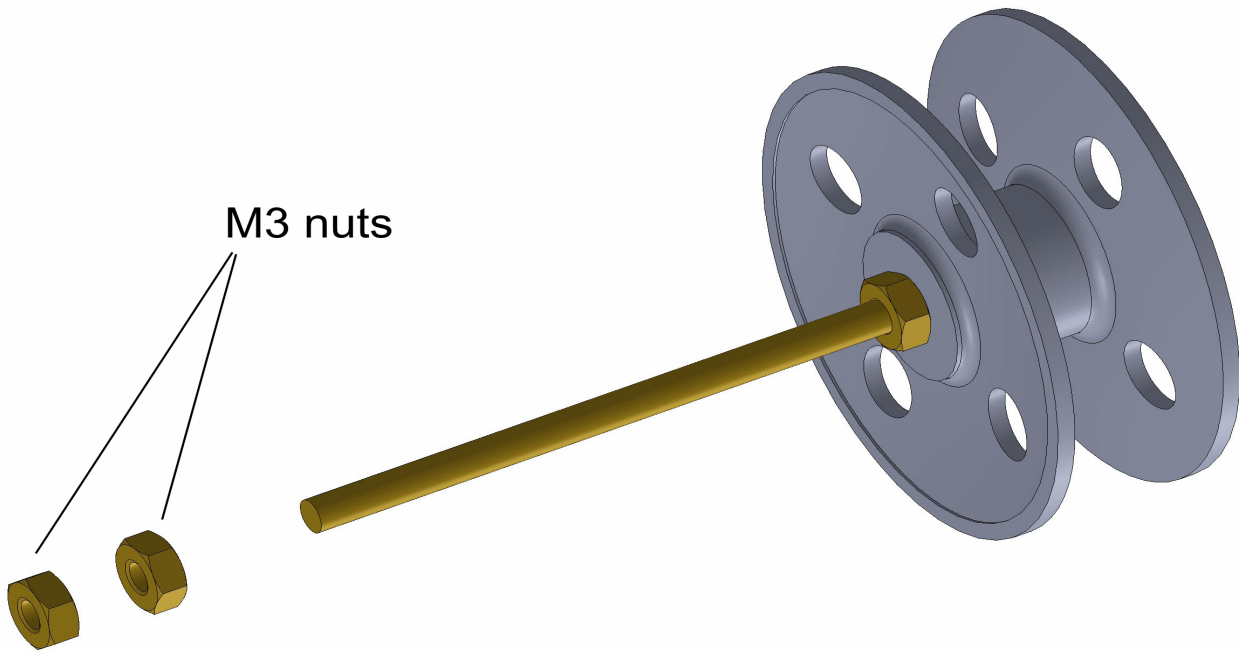
2x

Insert two 623ZZ bearings into part 01-31. You need two parts of 01-31.

Chapter 01 - Lower hull

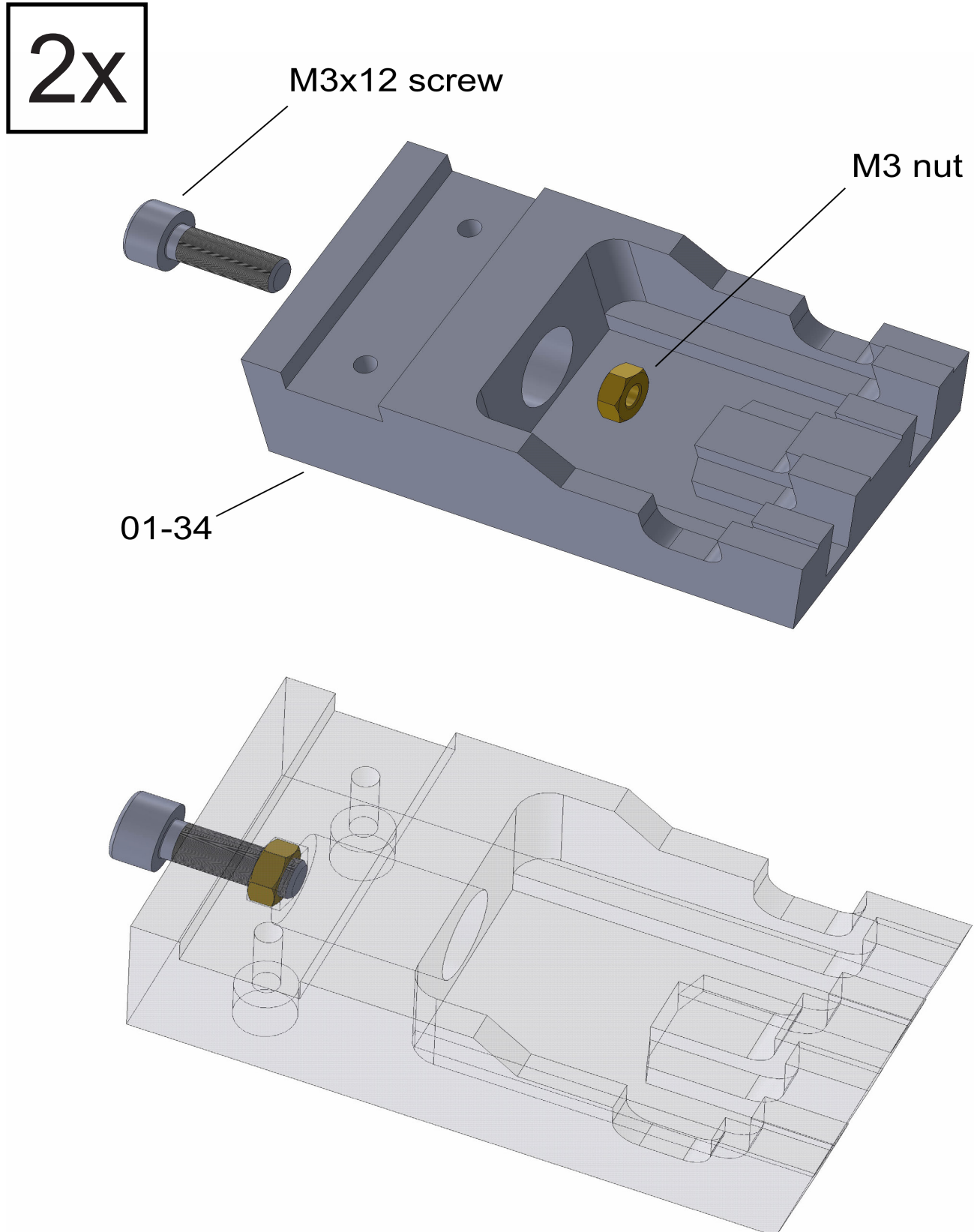


Insert hexagon bolt M3x60mm into part 01-32.
Secure with nut M3. The whole closes with part 01-33.
We recommend gluing part 01-33 at the end of the whole construction.

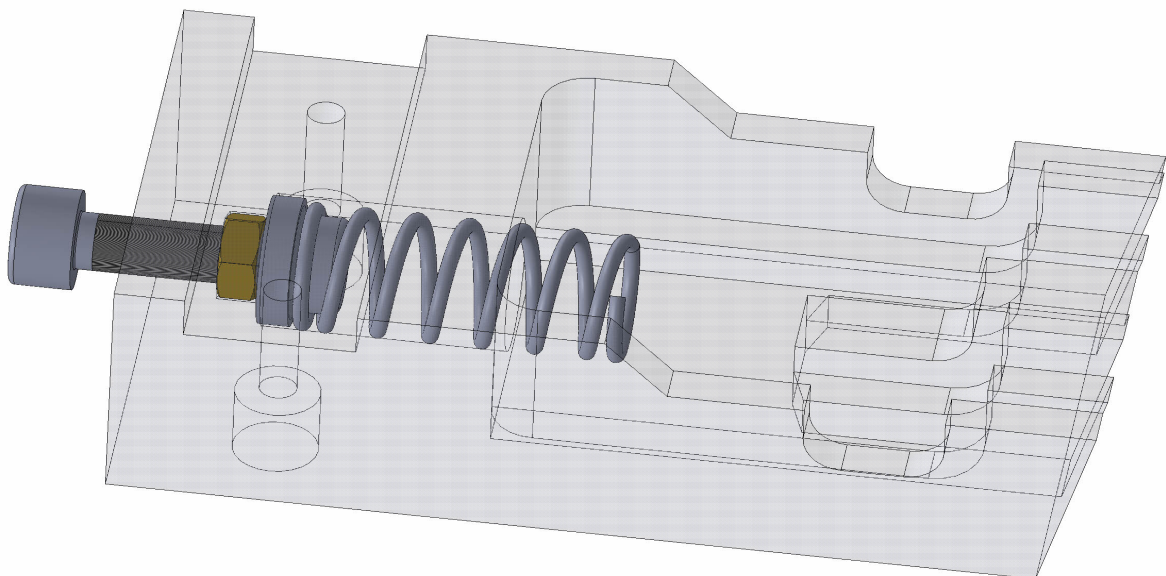
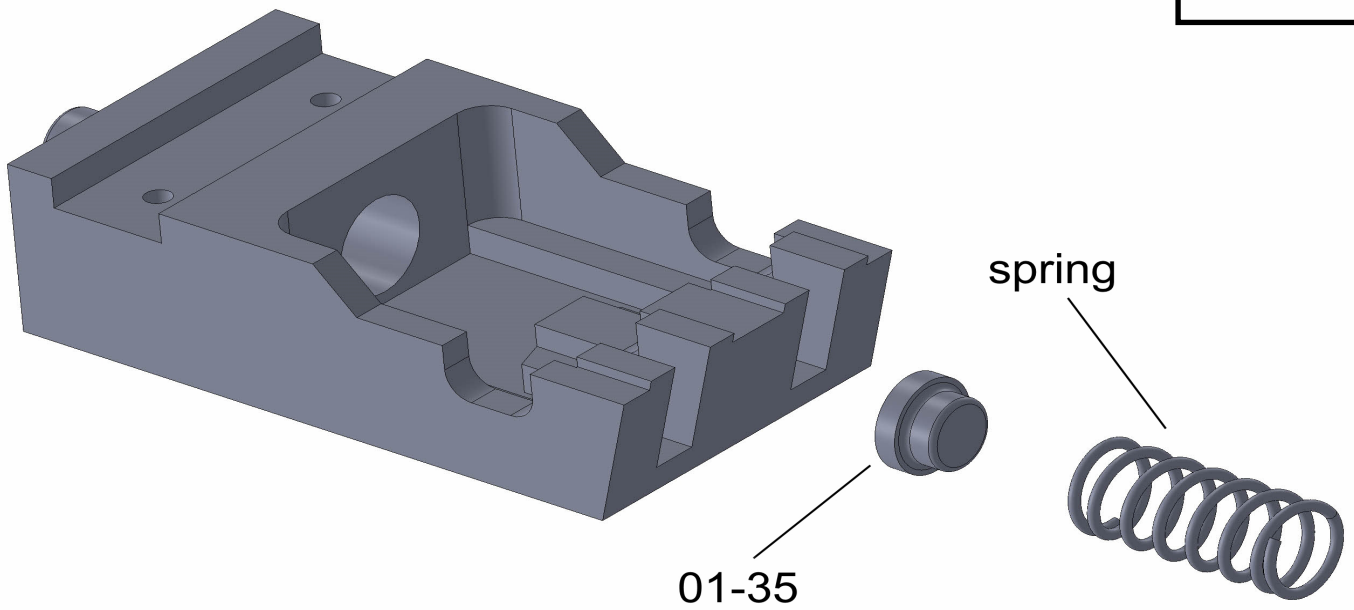
2x

Add two M3 bolts. Maintain a given distance from the wheel.

Chapter 01 - Lower hull

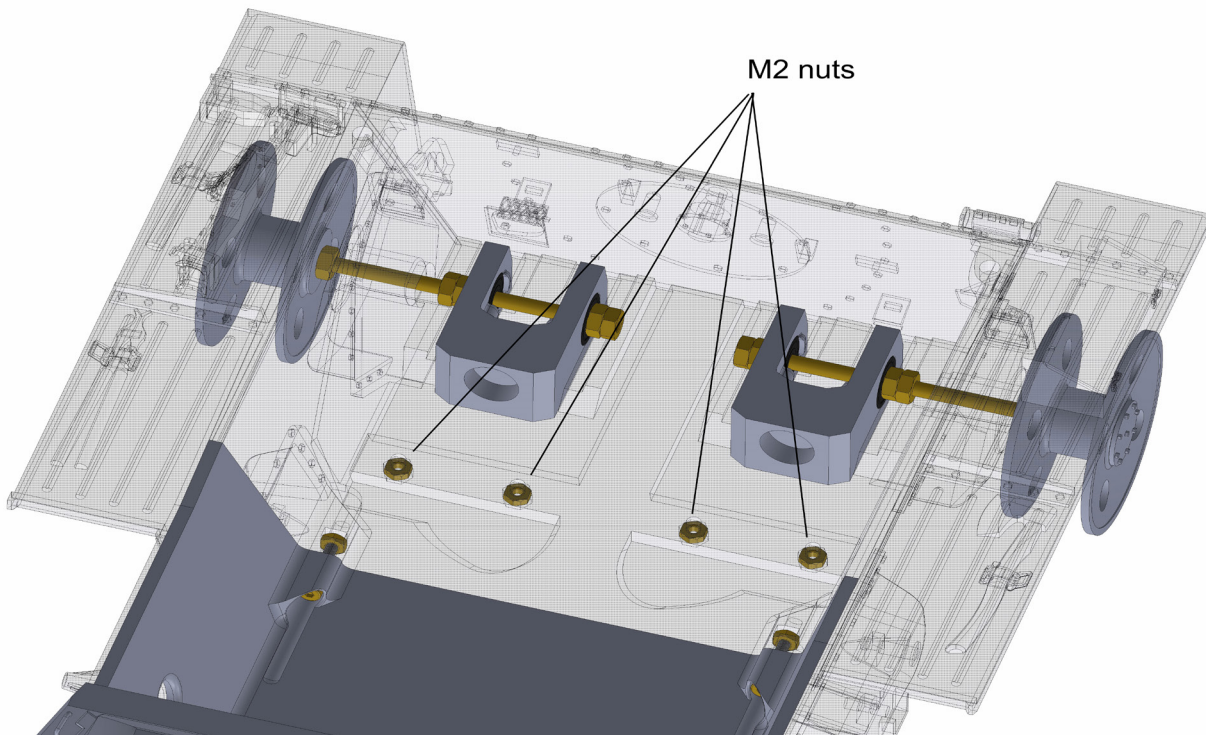
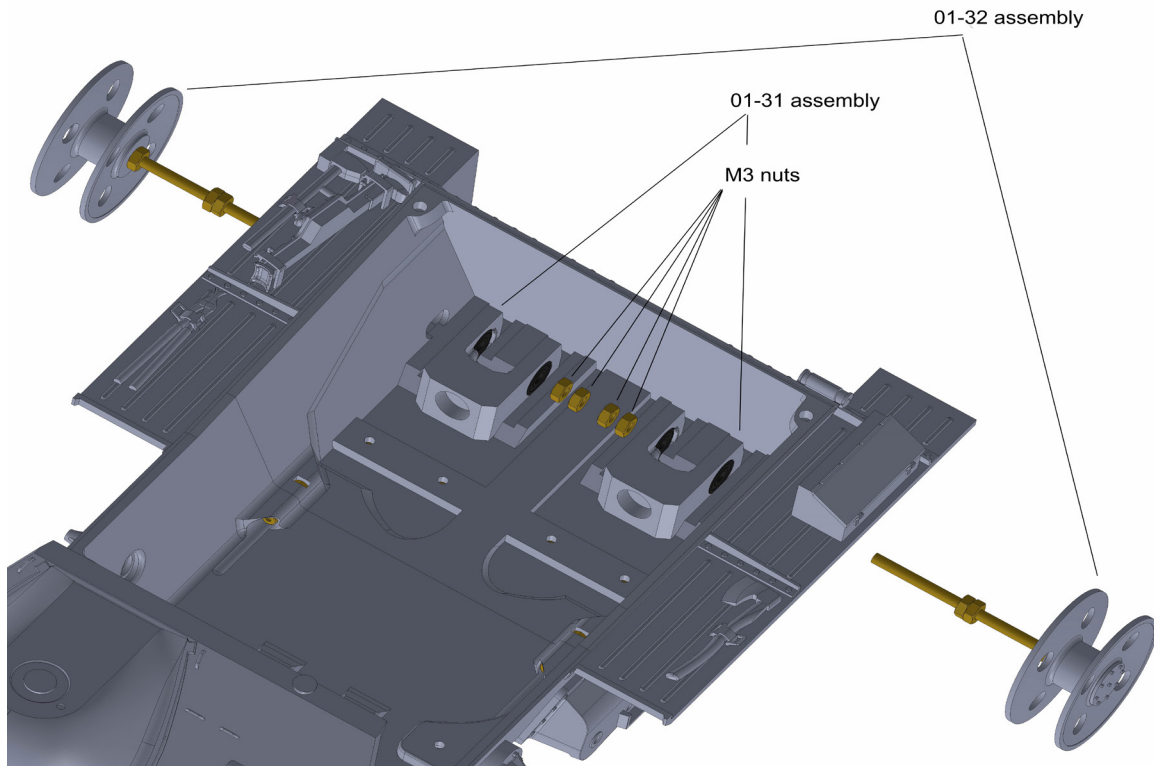


Insert M3x12 or M3x16mm screw into part 01-34.
Secure with M3 nut.

2x

Insert part 01-35 and spring of 7mm diameter and 22mm length.
The unit must move freely in the cavity.

Chapter 01 - Lower hull

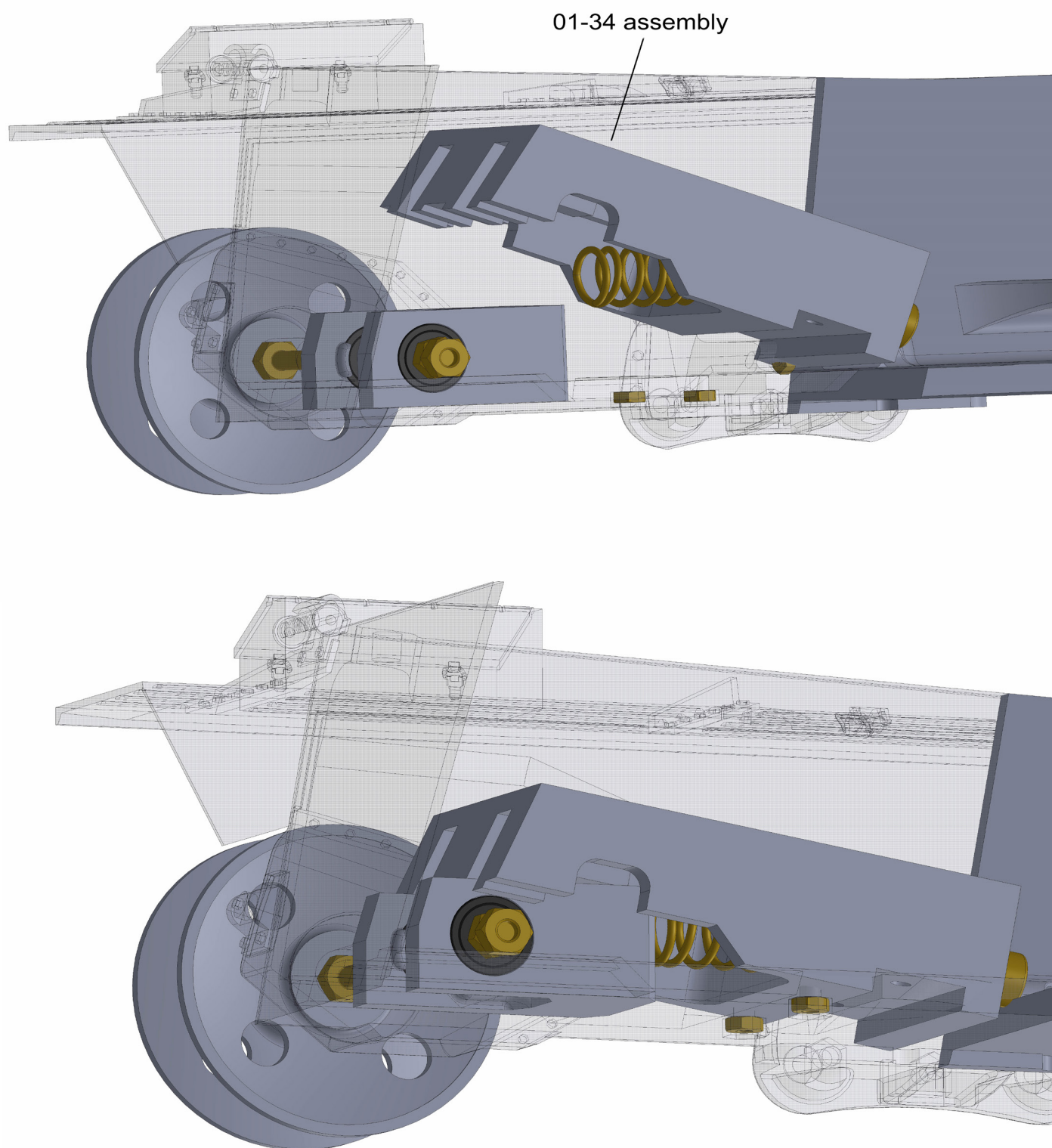


Insert the prepared subassemblies 01-31.

Then insert the subassemblies 01-34 and secure each one with two nuts.

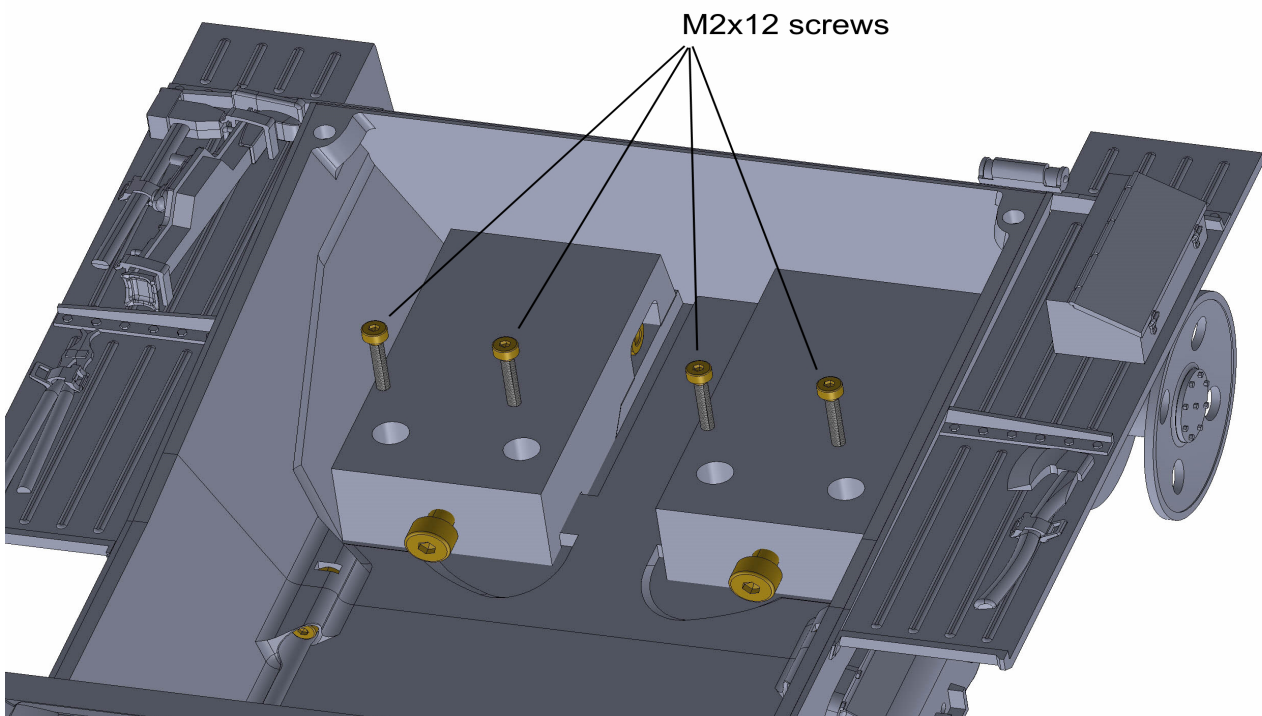
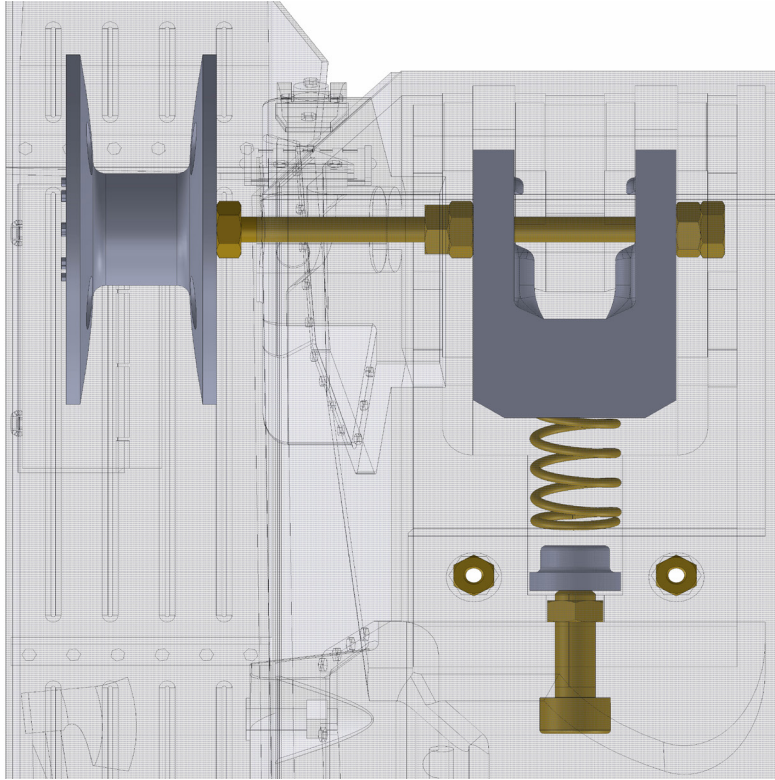
Insert 4 M2 nuts at the bottom of the body.

The wheel screws must be tight. If loose, there is a risk of damage to the model!!!

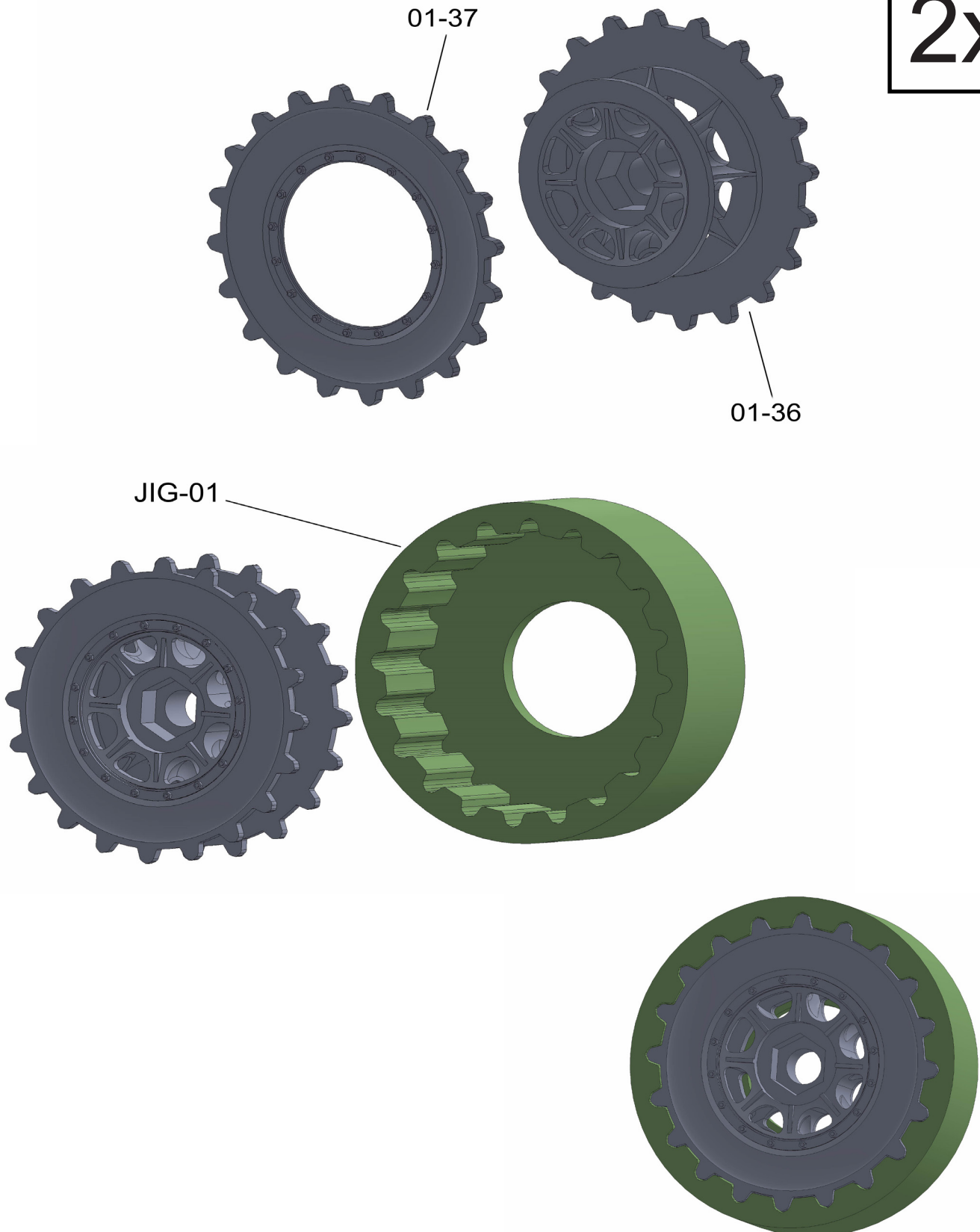


Insertion detail of subassembly 01-34.

Chapter 01 - Lower hull

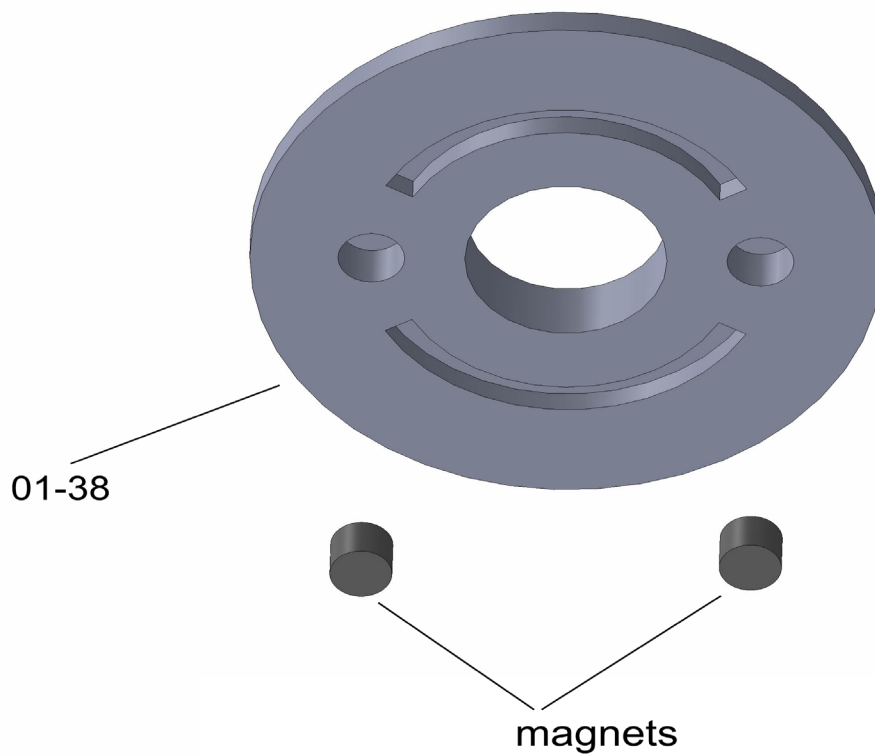
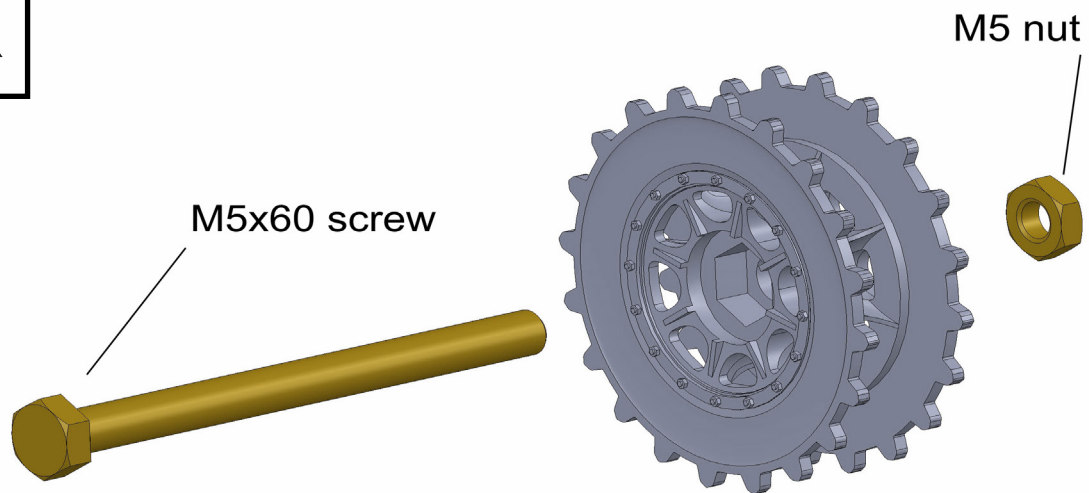


Finally, secure the whole units with M2x12 screws.

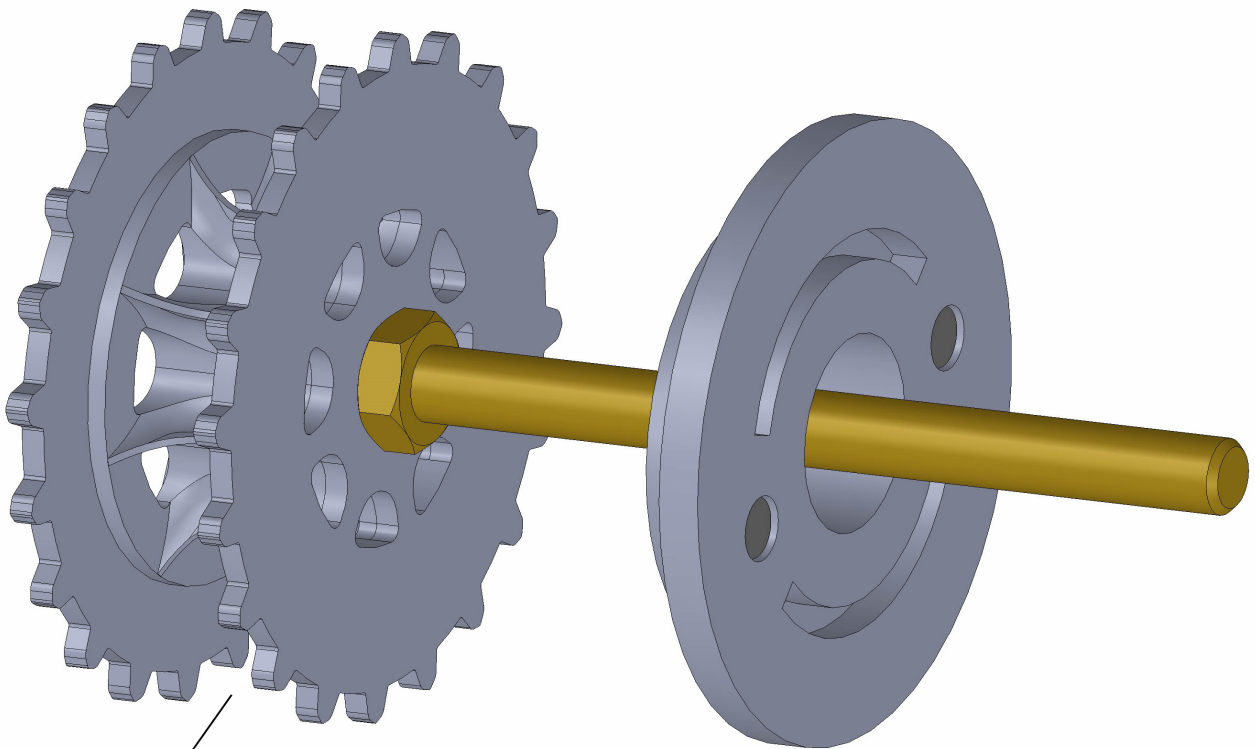
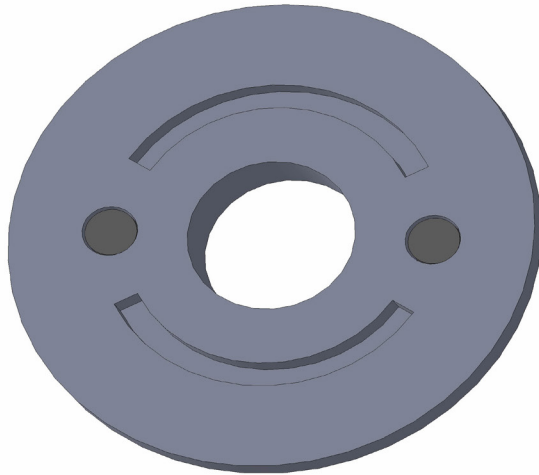
2x

Glue parts 01-36 and 01-37 together. Use JIG1 for precise bonding.

Chapter 01 - Lower hull

2x

Insert hexagon bolt M5x60 and secure with nut M5.
Glue 4mm diameter and 4mm length magnets to part 01-38.

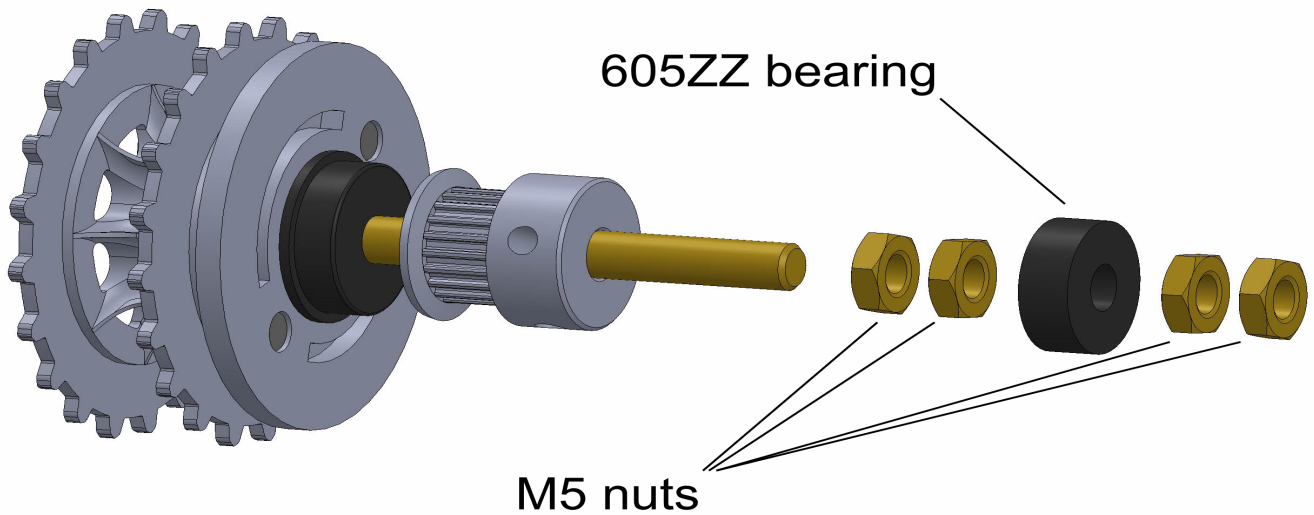
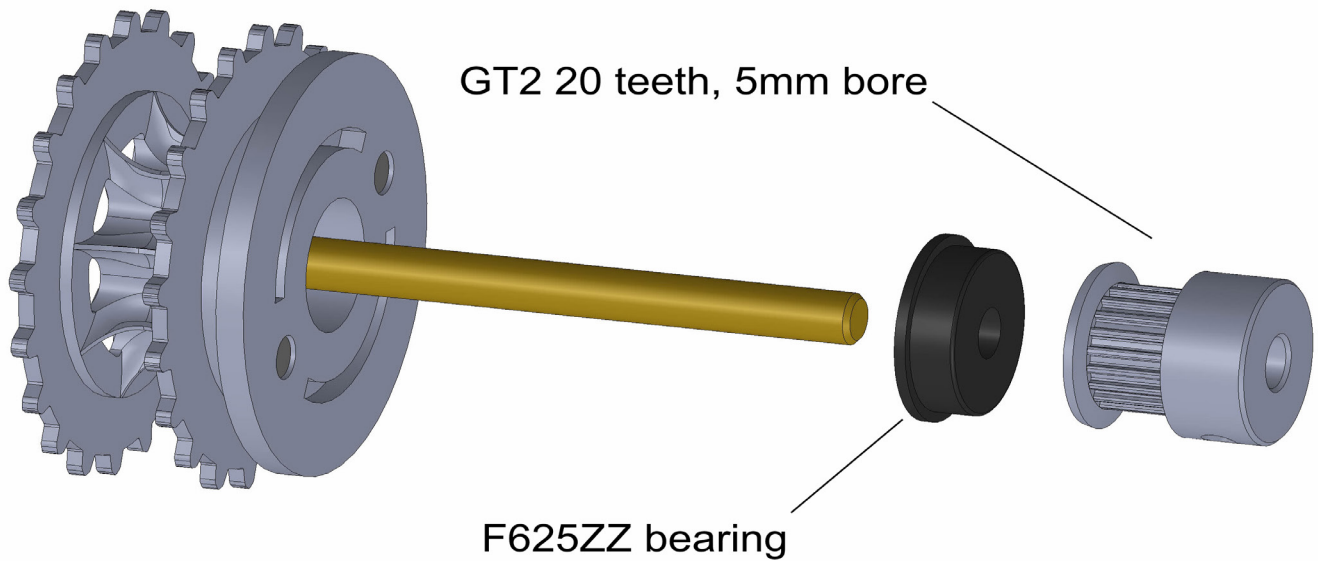
2x

01-36 assembly

01-38 assembly

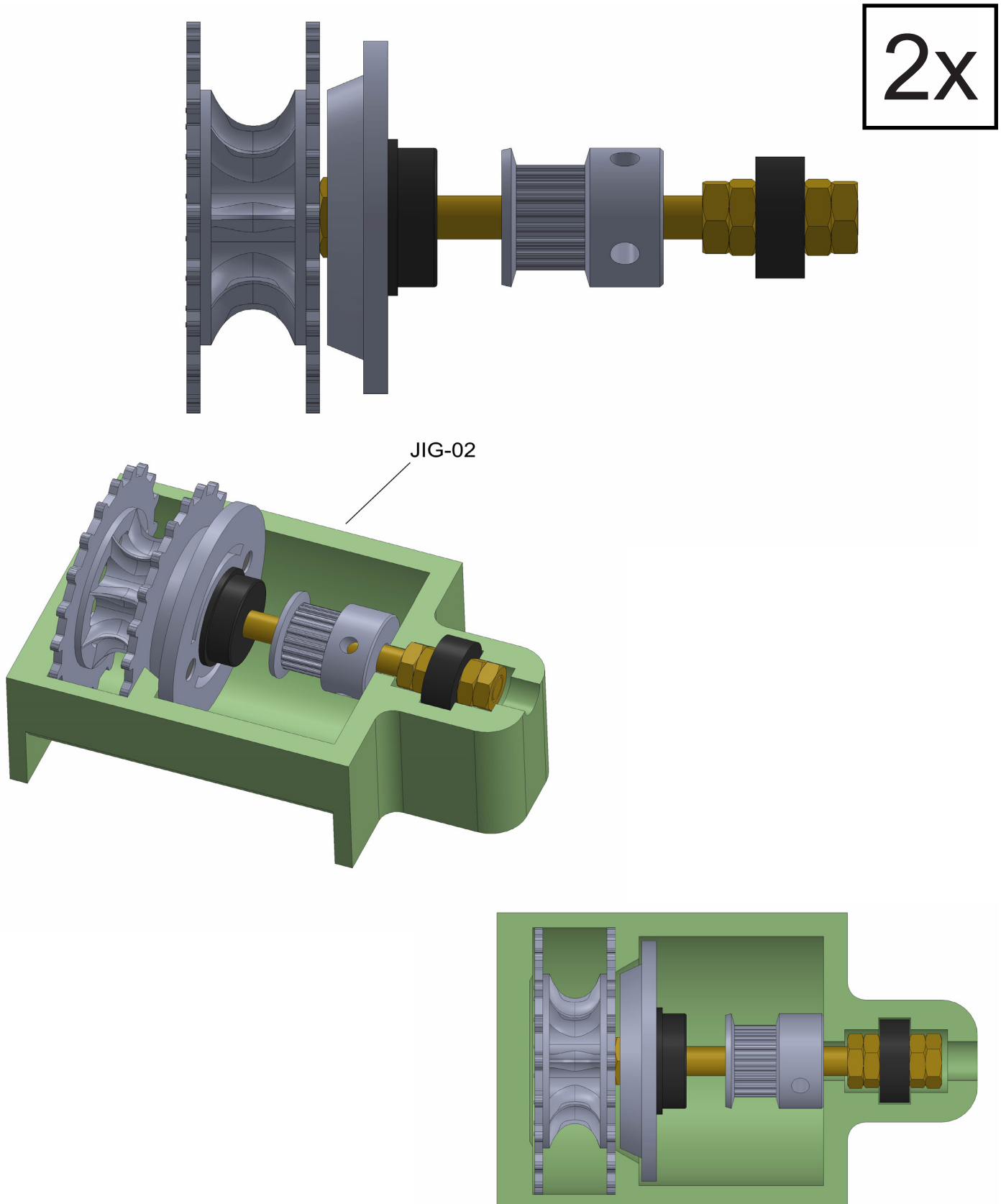
The magnets cannot extend beyond the workpiece surface.
Loosely place assembly 01-38 on the screw.

Chapter 01 - Lower hull

2x

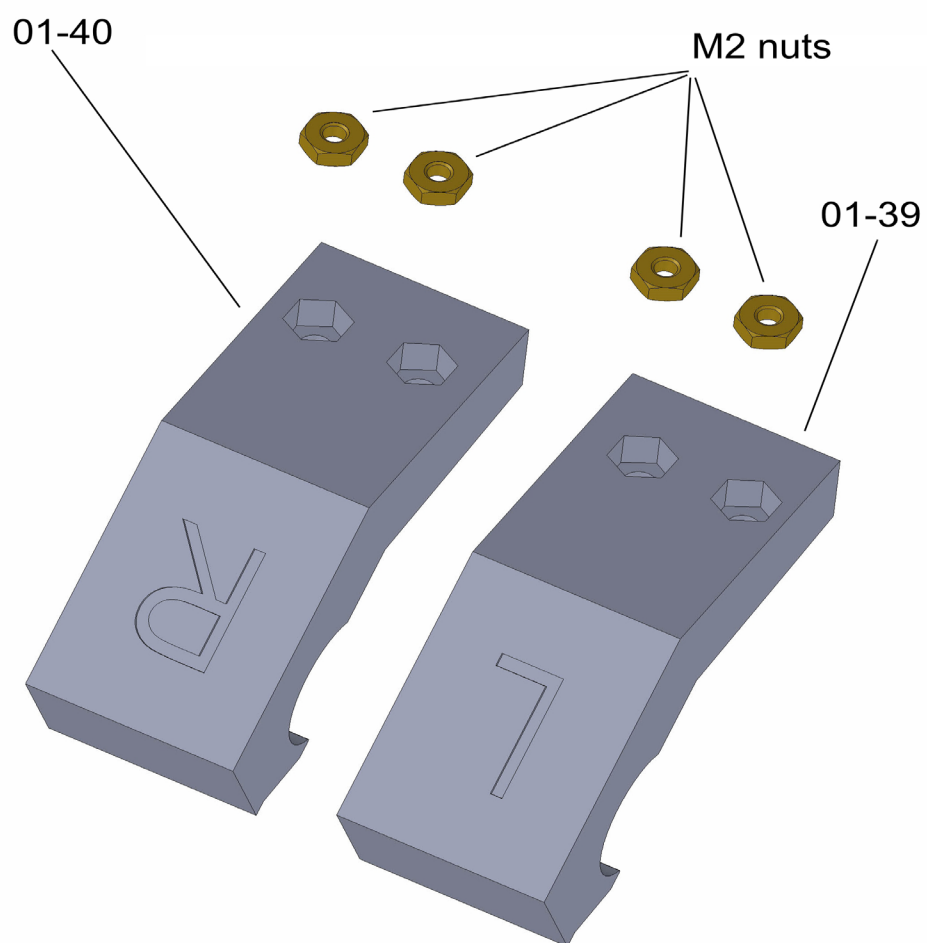
Insert the F625ZZ bearing and the GT2 pulley with a 5mm diameter hole and 20 teeth. Then insert the 4 M5 nuts and the 605ZZ bearing as shown.

Chapter 01 - Lower hull



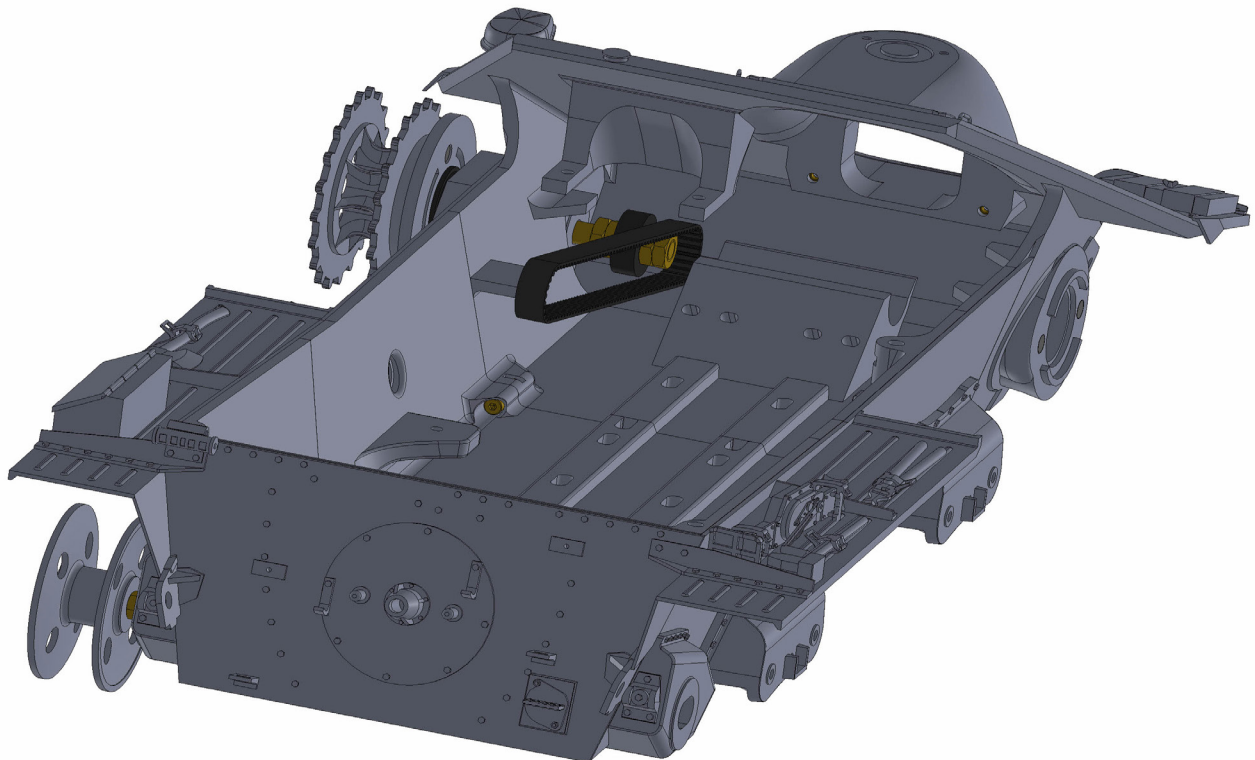
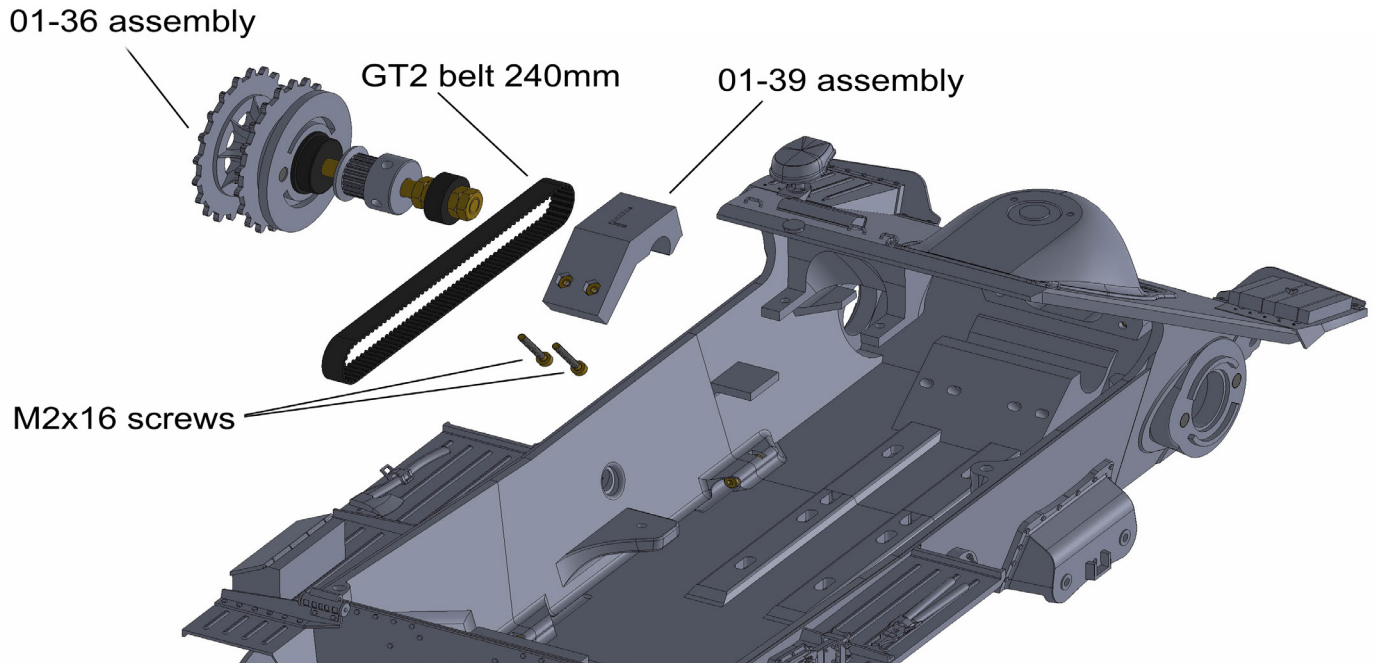
Align the assembly in JIG-02. Then tighten the nuts and pulley.

Chapter 01 - Lower hull



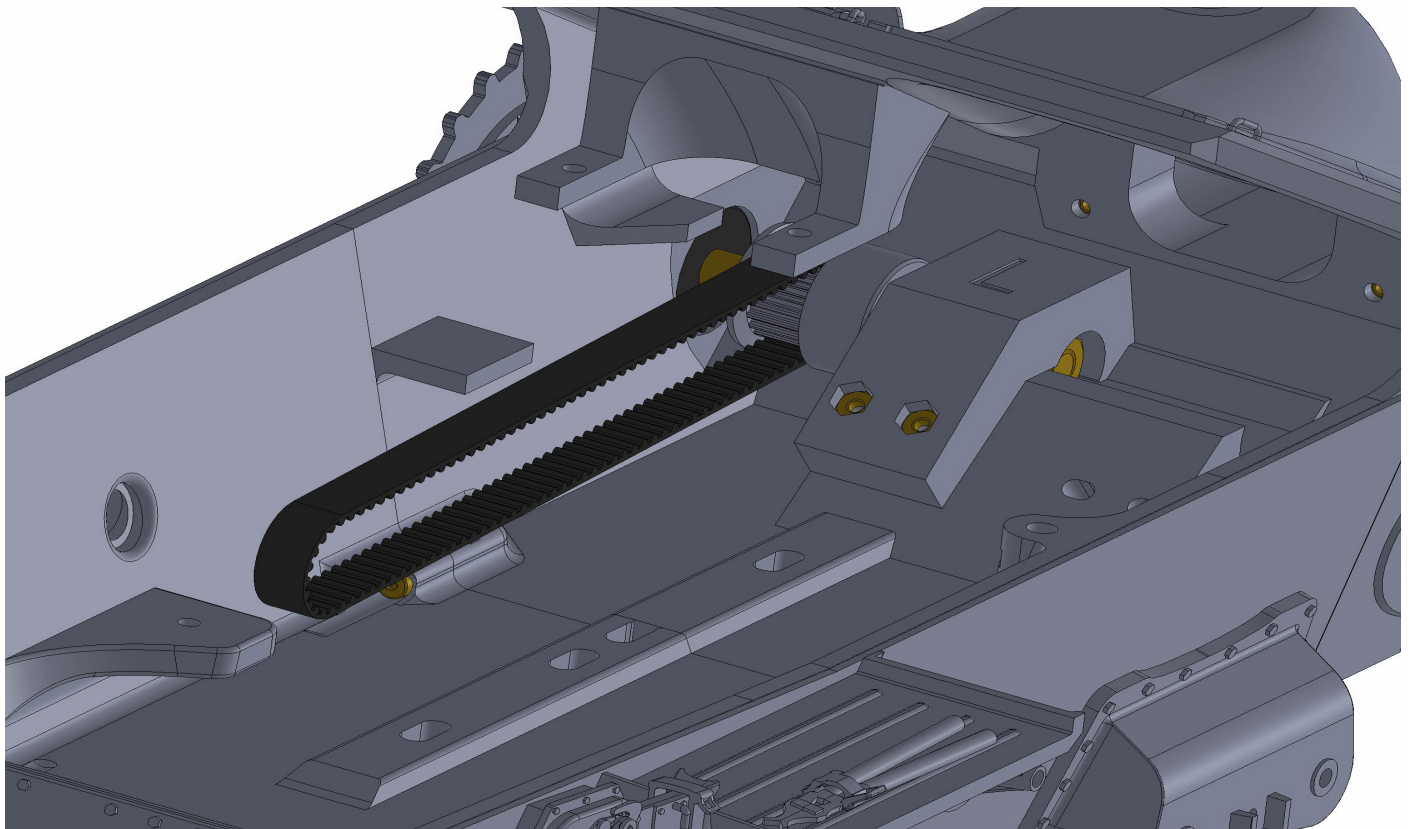
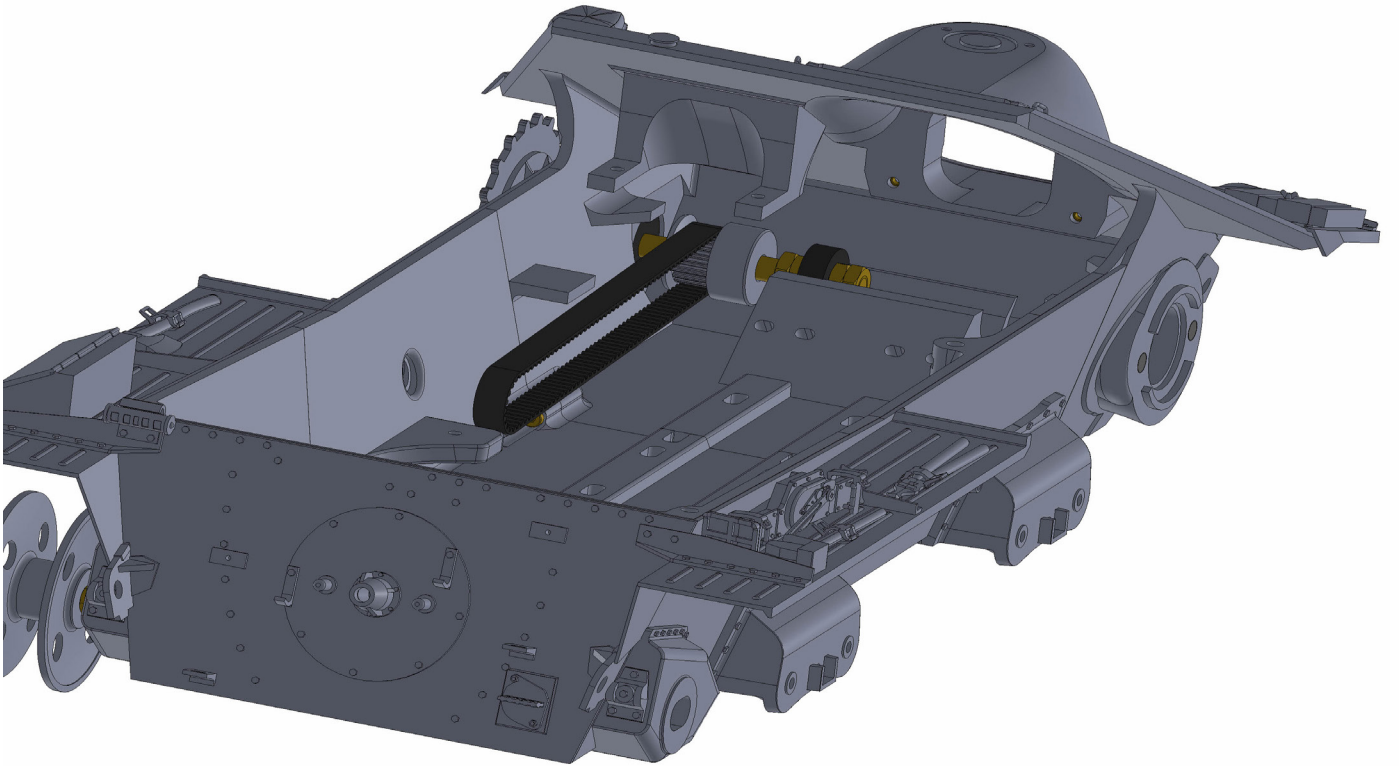
Insert the M2 nuts into parts 01-39 and 01-40.

Chapter 01 - Lower hull

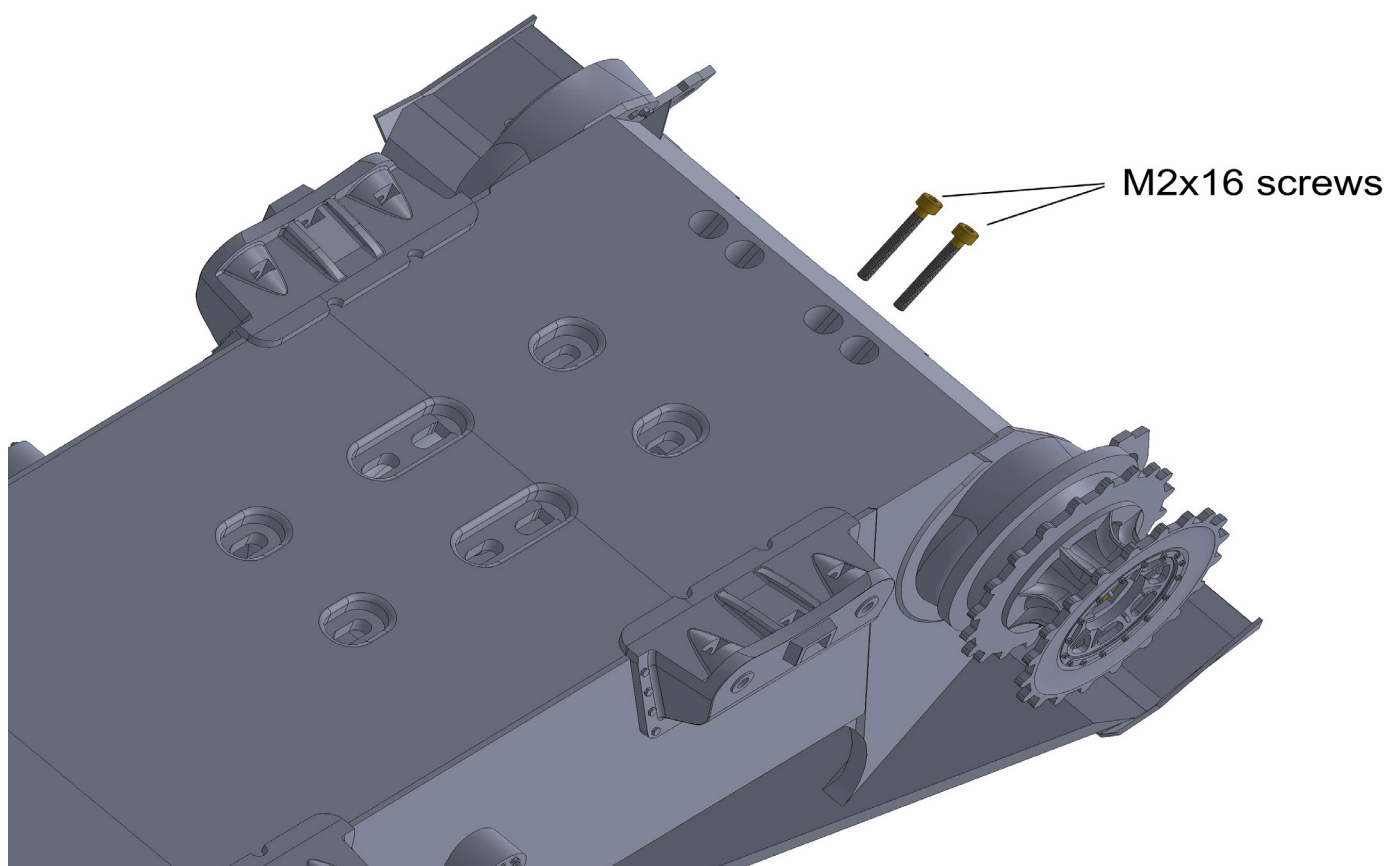


Install the left side of the drive.
First, insert the subassembly 01-36 into the hole in the hull.
Push the 240mm long GT2 track from the inside.

Chapter 01 - Lower hull

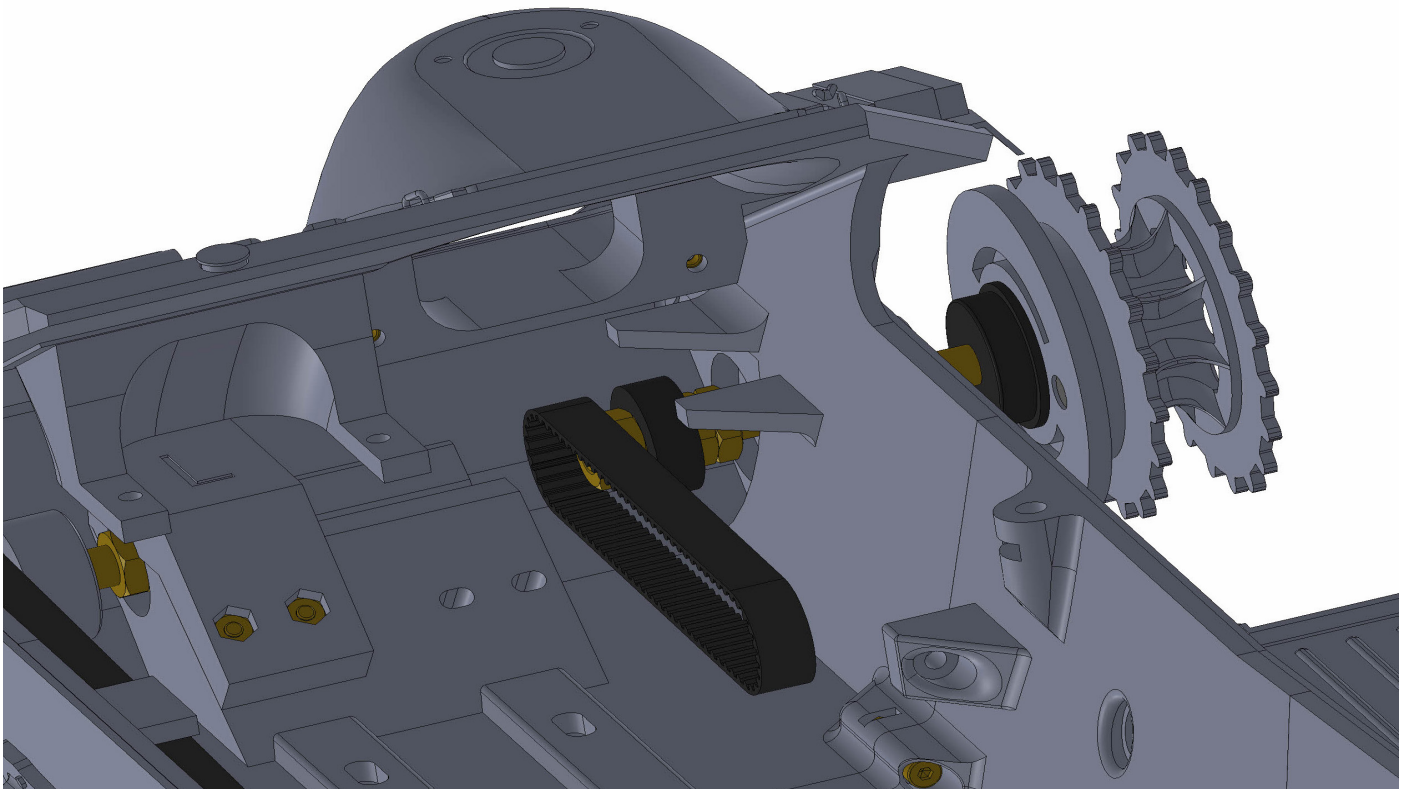
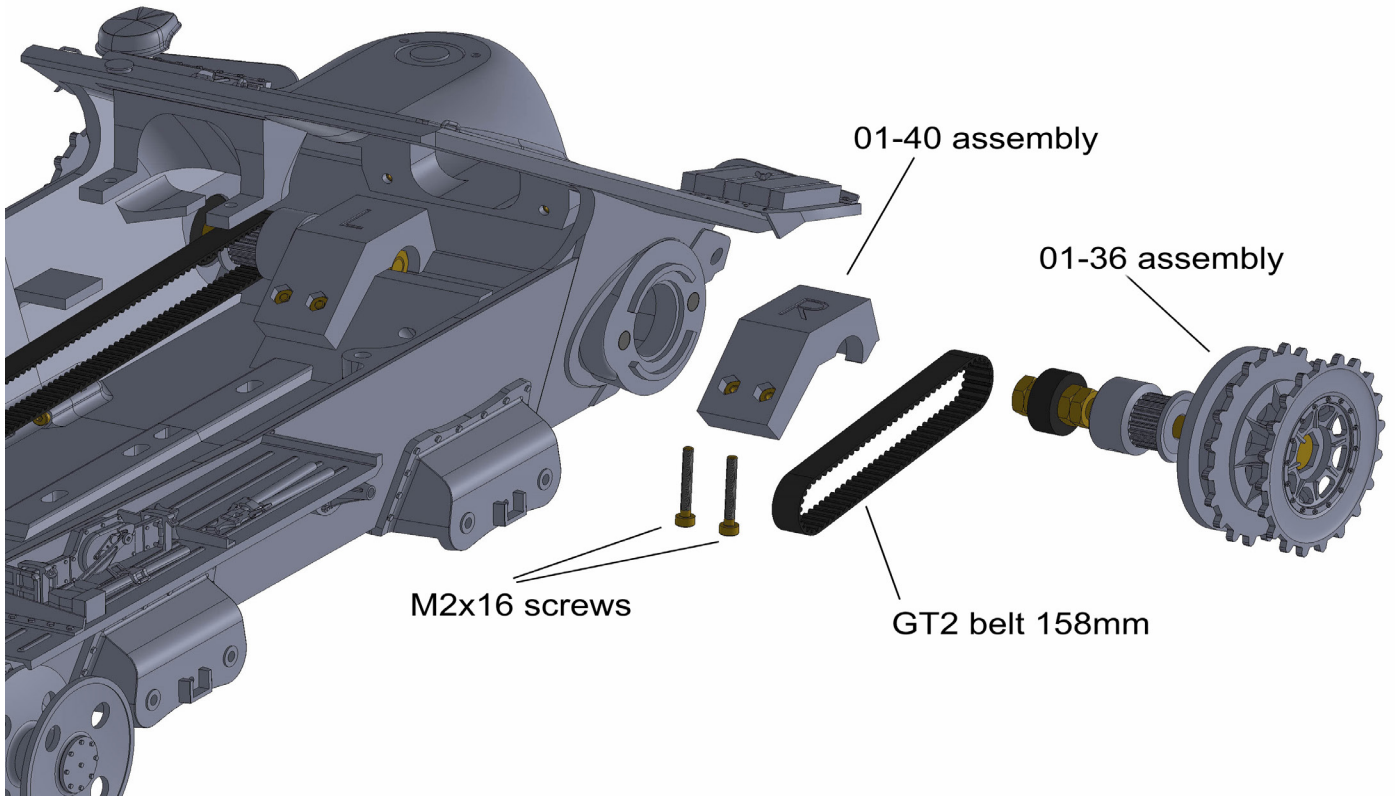


Move the wheel axle and belt to the position in the upper picture.
Then fix the subassembly 01-39. The part 01-39 must fit into the bearing.
Part 01-38 must fit into the grooves in part 01-01 and connect with magnets.



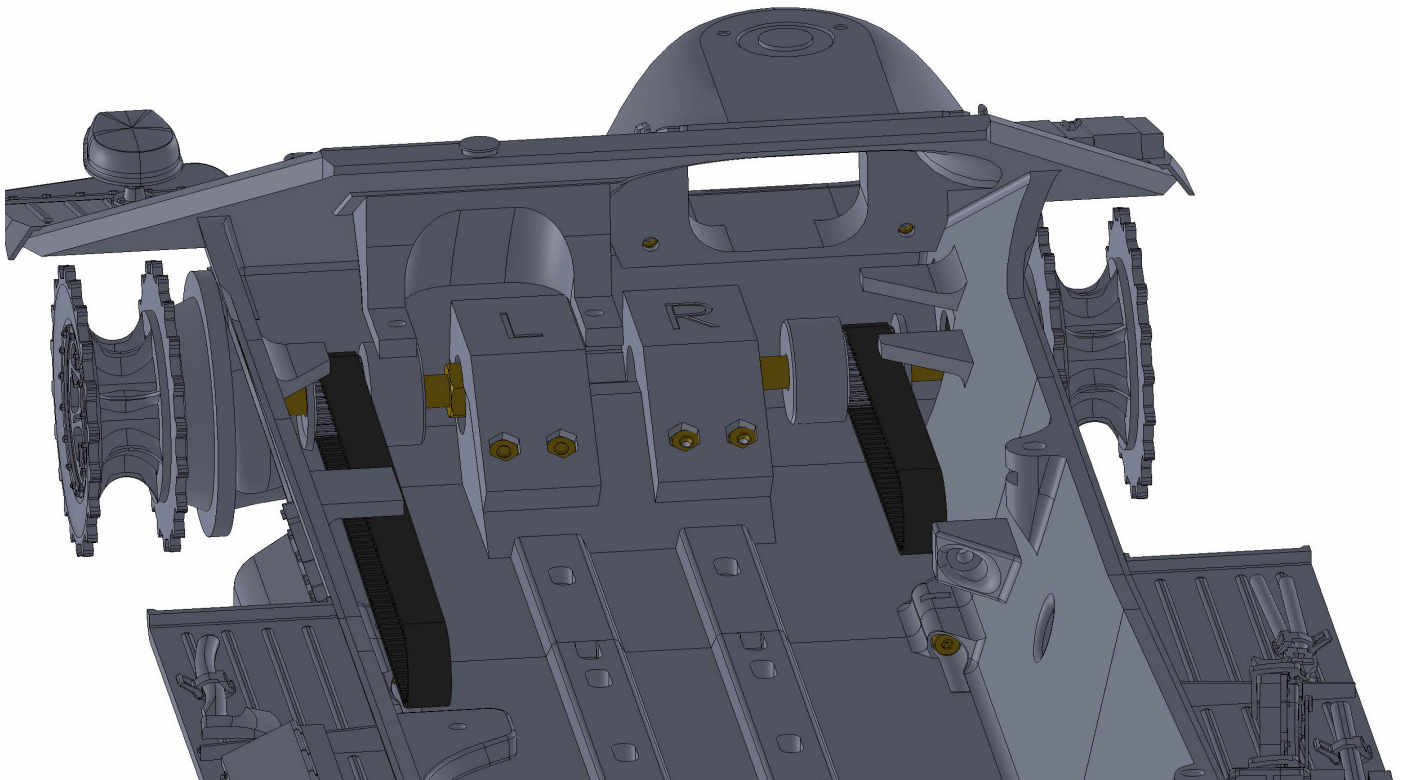
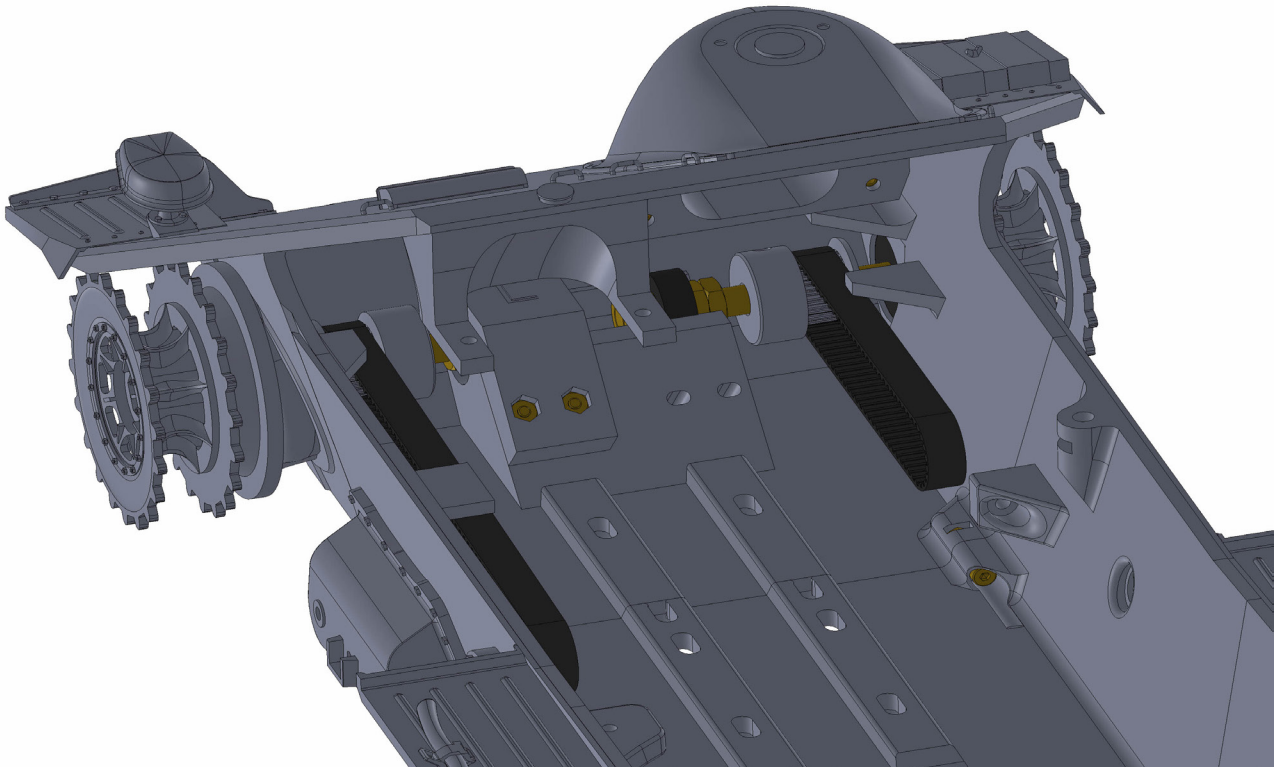
Secure the wheel from below with two M2x16mm screws.

Chapter 01 - Lower hull

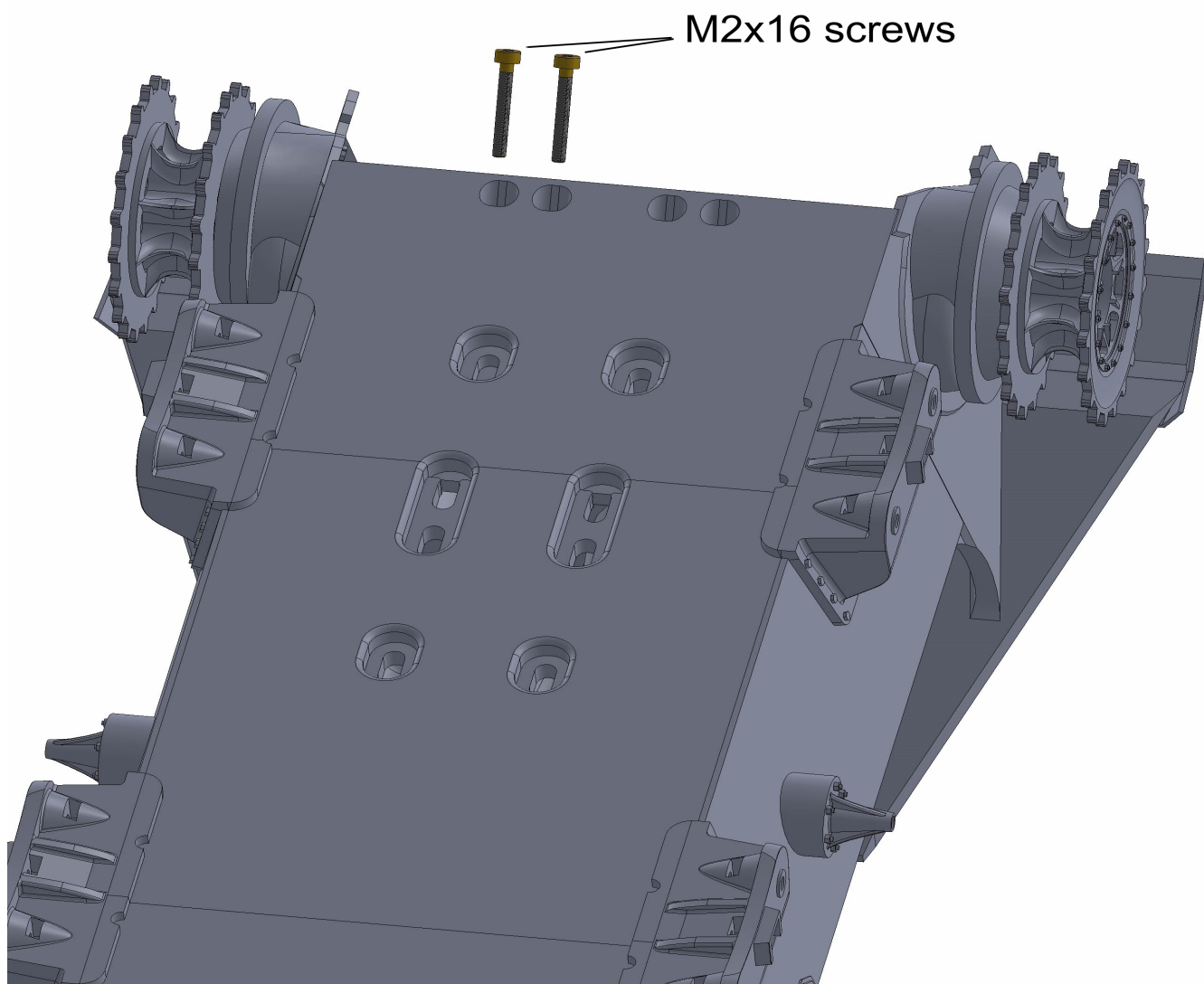


Install the right side of the drive, the procedure is the same as on the left.
First insert the subassembly 01-36 into the hole in the hull.
Push the 158mm long GT2 belt from the inside.

Chapter 01 - Lower hull

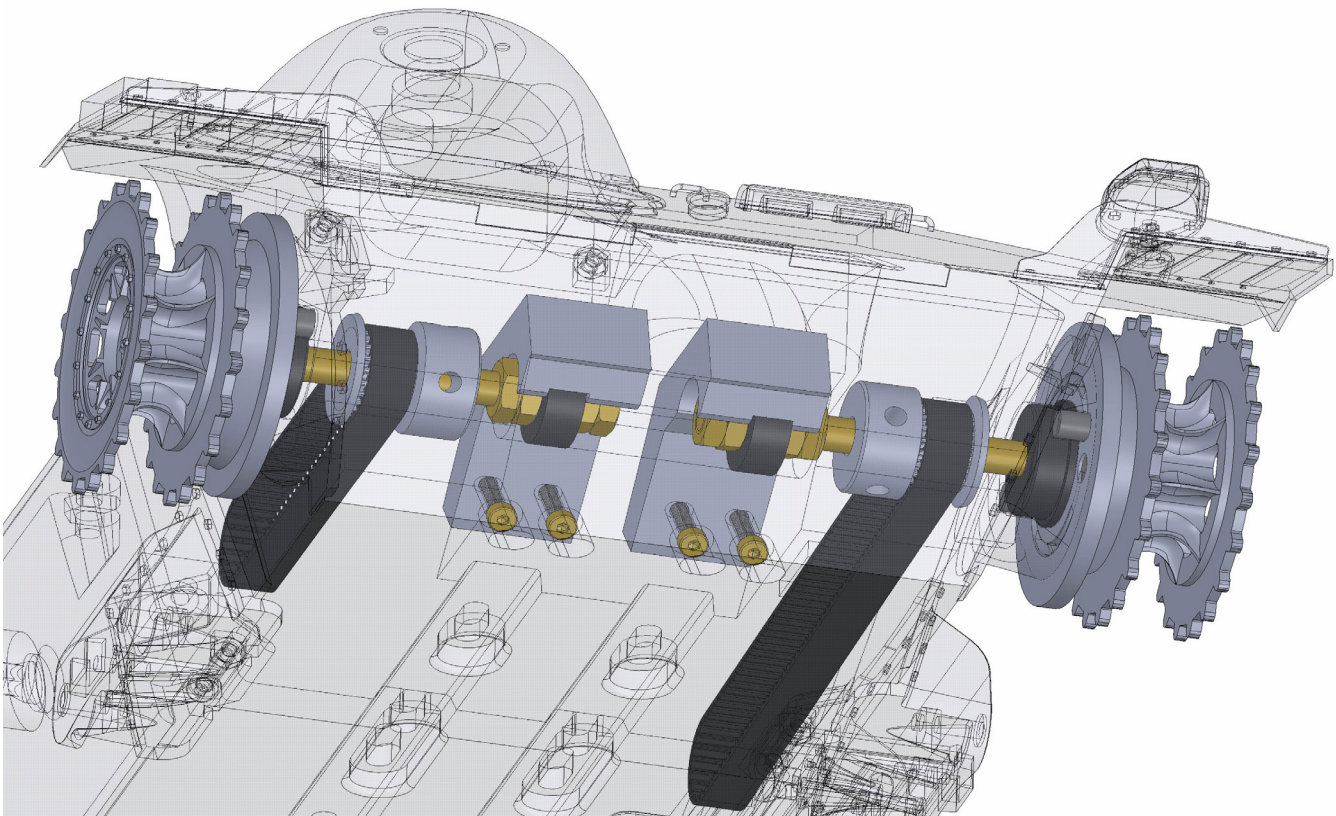
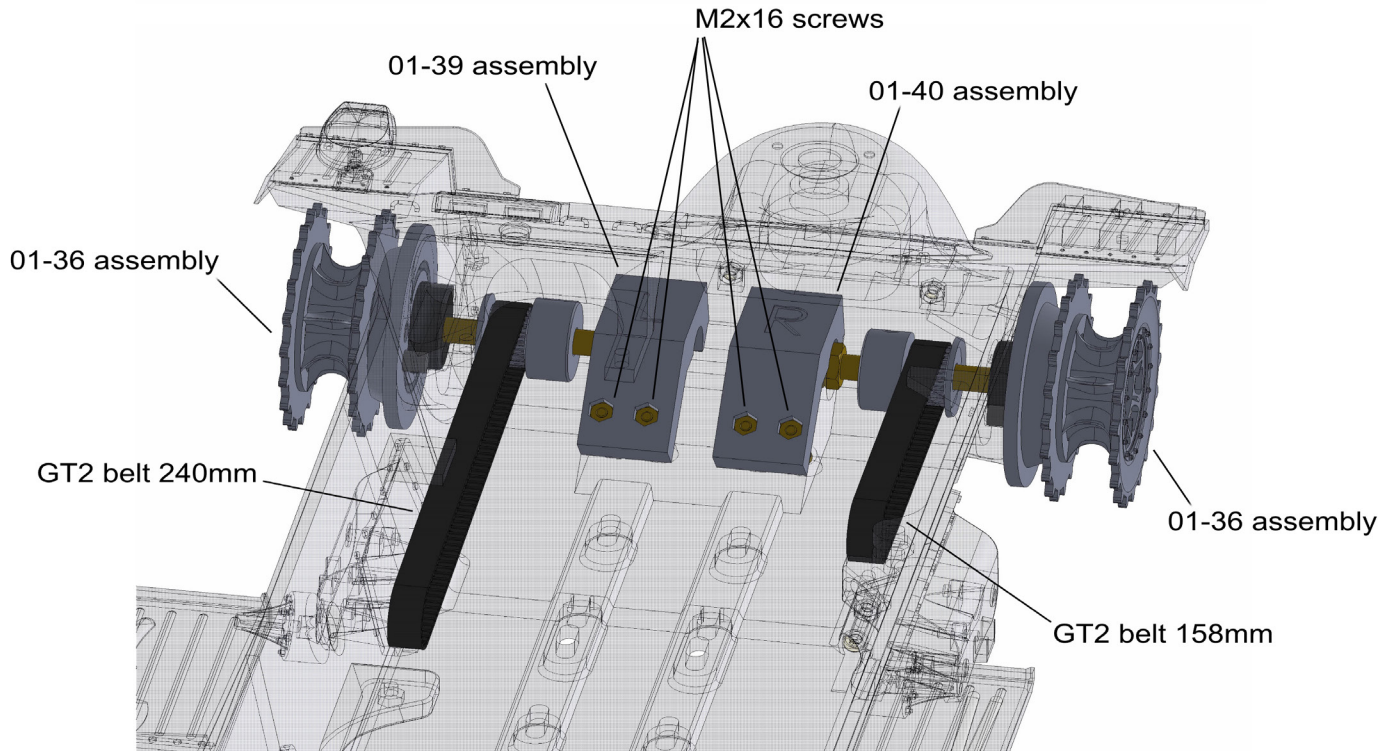


Move the wheel axle and belt to the position in the upper picture.
Then fix the subassembly 01-40. The part 01-40 must fit into the bearing.
Part 01-38 must fit into the grooves in part 01-01 and connect with magnets.



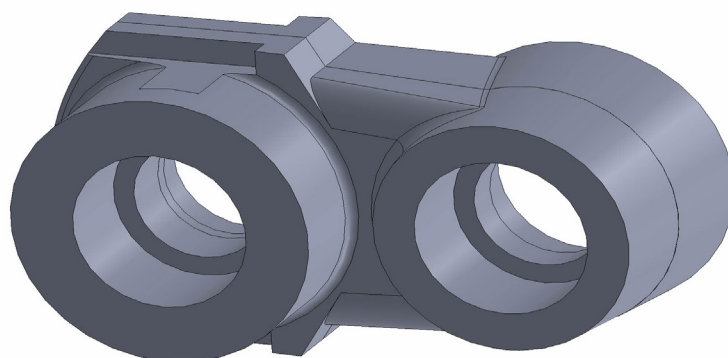
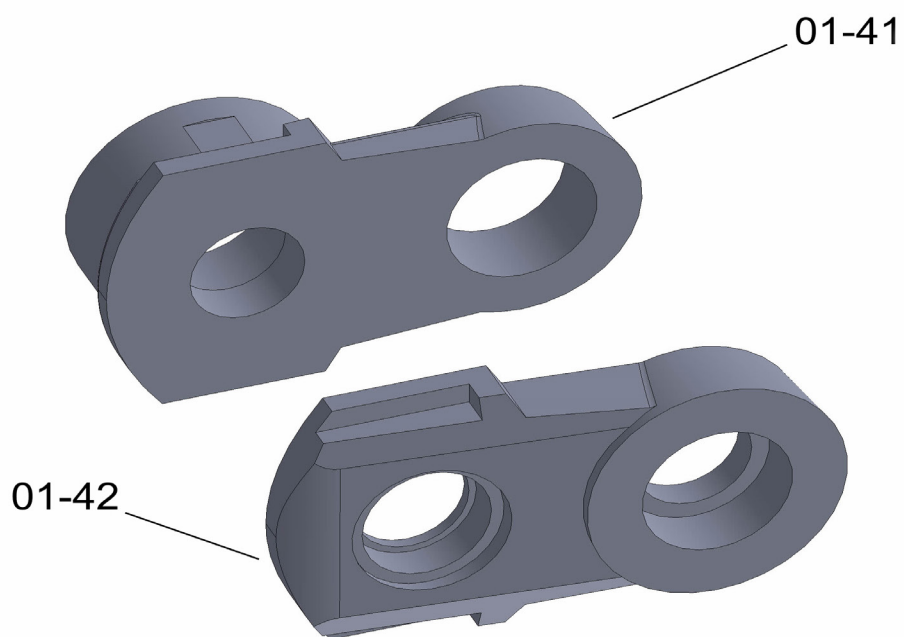
Secure the wheel from below with two M2x16mm screws.

Chapter 01 - Lower hull



View of installed subassemblies.

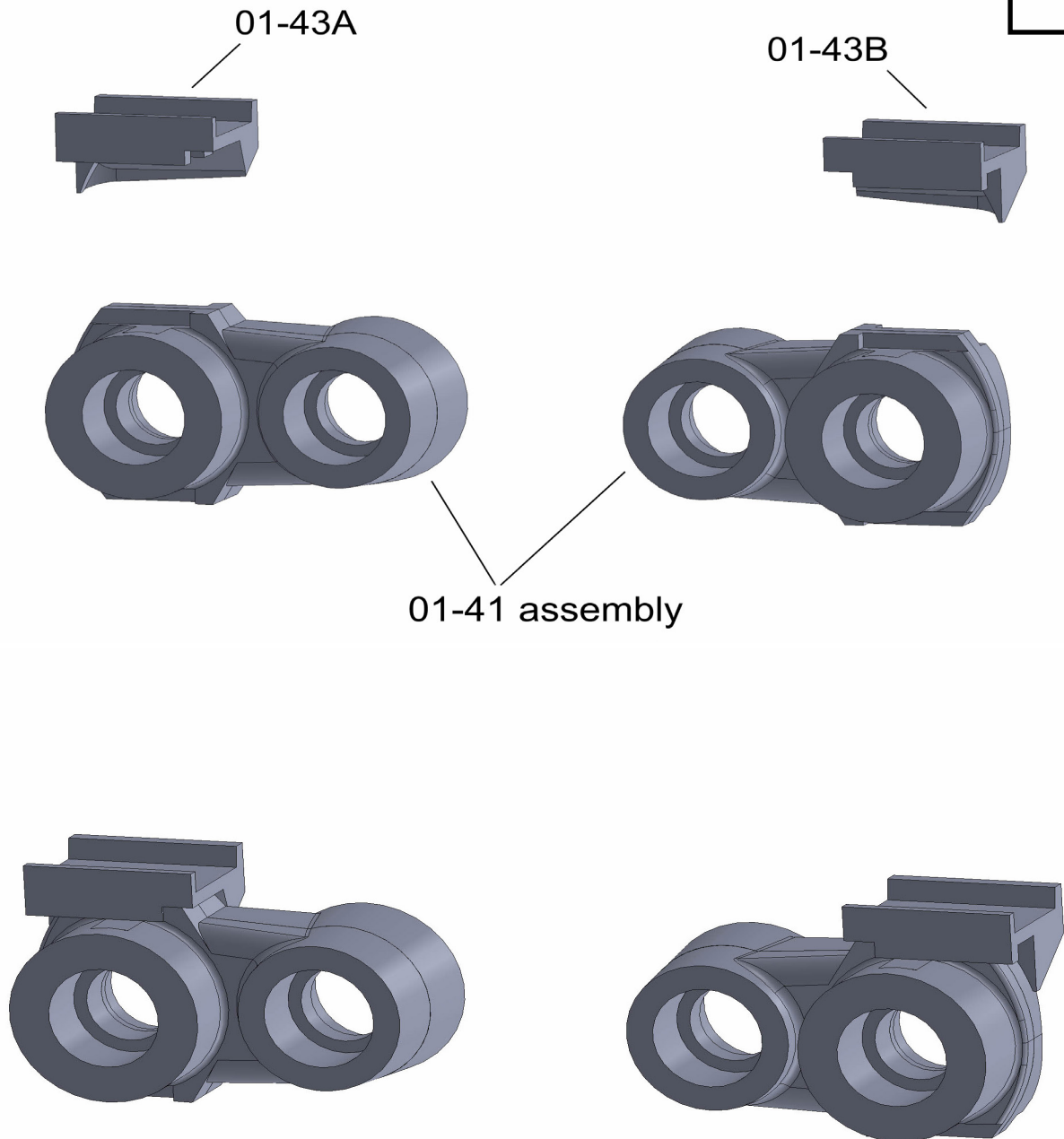
Chapter 01 - Lower hull

8x

Bond parts 01-41 and 01-42.

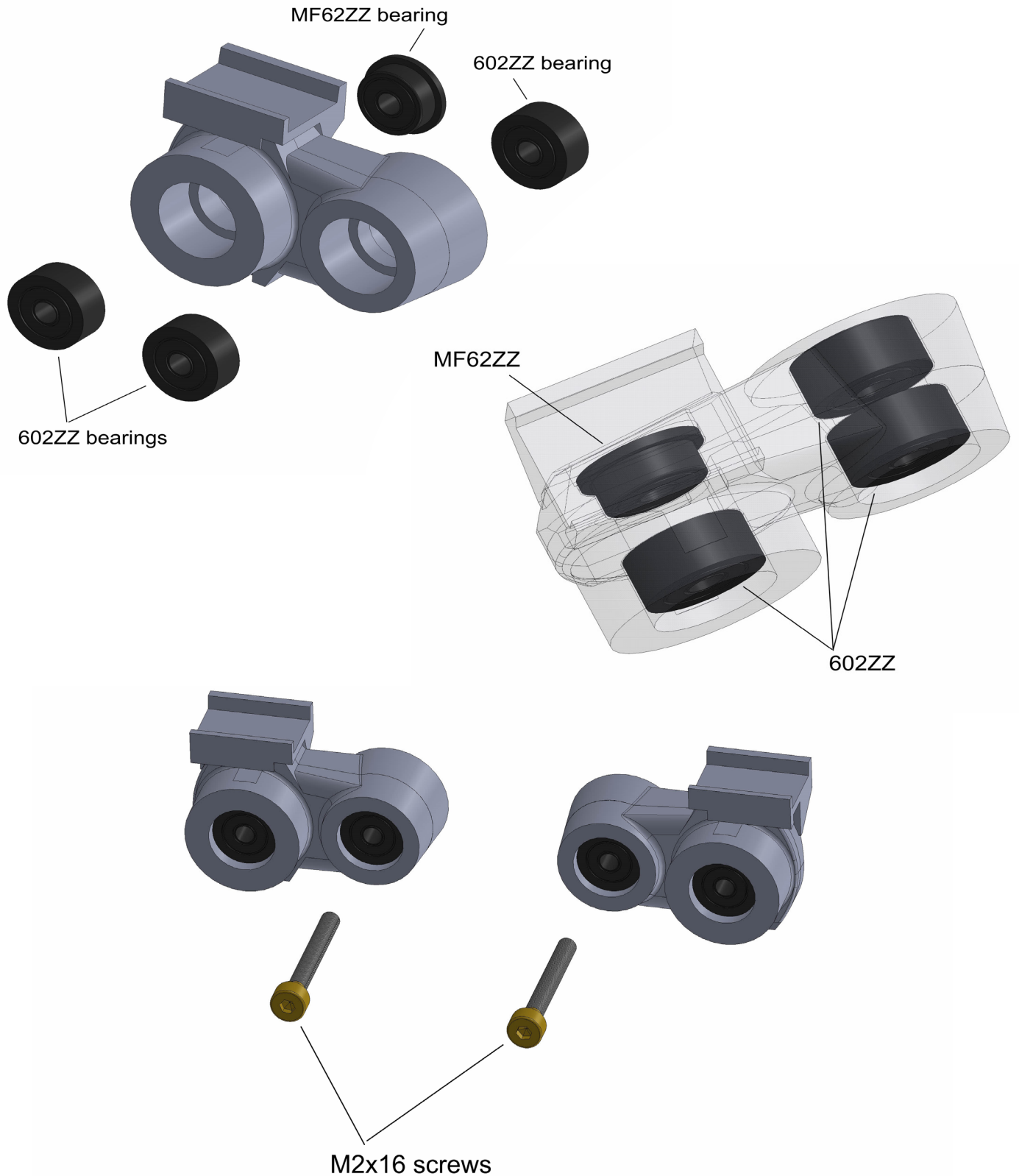
Chapter 01 - Lower hull

4x



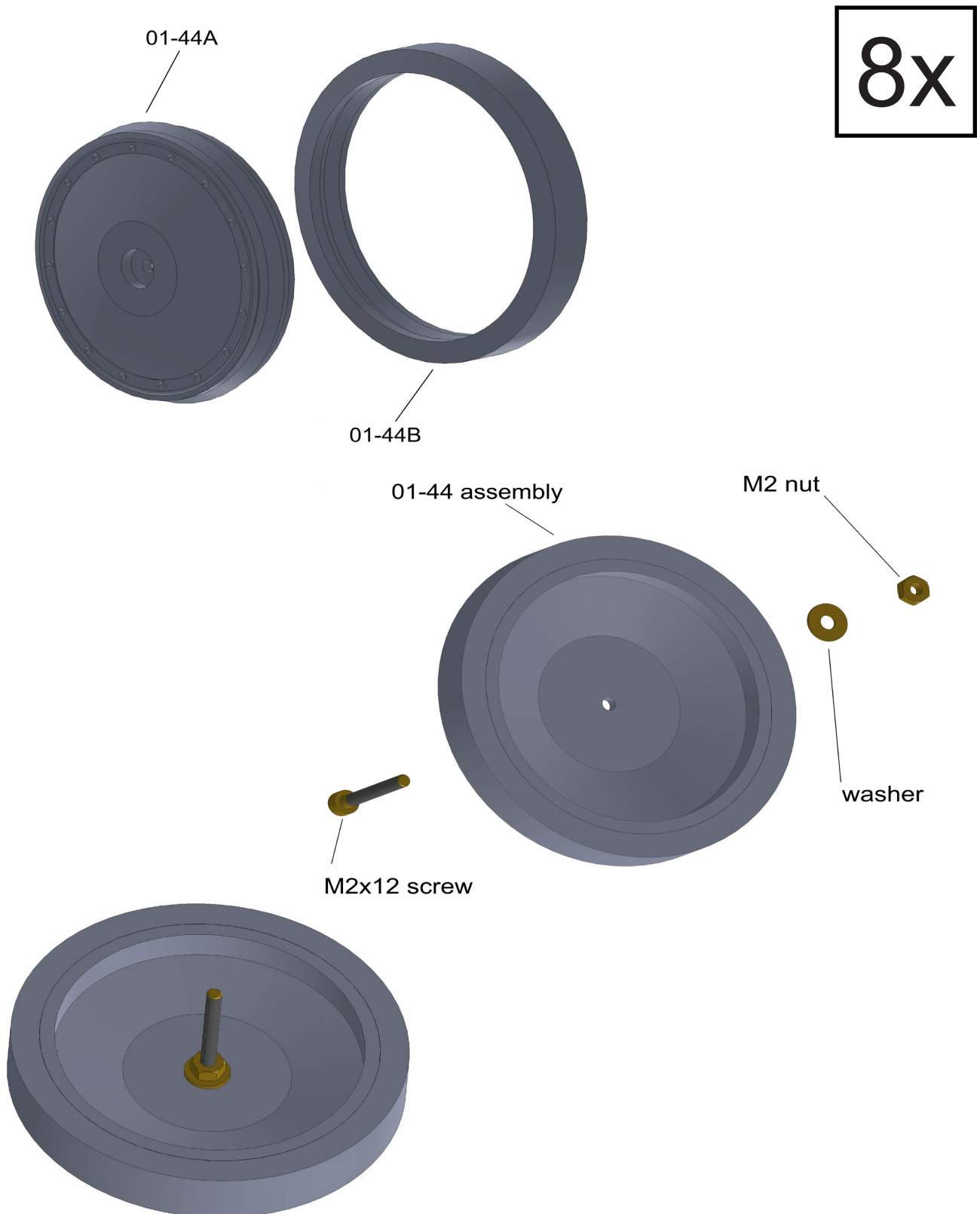
Glue part 01-43A on the four subassemblies 01-41.
Glue part 01-43B on the other four.

Chapter 01 - Lower hull



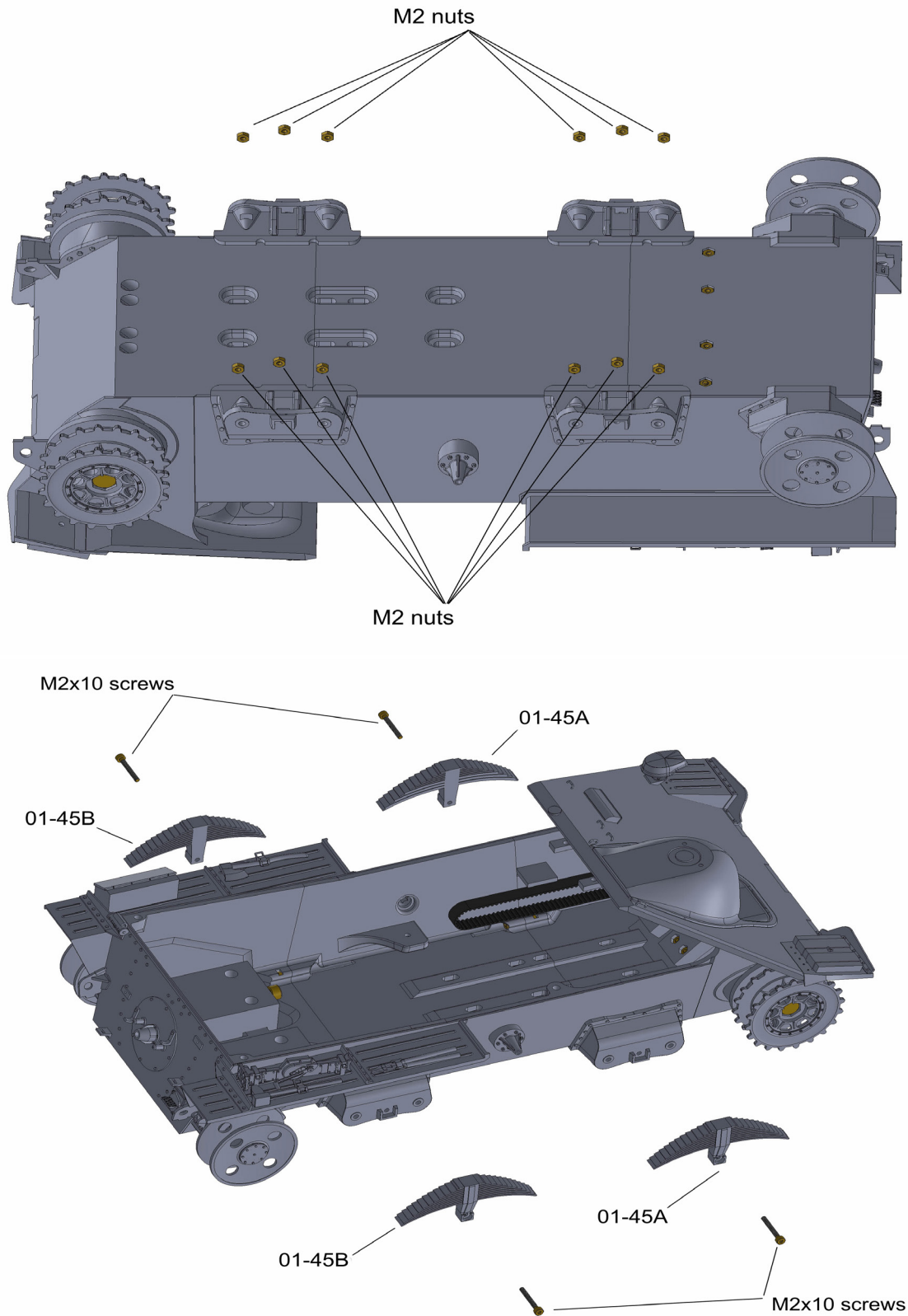
Insert three MR72zz (or 602ZZ) bearings and one MF62ZZ bearing into each subassembly 01-38.

Insert an M2x16 screw into each subassembly.



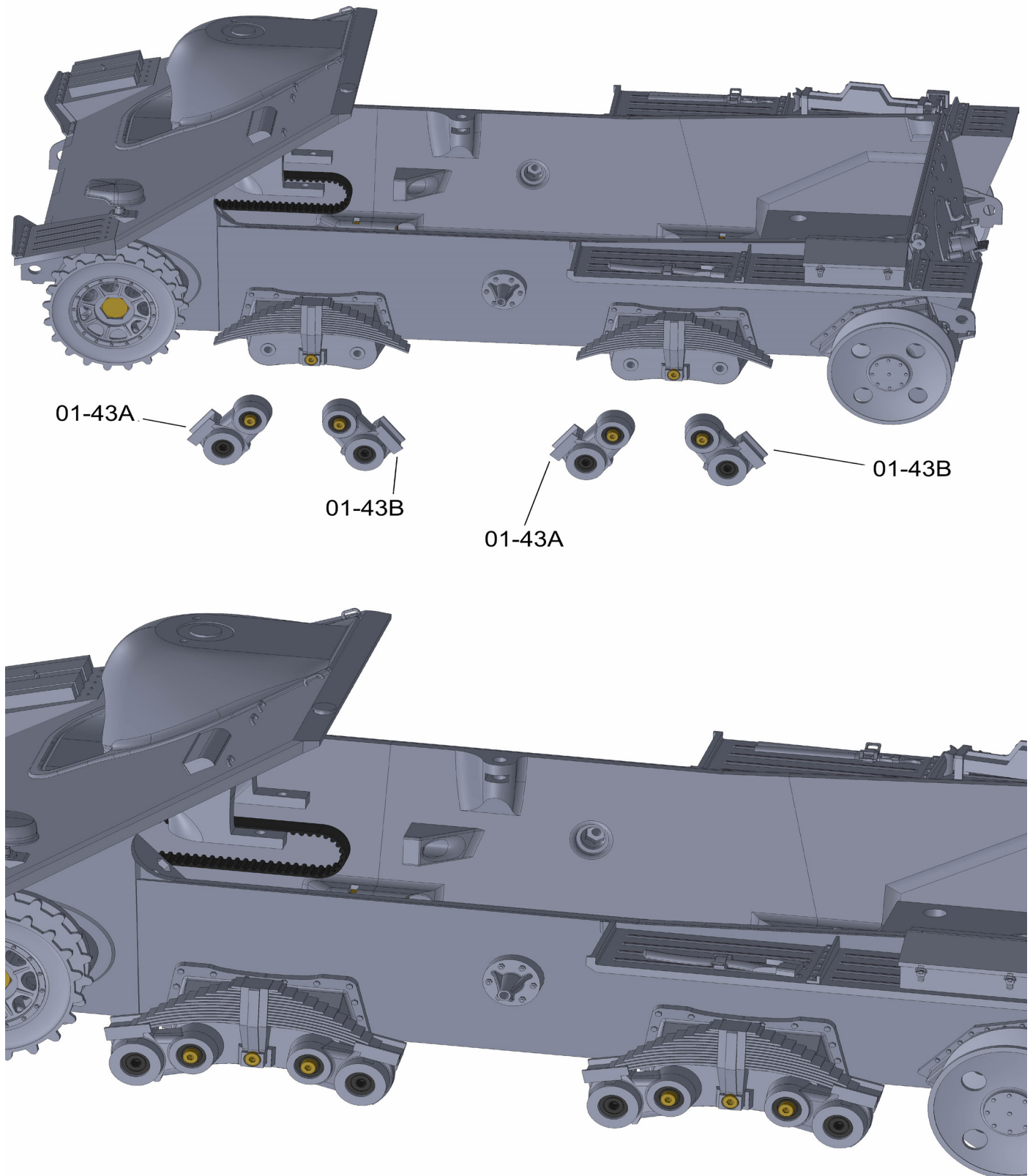
Thread the 01-44B part (printed with the TPU/TPE) onto the 01-44A part.
If you do not want or cannot print flexible material, you can use part 01-44_ALT.
The hole in part 01-44A must be as tight as possible.
Use an M2x12 screw, washer and nut.

Chapter 01 - Lower hull



Insert 12 M2 nuts into parts 01-04 and 01-05.
Install 01-45A and 01-45B using M2x10 screws.

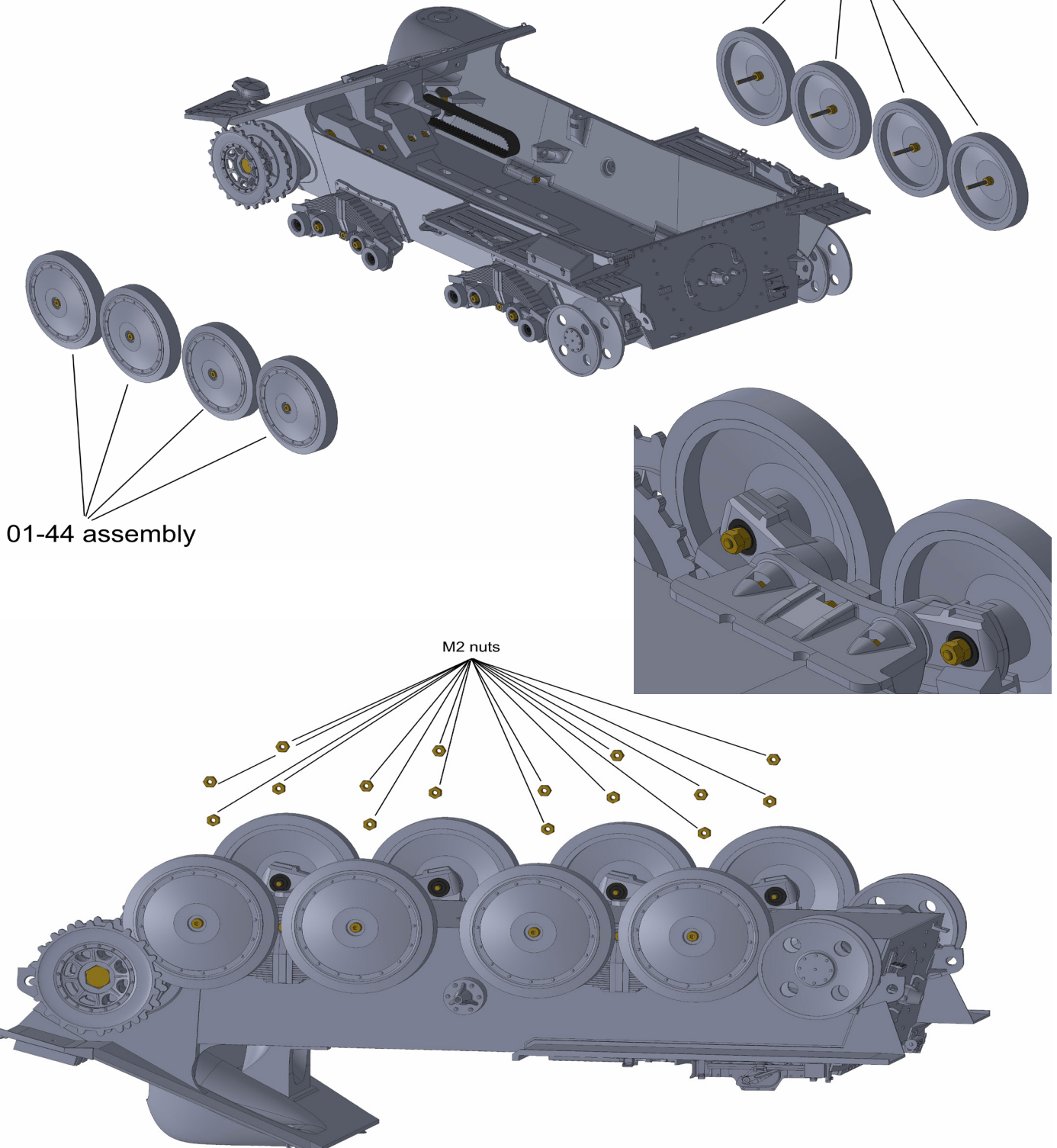
Chapter 01 - Lower hull



Install the prepared 01-43 subassemblies.
On each side there are two subassemblies with parts 01-43A
and two subassemblies with parts 01-43B.

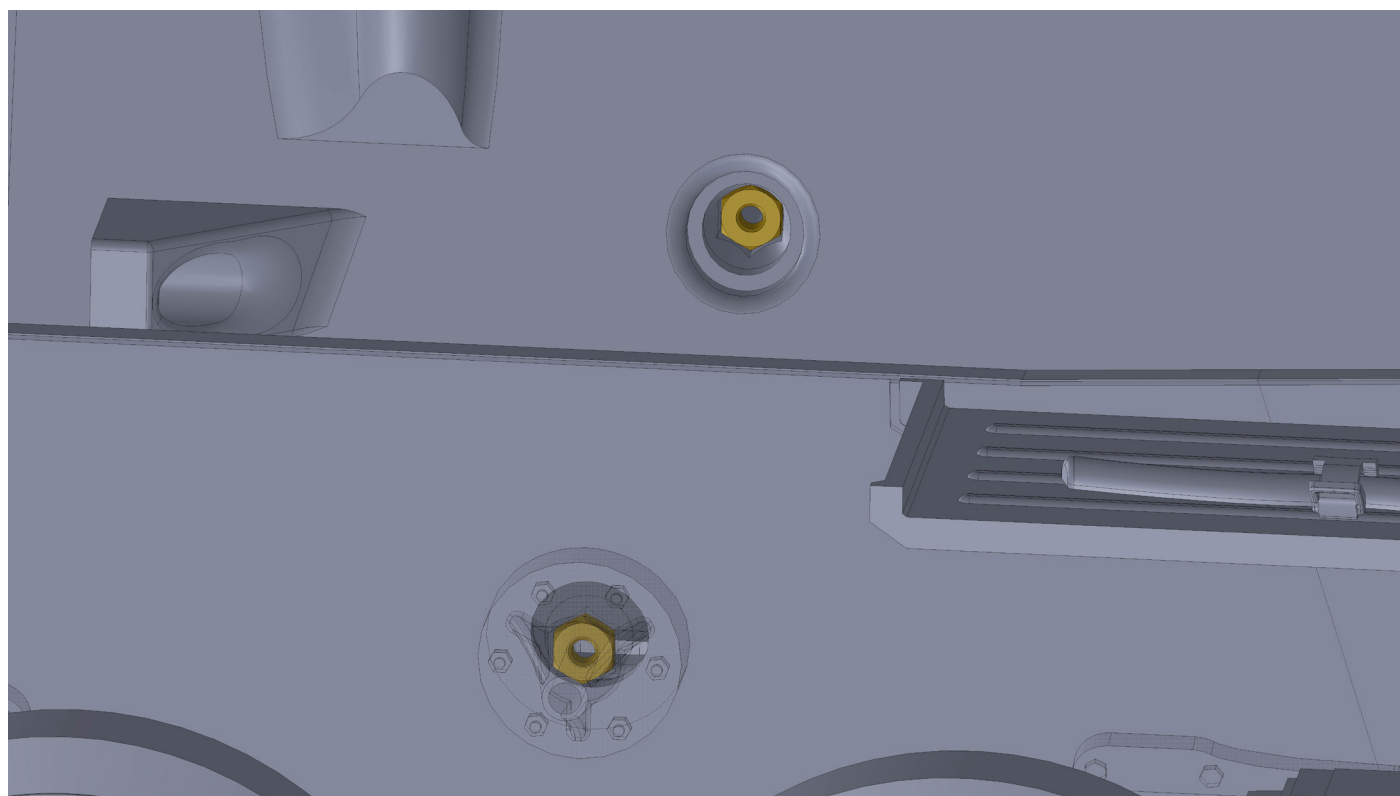
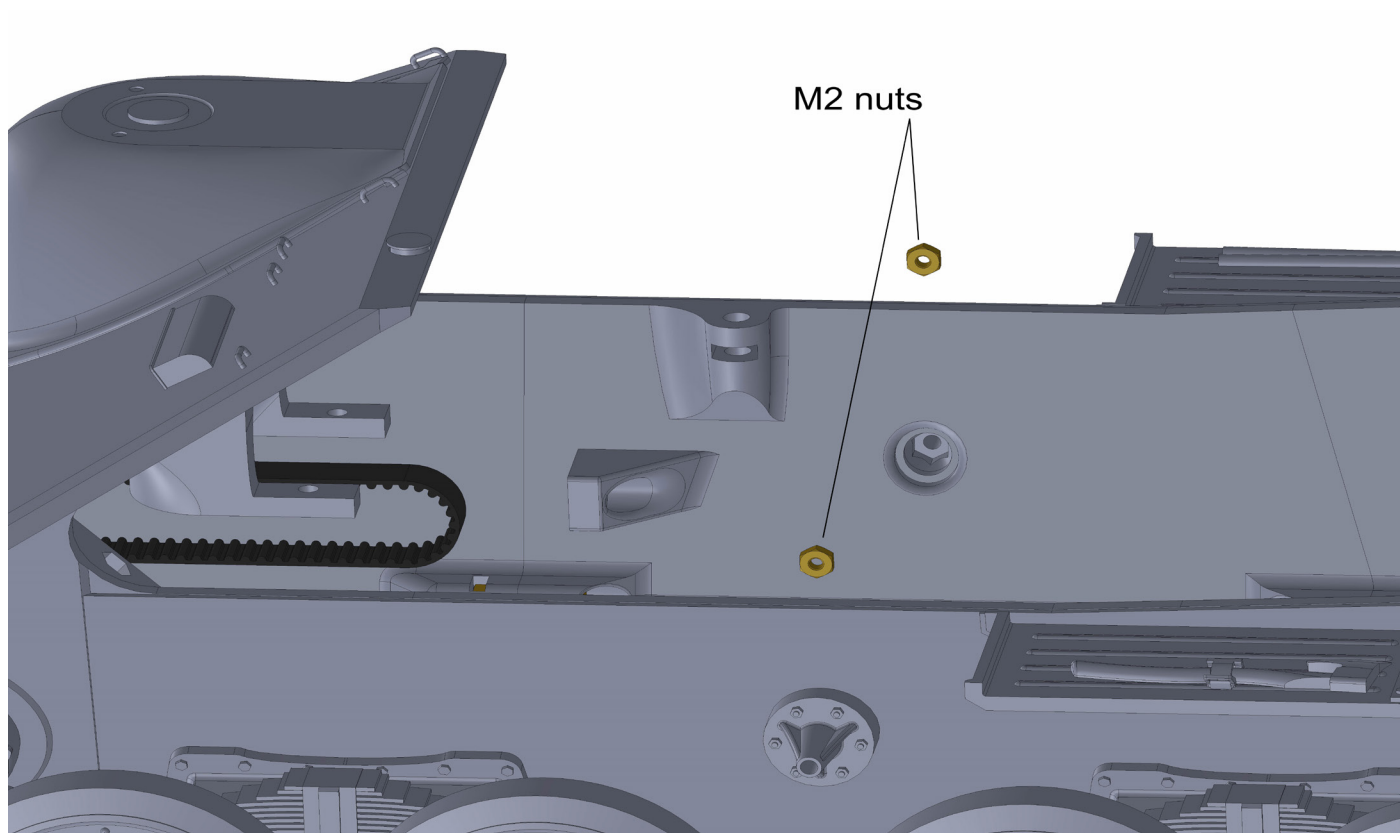
Chapter 01 - Lower hull

01-44 assembly



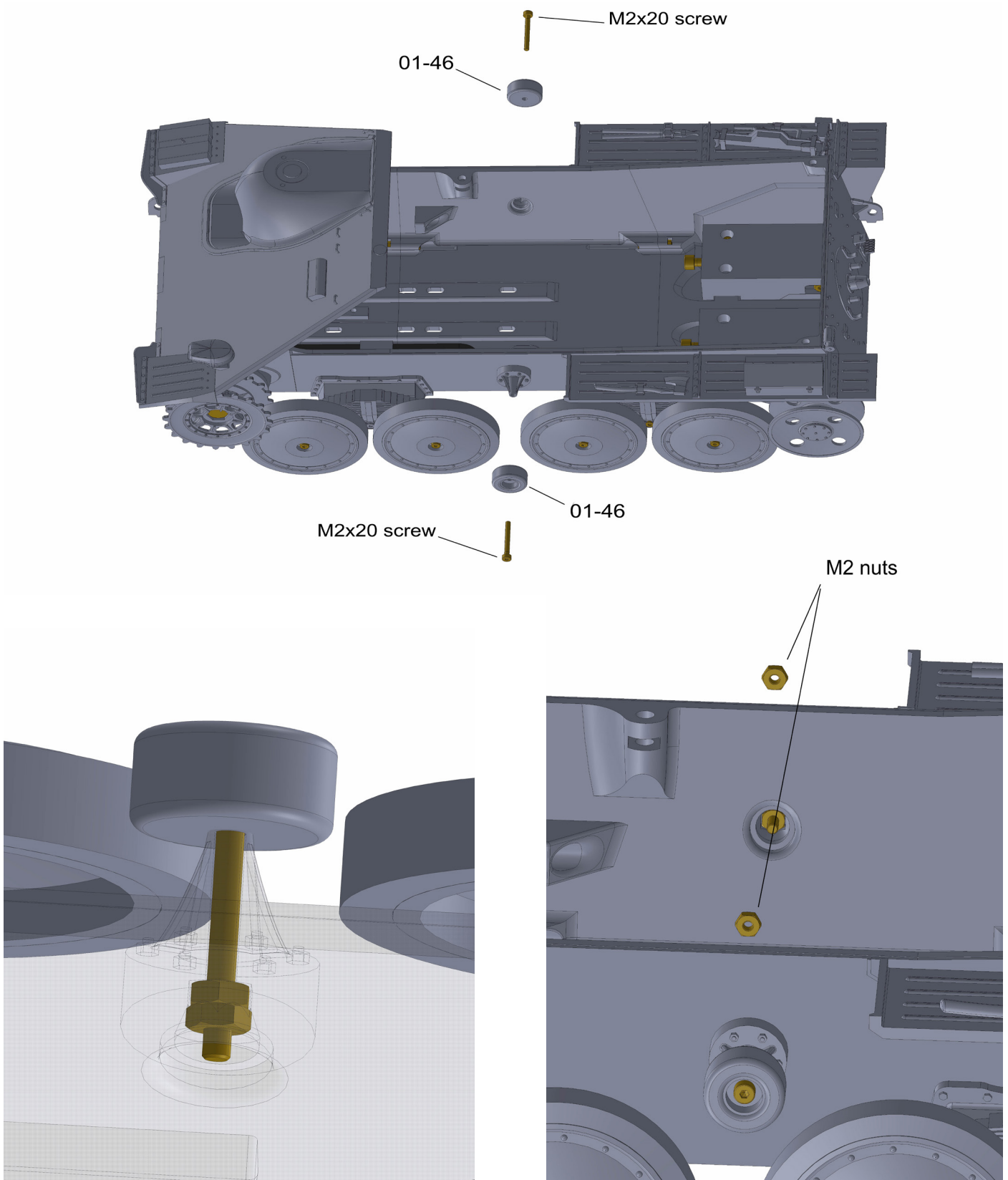
Install subassemblies 01-44. From the other side, secure with M2 nuts.
Use two nuts on each wheel and fasten them against each other.

Chapter 01 - Lower hull



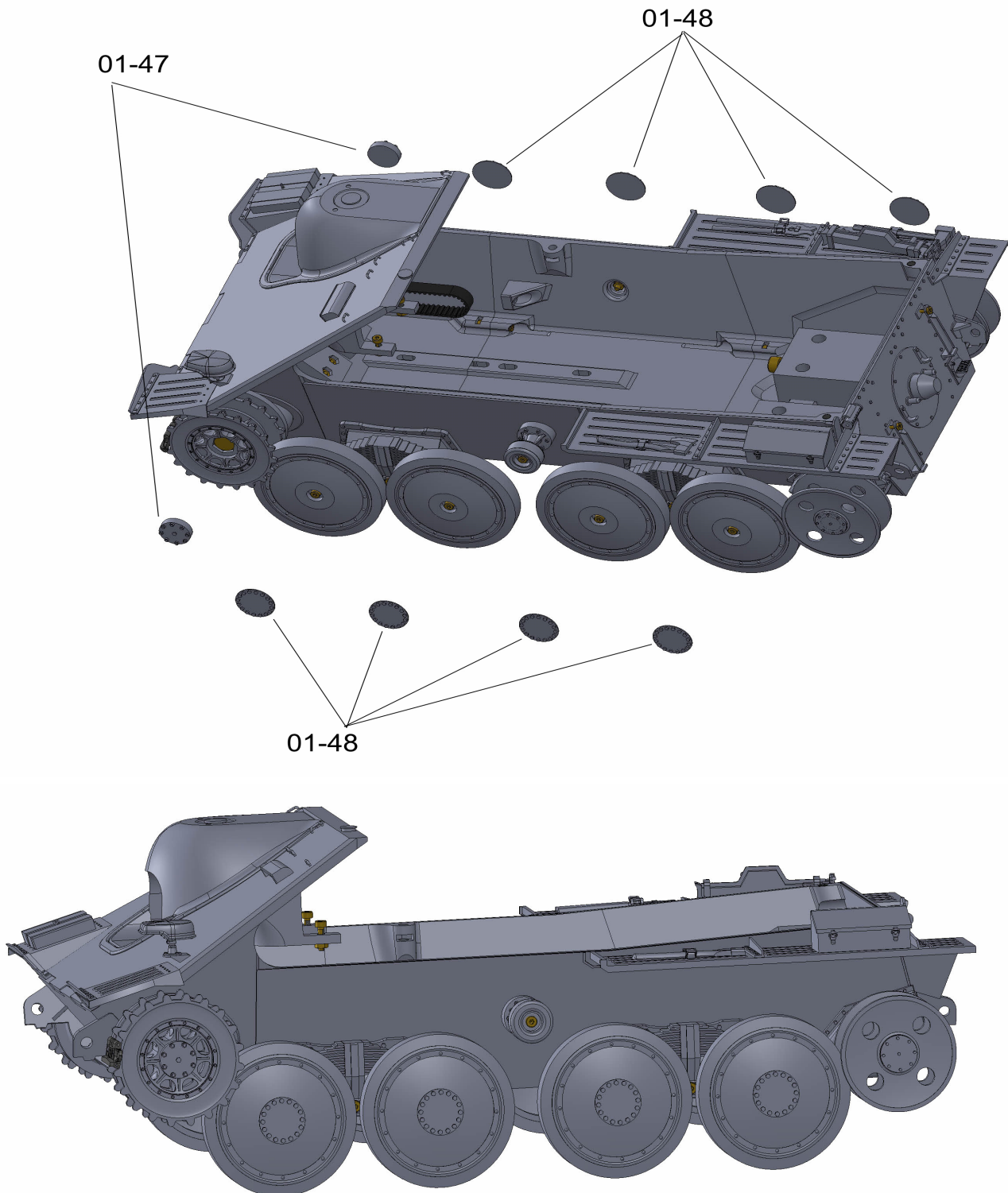
Insert two M2 nuts into part 01-02.

Chapter 01 - Lower hull



Install parts 01-46 with M2x20 screws.
Then secure the other two M2 nuts.

Chapter 01 - Lower hull



Cover the wheel bolts. Use two parts 01-47 on the front wheels.

Use blanks 01-48 on the wheels.

Make sure the wheels are installed correctly and all nuts are tightened. If possible, glue the parts in the way so that they can be peeled off in the future.

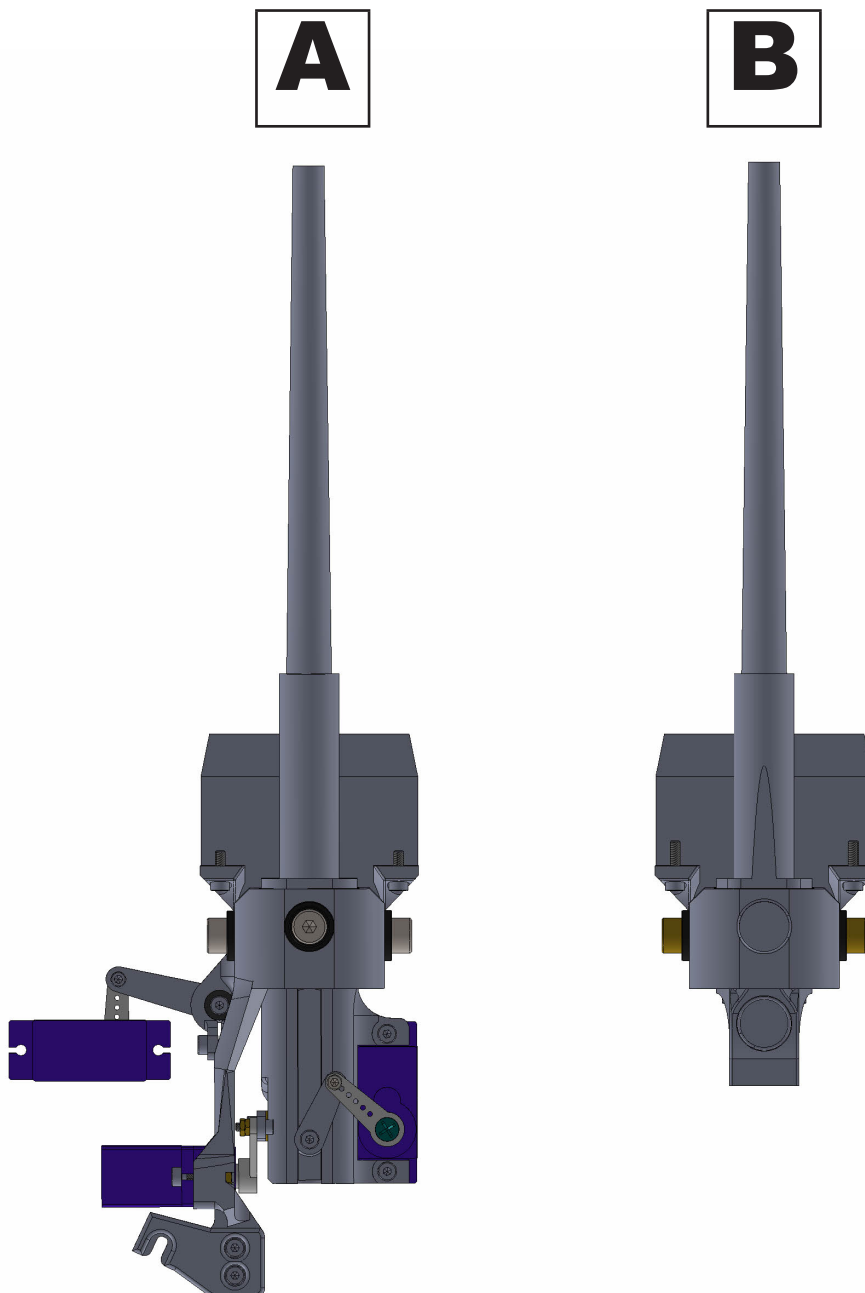
Jagdpanzer 38(t)

Assembly guide

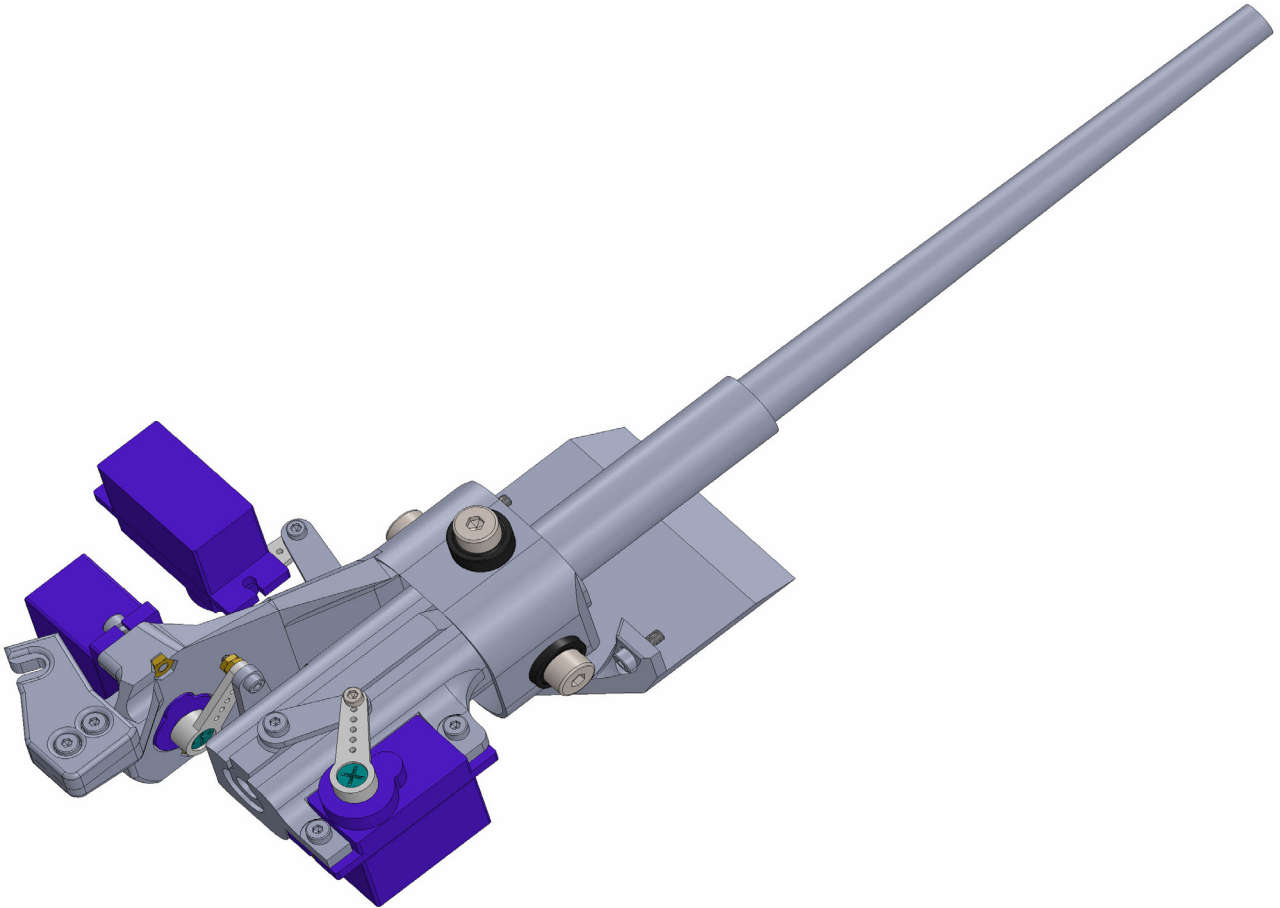
There are 2 different cannon types to choose from. The canon can be replaced at any time with another type:

A - servomotors controlled elevation, delivery and recoil. Possible installation of flash unit. We recommend using the Elmod® Fusion PRO control unit.

B - simple cannon with a functional elevation. Uses Heng-Long compatible elevation units.

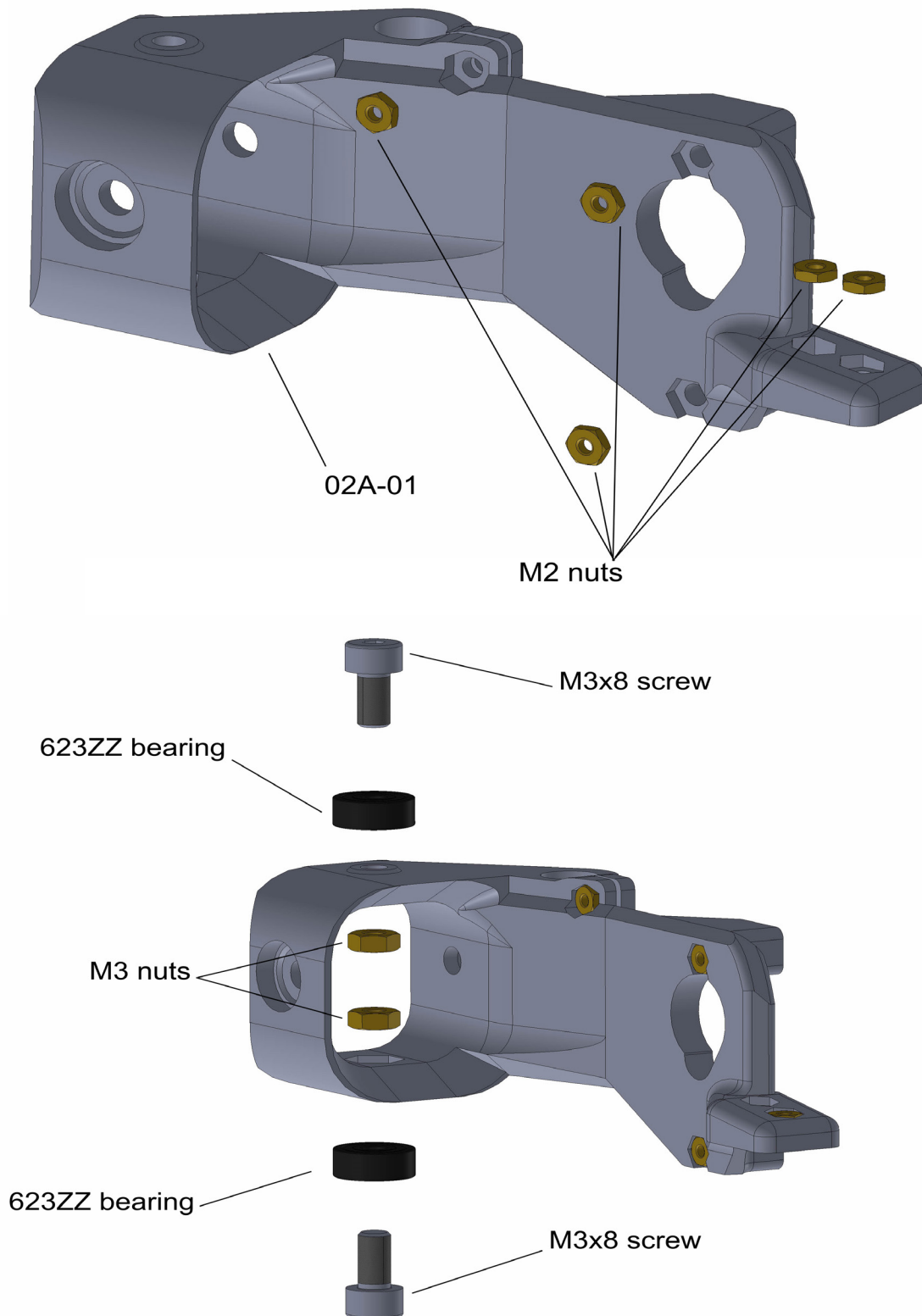


Chapter 02A - Type A cannon



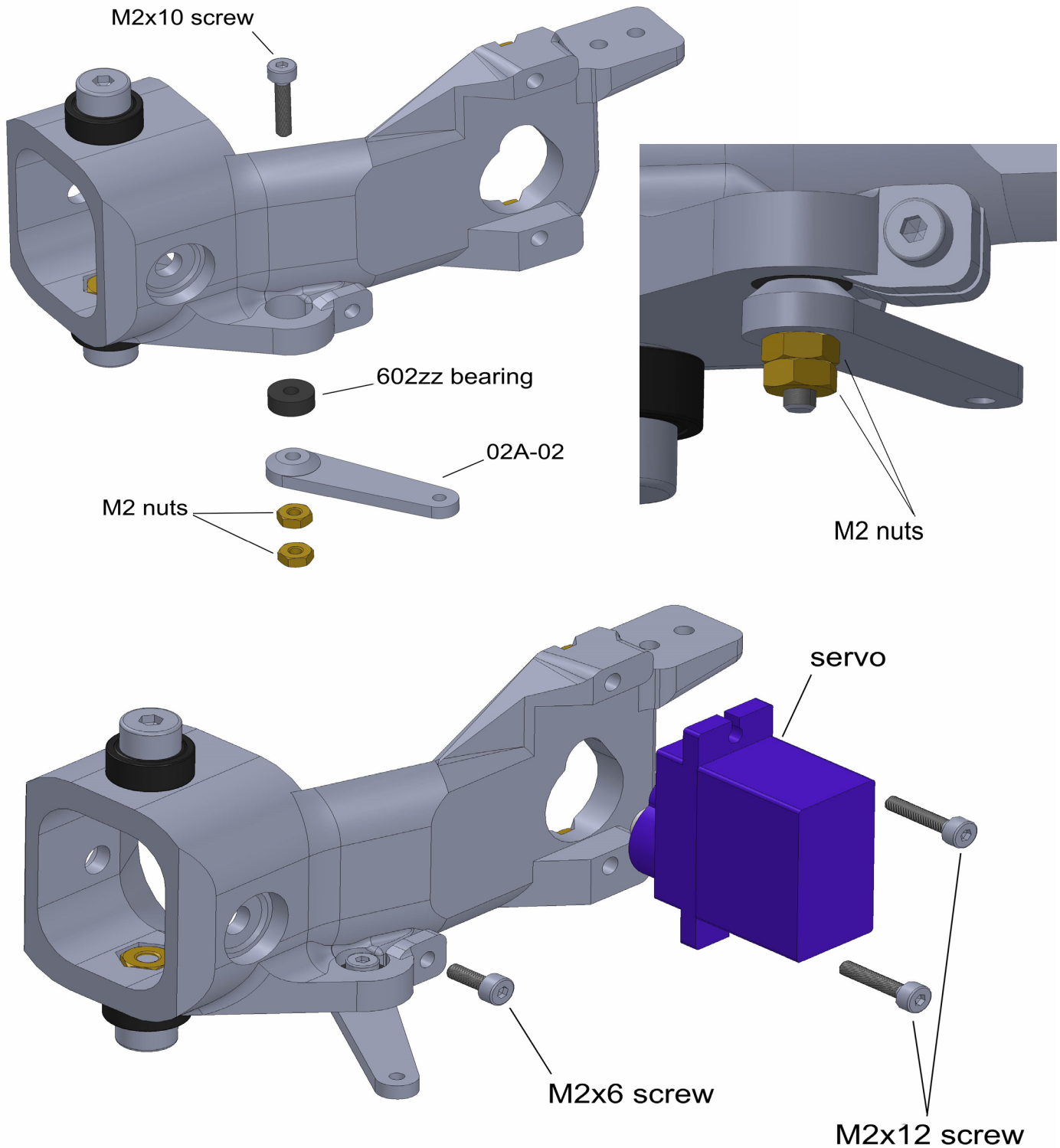
AMOUNT:	1
PRINTED PARTS:	02A-01 (1x), 02A-02 (1x), 02A-03 (1x), 02A-04 (1x), 02A-05(1x), 02A-06 (2x), 02A-07 (1x), 02A-08 (1x), 02A-09(1x), 02A-10 (1x).
OPTIONAL PRINTED PARTS:	
NON-PRINTED PARTS:	M3x10 screw (2x), M3x8 screw (2x), M2x12 screw (2x), M2x10 screw (1x), M2x8 screw (9x), M2x6 screw (2x), M1,6x6 screw (2x), M1,6x4 screw (1x), M3 nut (4x), M2 nut (13x), M1,6 nut (4x), M2 washer (1x), MR72zz or 602zz bearing (1x), 623zz bearing (4x), Servo SG90 + arm + screw (3x).

Chapter 02A - Type A cannon



Insert 5 M2 nuts into part 02A-01.
Install 623ZZ bearings with M3x8 bolts and M3 nuts.

Chapter 02A - Type A cannon



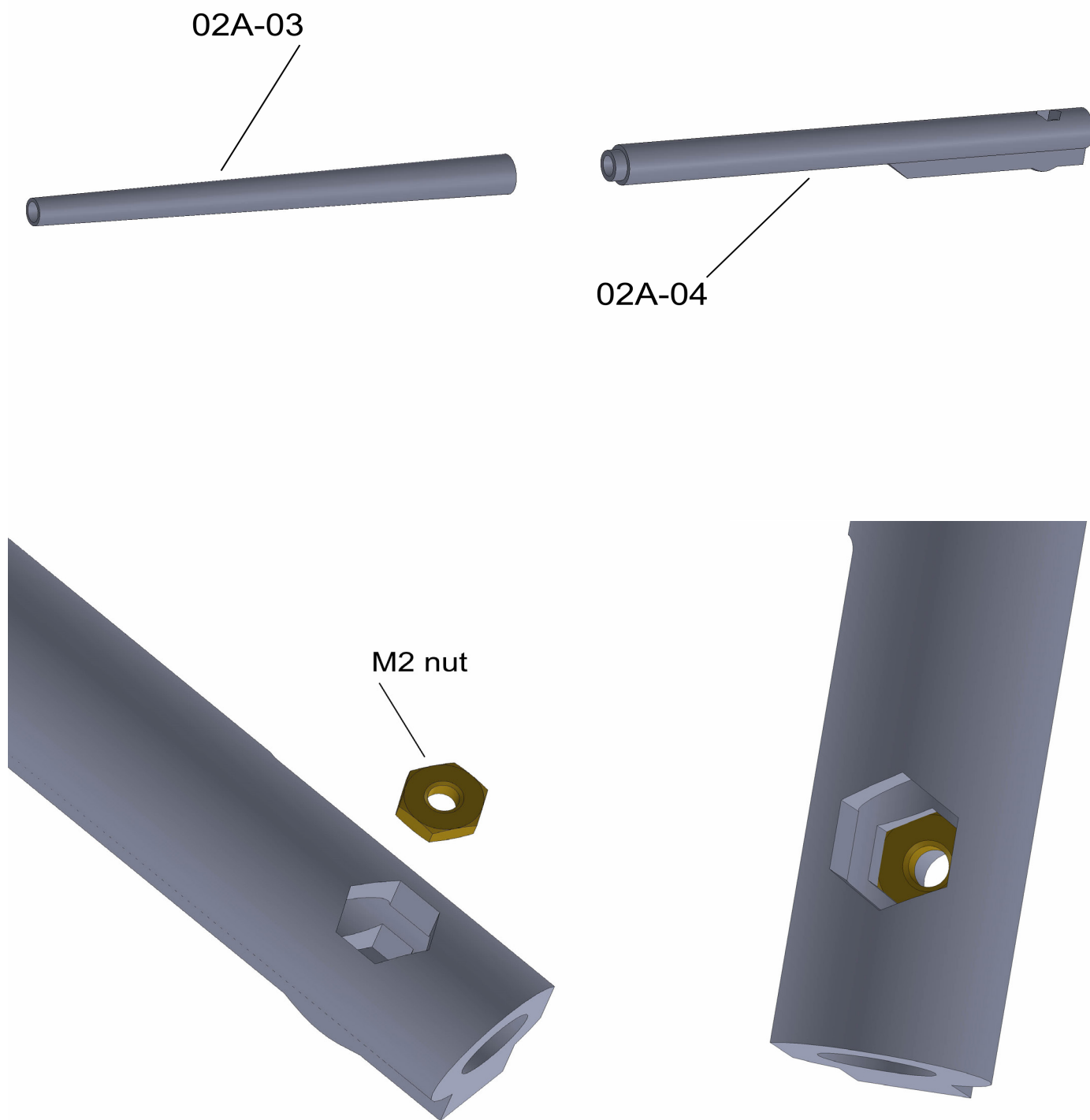
Insert the bearing MR72zz (or 602ZZ) into part 02A-01. Attach part 02A-02 with a M2x12 screw.

Secure with two M2 nuts. **Nuts and bolts cannot loosen.**

When released, there is a risk of damage to the model!!!

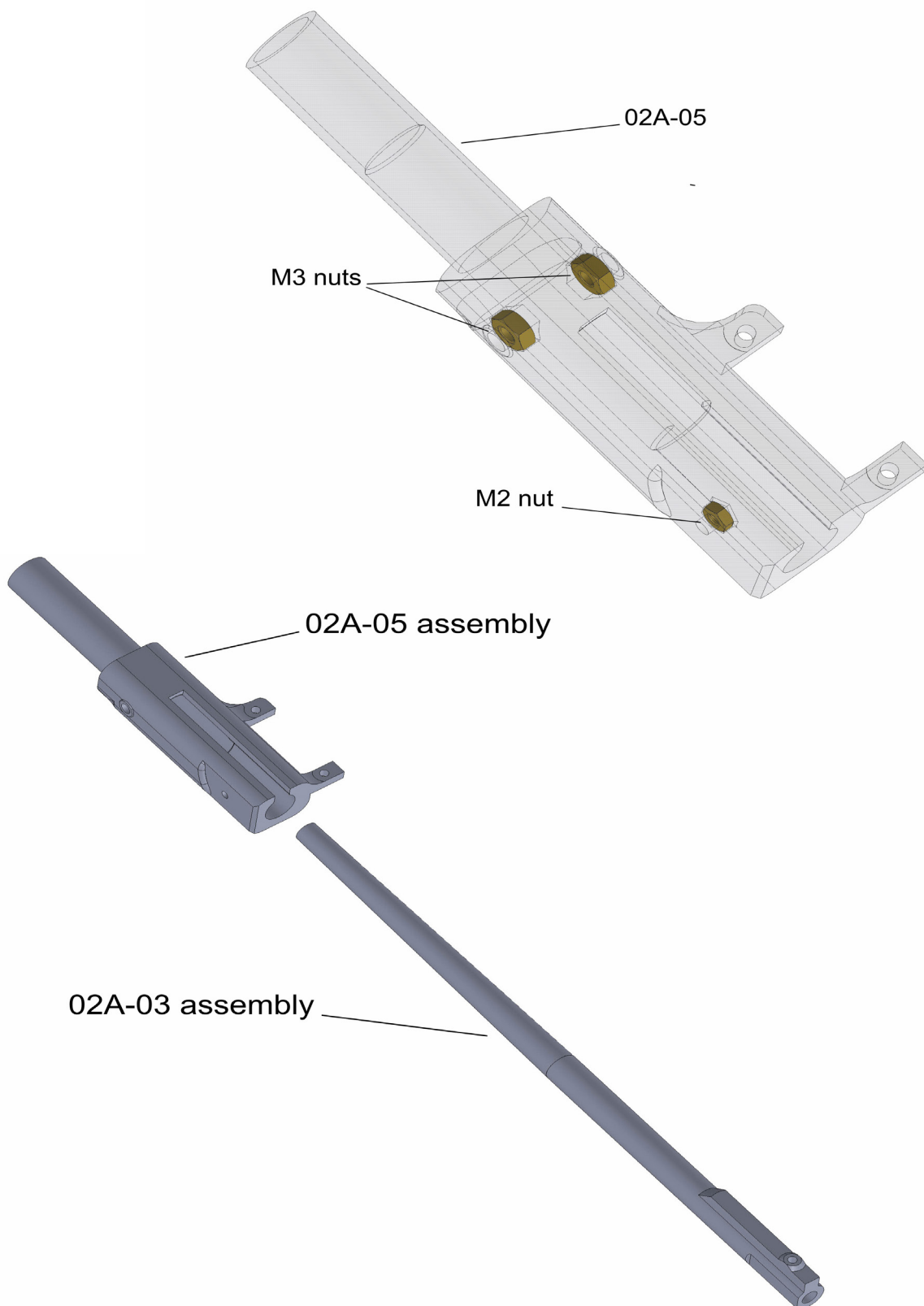
We recommend to glue the nuts with a super glue. Secure the bearing with an M2x6 screw and secure the servo with two M2x10 screws.

Chapter 02A - Type A cannon



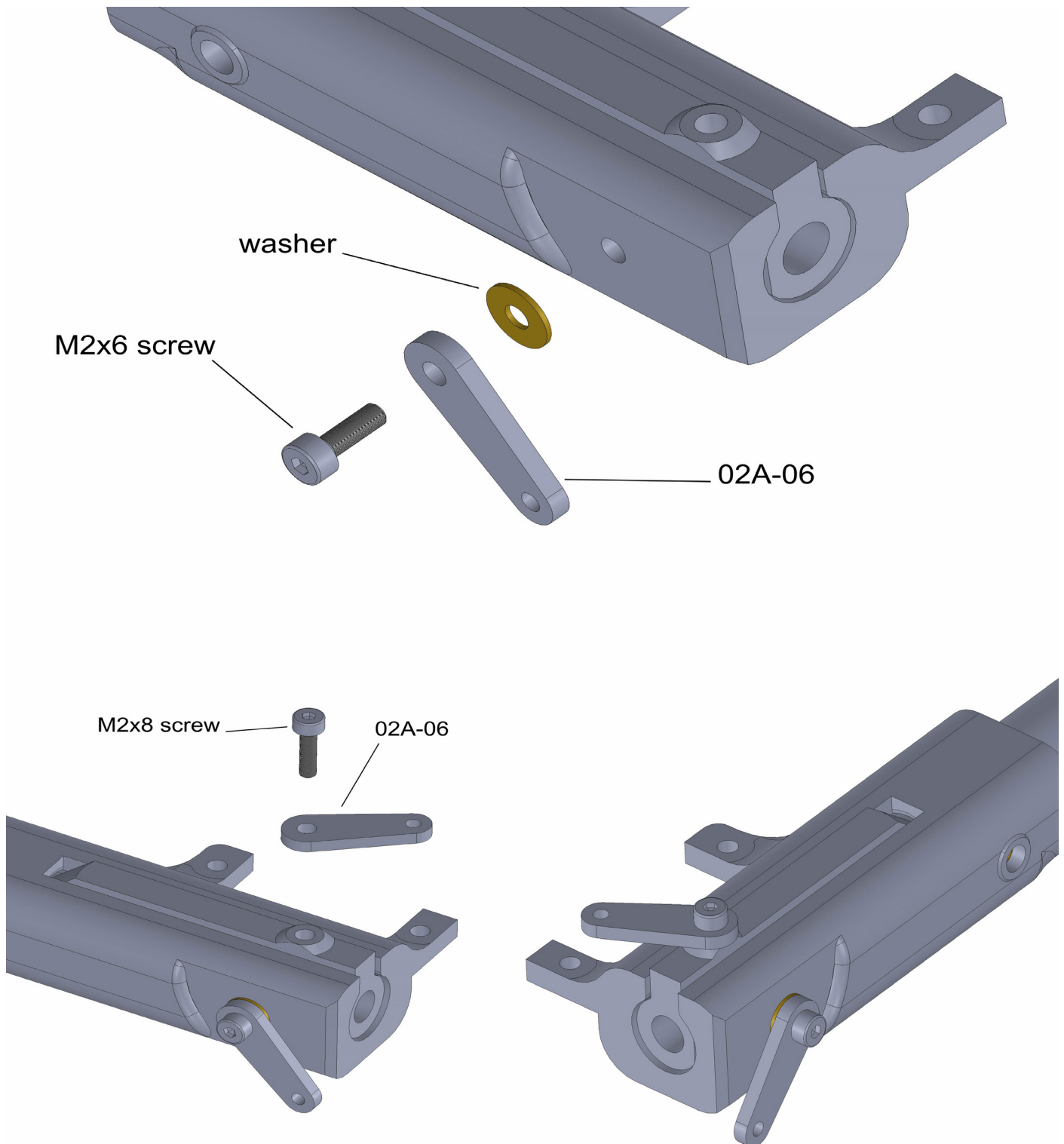
Glue parts 02A-03 and 02A-04 together. Insert the M2 nut into part 02A-04.

Chapter 02A - Type A cannon



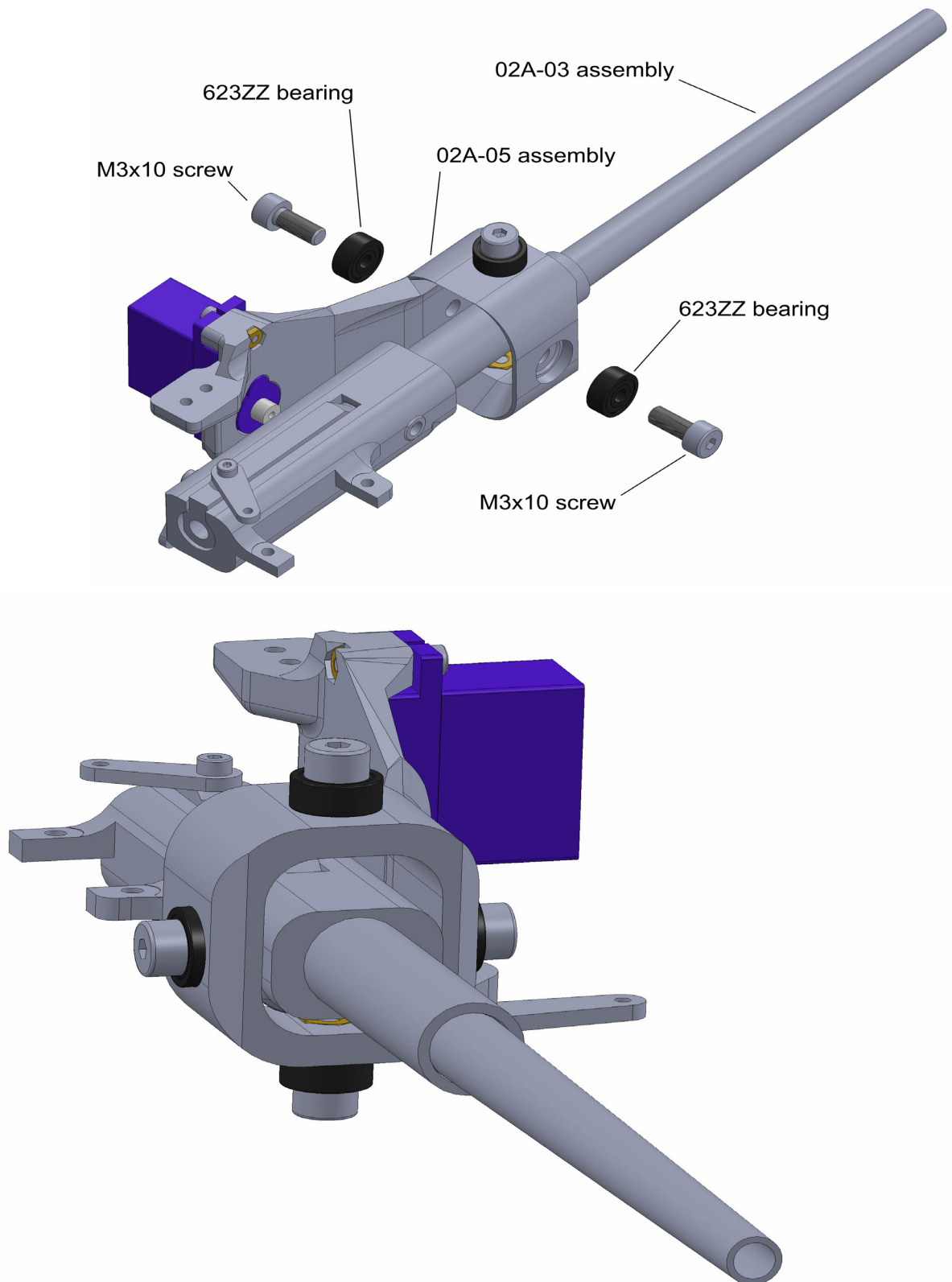
Insert two M3 nuts and one M2 nut into part 02A-05.
Insert the subassembly 02A-03.

Chapter 02A - Type A cannon



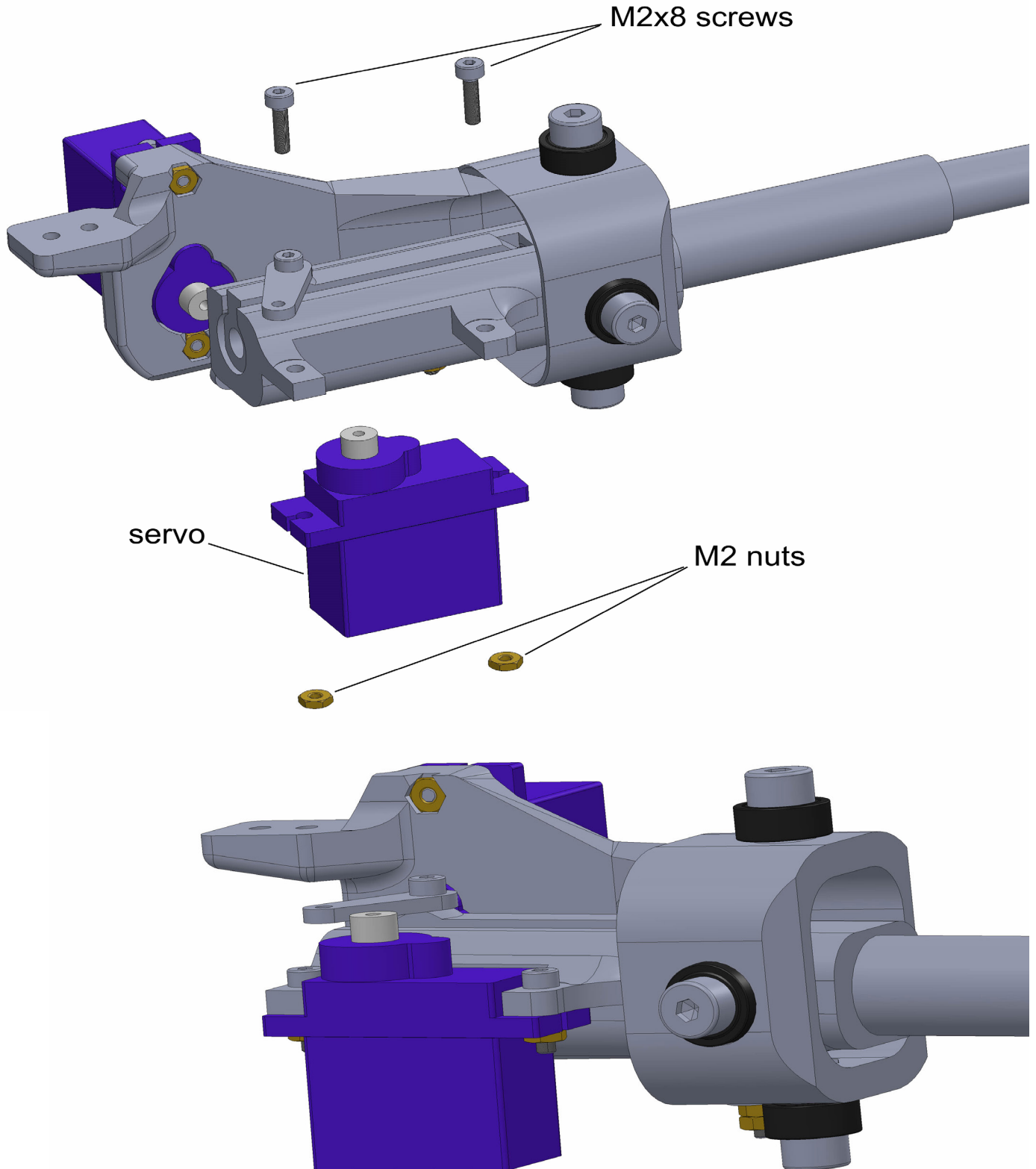
Attach part 02A-06 to part 2A-05 using a washer and an M2x6 screw.
The part must rotate freely.

Chapter 02A - Type A cannon



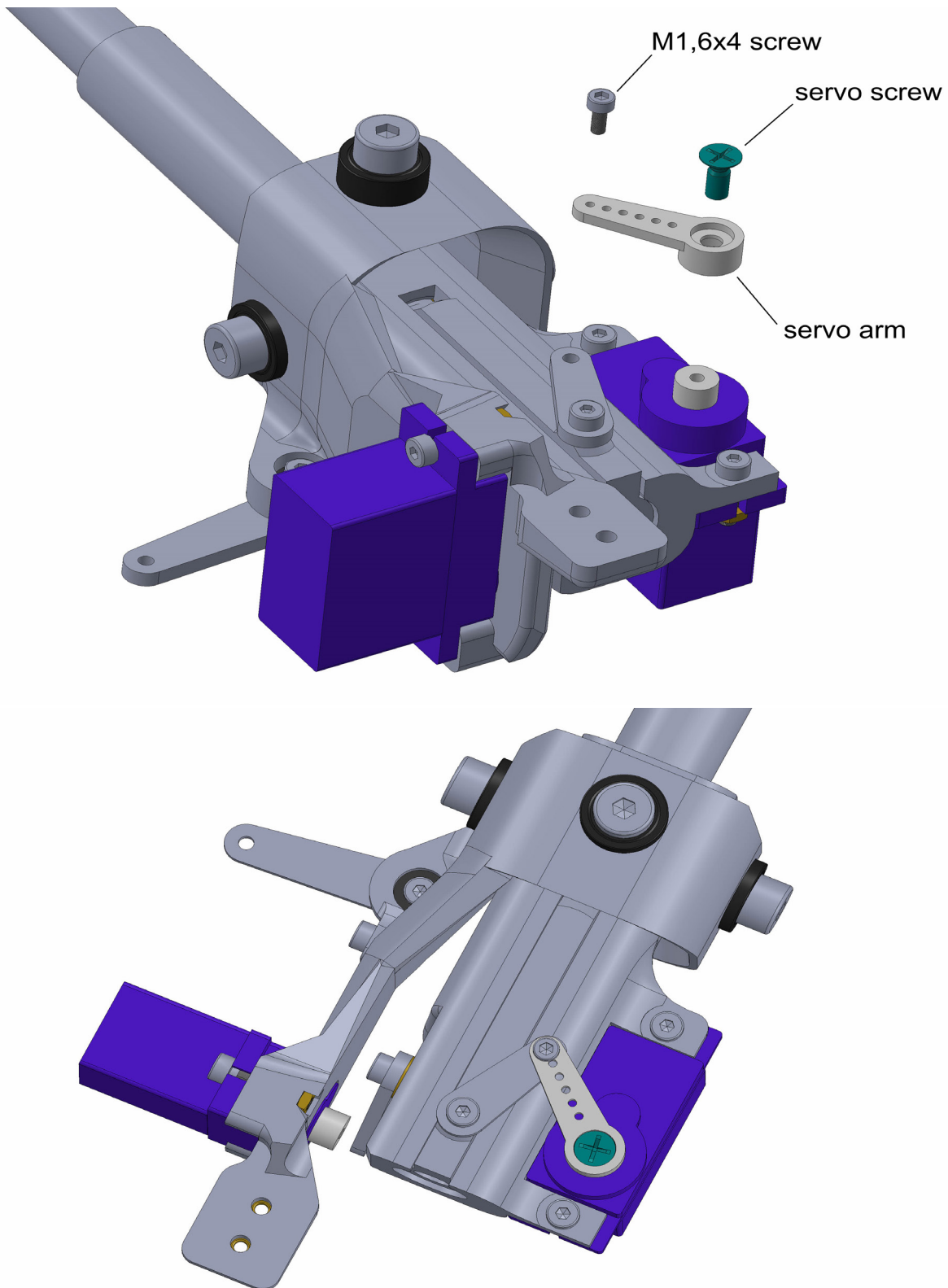
Insert the 02A-01 parts subassembly into the 02A-05 subassembly.
Insert two 623ZZ bearings into part 02A-05 using M3x10 screws.
This connects the subassemblies together. The bearings must rotate freely.

Chapter 02A - Type A cannon



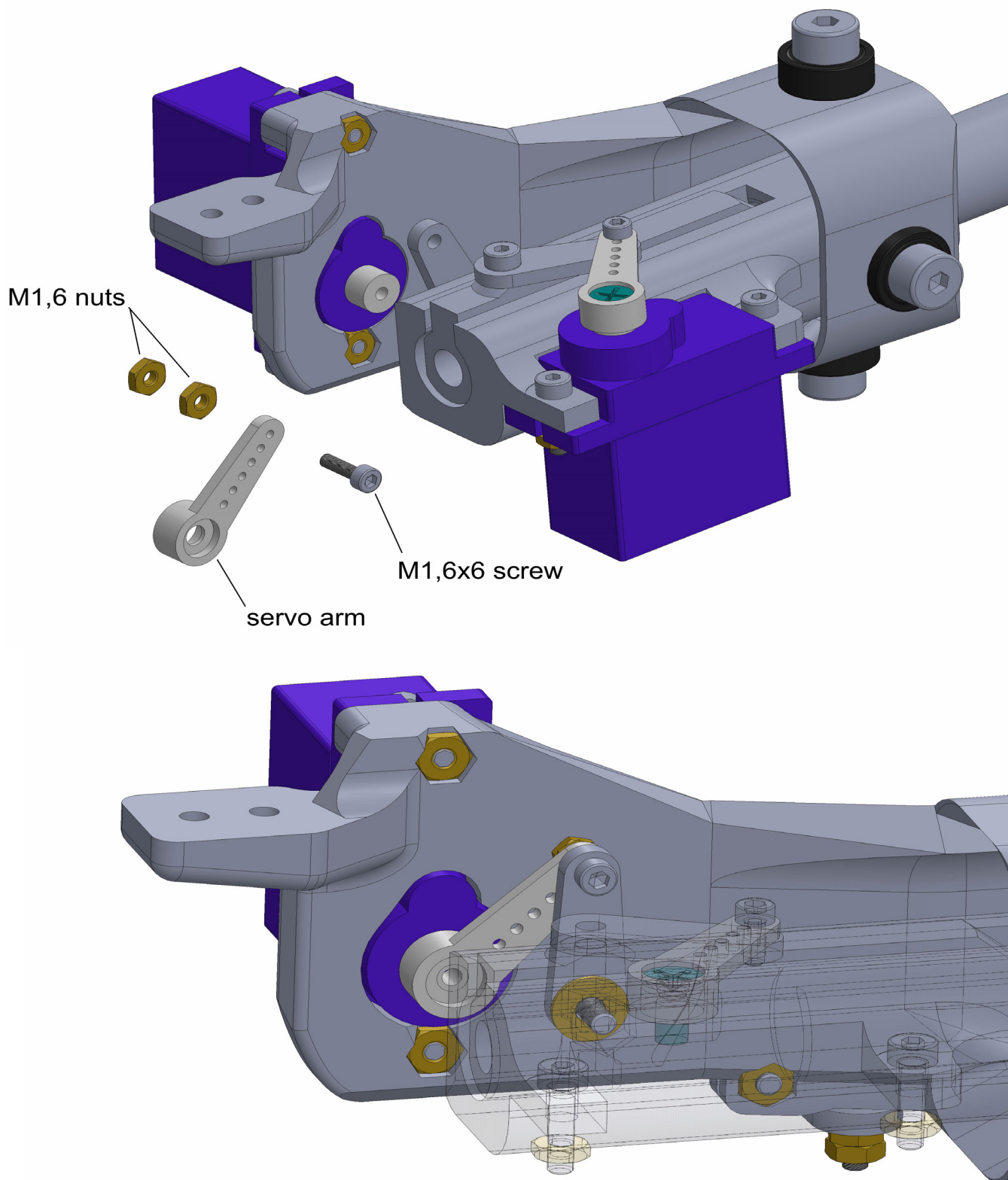
Connect the servo for the recoil. Use two M2x8 screws and M2 nuts.

Chapter 02A - Type A cannon



Attach the servo to the cannon using the arm supplied with the servo.
Use the screw supplied with the servo on one side
and the M1.6x4 screw on the other.
Correct position of arm and servo in rest position is indicated in the figure below.

Chapter 02A - Type A cannon

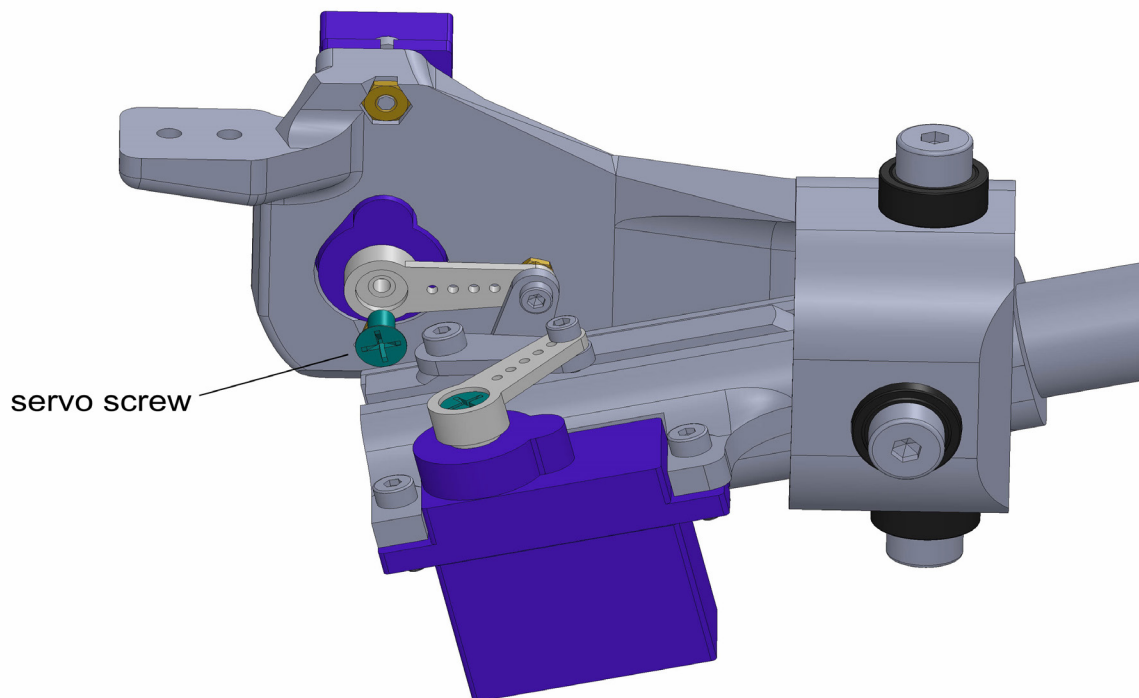


Attach the servo arm to part 02A-06 with a 1.6x6 screw and two M1.6 nuts.

Nuts and bolts cannot loosen.

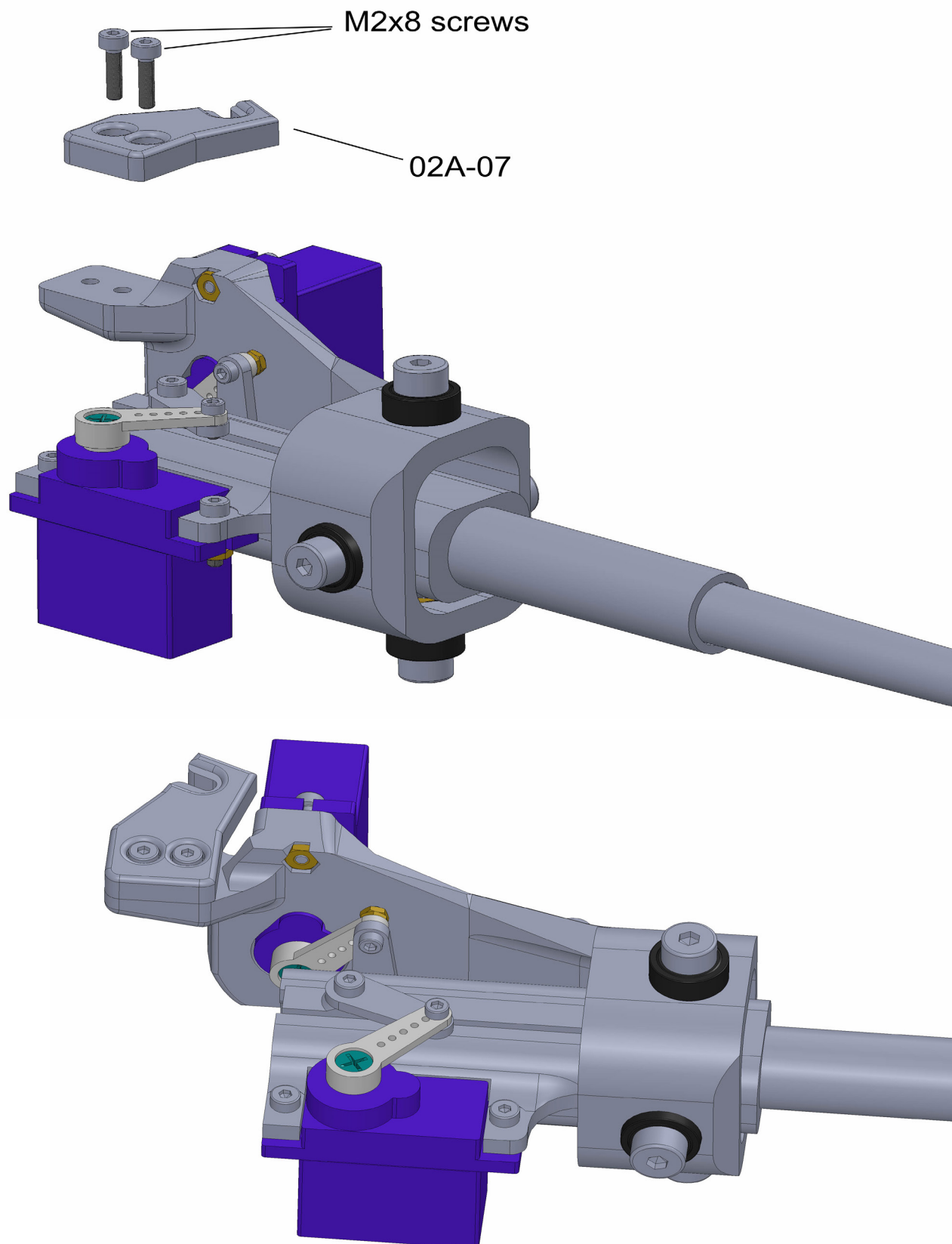
When released, there is a risk of damage to the model !!!

Chapter 02A - Type A cannon



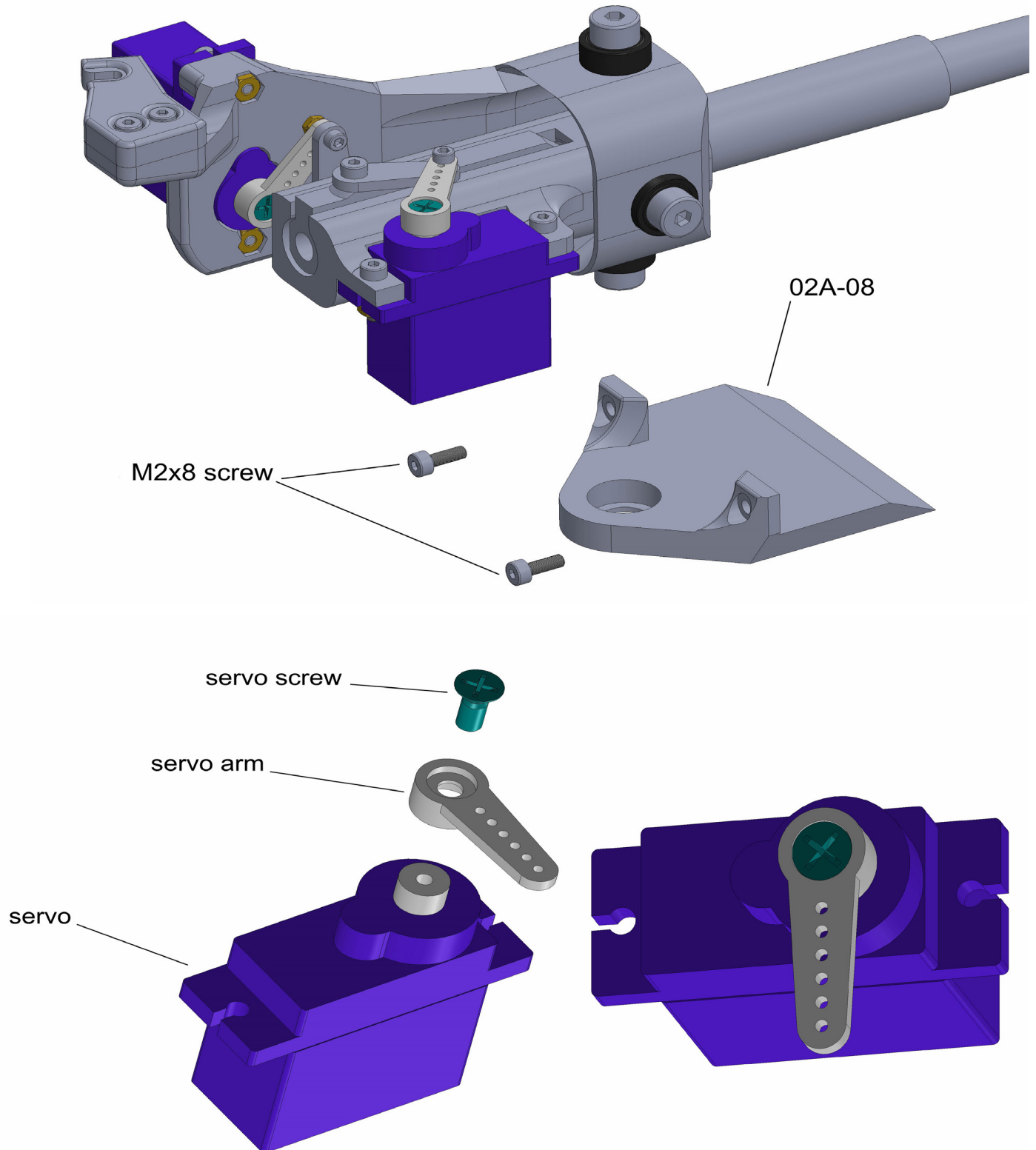
Attach the arm to the servo with a screw.

Chapter 02A - Type A cannon



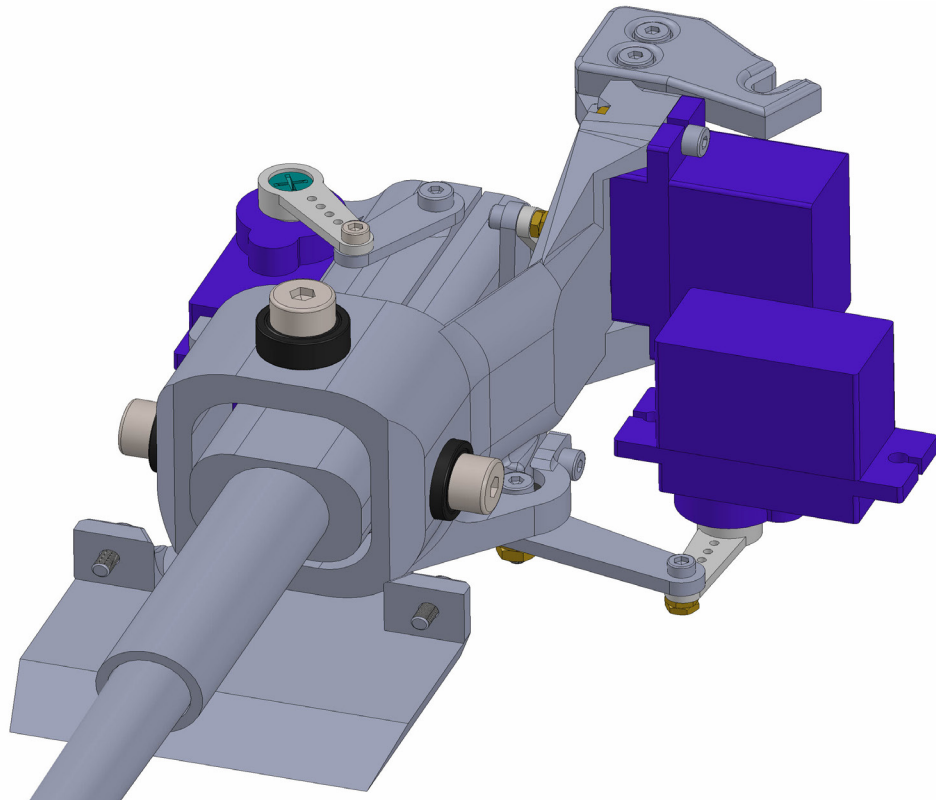
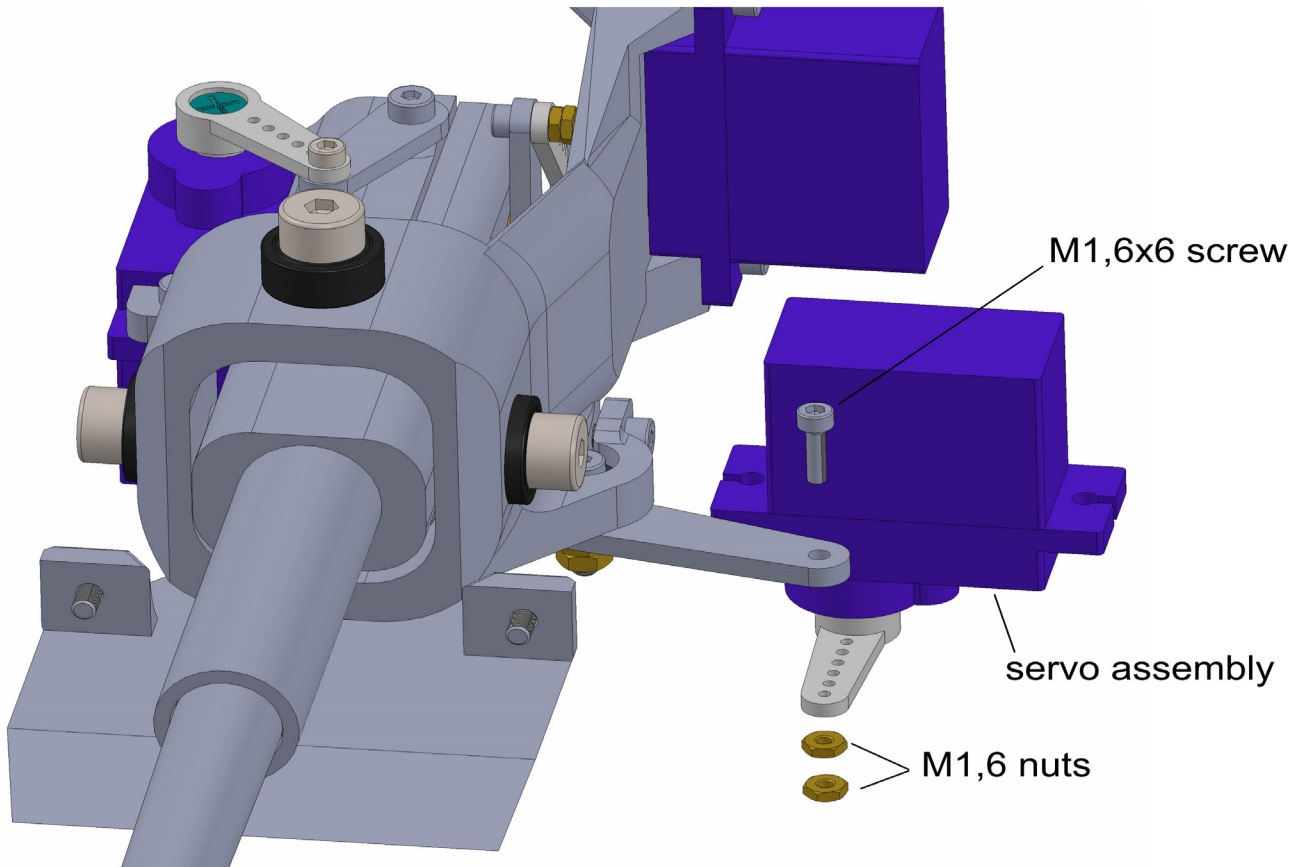
Attach part 02A-07. Use two M2x8 screws.

Chapter 02A - Type A cannon

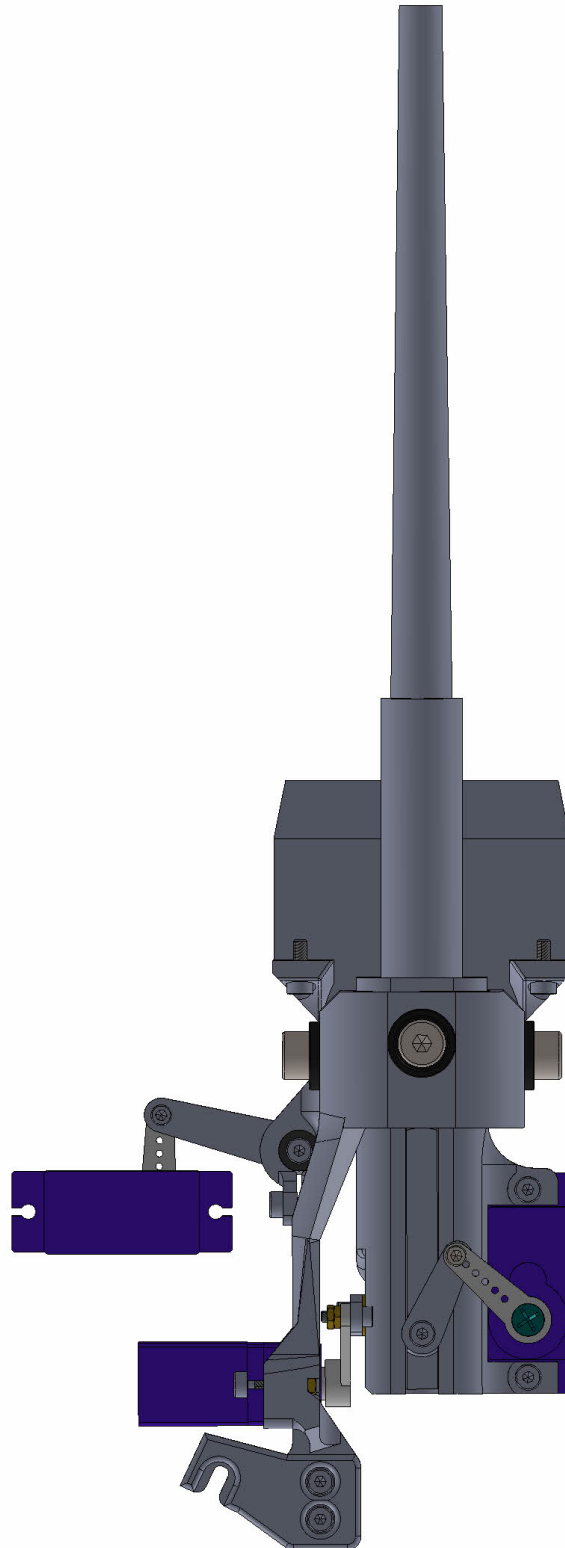


Insert the cannon into part 02A-08. Prepare M2x6 screws for the part.
Prepare the servo as shown.

Chapter 02A - Type A cannon



Connect the servo. Use an M1.6x6 screw and two M1.6 nuts.

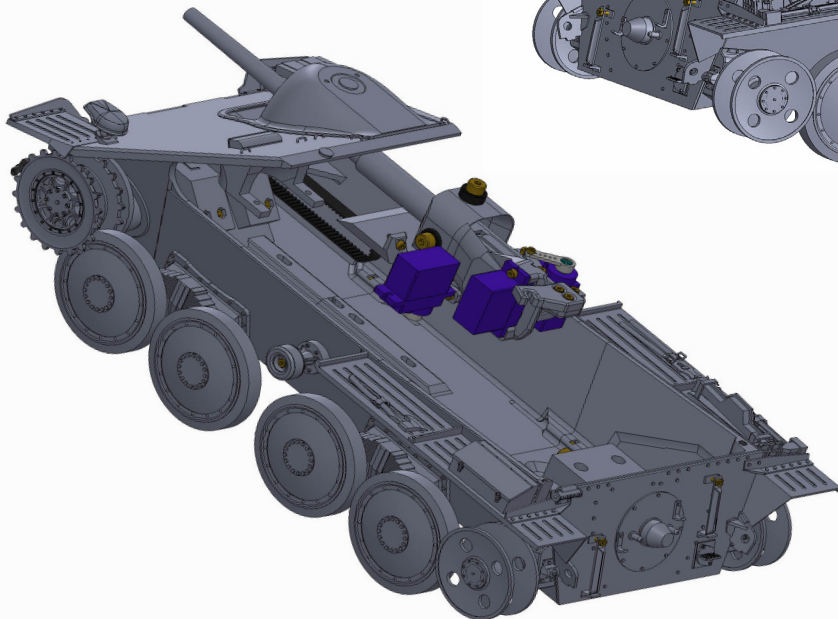
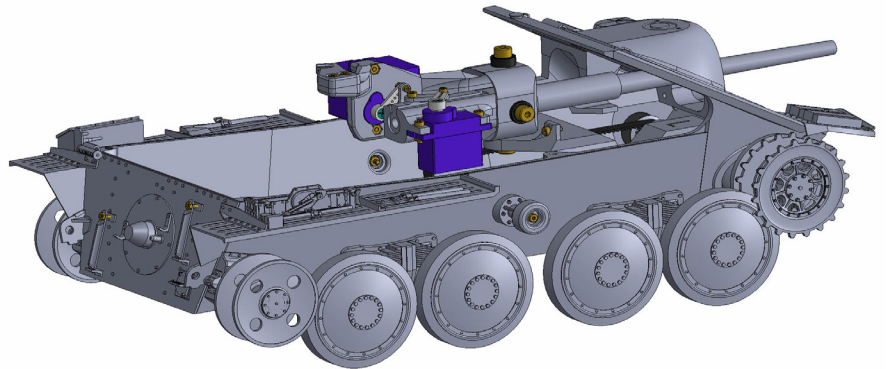
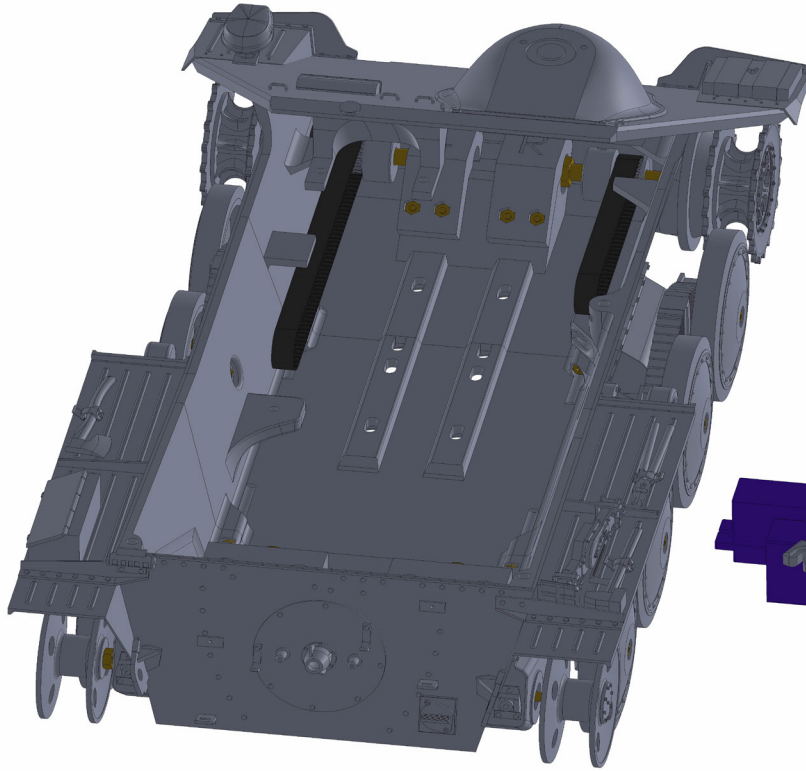


Ready Type A Cannon

Before installing the cannon in the vehicle, make sure the cannon is assembled exactly according to instructions and all screws on the servos are secured against loosening!!!

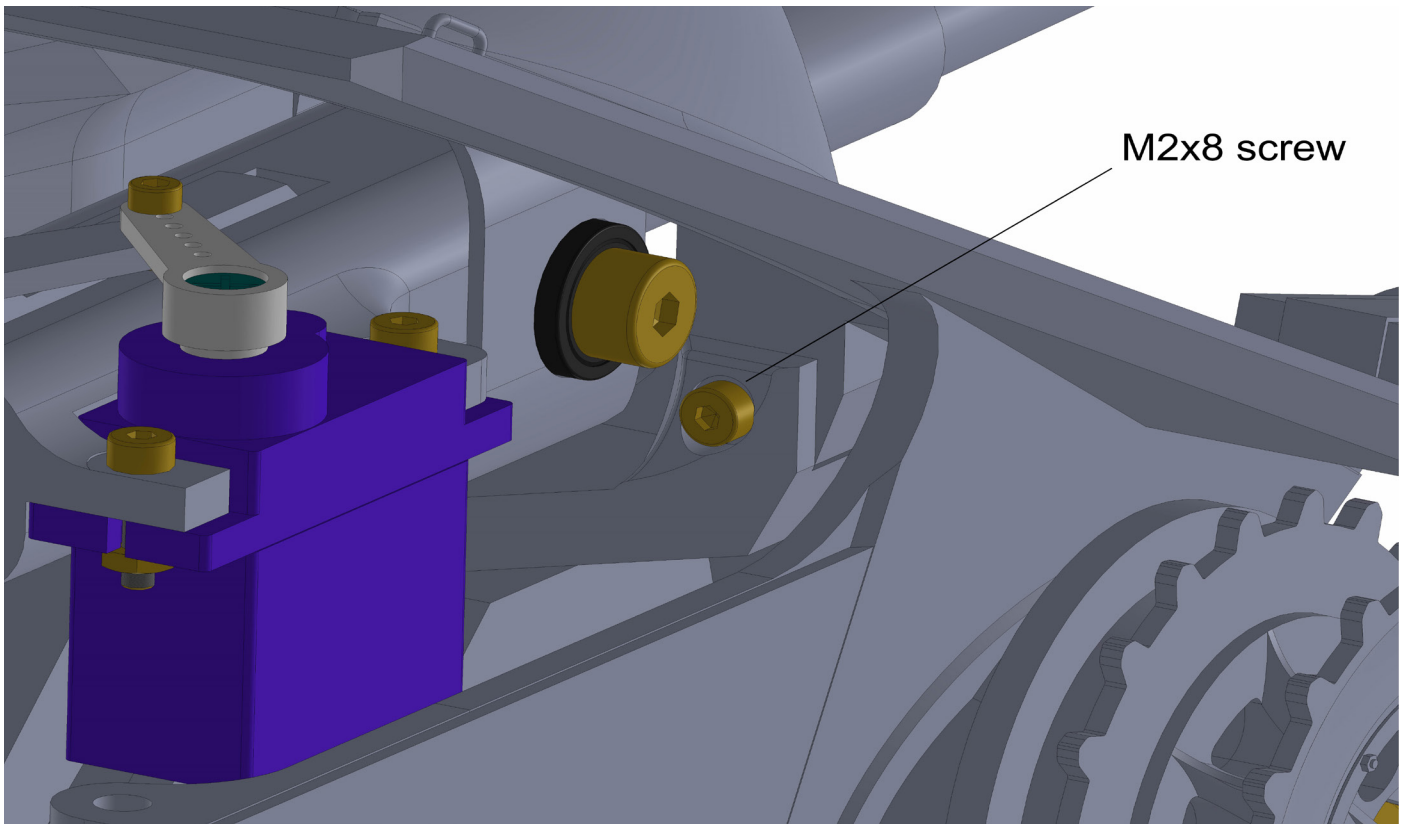
Chapter 02A - Type A cannon

02A assembly



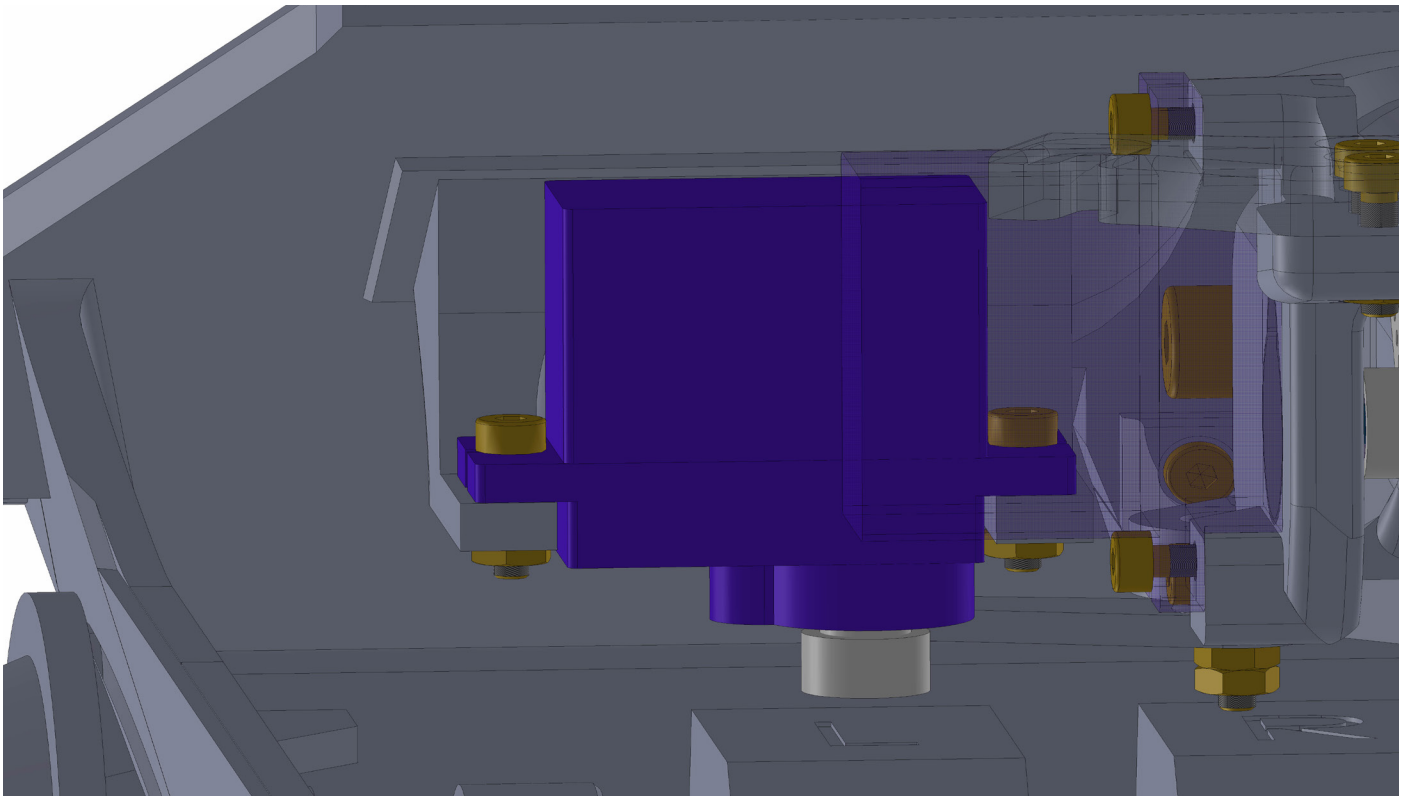
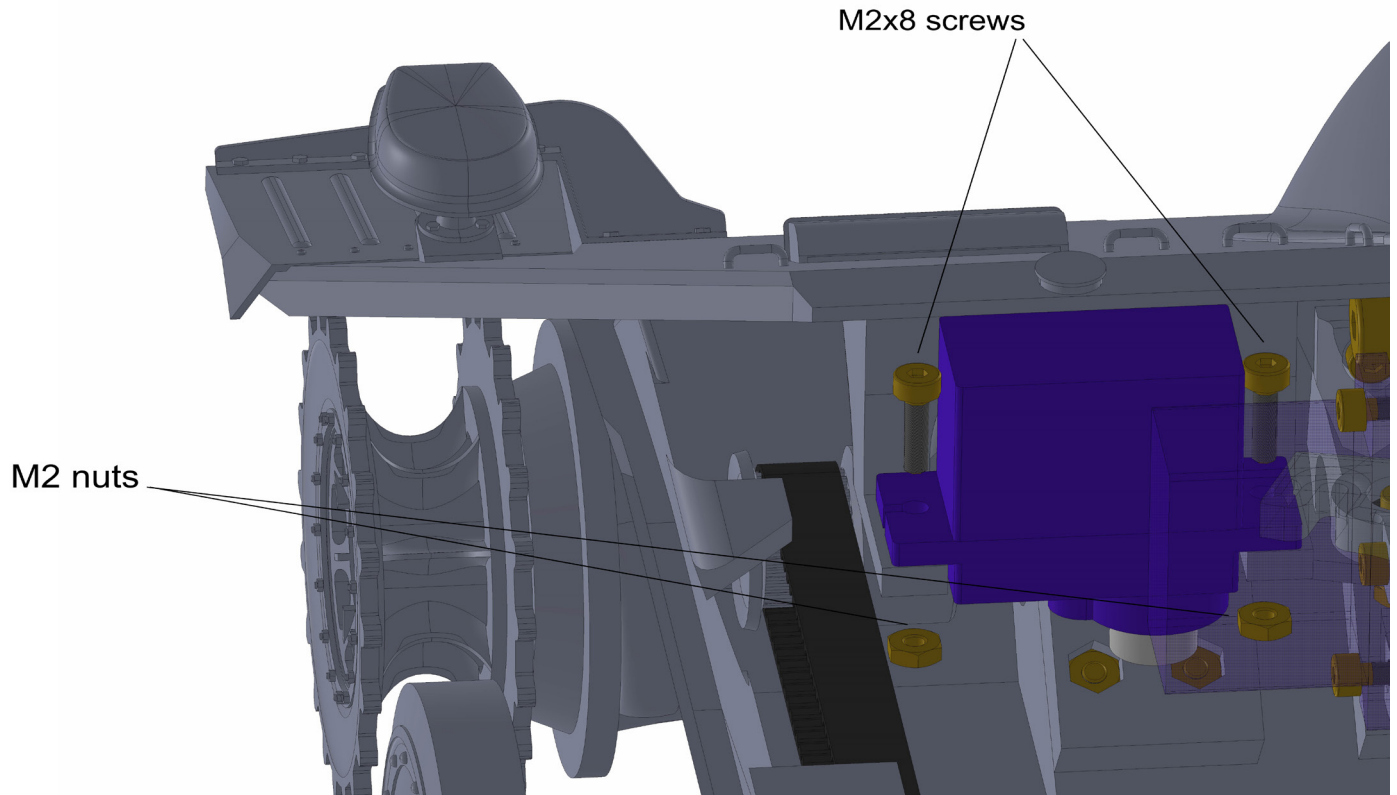
Insert the cannon into the vehicle.

Chapter 02A - Type A cannon



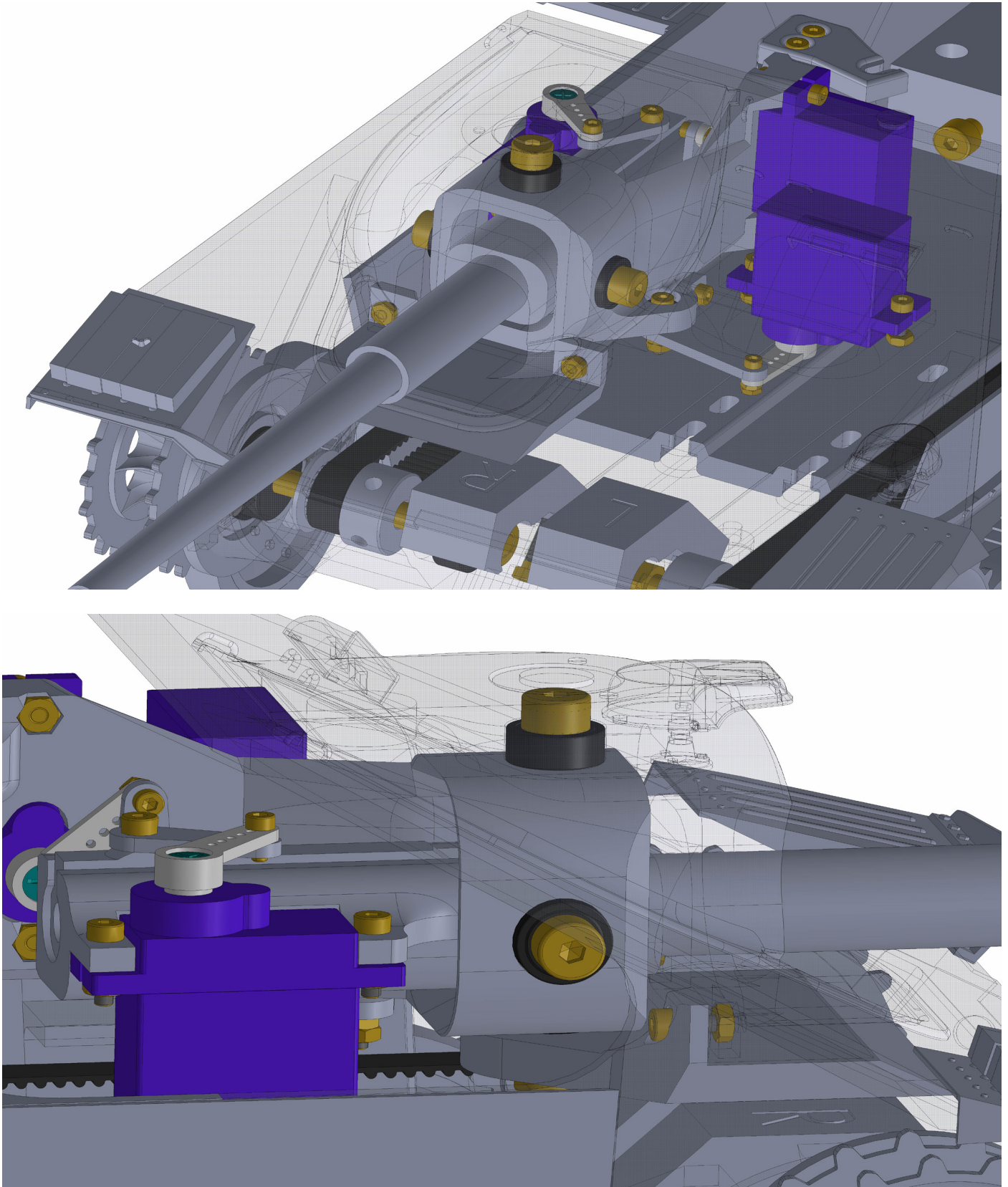
Attach the cannon with two M2x8 screws to part 01-01.
You can temporarily uninstall the elevator servo for better access from the left side.

Chapter 02A - Type A cannon



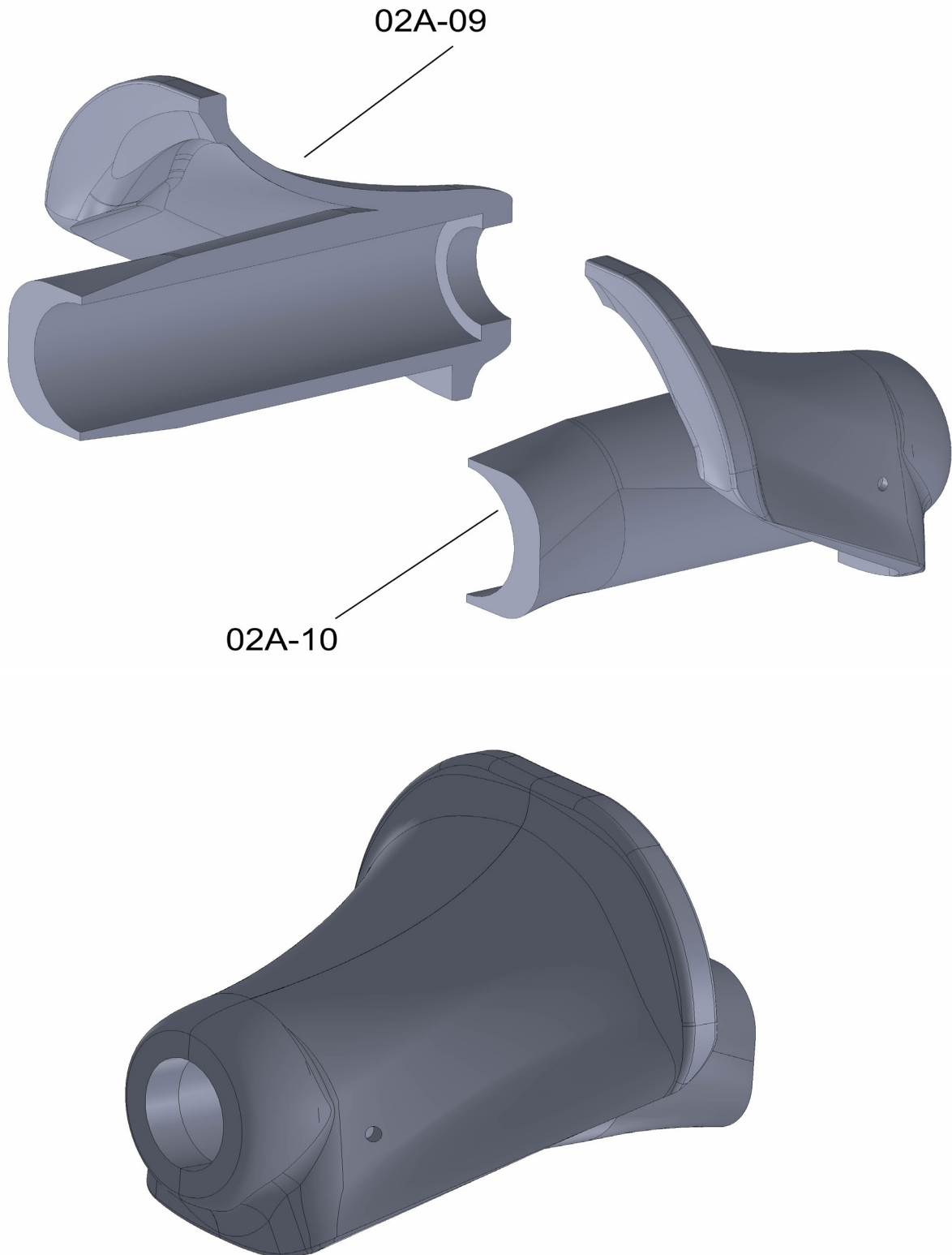
Complete the cannon installation by fixing the servo.
Use two M2x8 screws and a nut.

Chapter 02A - Type A cannon



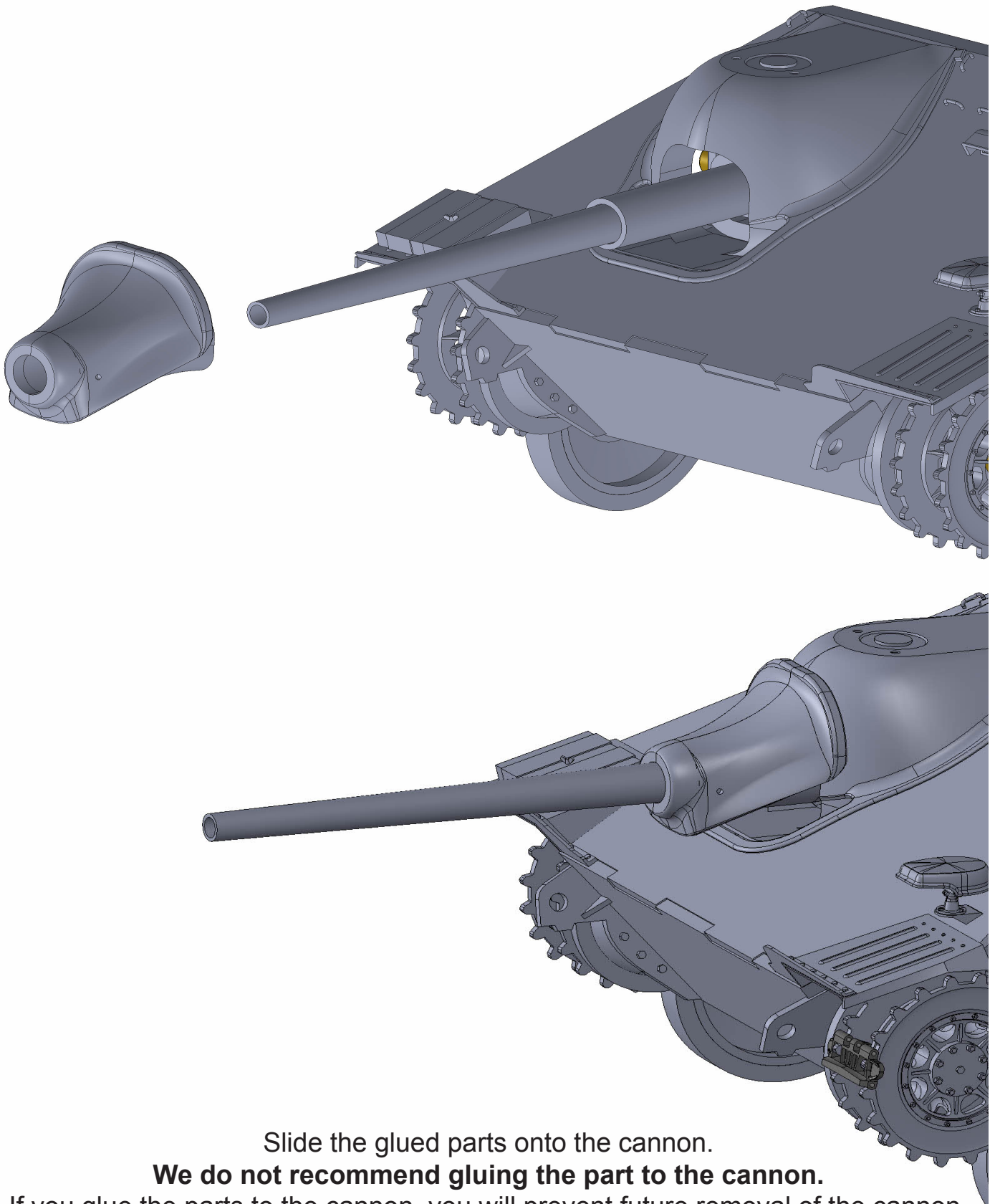
Additive views for better installation orientation.

Chapter 02A - Type A cannon



Glue parts 02A-09 and 02A-10 together.

Chapter 02A - Type A cannon



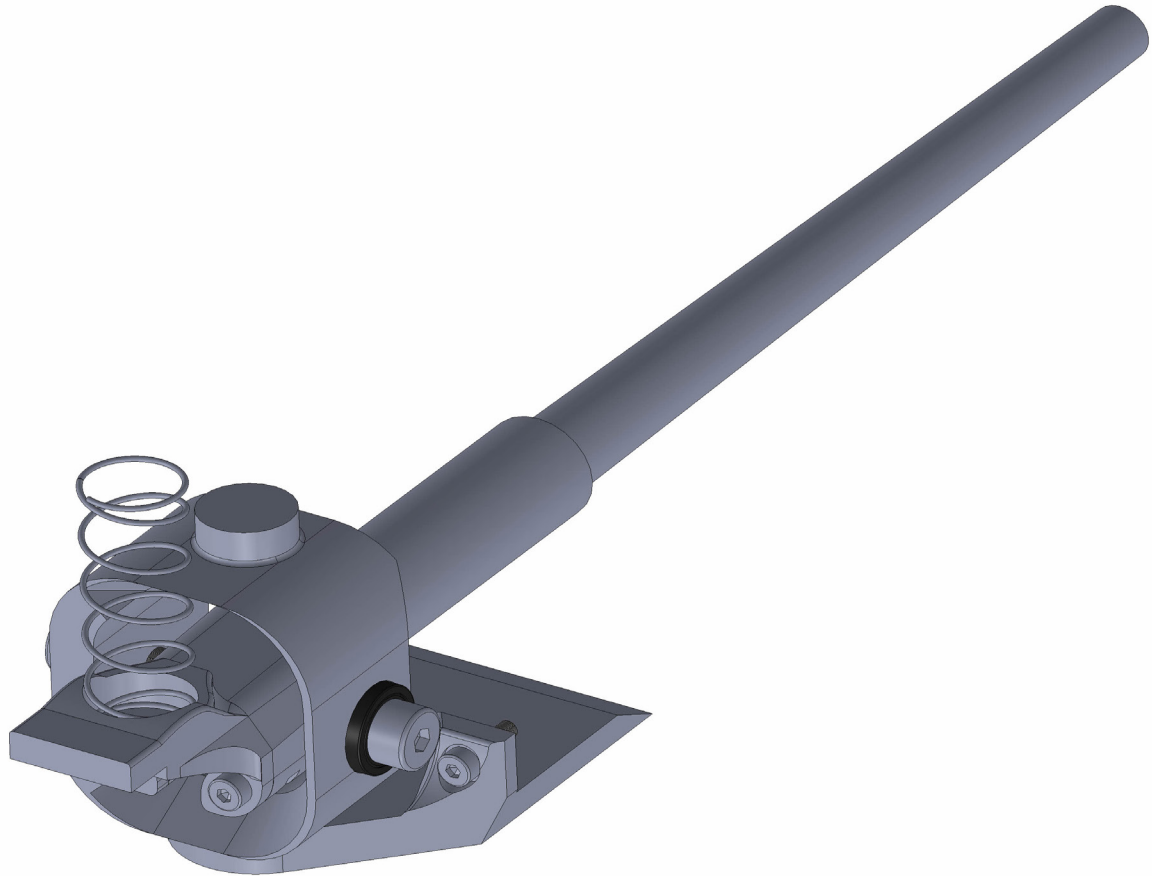
Slide the glued parts onto the cannon.

We do not recommend gluing the part to the cannon.

If you glue the parts to the cannon, you will prevent future removal of the cannon.

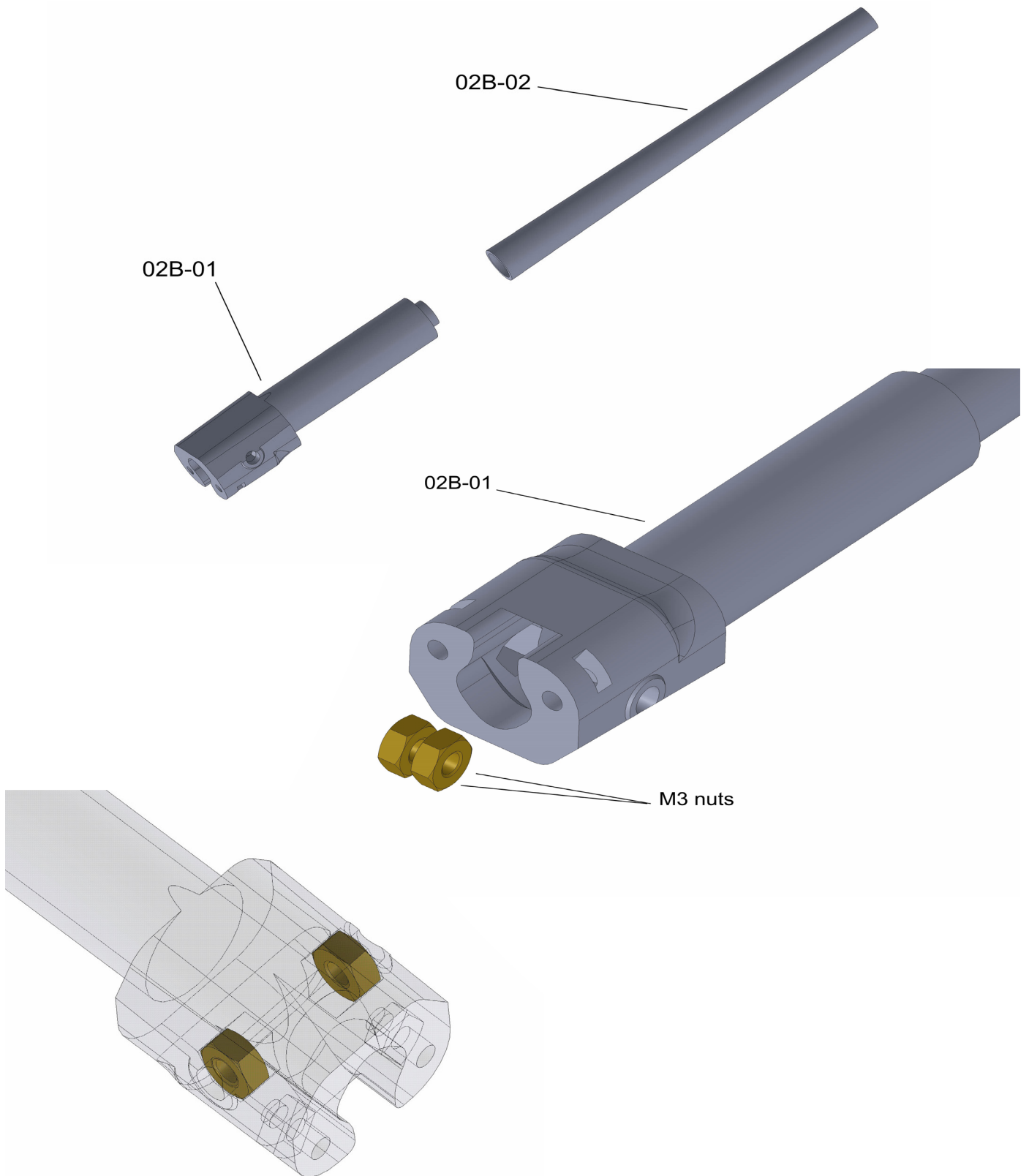
If there is a large clearance between the pieces,
wrap the cannon with a piece of office paper.

Chapter 02B - Type B cannon



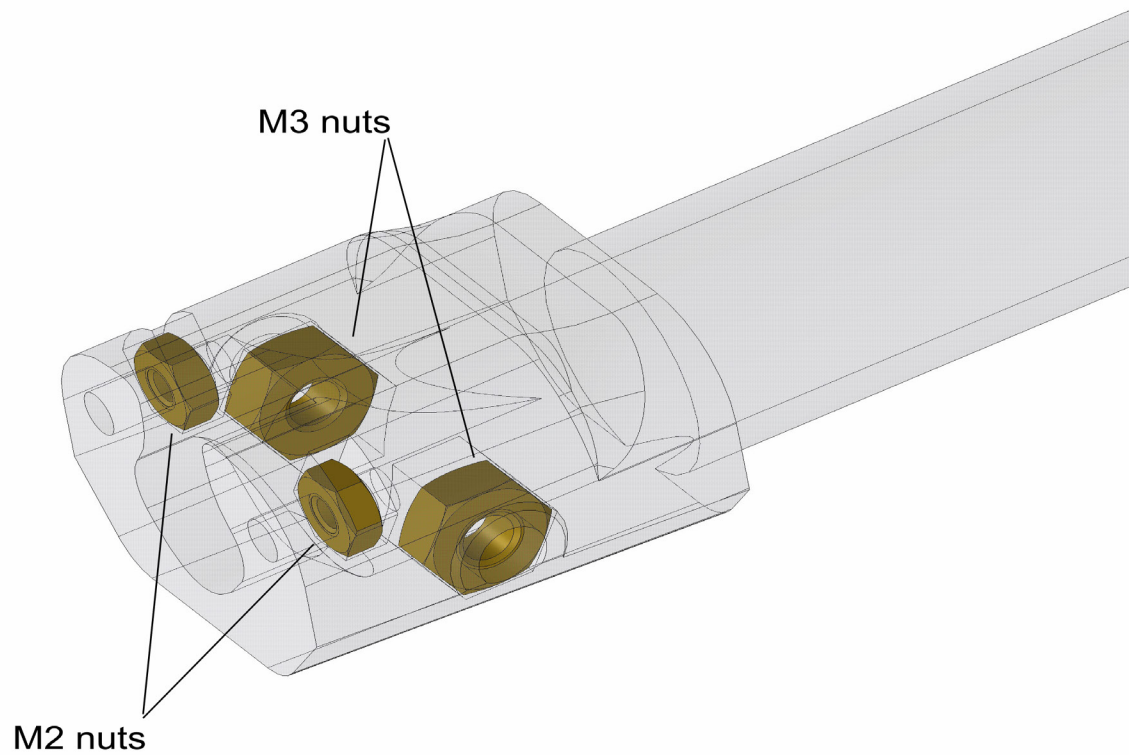
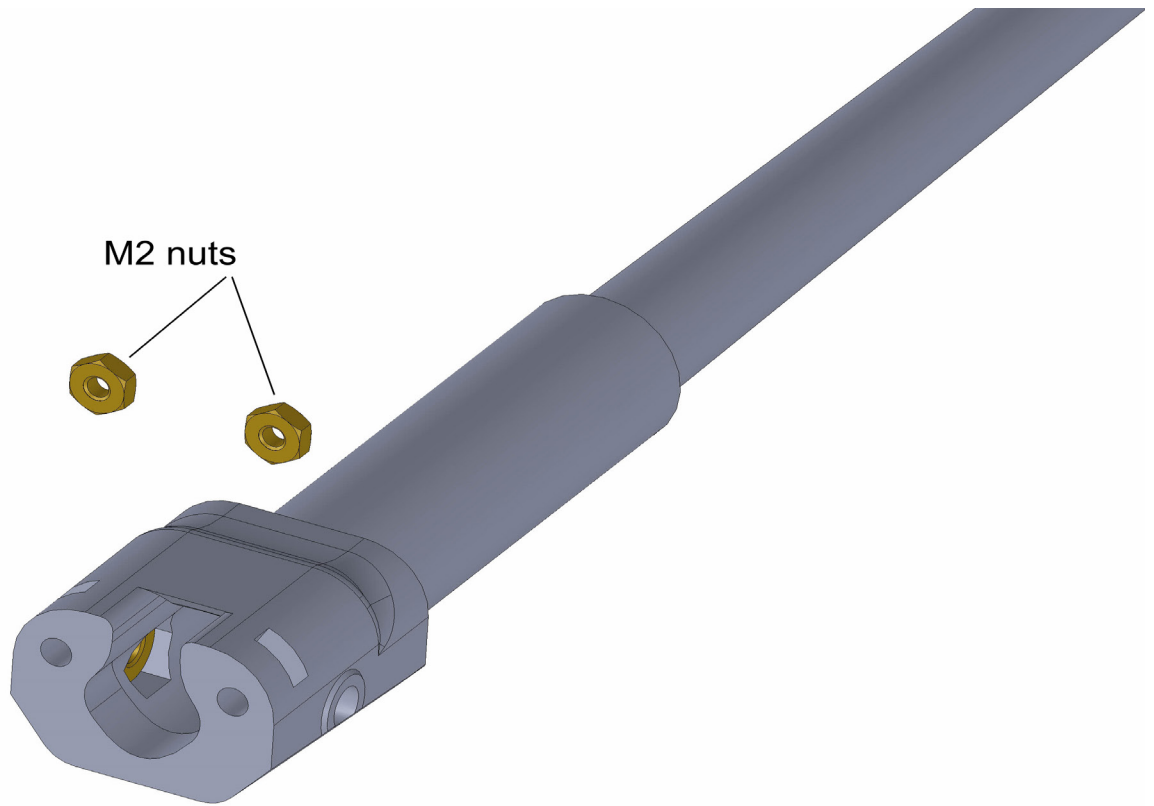
AMOUNT:	1
PRINTED PARTS:	02B-01 (1x), 02B-02 (1x), 02B-03 (1x), 02B-04 (1x), 02B-05(1x), 02B-06 (1x), 02B-07 (1x), 02B-08 (1x).
OPTIONAL PRINTED PARTS:	
NON-PRINTED PARTS:	M3x12 screw (2x), M2x20 screw (2x), M2x8 screw (6x), M2x6 screw (2x), M3 nut (2x), M2 nut (8x), 623zz bearing (2x), Heng-Long® compatible elevation spring (1x), Heng-Long® compatible elevation unit (1x).

Chapter 02B - Type B cannon



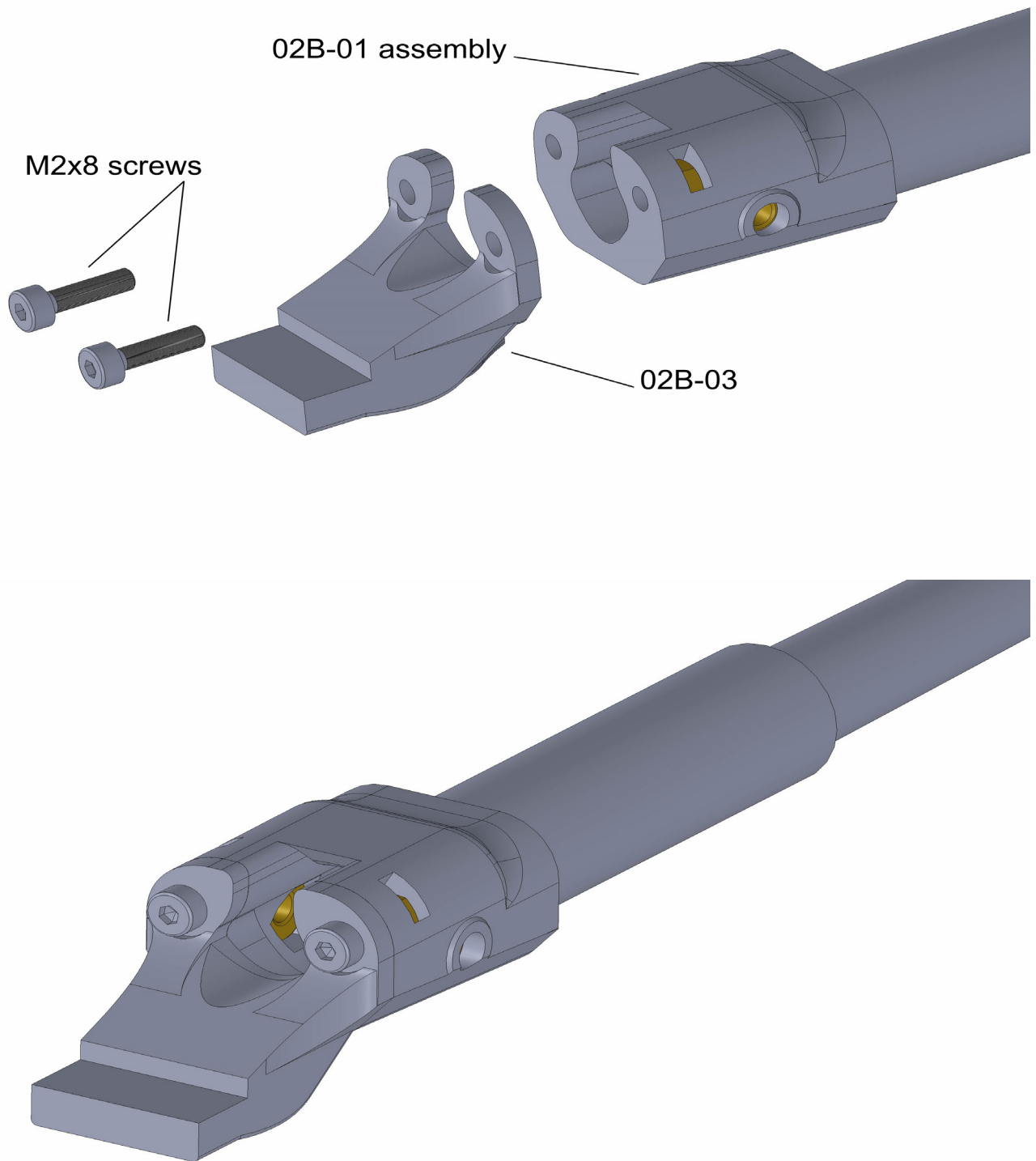
Glue parts 02B-01 and 02B-02 together. Insert two M3 nuts into part 02B-01.

Chapter 02B - Type B cannon



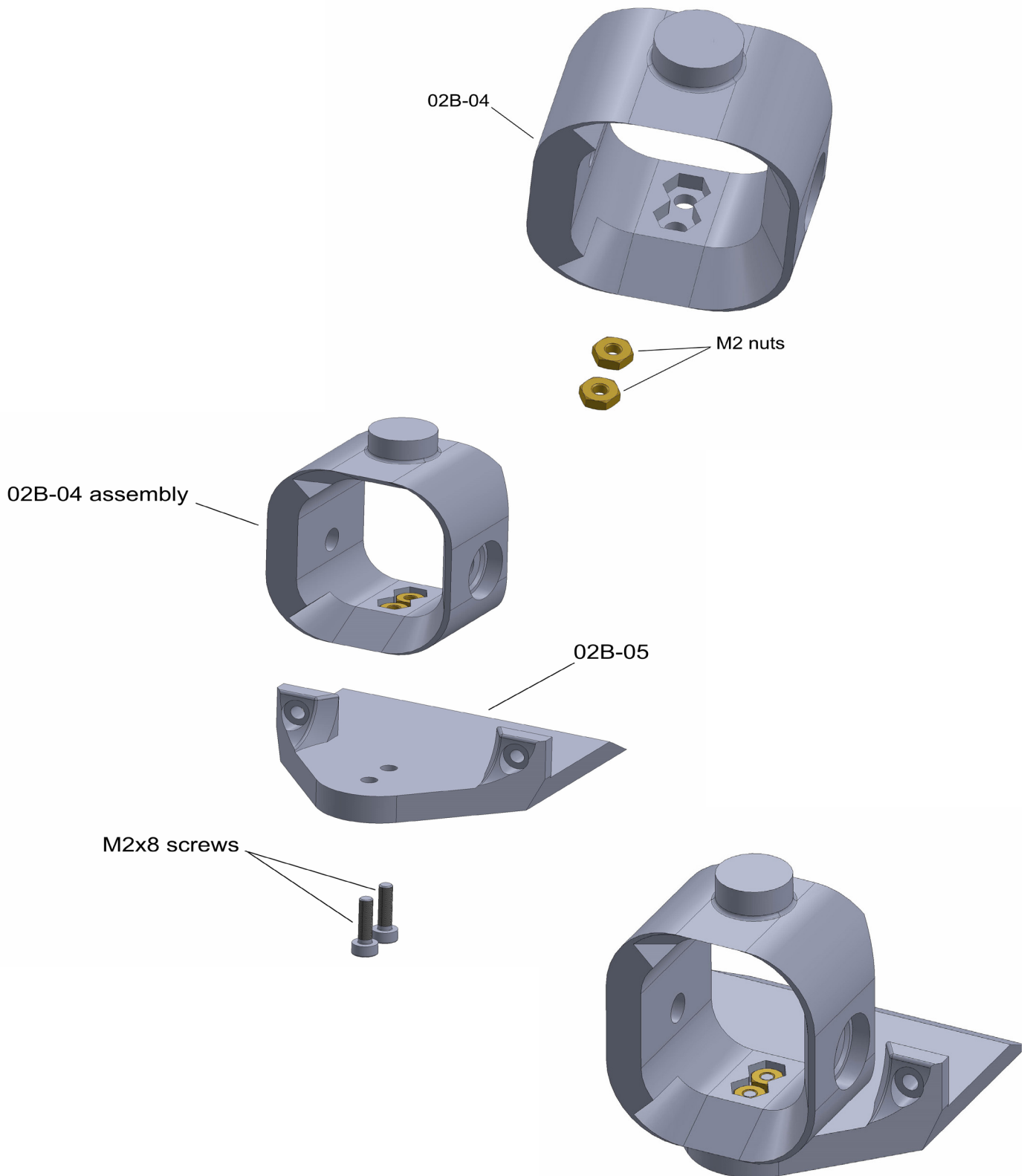
Insert two M2 nuts into part 02B-01.

Chapter 02B - Type B cannon



Join part 02B-03 with two M2x8mm screws.

Chapter 02B - Type B cannon

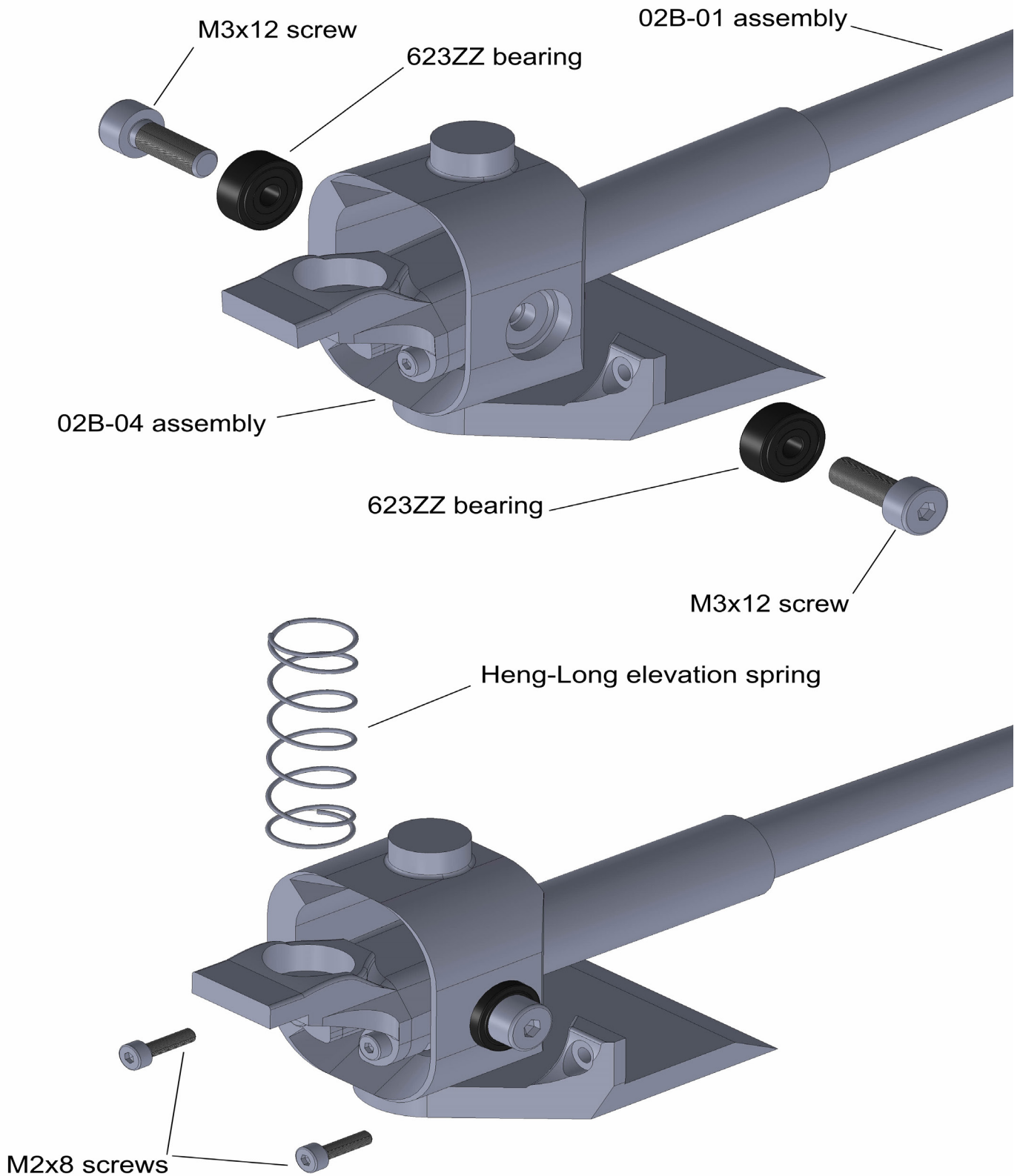


Insert two M2 nuts into part 02B-04.
Attach the prepared subassembly to part 02B-05
with two M2x8 screws.

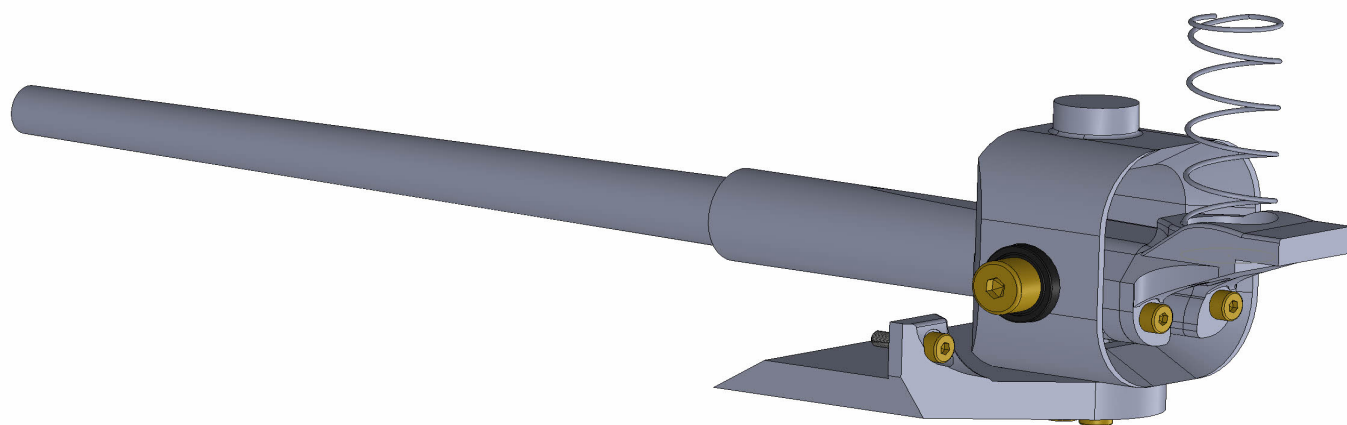
Jagdpanzer 38(t)

Assembly guide

Chapter 02B - Type B cannon

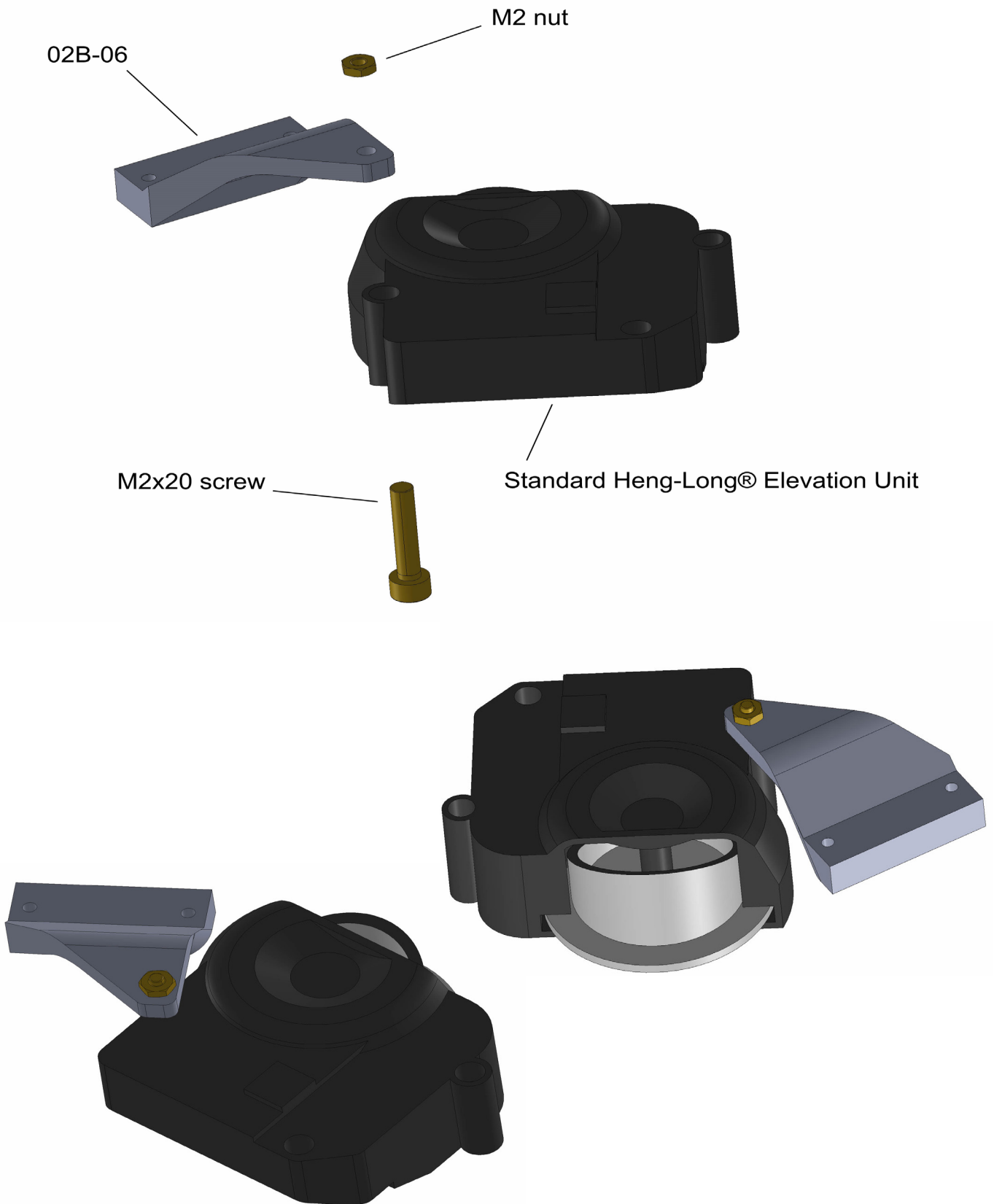


Connect the subassemblies 02B-01 and 02B-04 using two 623ZZ bearings and M3x12 bolts.
 Insert Heng-Long® compatible lift mechanism spring into part 02B-01.
 Prepare two M2x6 screws for part 02B-05.



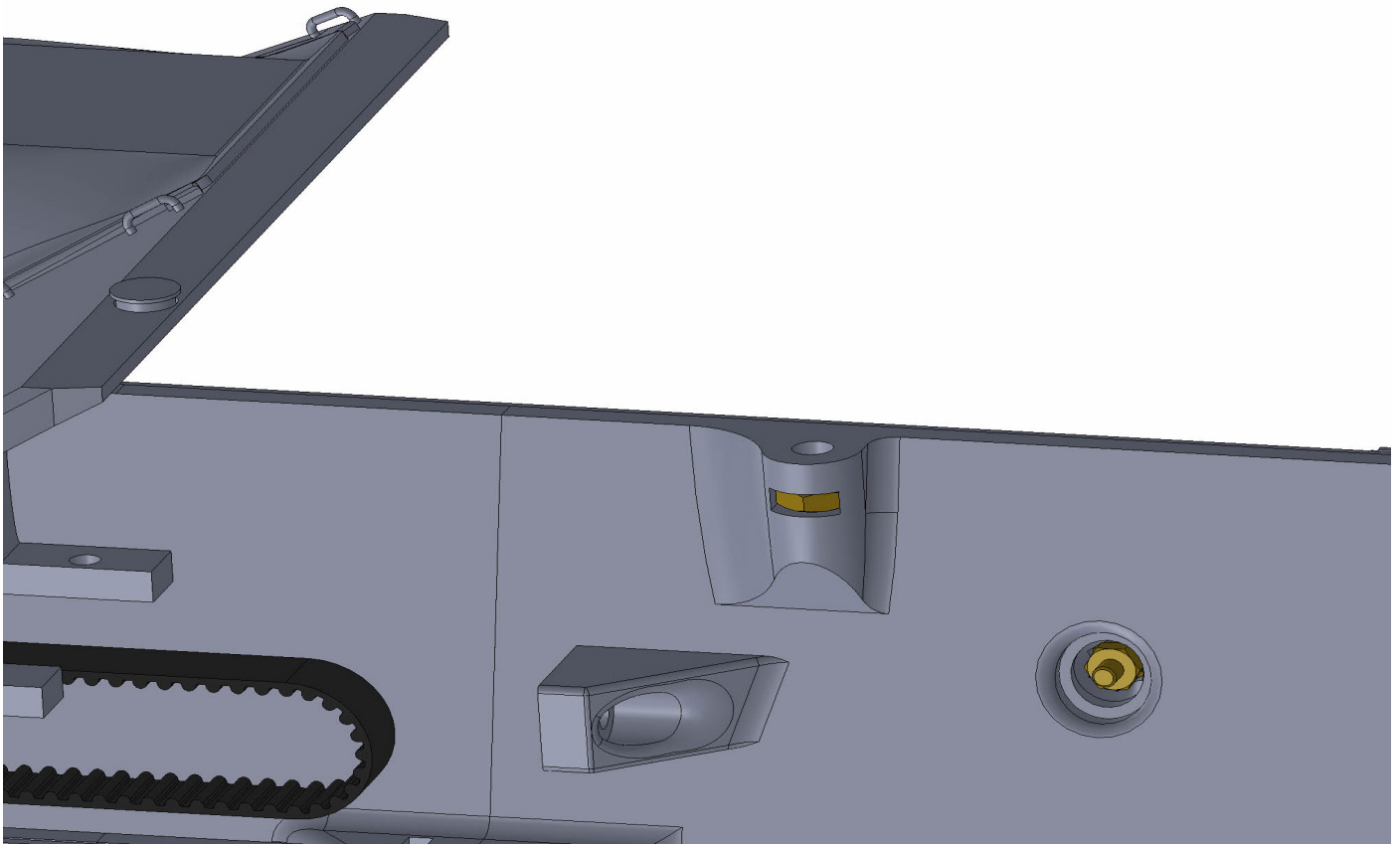
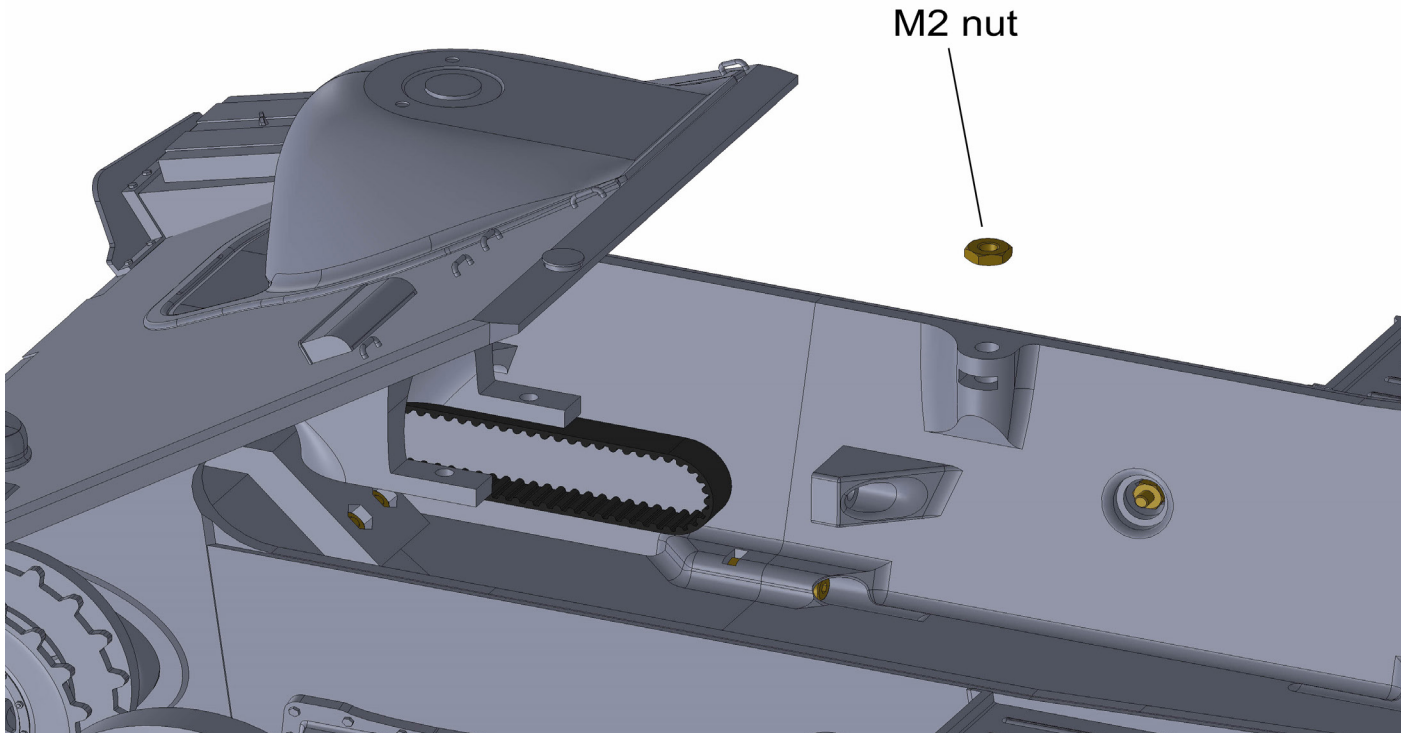
Almost finished type B cannon.

Chapter 02B - Type B cannon



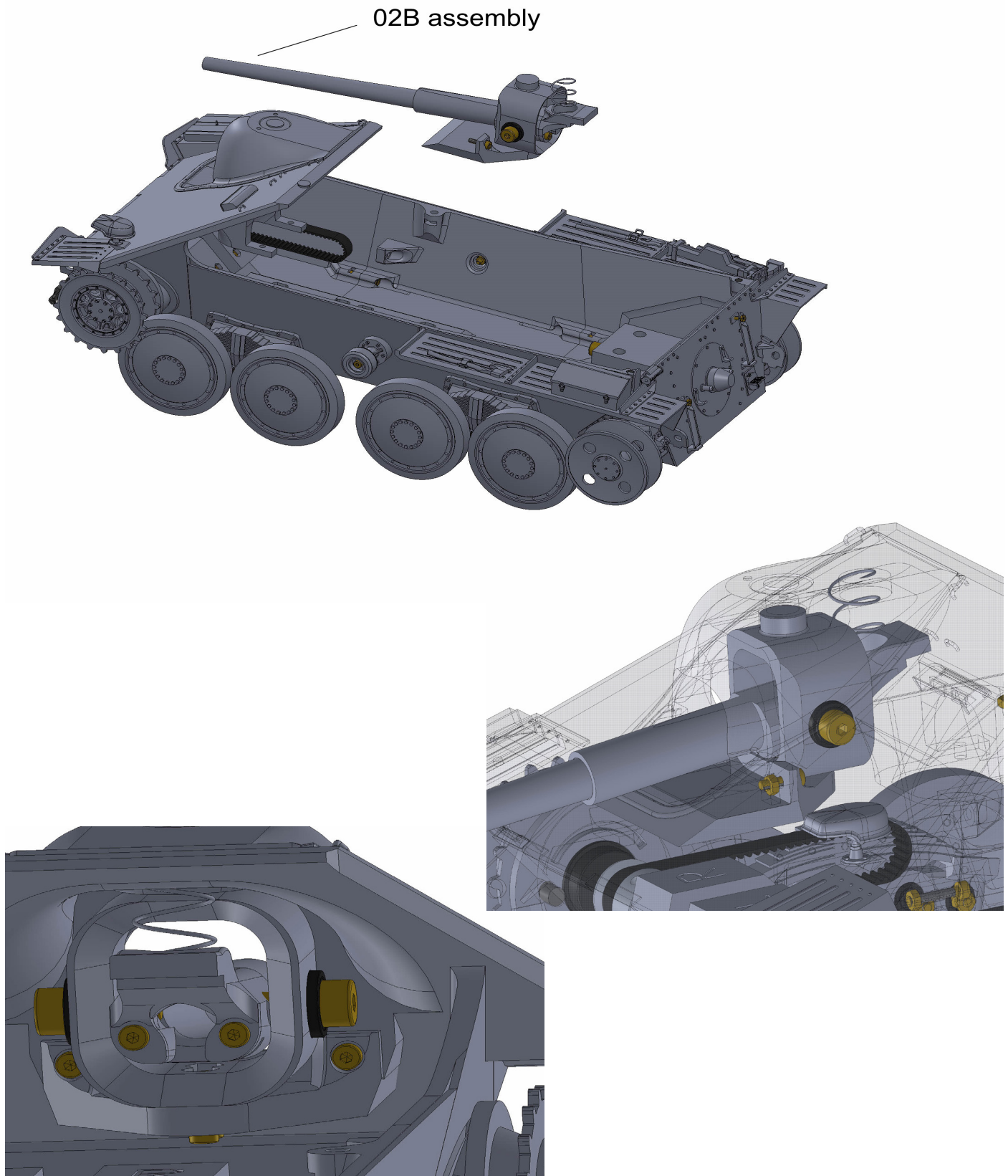
Connect the 02B-06 part and the Heng-Long® compatible elevation unit with a M2x20 screw and nuts.

Chapter 02B - Type B cannon



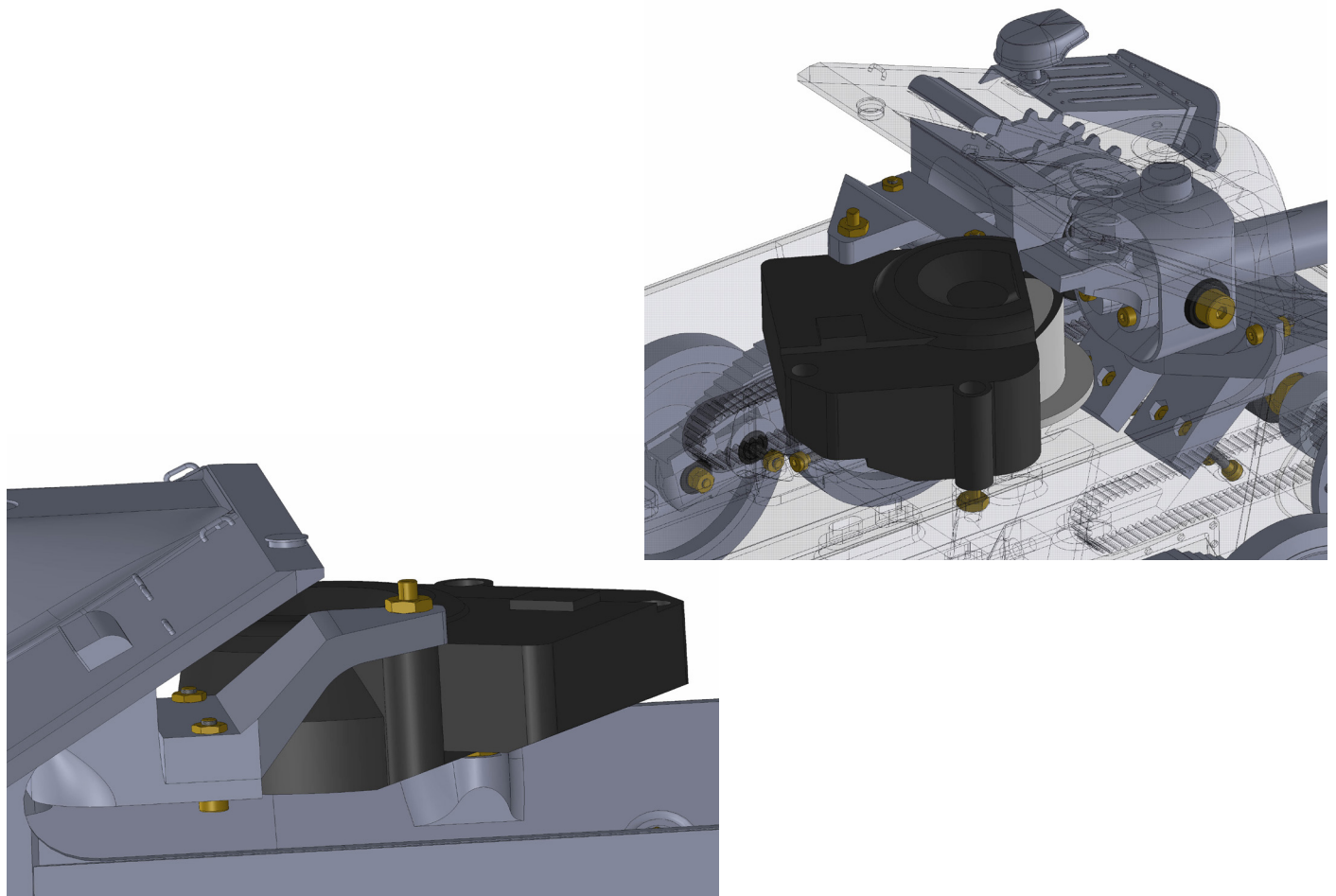
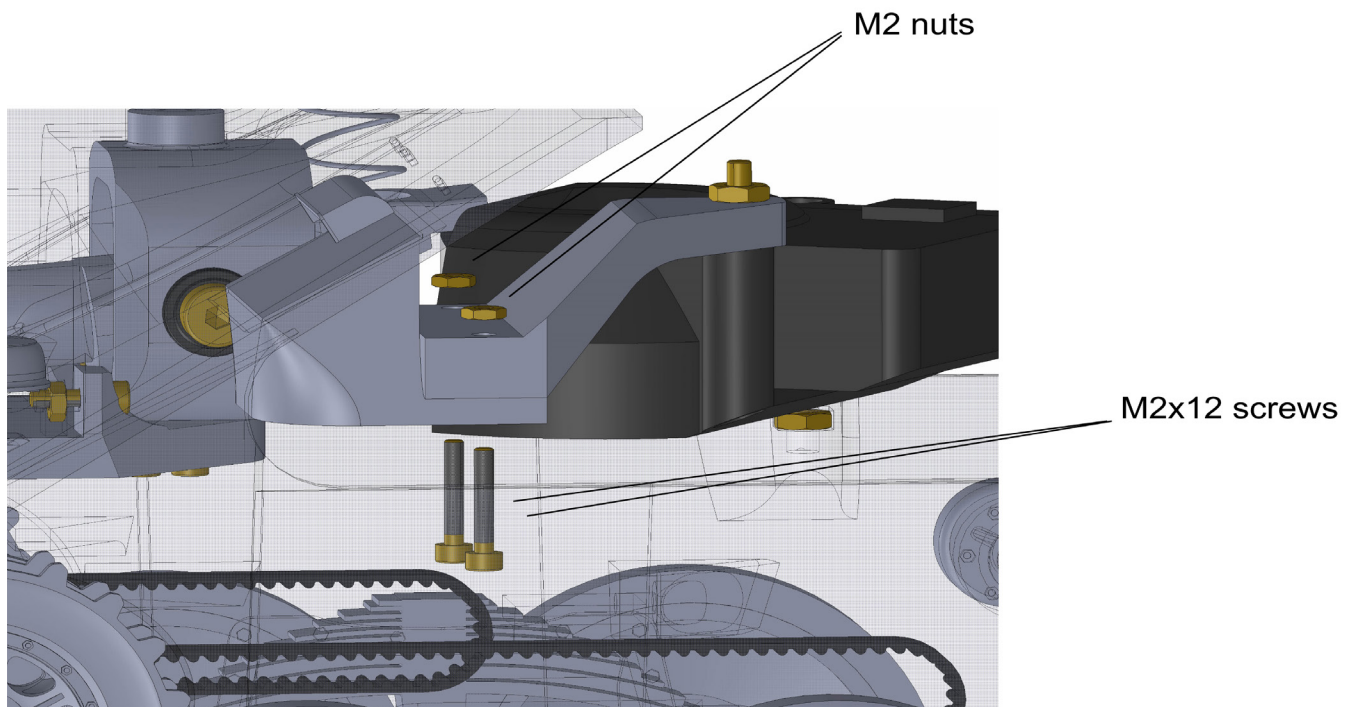
Insert nut M2 into part 01-02.

Chapter 02B - Type B cannon



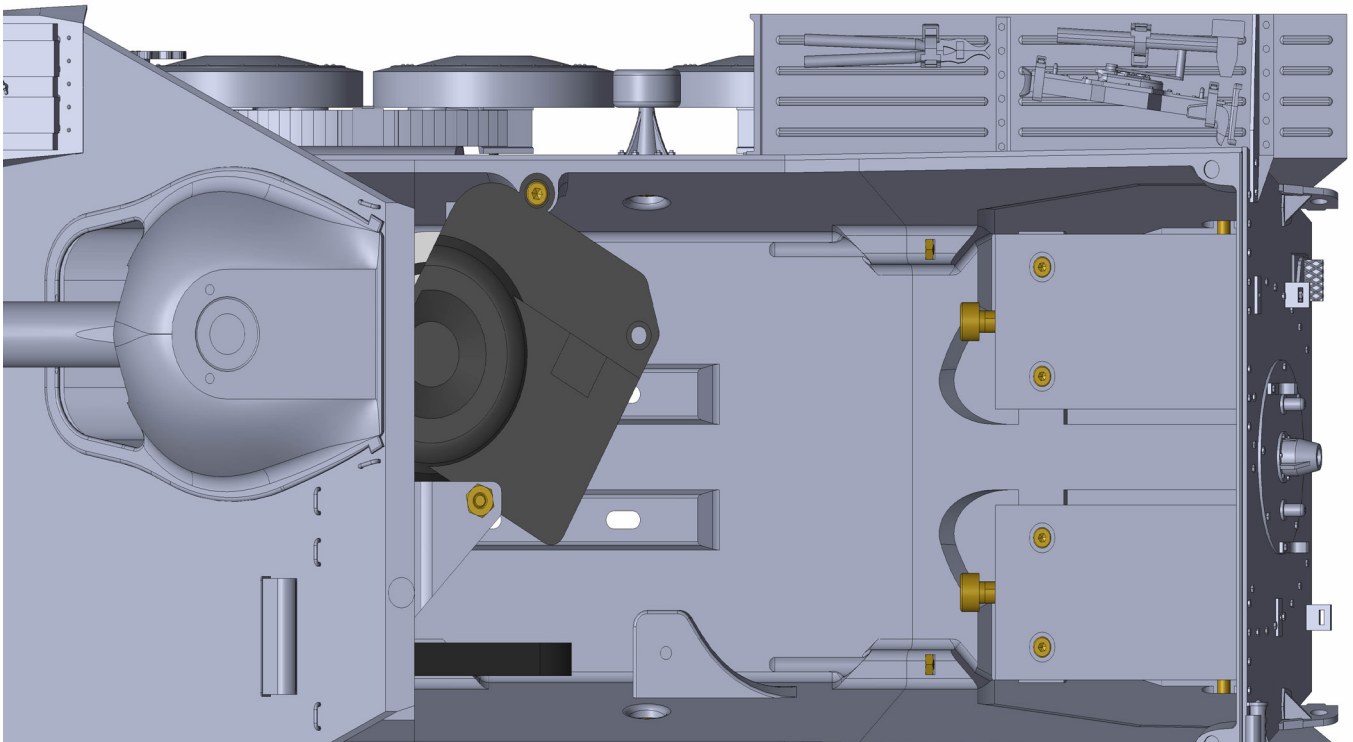
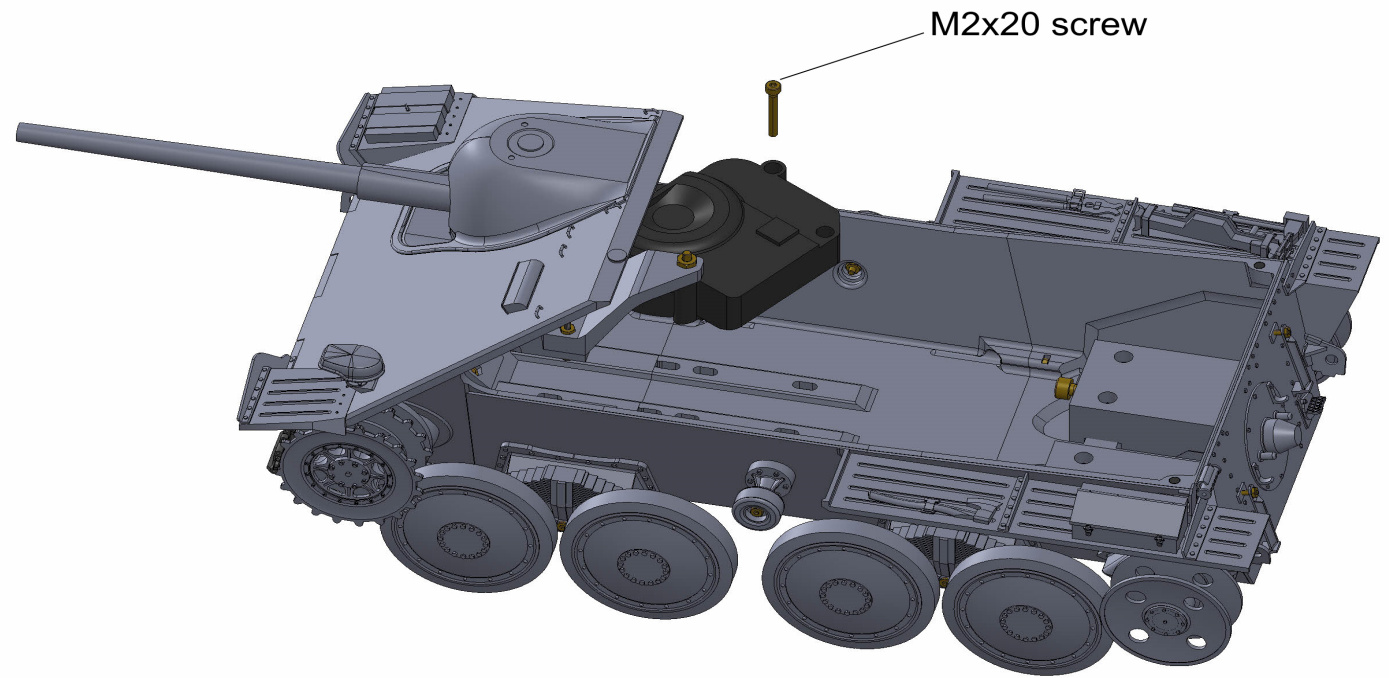
Insert subassembly 02B into the vehicle. Attach to part 01-01 with two M2 screws.

Chapter 02B - Type B cannon



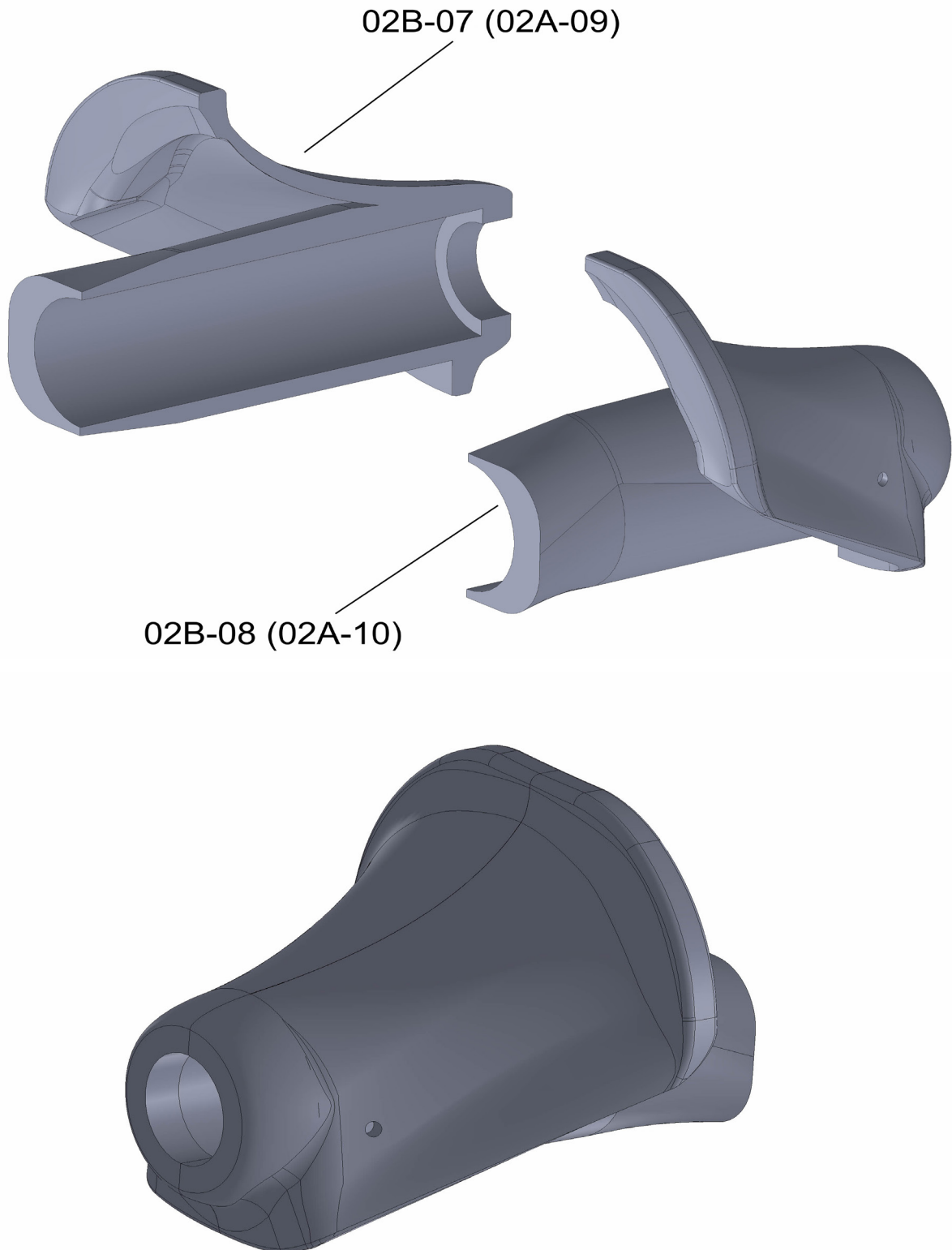
Install the prepared elevation unit using two M2x12 screws and nuts.

Chapter 02B - Type B cannon



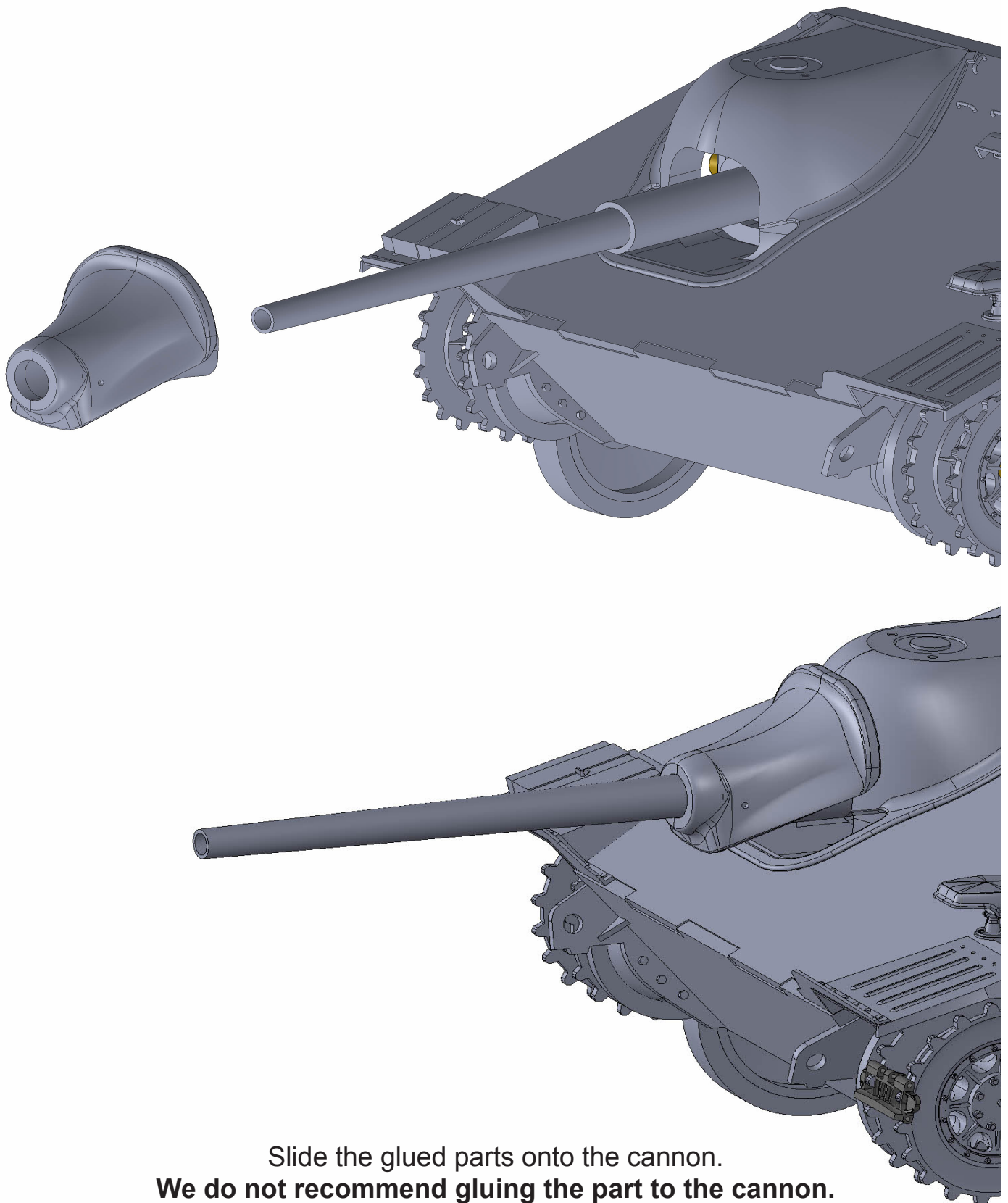
Insert the second M2x20 screw into the elevation mechanism.

Chapter 02B - Type B cannon



Glue parts 02B-07 and 02B-08 together.
The parts are identical to parts 02A-09 and 02A-10.

Chapter 02B - Type B cannon



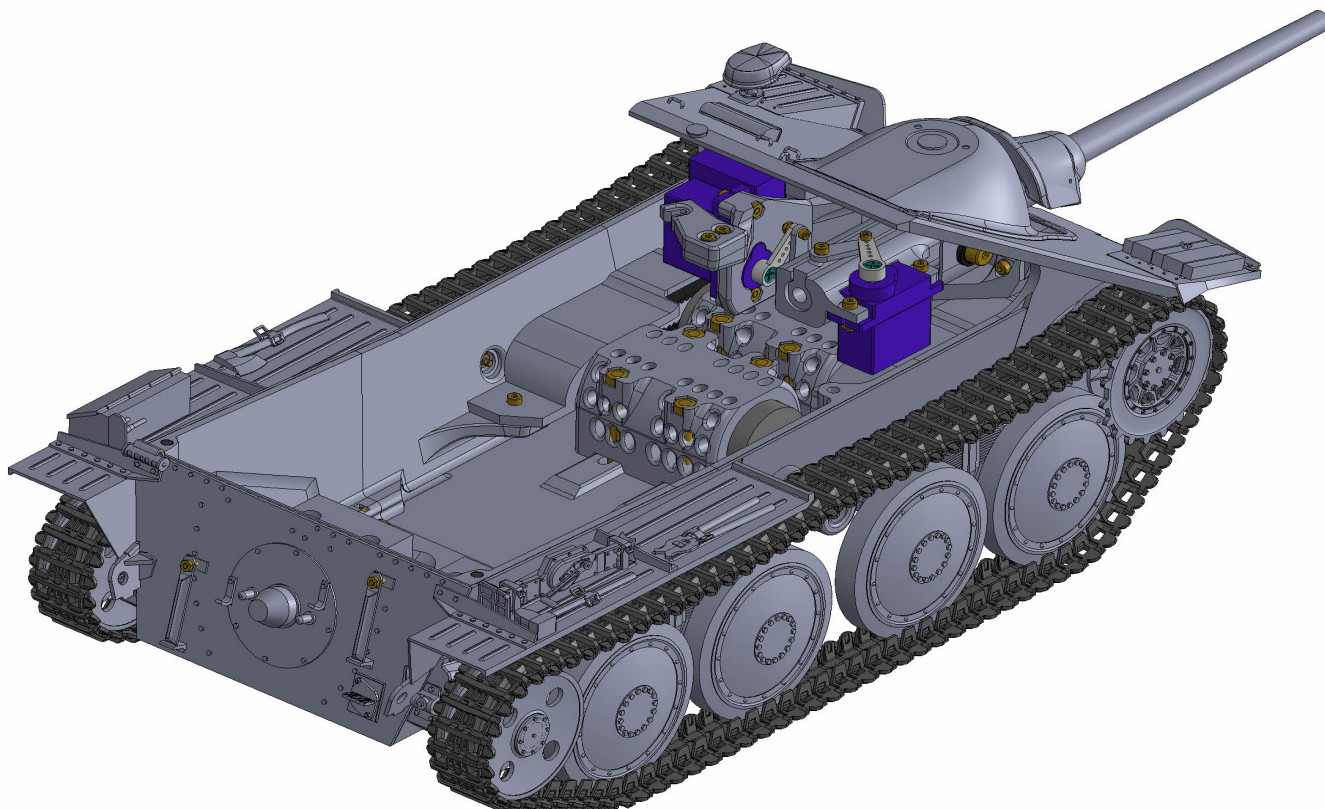
Slide the glued parts onto the cannon.

We do not recommend gluing the part to the cannon.

If you glue the parts to the cannon, you will prevent future removal of the cannon.

If there is a large clearance between the pieces,
wrap the cannon with a piece of office paper.

Chapter 03 - Motors and tracks



AMOUNT:	1
PRINTED PARTS:	03-01 (2x), 03-02 (2x) ,03-03 (1x), 03-04 (1x), 03-05 (188x)
OPTIONAL PRINTED PARTS:	03-01_176RPM (2x), 03-02_176RPM (2x).
NON-PRINTED PARTS:	M3x30 screw (8x), M2x10 screw (1x), M2x8 screw (1x), M3 nut (8x), M2 nut (1x), JGA25-370 280RPM Geared Motor (2x), GT-2 Pulley 16 teeth, bore 4 mm (2x), Wire - 0,8 mm diameter and 19 mm lenght (184x).

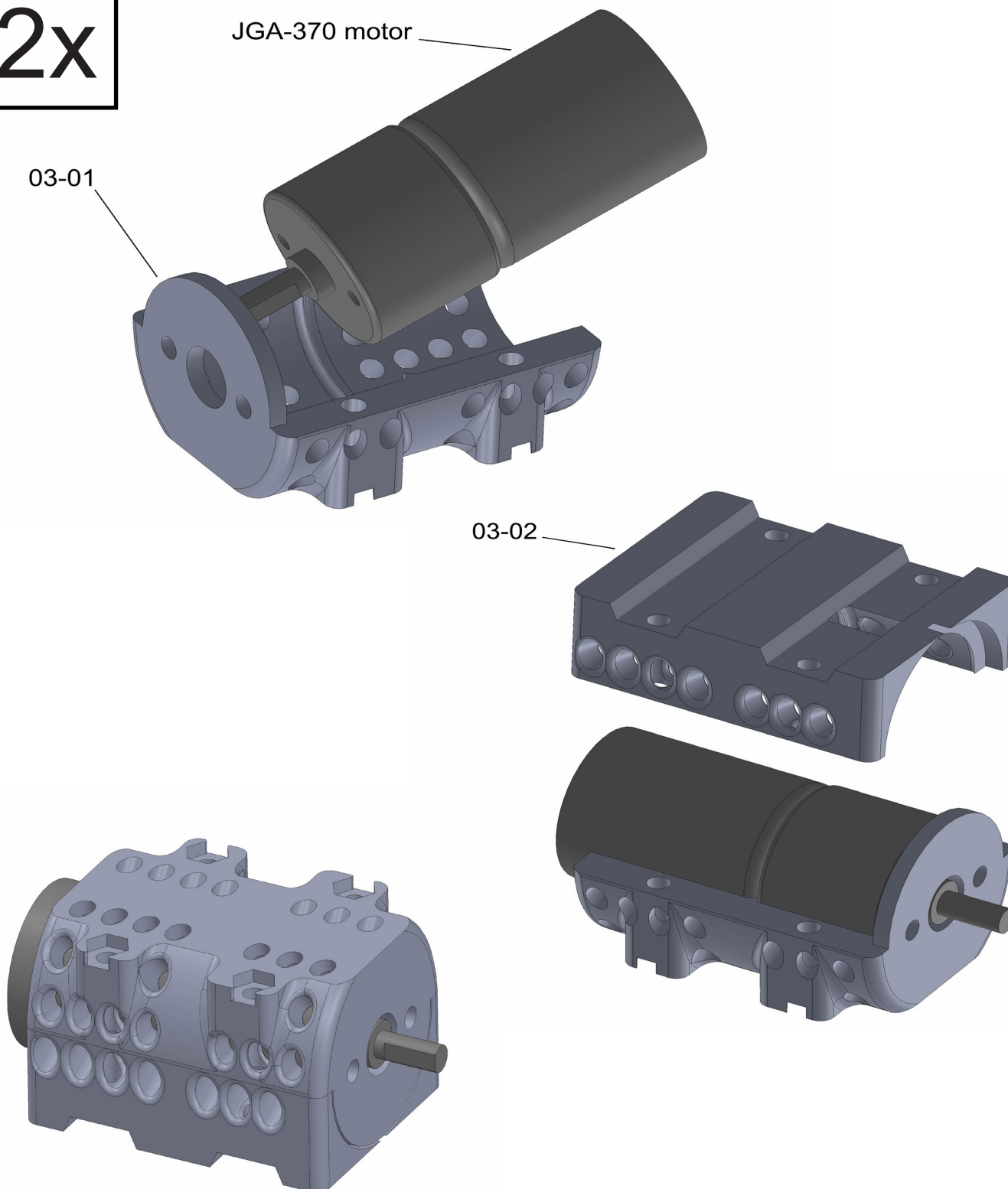
Chapter 03 - Motors and tracks

2x

JGA-370 motor

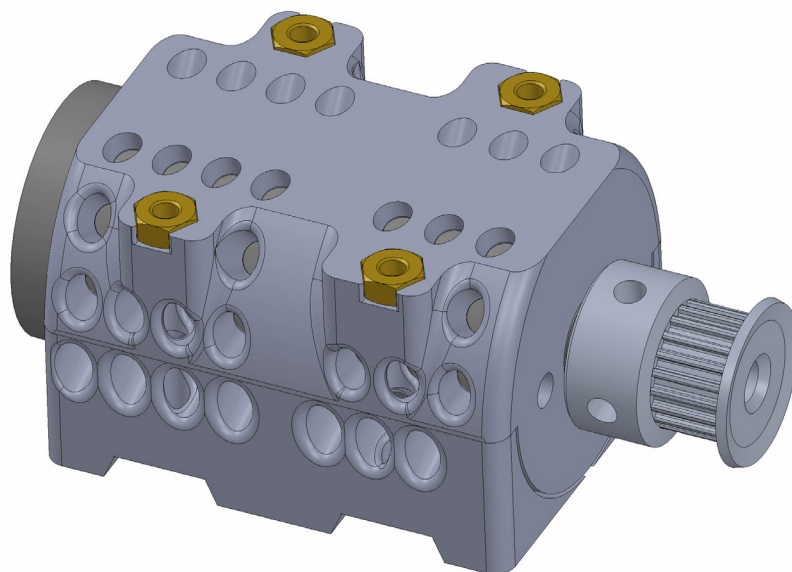
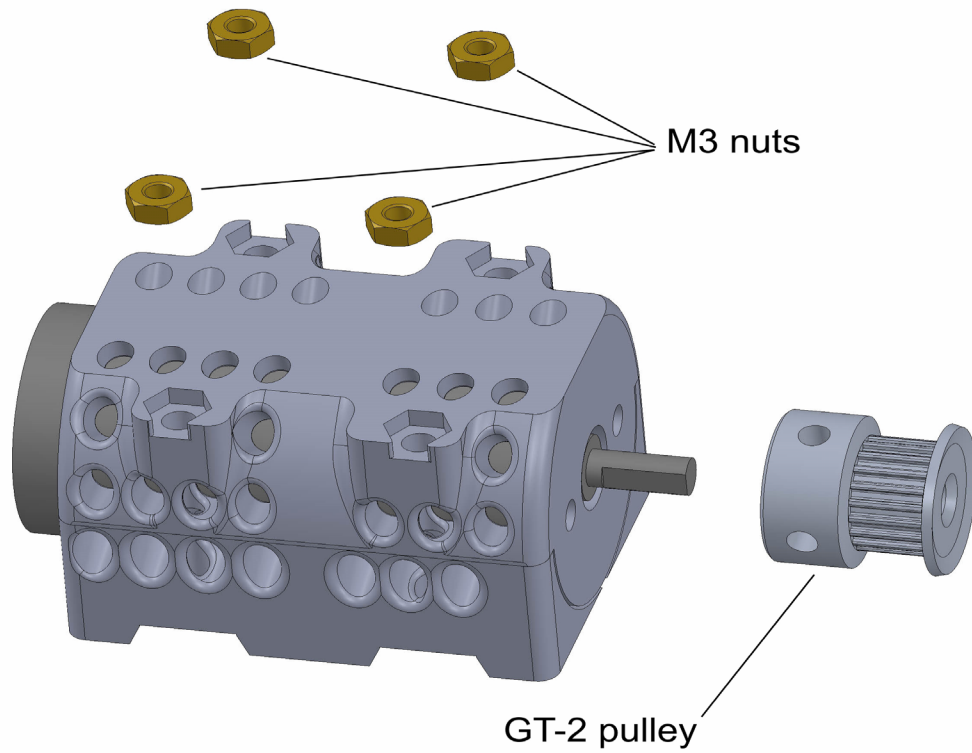
03-01

03-02



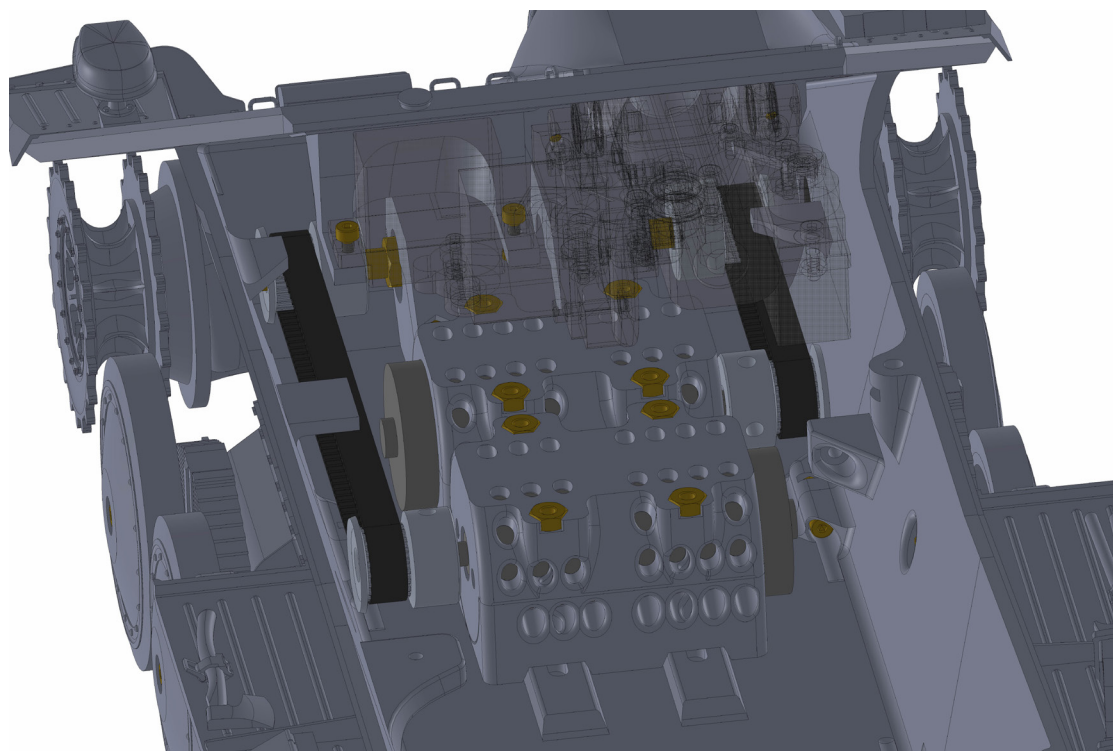
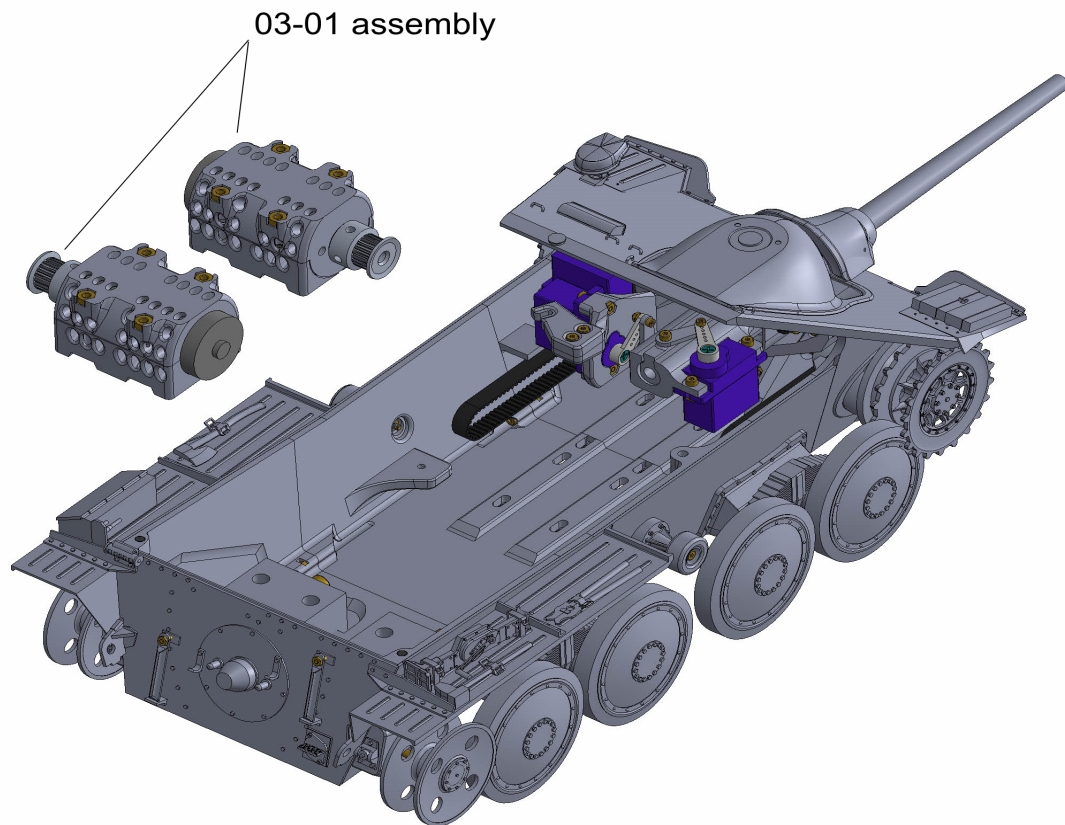
Assemble the motors as shown.

Insert the JGA25-370 280RPM motor into part 03-01 and close with part 03-02. You need two pieces. Use parts 03-01/02_176RPM or 03-01/02_POLOLU if you want to use different motors (JGA25-370 176RPM or POLOLU motors).

2x

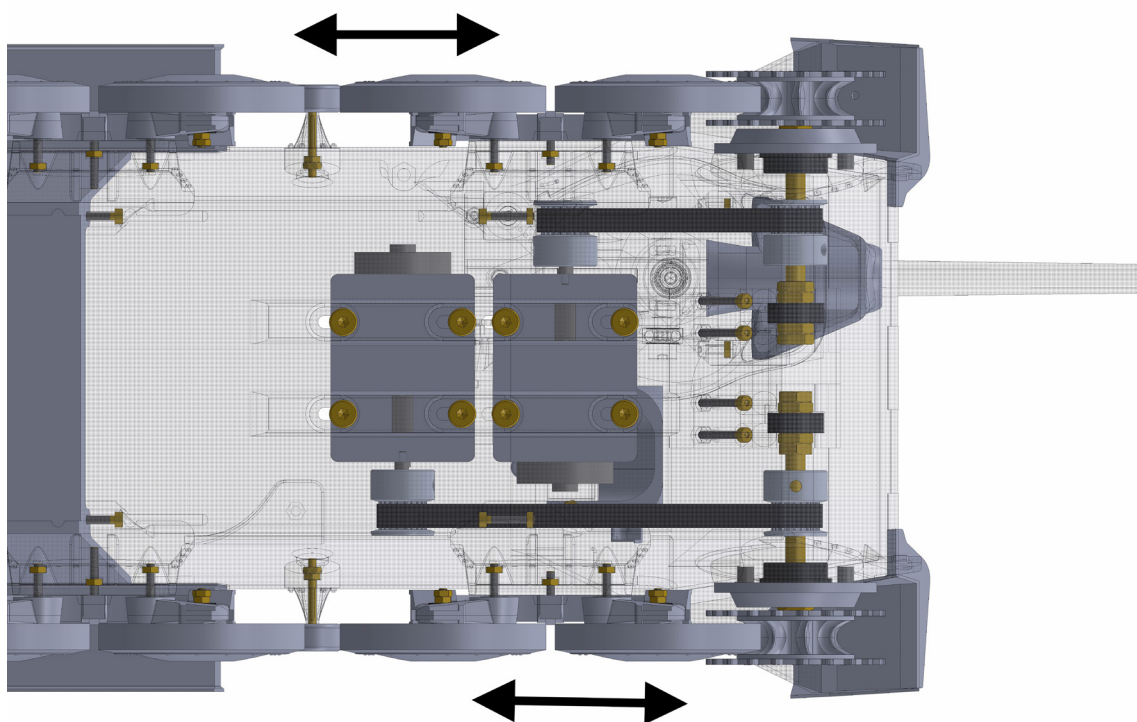
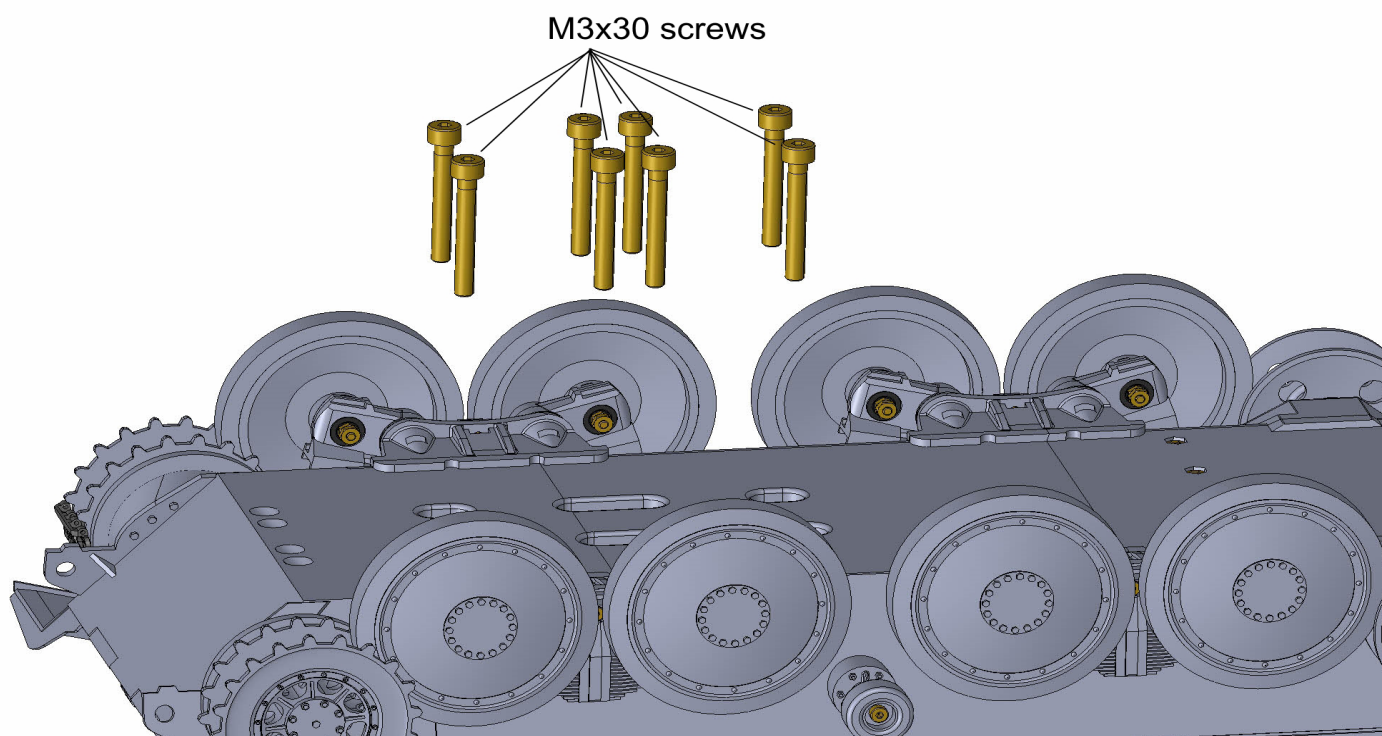
Insert 4 M3 nuts and attach the GT-2 pulley.

Chapter 03 - Motors and tracks

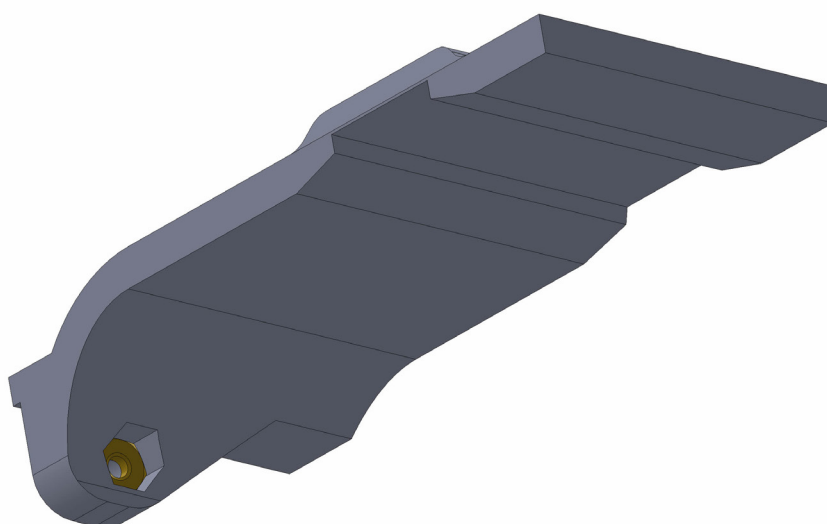
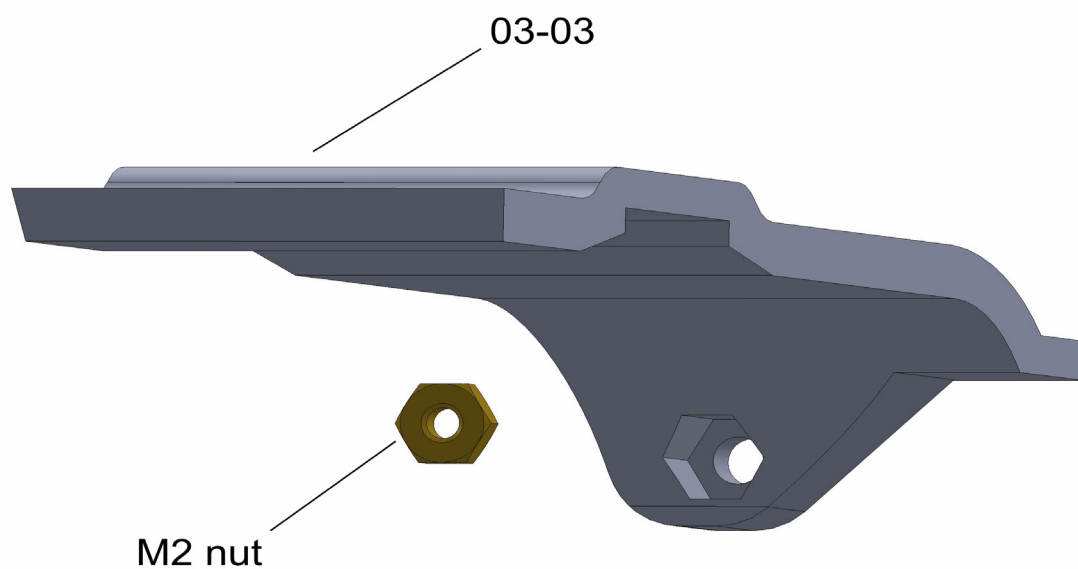


Insert both motors into the model.

Chapter 03 - Motors and tracks



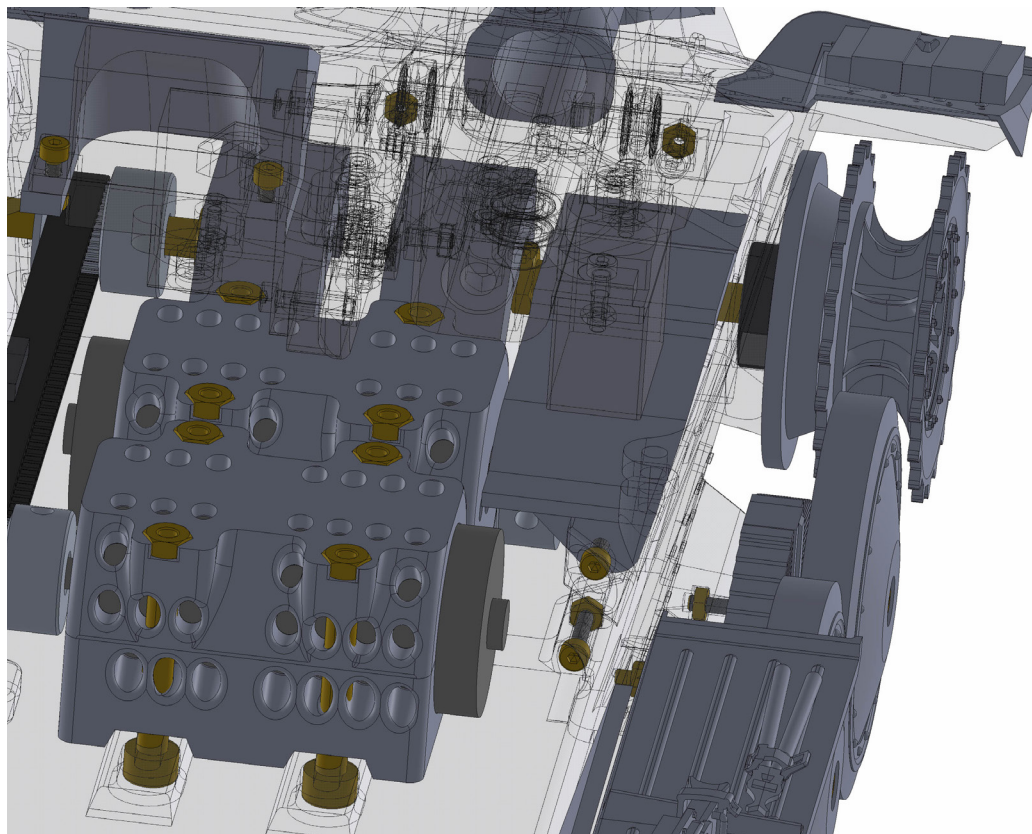
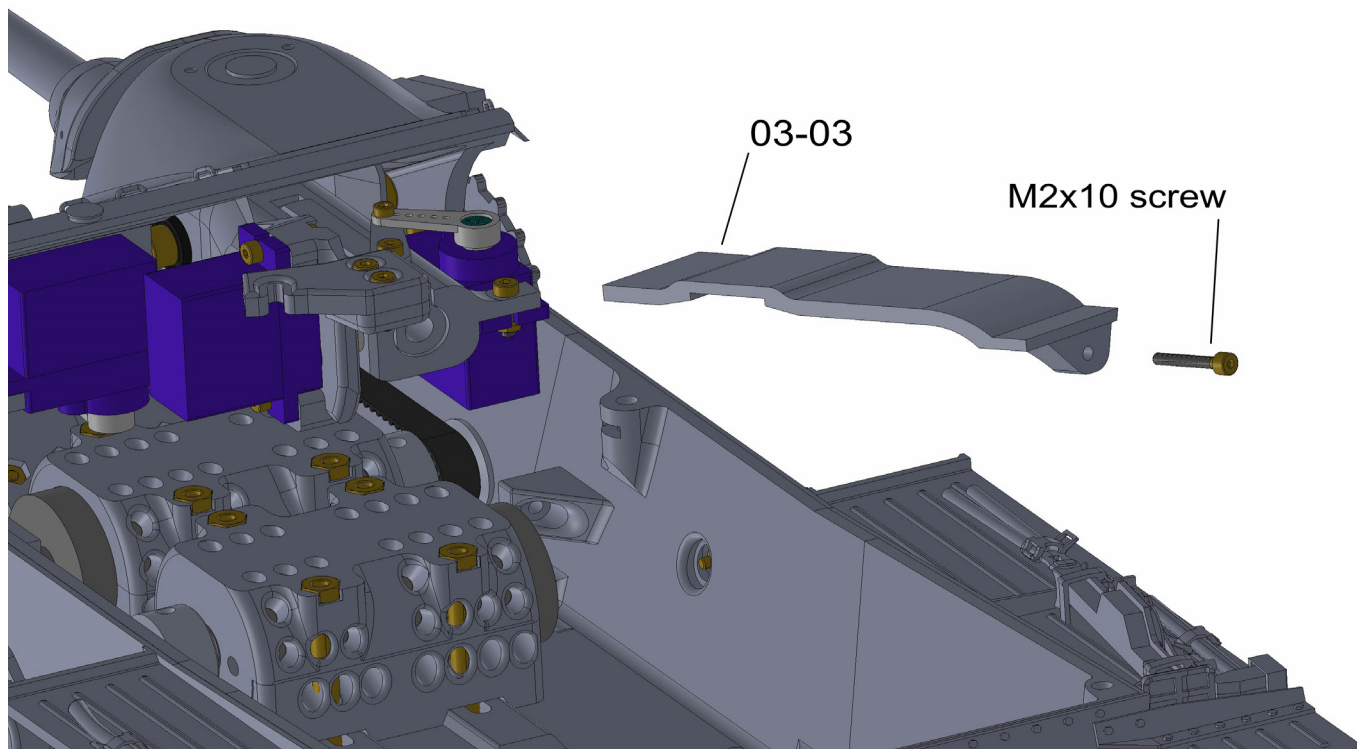
Use 8 M3x30 screws to secure the motors.
By installing the screws, the belts are also tightened.
Push the engines towards the rear of the vehicle and tighten the screws.
Make sure the belts are not loose!!



Insert nut M2 into part 03-03.

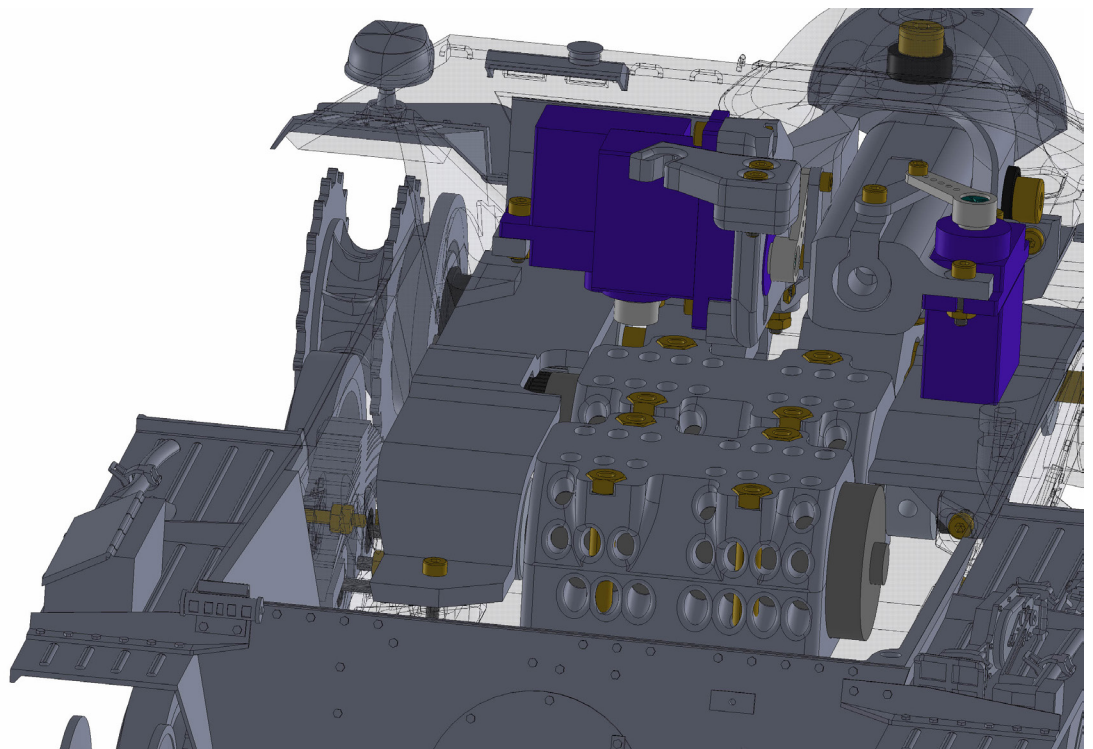
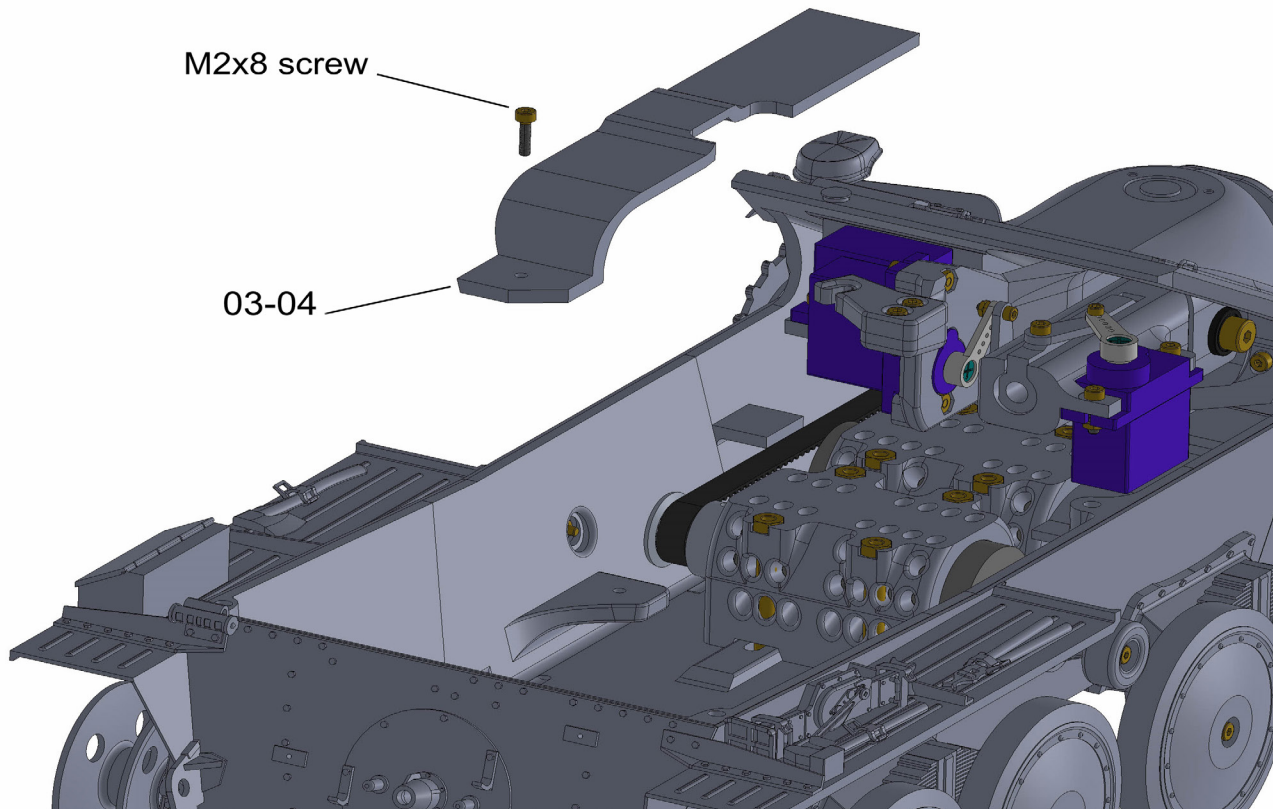
Use parts 03-03/04_176RPM if you want to use 176RPM motors.

Chapter 03 - Motors and tracks



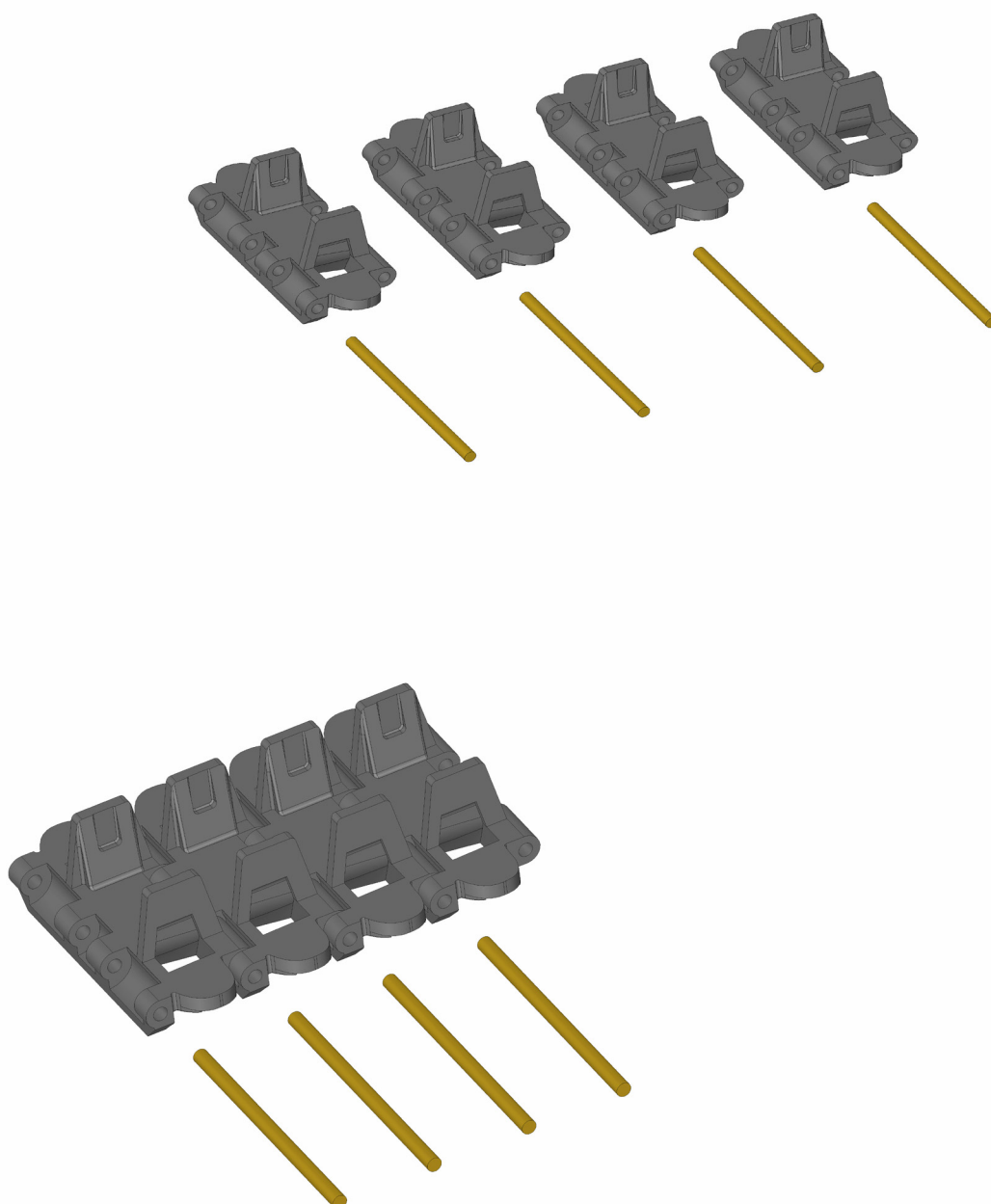
Insert part 03-03. The part serves as a belt cover.
You can secure the part with an M2x10 screw but it is not necessary.

Chapter 03 - Motors and tracks



Follow the same procedure on the other side. Install part 03-04. You can secure the part with a M2x8 screw but it is not necessary.

Chapter 03 - Motors and tracks



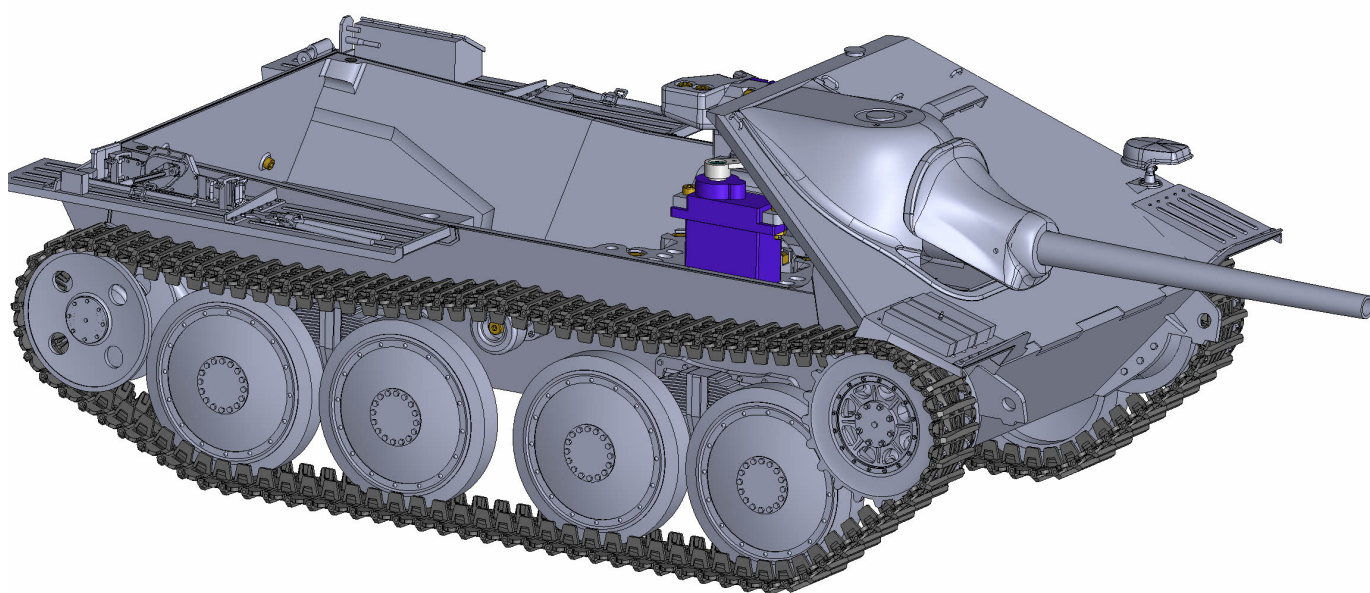
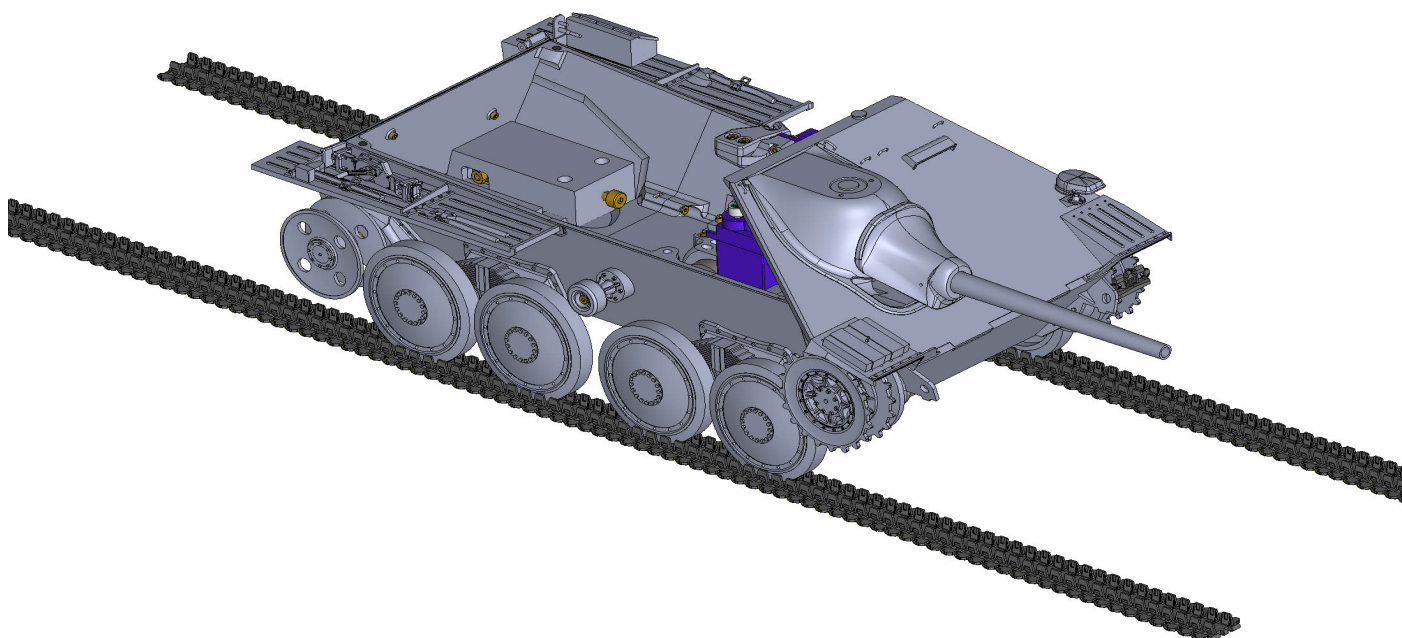
Here comes the most unpleasant part of the construction - tracks.

Join 03-05 parts with 0,8mm wire and 19mm length.

Pour super glue on both ends of the wire.

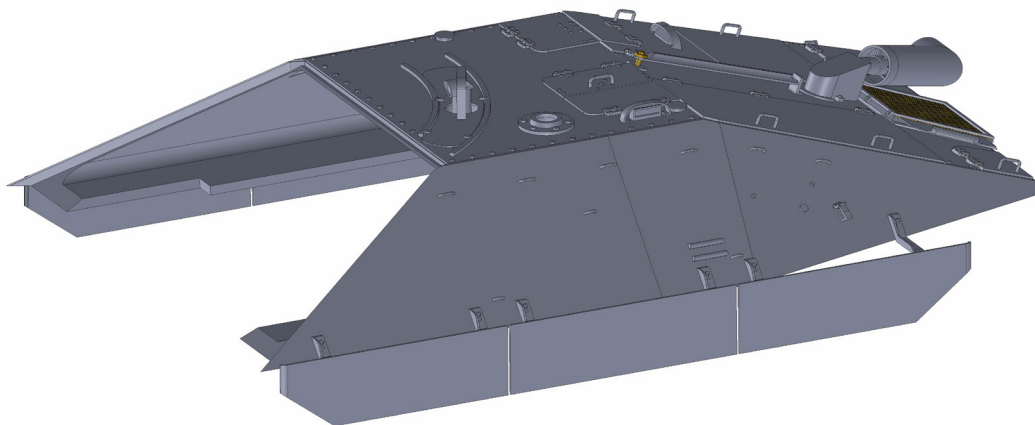
You need 94 track links on each side and a total of 14 links that will serve as spare ones.

Chapter 03 - Motors and tracks



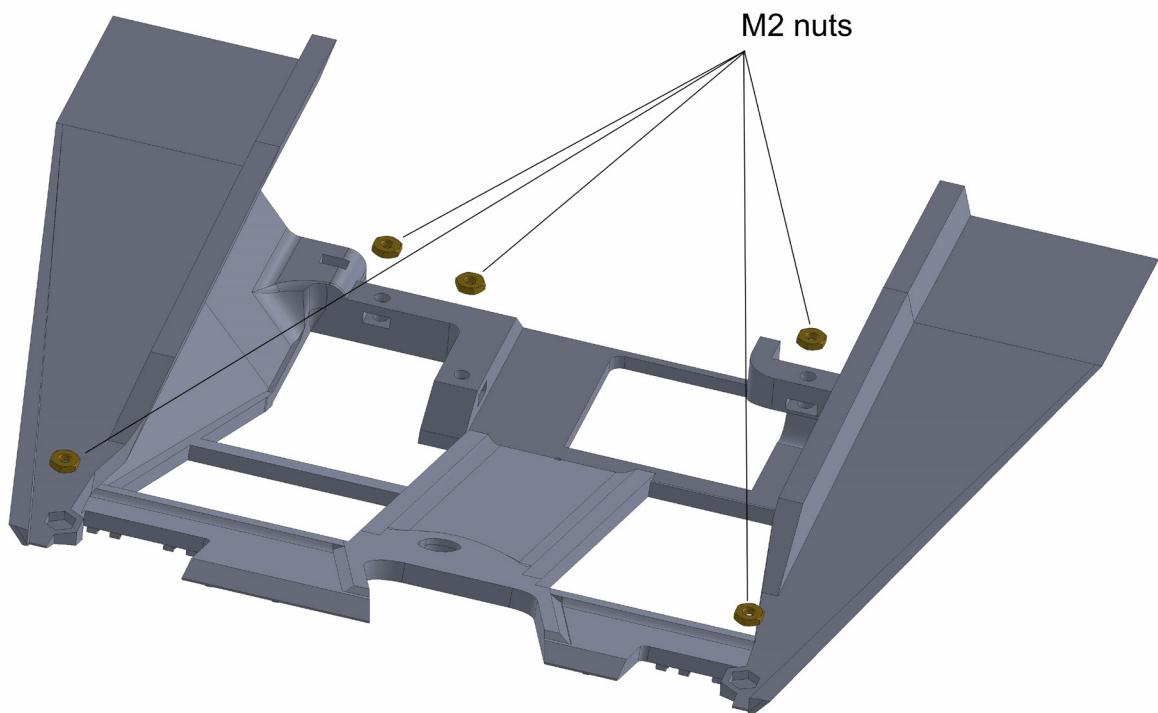
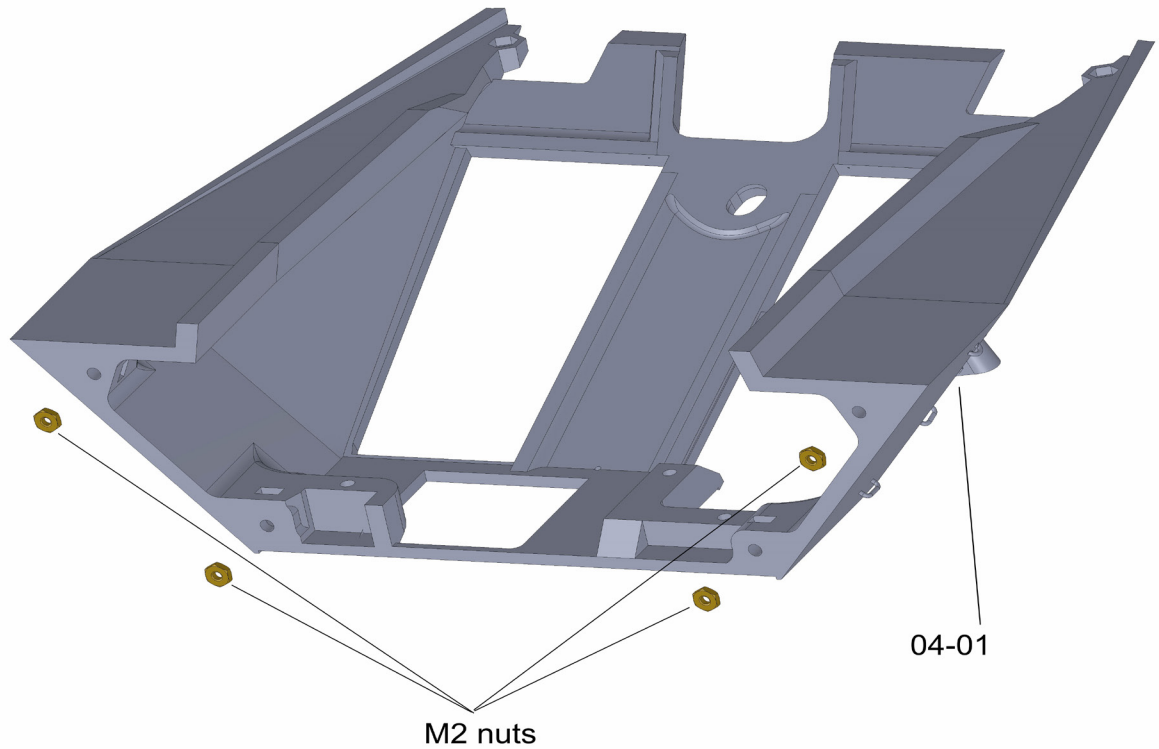
Place the model on the tracks. Close the tracks on the top with the last wire.
Tighten the tracks as needed using the rear wheel tensioner.
Tighten the M3 screw for greater tension.

Chapter 04 - Upper hull



AMOUNT:	1
PRINTED PARTS:	04-01 (1x), 04-02 (1x) ,04-03 (1x), 04-04 (1x), 04-05(1x), 04-06 (1x), 04-07 (1x), 04-08 (1x), 04-09 (1x), 04-10 (1x) ,04-11 (1x), 04-12 (1x), 04-13 (1x), 04-14 (1x) ,04-15 (2x), 04-16A (1x), 04-16B (1x), 04-16C (1x), 04-17A (1x), 04-17B (1x), 04-17C (1x), 04-18 (1x), 04-19 (1x), 04-20 (1x), 04-21 (1x) ,04-22 (2x), 04-23 (1x), 04-24 (1x), 04-25 (1x), 04-26 (1x), 04-27 (1x), 04-28 (1x), 04-29 (1x), 04-30 (1x), 04-31 (1x) ,04-32 (1x), 04-33 (1x), 04-34 (1x), 04-35 (1x), 04-36 (1x), 04-37 (1x), 04-38 (1x), 04-39 (1x), 04-40 (1x), 04-41 (5x), 04-42 (5x), 04-43A (1x), 04-43B (1x), 04-43C (1x), 04-43D (1x).
OPTIONAL PRINTED PARTS:	04-01_alt, INFRA_adapter, SERVO_alt.
NON-PRINTED PARTS:	M2x8 screw (2x), M2x10 screw (1x), M2x12 screw (4x), M1,6x12 screw (1x), M1,6 nut (1x), M2 nut (11x), TOWERPRO® FR360 9g SERVO or compatible, Wire - 0,5mm diameter and 5mm lenght (19x), 1,8x1,2mm mesh.

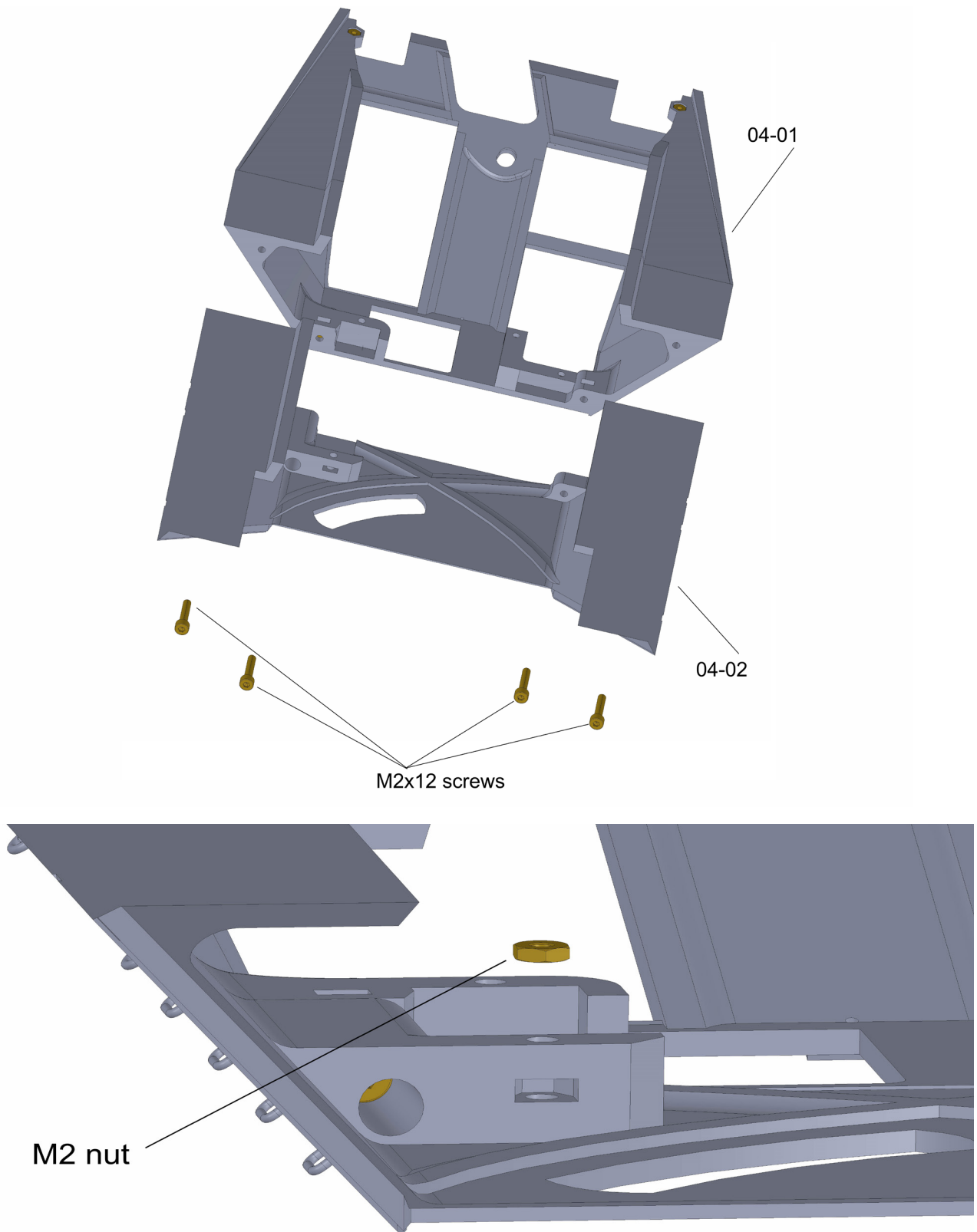
Chapter 04 - Upper hull



Insert 9 M2 nuts into part 04-01.

This part can be printed in different versions. See the “alternative parts” folder.
If you do not want a model with functional hatches, you can use an alternative 04-01_alt. In that case, skip to page 158 !!!

Chapter 04 - Upper hull

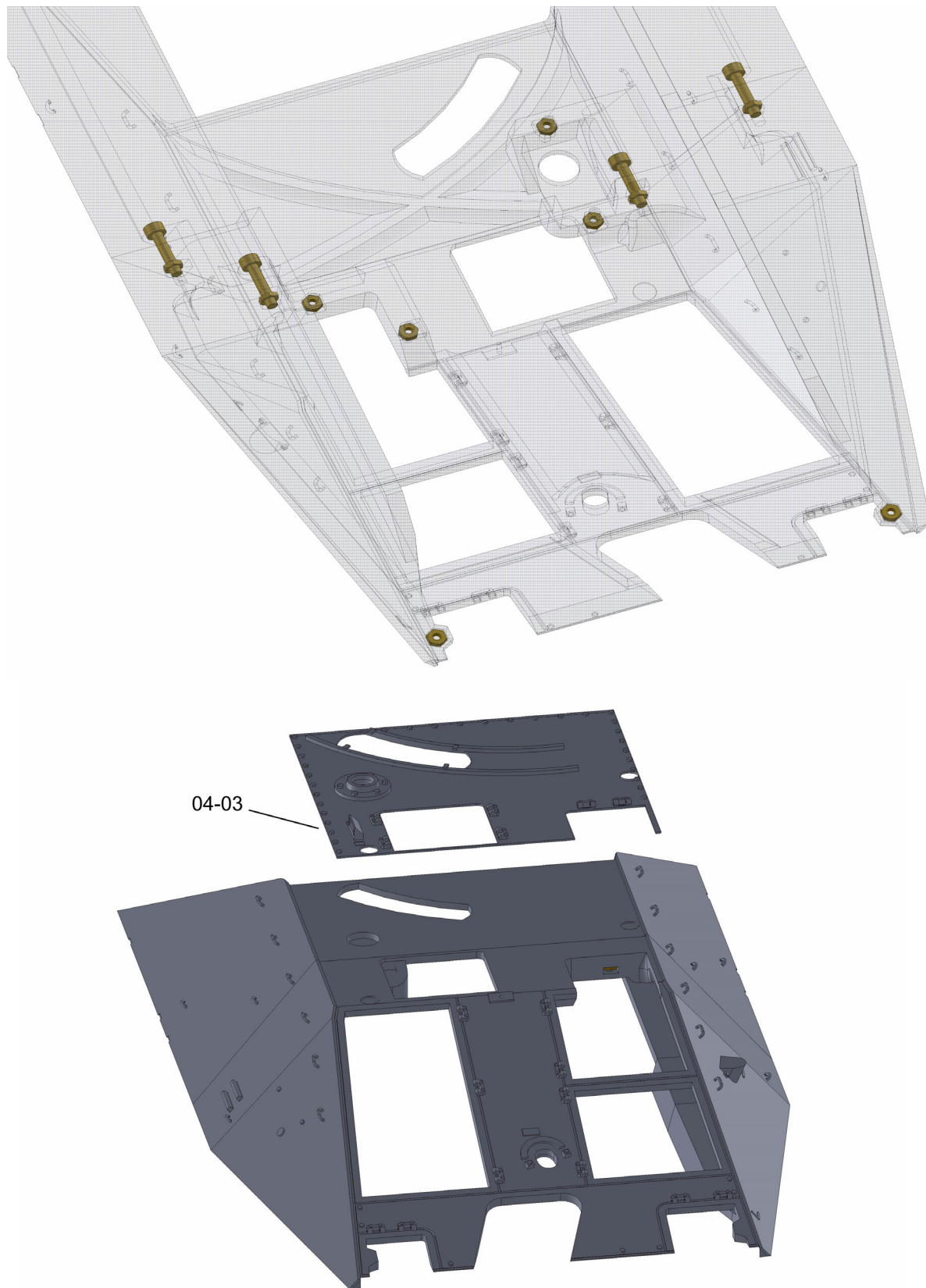


Connect part 04-01 and part 04-02 with four M2x12 screws.

Insert part M2 into part 04-02.

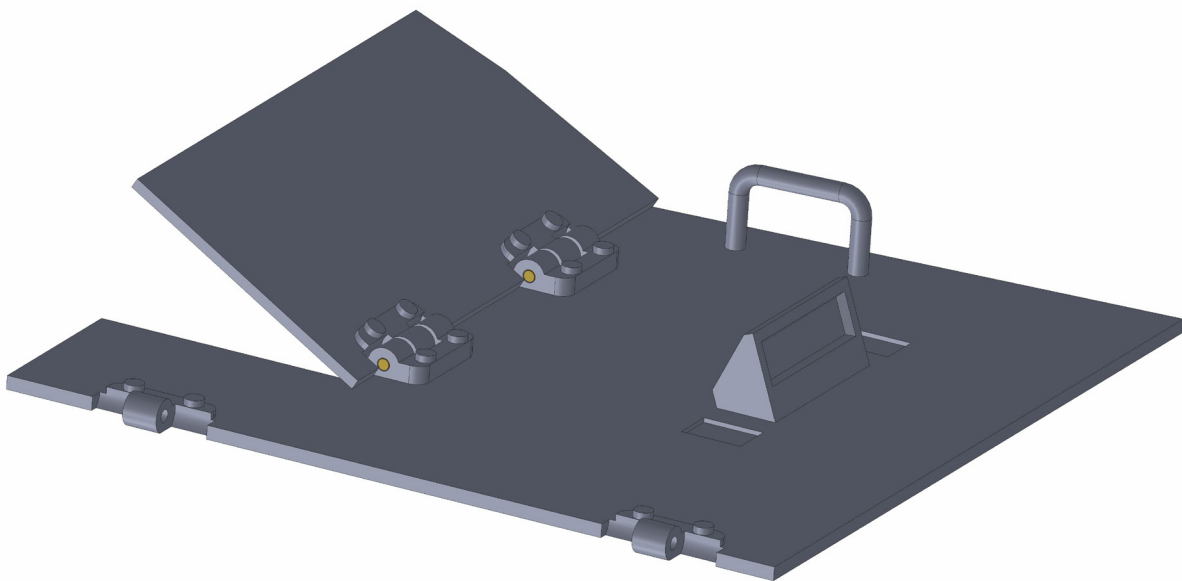
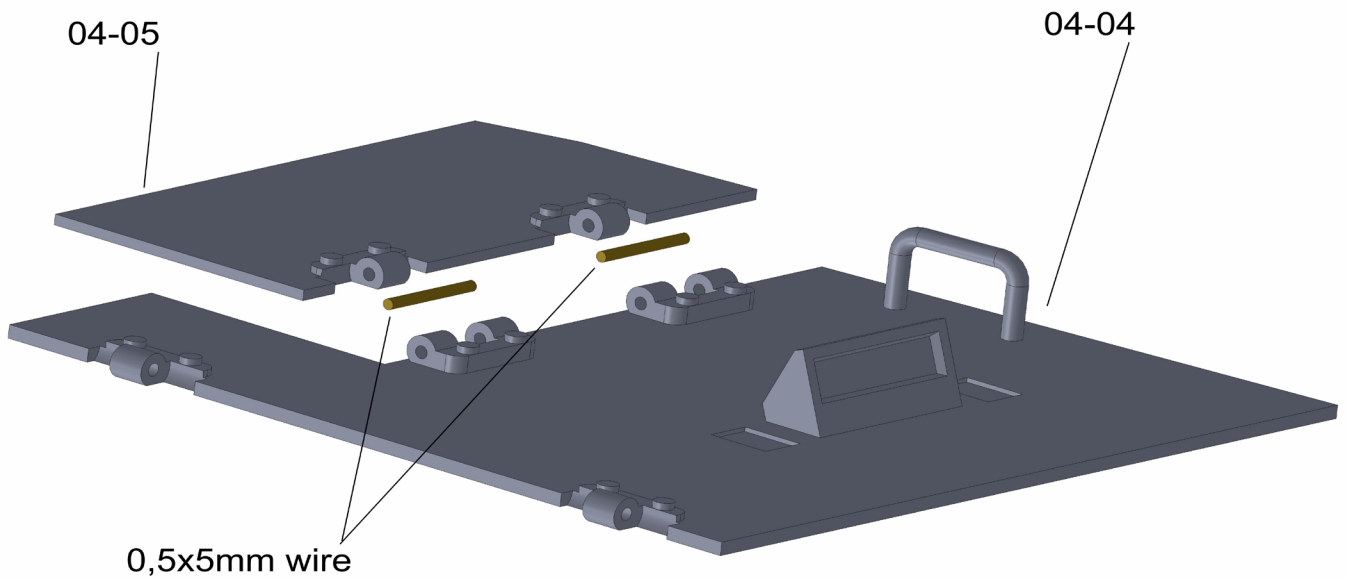
Part 04-02 can be printed in different versions. See the "alternative parts" folder.

Chapter 04 - Upper hull



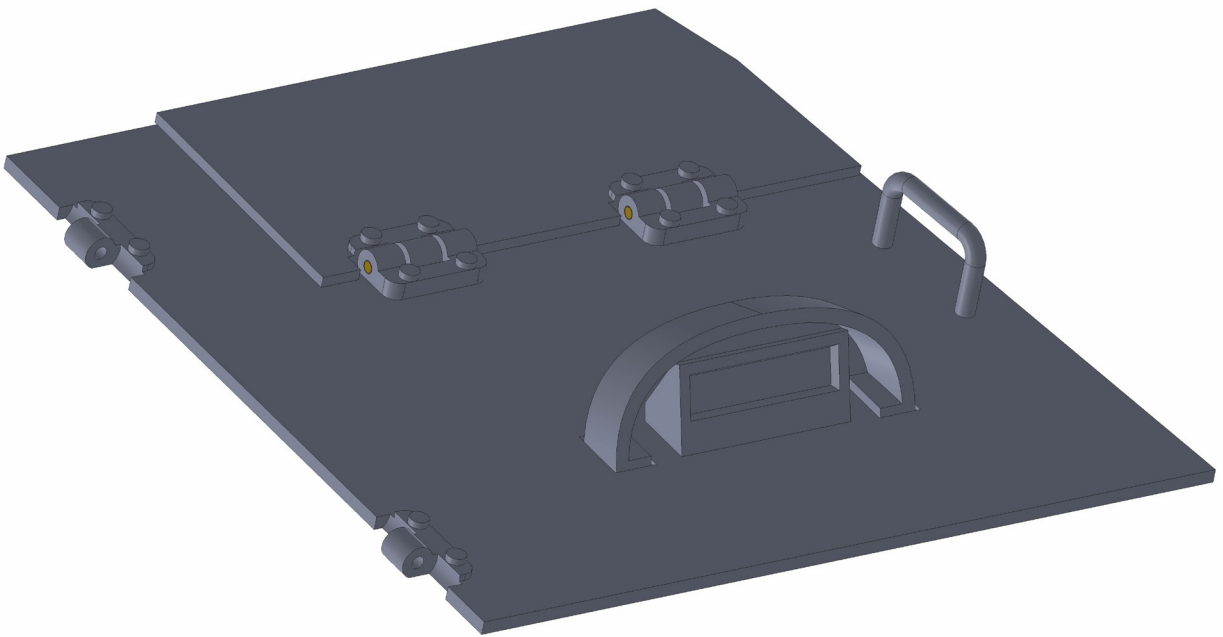
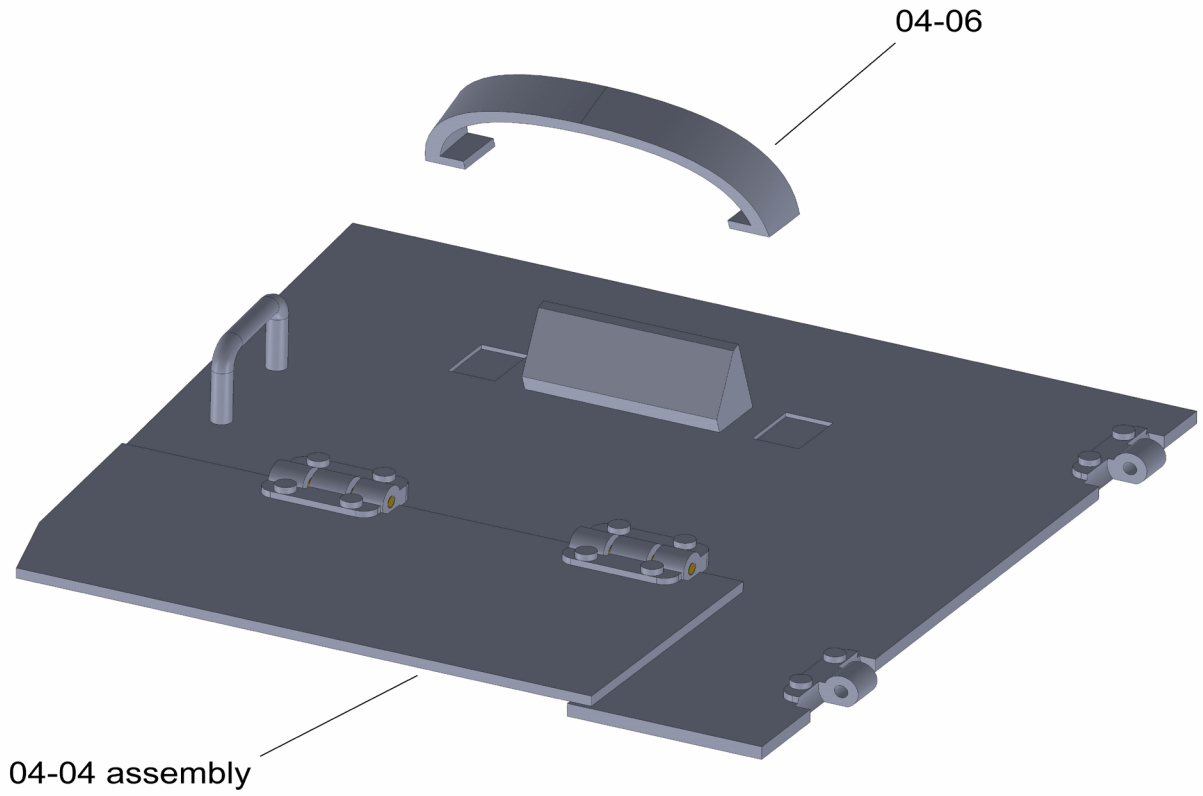
In the figure above you can see all the screws inserted in parts 04-01 and 04-02.
Attach part 04-03 to the top of the assembly.

Chapter 04 - Upper hull



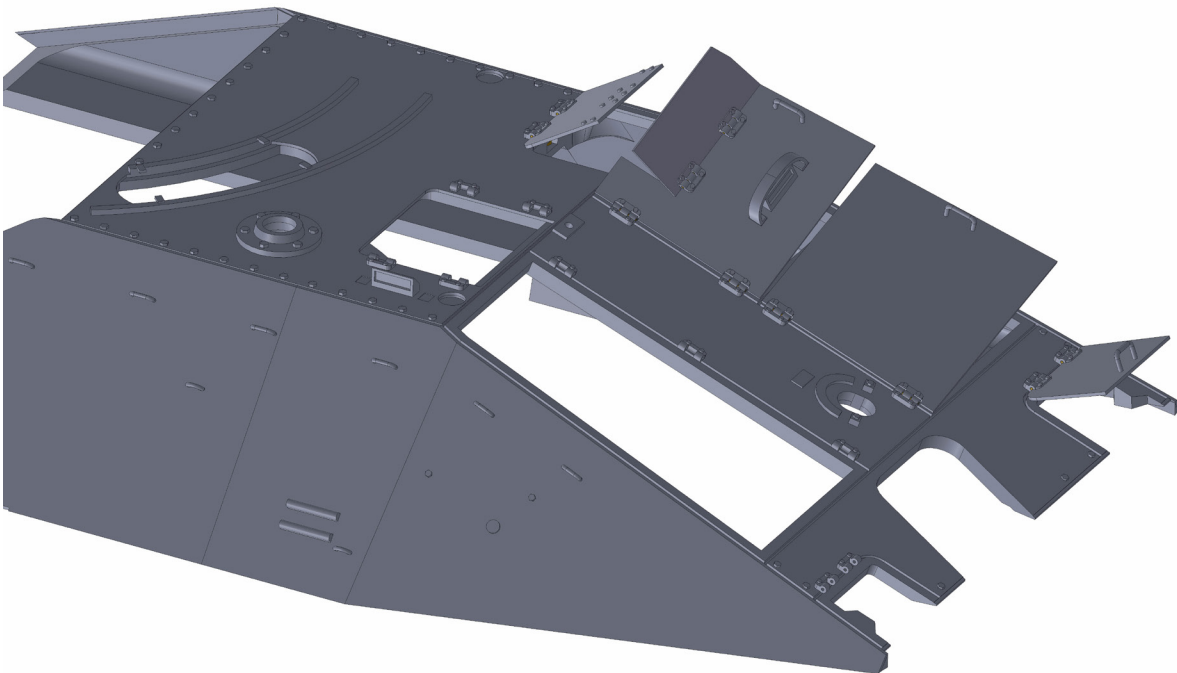
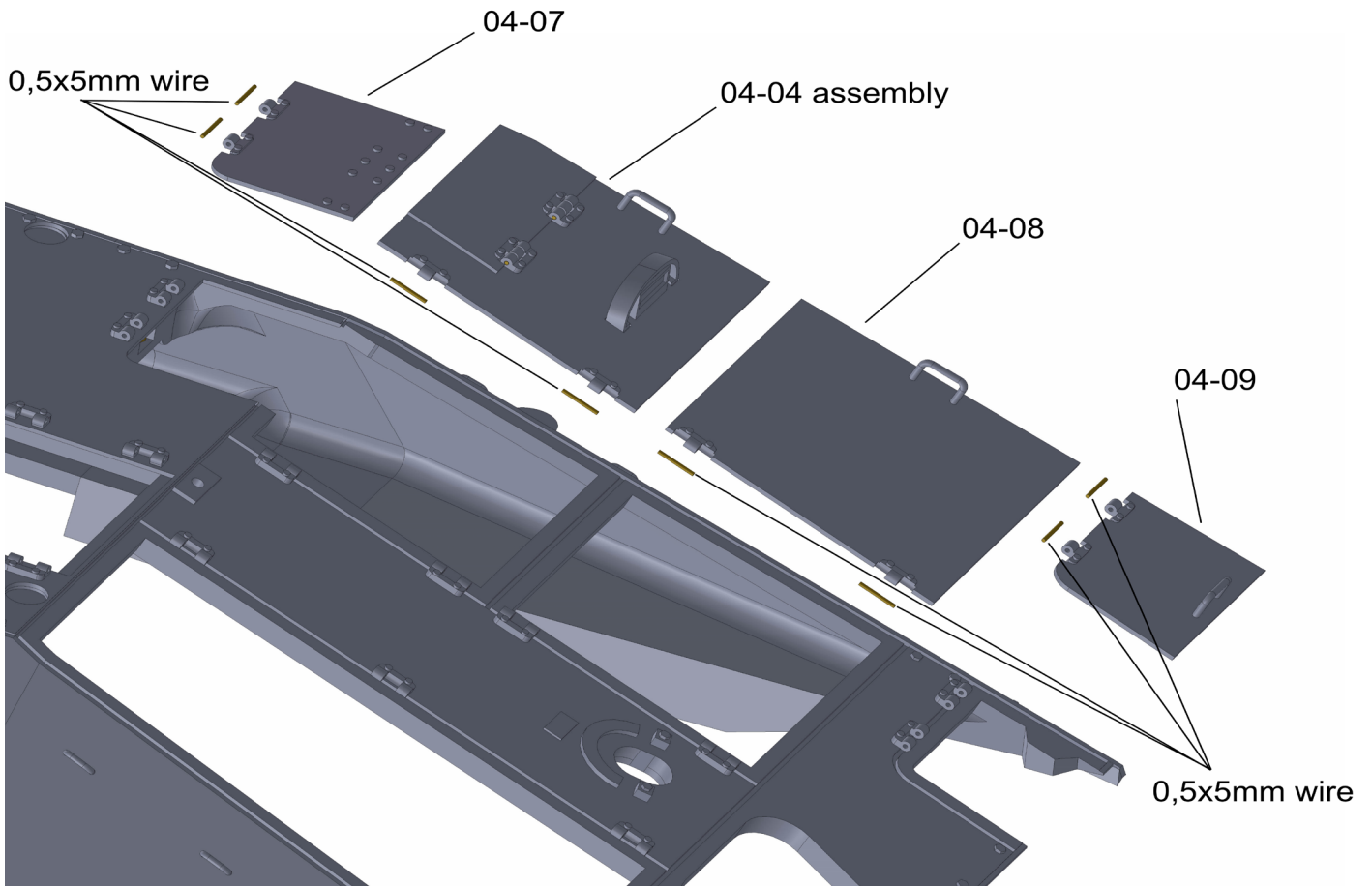
Join parts 04-04 and 04-05 using a wire of 0.5mm diameter and 5mm length.

Chapter 04 - Upper hull



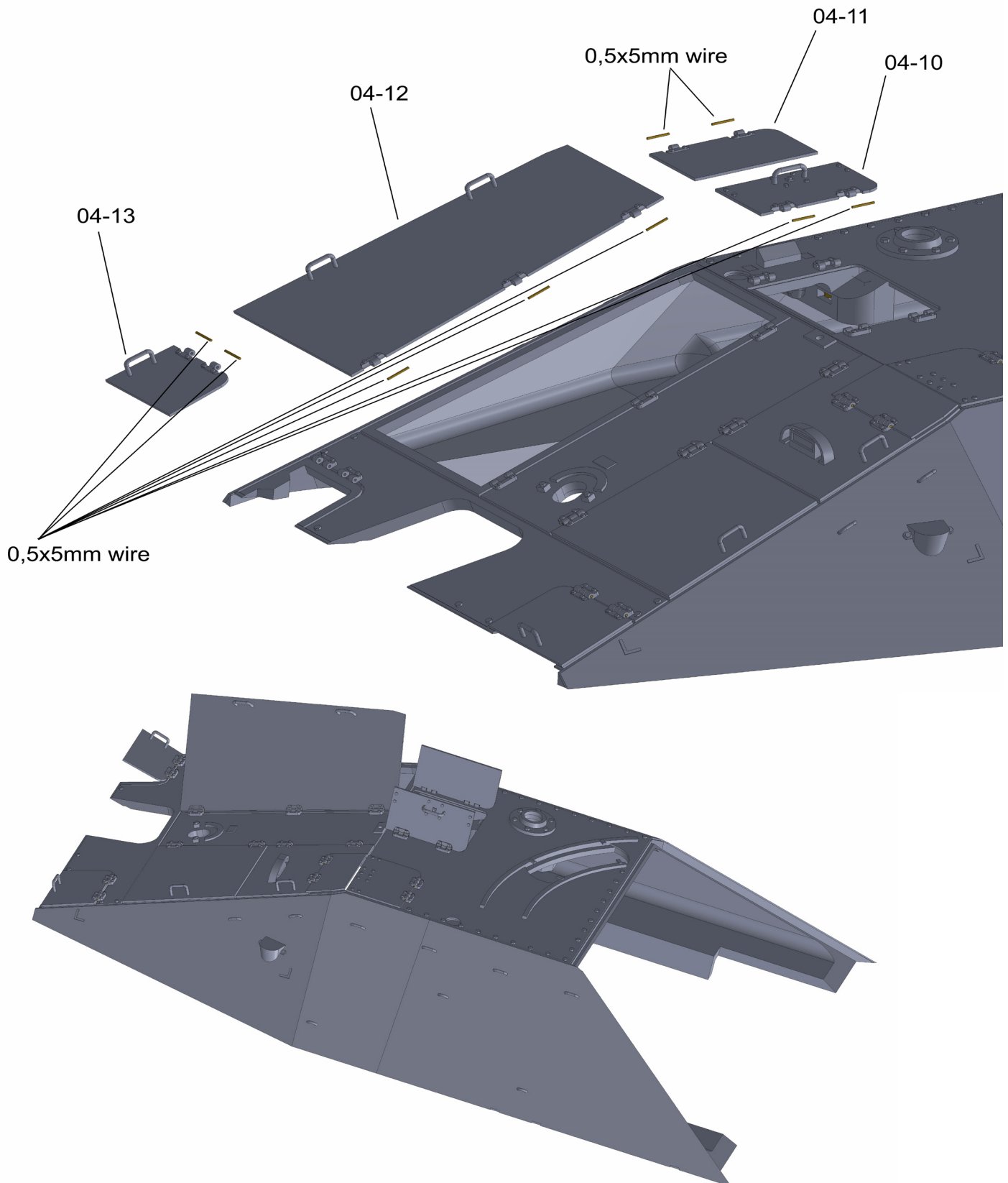
Glue part 04-06.

Chapter 04 - Upper hull



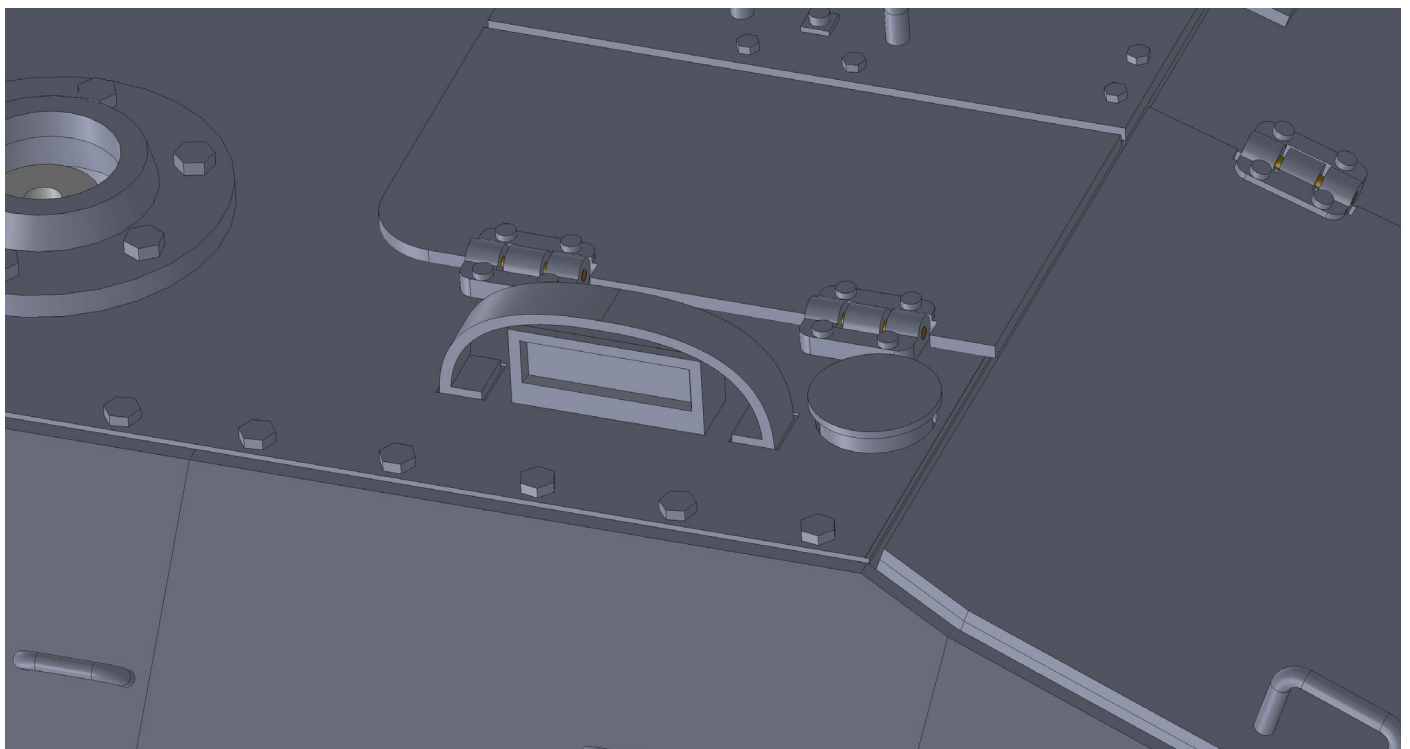
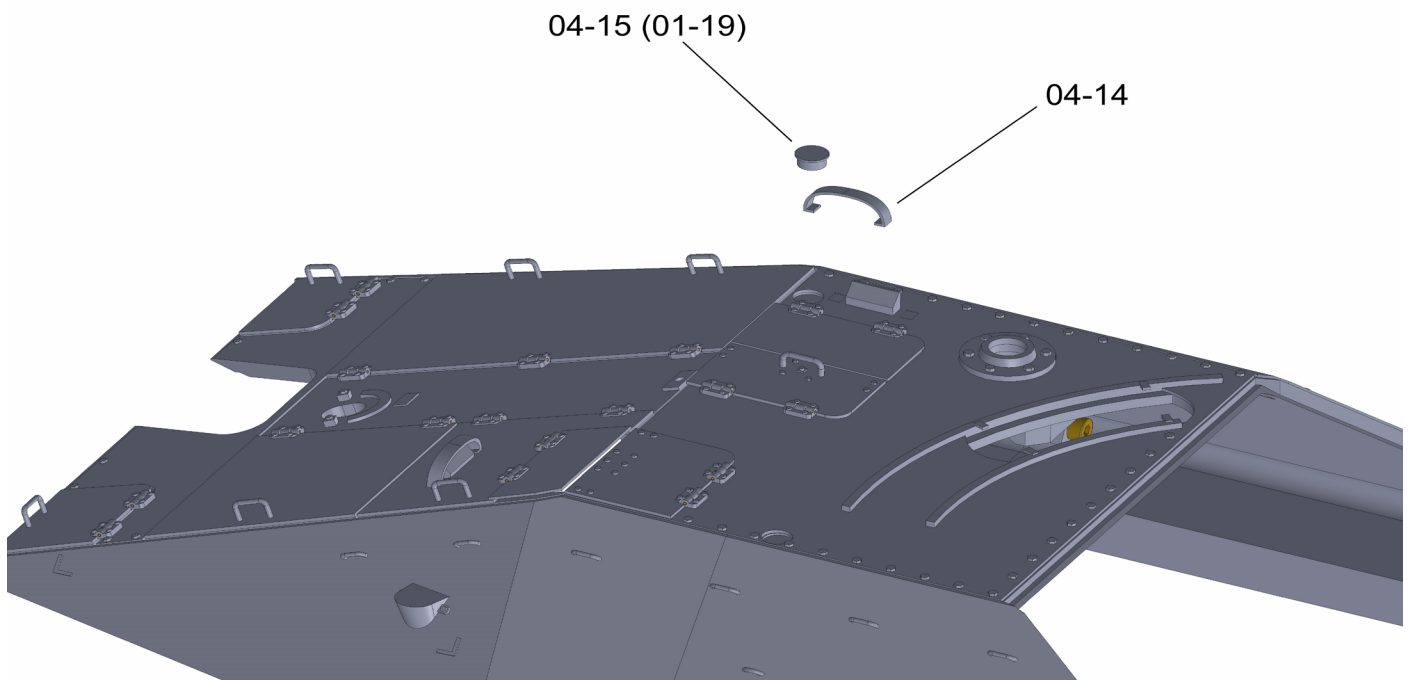
Join the 04-04 subassembly and the 04-07, 04-08 and 04-09 parts using a wire 0,5mm in diameter and in length 5mm.

Chapter 04 - Upper hull



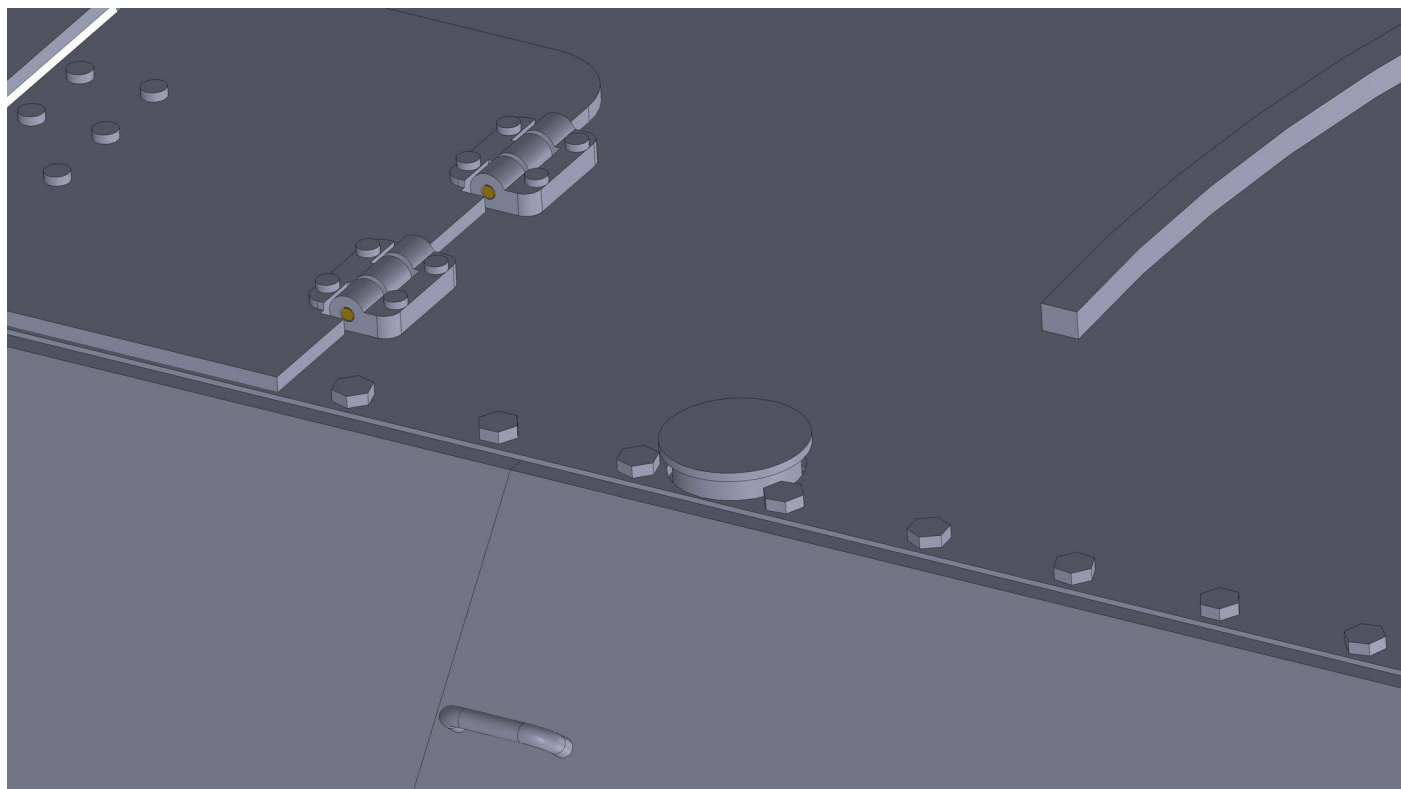
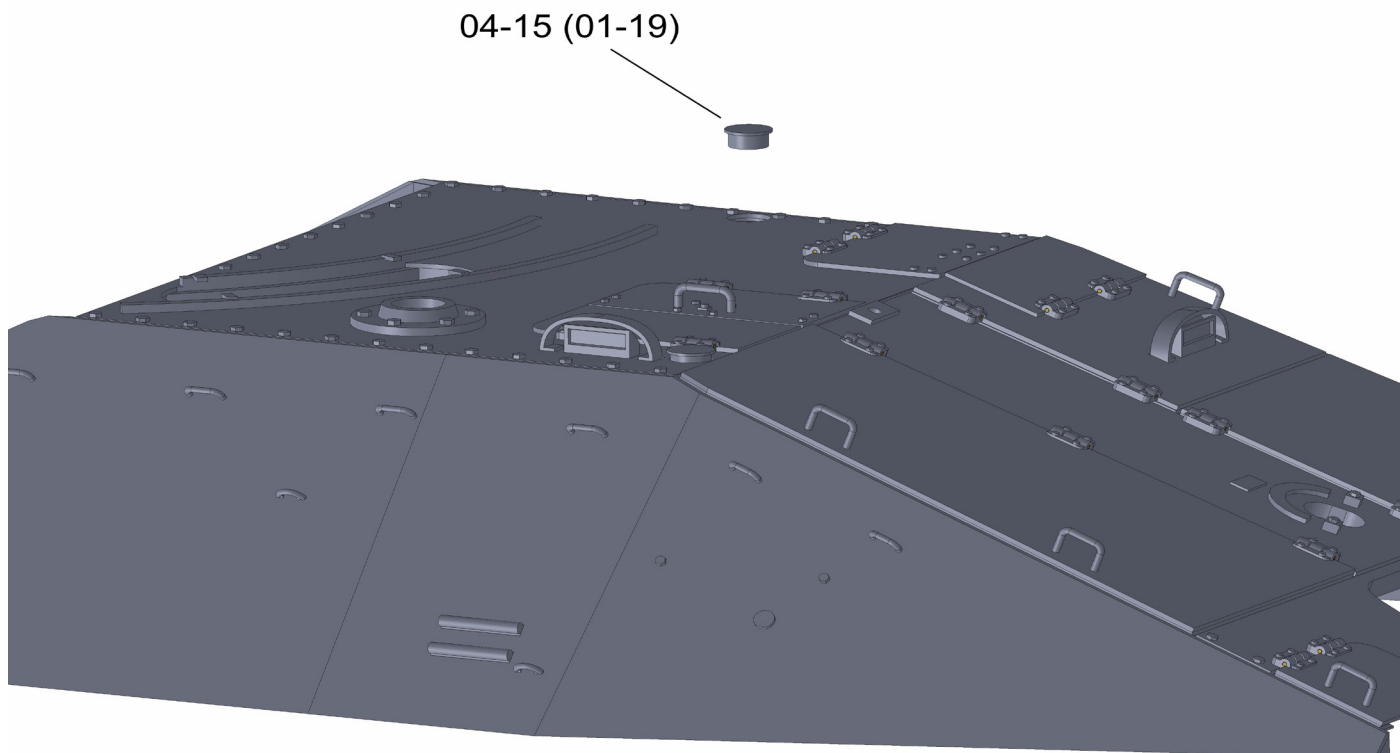
Connect parts 04-10, 04-11, 04-12 and 04-13 using a wire 0,5mm in diameter and in length 5mm.

Chapter 04 - Upper hull



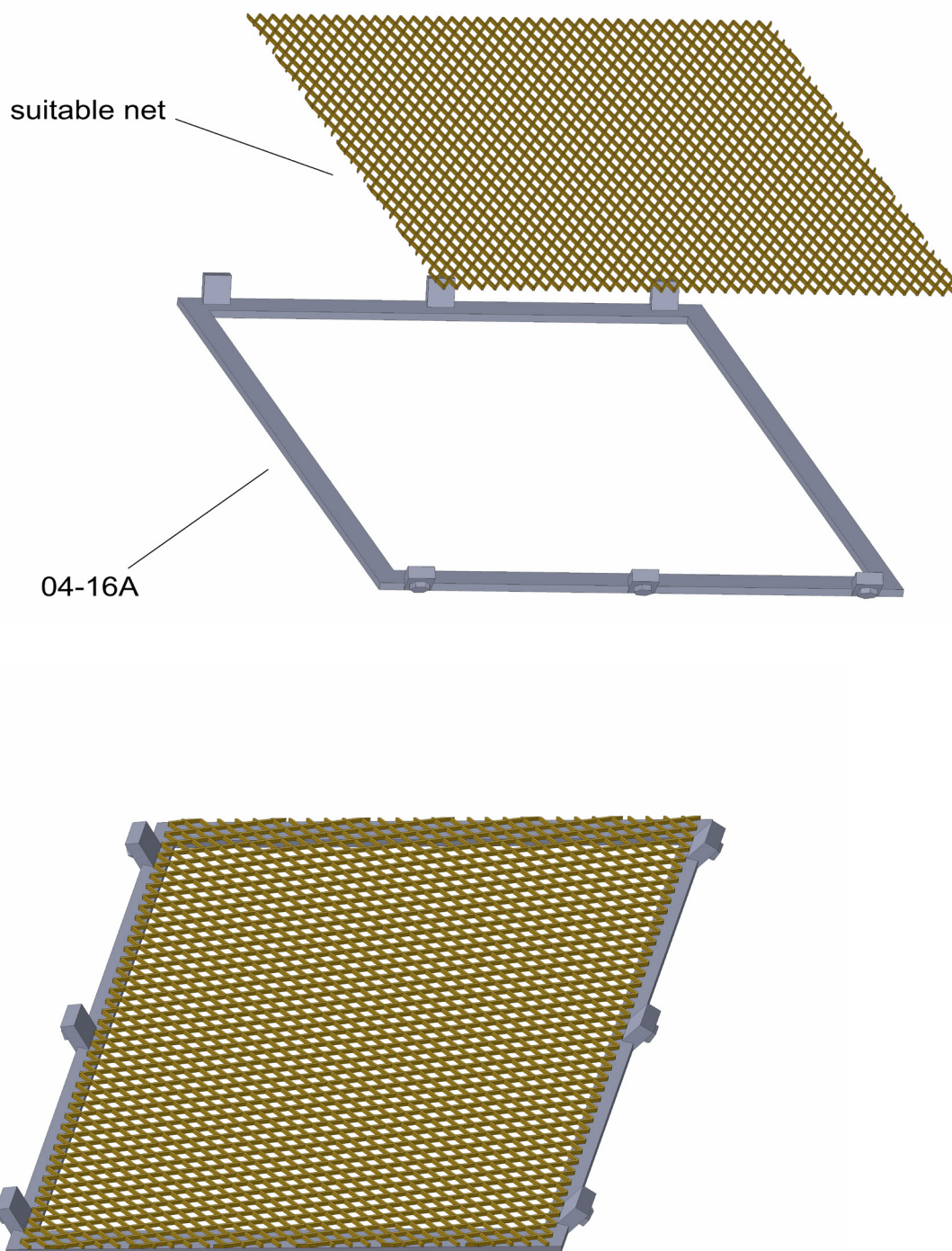
Glue parts 04-14 and 04-15.
Part 04-15 is identical to part 01-19.

Chapter 04 - Upper hull

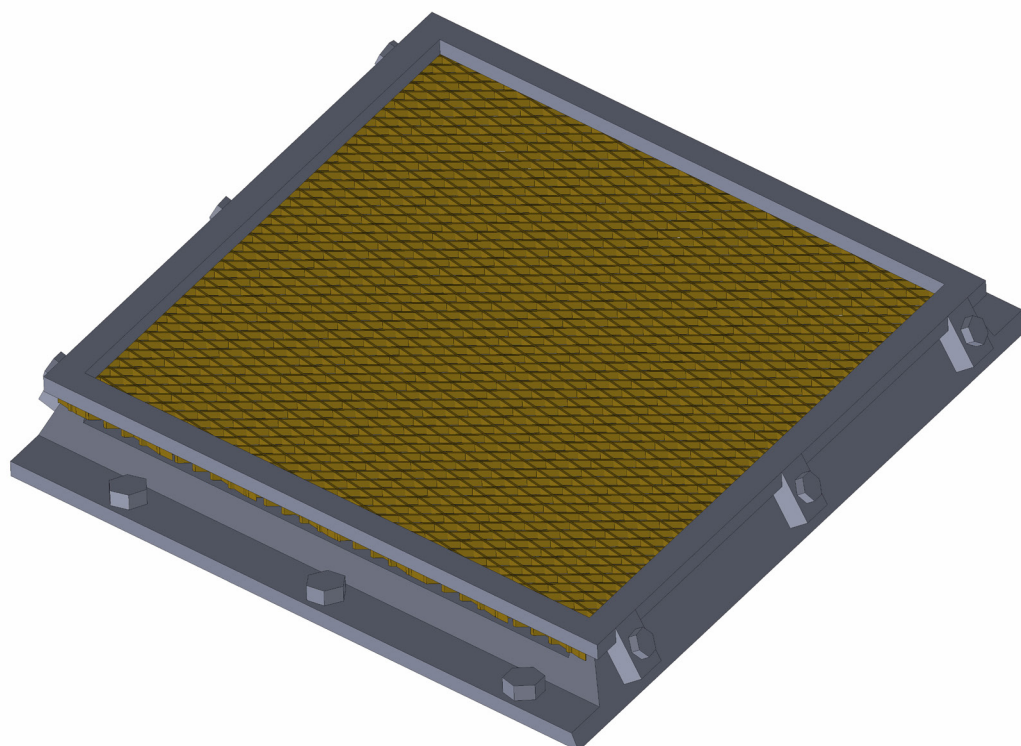
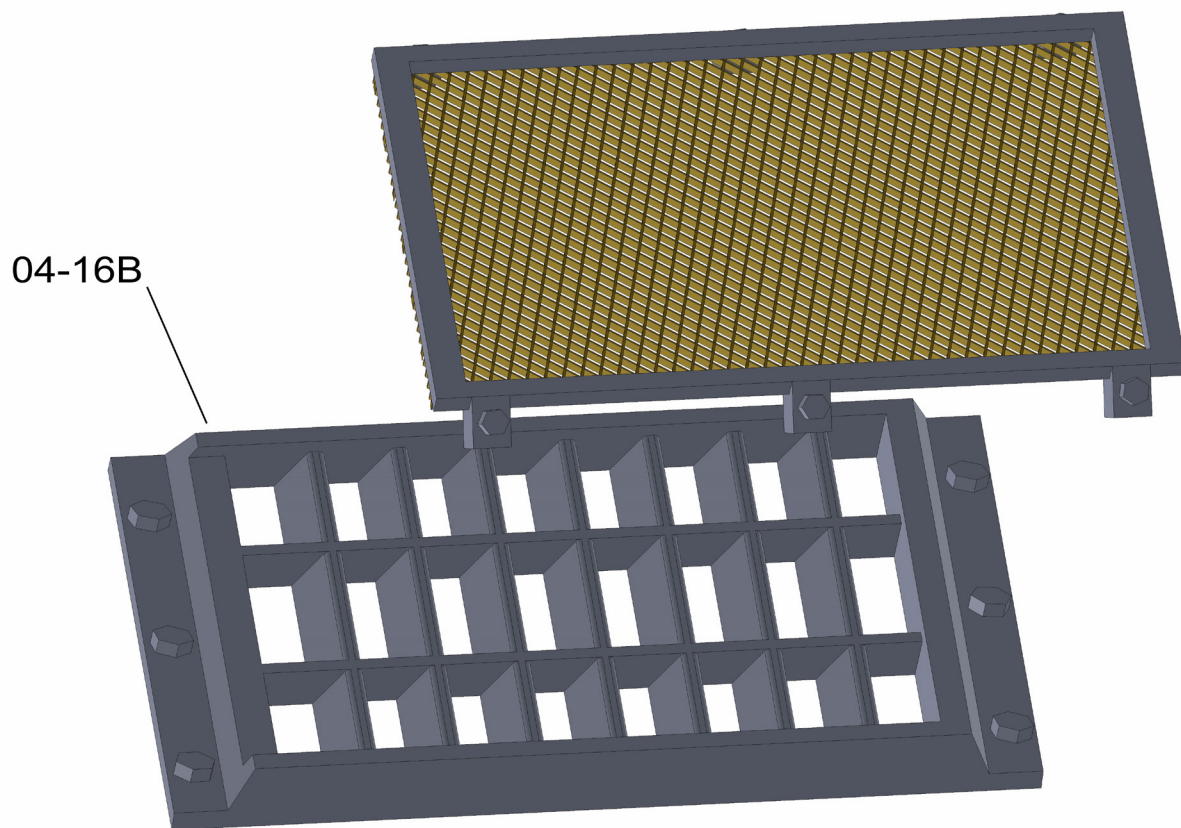


Glue the second part 04-15.

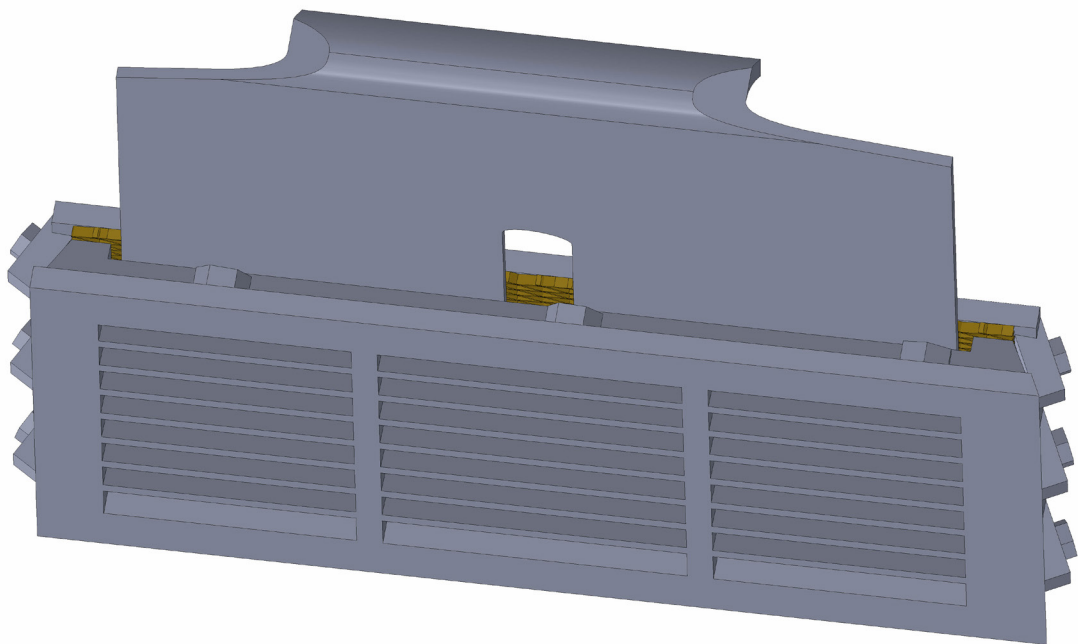
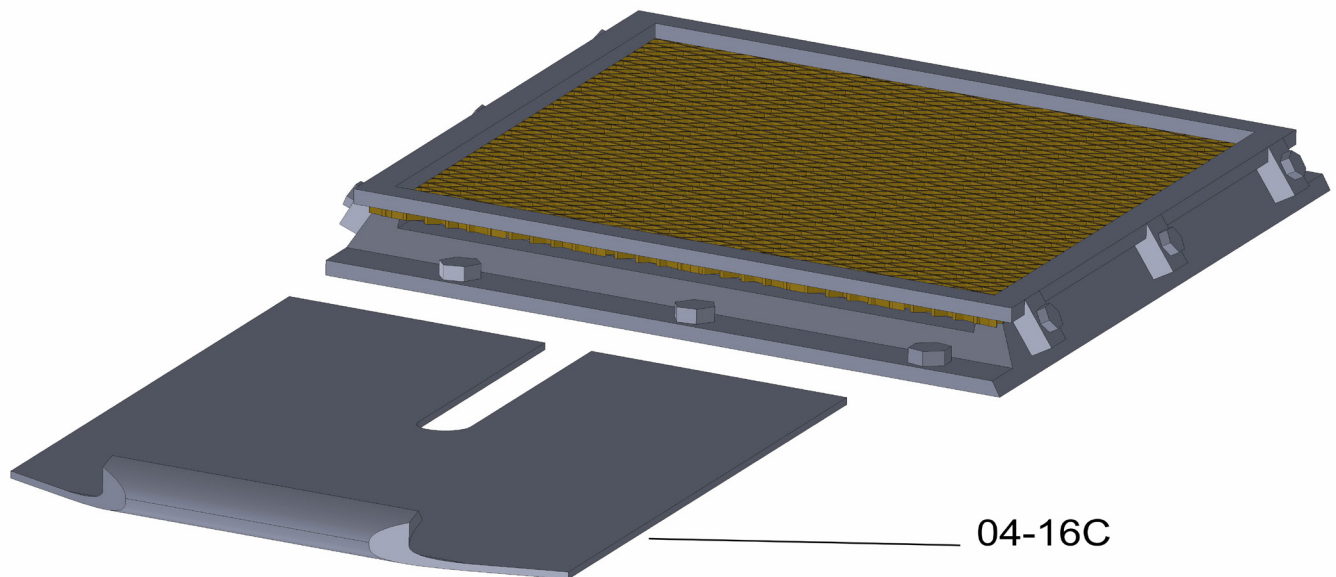
Chapter 04 - Upper hull



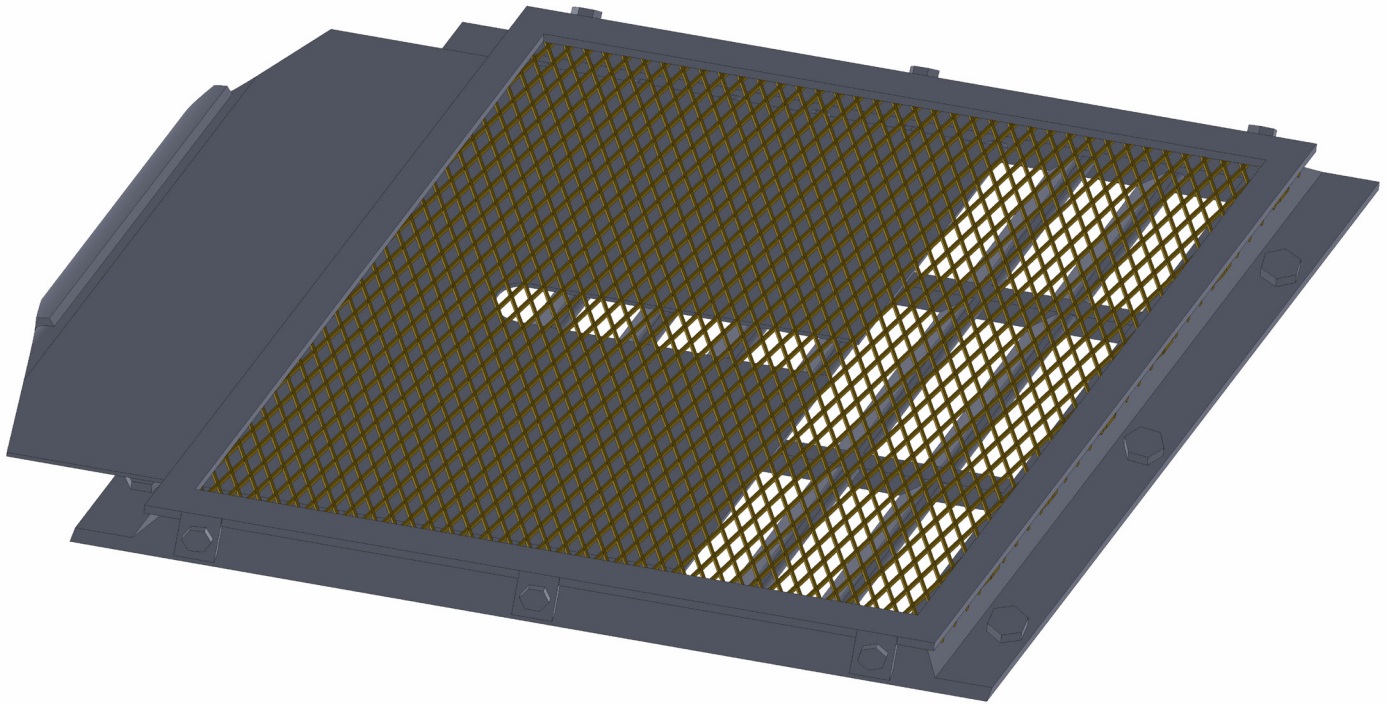
Glue the appropriate metal mesh to the part 04-16A.
We recommend ABER S02. You can use the NET_ template to cut your mesh.



Glue part 04-16B.



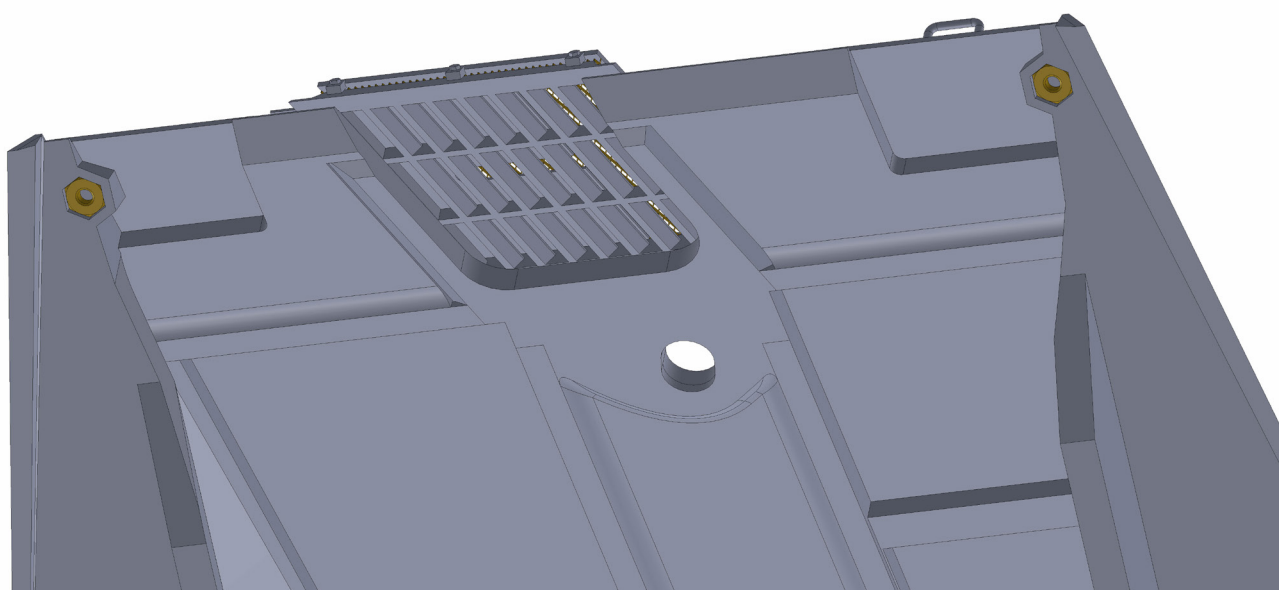
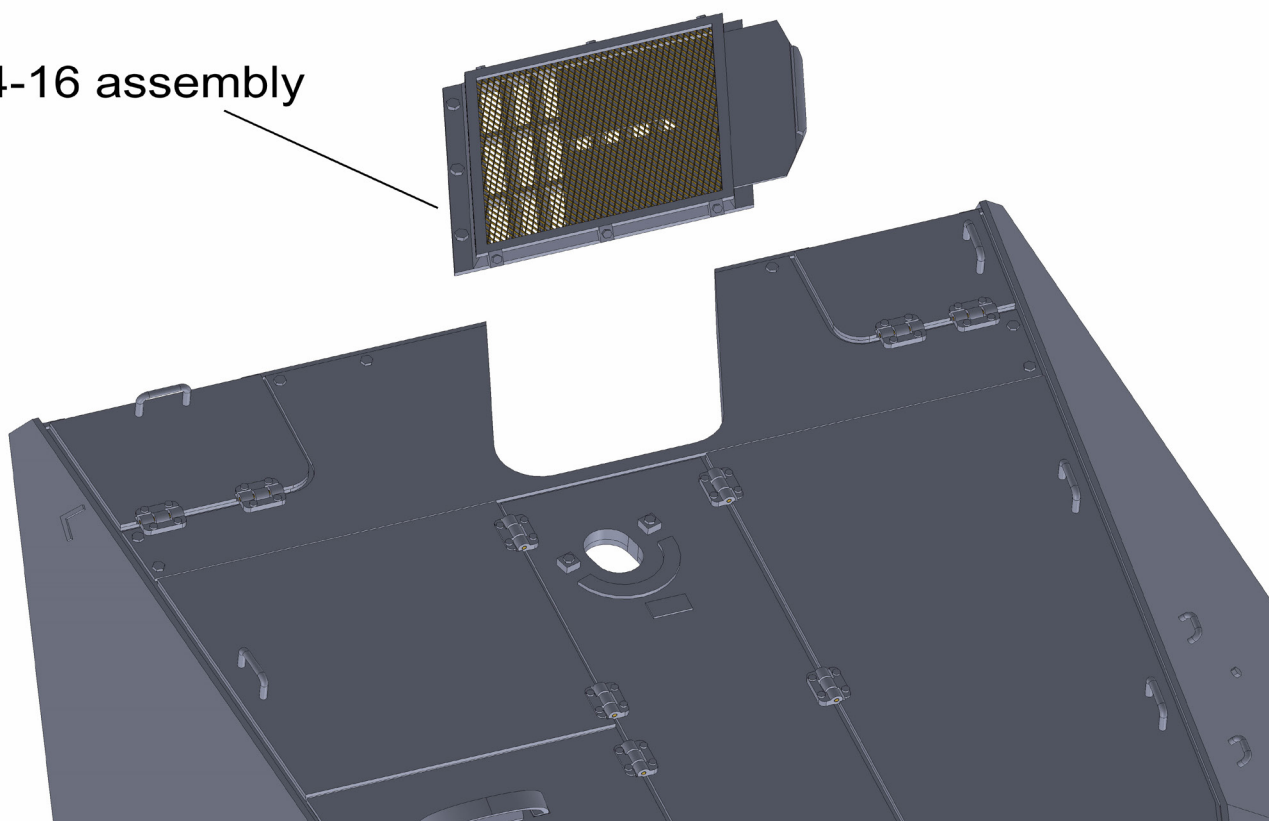
Slide part 04-16C between the part 04-16B and the net. Do not glue the part.



Top view of finished subassembly 04-16.

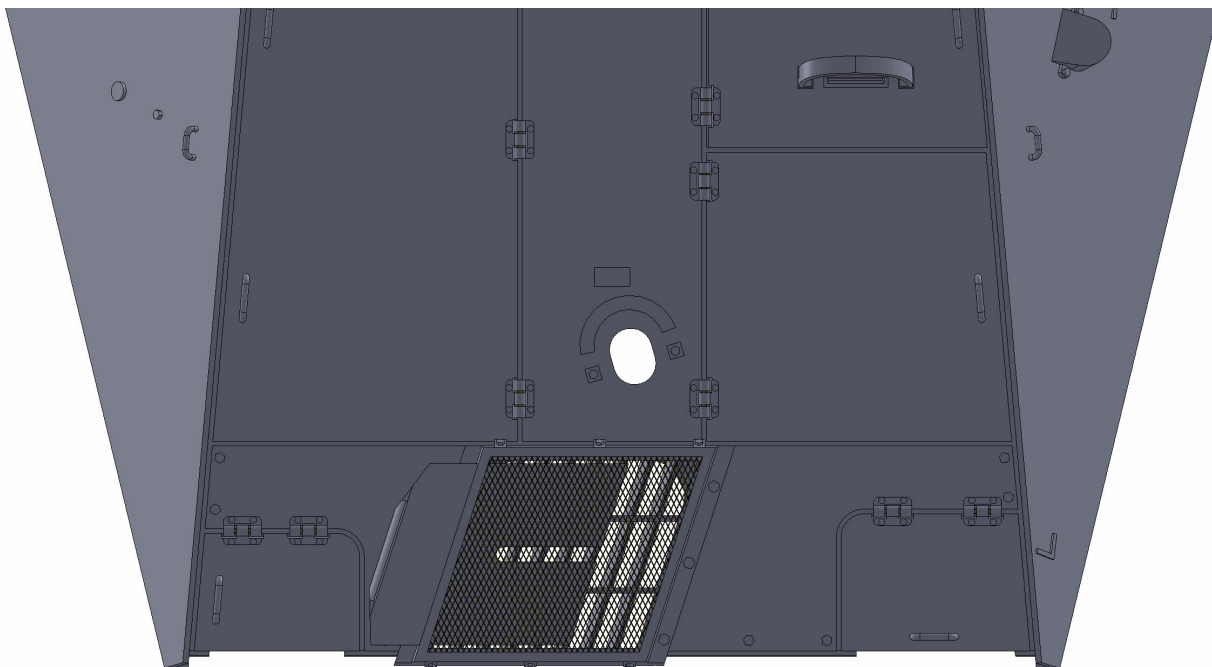
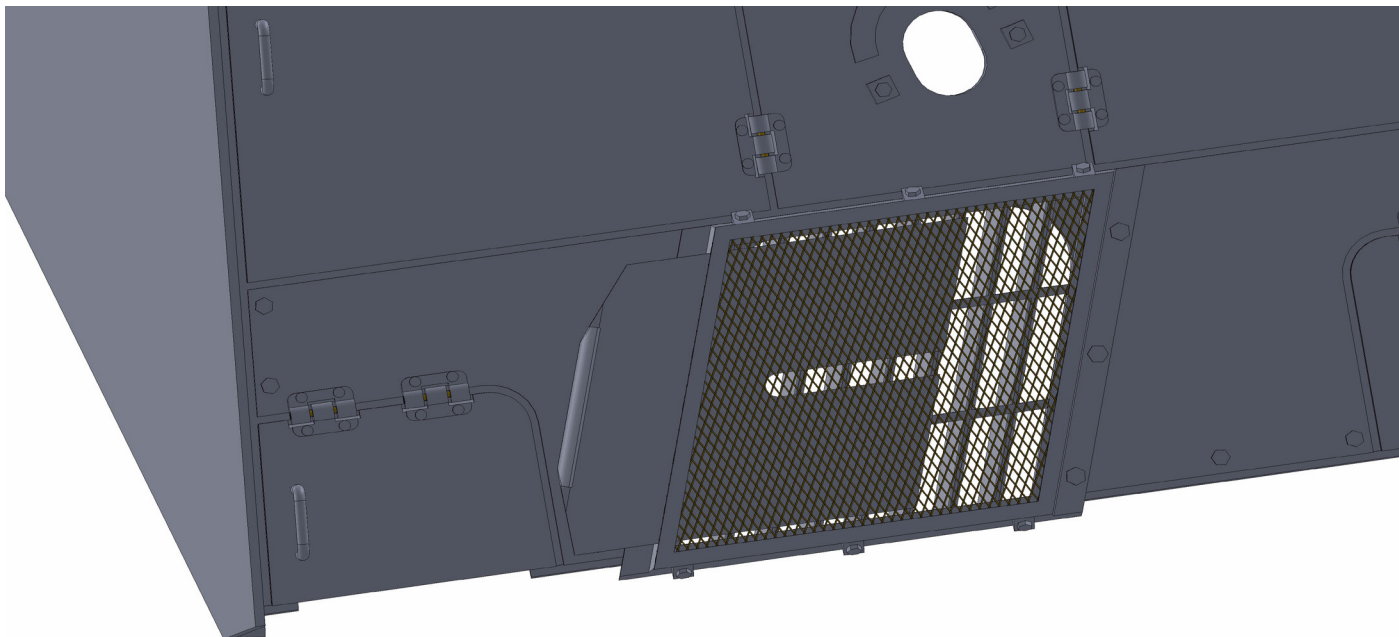
Chapter 04 - Upper hull

04-16 assembly

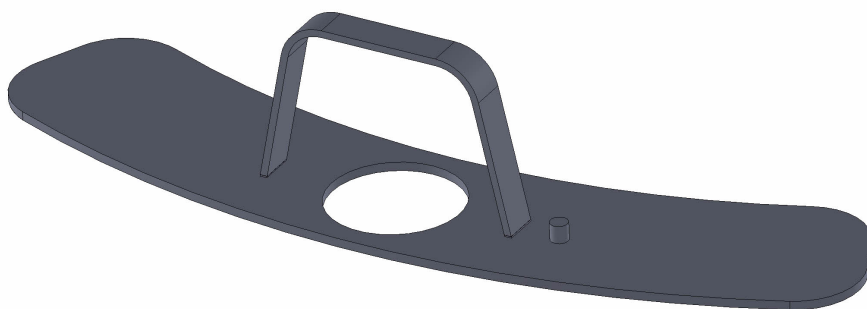
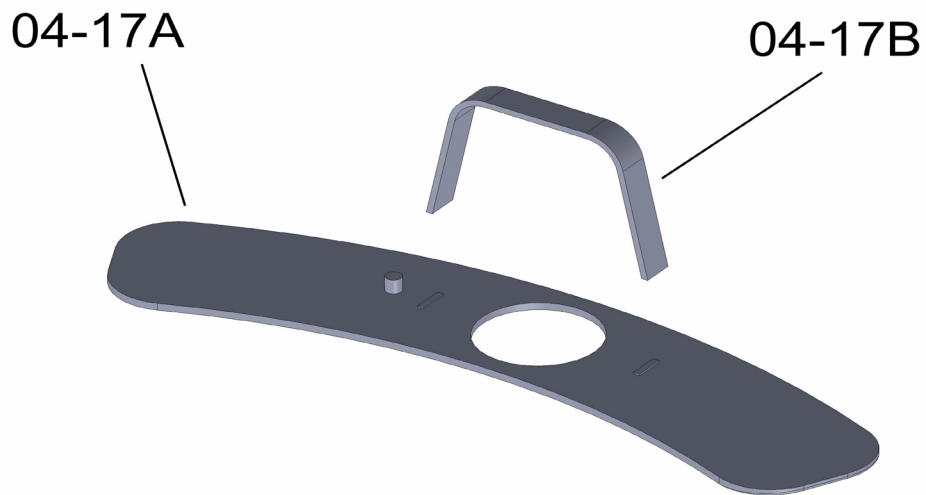


Glue subassembly 04-16 to part 04-01.

Chapter 04 - Upper hull



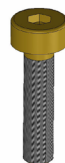
Additional Views for Subassembly Installation 04-16.



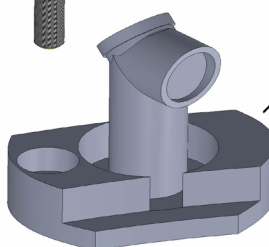
Glue parts 04-17A and 04-17B together.

Chapter 04 - Upper hull

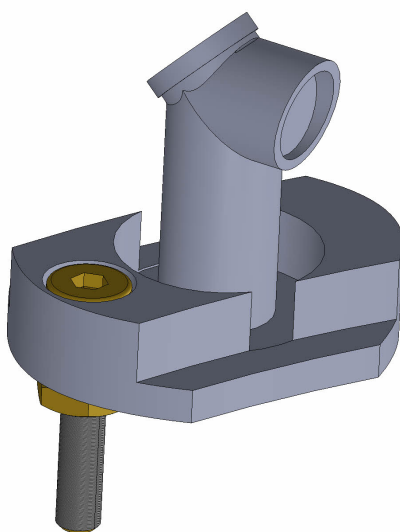
M2x10 screw



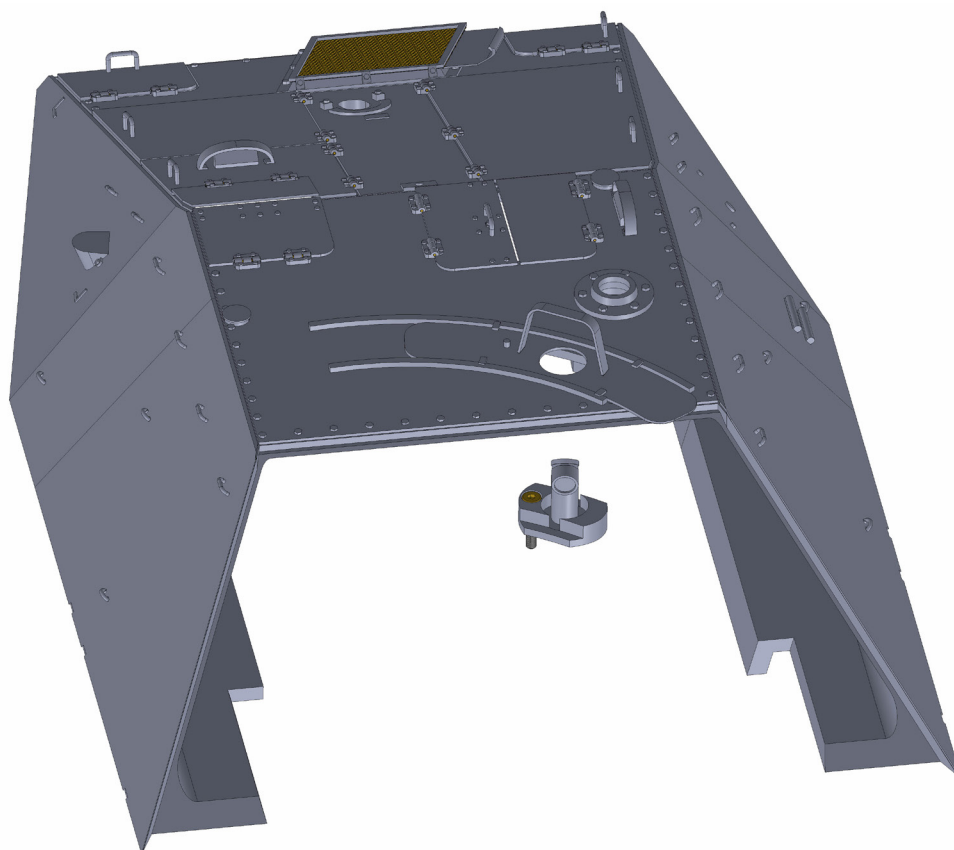
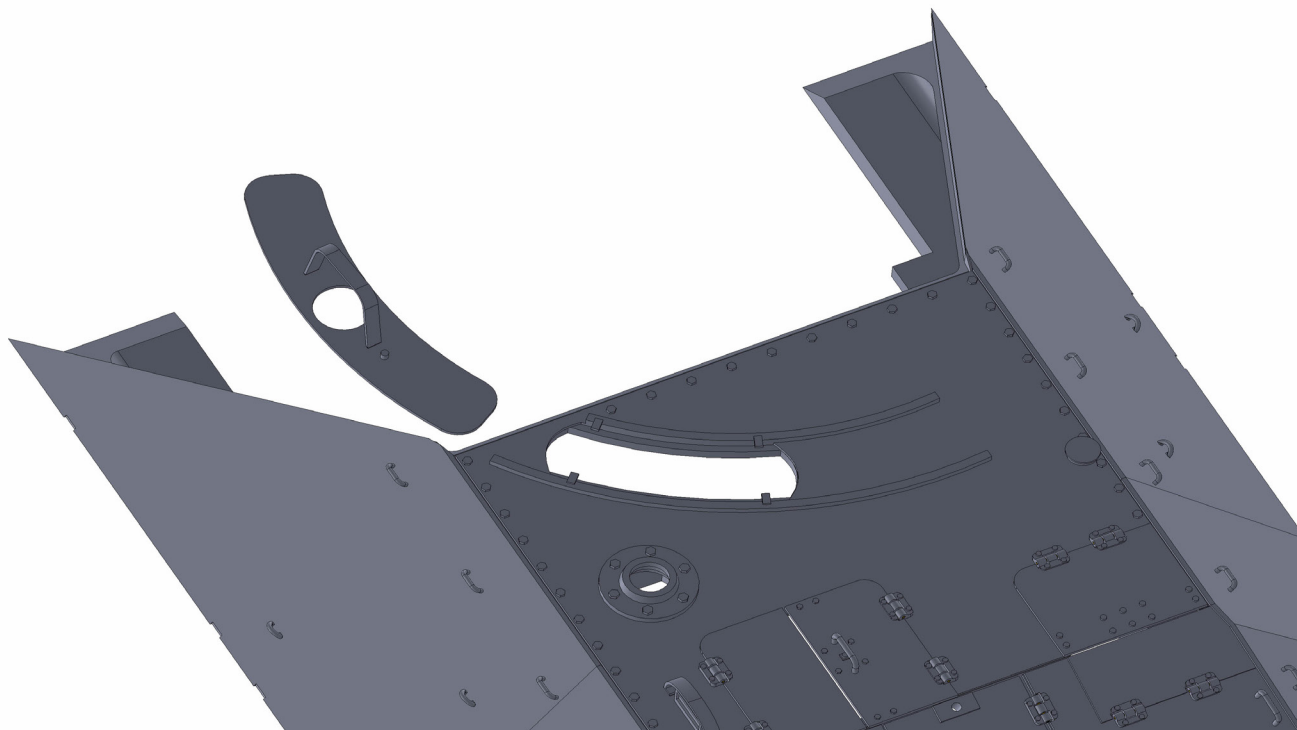
04-17C



M2 nut

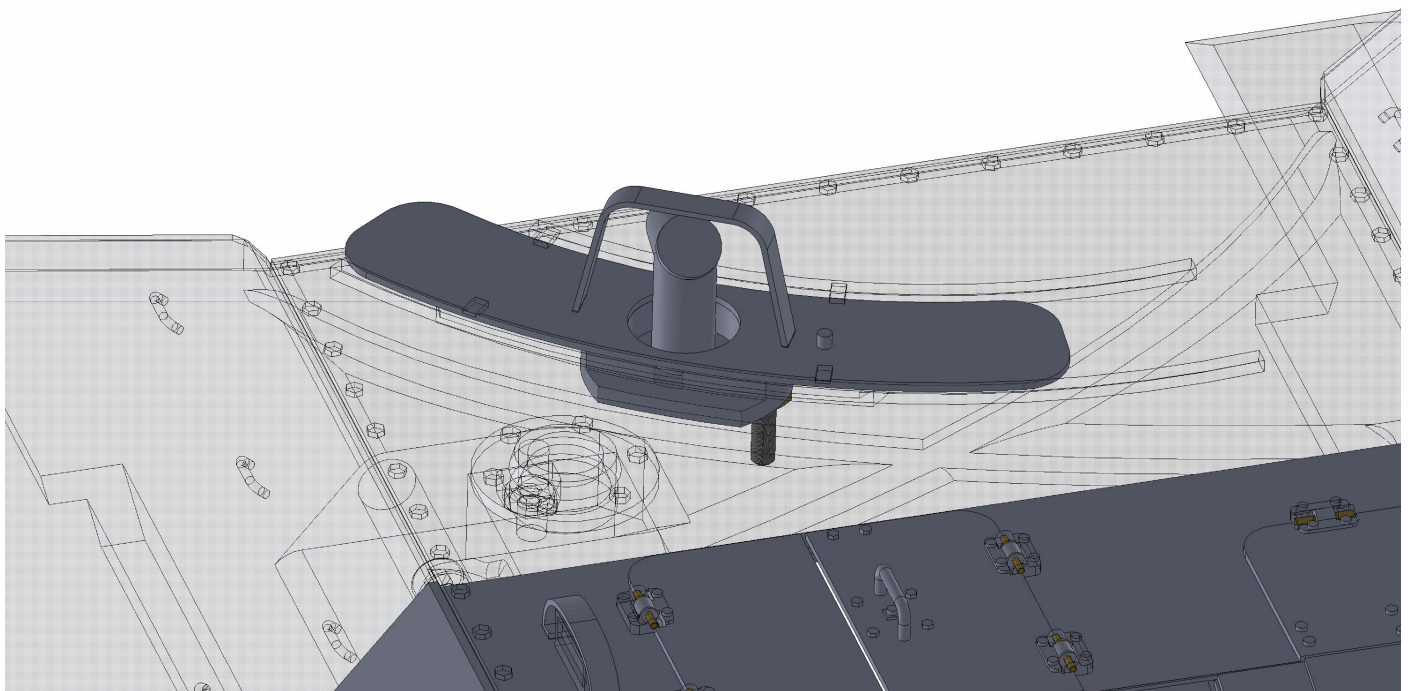
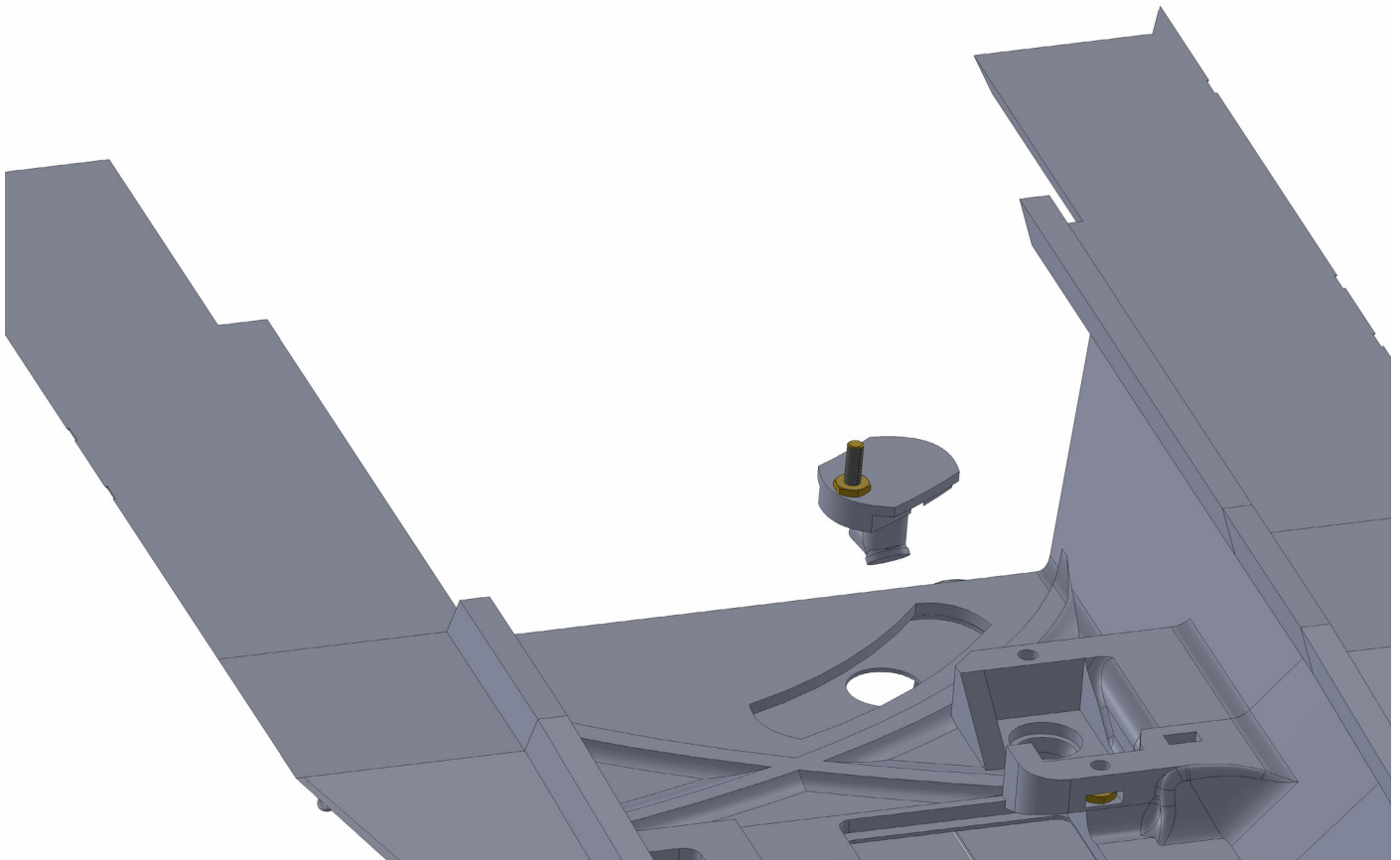


Insert the M2x10 screw into part 04-17C. Secure with nut.



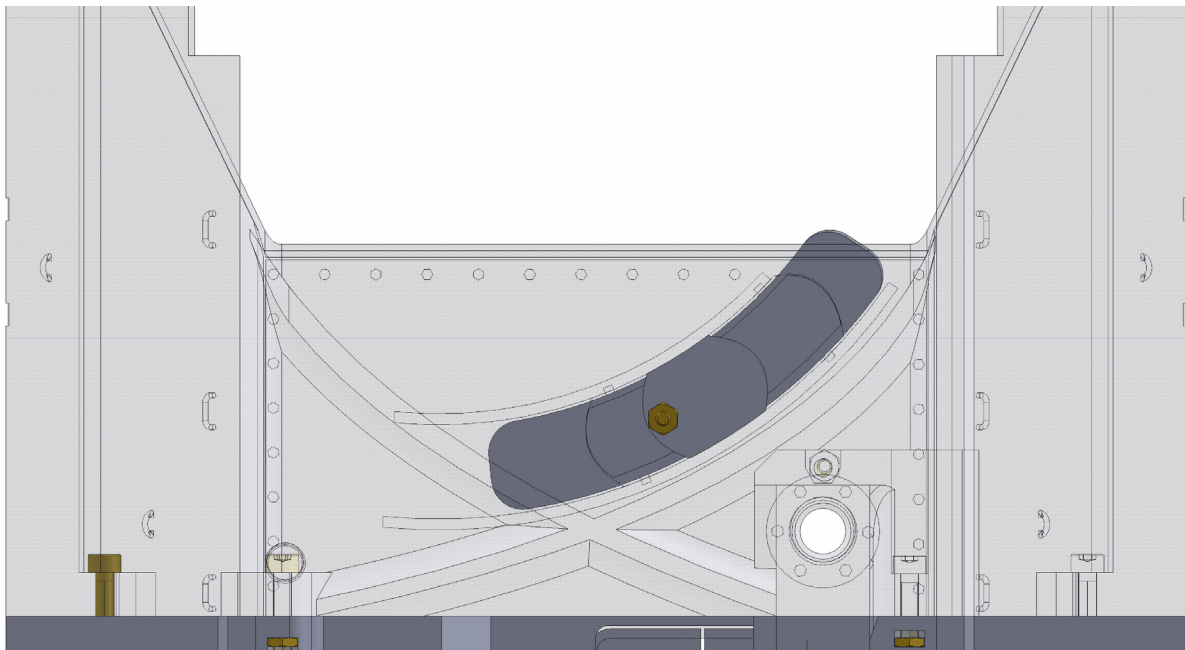
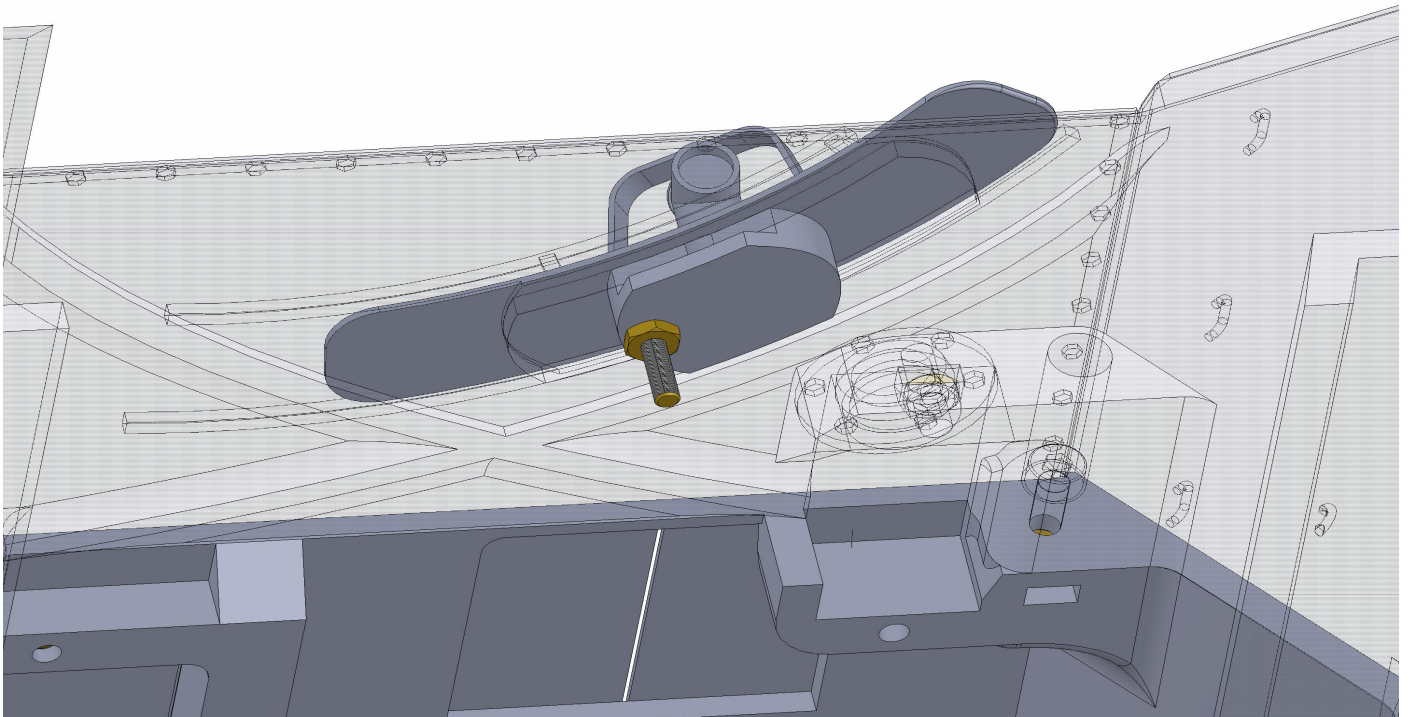
Carefully slide part 04-17A into part 04-03.
Glue 04-17C on the bottom of part 04-17A.

Chapter 04 - Upper hull



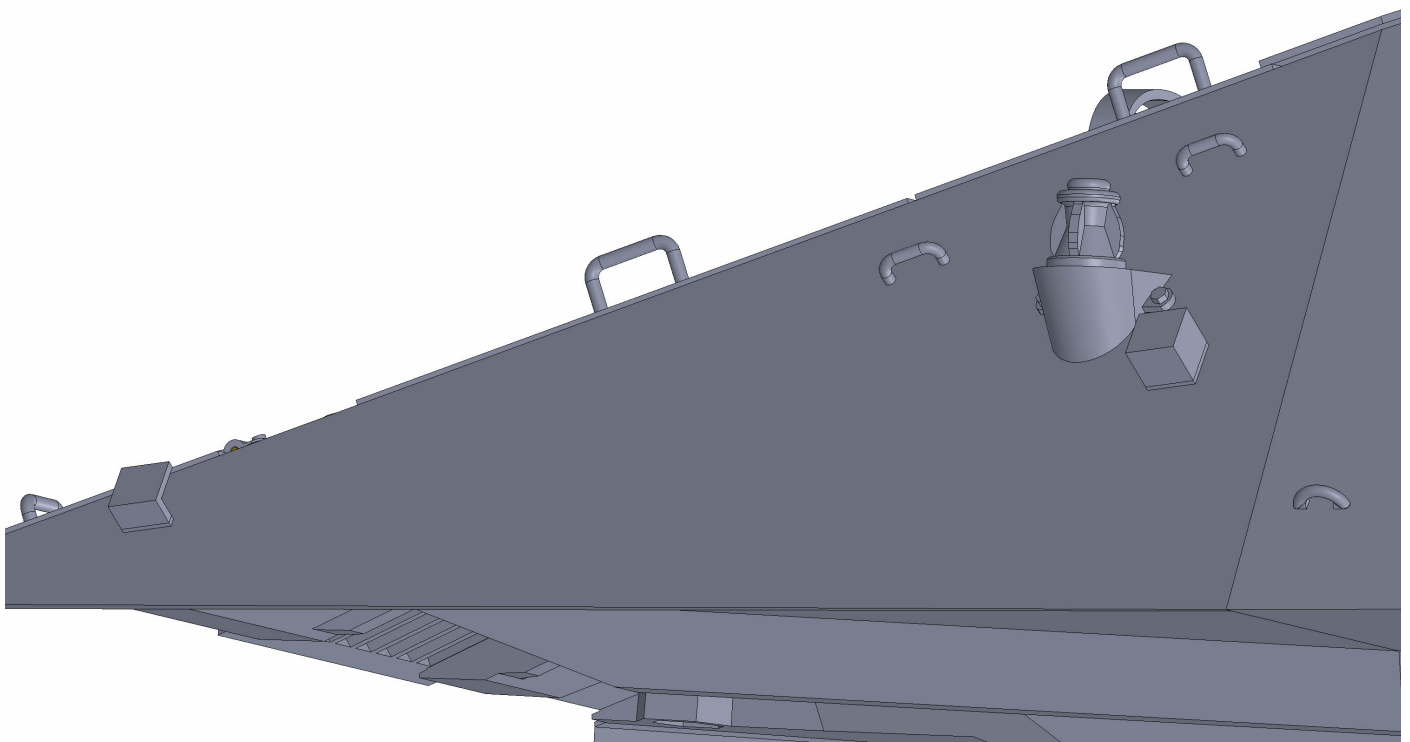
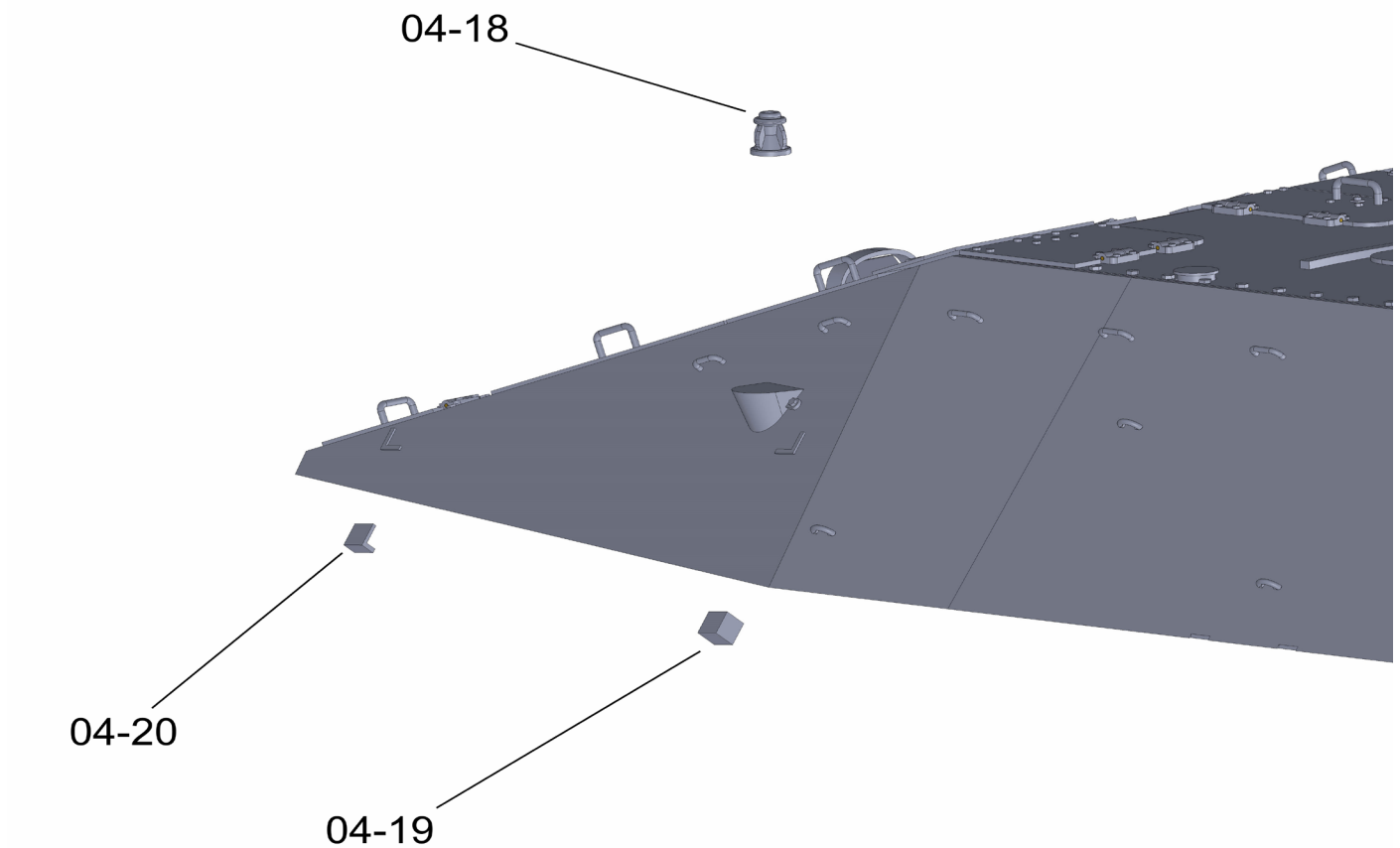
Before using glue, double check. Part 04-17C must be centered relative to the groove in part 04-02. It must move freely in the groove. It is not recommended to glue the part with too strong or fast-drying glue.

Chapter 04 - Upper hull



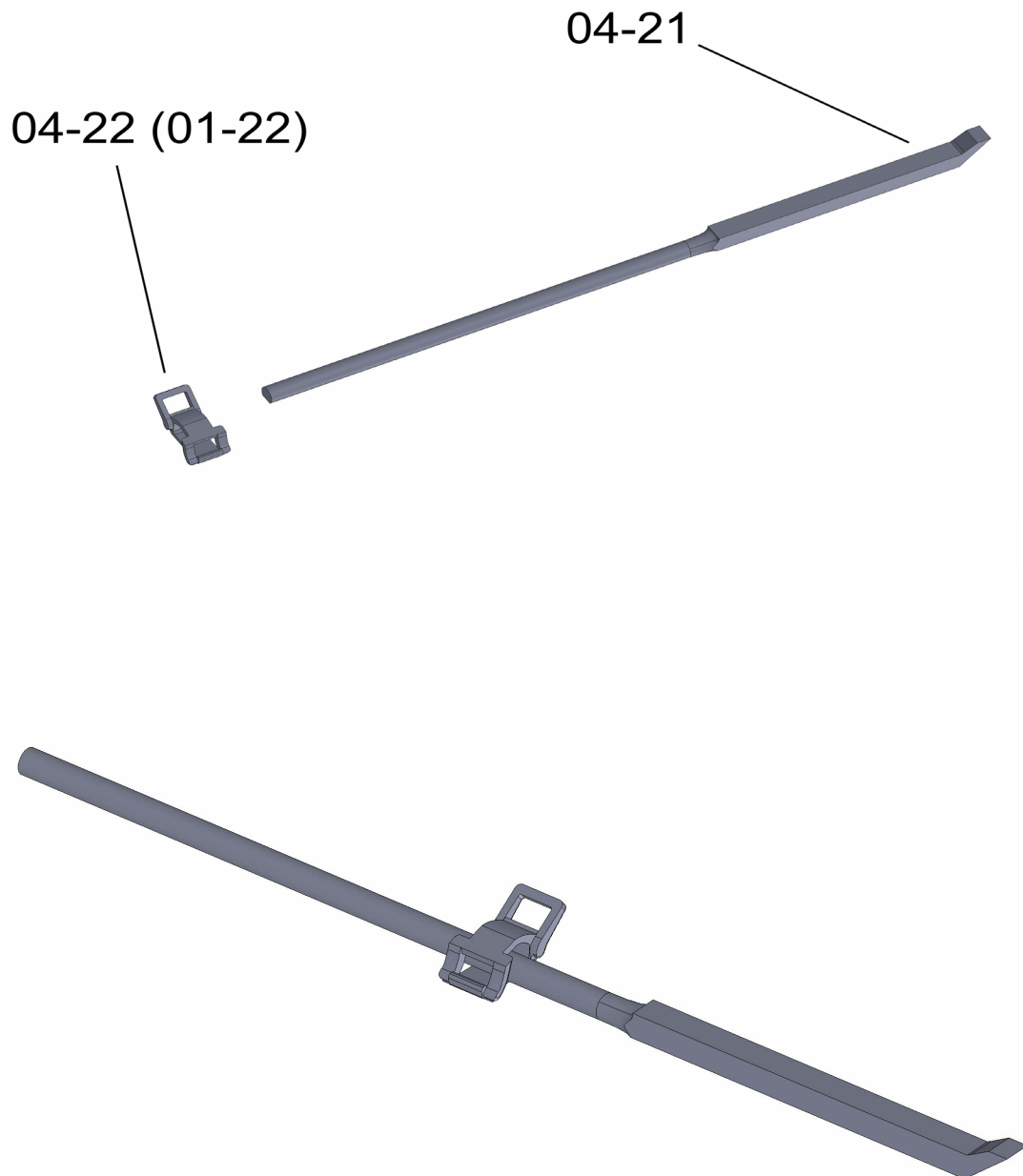
After paintjob and completing the vehicle, we recommend greasing the groove with petroleum jelly or silicone oil.

Chapter 04 - Upper hull



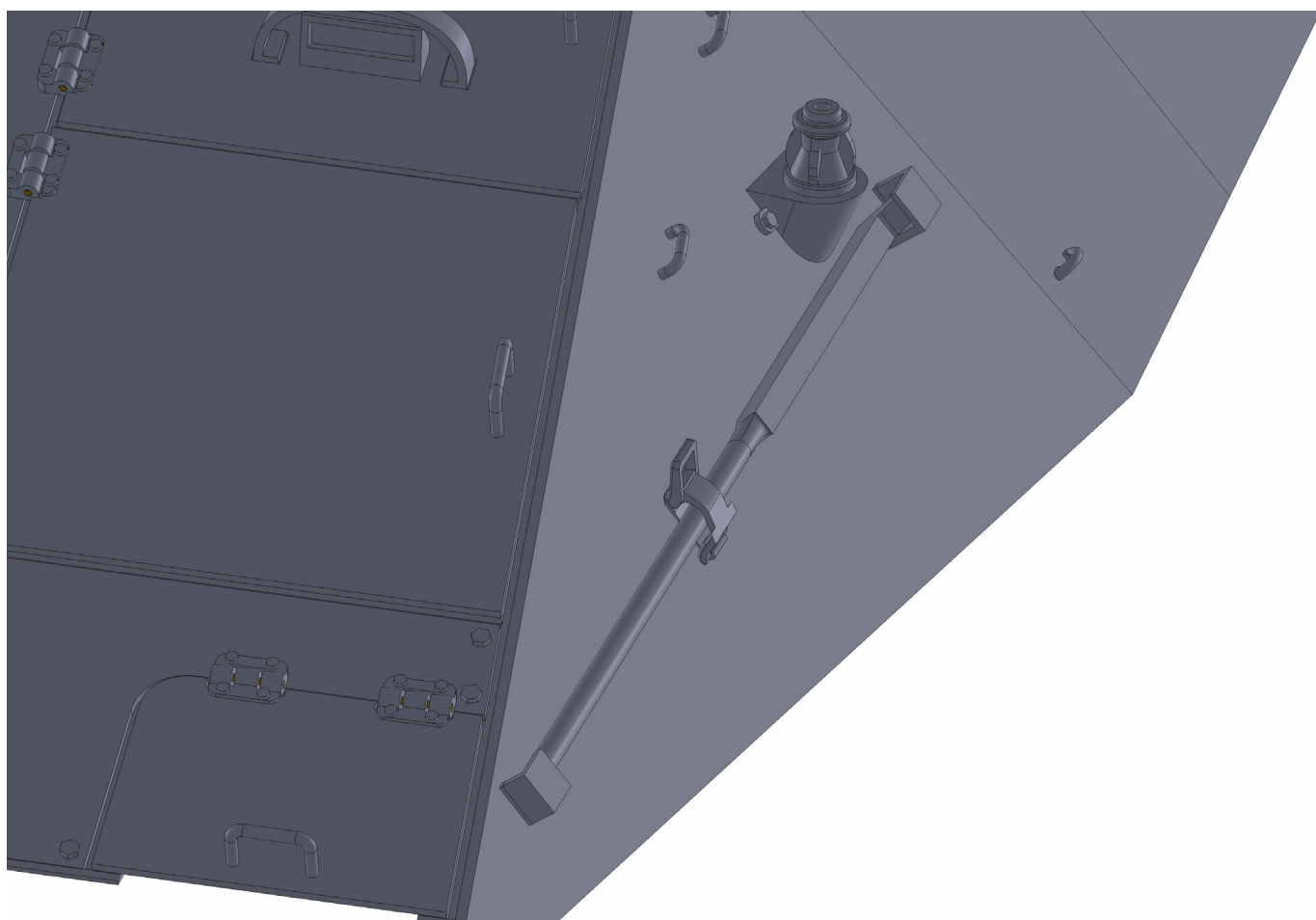
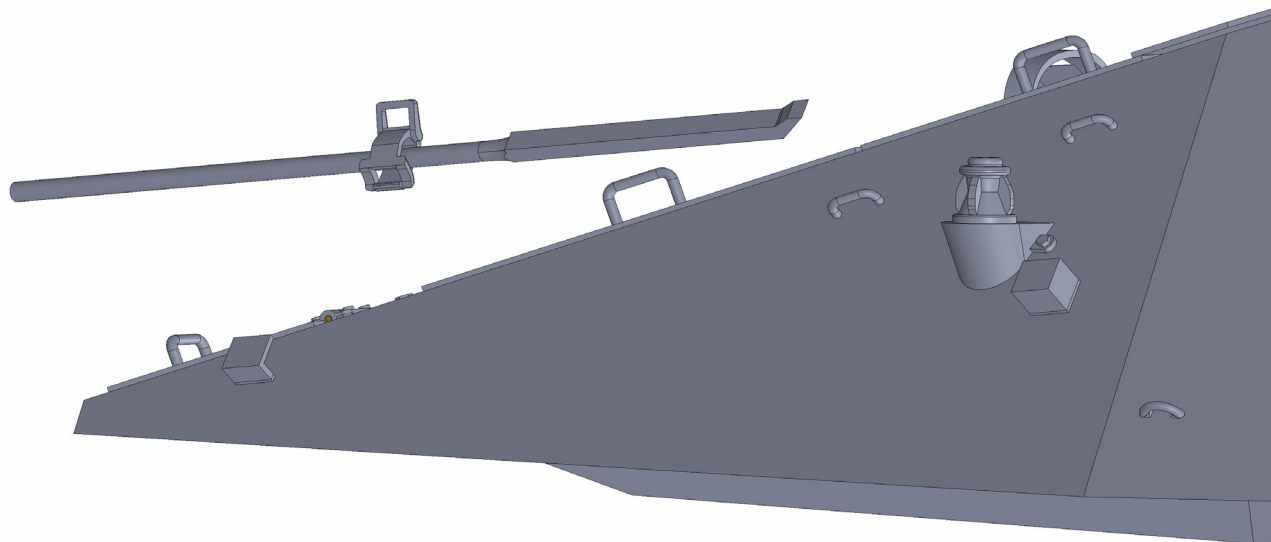
Glue parts 04-18, 04-19 and 04-20. Into the part 04-18, you can insert a piece of wire 0.5mm in diameter and 50mm in length, which will serve as an antenna imitation.

Chapter 04 - Upper hull



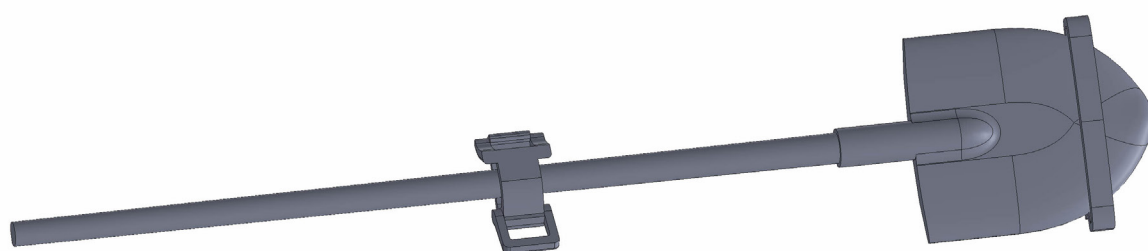
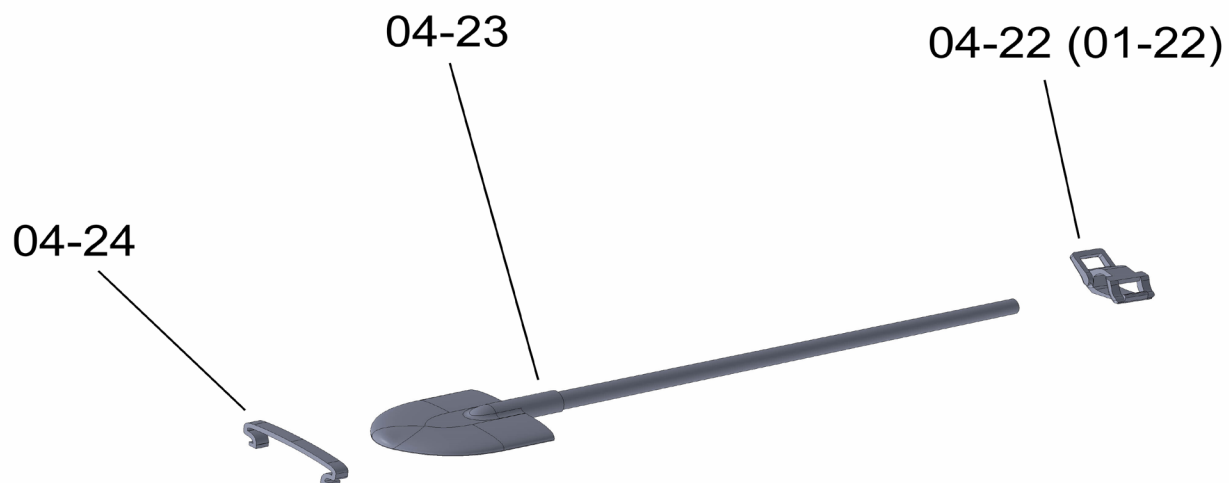
Glue parts 04-21 and 04-22.
Part 04-22 is identical to part 01-22.

Chapter 04 - Upper hull



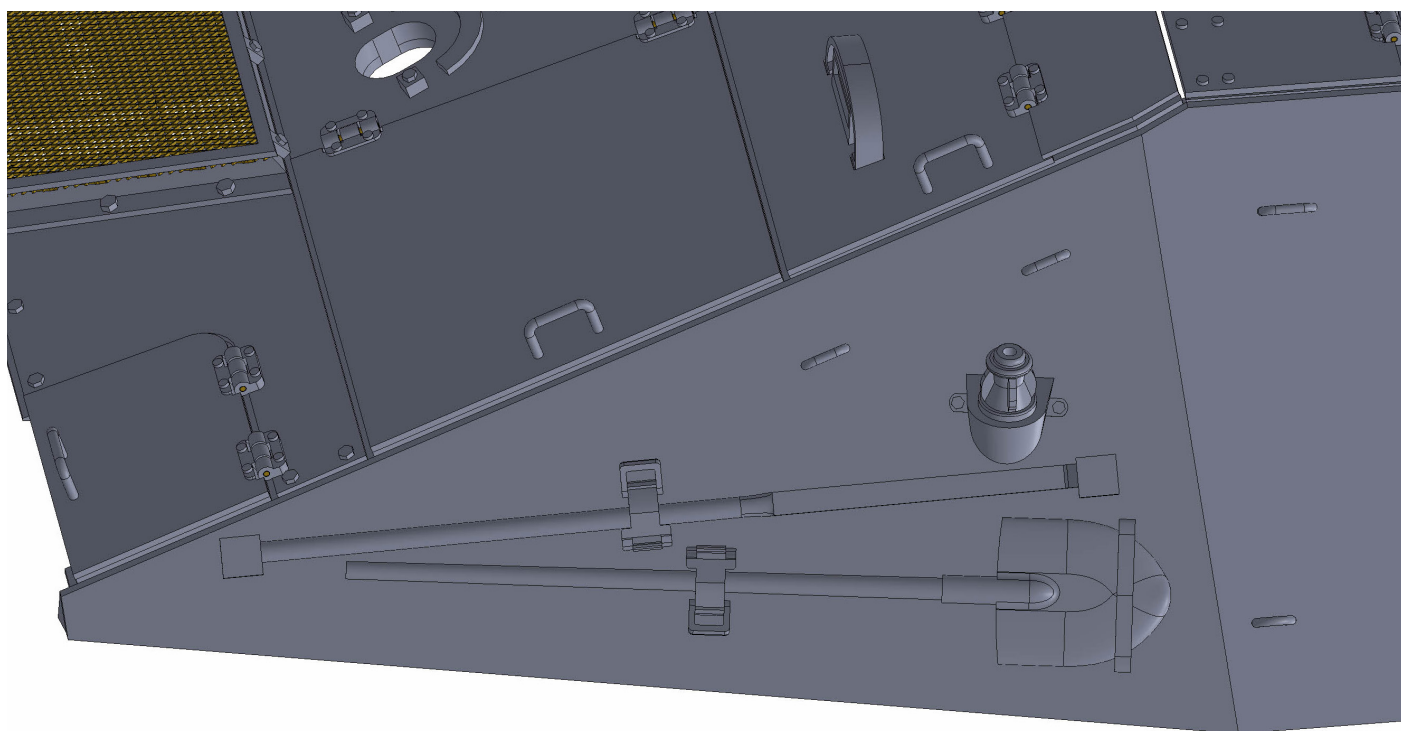
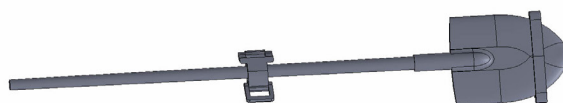
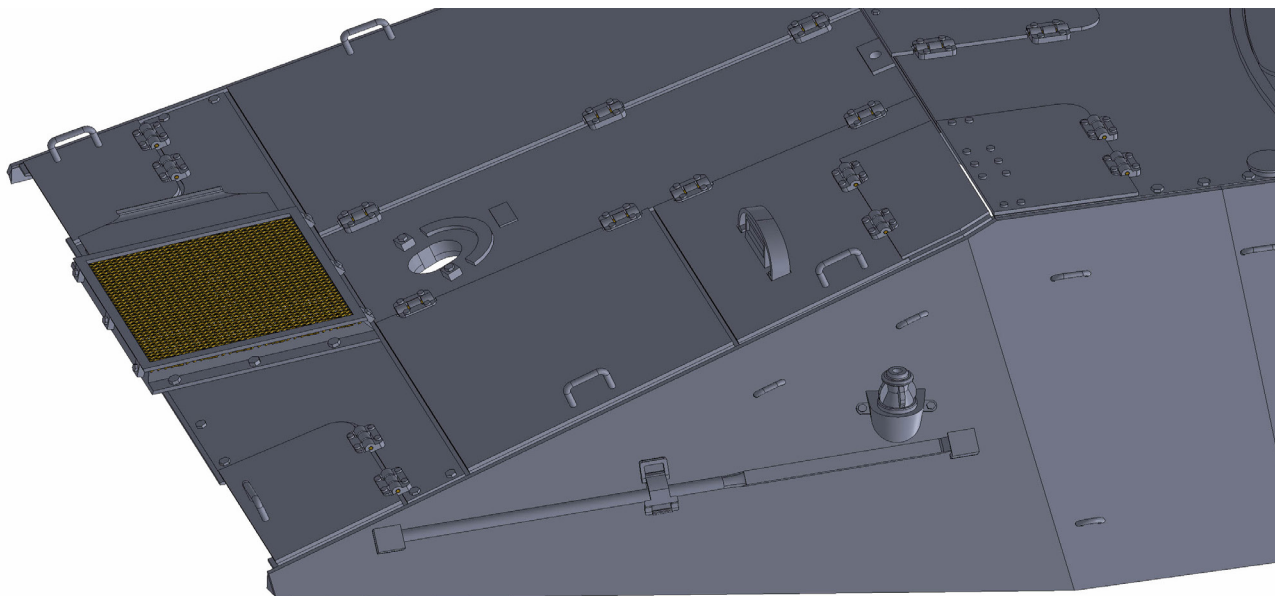
Glue the unit on part 04-01.

Chapter 04 - Upper hull



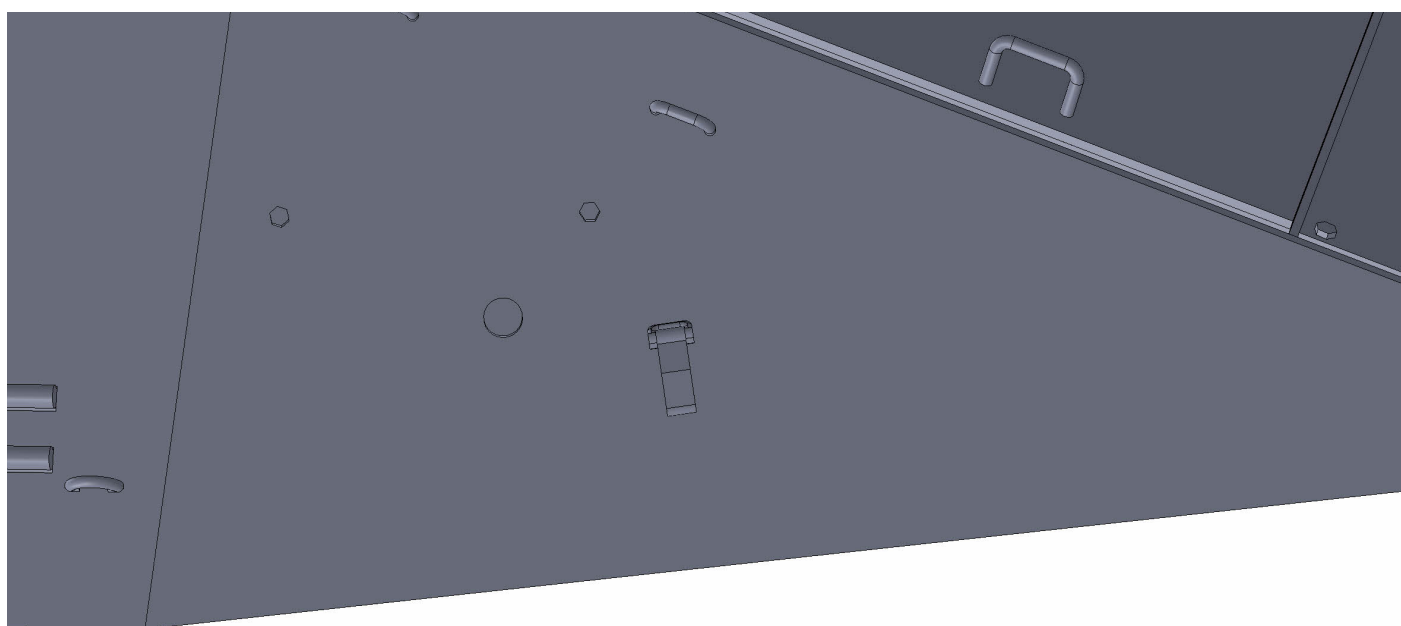
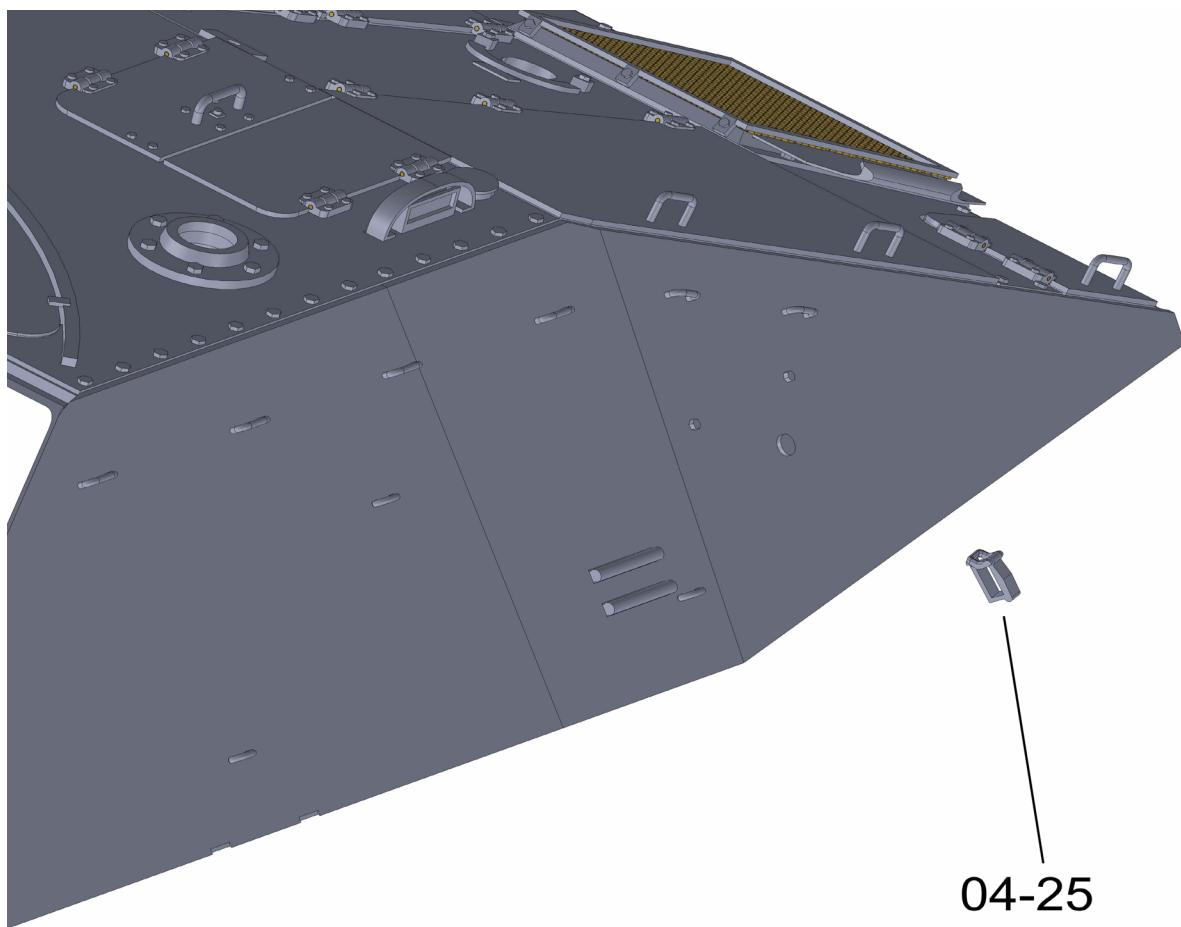
Glue parts 04-22, 04-23 and 04-24 together.

Chapter 04 - Upper hull

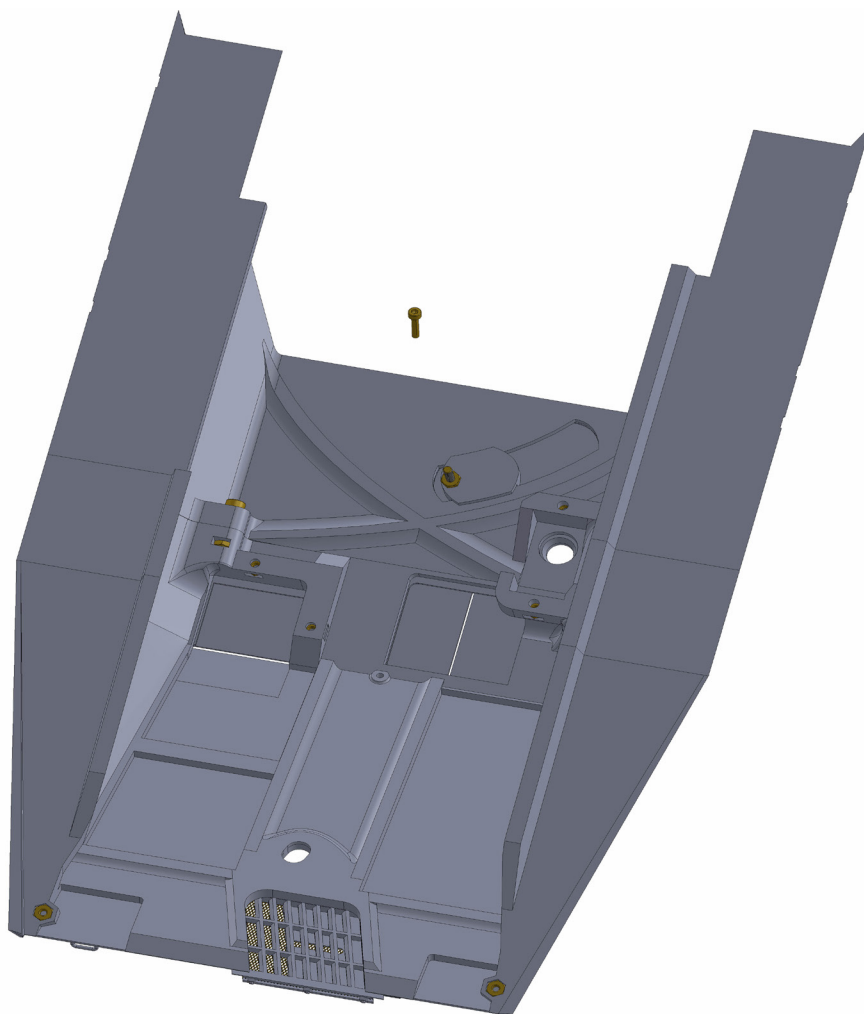


Glue the unit to the part 04-01.

Chapter 04 - Upper hull

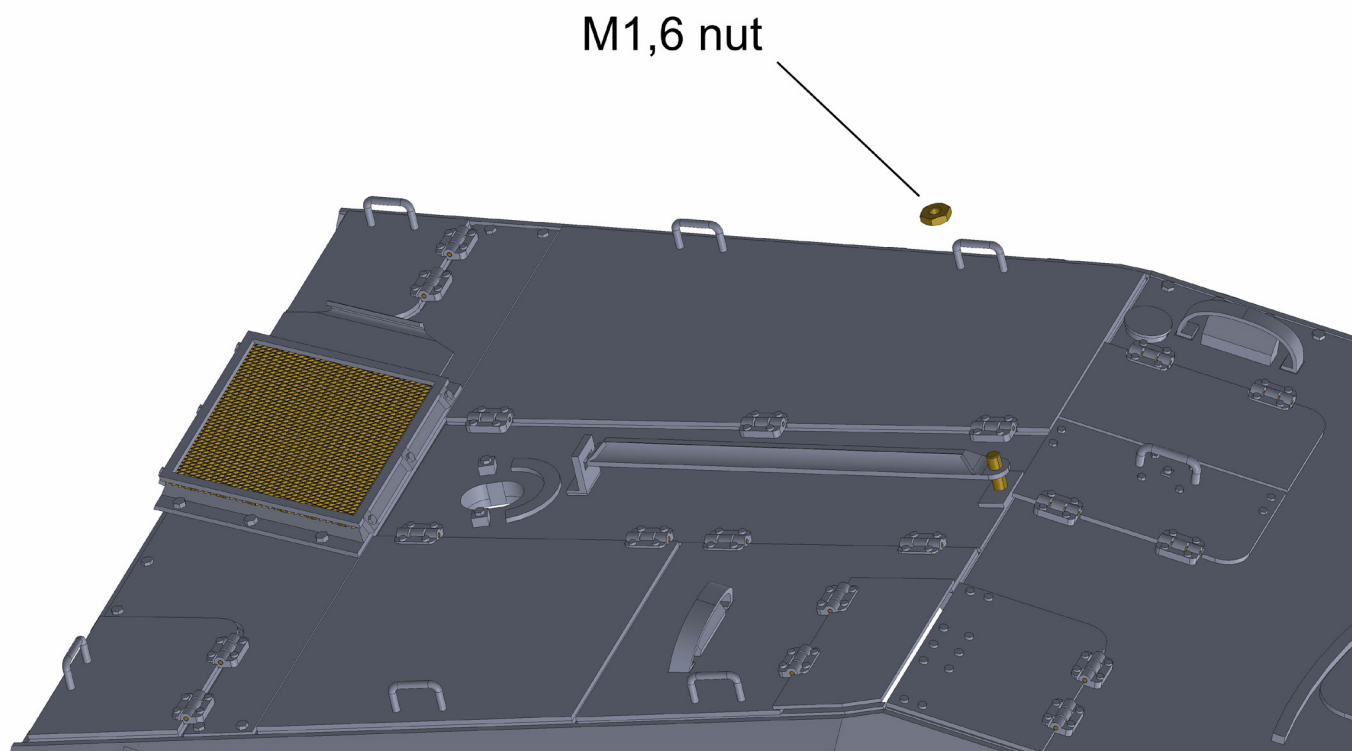
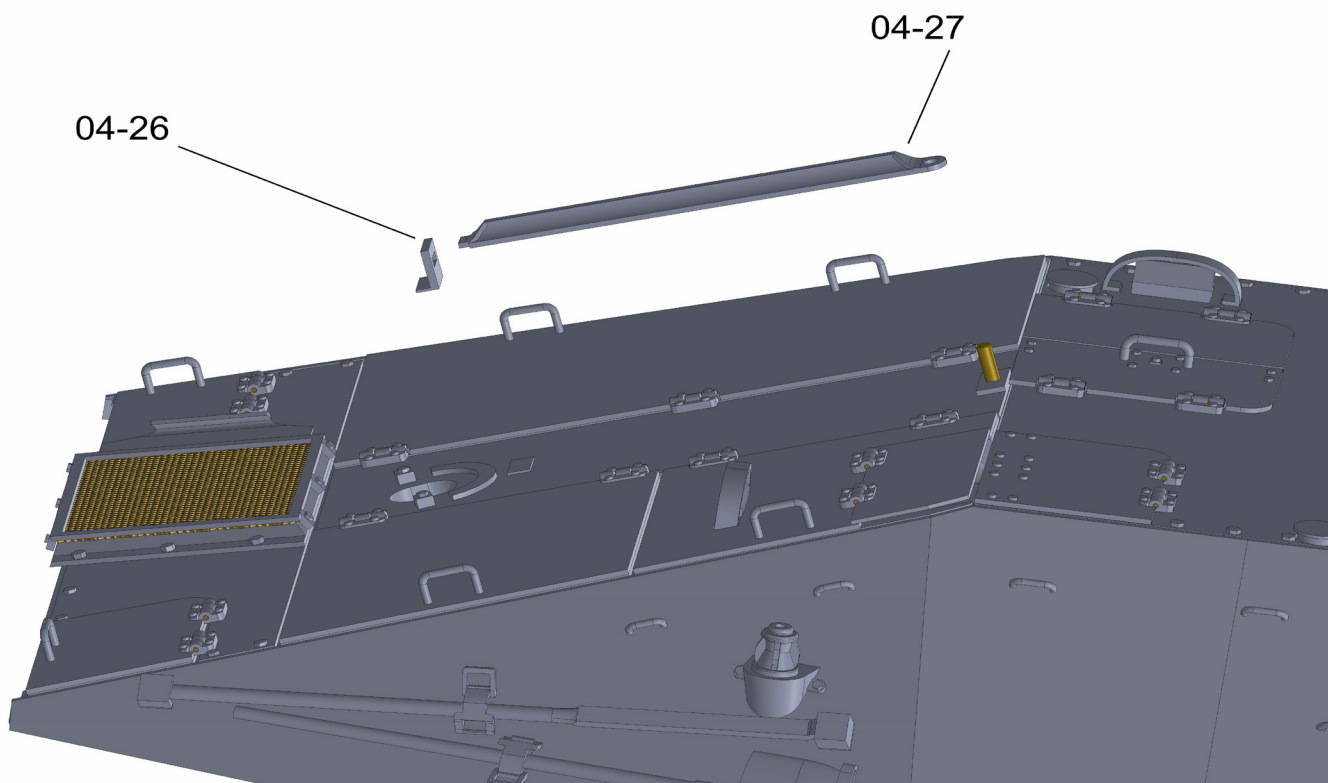


Glue part 04-25.



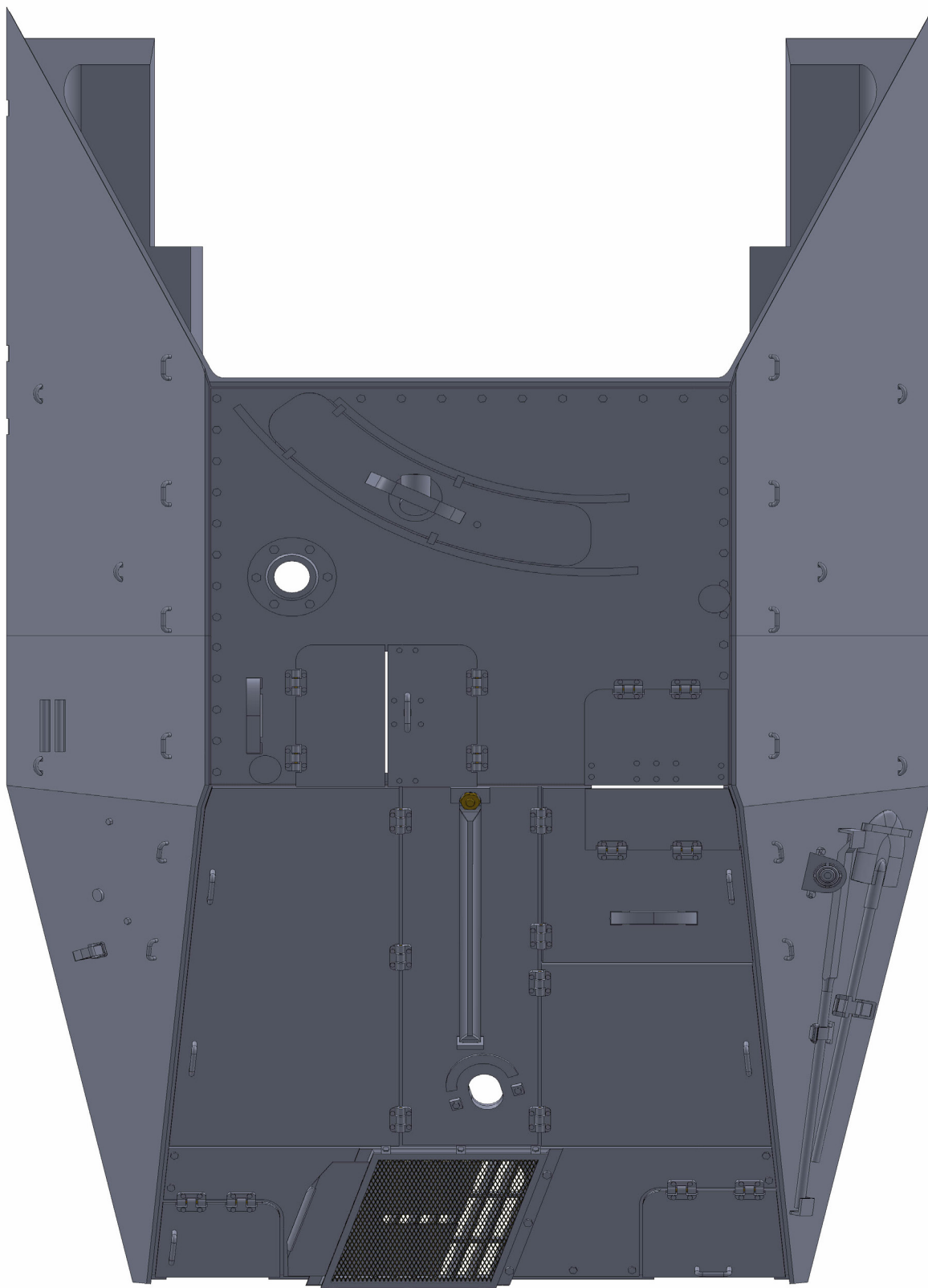
Insert the M1.6x12 screw into the hole in part 04-01.

Chapter 04 - Upper hull



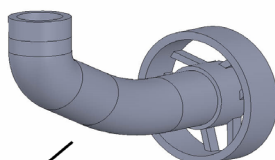
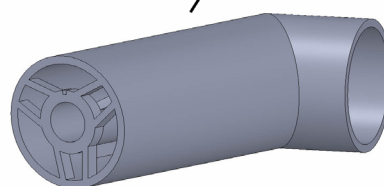
Glue part 04-26 from outside. Insert part 04-27 into part 04-26 and attach it to the screw M1.6. Secure screw with the M1,6 nut. Do not glue part 04-27.

Chapter 04 - Upper hull

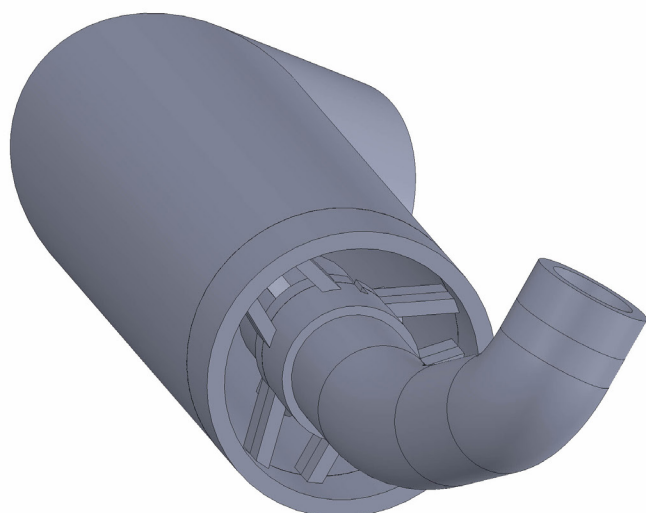
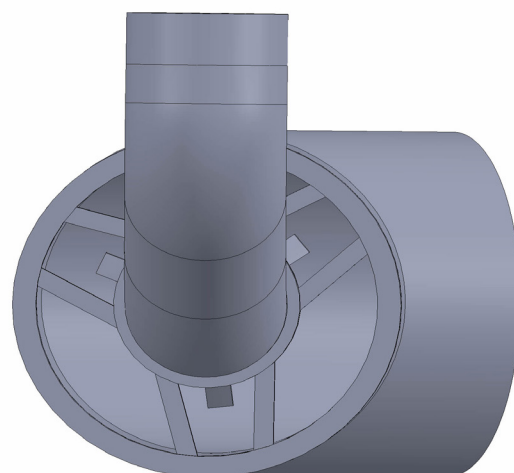


Correct position of all parts.

04-29

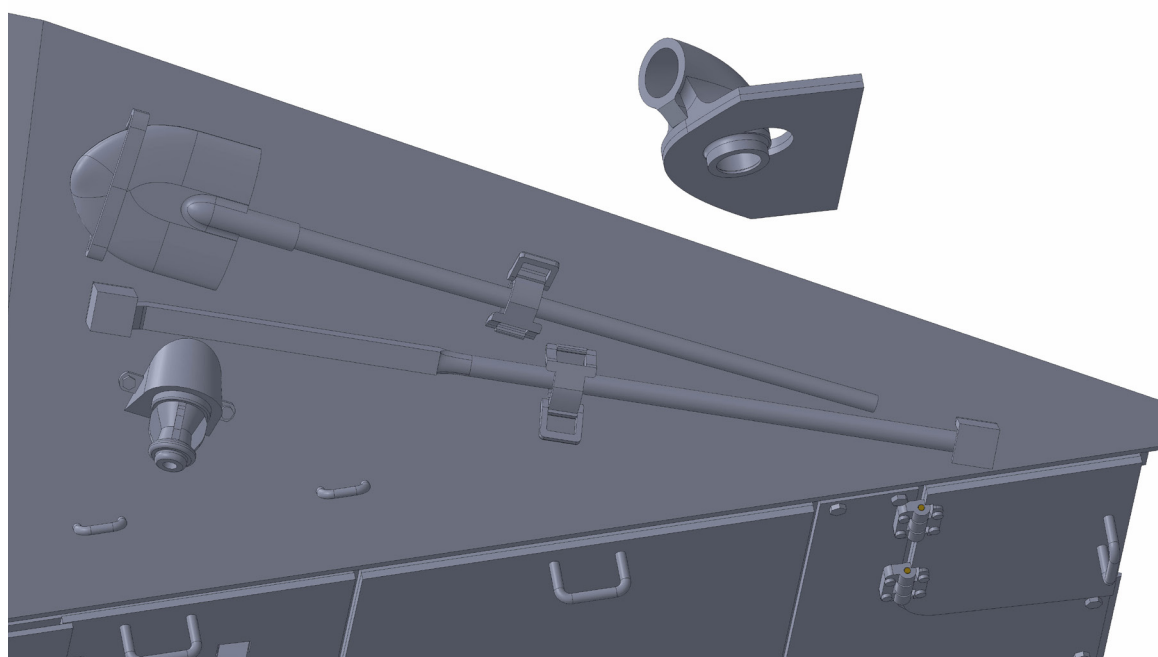
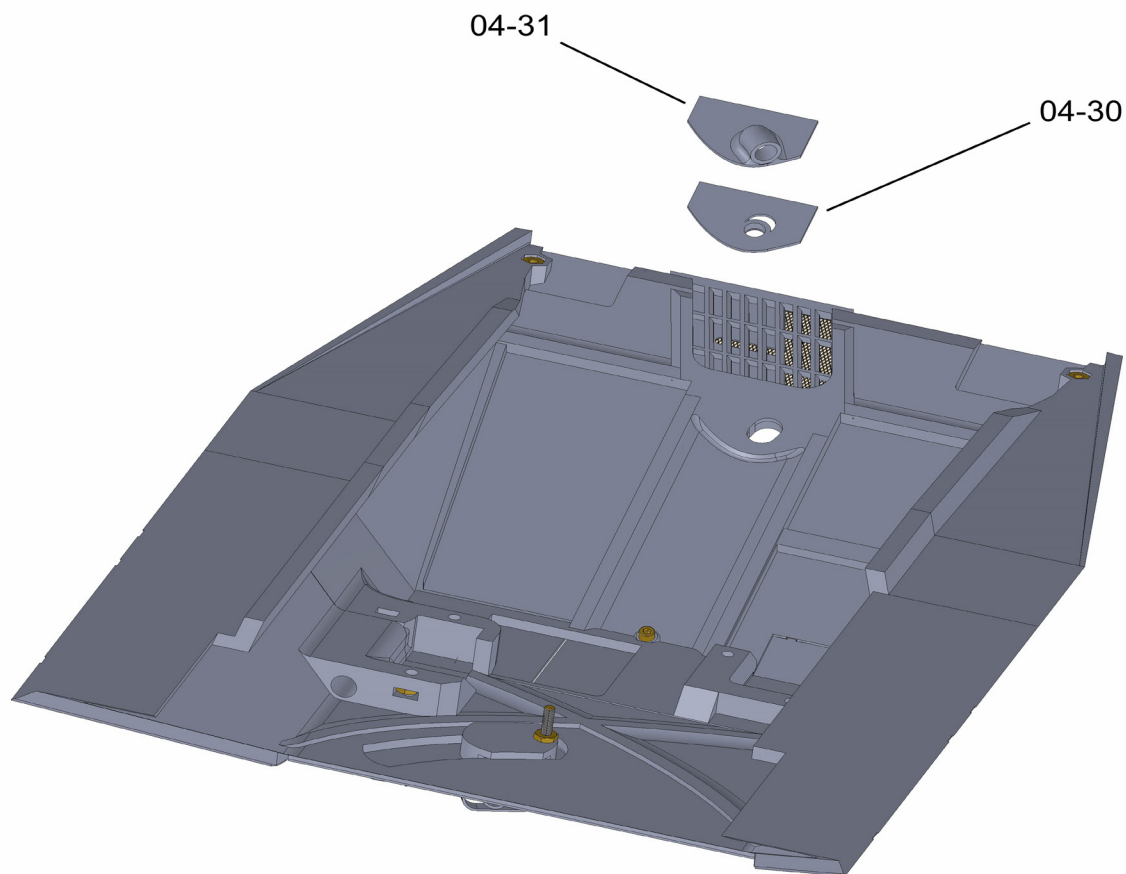


04-28

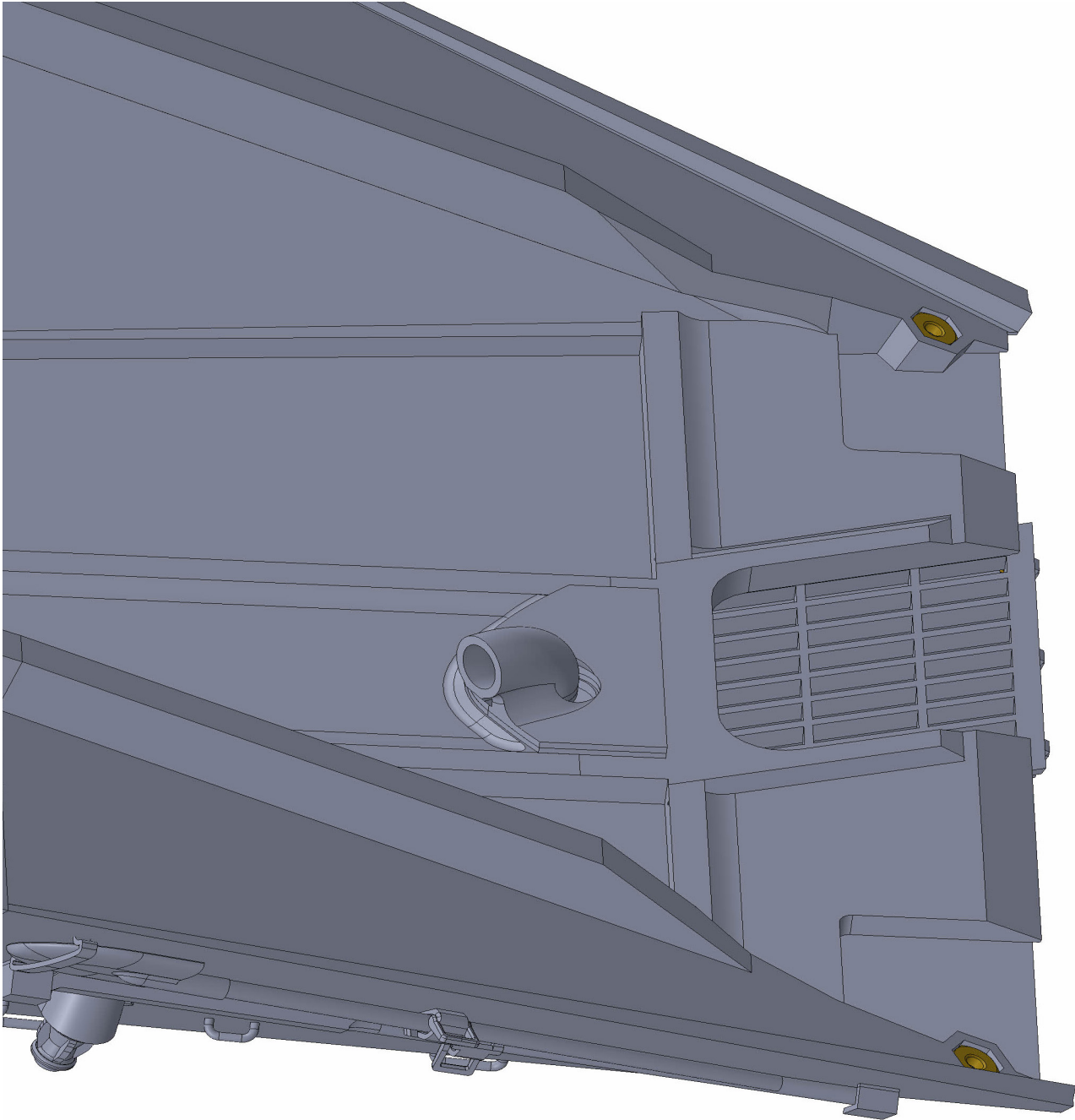


Connect parts 04-28 and 04-29. The correct orientation of the parts is shown in the figures below.

Chapter 04 - Upper hull

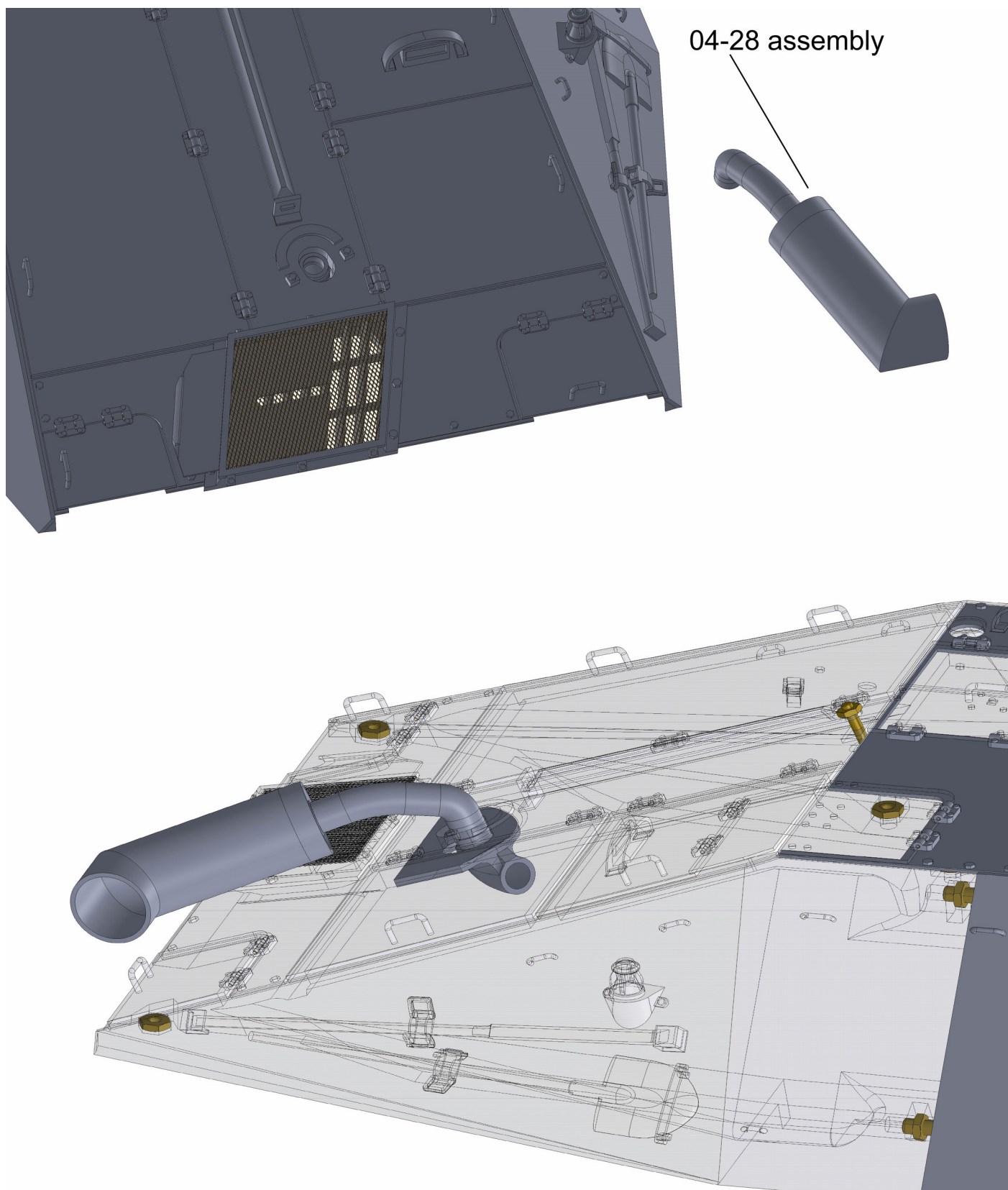


Glue parts 04-30 and 04-31 on the inside of part 04-01.



Correct position of parts 04-30 and 04-31.

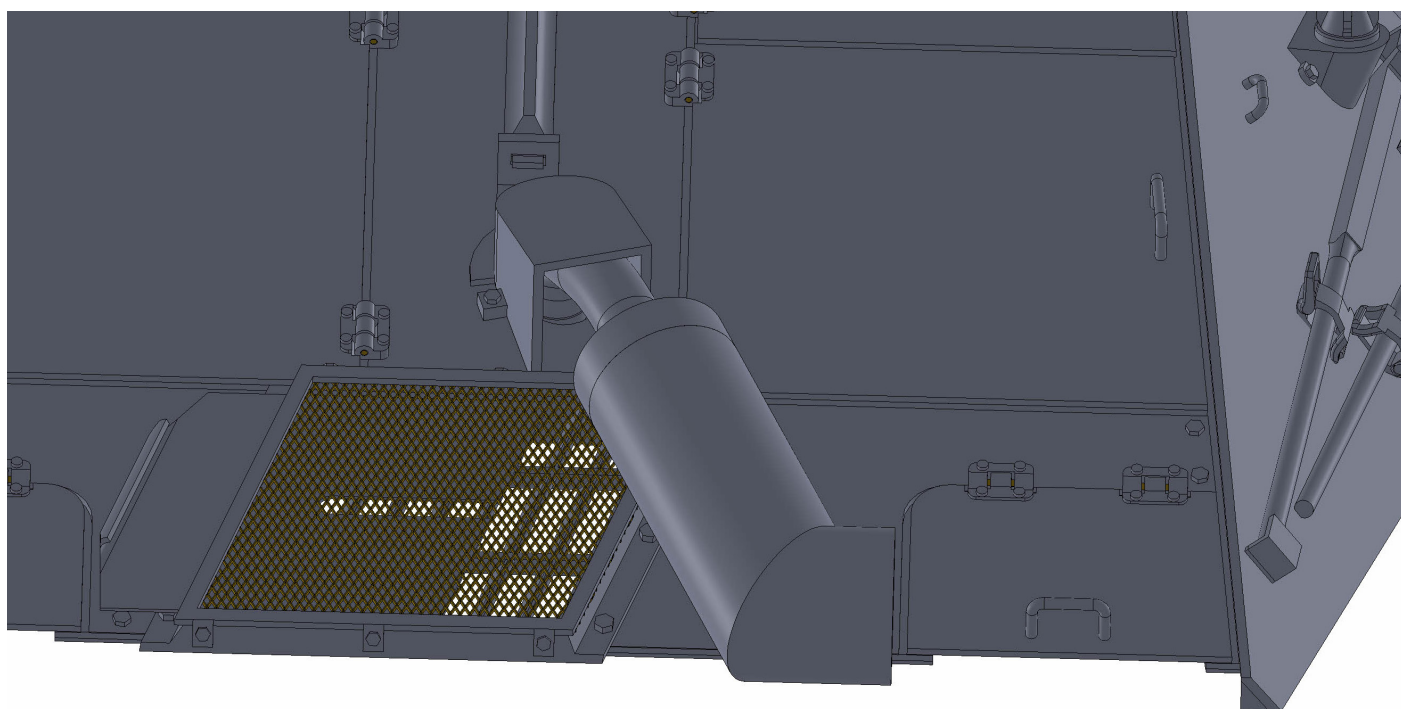
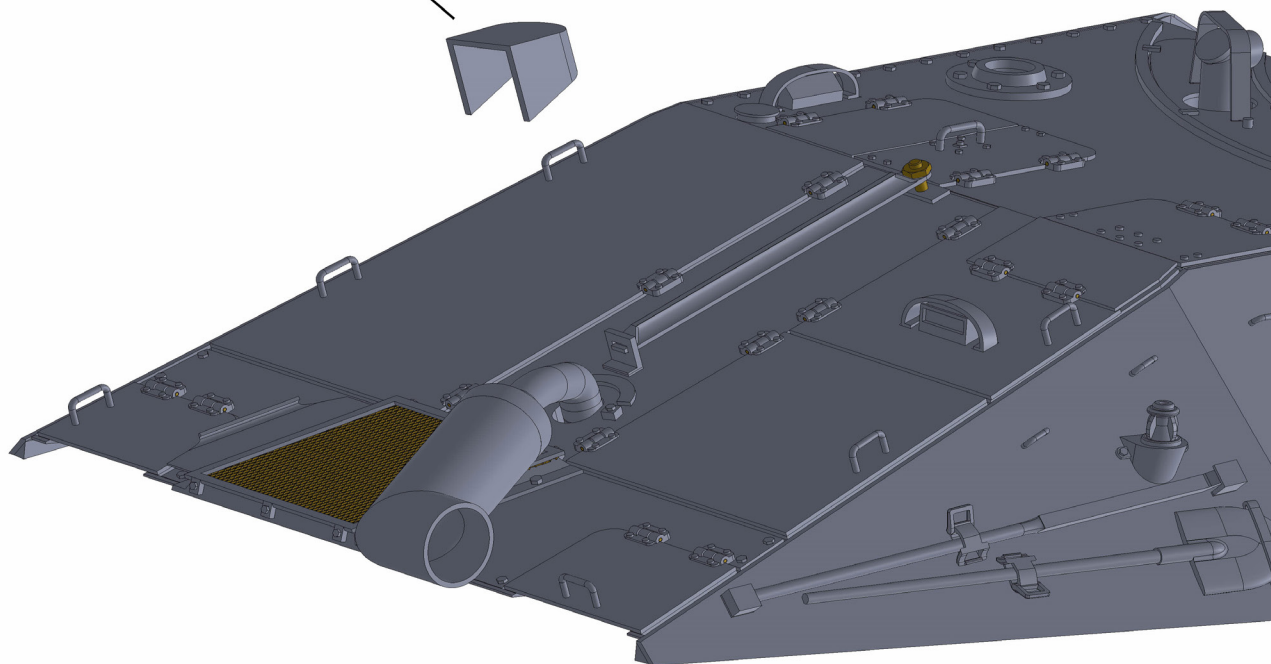
Chapter 04 - Upper hull



Glue part subassembly 04-28.

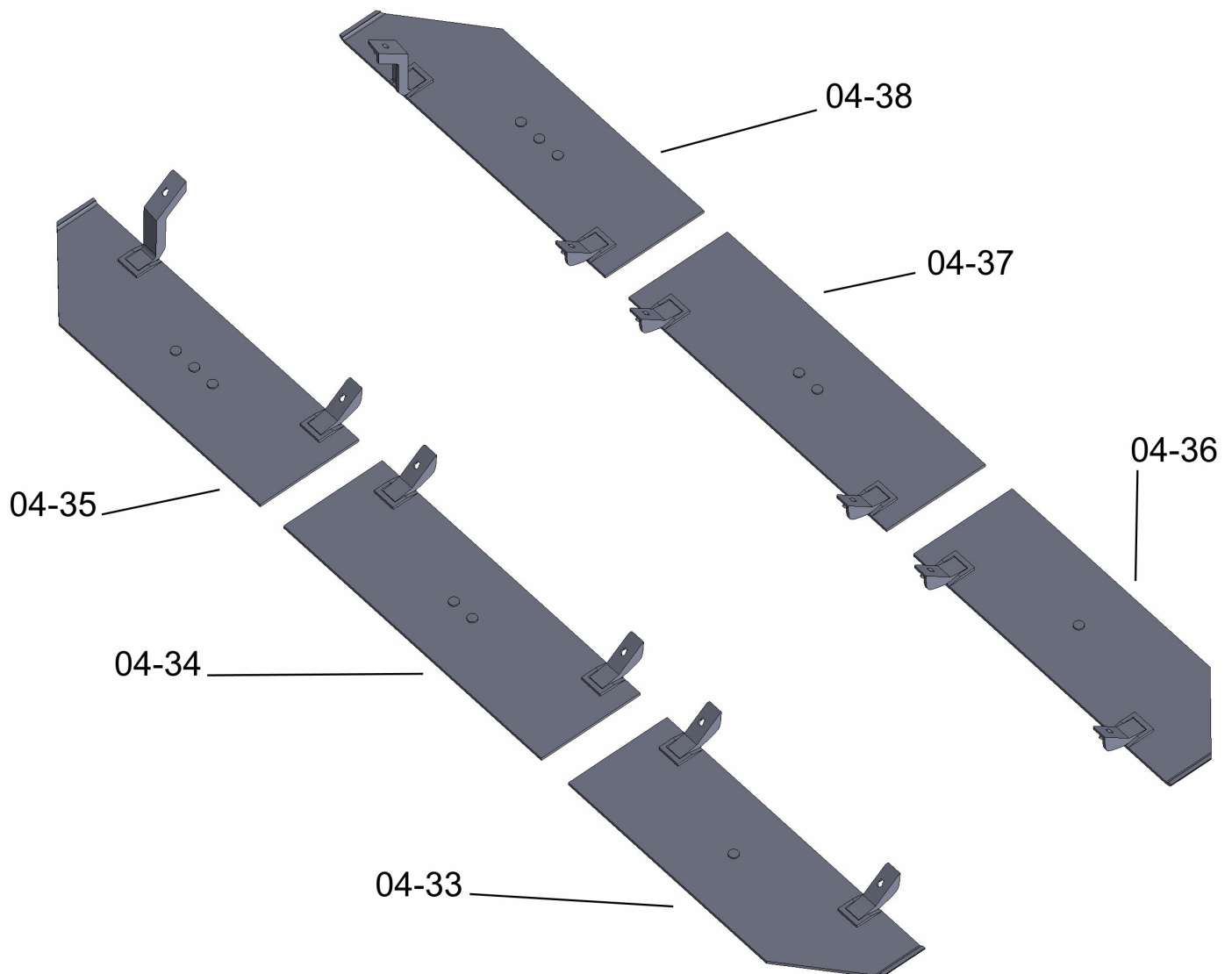
Chapter 04 - Upper hull

04-32



Glue part 04-32.

Chapter 04 - Upper hull



Prepare "Schurzen".

Prepare parts exactly as shown.

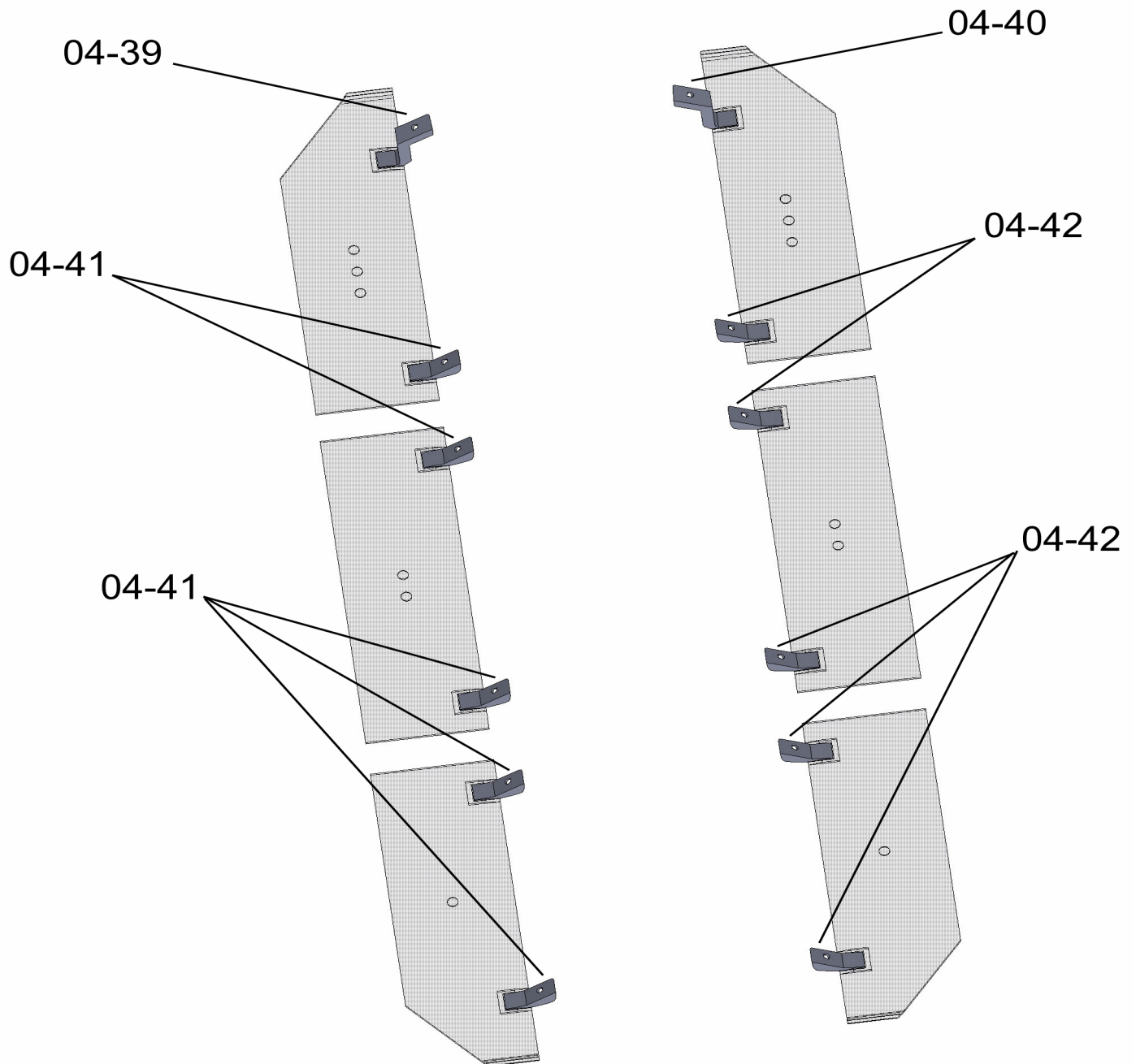
Individual parts 04-33 to 04-38 are marked with dots on the inside.

These serve as markings against confusion.

You can replace your markings with your own and cut off the dots.

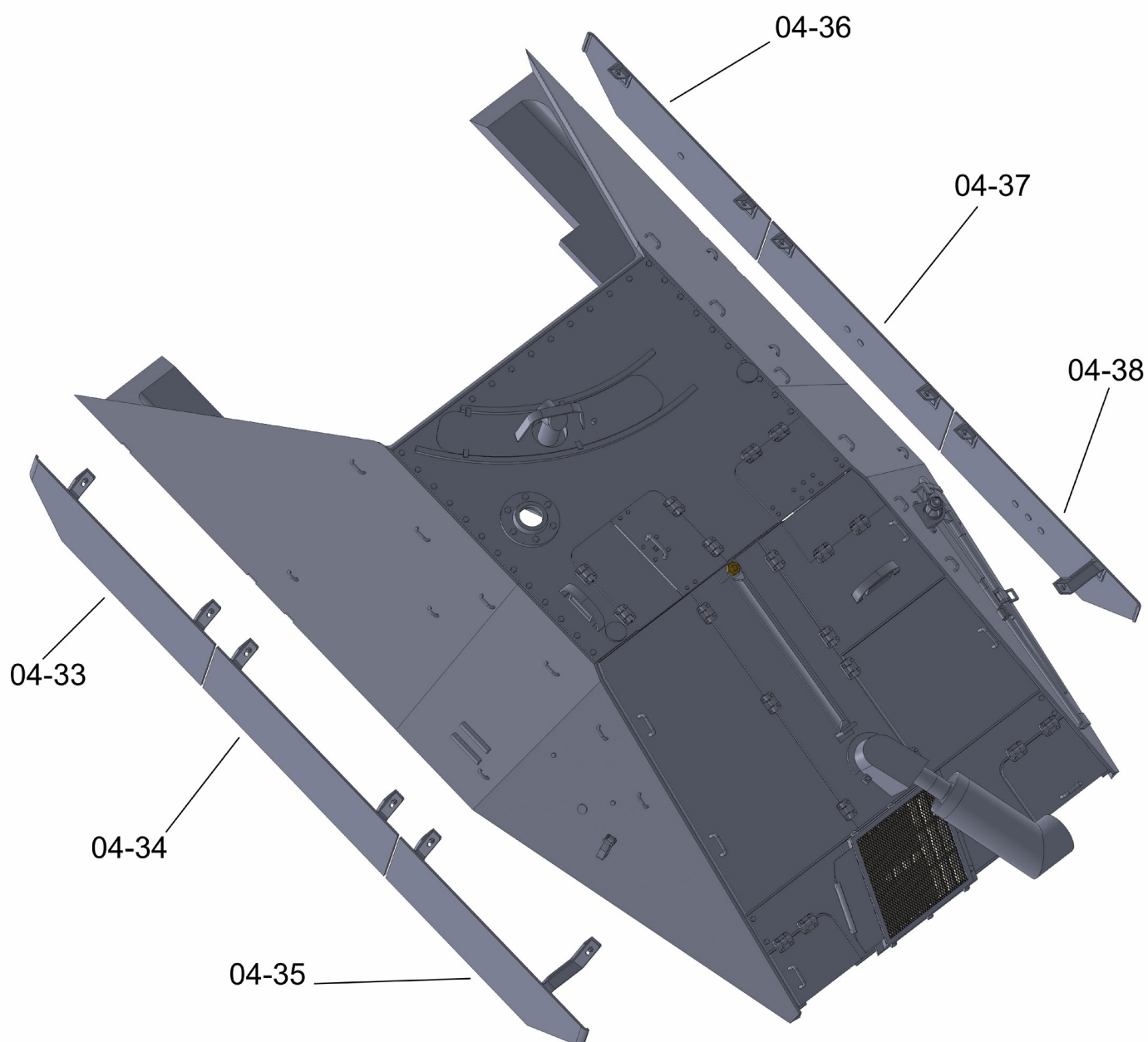
Parts with one dot belong to the front of the vehicle, parts with three dots to the rear.

Chapter 04 - Upper hull



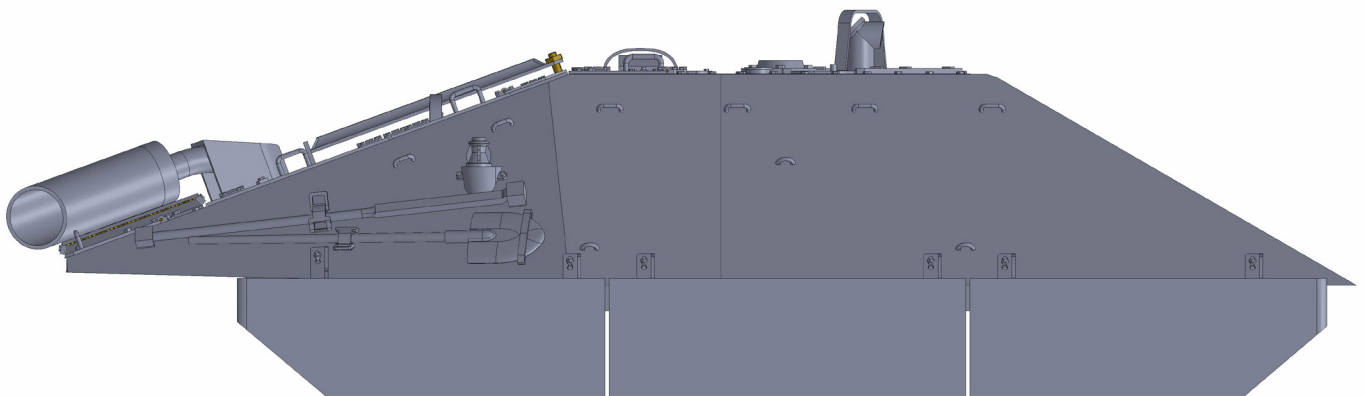
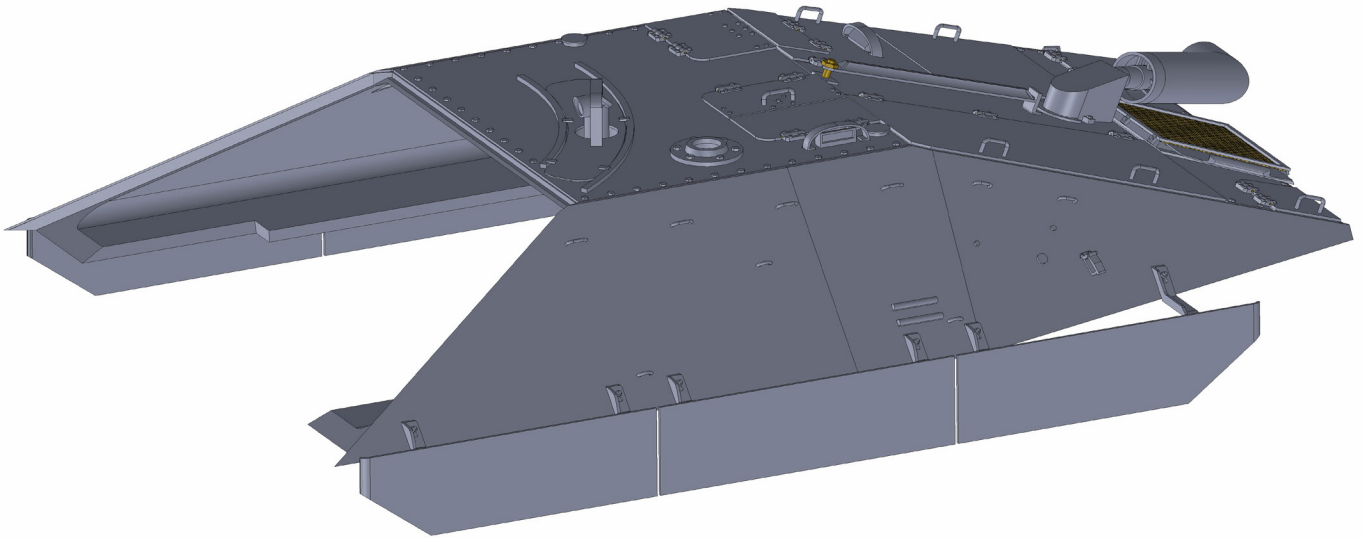
Make sure that the parts 04-39 to 04-42 are correctly oriented.

Chapter 04 - Upper hull



Glue the parts as shown. Align carefully.

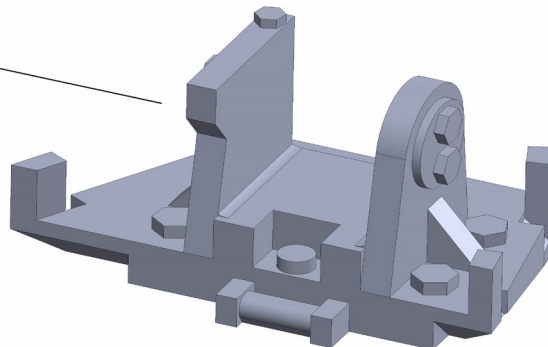
Chapter 04 - Upper hull



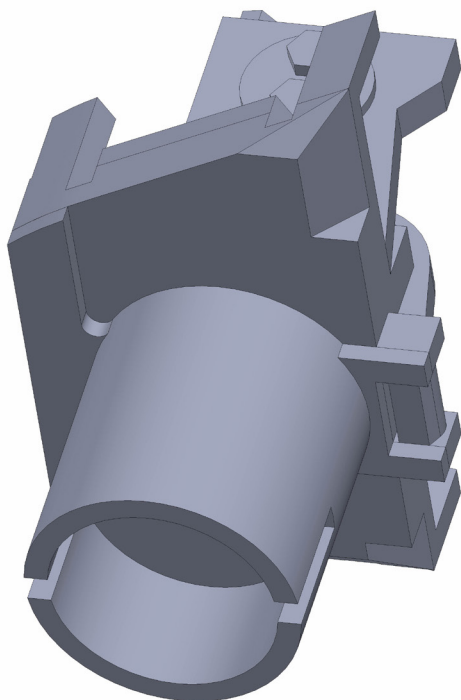
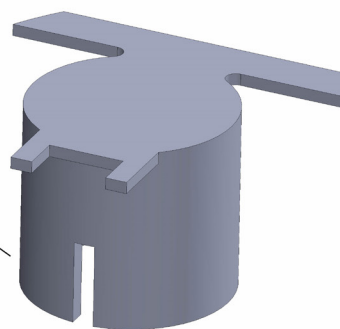
Additional views for bonding parts 04-33 to 04-42.

Chapter 04 - Upper hull

04-43B



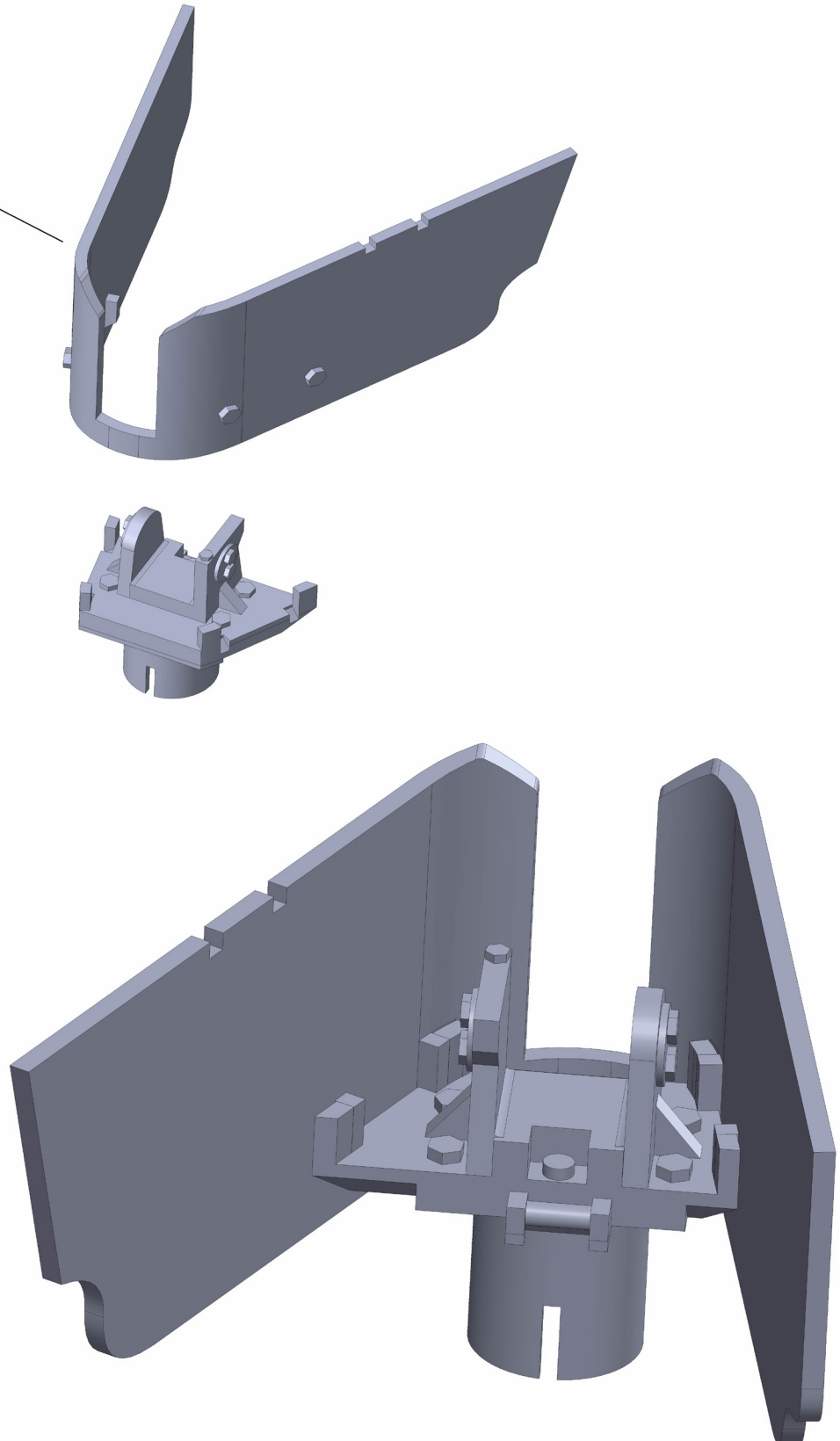
04-43A



Glue parts 04-43A and 04-43B together.

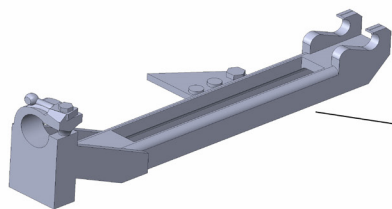
Chapter 04 - Upper hull

04-43C

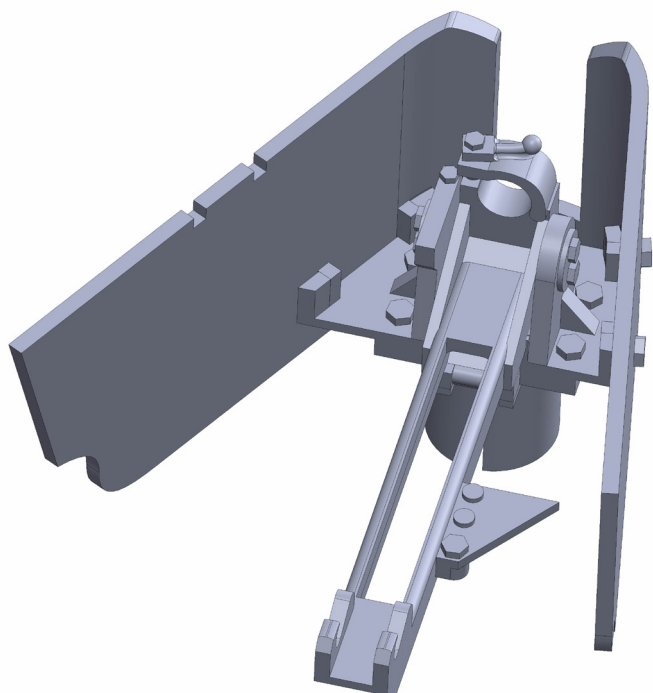
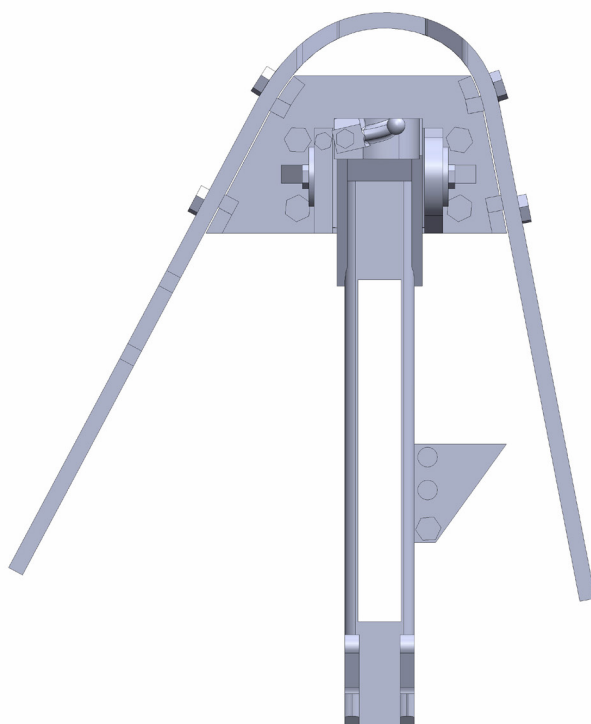
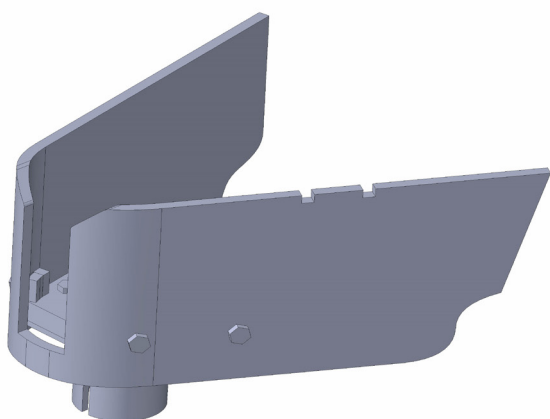


Glue part 04-43C.

Chapter 04 - Upper hull

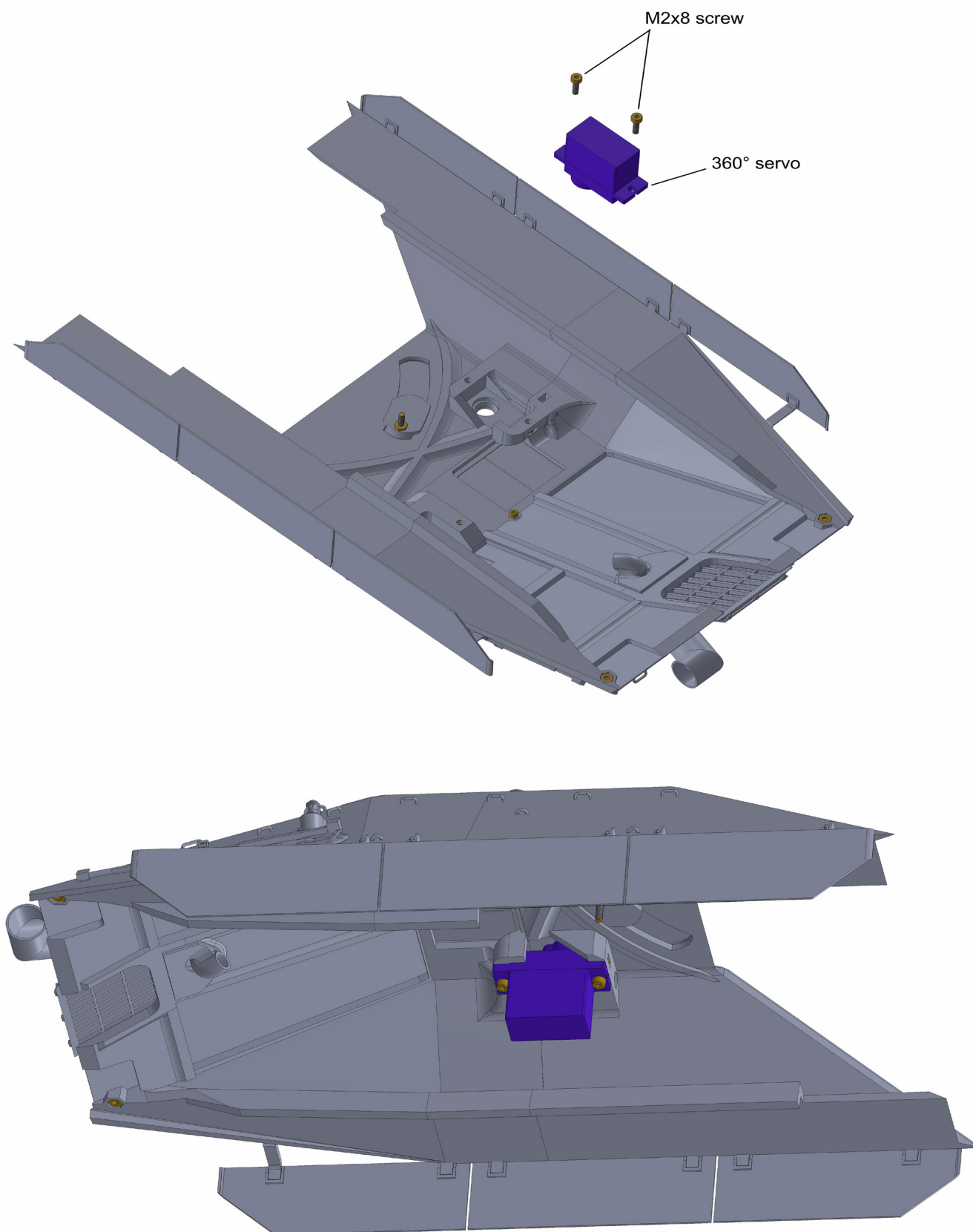


04-43D



Glue part 04-43D.

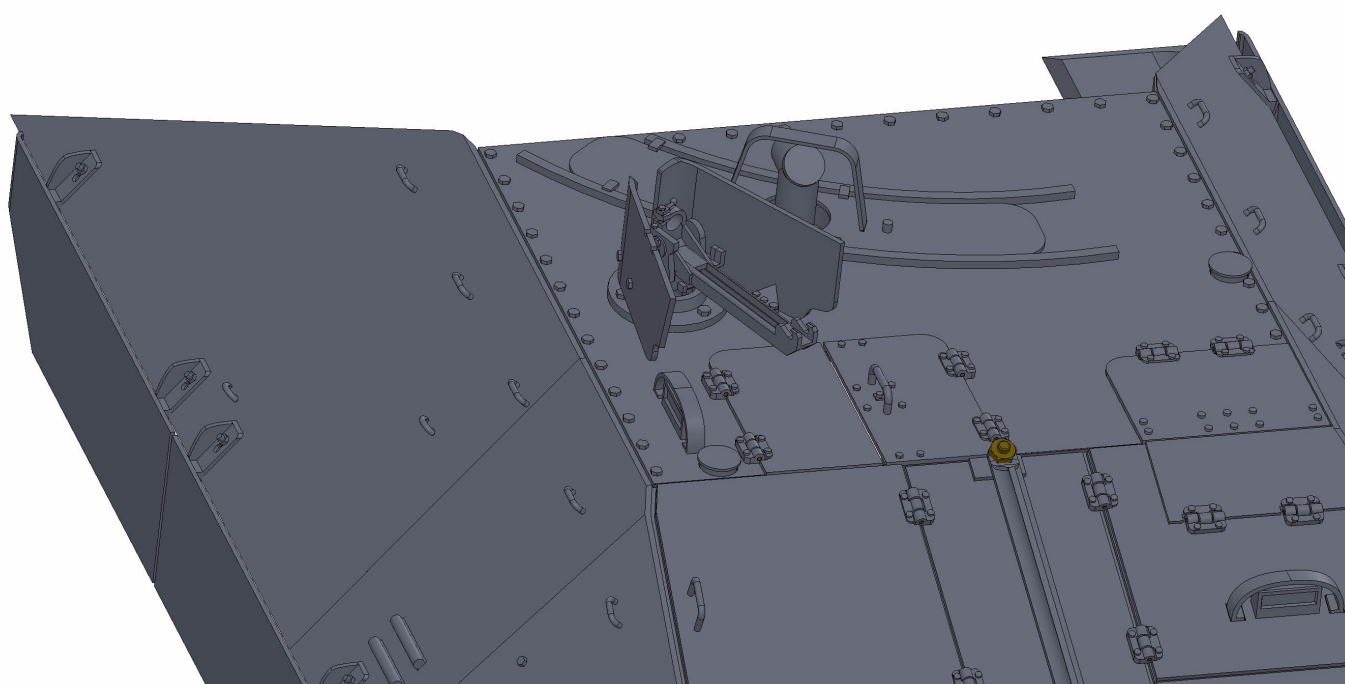
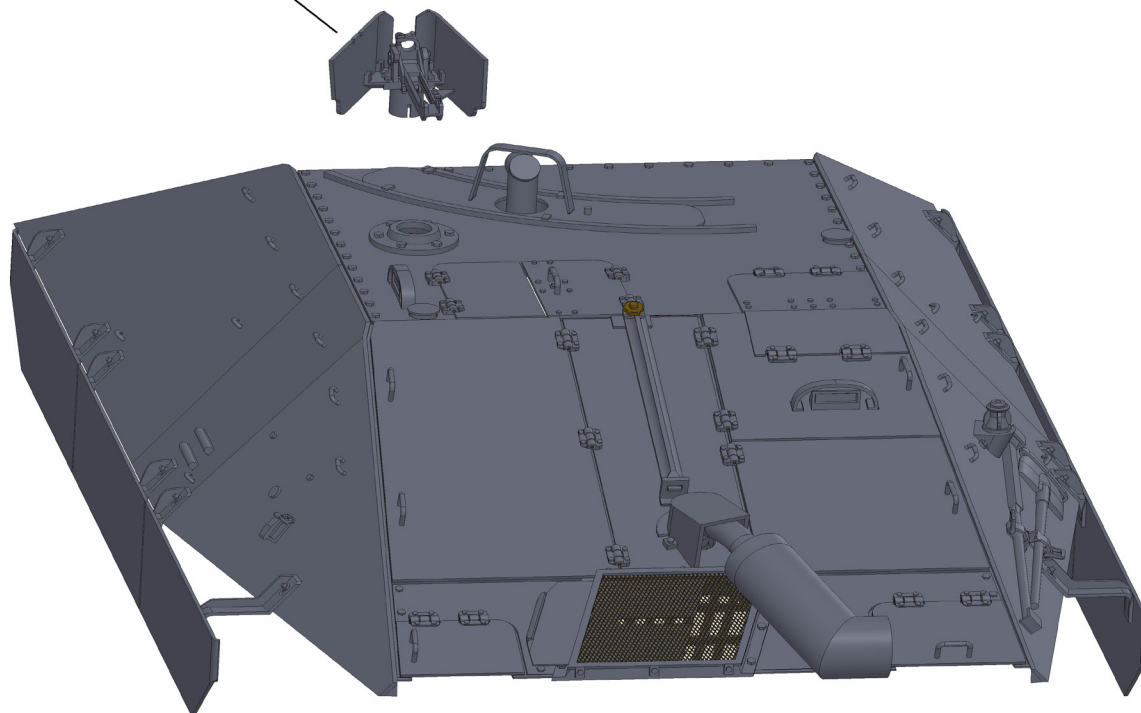
Chapter 04 - Upper hull



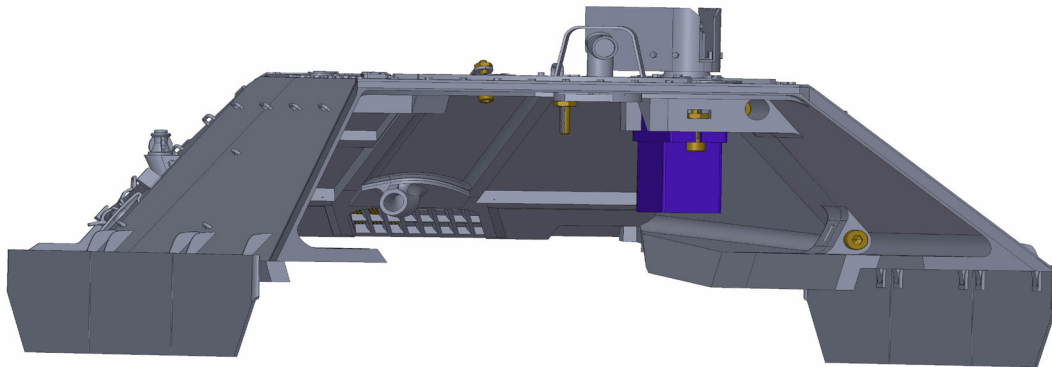
Attach 360 ° servo from inside of part 04-01. Use two M2x8 screws.

Chapter 04 - Upper hull

04-43 assembly

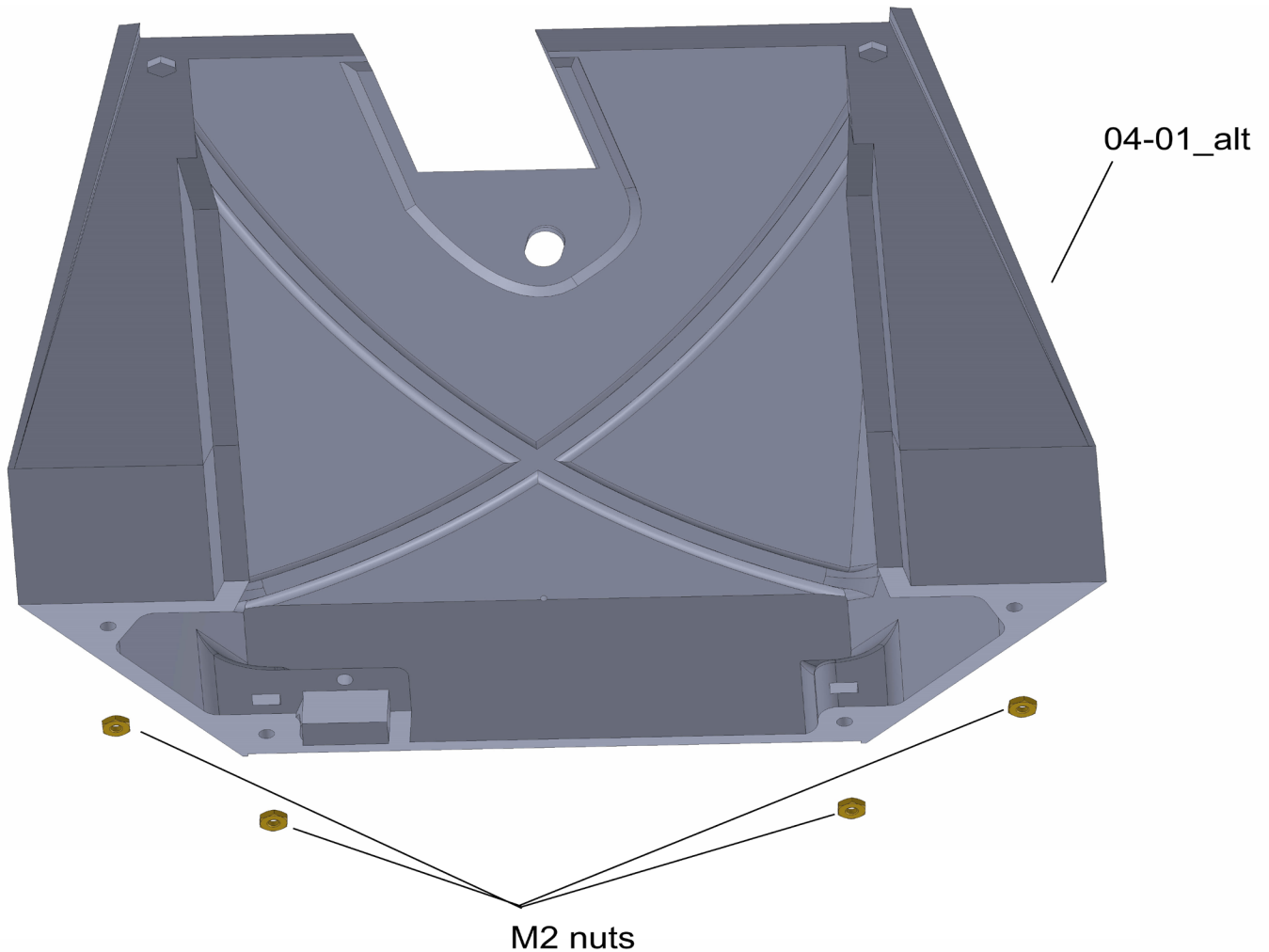


Slide the subassembly 04-43 onto the servo. Do not glue parts to the servo.



Additional view for better orientation.

If you are not interested in a functional machine gun, go to page 160 !!!



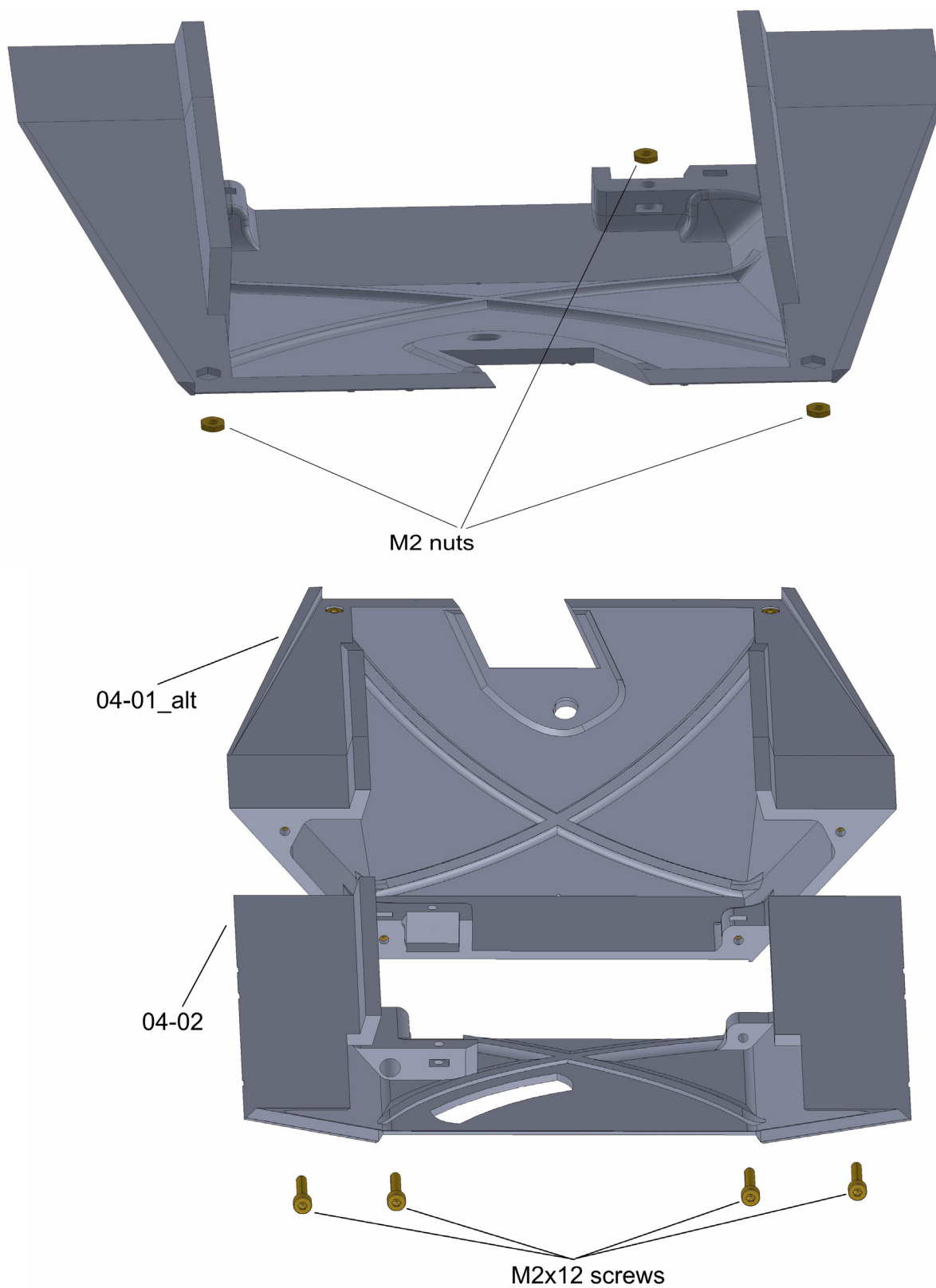
This part of the manual lists alternative parts for chapter 04. The first alternative is a model without opening hatches. In this case, instead of part 04-01, you need part 04-01_alt.

Start by inserting 4 M2 nuts into this part.

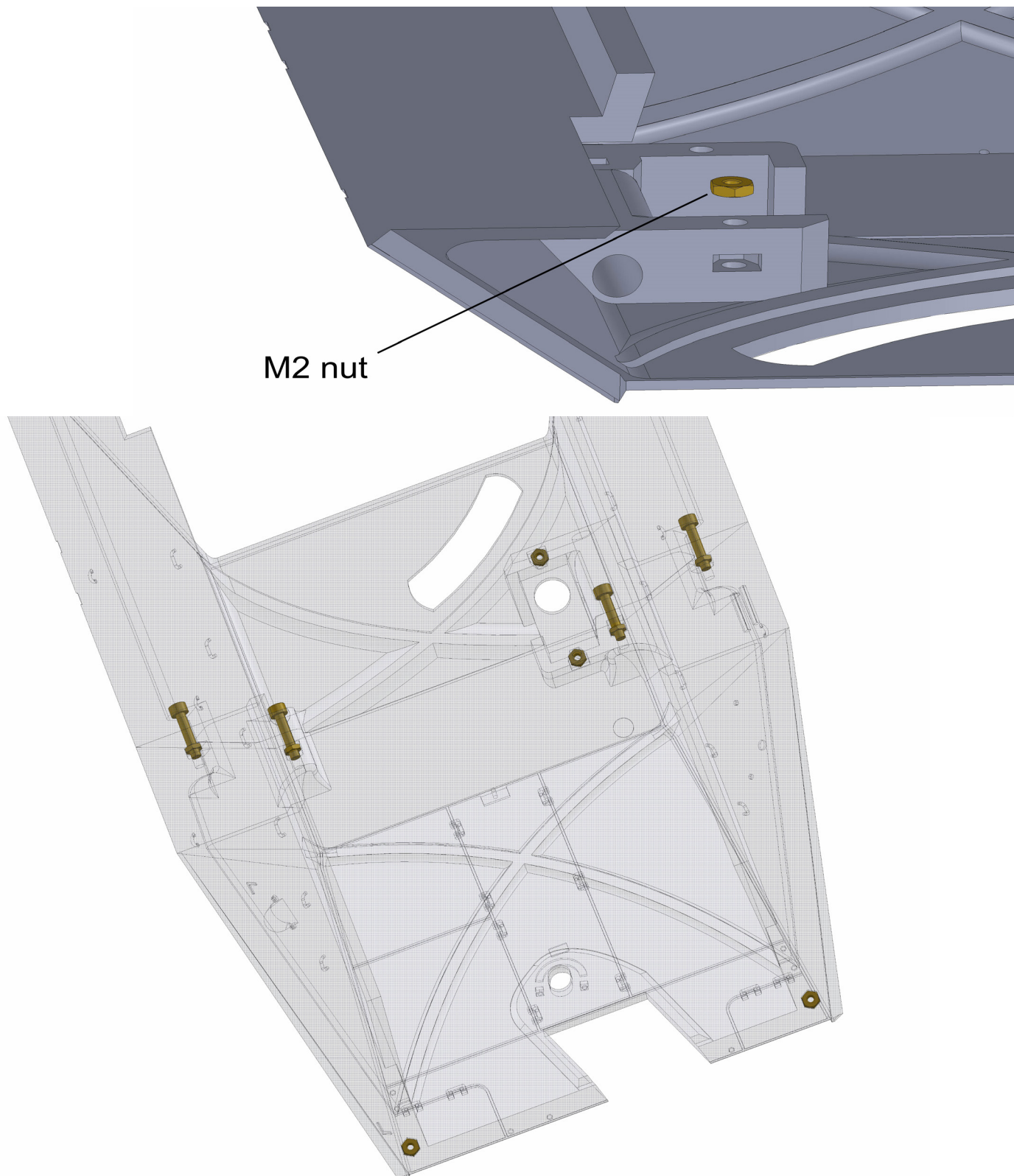
Note that using part 04-01_alt will make it impossible to use the IR receiver in the hatch.

At the same time, it will be very problematic to use smoke generator !!!

Chapter 04 - Upper hull - Alternative parts

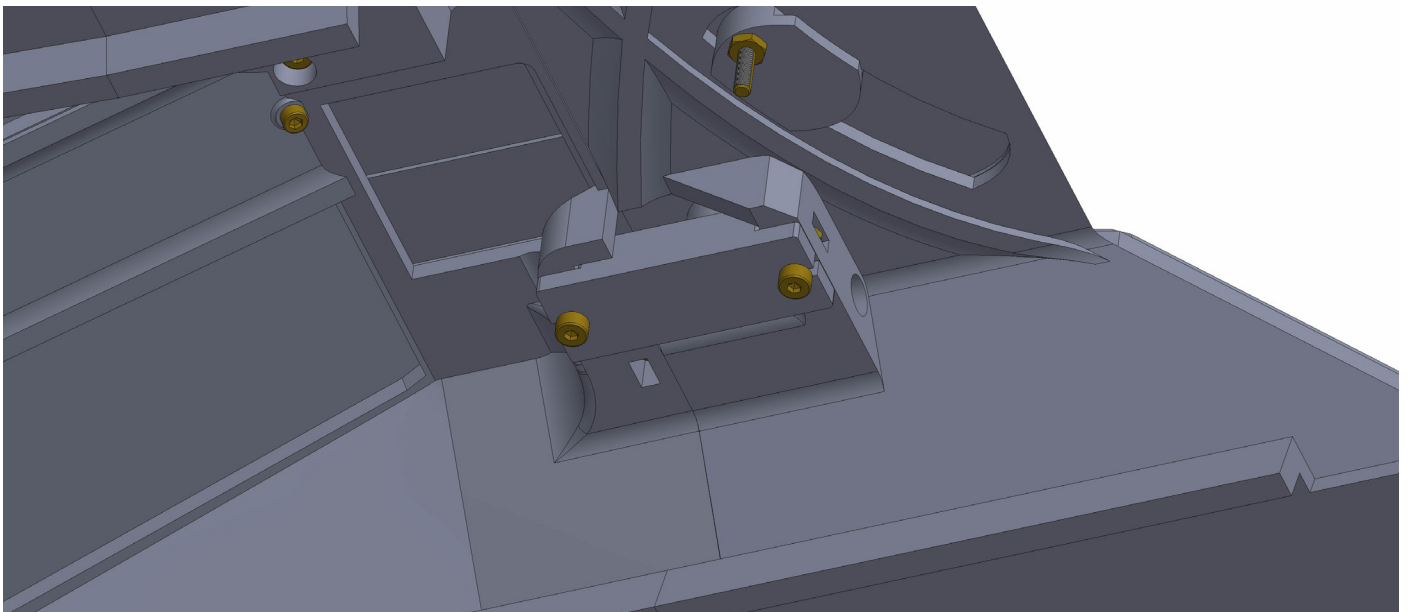
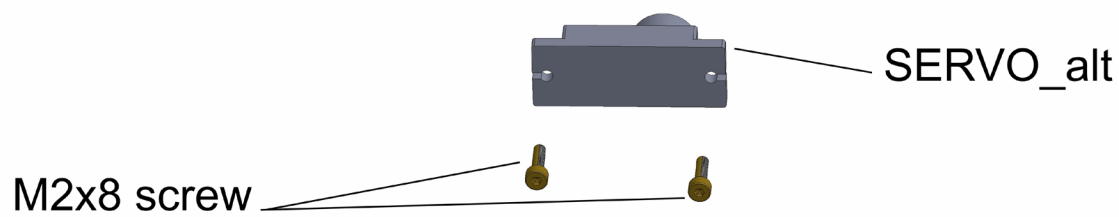
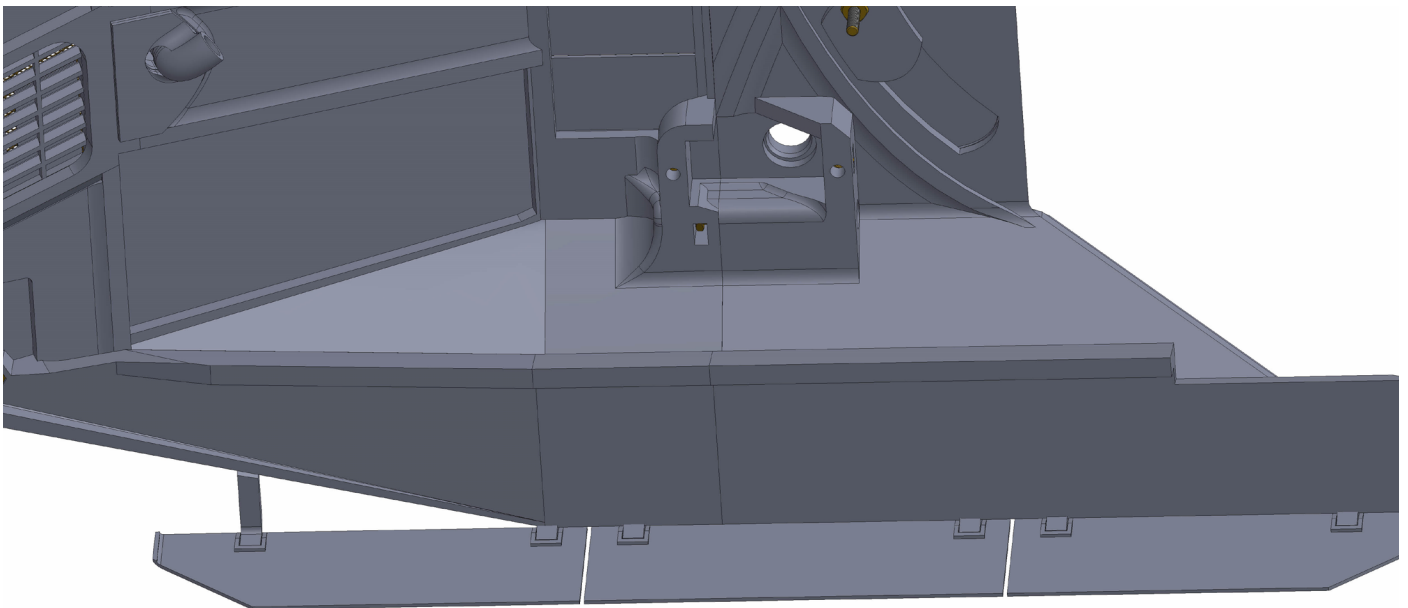


Insert the other 3 M2 nuts and connect part 04-01_alt with part 04-02 using four screws M2x12.

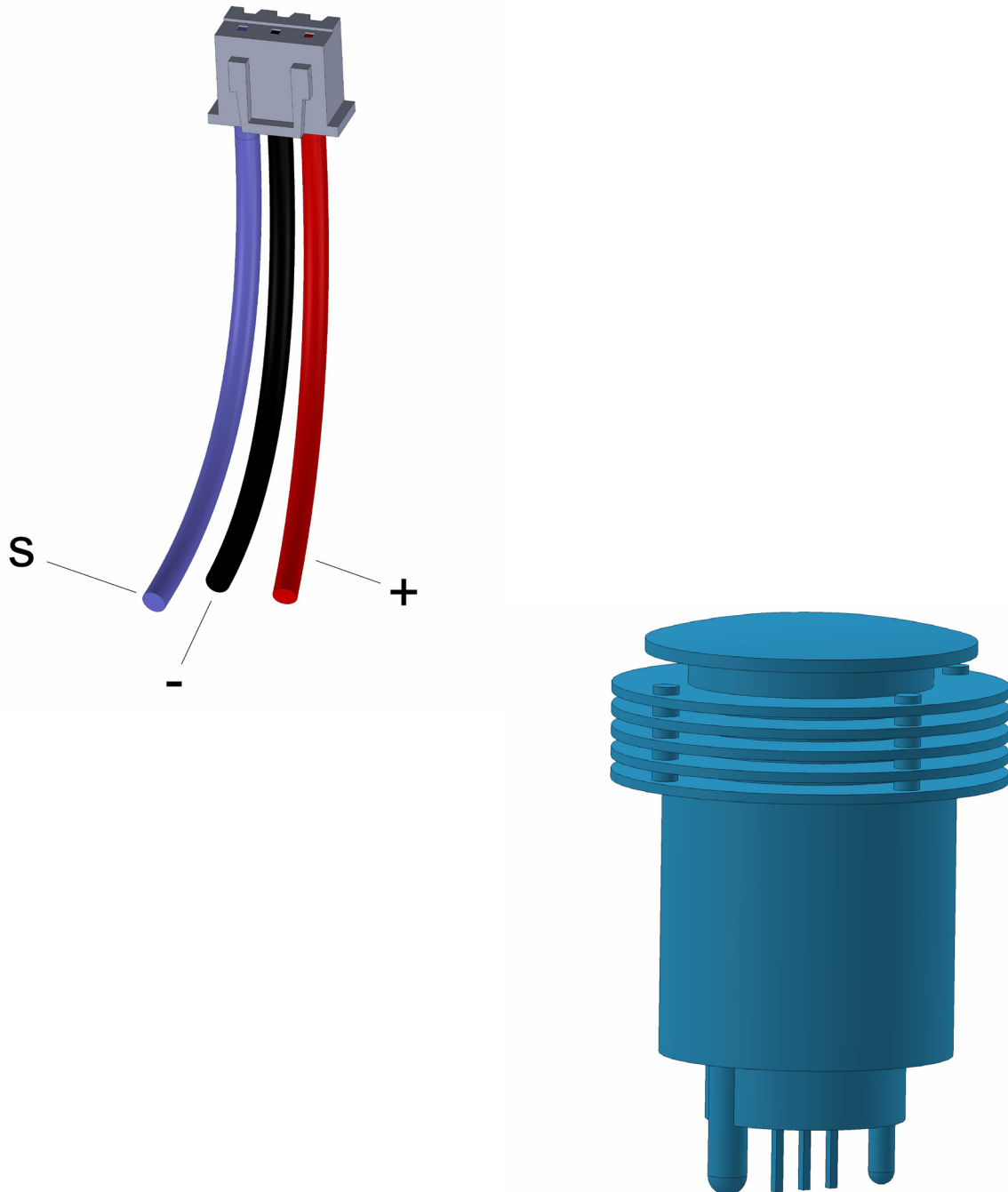


Insert nut M2 into part 04-02. The bottom figure shows the location of all nuts and bolts. Proceed to page 115. The procedure and parts are identical to the standard version. Glue parts 04-04 to 04-13 firmly to part 04-01_alt.

Chapter 04 - Upper hull - Alternative parts



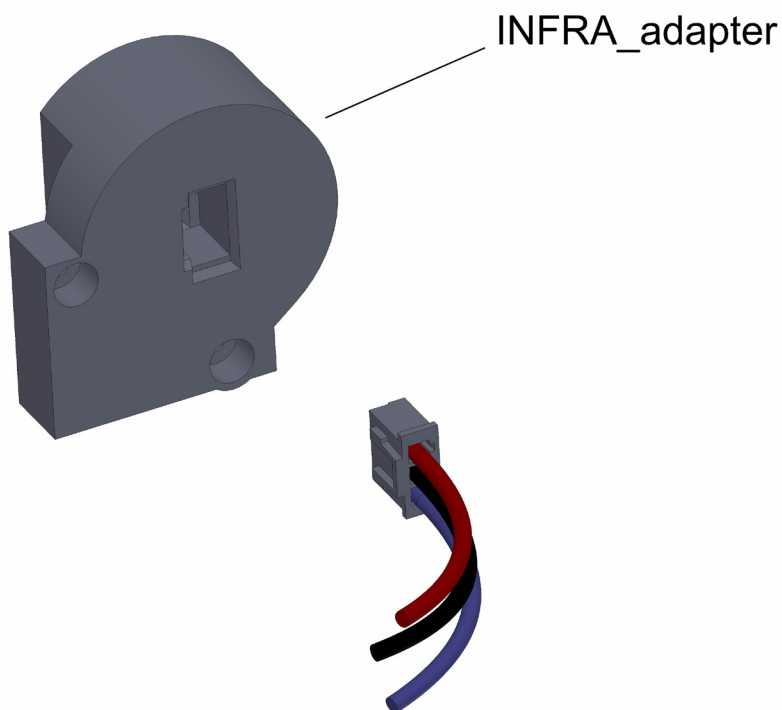
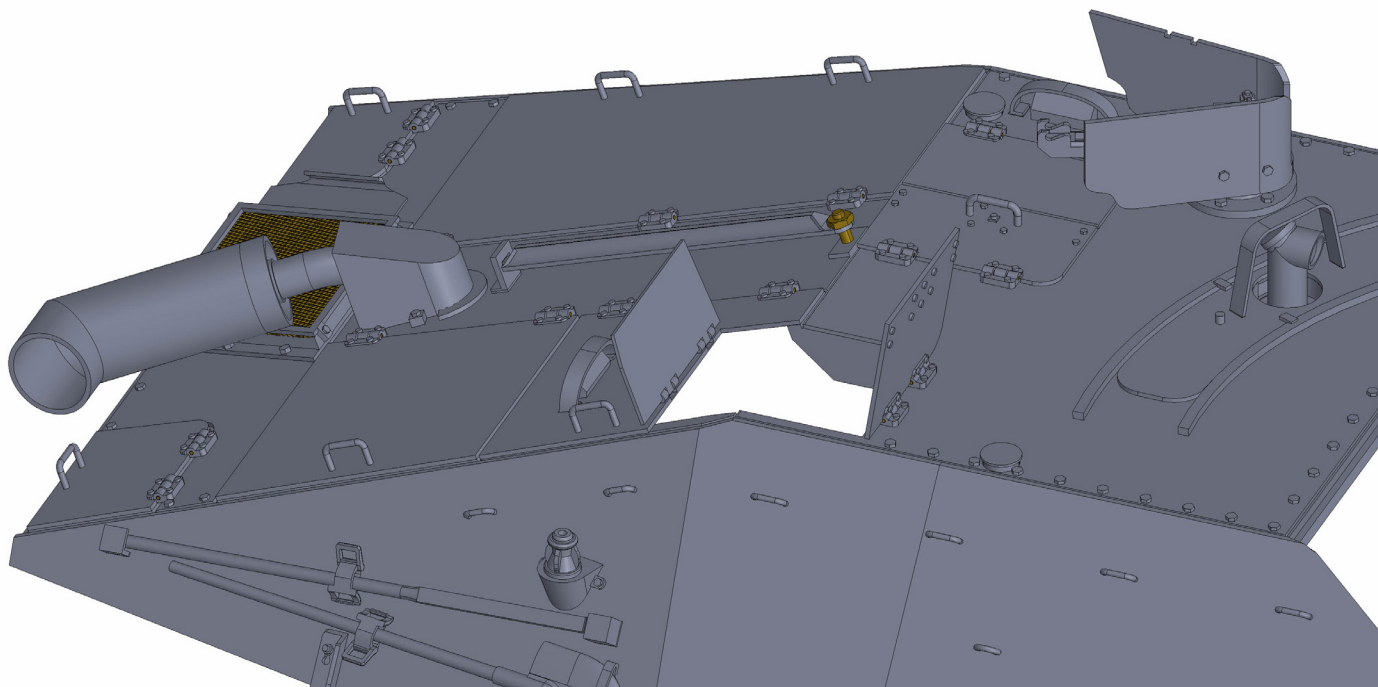
When installing a machine gun without a servomotor,
the construction process does not differ.
Use the printed part SERVO_alt instead of the servo.
Continue to work on page 151.



To install the infrared receiver, you will need 3-pin JST-XH wires and a Heng-Long® compatible IR receiver.

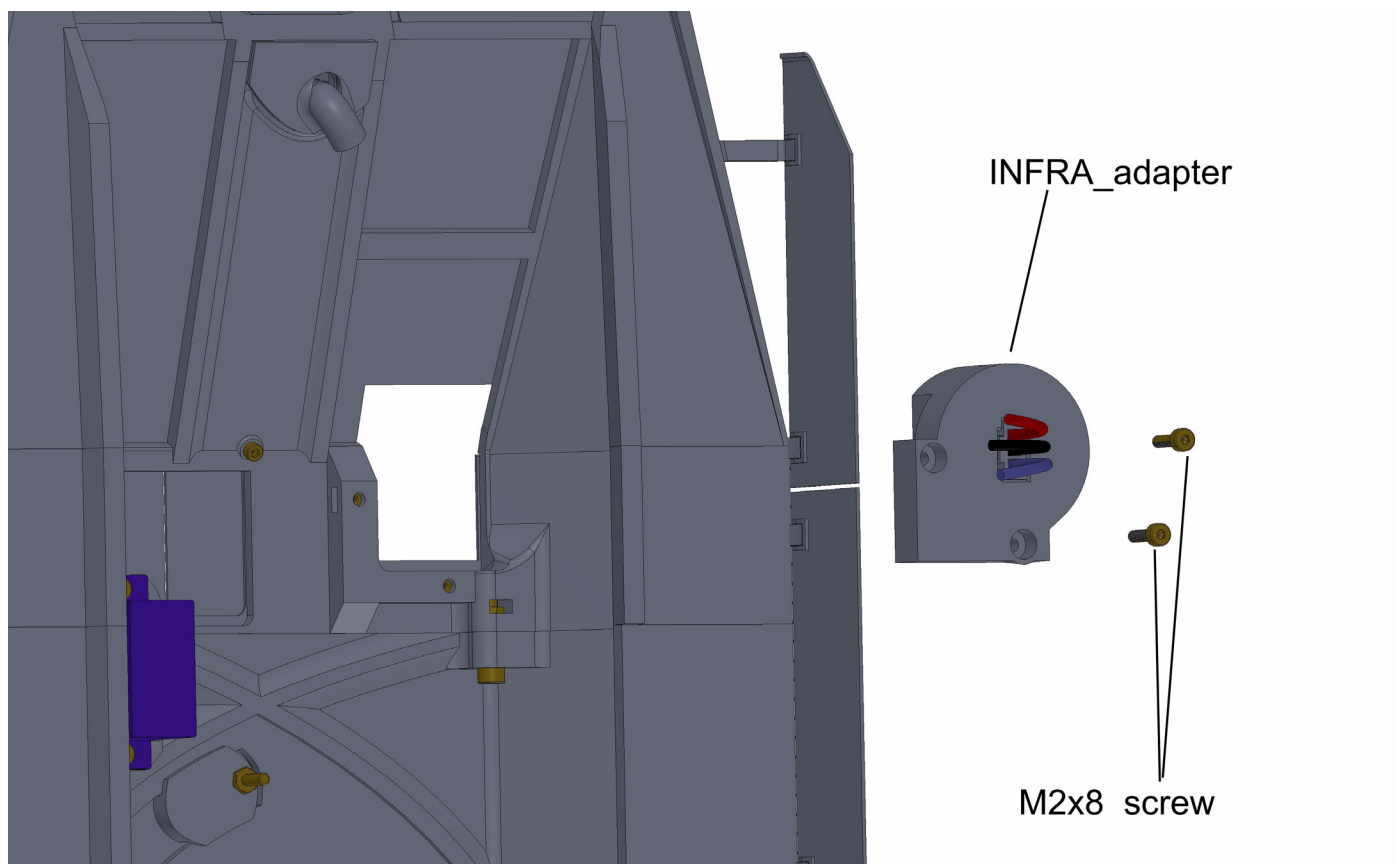
Use a wire of sufficient length. The wire length in the manual is illustrative. We recommend placing the IR transmitter diode in the gun, about 12 mm from the end of the barrel.

Observe the connection of the connector as shown in the picture!!!

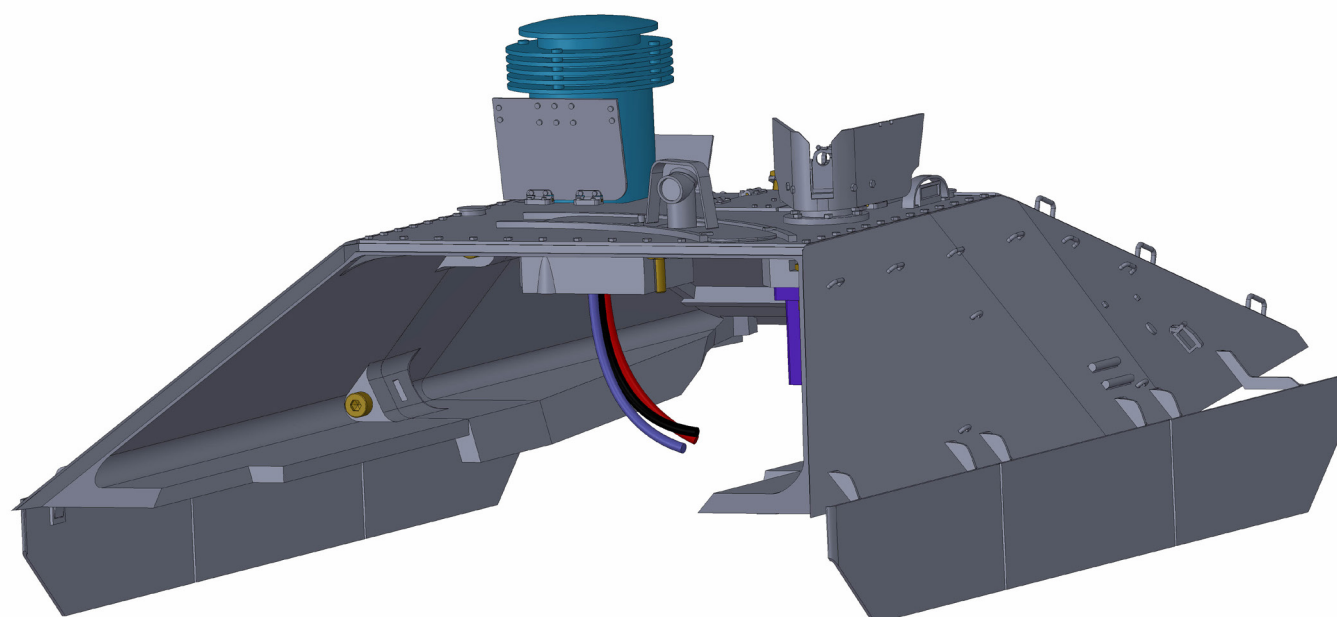
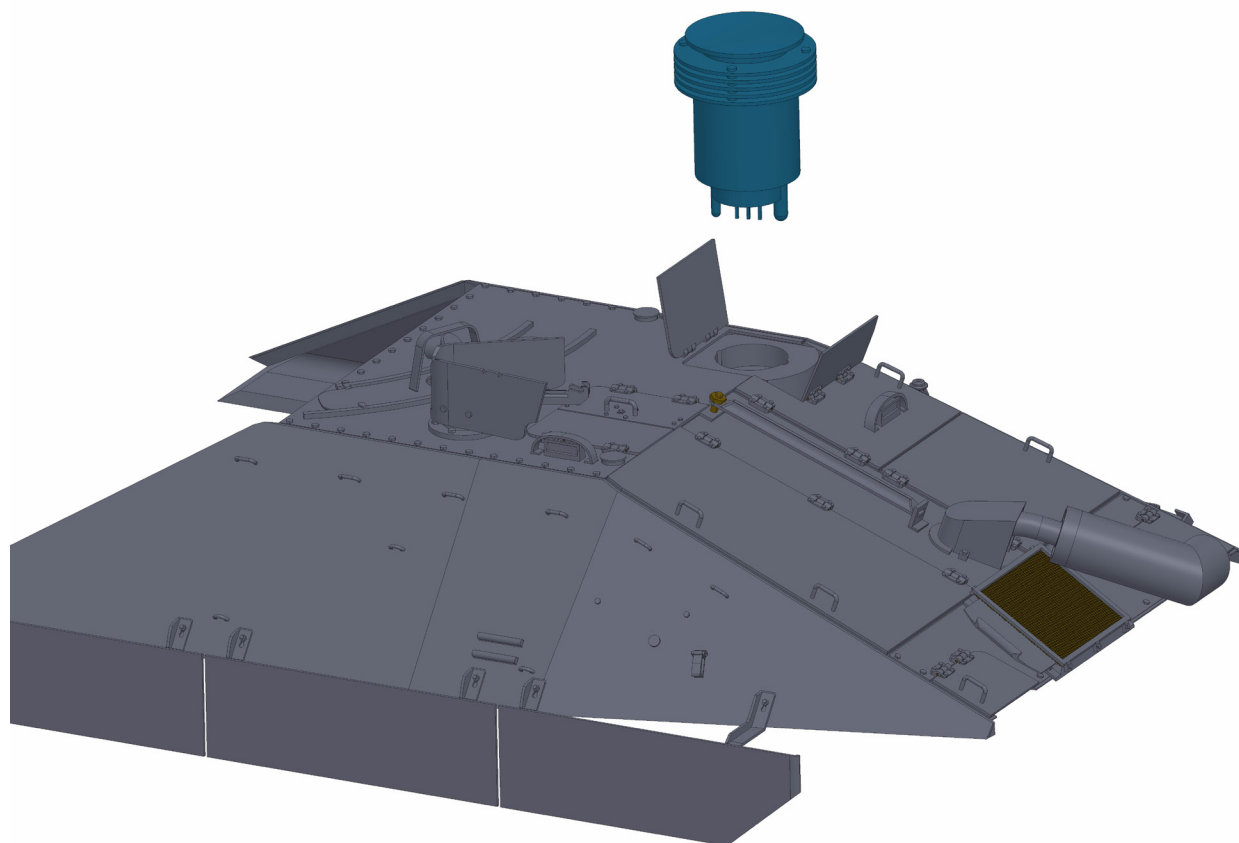


Installing the IR receiver requires the Commander's openable hatch (pictured above).
Insert the JST-XH connector into the INFRRA_adapter.

Chapter 04 - Upper hull - Alternative parts

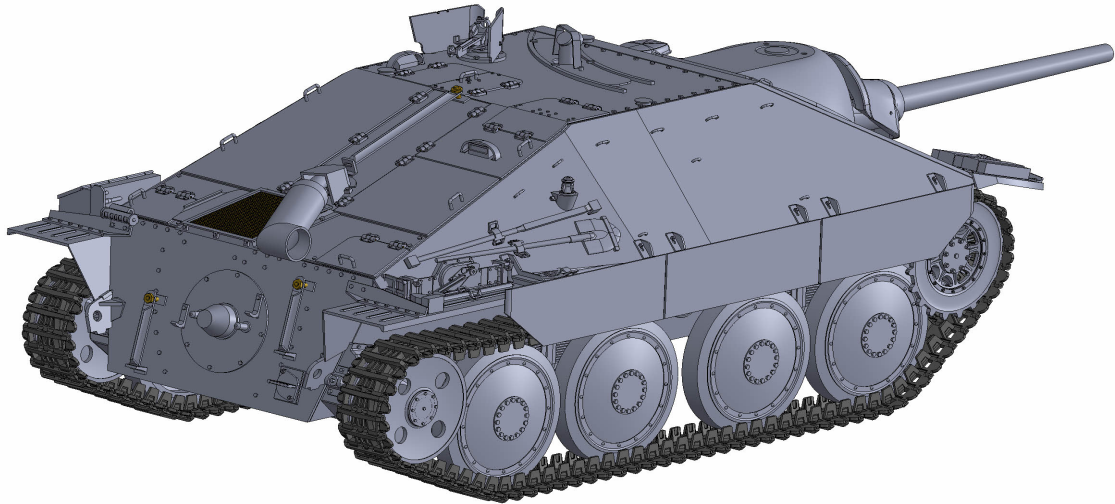


Install the INFRA_adapter with two M2x8 screws.



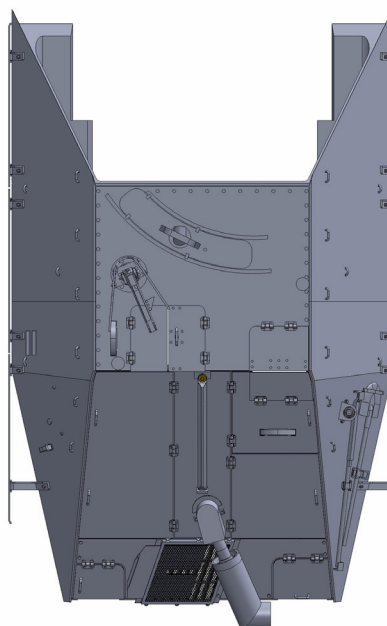
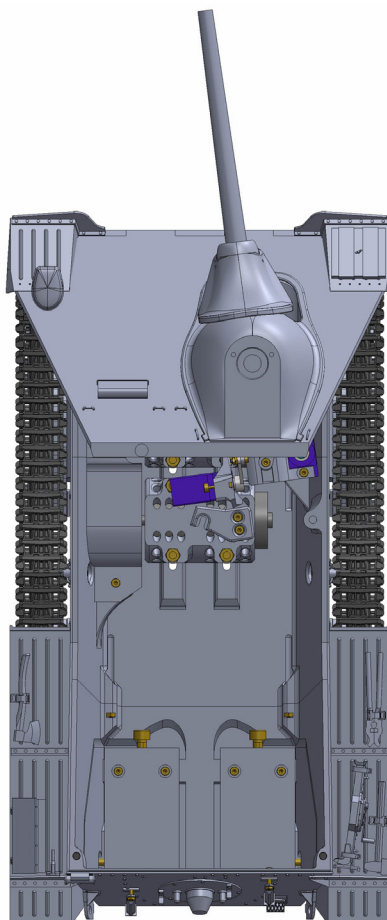
IR receiver installed. The receiver can be removed at any time.

Cover installation



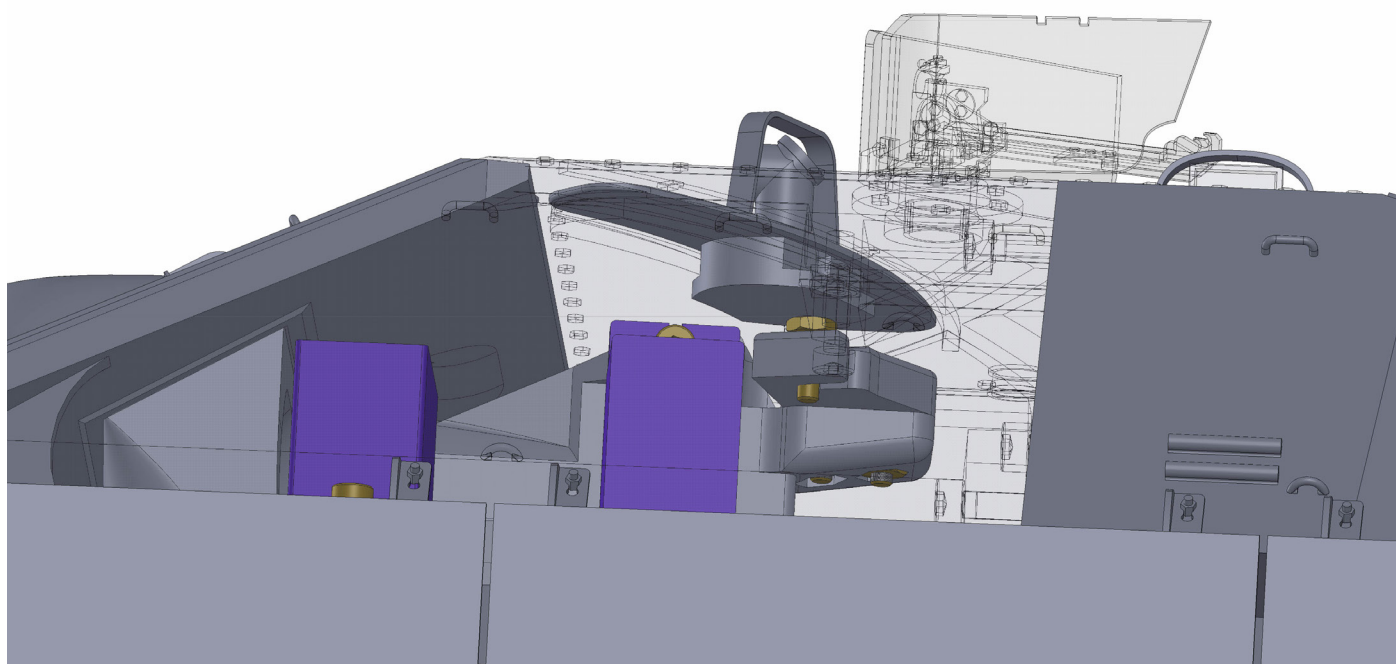
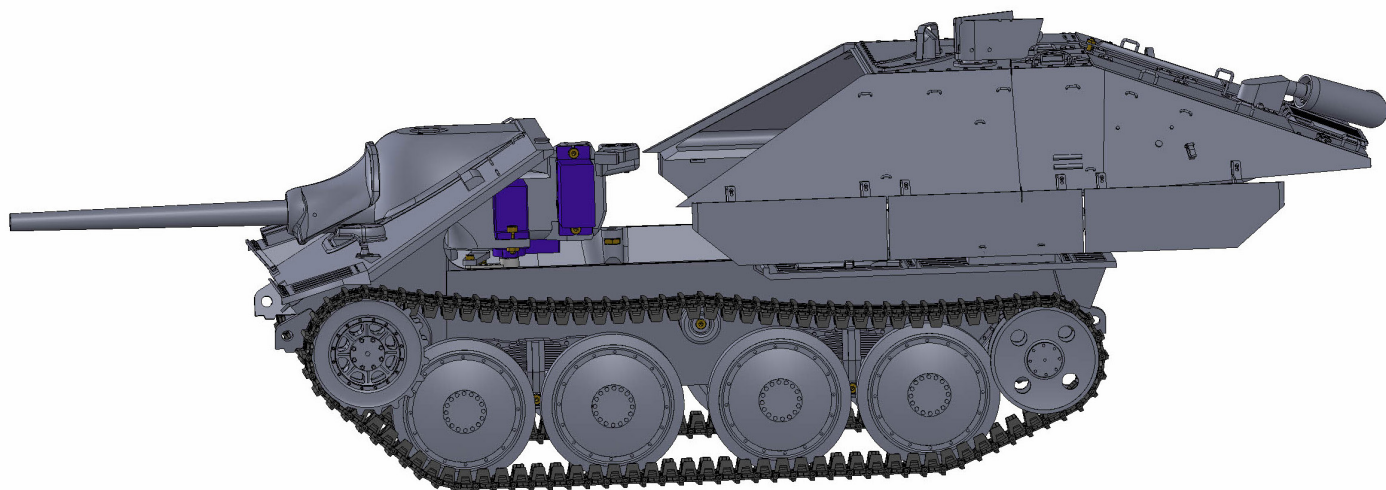
AMOUNT:	1
PRINTED PARTS:	
OPTIONAL PRINTED PARTS:	

Cover installation



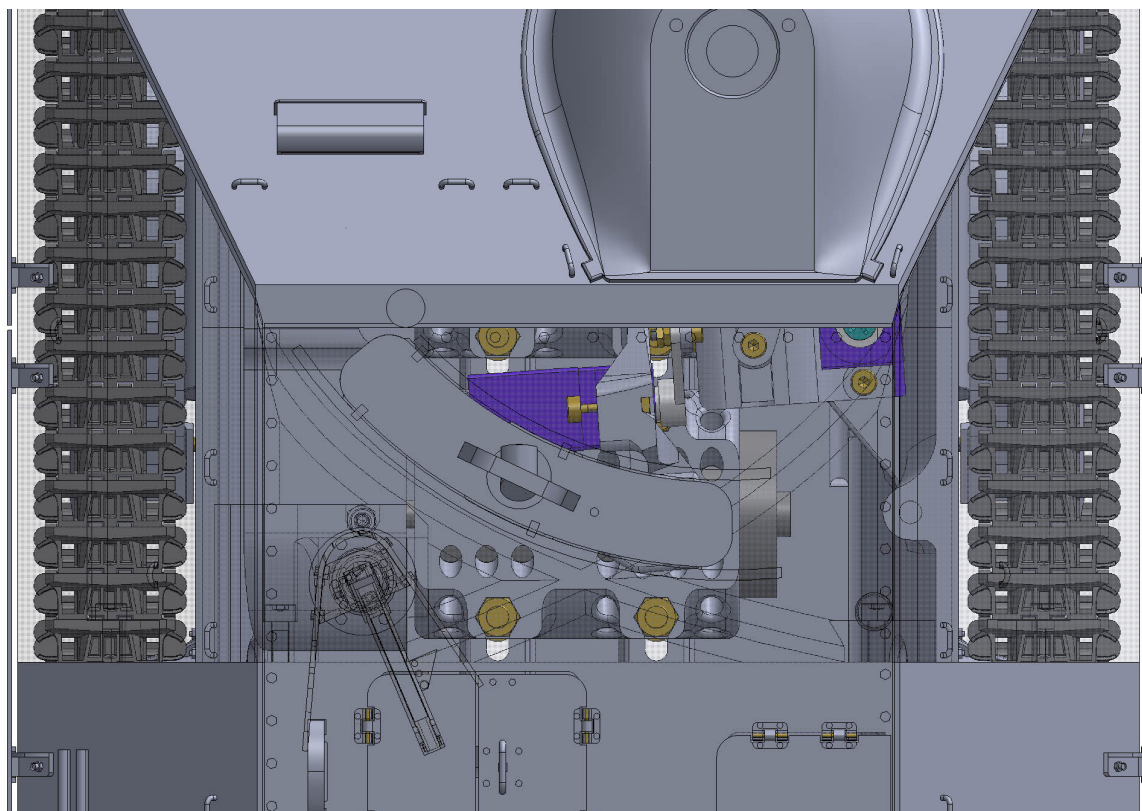
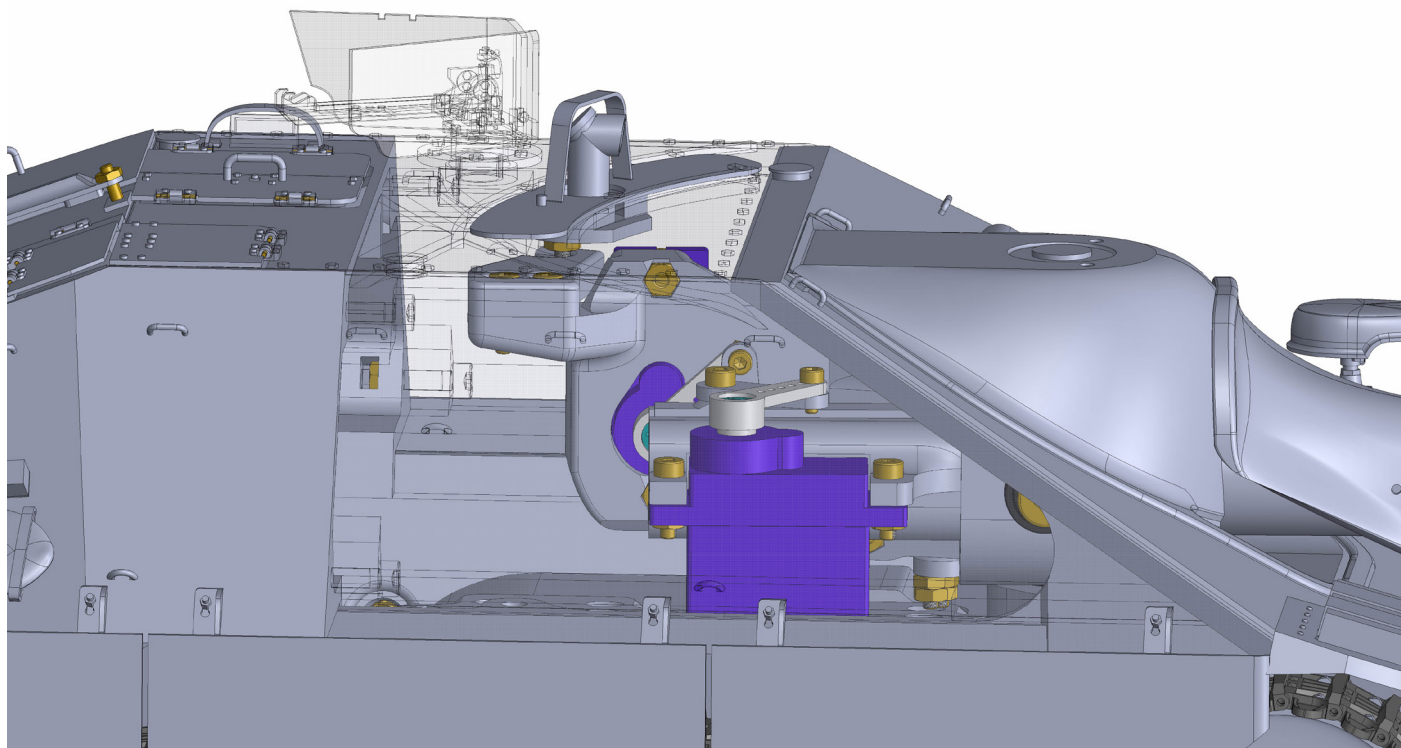
In case you installed a functional gunner's sight, make sure the gun is in the correct position when installing the cover. The gun must be turned all the way to the left so that the aiming screw of the aiming bolt fits into the gun groove.

Cover installation



Place the cover carefully.

Cover installation



In the pictures, you can see the internal arrangement of the shooter sight.
Cannon and sight are rotated in the mounting position.

Cover installation

Congratulations on completing your model.

We hope the construction was fun and trouble-free.

Electronics tips, more information and printing tips, common operating tips, and many more can be found in our forum at: <https://www.warprints.xyz/forum>

