



Index

Pages	Content
3	Safety notice
4-5	Features and about
6-7	Tools and electronics
8-9	Engine and muffler
10-11	Screws, nuts, shims and washers
12-15	Head assembly
16-22	Tail assembly
23	Servos preparation
24-26	Main frame assembly preparation
27-29	Main frame assembly
30	Servo frame pre assembly
31	Left main frame and tank assembly
32	Final main frame assembly
33	Preparing the engine
34-35	Engine to frame assembly
36	Tail boom to main frame assembly
37	Main drive pre assembly
38	Head and main drive to frame
39	Anti rotation guide
40	Tail boom to main frame assembly
41	Rotation direction and canopy
42	Throttle and tail servo rods
43	Final setup and tips
44	Muffler assembling
45	Final setup, canopy and pre-flight check



safety notice

Operate the helicopter in open areas with no people nearby.

Follow your countries air regulation rules.

You may need to join a local club and become a member before you can fly the model.

Do NOT operate the helicopter in the following places and situations (or else you risk severe accidents)

In places where children gather or people pass through in residential areas and parks, indoors and in limited space in windy weather or when there is rain, snow, fog or other precipitation. If you do not observe these instructions you may be held liable for personal injury or property damage!

Always check the R/C system prior to operating your helicopter.

Keep in mind that other people around you might also be operating a R/C model. Never use a frequency which someone else is using at the same time. Radio signals will be mixed and you will lose control of your model. If the model shows irregular behavior, bring the model to a halt immediately and disconnect the batteries. Investigate the reason and fix the problem. Do not operate the model again as long as the problem is not solved, as this may lead to further trouble and unforeseen accidents. In order to prevent accidents and personal injury, be sure to observe the following: Before flying the helicopter, ensure that all screws are tightened. A single loose screw may cause a major accident.

Replace all broken or defective parts with new ones, as damaged parts lead to crashes. Never approach a spinning rotor. Keep at least 5 meters/yards away from a spinning rotor blades. Do not touch the motor immediately after use. It may be hot enough to cause burns. Perform all necessary maintenance.

PRIOR TO ADJUSTING AND OPERATING YOUR MODEL, OBSERVE THE FOLLOWING

Operate the helicopter only outdoors and out of people's reach as the main rotor operates at high rpm!

Note that a badly assembled or improperly adjusted helicopter is a safety hazard!

In the beginning, novice R/C helicopter pilots should always be assisted by an experienced pilot.

SAFETY FIRST! ALWAYS.

Tronhelicopters
3. Ke Yuan South Road, Guang Cheng
Qu.Dongguan City.
Dongguan 523009.
China.

Features.



Probably the lightest 50 size nitro on the market, ready to fly weight starts at 2950 grams
Rotorhead and complete tail are 98% compatible with the Tron 5.5. This makes it super simple and keeps costs in mind.

Light, yet very stiff and robust.

Mini or full-size cyclic servo option.

Octa boom design with oval side shapes, no boom supports needed.

Perfectly thought-out servo layout in conjunction with the FBL system.

Easy cable routing with various options to ensure a clean setup. Modern, sporty and functional design.

High visibility canopy for perfect orientation in flight.

Recommended main blade size 550-610mm. Tail blade size 86-95mm.

Sustainably produced.



About Tronhelicopters

Designed, engineered and manufactured by YINs and Tronhelicopters Switzerland.

Tronhelicopter's team was built in 2019. Including professional RC Helicopter Pilot and RC FPV Drone World Champion from 2017 Dario Neuenschwander, we partnered with YINs to provide high-quality manufacturing thanks to over 18 years experience within the helicopter industry.

CAUTION:

This radio controlled helicopter is not a toy.

The product is not suitable for children under 14 years of age.

SAFETY PRECAUTIONS:

This kit includes some preassembled components. Please check for any loose screws and tighten them before you proceed with assembly. Use loctite where required as shown in this manual!

You are responsible for assembly, safe operation, maintenance, inspection and adjustment of the model.

Before beginning assembly, please read these instructions thoroughly.

Check all parts. If you find any defective or missing parts, contact your local dealer.

For the USA market, The Academy of Model Aeronautics (AMA) is a national organization representing modelers in the United States.

Please refer to the National Model Aircraft safety code from Academy of Model Aeronautics.

Tools required

	<p>2 component epoxy</p>
	<p>Loctite 243 / medium strength</p>
	<p>Grease</p>
	<p>2*Wrench for tail shaft nut</p>
	<p>Hex screwdriver 1.5mm/2mm/2.5mm/4mm/5mm</p>
	<p>TR501-518 Pair of customized nut wrench for tail shaft assembly.</p>

Electronics required



3* mini or full size servos for swashplate



2* full size servo for tail and throttle



50-60 size engine with muffler



2S lipo or regulator, glow plug and starter

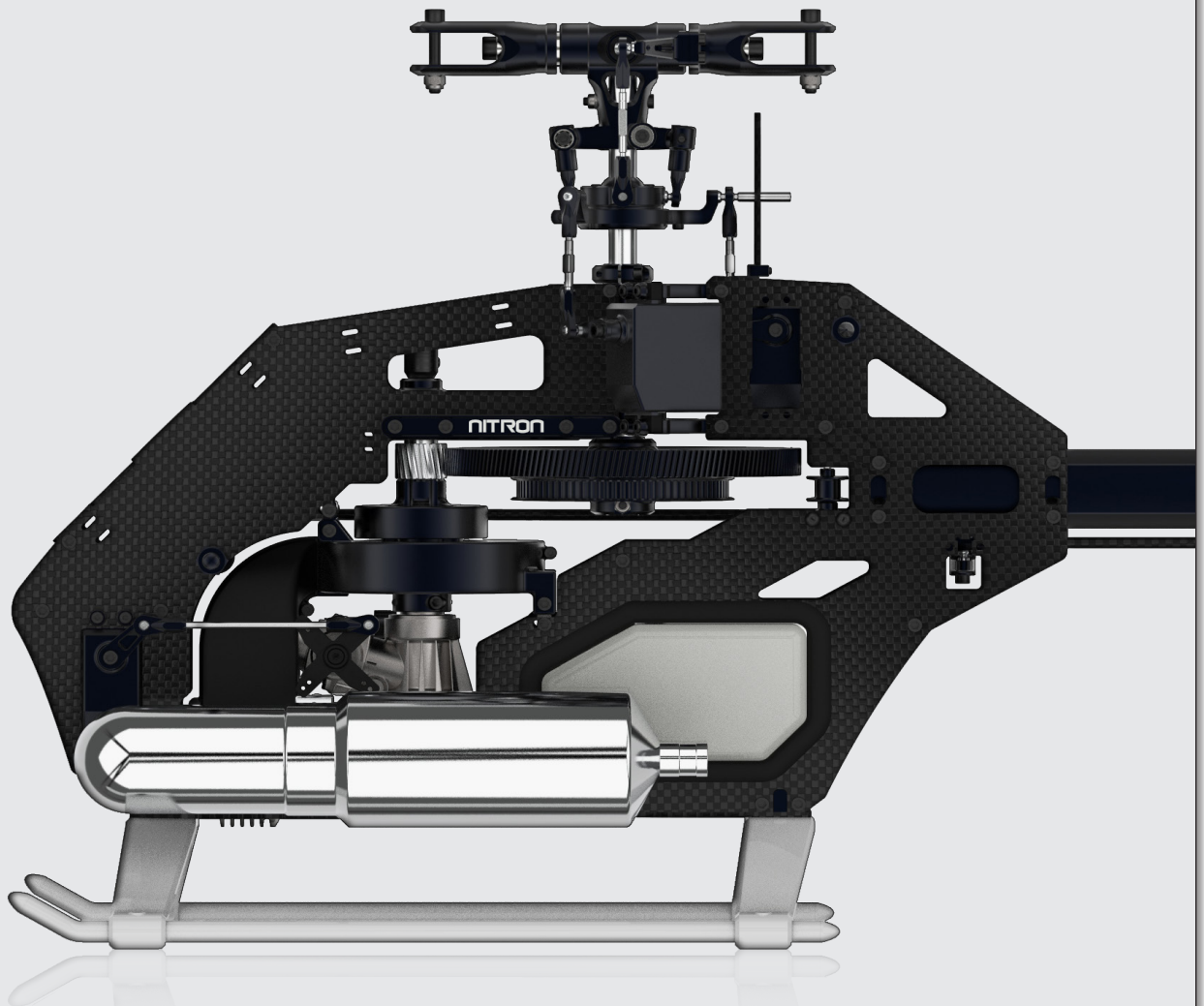


Front FBL tray fits for BRAIN 2/ ICON 2/ V-BAR-NEO / SPIRIT 2 / BEAST X.

Back FBL tray fits for any FBL system and offers larger space.

Engine and muffler.

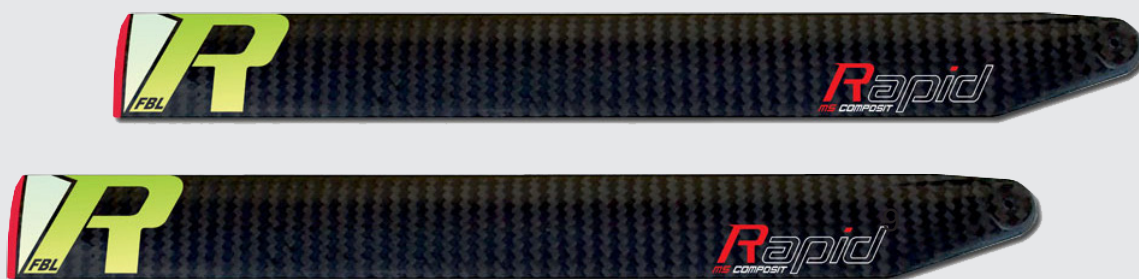
Engine and muffler recommendation for Nitron



- MAX-55HZ Hyper and Powerboost pipe 55
- MAX-55HZ-R and Powerboost pipe 55 II
- MAX-50SX-H RING HYPER and Funtech A329
- YS-60-SR and Hatory 60NS-3D

Main and tail blades recommendation.
































































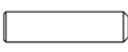
Main blade recommendation for Nitron (550mm-610mm length).



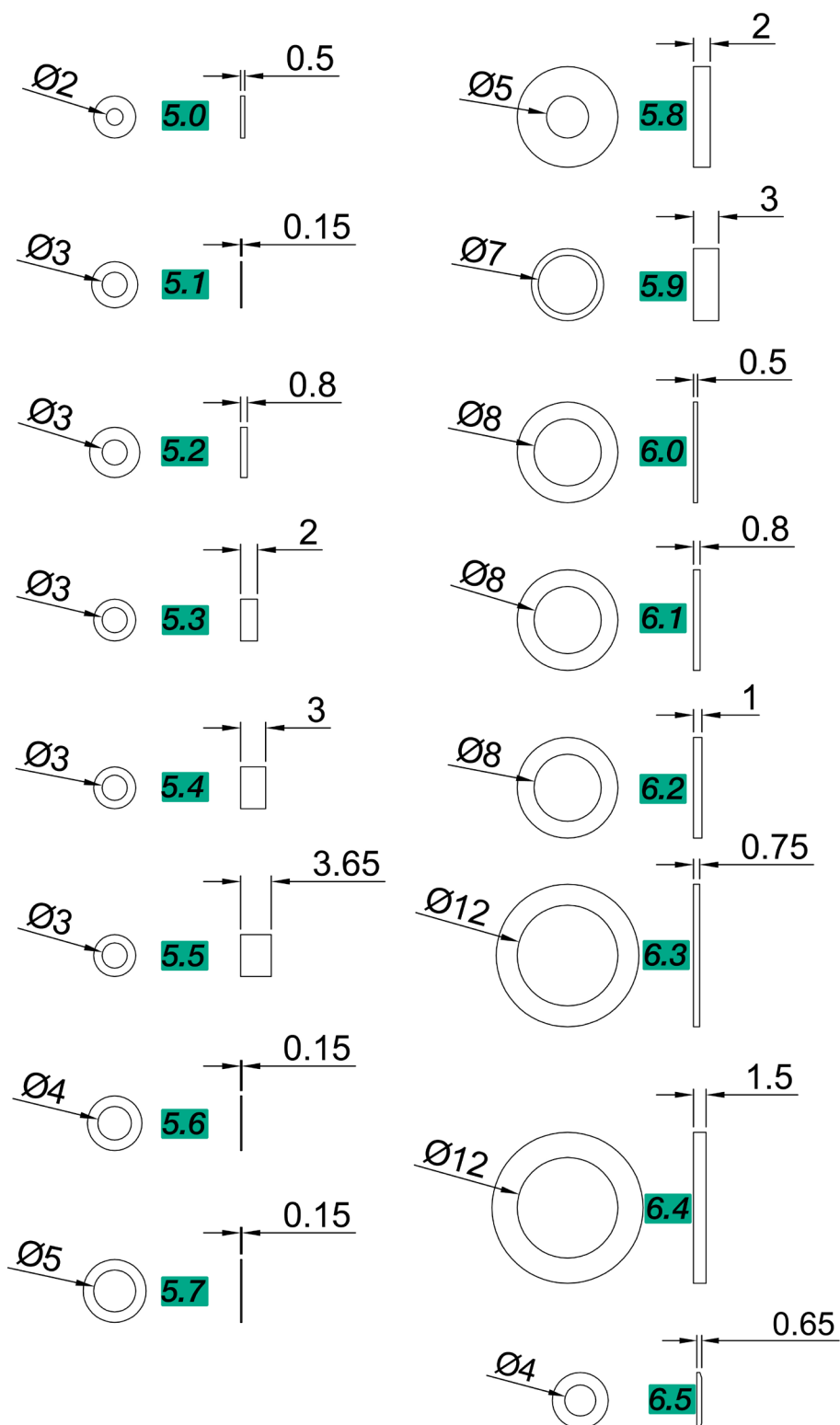
Tail blade recommendation for Nitron 5.5 (85mm-97mm length).



Screws and nuts.

 1.0  M2*4mm	 2.6  M3*20mm
 1.1  M2.5*6mm	 2.7  M3*20mm C/HUB.
 1.2  M2*4mm	 2.8  M3*22mm
 1.3  M2*6mm	 2.9  M3*25mm
 1.4  M2*14mm	 3.0  M3*26mm M/GEAR.
 1.5  M2.5*6mm	 3.1  M3*28mm
 1.6  M2.5*8mm	 3.2  M2.5*30mm
 1.7  M2.5*10	 3.3  M4*26.5mm
 1.8  M3*6mm	 3.4  M4*4mm
 1.9  M3*8mm	 3.5  M4*5mm
 2.0  M3*10mm	 3.6  M5*12mm
 2.1  M3*6mm	 3.7  M2 Nut
 2.2  M3*8mm	 3.8  M2.5 Nylon Nut
 2.3  M3*10mm	 3.9  M3 Nylon Nut
 2.4  M3*12mm	 4.0  M4 Nylon Nut
 2.5  M3*16mm	 4.1  M3*12mm

Shims and washers.



You will need:

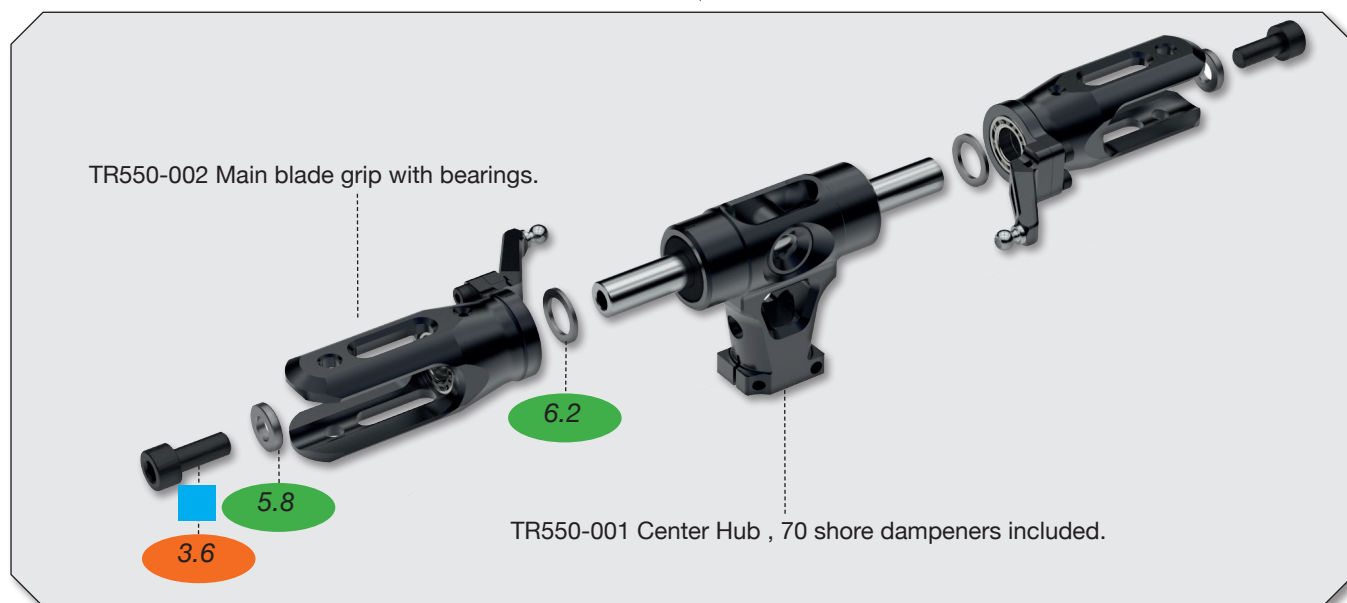
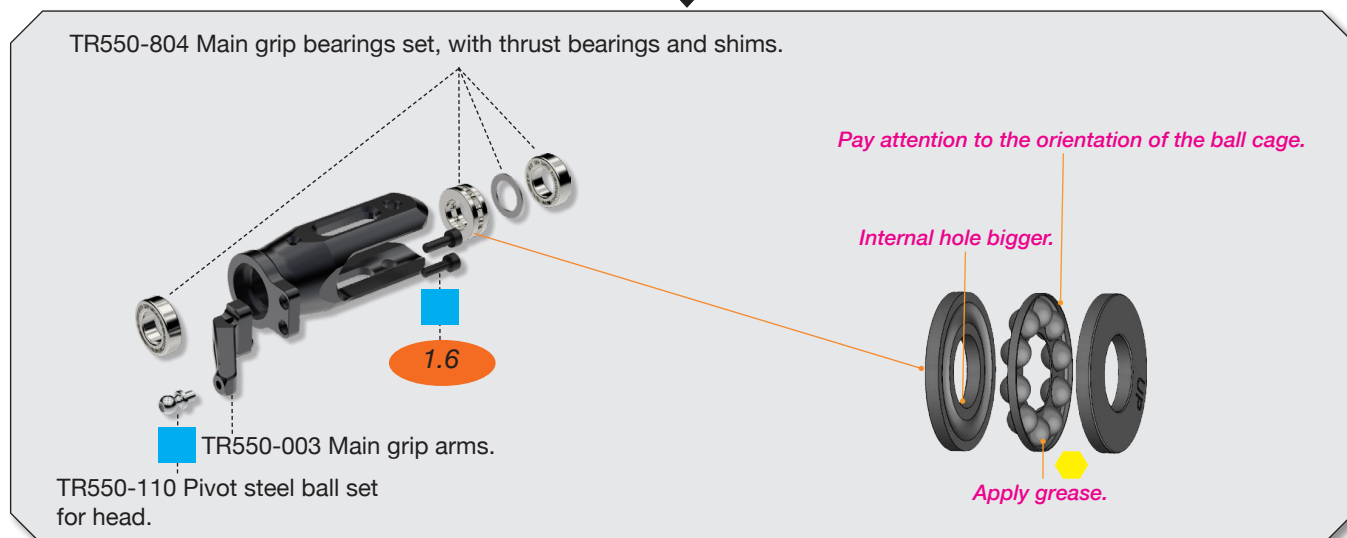
Loctite 243 = blue



Grease = yellow



Head assembly.



You will need:

Loctite 243 = blue



Head assembly.

TR504-100 Plastic ball link---
set 2,5mm



2.2



Important note!

The ball links have a larger and a smaller diameter. Always make sure the larger diameter is pointing towards the pivot ball when assembling!

5.1



5.3



TR550-105 Anti rotation arm set with bearings,shims,screws and ball links.



TR550-103 Bearing set and
spacers for anti rotation arms.

2.5



Do not tighten now!



2.6



Do not tighten now!



TR550-105 Anti rotation arm set with bearings,shims,screws and ball links.

5.1



You will need:

Loctite 243 = blue



Head assembly.

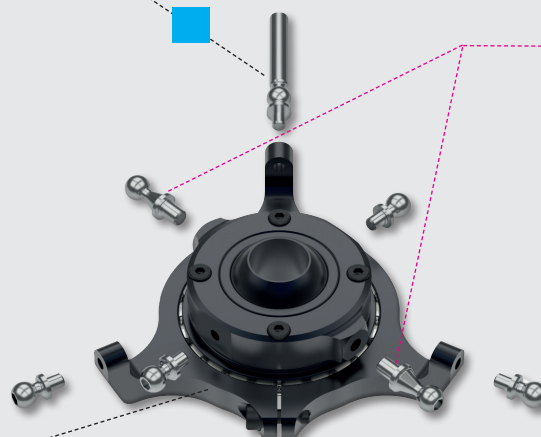
*Swashplate is preassembled in factory.
Please use loctite 243 on 1.2 and 1.4*



TR550-110 Pivot steel ball set for head. (16pcs.)

TR562-012 Pivot steel ball set

TR560-008 Complete swashplate assembly.



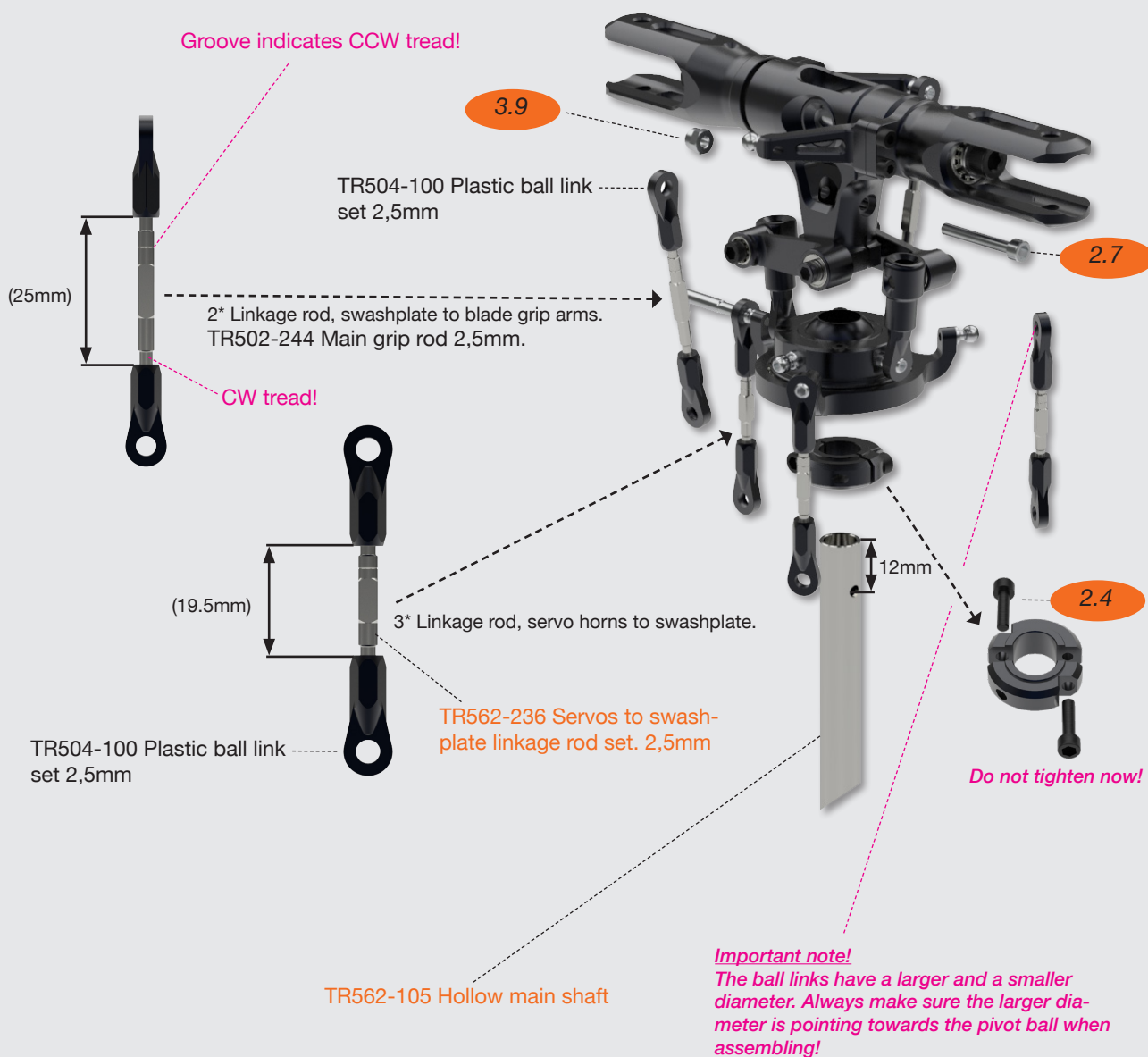
You will need:

Loctite 243 = blue



Head assembly.

1. Insert main shaft into center hub first.
2. Tighten screw 2.7
3. Tighten screw 2.6 left and right step by step (use loctite 248). Make sure the shim 5.1 do not fall out.

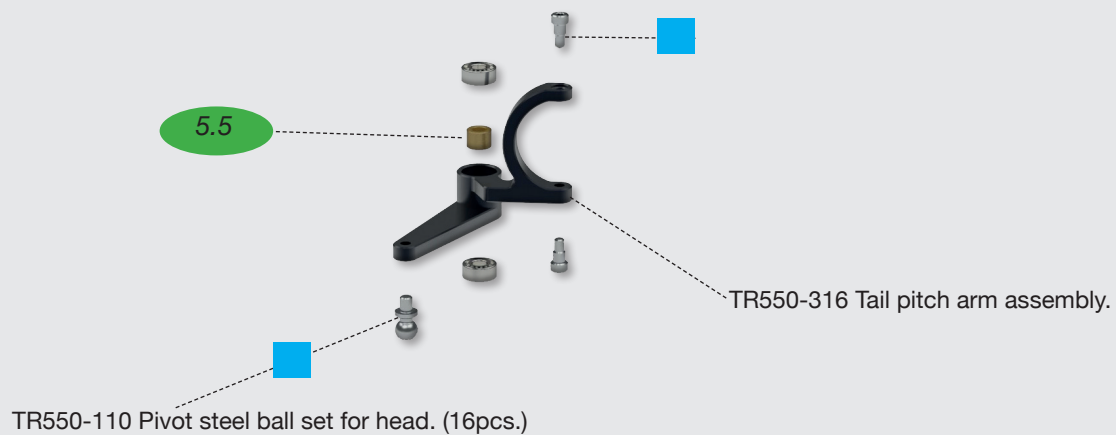
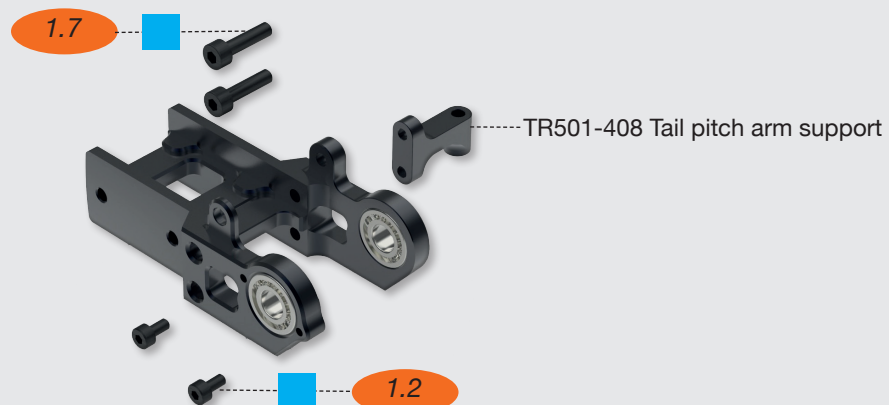
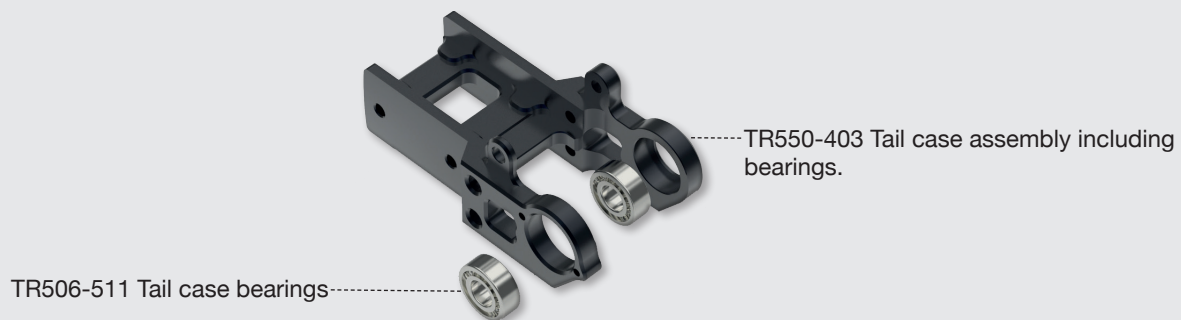


You will need:

Loctite 243 = blue




Tail assembly.

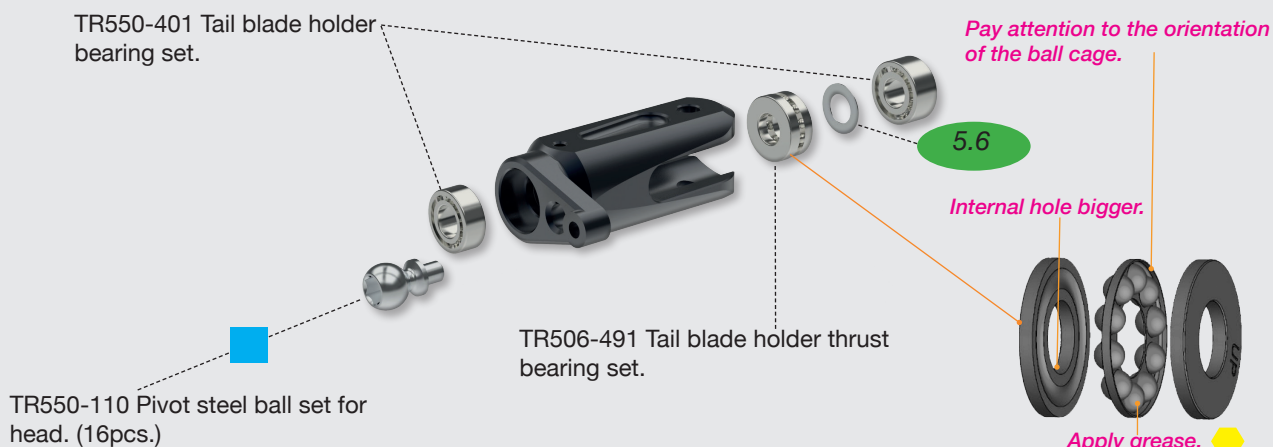
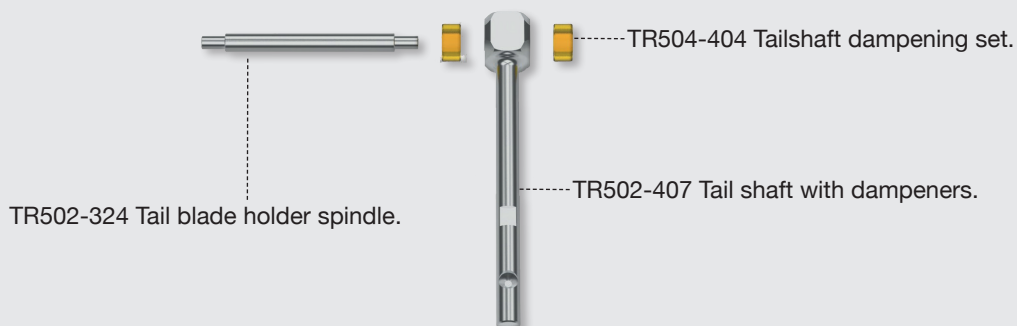
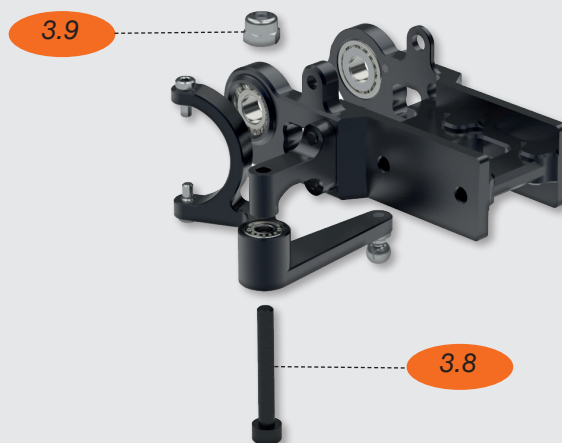


You will need:

Loctite 243 = blue 

Grease = yellow 

Tail assembly.

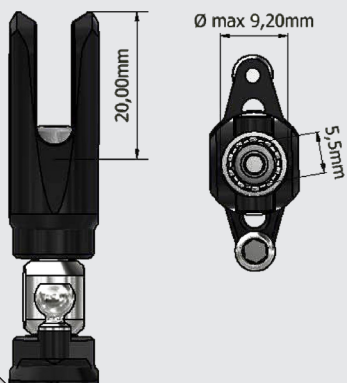


You will need:

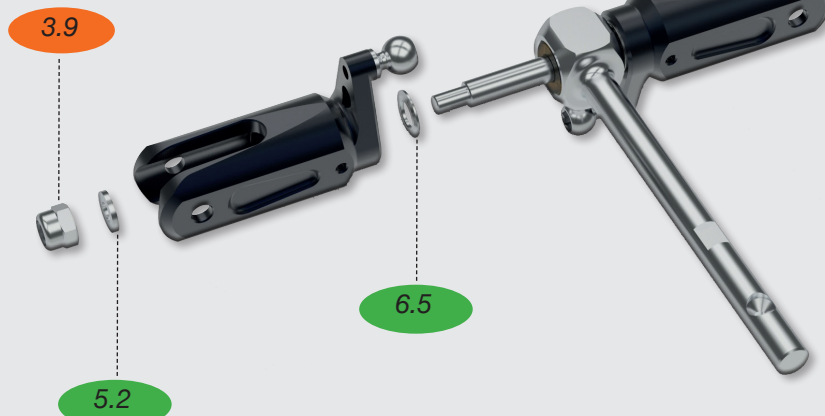
Loctite 243 = blue

Tail assembly.

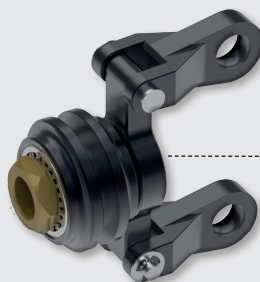
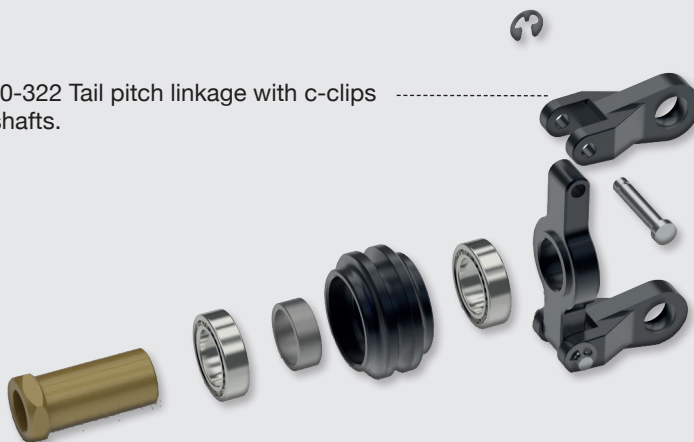
Wrench size for nut = 5.5mm. Outer diameter should not exceed 9.2mm and min. 20mm length is required.
Optional (TR:501518)



TR550-525 Tail blade holder set complete.



TR550-322 Tail pitch linkage with c-clips and shafts.

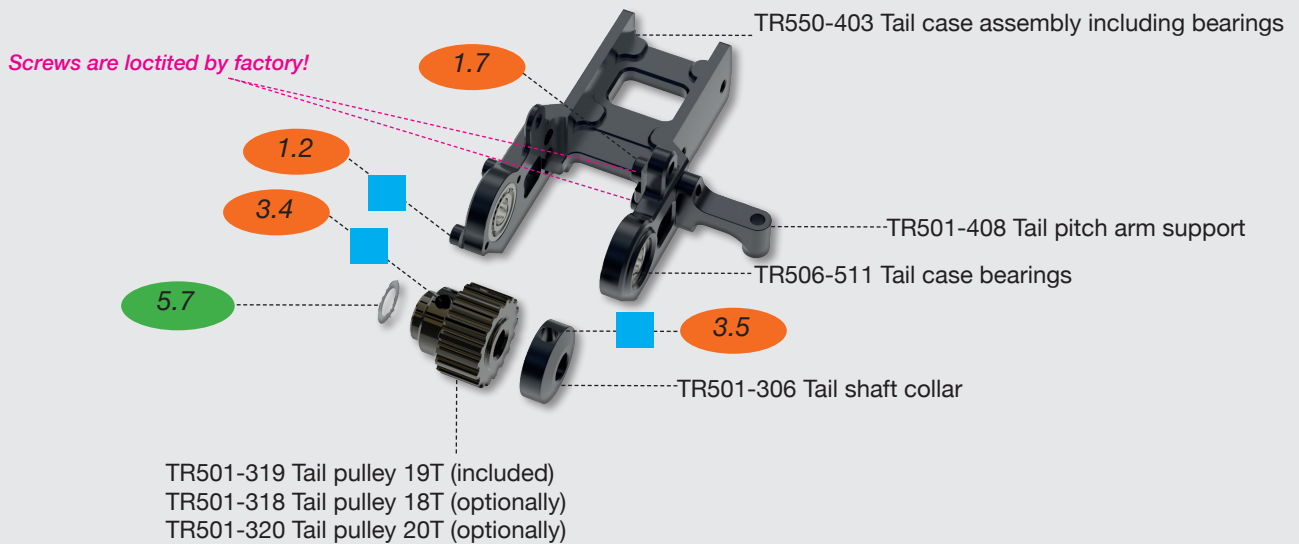


TR550-428 Tail pitch slider assembly.
(complete)

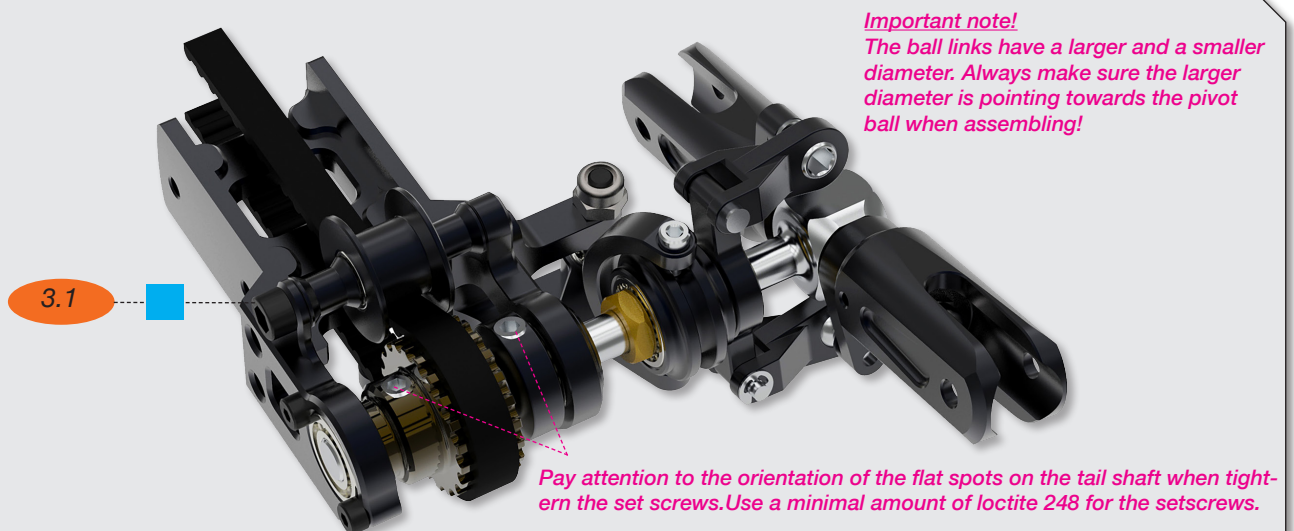
You will need:

Loctite 243 = blue

Tail assembly.



Insert belt here!

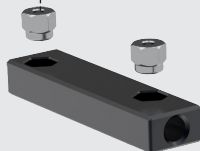


You will need:

A little bit of patience, when doing it for the first time

Tail assembly.

3.8



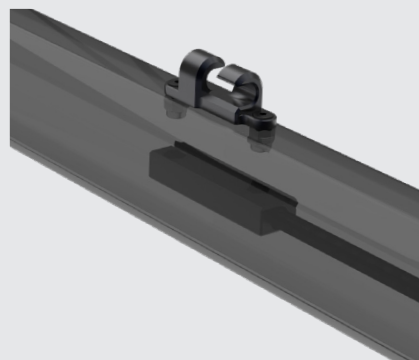
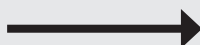
Insert nuts into the tail pushrod mounting device. Use the same direction as shown in the illustration.



Use the tail pushrod temporary.



Tighten the screws.



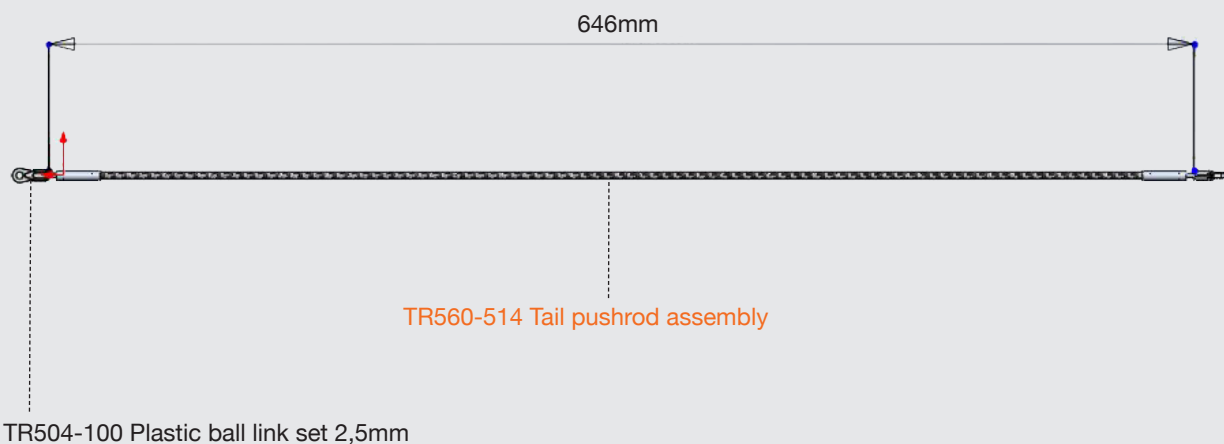
Pull the mounting device out from the nuts.

You will need:

2 component epoxy

Tail assembly.

Glue the tread into the tail push rod and the shell on the outside of the rod. This way you add double safety and the tread can not turn if you adjust the ball-link after the assembly is complete hardened. Use 2 component epoxy!



You will need:

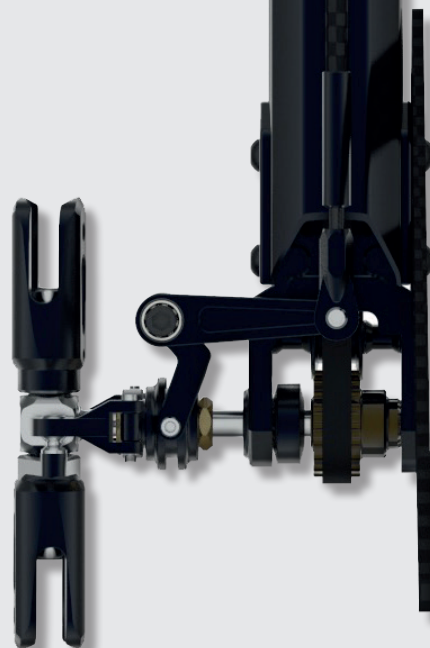
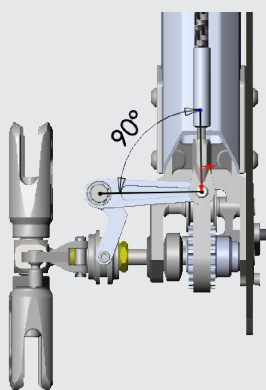
Loctite 243 = blue



Tail assembly.



For best tail authority performance adjust center position of your FBL controller (tail servo) same as shown in the illustration (90°) degree.



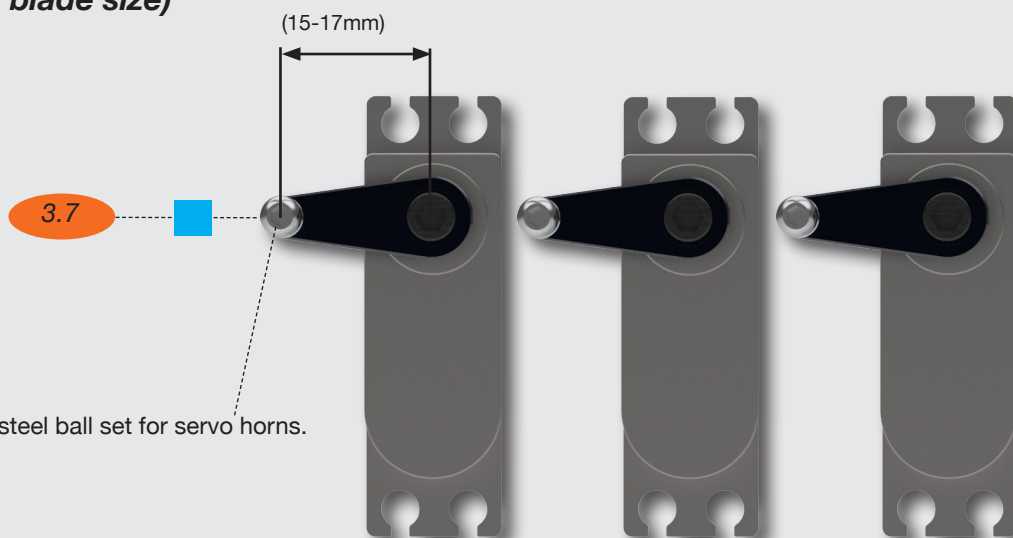
You will need:

Loctite 243 = blue



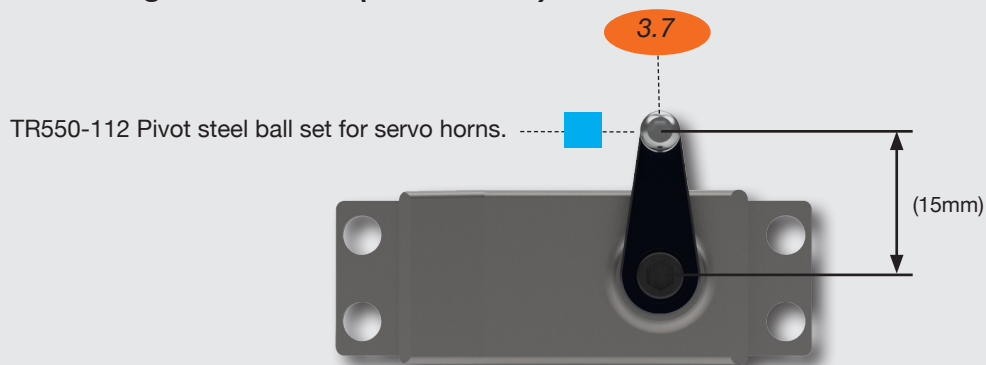
Servos preparation.

Mini and full size Cyclic servo arm length for Nitron (550-610mm blade size)

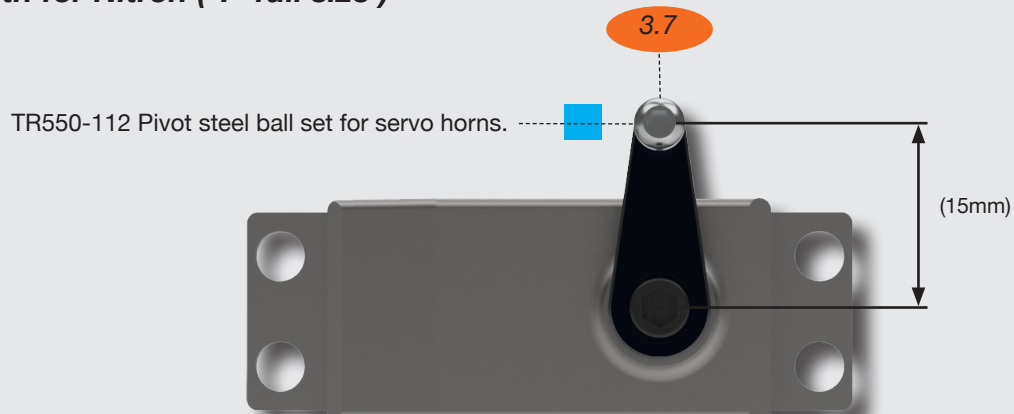


TR550-112 Pivot steel ball set for servo horns.

Throttle servo arm length for Nitron (1* full size)



Tail servo arm length for Nitron (1* full size)



You will need:

Loctite 243 = blue



Main frame assembly preparation.

Available pinions for Nitron.

- 21T / 580mm-610mm blades.
- 24T / 550mm-570mm blades.

TR506-105 Bearing set 2* XX and 2* XX

TR562-021, 21T pinion included clutch and engine shim mount
TR562-025, 24T pinion included clutch and engine shim mount

*For your own convenience, we offer the clutch and the pinion pre-assembled at the factory. This way, no ballancing is required. If you want fly 550-570mm mains you only need to order one of the above numbers or vise visa.
The set includes the clutch, the pinion and the correct shim for your engine gear mesh.*



TR562-206 Starter shaft adapter

TR561-305 Clutch support

3.4

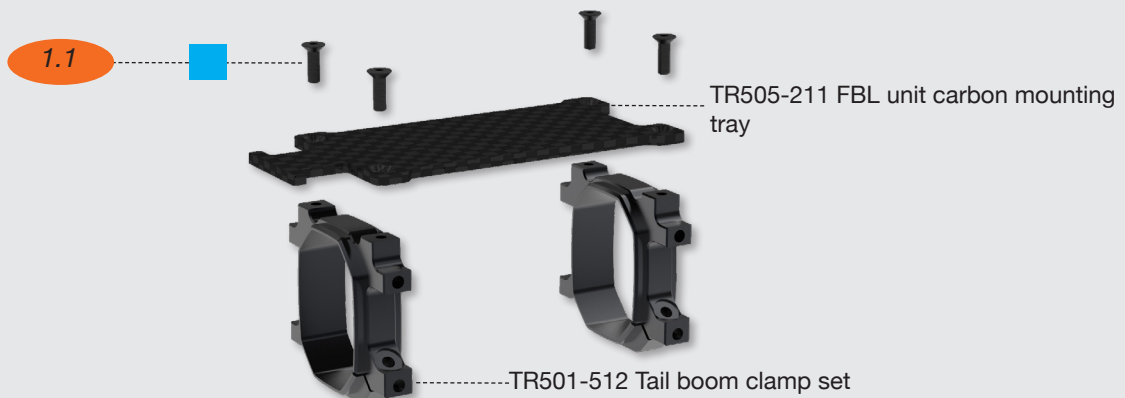
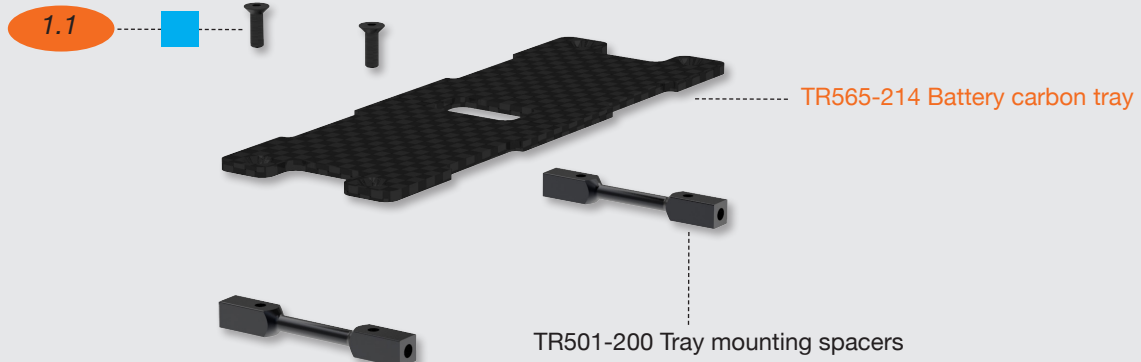
TR562-162 Starter shaft

You will need:

Loctite 243 = blue



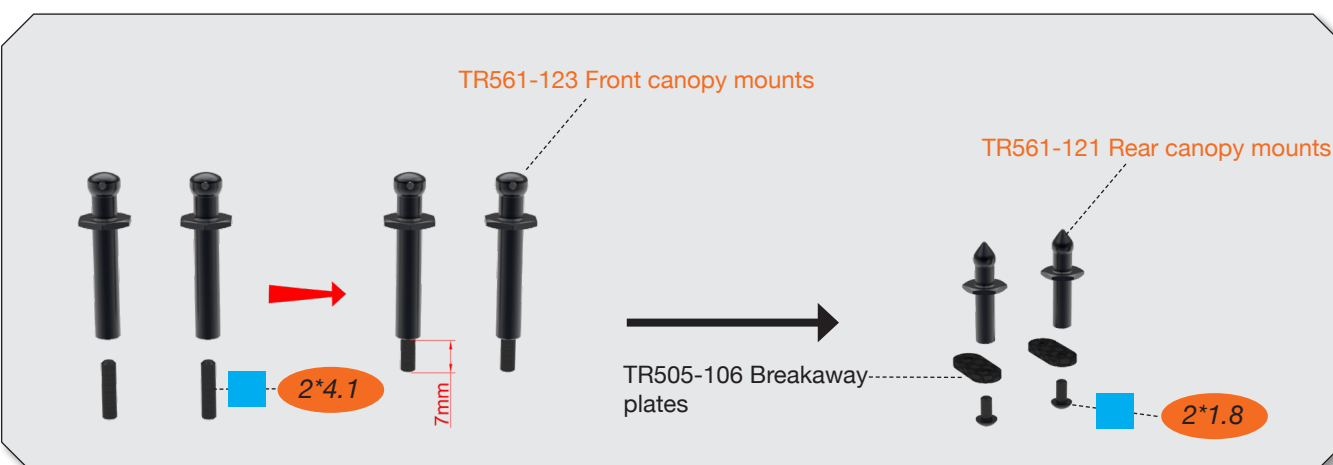
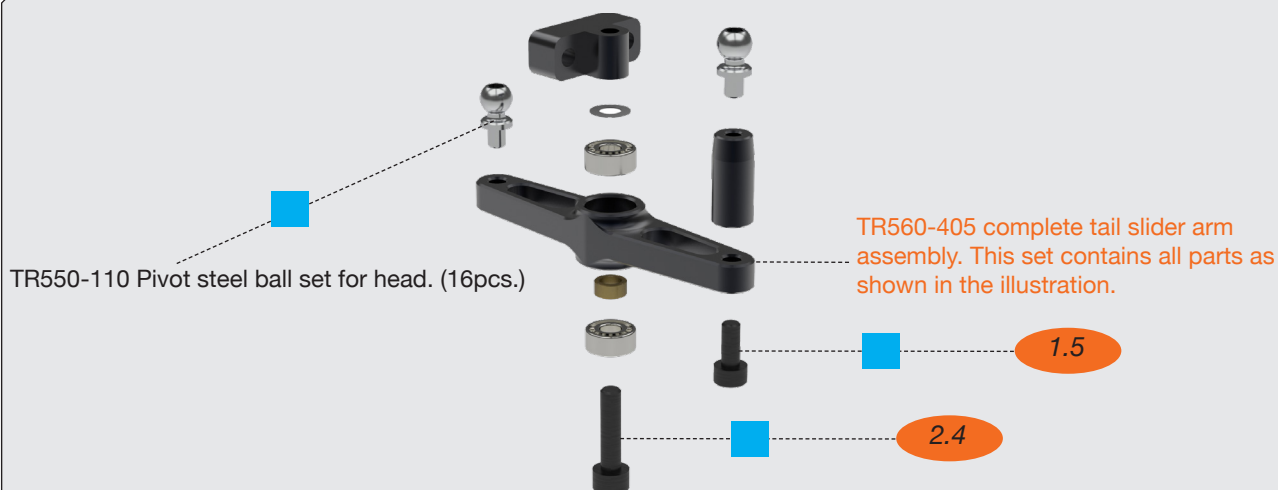
Main frame assembly preparation.



You will need:

Loctite 243 = blue

Main frame assembly preparation.

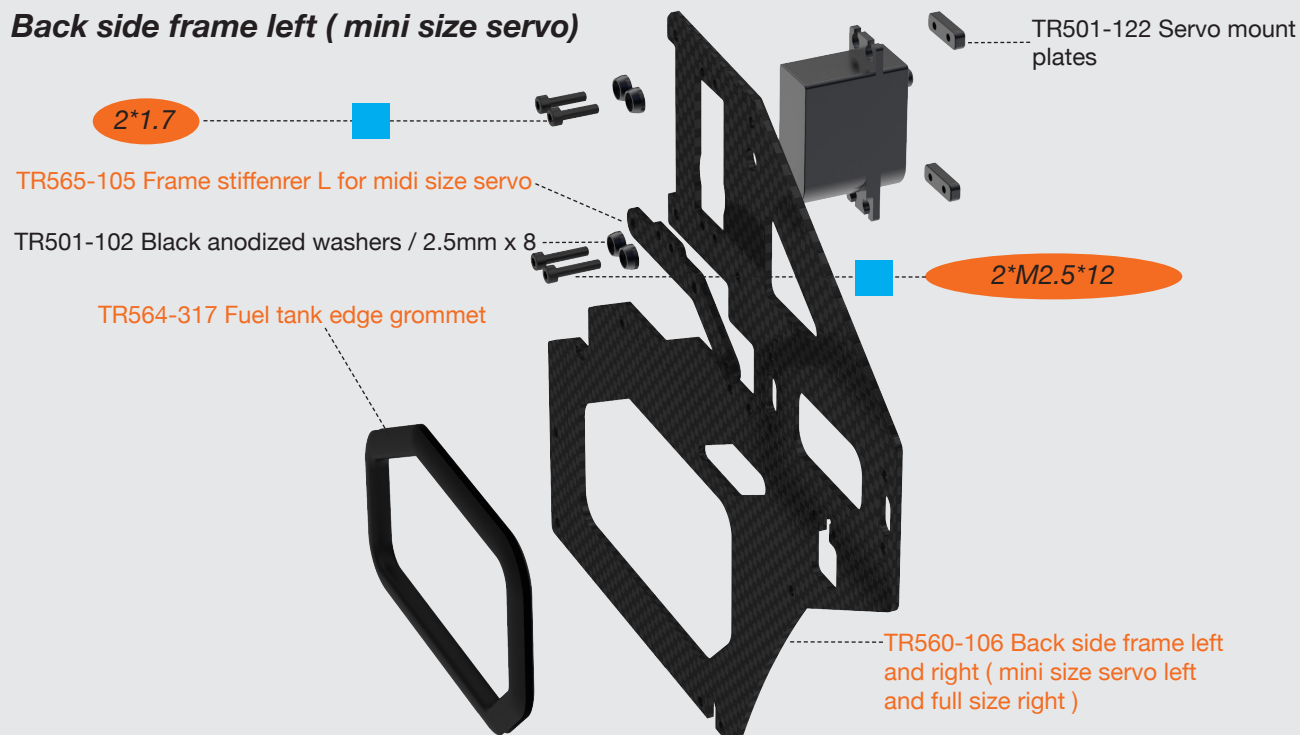


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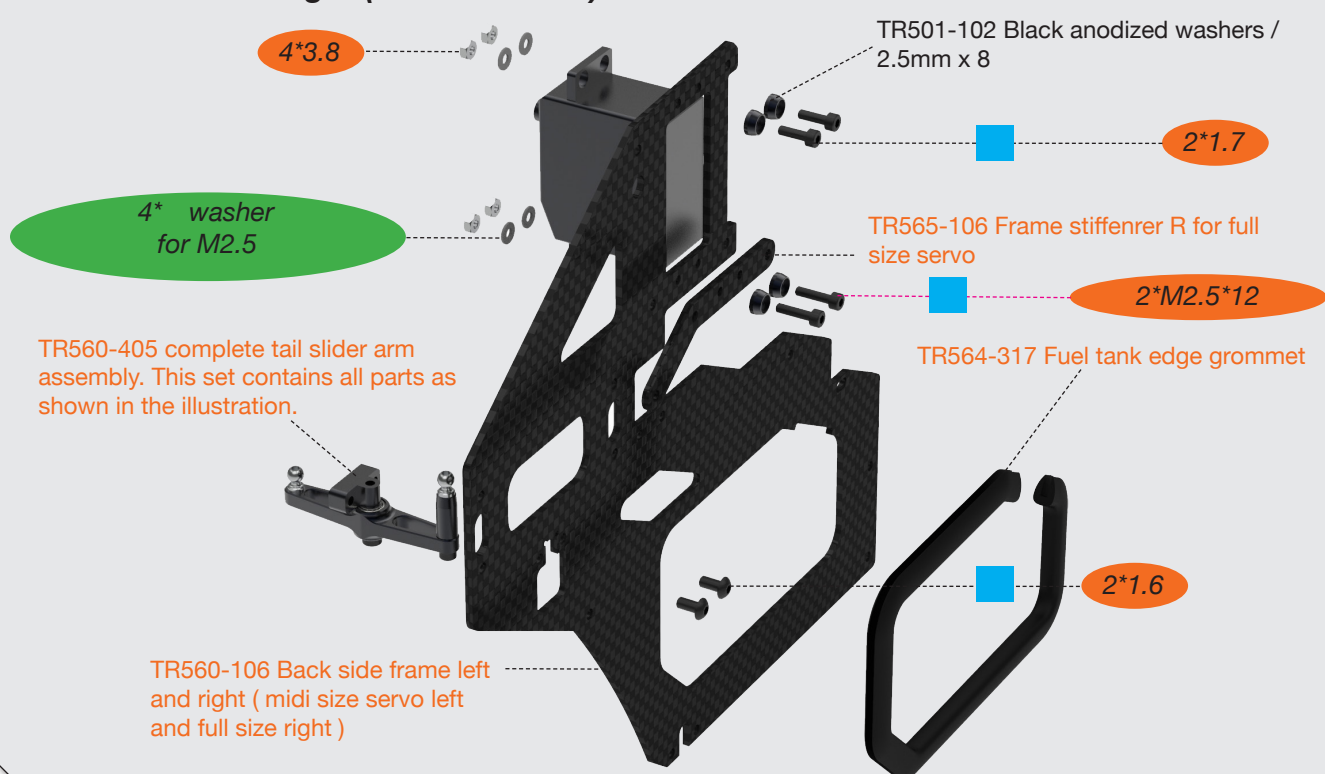
Loctite 243 = blue

Main frame assembly.

Back side frame left (mini size servo)



Back side frame right (full size servo)

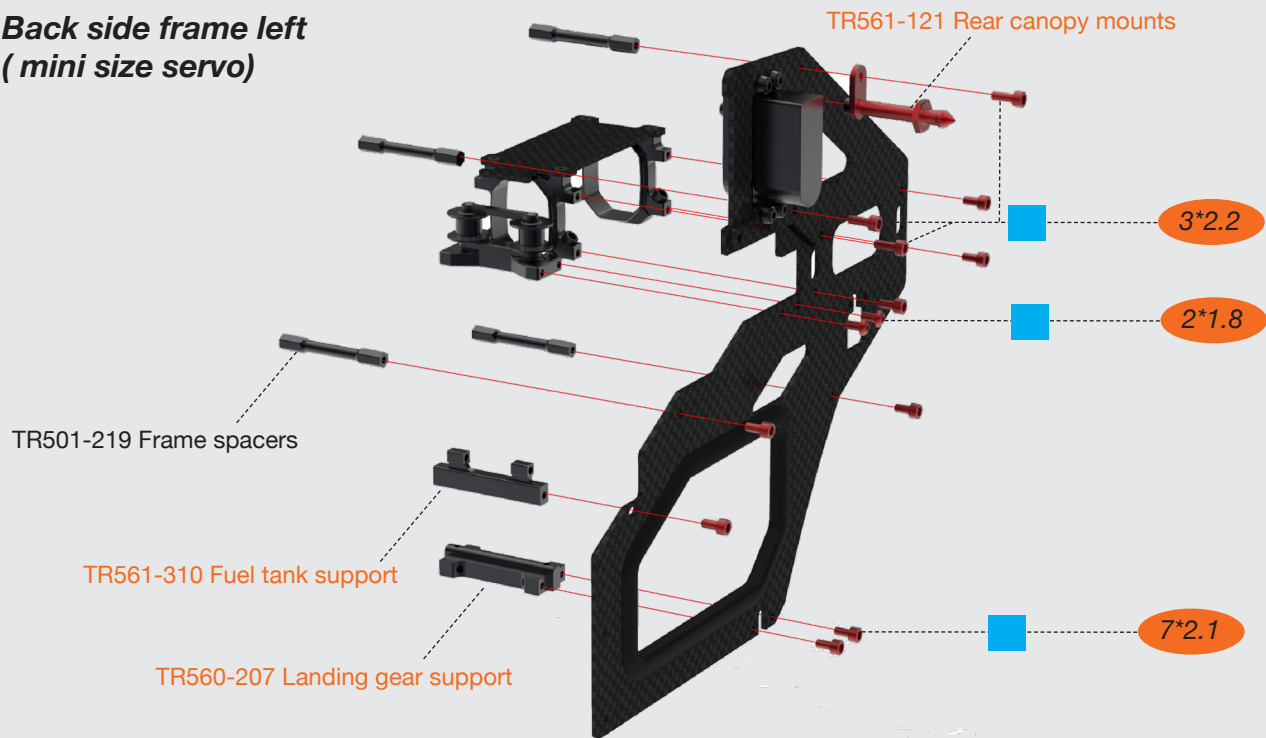


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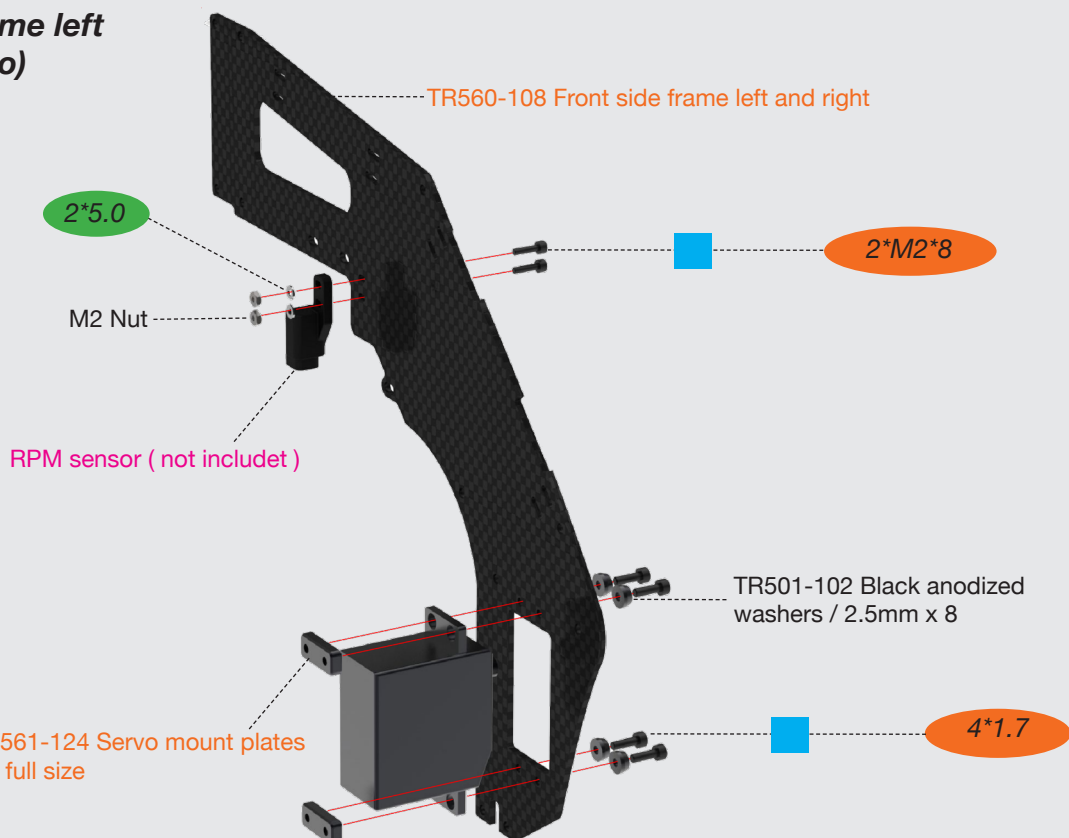
Loctite 243 = blue

Main frame assembly.

Back side frame left (mini size servo)



Front side frame left (throttle servo)

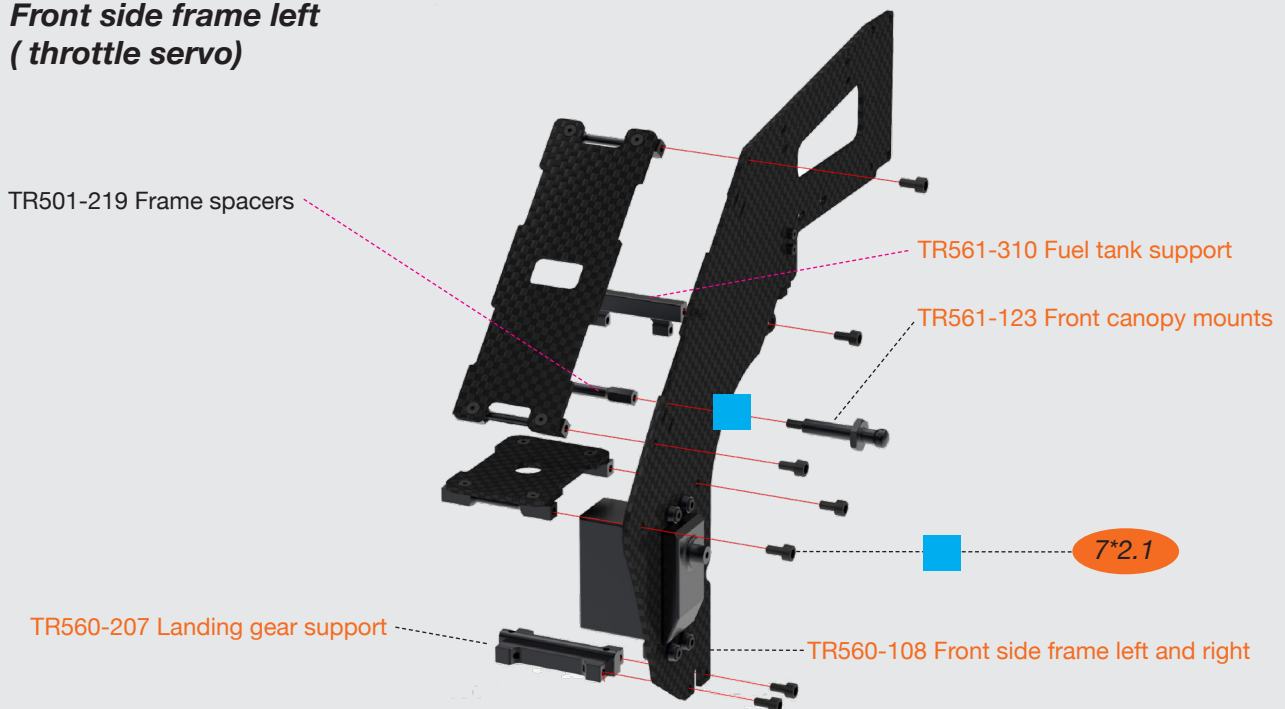


You will need:

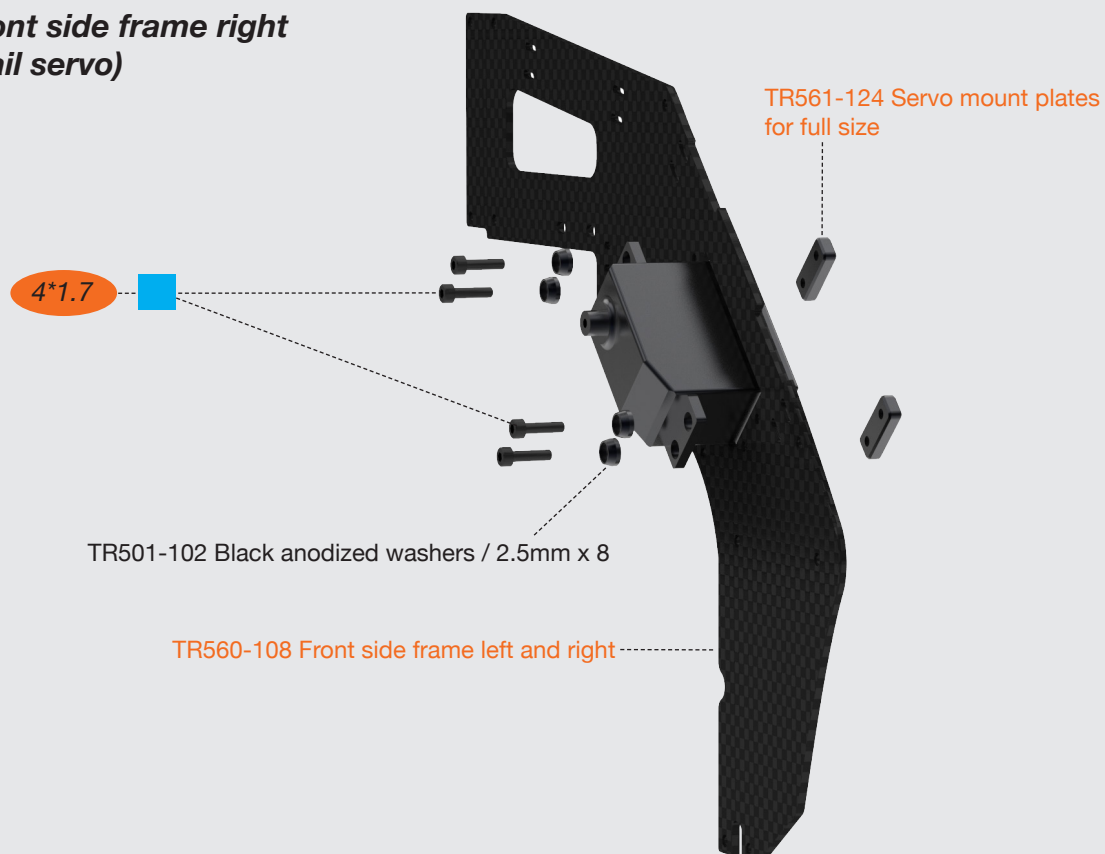
Loctite 243 = blue

Main frame assembly.

**Front side frame left
(throttle servo)**



**Front side frame right
(tail servo)**



You will need:

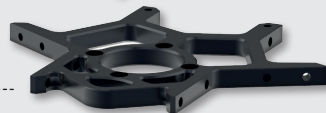
Locktite 243 = blue

Servo frame pre assembly.

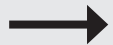
TR506-105 Main shaft bearing set



TR561-203 Servo mount unit



TR561-204 Main shaft support with bearings.



TR561-204 Servo mount unit



4*1.5

4*1.5



Full size servos.



TR561-125 Midi size servo adapters

4*1.1

TR501-102 Black anodized washers / 2.5mm x 8



4*1.6

TR501-102 Black anodized washers / 2.5mm x 8

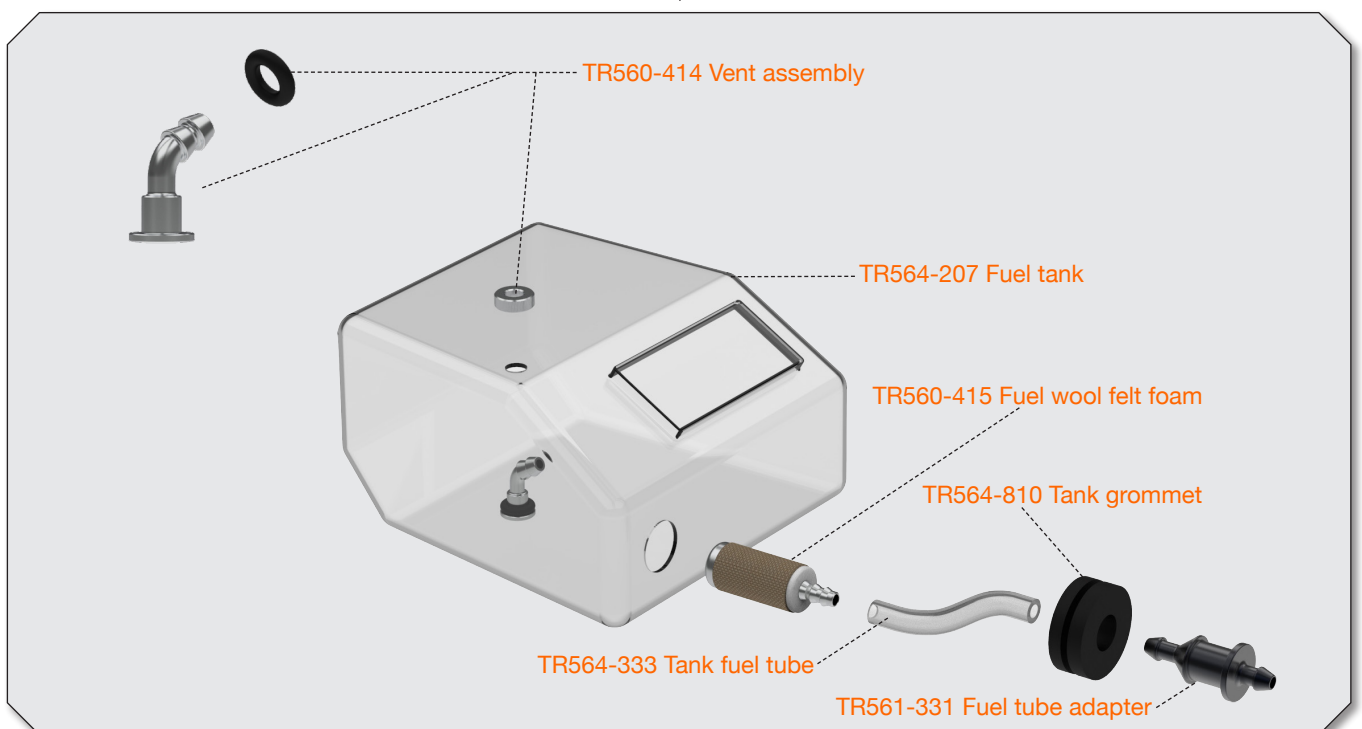
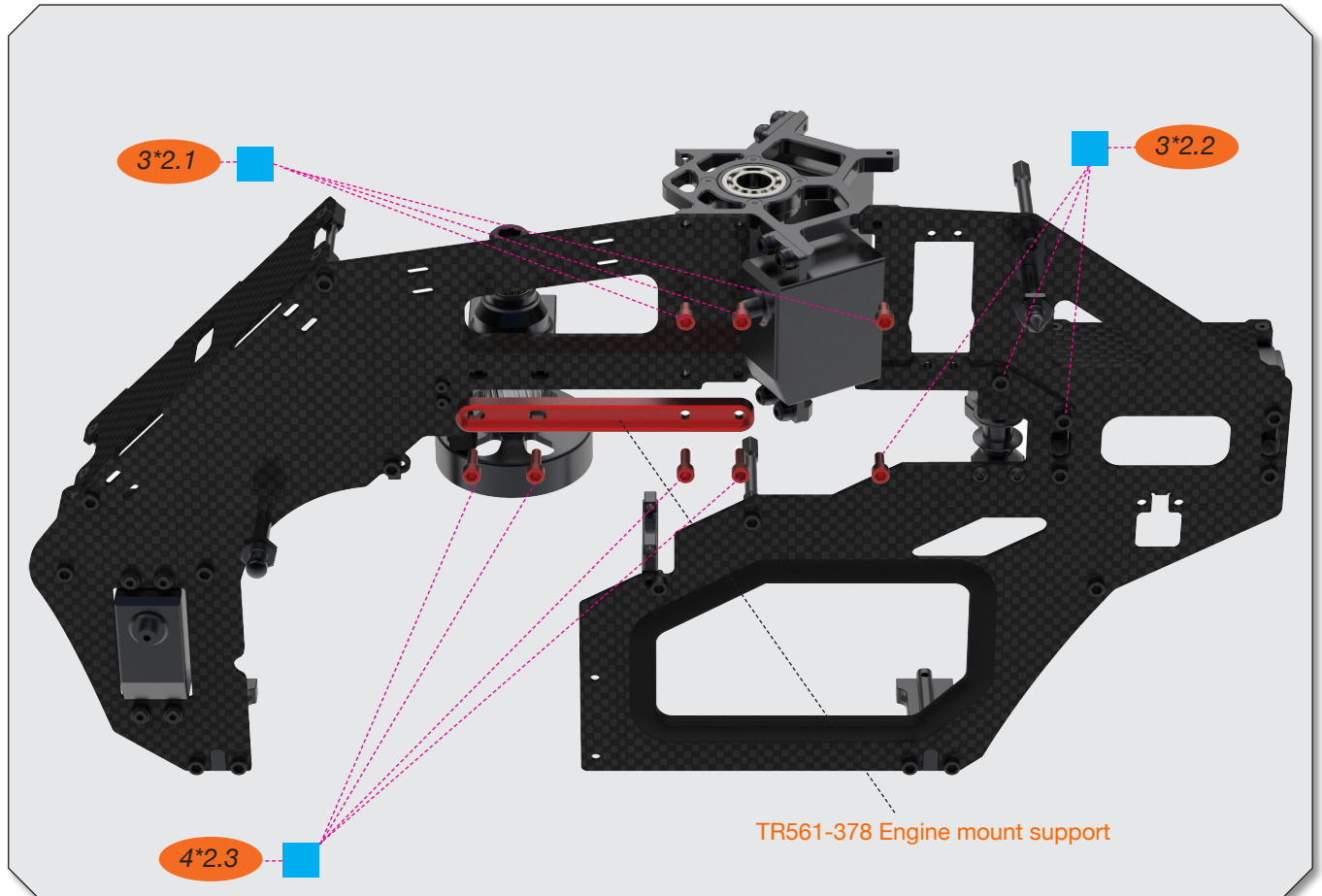
4*1.6



You will need:

Locktite 243 = blue

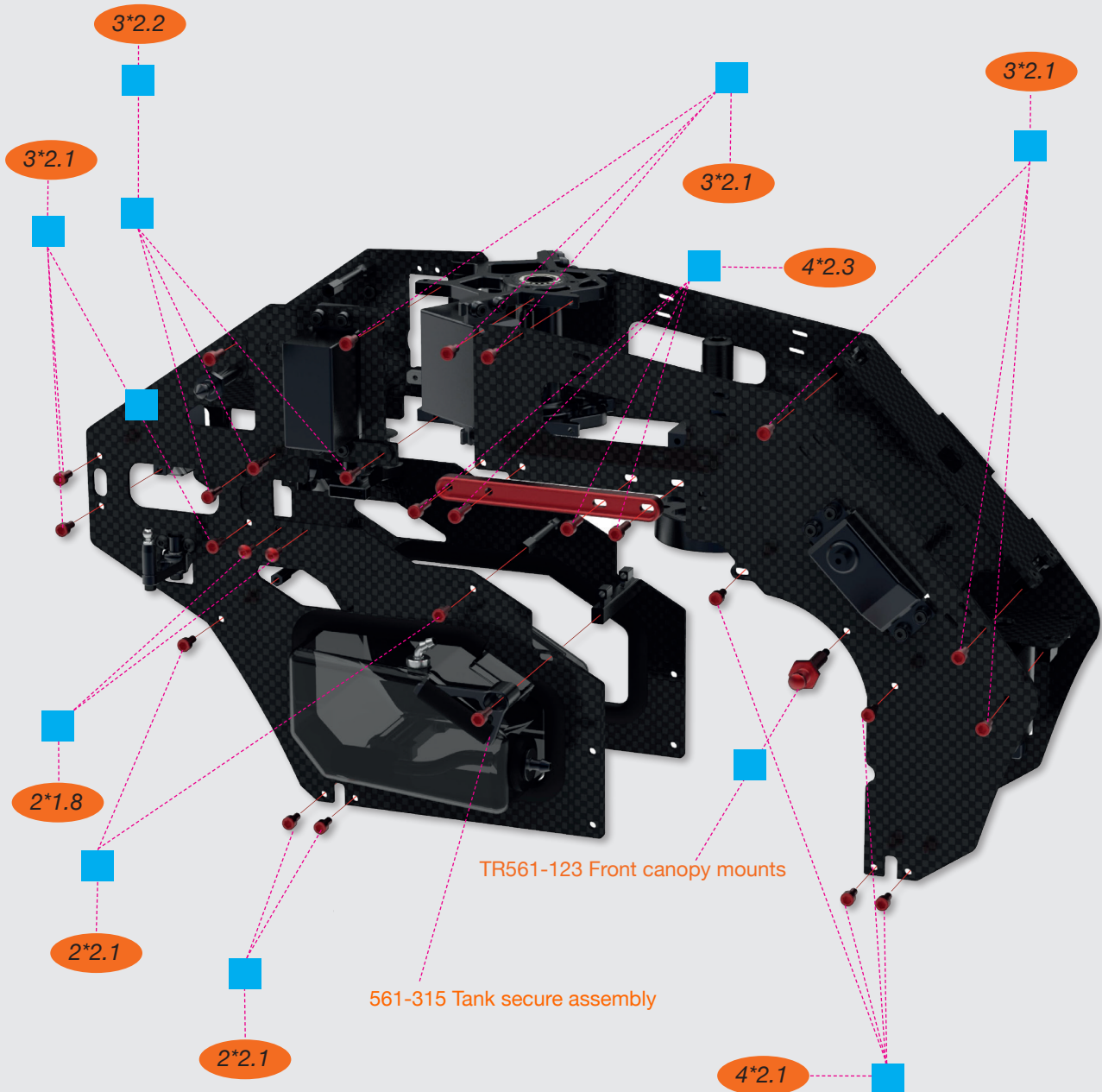
Left main frame and tank assembly.



You will need:

Loctite 243 = blue

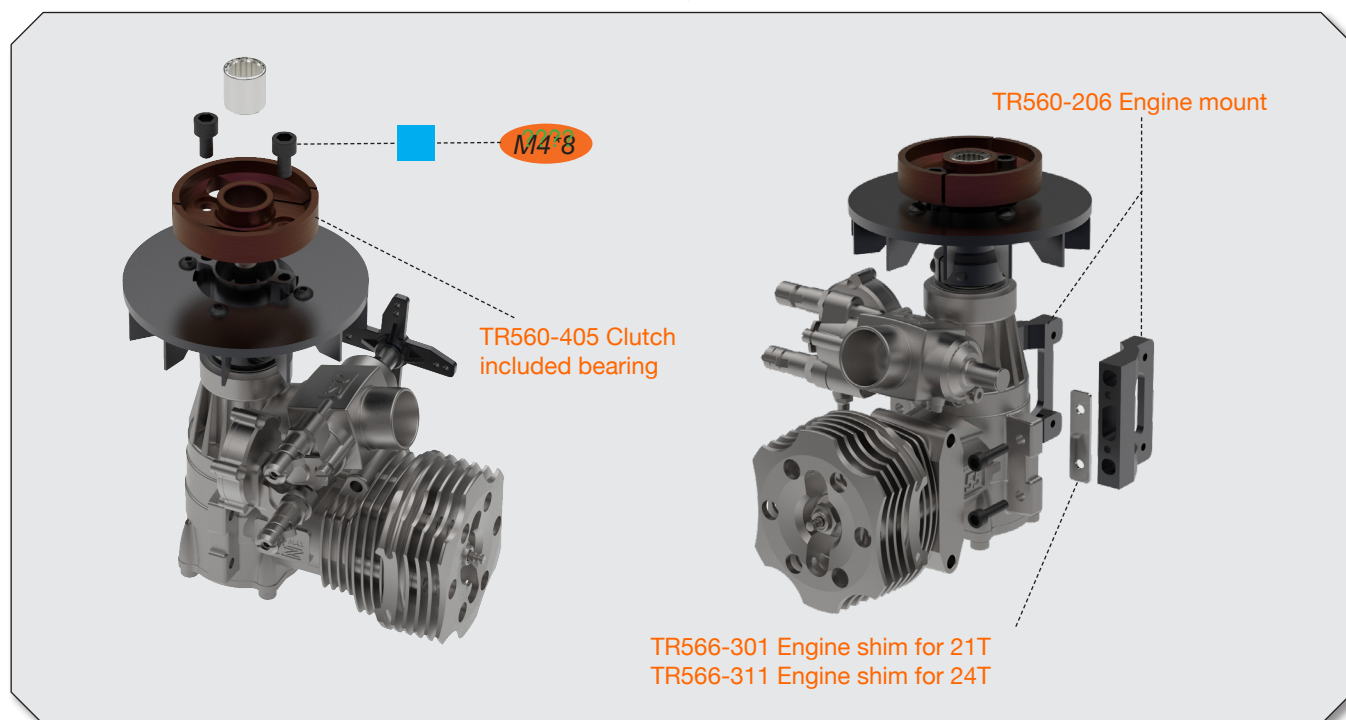
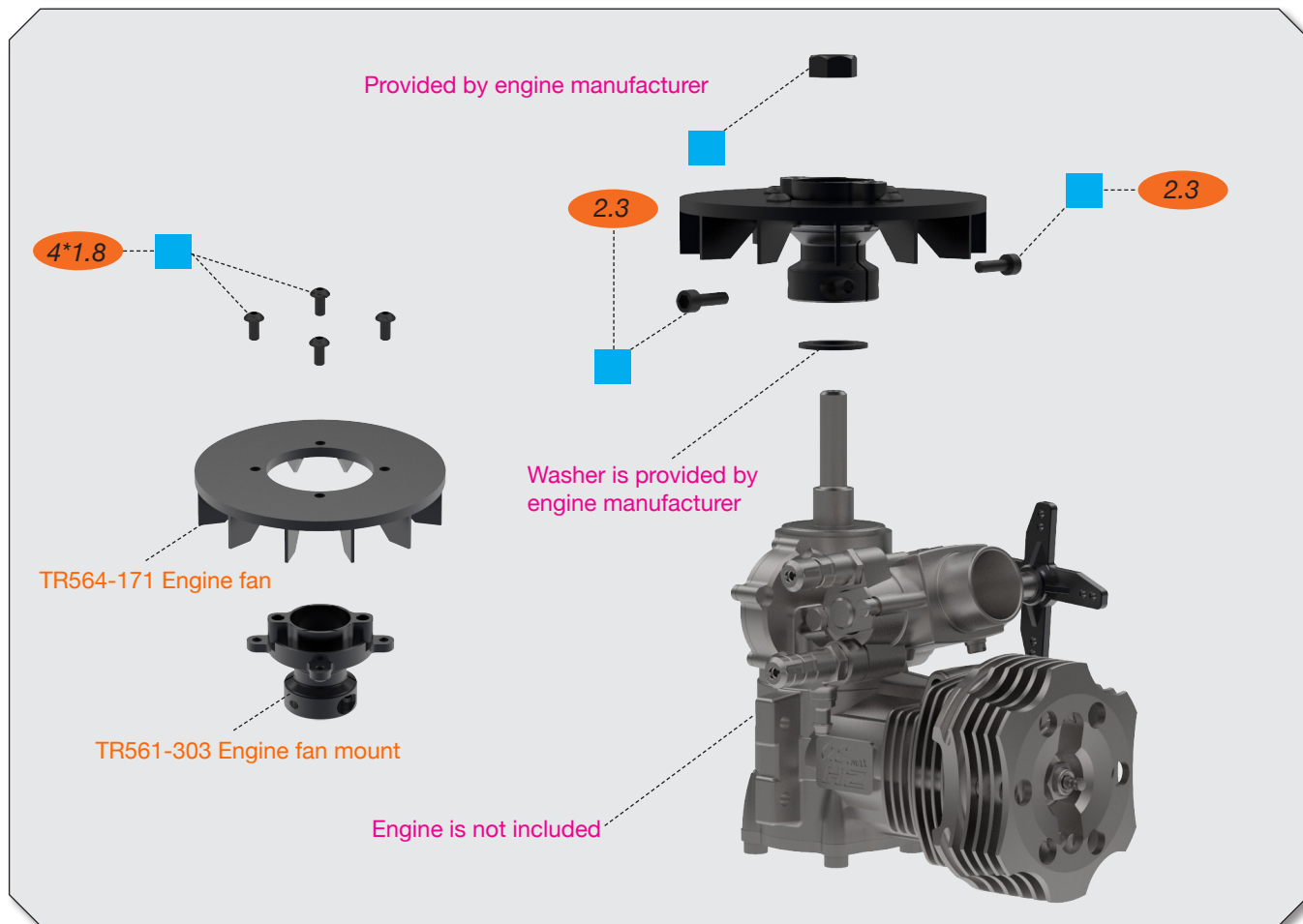
Final Main frame assembly.



You will need:

Loctite 243 = blue

Preparing the engine.



You will need:

Loctite 243 = blue

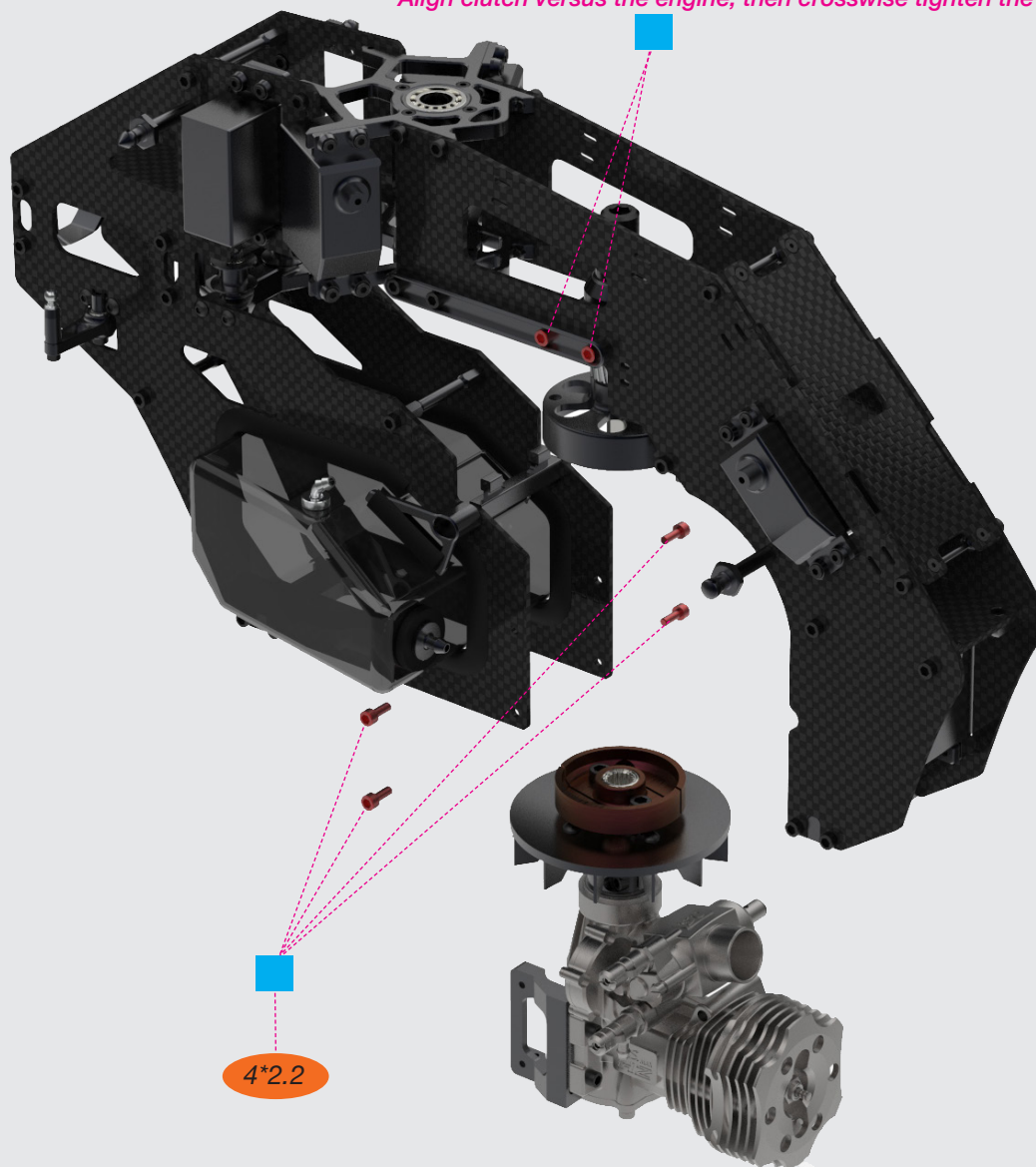


Engine to frame assembly.

Take care when assembling the engine to the frame, make sure the engine mount is clean and vertical, and slowly tighten the engine mount plate crosswise. Make sure the clutch runs smoothly in the one way bearing once all is set and ready.

Assemble engine first in to the frame, keep the 4 screws for the pinion-clutch alignment loose.

Align clutch versus the engine, then crosswise tighten the 4 screws.

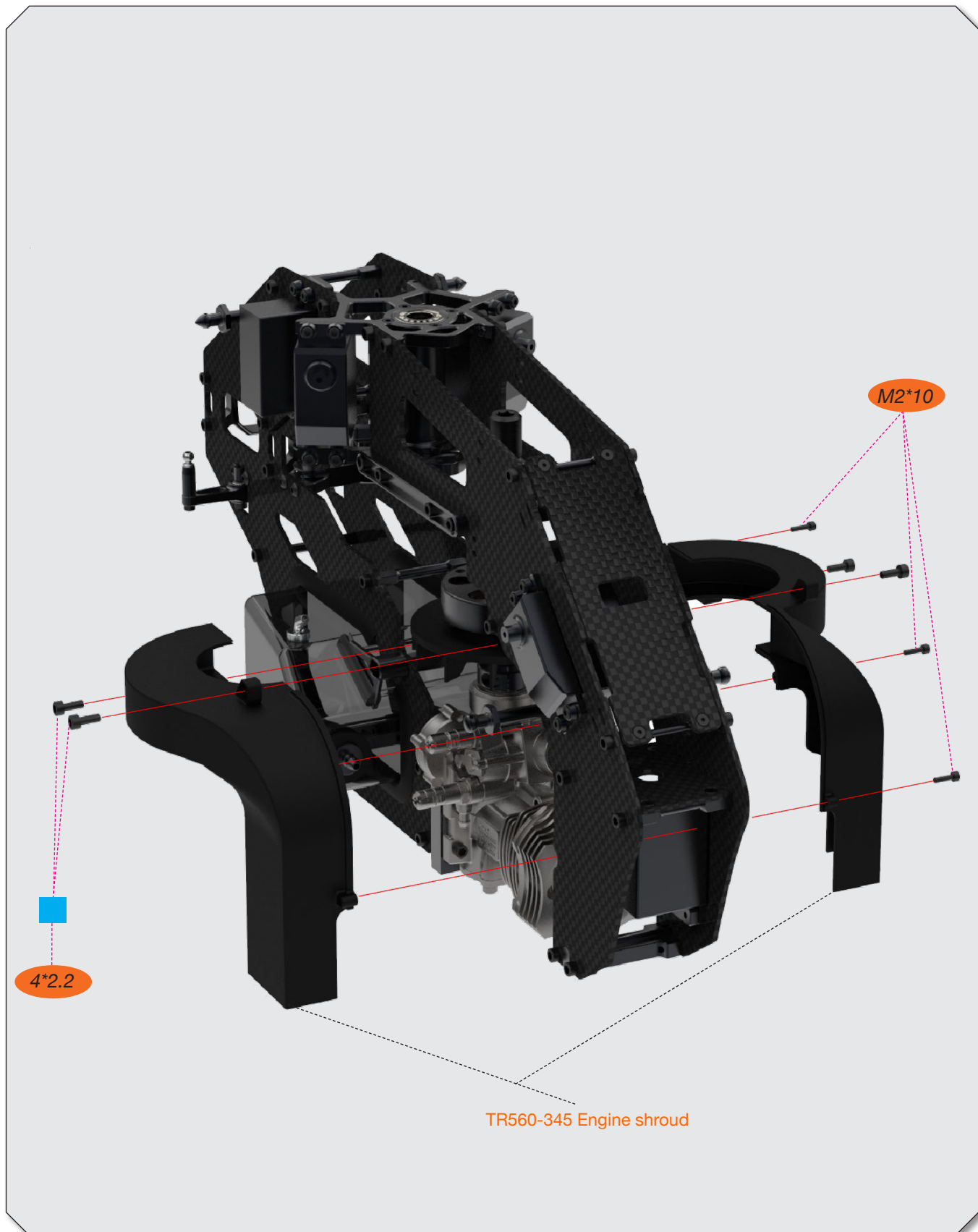


You will need:

Loctite 243 = blue



Engine to frame frame assembly.



You will need:

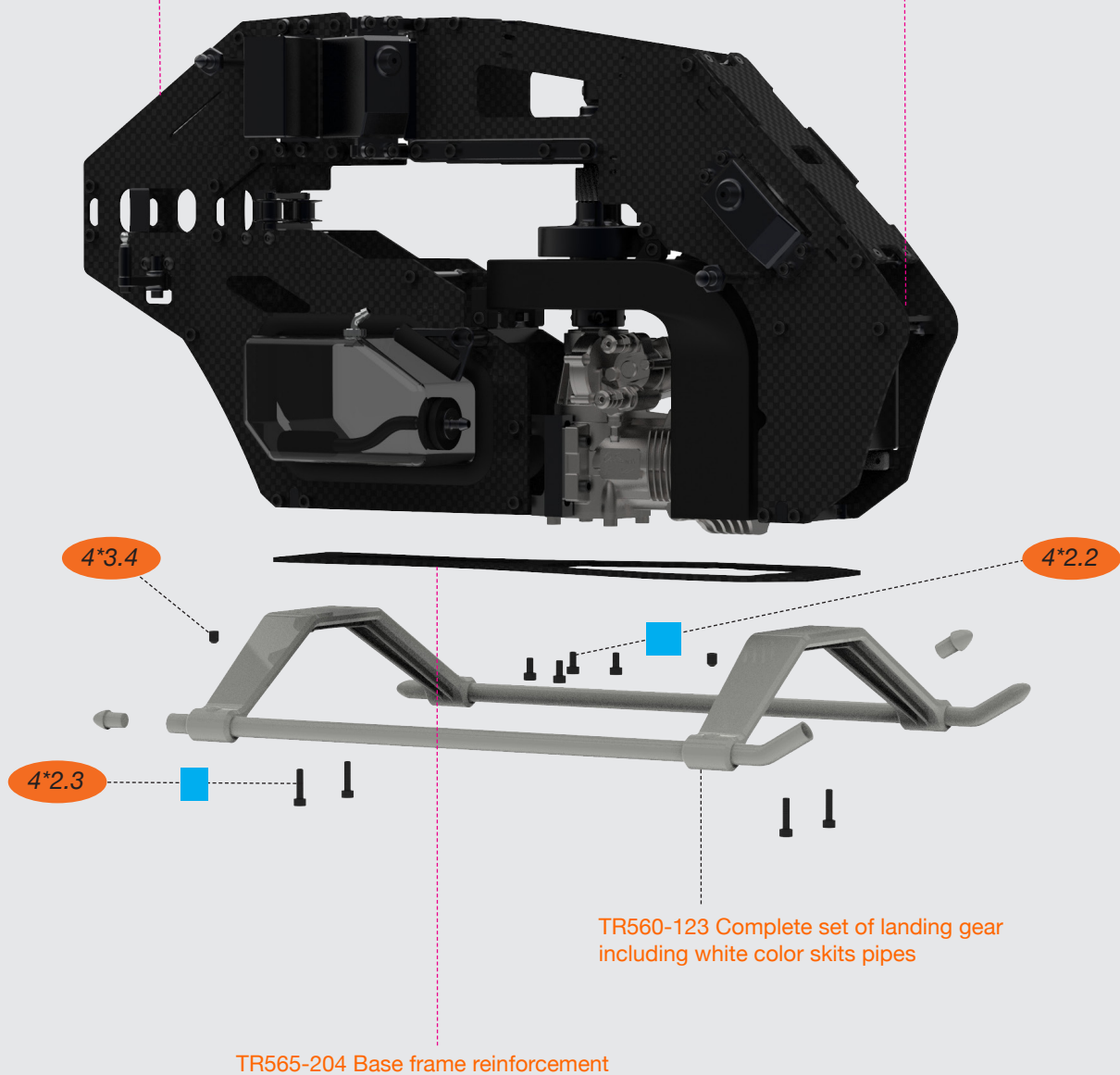
Loctite 243 = blue



Landing gear assembly.

Back FBL tray fits for any FBL system and offers larger space.

Front FBL tray fits for BRAIN 2 / ICON 2 / V-BAR-NEO / SPIRIT 2 / BEAST X.



You will need:

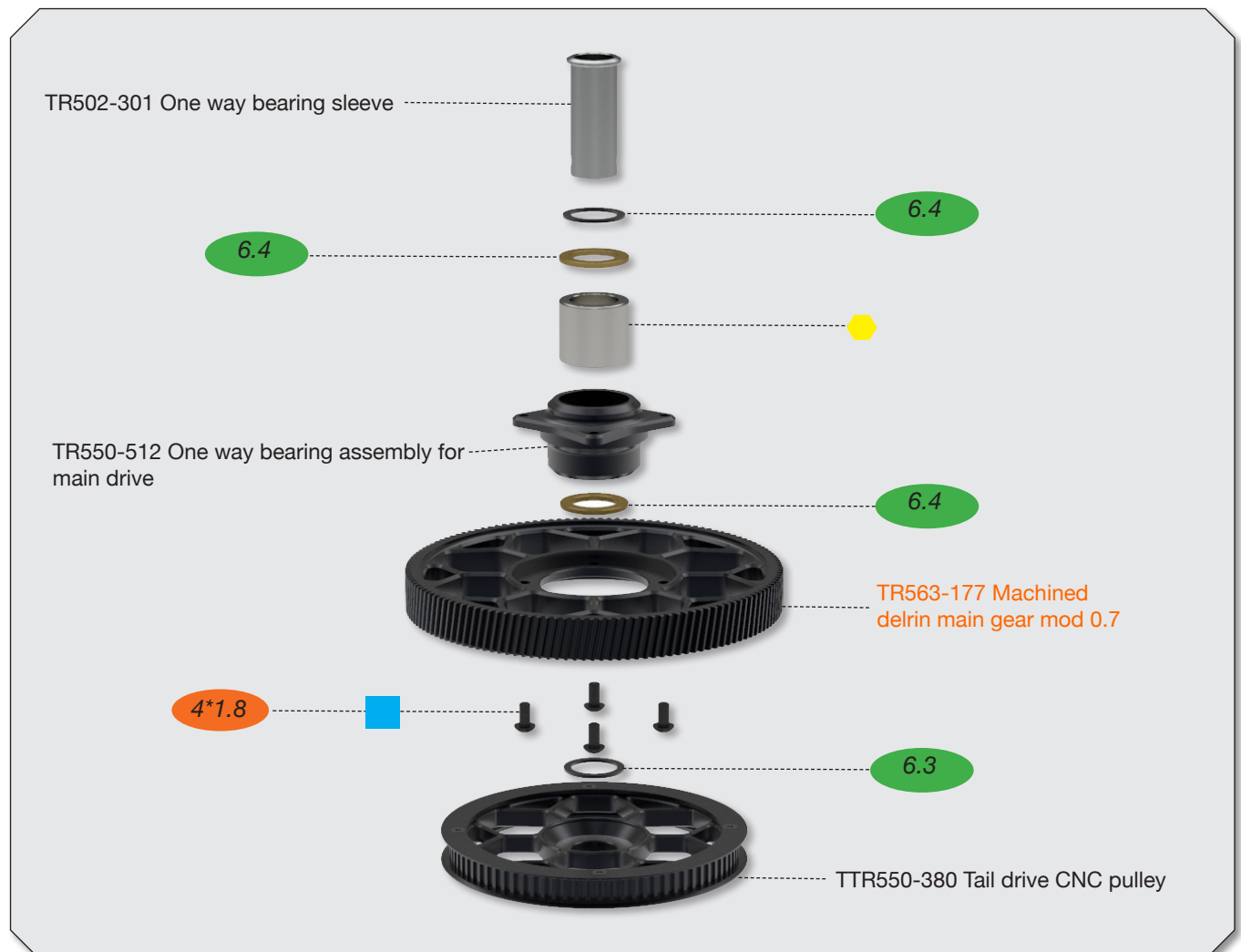
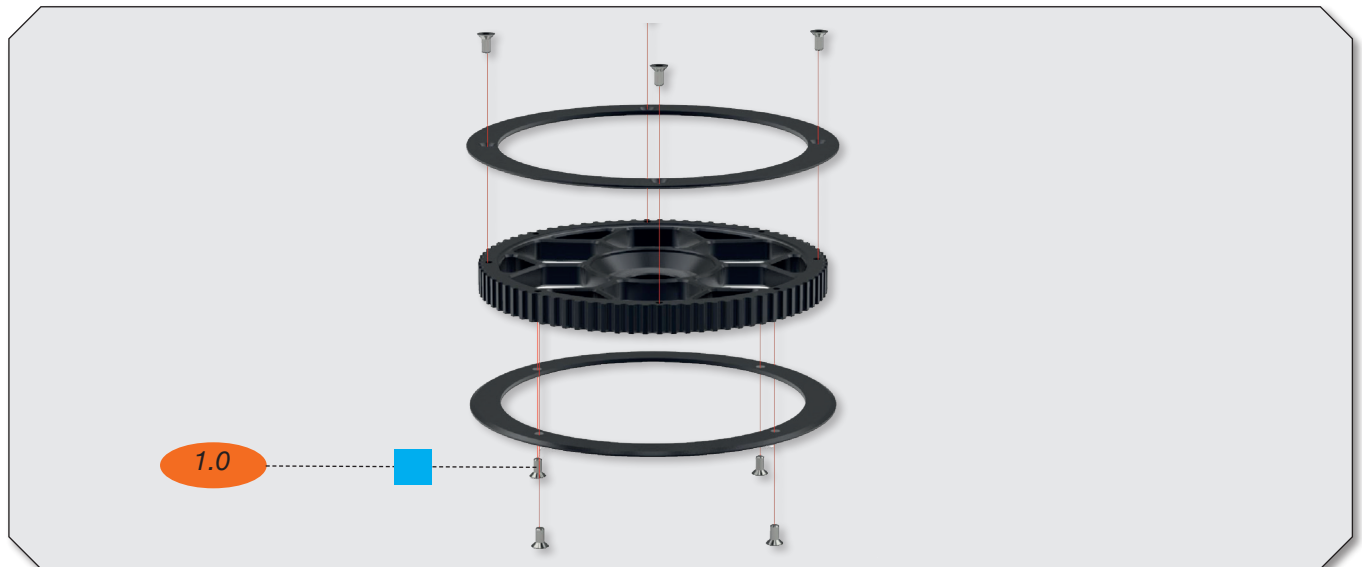
Loctite 243 = blue



Grease = yellow



Main drive pre assembly.

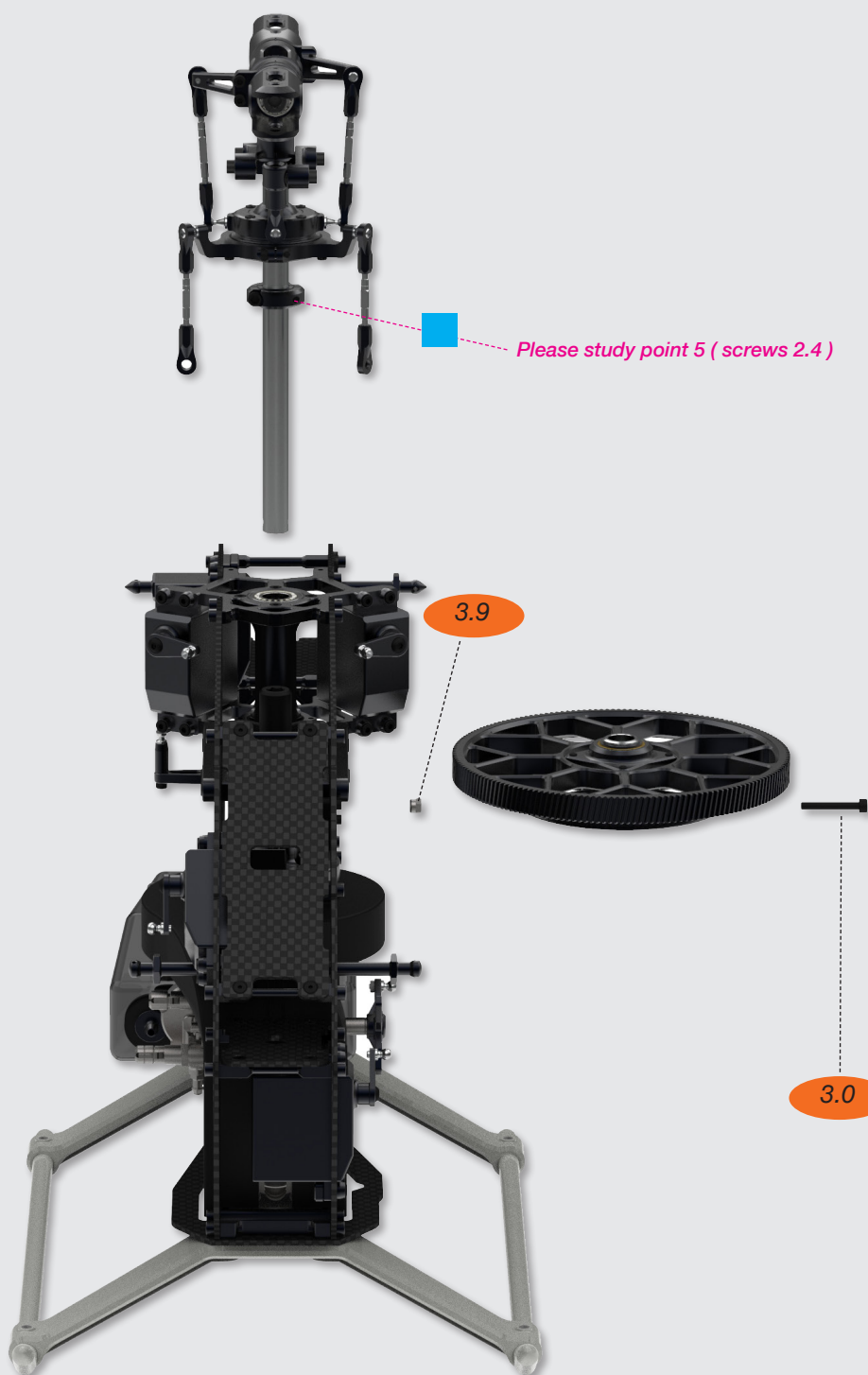


You will need:

Loctite 243 = blue

Head and main drive.

1. Insert main gear assembly into frame
2. Insert rotor head assembly true bearing support tube
3. Make sure your main shaft glide true the one way bearing sleeve and line up with the Jesus bolt screw 3.0
4. Move down the main shaft collar to have zero up and down play on the rotor head assembly, then tighten screws 2.4 step by step.
5. Make sure to have an equal gap on the collar to achieve best holding results for the main shaft.

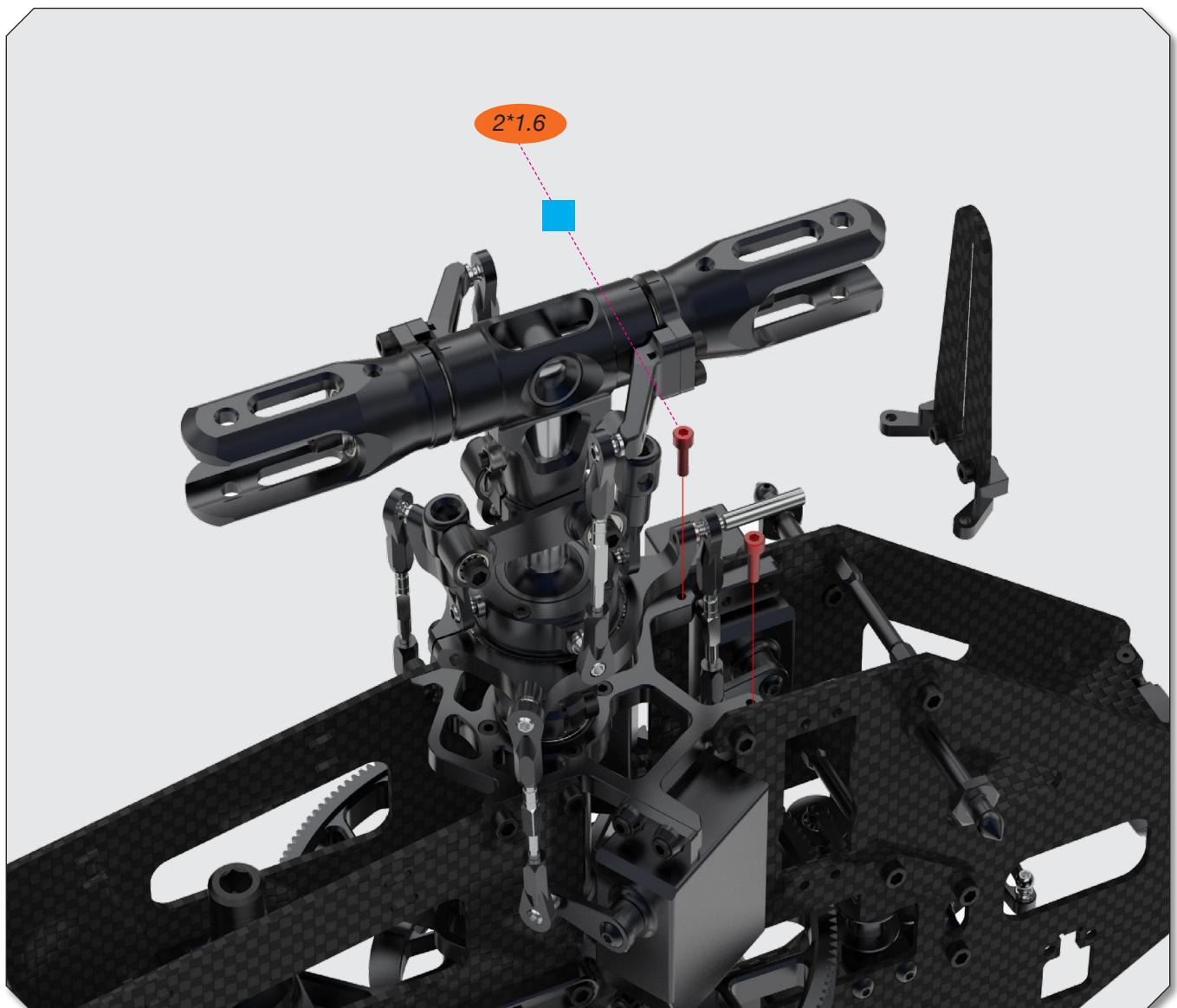


You will need:

Loctite 243 = blue



Anti rotation guide.



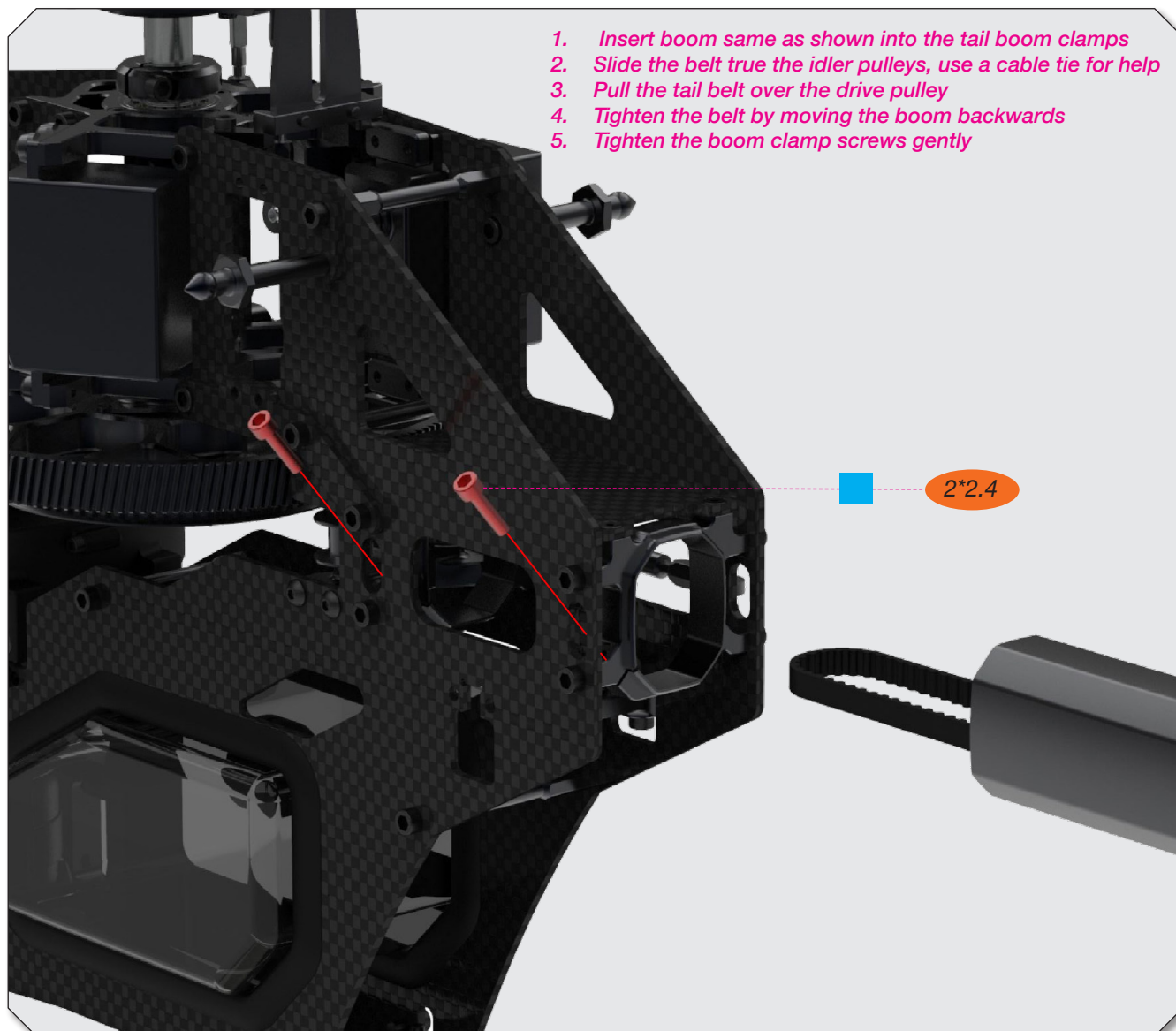
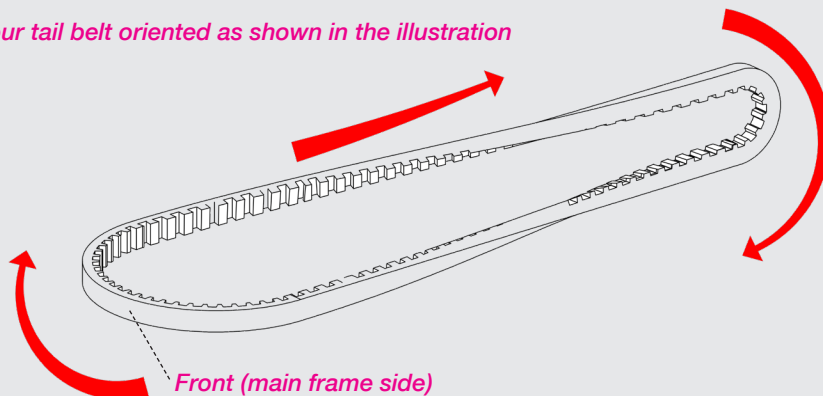
You will need:

Loctite 243 = blue



Tail boom to main frame assembly.

Ensure to have your tail belt oriented as shown in the illustration



Tips!

Rotation direction and canopy.

Rotation direction of main rotor versus tail rotor.

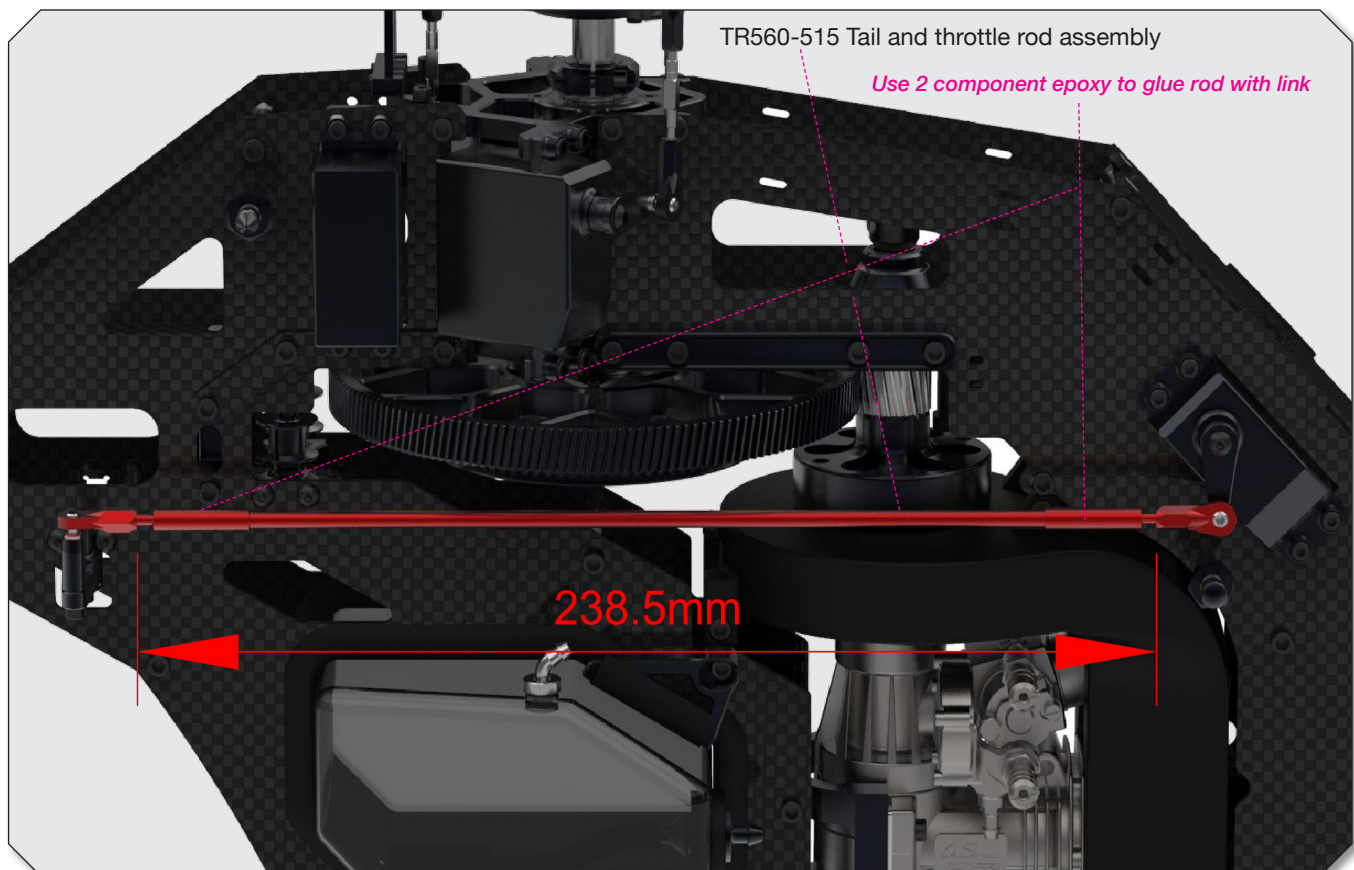
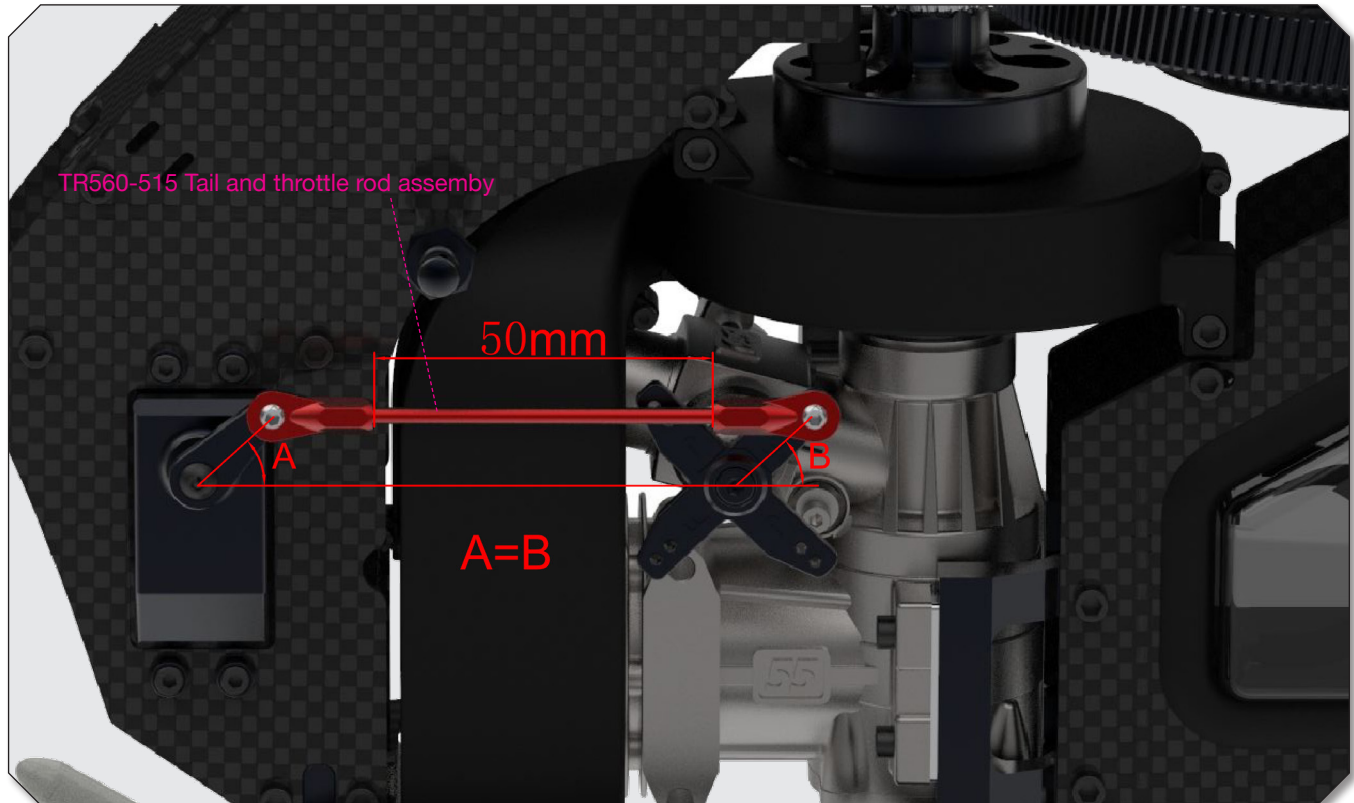


TR562-151 Canopy Nitron black orange canopy (standard in kit)

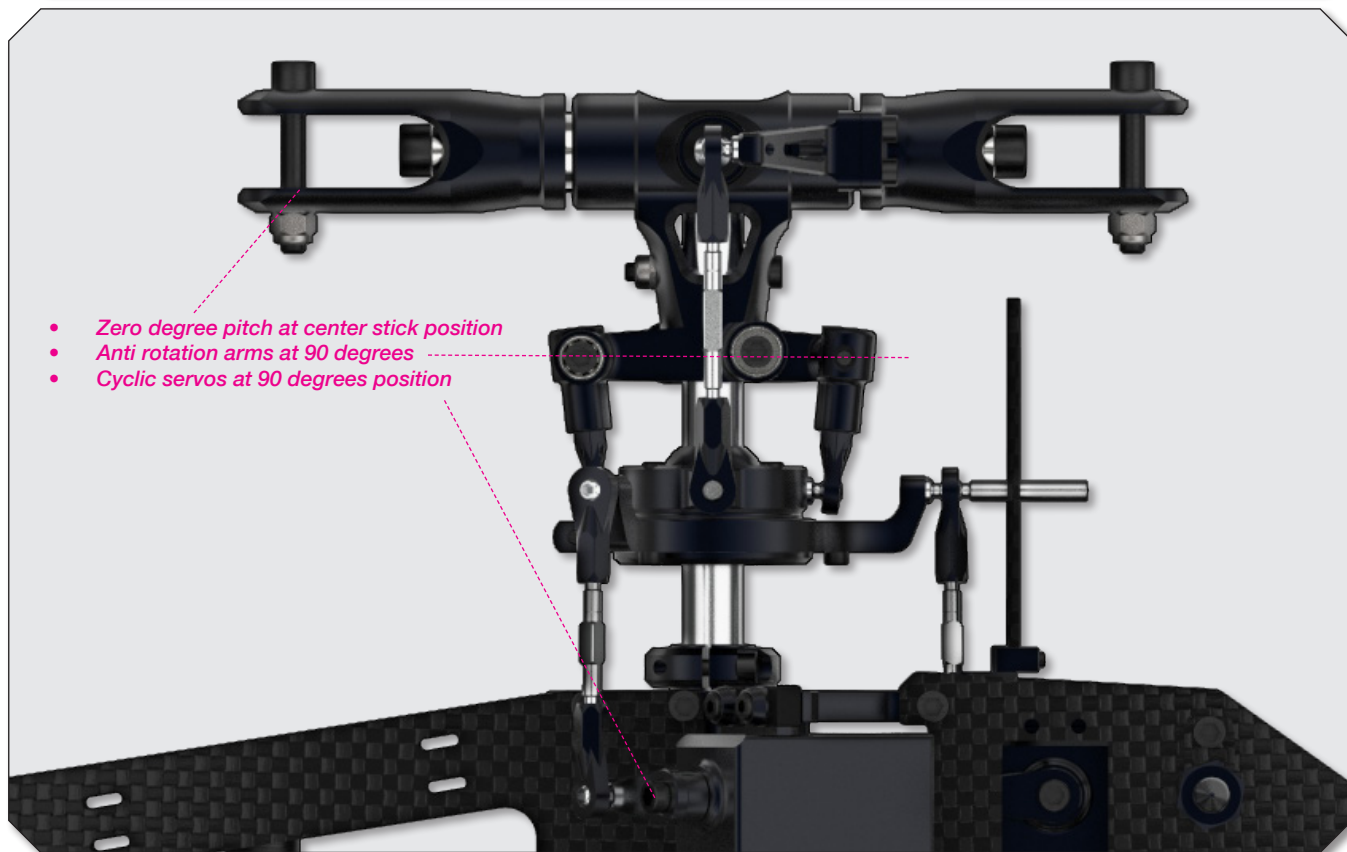


TR504-008 Canopy grommets

Throttle and tail servo rods.



Final setup and tips.



Muffler assembling.

Muffler and screws are not included.



Preflight check and gear ratios.

Recommended head speed.

1. Make sure your battery supply for your electronics are fully charged, monitor draw to ensure your supply is always save!
2. Inspect your blades for possible damage and if they are slightly tighten.
3. Inspect your linkages if they all in place and not have been popt off turing transport of your model.
4. Confirm that the FBL unit is correctly initialized.
5. Make sure your canopy is secured safely.
6. If you are a beginner, always seek advice by a expirianced pilot, specially for your first flight.

Flying styles	Head speed
Beginner and sport flying.	1800-1900rpm.
Advanced sport, 3D flying.	1900-2100rpm.
Hardcore 3D flying.	2100-2300rpm.

Main and tail rotor gear ratios.

Main gear	Pinion	Ratio	Tail drive gear	Tail pinion	Ratio
177/mod 0,7	21T	8.43	80	18T	4.44
177/mod 0,7	24T	7.37	80	19T	4.21

Make sure to check your model on regular basis, do a preflight check every time you plan to fly your model. Max. head speed for main rotor head must not exceed 2400 RPM!

Fly safe!

Contact:

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tronhelicopters.com