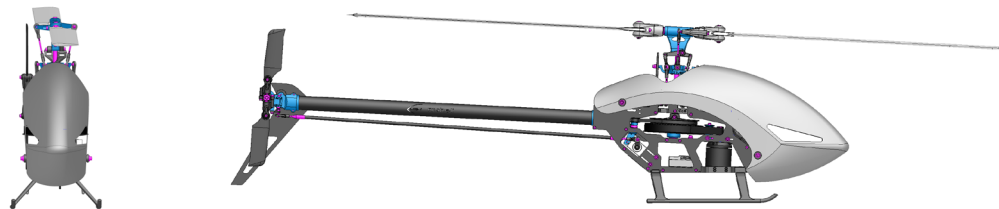




Main rotor diameter.....	864mm (380mm blades)
Tail rotor diameter.....	181mm (67mm tail blades)
Length without main blades.....	800mm
Length with main blades.....	1003mm (380mm blades)
Overall height.....	235mm
Tail rotor-Main rotor ratio.....	4,27 (4.43 optional)
Main pulley.....	120T
Autorotation pulley.....	94T
Tail pulley.....	22T (21T optional)

Release 1.0  
 Always check on [www.xlpower-rc.com](http://www.xlpower-rc.com) for a more recent version of this manual

Pages	Content
3	safety rules
4	tools required for assembly
5	R/C equipment required to complete
6	how to read this manual
7	motor pinion teeth choice
8-28	main frame assembly
29-38	head assembly
39-54	tail assembly
55	ESC
56- 59	canopy installation
60	battery installation
61	Gyro installation
62	Alu main blade holder set (optional)
63	Metal tail blade holder(optional)



# Always follow these rules for safety



Operate the helicopter in open areas with no people nearby.

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.

When the R/C system batteries get weaker, the operational range of the R/C system decreases.

Note that you may lose control of your model when operating it under such conditions.

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 10 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!

While adjusting, stand at least 10 meters

Novice R/C helicopter pilots should always seek advice from experienced pilots to obtain hints with assembly and for pre-flight adjustments.

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

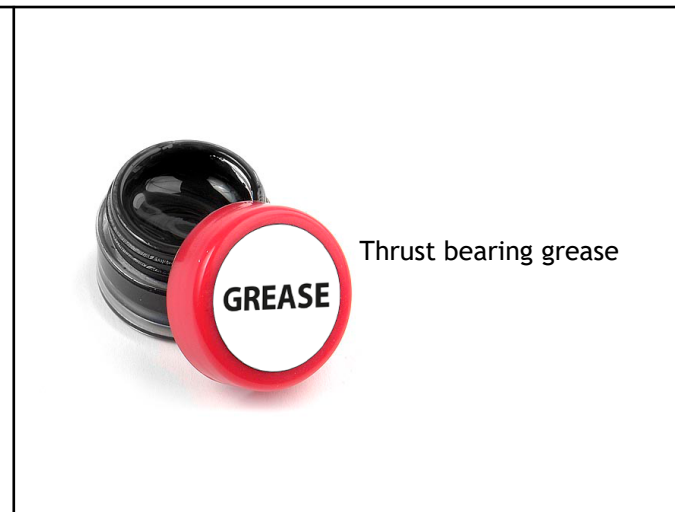
In the beginning, novice R/C helicopter pilots should always be assisted by an experienced pilot and never fly alone!

XLPOWER

# Tools required for assembly



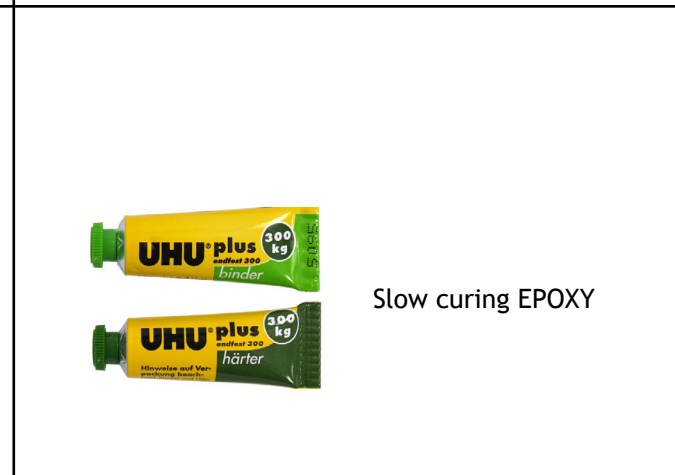
Hexagon screw drivers :  
1,5mm  
2,0mm  
two 2,5mm (spindle)



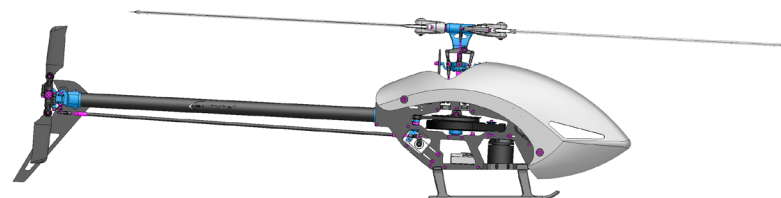
Thrust bearing grease



where indicated use  
Thread lock MEDIUM



Slow curing EPOXY

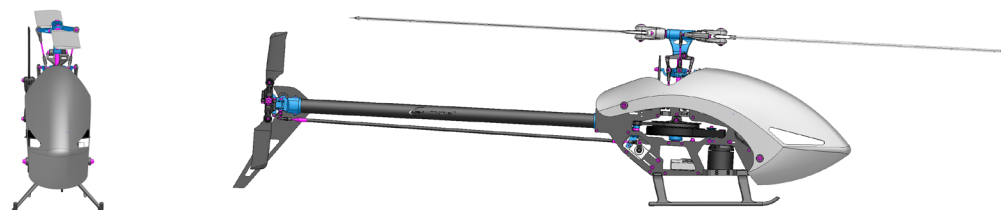


# Tools required for assembly



<p>Swashplate servos supported: all micro servos (qnty. 3)</p>	
<p>Tail servo supported: all micro and mini servos (qnty. 1)</p>	
<p>Main blades: standard full carbon blades 360-380mm</p>	

<p>Battery pack: LiPo 6s 1800mAh</p>	
<p>Trasmitter Receiver/satellite Flybarless unit</p>	
<p>Motor:3215 motor or other 5mm shaft motor arround 1000kv ESC:50A or more</p>	



# How to read this manual



1

Box and bag where you can find washers, bearings, screws and parts

Instructions Manual

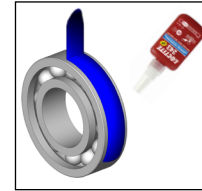
**Bag 1 + Bag 13**  
where I can find the parts

- Hex screw M2x4 ART. MSH41141
- Washer 2,1x5,5x1 ART. MSH41144
- Guide pulley motor Protos 380 ART. MSH41184 PRE-ASSEMBLED
- Guide pulley support Protos 380 - Front side - ART. MSH41185
- Ball bearing BB 3,5x9x4 ART. MSH41186
- Motor mount Protos 380 ART. MSH41183
- Hex screw M2,5x5 ART. MSH41123

9

Instructions Manual PRÔTOS

3



Apply a thin layer of threadlock on the external part of the ball bearing

4



Pay attention to the instruction step behind this icon

2

- Ball bearing 2x5x2,5 ART. MSH41086 ART. MSH41088
- Washout arm ART. MSH41099 ART. MSH41098
- BB spacer ART. MSH41098
- 2x12 pin ART. MSH41098

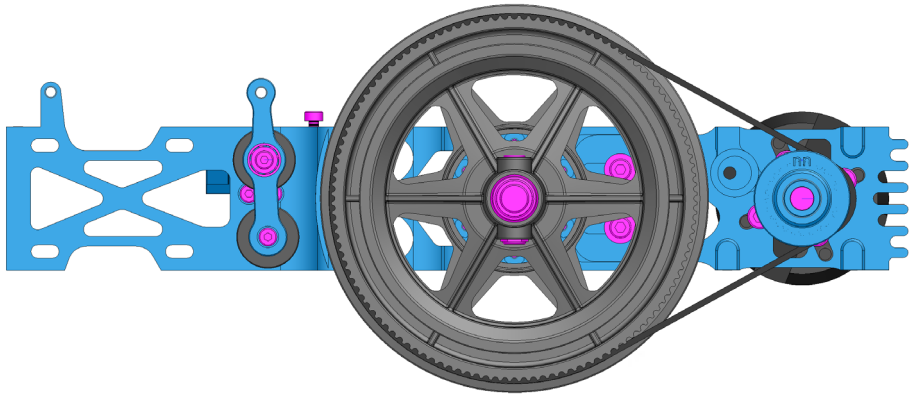
MSH spare part code

5

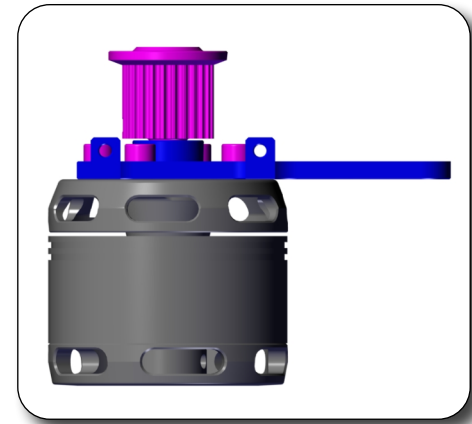
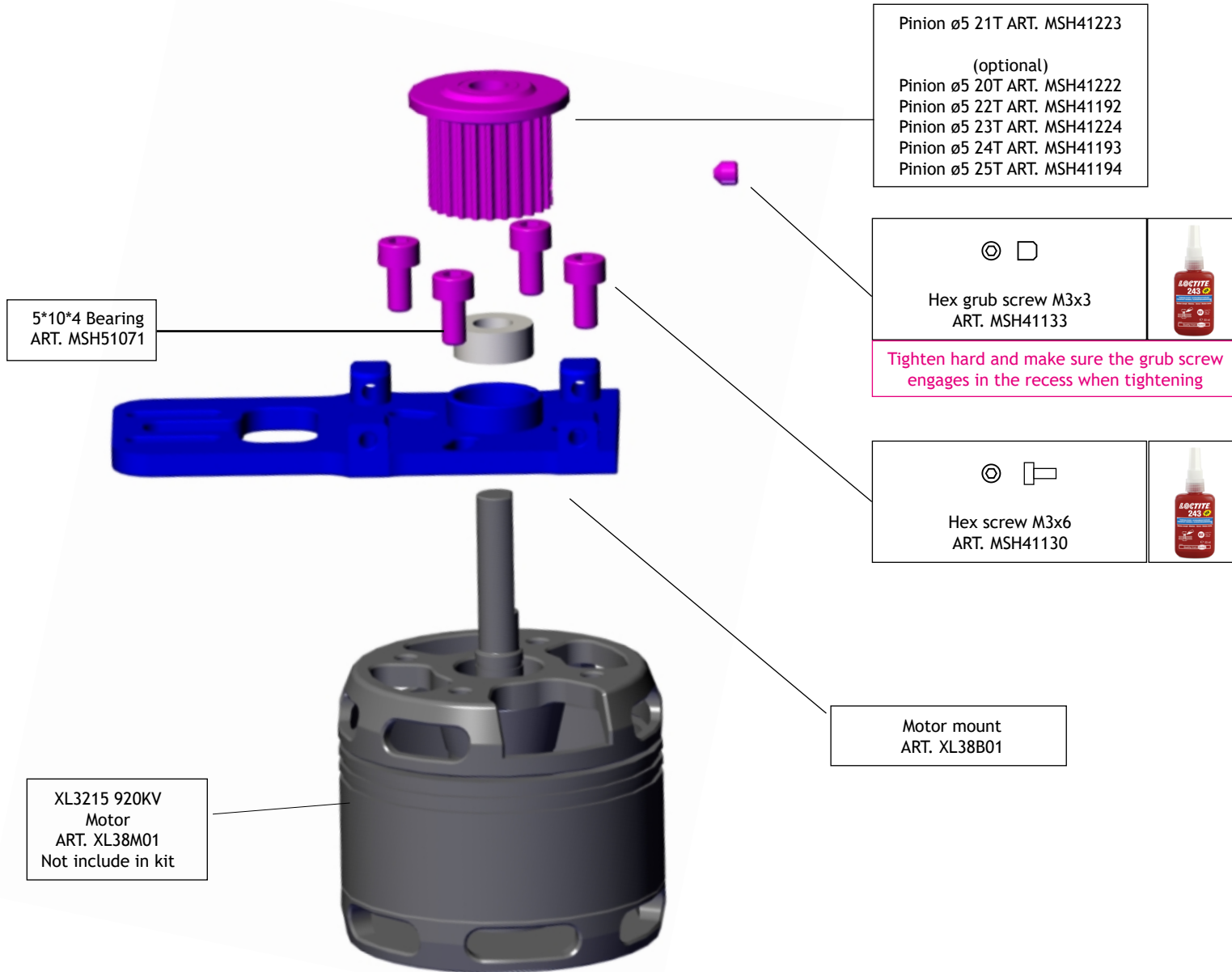
Hex screw M3x6 ART. MSH71108

Ball bearing 12x24x6 ART. MSH71155

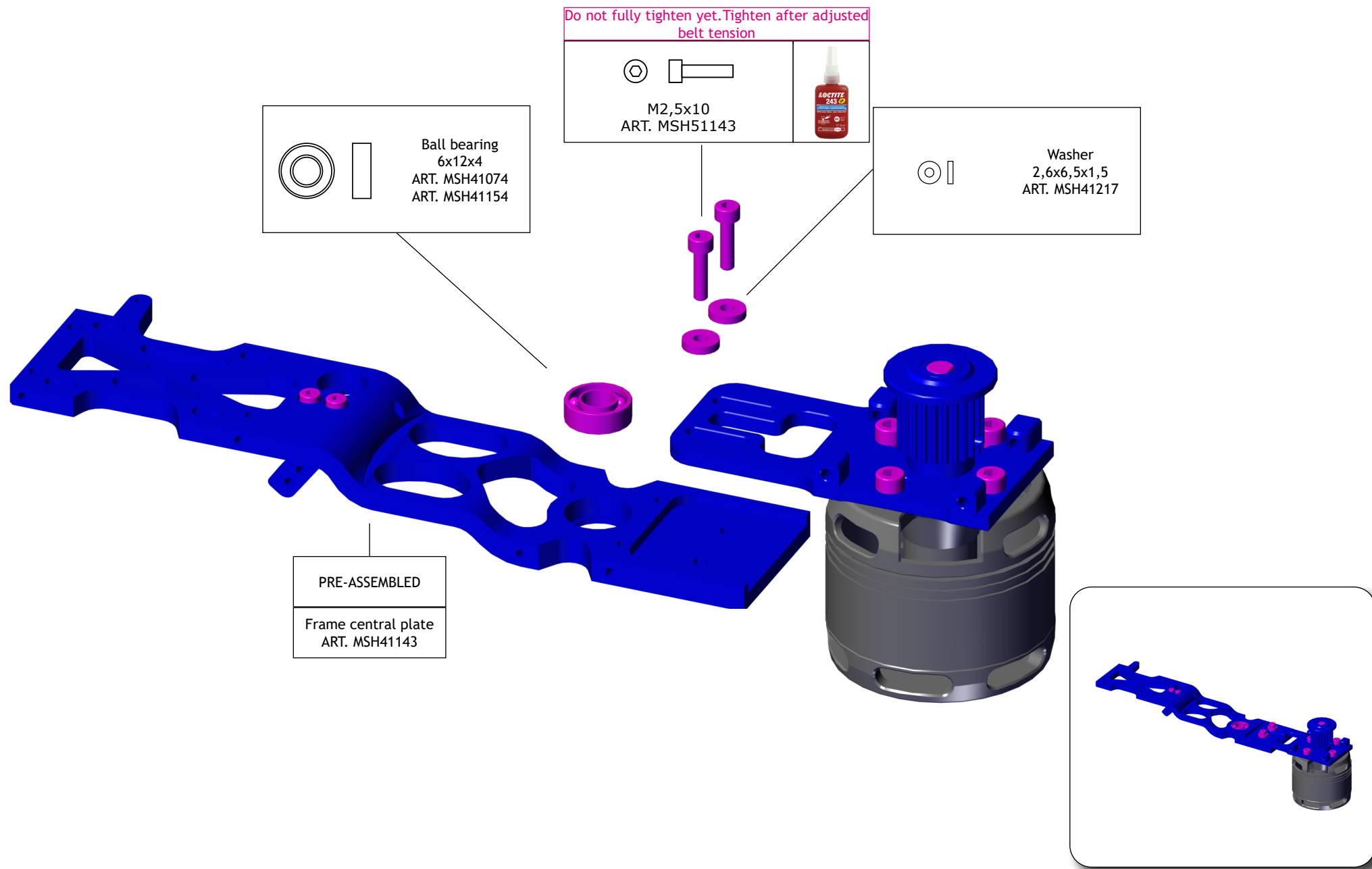
# Motor pinion teeth choice



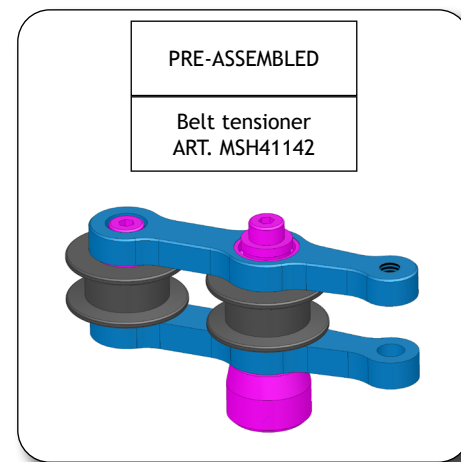
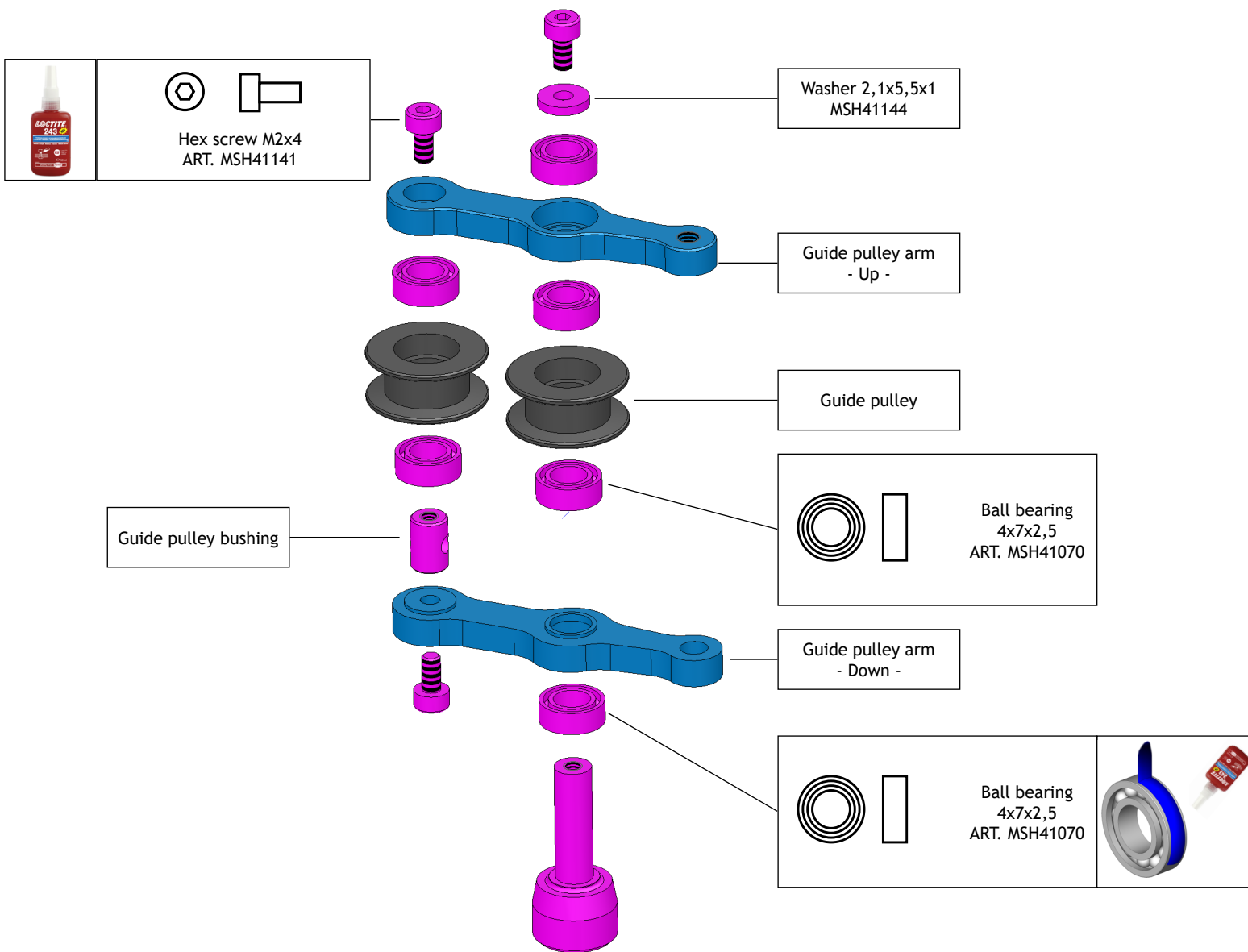
	Stock	Sport	Hard 3D	Extreme 3D
920 Kv ø 5mm	21T	20-22T	23-24T	25T

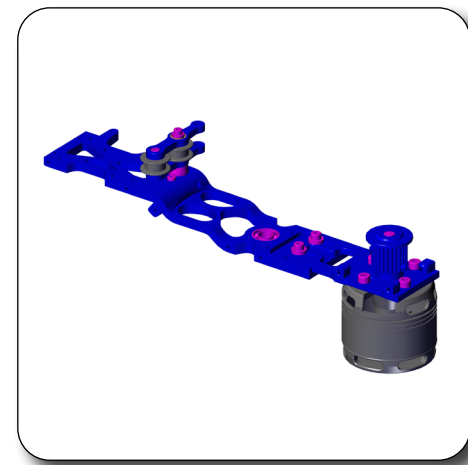
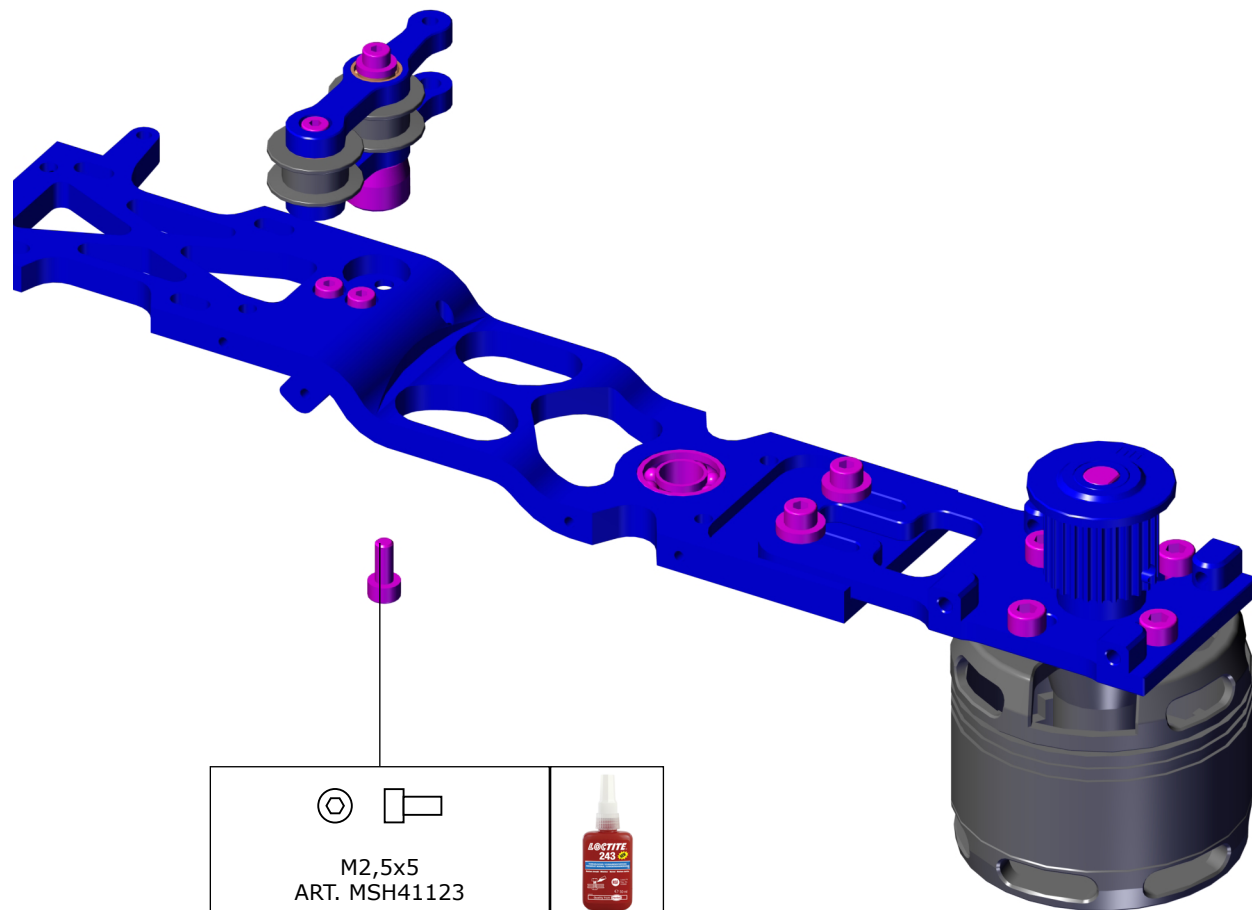






where I can find the parts





where I can find the parts

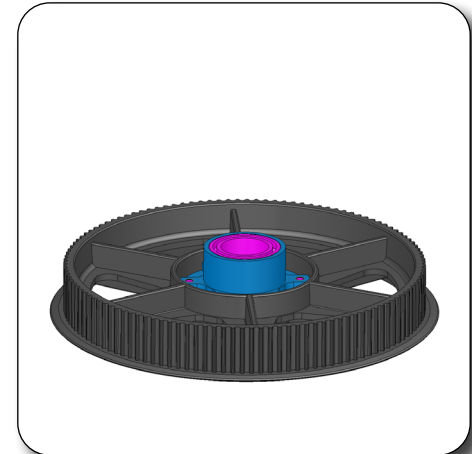
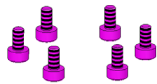
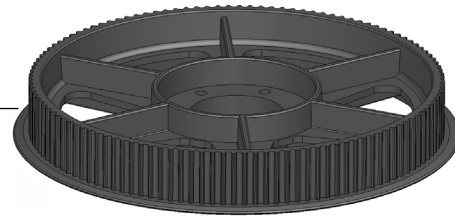
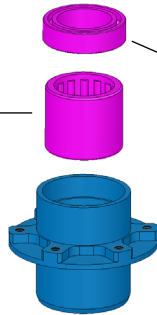
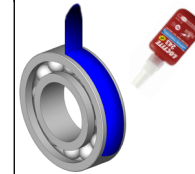
Oneway Bearing HF1012  
(PRE-ASSEMBLED)  
ART. XL52A15

Oneway hub  
ART. XL38B03

Main pulley  
ART. MSH41146

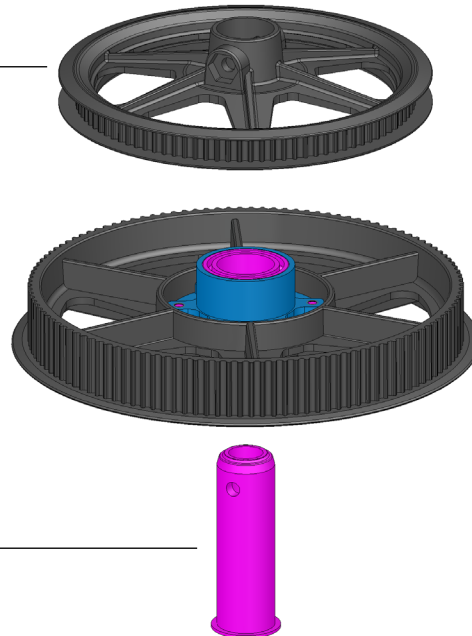
Hex screw M2x4  
ART. MSH41141

Ball bearing  
(PRE-ASSEMBLED)  
10x15x4

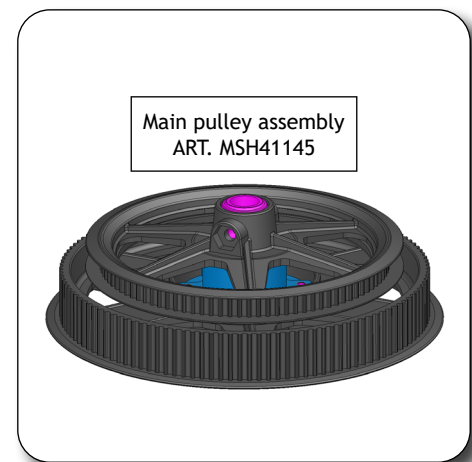


Autorotation pulley  
ART. MSH41147

Oneway shaft  
ART. XL38B04





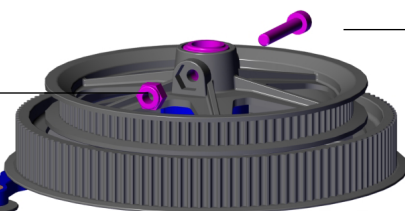
Main pulley assembly  
ART. MSH41145


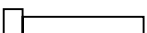


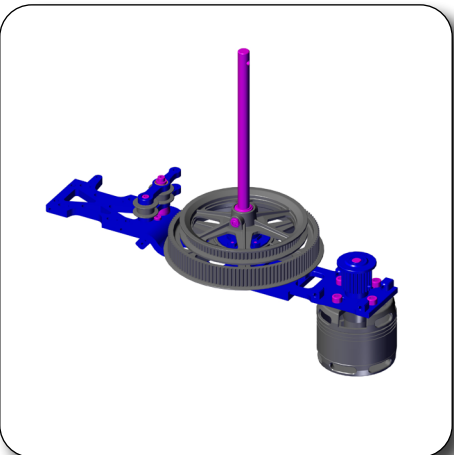
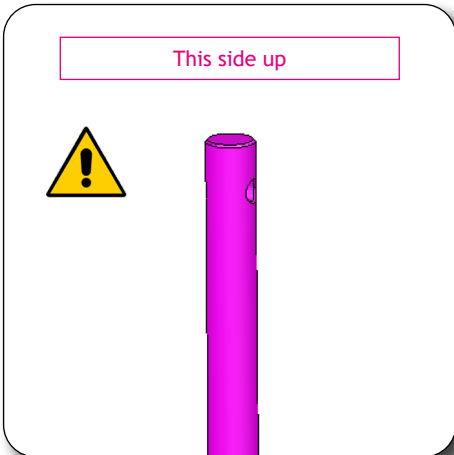
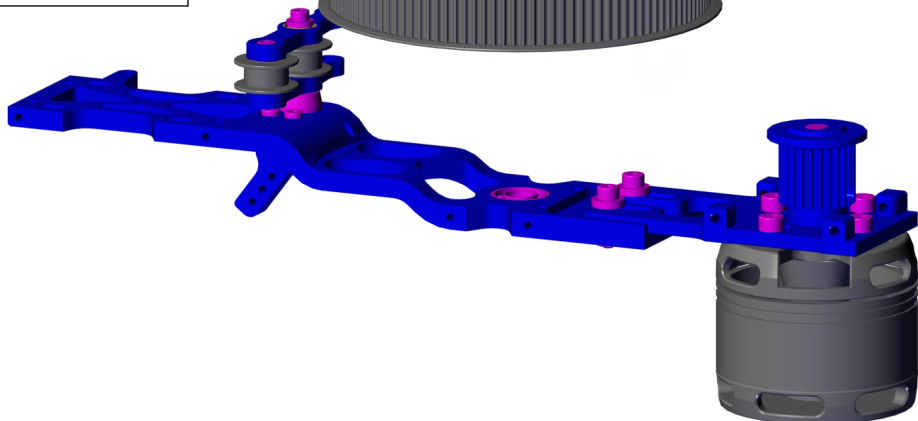
Main shaft Protos 380  
ART.MSH41148

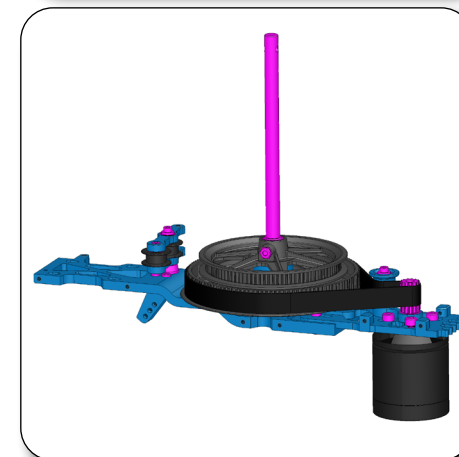
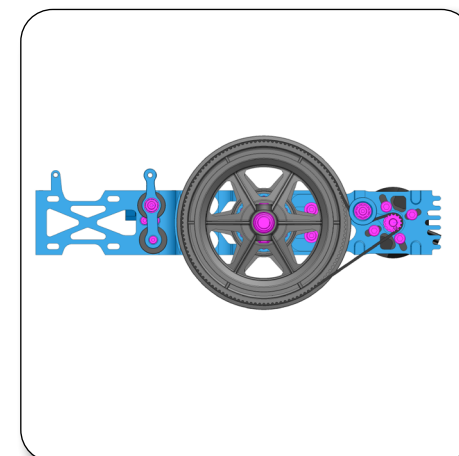
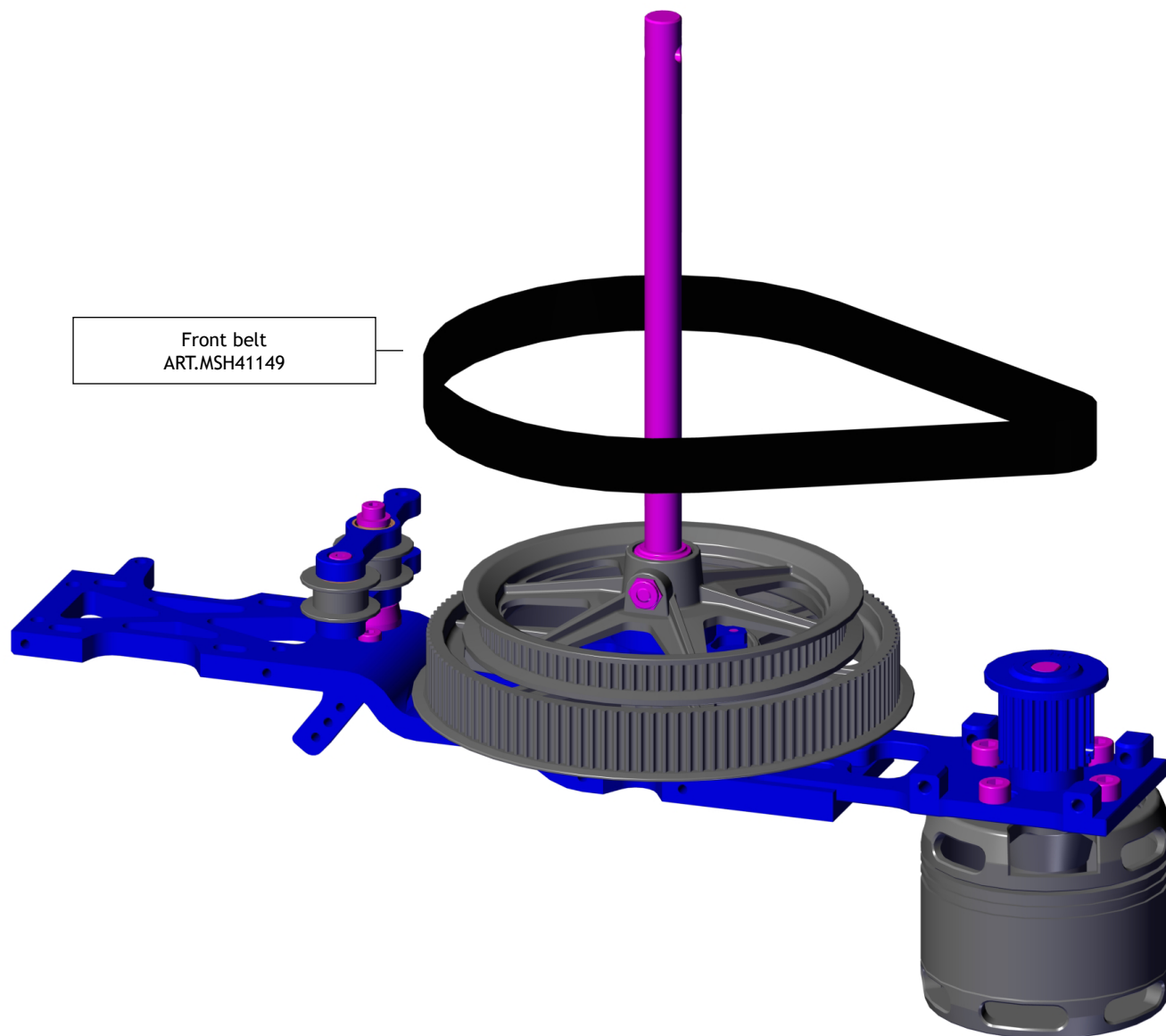


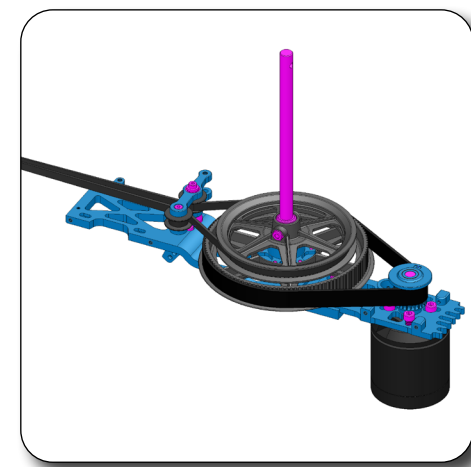
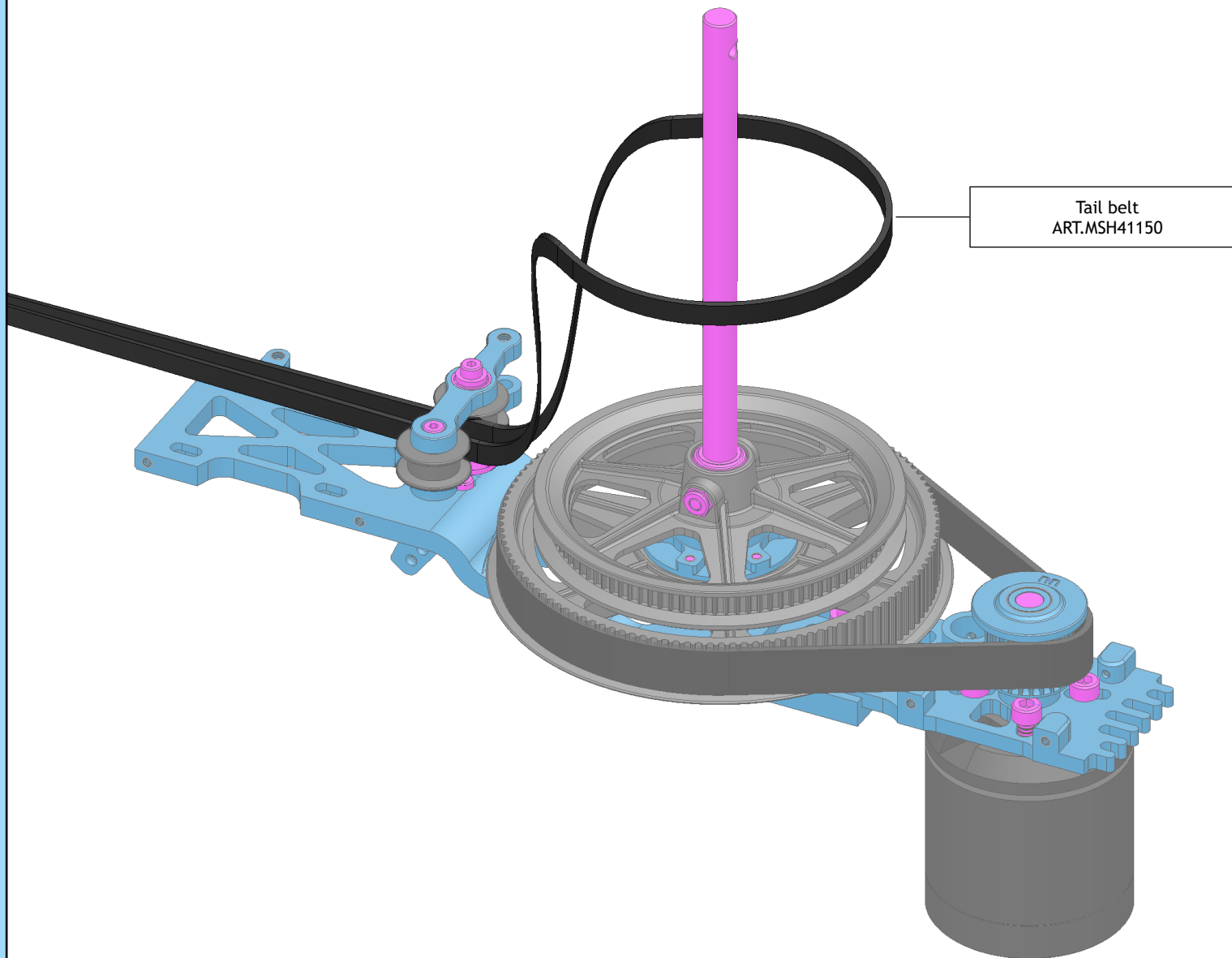
   
M2,5 Nut  
ART. MSH51137



   
M2,5x16  
ART. MSH51145









**!** **L≠R**

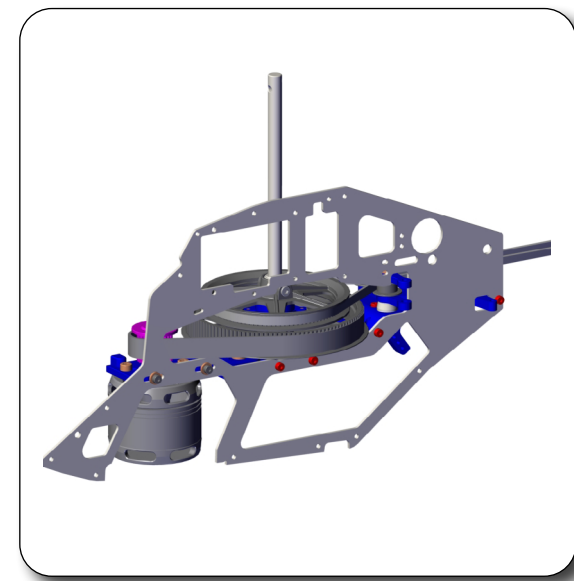
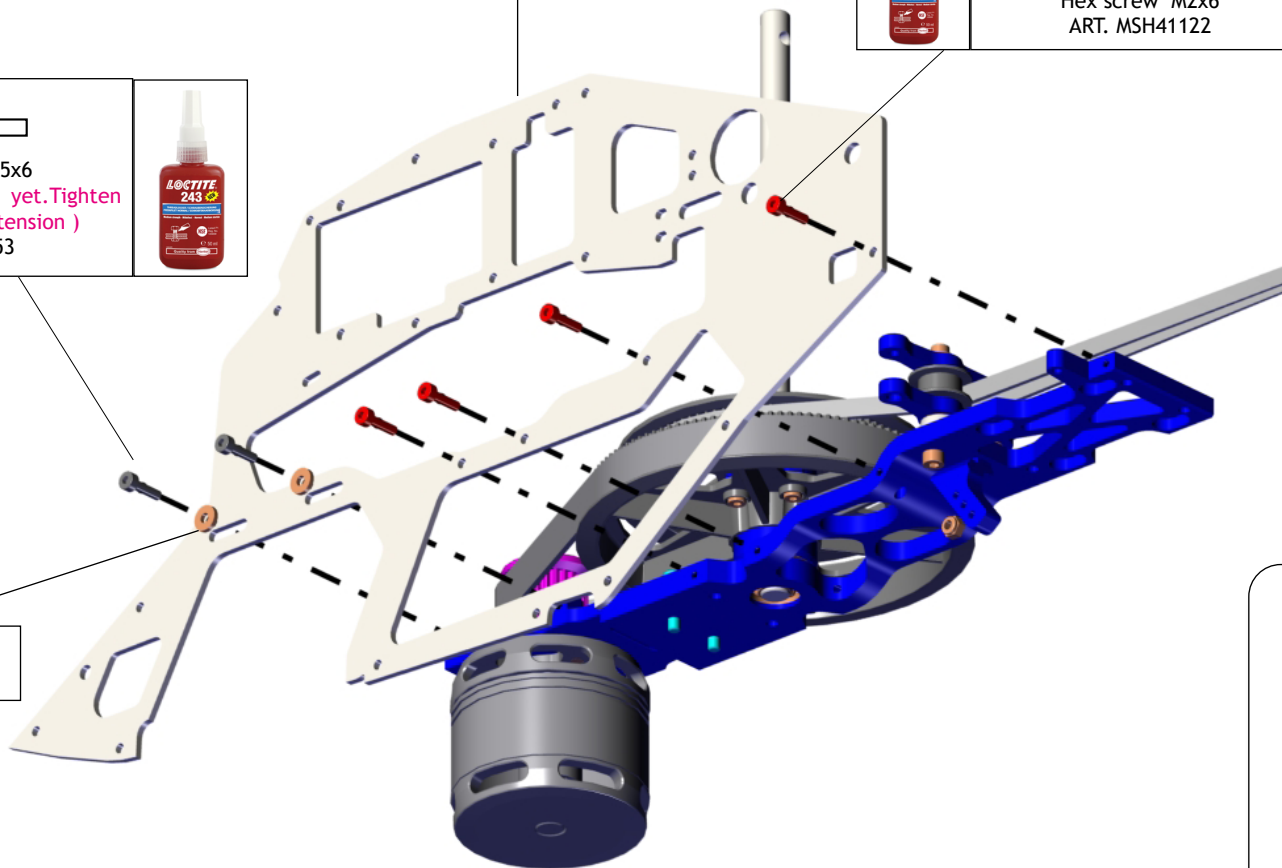
Carbon main frame Protos 380 V2  
ART. MSH41151-1

  
Hex screw M2x6  
ART. MSH41122

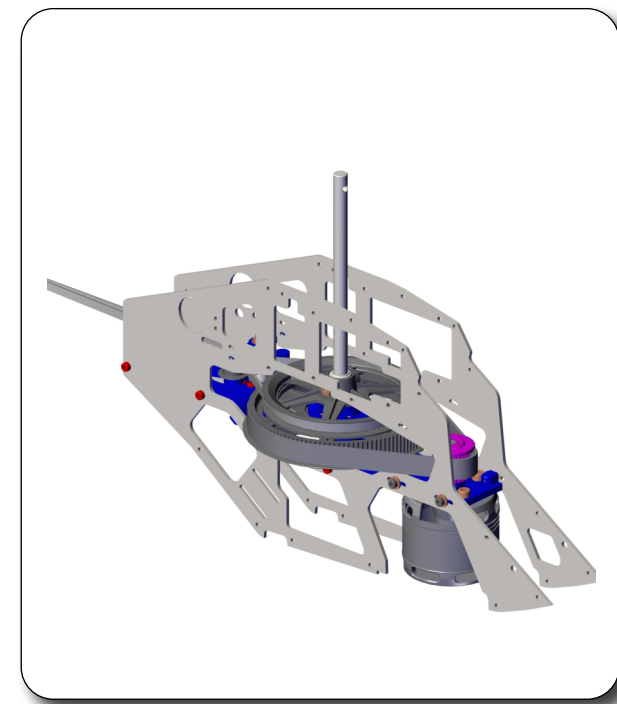
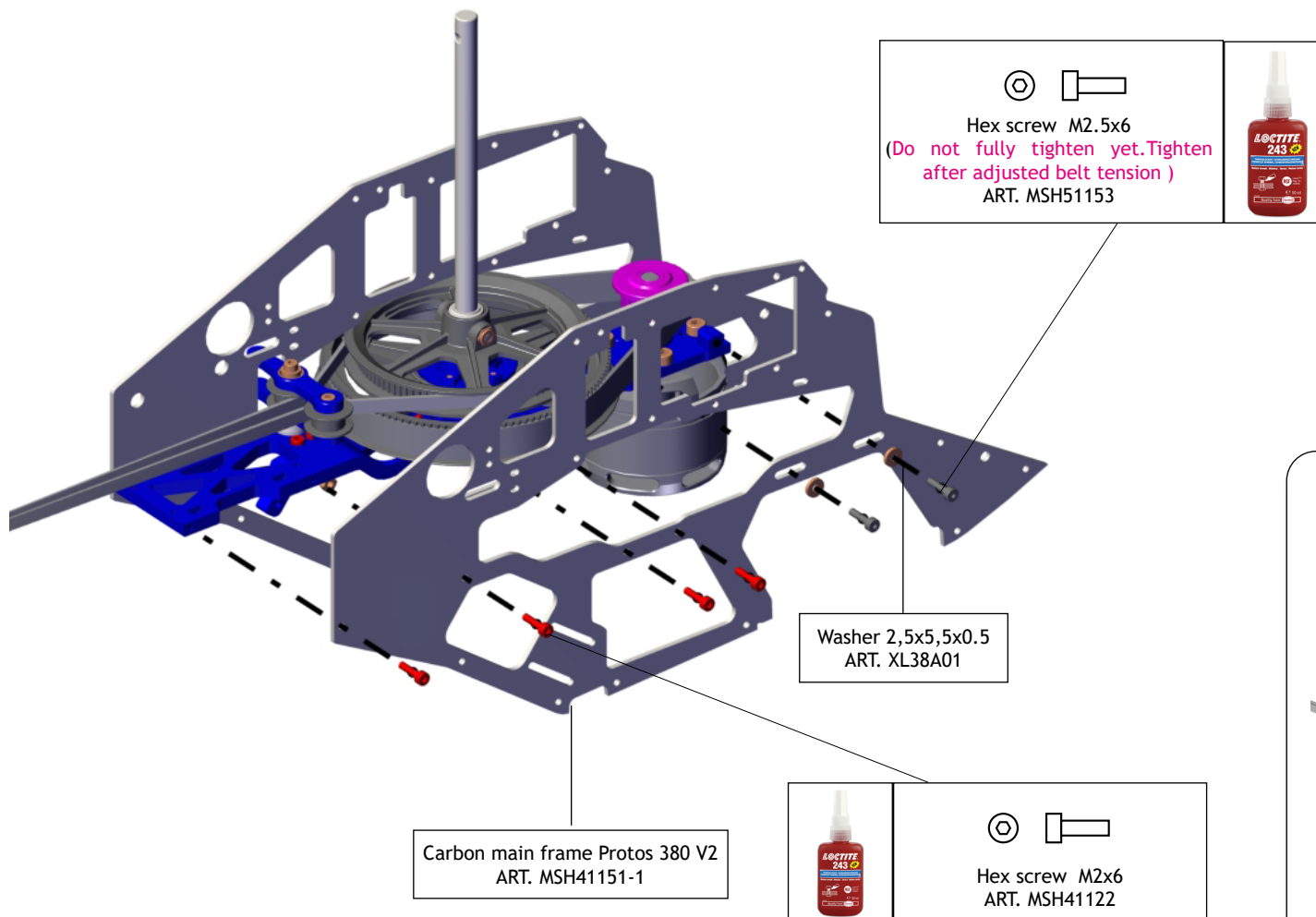
  
Hex screw M2.5x6  
(Do not fully tighten yet. Tighten after adjusted belt tension )  
ART. MSH51153

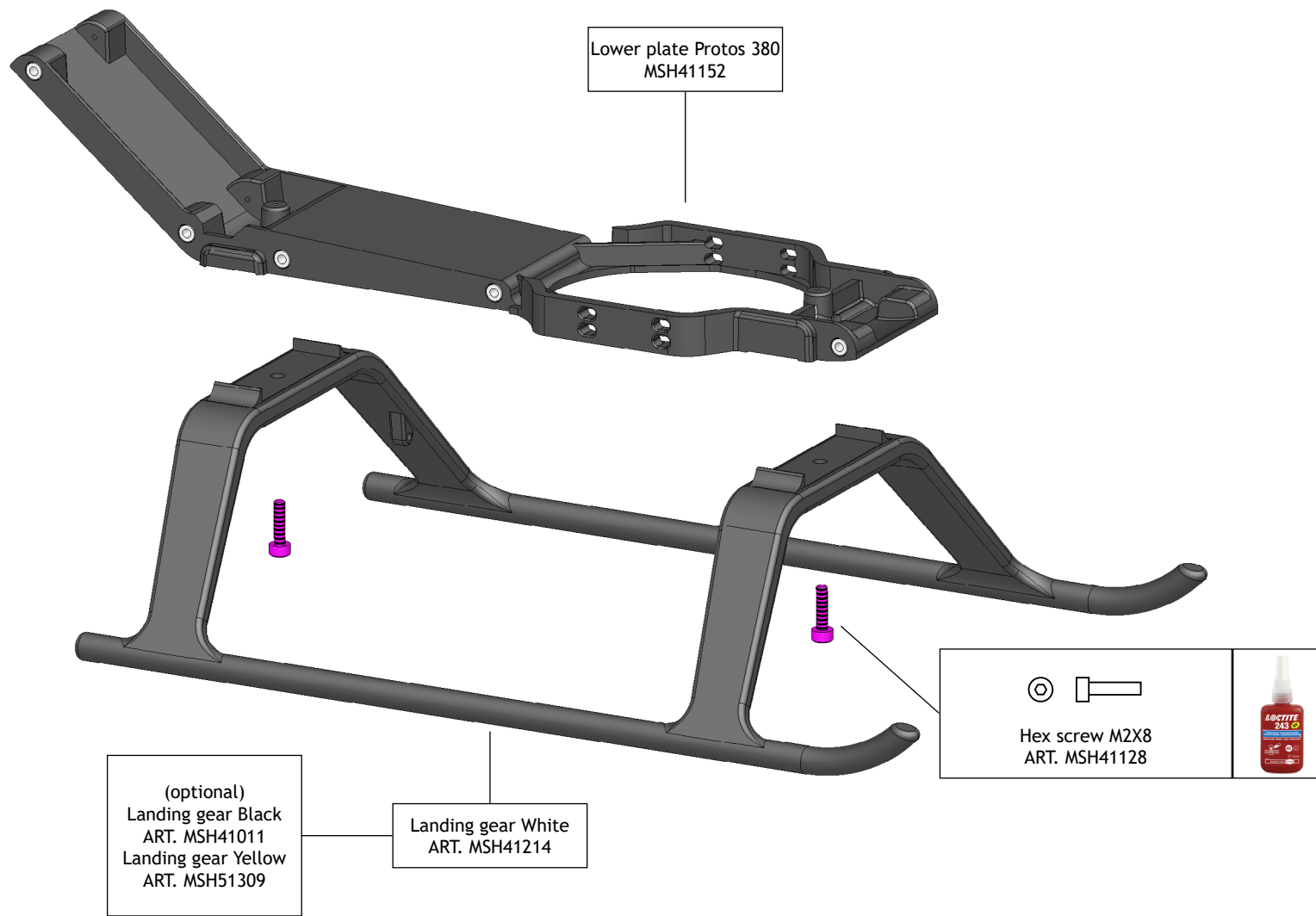


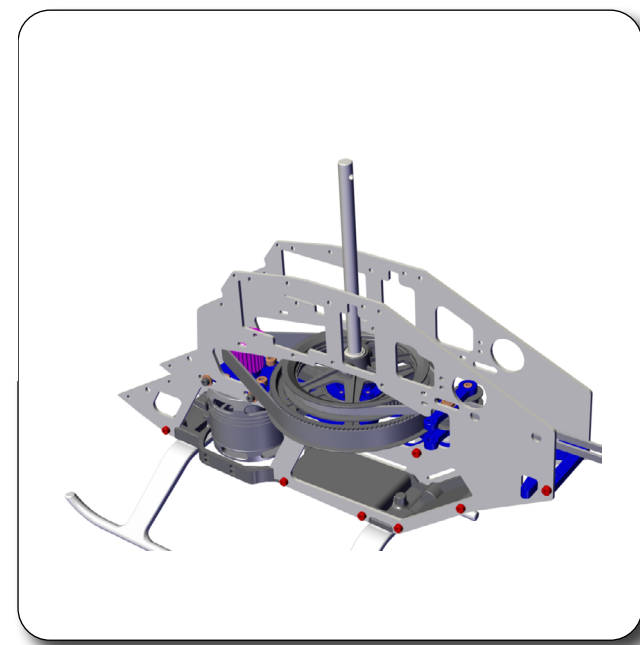
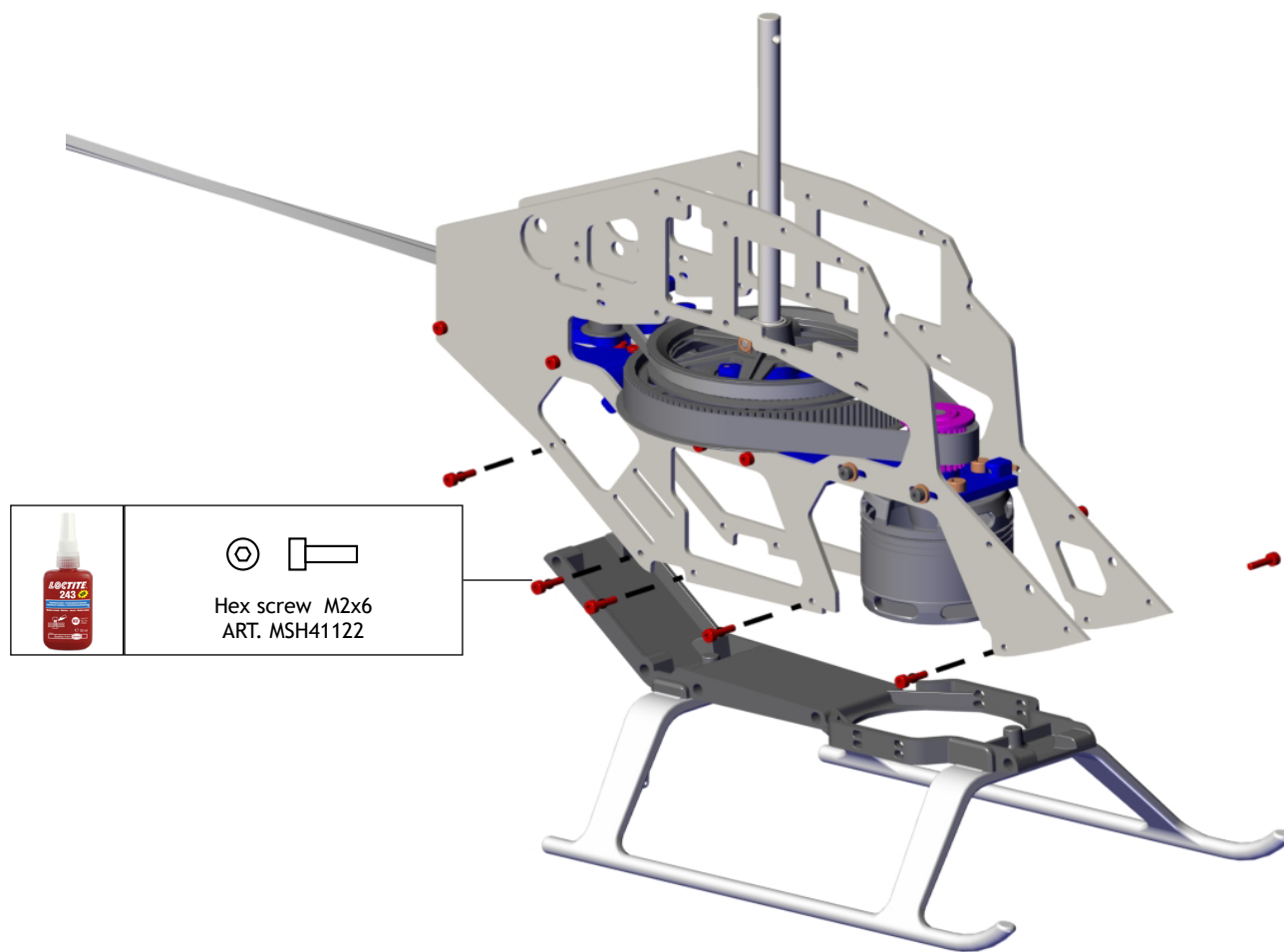
Washer 2,5x5,5x0.5  
ART. XL38A01




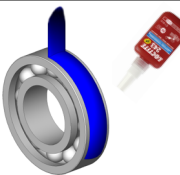


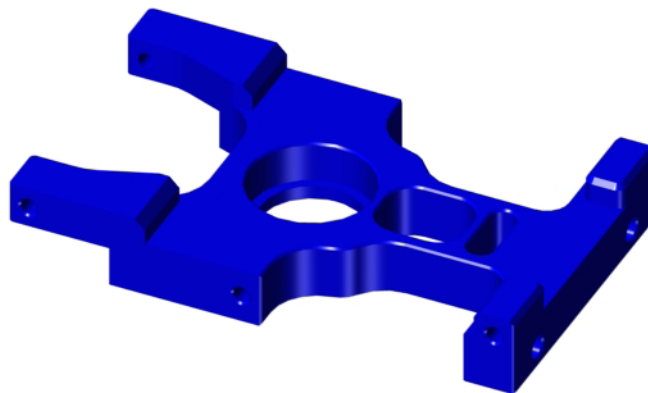
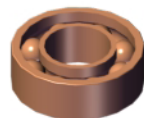




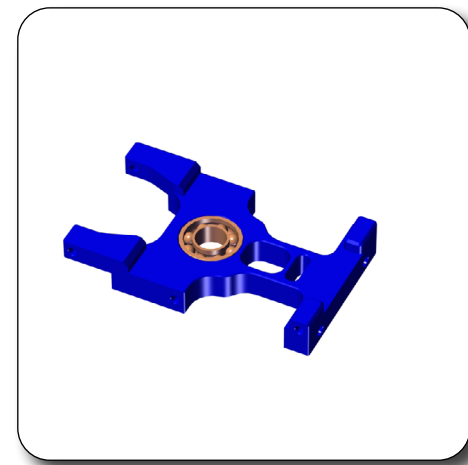


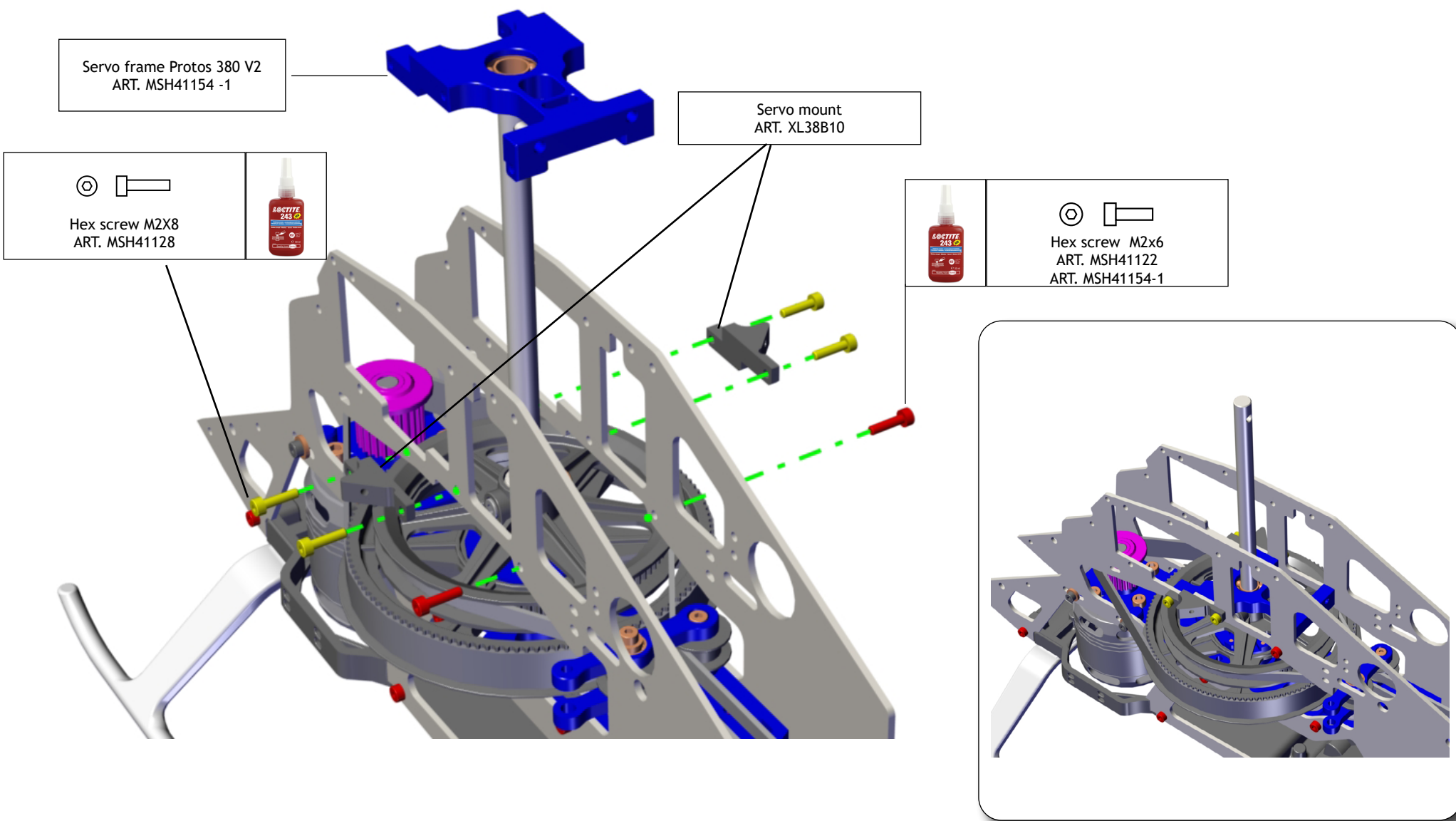
2X

	<p>Ball bearing 6x12x4 ART. MSH41074 ART. MSH41154-1</p>	
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Servo frame Protos 380 V2  
ART. MSH41154 -1



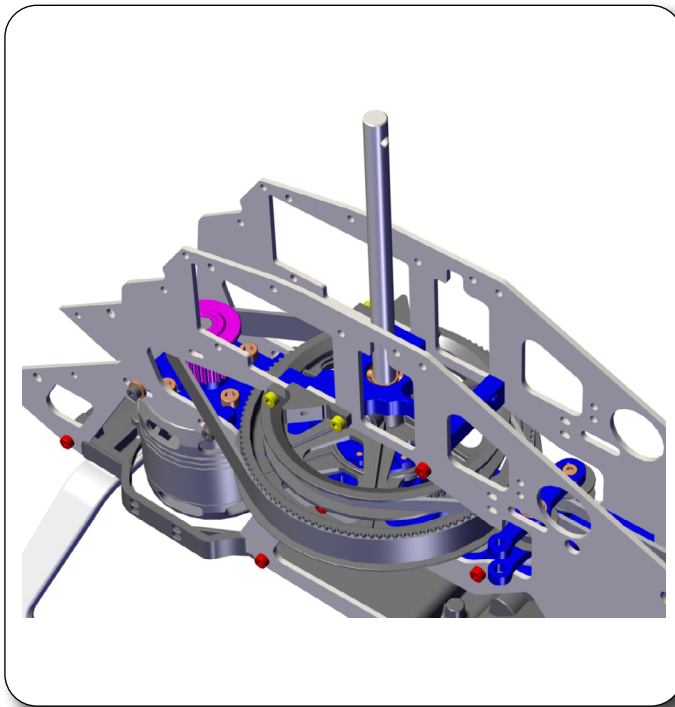


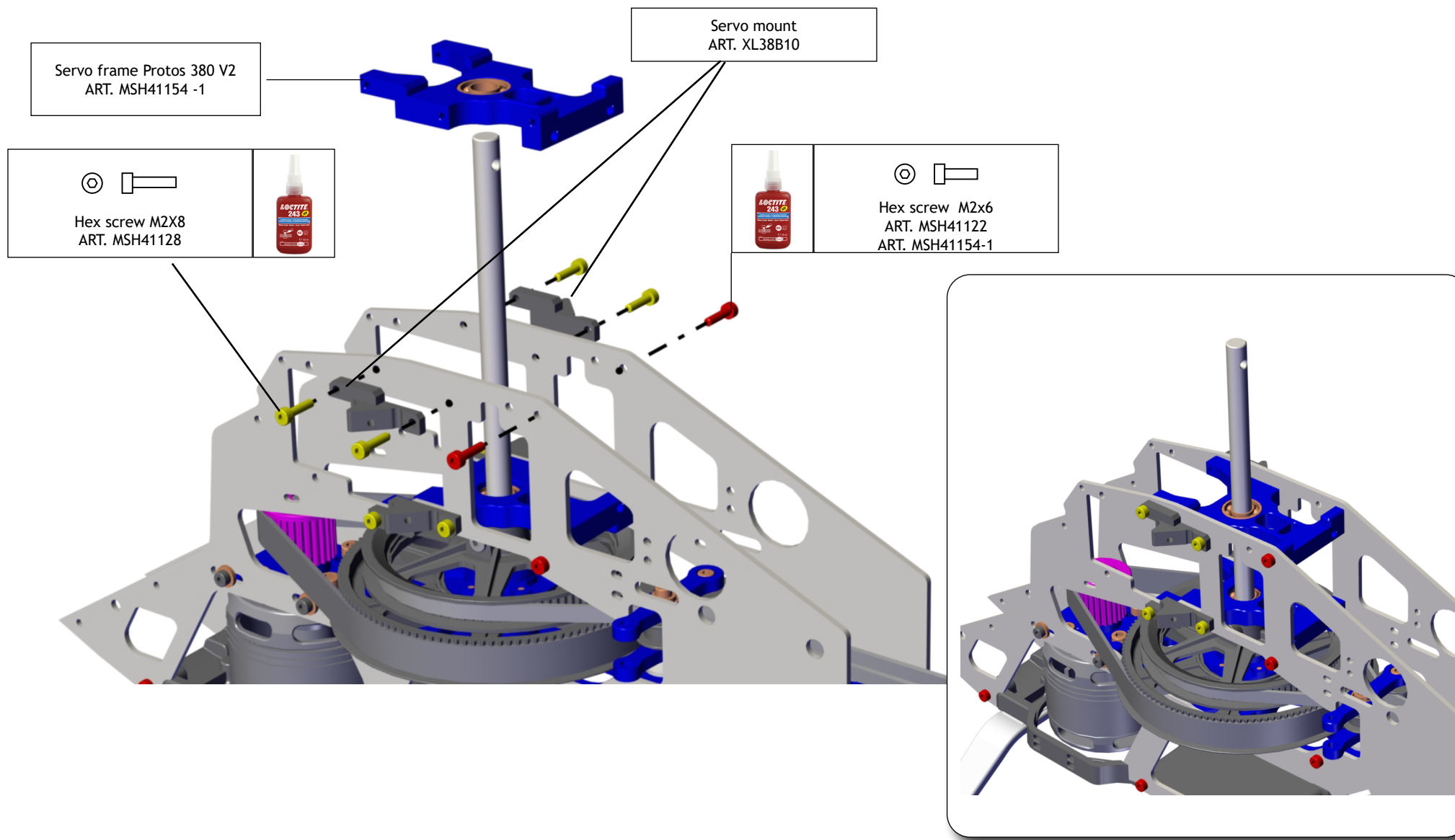
Servo frame Protos 380 V2  
ART. MSH41154 -1

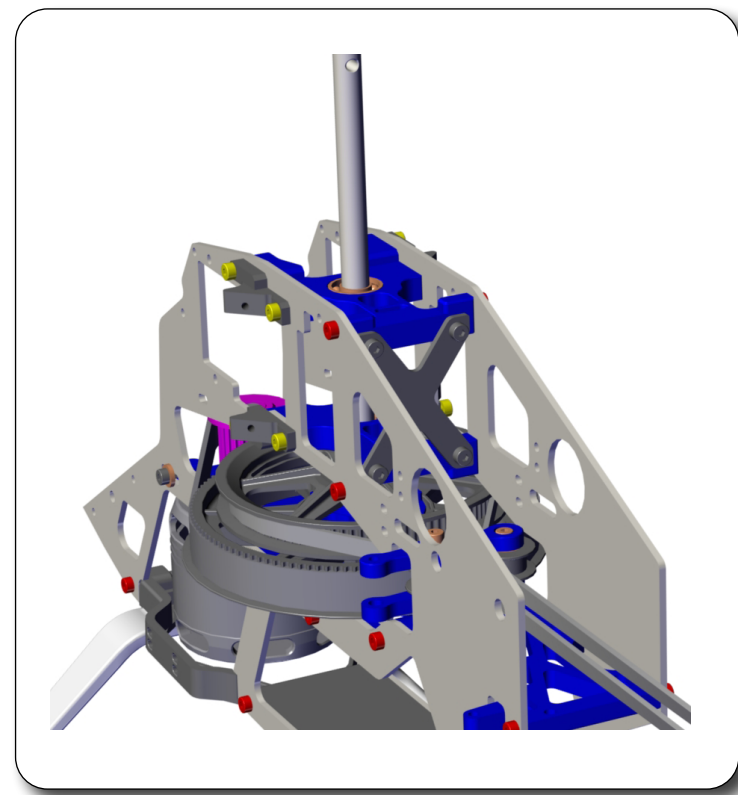
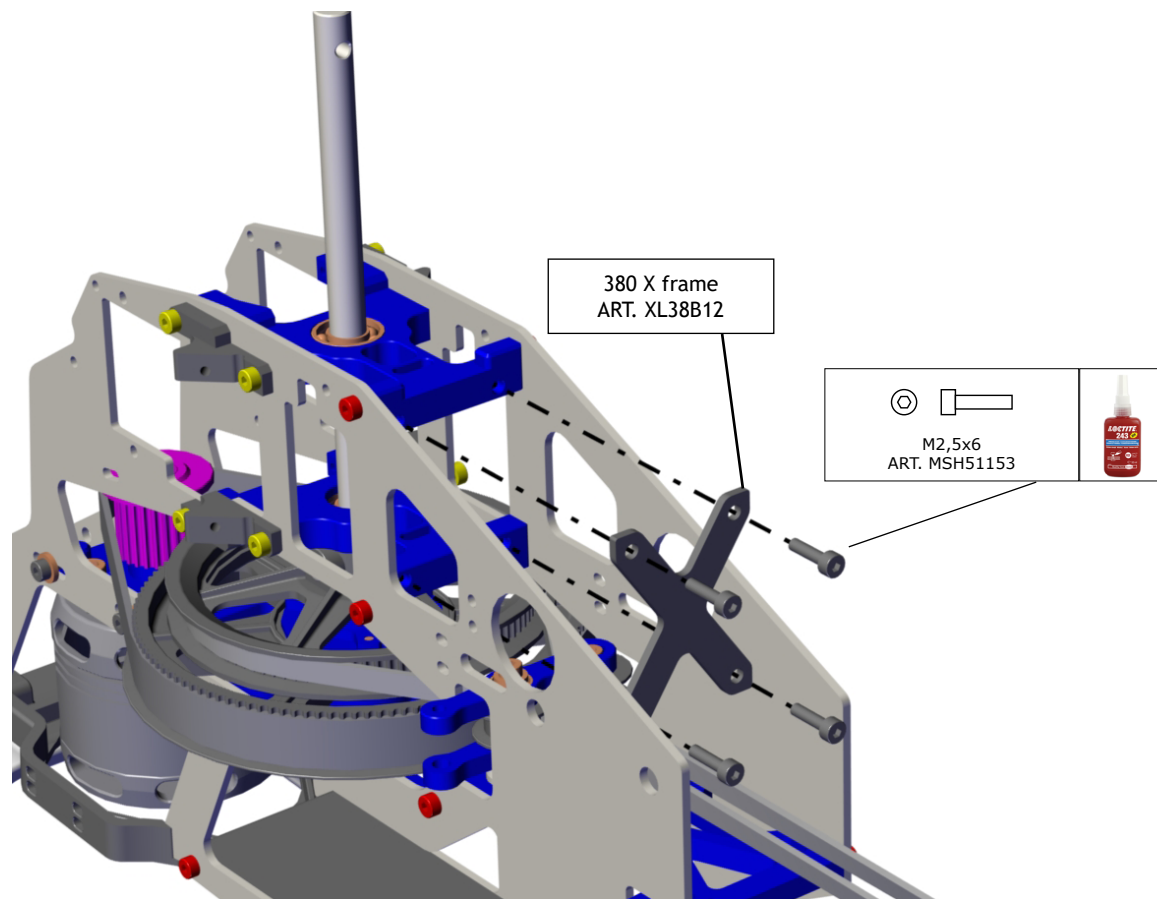
Servo mount  
ART. XL38B10

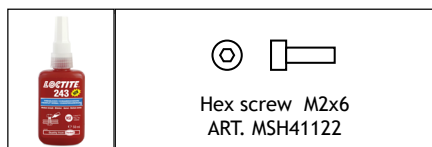
⊙ ⊔  
Hex screw M2X8  
ART. MSH41128

⊙ ⊔  
Hex screw M2x6  
ART. MSH41122  
ART. MSH41154-1

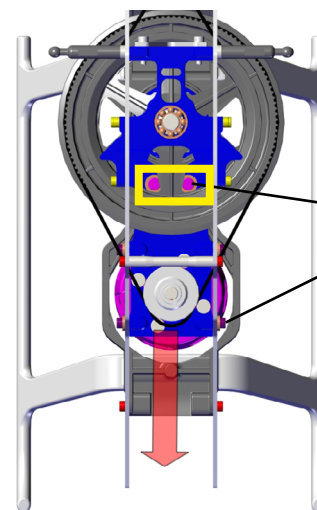
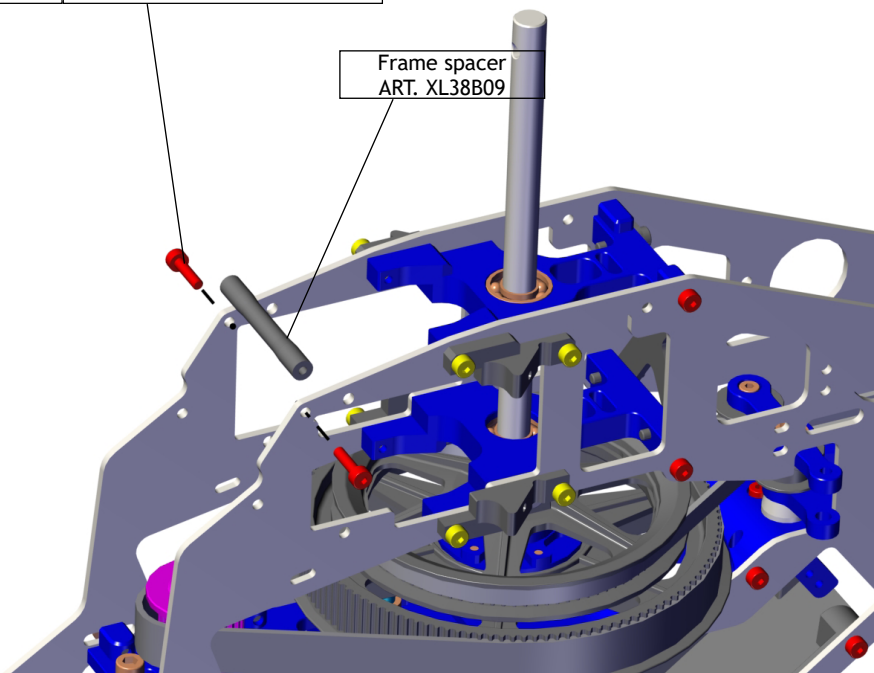




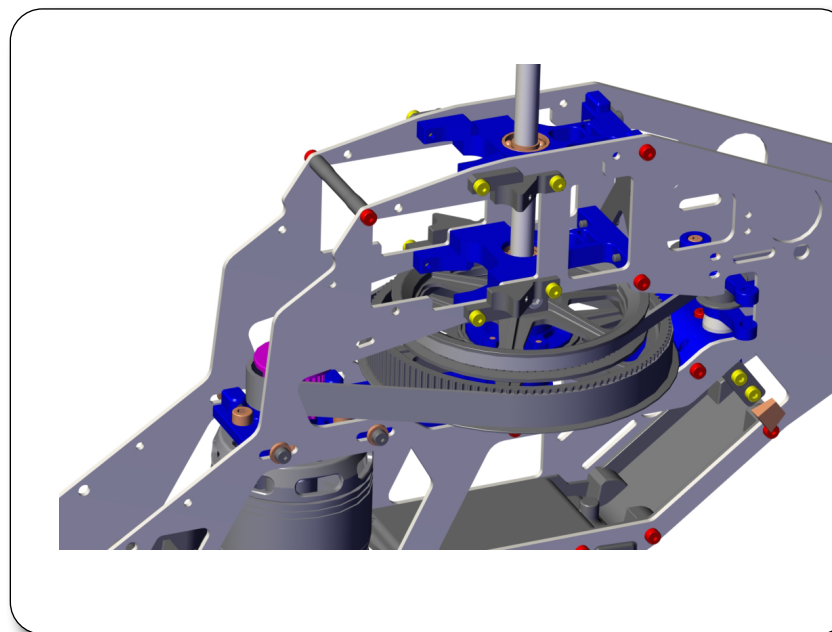




Frame spacer  
ART. XL38B09



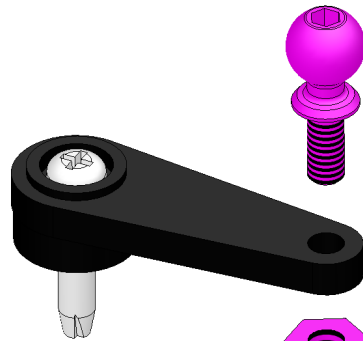
Pull the motor mount and fully tighten M2.5\*6 and M2.5\*10 screw









Servo arm 23T  
ART.XL38B08  
NOT INCLUDED in kit

Optional  
25T for GDW and KST  
ART.XL38B08-5



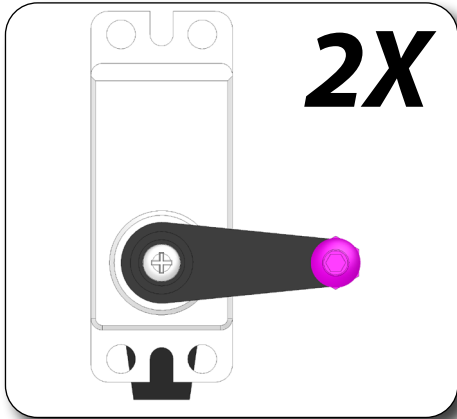
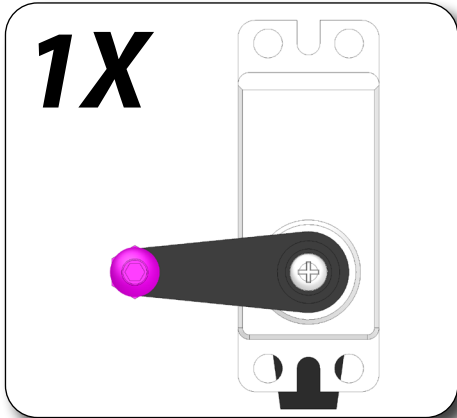
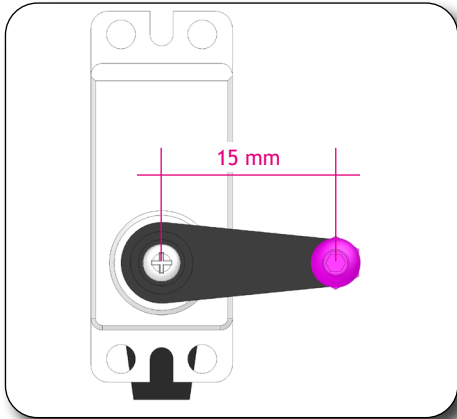
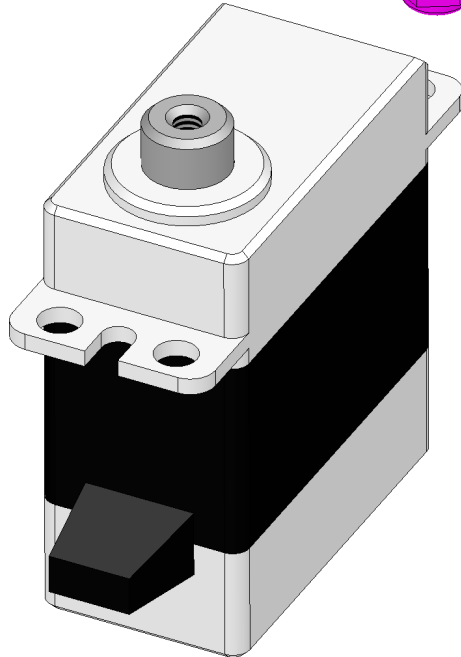
   
Ball M2x4.8  
ART. MSH41009

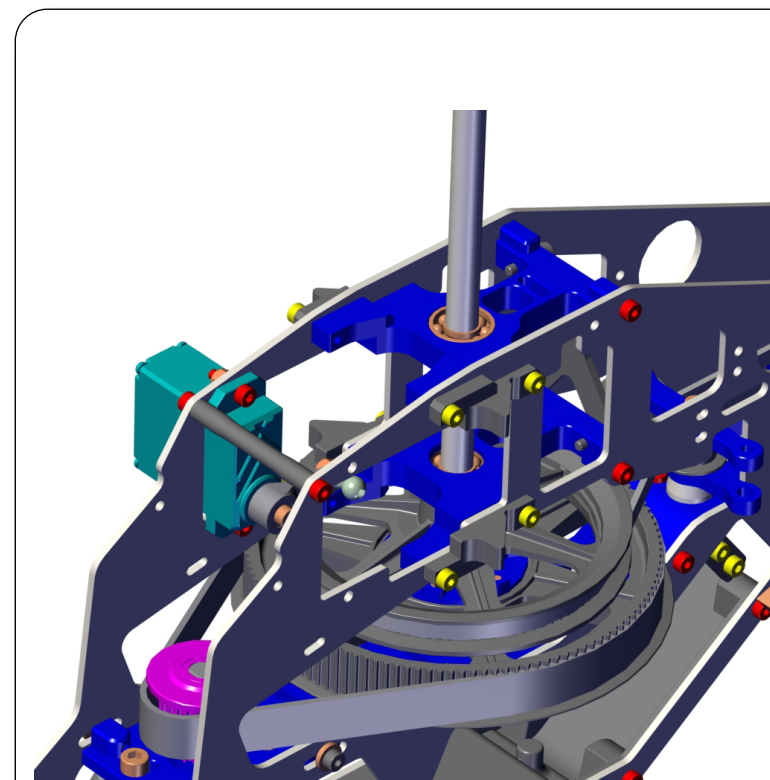
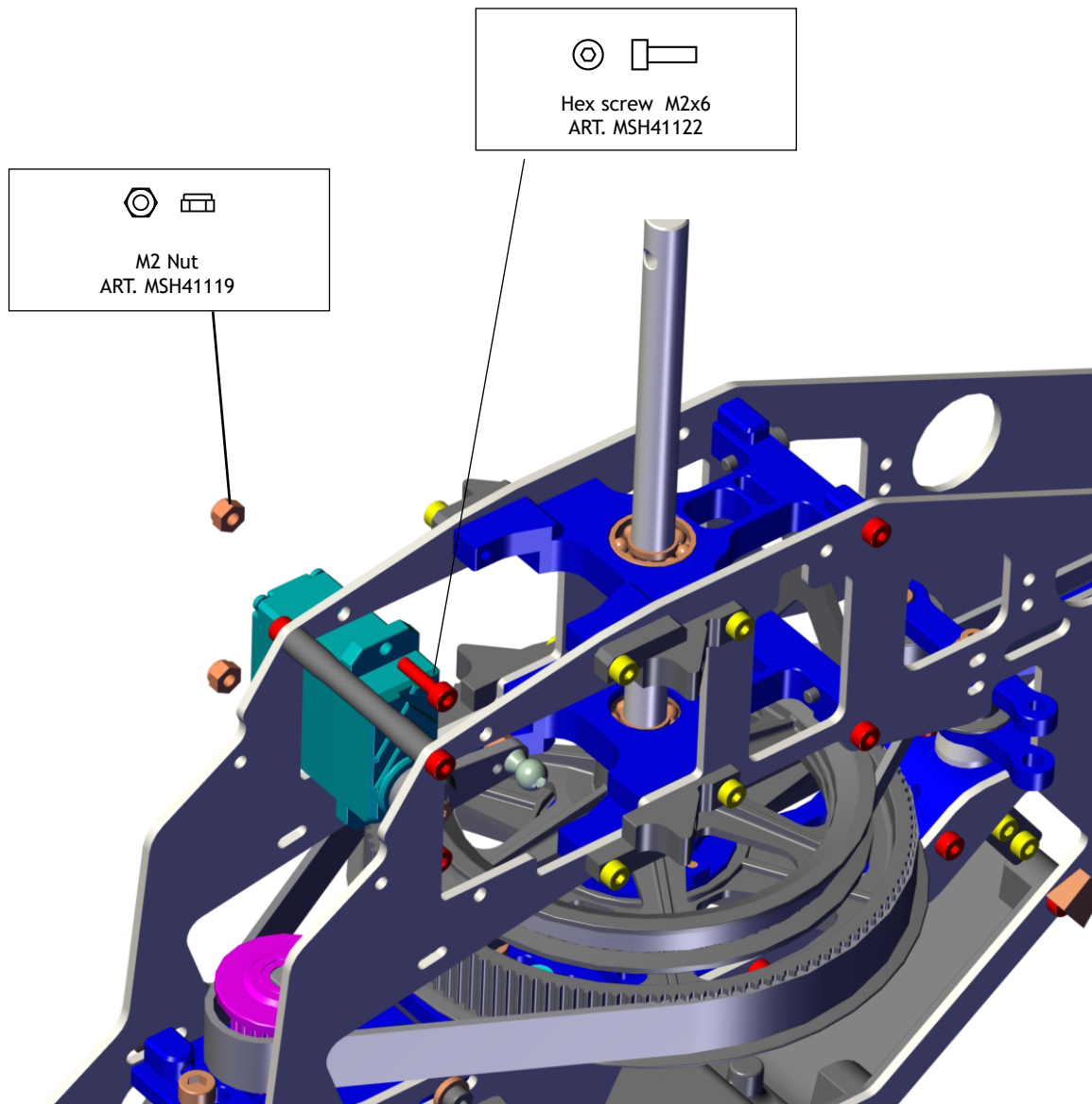


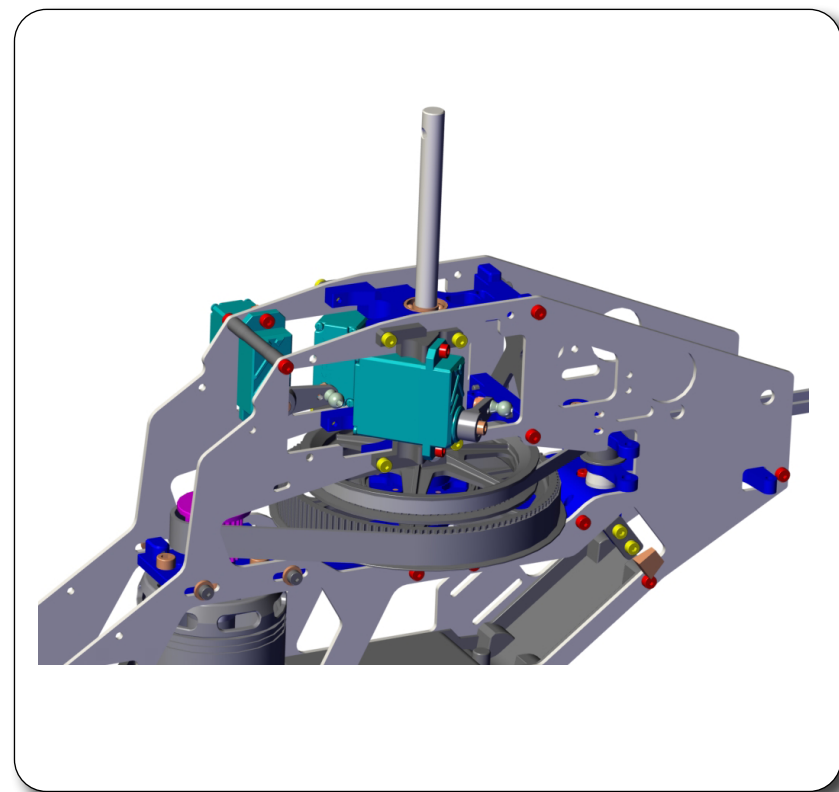
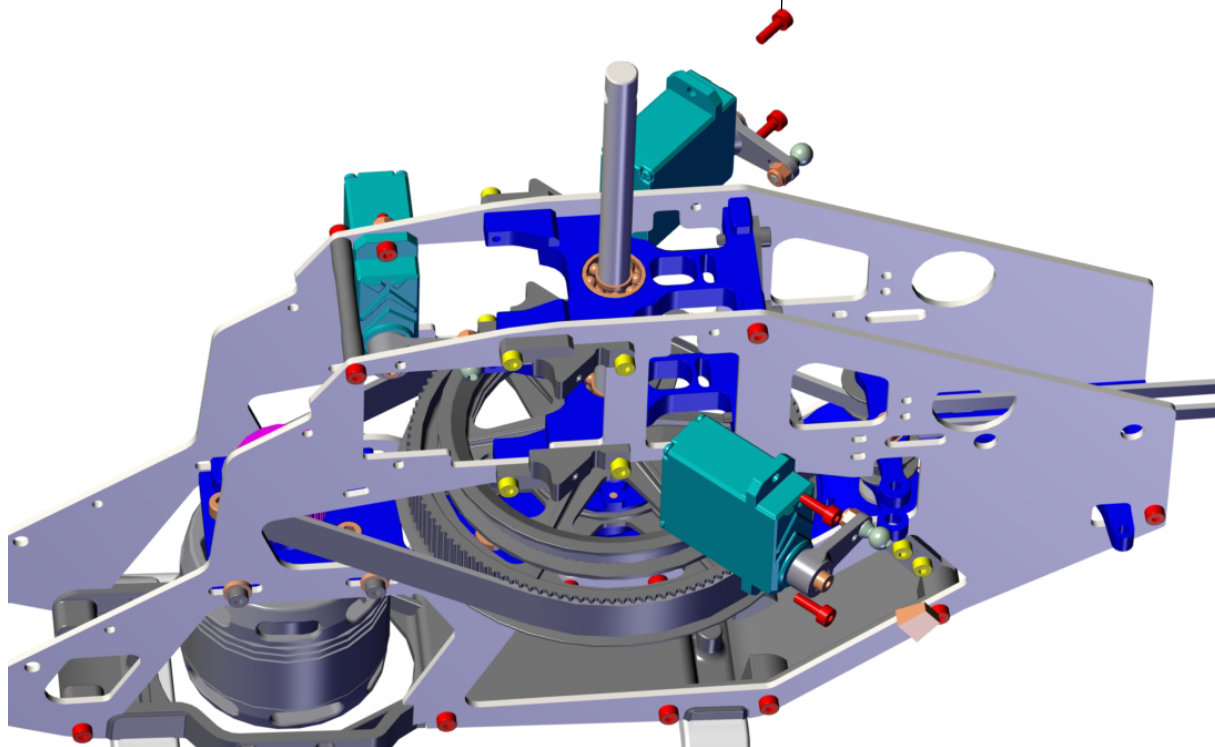
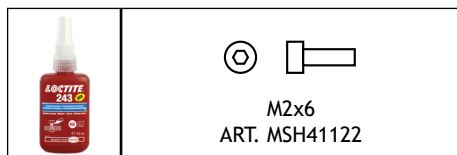
   
M2 Nut  
ART. MSH41119



NOT INCLUDED



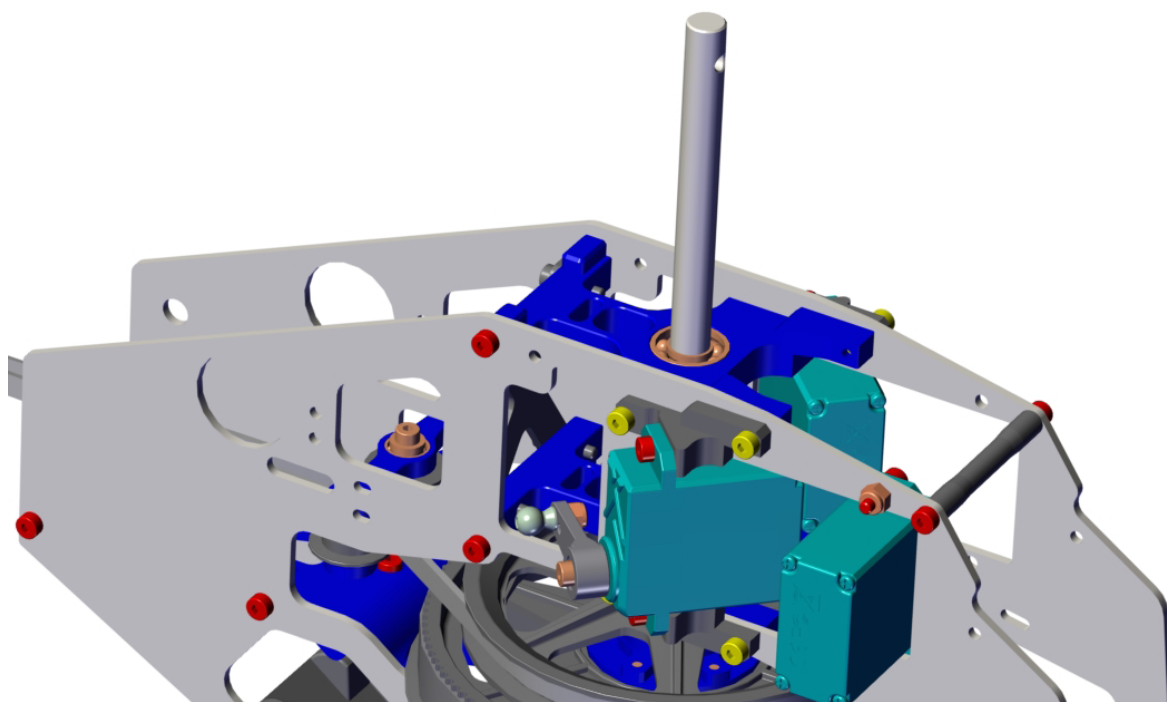




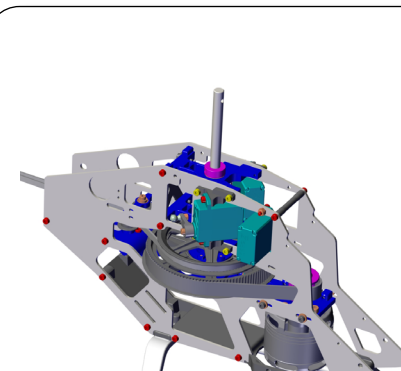
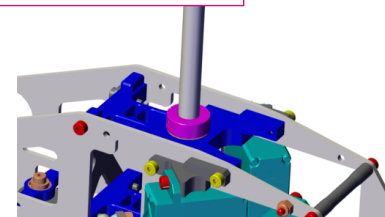
Main shaft lock  
ART. MSH41005

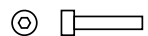


M2x6  
ART. MSH41122



-Pull up main shaft  
-Push down shaft lock  
-Fully tighten

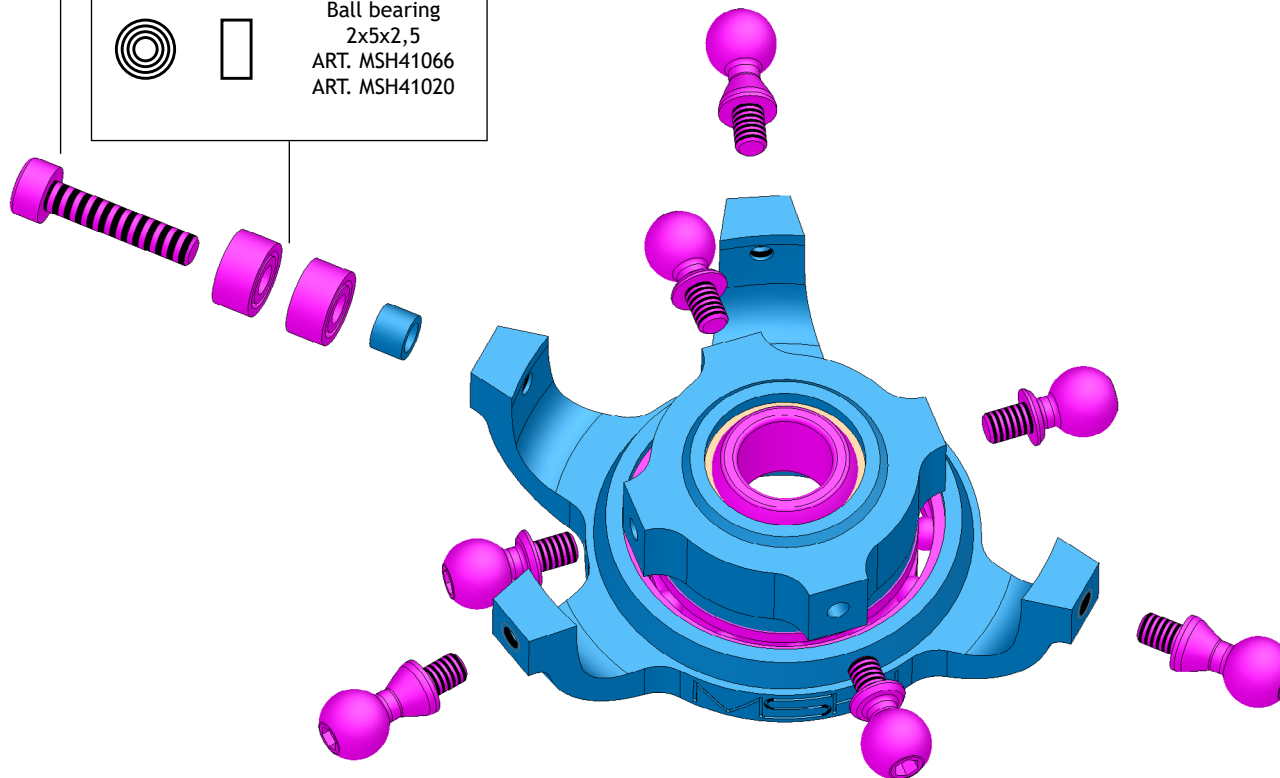




M2x10  
ART. MSH41121  
ART. MSH41020

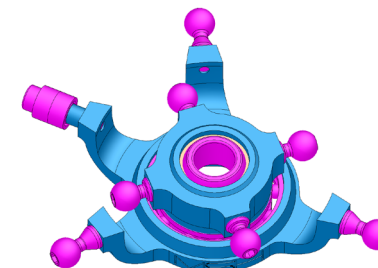


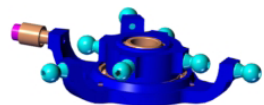
Ball bearing  
2x5x2,5  
ART. MSH41066  
ART. MSH41020



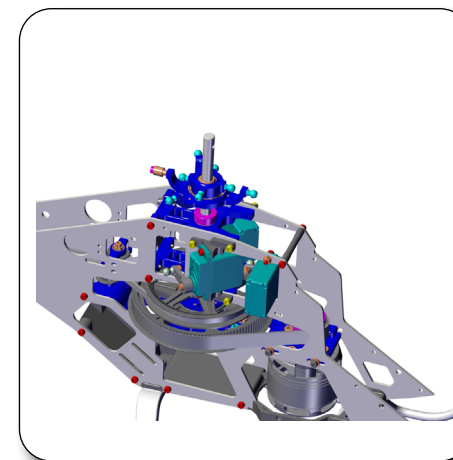
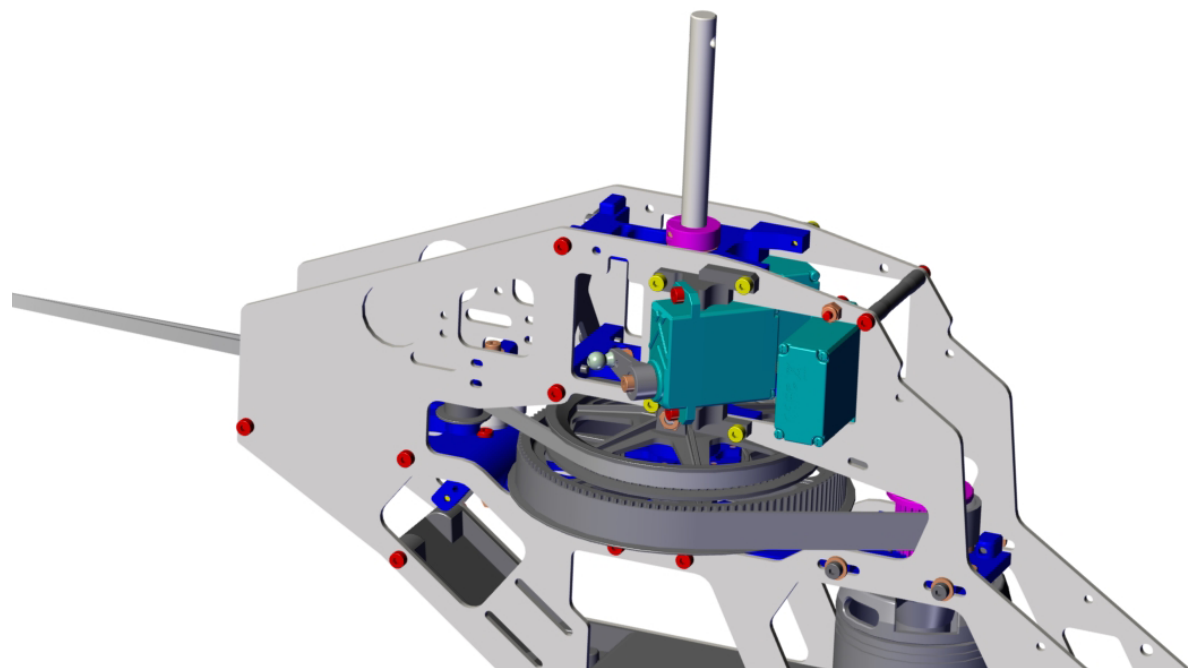
Ball M2x2.8  
ART. MSH41010  
ART. MSH41020

Swashplate  
ART. MSH41020



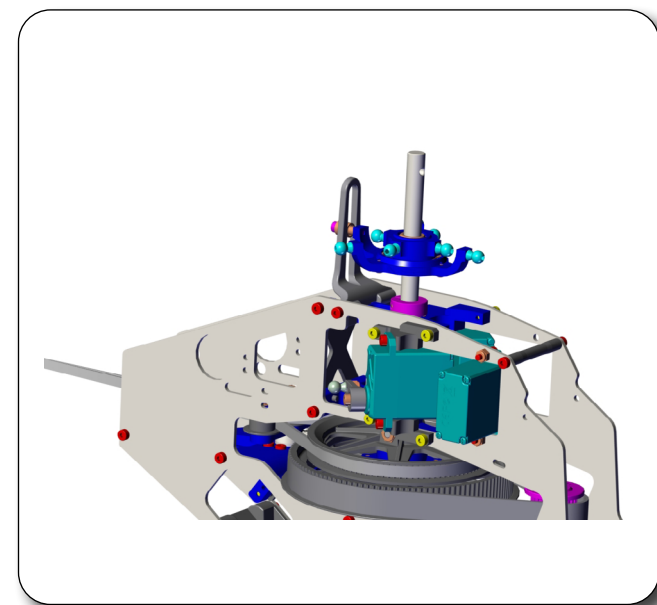
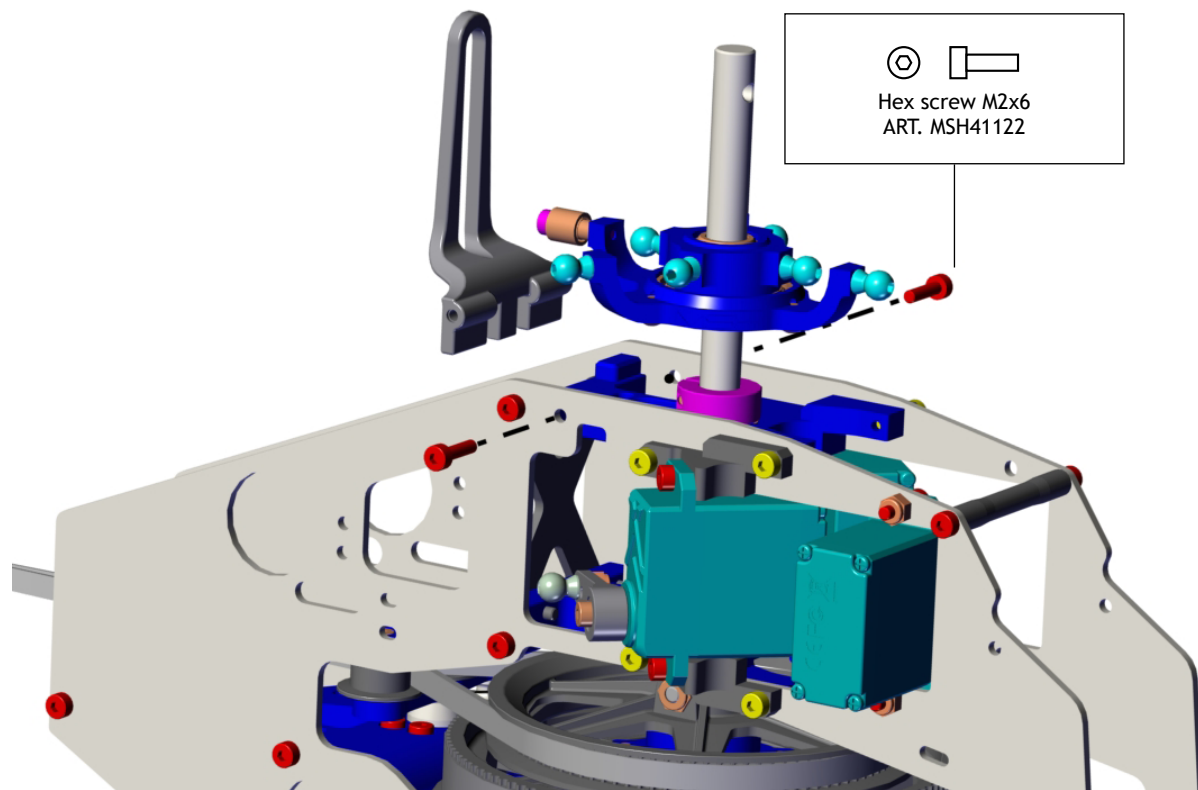


Swashplate  
ART. MSH41020

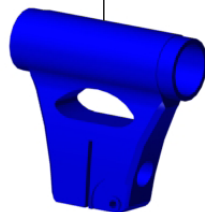


Anti swashplate spin  
MSH41156

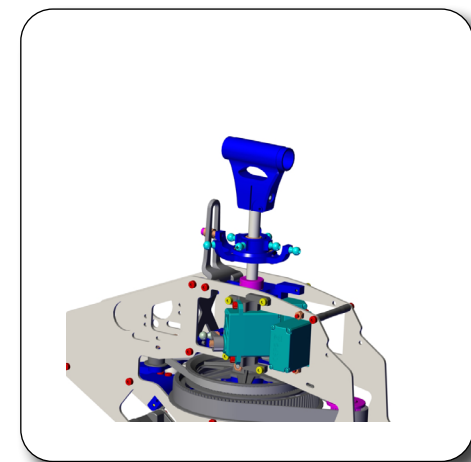
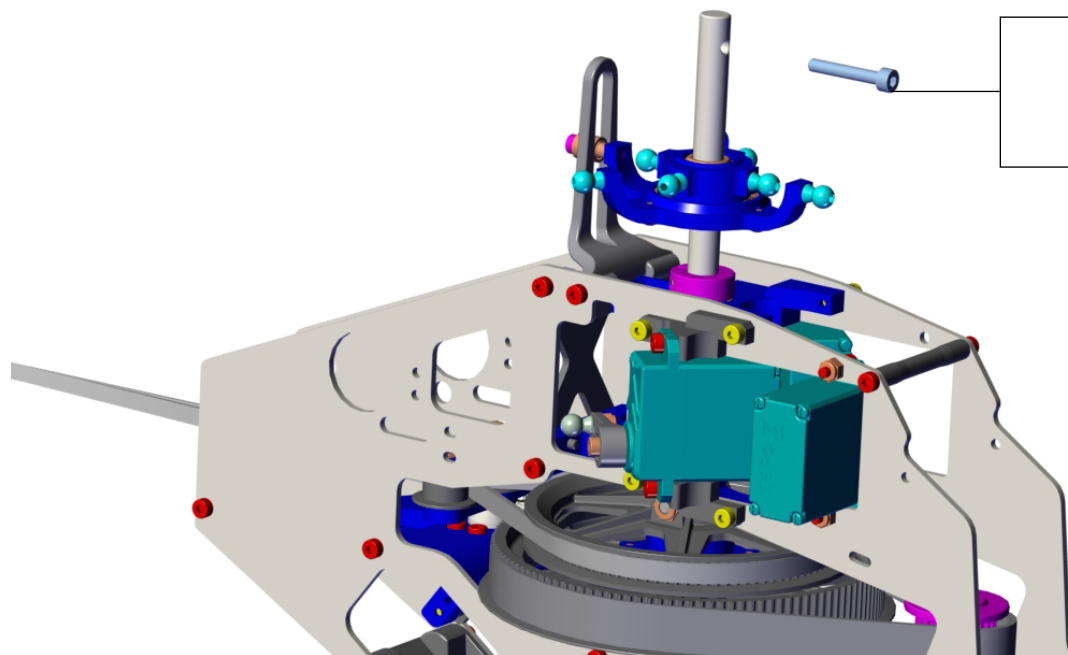
   
Hex screw M2x6  
ART. MSH41122



Main hub Protos 380  
ART. MSH41157

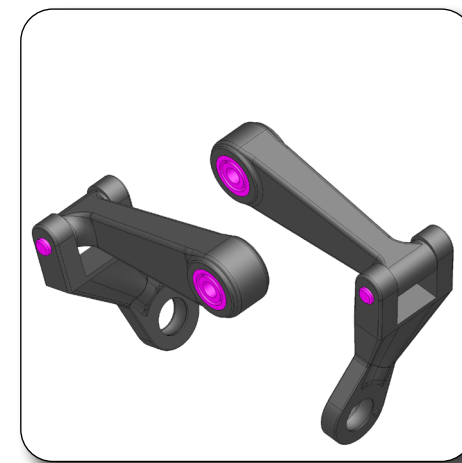
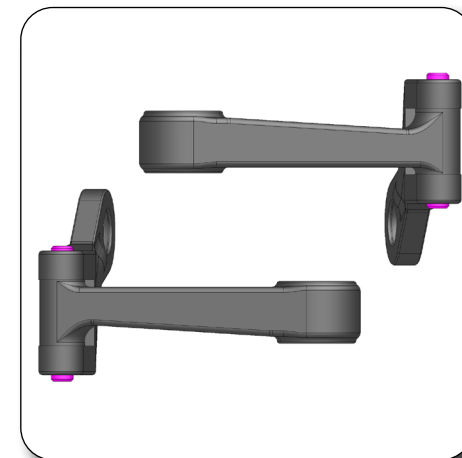
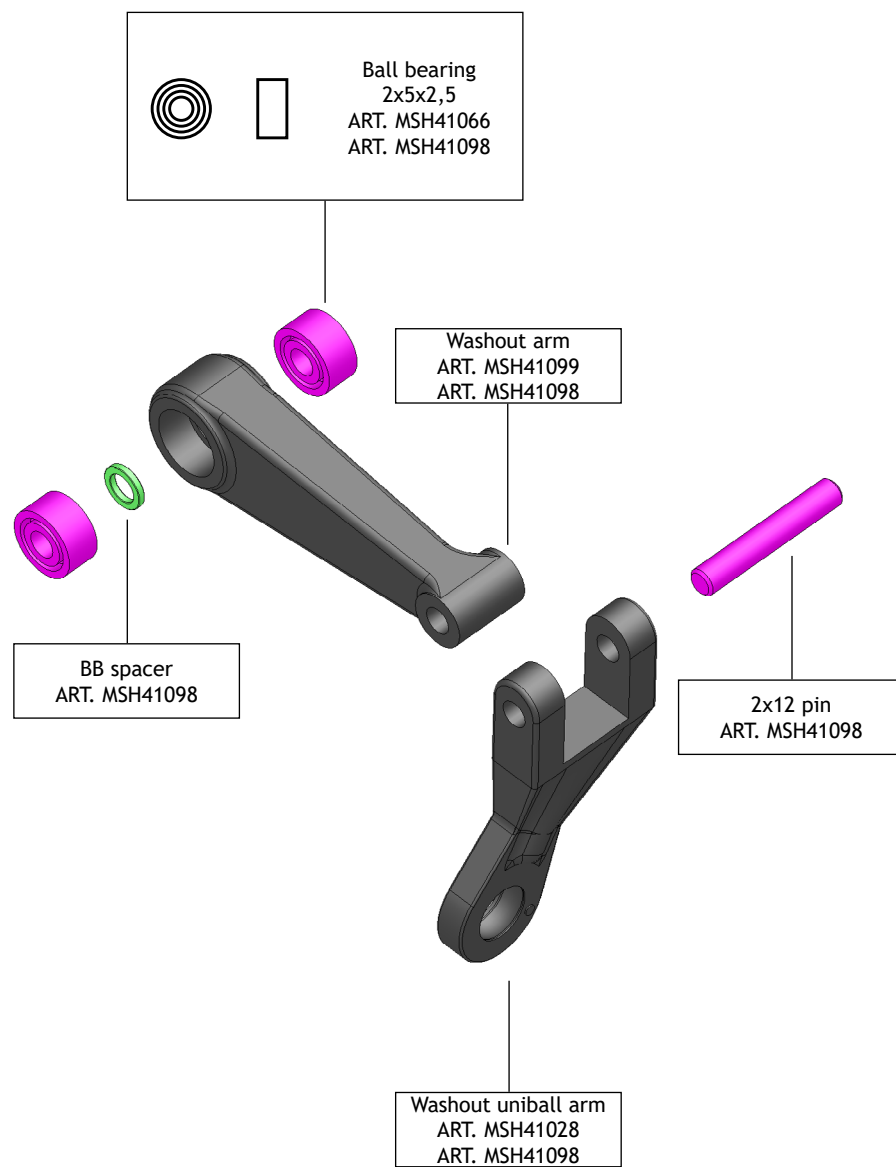





Hex screw M2,5x16  
ART. MSH51145

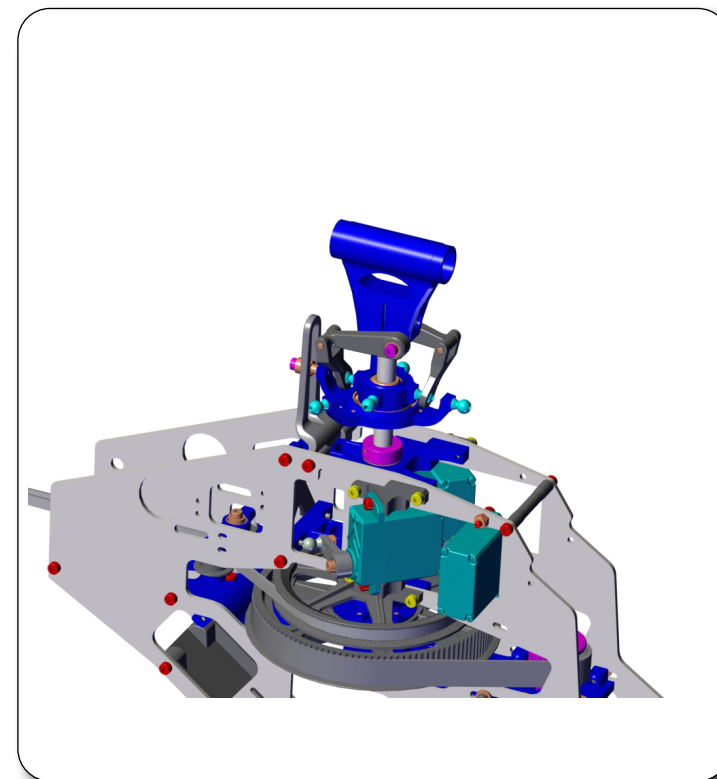
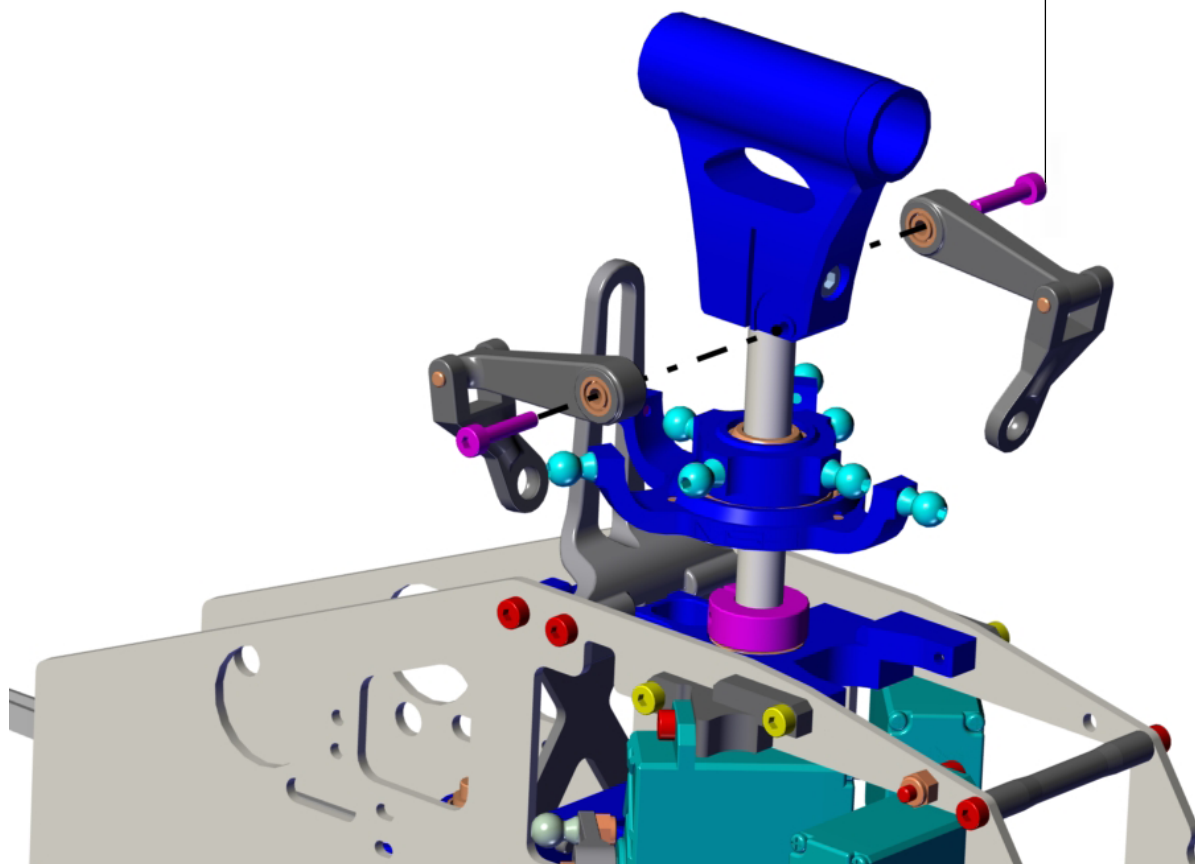




# 2X



	  Hex screw M2x10 ART. MSH41121
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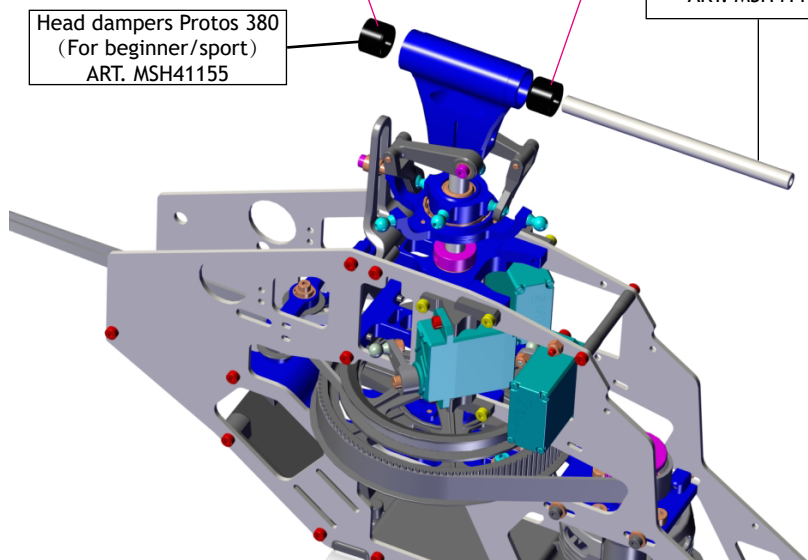


Step visible outside  
the main hub



Head dampers Protos 380  
(For beginner/sport)  
ART. MSH41155

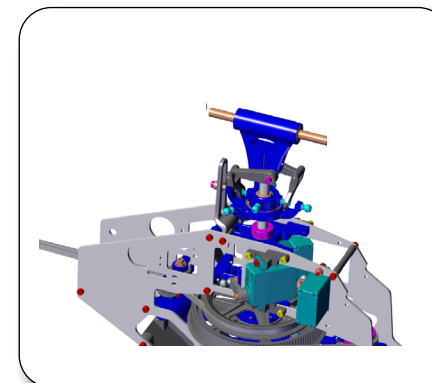
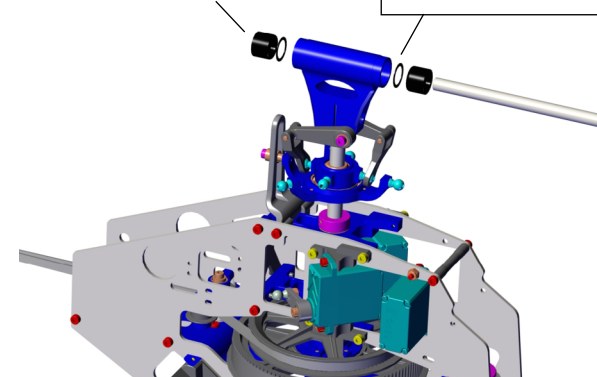
Spindle Protos 380  
ART. MSH41158



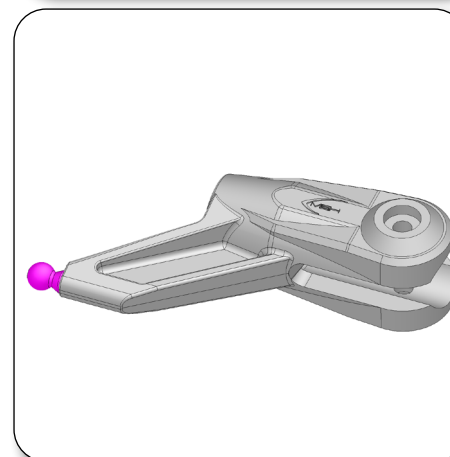
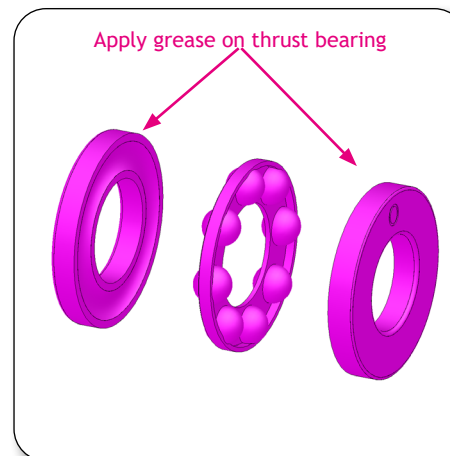
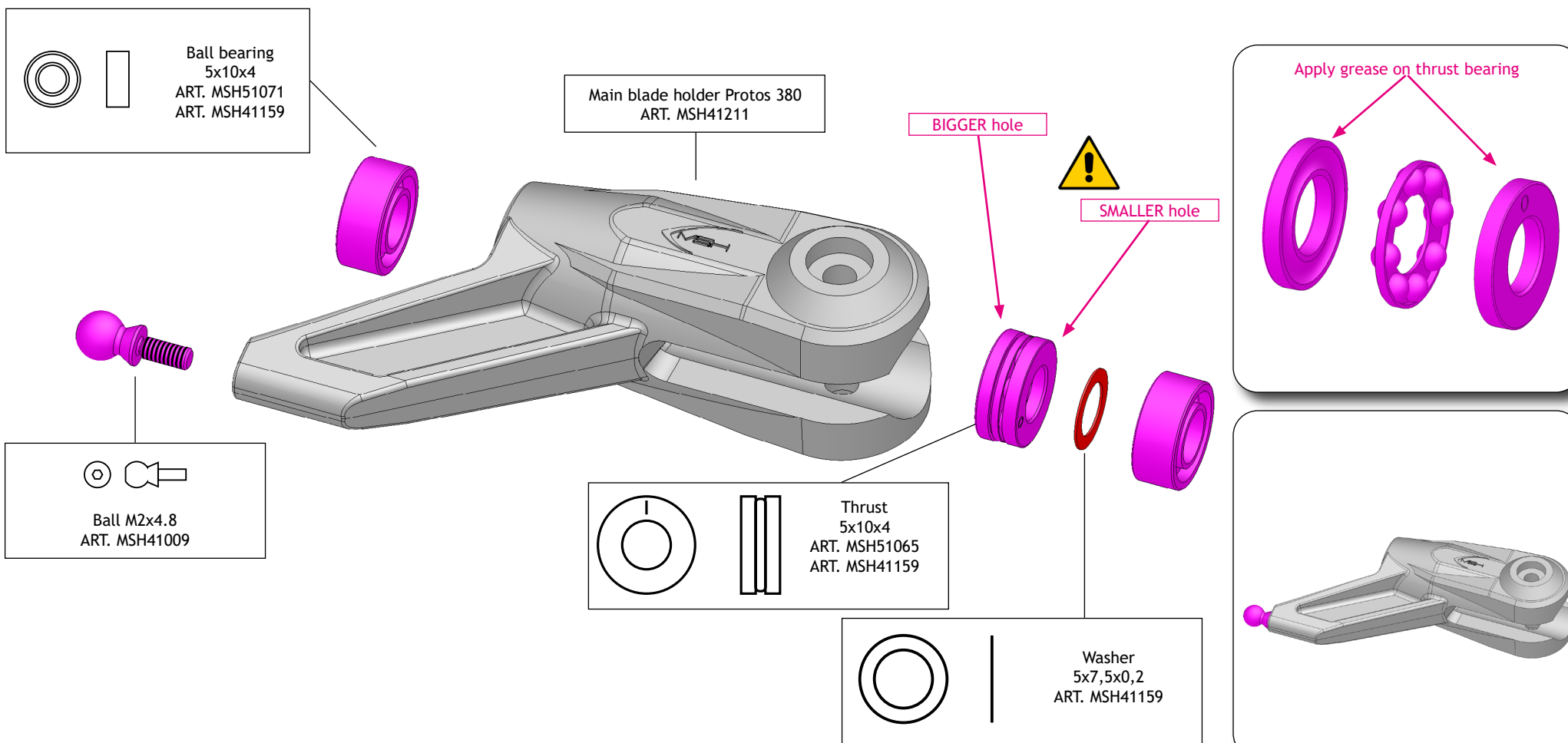
POM damper for hard 3D

Damper for Hard 3D  
ART. MSH41225-1




O ring  
ART. MSH41125-1



# 2X


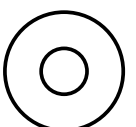


Step outside  
the main hub

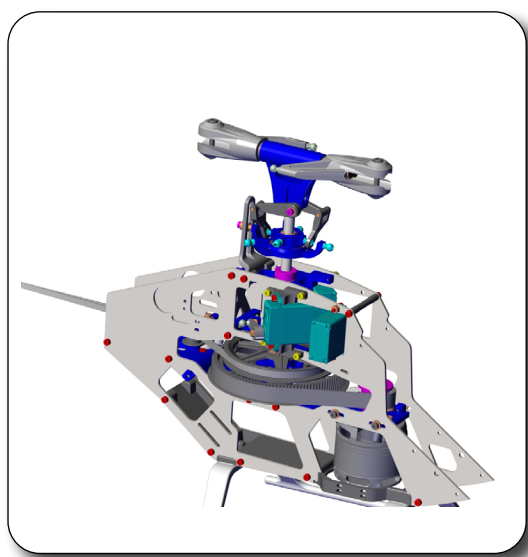


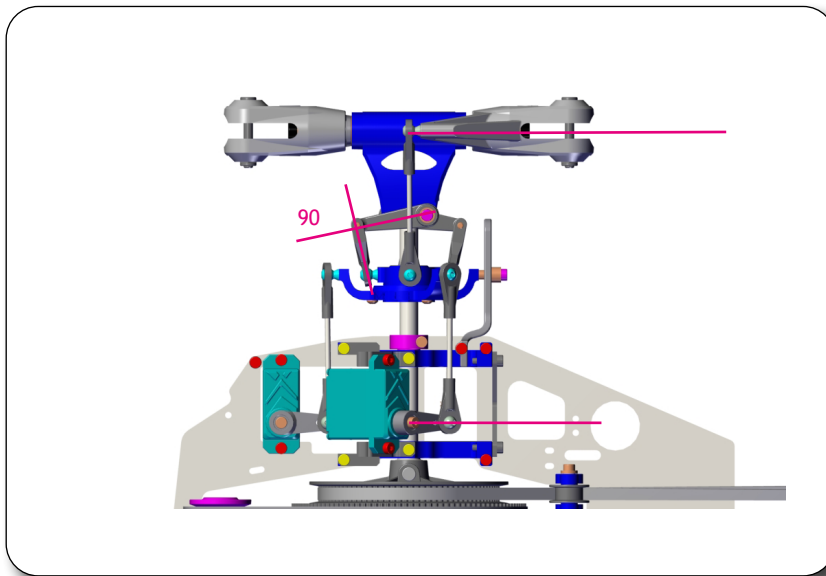
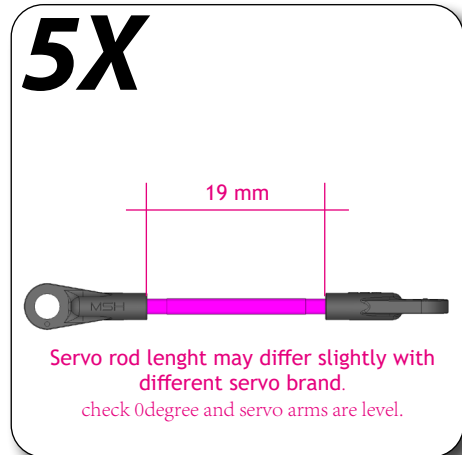
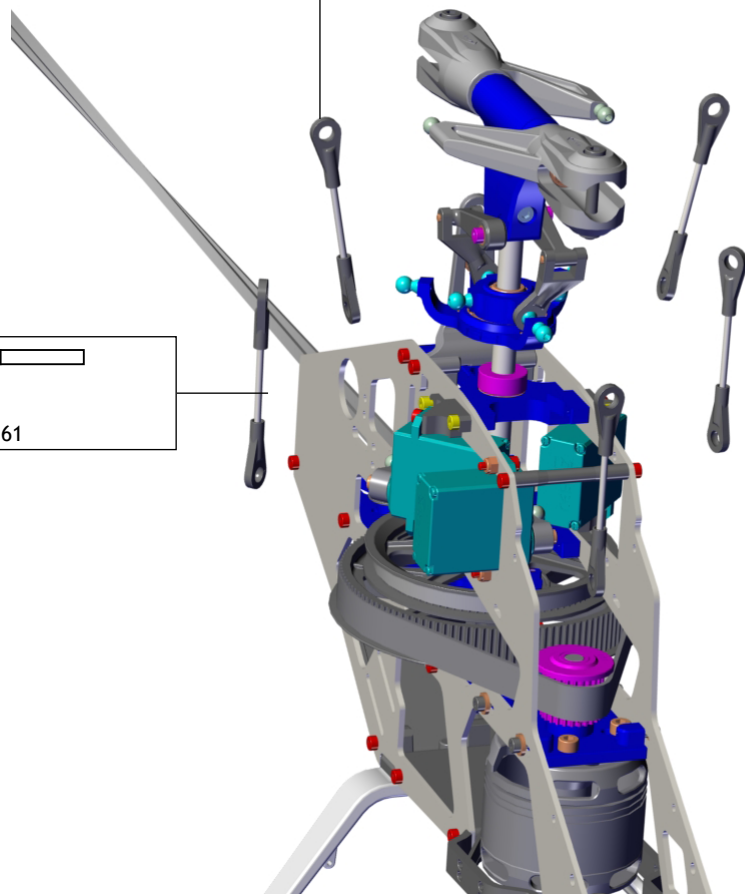
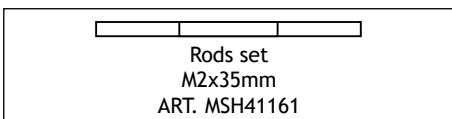
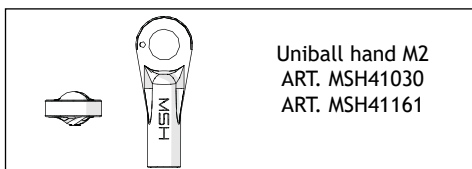
Hex screw M3x8  
ART. MSH51152  
ART. MSH41158

Spindle spacer  
ART. MSH41158



Washer  
3x8x1  
ART. MSH41158





Only MSH41506 - MSH41507

Tail clamp frame side  
ART. MSH41169

Pin antirotation frame  
ART. MSH41170

Hex grub screw  
M3x5  
ART. MSH51160

**Do not overtighten.**

Hex screw M2x10  
ART. MSH41121

**Do not fully tighten yet**

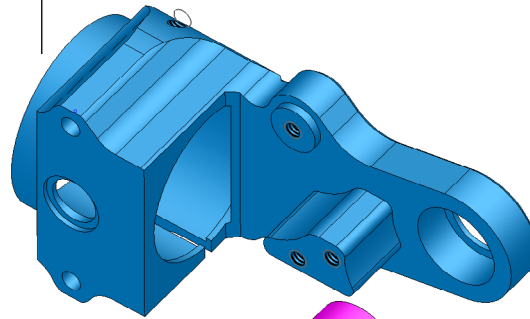
Boom Protos 380  
ART. MSH41171

Large assembly diagram showing the tail clamp frame side (blue) and the boom (black) connected.

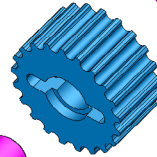
Inset image showing the boom with the tail clamp frame side attached.

where I can find the parts

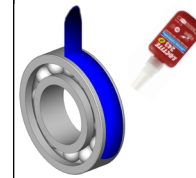
Tail box  
ART. MSH41162



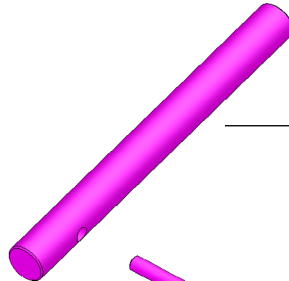
Tail pulley Protos 380  
ART. 41164



Ball bearing  
4x9x4  
ART. MSH41072  
ART. MSH41162



Tail shaft Protos 380  
ART. MSH41163



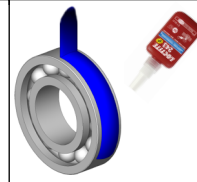
Tail pulley bushing  
Protos 380  
ART. MSH41164



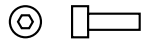
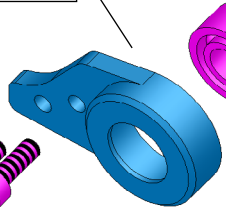
Pin 1,5x8  
ART. MSH41164



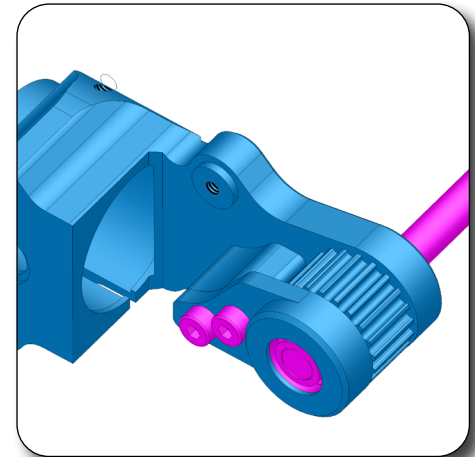
Ball bearing  
4x9x4  
ART. MSH41072  
ART. MSH41165



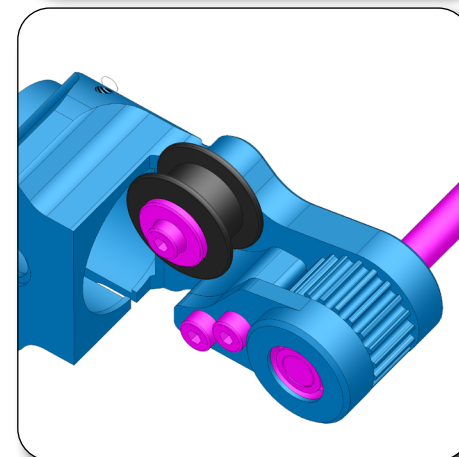
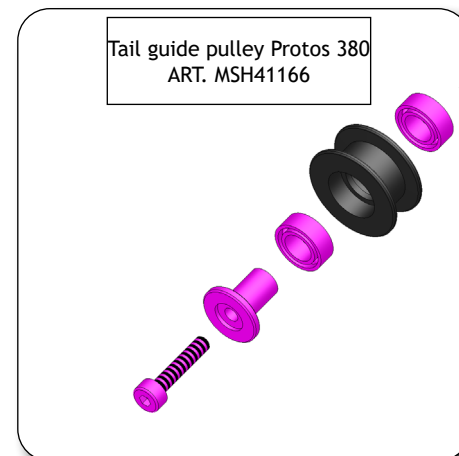
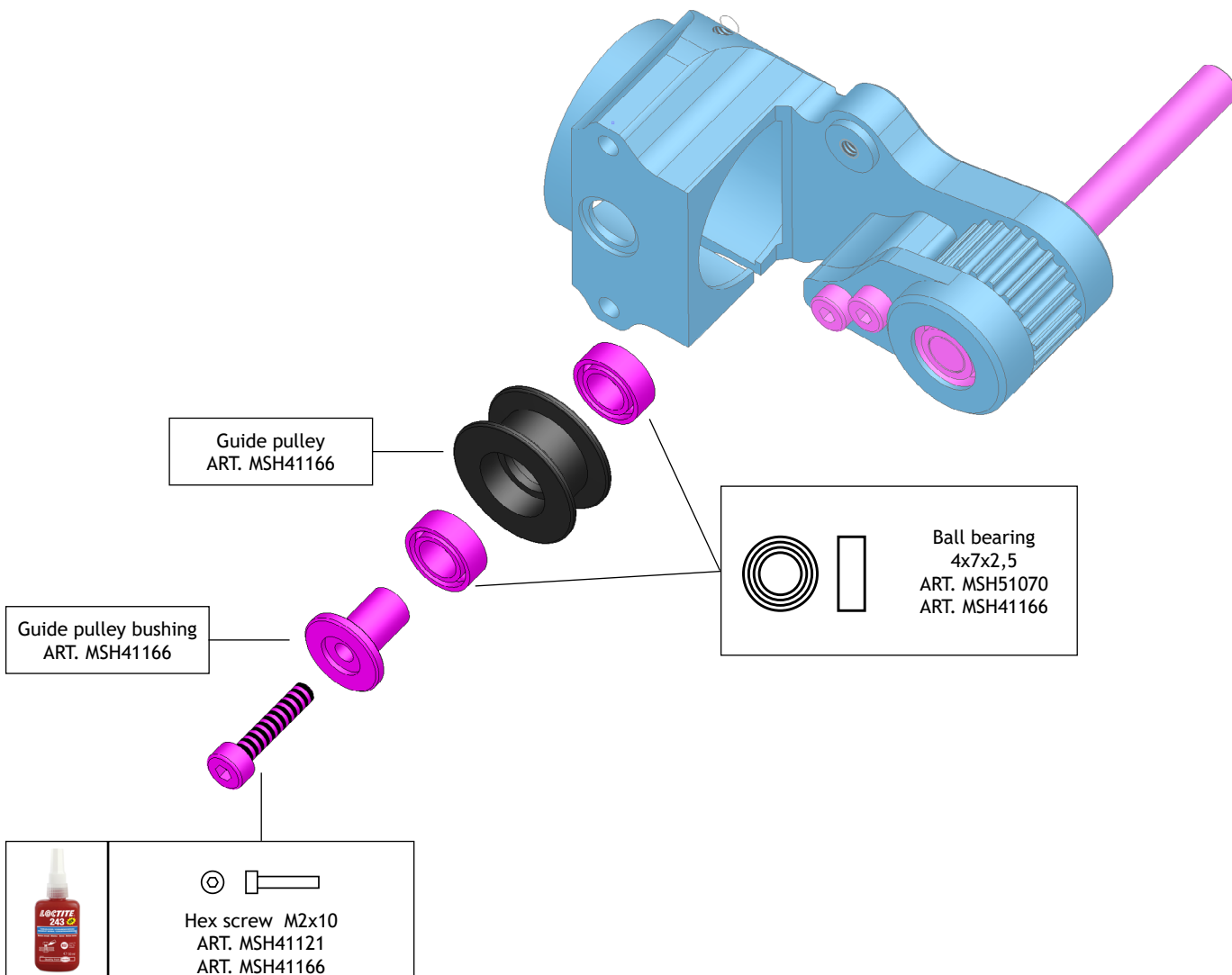
Tail box cover with BB  
ART. 41165

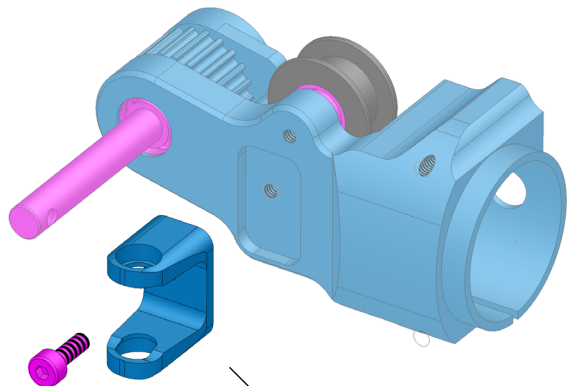


M2x6  
ART. MSH41122  
ART. MSH41165








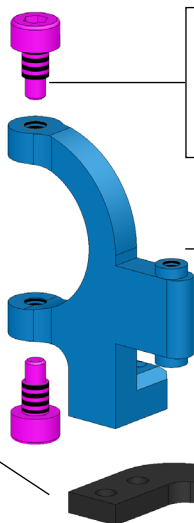
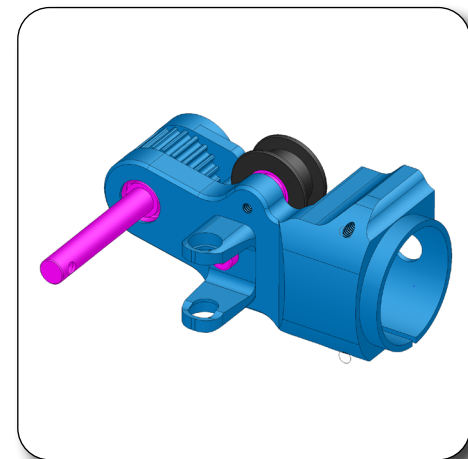







Tail pitch support  
ART. MSH41167




  
 Hex screw M2x6  
 ART. MSH41122  
 ART. MSH41167







  
 Tail pitch lever screw M2,5x5  
 ART. MSH41135  
 ART. MSH41168







Tail pitch lever  
ART. MSH41168

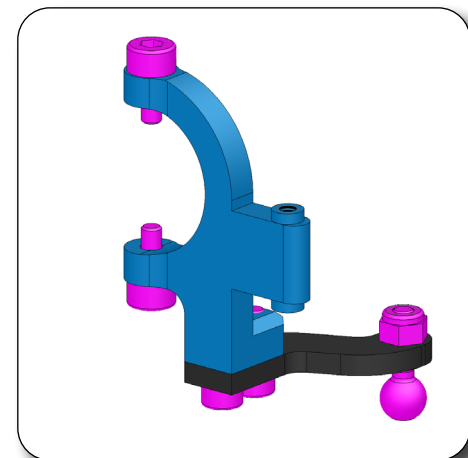
Tail pitch lever carbon  
ART. MSH41168


  
 M2 Nut  
 ART. MSH41119  
 ART. MSH41168




  
 Hex screw M2x6  
 ART. MSH41122  
 ART. MSH41168


  
 Ball M2x4.8  
 ART. MSH41009  
 ART. MSH41168



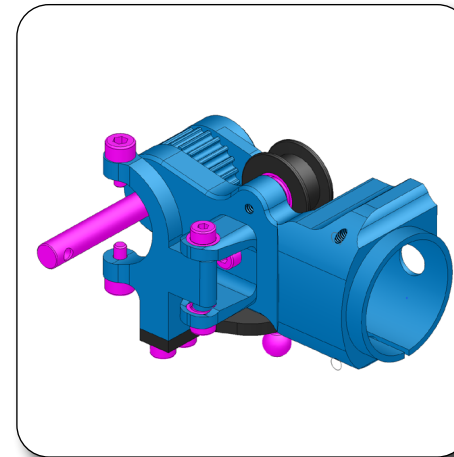
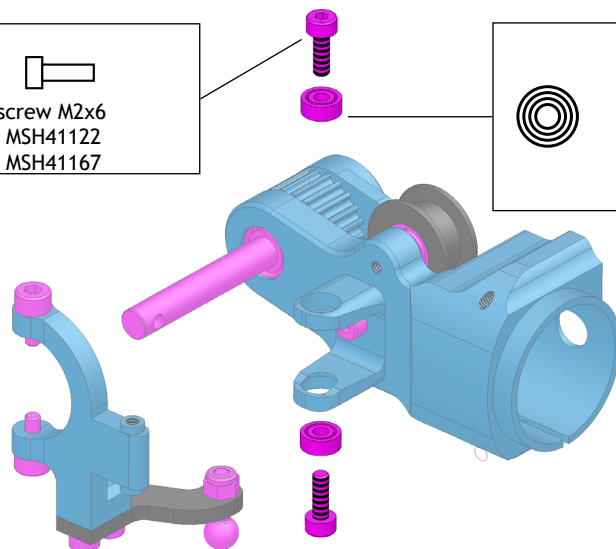
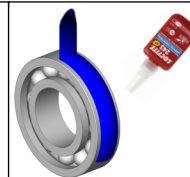
where I can find the parts



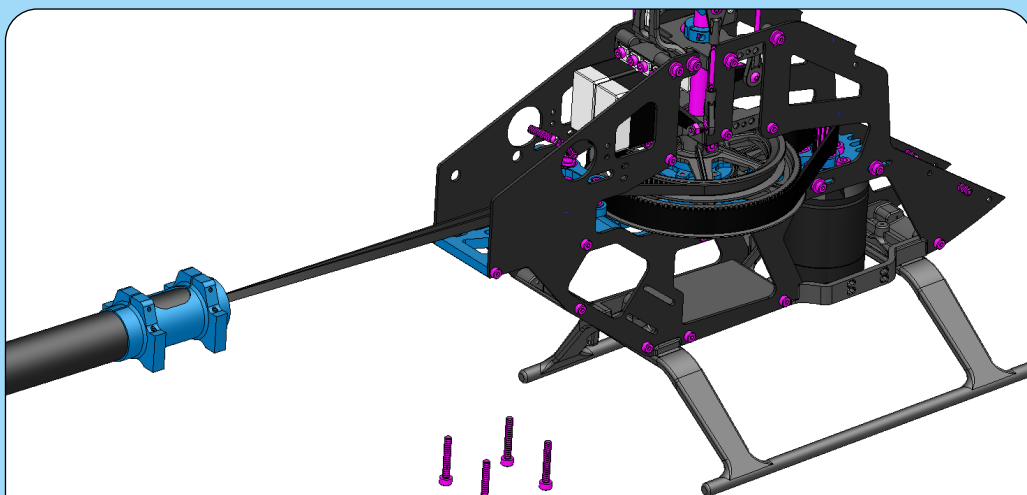
Hex screw M2x6  
ART. MSH41122  
ART. MSH41167



Ball bearing  
2x5x2  
ART. MSH41066  
ART. MSH41167



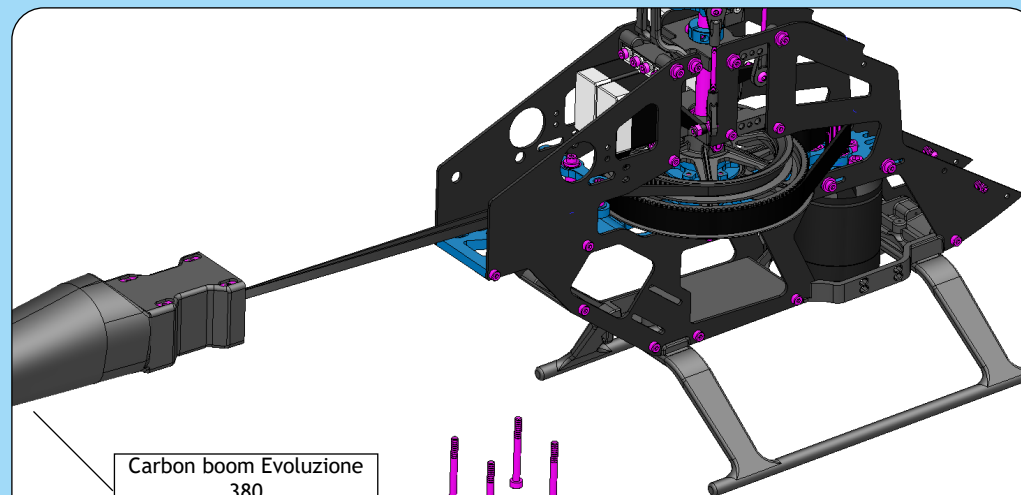
## MSH41506 - MSH41507(Standard Version)



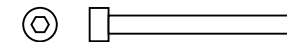
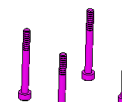
Hex screw M2,5x16  
ART. MSH51145



## MSH41508 - MSH41509(EVO Version)

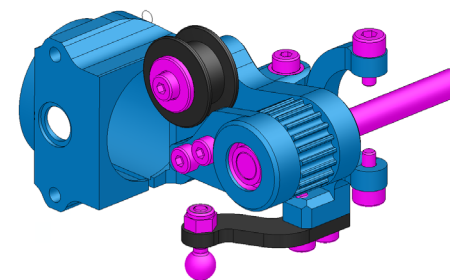
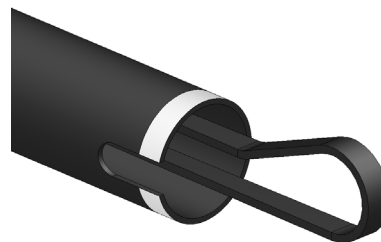
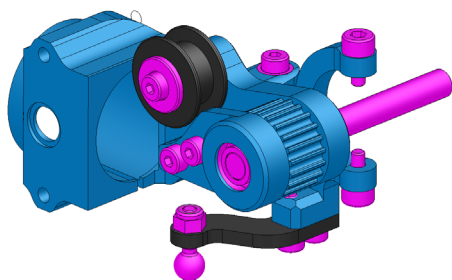
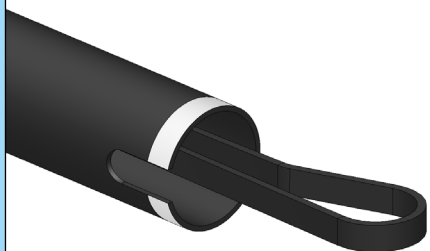


Carbon boom Evoluzione  
380  
ART. MSH41200

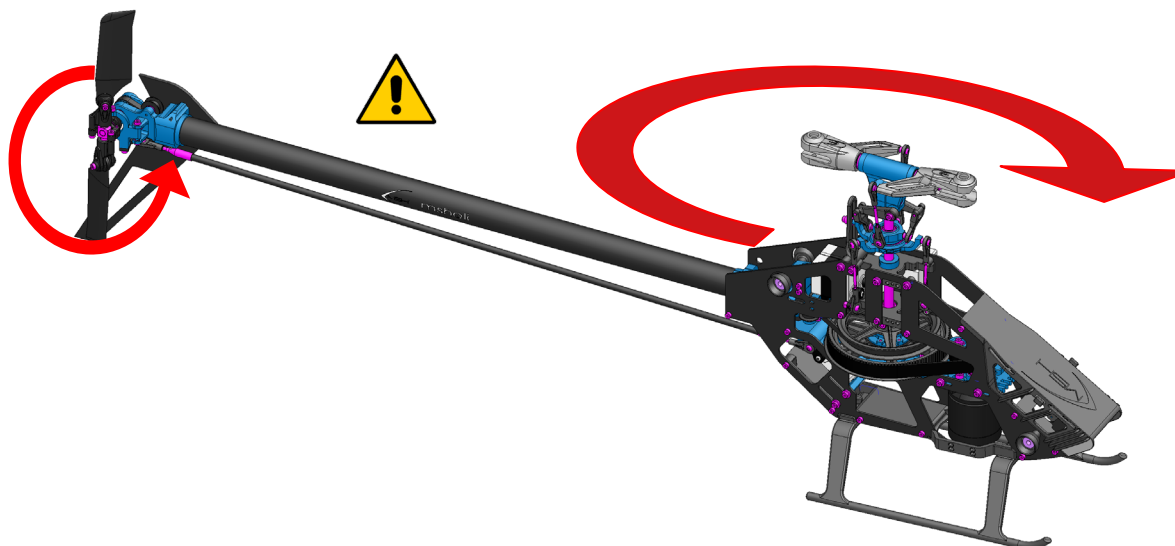




Hex screw M2,5x25  
ART. MSH51145

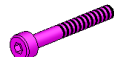






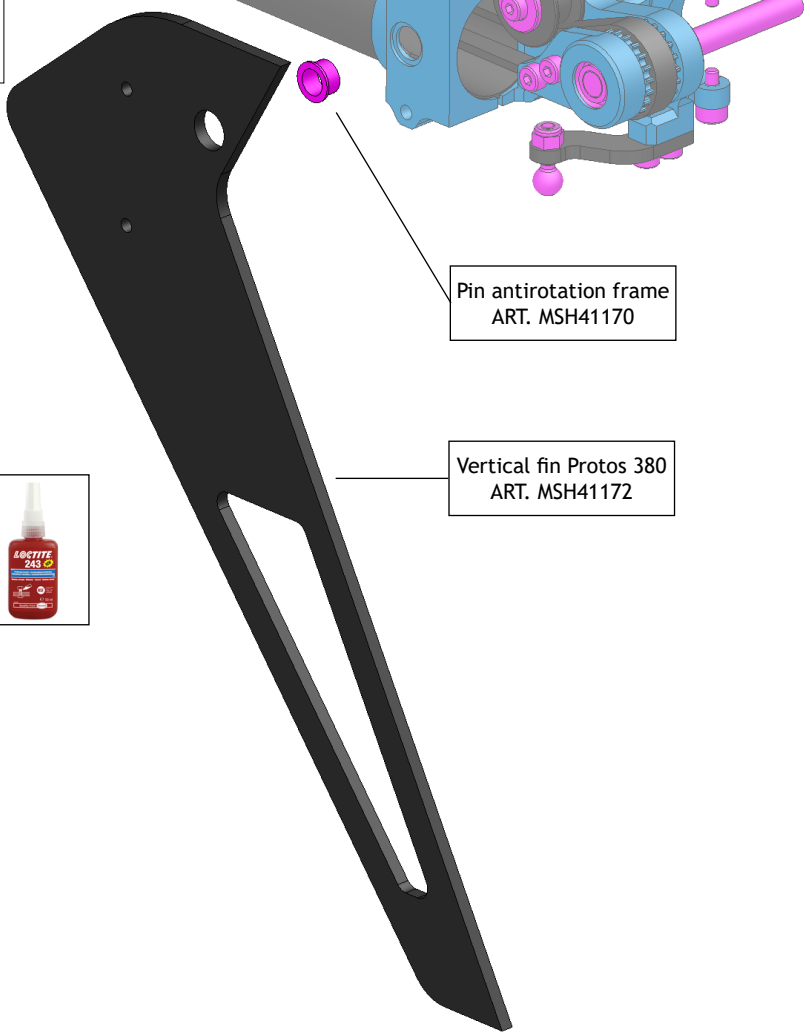
Check the rotation direction during the installation of the belt



   
Hex screw M2.5x6  
ART. MSH51153



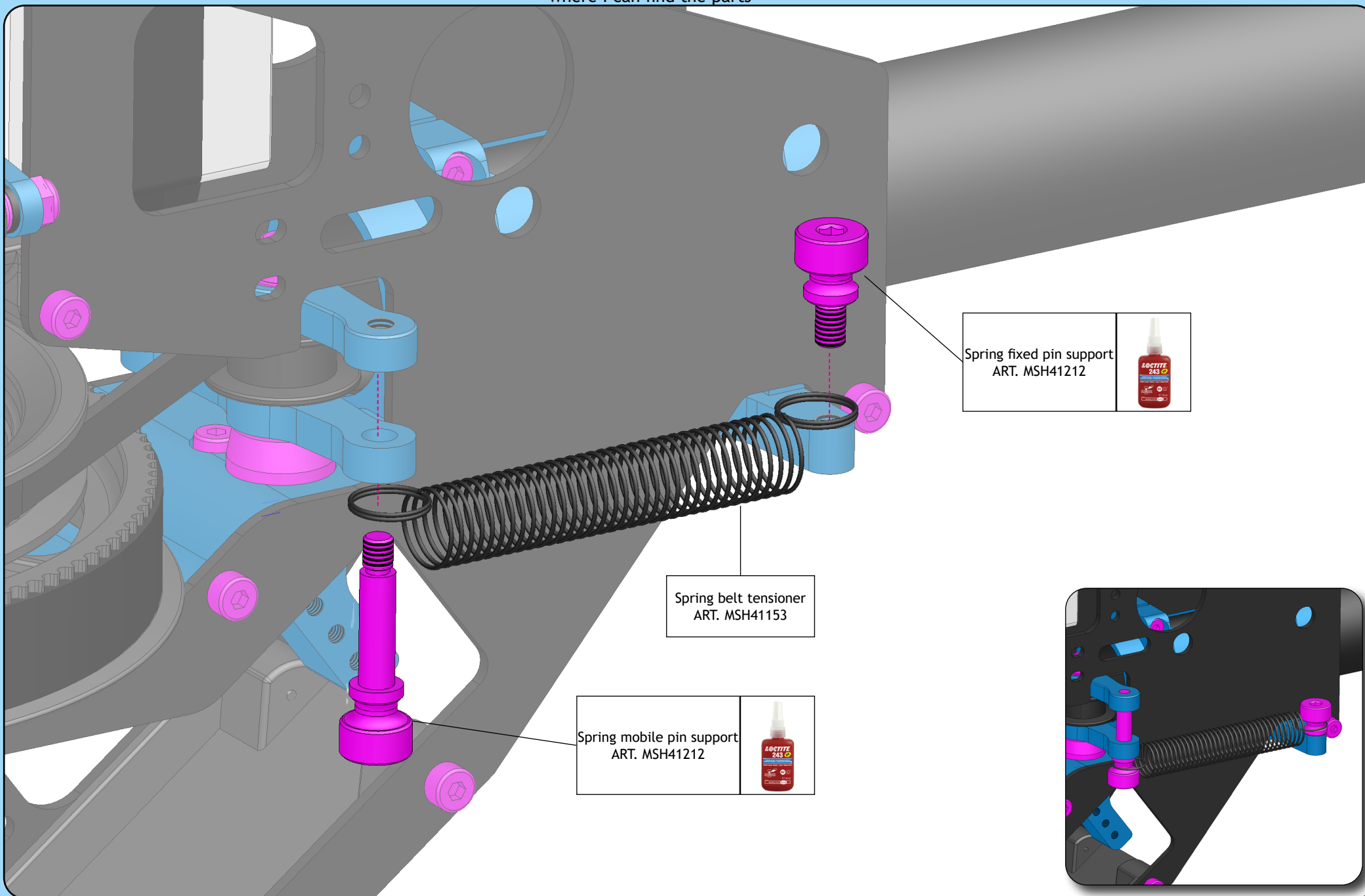
   
Hex screw M2,5x16  
ART. MSH51145




Pin antirotation frame  
ART. MSH41170

Vertical fin Protos 380  
ART. MSH41172



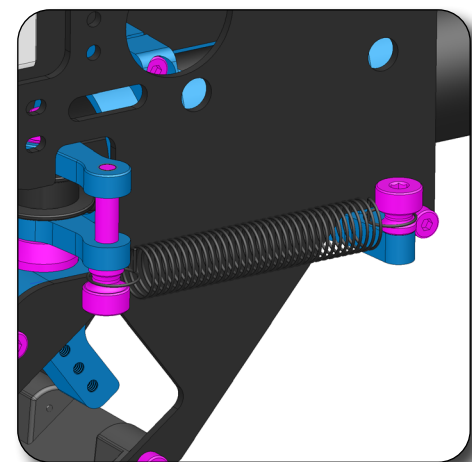



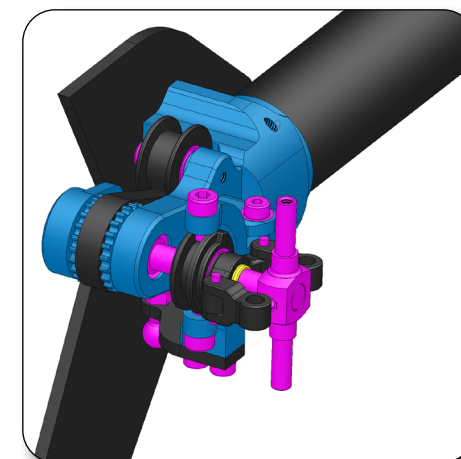
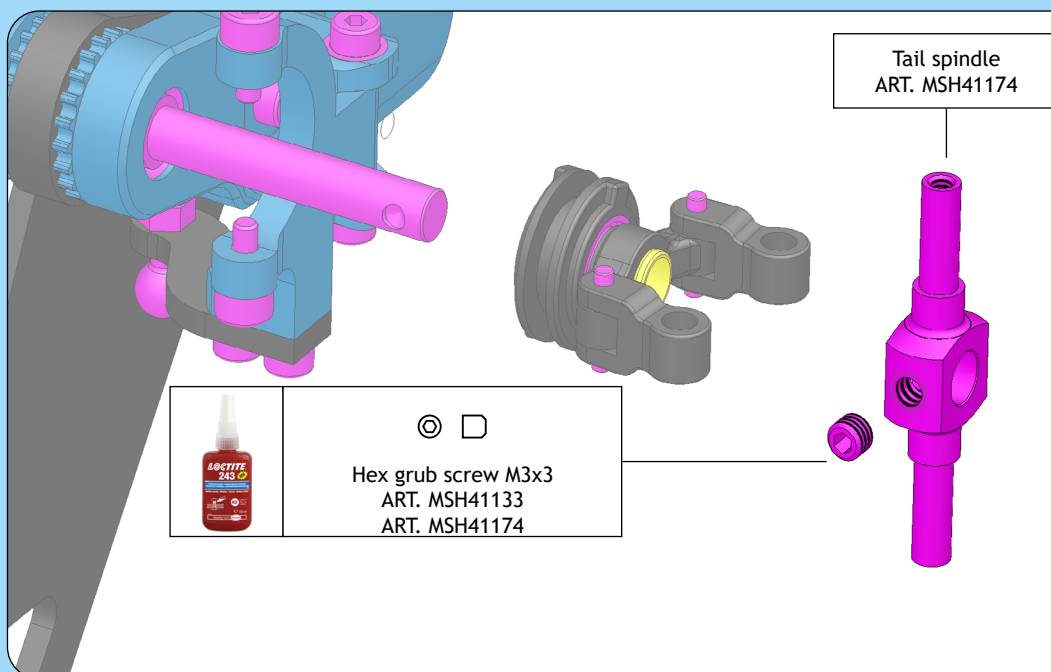
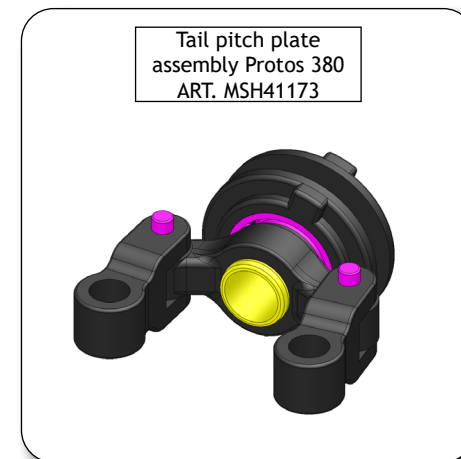
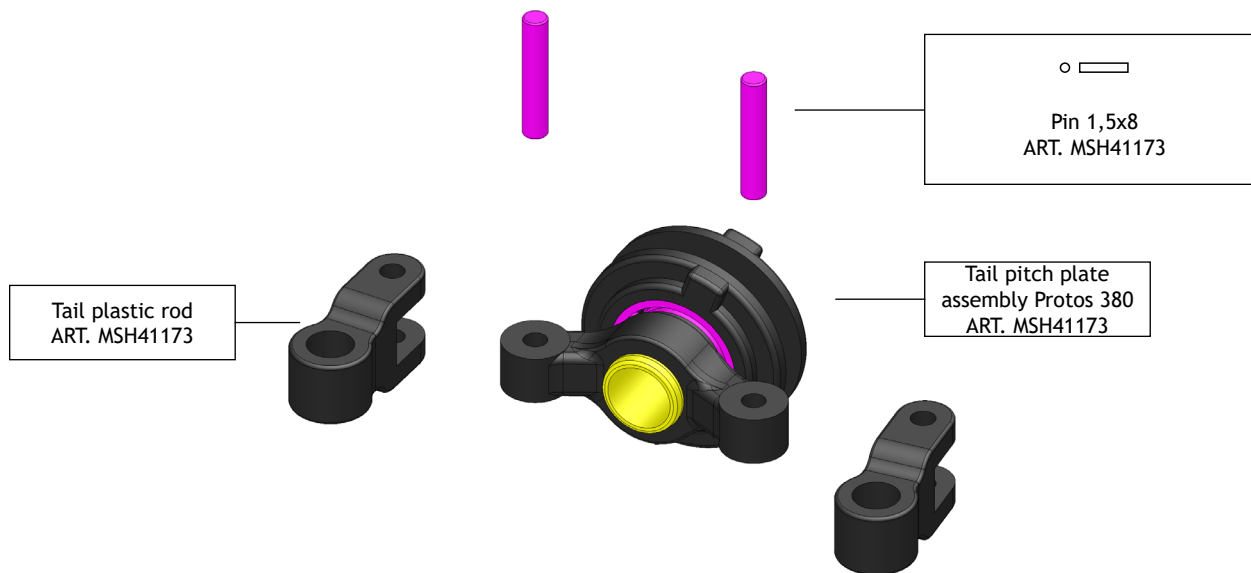
Spring fixed pin support  
ART. MSH41212



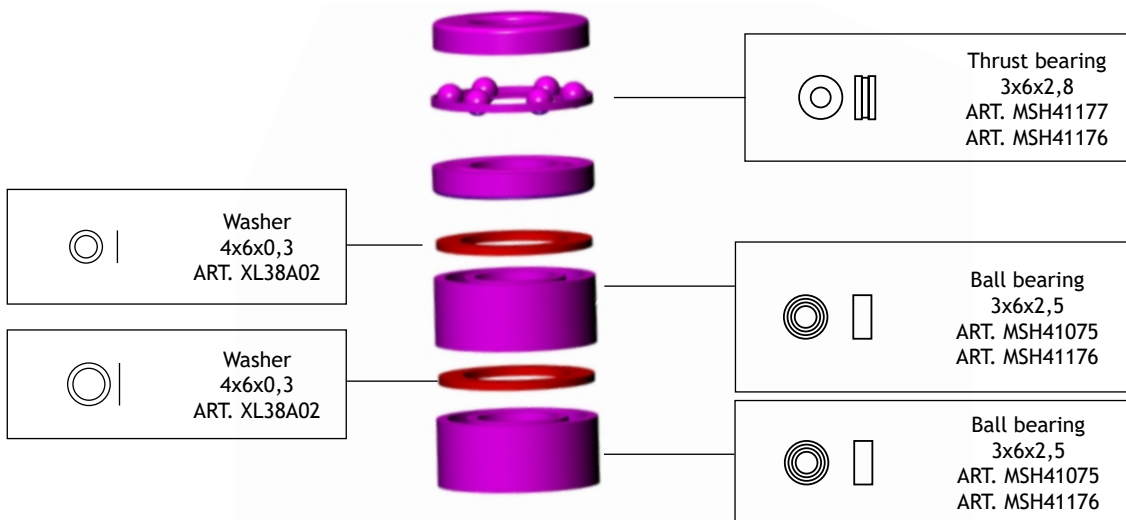
Spring belt tensioner  
ART. MSH41153

Spring mobile pin support  
ART. MSH41212





# 2X



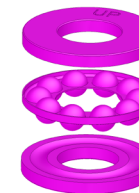
For metal tail grip upgrade manual pls check page 63



Attention: bearing must be in place

Apply grease on thrust bearing

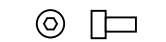
Internal hole SMALLER



Internal hole BIGGER







Hex screw M2x4  
ART. MSH41141



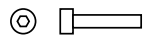
Special Washer  
ART. MSH41176



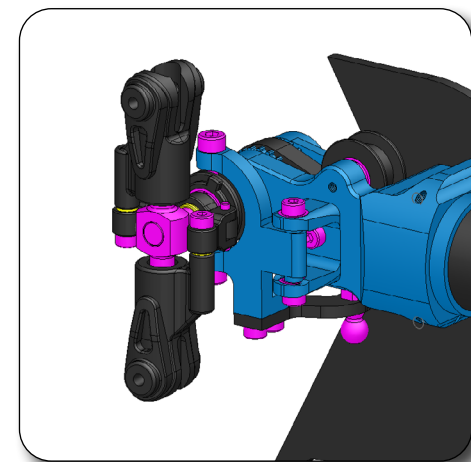
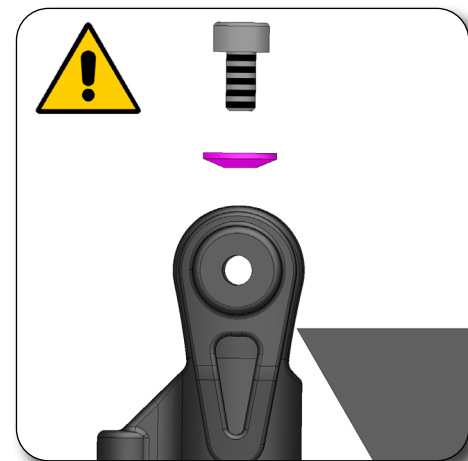
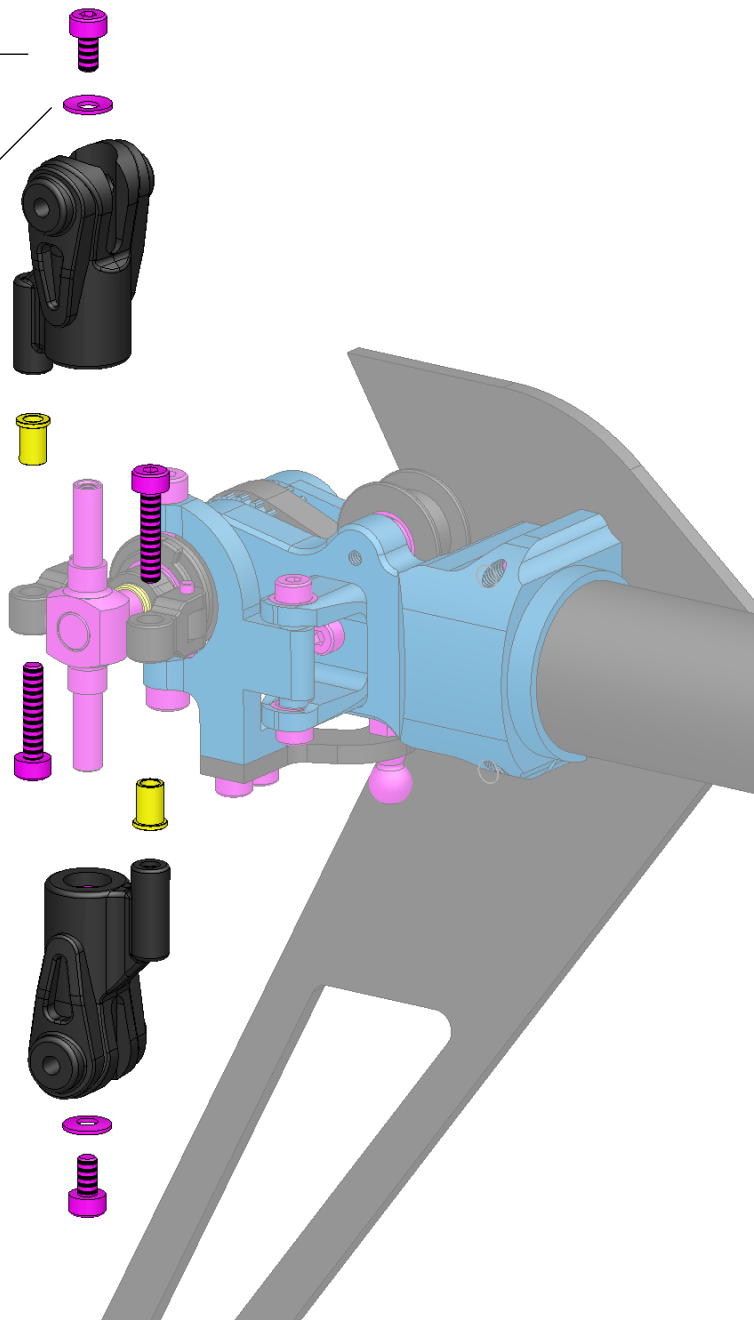
Tail pitch bushing  
ART. MSH41176

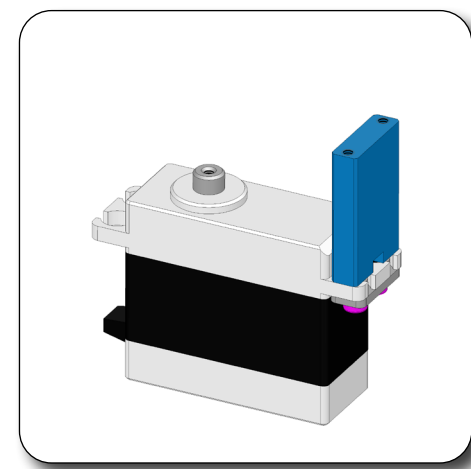
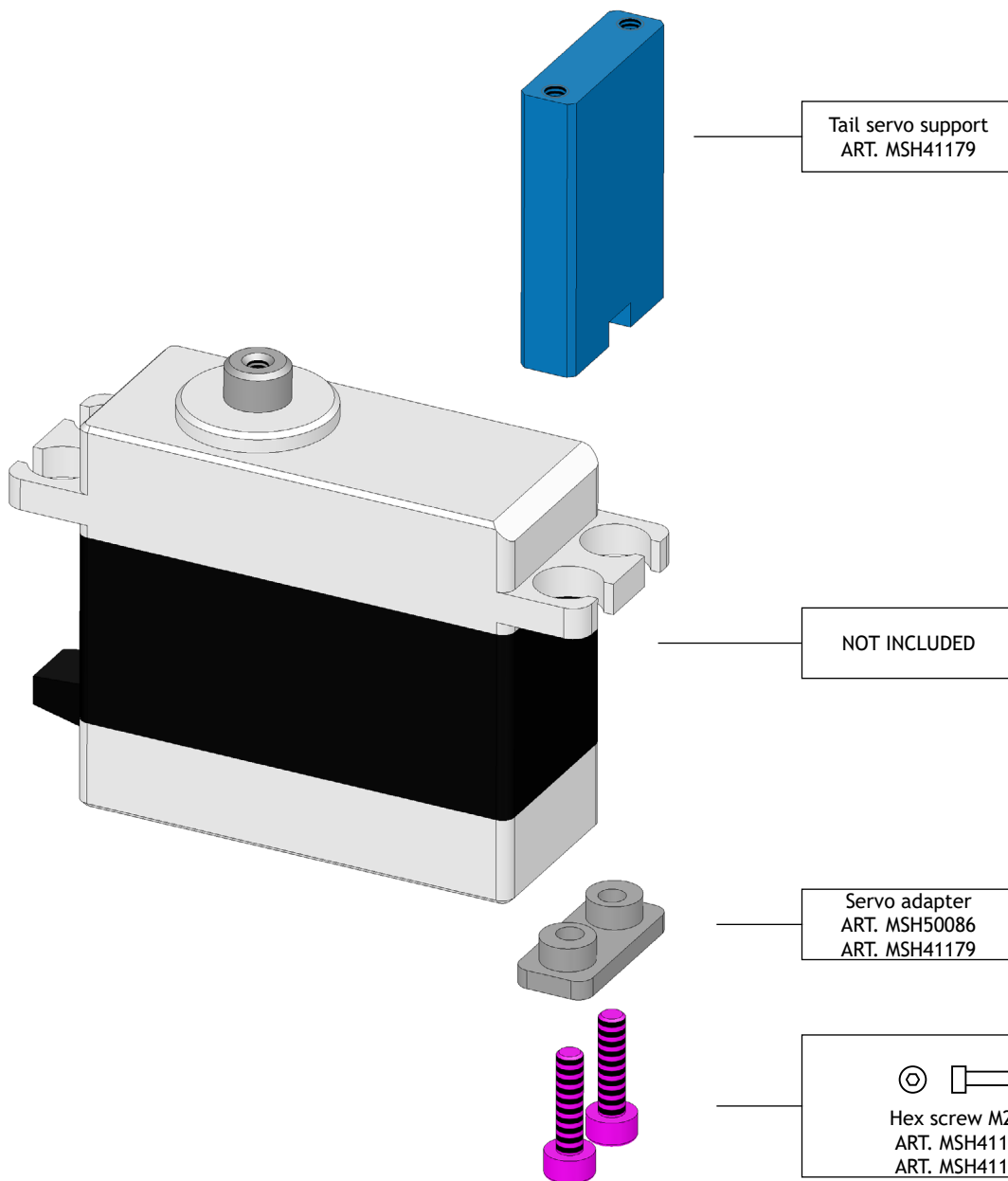


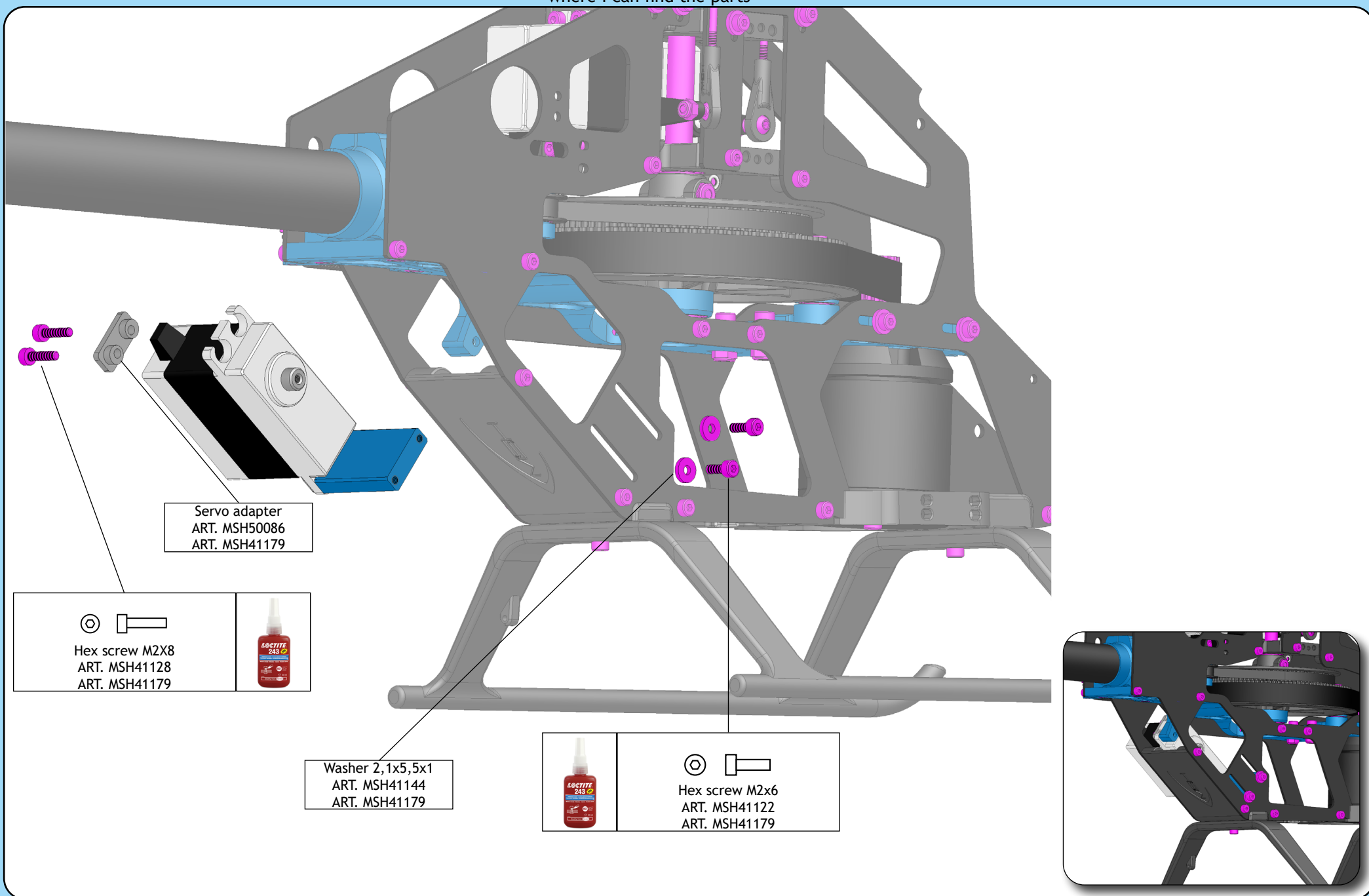
**VERY IMPORTANT**  
Do not overtighten.



Hex screw M2x10  
ART. MSH41121  
ART. MSH41176





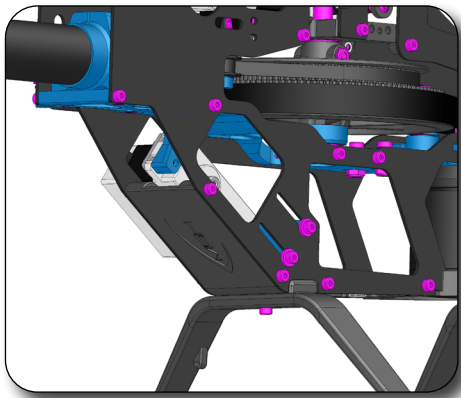


Servo adapter  
ART. MSH50086  
ART. MSH41179


Hex screw M2X8 ART. MSH41128 ART. MSH41179	

Washer 2,1x5,5x1  
ART. MSH41144  
ART. MSH41179

	Hex screw M2x6 ART. MSH41122 ART. MSH41179

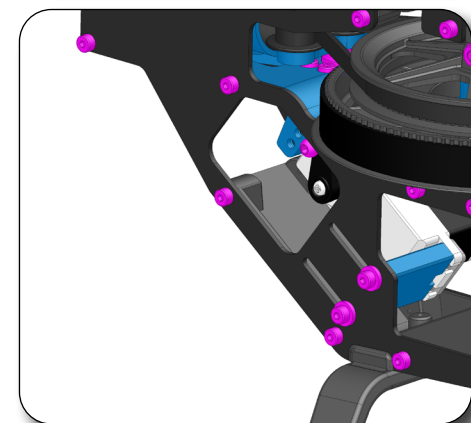
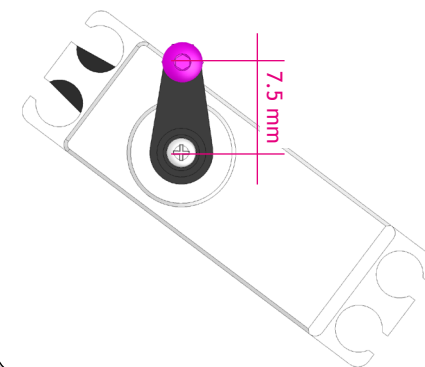


  
M2 Nut  
ART. MSH41119

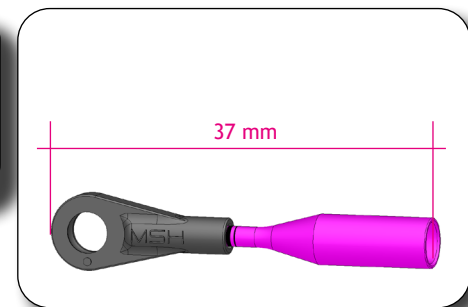
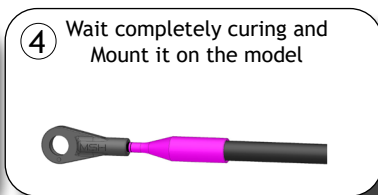
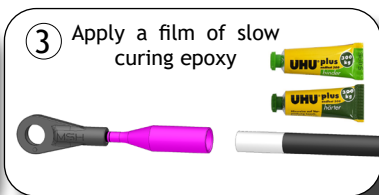
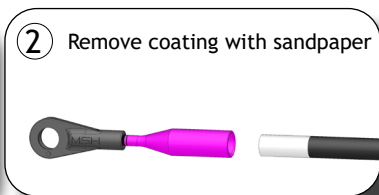
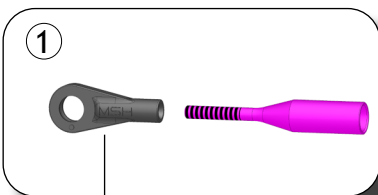
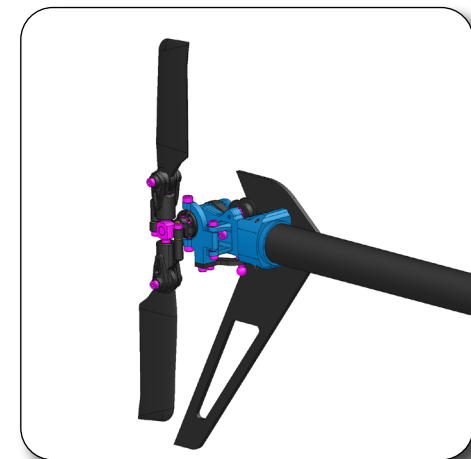
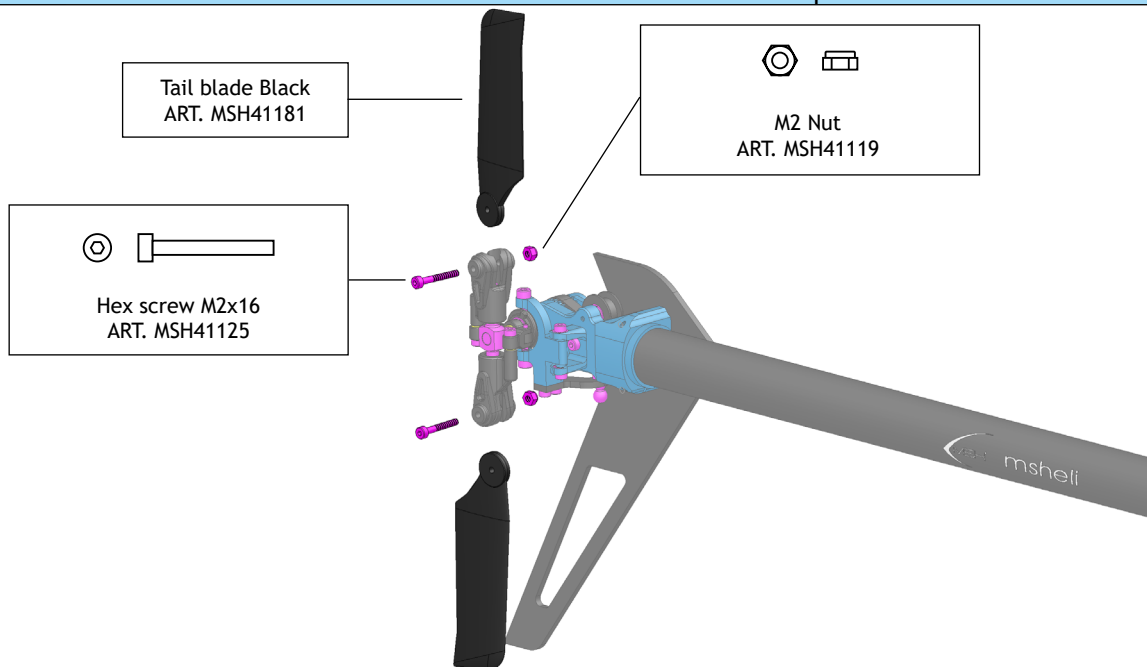
  
Ball M2x4.8  
ART. MSH41009

NOT INCLUDED

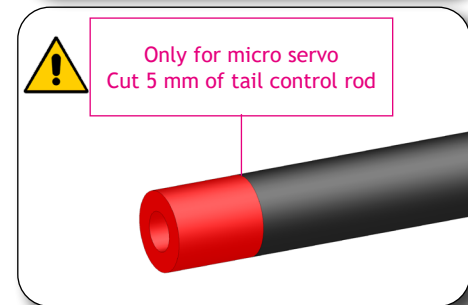
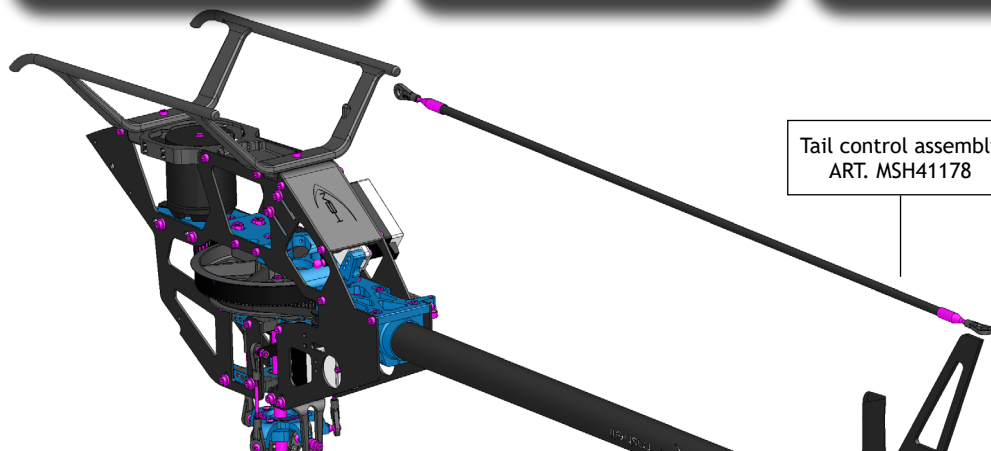
Servo horn length may differ with different servo brand. Keep your tail endpoint around 100 in gyro setting

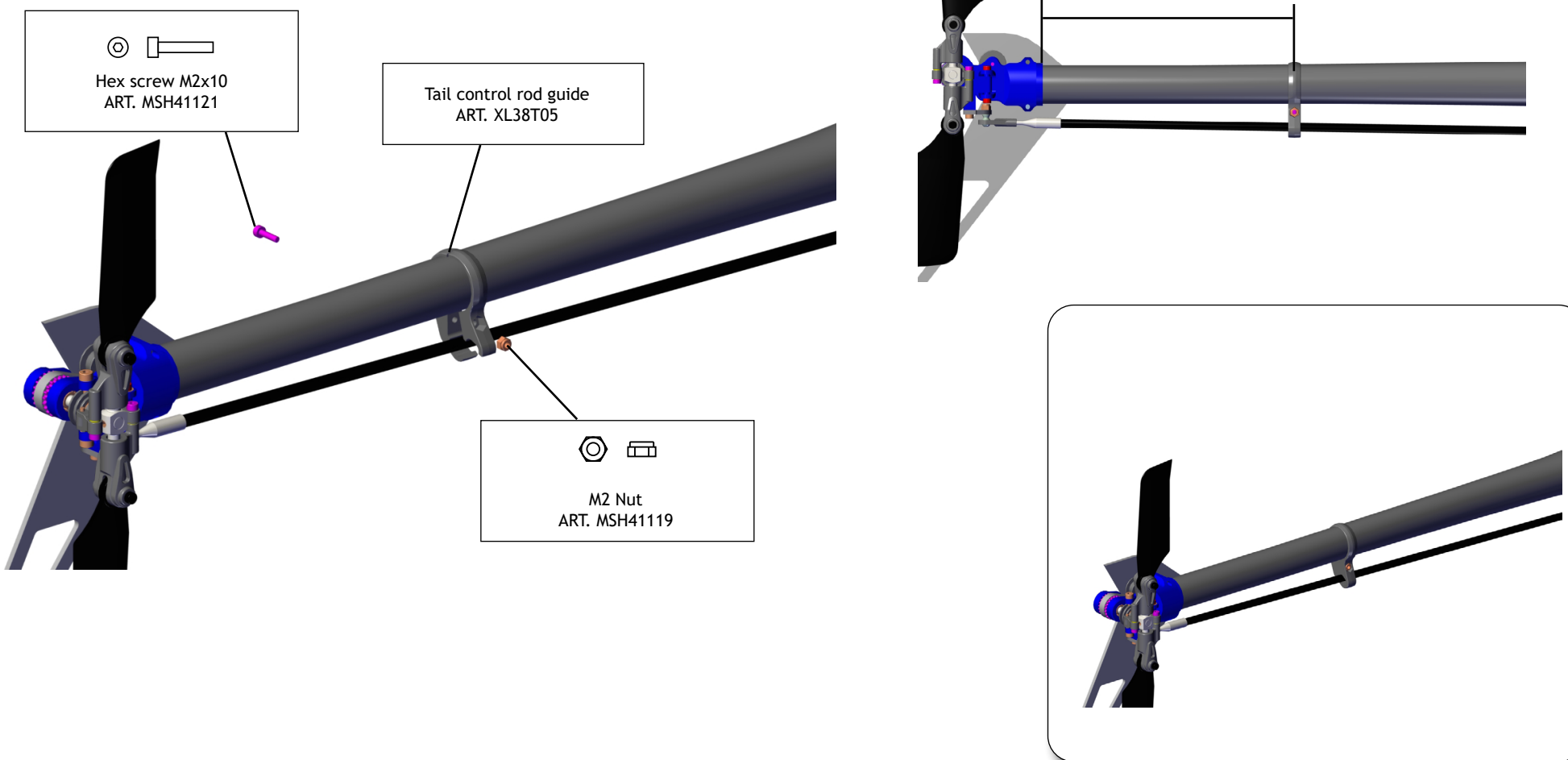


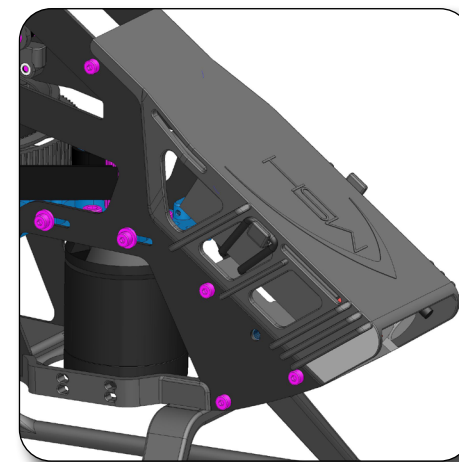
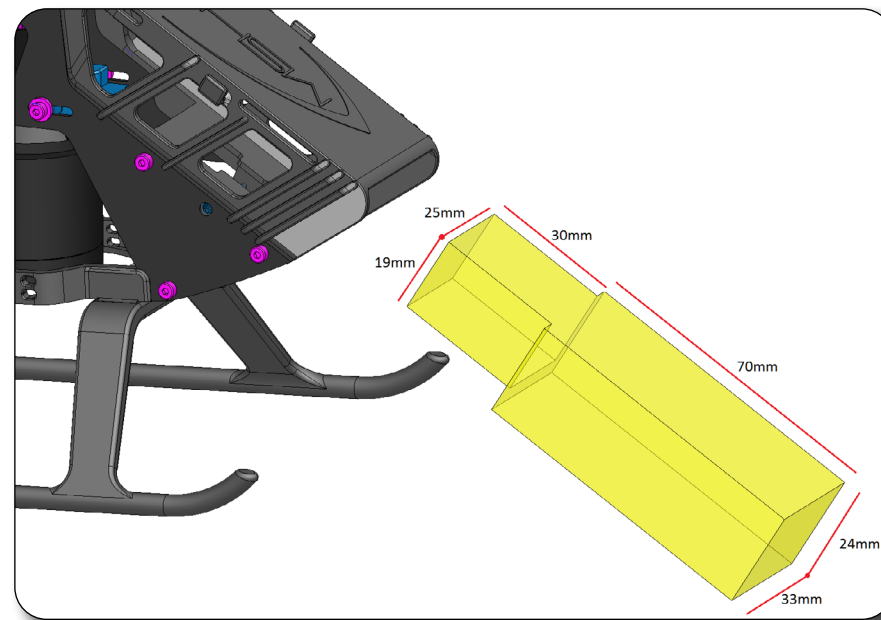
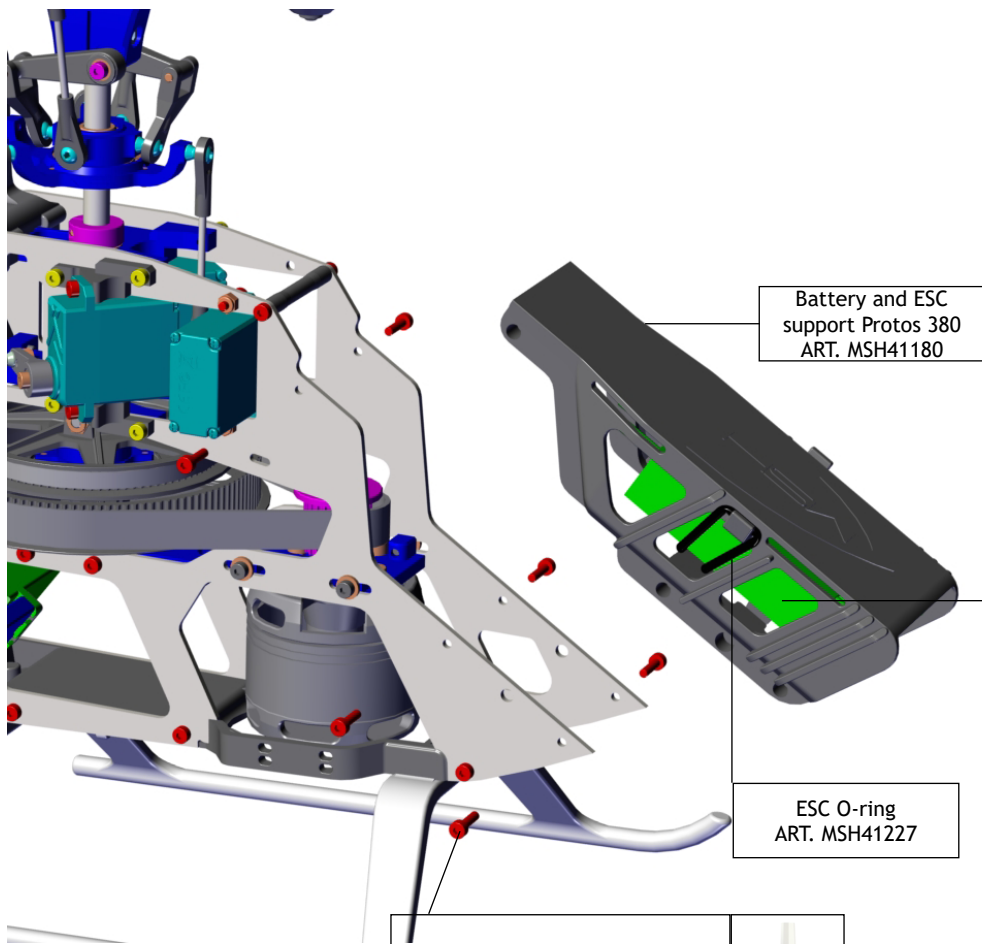
where I can find the parts

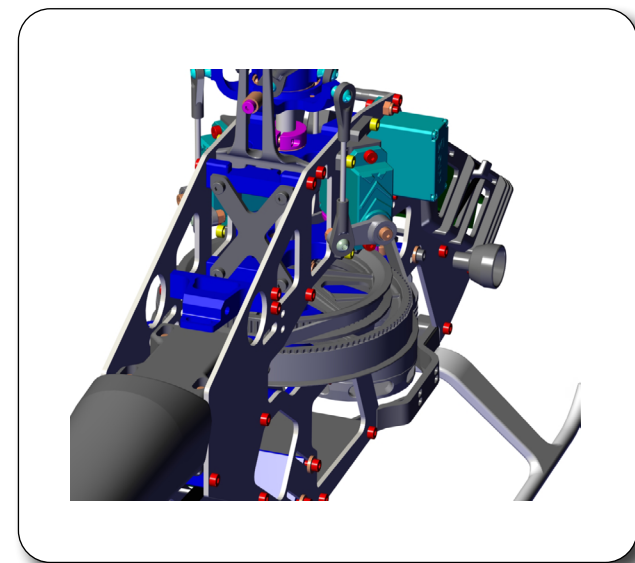
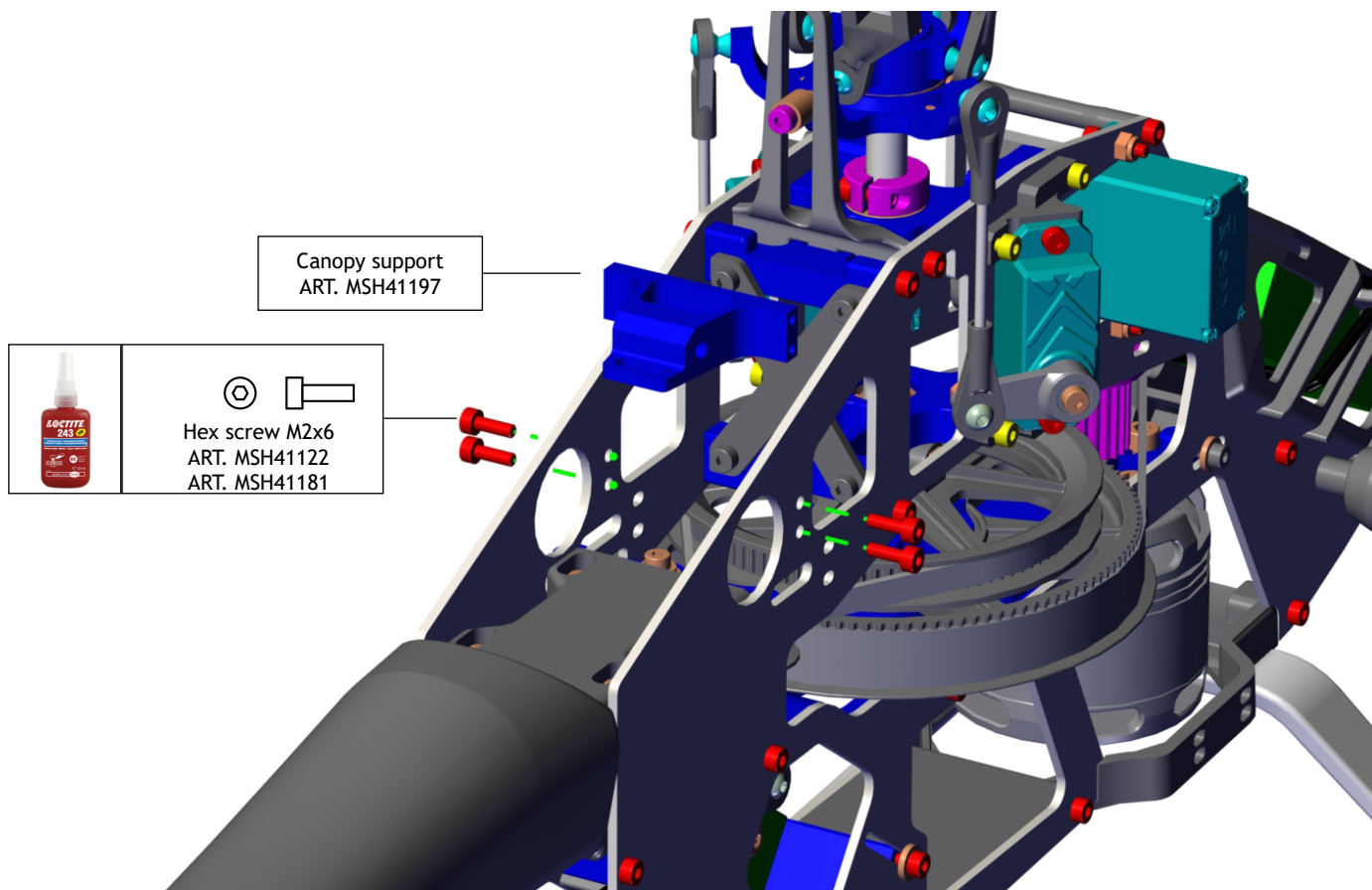


Uniball Link M2,5  
ART. MSH41083



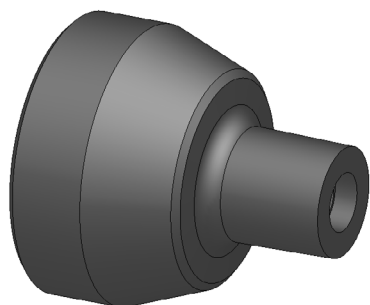








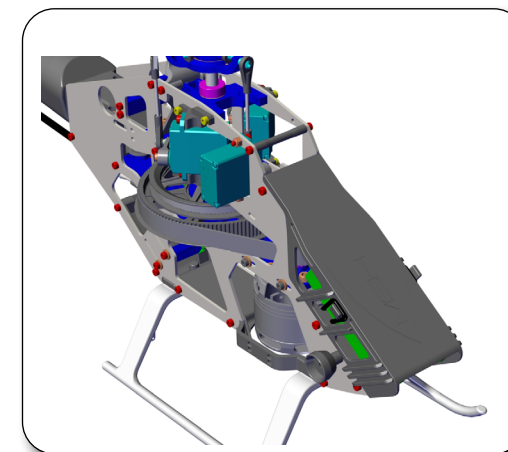
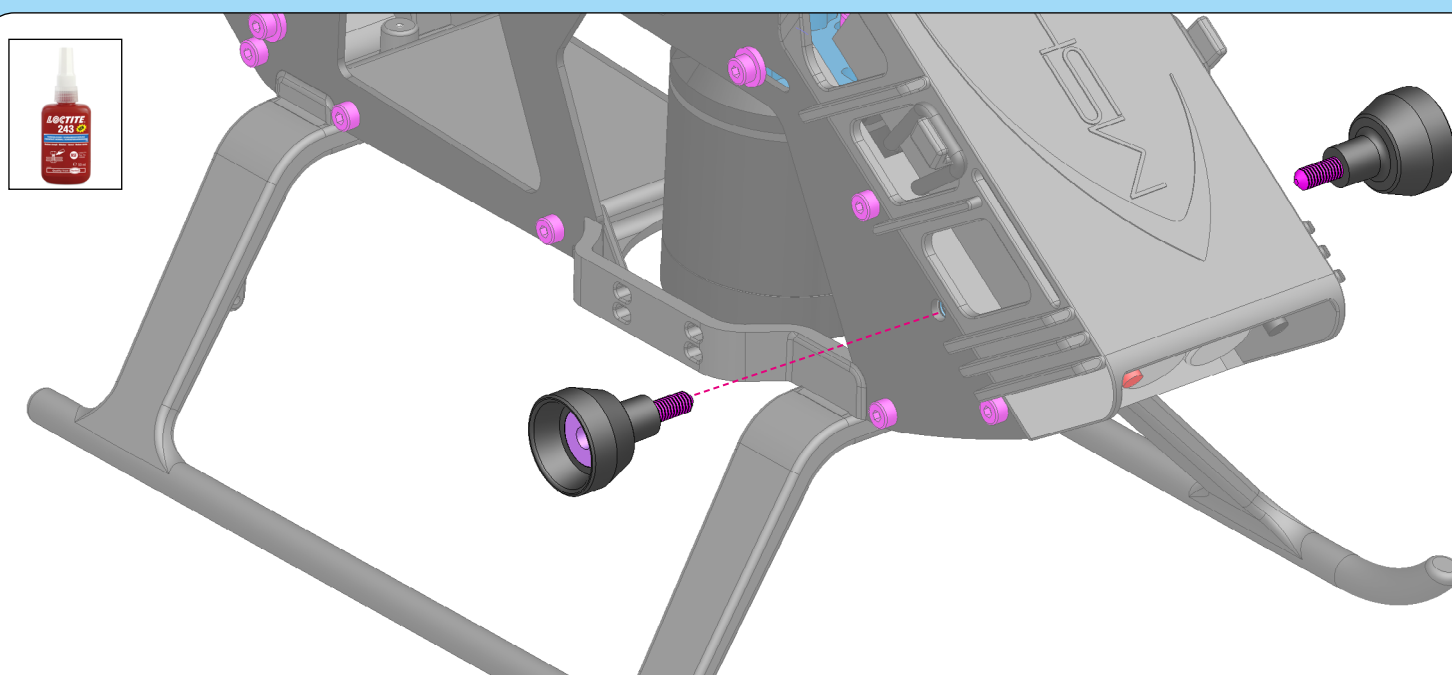
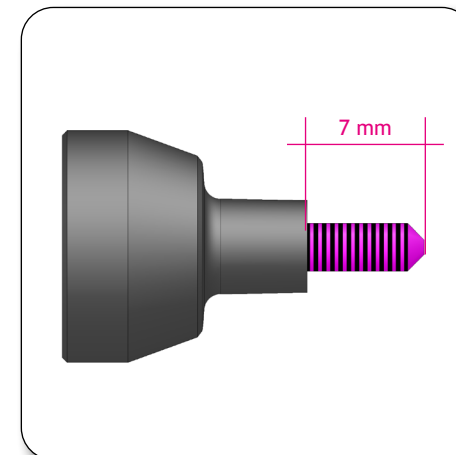
## 2X

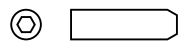


Magnet canopy support  
Protos 380  
ART. MSH41182

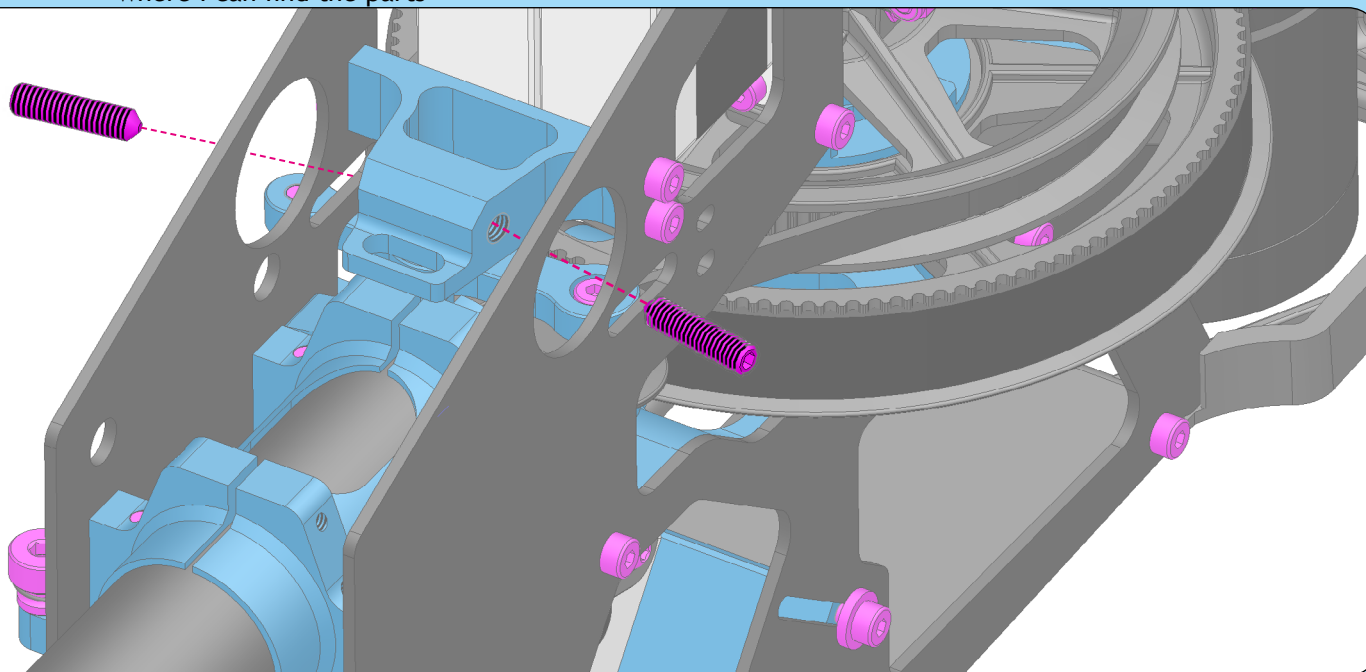


Grub screw M3x14  
ART. MSH41218  
ART. MSH41182

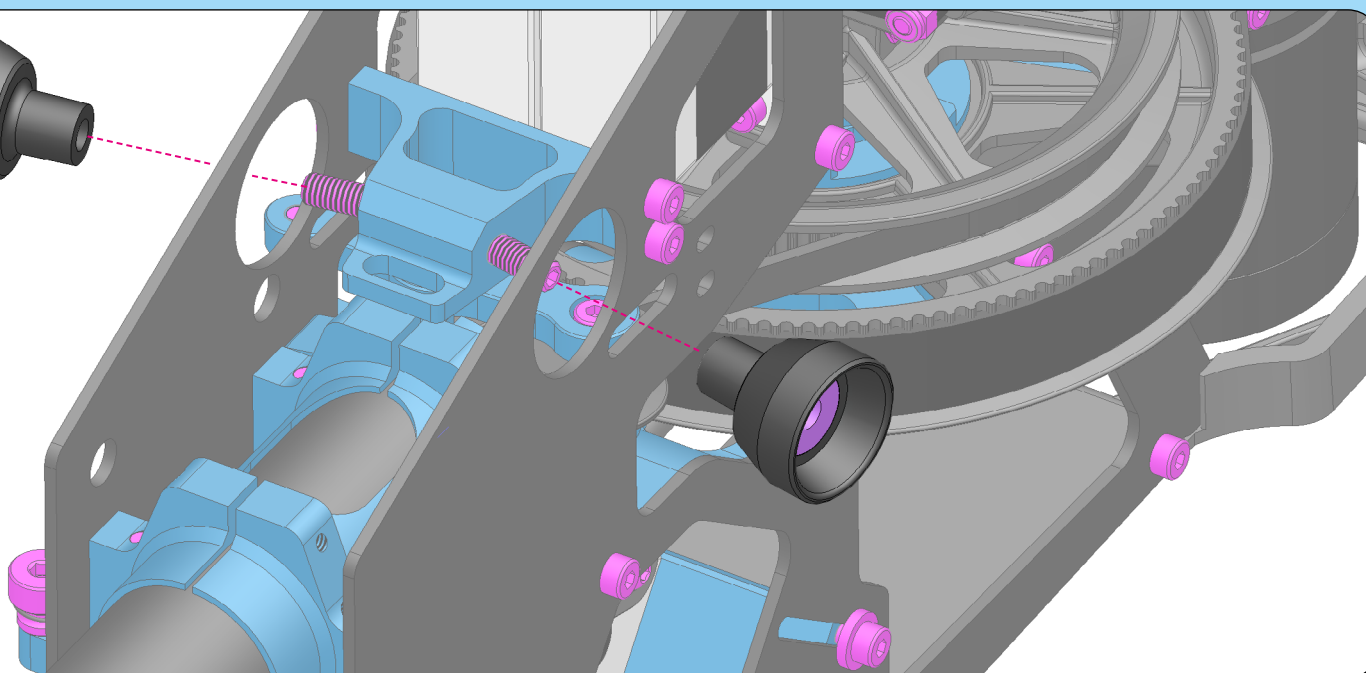
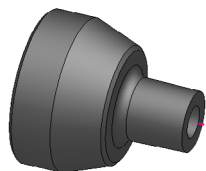


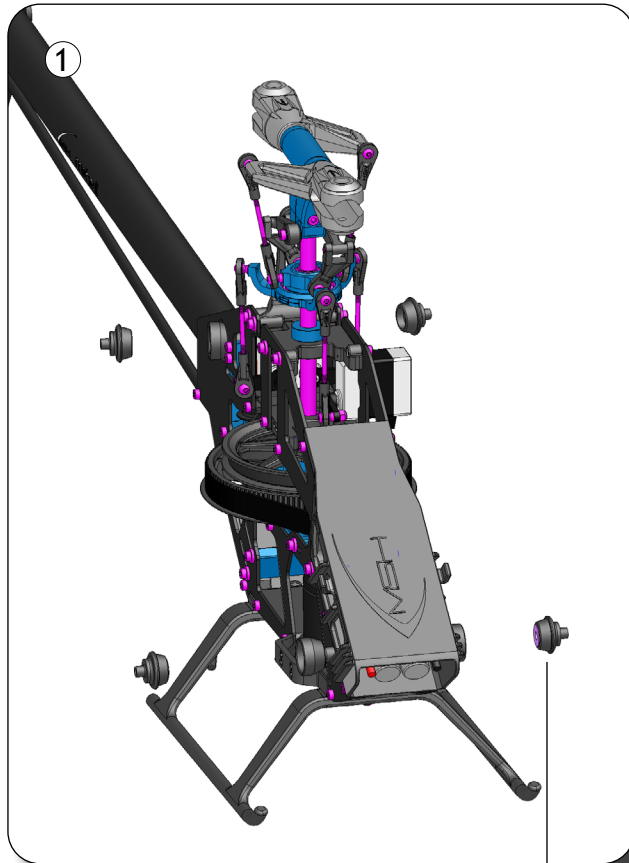


Grub screw M3x14  
ART. MSH41218  
ART. MSH41182


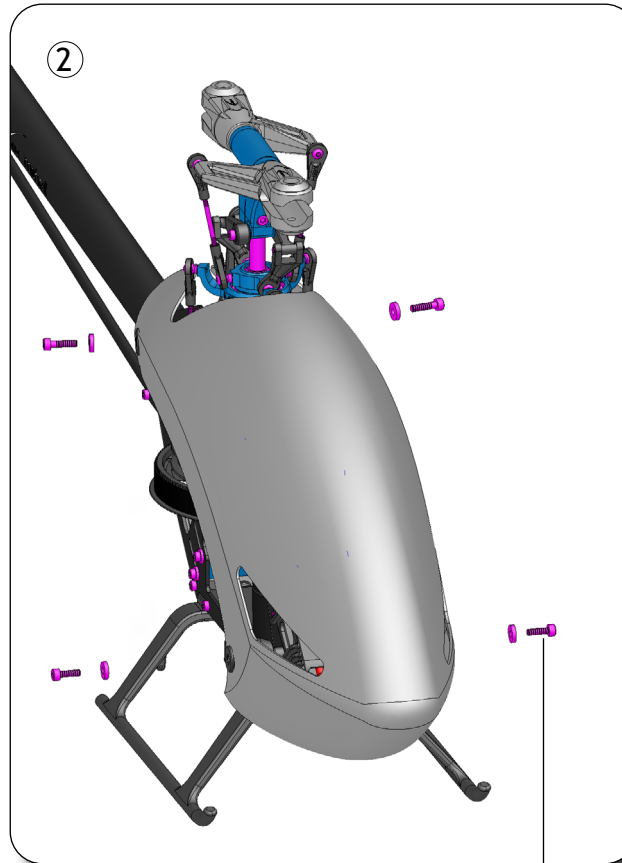


Magnet canopy support  
Protos 380  
ART. MSH41182

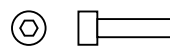




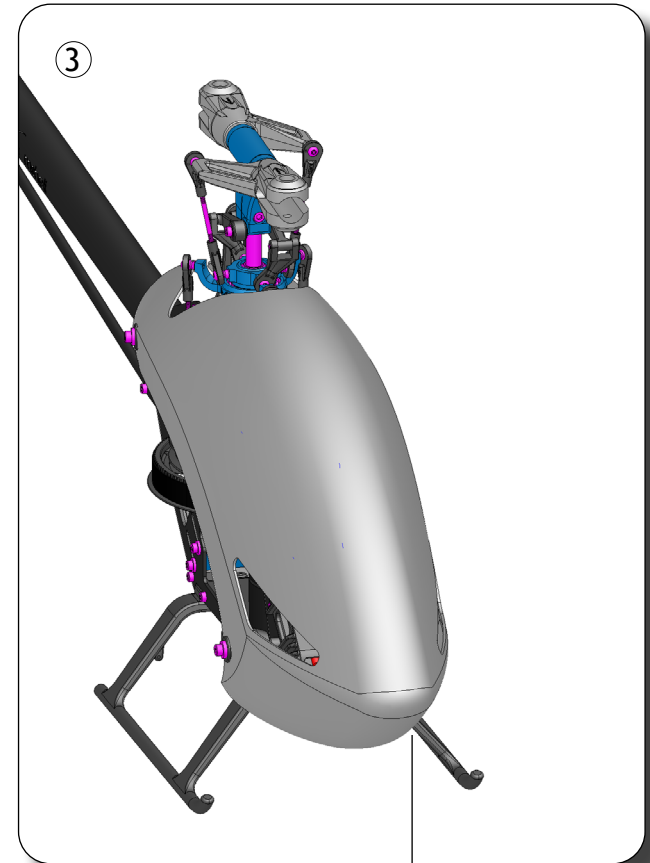
Magnet canopy support  
Protos 380  
ART. MSH41182



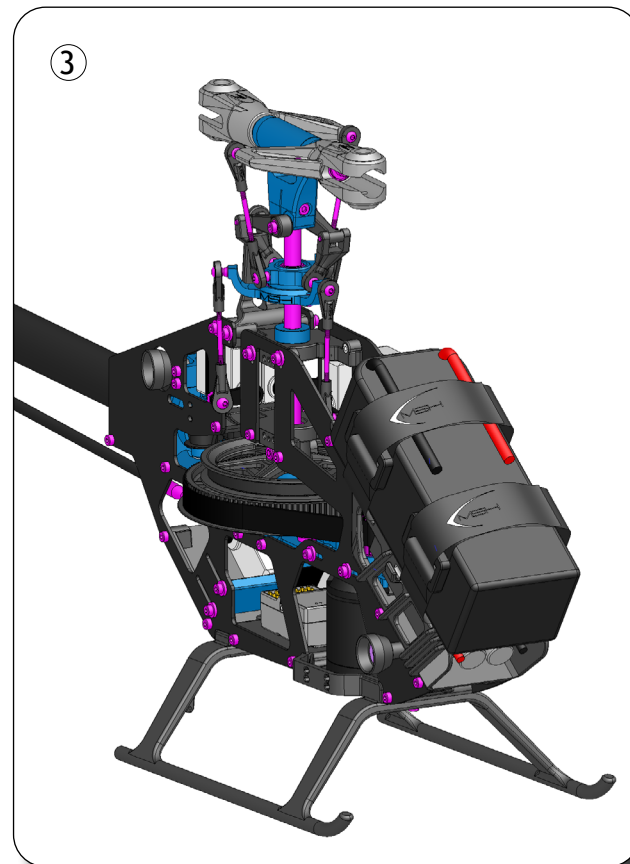
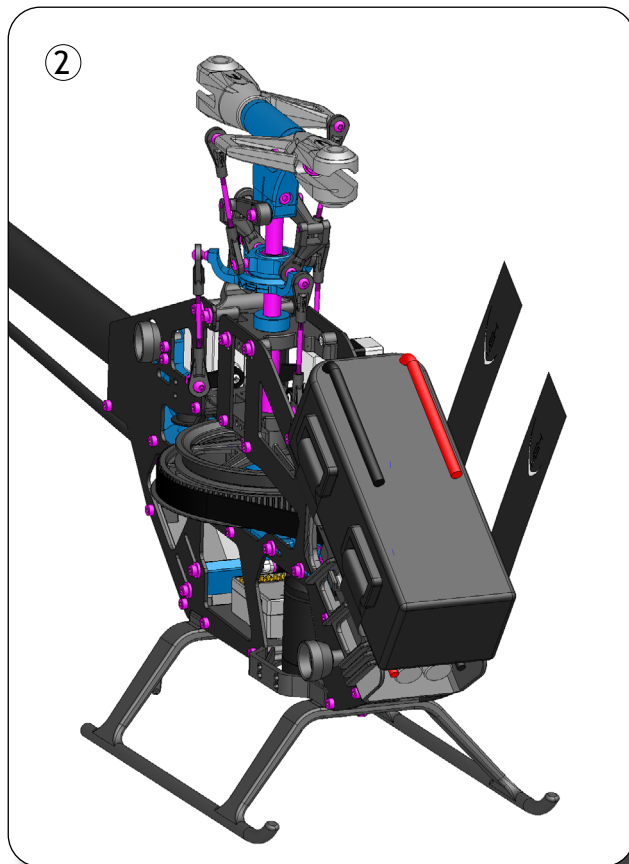
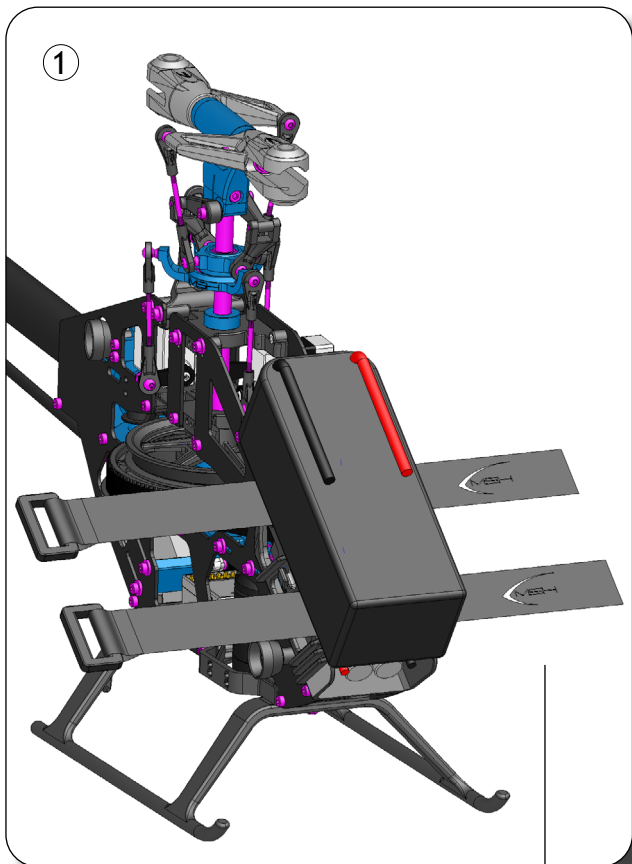
Washer 2,6x6,5x1,5  
ART. MSH41217



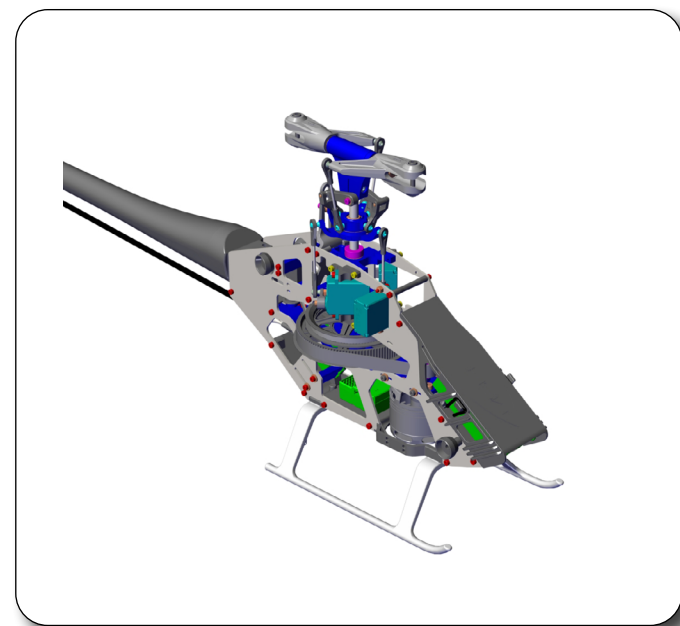
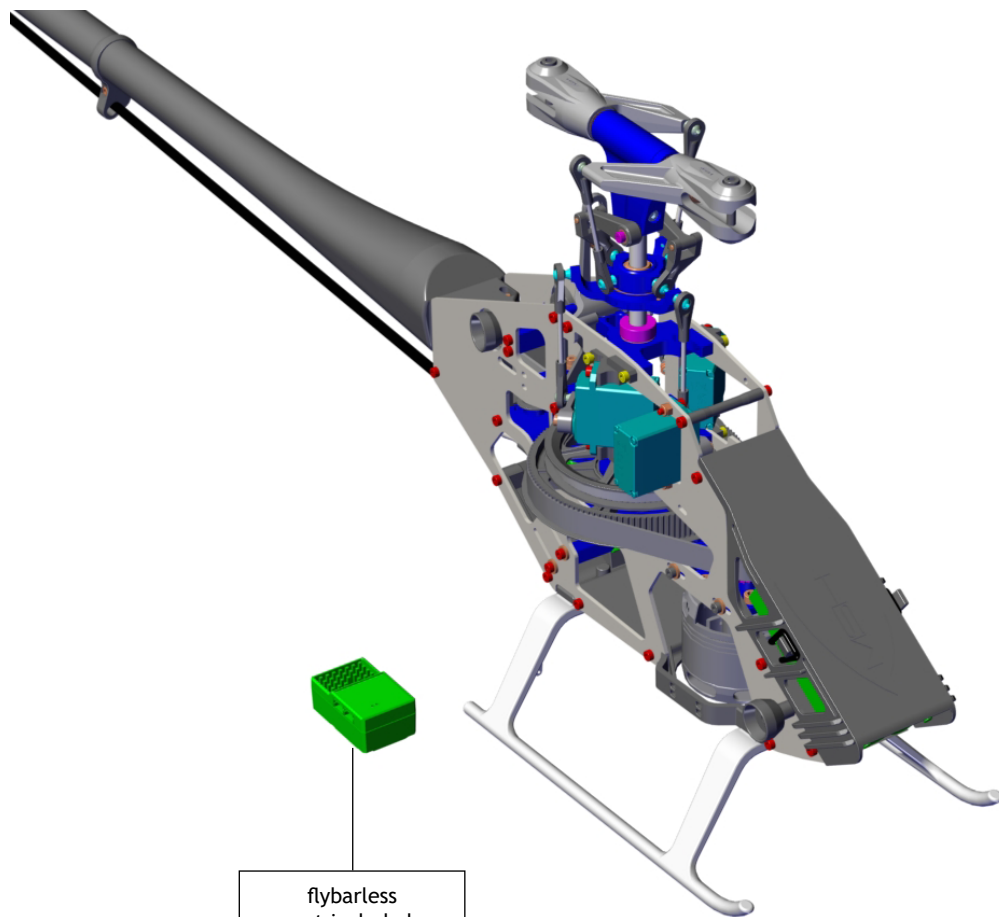
Hex screw M2,5x10  
ART. MSH51143




Painted canopy FG

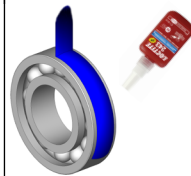


Velcro loop  
380  
ART. MSH41209

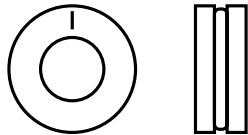




Ball bearing  
5x10x4  
ART. MSH 5107  
ART. MSH41159




Optional

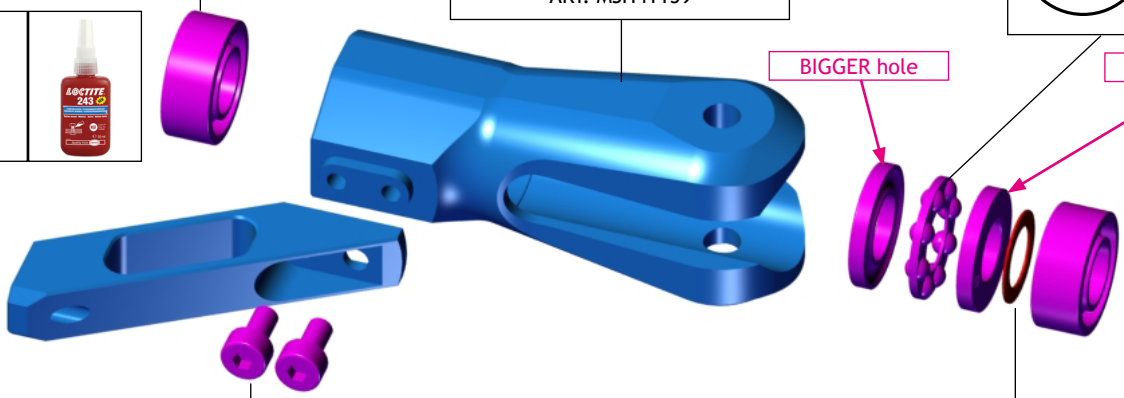



Thrust  
5x10x4  
ART. MSH51065

Main blade holder Protos 380  
ART. MSH41159



Ball M2x2.8  
ART. MSH41010

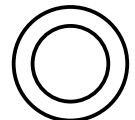


Apply grease on thrust bearing

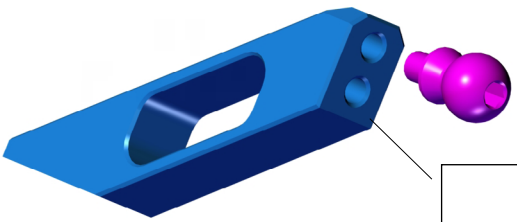
Main blade holder control arm V2  
Protos 380  
ART. MSH41160-1



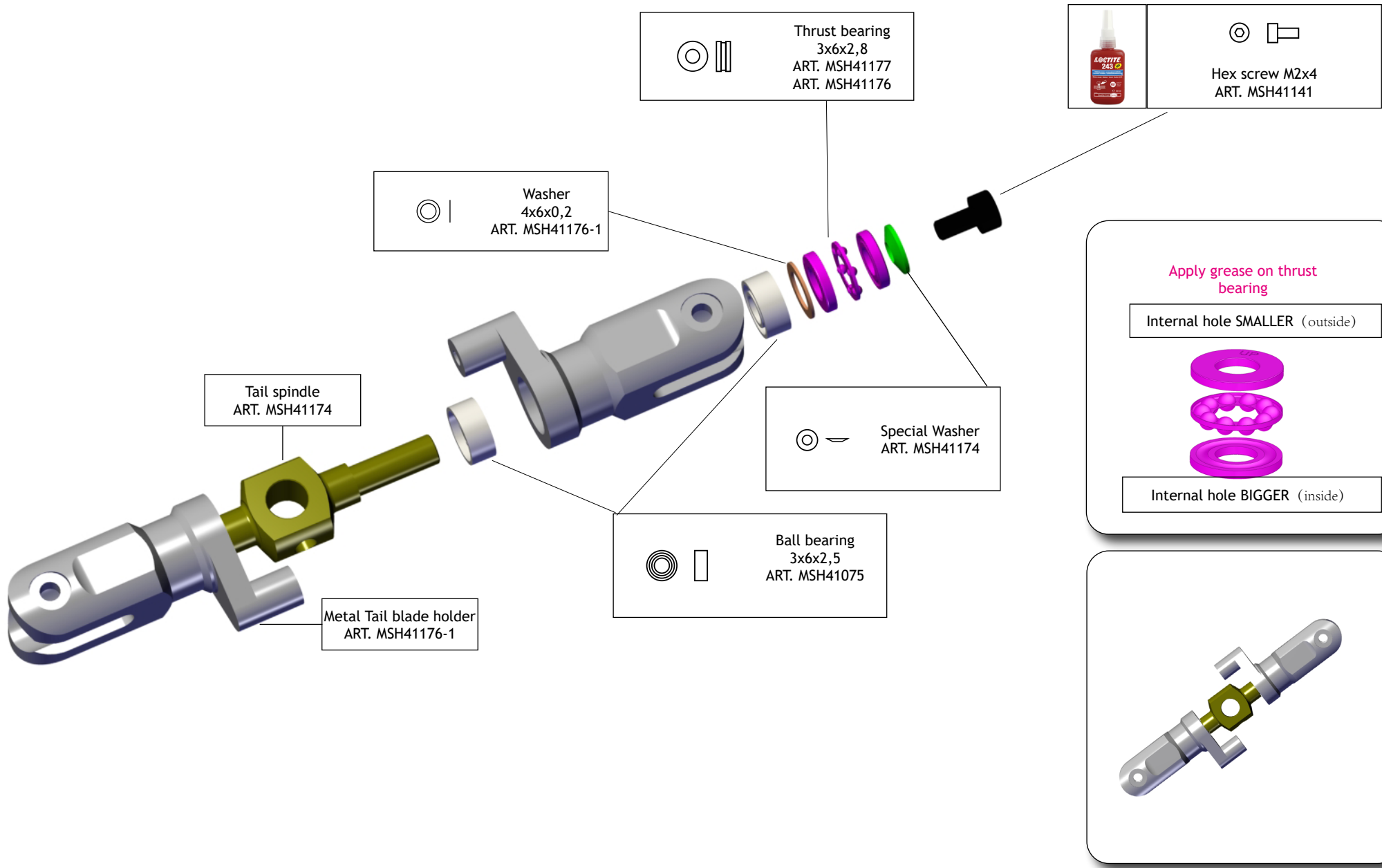
Hex screw M2x4  
ART. MSH41141



Washer  
5x7, 5x0,2  
ART. MSH41211



Inner hole agile  
outer hole stable



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