Manual

LOGO 690 SX

Mikado
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Max. rotorhead rpm LOGO SX 690: 2000
Max. collective range: +/- 11°
Max. rotor blade size: 690 mm
Max. tail rotor blade size: 105mm
Max. LiPo Akku size: 10S 5000 mAh
Max. LiPo Akku size: 12S 5000 mAh

LOGO 690 SX is not recommended for novices. This helicopter is a complex system. Basic knowledge of the function of a model helicopter is required to build and operate the LOGO 690 SX.

Note: There is no bag 10. The bags are numbered 1 to 12, with the exception of 10.

Warning:
The LOGO 690 SX is designed to be used with Scorpion motor HK 4525-370 Kv and a 15 teeth pinion exclusively. Do not use any other motors of any kind, as this can cause damage or failure of the gear train. It is absolutely essential to keep within the recommended pitch range from +/- 11°. Otherwise the one way bearing will be damaged.

Safety Instructions

OPERATING YOUR MODEL SAFELY
Operate the helicopter in spacious areas with no people nearby.

!Warning: 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 any rain, snow, fog or other precipitation

If you do not observe these instructions you may be held reliable 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.

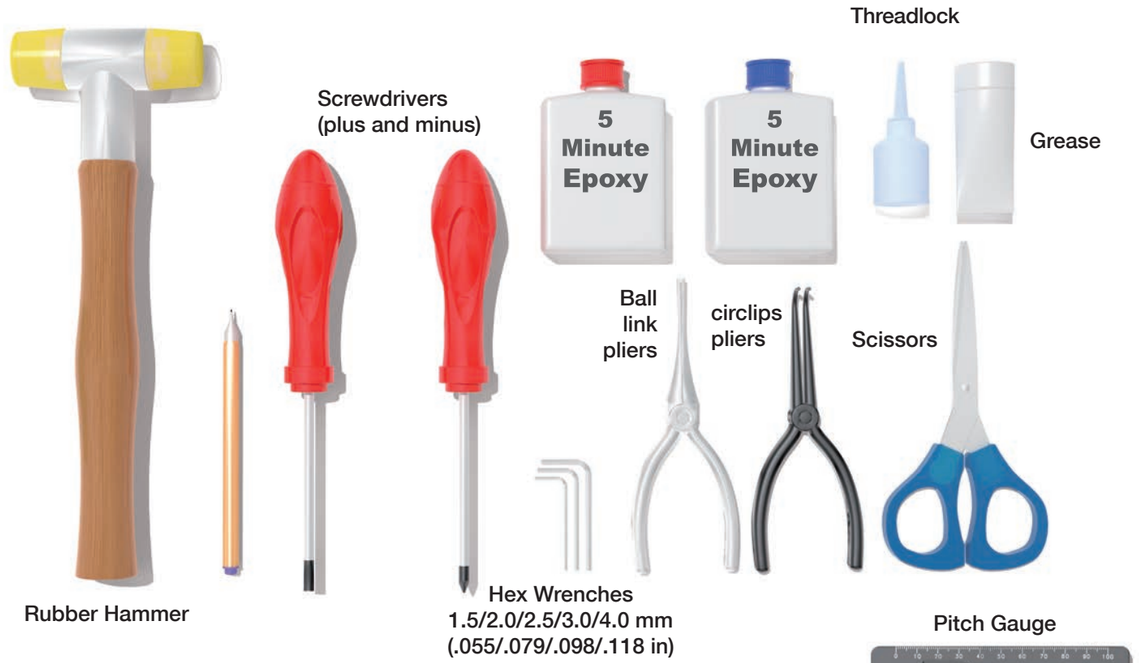
Never use a frequency which someone else is using at the same time. Radio signals will be mixed and you will lose control of your model.

If the model shows irregular behavior, bring the model to a halt immediately. Turn off all power switches 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.

! Warning: 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.

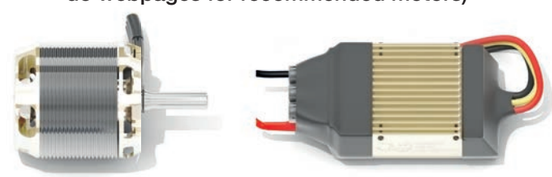
PRIOR TO ADJUSTING AND OPERATING YOUR MODEL, OBSERVE THE FOLLOWING
!Warning: Operate the helicopter only outdoors and out of people's reach as the main rotor operates at high rpm!
! Warning: While adjusting, stand at least 10 meters/yards away from the helicopter!
Novice R/C helicopter pilots should 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!

Tools for Assembly & R/C Equipment



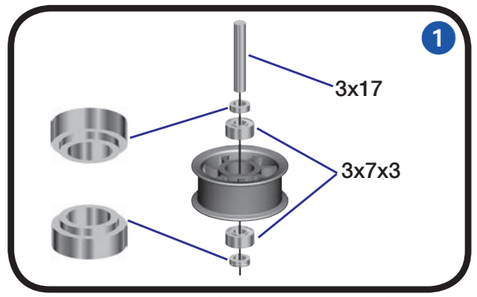
Alle shown products are examples. You may use different brands.

Motor + Speed Controller (check the Mikado webpages for recommended motors)

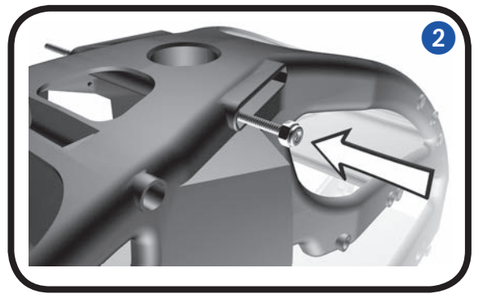


Radio with Heli-Software

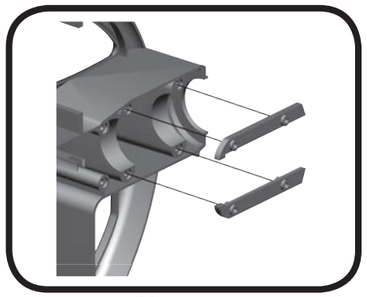
Bag 1



Before you combine the two sides of the main frame, attach the two belt tensioners (#4089, bag 6).



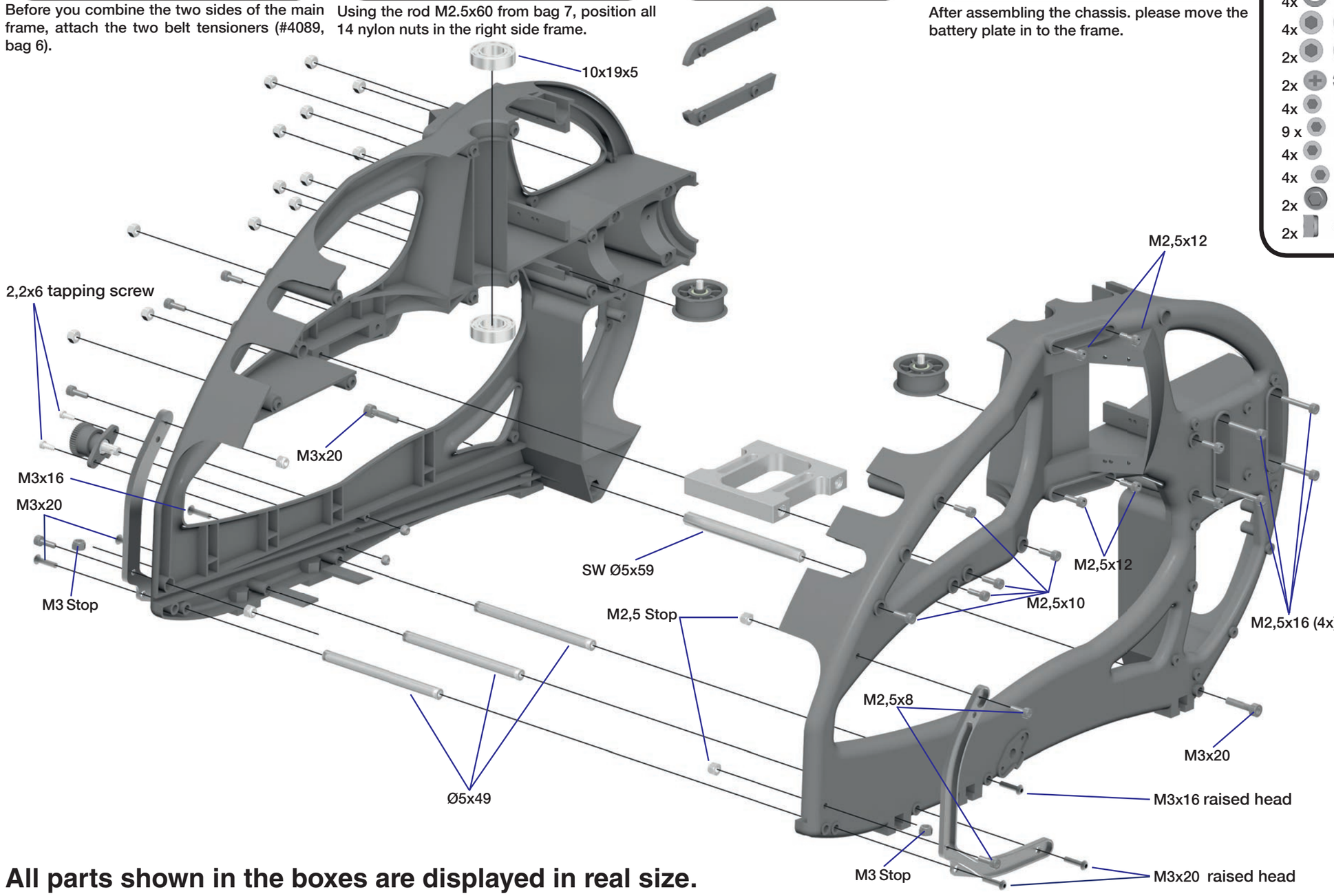
Using the rod M2.5x60 from bag 7, position all 14 nylon nuts in the right side frame.



After assembling the chassis. please move the battery plate in to the frame.

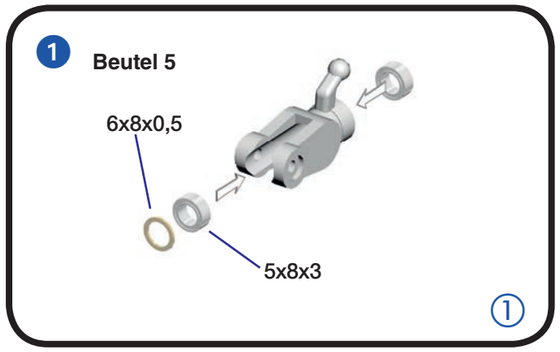
Bag 1

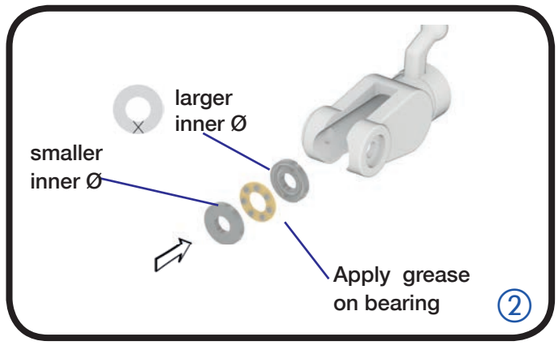
17x M2,5
1x SW5x59
3 x 5x49
2x 3x17
4x 3x5x2,5
4x M3x20
2x M3x16
2x 2,2x6
4x M2,5x8
9 x M2,5x10
4x M2,5x16
4x M2,5x12
2x M3x20
2x M3

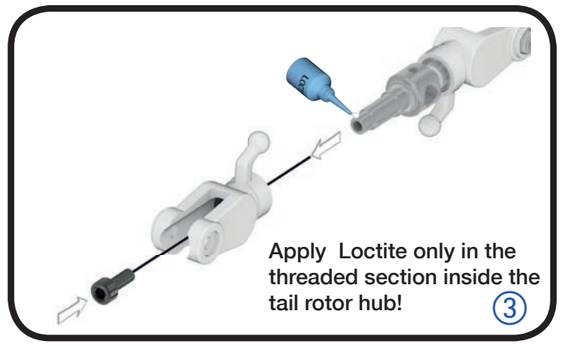


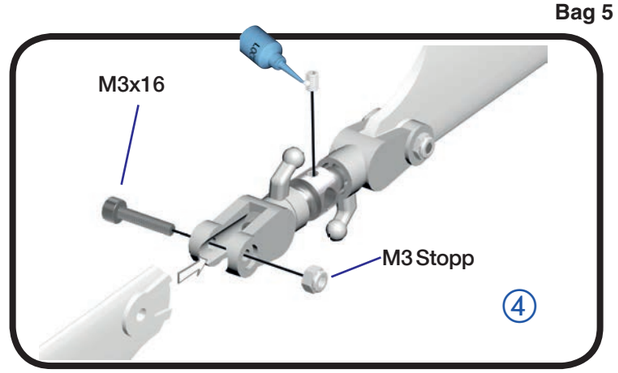
You should position the motor pinion on the motor shaft, before you mount the motor plate. You may also mount the motor pinion at a later stage, but the process will be more cumbersome. For reading on how to mount the motor pinion, please flip to page 9.

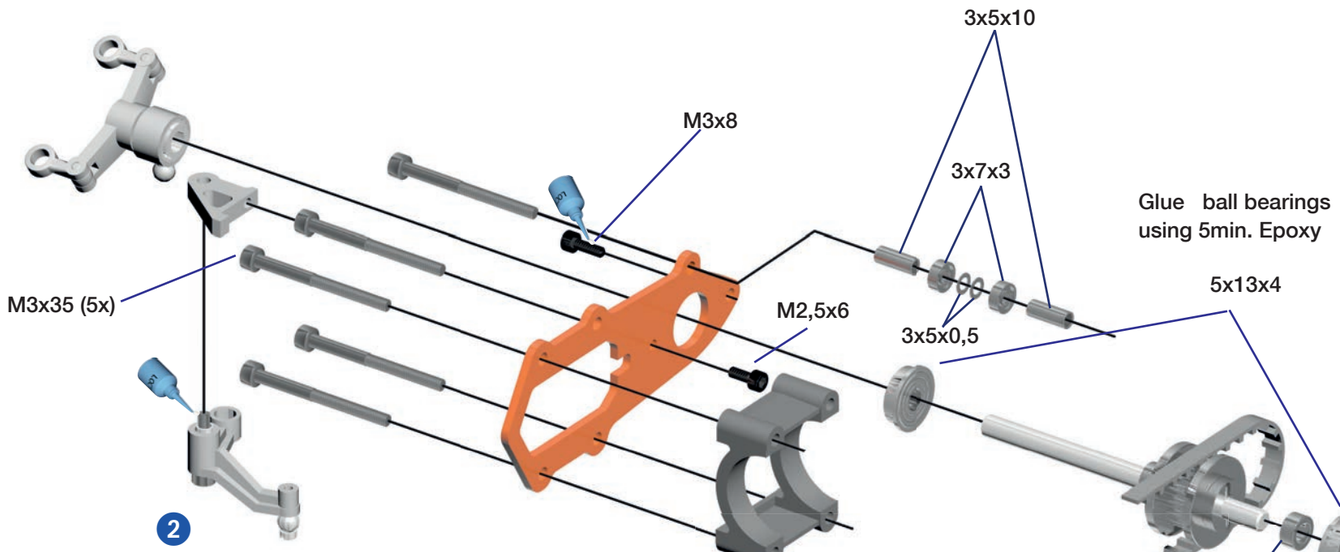
All parts shown in the boxes are displayed in real size.

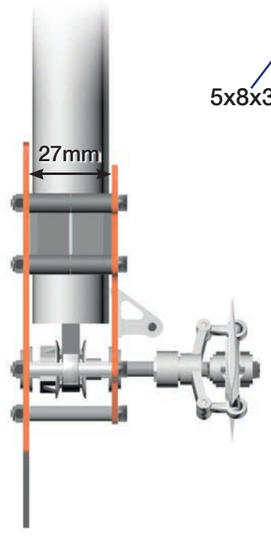

1
Beutel 5
6x8x0,5
5x8x3
①

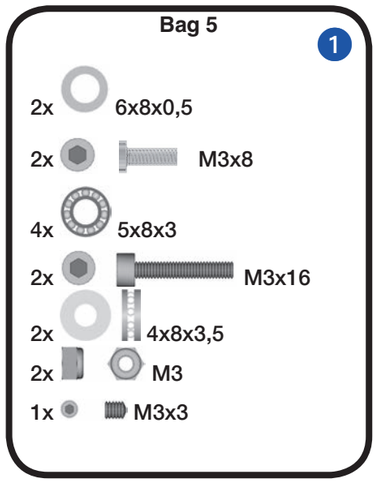

larger
inner Ø
smaller
inner Ø
Apply grease
on bearing
②

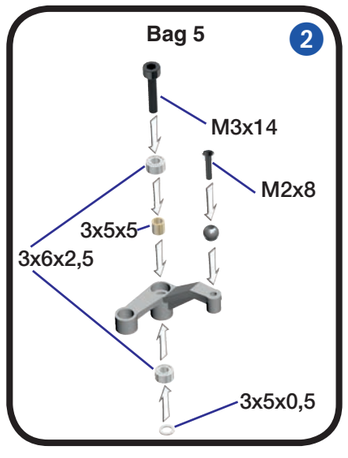

Apply Loctite only in the
threaded section inside the
tail rotor hub!
③

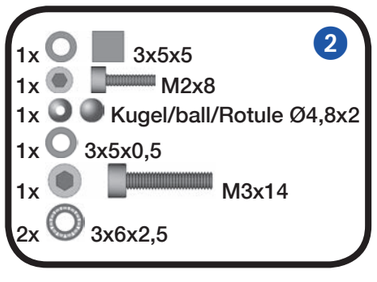

M3x16
M3 Stopp
④

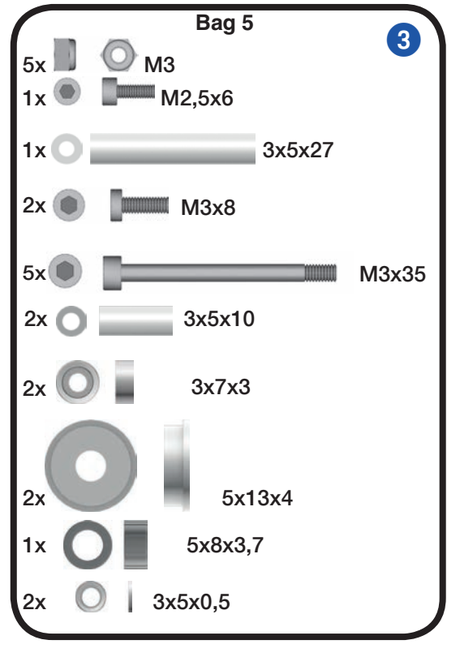

3x5x10
M3x8
3x7x3
M3x35 (5x)
M2,5x6
3x5x0,5
Glue ball bearings
using 5min. Epoxy
5x13x4
3x8
3x5x27
5x8x3,7
M3 Stopp
(5x)
2
3


27mm


Bag 5
1
2x 6x8x0,5
2x M3x8
4x 5x8x3
2x M3x16
2x 4x8x3,5
2x M3
1x M3x3


Bag 5
2
M3x14
M2x8
3x5x5
3x6x2,5
3x5x0,5

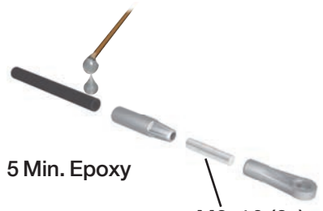

2
1x 3x5x5
1x M2x8
1x Kugel/ball/Rotule Ø4,8x2
1x 3x5x0,5
1x M3x14
2x 3x6x2,5

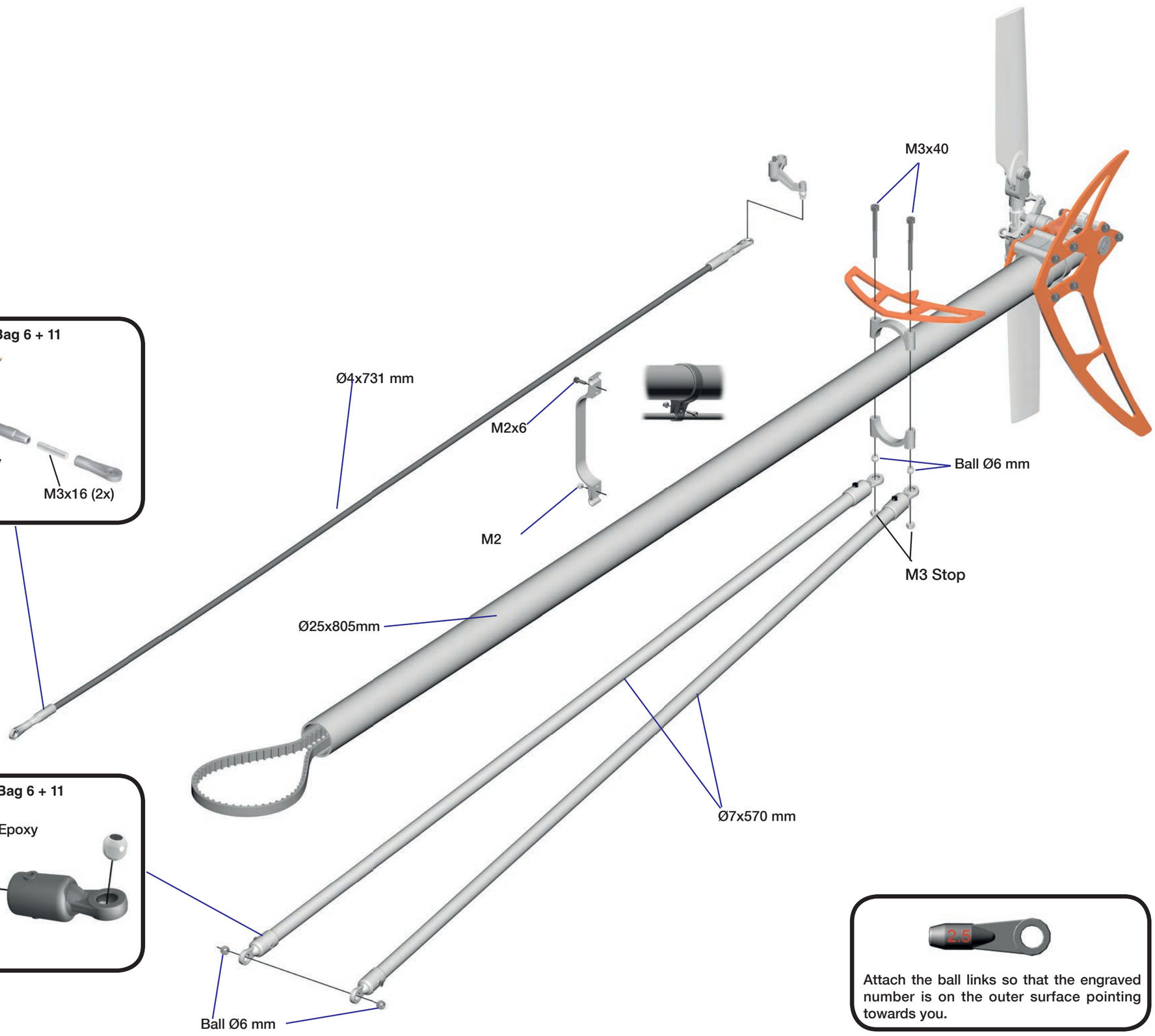

Bag 5
3
5x M3
1x M2,5x6
1x 3x5x27
2x M3x8
5x M3x35
2x 3x5x10
2x 3x7x3
2x 5x13x4
1x 5x8x3,7
2x 3x5x0,5

Bag 6

2x	M3
1x	M2x6
1x	M2 Stop
2x	M3x16
4x	Kugel/ball/Rotule Ø6x3
2x	M3x40
2x	3mm
2x	

Bag 6 + 11

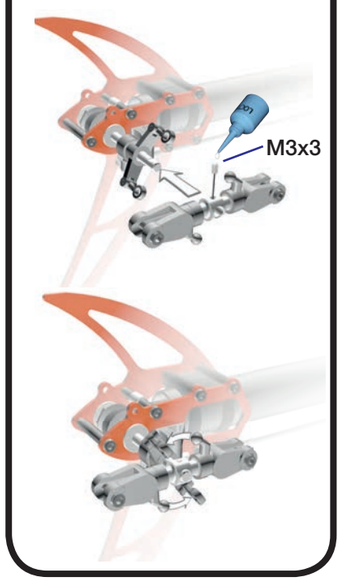




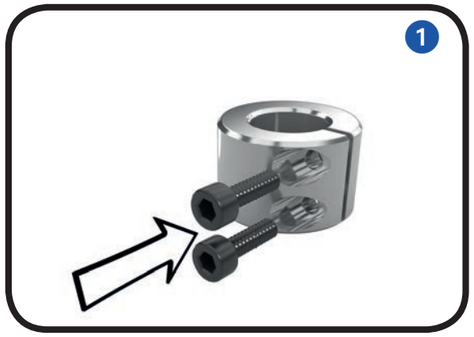
Bag 6 + 11

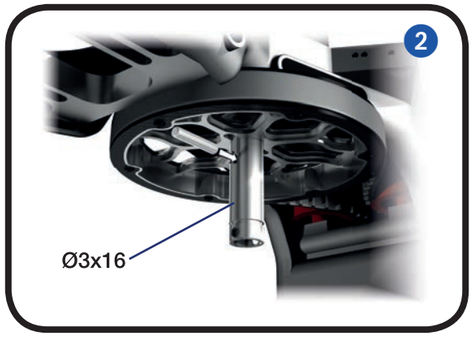
Attach the ball links so that the engraved number is on the outer surface pointing towards you.

Bag 5



Bag 2 • Bag 3 • Bag 8





Bag 2

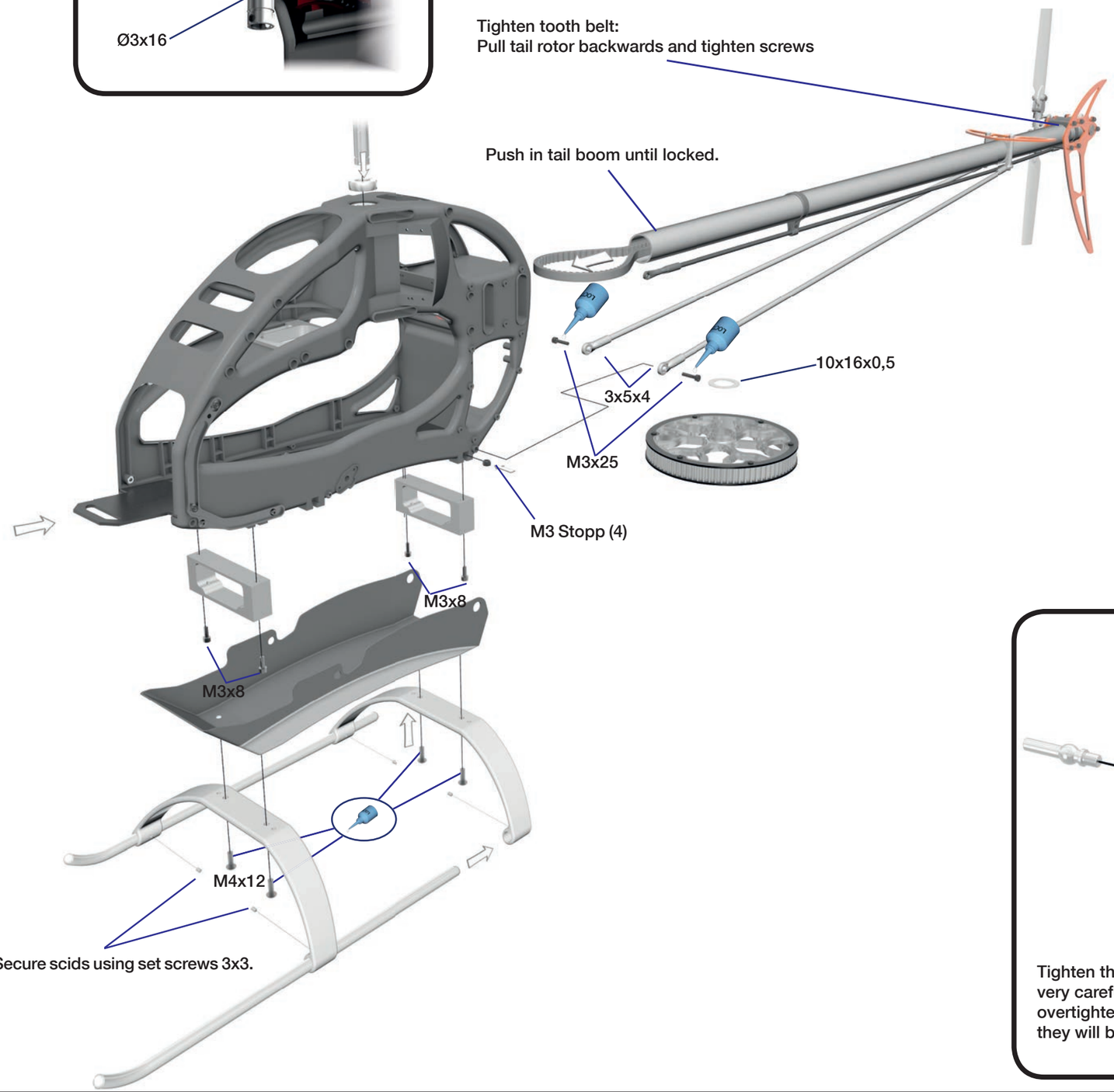
1x 10x16x0,5

1x 3x16

2x M2,5x8

4x M2,5x8

4x M2,5 Stop



Bag 8

4x M3

4x M3x8

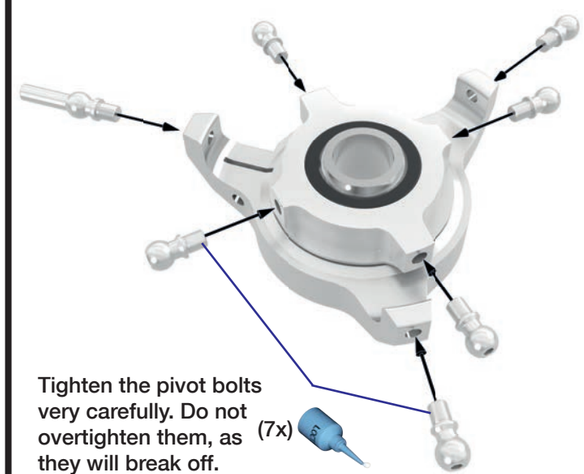
4x M3x3

4x M4x12

2x 3x5x4

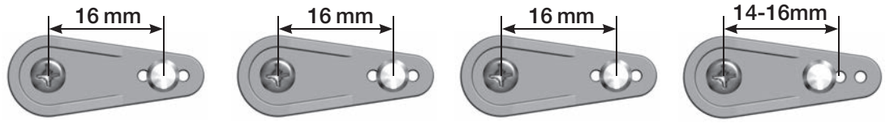
2x M3x25

Swashplate bag 3

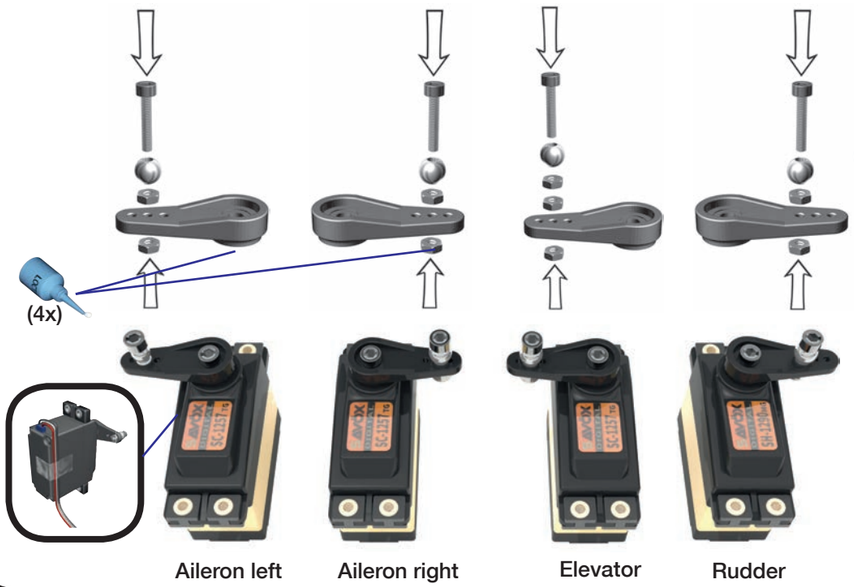


Bag 1 • Bag 9

1 LOGO Rotor Head (V-Stabi, flybarless head)

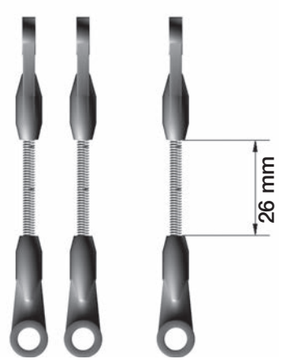


2



3

Attach the ball links so that the engraved number is on the outer surface pointing towards you.



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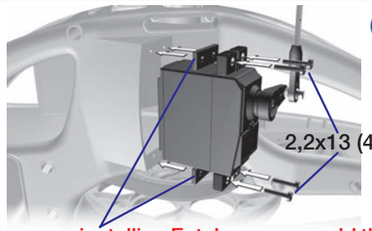
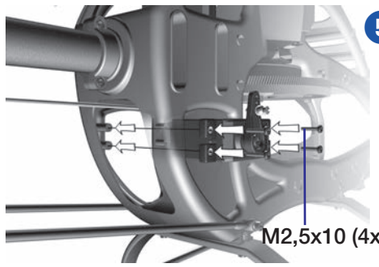
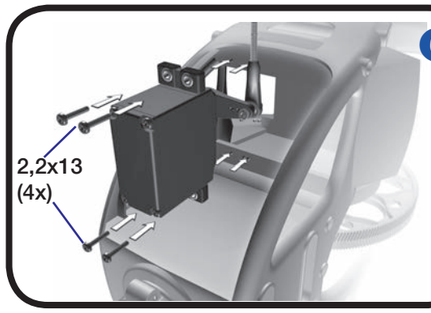


If you are installing Futaba servos, add the distance plate for the two aileron servos.

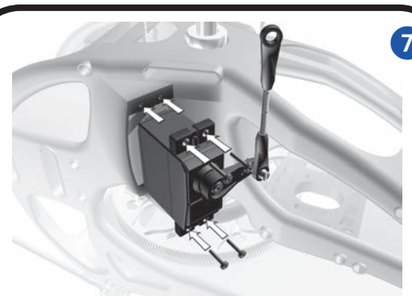
5



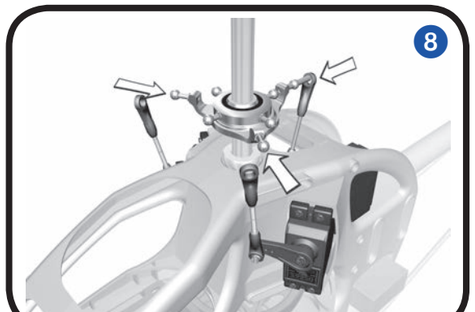
6



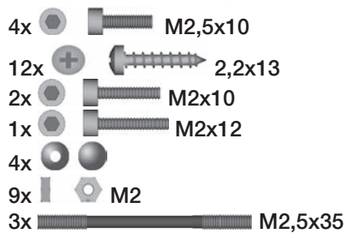
7



8



Bag 9

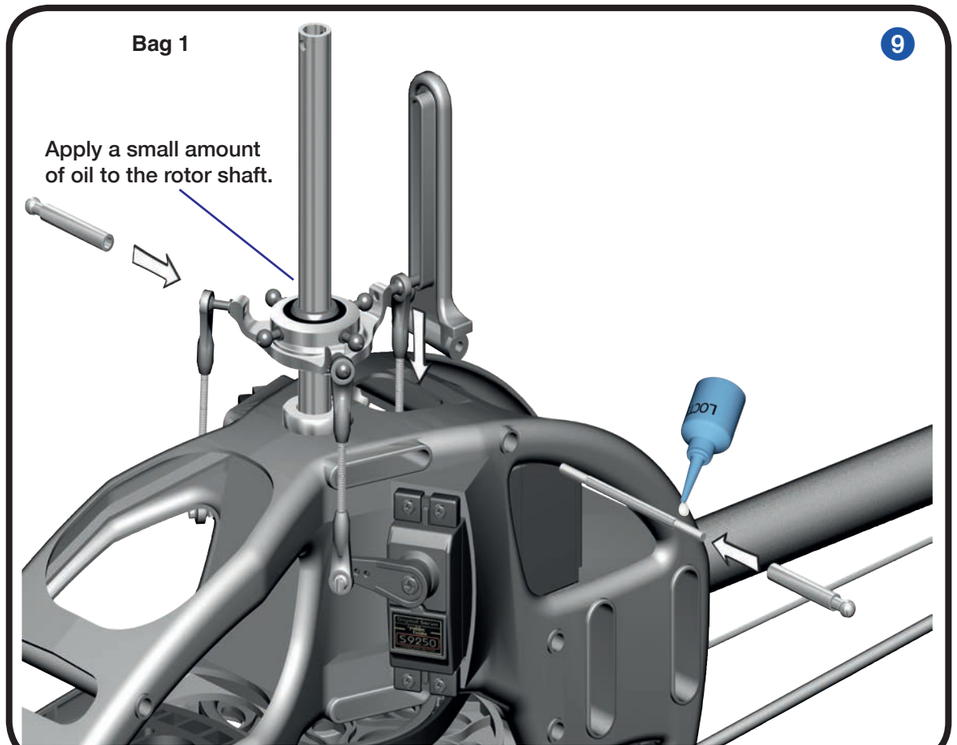


Bag 1

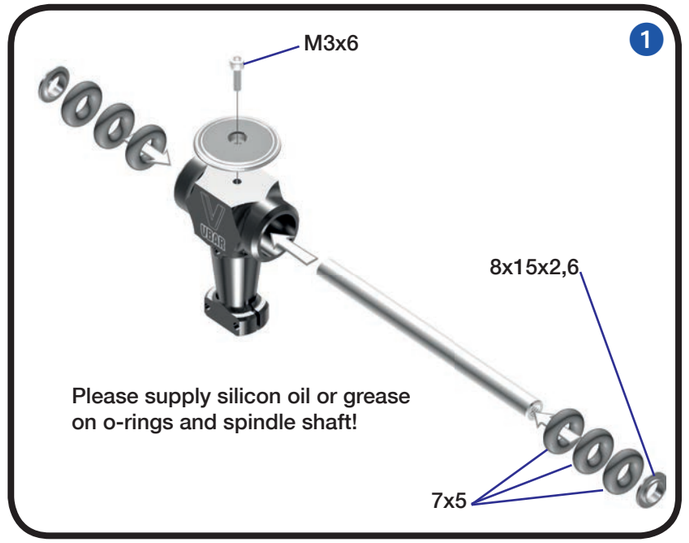
Using the two spacer washers (3x5x1.2), you can adjust the fitting of the canopy. Without the washers, the edges will overlap. If washers are used, edges are touching slightly.

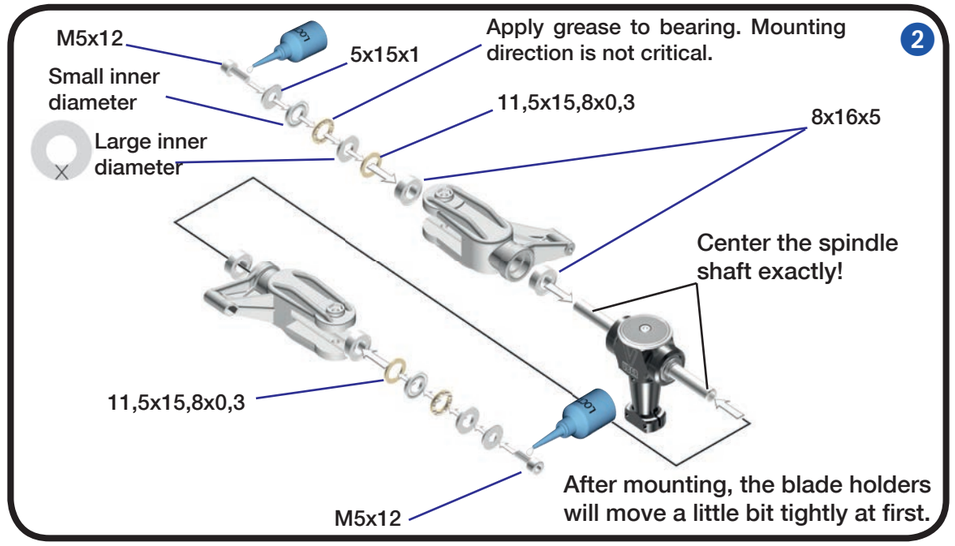
9

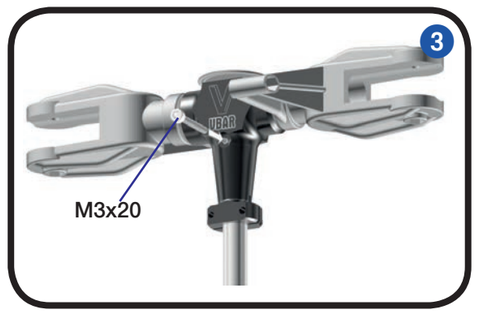
Bag 1

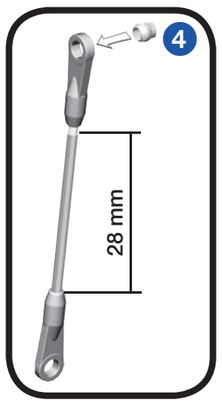


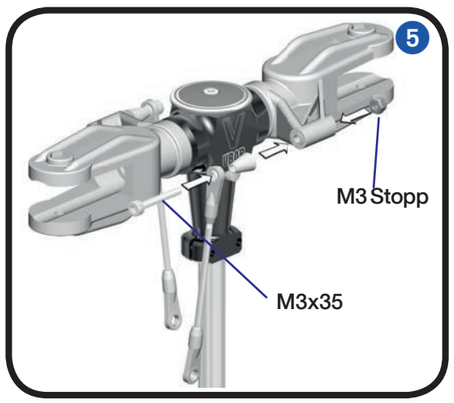
Bag 7

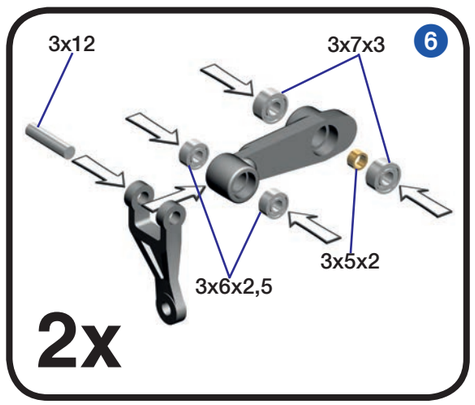


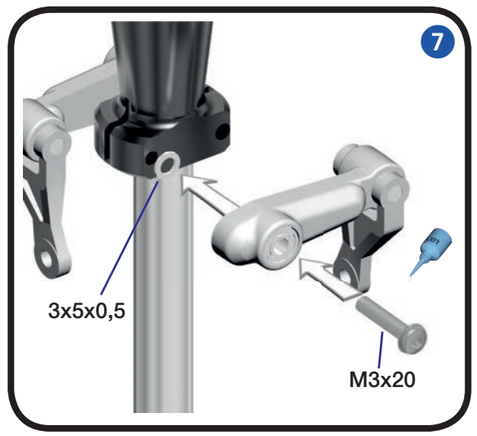


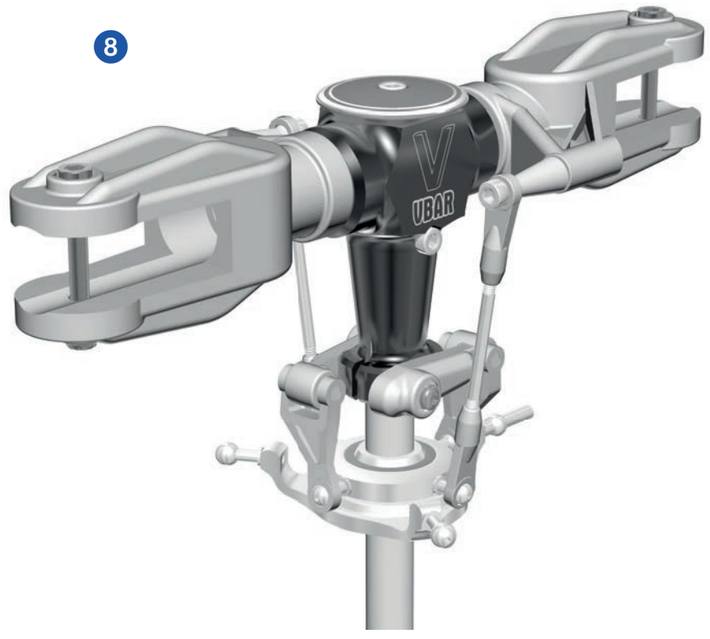












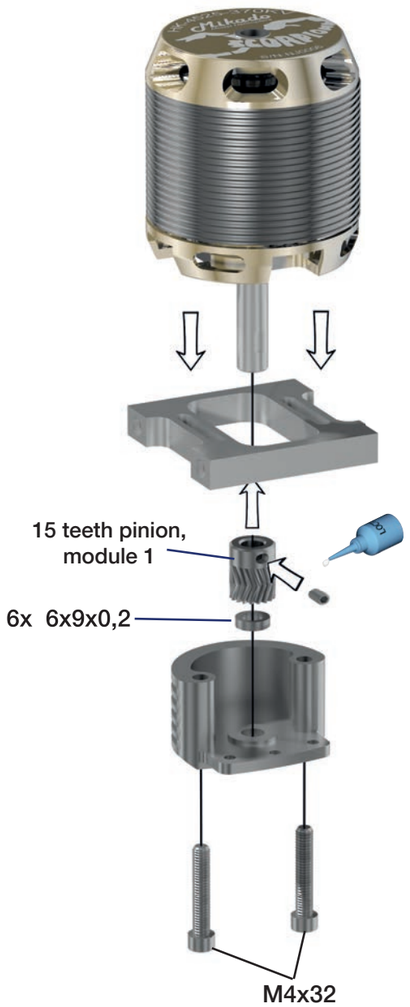
Bag 7

- 1x M3x6
- 4x
- 6x 7x5 O-Ring
- 2x 8x15x2,6
- 4x 8x16x5
- 2x 8x16x5
- 4x 11,5x15,8x0,3
- 2x M3x20
- 2x M3x35
- 2x M5x12
- 2x M5x36
- 2x 5x15x1
- 2x M3 Stop
- 2x M5 Stop
- 2x Ø4,8x3
- 2x 3x12
- 4x 3x7x3
- 4x 3x6x2,5
- 2x 3x5x2
- 2x M3x20
- 2x M2,5x40
- 4x

7 Mounting the Motor

Scorpion Motor HK-4525-370Kv

1



Please mount the motor, motor plate, pinion and counterbearing as illustrated in the above picture. When positioning the pinion, please ensure that it sits exactly on the ball bearing of the counterbearing with only one shim (6.9x0.2) inbetween. Also make sure that the M4 set screw sits on the flattened area of the motor shaft.

For mounting the new motor counterbearing with rotorshaft suport, please follow these steps: First, mount the main gear, the rotor shaft assembly and all shims. Secure assembly with the 10 mm c-clip (Picture 2). The main gear will have 0.5 mm axial play. This is normal and will facilitate the mounting and positioning of the pinion later on. Now mount the motor and the counterbearing. Once the motor position is set (please ensure correct gear back-lash!), please screw the rotorshaft support onto the counterbearing, using the three M3x6 screws.

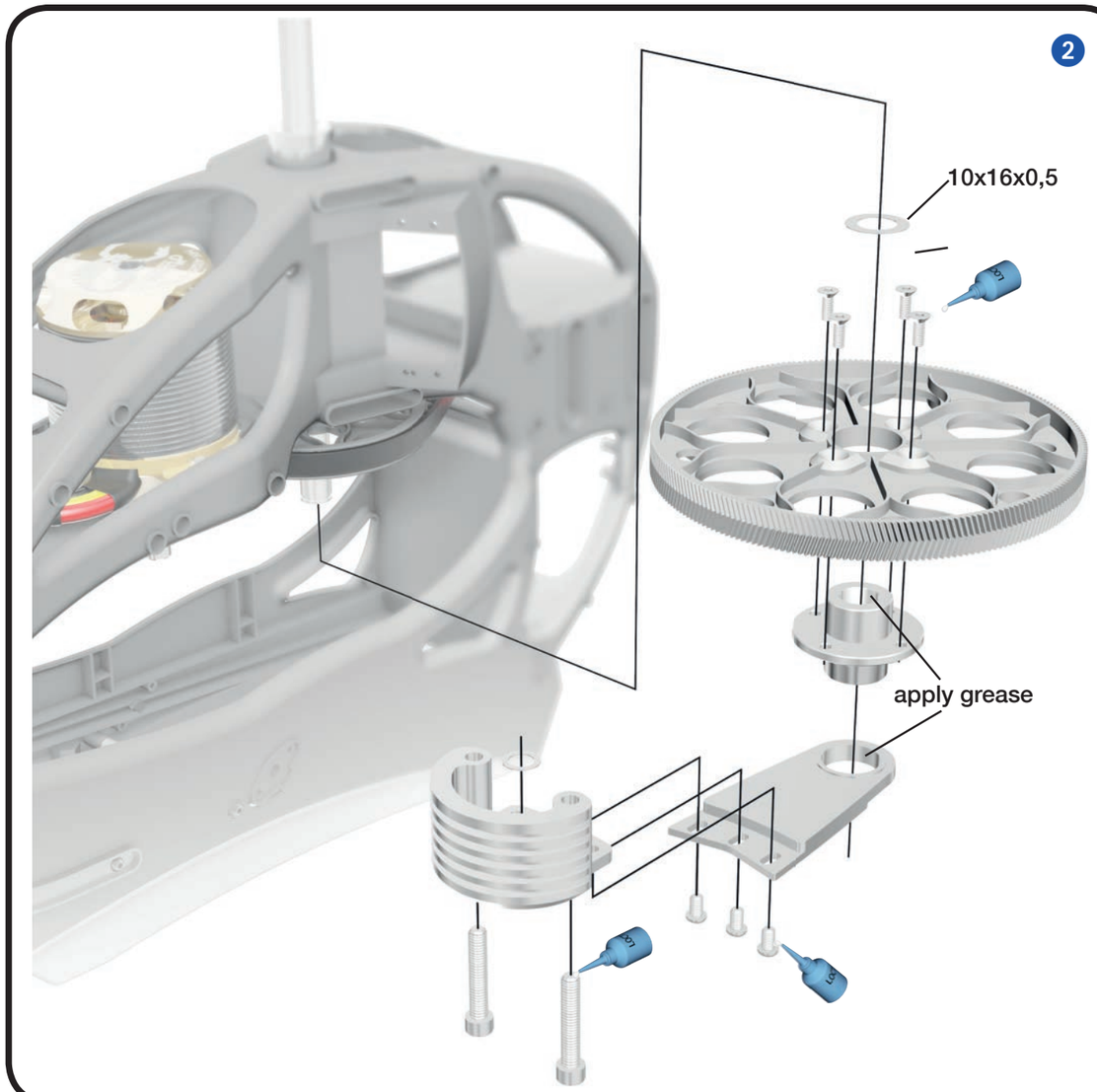
Bag 2

2x M3x22
4x 3x5x9
2x

Bag 2

4x M3x8
6x 6x9x0,2
2x M4x32
3x M3x6
1x 10x16x0,5

2



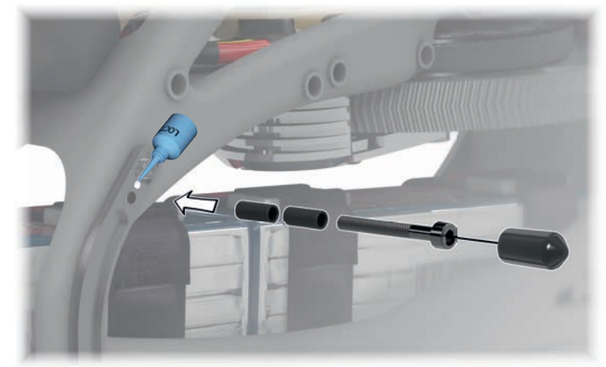
8 Mounting the Canopy

Bag 1,2

Bag 2

To secure and protect the canopy in the lower area of the front landing bow, please mount the edge protector and secure it with speed glue.

Bag 2



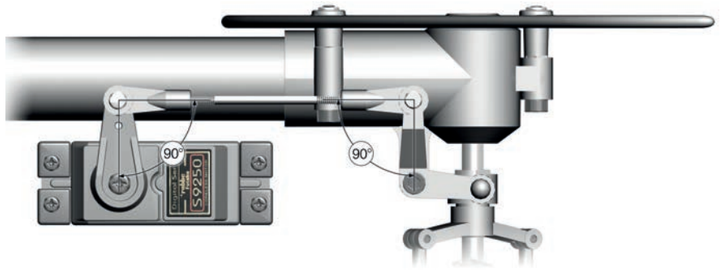
Installation of the Motor Pinion

Screw the motor pinion onto the motor shaft, making sure that it can still be moved. Now mount the motor on the motor plate and move the pinion so it is aligned well with the main gear. As visual help for aligning the pinion you may use the small ridge which separates the two parts of the pinion. When the pinion is aligned correctly it will easily engage with the main gear. If the pinion does not engage with the main gear, it is not correctly aligned. After the pinion is correctly aligned, take the motor out of the mainframe and tighten the set screw.

Gear Backlash

Move the motor with the pinion until it is limited by the gear. Tighten one of the M4x32 screws slightly. You must still be able to swivel the motor around its own axis. In this way you can easily determine the correct distance between the main gear and the pinion. There should be no (!) gear backlash. At the same time, the motor should not (!) exert any pressure onto the running surface of the main gear. After you have determined the correct distance, tighten the second M4x32 screw.

1

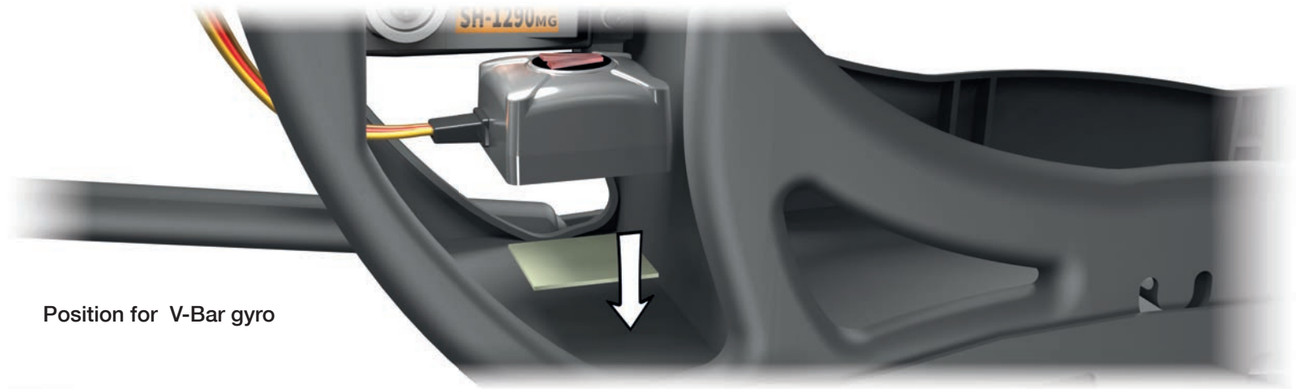


Position of servo arms for the tail rotor when sticks are centered

2

Position of servo arms for the aileron servos when sticks are centered (0 deg. Pitch)

3



Position for V-Bar gyro

4

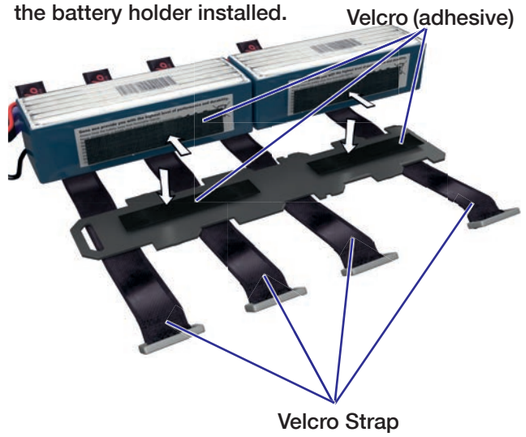
Position for Mini V-Bar

5

Attach speed controller with velcro and zip tie.

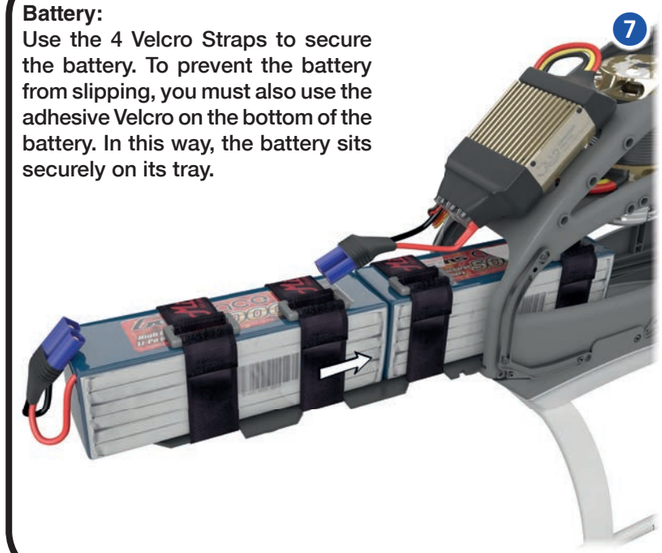
Battery:
Attach the battery with the 3 velcro straps. Mount the battery in a position where the center of gravity is met with the battery holder installed.

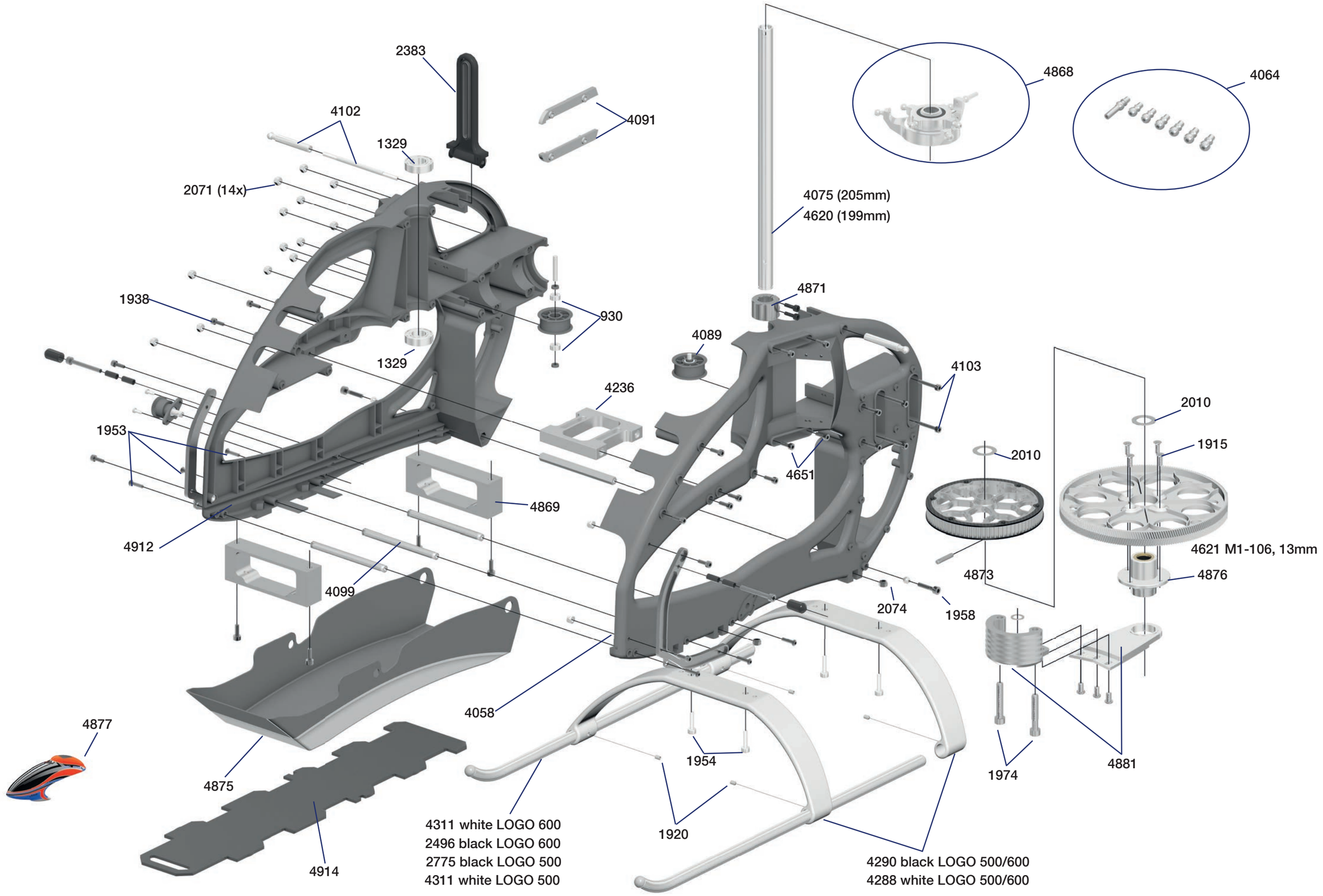
6

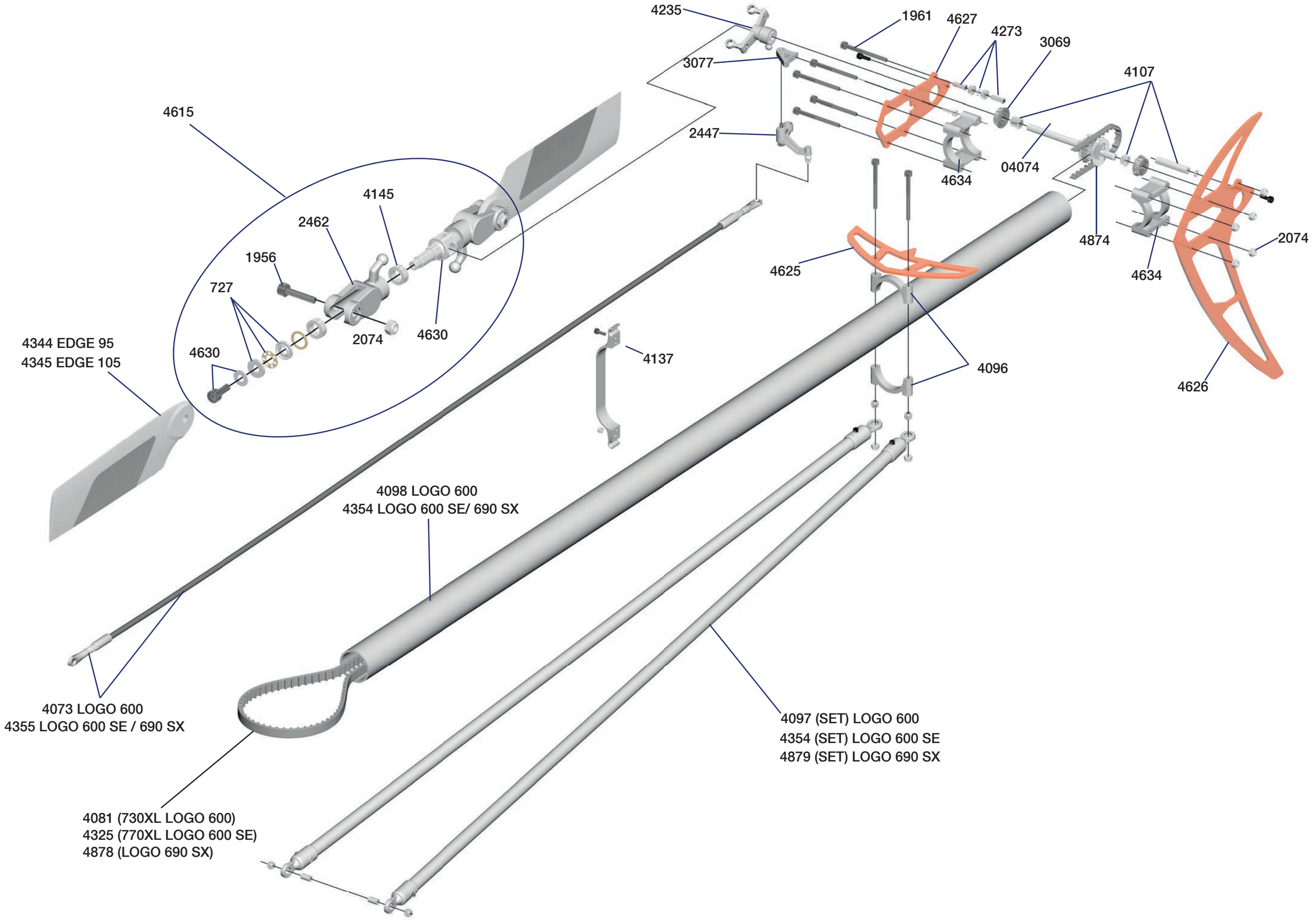


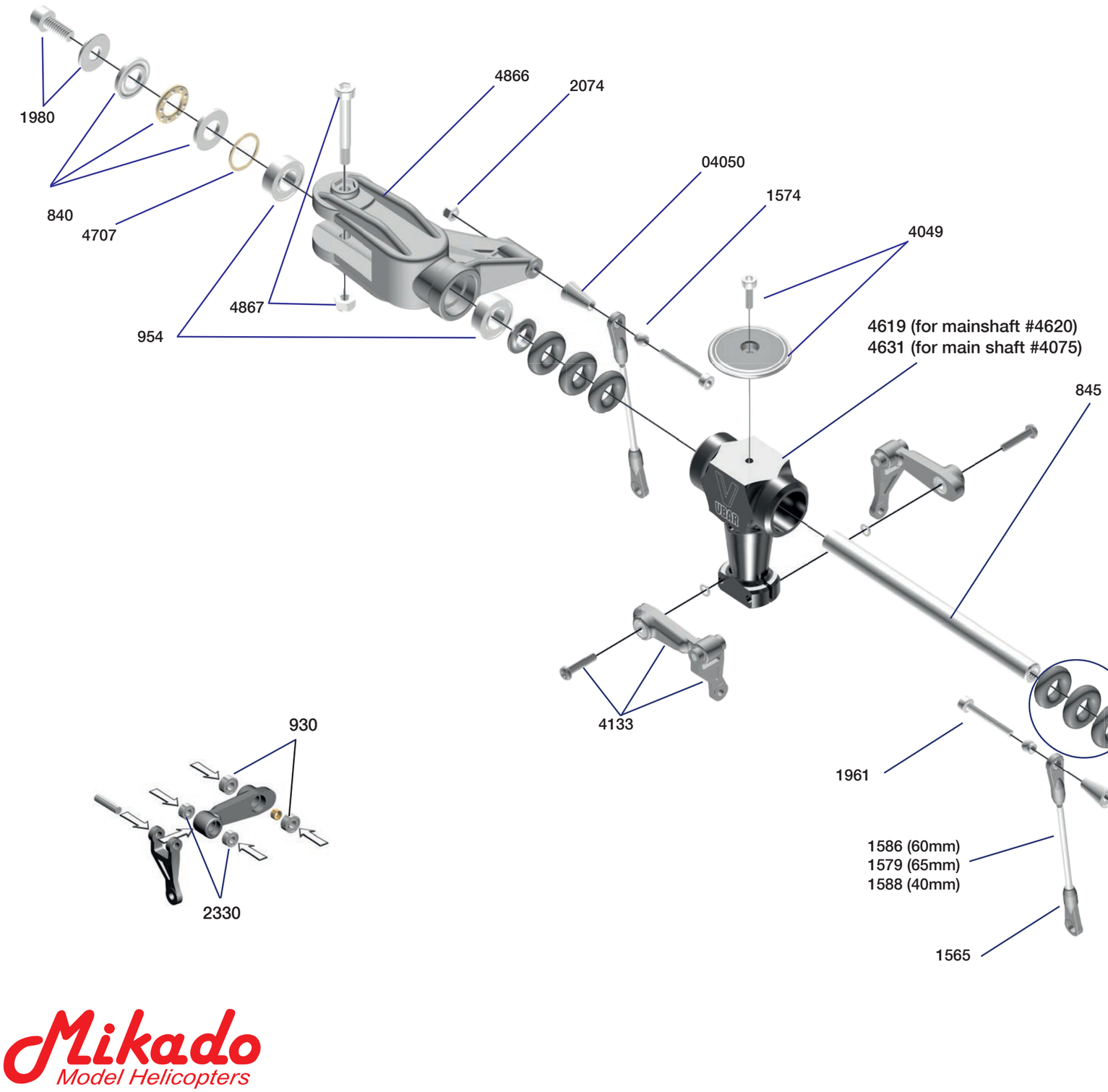
Battery:
Use the 4 Velcro Straps to secure the battery. To prevent the battery from slipping, you must also use the adhesive Velcro on the bottom of the battery. In this way, the battery sits securely on its tray.

7




2383
4102
1329
4091
2071 (14x)
1938
930
1329
4236
1953
4912
4869
4099
4058
4877
4875
4914
4311 white LOGO 600
2496 black LOGO 600
2775 black LOGO 500
4311 white LOGO 500
1954
1920
4089
4868
4064
4075 (205mm)
4620 (199mm)
4871
4103
4651
2010
1915
2010
4621 M1-106, 13mm
4873
4876
2074
1958
1974
4881
4290 black LOGO 500/600
4288 white LOGO 500/600


4235
1961
4627
4273
3069
3077
4107
2447
04074
4634
4615
4145
2462
1956
727
4630
2074
4630
4874
2074
4634
4625
4626
4344 EDGE 95
4345 EDGE 105
4137
4096
4098 LOGO 600
4354 LOGO 600 SE/ 690 SX
4073 LOGO 600
4355 LOGO 600 SE / 690 SX
4097 (SET) LOGO 600
4354 (SET) LOGO 600 SE
4879 (SET) LOGO 690 SX
4081 (730XL LOGO 600)
4325 (770XL LOGO 600 SE)
4878 (LOGO 690 SX)



Mikado Model Helicopters
www.mikado-heli.de

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