OMPHOBBY MULTISTAR

High-Performance 3-Blade Rotor Head

Centrally Interconnected • Fully Damped • Counterbalanced • True-Phase Design



REVISION I

Limitations for use with Fun-Key RT-360-3 ONLY (3D Use)

- Maximum Governor Speed (powered): 3000 RPM
- Permitted Transient Speed (unpowered): 3100 RPM – 3300 RPM
- Never Exceeded Speed: 3300 RPM

Limitations for use with Fun-Key RT-380-3 ONLY (Scale Use)

- Maximum Governor Speed (powered): 2500 RPM
- Permitted Transient Speed (unpowered): 2590 RPM – 2750 RPM
- Never Exceeded Speed: 2750 RPM

Limitations for using other blades

OMPHOBBY MULTISTAR is designed for use with Fun-Key RT-360-3 and RT-380-3 under the above limitations. If any other blade is used, it is your responsibility to ensure that the centrifugal forces acting on the blade retention system never exceed the following thresholds:

- Maximum Governed Centrifugal Force (powered): **720 N**
- Permitted Transient Centrifugal Force (unpowered): **770 N – 870 N**
- Never Exceeded Centrifugal Force: **870 N**

Note: 3D use of currently available 380 mm or larger blade sets is not permitted.

Maintenance is required when any of the following non-nominal events occur:

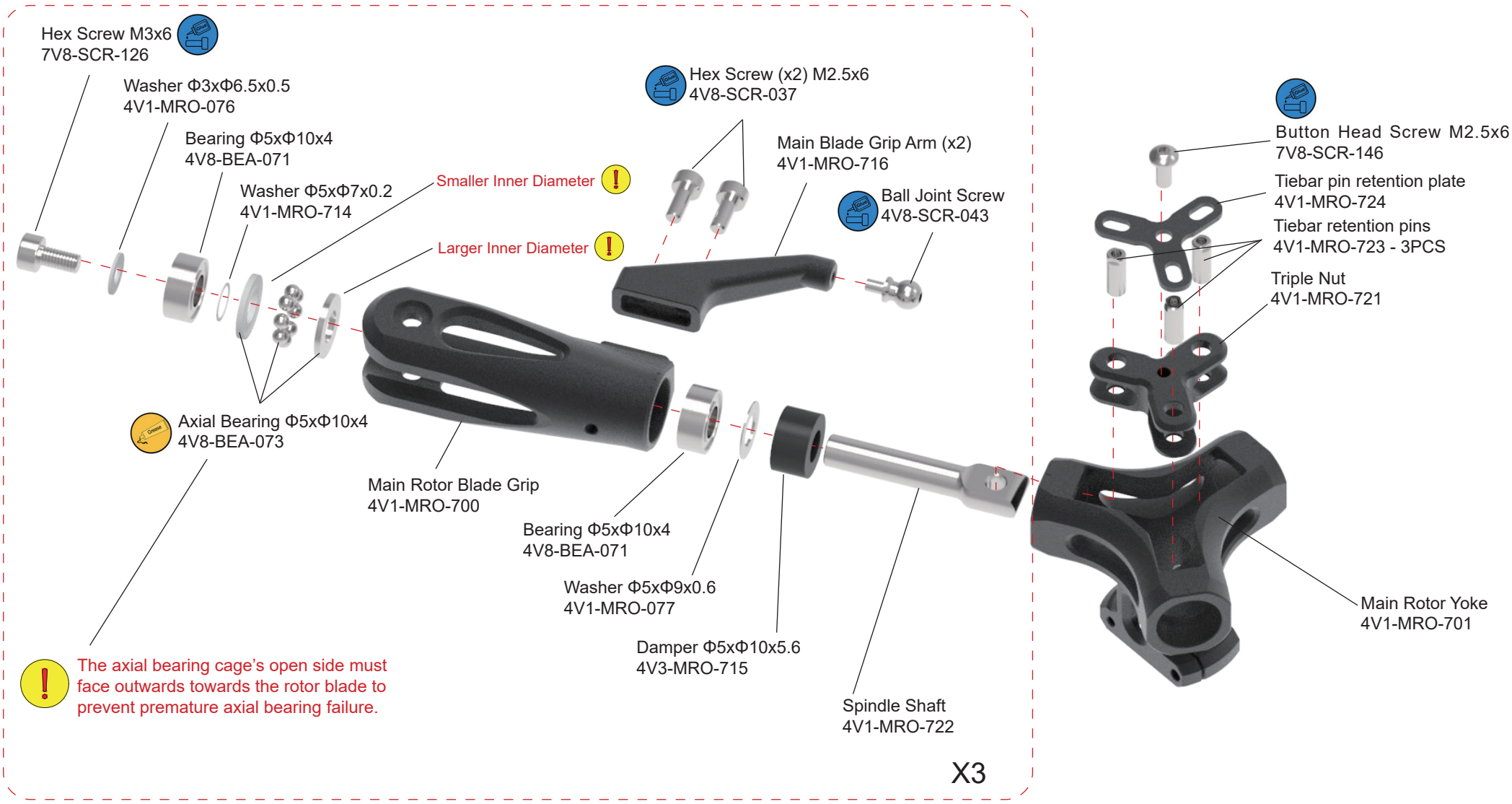
- RPM rises into the transient range 100 times
- Whenever the Never Exceed Speed is exceeded once
- Any crash, tipover or blade contact in flight with any solid object

In such cases, disassemble the blade retention system according to the assembly manual and inspect the following components for wear, deformation, or surface damage. Replace as required:

- Triple Nut
- Spindle tiebars
- Tiebar retention pins

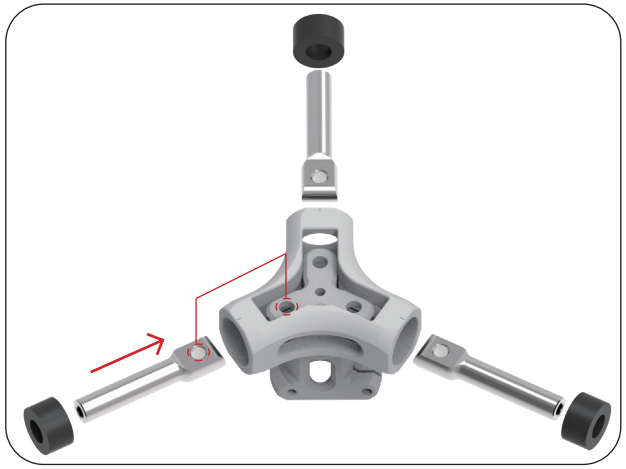
Additionally, inspect the previously mentioned components, as well as the following additional components, for general wear every 100 flights and replace on condition:

- Tiebar pin retention plate
- Damper rubbers
- Blade grip bearings
- Swashplate driver
- Ball joints

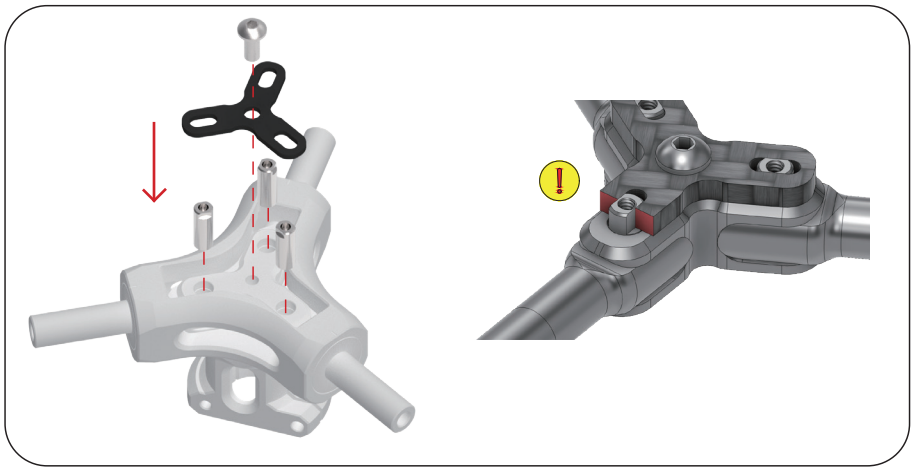

Hex Screw M3x6
7V8-SCR-126
Washer Φ3xΦ6.5x0.5
4V1-MRO-076
Bearing Φ5xΦ10x4
4V8-BEA-071
Washer Φ5xΦ7x0.2
4V1-MRO-714
Smaller Inner Diameter
Larger Inner Diameter
Hex Screw (x2) M2.5x6
4V8-SCR-037
Main Blade Grip Arm (x2)
4V1-MRO-716
Ball Joint Screw
4V8-SCR-043
Button Head Screw M2.5x6
7V8-SCR-146
Tiebar pin retention plate
4V1-MRO-724
Tiebar retention pins
4V1-MRO-723 - 3PCS
Triple Nut
4V1-MRO-721
Axial Bearing Φ5xΦ10x4
4V8-BEA-073
Main Rotor Blade Grip
4V1-MRO-700
Bearing Φ5xΦ10x4
4V8-BEA-071
Washer Φ5xΦ9x0.6
4V1-MRO-077
Damper Φ5xΦ10x5.6
4V3-MRO-715
Spindle Shaft
4V1-MRO-722
Main Rotor Yoke
4V1-MRO-701
The axial bearing cage's open side must face outwards towards the rotor blade to prevent premature axial bearing failure.
X3



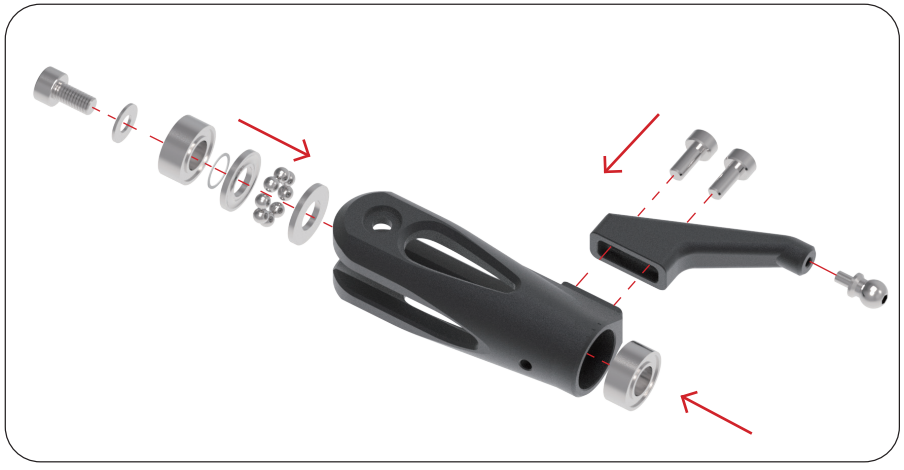
Step 1: Place the triple nut into the main rotor yoke, pay attention to the central bore facing up.



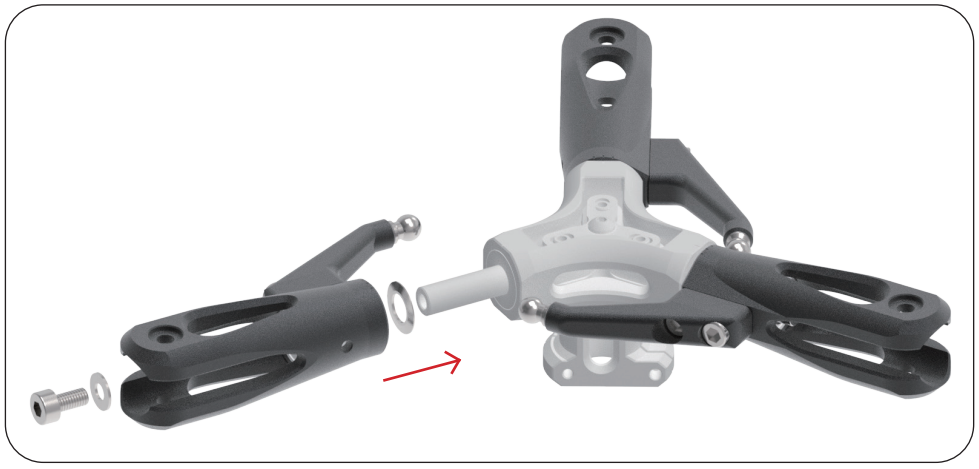
Step 2: Install the spindle tiebars and dampers into the triple nut and main rotor yoke as shown.



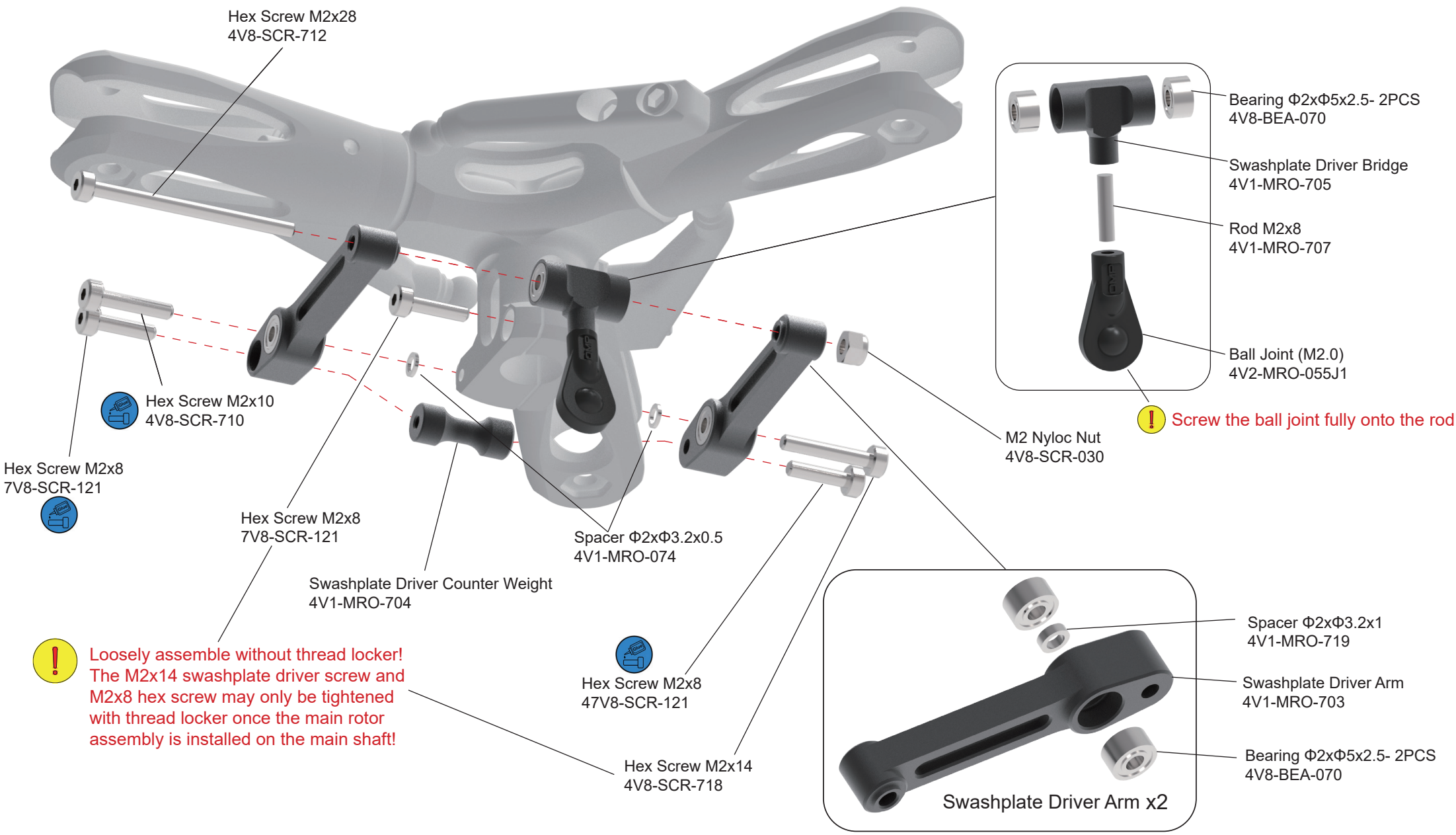
Step 3: Install the tiebar retention pins and the tiebar pin retention plate, secured by a single M2.5x6 screw. Pay attention to the alignment of the tiebar retention pins, which are keyed to interface with the retention plate. Once installed, the retention plate should be flush with the top of the pins and should be in full contact with the triple nut.

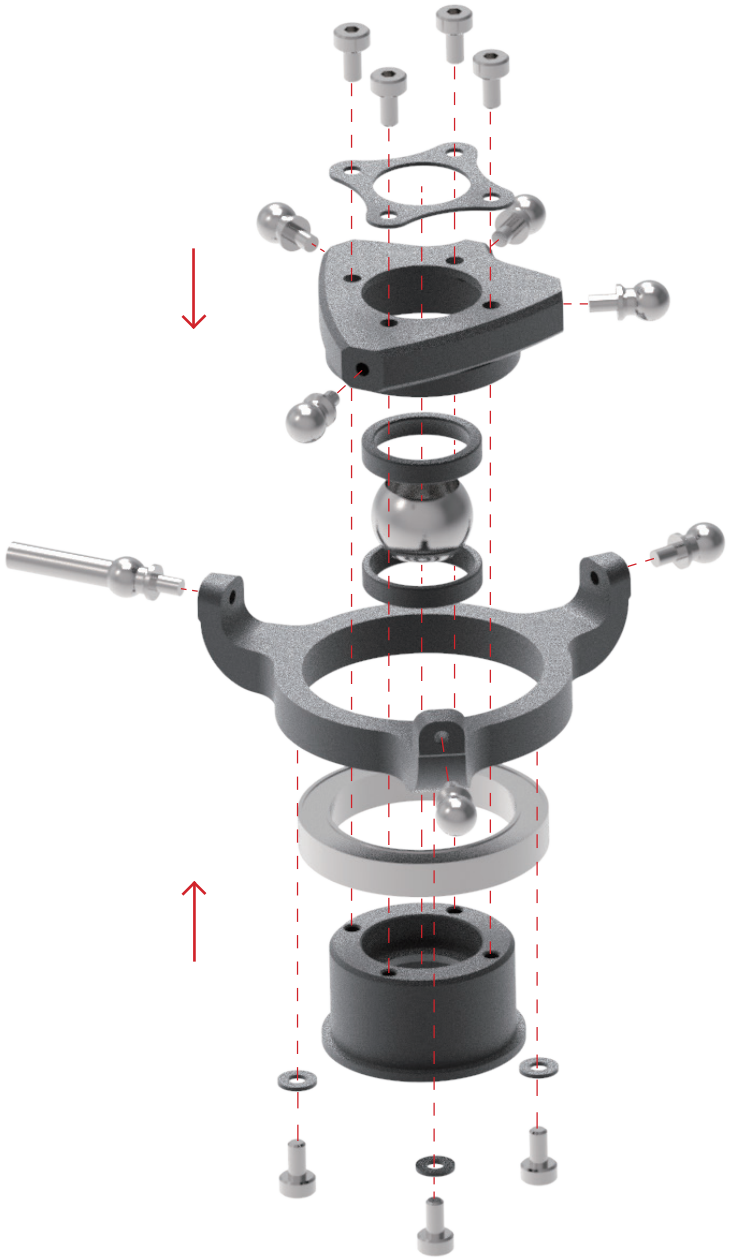


Step 4: Install the bearings into the main rotor blade grips and assemble the main blade grip arm as shown.



Step 5: Install the main rotor blade grips on the main rotor yoke, make sure to install the spacer with the cone facing towards the bearing, between the grip and yoke.


Hex Screw M2x28
4V8-SCR-712
Bearing Φ2xΦ5x2.5- 2PCS
4V8-BEA-070
Swashplate Driver Bridge
4V1-MRO-705
Rod M2x8
4V1-MRO-707
Ball Joint (M2.0)
4V2-MRO-055J1
Screw the ball joint fully onto the rod!
Hex Screw M2x10
4V8-SCR-710
M2 Nyloc Nut
4V8-SCR-030
Hex Screw M2x8
7V8-SCR-121
Hex Screw M2x8
7V8-SCR-121
Spacer Φ2xΦ3.2x0.5
4V1-MRO-074
Swashplate Driver Counter Weight
4V1-MRO-704
Loosely assemble without thread locker!
The M2x14 swashplate driver screw and
M2x8 hex screw may only be tightened
with thread locker once the main rotor
assembly is installed on the main shaft!
Hex Screw M2x8
47V8-SCR-121
Hex Screw M2x14
4V8-SCR-718
Spacer Φ2xΦ3.2x1
4V1-MRO-719
Swashplate Driver Arm
4V1-MRO-703
Bearing Φ2xΦ5x2.5- 2PCS
4V8-BEA-070
Swashplate Driver Arm x2





Hex Screw M2x4 - 7PCS
4V8-SCR-035



Spherical Bearing Retention Plate
4V4-MRO-060



Ball Joint Screw - 6PCS
4V8-SCR-043



Swashplate Inner Ring
4V1-MRO-708



Spherical Bearing Races - 2PCS
4V1-MRO-063



Spherical Bearing
Φ8*Φ11*6
4V1-MRO-059



Bearing Φ20xΦ27x4
4V8-BEA-072



Swashplate Hub
4V1-MRO-057B



Swashplate Outer Ring
4V1-MRO-058B

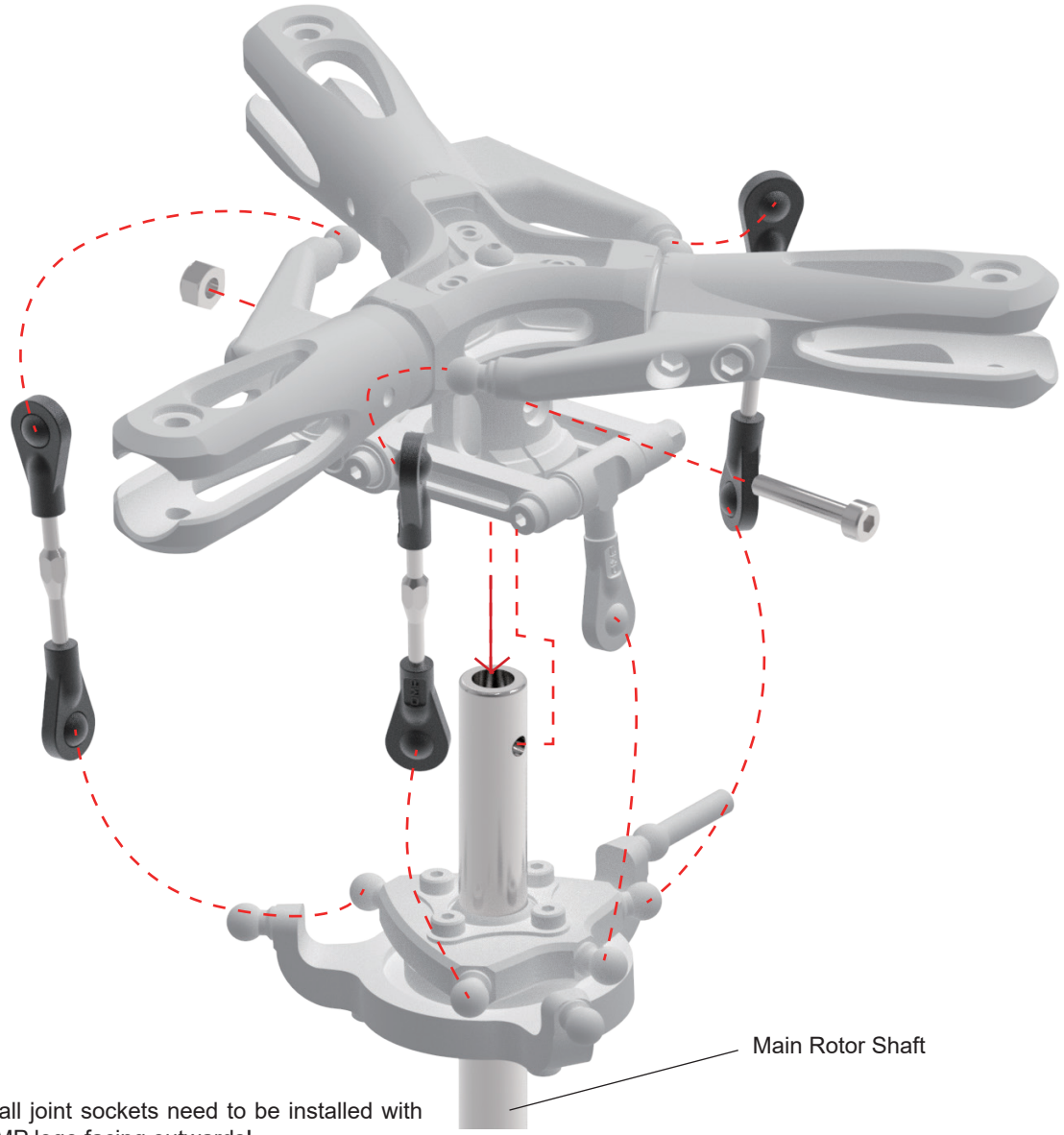


Ball Screw (long)
4V8-SCR-069



Washer Φ2xΦ4.3x0.5 - 3PCS
4V1-MRO-075

Rotor Head Linkage Assembly





Nyloc Nut M2.5
4V8-SCR-031

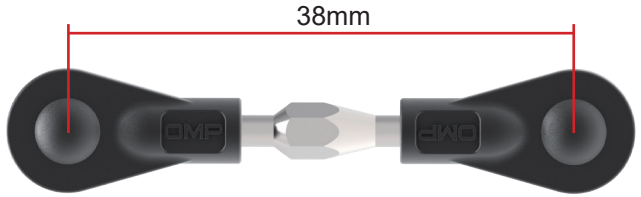
Hex Screw M2.5x15
4V8-SCR-041



Ball Joint Socket
(M2.0) - 6PCS
4V2-MRO-055J1

Linkage Rod - 3PCS
4V1-MRO-061

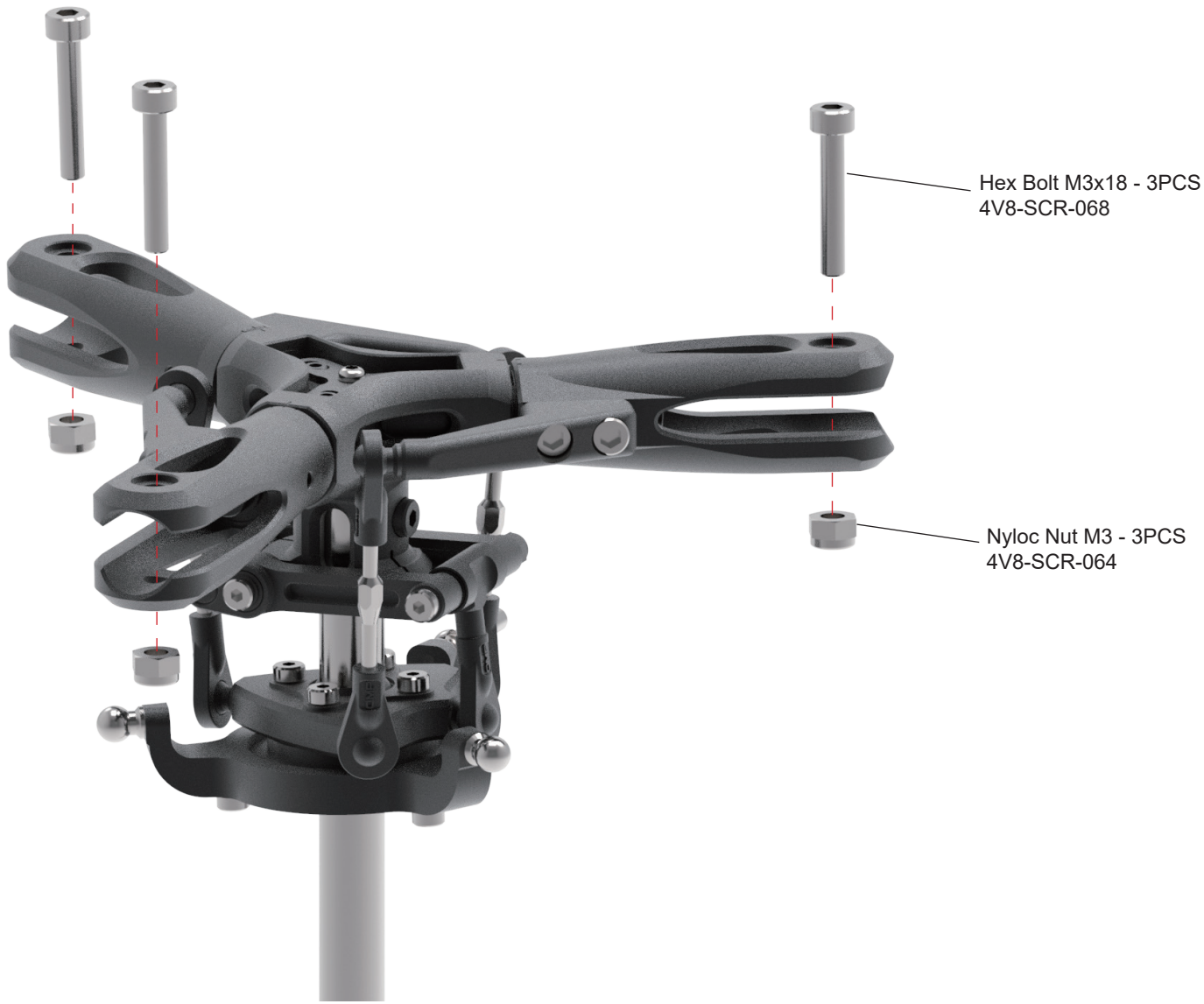
x3

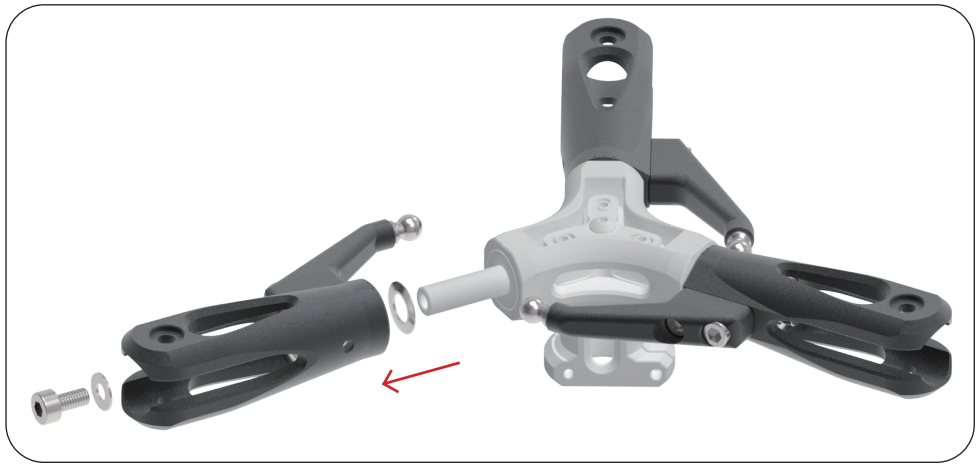


The swashplate driver arm screw (M2x14) and M2x8 hex screw must be tightened in this step to clamp the main rotor yoke onto the main shaft. To ensure proper alignment, first install the M2.5x15 hex bolt, but do not fully tighten it yet. Then, apply thread locker to the M2x14 swashplate driver arm screw and M2x8 hex screw, and tighten them evenly in small steps. Finally, fully tighten the M2.5x15 hex bolt.

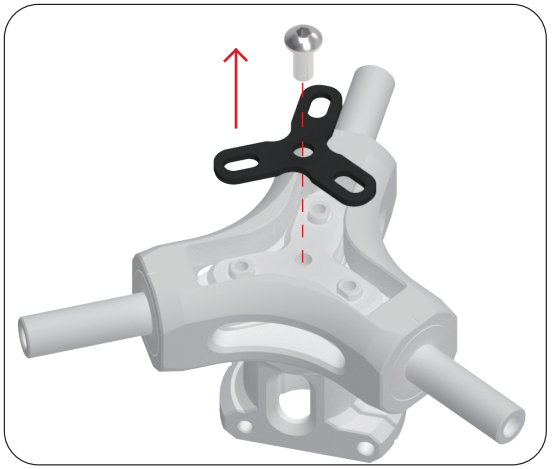
The ball joint sockets need to be installed with the OMP logo facing outwards!

The ball joints are intentionally manufactured tight to prevent slop, they can be freed up by gently squeezing them with flat-jaw pliers when installed on the ball. Never use serrated pliers.

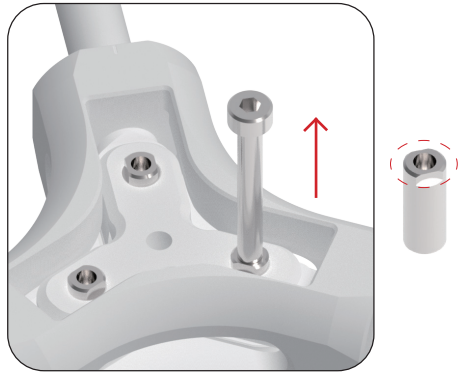

Hex Bolt M3x18 - 3PCS
4V8-SCR-068
Nyloc Nut M3 - 3PCS
4V8-SCR-064



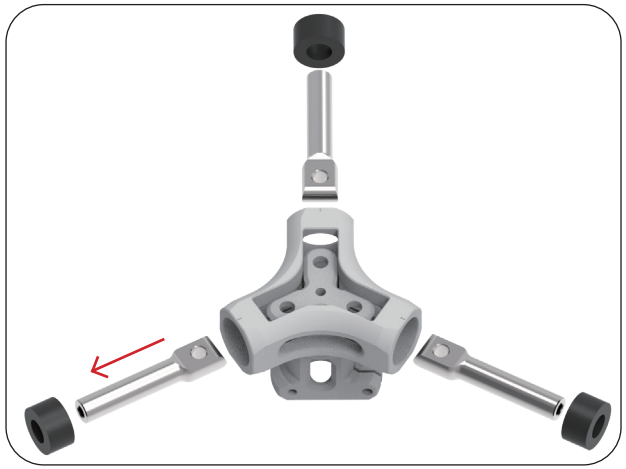
Step 1: Remove the M3x6 hex screw and main rotor blade grips.



Step 2: Unscrew the M2.5x6 screw to take the tiebar pin retention plate out.



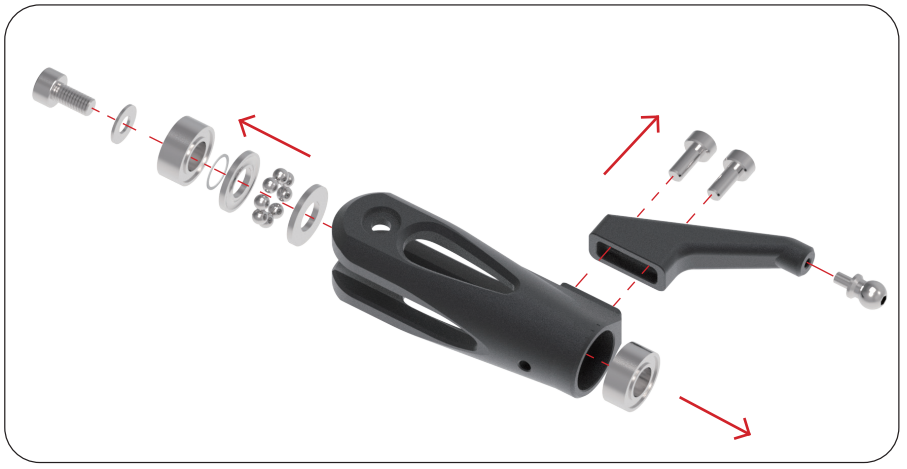
Step 3: Remove the tiebar retention pins by screwing an M2 screw into the top of each pin and using it as an extraction tool to pull the pin vertically out of the triple nut and tiebar.



Step 4: Remove the dampers and spindle tiebars.



Step 5: Remove the triple nut.



Step 6: Remove the bearings and blade grip arms.