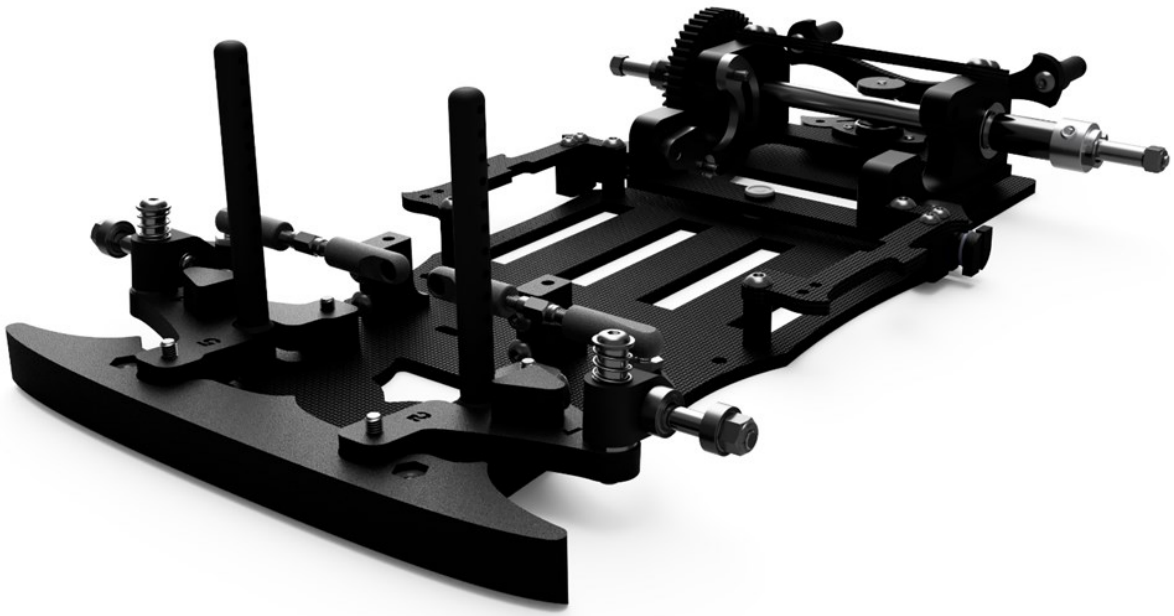
BattCave

JOK3R



INSTRUCTION MANUAL

Thank you for purchasing our JOK3R Mini Club Racer or JOK3R Mini Sport Racer!

We have spent hundreds of hours and completed thousands of laps to create the JOK3R mini racer the way we wanted it: A modern take on this classic R/C class. While we all get the saying, 'If it ain't broke, don't fix it,' we also believe that, 'What breaks often, should be fixed!' Our aim was to design a race car that meets the expectations of club racers of all levels: robust and fast, simple to set up, and easy to drive. Our philosophy was quite simple really: to reduce build time, downtime, setup time, and most importantly, lap times!

Please read this instruction manual fully, as it provides not only assembly information but also Tips and Tricks to make your build, set-up and running of your race car more enjoyable.

IMPORTANT! SAFETY FIRST!

WARNING: This kit contains small parts and it is not suitable for young children. If this kit is intended for your children, supervision is strongly advised.

THIS SLIDER KIT CONTAINS:

1x JOK3R Club Racer Kit, or JOK3R Competition Racer Kit.

In Addition, you will need:

- A RS-540 type Motor
- Speed Control
- Battery and Charger.
- Servo
- Radio Control set
- Body Shell and Tyres.

Please check with your local club for rules and recommendations.

RECOMMENDED TOOLS FOR ASSEMBLY:

1.5mm and 2.0mm HEX or Allen Drivers.

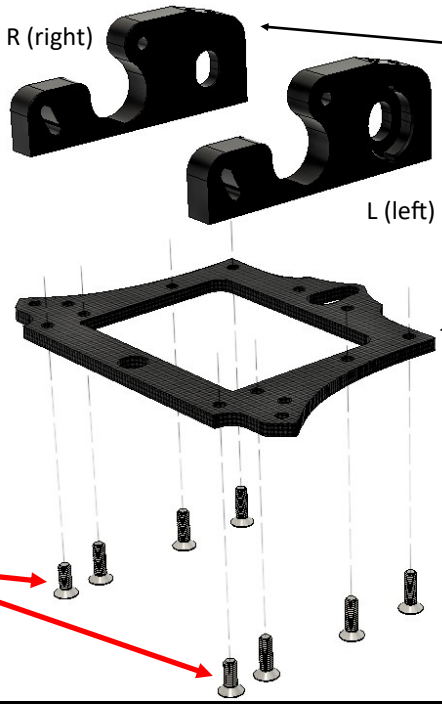
4mm Turnbuckle Wrench and 5.5mm Hex socket driver.

USEFUL ASSEMBLY TIPS:

1. Many plastic parts in this kit are made with our advanced 3D printing methods using only selected plastic filaments. Using this manufacturing method allows us to keep costs down as well as provide easy updates when required. The characteristics of printed plastic parts are fundamentally same as moulded parts and care should be taken when screwing or tapping screws into plastic materials. Motorised screw drivers are not recommended for the above reasons!
2. When screwing machine screws into plastic, heat is generated by the friction between the screw and the plastic itself, and this heat build up will soften the plastic. So it is essential to allow the heat to dissipate before the final tightening of the screw. A good rule is to screw the crew into the plastic 90% of the way into the plastic material, wait for 30 seconds then proceed with tightening the fastener to full.
3. Always remember not to over-tighten any screws especially when screwing into plastic materials.
4. We recommend the use of BLUE thread lock where indicated in the user manual.
5. It is good practice to regularly check screws in high load area to see if they are still properly fastened.
6. Don’t be afraid to ask dumb questions! (We all have them!)

1.
Install motor mounts onto the pod plate (stepped bearing hole facing outwards!) by using six M3x10mm countersink screws, and two M3x8mm countersink screws. Take special attention to screw locations.

Remember our recommendations for screwing into plastic parts (see P.1), and do not over-tighten!



Part no. Motor Mount
JKR-301 (3DP)
JKR-007 (CNC)

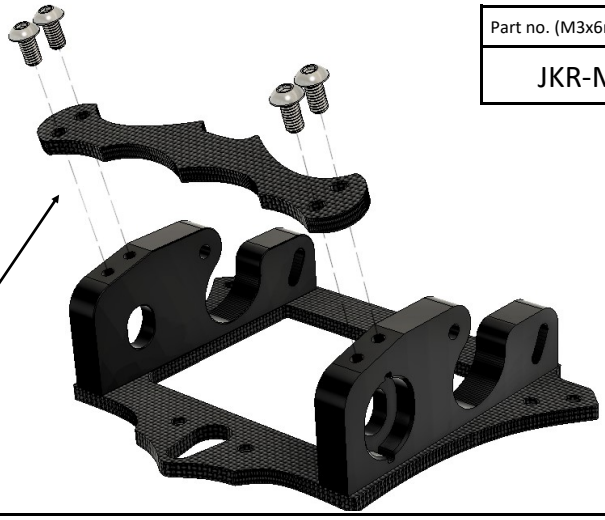
Part no. Pod Plate
JKR—002

Note, front two screws are M3 x 8mm, the rest are M3 x 10mm

Part no. (M3x10mm countersink)
JKR-M310-C

Part no. (M3x8mm countersink)
JKR-M308-C

2. Attach the Pod Brace using four M3 x 6mm button head screws. Remember that you are screwing into plastic!



Part no. (M3x6mm button head)
JKR-M306-B

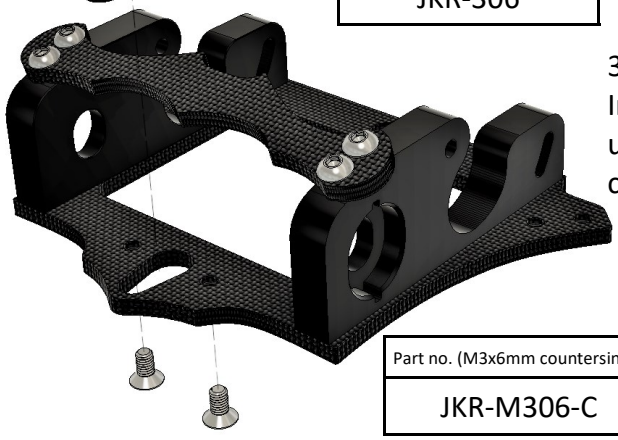
Part no. Pod Brace
JKR-005

Tech tip: For maximum pod squareness, place the Pod Plate on a flat surface before tightening the Pod Brace screws.

(a)



Part no. Pivot Guide
JKR-306

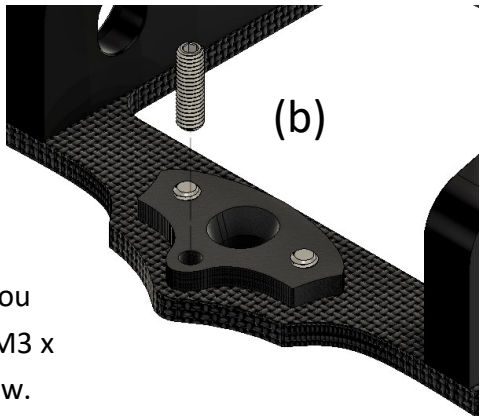


Part no. (M3x6mm countersink)
JKR-M306-C

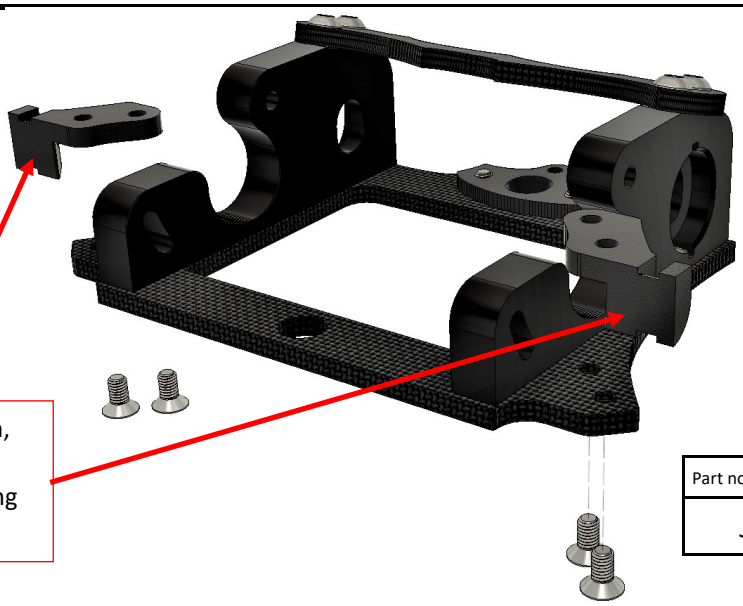
Part no. (M3x10mm grub)
JKR-M310-G

3. (a) First install Pod Guide Insert onto the pod plate using two M3 x 6mm countersink screws.

3. (b) Once attached, you can then screw in the M3 x 10mm droop grub screw.



Part no. Pod Band Bobbins
JKR-314

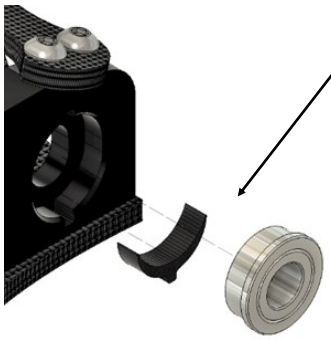


SKIP THIS STEP FOR CLUB RACER VERSION

4. Attach the Two Pod Band Bobins using four M3 x 6mm countersink screws.

Note, orientation, the flat faces should be pointing forwards.

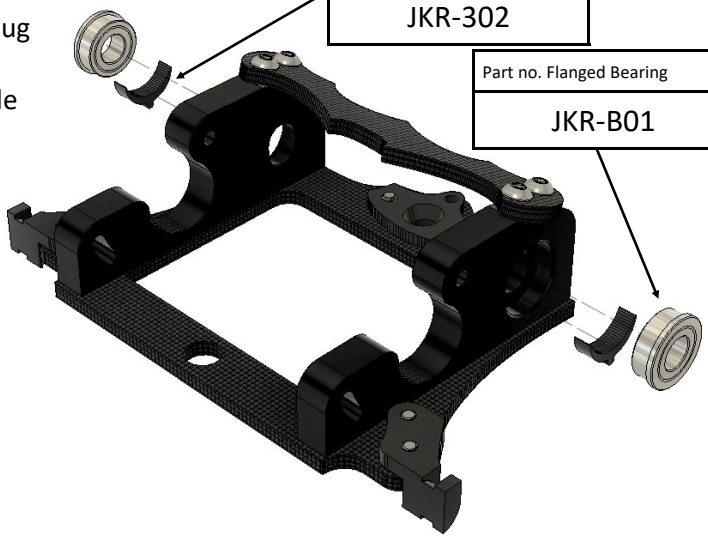
Part no. (M3x6mm countersink)
JKR-M306-C



5. Insert axle offset shim and flanged bearing, it will be a snug fit. Note, the axle off-set shim allows adjustment of drive axle height.

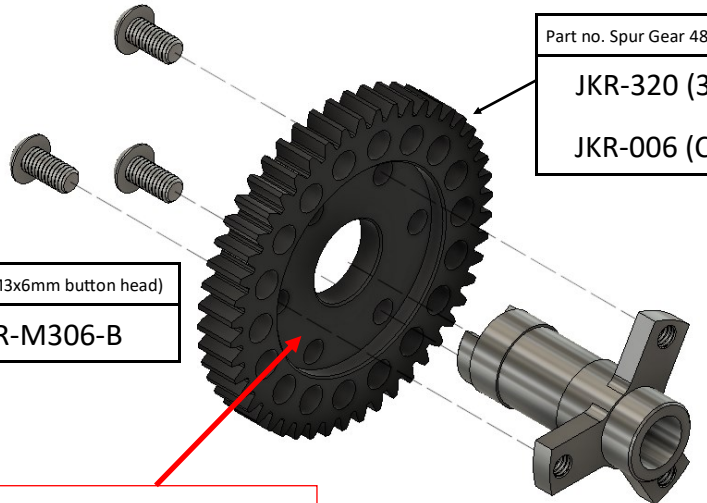
Part no. Axle Offset Shim
JKR-302

Part no. Flanged Bearing
JKR-B01





Tech tip: We recommend shim position, Lower (as shown) for rear tyre diameter 49-46mm. Upper for 46mm and smaller.



Part no. Spur Gear 48t
JKR-320 (3DP)
JKR-006 (CNC)

Part no. (M3x6mm button head)
JKR-M306-B

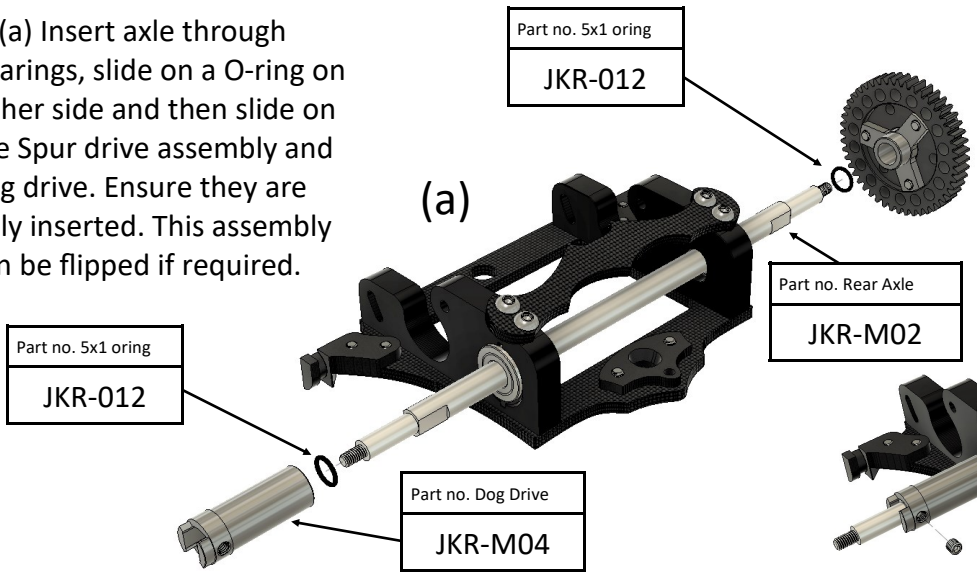
Note: Observe the orientation of spur gear recess!

Part no. Spur Drive
JKR-M03

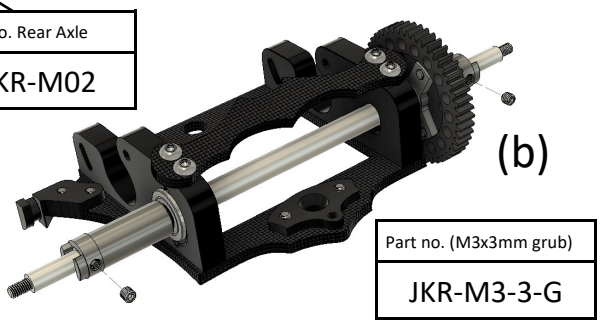
6. Install Spur gear onto Spur drive, then secure the spur gear in place using three M3 x 6mm button head screws.



7. (a) Insert axle through bearings, slide on a O-ring on either side and then slide on the Spur drive assembly and dog drive. Ensure they are fully inserted. This assembly can be flipped if required.



7. (b) once installed you can then fix each drive in place with the M3x3mm grub screws (optional).

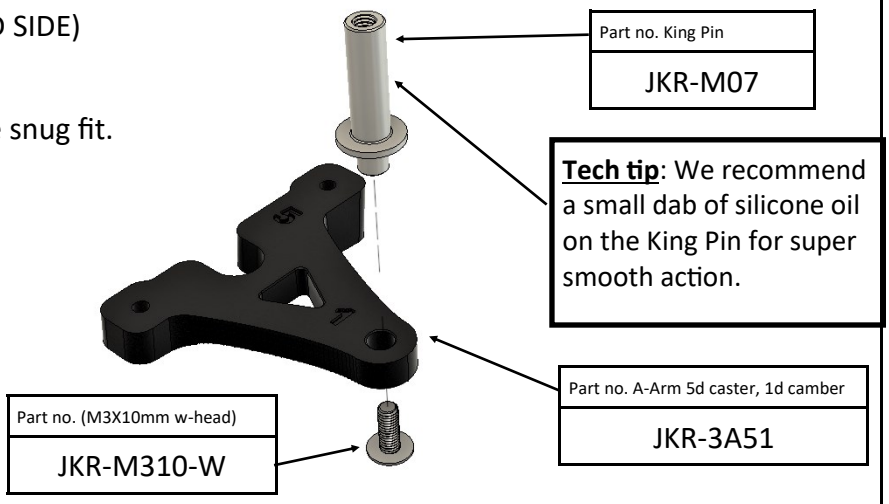


8. (REPEAT STEPS 8-11 WITH THE MIRRORED SIDE)

Draw the King Pin into Front Arm, using the M3x10mm wide head screw. It will be a nice snug fit.

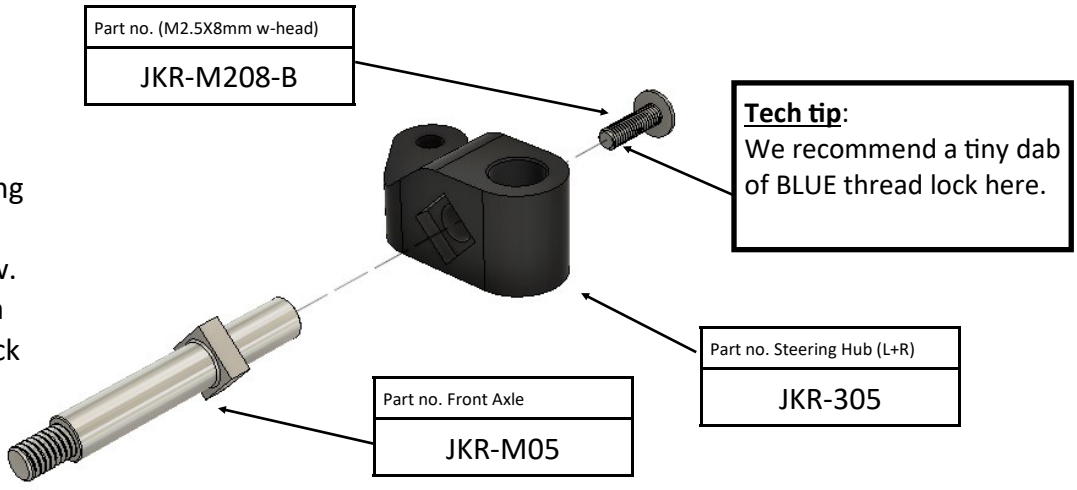
Kit front arms are 5° caster, and 1° camber which are clearly marked for easy identification.

Other tuning options are available on www.battcave.co.uk



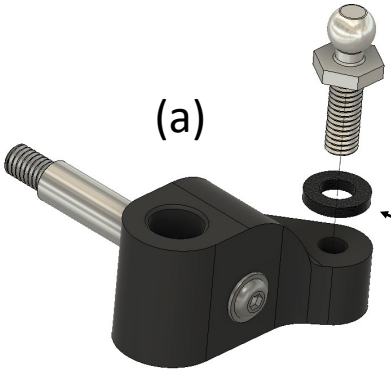
9.

Insert Front Axle into Steering Hub, secure in place with M2.5x8mm wide head screw. We recommend the use of a small dab of BLUE thread lock here.



10.

(a) screw the ball stud into steering arm with a 1mm shim in-between.



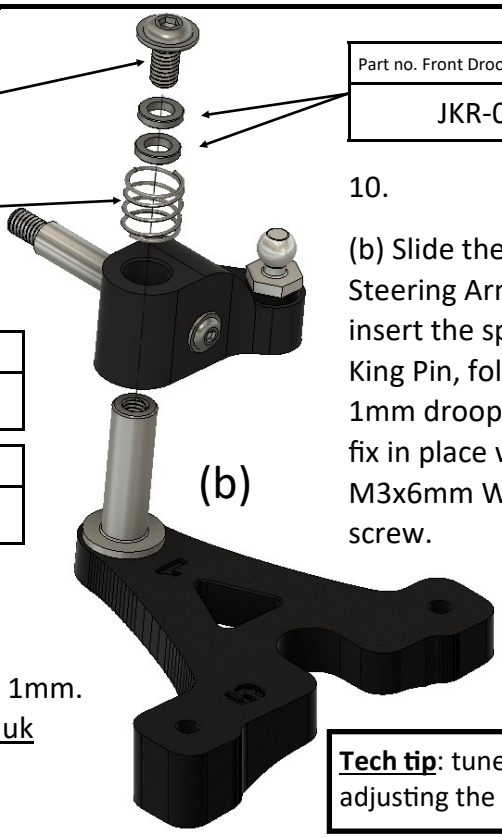
Part no. Ball Stud 4.3
JKR-014

Part no. 1mm Shim
JKR-317

Part no. (M3X6mm w-head)
JKR-M306-W

Part no. Front Spring Medium
JKR-S01F

Part no. Front Droop Shims 1mm
JKR-021



10.

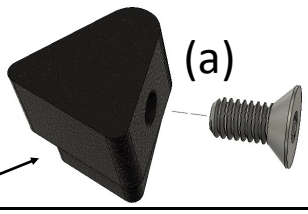
(b) Slide the assembled Steering Arm and then insert the spring onto the King Pin, followed by two 1mm droop shims, then fix in place with the M3x6mm Wide head screw.

Kit front spring are Medium, and Front Droop Shims are 1mm. Other tuning options are available on www.battcave.co.uk

Tech tip: tune front droop, by adjusting the number of shims

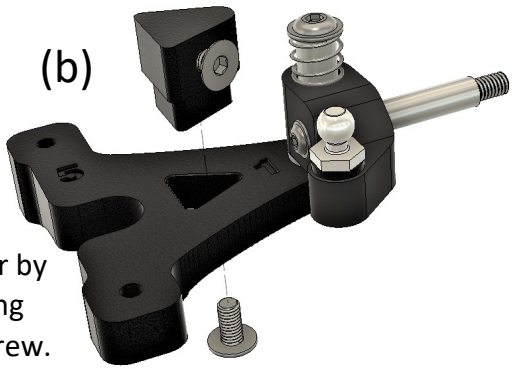
SKIP THIS STEP FOR CLUB RACER VERSION

11 (a) Screw a M3 x 6mm countersink screw into the steering limiter. Set this to around 3mm offset to begin with.



Part no. Steering Limiter
JKR-309

Tech tip: Use this option to limit the steering travel to reduce damage to surrounding parts in heavy impacts!



11 (b) Install the steering limiter by pressing into the A-Arm, securing with a M3 x 6mm wide head screw.

12 (a).
Install pivot ball into pivot ball holder, this must be done before you attach to the Pod Assembly!



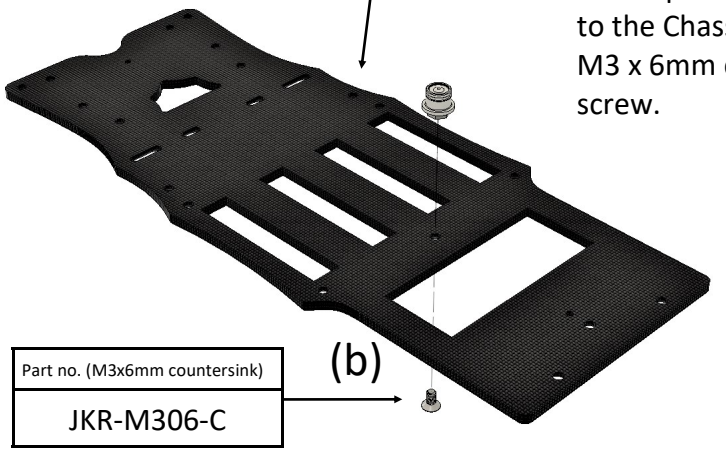
Part no. Pivot ball Holder
JKR-011

(a)



Part no. Pivot Ball
JKR-010

Part no. GRP Chassis
JKR-001

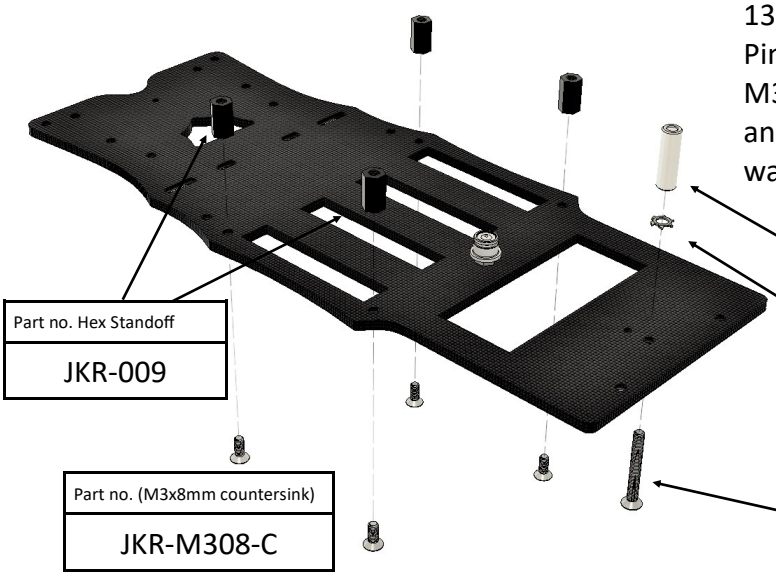


Part no. (M3x6mm countersink)
JKR-M306-C

12 (b).
attach pivot assembly to the Chassis, using a M3 x 6mm countersink screw.

13, (a) Attach the four hex standoffs to the chassis using four M3x8mm countersink screws.

Club kit standoff are plastic, aluminium option available on www.battcave.co.uk



Part no. Hex Standoff
JKR-009

Part no. (M3x8mm countersink)
JKR-M308-C

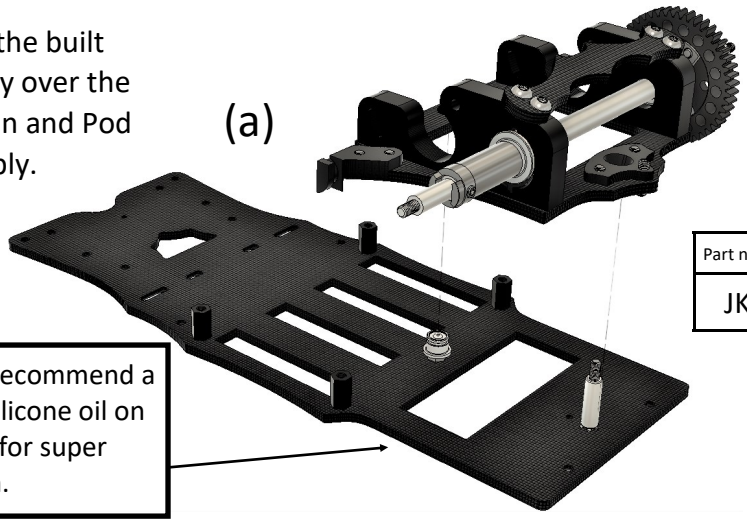
13, (b) Attach the Pod Guide Pin to the chassis using the M3x25mm countersink screw and using the shake-proof washer in between.

Part no. Pod Guide Pin
JKR-M08

Part no. Shake Proof Washer
JKR-W01

Part no. (M3X25mm countersink)
JKR-M325-C

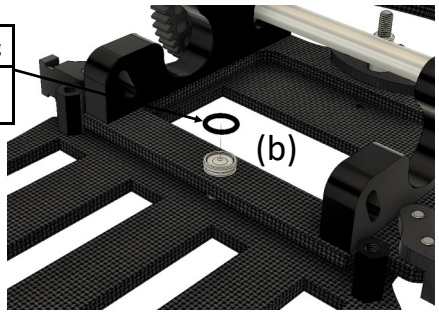
14, (a) Slide the built pod assembly over the Pod Guide Pin and Pod Pivot assembly.



Tech tip: We recommend a small dab of silicone oil on the Guide Pin for super smooth action.

14, (b) Secure the pod assembly with the O-ring. Making sure its well seated into the groove!

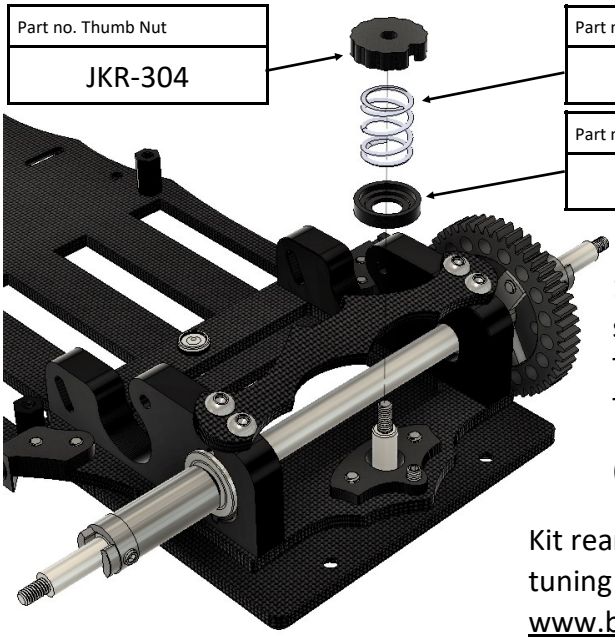
Part no. 5x1 O'ring
JKR-012



Part no. Thumb Nut
JKR-304

Part no. Rear Spring Medium
JKR-S01R

Part no. Spring Guide
JKR-303

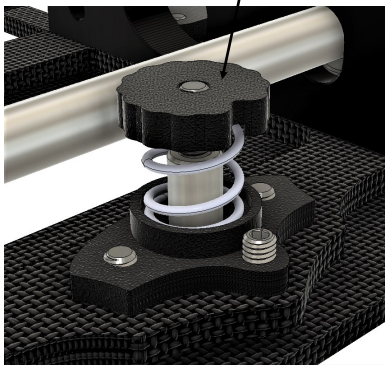


15, Slide the spring guide and spring onto the Guide Pin. Then screw on the Spring Thumb Nut.

(Note ORIENTATION!)

Kit rear spring is medium, other tuning options are available on www.battcave.co.uk

Tech tip. We recommend you pre-tap the thumb nut using a M3 screw before installation.

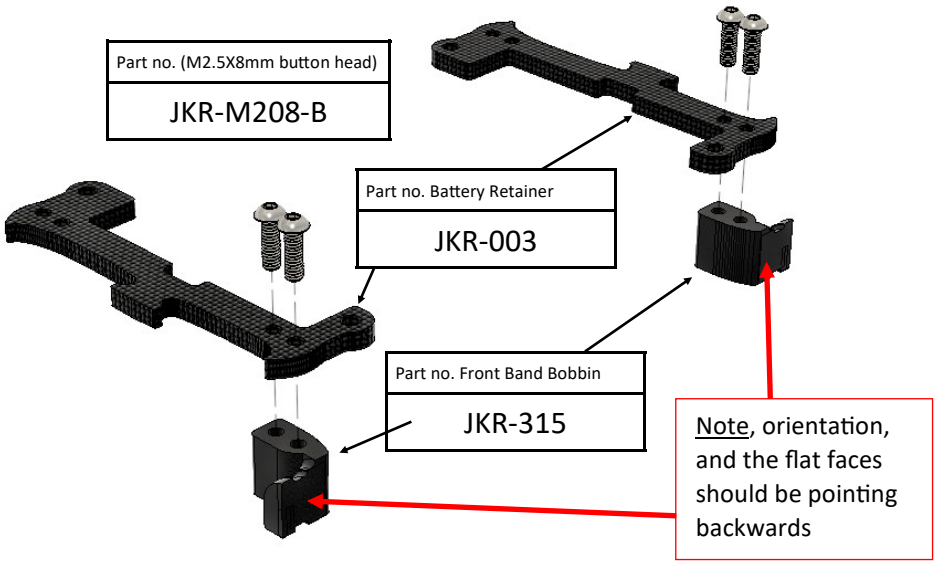


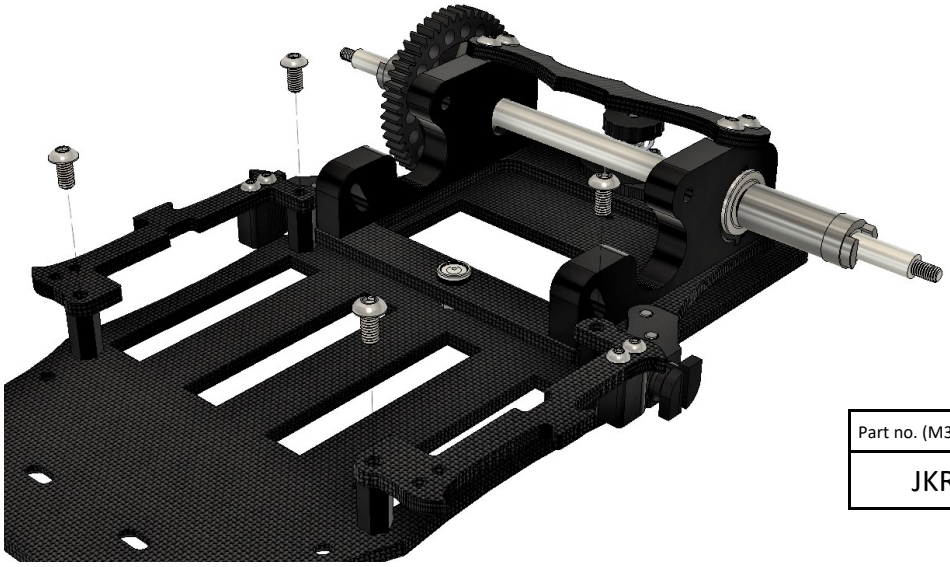
SKIP THIS STEP FOR CLUB RACER VERSION

16, Attach the two Front Band Bobbins to the Battery Retainers using four M2.5x8mm screws.

Note the orientation of the Battery retainers. We've designed them so you can easily tune the battery's position to forward or backward bias by simply rotating them 180°

(Orientation shown is battery back-wards)



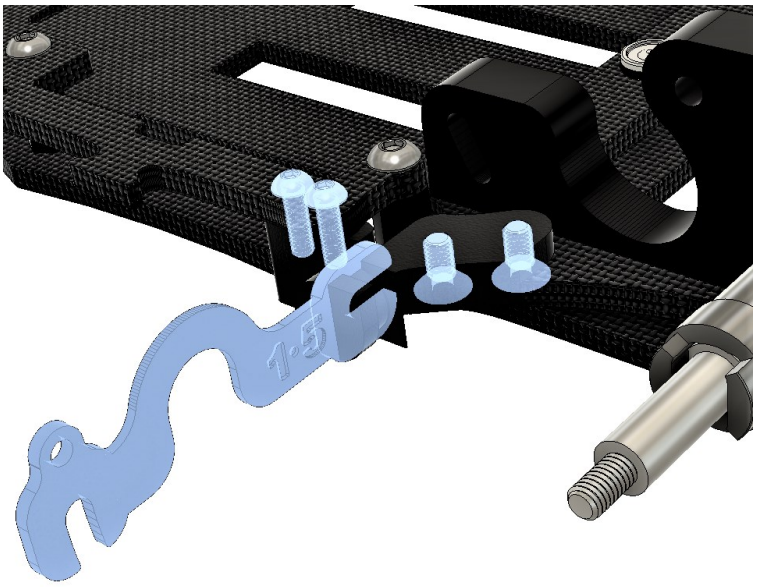


17. Attach the two assembled battery retainers to the four hex standoffs using four M3x6mm button head screws.

Part no. (M3X6mm button head)
JKR-M306-B

SKIP THIS STEP FOR CLUB RACER VERSION

18, Setting the gap between the two Band Bobbins is very simple, they have been designed to have a small amount of free movement. First very slightly relax the four highlighted screws. Next take your Kit supplied 1.5mm front ride height shim and place between the two flat faces… then simply pinch them all together and nip up the screws again. Repeat this for both sides.



19. Assemble the rear body shell mount by attaching the two SHORT body posts using two M3x8mm button head screws. Then attach the Body Post Plate to the Rear Body Post Mount using two M3x8mm countersink screws.

Part no. Rear Body Post Mount
JKR-321

Part no. (M3X8mm button head)
JKR-M3-8-BH

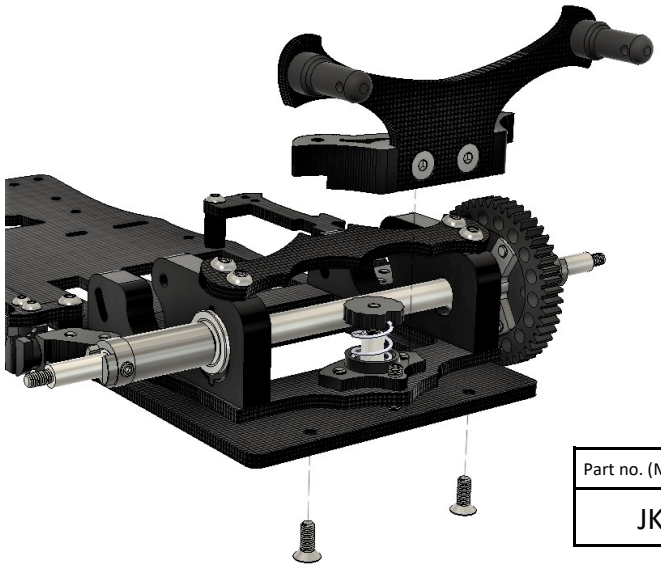
Part no. Body Post Plate
JKR-004

Part no. Body Post
JKR-008

Tech tip: 3 Body Post height adjustment positions for easy body height adaptation!

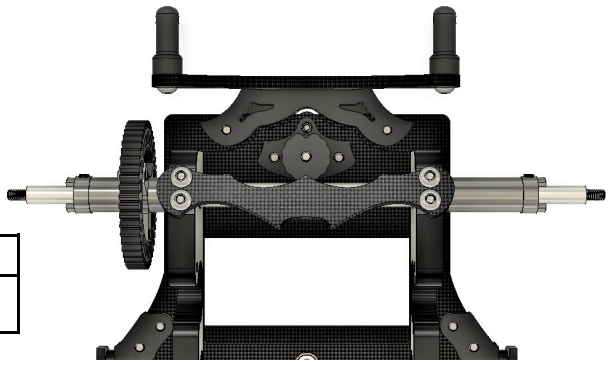
Tech tip: Use a body clip to stop the rear body-post spinning whilst installing!

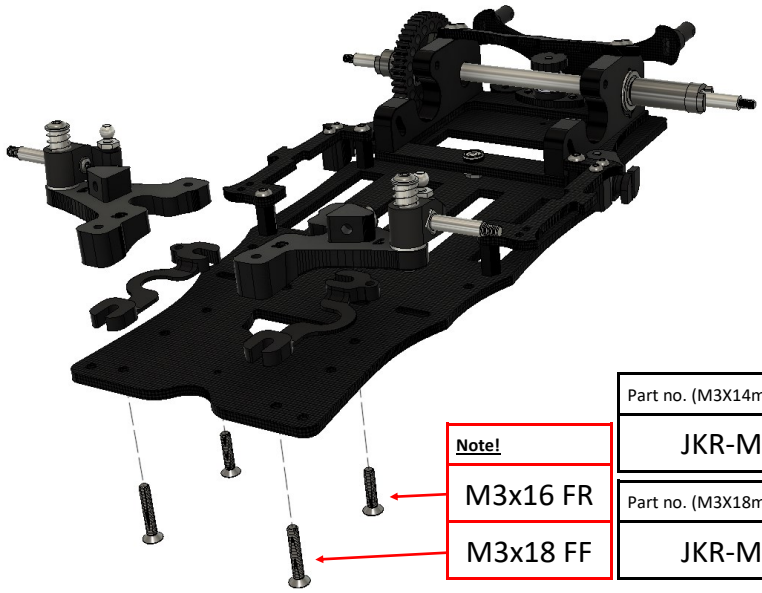
Part no. (M3X8mm countersink)
JKR-M3-8-CS



20. Attach the rear body post assembly using two M3x8mm countersink screws.

Part no. (M3X8mm countersink)
JKR-M308-C





21. Attach the two front end assemblies with your ride height spacers (note orientations) using two M3x18mm countersink screws on FF (Front Front hole) and two M3x16mm countersinks on the FR (Front Rear hole).

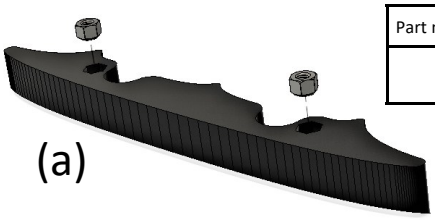
Note!
M3x16 FR
M3x18 FF

Part no. (M3X14mm countersink)
JKR-M316-C

Part no. (M3X18mm countersink)
JKR-M318-C

Tech tip: Your kit comes with Ride Height Spacers! We've labelled and shaped them, to allow simple and quick changes.
Use them in combinations to achieve the desired ride height.

1.0mm - JKR-310	1.5mm - JKR-311
2.0mm - JKR-312	4.0mm - JKR-313



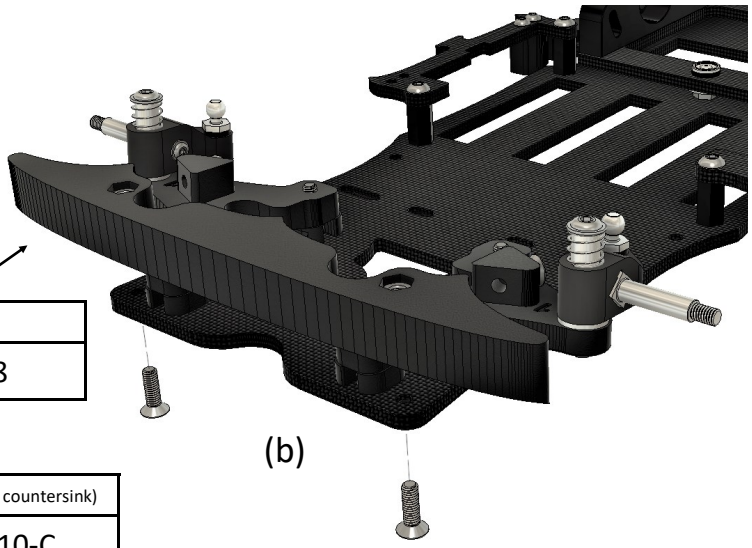
(a)

Part no. (M3 Nylock nut)
JKR-019

22. (a) First press in two nylock nuts into the flexible TPU Bumper. They will be a snug fit.

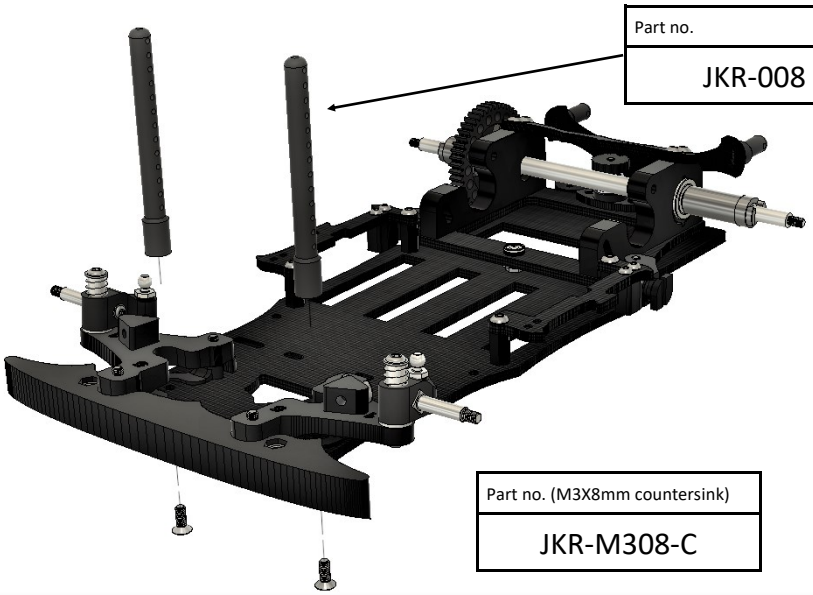
(b) Install the bumper onto the chassis using two M3x10mm countersink screws. We recommend you tighten until you just see the TPU bumper surface around the nuts begins to deform.

Part no. TPU Bumper
JKR-308



(b)

Part no. (M3X10mm countersink)
JKR-M310-C

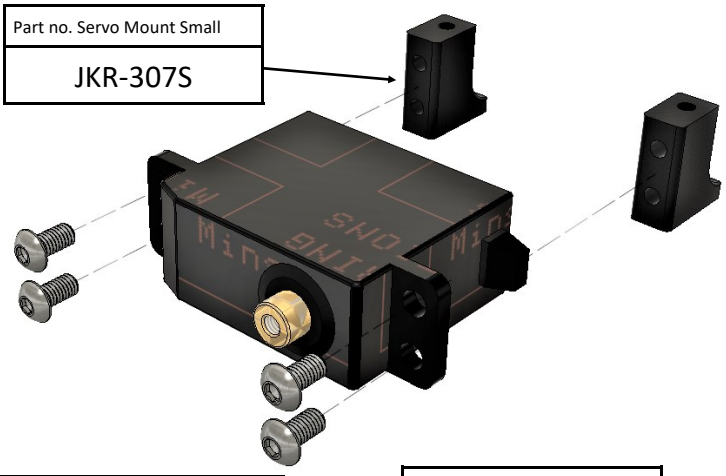


Part no.
JKR-008

Part no. (M3X8mm countersink)
JKR-M308-C

23. Install the LONG Body Posts onto chassis using two M3x8mm countersink screws.

Part no. Servo Mount Small
JKR-307S



24. Attach your servo (not included) to the servo mounts (small servo mount shown) using four M3x6mm screws. We have included two different types of servo mounts to cover all popular brands of servo (small and large).

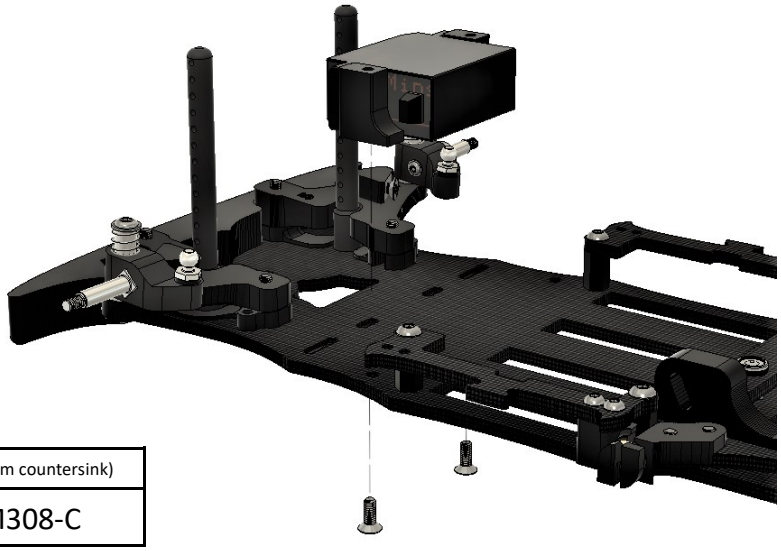


Part no. (M3X6mm button head)
JKR-M306-B

Part no. Servo Mount Large
JKR-307L



25, Attach the servo assembly with two M3x8mm screws. Initially lightly affix so that you can move the servo along the slots in the chassis.



Tech tip: There are mirrored servo slots on the chassis, allowing you to place the servo on either side.

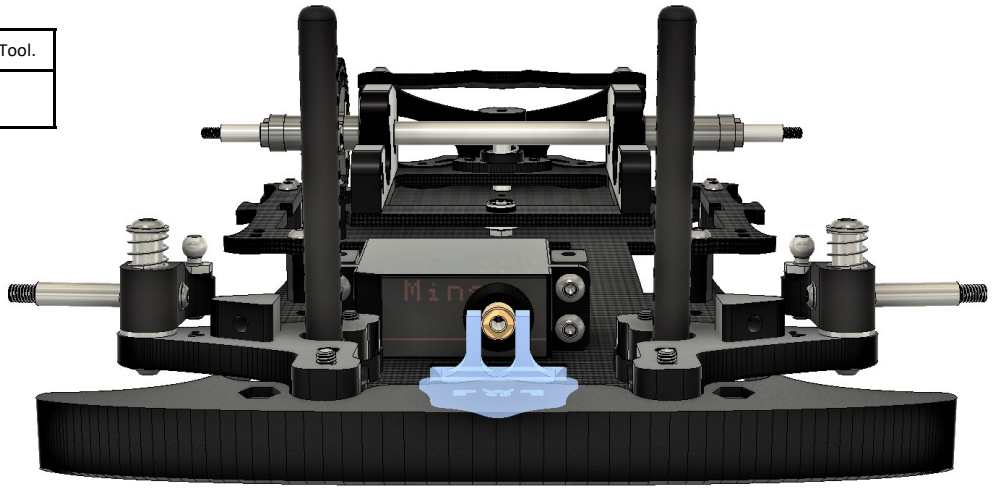
You can use this to tune weight balance, and cable management for example!

Part no. (M3X8mm countersink)
JKR-M308-C



Part no. Servo Alignment Tool.
JKR-318

26. For perfect central servo alignment use the included JOK3R Servo Alignment Tool! Simply insert from the bottom of the chassis cut-out, then align the servo spline to the tool and then tighten up the servo mounting screw!

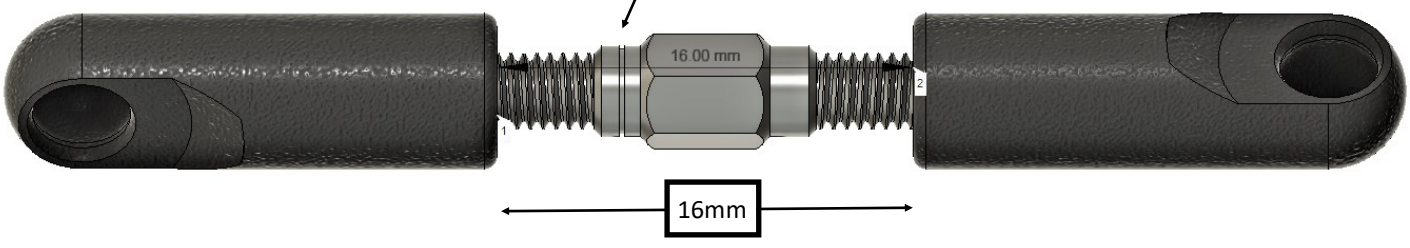


(Remember to remove the tool and keep it for another time!)

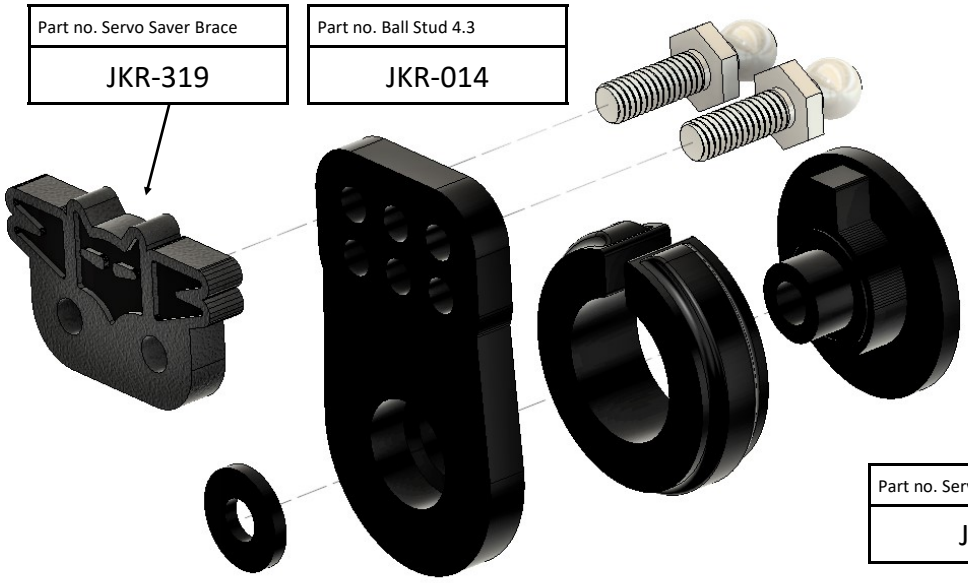
27. Make up two steering links as shown, Initially set the gap between the two ball ends to 16mm.

Part no. Ball End 4.3mm
JKR-015

Part no. 35mm Turnbuckle
JKR-M06



Part no. Servo Saver Brace	Part no. Ball Stud 4.3
JKR-319	JKR-014



28. Assemble the Servo Saver as shown, installing the two Ball Studs through the Servo Saver face plate and into the Brace Link.



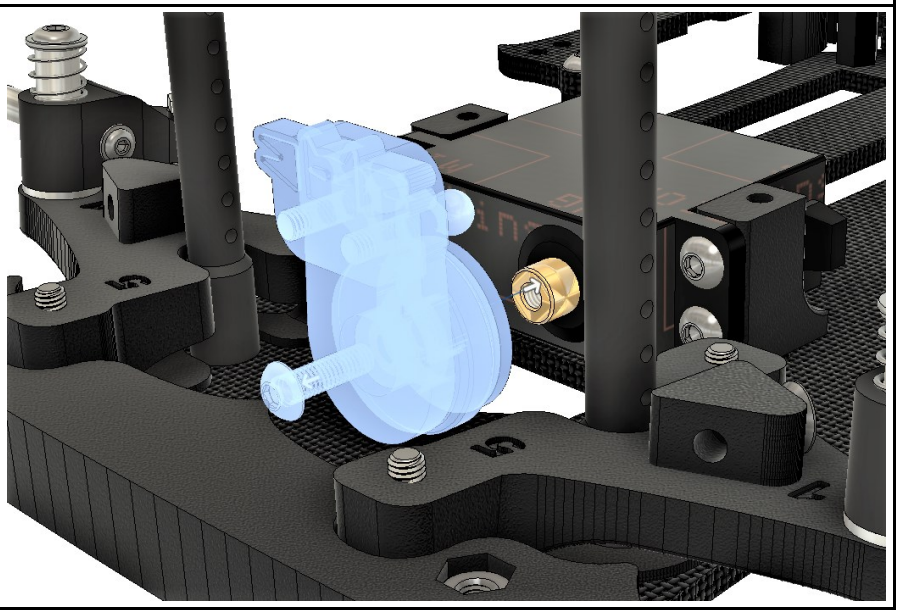
Part no. Servo Saver
JKR-013

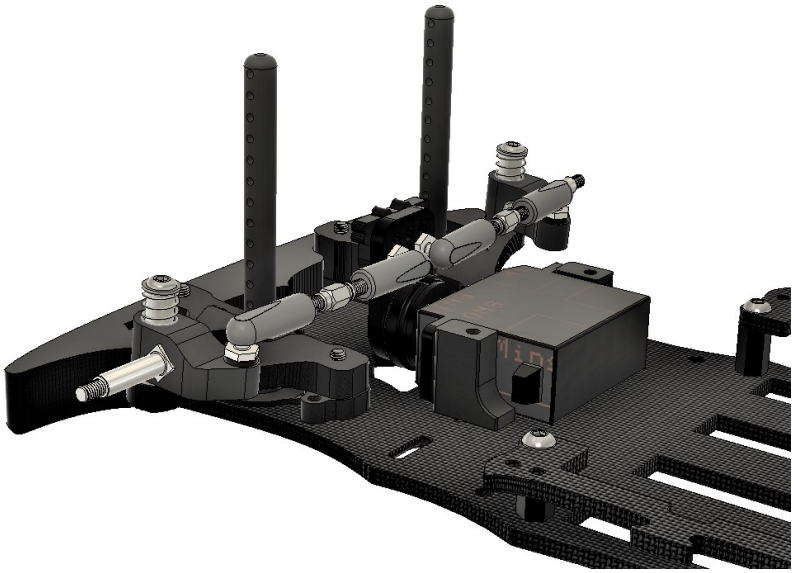
29. Install assembled Servo Saver onto the servo spline adapter using M3x10mm screw to retain in place.

Note: 3 Different Servo Spline adapters are included!

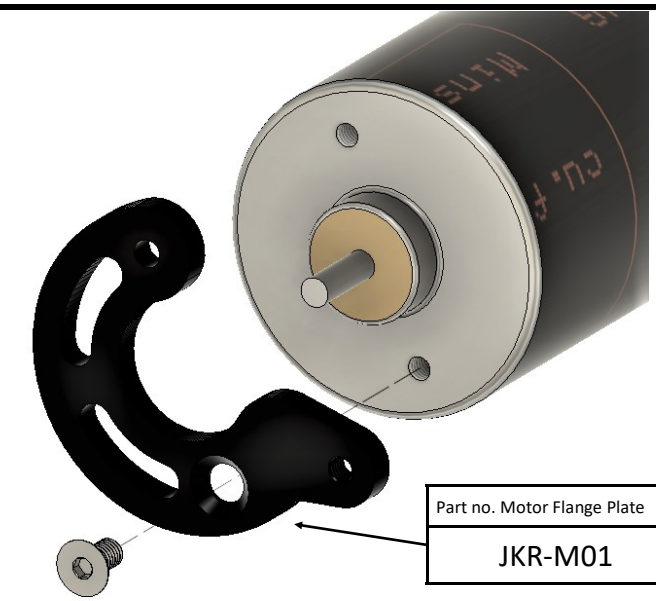
(SANWA/KO/FUTABA)

Part no. (M3X10mm button head)
JKR-M310-B



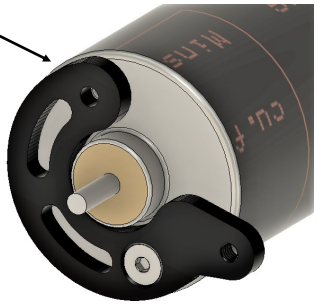


30. Pop on the two assembled steering links.

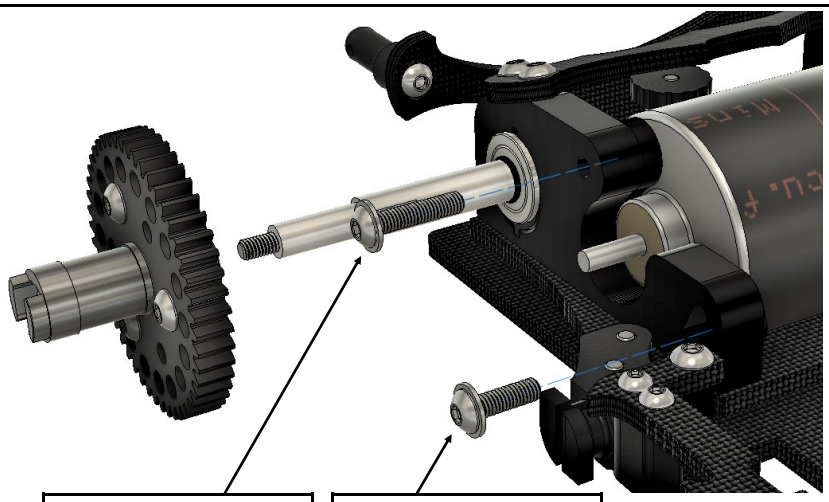


31. Mount the Motor Flange Plate to the motor (not included) using a M3x6mm countersink screw. Ensure the other holes align before you fully tighten the screw.

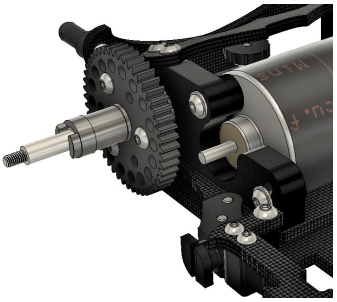
The Flange Plate can be mounted from either side, allowing you to install the motor on either side of the Pod Assembly.



Part no. Motor Flange Plate	Part no. (M3x6mm countersink)
JKR-M01	JKR-M306-C



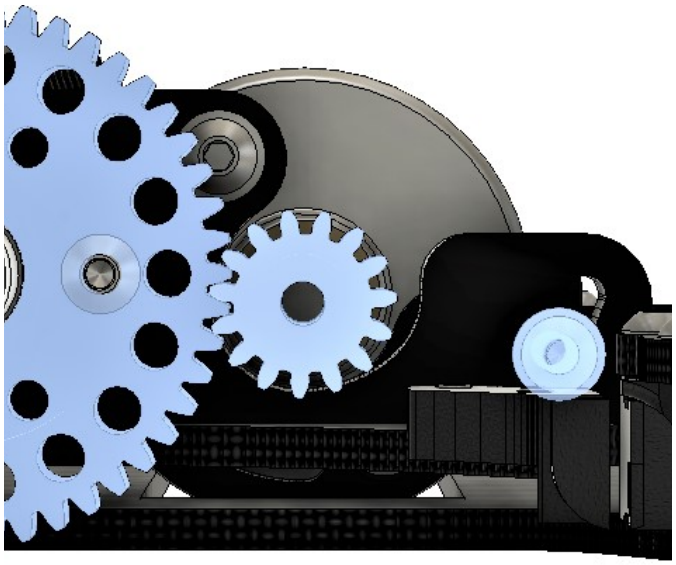
32. Slide in the Motor and Flange plate, then fix in place with a M3x14mm Wide head screw in the upper hole. We recommend you slide the Spur Drive assembly out of the way to initially insert this screw through the motor mount. Next pass the M3x12mm Wide head screw through the swing slot of the Motor Mount, and screw into the Flange Plate.

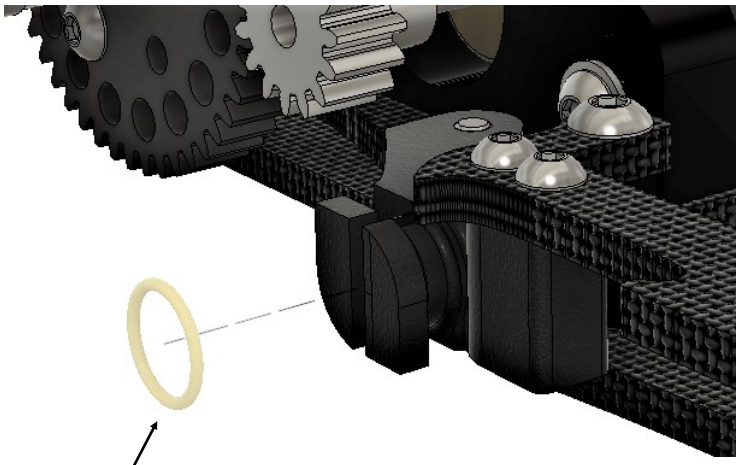


Part no. (M3X14mm w-head)	Part no. (M3X10mm w-head)
JKR-M314-W	JKR-M312-W

33. Attach your pinion gear (not included) to the motor shaft, and loosen the 2 screws holding the motor. The assembly can then swing, allowing you to correctly adjust the gear mesh correctly. Once correct mesh is achieved, tighten the highlighted screw first to fix the position. Then tighten the other screw to complete the motor installation.

Tech tip: If you are using a 3dp spur gear, make sure you correctly mesh the teeth for longevity. Another top tip is to keep the teeth clean of pickup. We've achieved 2000+ laps and counting on our prototype cars in testing!





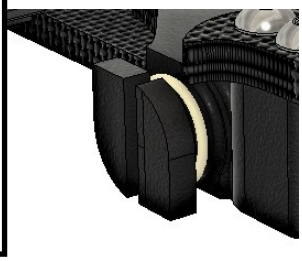
Part no. Side Band

JKR-017

SKIP THIS STEP FOR CLUB RACER VERSION

34. Install the Side Bands by stretching across the Bobbins... Repeat for both sides.

Tech tip. Initial recommended setting is one Side Band on each side. You can add up to 3 on each side to tune the side roll of the car. As this is a differential system, you can run the car with ODD or EVEN number of bands, and their tensions just adds together!



35. Insert the supplied Front Wheel Bearings into the front wheels (not supplied). Some wheel brands may need a 1mm spacer to avoid rubbing of the steering assembly. Using a M3 Nylock nut secure the front wheel onto the Front Axle. Tighten until the wheel starts to have some rotation resistance, then gradually back off until you get a free running

Part no. 1mm Wheel Spacer

JKR-316





Part no. (M3 Nylock nut)

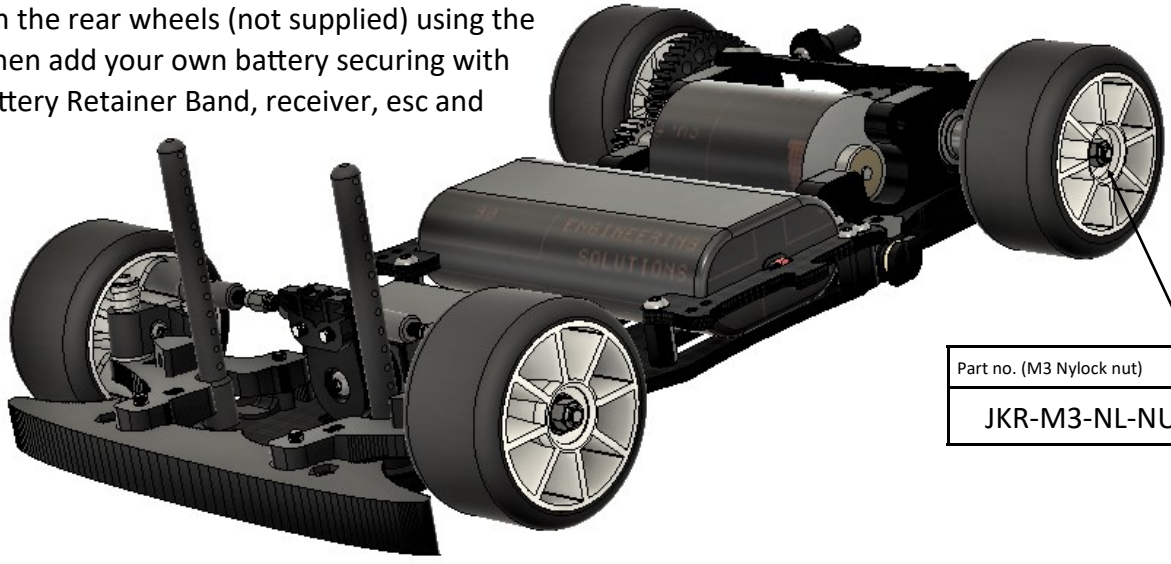
JKR-019

Part no. Front Wheel Bearing

JKR-B02

36. Finally attach the rear wheels (not supplied) using the M3 Nyloc nut, then add your own battery securing with the provided Battery Retainer Band, receiver, esc and bodyshell etc.

Lets Go Racing!



Part no. (M3 Nylock nut)

JKR-M3-NL-NUT

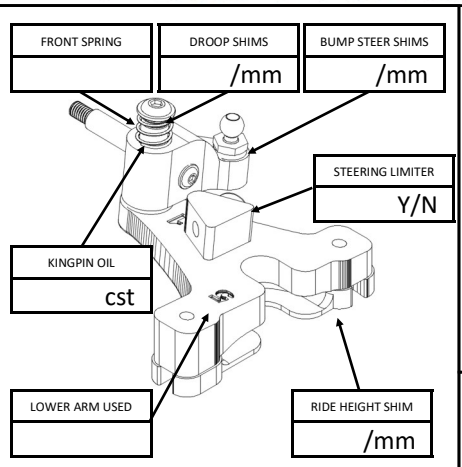
Kit Parts List	Part Number
chassis	YJKR-001
Pod Plate	JKR-002
battery Retainer	JKR-003
Rear Body Post Plate	JKR-004
pod brace	JKR-005
motor flange plate	JKR-M01
rear axle	JKR-M02
spur drive	JKR-M03
dog drive	JKR-M04
front axle	JKR-M05
turnbuckles 35mm	JKR-M06
front kingpins	JKR-M07
Rear Bodypost Mount	JKR-321
Motor Mounts	JKR-301
axle offset shim	JKR-302
spring guide	JKR-303
Thumb Nut	JKR-304
steering Hub	JKR-305
Pivot Guide	JKR-306
Servo Mount Small	JKR-307S
Servo Mount Large	JKR-307L
A Arms 5d caster, 1d camber	JKR-3A51
TPU Bumper	JKR-308
steering limiters	JKR-309
front ride height spacer 1mm	JKR-310
front ride height spacer 1.5mm	JKR-311
front ride height spacer 2mm	JKR-312
front ride height spacer 4mm	JKR-313
Pod Band Bobbins	JKR-314
Front Band Bobbins	JKR-315
1mm wheel spacer shim	JKR-316
1mm hub shim	JKR-317
Servo Alignment Tool	JKR-318
Servo Saver Brace	JKR-319
3dp Spur 48t	JKR-320
Body Post Set	JKR-008
Hex Standoff Plastic	JKR-009
Pod Guide Pin	JKR-M08
Medium Rear Spring	JKR-S01R
Pod Pivot ball	JKR-010
Pivot Ball Holder	JKR-011
5x1 O'Ring	JKR-012
Servo Saver	JKR-013
Ball studs 4.3mm	JKR-014
ball ends 4.3mm	JKR-015
Front springs Medium (Kit)	JKR-S01F
body clips	JKR-016
Side Bands	JKR-017
Battery Retainer Band	JKR-018
M3 nylock nuts	JKR-019
Rear Axle Bearings	JKR-B01
Front Axle Bearings	JKR-B02
Front Droop Shims 1.0mm	JKR-021
Shake Proof Washer	JKR-W01
JOK3R Screws (See manual for individual codes)	JKR-M...

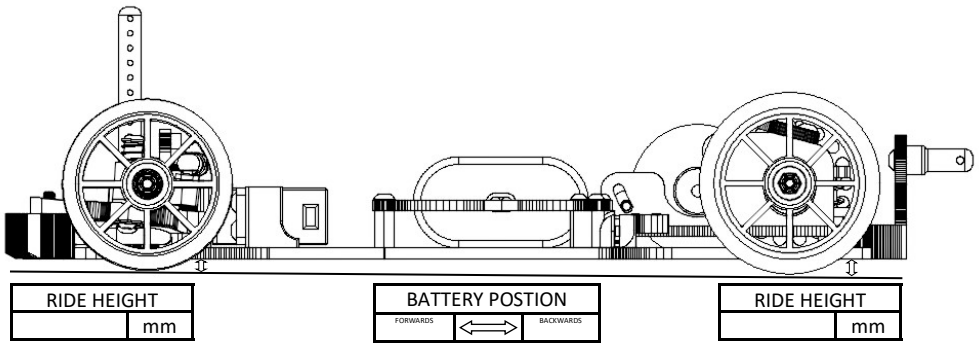
Optional and Upgrade Parts List	Part Number
7075 Aluminium Chassis	JKR-001-A
A Arms 5d caster, 2d camber	JKR-3A52
A Arms 4d caster, 1d camber	JKR-3A41
A Arms 4d caster, 2d camber	JKR-3A42
Rear spring hard	JKR-S02R
Rear spring soft	JKR-S03R
Front spring Hard	JKR-S03F
Front springs Soft	JKR-S02F
Hex Standoff Aluminium	JKR-M09
Motor Mounts	JKR-007
CNC spur gear	JKR-006
CNC motor mount	JKR-007
Front Droop Shims 0.3mm	JKR-020

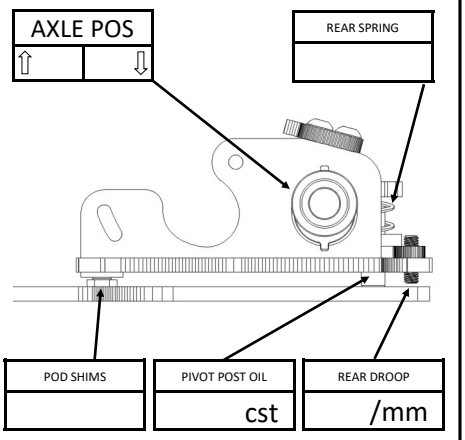
BATTCAVE

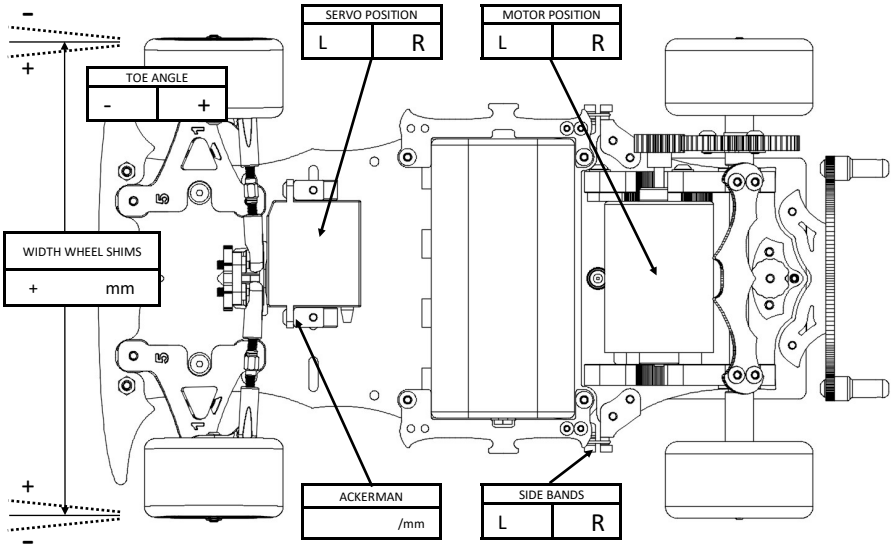
JOK3R

Name	Venue	Date

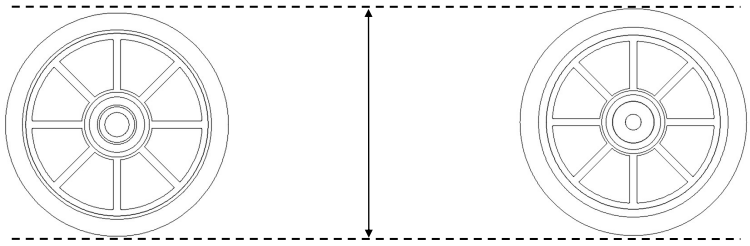






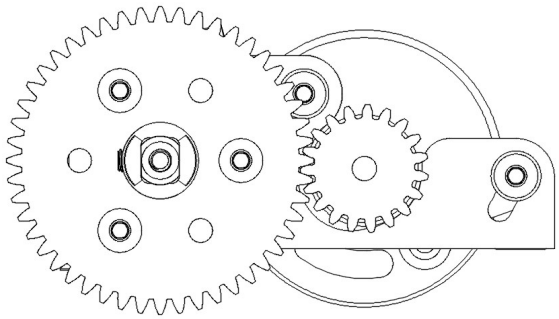


TYRE PREPARATION DETAILS		
FRONT		REAR
	SHORE	
/mm	DIAMETER	/mm
Y/N	SIDE WALL GLUE	Y/N



TYRE ADDITIVE PREP		
FRONT		REAR
	ADDATIVE	
/mins	TIME	/mins
	ADDATIVE AREA	

MOTOR	
SPUR	
PINION	
ROLL OUT	
ESC	
BATTERY	



ADDITIONAL NOTES...