

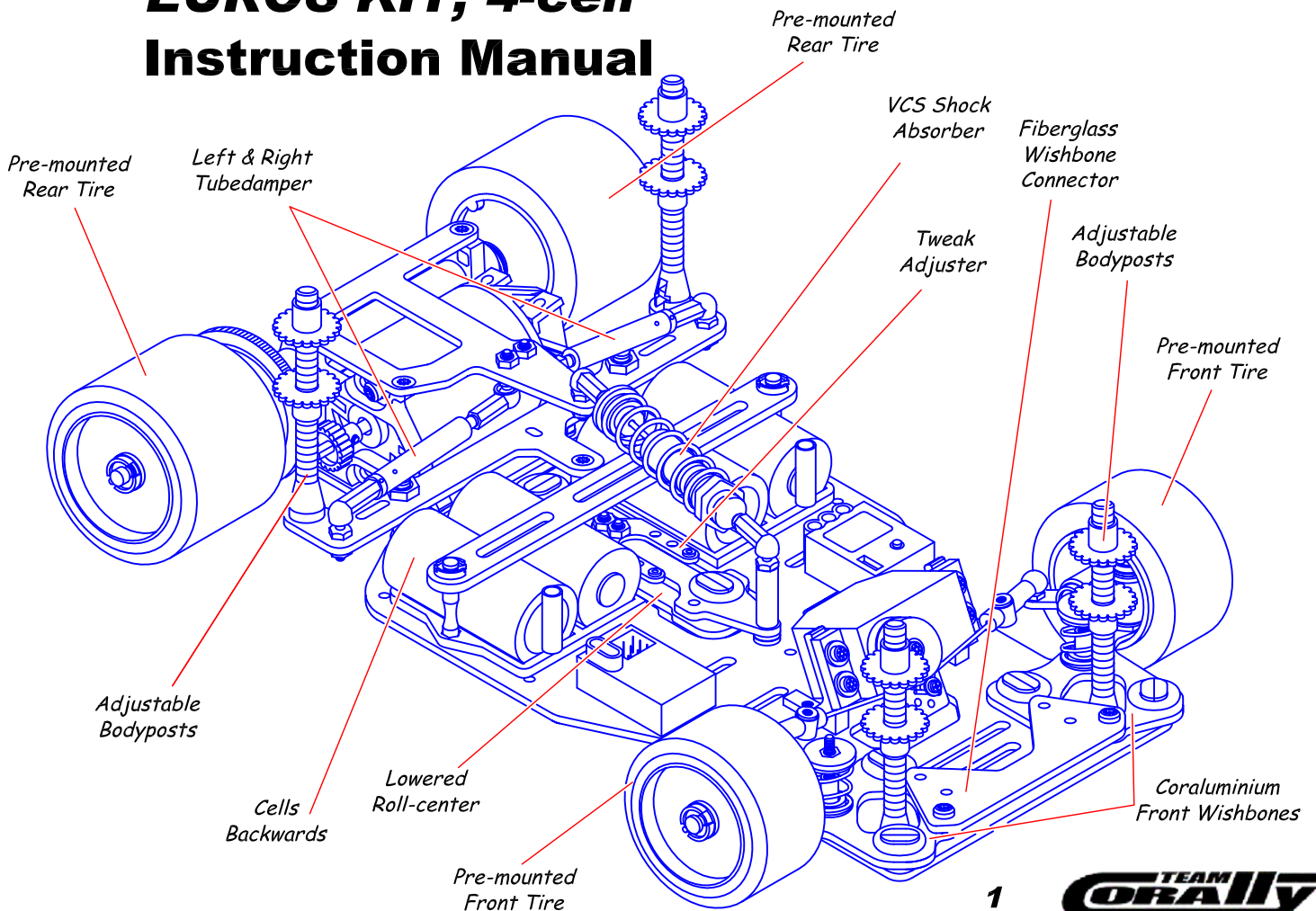
TEAM ORALLY

Introduction

Congratulations !

This SP12M Ahoniemi 2004 Euros Kit will improve your driving skills more than ever before. The Ahoniemi brothers are among the worlds best RC drivers. With their driving skills they have setup the ultimate 1:12 racer. This instruction manual will guide you through all the steps to get your car running. For best results it is advised to read this manual completely before you finish the car.

SP12M (#00058) AHONIEMI 2004 EUROS KIT, 4-cell Instruction Manual



SP12M Parts & Options

	1005	Spare parts set diff. incl. Thrust Bearing
Optional	1007	Diff balls 1/8 inch 'CERAMIC' (10 pcs.)
	1008	Diff balls 1/8 inch (10 pcs.)
Optional	10113	Servo-saver, Small - Universal (Sanwa/Airtronics/KO/Hitec)
Optional	10114	Servo-saver, Small - Universal (Futaba)
Optional	10131	Servo-saver, Small - Universal (Hitec)
	1017	Trackrod 1-12
	10401	Anti-roll Mast 1-12 (For mounting on chassis)
	1121	Ball Bearings - 'Metal Shielded' 5x9 (2 pcs.)
	1122	Ball Bearings - 'Metal Shielded' 4x7F (2 pcs.)
	1123	Ball Bearings - 'Metal Shielded' 1/4x3/8 (2 pcs.)
	1126	Ball Bearings - 'Metal Shielded' 7x11 (2 pcs.)
Optional	1121	Ball Bearings - CERAMIC 'Metal Shielded' 5x9 (2 pcs.)
Optional	1156	Ball Bearings - CERAMIC 'Metal Shielded' 7x11 (2 pcs.)
	1240	Torx Screws M3x25FH (10 pcs.)
	1244	Torx Screws M3x6FH (10 pcs.)
	1245	Torx Screws M3x8FH (10 pcs.)
	1246	Torx Screws M3x6RH (10 pcs.)
	1248	Torx screws M3x8RH (10 pcs.)
	1249	Torx Screws M3x12FH (10 pcs.)
	1250	Nuts, M3 (10 pcs.)
	1252	Nuts, M5 (10 pcs.)
	1253	Nuts, M2 (10 pcs.)
	1260	O-Rings 2,0x1,0 (10 pcs.)
	1261	O-Rings 3,0x1,0 (10 pcs.)
	1262	O-Rings 4,8x1,8 (10 pcs.)
	1263	O-Rings 5,0x1,5 (10 pcs.)
	1266	O-Rings 5x3,5 - For rear suspension pivots (10 pcs.)
	1267	O-Rings 5x4 - For T-bar pivots (10 pcs.)
	1280	Steel washers 3x6 (10 pcs.)
	1281	Aluminium washers 3.2x7 (10 pcs.)
	16030	Screw-driver - Torx 10
Optional	16040	Screw-driver - 1.5mm
Optional	16060	The Ultimate reamer for lexan bodies (3mm -14mm)
Optional	16070	Corally Toolset (Incl. 16081/16085/16087/16088/16089)
Optional	16081	High-Grip Torx Driver - T10
Optional	16082	High-Grip Hex Driver - 1,5 MM
Optional	16085	High-Grip Phillips Driver - 0
Optional	16087	High-Grip Nut Driver - 5,5 MM
	16170	Battery Holders
	2210	Setscrews M3x3
	74802	SP12M Chassis (4-cell), Graphite 'Cells Backwards'
Optional	74811	SP12M Wishbones, Graphite (1 pair)
	74812	SP12M Wishbones, Coraluminium (1 pair)
Optional	74817	SP12M A/R Frontbeam, Coraluminium
Optional	74820	SP12M Wishbone connector - soft, GRP (1,4)
Optional	74821	SP12M Wishbone connector - medium, Graphite (1,4)
	74822	SP12M Wishbone connector - medium, GRP (2,4)
Optional	74823	SP12M Wishbone connector - hard, Graphite (2,4)
	74830	SP12M T-bar - soft, GRP
Optional	74833	SP12M T-bar - hard, Graphite

	74857	SP12M T-bar Connector with tweak adj. position, Graphite
	74858	SP12M Tweak Adjuster, Graphite (use with 74857)
	74861	SP12M Motorbar, Graphite
	74865	SP12M Damperplate with tubedamper positions, Graphite
	74873	SP12M Radiotray with tubedamper positions, Graphite
	74881	SP12M Battery bar, Graphite (4-cell Saddle Pack)
	74894	SP12M Aluminium battery posts (1 Pair)
	74895	SP12M Aluminium servo posts (1 Pair)
	74900	SP12M Micro Shock Absorber Kit
	74905	SP12M Tube damper (1 pc. - 2 required per car)
	75083	Mounting set motorbar SP12GII & G3
	75154	Motorpod SP12M Special 'Tube-dampers'
	75285	Roll-Centre adjustment kit
	75290	Ball joint set T-bar & suspension
Optional	75571	X-soft front springs (0,8 MM)
	75572	Soft front springs (0,9 MM)
Optional	75573	Medium front springs (0,9 MM)
Optional	75574	Hard front springs (1,0 MM)
Optional	75576	X-hard front springs (1,2 MM)
	75580	Damper set front SP12M/SP12G3
	75582	Front damper rings (1 Pair)
	75701	Body post set 50 MM
	75710	Body post nuts
	75775	King pin with nut for camberbar SP12G3/12M
	75781	King pin shims, Alloy
	75782	King pin shims, Steel (0,5 mm - 6 pcs. / 0,1 mm - 6pcs)
Optional	75791	Steering Blocks L+R
	75795	Tuning Steering blocks, Ballraced (excl. 4 Ball bearings)
	75796	Tuning Steering blocks, Ballraced (incl. 4 Ball bearings)
	75801	Front Wheel Corally 1-12
	75811	Rear Wheel Corally 1-12
	75821	Left wheel plate 1-12
	75841	Drive plate 1-12
	75852	Front Axle 1 - 12
	75861	Rear Axle 1 - 12
Optional	75862	Rear Axle 1 - 12 (width extension + 3mm)
	75912	Thrust bearing, SP12G3/SP12M
Optional	75913	Thrust bearing - 'CERAMIC', SP12G3/SP12M
	75920	Diff. nut set (M7)
	75930	Bearing holder set
	76061	Clipset
	76071	Small parts assortment
	76072	Screw set aluminium
	76101	Transponder Holder
Optional	80000	Damper syrup, Soft
Optional	80001	Damper syrup, Hard
Optional	80002	Damper syrup, Extra Hard
Optional	80010	Ball Differential Lubricant
Optional	80120	Shock Absorber Oil - 20W
	90082	CORALLY Sticker Sheets (2x), New Design
Optional	90100	CORALLY Number Sheets

SP12M Tires

	1402	Green tires rear 1-12
	1405	Orange tires 1-12
	1406	Gold tires rear 1-12
	1407	Silver tires rear 1-12
	1408	Pink tires rear 1-12
	1412	Green tires front 1-12
	1416	Gold tires front 1-12
	1417	Silver tires front 1-12
	1418	Goldstar tires front 1-12
	1419	Silverstar tires front 1-12

	14502	Green on 1-12 Corally rear wheels
	14505	Orange on 1-12 Corally rear wheels
	14506	Gold on 1-12 Corally rear wheels
	14507	Silver on 1-12 Corally rear wheels
	14508	Pink on 1-12 Corally rear wheels
	14512	Green on 1-12 Corally front wheels
	14516	Orange on 1-12 Corally front wheels
	14517	Gold on 1-12 Corally front wheels
	14518	Silver on 1-12 Corally front wheels
	14518	Pink on 1-12 Corally front wheels

SP12M Bodies

	78100	1/12th Scale Body, N-Type (Long) - Lightweight
	78105	1/12th Scale Body, N-Type (Short) - Lightweight

	78110	1/12th Scale Body, F-Type (Long) - Lightweight
	78120	1/12th Scale Body, M-Type (Short) - Lightweight

Tools needed (included)

- Screwdriver Torx T10 **Corally part #16030**

Tools needed (not included)

Corally Tool Set (#16070) containing:

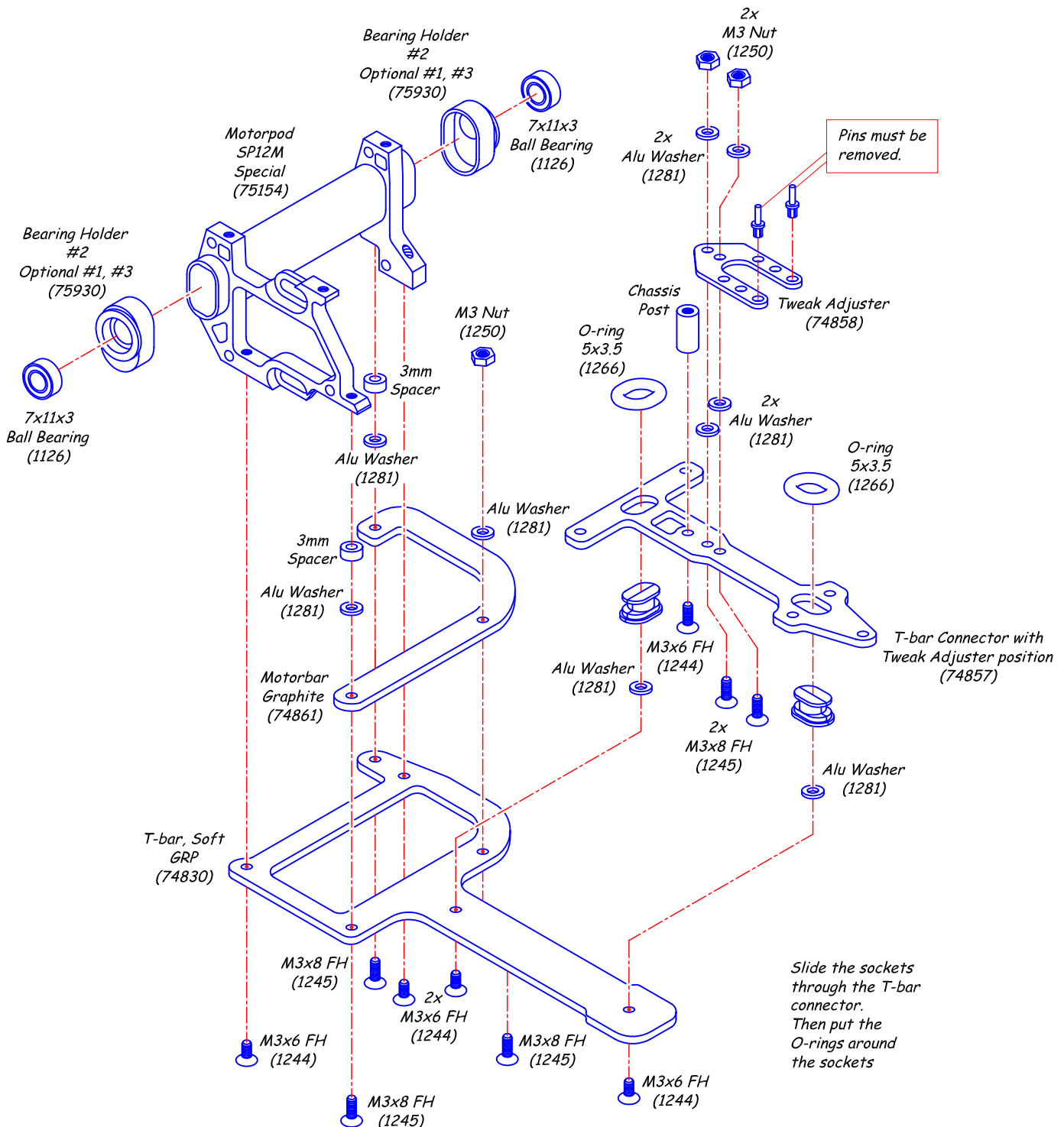
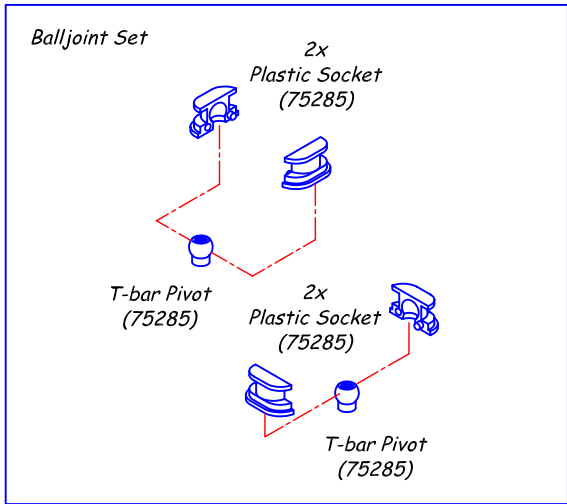
- Screwdriver Torx T10 **Corally part #16081** (same size as **#16030**)
- Screwdriver for setscrews - 1.5mm **Corally part #16082**
- Small Philips screwdriver **Corally part #16085**
- 5.5 mm nut driver **Corally part #16087**
- 6 mm nut driver **Corally part #16088** (not needed)
- 7 mm nut driver **Corally part #16089** (not needed)

- Silicone Shock Oil 20WT **Corally part #80120**
- Ball Differential Lubricant **Corally part #80010**
- 5 mm nut driver
- Cutting Plier
- Longnose Plier
- Vernier calipers or precision ruler
- Hobby Knife
Be careful with the sharp blade!
- Hobby Scissors
- Double-sided Tape

Items needed to complete your car (not included)

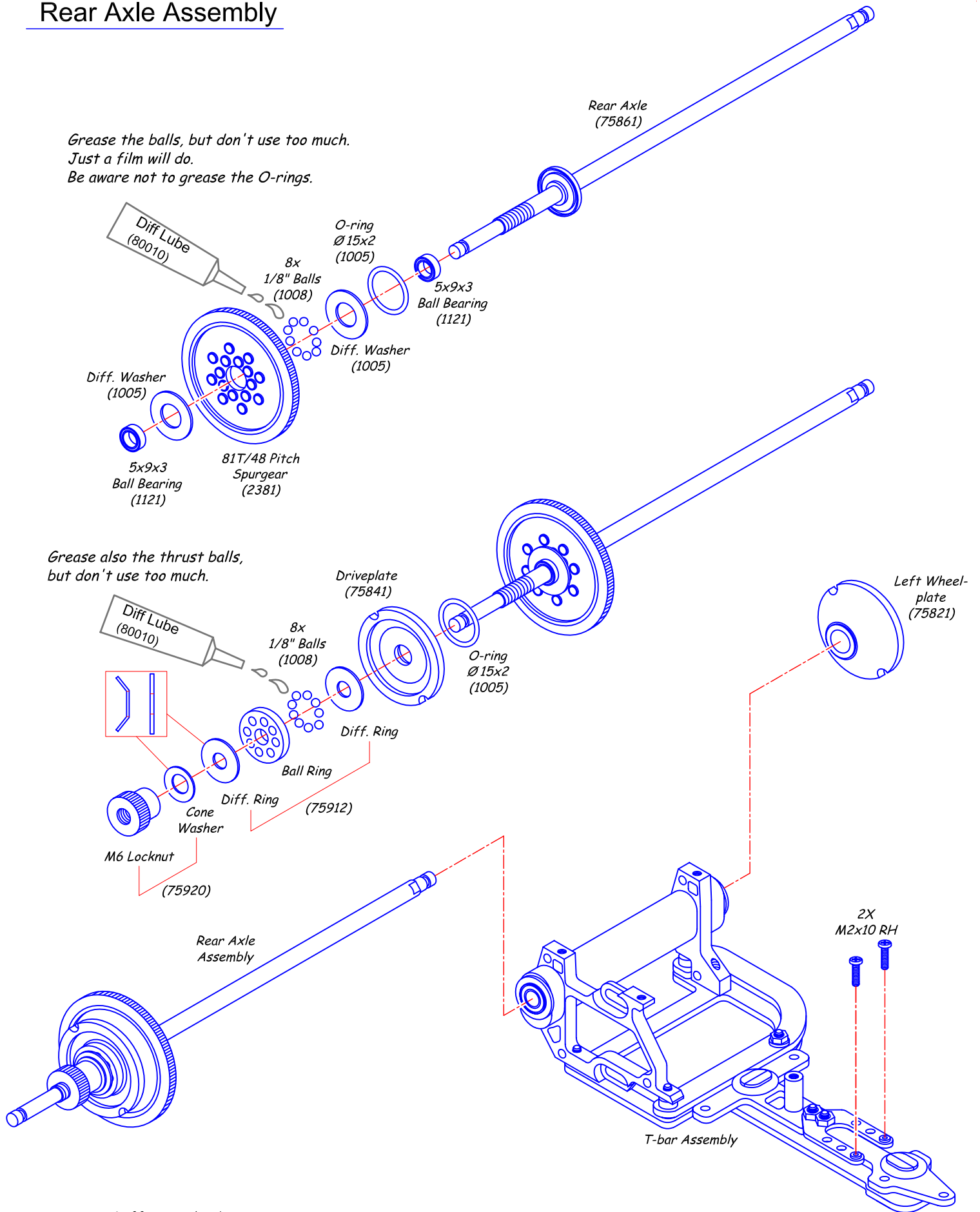
- R/C two channel surface frequency radio system
- 4.8V Battery Pack (4 cell sub-C size)
- Battery Charger (with peak or temperature detection)
- Mini Servo with Servosaver
- Electronic Speed Control
- Electric Motor
- 1:12 Scale Lexan Body
- 6V Receiver Pack (optional)

T-bar Assembly



Rear Axle Assembly

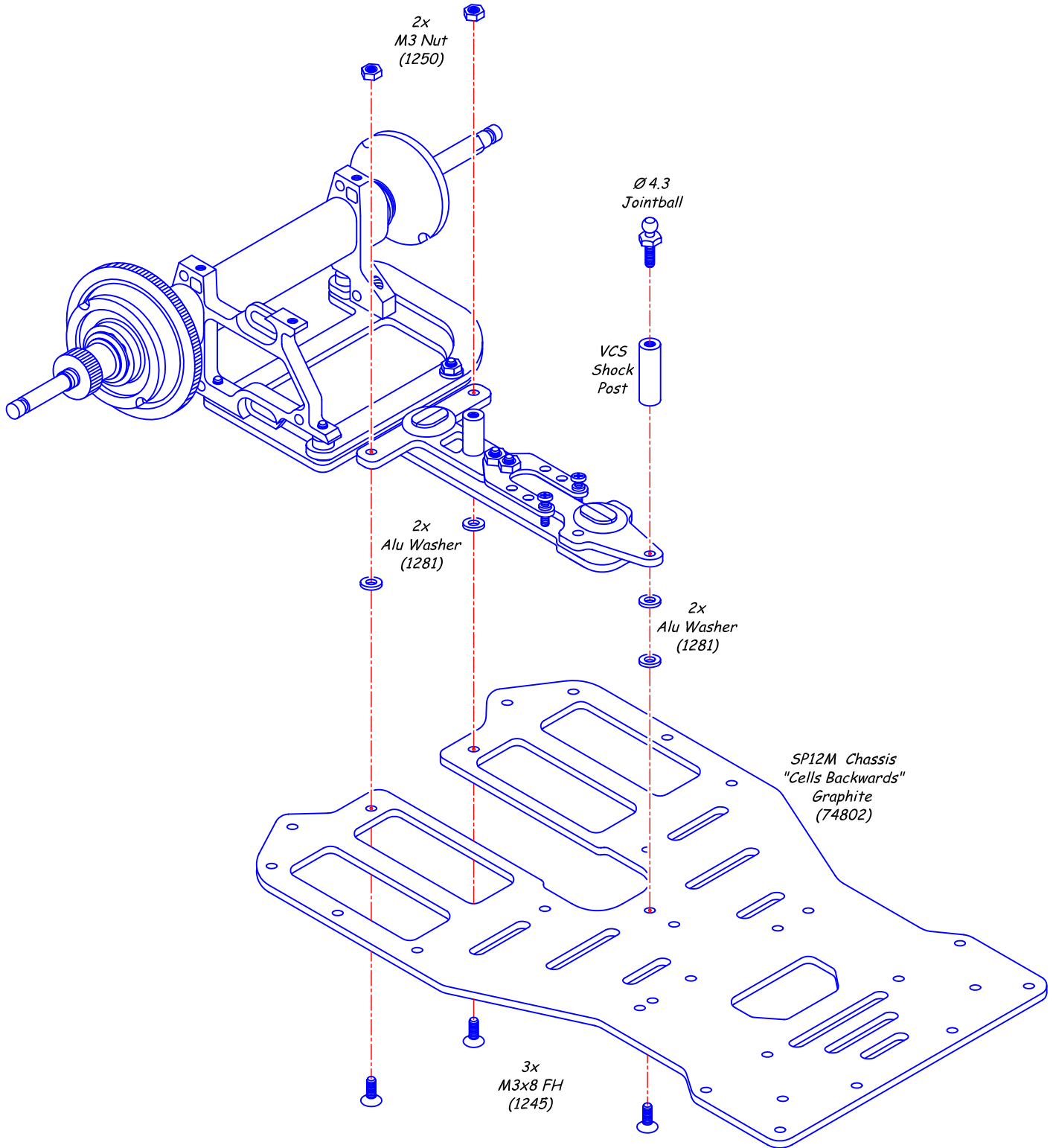
Grease the balls, but don't use too much.
Just a film will do.
Be aware not to grease the O-rings.



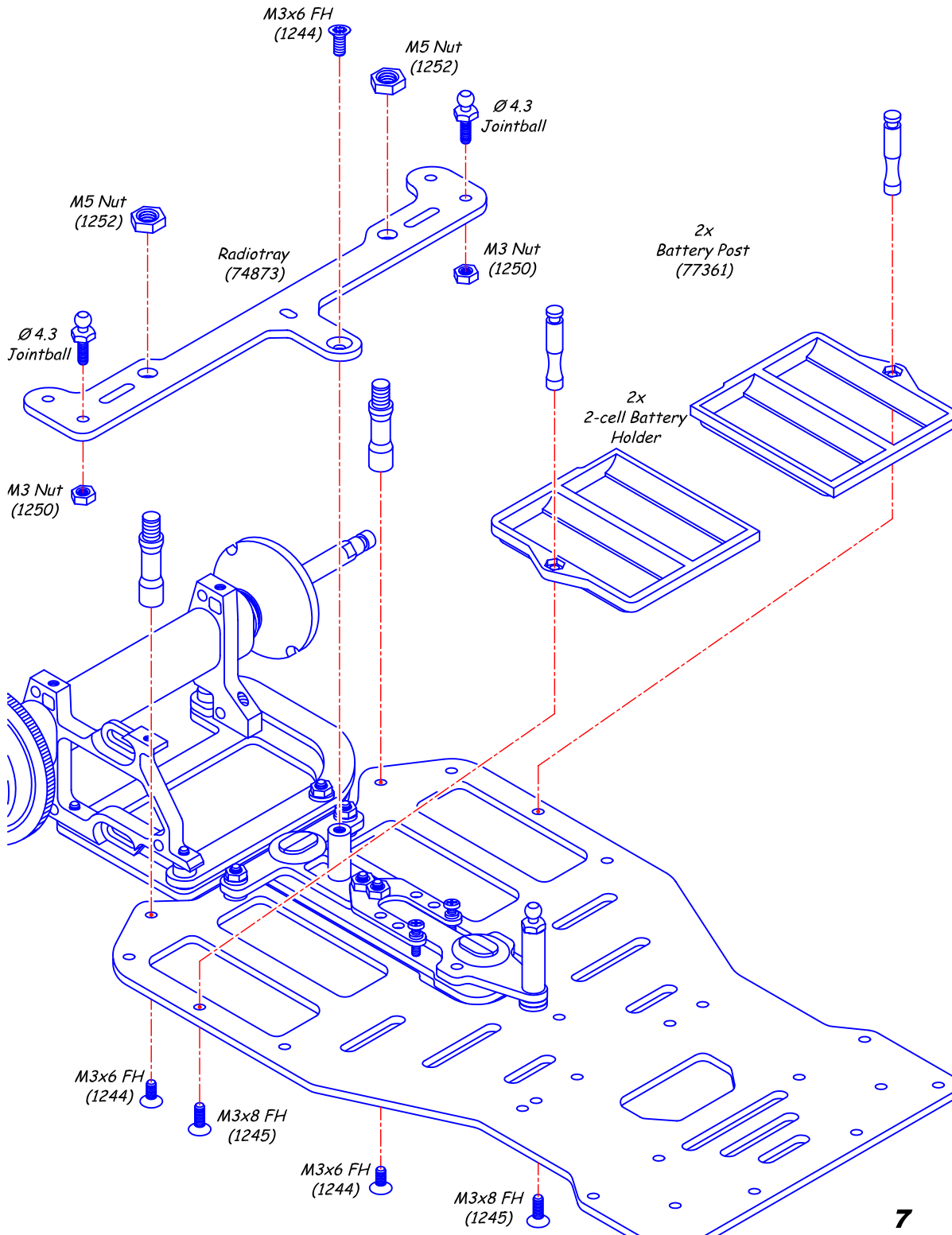
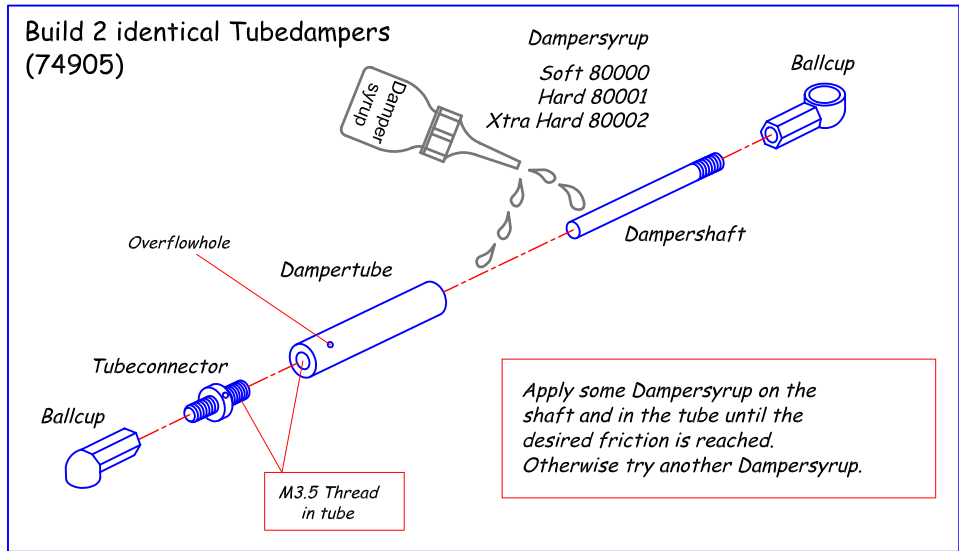
Grease also the thrust balls,
but don't use too much.

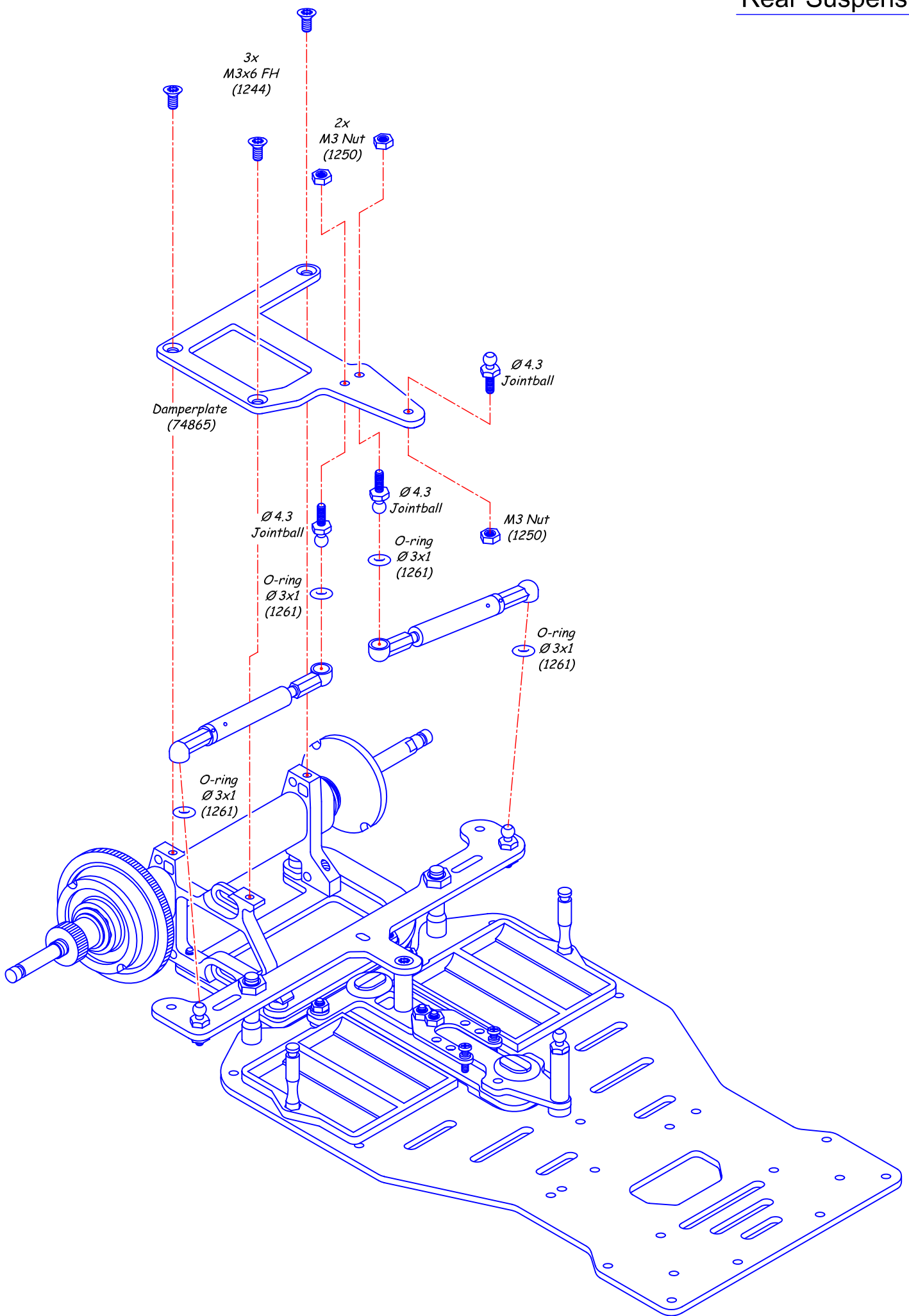
Differential Adjustment:
To test the diff. hold rear wheels then try to turn the spur gear with your right thumb. If the gear turns without extreme force then tighten the knurled diff. nut in the centre of the right wheel a small amount. Repeat this process until the gear cannot be easily rotated when both wheels are being held.

Drivetrain Mounting



Rear Suspension

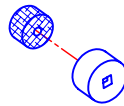




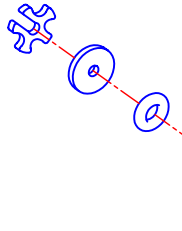
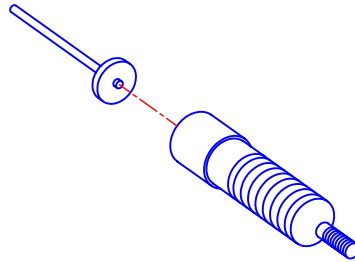
VCS Micro Shock Assembly

(74906)

1. Keep shock body straight up and fill with oil up to the upper groove.
2. Insert shaft/piston all the way to the bottom.

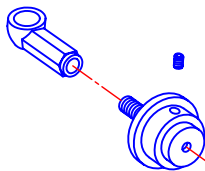
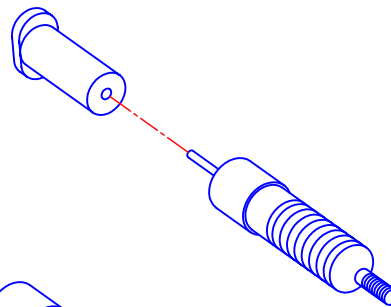


1. Remove the plastic VC housing from the parts tree.
2. Soak the VC foam with your shock oil. Use our Corally Shock Absorber Oil #80120
3. Push the foam into the housing.

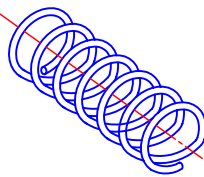


1. Use the assembly tool to push all the parts down into the body until the clip snaps into the groove. When you remove the tool, the shaft will push out somewhat if everything snapped into place correctly. Make sure the clip snaps into the groove completely

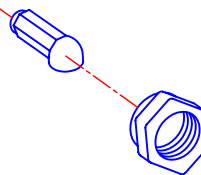
1. Remove the small and large washer from the parts tree. Remove any flash from the washers.
2. Slide the VC housing with the foam onto the shaft, housing first (so the foam is still seen though the body opening).
3. Slide on the following in this order: smaller washer, red O-ring, larger washer, then the star-shaped clip.



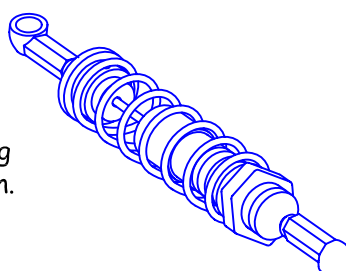
1. Slide the spring over the body and up against the adjusting nut.
2. Screw the ball cup onto the shock shaft end.
3. Tighten the shock rod and to the shaft with the set screw.



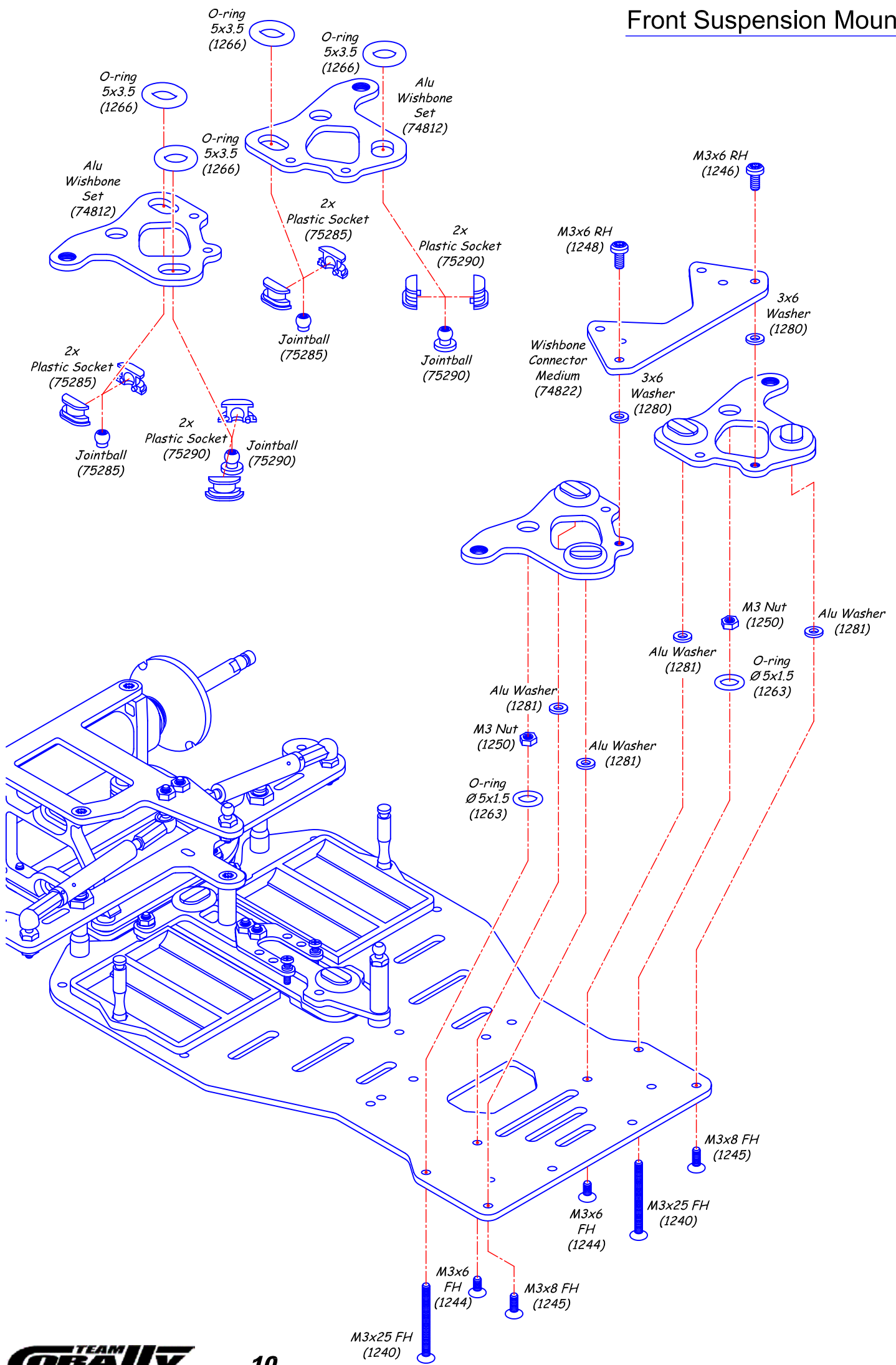
1. Remove the assembly tool and screw on the ball cup where shown.
2. Screw the spring adjusting nut onto the shock body threads, flange first, as shown.



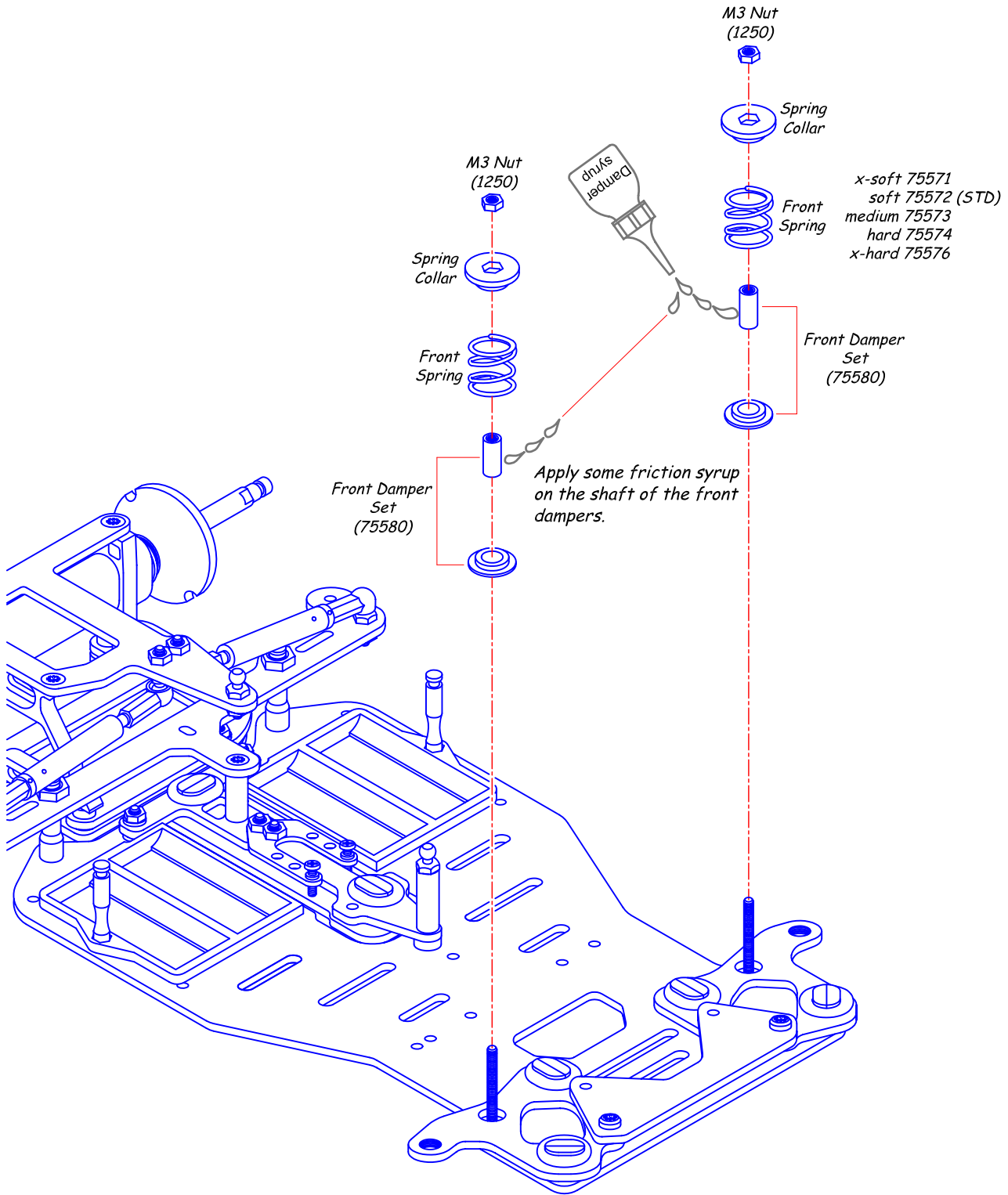
1. Pop the ball cups on the ball ends of your kit.
2. Turn the spring adjusting nut to adjust spring tension.



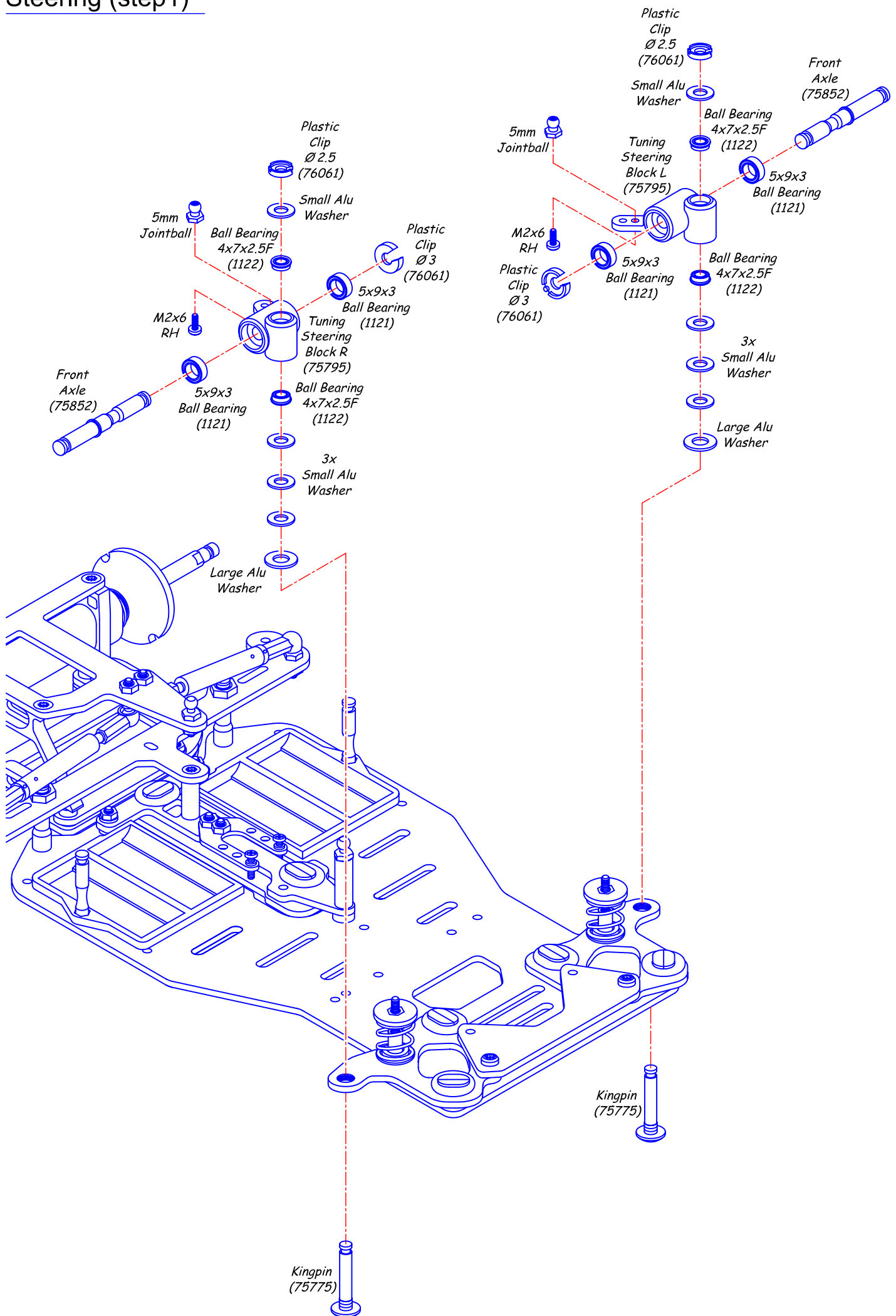
Front Suspension Mounting



Front Suspension Mounting

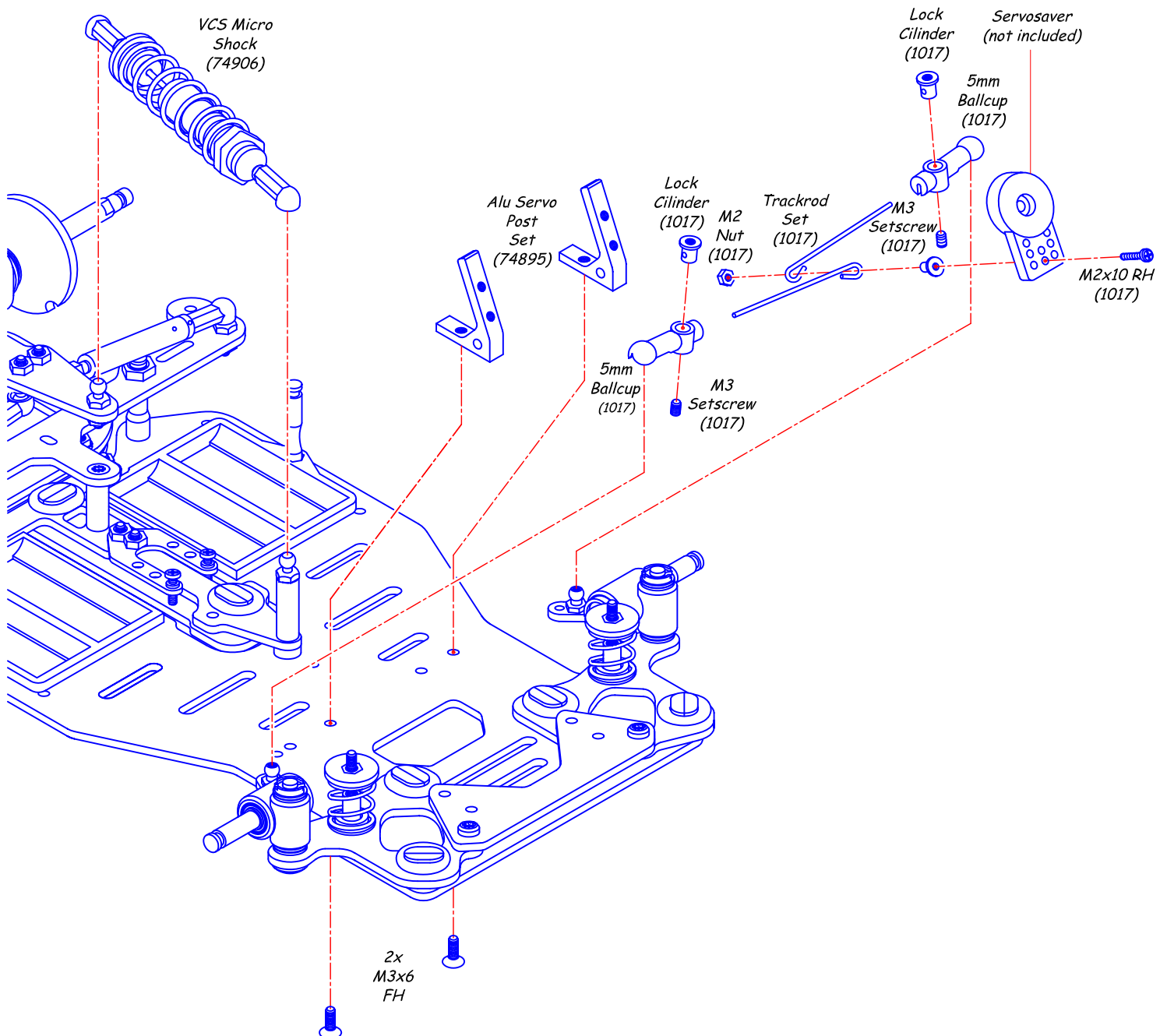


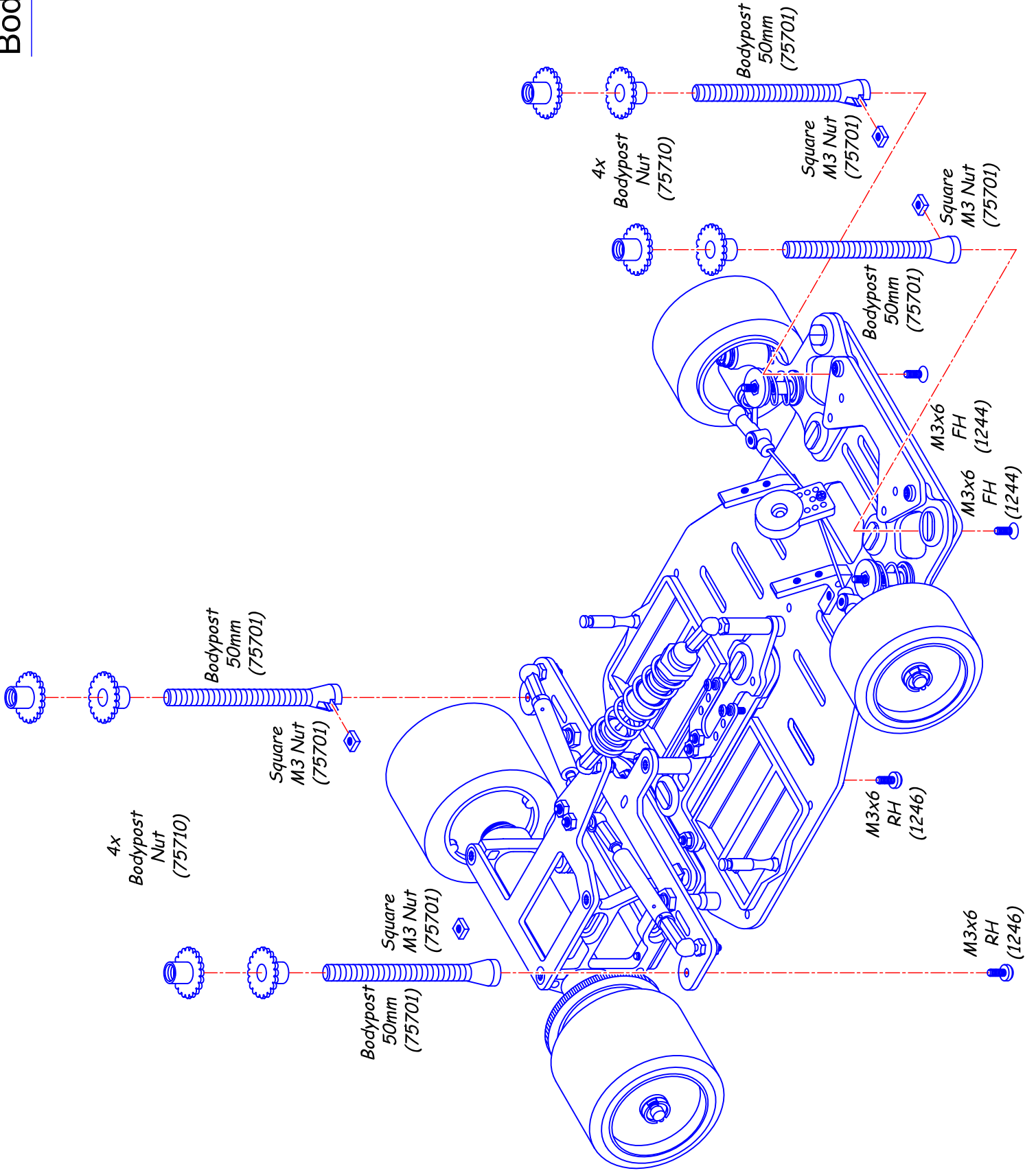
Steering (step1)



Steering (step 2)

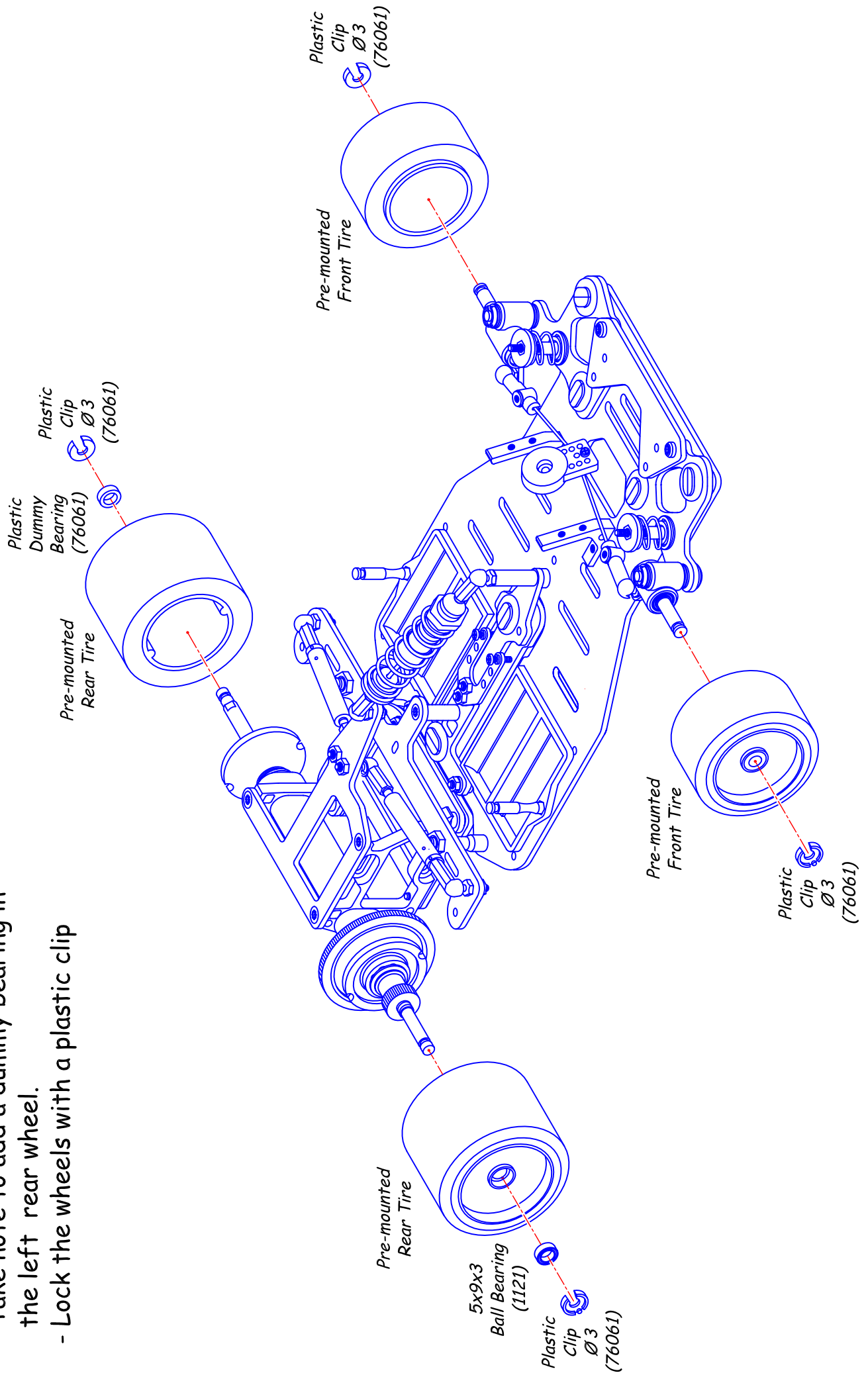
- Fit the Servoposts on the Chassis, but tighten them when mounting the Servo.
- Remove temporary Steering link, and apply the Trackrods.
- The VCS Micro Shock can also be installed.





Wheel Mounting

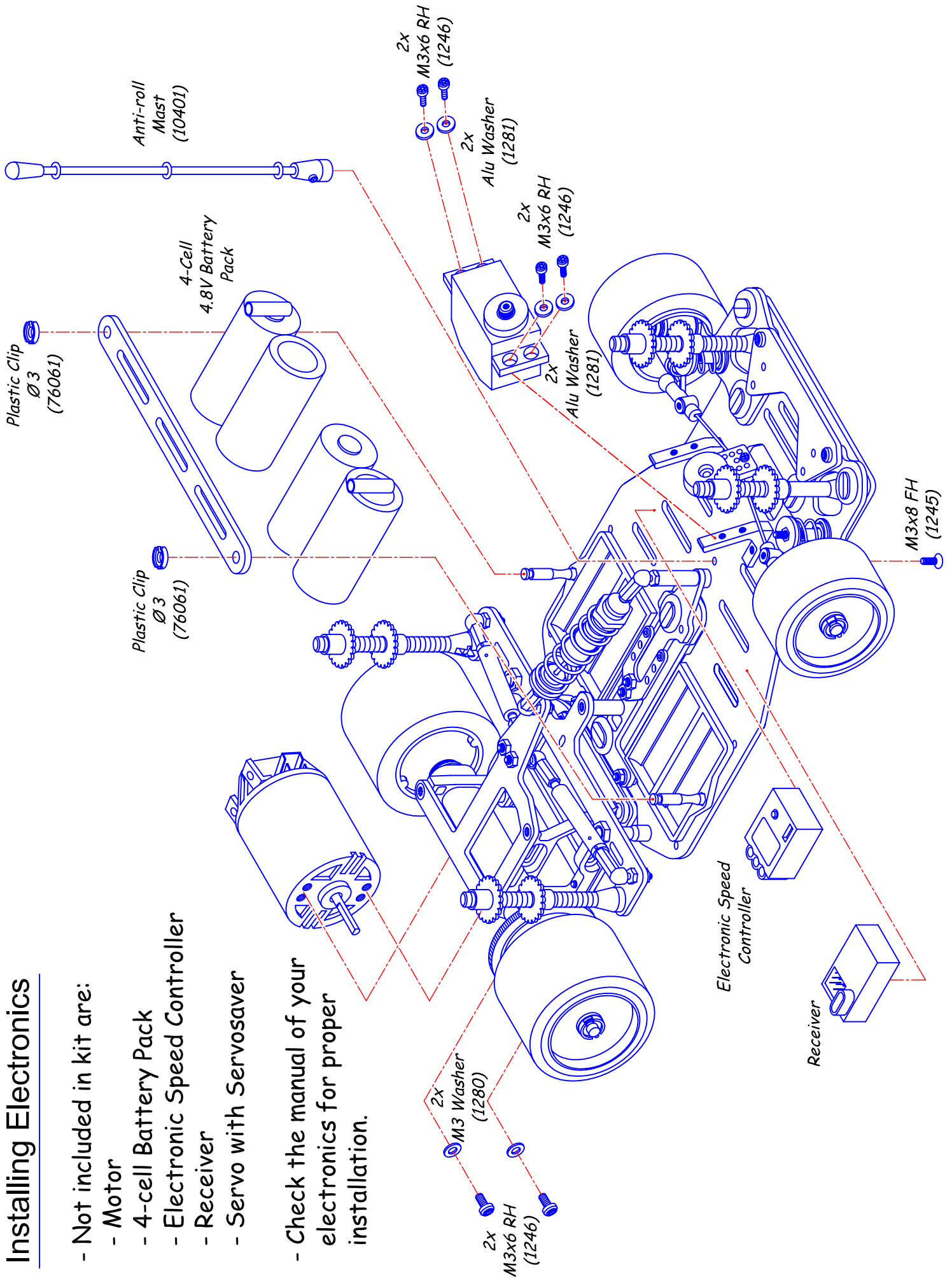
- Fit the wheels on the axles.
- Take note to add a dummy bearing in the left rear wheel.
- Lock the wheels with a plastic clip



Installing Electronics

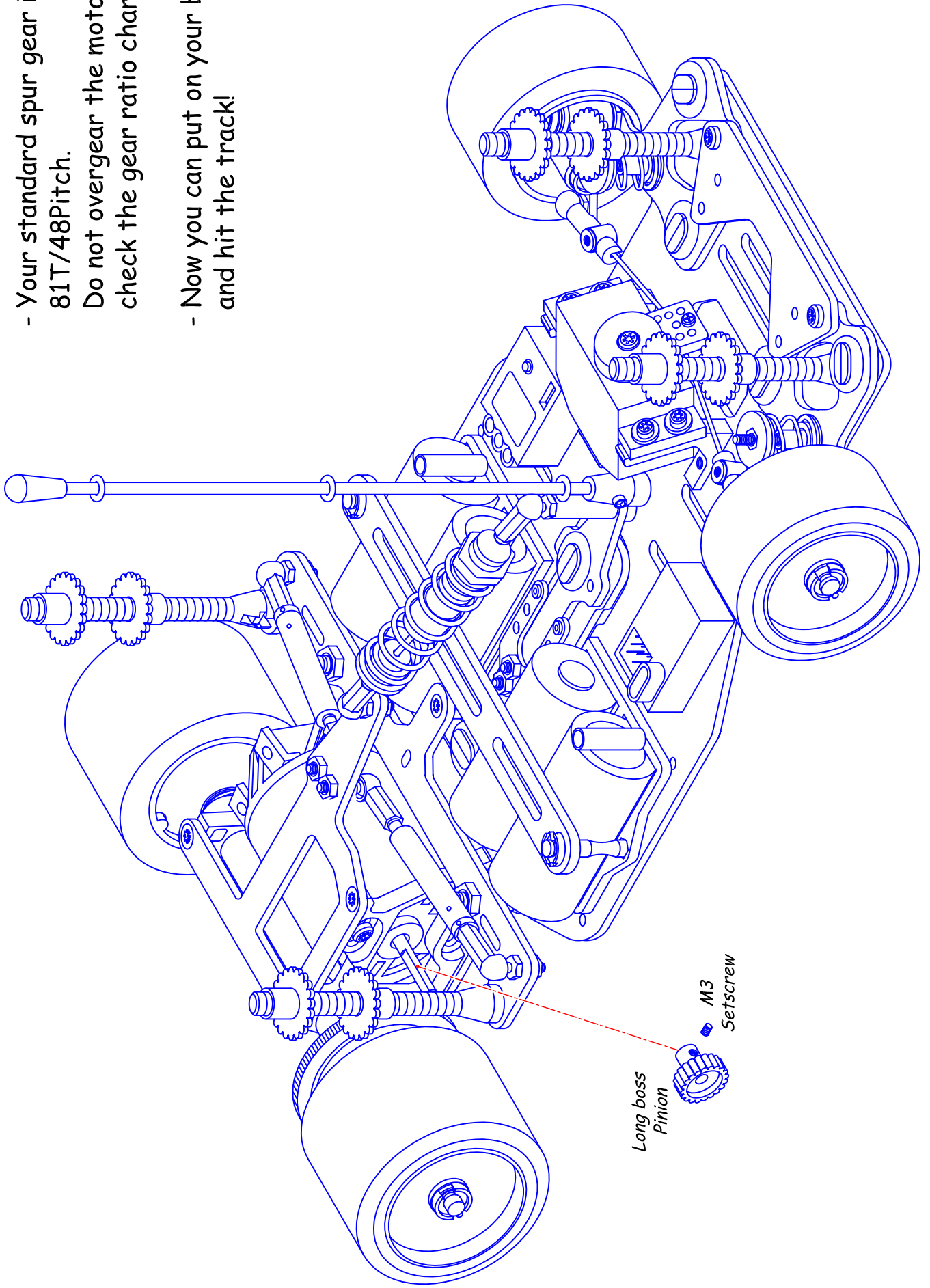
- Not included in kit are:
 - Motor
 - 4-cell Battery Pack
 - Electronic Speed Controller
 - Receiver
 - Servo with Servosaver

- Check the manual of your electronics for proper installation.



Almost Ready To Run

- Your standard spur gear is 81T/48Pitch. Do not overgear the motor, check the gear ratio chart!
- Now you can put on your body and hit the track!



1.0 TIPS TO FINAL ASSEMBLY

1.1 Fitting the centre point steering.

Screw the 2mm bolt into the centre hole on your servo saver (not supplied). The threaded bushing needs to be fitted onto the 2mm bolt now attached to the servo saver. The flange of the bushing needs to be screwed tightly up against the servo saver arm. Drop the loop on the end of each of the two track-rods, over the bushing. Once fitted screw the 2mm nut onto the bolt and tighten it up against the end of the bushing. Do not at any cost or for any reason replace this steering system or remove the play at the centre pivot. The tolerances in the track-rod eyelet's have been designed to aid straight line stability. Fitting 'play free' ball joints will change the geometry and make the car really difficult to drive – you have been warned!!!

Centre point steering explained.

The centre point steering used on all Corally cars has been designed to give the ideal "ackerman" angles during steering movements. This basically means that on Corally cars the inside wheel is always at the optimum angle to give neutral steering at all speeds, this drastically reduces wheel scrub and gives superior cornering speeds.

1.2 Front wheel tracking.

Remove the dummy track rod and fit the ends of the track-rods into the ball joints attached to the steering blocks. Centre the servo and set the front wheels to run parallel (straight ahead) and then tighten up the 3mm set screws. The ball joints are designed to withstand crashes and should never need to be popped off the balls; this design prevents the ball joints from being stretched and so getting loose due to servicing

1.3 Radio installation.

The Electronic speed control (ESC) and the receiver need to be mounted onto the chassis, using double sided tape (not supplied.) Mount the ESC first on the chassis plate on the left of the car. It is important that the ESC is mounted in a position which keeps the battery wires to the minimum length, to minimise electrical losses and potential interference problems. Next mount your receiver on the chassis plate on the right of the car. It is advised to keep the crystal and aerial wire as far away from the batteries as possible. Finally thread the aerial wire through the o-rings on the Anti-roll mast.

1.4 Motor installation and gear meshing.

Bolt your chosen motor in place as shown and fit the appropriate pinion gear to the shaft of the motor. Use a 1.5mm setscrew driver and ensure that you tighten the 3mm set screw onto the flat on the motor shaft. Refer to the gear ratio chart in this manual for advice on gear ratio selection. Once in place and the gears are fitted you need to adjust the position of the motor, in the slotted holes provided in the motor pod, to ensure that the gears mesh smoothly. A small amount of play is required between the teeth of the gears as they engage, turn the axle to ensure that they mesh consistently around the whole spur gear. Once in position tighten up the M3 Torx screws to hold the motor firmly in place. Please note that there are two types of gears available for Corally cars. One is 48dp which offers good efficiency and great durability, whilst for the serious racer there are 64dp gears which have a much smaller tooth form and so offer greater efficiency at the expense of durability.

1.5 Mounting the bodyshell and wings.

It is recommended that you use a lexan / polycarbonate bodyshell (not included) as they are lightweight and strong. See the set-up section later in this manual for advice on bodyshell selection and other aerodynamic considerations. It is advised that you mark the outside of the bodyshell with bodypost and aerial positions, before you spray paint it on the inside. The Corally body mounting posts fitted to the car are fully adjustable. The bodypost screws are fitted with sleeves which have been designed to allow the bodyshell to 'float' a little. This design helps in the event of a crash or when the bodyshell is accidentally run too low.

1.6 Final checks.

BEFORE RUNNING YOUR CORALLY CAR, CHECK ALL SCREWS ARE TIGHTENED READY FOR RACE CONDITIONS. The cars are pre-assembled with automatic tools with a low torque setting, so that you can undo them in the future.

2.0 MAINTENANCE AND SETUP TIPS.

2.1 Tweak (left to right balance of the car).

One of the most important factors when racing an R/C on-road car is 'tweak'. If a car is tweaked then the car will turn differently in left and right hand bends. Purposely tweaking a car may be advantageous when oval racing, but generally it is best if the car handles exactly the same in both left and right hand turns.

A car becomes tweaked when the grip or weight is not balanced between left and right hand wheels. This may occur in several ways.

- The chassis assembly could be twisted, this is no longer common in modern cars, but should be checked after major crashes.
- The tires on each side of the car could be different sizes. The outside tire generally wears more quickly than the inside tire. To prevent problems swap the tires from left to right hand sides after every couple of races. Or use a tire truer if available.
- The suspension or ride height may not be set the same on each side of the car. Check springs, tweak adjuster settings and ride height settings.
- Steering movement may be different on left and right sides.
- Tires may be giving different grip levels. Check and replace any that seem to have different firmness on the left or right.
- When using tire additive it is possible to tweak the car by accidentally applying different amounts of additive to each tire – be careful!
- Finally its possible for the car to feel tweaked if the suspension does not move freely. Check that the power wires to the motor do not restrict the rear suspension movement and check that all ball joints move freely.

2.2 Ride height adjustment.

The ride height should be kept to a minimum, this will keep the centre of gravity of the car as low as possible and so maximise cornering speeds. The ride height should ideally be between 3 – 5mm (1/8"-3/16"), but on bumpy tracks or where regulations dictate otherwise run the car a little higher. Check regularly to compensate for tire wear which can be rapid on some tracks.

Adjusting the front ride height.

Each front steering block is supported by aluminium washers. Placing these under the steering block lowers the chassis (less ride height) and conversely putting them above raises the chassis, giving more ride height.

On road courses always use the same washer position on each side of the car. On oval courses it may be advantageous to offset them to 'hook' the car into the turns.

Adjusting the rear ride height.

Three different pairs of rear axle bearing holders have been included in the kit, they are all off-set to give 6 different rear axle height settings. Remove the rear axle by removing the centre wheel clip on the left. Fit the appropriate pair of bearing holders to each end of the rear axle tube, complete with ball bearings and put the rear axle back into place. Do not forget to re-mesh your pinion and spur gear. Always use the same height setting on both sides of the car otherwise the rear axle bearings will lock up.

2.3 Front Damper servicing.

Your Corally car features an o-ring damping system inside the front springs. This system provides a superbly smooth damping action. To service these dampers remove the front springs and clean the damper posts and o-ring collars. Then add new damper syrup around the damper posts and the o-ring inside the collars.

2.4 Rear Tube Damper servicing and adjustment.

The rear tube dampers are a very important part of the car. These dampers control the rear suspension movement.

Periodically check that the movement of these dampers is even and smooth in all directions. To change the damper action (stiffness) the damper syrup has to be replaced by another type. Corally offers 3 different grades as following:

- #80000 – Damper Syrup, Soft
- #80001 – Damper Syrup, Hard
- #80002 – Damper Syrup, X-Hard

Rear damper setup.

The rear damper setup controls the speed at which the rear suspension moves over bumps and through turns.

- If the car is poor over bumps then increasing the rear dampening effect may help.
- Increasing the rear dampening effect will also increase steering a little, remember this when making this adjustment for other reasons.
- If the inside front wheel goes light or even lifts during cornering then the damper is too thin.
- If the car is reluctant to change direction quickly enough in chicanes then reducing the rear damper effect may help.

General rule - if the car understeers whilst exiting corners then the rear damper is set too thin. If the car oversteers exiting corners then the damper is too thick.

2.5 Corally Differential adjustment and maintenance.

To test the differential hold both rear wheels then try to turn the spur gear with your right thumb. If the gear turns without extreme force then tighten the knurled diff. nut in the centre of the right wheel a small amount. Repeat this process until the gear cannot be easily rotated when both wheels are being held.

Servicing the differential.

Unscrew the diff nut and carefully remove each component, making careful note of the order in which they are fitted (refer to the sectional drawings if necessary). Check the bearings in the centre of the spur gear and the drive plate, clean if necessary. Clean the 1/8" balls, the diff washers, the spur gear, and thrust bearing. Worn diff balls are often the cause of poor differential action, so if they are old or if the diff has been slipping a great deal, then try a new set (part no #1008). If you suspect that the diff washers are worn then firstly try building the diff with the washers turned over so that the balls run on the other face of the washers. If you have already done this once or if the diff still feels rough then replace them (#1005).

Now clean and degrease all the diff washers. In Corally diff's the large diff washers sit on large O-rings, these grip the washers to prevent slip and ensure an even pressure on each diff ball, thus making sure the spur gear runs true. It is critical that these O-rings are free from grease otherwise they cannot grip the washers and the diff will slip under acceleration. Degrease these O-rings and fit the cleaned washers. Put a small amount of ball diff lubricant on the exposed surface of these washers, where the spur gear and thrust bearings will run. Reassemble the complete diff in the reverse order to that detailed above. Be careful not to get any grease on the O-rings or the back of the washers, if you do - STOP, and go through the degreasing process again. To degrease use motor cleaner, allow the residue to evaporate before continuing.

2.6 Ball pivot servicing.

Corally cars utilise simple, but highly effective ball pivots on the suspension systems of their cars. It is important that the movement of these pivots is free and smooth. To remove the suspension or service the ball pivots simply remove the large rubber O-ring and lift away the suspension part or T-bar. The plastic socket can then be removed in two pieces. Please note that at the Corally factory these ball pivots are matched in sets to ensure that smooth, play free movement is maintained. Do not mix the ball and socket sets.

Check the system for play or binding, if the pivot system is worn or damaged then replace. If there is play between the moulded socket and the suspension beam or T-bar, then fit a larger O-ring or a shim under the O-ring to remove the play. It is not usual for play to be evident unless a much thinner suspension plate is fitted. Shims can be made from Lexan, card or thick paper if necessary.

2.7 Basic chassis set-up.

Most chassis tuning is to be done to give a good balance between front and rear traction. Too much front end traction will cause the car to turn too fiercely or even spin, this is referred to as 'Oversteer'. Too much rear end traction will cause the car to turn far less than the front wheels are actually asking it to do. The car will 'push' or 'understeer' wide in the turns. The car will also scrub off speed due to the extra lock on the turned front wheels.

It is critical that you tune your car to give a good balance between front and rear grip. The ideal situation is for the car to negotiate the turns without under or oversteering. The minimum of steering lock should be used as this will ensure that the car carries its speed through the turns. Corally cars are designed to give maximum traction, with neutral and stable handling. This is a good starting point on most tracks, but not all tracks or conditions are the same.

2.8 Choosing the right tires

Choose the best available highest bite tire for the rear of the car and then balance the car with the front tires. If the car pushes or understeers then fit front tires with more grip (softer). If the car oversteers or hooks then fit front tires with less grip (harder).

Choosing the right tire diameter

When a tire is new and has a large diameter it will provide more grip than the same tire when it has worn down and has a small diameter. Remember the following:

- Larger tires have more rolling resistance than smaller tires.
- Smaller tires are not so good over bumps as larger tires.
- When more steering is required use smaller rear tires or larger front tires.
- When less steering is required use larger rear tires or smaller front tires.

2.9 Tire Additive

Once the correct tires have been selected, you have experience of the best ways to treat them and what the different diameter achieve, you can fine tune the car by adjusting the amount of additive used on the front tires. Always apply the additive across the full width of the rear tires and on the inside of the front tires. Ensure that you treat each front tire exactly the same amount. The more steering you need, the more additive you use on your front tires.

* Repeated use of the same set of tires with additive can make them very soft. These tires can easily be damaged, they wear more quickly and have higher rolling resistance. The best solution is to have several sets of the same compound of tire. You can then rotate these sets of tires to prevent premature softening and give longer overall life.

2.10 Gear Ratio Charts

As it is often necessary to change tires and tire sizes to get the car dialled into the track, it is therefore important that you know exactly what effect these tire changes will have on the gear ratio. The following gear ratio charts equate motor gear ratios into linear distance travelled along the track per revolution of the motor and by doing so take into consideration the tire size used.

How to use these charts.

Measure your rear tires, find the chart for the tire size, line up the appropriate pinion and spur gears used and the chart will then show you the mm/rev travelled.

- The higher the number the further the car will travel per motor revolution, meaning it's geared higher than a lower figure.
- Smaller pinions mean lower mm/rev settings and larger pinions mean higher settings.
- Smaller spur gears mean higher mm/rev settings and larger spur gears mean lower settings.
- Higher settings mean higher top speed (using more battery energy).
- Lower settings mean less top speed but more acceleration (using less battery energy).
- A too high gear ratio setting might damage your motor and cause excessive brush and commutator wear.

Universal Gear Ratio Chart in mm/rev:

Tire Diameter	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0	46,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	24,1	25,9	27,8	29,6	31,5	33,3	35,2	37,0	38,9	40,7	42,6	44,4	46,3	48,1	50,0	51,9	53,7	55,6
81	23,2	25,0	26,7	28,5	30,3	32,1	33,9	35,7	37,4	39,2	41,0	42,8	44,6	46,4	48,1	49,9	51,7	53,5
98	19,2	20,6	22,1	23,6	25,1	26,5	28,0	29,5	31,0	32,4	33,9	35,4	36,8	38,3	39,8	41,3	42,7	44,2
100	18,8	20,2	21,7	23,1	24,6	26,0	27,4	28,9	30,3	31,8	33,2	34,7	36,1	37,6	39,0	40,4	41,9	43,3
104	18,1	19,4	20,8	22,2	23,6	25,0	26,4	27,8	29,2	30,6	31,9	33,3	34,7	36,1	37,5	38,9	40,3	41,7
108	17,4	18,7	20,1	21,4	22,7	24,1	25,4	26,7	28,1	29,4	30,8	32,1	33,4	34,8	36,1	37,4	38,8	40,1
110	17,1	18,4	19,7	21,0	22,3	23,6	24,9	26,3	27,6	28,9	30,2	31,5	32,8	34,1	35,5	36,8	38,1	39,4

Tire Diameter	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5	46,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	24,3	26,2	28,1	30,0	31,8	33,7	35,6	37,4	39,3	41,2	43,1	44,9	46,8	48,7	50,5	52,4	54,3	56,2
81	23,4	25,2	27,0	28,8	30,6	32,4	34,2	36,1	37,9	39,7	41,5	43,3	45,1	46,9	48,7	50,5	52,3	54,1
98	19,4	20,9	22,3	23,8	25,3	26,8	28,3	29,8	31,3	32,8	34,3	35,8	37,2	38,7	40,2	41,7	43,2	44,7
100	19,0	20,4	21,9	23,4	24,8	26,3	27,7	29,2	30,7	32,1	33,6	35,0	36,5	38,0	39,4	40,9	42,3	43,8
104	18,3	19,7	21,1	22,5	23,9	25,3	26,7	28,1	29,5	30,9	32,3	33,7	35,1	36,5	37,9	39,3	40,7	42,1
108	17,6	18,9	20,3	21,6	23,0	24,3	25,7	27,0	28,4	29,7	31,1	32,4	33,8	35,2	36,5	37,9	39,2	40,6
110	17,3	18,6	19,9	21,2	22,6	23,9	25,2	26,5	27,9	29,2	30,5	31,9	33,2	34,5	35,8	37,2	38,5	39,8

Tire Diameter	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0	47,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	24,6	26,5	28,4	30,3	32,2	34,1	35,9	37,8	39,7	41,6	43,5	45,4	47,3	49,2	51,1	53,0	54,9	56,8
81	23,7	25,5	27,3	29,2	31,0	32,8	34,6	36,4	38,3	40,1	41,9	43,7	45,5	47,4	49,2	51,0	52,8	54,7
98	19,6	21,1	22,6	24,1	25,6	27,1	28,6	30,1	31,6	33,1	34,6	36,1	37,6	39,2	40,7	42,2	43,7	45,2
100	19,2	20,7	22,1	23,6	25,1	26,6	28,0	29,5	31,0	32,5	33,9	35,4	36,9	38,4	39,8	41,3	42,8	44,3
104	18,4	19,9	21,3	22,7	24,1	25,5	27,0	28,4	29,8	31,2	32,6	34,1	35,5	36,9	38,3	39,7	41,2	42,6
108	17,8	19,1	20,5	21,9	23,2	24,6	26,0	27,3	28,7	30,1	31,4	32,8	34,2	35,5	36,9	38,3	39,6	41,0
110	17,4	18,8	20,1	21,5	22,8	24,1	25,5	26,8	28,2	29,5	30,9	32,2	33,5	34,9	36,2	37,6	38,9	40,2

Tire Diameter	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5	47,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	24,9	26,8	28,7	30,6	32,5	34,4	36,3	38,2	40,2	42,1	44,0	45,9	47,8	49,7	51,6	53,5	55,5	57,4
81	23,9	25,8	27,6	29,5	31,3	33,1	35,0	36,8	38,7	40,5	42,4	44,2	46,0	47,9	49,7	51,6	53,4	55,2
98	19,8	21,3	22,8	24,4	25,9	27,4	28,9	30,4	32,0	33,5	35,0	36,5	38,0	39,6	41,1	42,6	44,1	45,7
100	19,4	20,9	22,4	23,9	25,4	26,8	28,3	29,8	31,3	32,8	34,3	35,8	37,3	38,8	40,3	41,8	43,3	44,7
104	18,6	20,1	21,5	22,9	24,4	25,8	27,2	28,7	30,1	31,6	33,0	34,4	35,9	37,3	38,7	40,2	41,6	43,0
108	18,0	19,3	20,7	22,1	23,5	24,9	26,2	27,6	29,0	30,4	31,8	33,1	34,5	35,9	37,3	38,7	40,0	41,4
110	17,6	19,0	20,3	21,7	23,1	24,4	25,8	27,1	28,5	29,8	31,2	32,5	33,9	35,3	36,6	38,0	39,3	40,7

Tire Diameter	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0	48,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	25,1	27,1	29,0	30,9	32,8	34,8	36,7	38,6	40,6	42,5	44,4	46,4	48,3	50,2	52,2	54,1	56,0	58,0
81	24,2	26,1	27,9	29,8	31,6	33,5	35,4	37,2	39,1	40,9	42,8	44,7	46,5	48,4	50,2	52,1	54,0	55,8
98	20,0	21,5	23,1	24,6	26,1	27,7	29,2	30,8	32,3	33,8	35,4	36,9	38,4	40,0	41,5	43,1	44,6	46,1
100	19,6	21,1	22,6	24,1	25,6	27,1	28,6	30,1	31,7	33,2	34,7	36,2	37,7	39,2	40,7	42,2	43,7	45,2
104	18,8	20,3	21,7	23,2	24,6	26,1	27,5	29,0	30,4	31,9	33,3	34,8	36,2	37,7	39,1	40,6	42,0	43,5
108	18,1	19,5	20,9	22,3	23,7	25,1	26,5	27,9	29,3	30,7	32,1	33,5	34,9	36,3	37,7	39,1	40,5	41,9
110	17,8	19,2	20,6	21,9	23,3	24,7	26,0	27,4	28,8	30,1	31,5	32,9	34,3	35,6	37,0	38,4	39,7	41,1

Tire Diameter	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5	48,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	25,4	27,3	29,3	31,2	33,2	35,1	37,1	39,0	41,0	43,0	44,9	46,9	48,8	50,8	52,7	54,7	56,6	58,6
81	24,4	26,3	28,2	30,1	32,0	33,8	35,7	37,6	39,5	41,4	43,2	45,1	47,0	48,9	50,8	52,6	54,5	56,4
98	20,2	21,8	23,3	24,9	26,4	28,0	29,5	31,1	32,6	34,2	35,7	37,3	38,8	40,4	42,0	43,5	45,1	46,6
100	19,8	21,3	22,8	24,4	25,9	27,4	28,9	30,5	32,0	33,5	35,0	36,5	38,1	39,6	41,1	42,6	44,2	45,7
104	19,0	20,5	22,0	23,4	24,9	26,4	27,8	29,3	30,8	32,2	33,7	35,1	36,6	38,1	39,5	41,0	42,5	43,9
108	18,3	19,7	21,2	22,6	24,0	25,4	26,8	28,2	29,6	31,0	32,4	33,8	35,3	36,7	38,1	39,5	40,9	42,3
110	18,0	19,4	20,8	22,2	23,5	24,9	26,3	27,7	29,1	30,5	31,8	33,2	34,6	36,0	37,4	38,8	40,1	41,5

Tire Diameter	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0	49,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	25,6	27,6	29,6	31,6	33,5	35,5	37,5	39,5	41,4	43,4	45,4	47,3	49,3	51,3	53,3	55,2	57,2	59,2	
81	24,7	26,6	28,5	30,4	32,3	34,2	36,1	38,0	39,9	41,8	43,7	45,6	47,5	49,4	51,3	53,2	55,1	57,0	
98	20,4	22,0	23,6	25,1	26,7	28,3	29,8	31,4	33,0	34,5	36,1	37,7	39,3	40,8	42,4	44,0	45,5	47,1	
100	20,0	21,5	23,1	24,6	26,2	27,7	29,2	30,8	32,3	33,8	35,4	36,9	38,5	40,0	41,5	43,1	44,6	46,2	
104	19,2	20,7	22,2	23,7	25,2	26,6	28,1	29,6	31,1	32,5	34,0	35,5	37,0	38,5	39,9	41,4	42,9	44,4	
108	18,5	19,9	21,4	22,8	24,2	25,6	27,1	28,5	29,9	31,3	32,8	34,2	35,6	37,0	38,5	39,9	41,3	42,7	
110	18,2	19,6	21,0	22,4	23,8	25,2	26,6	28,0	29,4	30,8	32,2	33,6	35,0	36,4	37,8	39,2	40,6	42,0	

Tire Diameter	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5	49,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	25,9	27,9	29,9	31,9	33,9	35,9	37,9	39,9	41,8	43,8	45,8	47,8	49,8	51,8	53,8	55,8	57,8	59,8	
81	24,9	26,9	28,8	30,7	32,6	34,5	36,5	38,4	40,3	42,2	44,1	46,1	48,0	49,9	51,8	53,7	55,6	57,6	
98	20,6	22,2	23,8	25,4	27,0	28,5	30,1	31,7	33,3	34,9	36,5	38,1	39,7	41,2	42,8	44,4	46,0	47,6	
100	20,2	21,8	23,3	24,9	26,4	28,0	29,5	31,1	32,6	34,2	35,7	37,3	38,9	40,4	42,0	43,5	45,1	46,6	
104	19,4	20,9	22,4	23,9	25,4	26,9	28,4	29,9	31,4	32,9	34,4	35,9	37,4	38,9	40,4	41,8	43,3	44,8	
108	18,7	20,1	21,6	23,0	24,5	25,9	27,3	28,8	30,2	31,7	33,1	34,5	36,0	37,4	38,9	40,3	41,7	43,2	
110	18,4	19,8	21,2	22,6	24,0	25,4	26,8	28,3	29,7	31,1	32,5	33,9	35,3	36,7	38,2	39,6	41,0	42,4	

Tire Diameter	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0	50,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	26,2	28,2	30,2	32,2	34,2	36,2	38,2	40,3	42,3	44,3	46,3	48,3	50,3	52,3	54,3	56,4	58,4	60,4	
81	25,2	27,1	29,1	31,0	33,0	34,9	36,8	38,8	40,7	42,6	44,6	46,5	48,5	50,4	52,3	54,3	56,2	58,1	
98	20,8	22,4	24,0	25,6	27,2	28,8	30,4	32,0	33,6	35,2	36,8	38,4	40,1	41,7	43,3	44,9	46,5	48,1	
100	20,4	22,0	23,6	25,1	26,7	28,3	29,8	31,4	33,0	34,5	36,1	37,7	39,3	40,8	42,4	44,0	45,5	47,1	
104	19,6	21,1	22,6	24,2	25,7	27,2	28,7	30,2	31,7	33,2	34,7	36,2	37,7	39,3	40,8	42,3	43,8	45,3	
108	18,9	20,4	21,8	23,3	24,7	26,2	27,6	29,1	30,5	32,0	33,4	34,9	36,3	37,8	39,3	40,7	42,2	43,6	
110	18,6	20,0	21,4	22,8	24,3	25,7	27,1	28,5	30,0	31,4	32,8	34,3	35,7	37,1	38,5	40,0	41,4	42,8	

Tire Diameter	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5	50,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	26,4	28,5	30,5	32,5	34,6	36,6	38,6	40,7	42,7	44,7	46,8	48,8	50,8	52,9	54,9	56,9	59,0	61,0	
81	25,4	27,4	29,4	31,3	33,3	35,2	37,2	39,2	41,1	43,1	45,0	47,0	48,9	50,9	52,9	54,8	56,8	58,7	
98	21,0	22,7	24,3	25,9	27,5	29,1	30,7	32,4	34,0	35,6	37,2	38,8	40,5	42,1	43,7	45,3	46,9	48,5	
100	20,6	22,2	23,8	25,4	27,0	28,5	30,1	31,7	33,3	34,9	36,5	38,1	39,6	41,2	42,8	44,4	46,0	47,6	
104	19,8	21,3	22,9	24,4	25,9	27,4	29,0	30,5	32,0	33,5	35,1	36,6	38,1	39,6	41,2	42,7	44,2	45,7	
108	19,1	20,6	22,0	23,5	25,0	26,4	27,9	29,4	30,8	32,3	33,8	35,2	36,7	38,2	39,6	41,1	42,6	44,0	
110	18,7	20,2	21,6	23,1	24,5	25,9	27,4	28,8	30,3	31,7	33,2	34,6	36,0	37,5	38,9	40,4	41,8	43,2	

Tire Diameter	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0	51,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	26,7	28,7	30,8	32,8	34,9	37,0	39,0	41,1	43,1	45,2	47,2	49,3	51,3	53,4	55,4	57,5	59,5	61,6	
81	25,7	27,7	29,7	31,6	33,6	35,6	37,6	39,5	41,5	43,5	45,5	47,4	49,4	51,4	53,4	55,4	57,3	59,3	
98	21,2	22,9	24,5	26,1	27,8	29,4	31,0	32,7	34,3	35,9	37,6	39,2	40,9	42,5	44,1	45,8	47,4	49,0	
100	20,8	22,4	24,0	25,6	27,2	28,8	30,4	32,0	33,6	35,2	36,8	38,4	40,0	41,6	43,2	44,8	46,4	48,0	
104	20,0	21,6	23,1	24,6	26,2	27,7	29,3	30,8	32,3	33,9	35,4	37,0	38,5	40,0	41,6	43,1	44,7	46,2	
108	19,3	20,8	22,2	23,7	25,2	26,7	28,2	29,7	31,1	32,6	34,1	35,6	37,1	38,6	40,0	41,5	43,0	44,5	
110	18,9	20,4	21,8	23,3	24,7	26,2	27,7	29,1	30,6	32,0	33,5	34,9	36,4	37,9	39,3	40,8	42,2	43,7	

Tire Diameter	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5	51,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Spur																			
78	27,0	29,0	31,1	33,2	35,2	37,3	39,4	41,5	43,5	45,6	47,7	49,8	51,8	53,9	56,0	58,0	60,1	62,2	
81	26,0	27,9	29,9	31,9	33,9	35,9	37,9	39,9	41,9	43,9	45,9	47,9	49,9	51,9	53,9	55,9	57,9	59,9	
98	21,5	23,1	24,8	26,4	28,1	29,7	31,4	33,0	34,7	36,3	38,0	39,6	41,3	42,9	44,6	46,2	47,9	49,5	
100	21,0	22,6	24,3	25,9	27,5	29,1	30,7	32,3	34,0	35,6	37,2	38,8	40,4	42,0	43,7	45,3	46,9	48,5	
104	20,2	21,8	23,3	24,9	26,4	28,0	29,5	31,1	32,7	34,2	35,8	37,3	38,9	40,4	42,0	43,5	45,1	46,6	
108	19,5	21,0	22,5	24,0	25,5	27,0	28,4	29,9	31,4	32,9	34,4	35,9	37,4	38,9	40,4	41,9	43,4	44,9	
110	19,1	20,6	22,1	23,5	25,0	26,5	27,9	29,4	30,9	32,3	33,8	35,3	36,8	38,2	39,7	41,2	42,6	44,1	

Tire Diameter	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0	52,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	27,2	29,3	31,4	33,5	35,6	37,7	39,8	41,9	44,0	46,1	48,1	50,2	52,3	54,4	56,5	58,6	60,7	62,8
81	26,2	28,2	30,2	32,3	34,3	36,3	38,3	40,3	42,3	44,3	46,4	48,4	50,4	52,4	54,4	56,4	58,5	60,5
98	21,7	23,3	25,0	26,7	28,3	30,0	31,7	33,3	35,0	36,7	38,3	40,0	41,7	43,3	45,0	46,7	48,3	50,0
100	21,2	22,9	24,5	26,1	27,8	29,4	31,0	32,7	34,3	35,9	37,6	39,2	40,8	42,5	44,1	45,7	47,4	49,0
104	20,4	22,0	23,6	25,1	26,7	28,3	29,8	31,4	33,0	34,5	36,1	37,7	39,3	40,8	42,4	44,0	45,5	47,1
108	19,7	21,2	22,7	24,2	25,7	27,2	28,7	30,2	31,7	33,3	34,8	36,3	37,8	39,3	40,8	42,3	43,8	45,4
110	19,3	20,8	22,3	23,7	25,2	26,7	28,2	29,7	31,2	32,7	34,1	35,6	37,1	38,6	40,1	41,6	43,0	44,5

Tire Diameter	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5	52,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	27,5	29,6	31,7	33,8	35,9	38,0	40,2	42,3	44,4	46,5	48,6	50,7	52,8	55,0	57,1	59,2	61,3	63,4
81	26,5	28,5	30,5	32,6	34,6	36,6	38,7	40,7	42,7	44,8	46,8	48,8	50,9	52,9	55,0	57,0	59,0	61,1
98	21,9	23,6	25,2	26,9	28,6	30,3	32,0	33,6	35,3	37,0	38,7	40,4	42,1	43,7	45,4	47,1	48,8	50,5
100	21,4	23,1	24,7	26,4	28,0	29,7	31,3	33,0	34,6	36,3	37,9	39,6	41,2	42,9	44,5	46,2	47,8	49,5
104	20,6	22,2	23,8	25,4	26,9	28,5	30,1	31,7	33,3	34,9	36,5	38,0	39,6	41,2	42,8	44,4	46,0	47,6
108	19,8	21,4	22,9	24,4	25,9	27,5	29,0	30,5	32,1	33,6	35,1	36,6	38,2	39,7	41,2	42,7	44,3	45,8
110	19,5	21,0	22,5	24,0	25,5	27,0	28,5	30,0	31,5	33,0	34,5	36,0	37,5	39,0	40,5	42,0	43,5	45,0

Tire Diameter	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0	53,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	27,7	29,9	32,0	34,1	36,3	38,4	40,5	42,7	44,8	46,9	49,1	51,2	53,3	55,5	57,6	59,7	61,9	64,0
81	26,7	28,8	30,8	32,9	34,9	37,0	39,0	41,1	43,1	45,2	47,3	49,3	51,4	53,4	55,5	57,5	59,6	61,6
98	22,1	23,8	25,5	27,2	28,9	30,6	32,3	34,0	35,7	37,4	39,1	40,8	42,5	44,2	45,9	47,5	49,2	50,9
100	21,6	23,3	25,0	26,6	28,3	30,0	31,6	33,3	34,9	36,6	38,3	39,9	41,6	43,3	44,9	46,6	48,3	49,9
104	20,8	22,4	24,0	25,6	27,2	28,8	30,4	32,0	33,6	35,2	36,8	38,4	40,0	41,6	43,2	44,8	46,4	48,0
108	20,0	21,6	23,1	24,7	26,2	27,7	29,3	30,8	32,4	33,9	35,4	37,0	38,5	40,1	41,6	43,1	44,7	46,2
110	19,7	21,2	22,7	24,2	25,7	27,2	28,7	30,3	31,8	33,3	34,8	36,3	37,8	39,3	40,8	42,4	43,9	45,4

Tire Diameter	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5	53,5
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	28,0	30,2	32,3	34,5	36,6	38,8	40,9	43,1	45,2	47,4	49,5	51,7	53,8	56,0	58,2	60,3	62,5	64,6
81	27,0	29,0	31,1	33,2	35,3	37,3	39,4	41,5	43,6	45,6	47,7	49,8	51,8	53,9	56,0	58,1	60,1	62,2
98	22,3	24,0	25,7	27,4	29,1	30,9	32,6	34,3	36,0	37,7	39,4	41,1	42,9	44,6	46,3	48,0	49,7	51,4
100	21,8	23,5	25,2	26,9	28,6	30,2	31,9	33,6	35,3	37,0	38,6	40,3	42,0	43,7	45,4	47,0	48,7	50,4
104	21,0	22,6	24,2	25,8	27,5	29,1	30,7	32,3	33,9	35,5	37,2	38,8	40,4	42,0	43,6	45,2	46,8	48,5
108	20,2	21,8	23,3	24,9	26,4	28,0	29,6	31,1	32,7	34,2	35,8	37,3	38,9	40,4	42,0	43,6	45,1	46,7
110	19,9	21,4	22,9	24,4	26,0	27,5	29,0	30,5	32,1	33,6	35,1	36,7	38,2	39,7	41,2	42,8	44,3	45,8

Tire Diameter	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0	54,0
Pinion	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Spur																		
78	28,3	30,4	32,6	34,8	37,0	39,1	41,3	43,5	45,7	47,8	50,0	52,2	54,3	56,5	58,7	60,9	63,0	65,2
81	27,2	29,3	31,4	33,5	35,6	37,7	39,8	41,9	44,0	46,1	48,1	50,2	52,3	54,4	56,5	58,6	60,7	62,8
98	22,5	24,2	26,0	27,7	29,4	31,1	32,9	34,6	36,3	38,1	39,8	41,5	43,3	45,0	46,7	48,4	50,2	51,9
100	22,0	23,7	25,4	27,1	28,8	30,5	32,2	33,9	35,6	37,3	39,0	40,7	42,4	44,1	45,8	47,5	49,2	50,9
104	21,2	22,8	24,5	26,1	27,7	29,3	31,0	32,6	34,2	35,9	37,5	39,1	40,8	42,4	44,0	45,7	47,3	48,9
108	20,4	22,0	23,6	25,1	26,7	28,3	29,8	31,4	33,0	34,5	36,1	37,7	39,3	40,8	42,4	44,0	45,5	47,1
110	20,0	21,6	23,1	24,7	26,2	27,7	29,3	30,8	32,4	33,9	35,5	37,0	38,5	40,1	41,6	43,2	44,7	46,2



Driver: _____

Track / City: _____

Event: _____ Date: _____

SETUP SHEET

Front Suspension

Wishbone _____ Syrup Dampershaft _____

Frontbeam _____ Spring _____

Steering Block _____ Stabilizer _____

Caster _____ Servo position _____

Camber _____ Steering link _____

Ride Height _____ Roll center _____

Rear Suspension

T-bar _____ Center Shockabsorber _____

Tweak _____ Spring _____ Oil _____

Rollcenter _____ Syrup in Tubes _____ WT _____

Ride Height _____ Rear width _____

Others

Chassis _____

Front Tires _____ Diameter _____ Additive _____

Rear Tires _____ Diameter _____ Additive _____

Roll-out _____ Tyre additive _____

Bodyshell _____

Motor _____ Spur _____ Pinion _____

Timing _____ Brush _____ Spring _____

Charger _____ Servo _____ Receiver battery _____

Radio _____ ESC _____ Program _____

Battery _____

Track Conditions

Surface _____ Main _____ Finish _____ Qualifying Position _____

Traction Low / Medium / High Notes _____

Composition _____

Temp. _____

Race Comments



Driver: _____

Track / City: _____

Event: _____ Date: _____

SETUP SHEET

Front Suspension

Wishbone _____ Syrup Dampershaft _____

Frontbeam _____ Spring _____

Steering Block _____ Stabilizer _____

Caster _____ Servo position _____

Camber _____ Steering link _____

Ride Height _____ Roll center _____

Rear Suspension

T-bar _____ Center Shockabsorber _____

Tweak _____ Spring _____ Oil _____

Rollcenter _____ Syrup in Tubes _____ WT _____

Ride Height _____ Rear width _____

Others

Chassis _____

Front Tires _____ Diameter _____ Additive _____

Rear Tires _____ Diameter _____ Additive _____

Roll-out _____ Tyre additive _____

Bodyshell _____

Motor _____ Spur _____ Pinion _____

Timing _____ Brush _____ Spring _____

Charger _____ Servo _____ Receiver battery _____

Radio _____ ESC _____ Program _____

Battery _____

Track Conditions

Surface _____ Main _____ Finish _____ Qualifying Position _____

Traction Low / Medium / High Notes _____

Composition _____

Temp. _____

Race Comments



Driver: _____

Track / City: _____

Event: _____ Date: _____

SETUP SHEET

Front Suspension

Wishbone _____ Syrup Dampershaft _____

Frontbeam _____ Spring _____

Steering Block _____ Stabilizer _____

Caster _____ Servo position _____

Camber _____ Steering link _____

Ride Height _____ Roll center _____

Rear Suspension

T-bar _____ Center Shockabsorber _____

Tweak _____ Spring _____ Oil _____

Rollcenter _____ Syrup in Tubes _____ WT _____

Ride Height _____ Rear width _____

Others

Chassis _____

Front Tires _____ Diameter _____ Additive _____

Rear Tires _____ Diameter _____ Additive _____

Roll-out _____ Tyre additive _____

Bodyshell _____

Motor _____ Spur _____ Pinion _____

Timing _____ Brush _____ Spring _____

Charger _____ Servo _____ Receiver battery _____

Radio _____ ESC _____ Program _____

Battery _____

Track Conditions

Surface _____ Main _____ Finish _____ Qualifying Position _____

Traction Low / Medium / High Notes _____

Composition _____

Temp. _____

Race Comments