



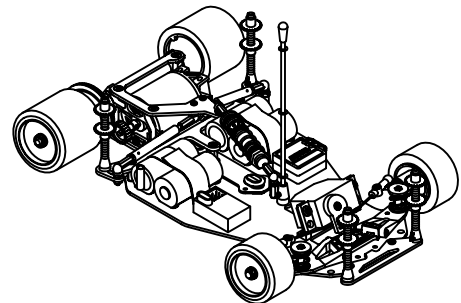
SP12X INSTRUCTION MANUAL

Thank you for choosing this high performance Team Corally RIC Car kit! This manual will guide you through all the steps to finish your SP12X or SP12X US Spec. Although the car comes partially assembled it is recommended to carefully examine each step of this manual. Team Corally is constantly developing to ensure that all products set the pace in the RIC competition world. Check www.corally.com for possible updates and setup tips. Please contact us by email or phone if you might come across any problems during the assembly of this car kit and we will do our very best to help you. We wish you a lot of fun and success building and racing your new Team Corally RIC Car!

The SP12X is the result of Team Corally's unbeaten 1/12th scale racing experience. Before the release there has been a long and extensive period of development and on-track testing by multiple European, US and World Championship winning team drivers. The SP12X uses the World's best materials and production methods to be the ultimate high performance race car which combines super low weight with high rigidity and durable on-track performance. After winning the 1994 Worlds with the legendary Corally SP12G2, it was the SP12X 'US Spec' that lead David Spashett to his 2006 WORLD CHAMPION title!

12X Features:

- The SP12X comes fully equipped with super strong, lightweight Titanium screws.
- Ceramic diff and thrust balls are used to provide super smooth diff action.
- The precision Ceramic front and rear wheel bearings offer long lasting ultra low rolling resistance and efficiency.
- Super lightweight and user friendly aluminium inserts are used to replace normal nuts throughout the kit. These inserts are pressed into the graphite parts providing a super rigid, tweak-free construction. Working on your car has never been this efficient ever before
- Unique one-piece graphite rear axle.
- The SP12X uses super high grade graphite chassis components with revolutionary pre-shaped battery slots. The chassis comes readily prepared to allow the option of mounting a standard US type front end.
- 2.0 mm GRP t-bar.
- Penta Dampening System using two rear tube-dampers, VCS microshock and two O-ring front dampers.
- New 3.5 turn front springs are installed (1.5 mm spring steel).
- Lowered and adjustable front and rear roll centres.
- Duraluminium front wishbones and servo mounts.
- Super rigid duraluminium motorpod using unique tube design.
- Front & rear adjustable ride height.
- Ballraced steering blocks with adjustable Ackermann.
- Threaded body posts for precise body height adjustment.
- The SP12X comes partially assembled.



12X (00066) Unique features:

- Corally wheel system with double supported rear wheels for true and durable performance. Quick change front and rear wheels using special Corally clips.
- Lightweight Chassis (2.4 mm graphite).
- Wheels with mounted tires included.
- Weight : 197 gram (excluding bodyshell, electronics, wheels and tires).
- Rear Width : 170 mm.
- Front Width : 166 mm.

12X US-Spec (00067) Unique features:

- Universal 'US Standard' wheel system using lightweight duraluminium rear wheel hubs
- Lightweight Chassis (2.4 mm graphite).
- Extra stiff chassis with minimum cut-outs (2.4 mm graphite).
- Weight : 194 gram (excluding bodyshell, electronics, wheels and tires).
- Rear Width : 170 mm.
- Front Width : 168 mm.

INCLUDED

- Damper syrup Hard **Corally part #80001**
- Ball Differential Lubricant **Corally part #80010**
- Silicone Shock Oil 20WT **Corally part #80120**

TOOLS REQUIRED FOR ASSEMBLY

- High-Grip Hex Screwdriver - 2.0mm **Corally part #16083**
- High-Grip Hex Nut driver - 5 mm **Corally part #16086**
- High-Grip Hex Nut driver - 9 mm **Corally part #16091**
- Longnose Plier
- Hobby Scissors
- Double-sided Tape

ITEMS NEEDED TO COMPLETE YOUR CAR (NOT INCLUDED)

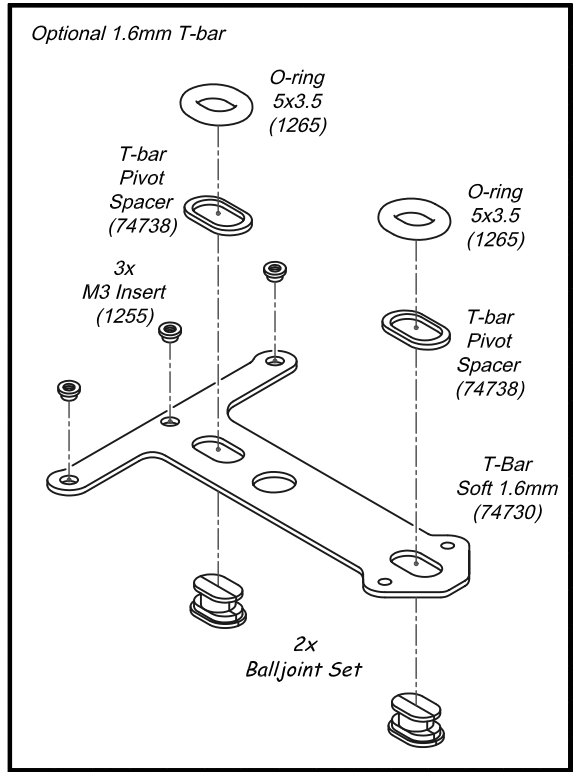
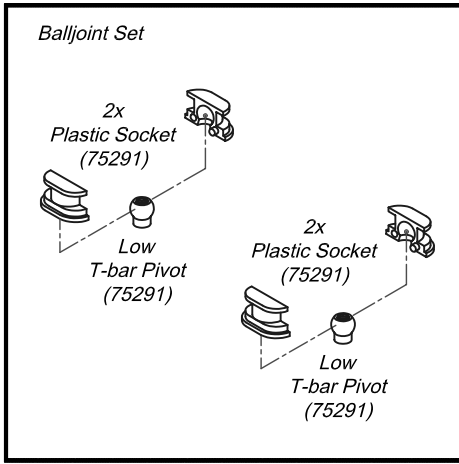
- R/C two channel surface frequency radio system
- 4.8V Battery Pack (4 cell sub-C size)
- Battery Charger (with peak or temperature detection)
- Mini Servo with Servosaver
- Electronic Speed Control
- Electric Motor
- 1:12 Scale Lexan Body
- 6V Receiver Pack (optional)

SP12X & SP12X US SPEC REPLACEMENT & OPTIONAL PARTS

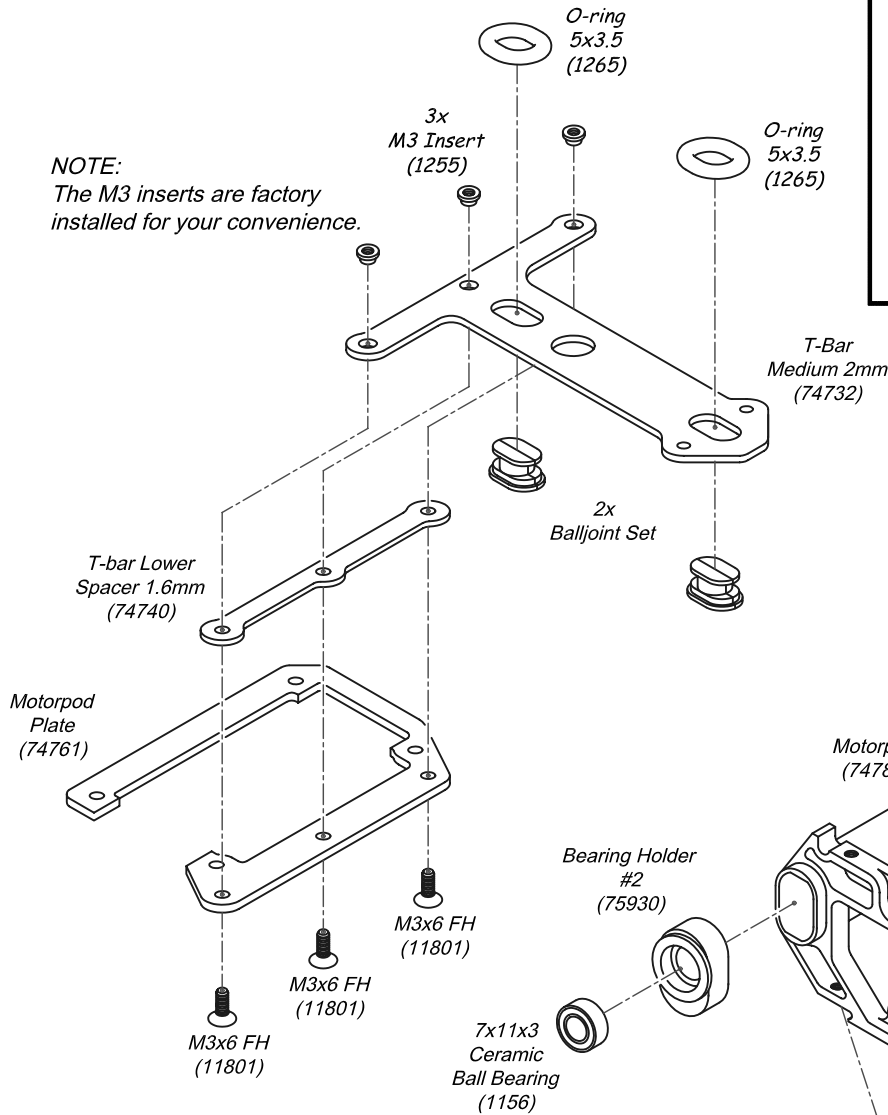
10010	US Spec Ceramic Thrust bearing - With 1/16 Inch Balls - 1 pair
10013	US SPEC Thrust washers - 1 pair
10016	US Spec Thrust balls 1/16 Inch - CERAMIC - 10 pcs
10050	Diff Spare parts set - FOR CORALLY WHEELS - 1 set
10053	Diff Washers - 1 pair
1006	Diff balls 1/8 Inch - CARBIDE - 10 pcs
1007	Diff balls 1/8 inch - CERAMIC - 10 pcs
1008	Diff balls 1/8 inch - STEEL - 10 pcs
1017	Trackrods for centerpoint steering system - 1 set
10401	Rollover antenna including holder - 1pc.
10405	Replacement Antenna / Microshock Mount - OPTIONAL - 1 pair
1121	Ball Bearings, Metal Shielded - 5 x 9 mm - 1 pair
1122	Ball Bearings, Metal Shielded - 4 x 7F mm - 1 pair
1124	Ball Bearings with Zero Res Metal Shields - 1/4" x 3/8" - 1 pair
1126	Ball Bearings with Zero Res Metal Shields - 7 x 11 mm - 1 pair
1135	US Spec Ball Bearings with Zero Res Metal Shields - 1/8" x 5/16" -1 pair
1151	Ceramic Hybride Ball Bearings - 5 x 9 mm - 1 pair
1156	Ceramic Hybride Ball Bearings - 7 x 11 mm - 1 pair
1165	US Spec Ceramic Hybride Ball Bearings - 1/8" x 5/16" - 1 pair
11800	Titanium Screws M3 x 5 mm - 2 mm Hex Flat Head - 6 pcs
11801	Titanium Screws M3 x 6 mm - 2 mm Hex Flat Head - 6 pcs
11802	Titanium Screws M3 x 8 mm - 2 mm Hex Flat Head - 6 pcs
11809	US Spec Titanium Screws M3 x 7 mm - 2 mm Hex Special
11812	Titanium Screws M3 x 8 mm - 2 mm Hex Button Head - 6 pcs
11907	Steel Screws M3 x 22 mm - 2 mm Hex Flat Head - 6 pcs
11961	Steel Screws M2,5 x 6 mm - 2 mm Hex Button Head - 6 pcs
1250	Steel Nuts, M2 - 10 pcs
1256	Aluminium Locknuts, M3 Black - 10 pcs
1260	O-Rings 2.0 x 1.0 mm - 10 pcs
1261	O-Rings 3.0 x 1.0 mm - 10 pcs
1266	O-Rings 5.0 x 3.5 mm - 10 pcs
1280	Steel washers 3 x 6 mm - 10 pcs
1281	Aluminium washers 3 mm - 10 pcs
1283	Aluminium washers 5 mm - 10 pcs
2210	Steel Setscrews M3 x 3 mm - 1.5 mm Hex - 5 pcs
2212	Steel Setscrews M3 x 5 mm - 1.5 mm Hex - 5 pcs
2215	Steel Setscrews M3 x 12 mm - 1.5 mm Hex - 5 pcs
74702	Chassis (4-Cell) - 2.4 mm Graphite - 1 pc.
74703	US Spec Chassis (4-Cell) - Extra hard - 2.4 mm Graphite - 1 pc.
74712	Front Wishbone - Red anodised duraluminium - 1 pc.
74720	Front Wishbone Mount - Red anodised duraluminium - 1 pc.
74725	Front Rollcenter Spacer - 1.0 mm Graphite - 1 pc.
74730	T-Bar, Soft - 1.6 mm GRP - OPTIONAL - 1 pc.
74732	T-Bar, Medium - 2.0 mm GRP - 1 pc.
74736	T-Bar Pivot Clips - Red - 3.0 mm - OPTIONAL - 6 pcs
74737	T-Bar Pivot Clips - Black - 1.3 mm - OPTIONAL - 6 pcs
74738	T-Bar Pivot Spacers - 1.0 mm Graphite - OPT. - For 1.6 mm t-bar - 2 pcs
74740	T-Bar Lower Spacer - 1.6 mm GRP - 1 pc.
74754	M3 Posts - 10 mm Length - Fiber Reinforced Black Nylon - 3 pcs
74755	M3 Posts - 12 mm Length - Fiber Reinforced Black Nylon - 3 pcs
74761	Motorpod Lower Plate - 2.4 mm Graphite - 1 pc.

74765	Damperplate Graphite - 2.4 mm Graphite - 1 pc.
74770	Front Bumper - 2.4 mm Graphite - 1 pc.
74773	Rear Bodypost plate - 2.4 mm Graphite - 1 pc
74780	Motorpod - Red anodised duraluminium - 1 pc.
74795	Servo posts - Red anodised duraluminium - 1 pair
74900	Micro Shock-Absorber - 1 pc.
74905	Tube-damper - 1 pc.
75291	Ball joint set for T-Bar - Low - 2 pcs
75564	Front Springs, Soft - 4.0 T / 1.5 mm - OPTIONAL - 1 pair
75565	Front Springs, Medium - 3.5 T / 1.5 mm - 1 pair
75566	Front Springs, Hard - 3.0 T / 1.5 mm - OPTIONAL - 1 pair
75582	Front damper rings - 1 pair
75583	Front damper posts - 1 pair
75701	Body post set 50 mm - 1 pair
75710	Body post nuts - 8 pcs
75781	King pin shims, Alloy - 10 pcs
75782	King pin shims, Steel (0.5 mm = 6 pcs / 0.1 mm = 6 pcs)
75791	Steering blocks without king pin ball bearings - OPTIONAL - 1 pair
75795	Tuning steering blocks, ballraced - excluding ball bearings
75796	Tuning steering blocks, ballraced - including 4 ball
75801	1:12 Front Wheels - Corally - 1 pair
75811	1:12 Rear Wheels - Corally - 1 pair
75821	Left Wheel Plate - FOR CORALLY WHEELS - 1 pc.
75841	Drive Plate - FOR CORALLY WHEELS - 1 pc.
75846	US Spec Left Wheel Hub - Red anodised duraluminium - 1 pc.
75848	US Spec Right Wheel Hub - Red anodised duraluminium - 1 pc.
75852	Front Axle - Duraluminium - CORALLY WHEELS (166 mm) - 1 pc.
75854	Front Axle - Red anodised dural. - CORALLY WHEELS (170 mm) - 1 pc.
75856	US Spec Front Axle - Hardened steel (168 mm) - 1 pc.
75858	US Spec Front Axle - Red anodised dural. (168-172 mm) - 1 pc.
75862	Rear axle - Graphite - CORALLY WHEELS (170 mm) - 1 pc.
75863	US Spec Rear axle - Graphite (170 mm) - 1 pc.
75912	Thrust bearing - FOR CORALLY WHEELS - 1 pc.
75913	Thrust bearing - CERAMIC - FOR CORALLY WHEELS - 1pc.
75920	Diff nut, knurled (M7) - FOR CORALLY WHEELS - 1 pc.
75924	US Spec Diff nut, hex (M7) - Incl. Spring Lock Washer - 1
75926	US Spec Diff nut thrust spacer - Red anodised aluminium - 1 pc.
75930	Rear Axle Bearing holder set - 3 pairs for 6 different ride height settings
76061	Clipset - Includes wheel clips, king pin clips and 5x9x3mm
76101	Universal transponder holder
76112	Outer Hingepins - 1 pair
79116	Outer Hingepin E-Clips - 10 pcs
79118	Outer Hingepin Shims, 0.2 mm - 10 pcs
79162	US Spec Diff Washers - 1 pair
80000	Team CORALLY Damper syrup for tube and friction dampers - Soft
80001	Team CORALLY Damper syrup for tube and friction dampers - Hard
80002	Team CORALLY Damper syrup for tube and friction dampers - Extra Hard
80010	Team CORALLY Diff Lube, White - For the large diff balls
80015	Team CORALLY Diff Lube, Black - For the thrust bearing
80120	Team CORALLY Shock Absorber Oil - 20 W
90084	Sticker Sheets "SP12X" - 2 pcs

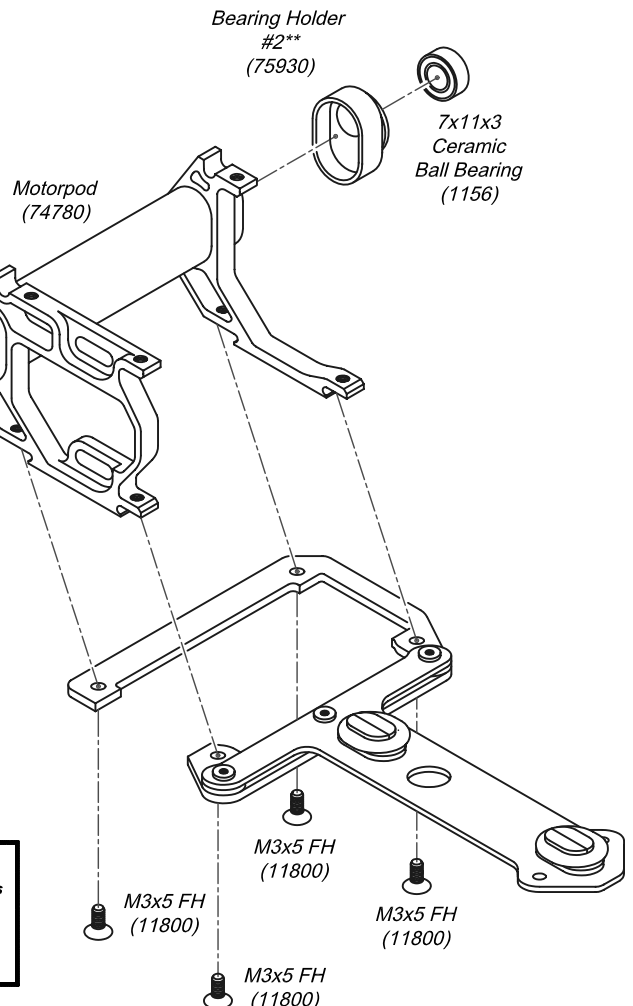
T-BAR ASSEMBLY



NOTE:
The M3 inserts are factory installed for your convenience.



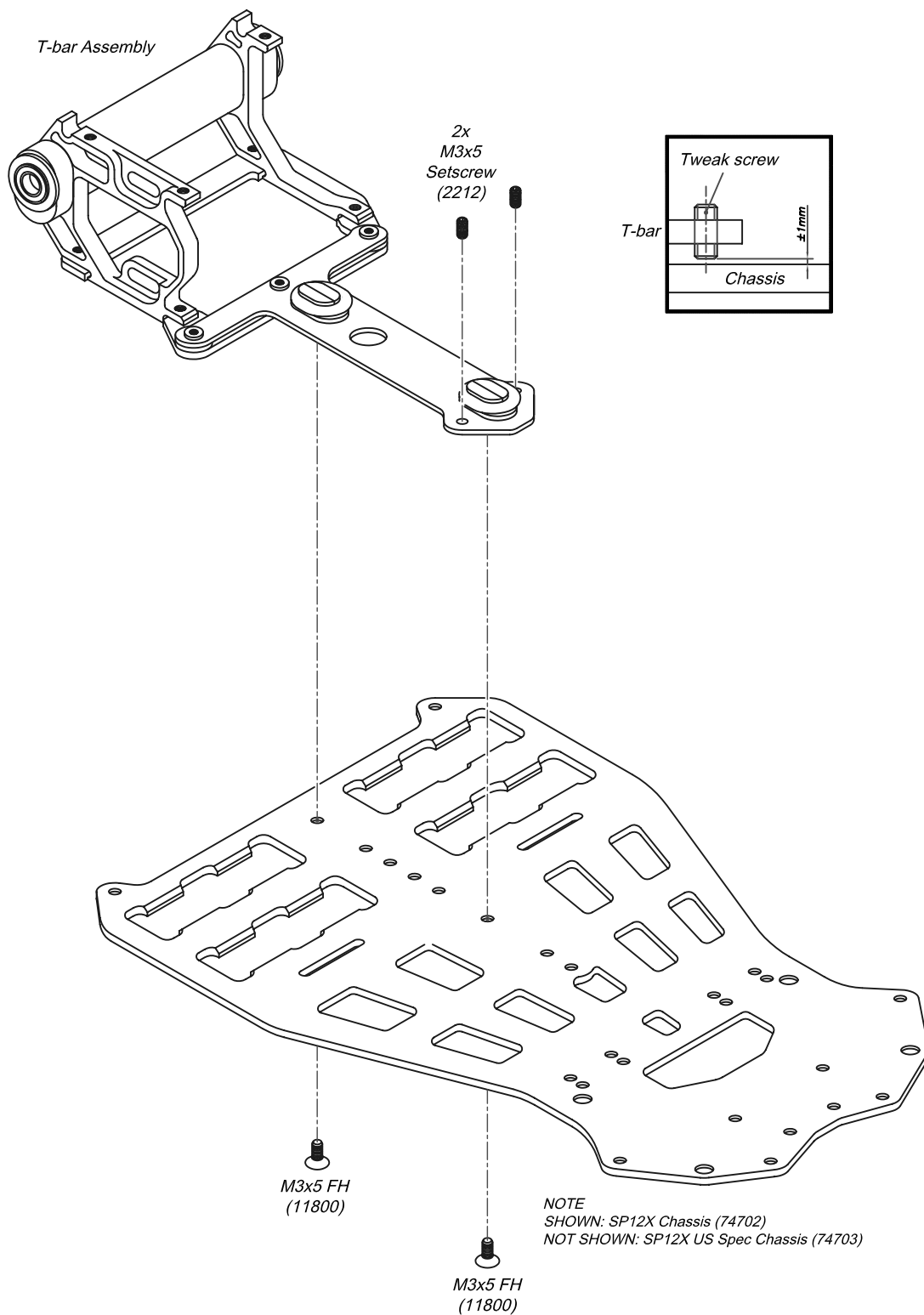
NOTE:
3 pairs of bearing holders (#1, #2 and #3) are included in the kit to allow 6 different rear ride height settings.



General notes to this manual

- Ultra lightweight and user friendly M3 inserts are used in stead of traditional loose nuts on all graphite and GRP parts. They come factory installed for your convenience.
- The number under all parts refers to the bag in which that part is available for spare and replacement.

DRIVETRAIN MOUNTING

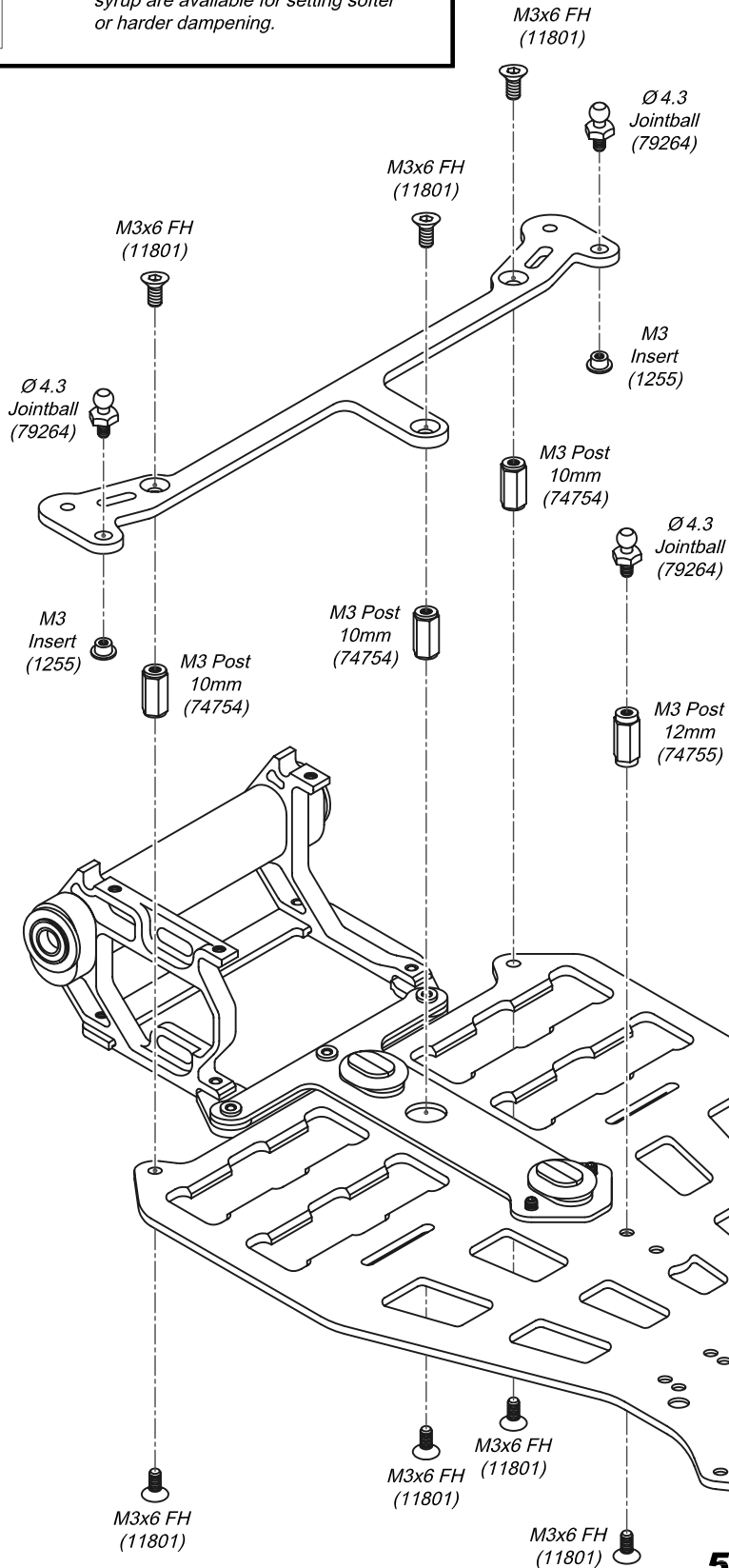
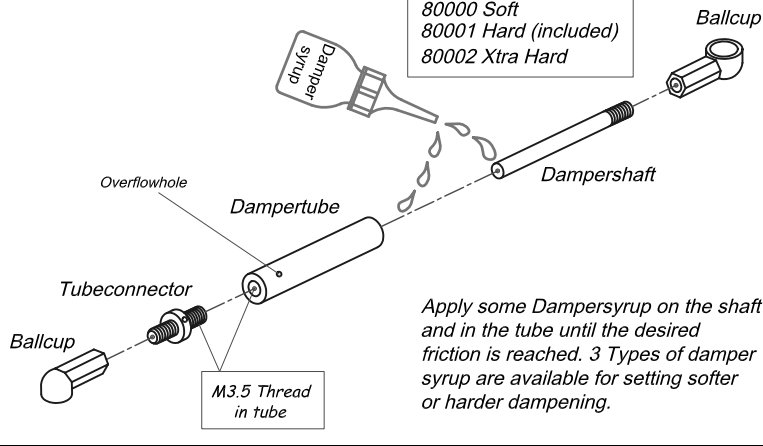


TUBEDAMPER REAR

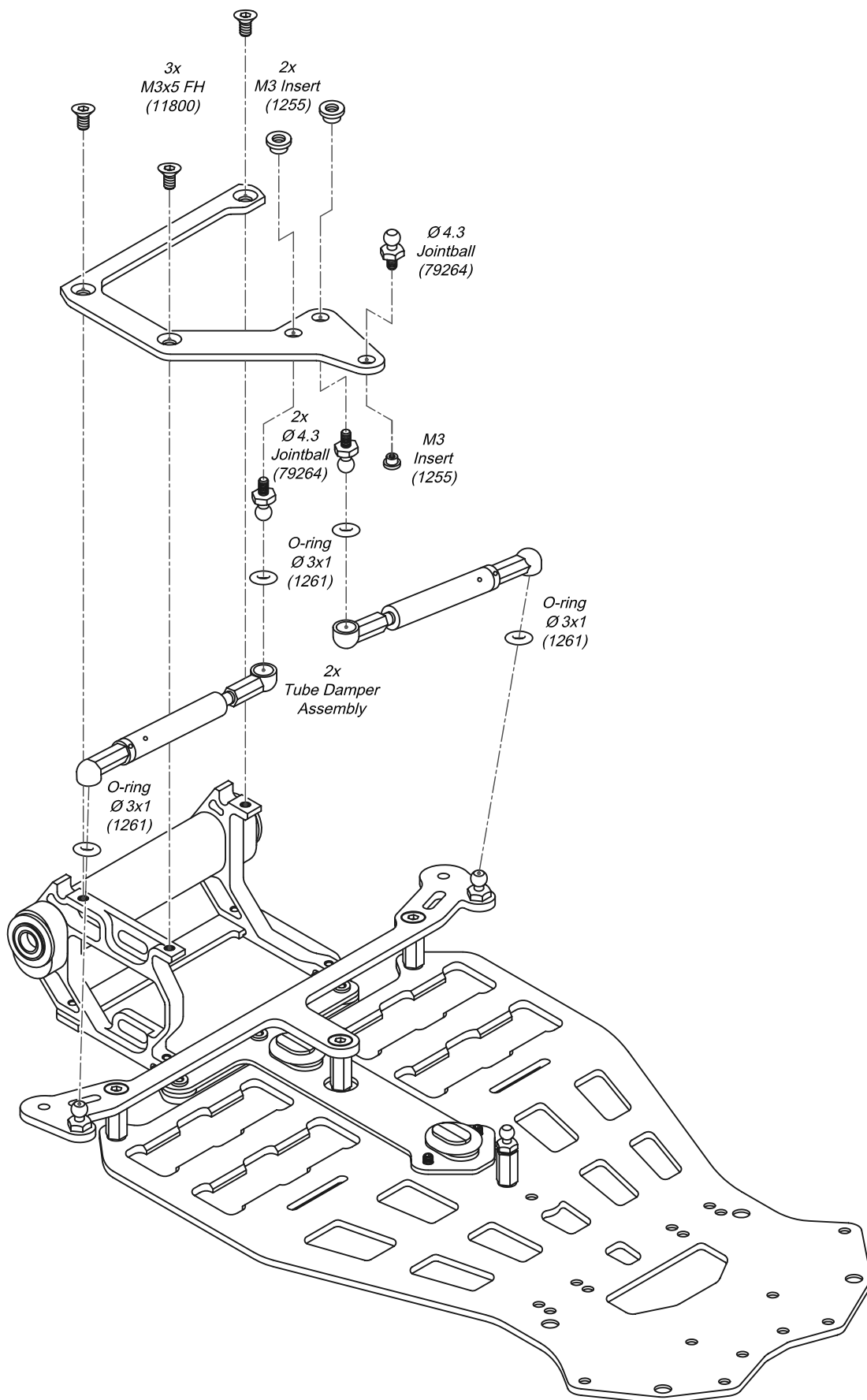
Build 2 identical Tubedampers
(74905)

Dampersyrup

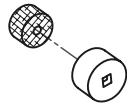
80000 Soft
80001 Hard (included)
80002 Xtra Hard



TUBEDAMPER REAR SUSPENSION

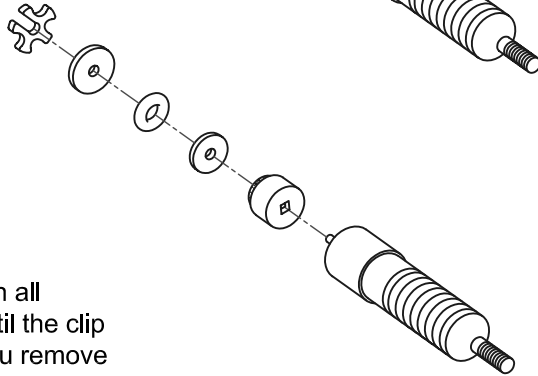
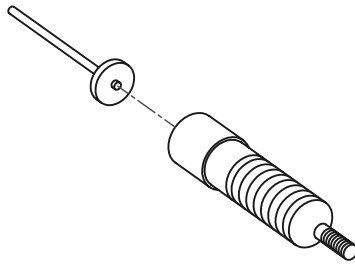


VCS MICRO SHOCK ASSEMBLY (#79406)



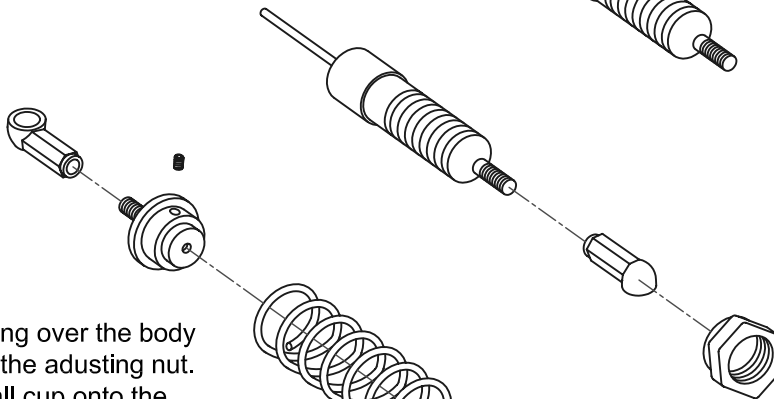
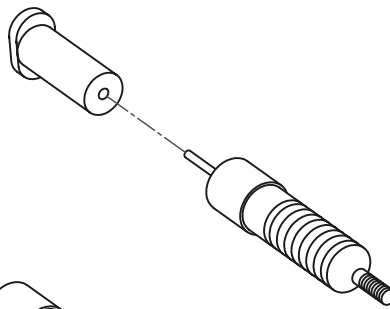
1. Remove the plastic VC housing from the parts tree.
2. Soak the VC foam with your shock oil. Use our Corally Shock Absorber Oil #80120
3. Push the foam into the housing.

1. 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 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.

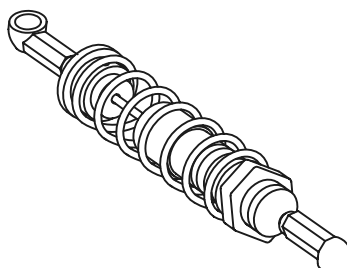
1. Use the assembly tool to push all the parts down into the body until the clip snaps into the groove. When you remove the tool, the shaft will push out somewhat if everything snapped into place correctly. Make sure the clip snaps into the groove completely



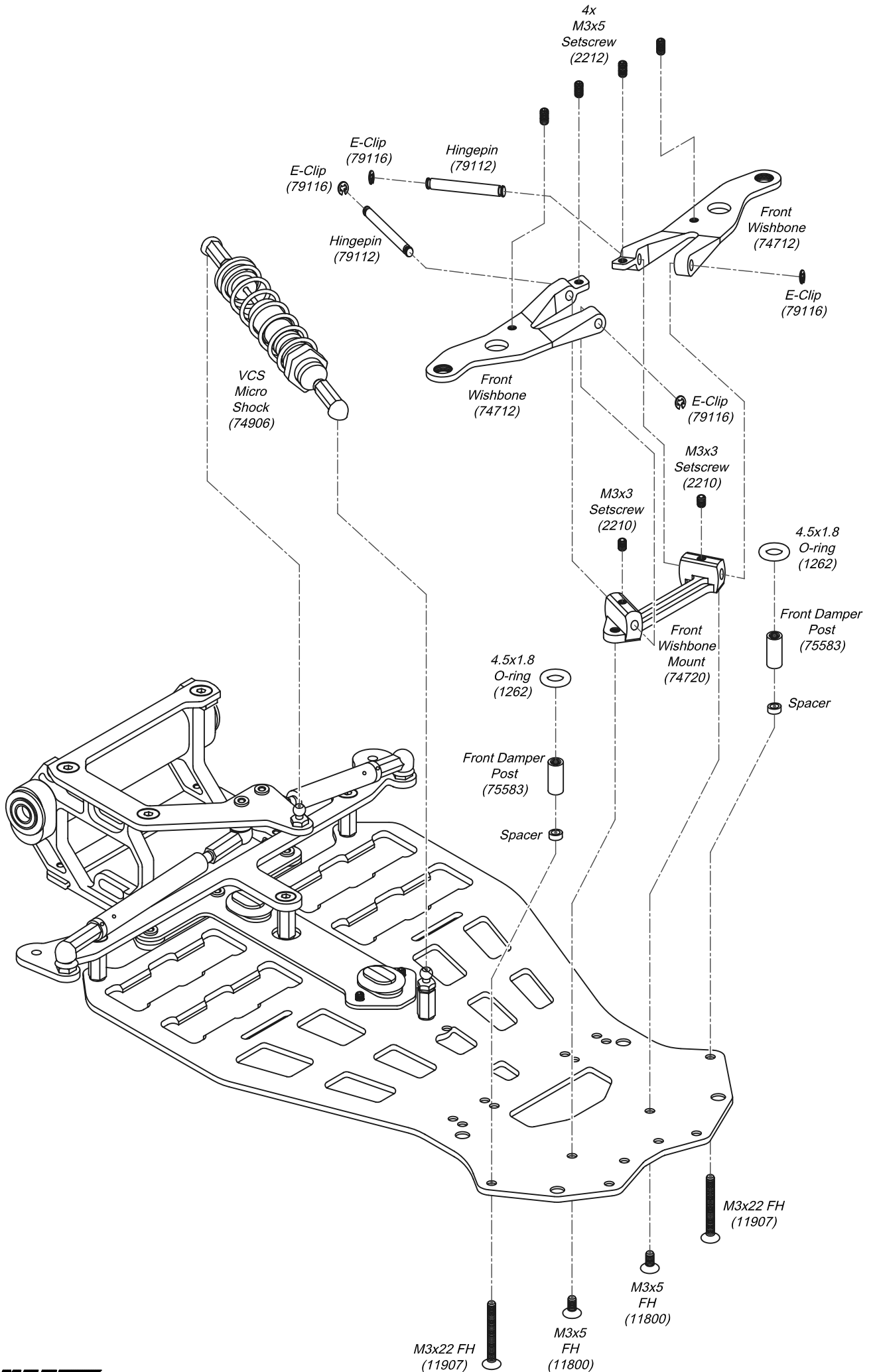
1. Slide the spring over the body and up against the adjusting nut.
2. Screw the ball cup onto the shock shaft end.
3. Tighten the shock rod and to the shaft with the set screw.

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.

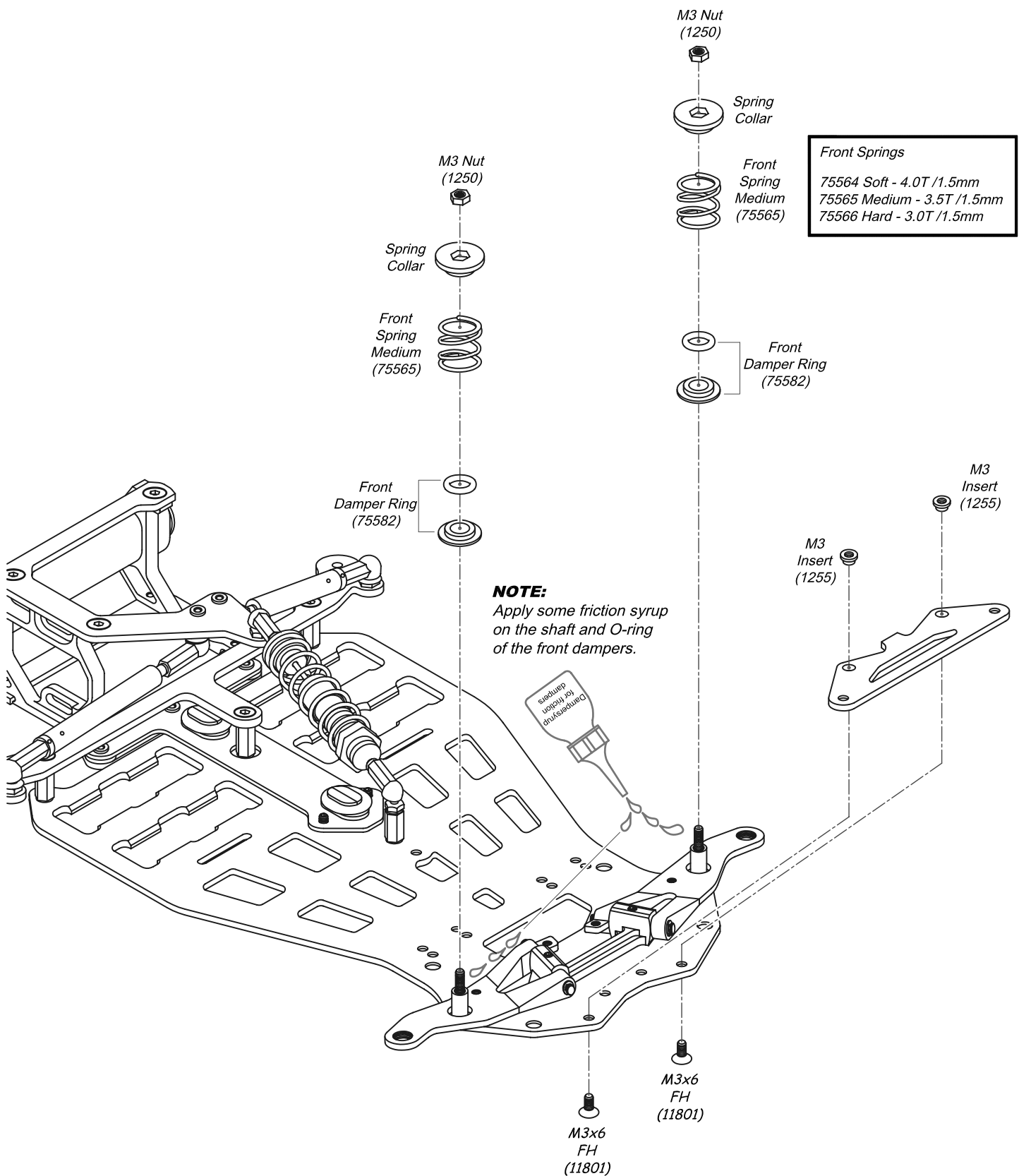
1. Pop the ball cups on the ball ends of your kit.
2. Turn the spring adjusting nut to adjust spring tension.



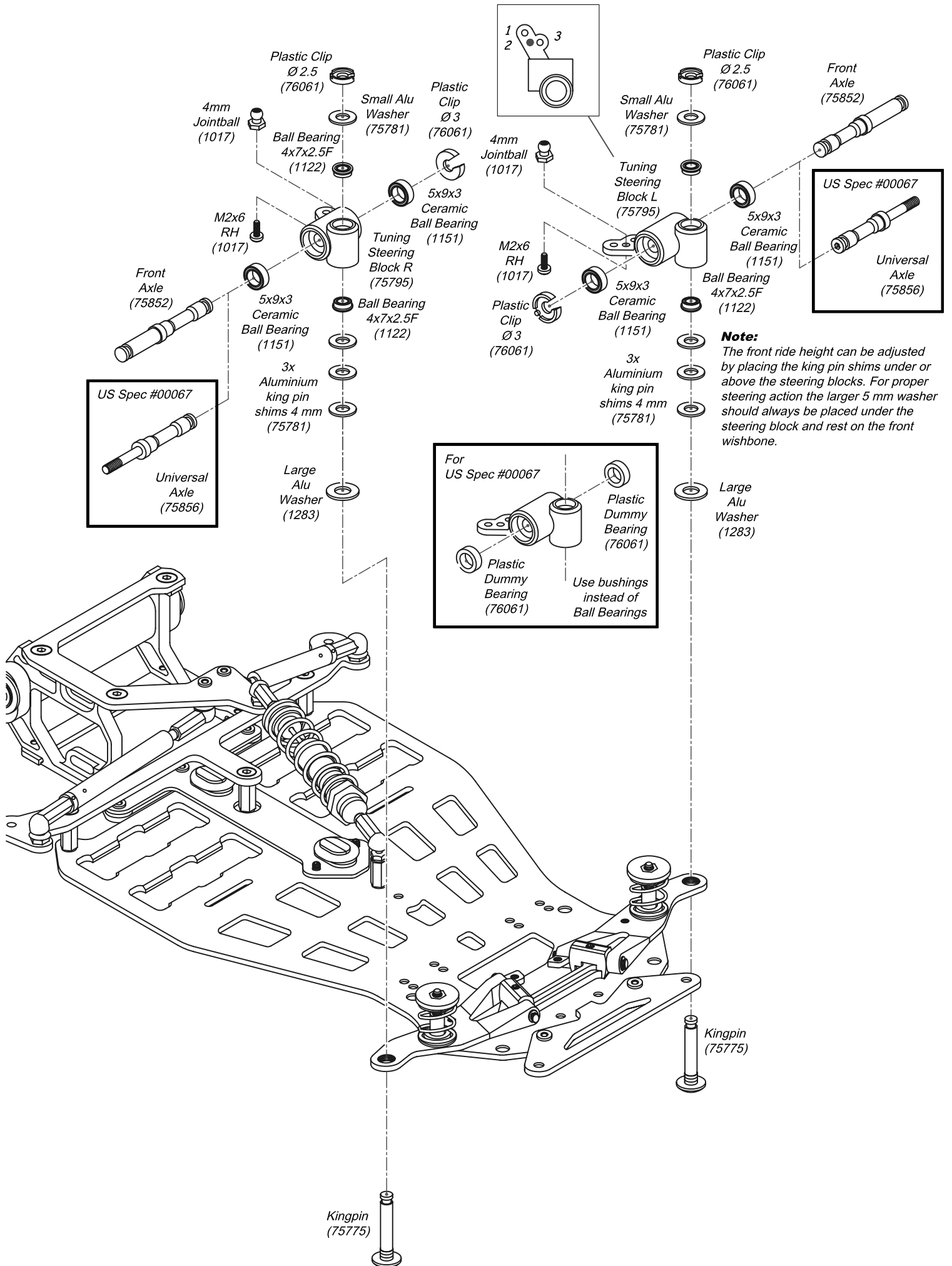
FRONT SUSPENSION MOUNTING



FRONT SUSPENSION MOUNTING

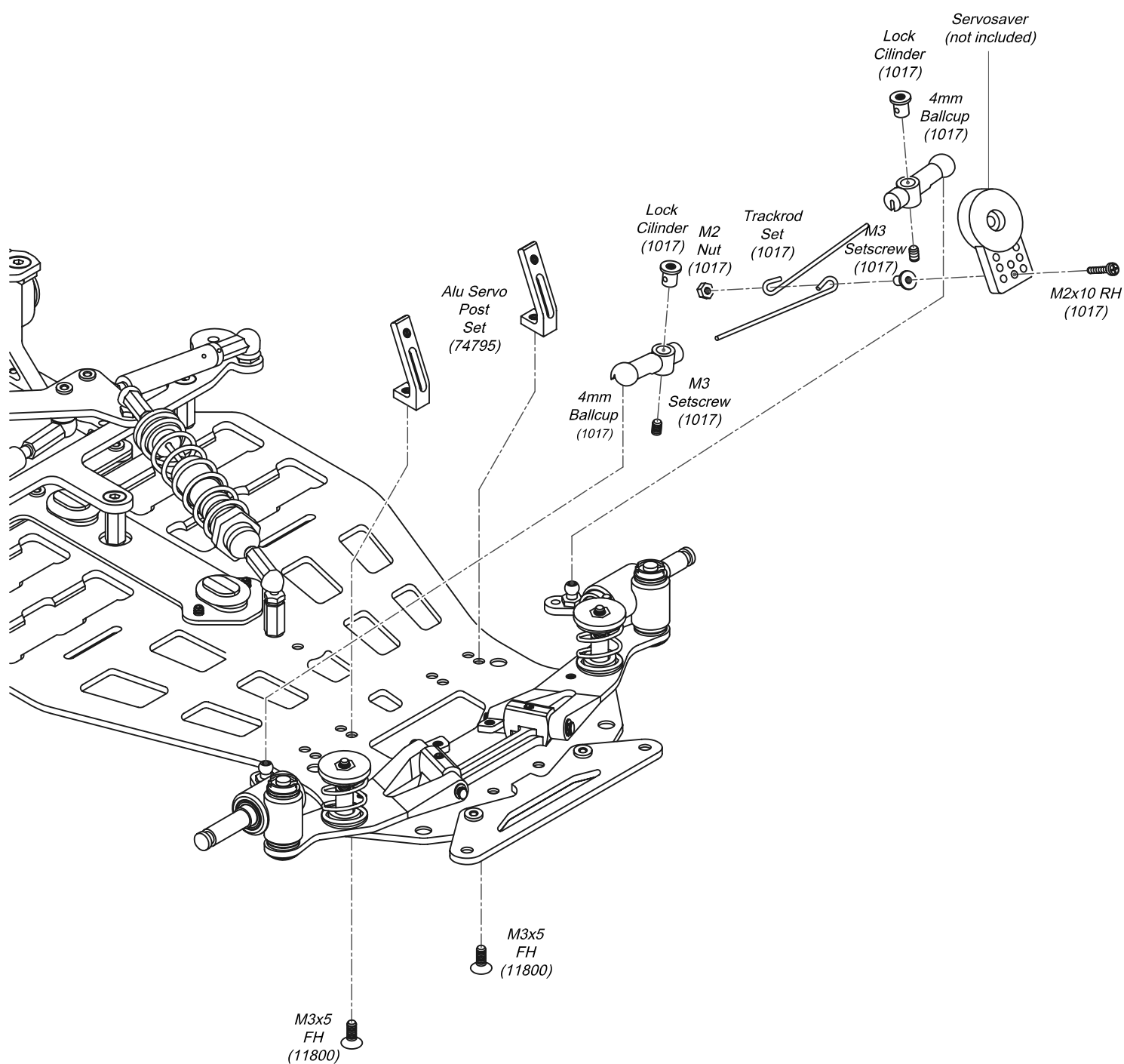


STEERINGS (STEP1)



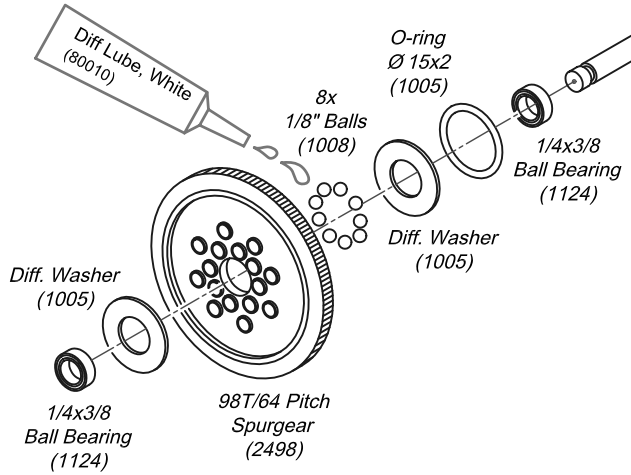
STEERINGS (STEP2)

- Fit the Servoposts on the Chassis, but tighten them when mounting the Servo.
- Install the trackrods by replacing them for the temporary rod that connects the ballcups.
- The VCS Micro Shock can also be installed.



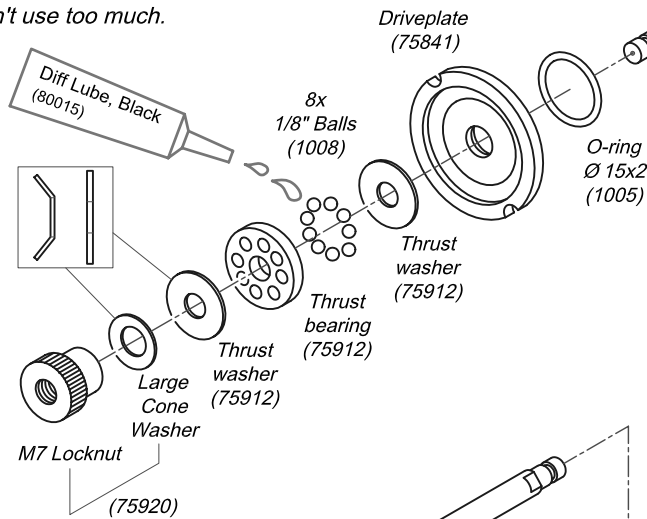
REAR AXLE ASSEMBLY (#00066 - CORALLY WHEELS)

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



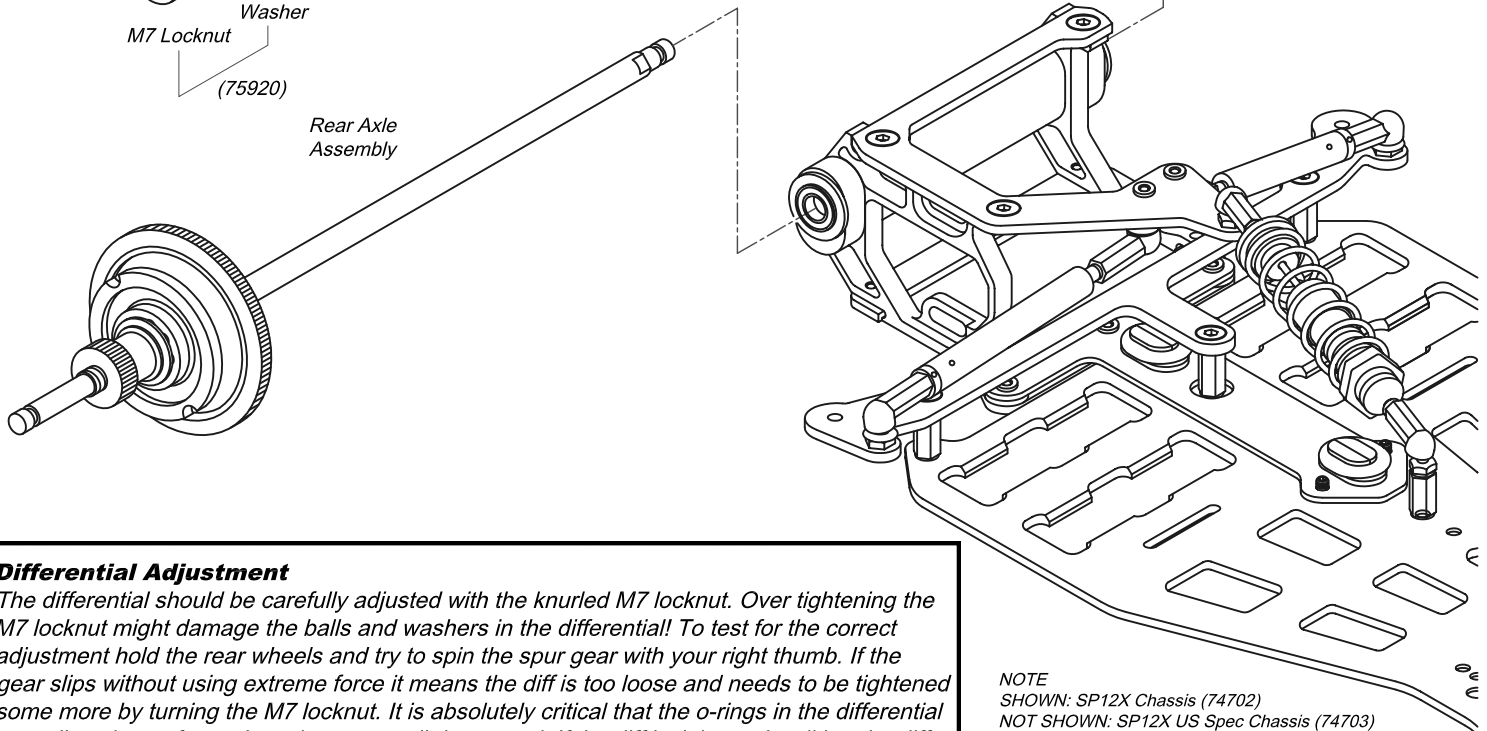
Rear Axle
(75862)

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



Left Wheel-plate
(75821)

Rear Axle
Assembly



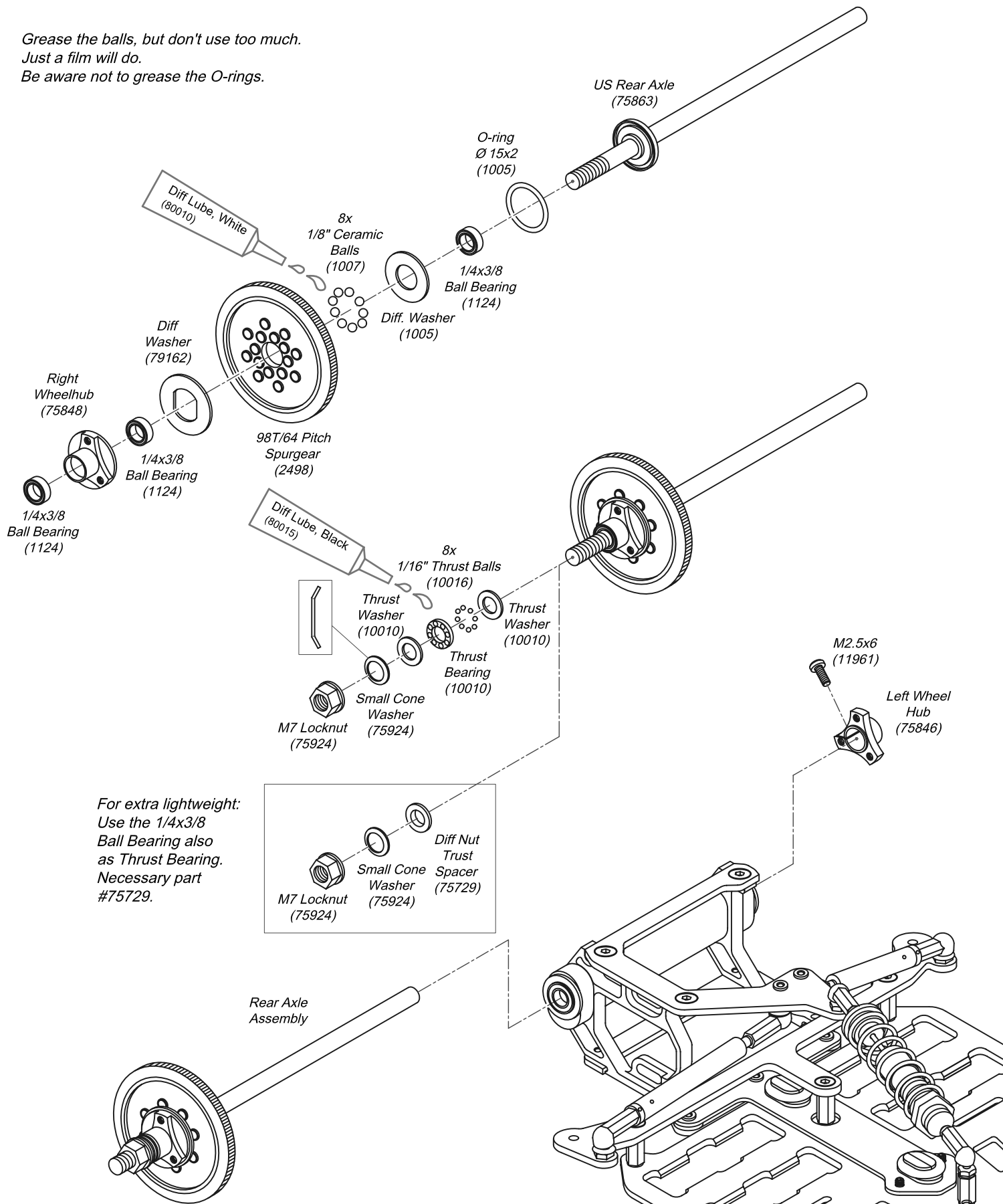
Differential Adjustment

The differential should be carefully adjusted with the knurled M7 locknut. Over tightening the M7 locknut might damage the balls and washers in the differential! To test for the correct adjustment hold the rear wheels and try to spin the spur gear with your right thumb. If the gear slips without using extreme force it means the diff is too loose and needs to be tightened some more by turning the M7 locknut. It is absolutely critical that the o-rings in the differential as well as the surfaces they sit on are well degreased. If the diff is tightened well but the diff rings are slipping on the o-rings it means they require better degreasing.

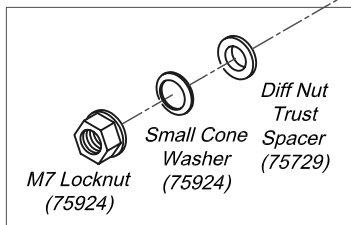
NOTE
SHOWN: SP12X Chassis (74702)
NOT SHOWN: SP12X US Spec Chassis (74703)

REAR AXLE ASSEMBLY (US SPEC #00067 - UNIVERSAL WHEELS)

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



For extra lightweight:
Use the 1/4x3/8
Ball Bearing also
as Thrust Bearing.
Necessary part
#75729.



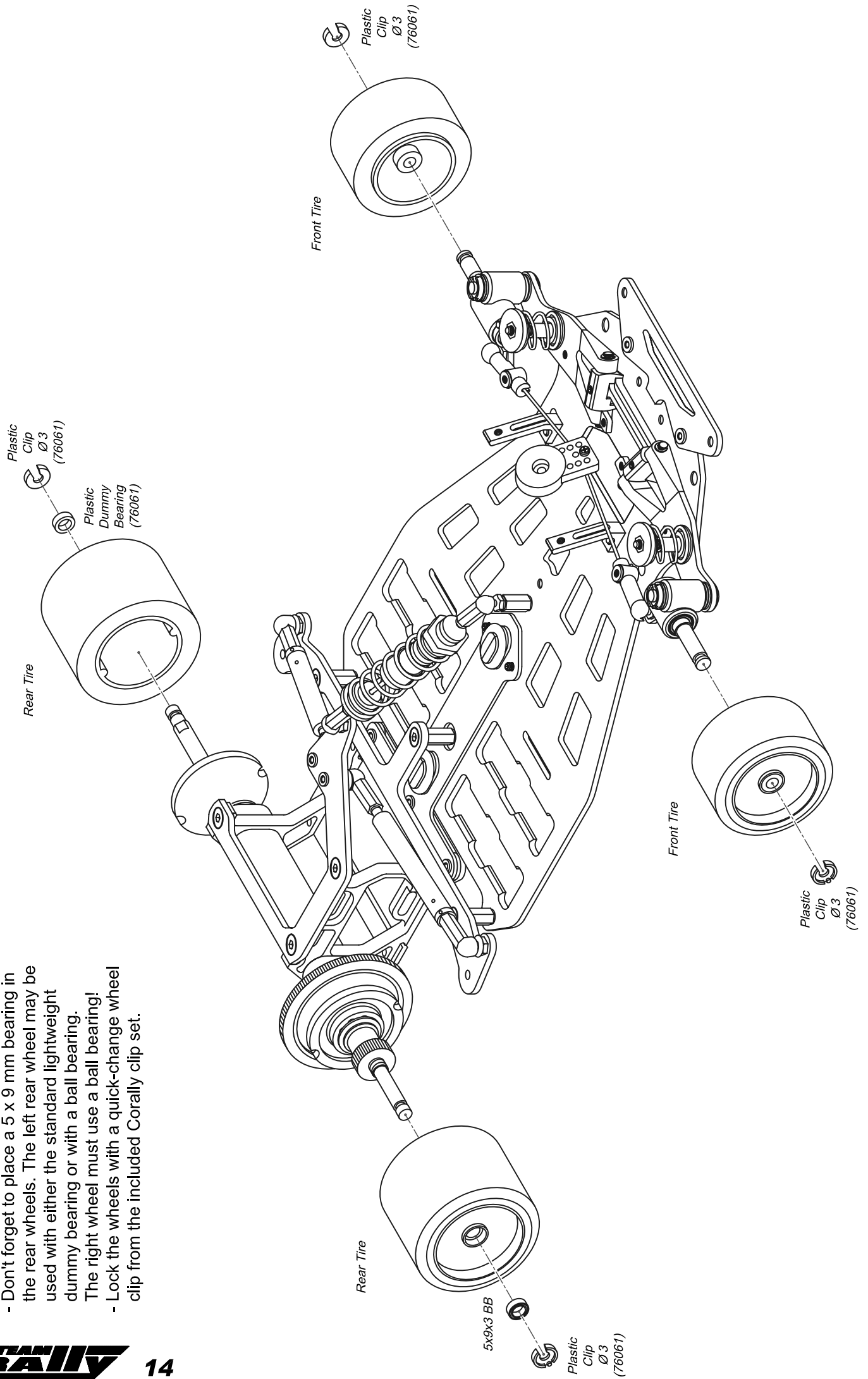
Differential Adjustment

The differential should be carefully adjusted by turning the M7 locknut using a 9 mm hex driver. Over tightening the M7 locknut might damage the balls and washers in the differential! To test for the correct adjustment hold the rear wheels and try to spin the spur gear with your right thumb. If the gear slips without using extreme force it means the diff is too loose and needs to be tightened some more by turning the M7 locknut. It is absolutely critical that the o-rings in the differential as well as the surfaces they sit on are well degreased. If the diff is tightened well but the diff rings are slipping on the o-rings it means they require better degreasing.

NOTE
SHOWN: SP12X US Spec Chassis (74703)
NOT SHOWN: SP12X Chassis (74702)

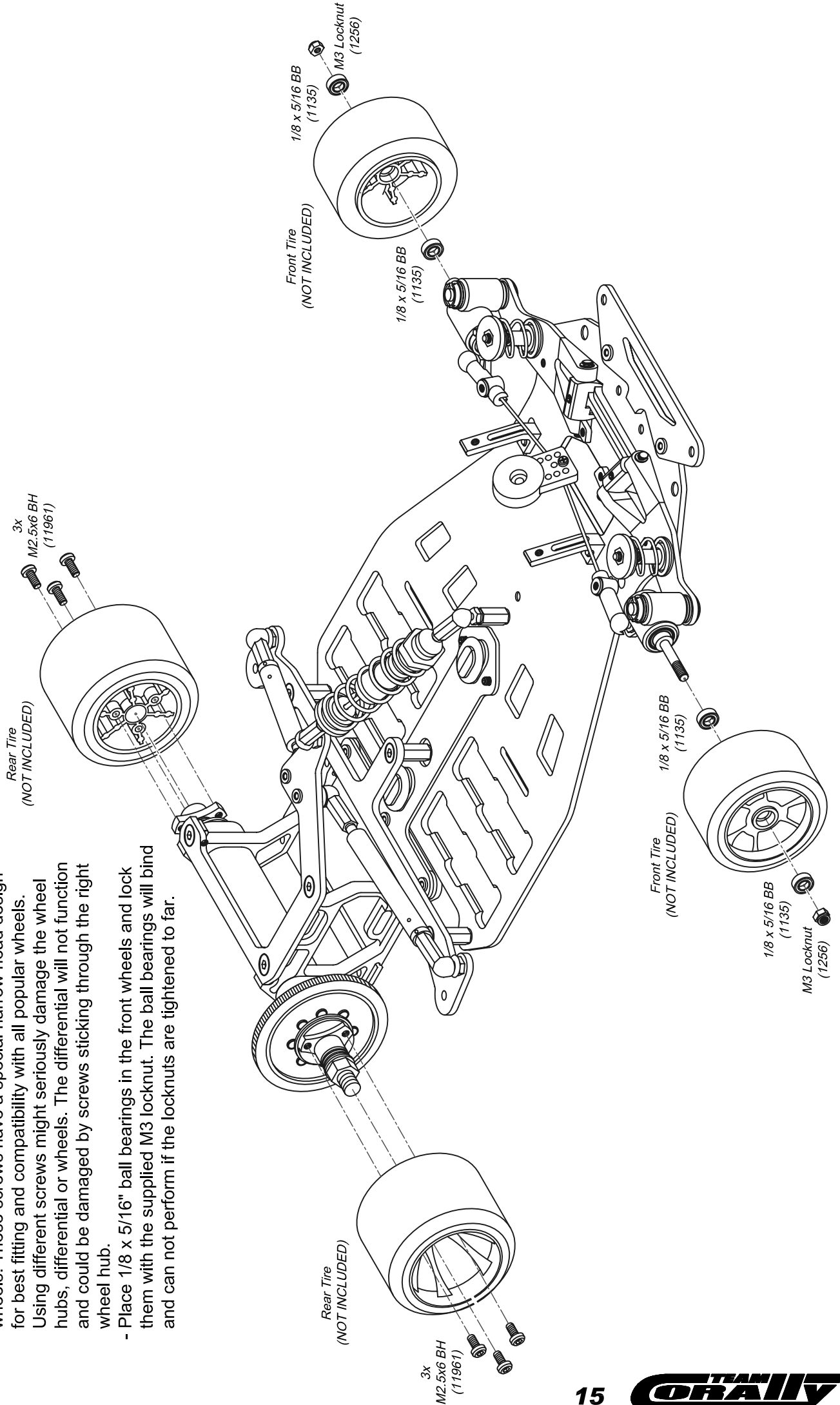
WHEEL MOUNTING (#00066 - CORALLY WHEELS)

- Fit the wheels on the axles.
- Don't forget to place a 5 x 9 mm bearing in the rear wheels. The left rear wheel may be used with either the standard lightweight dummy bearing or with a ball bearing. The right wheel must use a ball bearing!
- Lock the wheels with a quick-change wheel clip from the included Corally clip set.



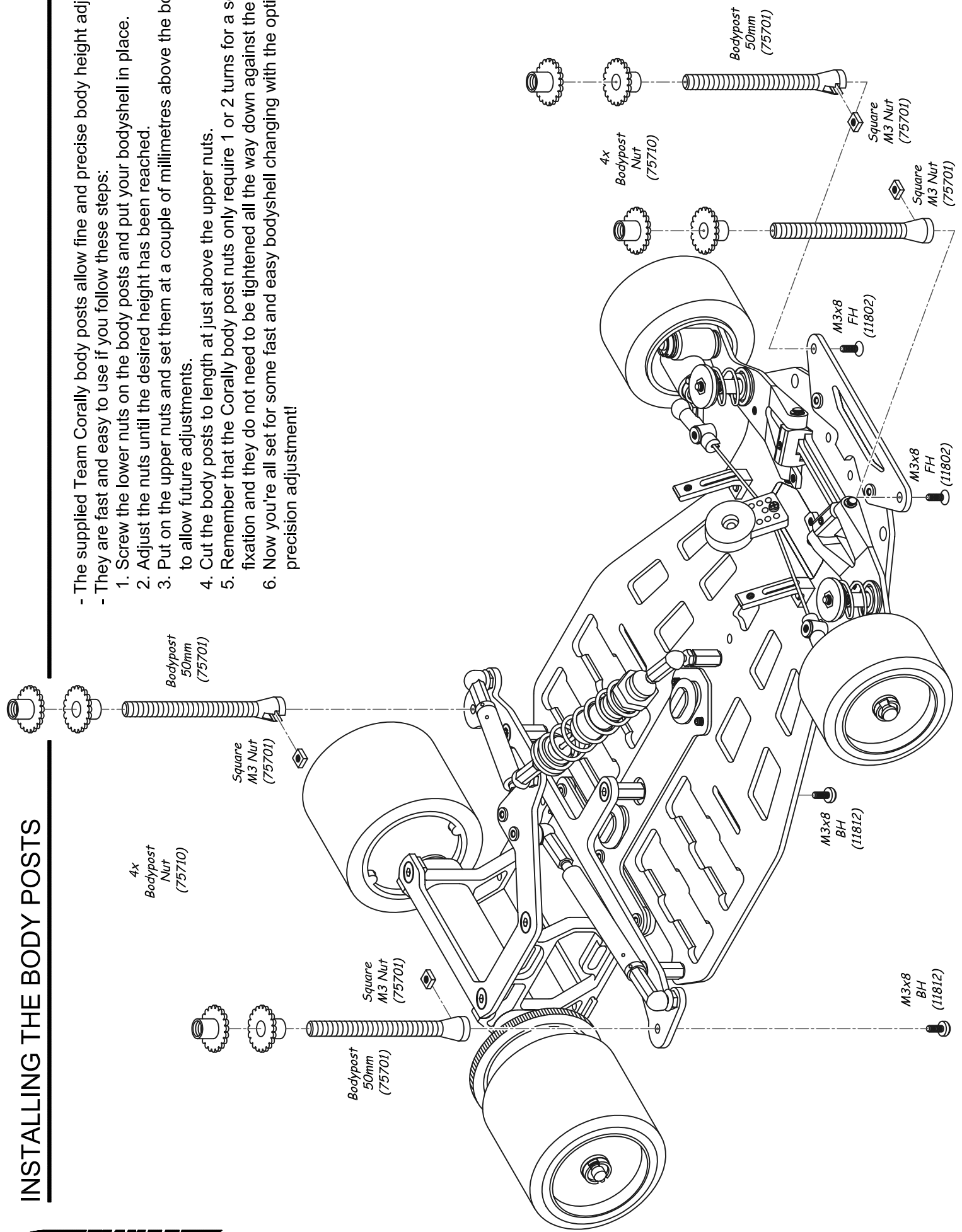
WHEEL MOUNTING (#00067 - UNIVERSAL WHEELS)

- Fit the wheels on the axles.
- Use the M2.5 x 6 mm BH screws for mounting the rear wheels. These screws have a special narrow head design for best fitting and compatibility with all popular wheels. Using different screws might seriously damage the wheel hubs, differential or wheels. The differential will not function and could be damaged by screws sticking through the right wheel hub.
- Place 1/8 x 5/16" ball bearings in the front wheels and lock them with the supplied M3 locknut. The ball bearings will bind and can not perform if the locknuts are tightened to far.



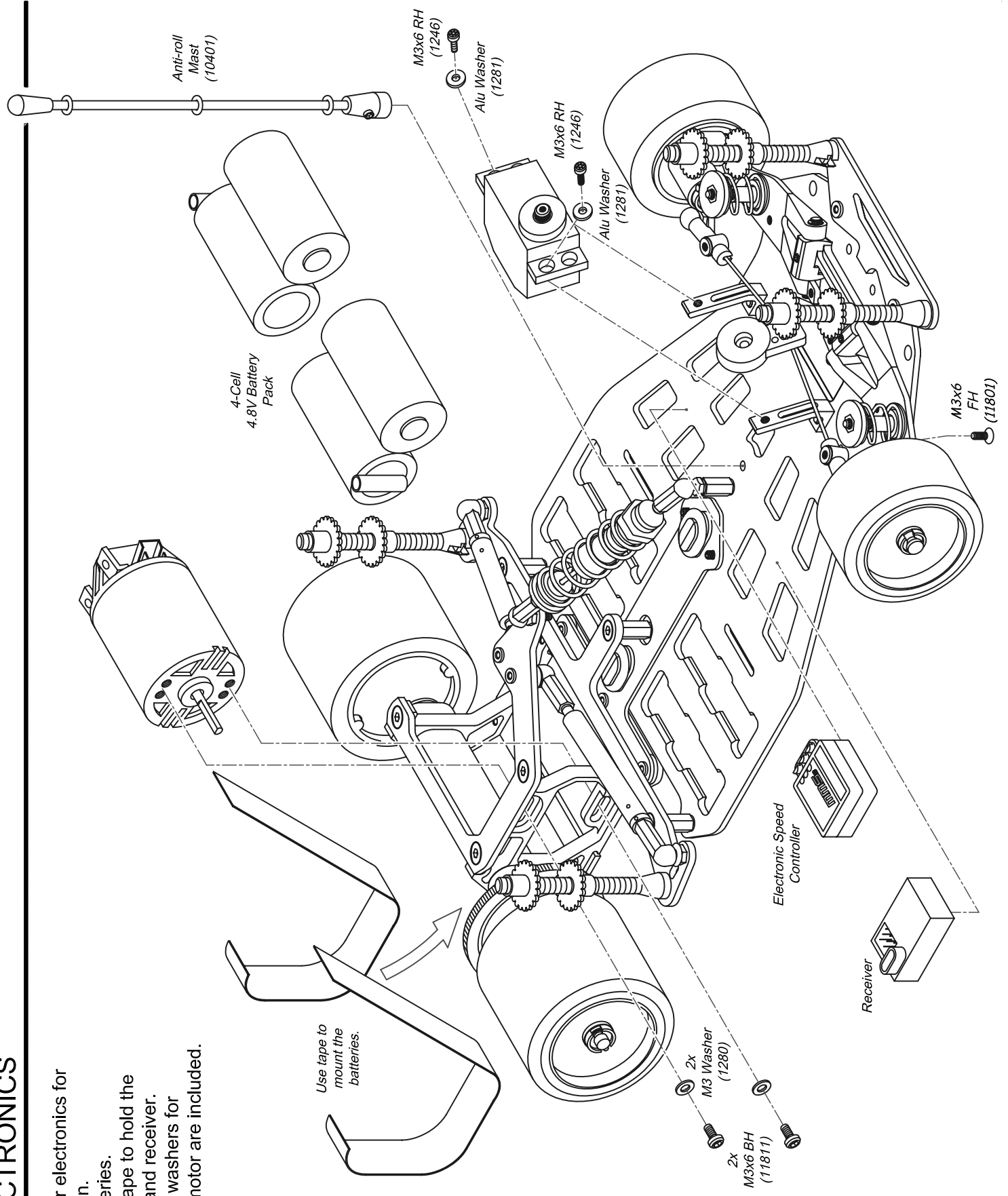
INSTALLING THE BODY POSTS

- The supplied Team Corally body posts allow fine and precise body height adjustment.
- They are fast and easy to use if you follow these steps:
 1. Screw the lower nuts on the body posts and put your bodyshell in place.
 2. Adjust the nuts until the desired height has been reached.
 3. Put on the upper nuts and set them at a couple of millimetres above the bodyshell to allow future adjustments.
 4. Cut the body posts to length at just above the upper nuts.
 5. Remember that the Corally body post nuts only require 1 or 2 turns for a secure fixation and they do not need to be tightened all the way down against the bodyshell.
 6. Now you're all set for some fast and easy bodyshell changing with the option of precision adjustment!



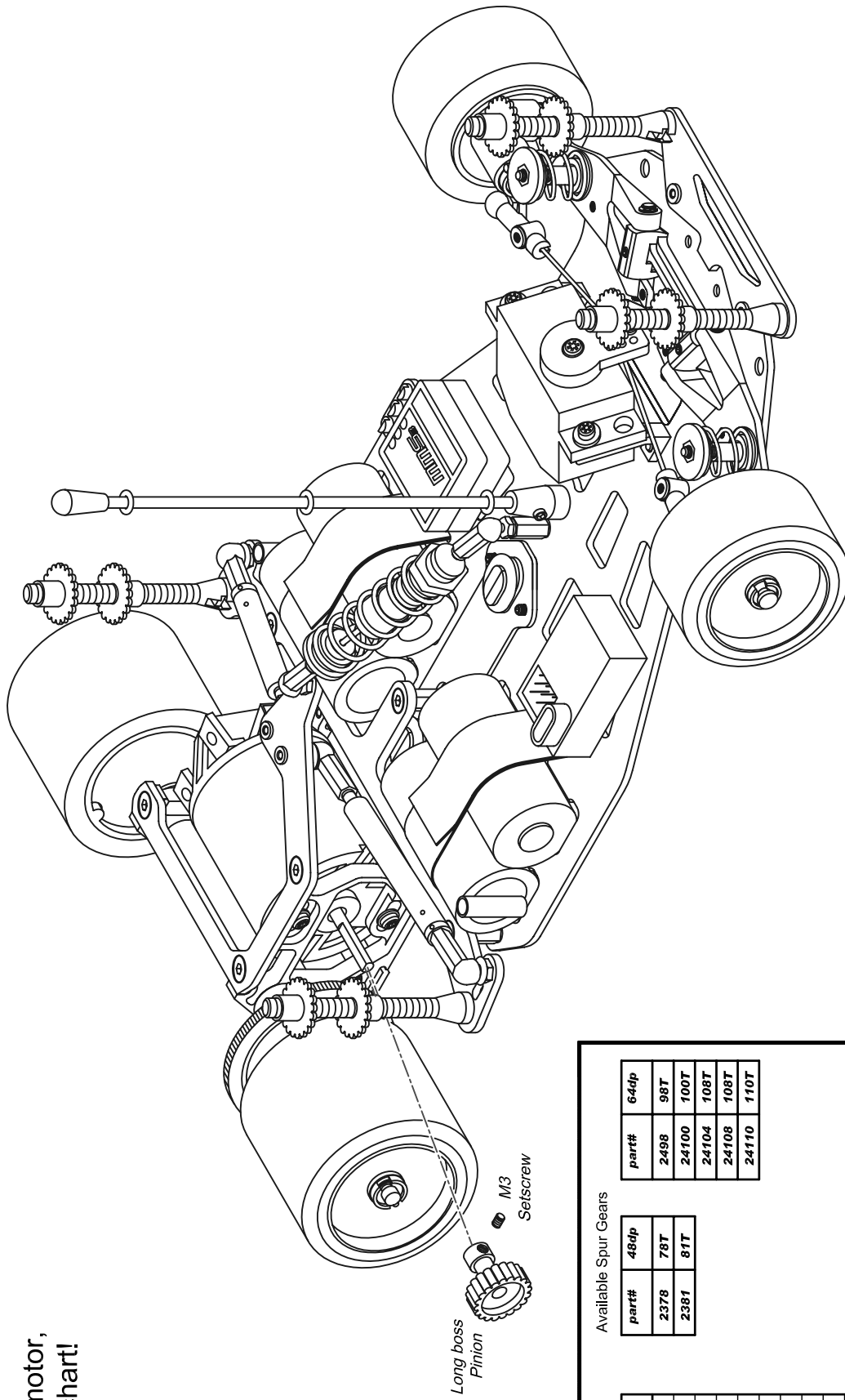
INSTALLING ELECTRONICS

- Check the manual of your electronics for proper use and installation.
- Use tape to hold the batteries.
- Use double sided servo tape to hold the electronic speed control and receiver.
- The required screws and washers for mounting the servo and motor are included.



ALMOST READY TO RUN

- Your standard spur gear is 98T/64Pitch.
- Do not overgear the motor, check the gear ratio chart!



Available Spur Gears

part#	64dp
2498	98T
24100	100T
24104	108T
24108	108T
24110	110T

part#	48dp
2378	78T
2381	81T

part#	64dp
2417	17T
2418	18T
2419	19T
2420	20T
2421	21T
2422	22T
2423	23T
2424	24T
2425	25T
2426	26T
2427	27T
2428	28T
2429	29T
2430	30T

Available Pinions

part#	48dp
2313	13T
2314	14T
2315	15T
2316	16T
2317	17T
2318	18T
2319	19T
2320	20T
2321	21T
2320	22T
2321	23T
2322	24T
2325	25T
2326	26T
2327	27T
2328	28T
2329	29T
2330	30T
2331	31T
2332	32T

NOTE:
Only long boss pinions can be used!!

TIPS TO FINAL ASSEMBLY

Fitting the centre point steering.

Screw the 2 mm bolt into the centre hole on your servo saver (not supplied). The threaded bushing needs to be fitted onto the 2 mm 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 2 mm nut onto the bolt and tighten it up against the end of the bushing. Do not remove the play at the centre pivot. The tolerance in the eyelet of the trackrods have been designed to aid straight line stability. The car will be really difficult to drive if the play on the centre point steering is being removed.

Centre point steering explained:

The centre point steering has been designed to give the ideal 'Ackerman angle' during steering movements. This basically means that the inside wheel is always at the optimum angle to give neutral steering at all speeds, this reduces wheel scrub and gives highest possible cornering speeds.

Optional Ackerman settings:

The tuning steering blocks that are installed on the 12X feature 3 trackrod pivot mounting locations, each of them offering a little different Ackerman.

- Position 1 - More steering response.
- Position 2 - Standard Ackerman setting.
- Position 3 - Smoother steering.

Front wheel tracking.

Remove the dummy trackrod and fit the ends of the trackrods 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 be popped off the balls; this design prevents the ball joints from being stretched and so getting loose due to servicing.

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.

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. The 12X is designed for use with long boss pinions which are available from Corally in a wide variety of sizes in 48 dp and 64 dp. Use a 1.5 mm setscrew driver and ensure that you tighten the 3 mm 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 screws to hold the motor firmly in place. Please note that there are two types of gears available for Corally cars. One is 48 dp which offers good efficiency and great durability, whilst for the serious racer there are 64 dp gears which have a much smaller tooth form and so offer greater efficiency at the expense of durability.

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.

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.

MAINTENANCE AND SETUP TIPS.

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.

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 - 5 mm (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.

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 and 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.

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.

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.

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 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. 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 they will need to be replaced.

Now clean and degrease all the diff washers. Corally differentials often use O-rings where the large diff washers sit on, these O-rings 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. Ideally use Corally motor cleaner to degrease and allow the residue to evaporate before continuing.

Ball pivot servicing.

The 12X utilises simple, but highly effective ball pivots on the T-bar. It is important that the movement of these pivots is free and smooth. To remove the T-bar or to service the ball pivots simply remove the large rubber O-ring and the T-bar can be lift away. 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 / O-ring and the T-bar, then fit a carbon spacer (optionally available). There are also plastic T-bar pivot clips available as an alternative for the O-rings. It is not usual for play to be evident unless a much thinner T-bar is fitted.

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 amount 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.

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.

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 they will give longer overall life.

Gear ratio charts

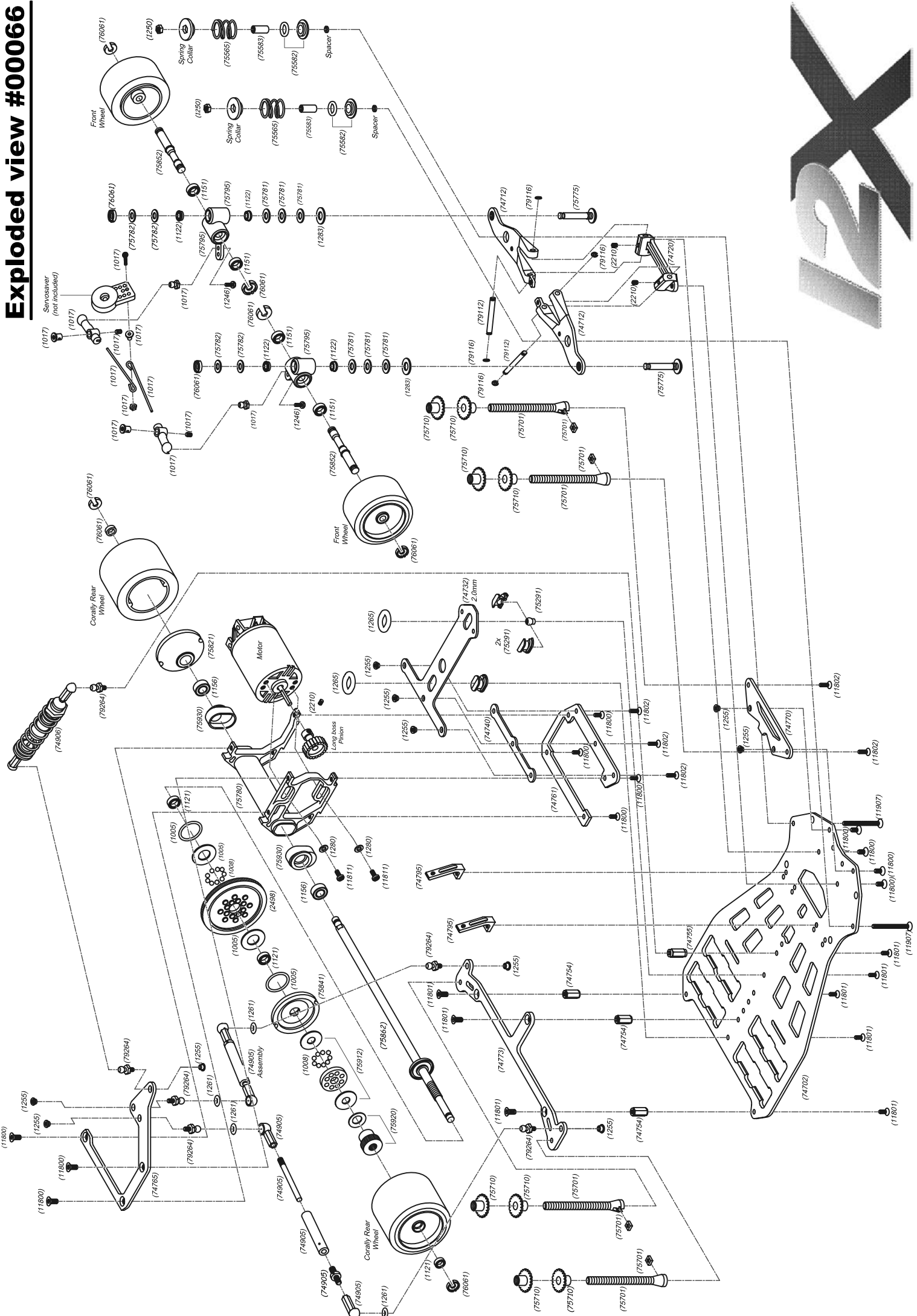
As it is often necessary to change tires and tire sizes to get the car dialled into the track, it is therefore important that you know exactly what effect these tire size changes will have on the gear ratio. The following gear ratio charts equate motor gear ratios into linear distance travelled along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

How to use these charts.

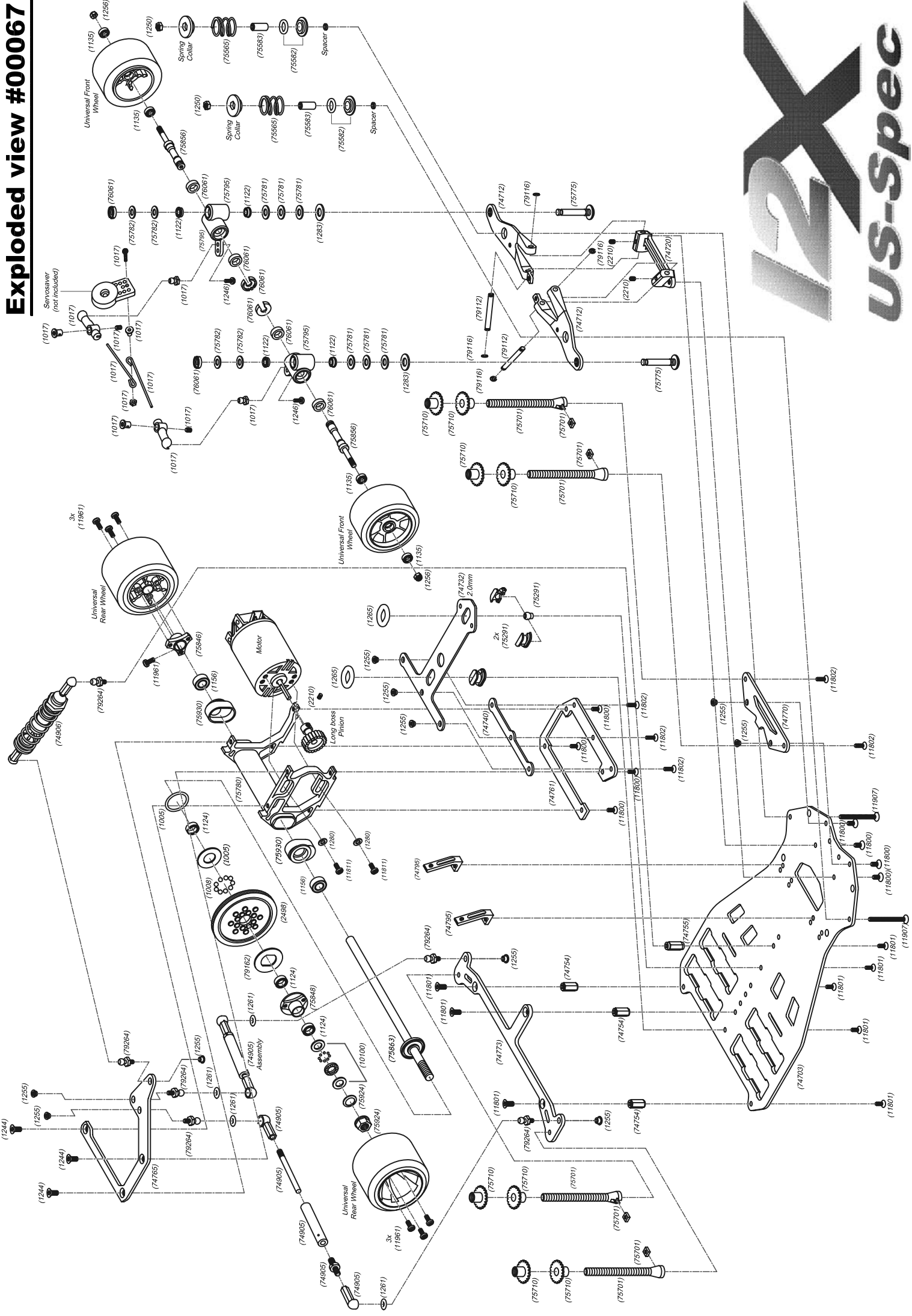
Measure your rear tires, find the chart for the tire size, line up the appropriate pinion and spur gears used and the chart will then show you the mm/rev travelled.

- 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.

Exploded view #00066





Exploded view #00067



12X US-Spec

SETUP SHEET




#00067: 
 #00066: 

SETUP

DRIVER _____
 DATE _____
 EVENT _____
 TRACK _____

FRONT SETUP

SPRINGS (Soft) (Med.) (Hard)
 SYRUP (Soft) (Med.) (Hard)
 CASTER CAMBER
 UPSTOP DOWNSTOP
 FRONT RIDEHEIGHT (3,0 mm) (4,0 mm)
 (3,5 mm) (4,5 mm)

ACKERMANN (1) (2) (3) 
 ROLL CENTRE
 SERVO POSITION (FRONT) (REAR)
 TRACK RODS (CENTRE) (2-Pivot)
 FRONT WIDTH (166 mm) (170 mm)
 (168 mm) (172 mm)

REAR SETUP

T-BAR (1,6 mm) (2,0 mm)
 ROLL CENTRE
 TWEAK
 REAR RIDEHEIGHT (3,0 mm) (4,0 mm)
 (3,5 mm) (4,5 mm)

SHOCK SPRING (SILVER) (GOLD)
 SHOCK OIL (WT)
 TUBE DAMPER SYRUP (Soft) (Med.) (Hard)
 REAR WIDTH (166 mm) (170 mm)
 (168 mm) (172 mm)

TIRES

FRONT TIRES (mm)
 FRONT TIRE ADDITIVE (%)
 FRONT WHEELS

REAR TIRES (mm)
 REAR TIRE ADDITIVE (%)
 REAR WHEELS

MOTOR

MOTOR (brand) (turns)
 TIMING (mm)
 BRUSH SPRING

GEAR RATIO (mm/rv)
 PINION / SPUR (teeth) (teeth)
 PITCH (48 dp) (64 dp)

BAT

BATTERY
 RECEIVER BATTERY

CHARGER
 CHARGING METHOD

OTHER

ESC
 ESC PROGRAM
 CHASSIS

RADIO
 SERVO
 BODYSHELL

RACE DATA & NOTES

RACE RESULT (Qual.) (Final)
 POSITION IN MAINS (F1) (F2) (F3)
 FASTEST QUALIFYER (Laps) (Time)
 FASTEST LAP TIME (Sec.)

TRACK SURFACE
 COMPOSITION
 TRACTION (Low) (Med.) (High)
 TEMPERATURE

NOTES