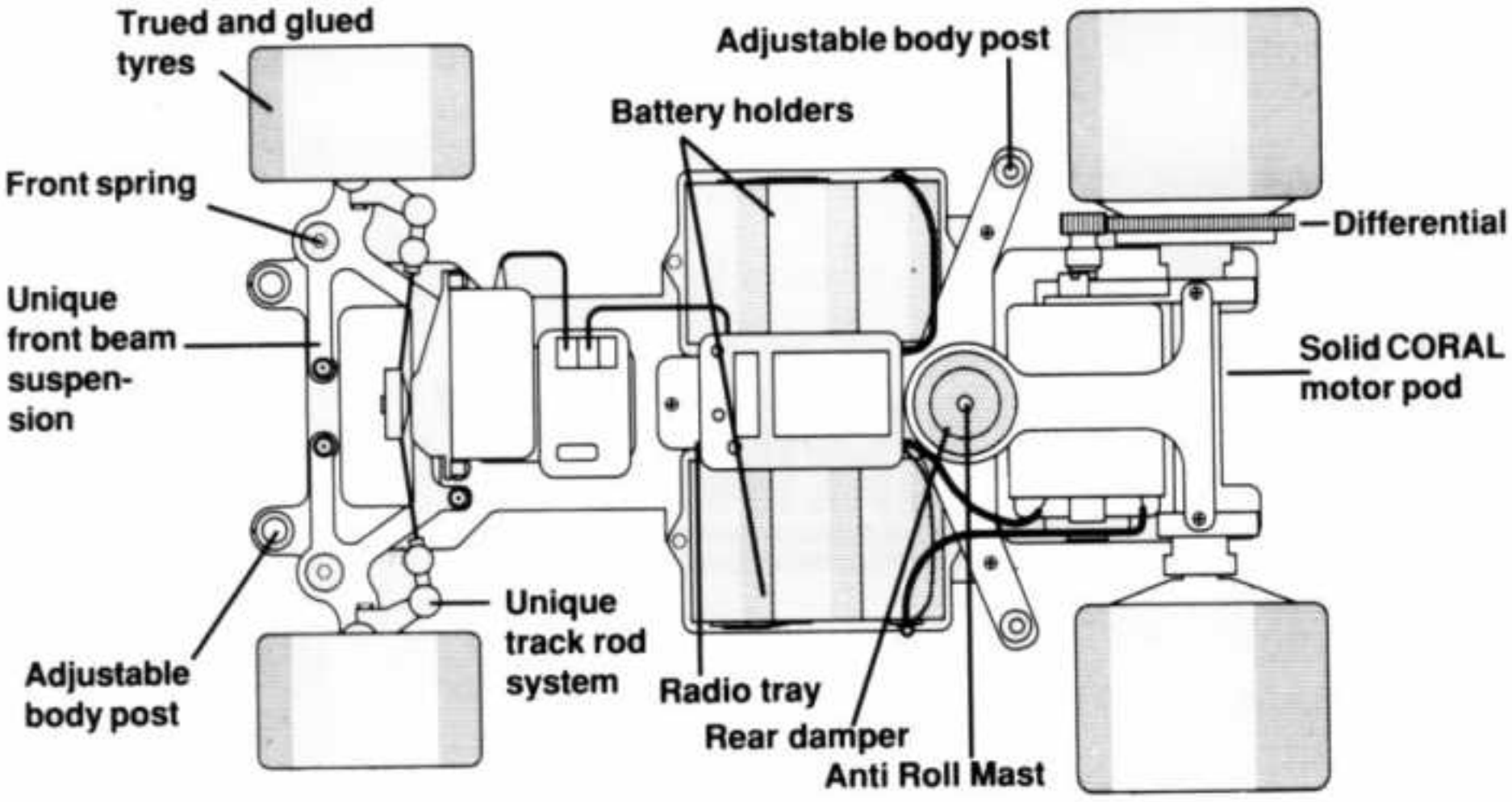
IMPORTANT: THIS CAR KIT CONTAINS 0.5 MODULE SPUR USE 0.5 MD PINIONS ONLY!

Orally

INSTRUCTION MANUAL

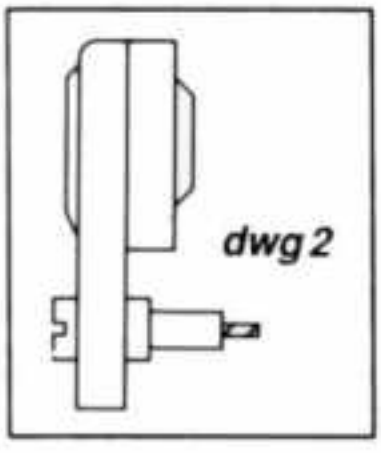
SP10 SP12

MOUNTING INSTRUCTIONS



Servo.

The servo position in the SP12 is based on the Futaba 32 HS series servo. The SP12G can also use this servo, or the even faster Sanwa 141HS. The Pro10 cars can use either of these servo's, as well as other types like the Sanwa XRG-XS or the KO. Fet servo. Use the appropriate holes for mounting the servo, so the axle of the servo is in the centre line of the car. . The servo itself is fixed to the posts with 2 or 4 screws M3 x 6.



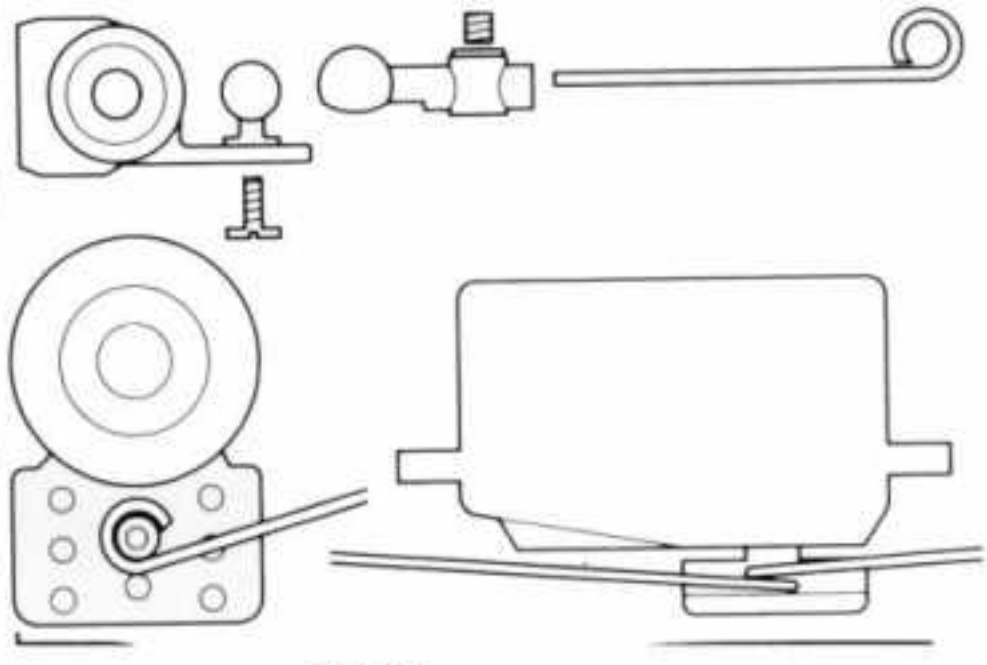
dwg 2

As a servo saver we advice the Kimbrough saver. Take the 2 mm screw and screw it in the centre hole from the front side (dwg 2), then mount the centre pivot.

The track rods are to be mounted as follows:

In the SP12 & SP10(X) & SP10 Oval the saver is mounted down wards, so the centre pivot is close to the chassis. In the other types (12G, SP10 GS/GSS) the saver is mounted point-ing upwards.

The track rod which goes along the longest side of the servo, is to be mounted first, then comes the other one. The loop in the track rod points up-wards (see dwg 3). Stick the other side of the track rod through the brass insert of the plastic pivot socket, and tighten the set screw. The final adjust-



dwg 3

ments will be done later. (See toe-in)

The track rods have a bit of play on the centre pivot. This is done on purpose, please let it be that way, or you will end up with a bad handling car!

Receiver.

We advice to place the receiver as far away as possible from battery, motor and speed controller. Degrease the bottom of the receiver and the chassis at the place where you want the receiver to be placed. Use a piece of double sided sticking tape to mount the receiver in place.

SP12(G): To mount the receiver wire to the anti roll mast, take the top and the 3 'O'rings of the mast. Stick the wire trough one of the 'O'rings, and press the ring over the mast again, so the wire is kept along the mast. The same is done with the other 2 'O'rings. Put the top in place again, and position one 'O'ring at the bottom, one at the middle and one at the top of the mast, thus keeping the wire in place.

SP10 all versions: Stick the aerial wire through the hole in the side of the aerial post, and let it come out of the top of it. (dwg 4) Press the wire through the yellow aerial tube. This goes easy when you first make the inside of the tube wet. Then press the tube into the post. There are two aerial tops provided, first mount the smaller one, and press the bigger one on top of it.

Speed controller.

SP12: Mount the speed controller on top of the radio tray. This way the wires are as short as possible, resulting in less electric losses. Also positioning the controller as far away as possible from the receiver prevents interference.

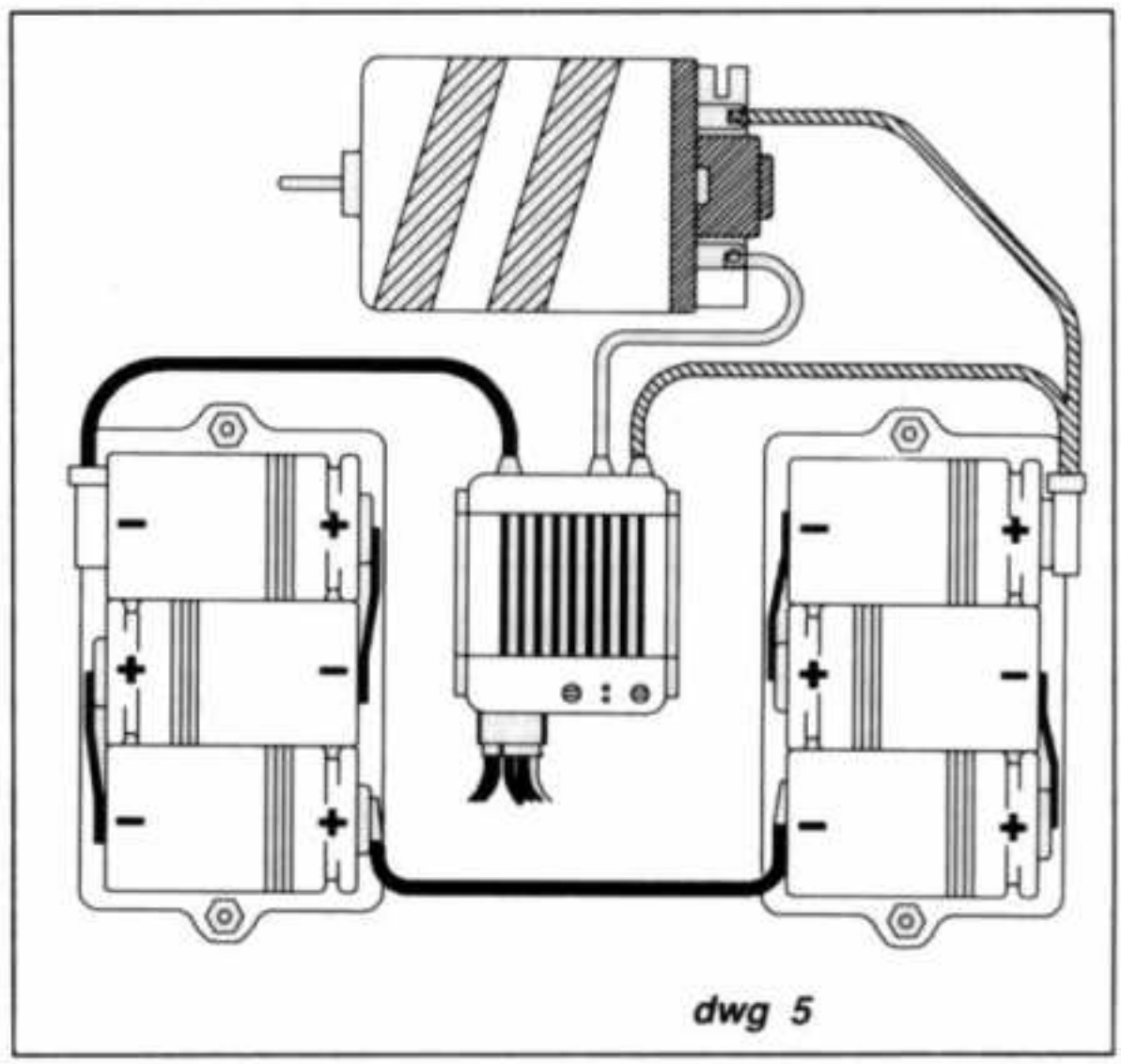
SP12G: Position the speed controller on the chassis in front of the batteries. This provides a low centre of gravity.

SP10 all versions: The controller is mounted on the chassis, but keep in mind to keep the wires as short as possible to prevent electric losses in the wires.

Remember that Corally also can supply the best gold plated plug system to connect your battery to the controller. Ask your dealer!

Battery.

The Corally cars are provided with a smart battery holder system, which makes chang-



dwg 5

ing of the batteries easy, but does not put the chassis under any kind of strain.

To fit the cells into the holders:

place the car upside-down on the table, and mount the holders to the under-side of the chassis, so the holders are kept flat by the chassis . (Mounting the holders to the underside gives you easy access to the cells.)

Apply some C.A. glue to the holders, at the spots where the cells will touch the holders. Put the cells in place, each cell the other way around as the cells beside it (dwg 5). Also apply some glue between the cells themselves. Solder the connection between the cells as shown in dwg 5.

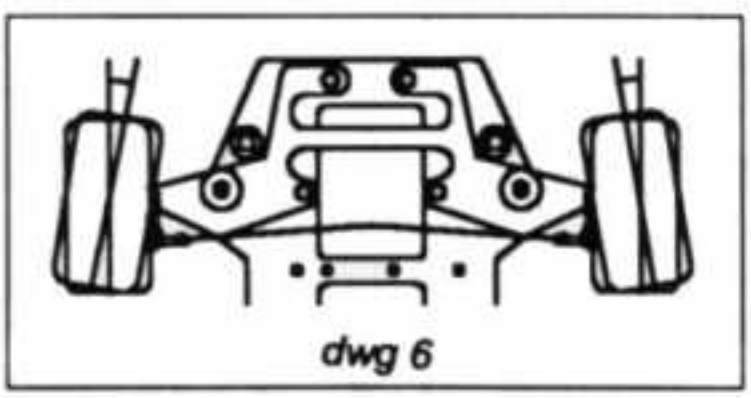
All versions, except the SP10GS, are equipped with battery straps. In that case you can choose between gluing the cells in place, or use the straps to keep the cells in the holders.

Battery positions.

The Corally SP10(X) is provided with 3 slots for battery holders. This makes it possible to place the batteries in any position you want. For 7 cell racing, we advise to mount the 7th cell in the middle of the centre battery holder, to keep the perfect balance of the car. For oval racing you might place two or three cells in the centre holder to offset the weight balance to the inside of the track.

The SP10 Oval can be used with 6 cells at the left side of the chassis. The holders can slide so you can adjust the off-set from the batteries to the centre line of the car, giving the possibility to adjust the car to different tracks.

After you have mounted a motor of your choice, and have charged your battery, you can connect the complete electric system according to your manual of the radio equipment and the speed controller. Remember to take the servo saver apart from the servo before you switch on the radio system. Then place all trims on the radio at neutral, and put the servo saver in place again, as close to the neutral position as possible.



dwg 6

Toe-In.

Now you can adjust the toe-in of the front wheels
The easiest way to do this is as follows:
Turn on the transmitter and the receiver. (Preferably disconnect one of the motor wires, or remove the motor pinion, so the car can't drive away from you!)
Put the steering trim knob in the centre position and check if the servo saver is exactly vertical. If not, adjust the position of the saver with the steering trim knob of the transmitter till it is.
Place the car side ways on a table, so the car rest on the side of the rear and the front wheel. Unscrew the set screw of the track rod pivot ball at the side that rests on the table. Press the front wheel flat on the table, and tighten the set screw again.
Now turn the car around so the other side is at the table, and adjust the other track rod in the same way.

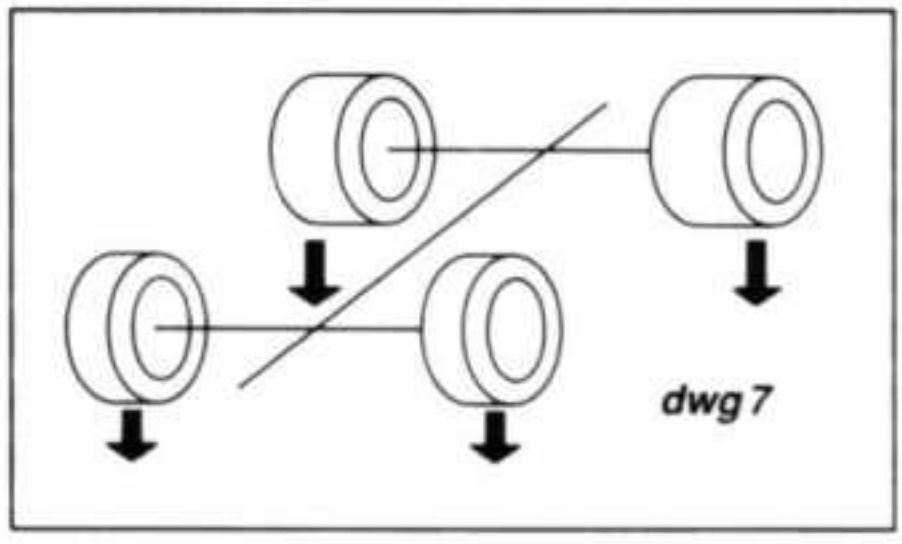
Things to know about your car

What is CORAL?

CORAL is a hardened light metal, which has equal characteristics in all directions. This in contrary to fibre glass, which is made of layers. As the layers at the top contribute more to the strength of the chassis then the layers in the middle, (compare with sandwich construction), these materials will have more flex into one direction than in the other. A CORAL chassis is always straight, and does not become weaker after some time, which makes the handling of the car much more consistent.

Tweak:

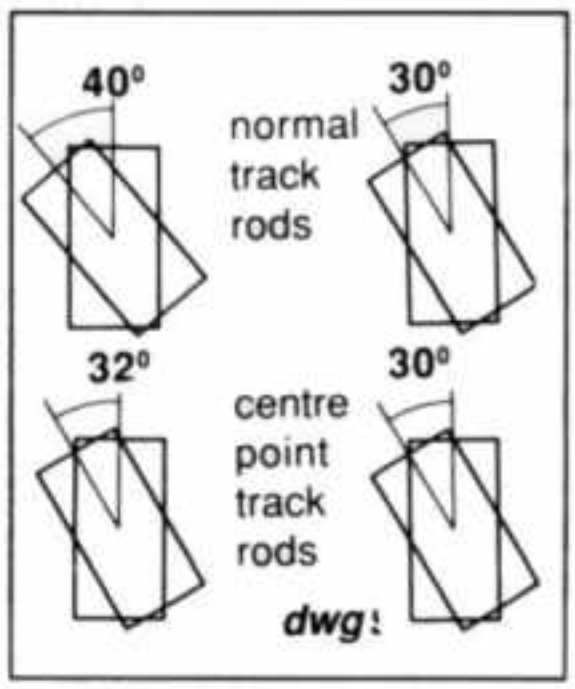
Tweak is the most common problem in racing. A car is "tweaked" when the left wheel of one axle has a different weight then the right wheel on the same axle. This makes the car handle different in left and right corners, e.g. over steering to the left and under steering to the right.



The Corally T-bar is mounted on balls, so it can roll freely in the length axle of the car. This combined with the front beam suspension, gives the car not only superb handling, but also makes the car tweak-free. Also the Corally rear friction-plate damper works in all directions with the same force.

Adjusting the car to different tracks:

Many adjustments are simply made by changing the type of tyres: If you have too much steering, use front tires with less grip, to make the car easier to handle. Standard supplied with the kit are green tires front and rear. So if you need less grip at the front, use the blue front tires. On most tracks our PK Gold and Silver tires work very good, and they wear less than the green tires. Normally the Gold tires have more grip then the Silver. Another point to know is that a tyre with a large diameter gives more grip then one with a smaller diameter, but as the rotating mass is bigger, the car will accelerate less with larger tyres. Use this information to find the right set-up of your car.



Centre point steering:

A car cornering fast, has little weight on the inside front wheel. Therefore the maximum angle between the wheel and the actual direction the car is going to, is smaller then of the outside wheel, which has more load. If that angle becomes too big, the wheel drags instead of rolls.

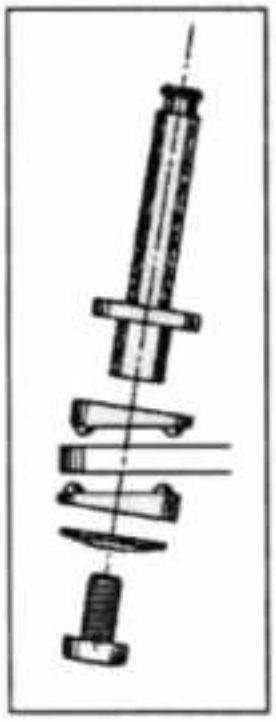
The centre point track rods give the inside wheel a smaller

angle related to the outside wheel, then a normal track rod system would do, and therefore give less drag, resulting in higher cornering speed and a less abrupt change from over- to under steer when giving less throttle.

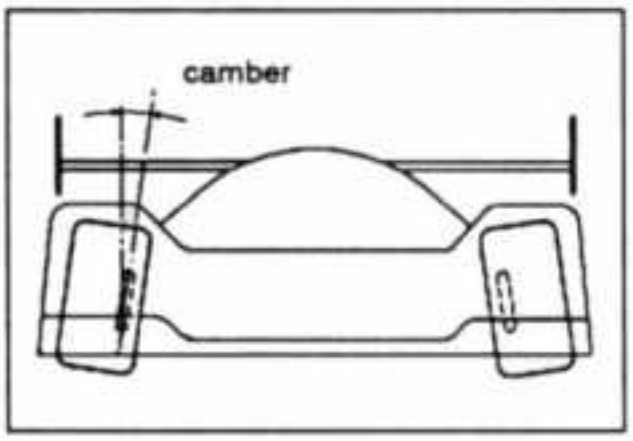
Front wheel turn:

For a good handling car the front wheels must turn the least amount necessary to get around the track. If the front wheels turn too much, you will find it difficult to handle the car under speed. So use the dual rate on your transmitter to give the exact amount of turning and no more! Also changing the position of the centre pivot of the track rods gives more or less steering. Positioning towards the axle of the servo gives less steering, and a position further away from the axle gives more.

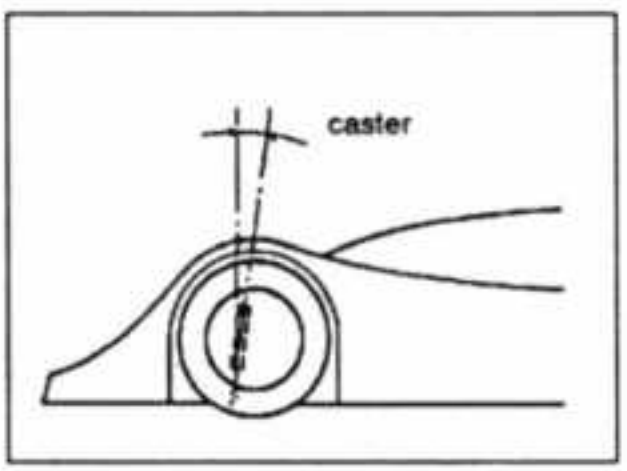
Caster / camber:



The SP10 versions with the Anti-Roll front beam are equipped with a king pin system that allows changes in caster and camber. There are 4 sets of (black, plastic) c-c rings (caster/camber ring), marked with 2, 4, 6 or 8. By changing the ring or it's position you can change the setting of caster and/or camber. Note always to have a ring with the same number on top and at the underside of the front beam, where as the notches on both rings should be in the same holes. By marking which ring and in what position it was for a certain track, you can always find back the same setting very easily. You have to experiment with these settings to find the right set-up that suits you best at a certain track. As a guide you can use the following rules:



Giving more caster (tilting the king ping to the back) makes the car more stable to drive, giving less grip at the front steering into the corner, but slightly more coming out.



Giving more camber (tilting the king pin to the inside of the car) gives more grip at high speed corners.

These rules are only basic's and can vary from track to track. Over-doing it will mostly result in the opposite effect!

Normally the set-up is OK when the front wheels wear evenly and the surface of the tyre stays parallel

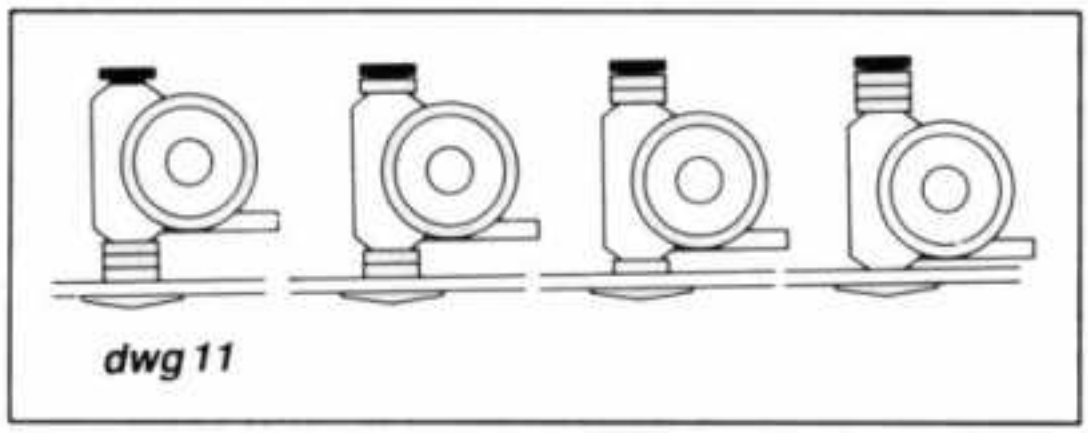
T-Bar adjuster

Under normal conditions the free floating T-Bar of the Corally's is the best set-up, as it provides the best grip and prevents tweaking. But on very high bite tracks there might be too much grip at the rear, and in that situation we advise to mount the T-bar adjuster.

This device is easy to instal, and makes the rear end of the car stiffer. So the car rolls less and is therefore easier to handle on high grip / high speed tracks. As the T-bar adjuster provides more steering, it is also used when the car under-steers too much. As it can also be used to give an off-set to the left, the t-bar adjuster is even a must on oval tracks.

Ride height adjustment front:

In general, a car must be set up as low as possible (and allowed!) without hitting the ground. The lower the car, the better it will handle.

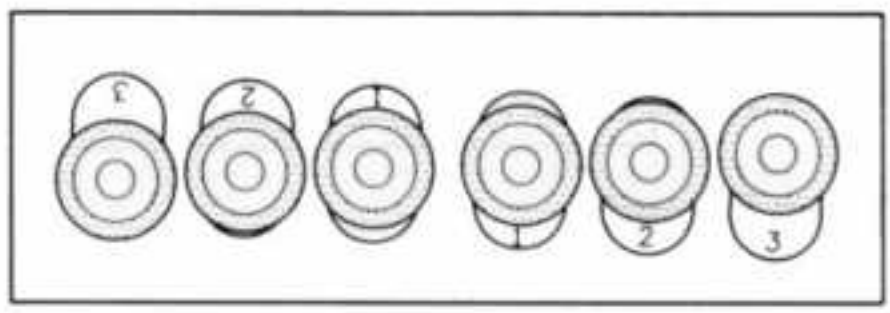


dwg 11

At the front each steering block is mounted with 3 washers. By changing the position of these washers you can change the ground clearance at the front.
Take care to have the same position of the steering block at the right and the left side of the car.

Ride height adjustment rear:

At the rear, there are 3 different sets of ball bearing holders, each with a different position of the bearing, so you have 6 positions to choose from. Take care to always have the same holder in the same position at the left and the right.



Rear damper.

A very important part of the car is the rear damper. When this is not working properly, the car won't handle well.

Normally you don't have to do much about it, but from time to time take the damper apart, and clean it thoroughly. Mount it again and put some damper syrup into it, so the inner system is completely covered by a layer of the syrup. (Do not fill it completely!). Check the working of the damper by taking the damper plate apart from the power pod and moving it by hand in all directions. Damper action should be smooth.
There are two types of damper syrup available, standard and thick. The Corally is supplied with the standard syrup, which is good under most conditions. As the thick version makes the rear of the car more stable we advise to use this at tracks with quick left-right changes.
For very bumpy tracks Corally can provide an hydraulic rear shock absorber with part number 75590. This set contains a special rear damper plate (the standard rear damper keeps it's normal function), an oil filled/teflon plated hydraulic shock absorber with coil-over spring and all mounting parts.

This set makes the car easier to handle on bumpy tracks, as it provides the rear wheels from losing traction under difficult conditions.

Front Damper:
The Corally cars with the Anti-Roll Front Beam are equipped with a front damping system, which is positioned inside the front spring. The system consists of a bushing that is screwed over the front spring post, and a disk with a rubber 'O'Ring that is placed between the beam and the bottom spring stop. This provides a very smooth damping system. To keep it in good order, you have clean the bushing and the 'O'ring properly, and apply some damper syrup to it. Also in this case you can choose between the standard damper syrup (# 80000) and the thicker version syrup ("hard", # 80001)

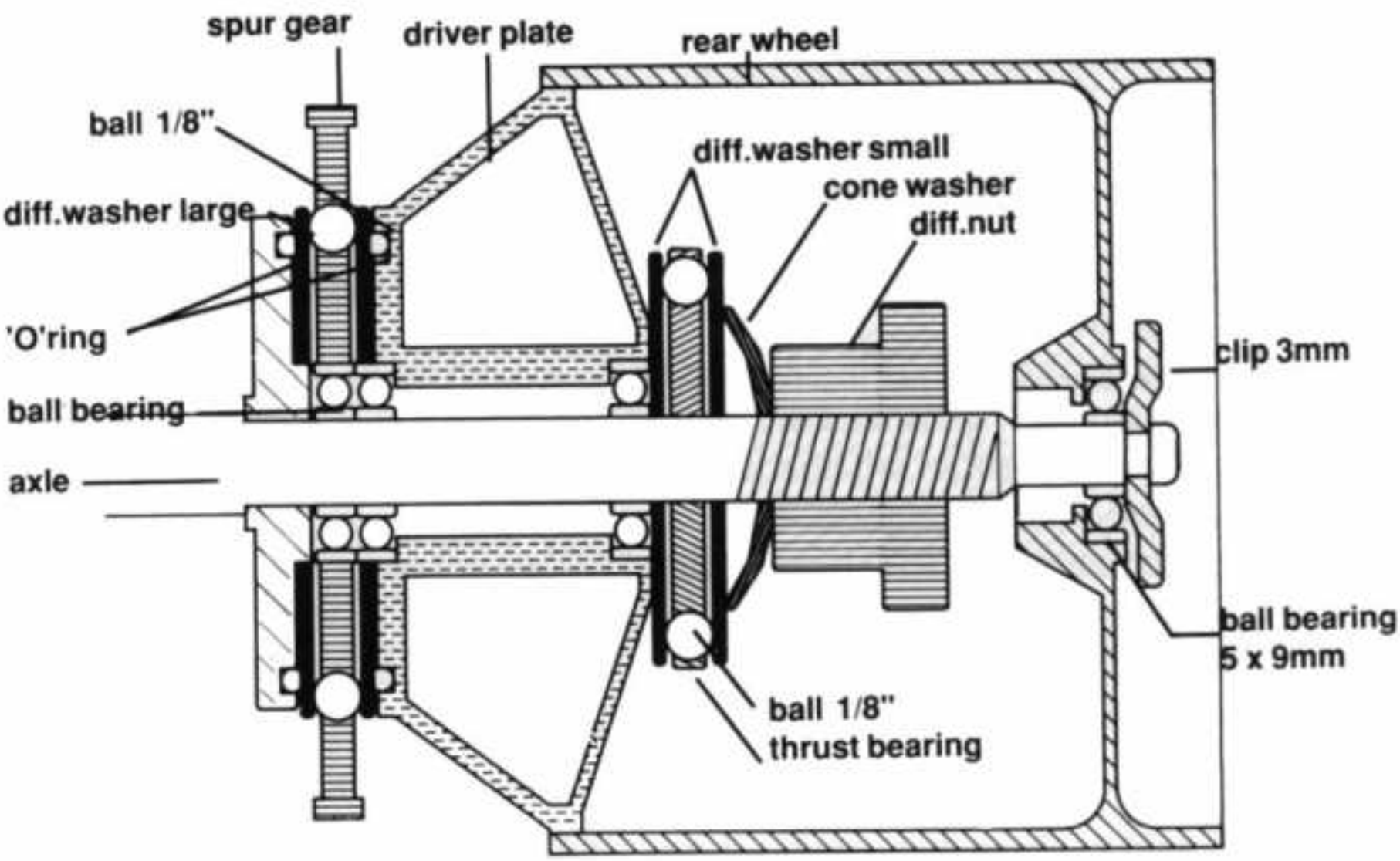
Body:
Mount the body to the car before you paint it, so you can see through it, to easily mark the positions of the holes for the body posts and the antenna.

Before you start spraying the body, you put some tape on the out-side of the body to cover the holes. This will prevent the paint from spraying through the holes and covering the out-side of the body.

Body height is very easy to adjust with the two threaded collars of the body posts. The body posts have a steel insert for the mounting screw, so the thread won't strip. Body posts are available in 3 sizes: 50, 65 and 80 mm (2, 2.5 and 3.25")

Wing Mount.
Optional there is a special wing mounting system. Mounting a wing gives more traction at the rear at higher speeds, but causes more drag. The steeper you mount the wing, the more grip you will get, but it will cost you driving time and top end speed. So it needs a lot of experimenting to find the right position.
Corally provides as an option a wing mount kit as part number: 75951

CORALLY Differential



Disassembly:

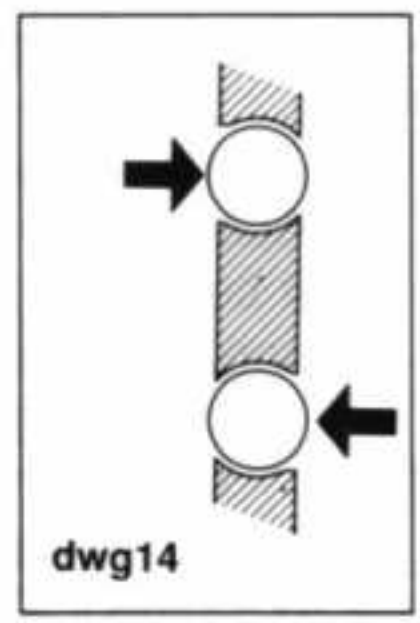
Take away the clip that keeps the right wheel on the axle, and remove the wheel.

Unscrew the black differential nut from the axle.

You can now take apart the differential, watch carefully the order in which the parts are mounted.

The gear has 12 balls (1/8"), 6 are put in place from one side, and 6 from the other. This construction makes that the gear won't wobble side-ways!

The steel diff. plates are kept from slipping by the use of two rubber 'O'rings. This can only work properly if the rubbers as well as the steel washers are totally free from grease! So take care to degrease these parts before assembling.

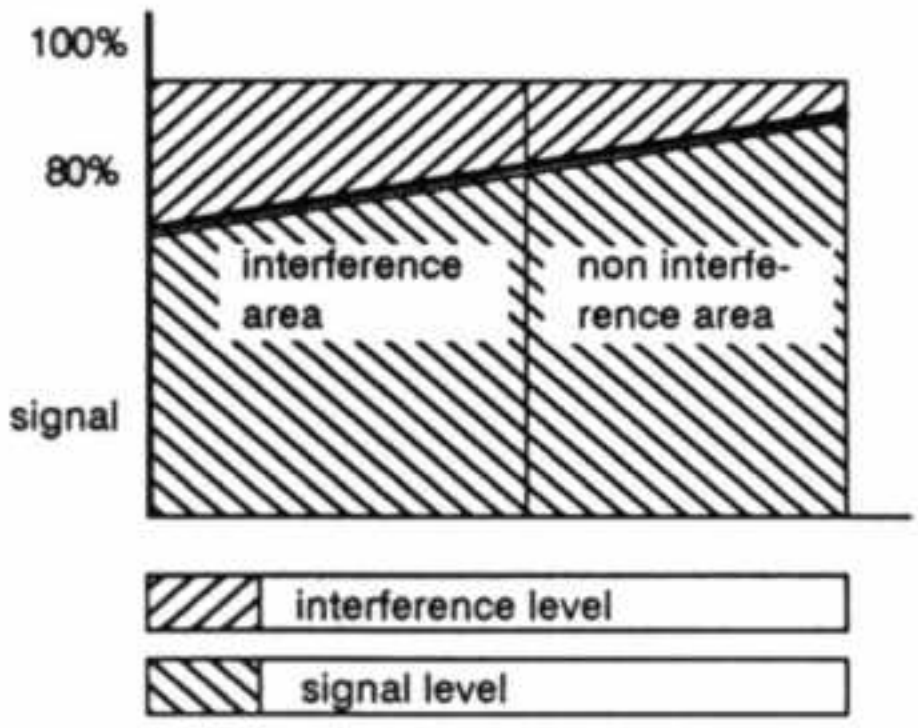


Adjusting the diff.

After assembling the differential, put the left wheel in place, keep the left wheel and the driver plate (right) from turning and try to spin the gear. If the gear slips, when applying normal force to the gear, tighten the diff.nut till you are satisfied. The diff.nut should be as loose as possible, without the diff. slipping when pulling away with full throttle. After some practise you should be able to feel by hand how the diff should be adjusted after assembling it.

Interference.

Nowadays batteries, motors and controllers are so powerful, that you should take extra care with the radio equipment to prevent interference.



To understand interference, you must know that interference is a matter of adding all bits of interference, coming from different sources. The receiver can handle a certain amount of interference without you noticing it, till the interference becomes too much, and then you "suddenly" have interference. To make it easy to understand, we can give the following "law":

Your receiver can only work properly as long as you have less then +/- 20% interference signal.

There are the following notorious interference sources:

Motor
Battery
Speed controller
Battery wires
Static electricity
Damaged crystal
Radio and receiver not adjusted to each other
Interference from other radios

All these things give a bit interference. As soon as the total of these interferences exceeds 20%, you will have interference. Changing one of these interference sources might cure your problem, but sometimes it's not enough. Suppose your crystal is damaged, and it acts as an interference source. When you change the crystal, but you also have a bad motor which gives a lot of interference, you will say "it's not my crystal, I've changed it and it's still the same."

Changing only the motor might also not be enough, but changing both might do the trick. This makes interference problems so difficult to solve.

Therefore make sure that all things you can do to minimise interference are done, so when something happens that gives you more interference, your equipment can handle this.

As a rule, you must keep the radio equipment as far away as possible from the motor, batteries, speed controller and wires. Sometimes if you have big interference problems, turning the receiver 90° might help.

Special care should be taken with the aerial wire. The aerial itself should be positioned as far away as possible from the interference sources, and the wire to it also. If your aerial is too long, do not wind it up, but cut it to the length you need. Wrapping it up makes a coil of it, which influences the working of the receiver. The best thing is to have your radio equipment checked by the technical service, who can re-adjust your receiver to operate optimal with an eventual shortened aerial.

The motor you use must have a clean commutator, good brushes and must be suited with 3 capacitors. For more details, see the instruction manual of your motor.

The wires between the battery, the controller and the motor should be as short as possible and as far away as possible from any part or wires from the radio equipment. Especially the wire between the saddle packs should be as short as possible, and far away from the receiver.

We advice to keep this wire under the radio tray, so unscrew the front of the radio tray, lift it a bit and push the connection wire of the saddle packs beyond the front radio tray post, then replace the front screw again.

Crystals are very vulnerable. They can be damaged easily, which can cause interference in some cases. This is very difficult to check, but replacing the crystals sometimes helps when you cannot find an other solution for your problems.

Corally®

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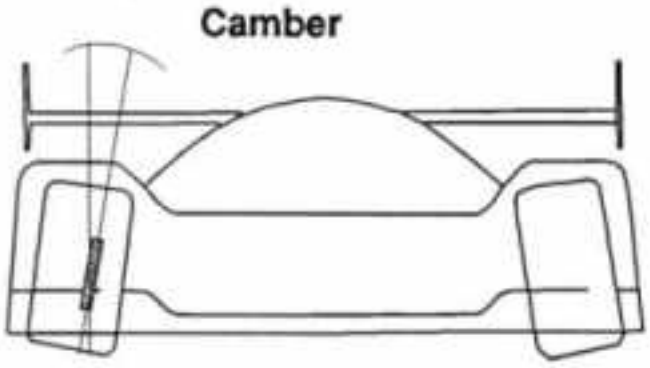
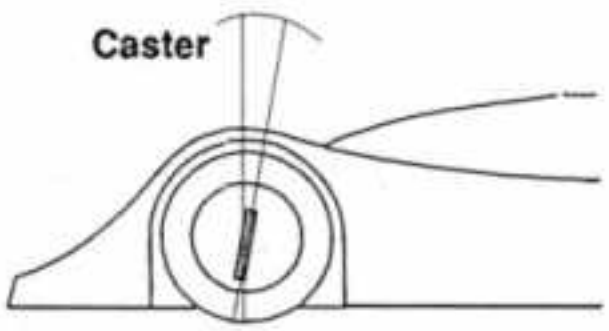
Fax 078-21.26.89

Corally Camber Caster System 1/10

Camber

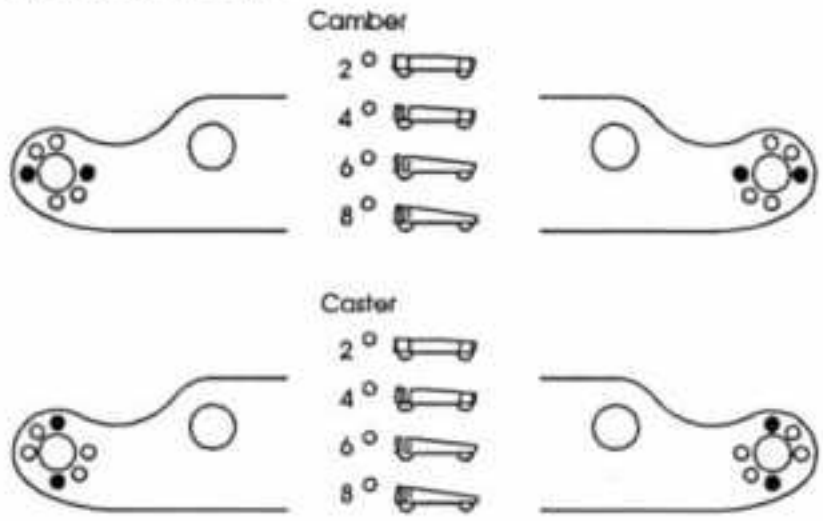


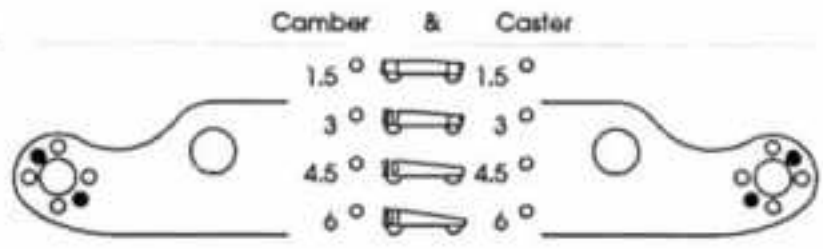
Caster

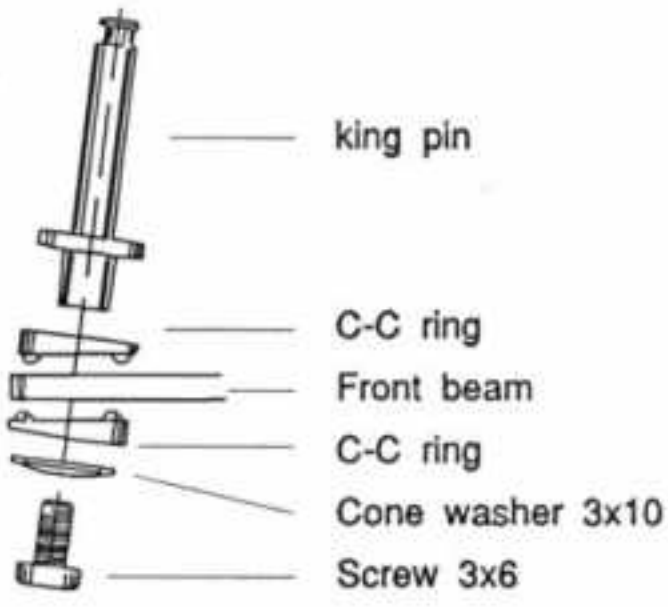


Camber & Caster settings of a racing car can be very important. Try different settings to see which set-up suits you best. Note that a small change can make a big difference, so change only one step at the time.

The following camber and/or caster settings can be made by using the different Camber/Caster rings and the proper holes in the front beam.







Mount king pin as shown.
Make sure to use identical C-C rings on top and under the front beam, and that the small dots on the C-C rings are in the same location holes.

When ordering parts, please use the following spare part numbers:

750590	Front beam A.R. 1/10	Fl.	56.50	US$	29.80
75771	King pin SP10 Caster/Camber (all 1/10 C-C versions)	Fl.	11.25	US$	6.00
75772	Caster/Camber ring set SP10 (all 1/10 C-C versions)	Fl.	12.00	US$	6.40