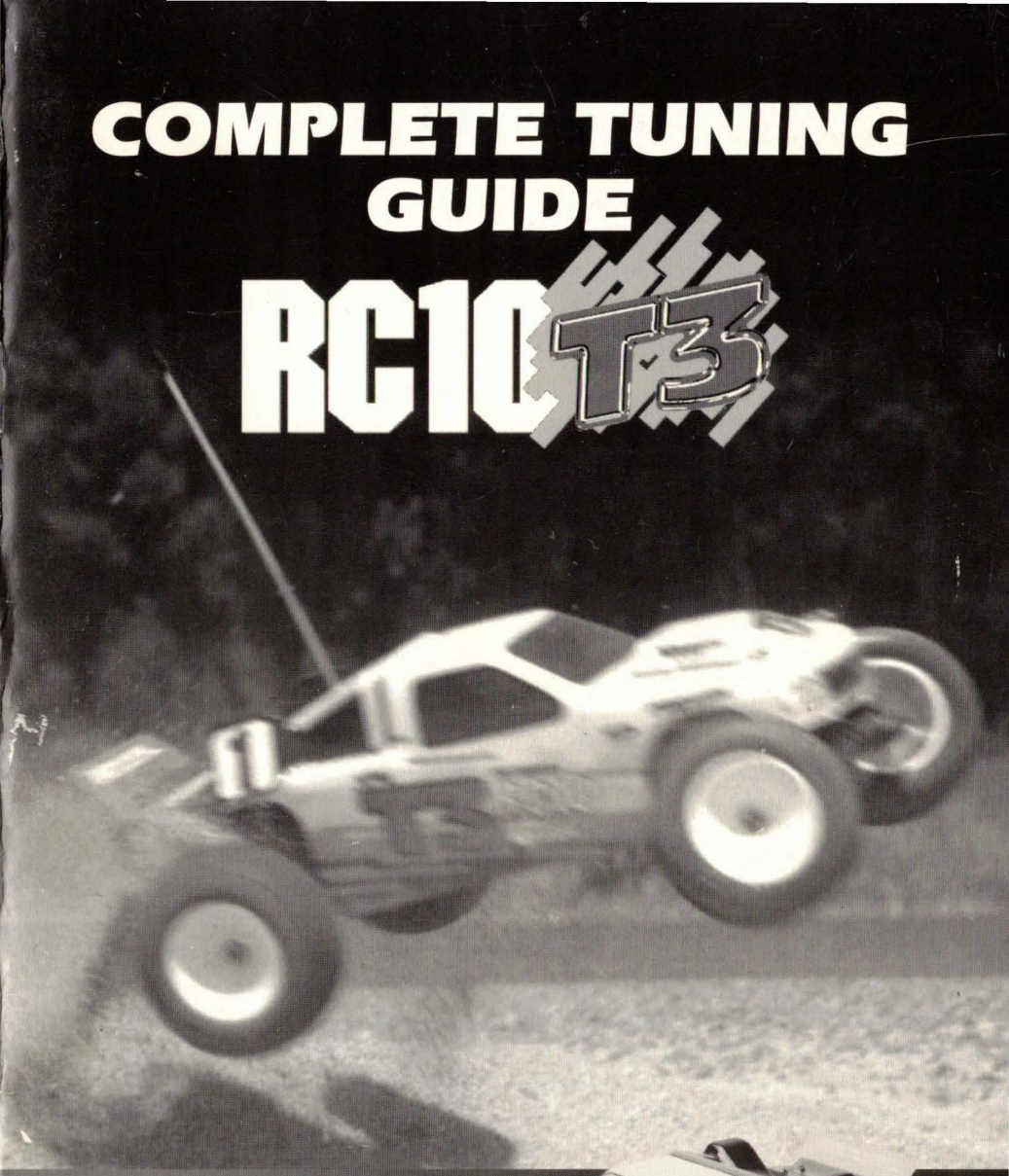
COMPLETE TUNING GUIDE

RC10 T3



Over 40 tuning options
to set up your truck to *WIN!*



TEAM ASSOCIATED

$3.95

The Complete Tuning Guide for the RC10T3

How this Guide got started

This *Guide* first saw the light of day online at the Team Associated R/C Cars web site. It was created in the hopes that it would answer the tuning questions that normally would be directed to us, thereby freeing us to spend more time making terrific cars.

We later decided to adapt the online section to a print version to make it more accessible to the racer (because you can't carry your computer to the track!) In booklet form, it fits in the average toolbox and on your overly-cramped pit table.

The title does not mean to imply that there are no other tuning possibilites for the T3 other than those contained in this *Guide*. Aftermarket companies are constantly expanding the possiblitities (and shrinking your wallet) when it comes to hopping up your truck.

Who this Guide is for

Our feedback indicates that many of you feel lost in the maze of tuning possibilities.

This *Guide* is for those who wish to understand all the tuning possibilities that Associated has built into the RC10T3. It is also written for those who wish to beat the pants off the competition by superior tuning.

We chose to make this information extremely accessible to the novice. This means that the explanations we give are so basic that they may offend the seasoned racers. Sorry 'bout that!

How this Guide is organized

We have organized this Guide according to the different sections of the truck. Every tuning option covered will have all or some of the following information:

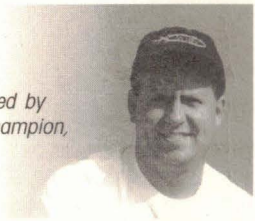
- What the feature is.
- What tuning options are possible.
- How the changes will affect the vehicle.
- How to make the change.
- How to mark this feature on your setup sheet.
- Illustration(s) of this feature, with captions.

In the center spread is a blank setup sheet for the truck. Lay the booklet flat on the copier for your copies. EVERY tuning option on the setup sheet is explained in this *Guide*. The numbers on the setup sheet are elsewhere in the *Guide* in numerical order so you can look up that feature in the *Guide* quickly.

We have also underlined certain key terms in the text—like more traction, more steering, bumpy tracks—to help you find what you are looking for, 'highlighting' information you may want to reach fast.

We have chosen to leave much empty space in the *Guide* so you can add to your store of knowledge, making this *Guide* a valuable mini-notebook you will carry with you everywhere.

In short, we have tried to cut through the fluff and produce a small, practical *Guide* that you can actually use, and that will grow more valuable over time and experience.



Contents approved by former World Champion, Mark Pavidis!

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Getting the best setup for your T3

Copy the setup sheet in the middle of this book several times. Fill it out according to the standard T3 setup at right and date it. Change your T3 so it matches this standard setup. Fill out the Track Conditions section of the setup. Mark the page as "Standard Setup." Put the setup sheet aside and consider the following tips from the pros.

• Before you change any of your settings, make sure you can get around the track without crashing. None of your setup changes will work if you cannot stay on the track. Your goal at this point, as a novice, is to get consistent lap times, not to go fast. Your lap times may be inconsistent because of poor control. So get a lap counter and have a friend time your laps until they are consistent. Keep notes of your lap times so you can check your progress. You may note your best times on the back of your current setup sheet.

• After your lap times are consistent, focus on your tire type. What are the winning racers using? Read the Wheels & Tires section for basic guidelines on tire choice. Change your tires if necessary, mark the change on your setup sheet, and practice. Are your lap times the same, better or worse? If your lap times are better, then you have either become a better driver or your new tires have made a difference.

• Now you can start making the tuning changes in this booklet to your truck settings. Make changes one at a time, checking your lap times *each time* before you make another change. Read the *Guide* carefully and thoroughly to make sure your changes match the conditions of the track, and that you are addressing real problems. Mark each change on your setup sheet. When you have made real progress, you may want to make up a new setup sheet with those changes. Fill it out thoroughly. Put it in a safe place; it can be used again later if you race on a track with similar conditions.

This is how the expert racers tune their trucks to the track--former World Champions Mark Pavidis and Cliff Lett contributed to this booklet. Tuning changes combined with practice, practice, and more practice makes a winner. Don't make changes that you cannot justify! With experience, you'll be able to knowingly make the best choices for setups in other track conditions and explain your changes to others.

Standard Setup for the T3 and *Guide* Index

(Numbers 1-41 correspond to Guide numbers.)

1. Front camber: -2 deg.
2. Front camber link: Tower, outside hole.
3. Front toe-in: 0-1 deg.
4. Front caster: 30 deg.
5. Front ride height: arms level.
6. Front antiroll bar: none.
7. Ackerman: outside holes of servo savers.
8. Bump steer spacers: none.
9. Anti-squat: 3 deg.
10. Driveshafts: dogbones or MIP CVD's.
11. Rear camber: -1 to -3 deg.
12. Rear camber link: tower, inside. Hub, outside.
13. Rear toe-in: 3 deg.
14. Rear ride height: bones level.
15. Shock body: front, 1.02. Rear, 1.39.
16. Shock oil: 30wt.
17. Shock shaft: front, 1.02. Rear, 1.32.
18. Shock pistons: front, #2. Rear, #1.
19. Shock springs: front, green. Rear, green.
20. Shock limiters: none.
21. Shock mounting, front: tower, outside. Arm, middle.
22. Shock mounting, rear: tower, middle.
23. Tires:
24. Inserts:
25. Wheels: 1 piece.
26. Batteries:
27. Battery placement: rear.
28. Radio:
29. Servo:
30. Speed control:
31. Motor:
32. Brushes:
33. Springs:
34. Pinion:
35. Spur Gear:
36. Chassis: long.
37. Weight in bulkhead: none.
38. Wheelbase: short.
39. Slipper: Assoc. ATC.
40. Body: Assoc. RC10T3.
41. Spoiler: on.

Front Suspension

1 Camber, front

Camber describes the angle at which the tire and wheel rides relative to the ground when looked at from the front or back, **fig. 1a**. Negative camber means that the tire leans inward at the top, pivoting at the front outer hinge pin, **fig. 1b**. Positive camber means that the tire leans outward at the top. (Positive camber should not be used.) Camber is measured in degrees.

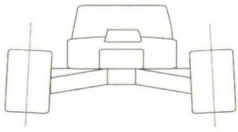


fig. 1a *Negative camber means that the tire leans inward at the top.*

How do I know which setting to use?

- Use more than 3 deg. of negative camber to improve stability in bumps; but this also decreases traction because less of the tire is contacting the track.
- Use less camber (0 to 1 deg.) for maximum amount of traction, but this will also be less stable in bumpy conditions.
- We suggest using between 1 and 3 deg. of negative camber at all times. It is difficult to measure, but can be done by putting a vertical object next to the each tire, and making sure that the space at top or bottom between the tire and the object is the same for both sides of the car.

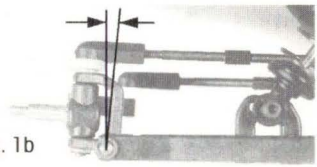


fig. 1b

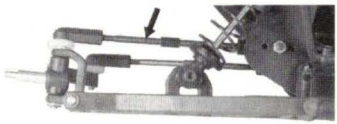


fig. 1c *Turn this turnbuckle to adjust camber.*

How do I change the camber? You change the front camber by turning the camber link, **fig. 1c**. This pivots the axle at the hinge pin, **fig. 1b**.

On setup sheet: You mark the number of degrees of camber you used.

2 Camber Link Adjustment, front

The camber link is from the shock tower to the steering block ball end, **fig. 1c**. Changing the mounting position of the camber links can affect traction, stability, and handling on rough tracks. You have three link possibiliites on the tower, **fig. 2a**.



fig. 2a *Camber link possibilities.*

How do I know which link is best? Use the following two guidelines.

- Using a longer mounting position will increase traction but decrease stability and rough track handling. **Fig. 2b**.
- Using a shorter mounting position will decrease traction but increase stability and rough track han-

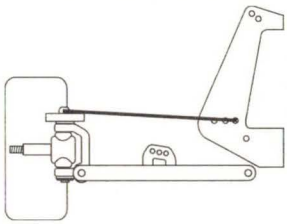


fig. 2b *Longer mounting position will increase traction, but decrease stability.*

dling. Standard setting for the front is the outside hole of the tower to the steering block. **Fig. 2c.**

- The outside (shorter) camber position is the standard position and works best at most tracks.
- The inside (longer) camber position will increase steering but will make your car a little harder to drive.

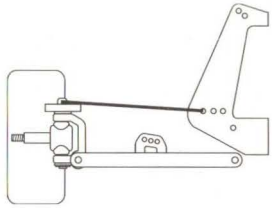


fig. 2c *Shorter mounting position will decrease traction, but increase stability.*

How do I adjust the camber position? First pop off the turnbuckes indicated in **fig. 1c**. Then move the tower's ball ends to the new position. Lastly, adjust the turnbuckle length and pop them back on in their new position.

On setup sheet: You mark which hole you used for your camber link from the tower to the steering block, at #2, **fig. 2d.**

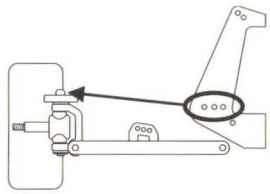


fig. 2d

3 Toe-in and Toe-out, front

Front toe-in/toe-out describes the angle of the wheels when viewed from above, **fig. 3a,** the front of the wheel turning inward (toe-in) or outward (toe-out), rather than pointing straight ahead. It is measured in degrees.

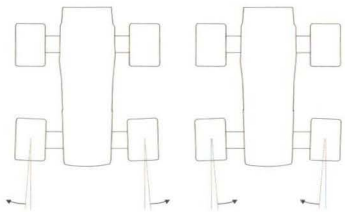


fig. 3a *Toe-out. Toe-in.*

How do I know when to use toe-in or toe-out?

- On slippery tracks use a small amount of toe-in. Add toe-in to the front tires if you need help stabilizing your vehicle under acceleration. Doing this will also decrease the amount of steering when entering a corner, and increase it coming out of a turn during acceleration.
- Add toe-out when you need more steering entering a corner. But doing this will cause instability when accelerating through bumps or down a slippery straightaway.
- We suggest using 0 to 1 degree of toe-in at all times. Yes, it is difficult to measure the degrees! Drawing parallel lines on a board and setting your vehicle next to them can help.



fig. 3b *Turn this turnbuckle to adjust toe-in.*

How do I change the toe-in or toe-out? By turning the turnbuckle shown in **fig. 3b** you adjust this setting. Your steering block will pivot around the kingpin, **fig. 3c.**

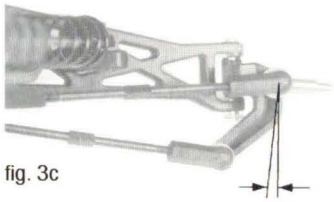


fig. 3c

On setup sheet: You mark how much toe-in or toe-out you have on your truck, in degrees.

4 Caster, front

Caster describes the angle of the kingpin when it is leaned toward the rear of the vehicle. Positive caster means the kingpin leans rearward at the top (as shown). Negative caster (leaning the kingpin forward) is never used.

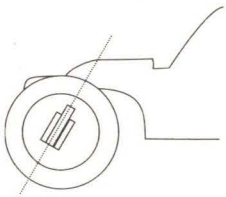


fig. 4a *Positive caster shown*

How do I know which setting to use?

- Use 30 deg. of caster if you need increased steering entering corners and less steering exiting corners. It will also be more stable when accelerating through fast bumpy track conditions.
- Use 25 deg. of caster if you need less amount of steering entering corners, but more steering in the middle and exiting corners. When using the 25 deg. block carriers, remove the #6466 spacer (colored blue in left drawing).

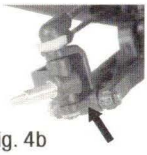


fig. 4b



fig. 4c

Your front block carriers will determine the amount of caster.

How do I change the caster? By changing the front block carriers. You have two choices, 25 deg. (#7212, optional) and 30 deg. (#7210, kit standard).



fig. 4d *Change the front block carriers to change the caster.*

On setup sheet: You mark which front block carrier you are using, 25 deg. or 30 deg.

5 Ride Height, front

Front ride height describes the height of the vehicle as indicated by the a-arms with the kit fully equipped and the body off. To set the standard front ride height, push down on the front suspension and then let go. When the suspension stops, the front arms should be level with the bottom of the nose plate when you look at the edge arms, **fig. 5a.** If they are not in a straight line, then adjust the ride height until it is level. If you decide to move the battery pack forward or back, then recheck the ride height and adjust so it is level.

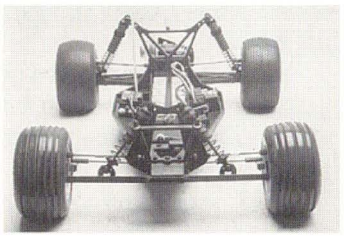


fig. 5a *Standard front ride height is a-arms level. This means that your a-arm edges should be in a straight line, as shown.*

When should I change the ride height? You should always check the ride height after making all your other adjustments, just before you are ready to race. You should maintain your ride height level as

handescribed above.

• But if you want more steering, drop your front ride height (arms aiming downward toward the chassis).

• Raising your ride height will give you more push, and less steering.

How do I change the ride height? By adding or subtracting preload spacers to the front shocks **(fig. 5b)**, or by sliding your shock spring clamps up or down.

On setup sheet: You mark here if your front ride height is level ("arms level"), or otherwise ("arms -2 deg. below level").

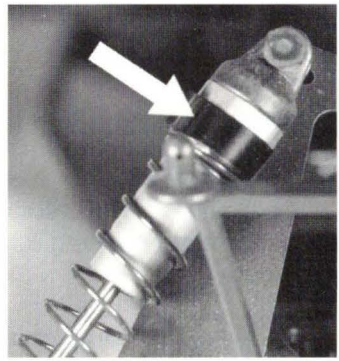


fig. 5b *Slide your shock spring clamps down to raise your chassis ride height, or add preload spacers.*

6 Antiroll bar (sway bar)

Antiroll bars are used to stabilize a car from excessive chassis roll, (which occurs when your truck leans through the turns by centrifugal force). A truck not using an antiroll bar on a high traction surface will tend to have a lot of chassis roll, which results in being less responsive. A truck using antiroll bars on a high traction surface will tend to have less chassis roll, making the truck more responsive to cornering, at the same time making the truck more stable.

Antiroll bars are generally used on smooth, high traction conditions. If the track is very bumpy, then antiroll bars are not your best bet. The more bumpy a track gets, the more the bars become a disadvantage. Antiroll bars on bumpy tracks don't fully allow your suspension to work independently, making your truck difficult to drive.

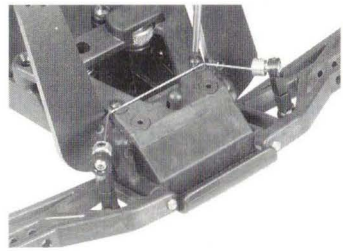


fig. 6a *Optional front roll bar shown. The wire applies downward pressure to both a-arms.*

When do I use an antiroll bar? Knowing when to use a front or rear antiroll bar is fairly easy.

• If you are driving on a high traction track and your truck wants to oversteer, then use the front antiroll bar only. This will stiffen the front during cornering, giving the truck consistent steering throughout the corner.

• If your truck is understeering, this is when you would want to try a rear antiroll bar. The rear antiroll will keep the rear of the truck from rolling, in return, transferring more weight to the front of the truck, gaining steering.

You can modify the effects by changing the wire diameter to the thicker one or the thinner one.

How do I get the antiroll bars? Antiroll bars are optional items. They are part #9104 for front antiroll bars for the T3/B3, and #9254 for rear.

On setup sheet: You mark here if you used the thicker wire or thinner one, or none.

7 Ackerman

Ackerman is a term describing the effect of the inside front wheel to turning tighter than the outside front wheel.

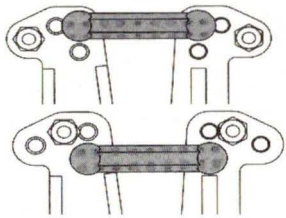


fig. 7a *Top, standard Ackerman, Bottom, for more aggressing steering.*

How do you know which setting to use?

- Use the Standard setup, as shown at top right, for less aggressive steering and a more forgiving driving feel.
- Use the Optional setup of less Ackerman if you want more aggressive steering--but this will make the truck less forgiving to drive. Try it only with very high traction tracks. This setup is rarely used!

How do I change the Ackerman setting? Pop the drag link off the servo saver ball ends, **fig. 7b**. Move the ball ends to new locations according to **fig. 7a**. Adjust your drag link for the new locations.

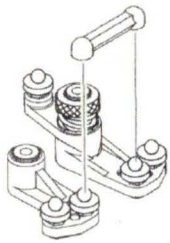


fig. 7b *Change your settings by changing your ball end locations on the servo savers. The drag link is shown being removed.*

On setup sheet: You mark here which steering Ackerman setup you used. You have two choices, shown in **fig. 7a**.

8 Bump Steer

Bump Steer takes its name from the fact that when the truck goes over **bumps**, it changes the **steer**ing. Bump steer is the undesireable effect of extra toe-in in one tire or the other as your truck goes over bumps such as "moguls" (which are randomly-spaced hilly bumps closely spaced together in an area on the track), making your steering unpredictable. Your truck then bounces back and forth instead of going straight through the bumps.

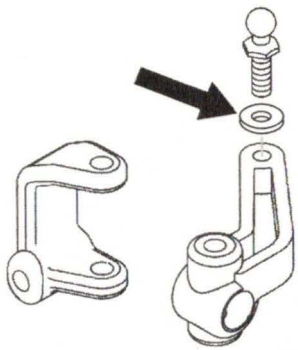


fig. 8a *Solve your bump steer problem by adding a washer where shown.*

When do I change the bump steer?

- When you want to keep a straight line through moguls and other bumps, or have better control of your steering through bumps.
- When you change your block carrier, **fig. 8a**, from 25 degrees to 30 degrees, then bump steer will be more pronounced. Add a washer where shown if

bump steer becomes a problem.

How do I change the bump steer? You minimize the undesireable toe-in effect by adding small washers between the steering block and its ball end, **fig. 8a**. One washer is usually sufficient.

On setup sheet: You mark how many washers (spacers) you used to help eliminate bump steer.

Rear Suspension

9 Anti-squat, rear

Anti-squat is the angle at which the rear arms sit in relation to the horizontal chassis surface. For example, 3 degrees means the front of the arm is mounted 3 degrees higher than the rear of the arm.

How do I know when to change the anti-squat?

- The standard rear arm mounts have 3 degrees of anti-squat, which results in increased traction exiting corners. 3 degrees will also allow your truck to jump higher and farther.
- Less anti-squat (1.5 degrees and 0 degrees) will allow your truck to accelerate better through bumpy sections but will have less forward traction.

How do I change the anti-squat? By changing the rear suspension mounts, **fig. 9a**. The mounts are labeled as follows:

- "2-3" means 2 degrees toe-in, 3 degrees anti-squat (part # 9266).
- "3-3" means 3 degrees toe-in, 3 degrees anti-squat (part # 9267), **fig. 9b**.
- "3-0" means 3 degrees toe-in and no anti-squat (part # 9268).

On setup sheet: You check here which degree of anti-squat your vehicle is using.

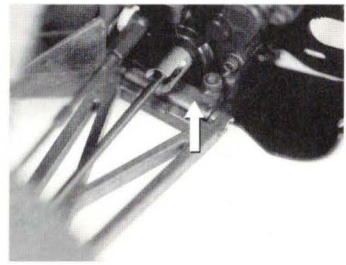


fig. 9a *Your rear arm mounts will determine your anti-squat setting.*



fig. 9b *Your rear arm mounts are labelled for easy identification. This arm mount will give your 3 degrees toe-in and tilt the rear arms rearward 3 degrees (anti-squat).*

10 Driveshafts

Driveshafts **(fig. 10b)** link your transmission's outdrive to the stub axle to transfer force to the wheels.



fig. 10a *Dogbone driveshaft.*

How do I know which driveshaft to use?

- Choose the dogbones **(fig. 10a)** if you are

budget-minded. Also try them in extremely bumpy conditions, because they are loose on both ends.

• Try MIP CVD's for a slight edge on performance; they are more efficient in transferring power to the wheels.

On setup sheet: You write here which driveshafts you used, dogbones **(fig. 10a),** MIP CVD's, or another type, like universals.

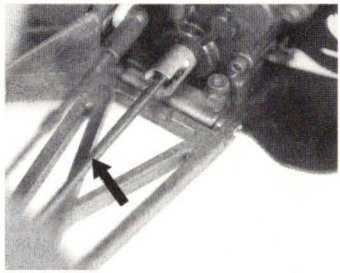


fig. 10b *You can change your driveshaft type.*

11 Camber, rear

Camber describes the angle at which the tire and wheel rides relative to the ground when looked at from the front or back, **fig. 11a**. Negative camber means that the tire leans inward at the top, pivoting at the front inner hinge pin, **fig. 11b**. Positive camber means that the tire leans outward at the top. (Positive camber should not be used.) Camber is measured in degrees.

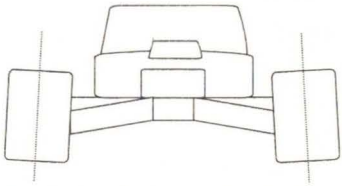


fig. 11a *Camber is seen from the back or front of the truck.*

How do I know which setting to use?

• Use more than 3 deg. of negative camber to improve stability in bumps; but this also decreases traction because less of the tire is contacting the track.

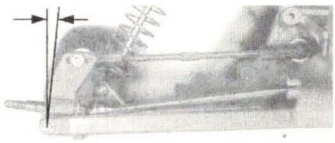


fig. 11b *In negative camber, your tire leans inward at the top.*

• Use less camber (0 to 1 deg.) for maximum amount of traction, but this will also be less stable in bumpy conditions.

• We suggest using between 1 and 3 deg. of negative camber at all times. It is difficult to measure, but can be done by putting a vertical object next to the each tire, and making sure that the space at top or bottom between the tire and the object is the same for both sides of the car.

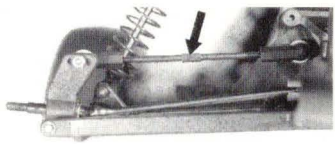


fig. 11b *Turn the camber link to change camber.*

How do I change the camber? You change the front camber by turning the camber link, **fig. 11c**. This pivots the axle at the hinge pin, **fig. 11b**.

On setup sheet: You mark the number of degrees of rear camber you used.

12 Camber Link Adjustment, rear

The camber link is from the rear shock tower to the wheel hub, **fig. 12a** . Changing the mounting position of the camber links can affect traction,

stability, and handling on rough tracks.

How do I know which link is best? Use the following guidelines to find the best handling for your track conditions.

- Using a longer mounting position **(fig. 12b)** will increase traction but decrease stability and rough track handling.
- Using a shorter mounting position will decrease traction but increase stability and rough track handling.
- Standard setting is the inside hole of the rear bulkhead to the inside hole of the hub carrier.

How do I adjust the camber link? First remove the ball cups from the ball ends and unscrew the ball ends from the bulkhead. Then screw the ball ends into the new holes. Reinsert the ball cups onto the ball ends again, twisting or untwisting the cups as necessary to fit.

On setup sheet: You mark which holes you used for your camber link from the tower to the hub carrier.

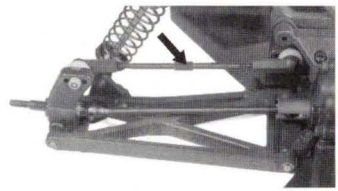


fig. 12a *The camber link is from the rear shock tower to the wheel hub.*

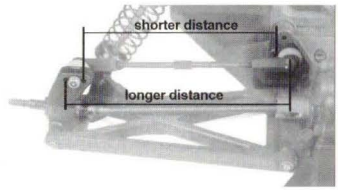


fig. 12b *The longer position increases traction; the shorter position increases stability and rough track handling.*

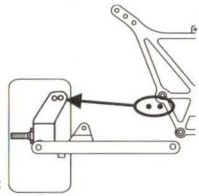


fig. 12c

13 Toe-in, rear

Rear toe-in describes the angle of the wheels when viewed from above, the front of the wheel turning inward rather than pointing straight ahead. Rear toe-in affects front and rear traction.

How do I know how much toe-in to use?

- Decreasing rear toe-in (so that the wheels are almost pointing straight ahead) decreases rear traction and adds steering.
- Increasing rear toe-in will increase rear traction and remove steering.

How do I adjust toe-in? You adjust this setting by changing arm mounts, **fig. 13a & b**. Your B3 or T3 comes with 3 deg. of rear toe-in per arm mount, for a total of 6 deg. The kit also comes with 0 deg. rear hub carriers. This setup works best for almost all track conditions. It is rarely changed. However, Associated offers optional 2 degree arm mounts for different track conditions.

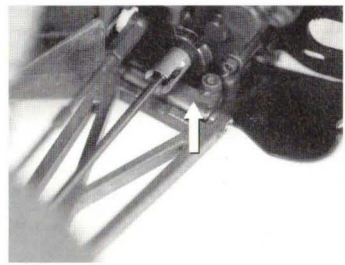


fig. 13a *Different arms mounts will swing your rear arms forward or back for different degrees of toe in.*



fig. 13b *The first number on the arm mount will indicate which toe-in you have. "R3-3" means 3 degrees toe-in and 3 deg. anti-squat.*

On setup sheet: You mark here which mount you used.

14 Ride Height, rear

Rear ride height describes the height of the vehicle as indicated by the dogbones or CVD's with the kit fully equipped (but with body removed). To set the standard rear ride height, push down on the rear suspension and then let go. When the suspension stops, the dogbones should be level, **fig. 14a**. If they are not in a straight line across, then make adjustments. If you decide to move the battery pack forward or back, then recheck the ride height and adjust so it is level.

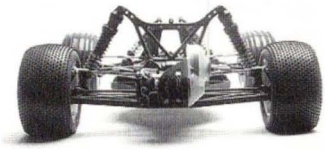


fig. 14a Mor eoften than not, your best ride height is when your dogbones are in a straight line, as viewed from the rear.

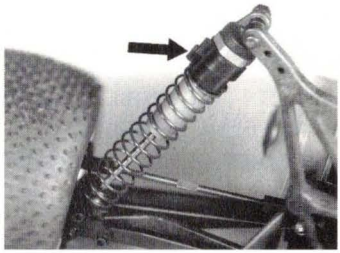


fig. 14b *You change your ride height by changing the preload spacers, at arrow, or by sliding your shock springs clamps up or down.*

When should I change the rear ride height?

- You should always check the ride height after making all your other adjustments, just before you are ready to race. You should maintain your ride height as described above.
- But if you lower it (axles going down toward chassis), you will have more traction. In high traction conditions, lower ride height will also improve cornering.
- If you raise it, you will have more steering going into turns when you let off the acceleration. Raising it in low traction conditions will add high speed steering.

How do I change the rear ride height? By adding or subtracting preload spacers to the rear shocks **(fig. 14b)**, or by sliding your shock spring clamps up or down. The spring tension then forces your chassis up or down.

On setup sheet: You mark if your rear ride height is level ("dogbones level"), or if you raised or lowered it.

Shocks, General

15 Shock body

The shock body, **fig. 15a**, houses the oil and piston components. Its length determines the amount of piston travel. Its composition can have an impact on the smoothness of the shock action.

How do I know which shock body to use? Use the gray hard anodized Teflon coated shock body if you want smoother shock action. Highly recommended for competition racing.

On setup sheet: You indicate the body length used (expressed in decimal form), such as 1.39 (rear shock size) or 1.02 (front shocks). You may wish to note if you used the standard gold shock bodies or the gray body type.



fig. 15a *Shock bodies come in different lengths and compositions.*

16 Shock Oil

Oil weight determines the dampening of your car. It helps control how quickly the spring rebounds. In other words, shock springs hold your car off the ground; oil determines how the car regains that height after bumps and jumps. Heavier weight oil makes rebound more sluggish than lighter weight oil.

How do I know which weight of oil to use?

- If your car is bouncing too much, or bottoms out too much after the jumps, then switch to heavier oil.
- Use lighter oil for smoother tracks.

Associated sells high-quality silicone oil in 2 oz. bottles from 10wt to 40wt in increments of 5wt, and 80wt. This silicone oil handles better over a wider range of weather conditions. The larger the number, the heavier the weight, that is, the oil viscosity is thicker.

On setup sheet: You mark here which weight of oil you used. If you used the oil shown in **fig. 16a,** you would mark "30" in the space.



fig. 16a *The correct oil weight can help you regain your ride height in a way that's best for your track condiitons.*

17 Shock shaft

Your shock shaft, **fig. 17a,** connected to your arms, communicates the shocks' dampening effects to the arms.

How do I know which shaft to use? Use the unobtainium shaft if you want smoother shock action. Highly recommended for competition racing.



fig. 17a *The shock shaft.*

On setup sheet: You indicate the shaft length used (expressed in decimal form), such as 1.02 (front) or 1.32 (rear). If you wish, you may also note if you used Associated's Unobtainium shock shafts, standard shafts, or other ones.

18 Shock Pistons

The drawing from the T3 manual, **fig. 18a,** shows where the piston is located. The piston is held in place on the shock shaft with E-clips. The piston has holes through which the oil flows as it travels up and down in the shock, determining the dampening.

Shock dampening has to do with resistance of the shock as the piston moves up and down in the shock body through the oil. Therefore, changing the piston hole size changes the dampening characteristic of the shock. The smaller holes provides the greatest dampening, also known as more "pack", while the larger holes provides the least dampening, or less "pack."

Associated #6465 includes 4 each of #1, #2, and #3 pistons. The #1 piston has the largest holes and the #3 piston has the smallest holes.

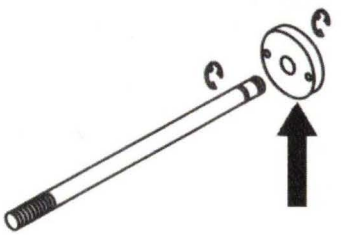


fig. 18a *Your shock pistons further fine-tune your shock dampening characteristics.*

How do I know which piston to use?

- If your vehicle is bottoming out (becoming completely compressed) after the jumps, try using the smaller hole size piston, #3. It may help to accompany this with heavier shock oil.
- If your truck bounces too much, you may try a larger piston size. As a general rule of thumb, with certain exceptions, the smoother the track surface, the smaller the hole piston.
- We recommend starting with the #2 piston in front with a #1 piston in the rear for the T3.

On setup sheet: You write here which shock piston you've added to your shocks, #1, #2, or #3.

19 Shock springs

Springs' purpose is to keep the vehicle level **(fig. 19a)**. Several spring tensions are available to acheive this.

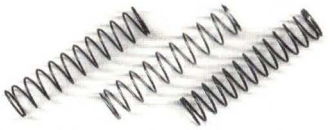


fig. 19a *Your shock springs help your truck level off after the bumps.*

How do I know which spring to use?

- Stiffer springs help your suspension respond

more quickly, but, because of their stiffness, will not absorb smaller bumps as well.

• Softer springs are best for tracks with many small bumps.

On setup sheet: Write in which shock springs you used by color. Each shock spring is color-coded according to the stiffness of the spring, **fig. 19b**.

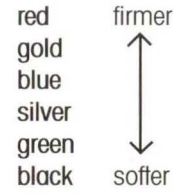


fig. 19b *Your shock springs are color-coded according to its stiffness.*

20 Shock (travel) Limiters

You can limit the amount of travel the shock shaft makes in the shock body. Associated #6466 limiters **(fig. 20a)** has four each of three sizes of travel limiters for this purpose: 1/8" (.125), 1/16" (.062), 1/32" (.031).

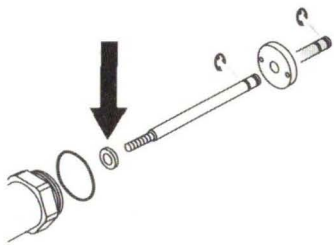


fig. 20a *Shock limiters will limit the amount of shock travel. This limiter will go inside the shock.*

When do I add shock limiters?

• When your truck leans too much in the turns, add limiters to both right and left side shocks.

• Also, try adding limiters to the rear shocks on high traction smooth tracks when your truck's front end rises on acceleration. The limiters can give you more traction this way. In the rear, limiters are used only high traction, smooth tracks.

• Not recommended for bumpy tracks because you'll bottom out your shocks sooner.

How do I add shock limiters? You must remove your shocks from the truck and take them apart. **Fig. 20a** shows one limiter being added to the shock shaft. This limiter will end up inside the shock. You may also add limiters to the the shock shaft while the shaft is protruding from the shock body.

On setup sheet: You mark here the overall thickness of the shock limiter 'washers' you've added to your shock.

21 Shock mounting, front

You have two mounting positions for your shocks on the tower and three on the front arm.

When do I change the shock mounting position?

• On a smooth track without challenging jumps, mount your shocks closest to the wheel on the

SETUP SHEET

TEAM ASSOCIATED **RC10T3**

driver _____

track / city _____

event _____ date _____

FRONT SUSPENSION

4 ❶ CASTER ☐25° ☐30°

5 ❷ FRONT RIDE HEIGHT ☐ ARMS LEVEL ☐ other _____

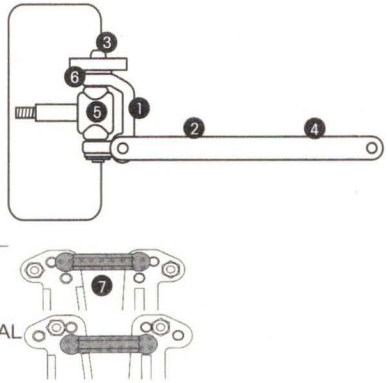
1 ❸ CAMBER _____°

6 ❹ ANTI ROLL BAR ☐ NONE
☐ THICK
☐ THIN
☐ other _____

3 ❺ TOE-IN _____° TOE-OUT _____°

8 ❻ BUMP STEER SPACERS _____

7 ❼ STEERING ACKERMAN ☐ STD
☐ OPTIONAL



FRONT SHOCKS

15 BODY ☐ STD ☐ GRAY ☐ other _____
BODY ☐ 1.02 ☐ other _____

17 SHAFT ☐ 1.02 ☐ other _____
SHAFT ☐ STD ☐ Unobtainuim

20 LIMITERS, inside _____
LIMITERS, outside _____

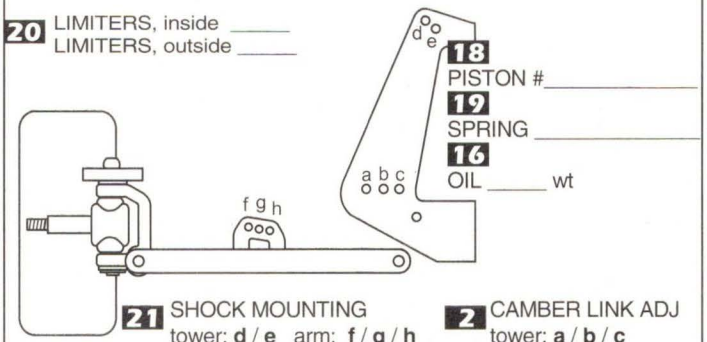
18 PISTON #_____

19 SPRING _____

16 OIL _____ wt

21 SHOCK MOUNTING
tower: **d** / **e** arm: **f** / **g** / **h**

2 CAMBER LINK ADJ
tower: **a** / **b** / **c**



REAR SUSPENSION

11 ❶ CAMBER _____°

14 ❷ REAR RIDE HEIGHT
☐ BONES LEVEL ☐ other _____

10 ☐ MIP CVD's ☐ DOGBONES ☐ UNIVERSALS

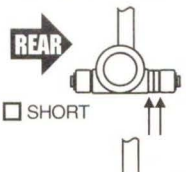
13 ❸ TOE-IN / 9 ANTI-SQUAT ☐ 2-3 ☐ 3-3 ☐ 3-0

6 ❹ ANTI ROLL BAR ☐ NONE

38 WHEELBASE ADJUSTMENT

REAR

☐ SHORT



REAR SHOCKS

15 BODY ☐ STD ☐ GRAY ☐ other _____
BODY ☐ 1.39 ☐ other _____

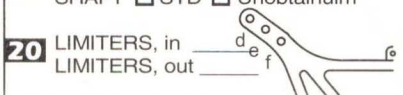
17 SHAFT ☐ 1.32 ☐ other _____
SHAFT ☐ STD ☐ Unobtainuim

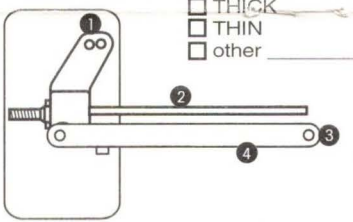
20 LIMITERS, in _____
LIMITERS, out _____

18 PISTON #___

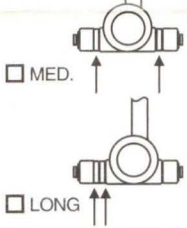
19 SPRING _____

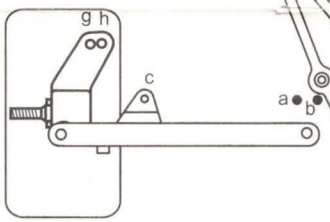
16





☐ THICK
☐ THIN
☐ other _____





OIL _____ wt

22 SHOCK MOUNTING
tower: **d** / **e** / **f** arm: **c**

12 CAMBER LINK ADJ
on tower: **a** / **b** arm: **g** / **h**

OTHER

37 WEIGHT IN BULKHEAD _____ **41** ☐ SPOILER

40 BODY _____

23 FRONT TIRES _____ **24** FOAM _____

23 REAR TIRES _____ **24** FOAM _____

25 FRONT WHEELS ☐ 1 PC. ☐ 3 PC. ☐ other _____
REAR WHEELS ☐ 1 PC. ☐ 3 PC. ☐ other _____

36 **CHASSIS** ☐ STD ☐ SHORT ☐ LONG ☐ GRAPHITE

31 MOTOR TYPE _____

32 BRUSHES _____ **33** SPRING _____

34 PINION _____T **35** SPUR _____T

39 SLIPPER ☐ ASSOC. ☐ HYDRA ☐ VISCOUS _____

26 BATTERIES _____

27 BATTERY PLACEMENT ☐ FRONT ☐ F-MIDDLE ☐ R-MIDDLE ☐ REAR

28 RADIO _____ **29** SERVO _____ **30** SPD. CONT. _____

42 TRACK CONDITIONS

SURFACE ☐ smooth ☐ bumpy BUMPS: _____
TRACTION ☐ low ☐ med. ☐ high
COMPOSITION
☐ sandy ☐ soft dirt ☐ grass ☐ clay ☐ other _____
☐ wet ☐ dry ☐ dusty ☐ other _____

other: _____

43 RACE COMMENTS

MAIN _____ PLACE _____ ☐ TQ

NOTES _____

44 TRUCK COMMENTS

NOTES _____

suspension arm **(fig. 21a)**, and use the inside hole on the shock tower (your shocks will be more horizontal). If you move the shock mounting toward the outside on the arm, it will transfer more weight to the wheel for better steering. Try the outside position in very high grip conditions, especially if your car feels like it has too much steering. Your car will probably need a softer front spring when using this position.

- For bumpy tracks, move the shock mounting inward on the arm and more outside on the tower (more vertical), **fig. 21b**.
- Standard setup calls for outside hole on tower and middle hole arm position.

Make sure you re-check the ride height after shock mounting changes, and check that your dogbones remain seated if you mount your shocks outside on the tower.

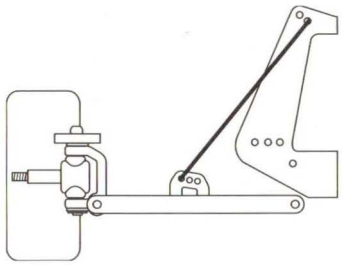


fig. 21a *For smoother tracks, mount your shocks more horizontal.*

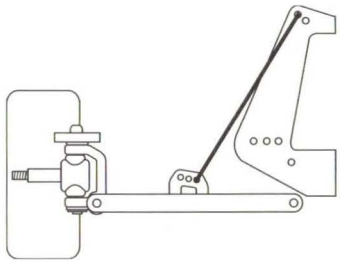


fig. 21b *For bumpy tracks, mount your shocks more vertical.*

How do I change the shock mounting position?
Remove the screw on the arm and move it to another hole. Remove the nut, washers and screw from the tower and reposition it in another hole.

On setup sheet: You mark here which arm hole and shock tower hole you mounted your shock. You have three choices for the arm, inside, middle and outside.

22 Shock mounting, rear tower

There are several mounting possibilities for your rear shocks.

How do I know which mounting position to use?

- The outside hole on the tower, **fig. 22a**, will improve jump landings and increase steering. It will also decrease rear traction.
- The middle hole, **fig. 22b**, works best in most situations. It is the standard position.
- The inside hole, **fig. 22c**, will increase rear traction but will cause bottoming on jump lands. Keep in mind you may need a harder spring for this position.

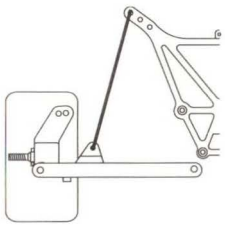


fig. 22a *Improves jump landings and steering.*

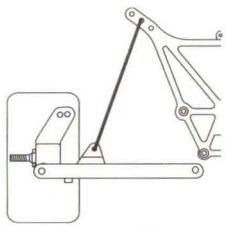


fig. 22b *Standard position.*

On setup sheet: Mark here which hole you mounted your shock on the T3 rear tower. You have three choices, outside, middle, or inside.

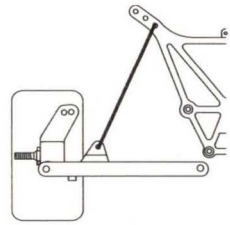


fig. 22c *Increases rear traction.*

Wheels & Tires

23 Tires

Numerous tires (**fig. 23a**) are available for your RC10T3 kit. This is one of the most significance pieces of information on the setup sheet. Tire choice is one of the most crucial choices a racer has to make, following practice on the track. The proper tire choice will either hook practically all your car's setups to the ground or ruin it.



fig. 23a *Your choice of tire is second in importance to practicing not to crash when it comes to winning.*

How do I know which tire to use?

- The basic are as follows. The harder the surface, the smaller the pin or spike on the tire. If the surface is soft or has a loose layer on top, the tire pin or spike will become longer to try and get down to the harder surface below.
- The more traction the surface has, the harder the tire compound can be. If there is less traction then you have to try softer compounds.
- Choose the tire that the most successful racers are using at that track. This saves you money—it keeps you from buying tires that won't work on the track.

On setup sheet: You write in which brand and type of tires you used.

24 Tire Inserts (foam)

Today's tires are thin and need support to retain their shape. Tire inserts, **fig. 24a**, give this support.



fig. 24a *More often than not, you should stick with the foam tire insert that came with your tires.*

How do I know which foam to use? The foam insert's density is important. The foam insert that comes with the tires nine times out of ten is the insert you should use. Too firm an insert will cause your car to bounce, resulting in loss of traction. Too light a

foam will cause the car to wander and to be very unstable.

On setup sheet: Write in the foam brand that you used.

25 Wheels

Associated provides 1-piece wheels and 3-piece wheels for your kit. Associated sells these wheels (rims) in natural white, fluorescent yellow, and black.

How do I know which wheel type to use?

• 1-piece wheels, **fig. 25a,** are used because of their lighter weight, but their drawback is that they must be glued to the tires. They allow quick change from one set of wheel/tire combos to another.

• 3-piece wheels, **fig. 25b,** are heavier, but they allow you to change from worn tires to fresh tires less expensively, using the same wheels repeatedly. Great for racers on a budget.

On setup sheet: You check here if you used 1-piece wheels, 3-piece wheels, or an aftermarket type.



fig. 25a *1-piece wheel.*



fig. 25b *3-piece wheel.*

Electrical

26 Battery Type

Your batteries power your electrical components. They determine your run time, maximum power transmitted to the motor, and their dumping characteristics (how the power drains) may determine whether you win or lose.

Which cells should I use?

• RC2000 cells, **fig. 26a left,** give you longer run times than RC1700 cells, if geared comparatively.

• RC2000 cells give you more power than the earlier 1700 cells.

• Also, matched cells maintain power longer, while unmatched cells may drop power gradually as the weaker cells fail before the others.

• Racers on a budget may ant to use 1700 cells.



fig. 26a *Individual cells.*

Extra battery tips for maximum performance:

- Recommended charge rate for Sanyo cells is 4.0 amps.
- After initial charge, let the batteries cool, then just before use re-peak once.
- Do not trickle charge or pulse charge.
- When done racing, discharge your pack to 3.0 volts to remove memory.
- Use a high-temperature/high wattage soldering iron for briefer contact with the cells to prevent heating up the whole cell and damaging it.
- Lightly sand the area to be soldered with #600 sandpaper to ensure a better solder joint.

On setup sheet: You write here the brand and type of batteries you are using. If you are using Reedy WCZappers, then you would write "2000 WCZappers," "2000", or simply write the part number.

27 Battery Placement

You can slide your batteries forward or back, or leave them near the center, fig. 27a.

When do I change the battery placement?

- Place the battery in the middle for more stability.
- Place it toward the front if you want more responsive steering (because more weight is transferred to the front wheels). This will sacrifice some rear traction.
- Place it toward the rear if you want more rear traction. This will also result in less steering.

How do I change the battery placement? You position the batteries using the #9238 foam pads to position them forward or toward the rear of the truck.

On setup sheet: You mark which battery pack position you used.

FRONT *REAR*

More steering and less traction with batteries toward front.

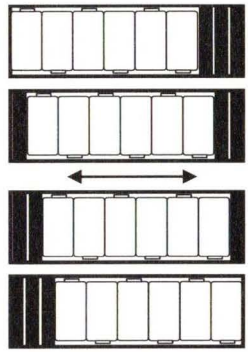


fig. 27a *Less steering and more traction with batteries toward rear*

28 Radio

Your hand-held transmitter sends signals to your servos to control your truck steering and speed. Popular radio systems include Futaba, Airtronics, and KO Propo.

What should I consider in a radio?

• We recommend FM over AM radios for their better reliability.

On setup sheet: You write in which brand of radio you used for this race.

29 Servo

Under your radio direction, the servo horn pivots left or right, pushing/pulling the steering tie rods connecting between the servo and the wheels to help you steer your truck. The servo is usually included with your purchase of a transmitter. Popular servos include Airtronics, Cirrus, Futaba, Hitec, Hobbico, JR Radio, and KO Propo.

What should I consider in a servo?

• Generally, for on road racing, you may want a servo with faster transit speed, because they will feel more responsive.

• For off road racing you'll want a servo with more torque. The servo's torque is measured in oz.-in. (The more ounces, the stronger the servo.) Your second consideration after that will be servo transit speed for responsiveness, but this depends upon your driving style.

On setup sheet: You write in which brand of steering servo you used in your vehicle.

30 Speed Control

As its name implies, the "speed control" controls the rpm's of your motor, and thus the speed of your vehicle according to the acceleration you give it at your hand-held transmitter. A better, more advanced breed of ESCs are the LRP digital speed controls. A low-cost mechanical substitute for the ESC is the resistor speed control.

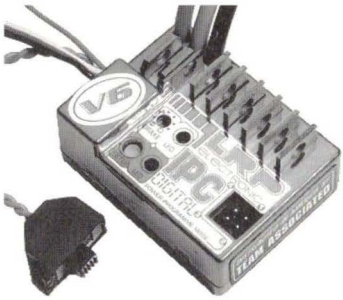


fig. 30a *Digital speed control from LRP.*

31 Motor

The ESC feeds your radio transmitter commands to the motor, then the motor turns the transmission gears, which then turns the axles that drive your rear wheels. Motors come in many stock and modified varieties, giving you many tuning options.

How do I know which motor to use? Use the following over-simplified tips.

• Match your motor to the correct application. Off road and on road vehicles require different motors. Generally, on road racing favors more rpm/ off road favors higher torque. Reedy's Sonic2, **fig. 31a,** was designed for off road. Our Reedy catalog takes the guesswork out of which motor you should buy for your truck.



fig. 31a *Make sure the motor you use is designed for off road use. Reedy's Sonic2 fits the bill for off road trucks.*

• Choose the number of turns. "Turns" refers to the number of times the wire was wound around each armature arm. The fewer the turns, the higher the rpm (revolutions per minute), or top end speed (the highest speed attainable by that motor). So, if you wish the fastest motor, choose a motor with the fewest number of turns. Keep in mind that the fewer the turns, the greater the battery draw, which means lesser run time.

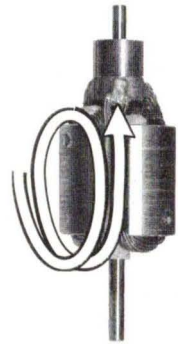


fig. 31b *Turns refers to the number of times the wire was wrapped around the armature, determining your top speed.*

• Then choose the type of wind, **fig. 31c.** "Winds" of "Double," "Triple" or "Quad" refers to the number of strands of wire wound around the armature, double being two strands, triple being three, quad being four, and quint being five. The type of wind is for fine tuning your motor's power band. In general, the winds with fewer wires give the impression of kick-starting your wheels, while the winds with more wires will bring you up to top end speed more slowly.

If you have a very slick track, then winds like single and double may cause your wheels to spin; other winds—triple, quad, quint—may give your truck better traction. In addition, the less turns of wire, the less run time you will have, because the fewer wires will draw more power from your batteries.

The performance gains by changing the type of wind is subjective and may be noticed only by experienced racers with trucks that respond well.

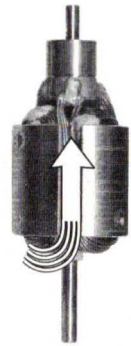


fig. 31c *Winds refer to the number of strands of wire wrapped around the armature, and determines the placement of your power band.*

Extra performance motor tips:

• Spray the motor commutator area with motor cleaner after every 2 to 3 runs while it is running. Over a 15 second span, spray the commutator several

times for 2 to 3 seconds. Keep doing so until the runoff is clean.

• After the motor spray, apply a small amount of lightweight oil to each bushing for lubricating. Applying too much oil will pick up dirt and contaminate the commutator and brushes.

• Never overgear your motor (large pinion and/or small spur). Excess heat from overgearing can harm your motor.

On setup sheet: You write here which brand and type of motor you used. If you used a Reedy Sonic2 "S" motor, 12 turn double wind, it can be written as "Sonic2 12x2."

Are there other ways to get the most out of my motor? Several other notes about the motor can be written on the back of your setup sheet, if needed. They are:

32 Type of motor brushes, **fig. 32a**. The motor brush contacting the armature completes the electric circuit of your motor, therefore, the better the connection, the better the motor performance. Make sure you match your brush to the proper application. There are motor brushes designed specifically for on road or off road applications—brushes that fit large commutators and other brushes for small commutators. As a T3 owner, your interest is with large commutators, such as the Sonic2, **fig. 31a**. which requires laydown brushes. Reedy recommends the #760X laydown brush for the Sonic 2. Serrated brushes help seat the brushes to the armature more quickly, getting you up to performance more quickly. Silver content brushes transfer power more efficiently, but wear your armature more quickly.

Remove the brushes from the holders every 3 to 5 runs and inspect them for wear and burning. Replace the brushes if you notice wear or burning. Failure to do this will harm your armature.



fig. 32a *Motor brushes must be matched to the correct type of armature. Reedy recommends #760X laydown brushes for the Sonic2 motor for off road competition use. For best performance, replace your brushes when worn.*

On setup sheet: You note the brushes you used.

33 Type of motor springs, **fig. 31a**. You can change the tension of the spring by changing the angle of its two ends (by squeezing them closer together or pushing them farther apart). The tension of the spring affects the pressure of the brush against the armature. In general, the more tension, the more torque; the less

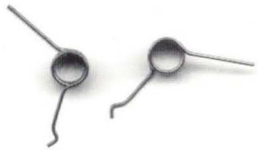


fig. 33a *Motor springs.*

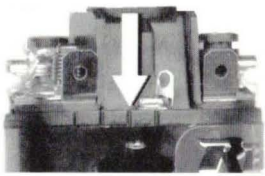


fig. 33b *Note the tick mark before you change you timing.*

tension, the more rpm.

On setup sheet: You note which springs you used.

• Motor timing is accomplished by loosening (but not removing) the two top screws of the endbell (not the brush hood screws) and turning the endbell slightly. Then the screws are tightened again. Turning the endbell to the right on Reedy motors gives you more rpm and less torque, to the left results in less rpm and more torque. The timing has already been set optimally by the factory, so carefully mark a tick mark on the can aligned to a tick mark on the endbell, **fig. 33b,** (arrow points to one such tick mark) so you can later return it to its original position. Reedy strongly recommends you keep the factory setting.

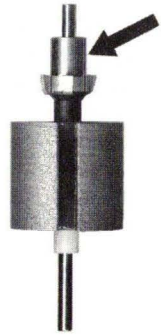


fig. 33c *The arrow points to the commutator portion of the armature.*

• Cutting the commutator (at arrow in **fig. 33c)** is accomplished with a comm lathe. The commutator is the area in contact with the brushes. Fine scratches form on the comm when the commutator rotates past the brushes, producing less than optimal connection. A comm lathe will trim this area so it is smooth again for optimum performance.

34 Pinion

The pinion gear, **fig. 34a,** is attached directly to the motor shaft and drives the spur gear, which interfaces with the transmission. Changing the pinion gear to more or fewer teeth will make big changes to your truck's run time and top speed.



fig. 34a *Pinion gear.*

How do I know when to change my pinion gear? You need to properly match the pinion teeth number with the spur gear teeth number and your motor. For best results, use the numbers in the chart following.

• The larger the number of teeth, the greater the speed, but it results in less run time and too many teeth (overgearing) could harm your electrics.

• The smaller the number of teeth, the more run time, but you will attain less top-end speed. ("Top-end speed" refers to the fastest speed you could attain.)

• Consider changing your gearing according to track length. For larger tracks, top end would be more important, so try a pinion tooth larger than the chart following. For smaller, twisting tracks, try a pinion tooth smaller than the chart.

• Following is the current recommended numbers for the T3. You should not increase your pinion size by more than one tooth than indicated or you may harm your motor.

Motor	Pinon	Spur	Final Drive Ratio
24 deg. ROAR stock	20	87	10.44:1
DS Spec motor	20	87	10.44:1
36 deg. stock motor	20	87	10.44:1
14 turn modified motor	20	87	10:44:1
13 turn modified motor	19	87	10.98:1
12 turn modified motor	18	87	11.60:1
11 turn modified motor	17	87	12.28:1
10 turn modified motor	16	87	13.05:1

How do I change my pinion gear? You loosen the set screw on the pinion gear, slide off the gear, and insert a new one.

On setup sheet: You write in the number of teeth of the pinion gear that you mounted on your motor output shaft. This number is usually from 16 to 20 for the T3. Associated sells 48 pitch stock pinion gears from 13 through 26 tooth, and precision machined 48 pitch pinion gears from 15 through 26 tooth.

35 Spur Gear

The spur gear, **fig. 35a,** is attached directly to the transmission. It interfaces between the motor and the transmission. Changing the spur gear to more or fewer teeth will make big changes to your truck's run time and top speed.

You need to properly match the spur gear teeth number with the pinion gear teeth number and motor. See the chart earlier.



fig. 35a *Spur gear.*

How do I change my spur gear? You remove the screws, slide off the gear, and insert a new one.

On setup sheet: You write in the number of teeth of the spur gear you mounted on your transmission. Associated sells various spur gears intermittently numbered from 78 to 87.

Other

36 Chassis

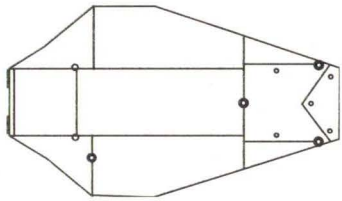


fig. 36a *T3 truck chassis.*

Team Associated offers long and short length chassis for the RC10T3 truck. They are available in molded composite, and Carbon Fiber composite (graphite).

How do I know which chassis to use?

- The longer T3 chassis is standard, providing the best, all-around stability.
- The shorter chassis works best on smooth, tight tracks or quick, tight carpet tracks.
- The molded composite chassis has more flex, but is heavier than graphite.
- The graphite chassis is lighter, but it may break easier in a crash because it is stiffer.

On setup sheet: You note which chassis you are using, long or short, and if you used the graphite chassis.

37 Weight in Bulkhead

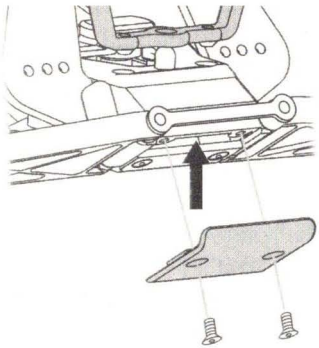


fig. 37a *You can remove the front bumper and insert weight in the hollow space indicated by the arrow.*

The front bumper can be removed to add weight to the bulkhead, fig. 37a.

Why should I add weight to the front? Add weight if you need extra steering on slick or high traction tracks. Your truck will change direction slower. Not used for rough surfaces. 7 grams weight is standard.

How do I add weight to the front? Weight is added to the hollow part of the front bulkhead, as shown at right, by removing the screws holding the front bumper, fig. 37a.

The weight can come in the form of a lead stick that has been preperforated in 1/4" segments that you break off and add to the bulkhead. The weight is held to the bulkhead with sticky tape or servo tape.

On setup sheet: You mark here how much weight you added to the bulkhead, in grams or ounces.

38 Wheelbase adjustment

You can make adjustments to your wheelbase. That is, you can shift the rear wheels forward or back.

How do I know when to adjust the wheelbase?

- Both spacers to the rear, **fig. 38a,** will move your hub carriers toward the front of the vehicle, shortening the wheelbase and increasing rear traction (because it would then bear the brunt of the battery and motor weight). This is the standard setting.
- Both spacers to the front will shift the hub carriers toward the rear of the chassis, lengthening the wheelbase and increasing steering.



fig. 38a *Placing these spacers in front or in back of the rear hub carriers will adjust your wheelbase.*

How do I change the wheelbase? By moving the spacers as noted above. You must first remove an E-clip from the pin, slide out the pin, then place the parts on in a different order as you push the pin back through.

On setup sheet: You indicate where you placed the spacers in relation to your hub carrier. #1 is two spacers toward the rear of your kit, #2 is one on either side of your hub carrier, and #3 is two spacers toward the front.

39 Slipper (clutch)

The Associated ATC regulates the amount of wheel spin, either absorbing it itself, or letting the wheels spin. It therefore acts like a buffer between the tires and the tranny/motor, controlling the amount of traction ("slipping") of your rear tires. Tightening the slipper has the effect of locking the tranny gears to your wheels, so if you overtighten the slipper, you can damage your transmission gears landing off a jump.

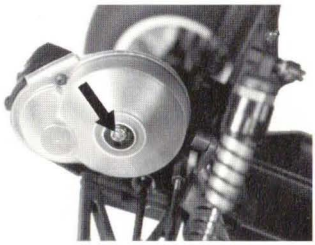


fig. 39a *Adjust your slipper by turning the clutch nut.*

When would I make the slipper looser or tighter?

- The purpose of the clutch is to gain traction. On a high traction surface such as carpet, you can run your slipper a little tighter than on a low traction surface.
- If your tires are spinning (slipping) too much, then loosen the slipper.

How do I change the slipper? You change the

slipper on the Associated Stealth ATC by turning the torque control clutch nut, **fig. 39a**. To loosen the slipper, back off the nut. To tighten the slipper, tighten the nut.

Beware of over-tightening the torque clutch (slipper), otherwise you may damage the differential landing off a jump.

If you recently rebuilt the Stealth tranny, then run the truck a little on the loose side for about one minute before adjusting for race settings. With a fully charged battery, your torque clutch should only slip 2-3 feet before fully engaging. If your wheels slip longer, then loosen the slipper.

On setup sheet: You check off which slipper clutch you are using, the standard Associated Stealth transmission ATC, the aftermarket Hydra or Viscous slippers, or another type. You also note here if you ran the slipper standard, looser than standard, or tighter.

40 Body

The body does more than protect your components. Its aerodynamics will influence your trucks' handling on different tracks.

On setup sheet: You write here which body you used.



fig. 40a *T3 truck body.*

41 Spoiler

Your truck spoiler, **fig. 41a**, aids in rear traction.

On setup sheet: You indicate if you used a spoiler.



fig. 41a *Rear spoiler.*

42 Off Road Track Conditions

This section has detailed specifications for many different types of tracks. Marking these track conditions carefully will better help you to match your settings to other tracks that are similar. Tracks change depending on the weather, being damp or dry, etc., and such information omitted may cost you the next race if you use the same settings when the track changes from dry to damp.

Note carefully your type of track conditions, then

go back over this *Guide* and look for underlined terms that match your track, such as slick tracks, or bumpy tracks. Note what changes are recommended and get ahead of the competition already!

Also, paying particular attention to this area will help others understand why you deviated from the standard setup, or used it successfully. Pay particular attention to track layout description (length, jumps, etc.) if your track layout is changed frequently.

Setup sheets without this track information is practically useless, because the whole idea of setups is to hook up the vehicle to race to its fullest potential on that particular track.

On setup sheet: You mark here the type of track you drove on.

43 Race Comments

Every racer should get a feeling for why they finished where they did. Some reasons are obvious, others not so obvious.

On setup sheet: You write here your outcome of the race. Did you TQ with these settings? Did you win, but only because the racer who always beat you in the past did not show? You need to note these details. In which Main did you finish? Was it tough competition or smooth sailing? What observations can you write here that will help you race next time? These comments will help you and those who see your setup sheet.

44 Truck Comments

Every driver has to judge their vehicle's overall handling after all the settings have been made and put to the test. You should be able to express those observations on paper.

On setup sheet: You write here how your vehicle handled overall. Also, note here any new hop-ups you were experimenting with, and what impact they had on the car's performance. What made you happy about the car? How were you dissatisfied? What problems came up that you would want to consult a more experienced racer about?

Special Bonus: How to Go Faster

Here is a checklist of areas to consider that may be 'scrubbing' speed. Don't overlook these if you want to go faster.

1 Shock/spring setup. If your truck bounces too much, then while it's in the air you cannot accelerate (because the rear tires are not touching the ground; poor traction).

2 Poor driving. It is important to practice getting around the track smoothly, that is, keeping consistent lap times. Speed will suffer if the driver rambles all over the track, keeps crashing, or takes the long way around. You want the near tightest line around the track. Without a lot of practice, your driving skills may not be able to handle the extra power/speed of the setup.

3 Too much weight on the truck. This wastes the motor's power, because too much of its energy is just trying to haul it's own weight instead of propelling it forward. Consider replacing with lightweight components, such as aluminum screws, graphite parts, aluminum parts, titanium, one-piece wheels, narrower tires, nylon nuts.

4 Motor/battery combo. You can have the fastest motor, but a poorly charged or insufficiently rated pack may not be giving it the energy needed to perform at it's best. For the fastest motor/battery combination, try a Reedy Sonic2 "?", seven cells, and gear it 18-81! (For 5 minute racing we gear 17/87.)

5 Speed/torque motor combo. The fastest motor on one track may not be the best choice on a different track. Pros are always seeking the best middle ground between the motor's torque and speed. Like two people on a seesaw, you can't have both at the highest point at the same time.

6 Tire choice. Tires poorly matched to the track may end up wasting valuable rpm's as they spin in place; good traction is key.

7 Poor setup. Remember to start with the standard setup, practice getting around the track smoothly, then begin to change one setting at a time so you can learn the effect. Always have someone time your efforts with a stop watch. If your lap times are slower, then go back to the earlier setting and change something else. When you find the setting that is just right for you, then fill out the blank setup sheet for your records. These are the steps Mark Pavidis and the rest of the Team has to go through for every track that they are unfamiliar with. (They also have to do this for every new kit we release-that's where the standard kit setups come from.)

8 Improper gearing. Use the gearing that came with your manual or motor for best results. A smaller spur gear and larger pinion will increase the top speed of your car or truck. Fewer teeth on a pinion gear means more acceleration and less top speed.

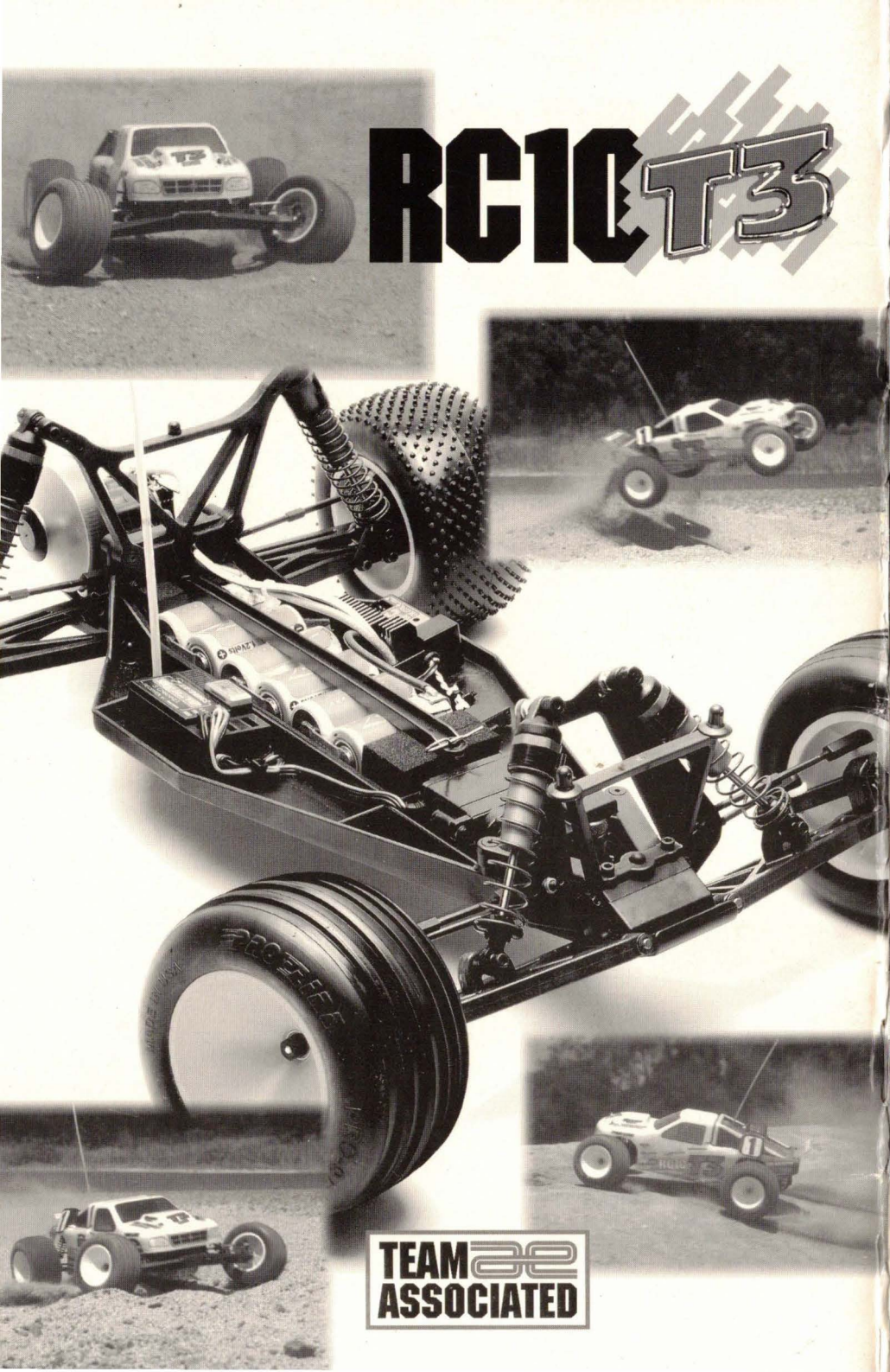
9 Gear mesh too tight. This will increase load on the motor, costing you power. You should be able to just rock them a little in place.

10 Lock nuts hold wheels too tightly. It is possible to have the front wheel nuts so tight they will bind the bearings, increasing drag on your motor.

11 Bushings. One of the best upgrades you can make is to replace your bushings with bearings. They reduce drag and maintenance.

12 Tires loose on rims. Are your tires securely glued to your 1-piece rims? Tires that spin on the rim cost you power.

13 Dirt. Grit in your truck can make it heavier and roughen the areas that should be smooth.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