Team Associated RC10B4 Tuning Guide

#9577 B4 and T4 INLINE STEERING AXLE

INLINE AXLE

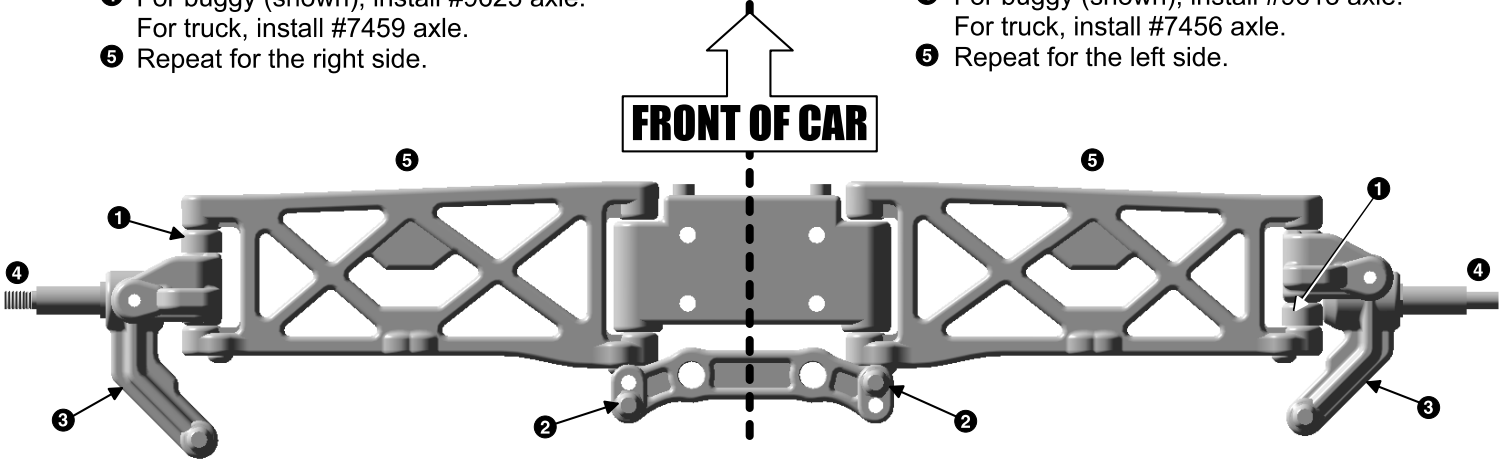
TO INSTALL:

1. Insert spacer where shown to move caster block to rearward position.
2. Move ball end to rearward hole in rack.
3. Install #9577 inline steering block.
4. For buggy (shown), install #9623 axle. For truck, install #7459 axle.
5. Repeat for the right side.

TRAILING AXLE

TO INSTALL:

1. Insert spacer where shown to move caster block to forward position.
2. Move ball end to forward hole in rack.
3. Install kit's #9581 trailing steering block.
4. For buggy (shown), install #9613 axle. For truck, install #7456 axle.
5. Repeat for the left side.



 CONTENTS

Front Suspension

Ride Height, front

Front ride height distance from the ground to the bottom of the chassis, with the kit fully equipped (fig. 1).

To set the standard front ride height, lift up the entire car about six to eight inches off the bench and drop it. When the suspension settles, the front edge of the a-arms should be level, fig. 2. If they are not in a straight line, then add or subtract preload spacers to the front shocks, fig. 3, or adjust the threaded shock collar up or down until it is level.

If you move the batteries forward or back, then recheck the ride height and adjust so it is level.

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 described above, a position called "arms level." Making large ride height adjustments up or down from this setting will tend to make the car feel unpredictable.
- 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.
- Front ride height will also affect jumping. If your car is jumping nose-down, try raising the front end to give it more lift off the jump.

How do I change the ride height?

By adding or subtracting preload spacers to the front shocks (fig. 3), or adjusting the treaded collar up or down on the Factory Team threaded shock bodies.

On setup sheet

You mark here if your front ride height is level ("arms level"), or otherwise ("arms below level").

fig. 1 *Ride height distance.*

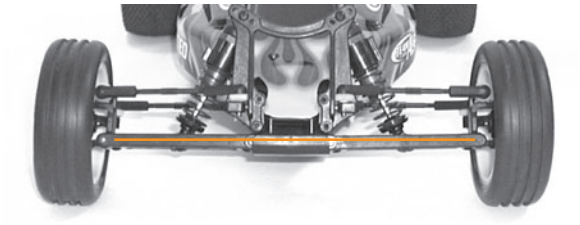


fig. 2 *Standard front ride height is a-arms level. This means that your a-arm edges should be in a straight line, as shown.*

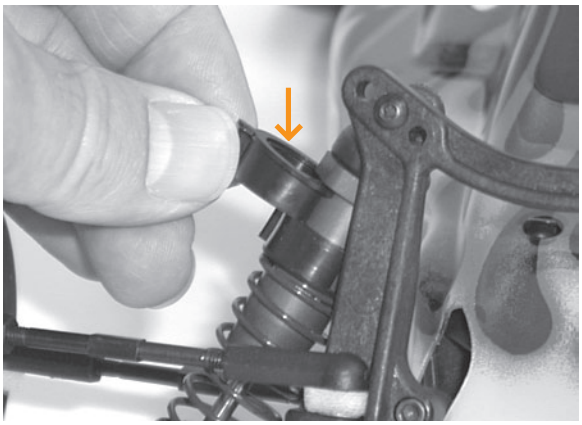


fig. 3 *Add preload spacers to raise your chassis ride height.*

 CONTENTS

Shocks

Shock Mounting, front

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

When do I change the mounting position?

The kit springs and inside arm hole will work best in most cases.

• Changing to the outer hole in the front arm will tend to make the car more stable and less responsive. Making this change requires that you remove the travel limiters from the front shocks. You should also change to a softer spring to account for the difference in leverage on the shock.

• Moving the front shock out on the tower (fig. 2) will decrease steering entering corners. It will also let the front end lift more off jumps.

• Moving the front shock in on the tower (called laying it down) will increase initial steering and give less lift off of jumps.

Make sure you re-check the ride height after shock mounting changes.

How do I change the 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 tower, inside, middle and outside, and two choices for the arm.

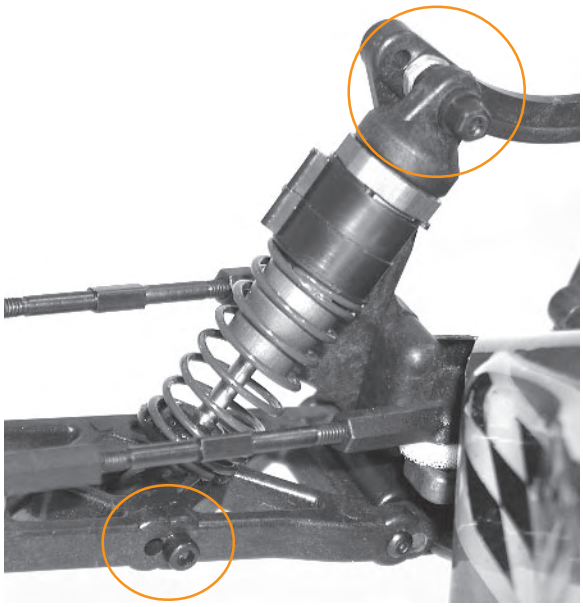


fig. 1 *You have three mounting positions for your shocks on the tower, and two on the front arm.*

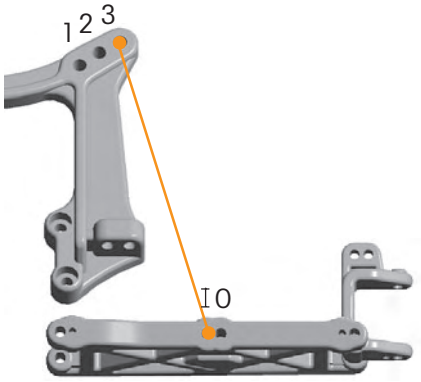


fig. 2 *Mounting position 3-I shown.*

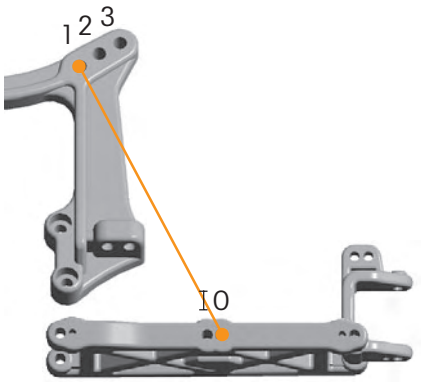


fig. 3 *Mounting position 1-O shown.*

TIP

Sometimes if going to a heavier spring takes away too much front grip, try moving the shocks in a hole on the tower to regain a bit of steering.

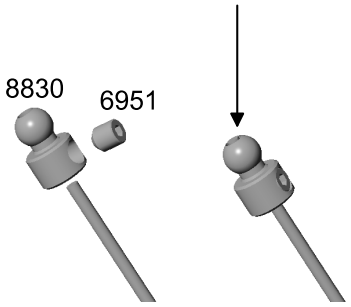
#9635 B4 Anti-Roll Bar

Three wire thicknesses supplied:

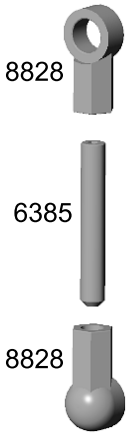
1782

.047"	Black
.051"	Silver
.055"	Gold

Wire flush with end of ball

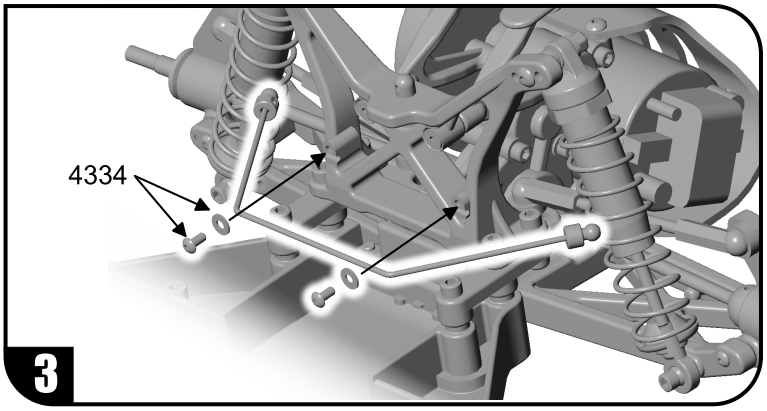


1

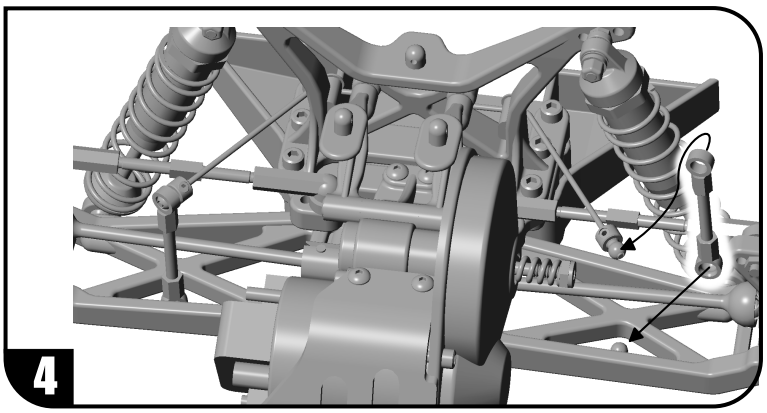


Final length = 1.75" long.
Make both rods equal length.

2



3



4

SHOCK ASSEMBLY INSTRUCTIONS

step 1

REMOVE THESE PARTS

Step 1

6465
shock piston #1

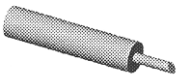
Step 2

shock bodies

6440
split locking washer

6440
small spacer

6440
large spacer



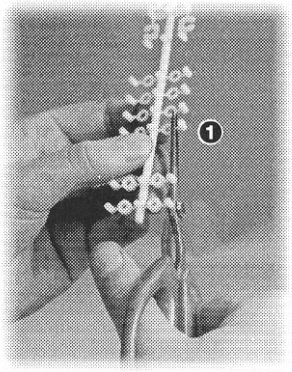
6429
shock assembly tool

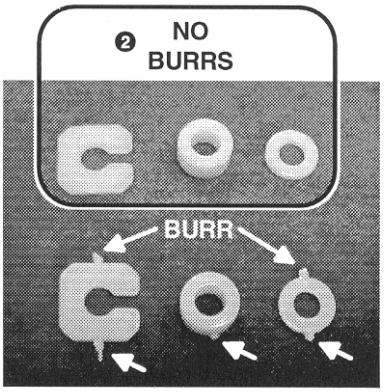
5407
red O-ring

REMOVE SHOCK PARTS

❶ Remove the #6440 shock parts from the molding tree carefully so no part of the molding runner remains.

❷ It is safer to remove a tiny amount of the shock part than to risk the chance of a burr remaining on the part. Short blade scissors or a hobby knife will work. See pictures at right.



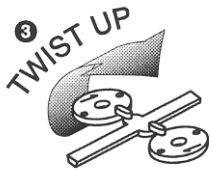


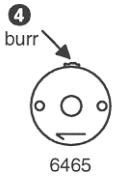
REMOVE BURRS WITH HOBBY KNIFE

REMOVE & TRIM SHOCK PISTONS

❸ Burrs interfere with smooth shock action within the shock body. To remove from tree without creating burrs, twist up, not down.

❹ Remove remaining burrs carefully with hobby knife.





step 2

❶ Install the shock parts onto the #6429 shock tool as shown. One shock clip (split locking washer), one thin spacer, one red O-ring, one thick spacer, one red O-ring, and one thin spacer.

❷ Remove the oil bottle and add 3-4 drops to the inside of the shock body and to the seal parts.

❸ Insert the tool and the seal parts into the shock body all the way. Push easily, as shown in fig. 2-3, until the parts snap into place.

❹ Check the tool height in fig. 2-4. The left shock shows just before snapping into place, the right shows after.

5 Assemble the remaining shocks the same way.
If your shocks do not snap together easily, check the internal parts for burrs again.

fig. 2-3

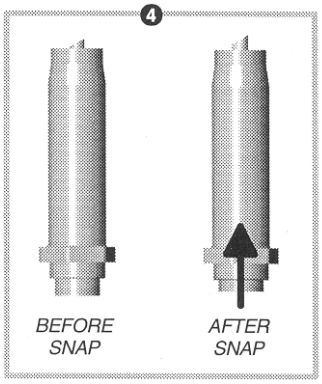
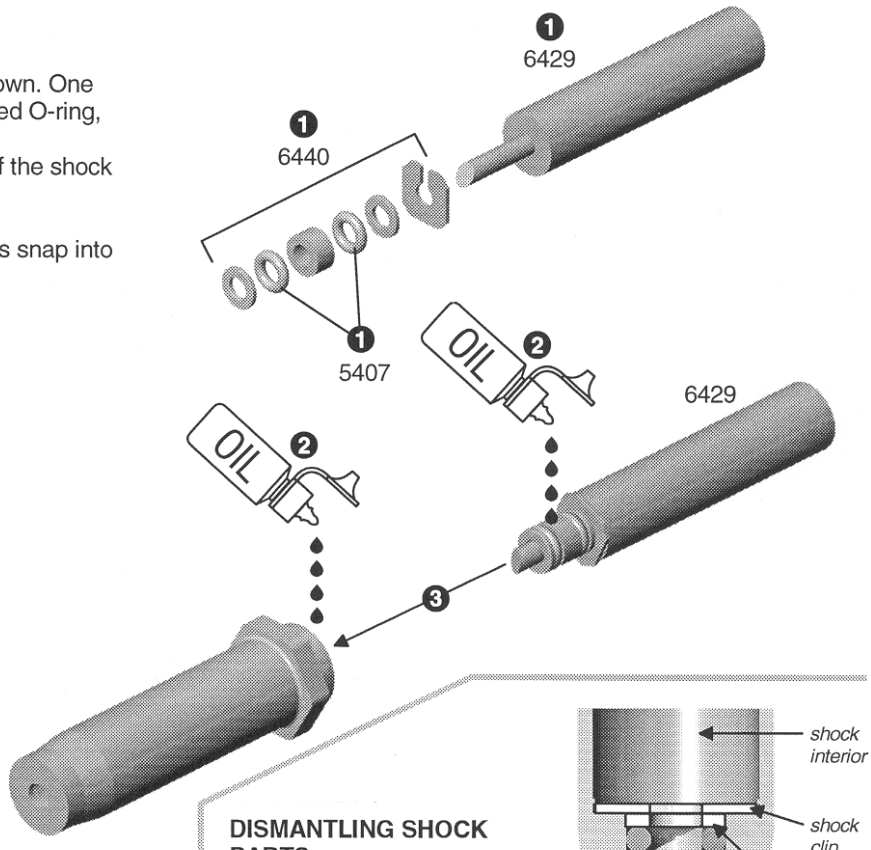
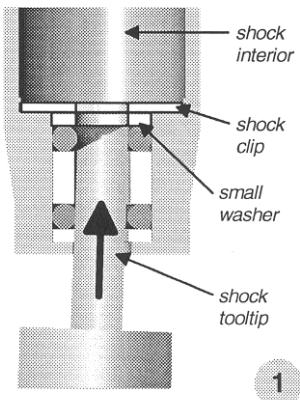


fig. 2-4



DISMANTLING SHOCK PARTS

Here is how to dismantle the shocks when it's rebuild time. Put the shock assembly tooltip into the bottom of the shock until it rests against the small washer as shown, then push until you unclip the shock clip (split locking washer).



step 3

REMOVE THESE PARTS

Step 3

6469
large O-ring

6299
E-clip

shock shaft

7217
pivot ball

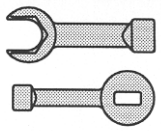
7217
eyelet

Step 4

6428
shock cap

shock oil

TOOLS USED



ASSEMBLE SHOCKS

1. Install the #6469 large O-ring over the thread of each shock body.
2. On the shock shaft, install a #6299 E-clip on both sides of the #6465 piston from step #1.
3. Insert the shock shaft assemblies into the shock bodies.
4. Push the #7217 pivot ball and eyelet together. As you hold the shaft with a rag and needlenose pliers next to the threads, screw the eyelet onto the end of each shock shaft.

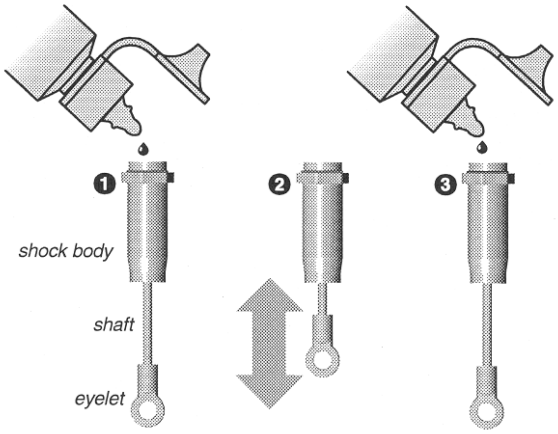
Your pistons are labelled 1, 2 or 3. See your kit or RTR instruction manual for the correct pistons to install.

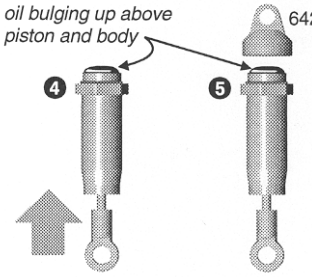
ASSEMBLED TO STEP 3

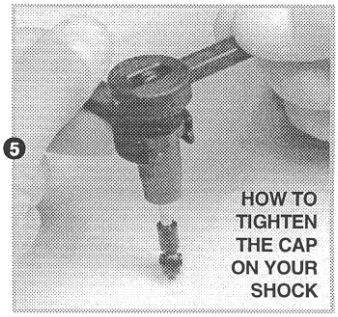
step 4

FILLING THE SHOCKS

1. Holding the shocks upright, fill with oil to the top of the shock body.
2. Slowly move the shaft up and down several times to allow air bubbles to escape to the top.
3. Refill with oil to the top of the shock body.
4. Push the shaft in until the piston is level with top of shock body. The oil will slightly bulge up above the shock body. **NOTE:** With some shock lengths, the piston will not move to the top of the body.
5. Screw the #6428 shock cap onto the shock body. Try to retain as much oil as possible during assembly. The shaft will extend out as you tighten the cap down.



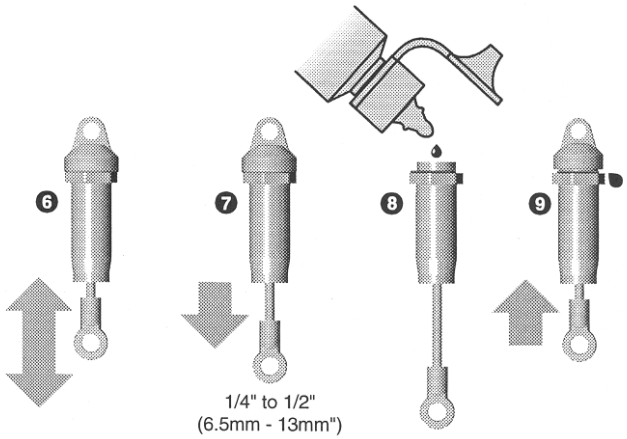




step 5

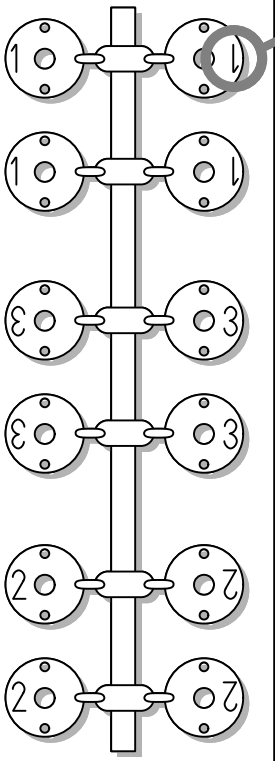
CHECKING THE REBOUND

6. Move the shock shaft in and out a few times and then push it all the way in. It should be easy to push the shaft in until the eyelet hits the body. **NOTE:** With some shock lengths, there may be a gap between the eyelet and body when the shaft is pushed in all the way.
7. Then the shaft should push itself out approximately 1/4" to 1/2" (6.5mm - 13mm).
8. If the shock does not push out this far, there is not enough oil in them. Add just a little oil and try steps 6-7 again.
9. If the shocks push out farther than the distance in step seven, or you cannot push the shaft in until the eyelet hits the body, there is too much oil. Loosen the cap 1 1/4 turns (with the shaft extended) and pump out a small amount of oil by pushing the shaft in. Retighten the cap and try steps 6-7 again.



NEW ASSOCIATED SHOCK PISTONS:

PART NO. 6465



The shock pistons supplied are numbered #1, #2 and #3 so you can match them accurately to the shocks used on your kit according to the following tips:

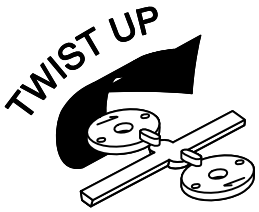
The #1 piston is the lightest damping and the #3 piston is the heaviest.

Below are some starting points for the RC10L/10LSS, RC10c.e. & Team Car, and RC10T Truck:

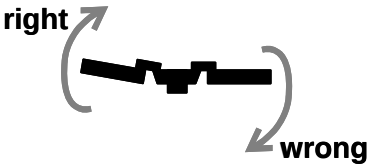
RC10L/10LSS:
#1 piston with Assoc. 20wt silicone oil.
RC10c.e. & Team Car, front & rear:
#1 pistons with Assoc. 30wt silicone oil.
RC10T Trucks, front:
#3 pistons with Assoc. 30wt silicone oil.
RC10T Trucks, rear:
#2 pistons with Assoc. 30wt silicone oil.

(The #1 piston is also sold separately as #6464.)

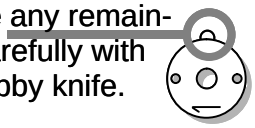
Burrs interfere with smooth shock action within the shock body.



To remove from tree without creating burrs, TWIST UP, not down:



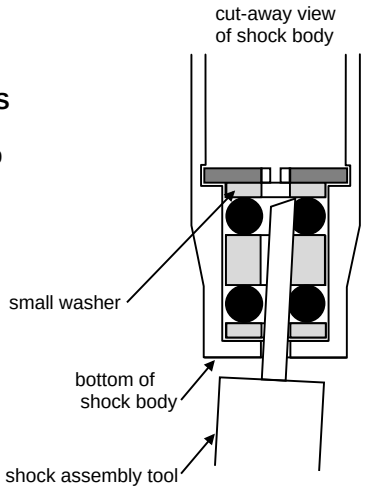
Remove any remaining burrs carefully with a sharp hobby knife.



#6440 SHOCK REBUILD KIT

Step 1

DISMANTLING THE SHOCKS WHEN IT'S REBUILD TIME
Put the shock assembly tooltip into the bottom of the shock until it rests against the small washer, as shown, then push.

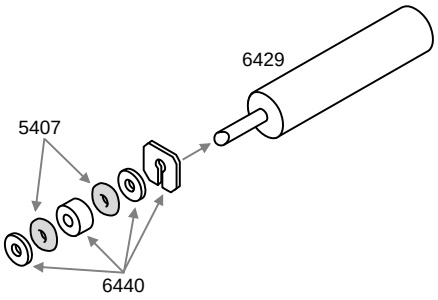


Step 2

TRIM SHOCK WASHERS & SPACERS
For best shock performance, trim each part from the parts tree so no part of the two molding runners remain. It is safer to remove a tiny amount of the part than to risk the chance of a burr remaining. Short blade scissors or a hobby knife will work fine, as shown at right. Run your finger over the edges to feel for burrs you cannot see. Remove the ones you find. Burrs can keep the parts from snapping in correctly, and can cause the shock to leak or the shaft to jam.

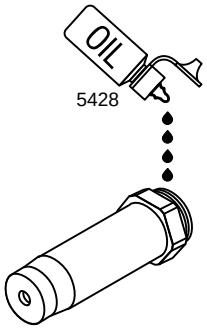
Step 3

SHOCK SEAL PARTS
Install the #5407 and #6440 parts shown onto the #6429 tool tip.



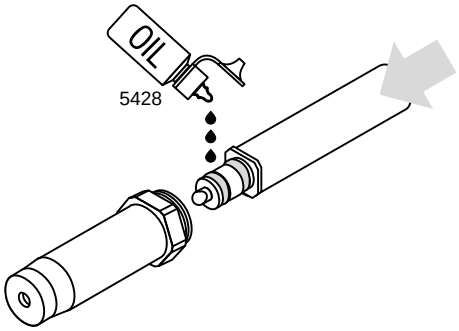
Step 4

Add 3-4 drops of #5428 oil to the inside of the shock body, and to the shock seal parts.



Step 5

Insert the tool tip into the shock body all the way. Push **easily** until the parts snap into place.

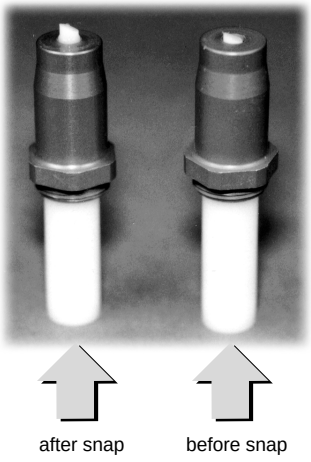


Step 6

Check the tool height in photo. The right shock shows just before snapping parts in place, the left shows after.

If your shocks do not snap together easily, check the parts for burrs again as in Step 2.

Assemble the other shock bodies the same way.



Oils

Check out Team Associated's latest Silicone Shock Oils. All bottles are 2 ounces each, $3.50.

#5420 10 wt
#5427 15 wt
#5421 20 wt
#5428 25 wt
#5422 30 wt
#5429 35 wt
#5423 40 wt
#5435 50 wt
#5436 60 wt
#5437 70 wt
#5425 80 wt

 CONTENTS

Shocks

Shock Springs

The spring's purpose is to keep the vehicle level (fig. 1). The shock spring controls the stiffness of the suspension. This affects how the car corners and how it lifts off of jumps. Several spring tensions are available to moderate these factors.

fig. 1 *Your shock springs help your buggy level off after the bumps.*

How do I know which spring to use?

• As a rule of thumb, running a stiffer spring on one end of the car will give that end of the car less traction, and make that end lift higher off of jumps.

For example, if your car is jumping with a nose-down attitude and it has too much steering, try running a heavier front spring.

• For the inside hole on the front arm, the green, silver, or blue springs tend to work best.

• For the outside hole in the front arm, the brown or black springs tend to work better because the shock has more leverage on the arm.

• The Team typically runs silver rear springs in most cases. For more rear grip on slick tracks, try green (softer). For less rear grip, try gray rear springs (firmer).

• Stiffer springs help your suspension respond more quickly, but, because of their stiffness, they will not absorb smaller bumps as well.

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

On setup sheet

Write in the color of the shock springs you used. Each shock spring is color-coded according to the stiffness of the spring

TIP

Your shock springs are color-coded according to their stiffness.

		REAR	
6481	Black	1.74 lb.	*softer*
6480	Green	1.90 lb.	
6478	Silver	2.10 lb.	↕
6482	Gray	2.33 lb.	
7434	Blue	2.55 lb.	
7435	Gold	2.75 lb.	
7436	Red	3.03 lb.	*firmer*
		FRONT	
6493	Brown	2.80 lb.	*softer*
8232	Black	3.20 lb.	↕
6494	Green	3.50 lb.	
6496	Silver	3.85 lb.	
6497	Blue	4.20 lb.	*firmer*

 CONTENTS

Electrical

Motor Brushes

Type of motor brushes, fig. 1. 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 others for small commutators.

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. Clean the comm with a Comm Stick. Replace the brushes if you notice wear or burning. Failure to do this will harm your armature. If replacing brushes, it's best to true or cut the comm so there is a fresh surface for the brush to run on. See below for more on cutting the comm.

fig. 1 *Motor brushes must be matched to the correct type of armature. For best performance, replace your brushes when worn.*

On setup sheet

You note which brushes you used.

Cutting the commutator

Cutting the commutator (at arrow in fig. 2) 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.

fig. 2 *The arrow points to the commutator portion of the armature.*

 CONTENTS

Electrical

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 (fig. 1) and modified (fig. 2) 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 while off road favors higher torque. Reedy's Kr motor, fig. 2, was designed for modified racing. Our Reedy catalog takes the guesswork out of which motor you should buy. It's free for the asking.

• 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.

• Then choose the type of wind, fig. 3. "Winds" of "Single," "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 quicker acceleration, while the winds with more wires will bring you up to top end speed more smoothly.

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 car 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 buggies that respond well.

On setup sheet

You write here which brand and type of motor you used. If you used a Reedy Kr 12 turn double wind, it can be written as "Kr 12x2."

fig. 1 *Stock class requires a stock motor, such as Reedy's MVP motor.*

fig. 2 *Modified class allows modified motors, such as Reedy's Kr modified motor.*

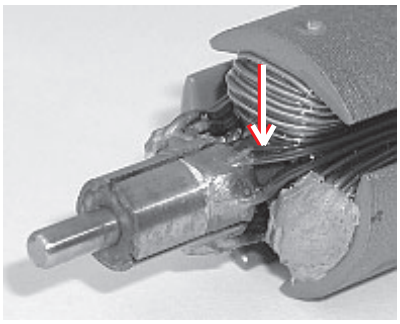


fig. 3 *Arrow points to two wires, indicating that this is a "Double" wind.*

Motor Differences

• A modified motor is unlimited turns, adjustable timing, and includes ball bearings.

• A stock motor has 27 turns of a single wire, has fixed 24 degrees of timing, and bushings.

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.

 CONTENTS

Electrical

Motor Springs

Type of motor springs, fig. 1. 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 tension, the more rpm.

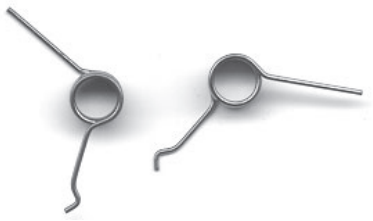


fig. 1 *Motor springs. When the two ends are in a straight line rather than angled, tension is greater.*

On setup sheet

You note which springs you used.

Other performance enhancements:

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. 2, (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. Do not turn your endbell to the left beyond the timing point on the can.

Explanatory note: There is usually a dent or stamp mark on motor cans to indicate the zero timing point. When the first notch on the endbell (the notch nearest the clamping screw) is aligned with the zero mark on the can, this is called zero timing. Zero timing means that the motor brushes are sitting directly in the center of the magnets.

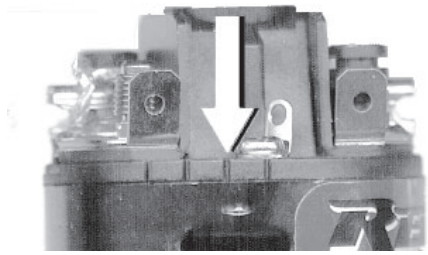


fig. 2 *Note the tick mark alignment before you change your timing.*

Final Drive Ratios for T4 and B4 Spur Gears

Transmission Ratio of B4 and T4: 2.6:1
Equation: (Spur divided by Pinion) times 2.6

Pinion Teeth	Final Drive Ratio for 72 Spur	Final Drive Ratio for 75 Spur
15	12.48	13.00
16	11.70	12.19
17	11.01	11.47
18	10.40	10.83
19	9.85	10.26
20	9.36	9.75
21	8.91	9.29
22	8.51	8.86
23	8.14	8.48
24	7.80	8.13
25	7.49	7.80
26	7.20	7.50
27	6.93	7.22
28	6.69	6.96
29	6.46	6.72
30	6.24	6.50
31	6.04	6.29
32	5.85	6.09
33	5.67	5.91
34	5.51	5.74
35	5.35	5.57
36	5.20	5.42
37	5.06	5.27
38	4.93	5.13
39	4.80	5.00
40	4.68	4.88

Team Associated - Champions by Design

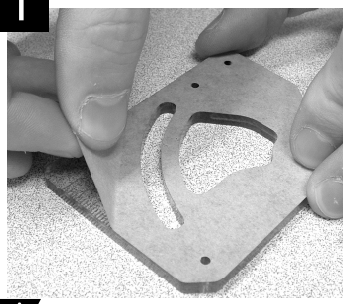
#1449 - Offroad Ride Height Gauge

Associated Electrics, Inc.

Follow the steps below to assemble your Offroad Ride Height Gauge.

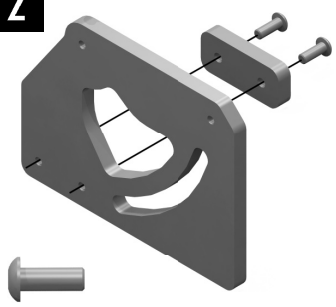
To prevent squeaking, apply a lubricant (dishwashing liquid, soap, diff lube) to screws before inserting them into plastic.

1



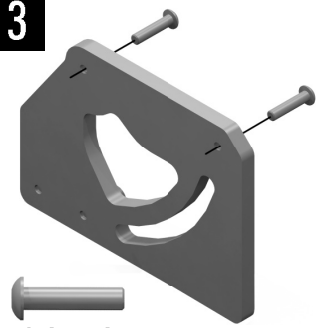
remove paper backing on all pieces

2



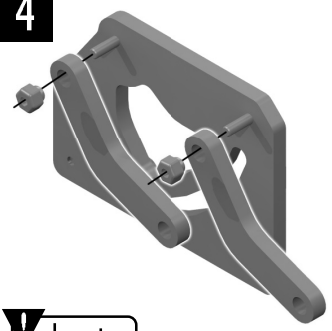
6919, qty 2
4-40 x 5/16" bhcs

3



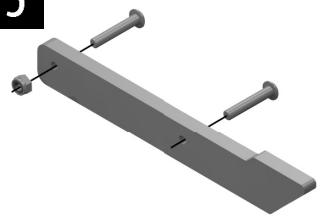
6918, qty 2
4-40 x 1/2" bhcs

4



do not overtighten

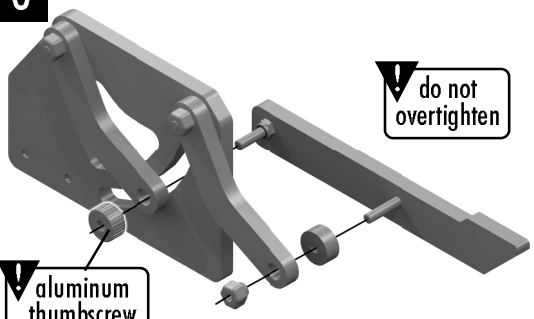
5



7633, qty 2
4-40 x 5/8" bhcs

4449, qty 1
4-40 locknuts

6



do not overtighten

aluminum thumbscrew

Correct measuring point

rear:
under transmission

front:
right behind kickup