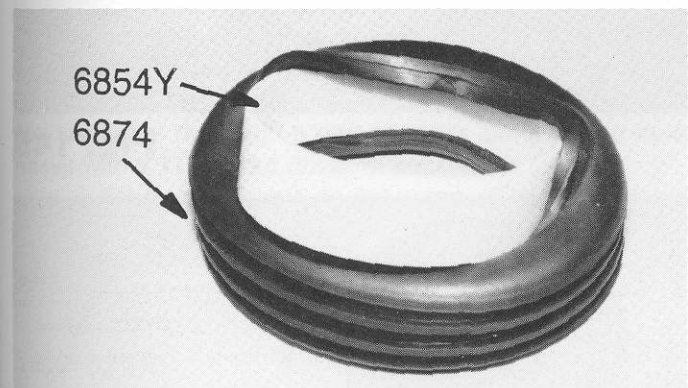


WHEEL AND TIRE ASSEMBLY

Fig. 139 In the kit box you will find the front tire and wheel bag which contains two Associated #6874 (Proline XTR #8015) flat four-ribbed front tires, the #6854Y yellow three piece front wheels, two small bags containing six #6860 4-40 x 3/8" aluminum SHCScrews and four #6906 3/8" x 3/16" unflanged front wheel bearings. *Note: The tires in your kit may be different from those in the photos, for we are constantly testing tires to find a new combination which will outperform what we were using before.*

We will start by installing the #6854Y plastic insert rings inside the two front tires as shown in fig. 139. Work the insert ring into the tire until it is evenly seated. *Note: Tire types vary. Some will go on quite easily, and some will be quite difficult to install. For these tough ones, soapy water (like dish washing soap) will help the rubber to slip easier and will make mounting the tires much simpler. Be sure to rinse off the soap and dry the tires thoroughly.*





-  #6860
4-40 x 3/8
aluminum
-  #6906
3/8 x 3/16
unflanged bearing

Fig. 139

Fig. 140 This photo shows the #6854Y front wheel ring already installed. Double check to make sure the ring is perfectly centered.



Fig. 140

Fig. 141 Take the outer half of the #6854Y front wheel (which has a small center hole) and fit it into the front tire. Make sure it is seated all the way around, and centered evenly. Do the second tire and wheel.

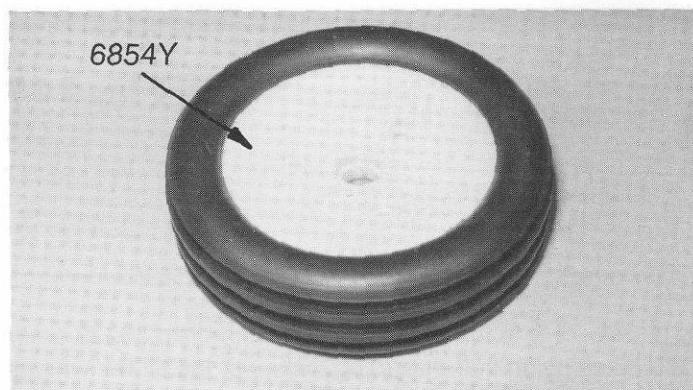


Fig. 141

Fig. 142 Turn the wheel over and install the inside half of the #6854Y front wheel (which has the larger center hole). Make sure the screw holes on both wheel halves line up before you insert the back half of the wheel. Finish the second tire and wheel.

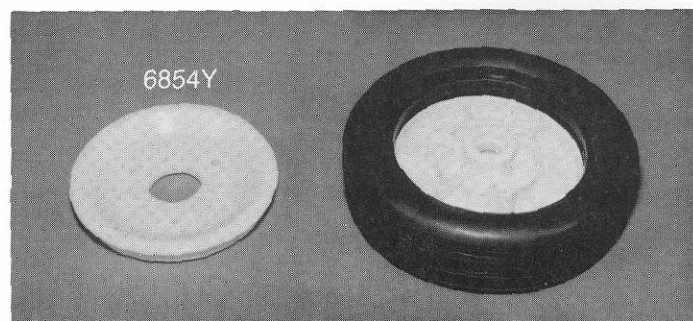
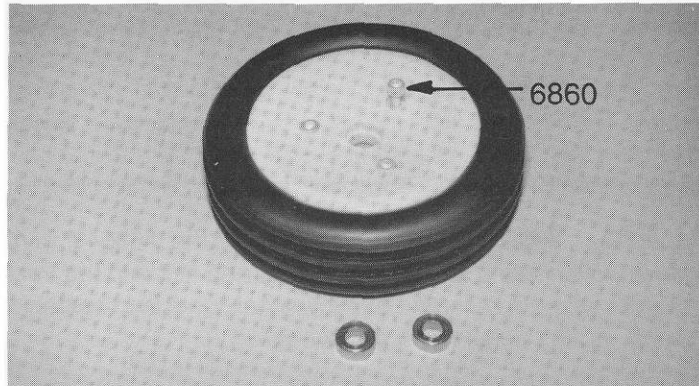



Fig. 142

❑ **Fig. 143** Remove three of the #6860 4-40 x 3/8" aluminum SHCScrews from the front tire and wheel bag. Use these to screw the two wheel halves together. **DO NOT** overtighten these screws. Try to use the same tension on all three screws. Now take out your four #6906 3/16" x 3/8" unflanged ball bearings and install them into both of the front wheels, one on each side.

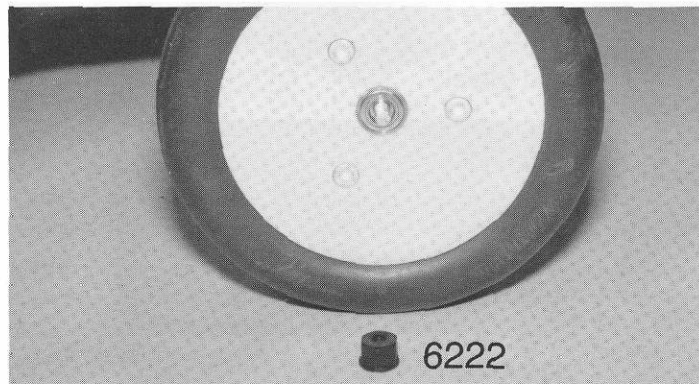


 #6906
3/8 x 3/16
unflanged bearing

 #6860
4-40 x 3/8
aluminum

Fig. 143

❑ **Fig. 144** In bag #6-1 you will find two #6222 4-40/5-40 black nylon self-threading locknuts. Install the wheels and tires onto the #6220 aluminum front axles so that the heads of the Allen screws are facing the outside. Now thread on the #6222 locknuts. Tighten the nuts to take up the end play on the axle, but not so tight that the tires and wheels will not spin freely. If the tires and wheels do not spin true, you will need to remove them and remount the tires.




 #6222
4-40/5-40
nylon locknut

Fig. 144

❑ **Figs. 145 & 146** Now go back to the kit box and remove the rear tire bag, which contains two Associated #6824 (Proline XTR #8086) flat stubby rear tires, two #6805Y Yellow 2.175" one piece rear wheels and two #6880 light grey (or blue) foam tire inserts. Remove the #6824 tires and the #6880 foam inserts. Pull the center out of the foam inserts and discard it. Push the foam inserts into the rear tires and center the foam in each tire. Your tire with foam inserts should look like fig. 146.

Now take out your #6805Y rear wheels and mount the rear tires and foam inserts onto them. Check to make sure that the tires are centered on the wheels and that the foam inserts are still centered inside the tires.

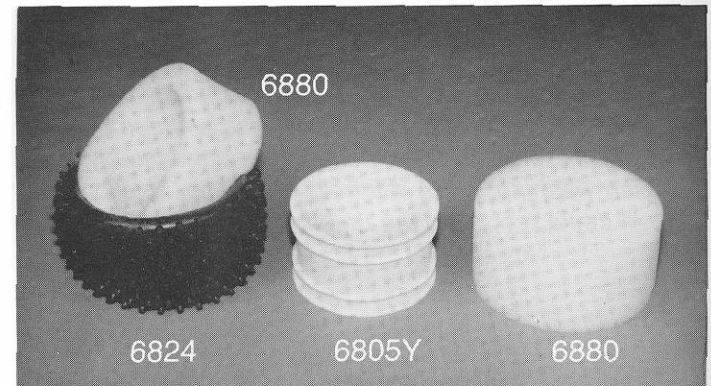


Fig. 145

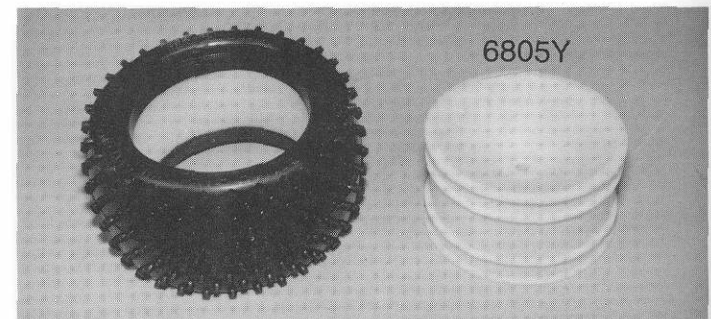


Fig. 146

❑ **Fig. 147** Now you are going to use some Super Glue (cyanoacrylic glue) and glue the beads of the rear tires to the rims. Pull back gently on the tire in about five or six places evenly around the wheel, placing a drop or two of the Super Glue in each location. When the glue has dried you can turn the tire and wheel over and do the other side the same way. Go ahead and do the second tire and wheel. **WARNING: Super Glue can be dangerous to you. Use safety goggles or glasses, and gloves. Also make sure you follow all of the glue manufacturer's safety precautions!**

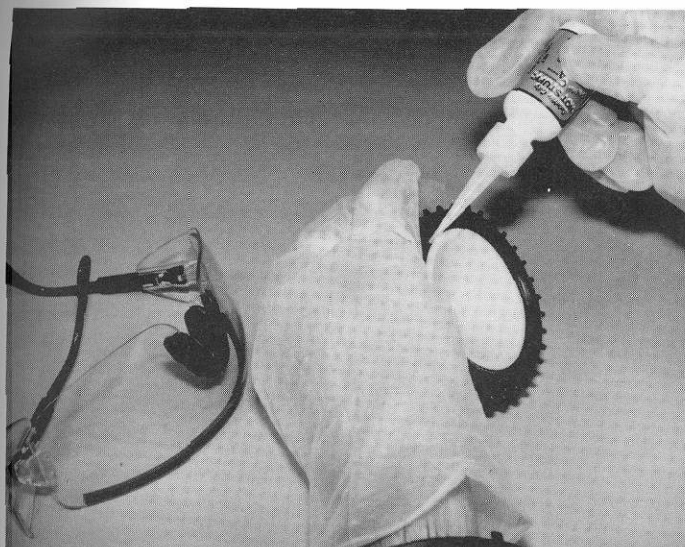
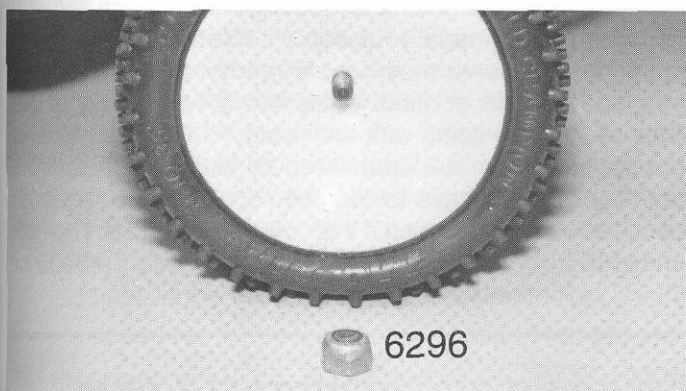


Fig. 147

□ **Fig. 148** In bag #6-8 you will find two #6296 8-32 aluminum locknuts. Now slide one of the rear tire and wheel assemblies onto the rear axle as shown. Make sure the slot in the back of the wheel aligns with the pin in the axle and then goes over the pin. Now do the same for the other wheel assembly. Now take the two 8-32 locknuts and thread them onto the rear axles to secure the rear wheels and tires. You can install the nuts with a pair of pliers, but it will be much easier with a 11/32" nut driver or socket.

If the rear wheels do not come off easily when you want to remove them, then loosen the locknuts until they are just a couple of threads from coming off. Now grab the back-side of the rear wheel and tap the locknut on the end of the axle, preferably with the plastic handle of a tool. Do this until the back side of the wheel clears the pin in the axle. You can then remove the locknut and unthread the wheel from the axle.




 #6296
8-32 locknut

Fig. 148

□ **Figs. 149, 150 & 151** In bag #6-7 you will find the #6334 nylon battery cup and two #6922 4-40 x 1/2" FHSScrews. Use the two #6922 FHSScrews to fasten the battery cup to the chassis as in fig. 150.

Now get the two #6924 4-40 x 3/8" SHCScrews and the #6339 fiberglass battery hold-down strap from the bag. Thread the two #6924 SHCScrews into the two holes on top of the battery cup as shown in fig. 150. To install the battery strap (after you have installed the battery pack), slide the rear end of the strap into the battery slot in the rear bulkhead. On the opposite end of the strap, place one side over the screw of the battery cup. Slide the strap to the side so the head of the screw is over the smaller section of the key hole slot. While holding this end tight, you will need to flex the other side of the battery cup until the second screw lines up with its hole in the battery strap. Push the strap down over the screw head and then release the pressure on the battery cup. Your batteries would now be locked in; you just reverse the steps to remove the strap. Your completed rolling chassis will now look like fig. 151.

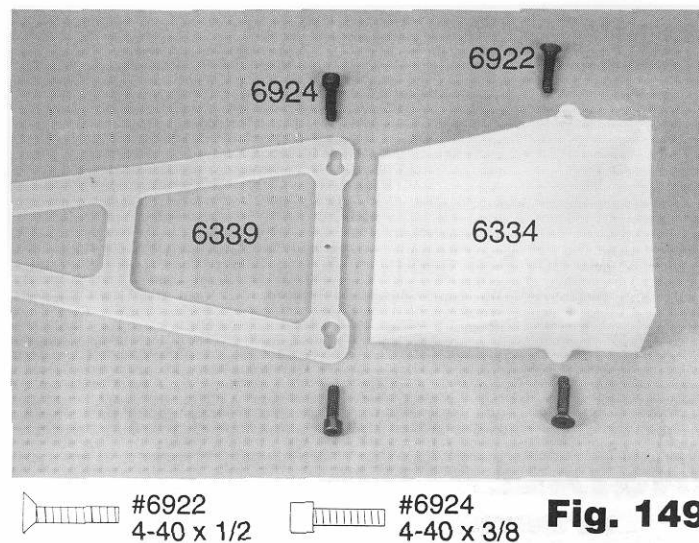


Fig. 149

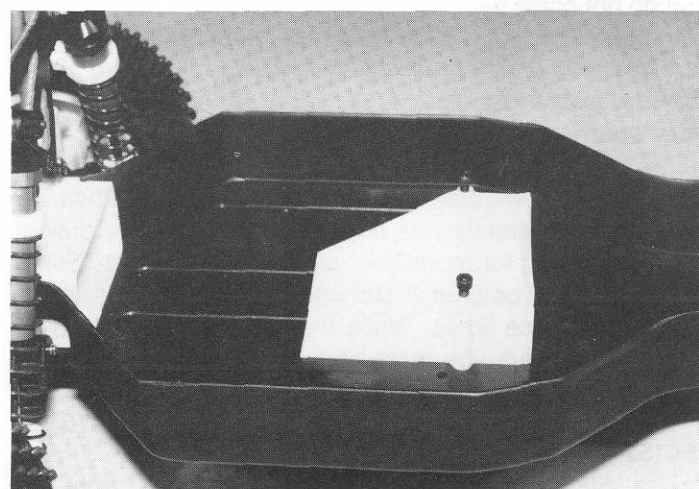


Fig. 150

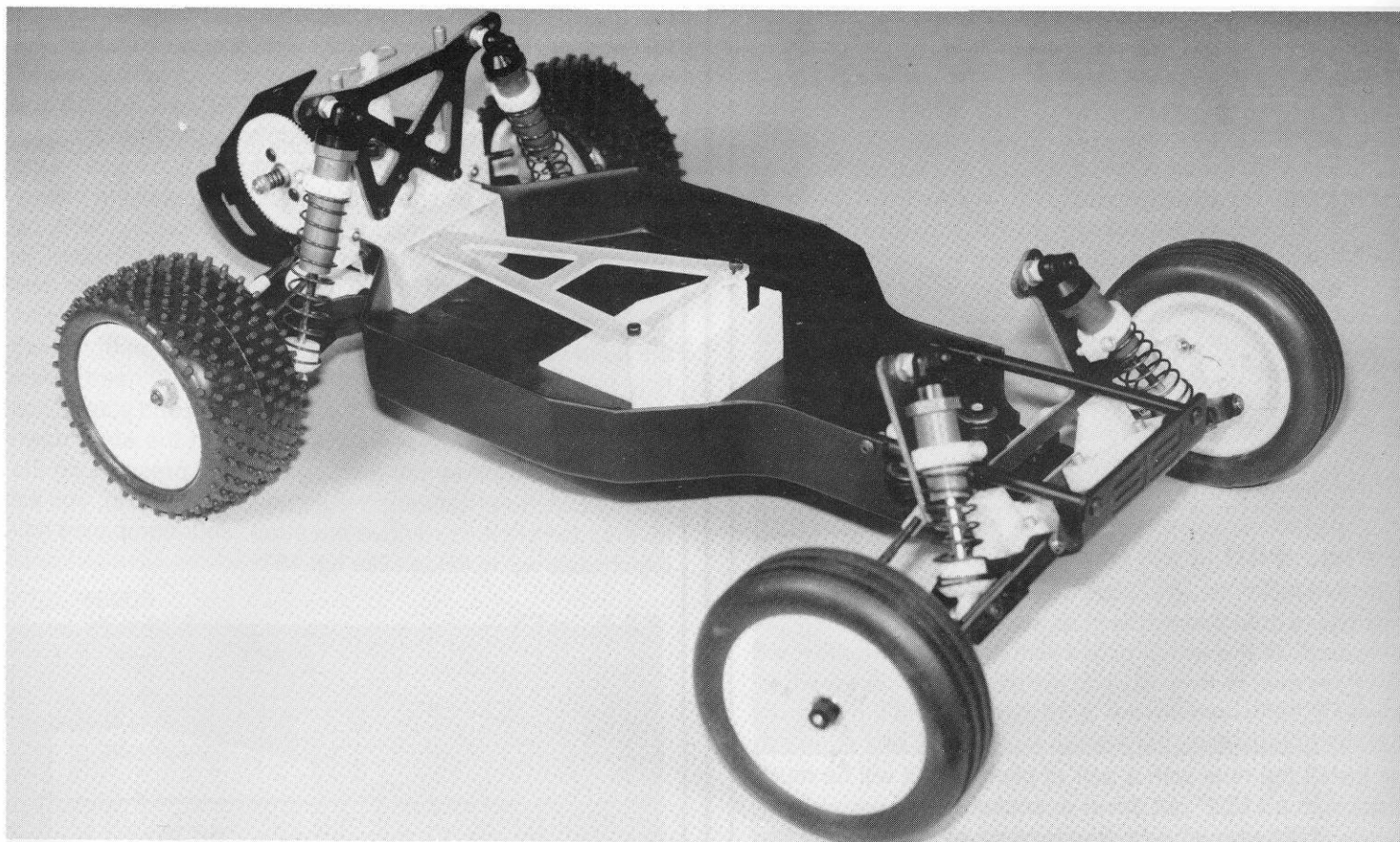


Fig. 151

RADIO AND ELECTRICAL INSTALLATION

We are now ready to install all of the components that do not come with your new car kit. The first item we are going to install is the steering servo. ***WARNING! Because our new bell crank steering system has no servo saver feature, you must decide to add a servo saver, or use your steering servo without a servo saver feature.***

Selecting a good servo is very important if you are going to race competitively. While just having a ball bearing servo for consistency was important a while back, drivers are now looking for more from their steering servos. Some of the new servos offer metal internal gears in addition to quicker response times. While these servos are a little bit heavier, they give you more consistent results and longer servo life, but they cost more.

Some of the new metal gear servos are: #94151 or #94152 from Airtronics and #9302 from Futaba.

Standard high speed servos are: #94737 from Airtronics, #9301, #9401, or #9101 from Futaba, and #4135, #4721, #4731 or #4735 from J.R. Propo. There are many more servos available than what are listed here, but these represent what seem to be used by most racers.

If you are running one of the new, all-metal gear servos, or if you feel your driving is good enough, you may choose to run a standard servo horn and no servo saver. If you make a mistake and hit something hard enough, though, then you can damage your servo's internal gears. Servo gears for your servo may not be readily available in your area, so keep this in mind. While this is what many of our Team drivers are doing with their cars, PLEASE remember that many of them are sponsored by radio manufacturers and they may not have to buy the repair parts or replacement servo they may need if their own is damaged. The recommended servo saver is the large Associated (#8435 or #5551) or Kimbrough large servo saver equivalent.

STEERING SERVO INSTALLATION - MEDIUM SIZE SERVO

Fig. 152 All of the servos mentioned above are medium size servos; we no longer recommend using small servos. In fig. 152 you will see four mounting holes. For a medium size servo we will use the two holes closer to the centerline of the chassis and spaced further apart, as indicated by the arrows.

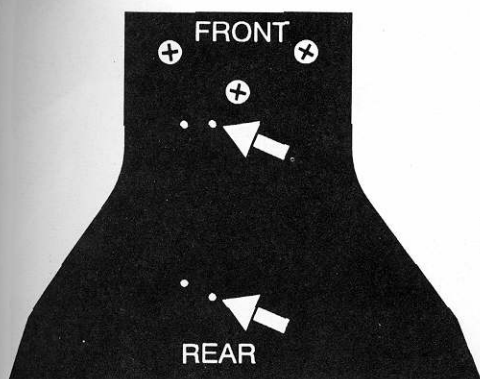


Fig. 152

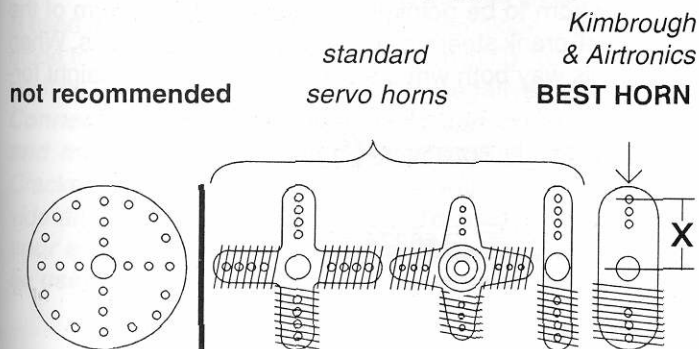
Medium size servo mounting holes (bottom view shown).

□ **Figs. 153, 154 & 155** Now you need to decide whether to use a servo horn or servo saver. Servo horns come in several different styles that must be modified to fit. Fig. 153 shows some of the more common styles of servo horns used in off road racing. The preferred is the aftermarket heavy duty Kimbrough or Airtronics style servo horn. Your servo horn should look like one of the other three shown. If you have a round servo horn, you will need to find a replacement, because they will not work in our car. Which-ever type you have, remove the shaded areas as in fig. 153.

Now measure your servo horn or servo saver from the center of the splined mounting hole to the outside hole (on the longest arm), fig. 154. If the distance is $\frac{3}{4}$ " (.750" or 19.1mm) or greater, you can mount the ball end on the back side over the servo. If the distance is less than the above measurements, then mount the ball on the front of the servo horn or saver.

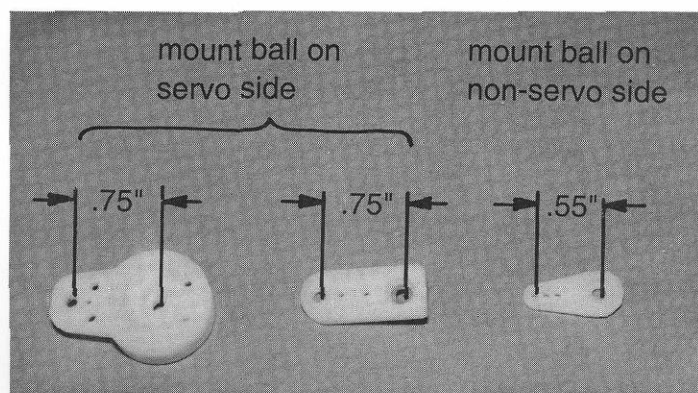
From bag #6-14 remove one #6270 short steel ball end and one #7260 4-40 small pattern nut. Thread on the ball end in the hole closest to $\frac{3}{4}$ " (.75" or 19.1mm), on the correct side according to your measurements. **Note:** On most servo horns or servo savers you will have to enlarge the mounting hole before you install the ball end. The best way to do this is to ream out the hole with your X-acto® knife. Reaming from both sides will help prevent the servo horn or saver from cracking. After the ball is installed, thread on the #7260 4-40 small plain nut on the other side.

TYPES OF SERVO HORNS



(NOT ACTUAL SIZE)

Fig. 153



#6270
4-40

#7260
4-40
thin plain nut

Fig. 154

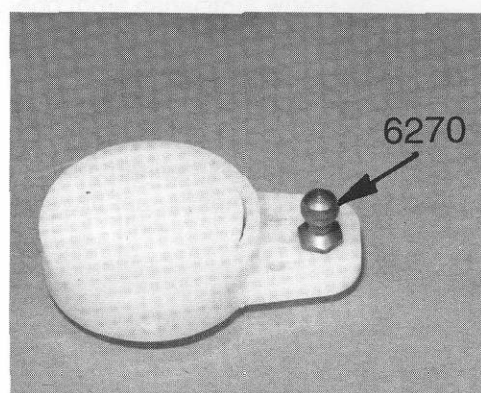


Fig. 155

□ **Figs. 156 & 157** In bag #6-6 you will find two #6336 nylon servo mounts and two #6292 4-40 x $\frac{3}{8}$ " FHSScrews. For now, we will temporarily install the servo mounts so we can mark them for drilling to fit your servo correctly. Fasten the servo mounts to the chassis with the two #6292 FHSScrews so that the thicker portion of the mount is towards the driver's side of the chassis. **Note:** The remaining steps will show installing the #8445 servo saver because this is the more complex installation.

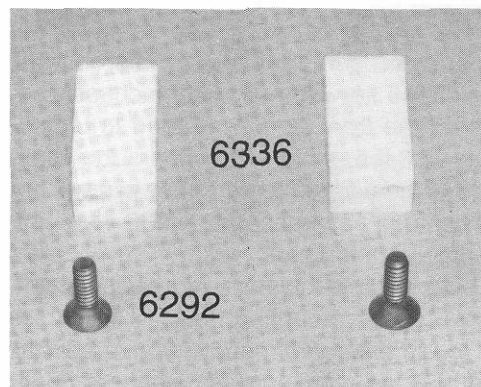


Fig. 156

#6292
4-40 x $\frac{3}{8}$

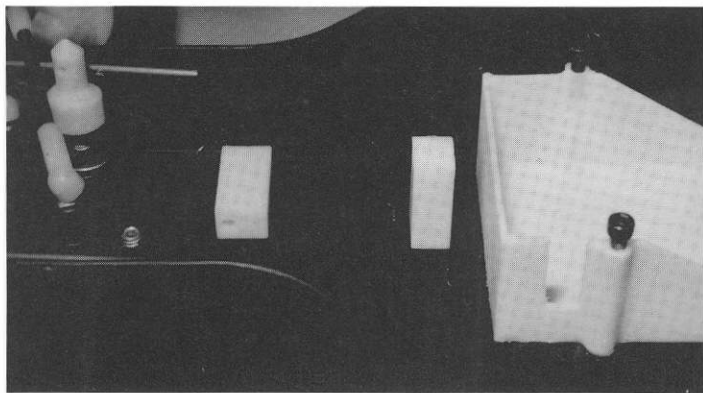


Fig. 157

□ **Fig. 158** Mount the servo saver so that it is pointing straight up as shown. Now check to make sure you have almost equal travel for the servo saver in both directions. If you don't, remove the servo saver, rotate the mounting position one spline in the direction needed and then remount the servo saver. Do this until you have almost equal travel in both directions.



Fig. 158

□ **Fig. 159** Place your servo with servo saver between the two #6336 nylon servo mounts on the chassis. You will see that the #8445 servo saver hits the chassis before the servo goes on the front side. You need to temporarily raise the servo until the servo saver clears the chassis. (With a standard or heavy duty servo horn this will not be necessary.) You can use several of the #6936 #4 aluminum washers to accomplish this. Once the servo saver clears the chassis, slide it back against the servo mounts and mark the centers of the two upper mounting holes. If the holes are too close to the top of the servo mounts, you can install one or two of the #6936 #4 aluminum flat washers under each mount to raise them. Now remove the two servo mounts and drill your marked holes with a #43 drill bit (a 3/32 drill bit will work if used carefully).

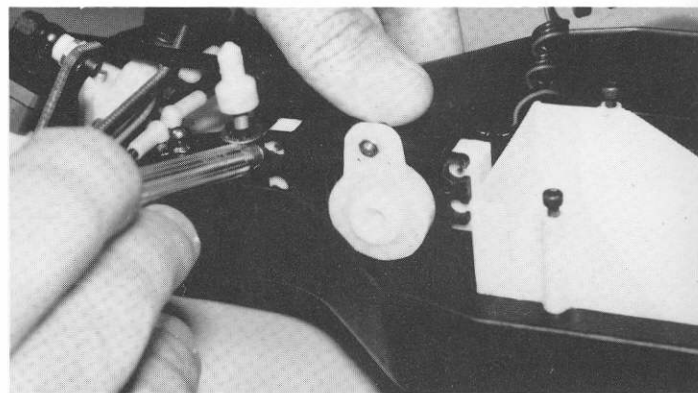
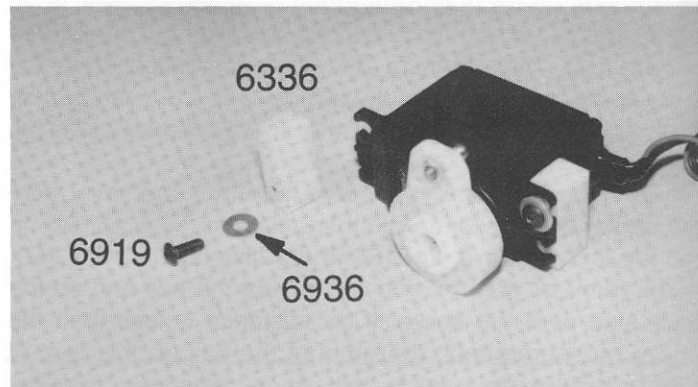


Fig. 159

□ **Fig. 160** Now remove two #6936 #4 aluminum flat washers and two #6919 4-40 x 5/16" BHSScrews from bag #6-6. Use these screws and washers to mount the servo to the servo mounts as shown. Reinstall the servo onto the chassis. If you had to raise the servo mounts, use the same number of washers under the mounts to reinstall the servo.



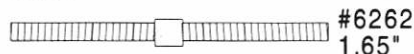
#6919
4-40 x 5/16



#6936
#4 flat washer
aluminum

Fig. 160

□ **Fig. 161** In bag #6-2 you will find the #6262 1.65" turnbuckle. In bag #6-14 you will find the remaining two #6274 plastic ball end caps. Thread on the two plastic ball end caps. Because each servo horn or servo saver can be a different size, there is no pre-established length for this turnbuckle. To properly set up this turnbuckle, you will want the servo saver or horn to be pointing straight up and the arm of the #6254 bell crank steering pointing across the chassis. When set up this way both wheels should be pointing straight forward.



#6262
1.65"



#6274

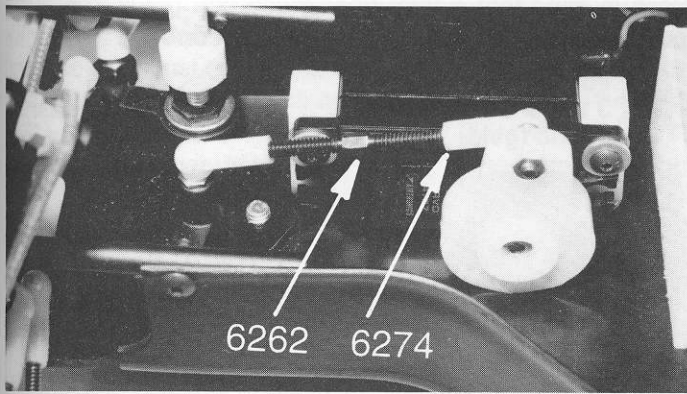


Fig. 161

MOTOR INSTALLATION

□ **Fig. 162 & 163** Now it is time to take out your stock or modified motor so that we can install it. Your kit does not come with a motor or pinion gear, so you will be installing the motor and pinion you bought separately.

First, depending upon your motor, you may need to install your motor capacitors and Schottky diode. **WARNING!!! IF YOU ARE RUNNING A SPEED CONTROL WITH REVERSE, DO NOT INSTALL A SCHOTTKY DIODE ON YOUR MOTOR! Installing the diode with a reverse speed control will destroy the speed control!!!**

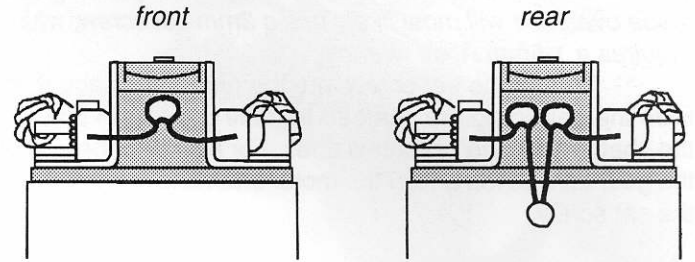
CAPACITORS. You will want to install a total of three .1uf 50 volt capacitors (it does not matter which brand or size). If your motor already has some installed, just add the ones still needed to bring the total to three. Capacitors are mounted as follows (fig. 162): one goes from the can (stock motor) or can grounding tab (modified motor) to the positive terminal, another goes from the can or can grounding tab to the negative terminal, and the third goes from the positive terminal to the negative terminal. **Note:** Make sure that each lead of a capacitor only touches a lead of another capacitor connected to the same terminal or can grounding point.

SCHOTTKY DIODE. If you have a high frequency speed control (without reverse) like the Novak HPc or Tekin 411-G you should install a Schottky diode. This diode will give you more consistent brakes, make your motor run more efficiently, and allow your electronic speed control to run cooler.

The diode has a silver band painted on one end that is used to identify the positive side of the diode. Connect the diode to the tabs of the motor as shown in fig. 163, soldering positive to positive and negative to negative. **WARNING: Connecting the diode backwards can crack the diode and make the car act like the motor is shorted out. Cracked diodes should be replaced with new ones to provide all of the above advantages. To prevent damage to your electronic speed control a Schottky diode should be used at all times (except on reverse models).**

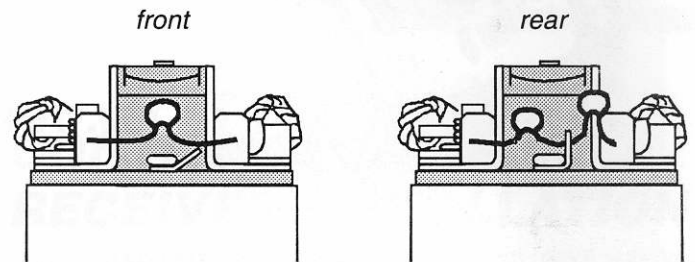
MOTOR PLUG CONNECTOR. If you are going to use a motor plug connector, install one now. Our Team drivers hard wire (direct solder) the speed control motor leads to the motor. Connect the positive lead to the positive terminal of the motor and the negative lead to the negative terminal.

STOCK MOTORS



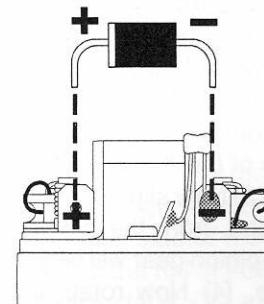
Add three capacitors where shown.

MODIFIED MOTORS



Add three capacitors where shown.
(NOT ACTUAL SIZE)

Fig. 162



Do not use a Schottky diode on a speed control with reverse. Solder positive to positive, and negative to negative.

(NOT ACTUAL SIZE)

Fig. 163

❑ **Fig. 164** Now you will need to locate your pinion gear and its appropriate set screw. **Note:** Most of the American made pinion gears use a 4-40 set screw, which requires an .050" Allen wrench. The few non-standard American made gears will use a 1/16" Allen wrench. Any of the pinion gears made overseas will most likely use a 3mm set screw, which requires a 1.5mm Allen wrench.

Thread the set screw into the pinion gear and then slide the gear onto the shaft so that the gear teeth go over the shaft before the set screw does. For now, line the end of the gear up with the end of the motor shaft and lightly tighten the set screw.

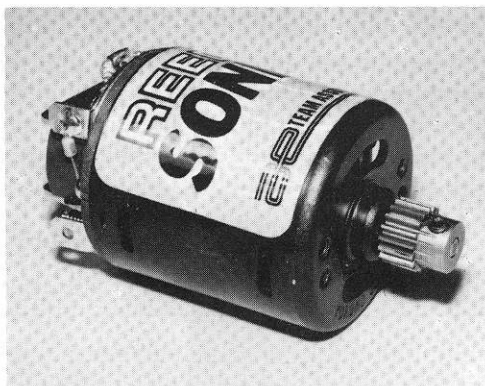


Fig. 164

❑ **Figs. 165, 166 & 167** (1) In the master bag you will find a small bag containing the two #6515 gold 3mm x 6mm SHCScrews and two #6936 #4 aluminum flat washers. These gold colored screws are metric screws used only for mounting the motor to the motor plate. **WARNING! Do not use any of the black 4-40 screws to mount the motor. They can strip out the 3mm screw holes in the motor can, making the motor unusable.**

(2) Place one of the #4 flat washers on each of the #6515 motor screws. (3) Now slip the motor into the opening behind the transmission, from the driver's side, shaft end first. See fig. 165. The pinion gear will slide through the opening in the motor plate. (4) Now rotate the motor until the lower hole in the motor lines up with the lower motor mounting hole. (5) Thread the upper and lower motor screws and washers into the motor, but do not completely tighten the screws yet.

(6) Now we need to set the gear mesh. By moving the motor forward or back we will be moving the motor pinion gear closer to or away from the nylon spur gear. What we want to do is the get metal pinion gear as close to the nylon spur gear as we can without jamming the gears. The easiest way to check this is to put your finger on the plastic gear and see if you can rock it in the teeth of the metal pinion gear, but without moving the metal pinion gear. The gears should be as close as possible, but still have the ability to rock the plastic gear. (7) When you have the spacing correct you can go back and tighten both of the motor mounting screws. (8) Now recheck the gear spacing. It is important to

keep in mind that a tight gear mesh can result in a huge power loss, so take your time and do it correctly.

#6515
3 mm x 6 mm
metric (gold)

#6936
#4 flat washer
aluminum

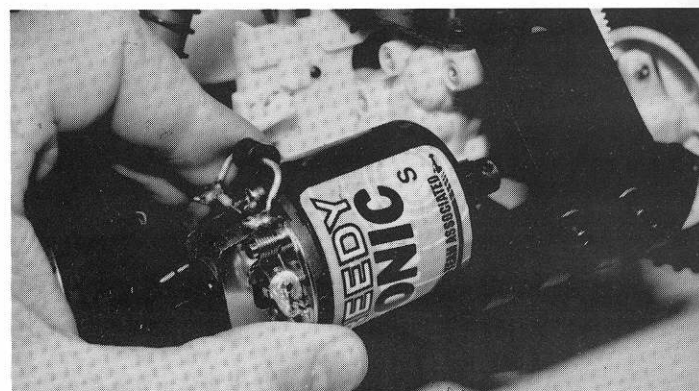


Fig. 165

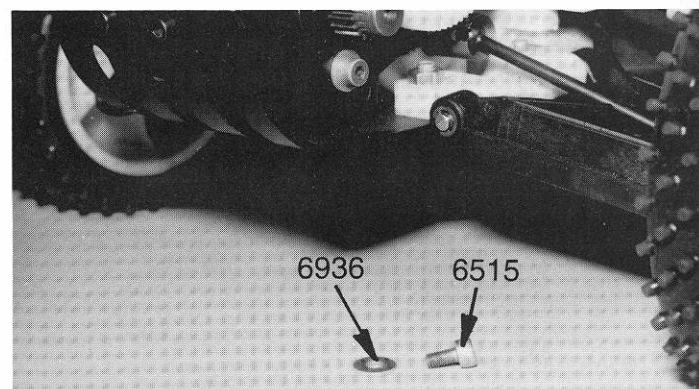


Fig. 166

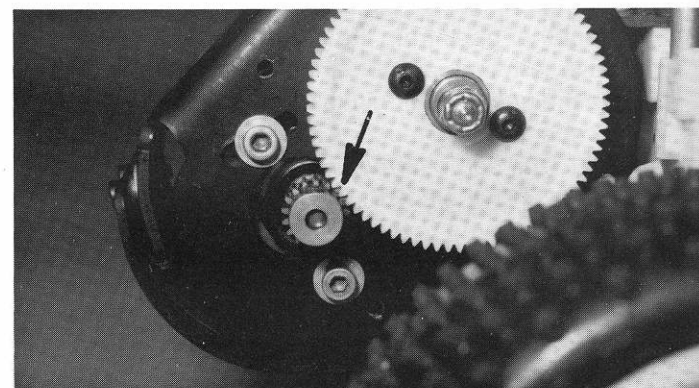
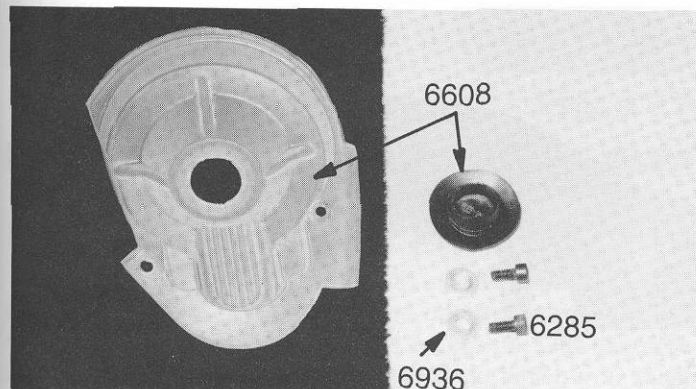


Fig. 167

❑ **Figs. 168, 169, 170 & 171** (1) In the Stealth transmission bag you will find the #6608 plastic gear cover with its black removable cap. (2) Trim around the outside of the gear dust cover (fig. 168) so that it will fit over the motor plate accurately, then (3) cut out the center button hole. (4) There are also two small dimples in the gear cover that mark the locations for the two mounting screw holes. Take a hobby knife and open up these holes. (5) In bag F of the transmission bag you will find two #6285 4-40 x 1/4" SHCScrews and two #6936 #4 aluminum flat washers. Use

these to fasten the plastic gear dust cover to the motor plate (fig. 169). (6) You can now install the black removable cap into the gear dust cover (fig. 170). Remove the cap to adjust the transmission torque clutch with your 1/4" nut driver (fig. 171) in the future. **WARNING!** Before you can remove the motor from the car you must first remove the gear dust cover. Make sure you do not get the gold motor screws mixed up with the black dust cover screws. Mixing these up could cause you to strip out the motor can mounting holes or gear cover holes in the motor plate.



#6285
4-40 x 1/4
steel

#6936
#4 flat washer
aluminum

Fig. 168

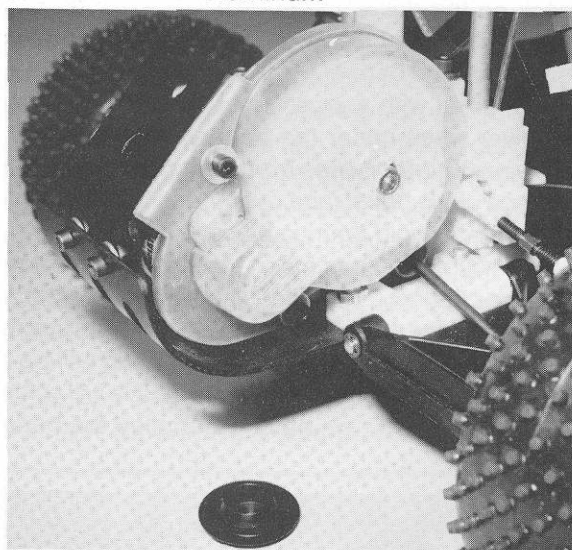


Fig. 169

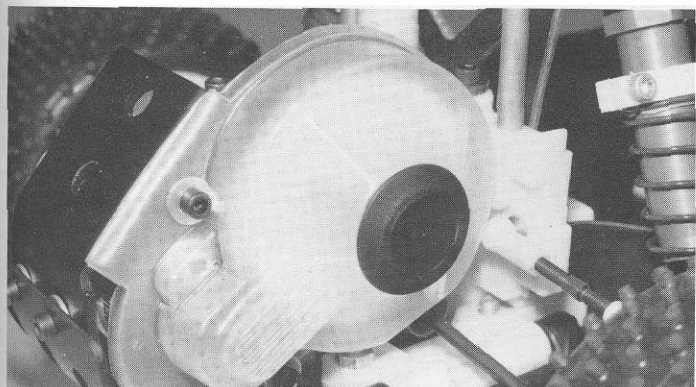


Fig. 170

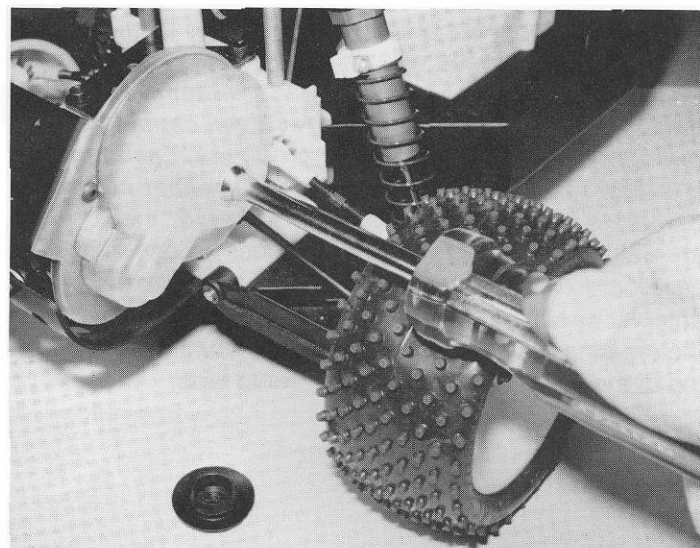


Fig. 171

ELECTRONIC SPEED CONTROL AND RADIO RECEIVER INSTALLATION

If you are serious about racing, then make sure you pick a quality radio such as Airtronics, Futaba, J.R. Propo, or K.O. Propo. This is an important part of your car system and can help eliminate possible problems. The same applies to the electronic speed control (ESC). Some radios come with one servo and an electronic speed control; make sure it is a good ESC. Most racers prefer to use aftermarket speed controls from companies like Novak or Tekin, which are the two top manufacturers of ESC's.

Fig. 172, 173 & 174 (1) Locate your receiver close to the antenna on the right side of the chassis as shown. If your receiver is too large to fit laying down, you will have to stand it on edge. If you have to do this, make sure you have the crystal side of the receiver up. (2) In the master bag you will find the roll of #6726 black servo tape, a double-sided foam sticky tape. Cut a piece to match the side of the receiver that you are going to mount to the chassis. Stick it first to the receiver then the chassis. **Note:** Team drivers will sometimes use two layers of servo tape to help provide better shielding from electrical interference. (3) Remove your #6338 antenna tube and mount from the master bag. (4) Feed the antenna wire up through the bottom of the #6338 antenna mount. (5) Fasten the mount to the chassis (in the location shown) using the #6922 4-40 x 1/2" FHSScrew that came with the mount. (6) Now feed the antenna wire through the antenna tube. (Keep the antenna tube as long

as possible, for radio range, but not to the point where it could get caught in the wheels or something else.) **WARNING!! Do not cut the radio receiver antenna wire. Cutting this wire could detune the receiver, causing severe radio interference or glitching problems. Each receiver is tuned for the length of antenna wire that comes attached to it.** If you have excess antenna wire, the appropriate way to store it is to wrap the excess around a piece of cardboard or plastic as shown in fig. 174. Make sure the antenna wire does not cross over itself, for that could shorten the antenna receiving range. You can mount the excess on top of the receiver with a piece of servo tape.

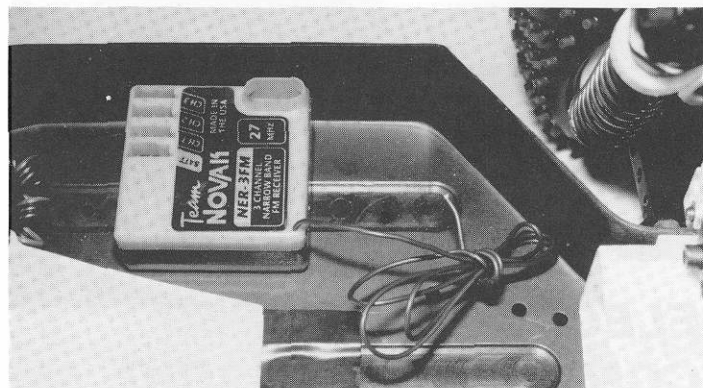


Fig. 172

#6922
4-40 x 1/2

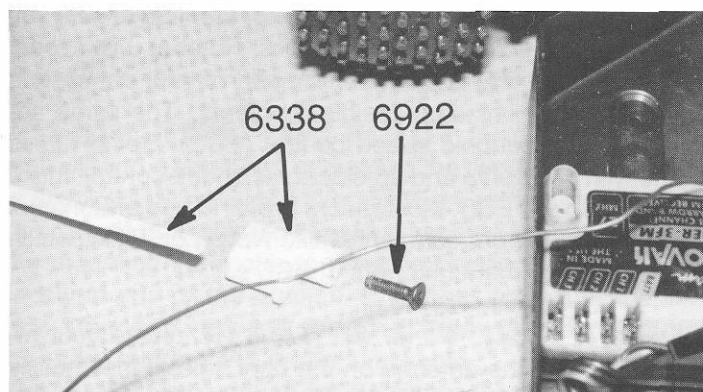
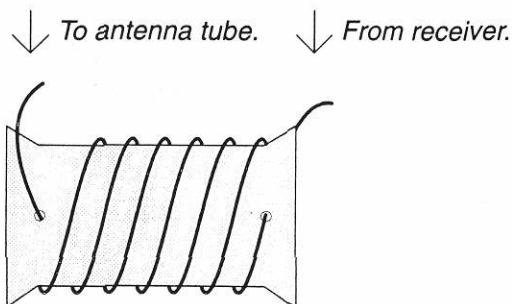


Fig. 173



If you have excess antenna wire, wrap it around a piece of cardboard. Do not let the antenna wire cross over itself.

(NOT ACTUAL SIZE)

Fig. 174

Fig. 175 Now that the receiver is mounted we can install the steering servo plug into the channel 1 (or rudder) slot on the receiver. Bundle the excess steering servo wire and secure it with one of the small wire ties supplied with the kit. Try to keep the excess wire as far away from the receiver as possible.

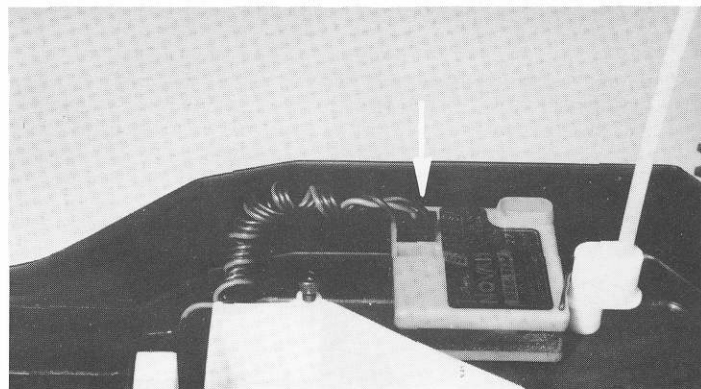


Fig. 175

Fig. 176 & 177 Mount your speed control as far back on the driver's side of the chassis as possible using another piece of servo tape. This location helps you keep the motor and battery wires as short as possible. Your chassis is milled with a cross slot for running the speed control receiver wires under the battery. **Racer's Tip:** To prevent the speed control wires from being damaged, racers will put a piece of electrical tape over the wires going under the battery pack to hold them in place.

Now you can insert the speed control receiver plug into the channel 2 (throttle) slot of your receiver. When using electronic speed controls you do not use the receiver battery slot with normal setups. Everything will be powered by the speed control through channel 2. We will solder the speed control wires after we have assembled the battery pack.

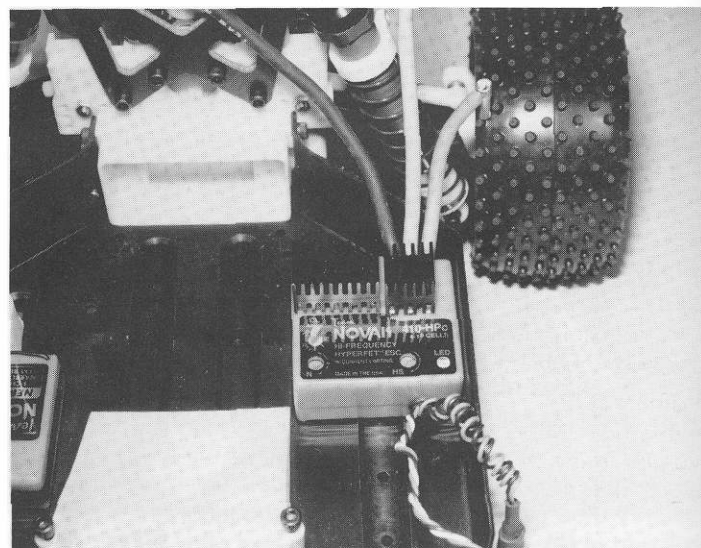
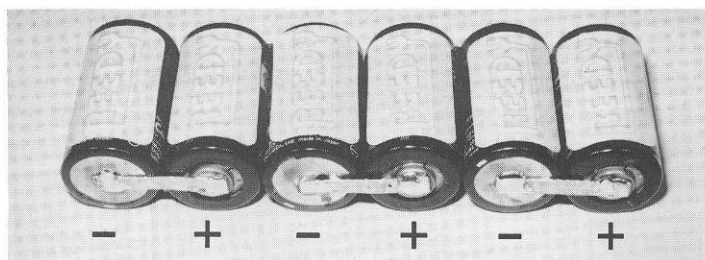


Fig. 176



passenger's side end view

Fig. 181

□ **Fig. 182** Before we can install the battery pack into the car, we must notch the battery cup as shown in fig. 182 so that the battery connector pin socket will fit.

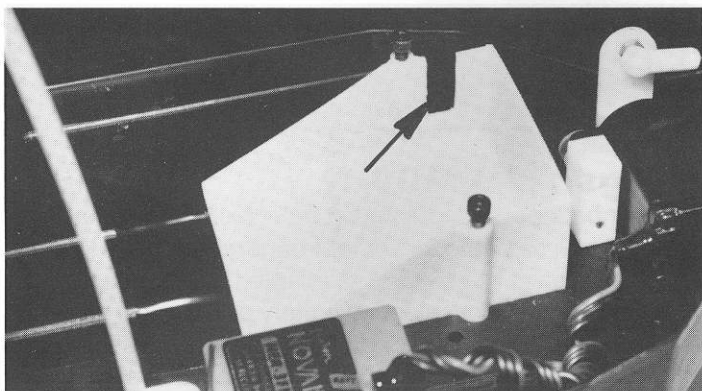


Fig. 182

□ **Figs. 183 & 184** Now we are going to hook up your speed control battery leads to our battery pack. We are using the new Reedy #652 power connector pins in our example. These pins make for an easy battery connect and disconnect system and have almost no power loss. (1) We will start with the positive terminal. Install the battery into the battery cup (make sure the positive connector is in the back left corner). (2) Now push the pins into the pin sockets. We are doing this so we can measure the wire lengths before we cut them. Make sure you leave a little slack in the wires so that they will not be hard to push in or pull out of the sockets. (3) Now solder the negative wire to the negative pin connector and the positive wire to the positive pin connector. (4) Because the speed control we are using is a three wire system, after you cut the positive lead wire you must solder one end of the piece you cut off into the other side of the positive pin so that it can be used to go to the motor positive terminal.

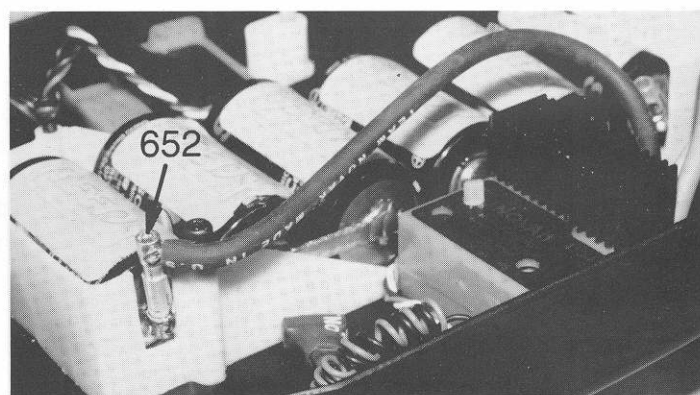


Fig. 183

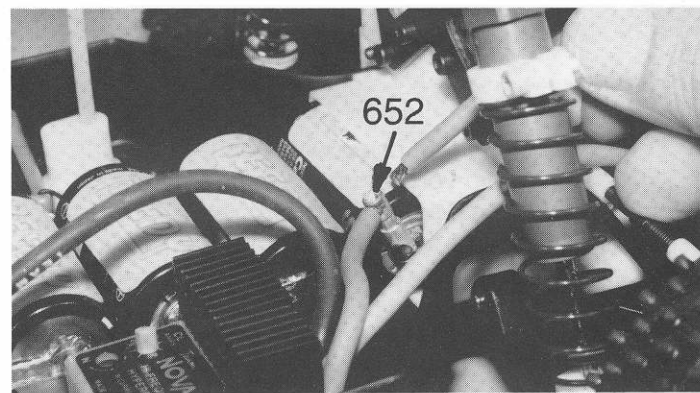


Fig. 184

□ **Fig. 185** Now measure the motor lead wires to cut them to the right length (make sure you leave some slack in the wires), then solder them onto the motor.

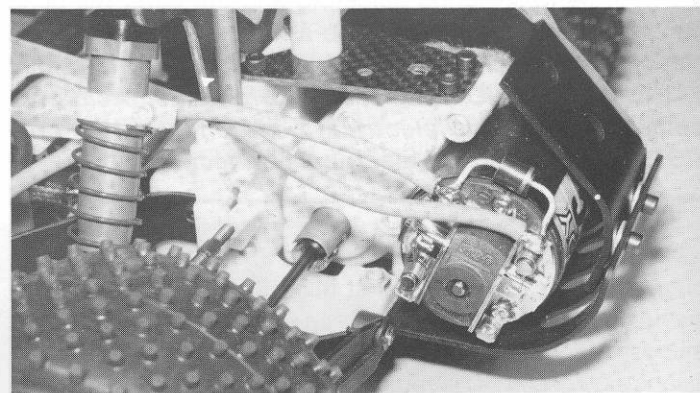


Fig. 185

□ **Figs. 186, 187, 188 & 189** Go ahead and install your battery hold down strap over your batteries. If you do not remember how, you can refer back to figs. 149 to 151. Your completed car will now look like figs. 186-189.

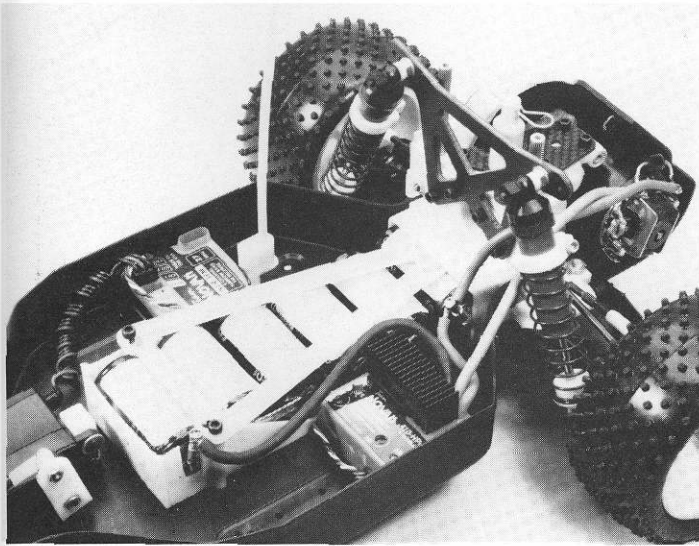


Fig. 186

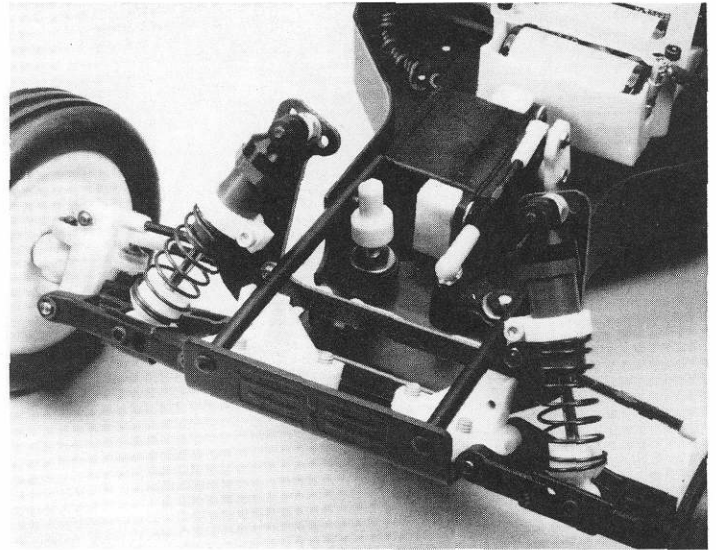


Fig. 187

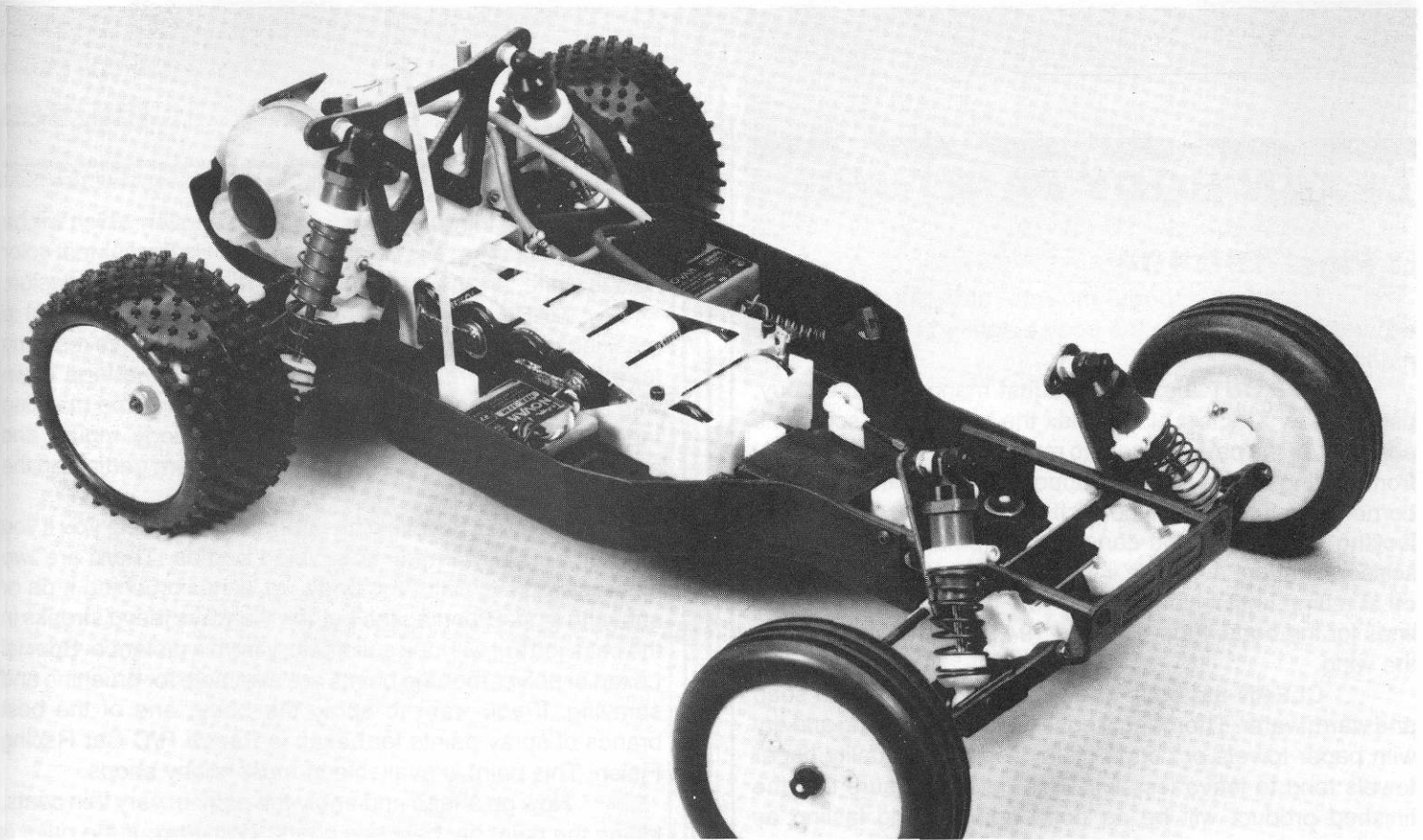


Fig. 188

If you make a mistake applying paint, the only product that we have found that can remove the paint or overspray without damaging the Lexan is Synthetic Reducer (if used properly). It can be purchased through a automotive paint supply store.



Fig. 190

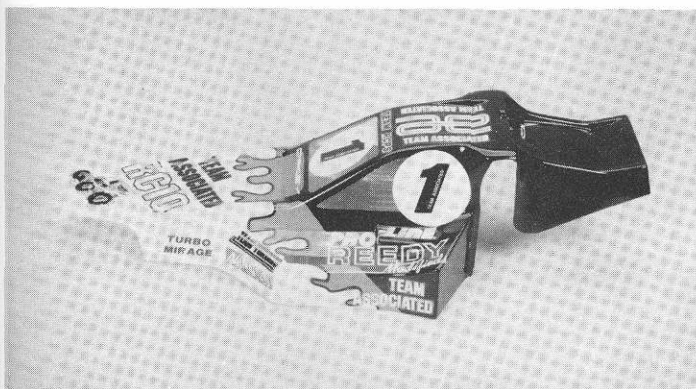


Fig. 191

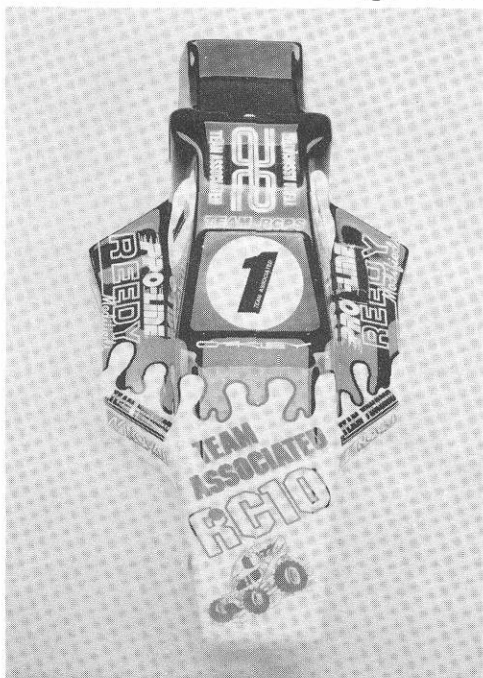


Fig. 192



Fig. 193

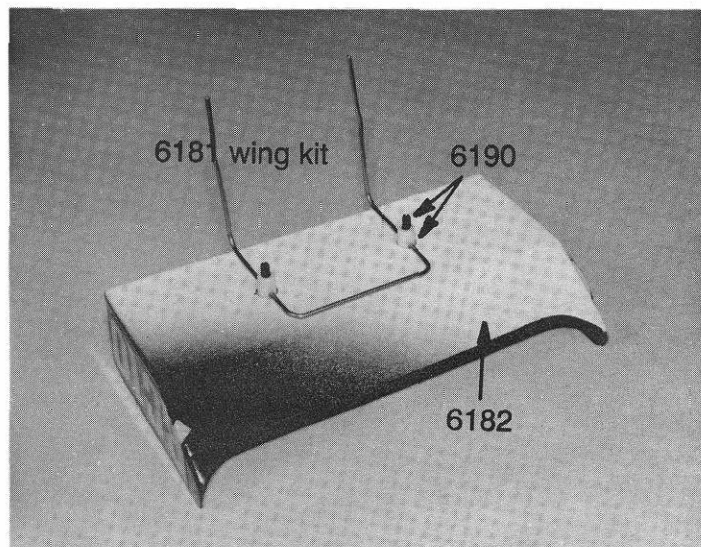


Fig. 194

❑ **Figs. 195, 196, 197 & 198** You may add the decals supplied with the kit, or customize it with decals from your local hobby shop. After the body is finished, place it on the chassis so that both body mounts are coming through the body holes. Now install the #6332 body clips through the body mounts. Fig. 195 shows the front of the body with the body clip installed; fig. 196 shows the wing mounted. Fig. 198 shows the finished product.

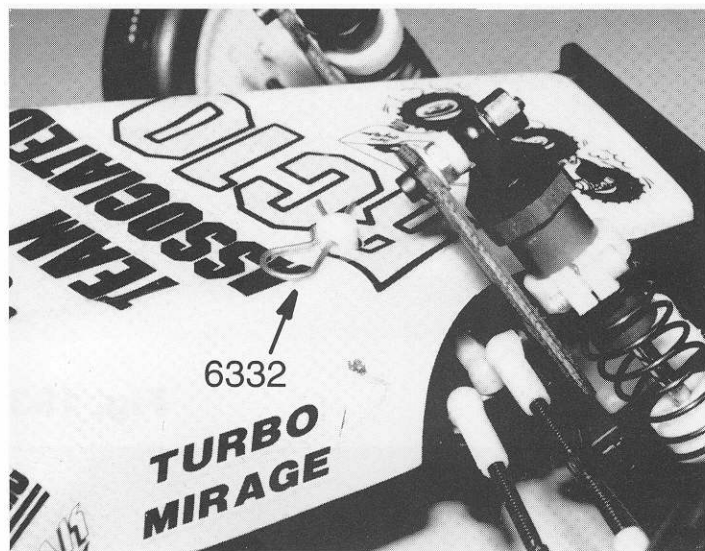


Fig. 195



Fig. 196

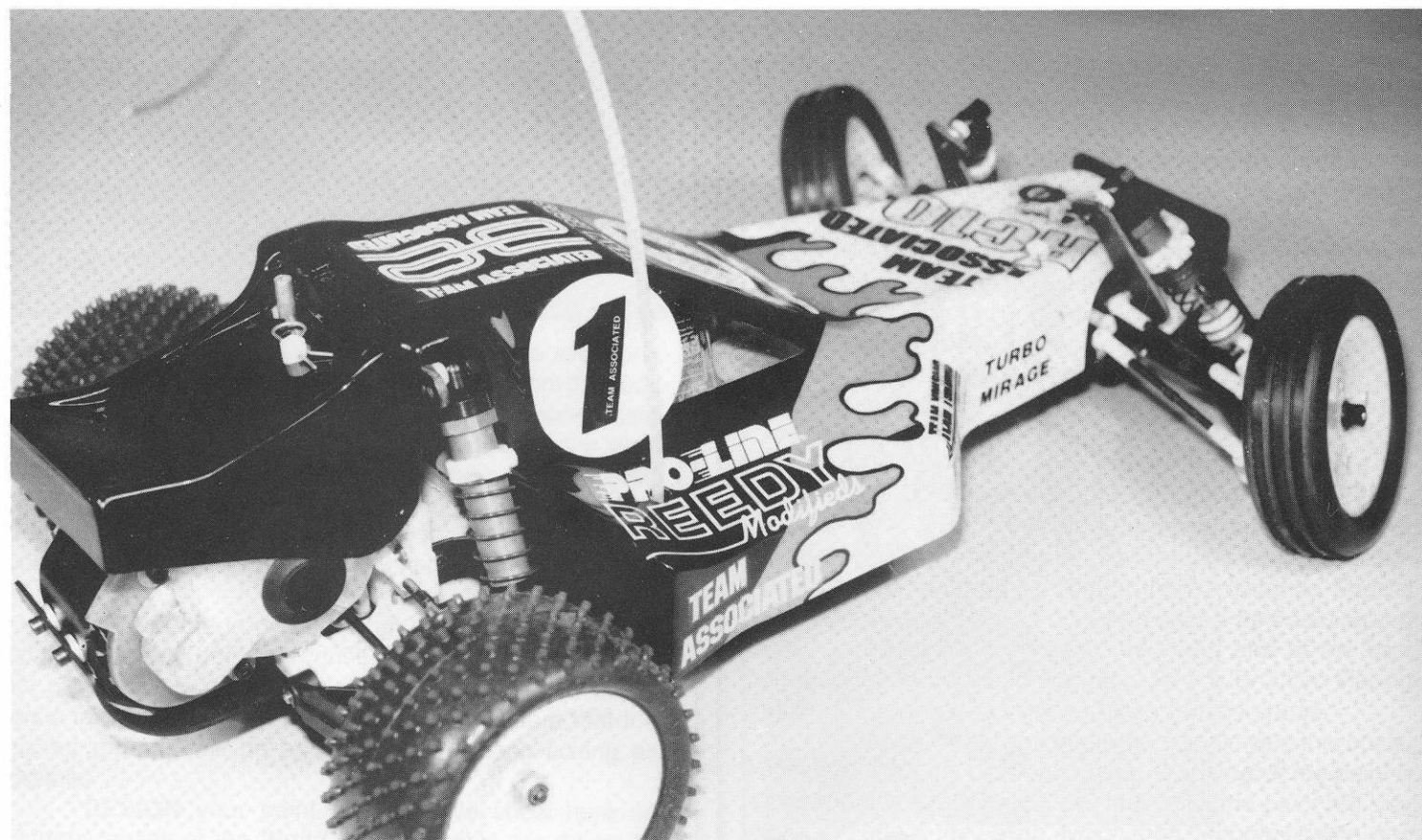


Fig. 197

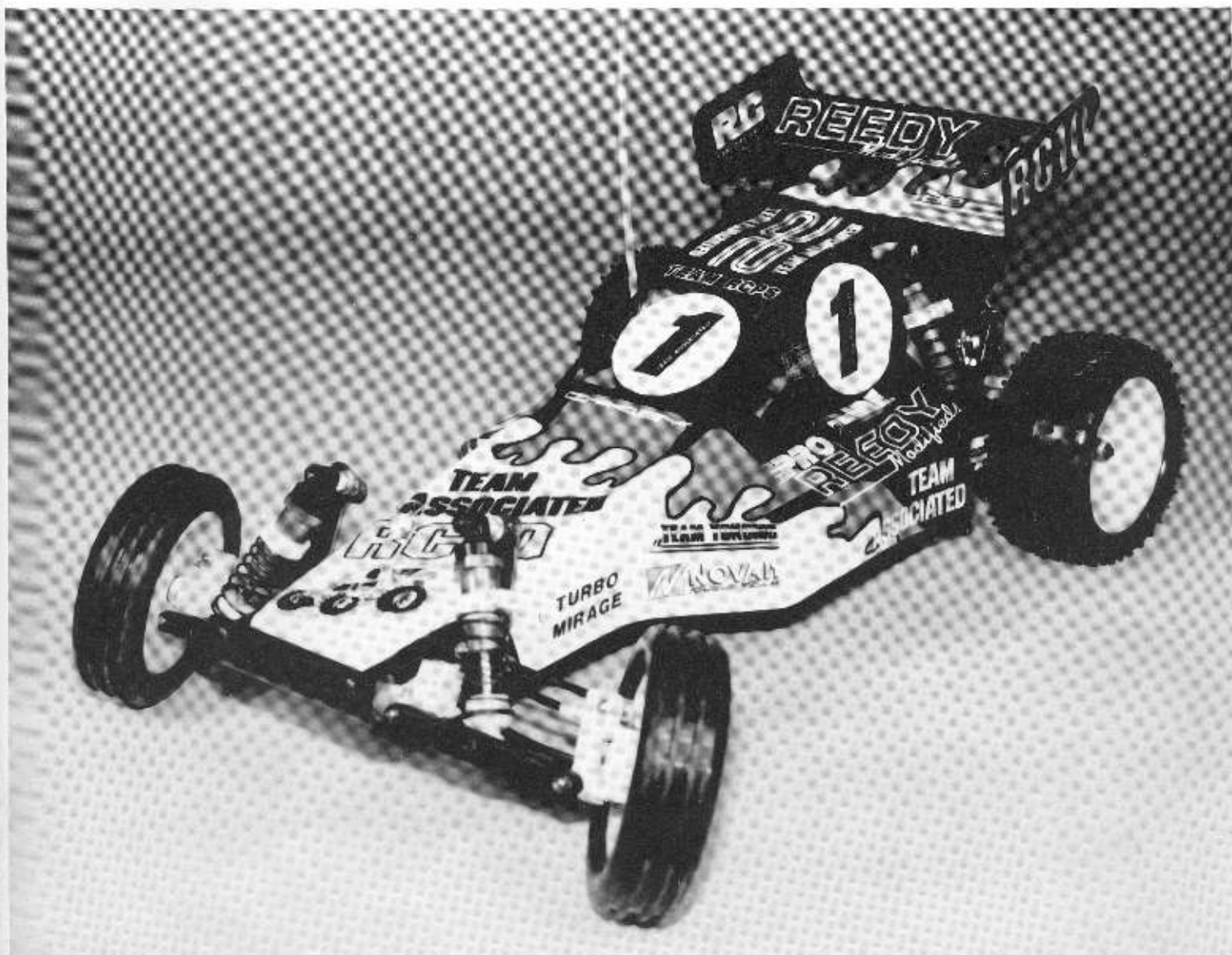
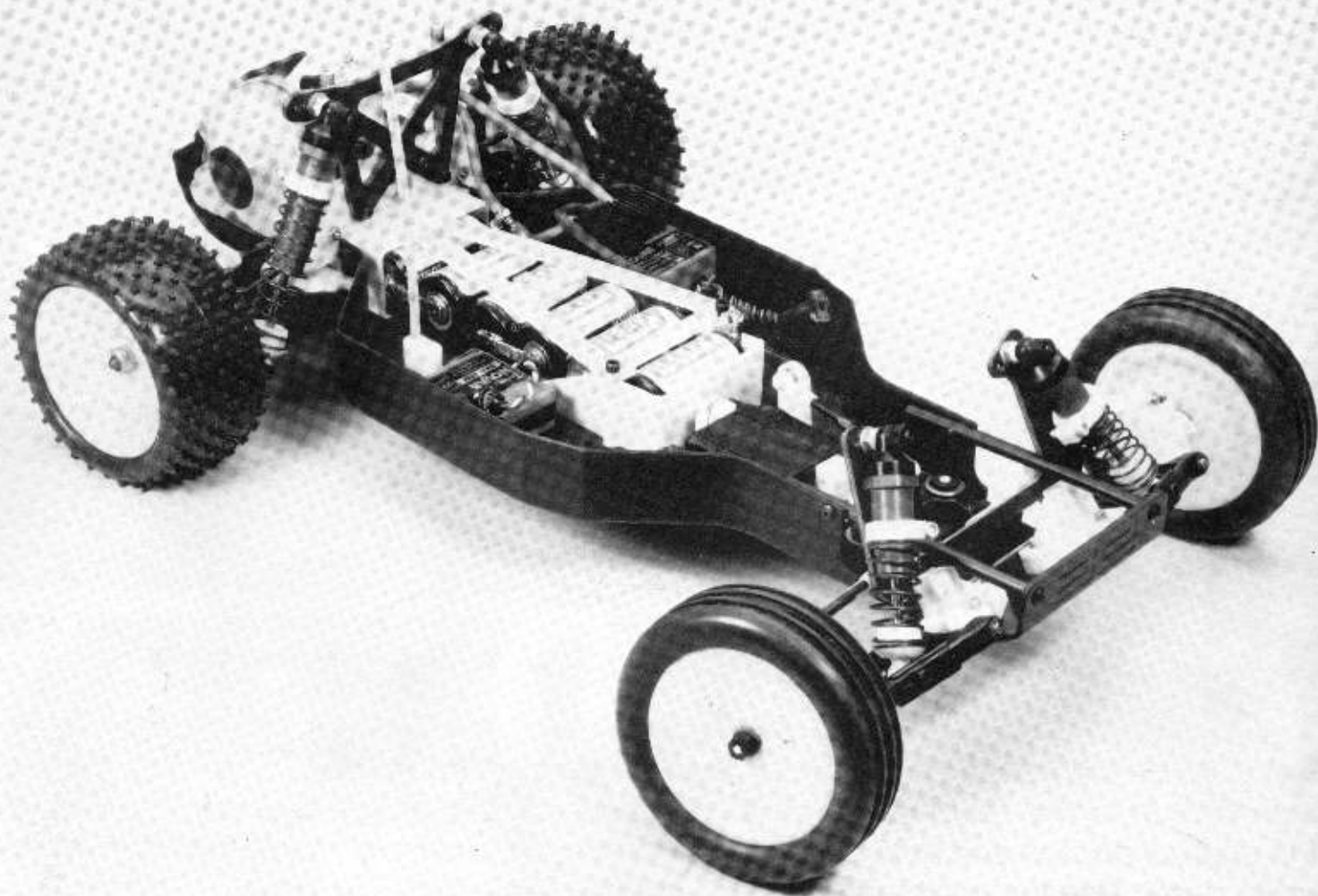


Fig. 198

SAVE THIS MANUAL! This is more than an instruction manual. It is also a handy supplement to the Team Associated 1:10 scale off road buggy catalog. You can use the manual photos and descriptions to identify part numbers and names to help you order parts. Use the current catalog for pricing.

WORLD'S CAR



22 TEAM ASSOCIATED

© 1994 Associated Electrics, Inc.

3585 Cadillac Ave.

Costa Mesa, CA 92626

(714) 850-9342