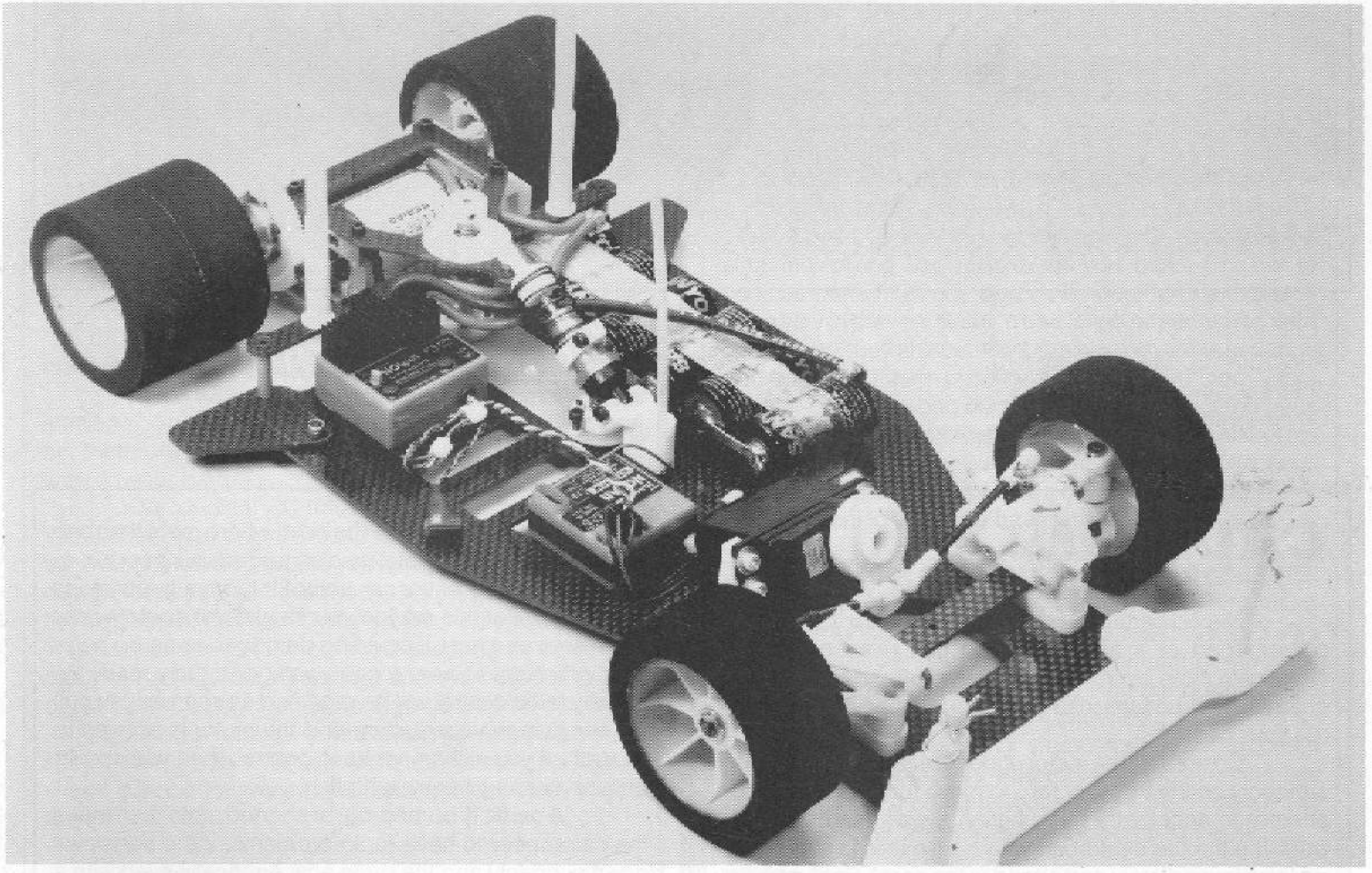
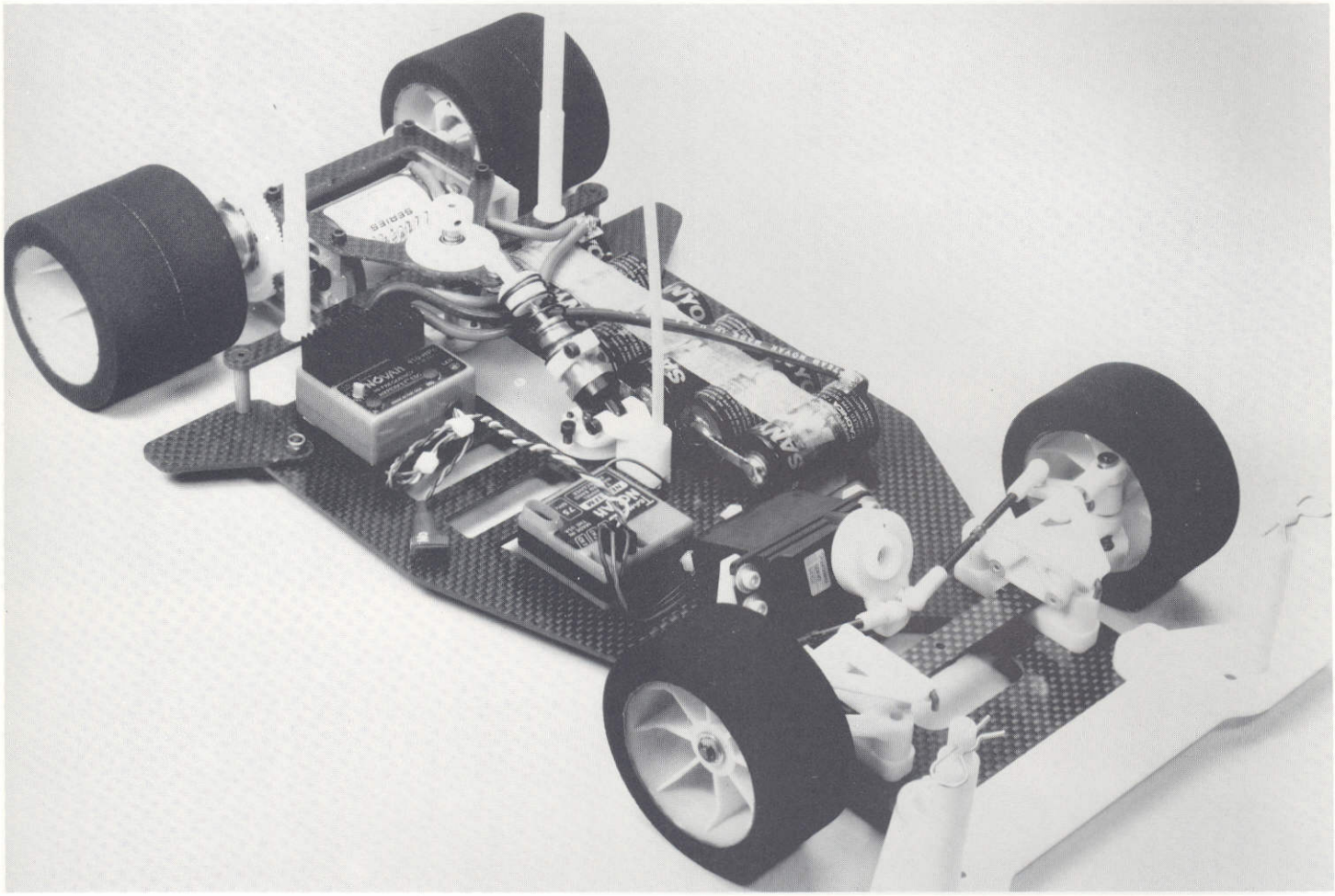
RC10L5O

WITH NEW DYNAMIC STRUT FRONT END



INSTRUCTION MANUAL

RC10LSO GRAPHITE with Dynamic Strut



ASSOCIATED ELECTRICS, INC.
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Costa Mesa, CA 92626

TEAM ASSOCIATED

CAUTION

Ni-cad batteries are susceptible to damage when overcharged at a high rate, and can release caustic chemicals if the overcharge is severe. Read the battery charging instructions in this manual before attempting to run your car.

Do not stall the motor under power. If the car stops suddenly on the track, or fails to move forward when you attempt to accelerate (after hitting a wall, for instance), push the throttle control on your transmitter to the brake position immediately and attend to the car. A small rock or other piece of debris may have stalled the gears, and if the throttle is left in the "ON" position, the result can be a burned-out motor, resistor or electronic speed control unit.

If you run the car to the point where more than one cell in the pack is completely discharged, it is possible to lose radio control of the car before the drive motor stops completely. For this reason you should not operate your car in an area where it could be damaged or cause harm to others, such as near a pool, water or a busy roadway. Usually radio control will be regained as soon as you pull the car from the obstruction and the motor is allowed to free-run. If you still do not have control, then you should turn the car's power switch off.

A partially burned-out or shorted motor can make the car appear to have radio problems. If the car slows down suddenly and the radio acts erratically even with a full battery charge, then the cause is probably the motor. Check the range of the radio. A shorted motor will draw extremely high current even under no-load (free spinning) conditions.

FIRST, A WORD

CONGRATULATIONS! You now have the winningest 1/10 scale Super Speedway Oval car in the world! The original designs for our first super speedway car, the RC10L-SS, came from our National Championship-winning RC10L car. We were very successful on flat ovals with the RC10L, but with a few changes we made a better car for the high banks of the super speedway style tracks, tracks like Whippoorwill or the Velodrome track used for the Thunderdrome race.

On these big-banked tracks we were faced with a different set of racing problems than for a road course or flat oval race track. On a road course or flat oval the cars have to handle extremely high side loads in the corners. For this type of racing a car that is closer to "square" is best. Closer to "square" means a car whose track or width is almost the same as it's wheelbase. A "square" car allows you to go around the corners much faster, giving you quicker lap times. This is what is needed for the best performance on road courses or flat oval tracks.

On the high bank ovals tracks you hardly have any side force. This normal side force in a flat corner is turned into downforce on a banked corner. Since we no longer have the high side loads to deal with in the corners, we no longer need a "square" or wide car. Therefore, why should we be trying to push that big of a body around the track if we do not need to?

We then called NASCAR and talked to their Tech Inspector. He gave us the exact width of a Chevrolet Lumina at the bottom of the door windows. We then took 1/10 of that dimension for a 1/10 scale body and designed a new body based on this width. Designing the first narrow super speedway version of our on road car had many racers asking, "It is so narrow; is it legal?" The answer is "YES!" It meets both ROAR and NORRCA rules for its class like the RC10L does.

All of this translates into greater speed and efficiency. The narrower body means you are pushing less air, therefore you have less drag, giving you better run time on your batteries.

Our original RC10L-SS has won more titles on super speedway tracks around the country than any other car. With the new RC10LSO you have all the same winning design features that have made this car a success, with the addition of our new Dynamic Strut front suspension. This suspension gives you more suspension travel (for rougher tracks), more steering, and the ability to adjust caster, camber, or change springs quickly.

We have also switched to our new, improved style shock with the new Teflon assembly parts and Teflon shock pistons for more consistent and accurate shock action.

BEFORE YOU BEGIN

You will find the photos so easy to follow that you may be tempted to put the car together from the photos alone. However, although you have the best car kit, if you want the best COMPLETED car kit, then please read the text near each photo.

Take your time assembling the car. It's not a race to see how fast you put it together; it's how well you put it together that determines how fast you can race. Please note the steps below *before* you begin to assemble your kit.

❑ **Step 1** **OPEN THE PARTS BAGS WHEN THE STEP SPECIFIES, NOT BEFORE,** otherwise you will get the parts mixed up and then you will have trouble assembling your car. **When you open each main bag for the first time, check the contents against the parts list** supplied as a separate sheet that came with your manual.

All major parts bags are referred to by bag number or description in the manual. While building the car, you will sometimes be working with several bags at the same time. These bags are referred to by bag number in the manual. Inside each major parts bags there are more bags; these are not numbered and belong to the bag they came out of.

❑ **Step 2** **KEEP THE PARTS SEPARATE.** While building the car, you will sometimes be working with several parts bags at the same time. Bags and parts will start multiplying like rabbits as you build. Try not to confuse parts from one bag as belonging to another. A good way to prevent this is to **use large paper plates with partitions.** They are ideal for both keeping parts separate and spreading them out where you can find them. Mark the plates with the bag numbers before you put the parts into them. When the plates are used up you can relabel the plate for another bag. (We include some miscellaneous spare fasteners and clips, so do not worry when you have parts remaining after you have finished.)

❑ **Step 3** **CHECK THE SUPPLEMENTARY SHEETS.** Associated is constantly testing new and improved components and then updating the kit with the best. Not all updates will be noted in the written manual (the manuals' reprinting cannot always keep up with the updates). So before you begin, check each parts bag to see if they contain any supplementary instruction sheets. If so, locate the section of the manual where this change first applies and attach the sheet(s) to that section, then you will not forget about the changes when assembling the kit.

❑ **Step 4** **ADDITIONAL ITEMS NEEDED TO COMPLETE THE KIT:**

❑ 2-channel R/C surface radio system.

❑ Battery pack (6 cell), capable of being assembled into a saddle pack (3-3), four and two, or side

by side inline six layout.

❑ Battery charger (for 6 and/or 7 cell packs).

❑ Electronic Speed Control.

❑ R/C electric motor.

❑ Motor pinion gear (48 pitch); size will be determined by type and wind of motor being used.

❑ 1/10 scale Lexan oval body.

❑ 1/10 scale Lexan wing (if allowed and needed).

❑ Step 5 TOOLS: Your kit contains the three Allen wrenches and the turnbuckle/shock wrench that you will need to assemble your car kit, but you will still need the following tools:

❑ #2 Phillips screwdriver (#SP-76)

❑ Needle nose pliers

❑ A hobby knife, such as an X-acto© with a #11 pointed blade

❑ Small file

❑ Soldering iron (40 to 50 watts), and a small amount of ROSIN (not acid) core 60/40 solder.

❑ Super glue (instant adhesive)

❑ Fiber-reinforced strapping tape

❑ Electrical tape

❑ Small piece of brass, alumium or steel shim stock approximately .010" thick.

The kit can be assembled faster and easier with the following tools:

❑ Associated's screwdriver-handle Allen wrenches in the following sizes:

❑ #6957	.050"
❑ #6958	1/16"
❑ #6960	3/32"
❑ #6961	2.5mm
❑ #6962	1.5mm

❑ A 3/16" nut driver will make installing the ball ends, small 4-40 locknuts and upper arm turnbuckles easier. (#SP-86)

❑ A 1/4" nut driver will make installing the 4-40 nuts and locknuts easier. (#SP-85)

❑ A 11/32" nut driver will make installing and adjusting the 8-32 nylon locknuts easier. (#SP-82)

❑ A precision ruler with decimal inches or metric measure.

WARNING! *Do not use a power screwdriver to install screws into nylon parts. The rotation speed is too fast, and will cause the screws to heat up when they are driven into plastic or nylon parts, and they will strip out.*

❑ Step 6 DO NOT DYE YOUR PARTS. Normally, because our parts are made of virgin nylon, you could dye the parts. But because of the very tight tolerances of the new front end, we DO NOT recommend dyeing or boiling these parts. Dyeing or boiling causes swelling of the parts, which will jam the new front end parts and compromise it's performance.

❑ Step 7 FINAL NOTES:

(1) For you experienced builders and racers: **please build the car our way first!** The RC10LSO is a remarkably fast car right out of the box. There is a good reason for everything on the car, and very few compromises were made in its design. Build it our way first and see how it handles before you make any changes.

(2) Put a check mark (✔) in the box (❑) at each step after you finish it. When you stop during assemby, it will be easier to find where you left off.

(3) To help you identify certain parts, occasionally an actual-size drawing will accompany the steps. You can place your part on top of the drawing to be sure you have picked up the right one.

(4) In some places in the instructions we have provided numbers in parentheses within the text to present an easier-to-follow, step-by-step assembly.

(5) We have used abbreviations throughout this manual for the various types of screws used. The following list identifies what the abbreviations stand for:

FHMScrew: Flat Head Machine Screw. Use #2 Phillips screwdriver.

FHSScrew: Flat Head Socket Screw. Use Allen wrench or driver.

BHSScrew: Button Head Socket Screw. Use Allen wrench or driver.

SHCScrew: Socket Head Cap Screw. Use Allen wrench or driver.

(6) The following types of notes, *in italics,* will be used throughout the manual:

Racer's Tip: *This is a trick used by some of the Team Drivers to improve their car's handling or to reduce its maintenance.*

Note: *Alternate ways to assemble the kit, including tips for smoothing out the difficult assemblies.*

WARNING! *This alerts you to be careful during this step to prevent harm to yourself, or prevent reduced performance or damage to the parts.*

SAVE THIS MANUAL! This is more than an instruction manual. It is also a handy supplement to the Team Associated 1/10 scale on-road catalog. You can use the manual photos to help you identify part numbers and names when ordering parts.

Now clear off your workbench, line up some paper plates, grab a drink and a sandwich, and let's begin!

CHASSIS PREP

❑ Figs. 1 & 2 The new RC10LSO is only offered in a graphite chassis version but the chassis is the same as the one used in our #8006 graphite RC10L-SS and the same configuration as the fiberglass chassis used in our #8005 kit. At the time of release all of the parts from this car will also fit onto our original RC10L's or the other way around.

To begin remove your #8301 graphite chassis from the kit box. You will notice that one side of the chassis (the bottom) has the holes countersunk for the screw

heads. Before we bevel the battery slots on the top of the chassis we will need to decide how we are going to configure our batteries. There are three battery layouts commonly used, all six on the left, four on the left and two on the right, or three on each side. Which layout you use will determine which slots we will need to bevel. We will want to file both sides of the six slots, that we are going to be using for our batteries, at a slight angle. We do not want the battery cells to sit against a sharp angle which could cut through the battery cell sleeve. Now lightly file the top and bottom of the chassis where the strapping tape, holding the batteries in the car, touches the chassis. Just round these corners so they will not cut the tape. Now dip a piece of #280 or #320 grit wet or dry sandpaper in water and smooth all the edges of the chassis.

WARNING! *Graphite dust can be harmful to your health, so make sure that you do the work in a well ventilated location and take proper safety precautions. When you have finished, wash off the chassis with running water and dry it with paper towels. Wash your hands off with soap and cold water to remove any graphite dust. Carefully dispose of the graphite filings or dust.*

You are now finished with figs. 1 & 2 so put a check mark in the box at the top of this step. After you have completed each step from now on, check off its box so you know which part of the assembly is completed. You will not miss any steps this way.

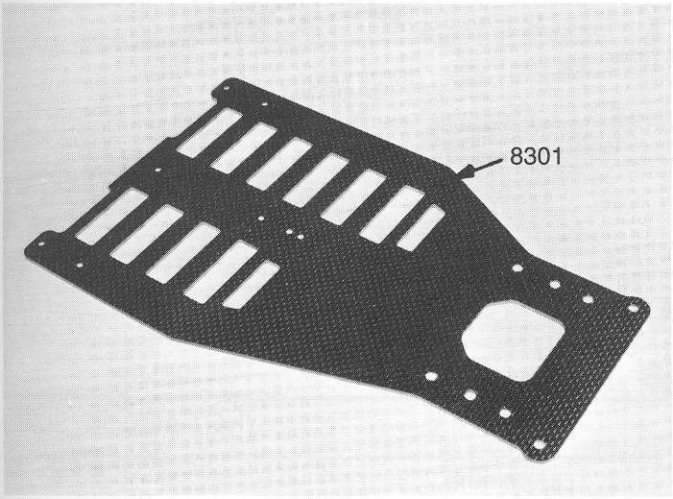


Fig. 1

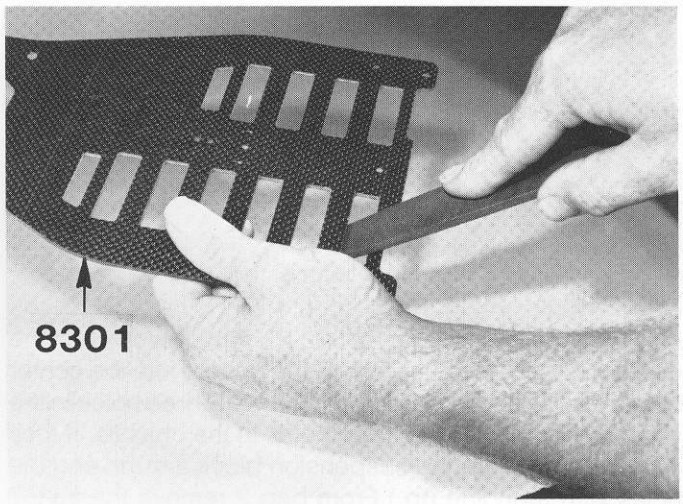


Fig. 2

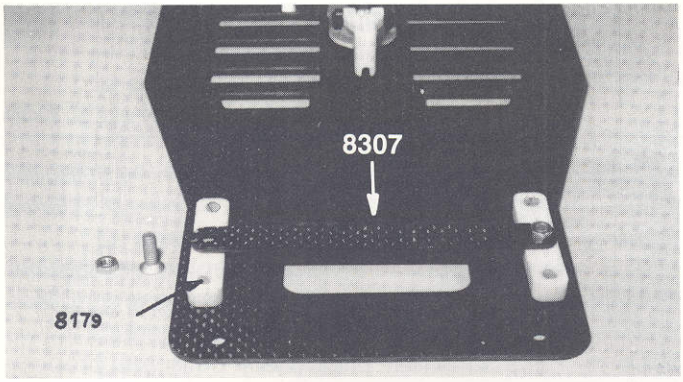
❑ **Fig. 3** ***WARNING!*** *We highly recommend doing the following step of the instructions for safety to prevent shorting the battery cells against the chassis.*

Because graphite conducts electricity somewhat like metal we have to take some of the same precautions that we would with metal. Because of its conductivity we need to make sure that the battery cells are properly insulated so that they cannot short out on the chassis. The shrink wrap on the battery cells is an insulator and we have filed the sharp edges off of the chassis so they will not cut through the cell shrink wrap, but we want to go one step further. Wrap all segments of the battery slots with electrical tape where the batteries touch. ***Note:*** *It is also important to make sure that none of the battery cell solder connections can touch the chassis anywhere on the car.*

Fig. 3

FRONT END SECTION

❑ **Fig. 4** In bag 2 you will find two #8179 front suspension arm spacers and two #3324 8-32 x 1/2" FHMScrews (lime green colored). The #8179 suspension arm spacer has one side where the holes are slightly countersunk (chamfered). Mount this side against the chassis and the thread the #3324 FHMScrew through the center hole of the chassis from the bottom into the center hole of the spacer block. (Make sure all three holes in the spacer line up with the three holes in the chassis. If they do not, then rotate the suspension block around and the holes with then line up.) From bag 2 remove the #8307 front chassis brace and two #8182 8-32 aluminum plain nuts. Install the chassis brace over the two #3324 screws and then thread on the two #8182 nuts (a #SP-85 1/4" nut driver will help). Align the three holes on each spacer and tighten the nuts.




#3324
8-32 x 1/2
aluminum


#8182
8-32
plain nut

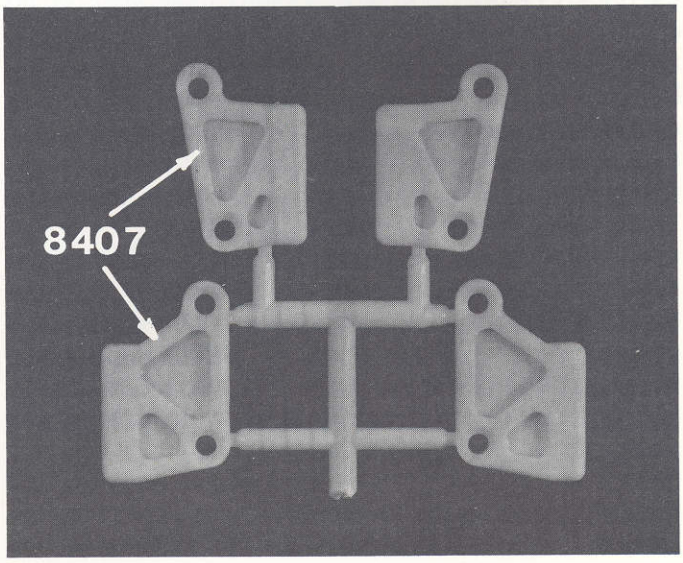
Fig. 4

❑ **Figs. 5 & 6** Again from bag 2, the front end bag, remove the #8407 front upper arm mounts (see photo). As the photo shows there are two different types of upper arm mounts as well as both left and right mounts. Notice that one side of each mount has two "domes" with holes drilled through the middle (see fig. 6). Lay out your upper arm mounts as shown if fig. 4 with the "domes" facing down.

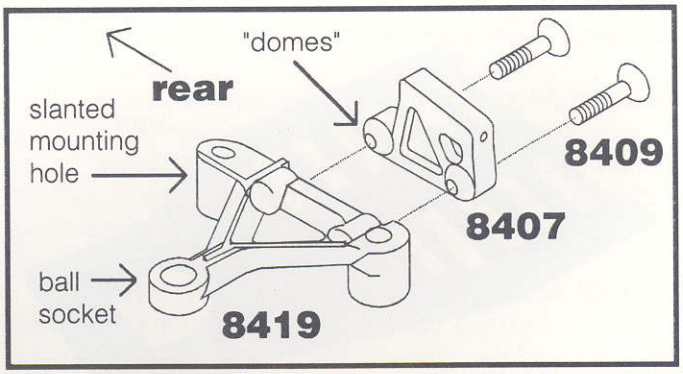
Now locate the right side 0° mount (as shown in photo) and remove it from the parts tree.

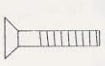
From bag 2 remove the #8419 right lower suspension arm and two #8409 4-40 x 1/2" aluminum FHSScrews. To make sure you have the correct lower suspension arm, place the lower suspension arm in front of you with the ball socket hole to the right. The arm mounting hole which has the slanted or angled top surface will be the rear or back mounting hole. In the master bag you will find the #6950 Allen wrench tool bag. This bag contains one each 3/32", 1/16" and .050" Allen wrenches. We are going to need the 1/16" Allen wrench to start with.(Associated #6958 screwdriver handle Allen wrench would work well here). Using the two #8409 aluminum screws and the 1/16" Allen wrench, screw the #8407 0° right hand upper arm mount to the lower suspension arm. Make sure the "domes" of the upper arm mount will fit into the spaces in the lower suspension arm. Also make sure that the upper arm mount is level and forward when mounted. Now repeat steps 5 & 6 for the left side.

left side 10° mount ↓ ↓ *right side 10° mount*



↑ *right side 0° mount* **Fig. 5** ↑ *left side 0° mount*

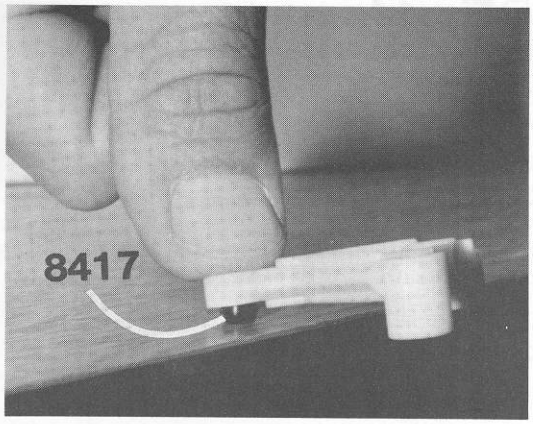



#8409
4-40 x 1/2
aluminum

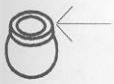
(NOT ACTUAL SIZE.)

Fig. 6

❑ **Fig. 7** From bag 2 locate the small bag containing the four #8417 plastic pivot balls. Remove two. Place one of the pivot balls on a flat surface, shoulder up, and snap the suspension arm onto it using your thumb. Do the same for the other suspension arm. ***Note:*** *Always install the pivot balls from the bottom of the arms.* ***WARNING!*** *Do not install the plastic pivot balls with pliers.*



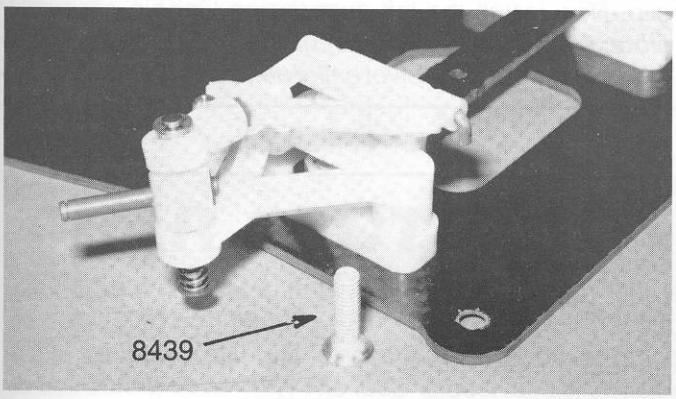
shoulder up



(NOT ACTUAL SIZE.)

Fig. 7

❑ **Fig. 8** From bag 2 remove the four #8439 8-32 x 5/8" aluminum FHMScrews (silver colored). Take the right lower suspension arm and align the arm over the two unused mounting holes of the suspension arm spacer. Make sure the lower suspension arm mounting hole with the beveled top side is to the back of the car chassis. Thread the two #8439 screws into the spacer and lower suspension arms from the bottom of the chassis. Now install the left suspension arm.

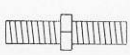


#8439
8-32 x 5/8
aluminum

Fig. 8

❑ **Fig. 9** In bag 2 you will find two #8411 nylon eyelets, two #8415 upper arm turnbuckles, and two #8405 upper suspension arms. From the same bag remove the #8416 turnbuckle/shock wrench (gold colored). Now screw one of the #8415 turnbuckles into each upper suspension arm until the threads bottom out. ***Note:*** *A 3/16" nutdriver will help speed up this step (Associated #SP-86).* Now holding the turnbuckle center nut with your #8416 turnbuckle wrench, thread a nylon eyelet onto each turnbuckle until the threads bottom out.

use for #8415



#8415
turnbuckle

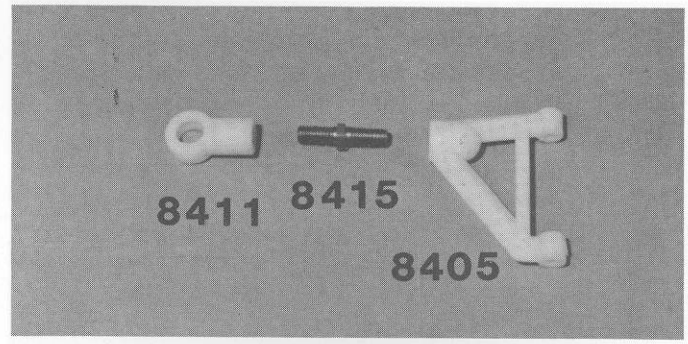


Fig. 9

❑ **Fig. 10** Go back and get the two remaining #8417 plastic pivot balls that we pulled out of bag 2 in fig. 8. Place one of the balls on a flat surface with the shoulder down. Now snap the eyelet onto the plastic pivot ball. Install the other pivot ball into the other upper arm assemby ***WARNING!*** *Make sure that the ball is always installed from the side of the eyelet with the square (not rounded) edges. Do not use pliers to install the pivot balls.*

shoulder down

(NOT ACTUAL SIZE.)

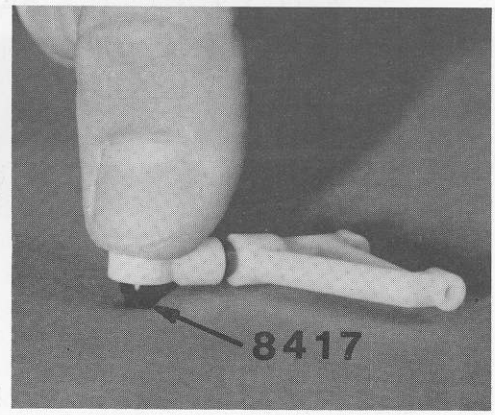


Fig. 10

❑ **Fig. 11** Locate the two #8413 upper arm hinge pins and four teflon caster shims in bag 2. We are going to install one upper suspension arm to the right side upper arm mount. Make sure that the ball end and eyelet are closer to the back of the car than to the front and that the shoulder side of the plastic pivot ball is facing down at the same time. From the front install the #8413 hinge pin through the front side of the upper suspension arm then slide one of the teflon shims onto the pin. Next slide the pin through the upper arm mount and install the other teflon shim before pushing the pin through the back side of the upper suspension arm. Make sure that you have one of the teflon shims on each side of the upper arm mount. Now repeat this step to assemble the left suspension arm.

#8413

#8413
teflon shim

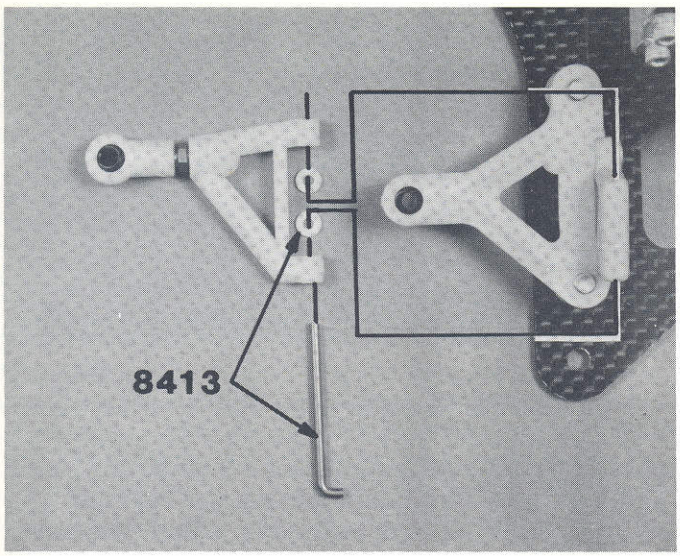


Fig. 11

❑ **Fig. 14** From bag 2 locate two #8423 kingpins, two #8431 .022 front springs, four #6299 1/8" E-clips, and 8 #8425 steel shims. Push an E-clip into one end of each kingpin. Place one of the springs on the kingpin and then slide it through the pivot ball in the right hand lower suspension arm. Now install the steering block assembly onto the kingpin with the flat side down and then push the kingpin through the upper arm pivot ball. Install four of the #8425 steel shims onto the kingpin on top of the upper arm pivot ball and secure them in place with a E-clip. Now install the left suspension kingpin assembly. ***Note:*** *Make sure that the steering block is contacting the shoulder side of each pivot ball; if not, correct as necessary.*

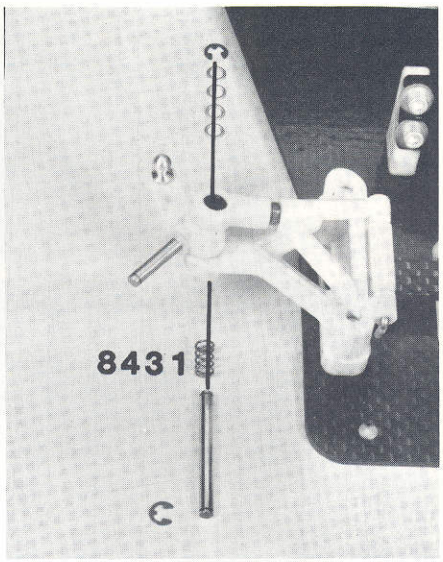


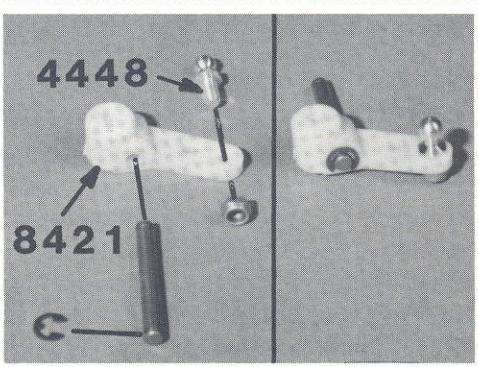
Fig. 14

#6299 e-clip 1/8 shaft

#8425 steel shim

#8423

❑ **Figs. 12 & 13** Get bag 2 and remove two #8421 nylon steering blocks, two #3213 front axles, and two #6299 1/8" E-clips. Install one E-clip onto each front axle. Now push an axle into each of the #8421 nylon steering blocks from the back side of the steering block as shown. Now you will need to remove two #4448 aluminum ball ends and two #4449 small aluminum locknuts. Place both of the front axle steering block assemblies on a flat surface so that they sit flat. One side of the steering block will allow it to sit completely flat on the surface the other only at the ends. The #4448 ball end will install from the top of the steering block in the outside hole as shown. Now thread the #4449 4-40 aluminum locknut onto the ball end threads. You can use your #8416 turnbuckle wrench to hold the ball end and then tighten the nut with pliers or a 3/16" nut driver.



before assembly *after assembly*

Fig. 12 **Fig. 13**

#6299 e-clip 1/8 shaft

#4448 ball end aluminum

use for #4448

#4449 4-40 locknut

#3213

❑ **Fig. 15** Push down on the top of the kingpins with your thumb so that all of the free play is taken up by the spring.

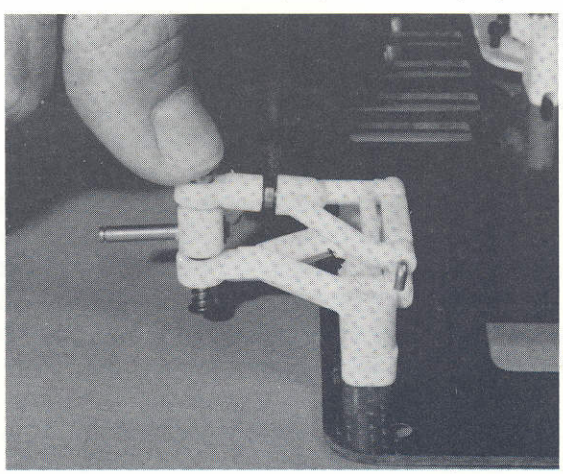
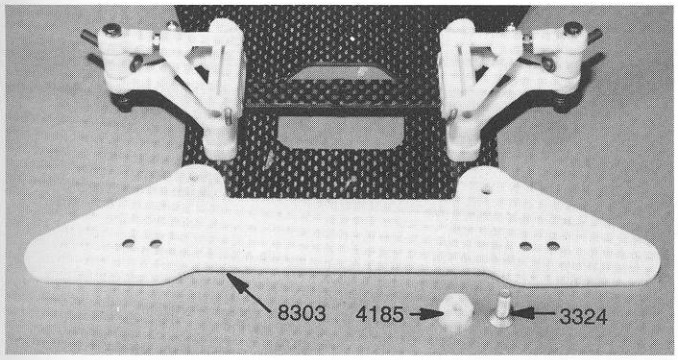
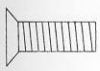


Fig. 15

BUMPER SECTION

❑ **Fig. 16** Remove the #8303 front bumper, two #3324 8-32" x 1/2" aluminum FHMScrews (lime green colored) and two #4185 8-32" nylon locknuts from the bumper bag inside the master bag. Place the bumper on top of the chassis then screw the two FHMScrews through the two front chassis holes from the bottom. Now thread the two nylon locknuts on top of the bumper. Tighten down the nylon locknuts, but not to tight, or they will strip out. ***Note:*** *A 11/32" nut driver (Associated #SP-82) would make this installation easier and faster.*



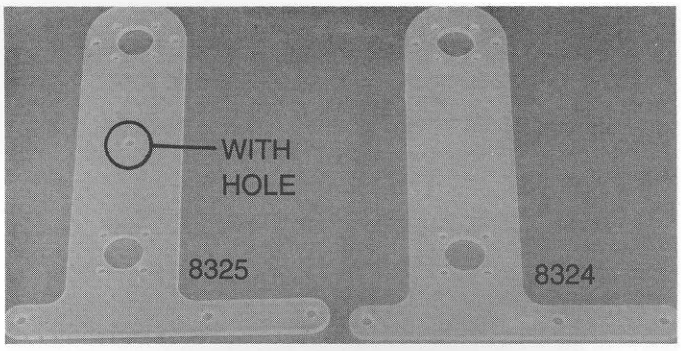

#3324
8-32 x 1/2
aluminum


#4185
8-32 locknut
nylon

Fig. 16

T-BAR SECTION

❑ **Figs. 17-21** In Bag 3 you will find two T-bars #8324 (.063") and #8325 (.075", fig. 17). You will need to make a decision at this time as to which one you are going to use during assembly. The .063" is best for a slick track and the .075" is best for a high traction track. For these instructions we will use the #8325 .075" T-bar. From the same bag take out two #4336 steel pivot balls, the four #4335 pivot socket pieces (fig. 18), and the eight #4334 2-56 x 5/16" BHSScrews. Lay the T-bar on your work surface as shown in fig. 19. Now install the bottom half of one #4335 pivot ball socket in the front hole of the T-bar. The bottom half of pivot socket is flat on top with a round recessed area in the center which will fit inside the hole in the T-bar. Now place one of the #4336 steel pivot balls inside the pivot socket. Align the holes in the pivot socket with the holes in the T-bar. Place the top half of the pivot socket over the steel pivot ball; it will snap down over the ball. Align all of the holes then pick up the T-bar and pivot socket, making sure to hold the pivot socket parts in place. Now thread the four BHCScrews in the pivot socket from the bottom of the T-bar. The screws will go through the T-bar, then the bottom pivot socket and thread into the upper socket half. Do not over tighten the screws, just snug them down. It is okay if the ball is tight in the plastic for the front pivot; it does not swivel.



Left, #8325 (.075"); right, #8324 (.063"). **Fig. 17**

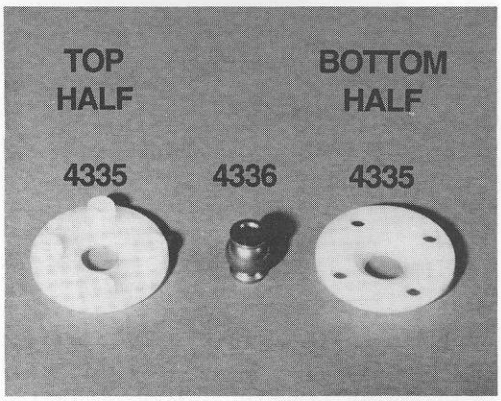


Fig. 18


#4334
2-56 x 5/16


#4336
steel pivot ball

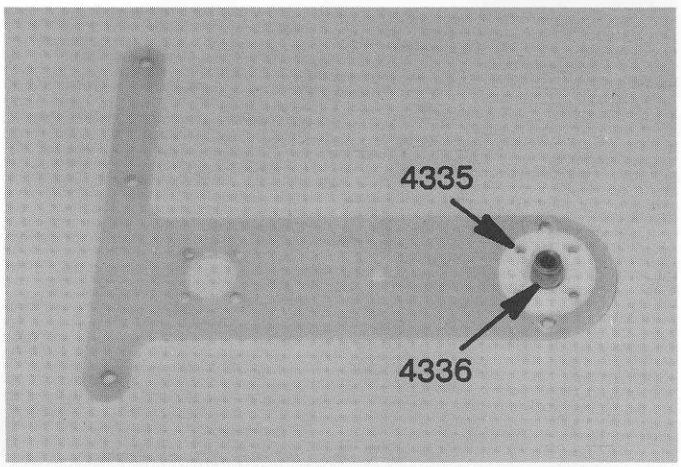


Fig. 19

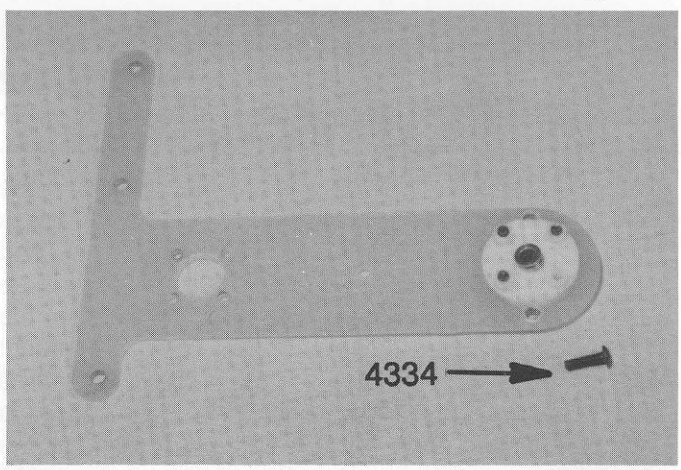


Fig. 20

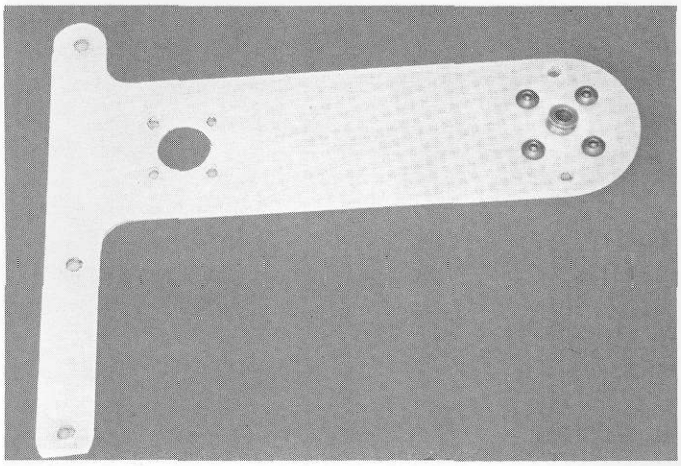


Fig. 21

❑ **Fig. 22** Now we need to repeat the process in figs. 17 to 21 for the rear pivot. For this pivot the ball must be very free in the socket but not loose. If the ball is not perfectly free you can do a couple of things to correct the problem. You can unscrew all four screws equally, one quarter to one half turn, but the best way is to remove the pivot ball and polish it. You can do this by placing the ball on a long 4-40 screw and securing it with a nut. You then mount the screw in a drill press and polish the ball using crocus cloth or 660 wet or dry sandpaper. Clean the ball off and reinstall it and check the movement. Keep doing this until you get the ball perfectly free, but not loose.

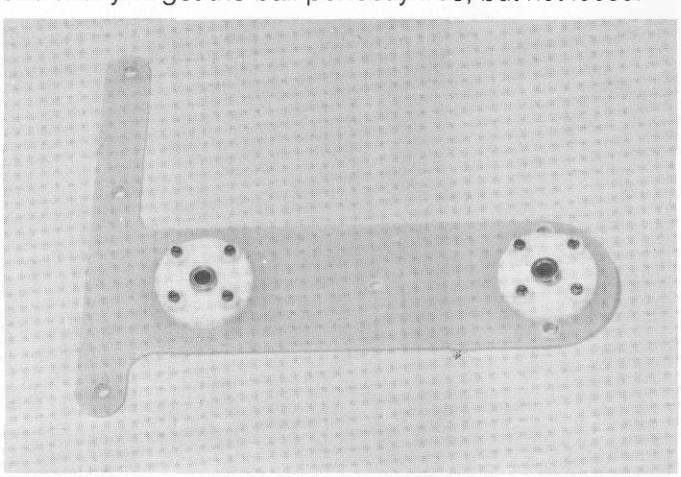


Fig. 22

❑ **Figs. 23 & 24** Take out bag 5 and remove the #8319 aluminum rear lower brace and the #8326 fiberglass T-bar spacer, three #6292 4-40 x 3/8" FHSScrews and three #6937 4-40 blue aluminum locknuts. Place the three #6292 flat head screws in the holes at the front of the aluminum brace, from the bottom, as shown. Now mount the #8326 T-bar spacer on top of the three screws with all three holes lining up with the screws. If the spacer is turned around it will not fit over the screws. Install the #8325 T-bar over the screws and then thread on the #6937 4-40 aluminum locknuts.

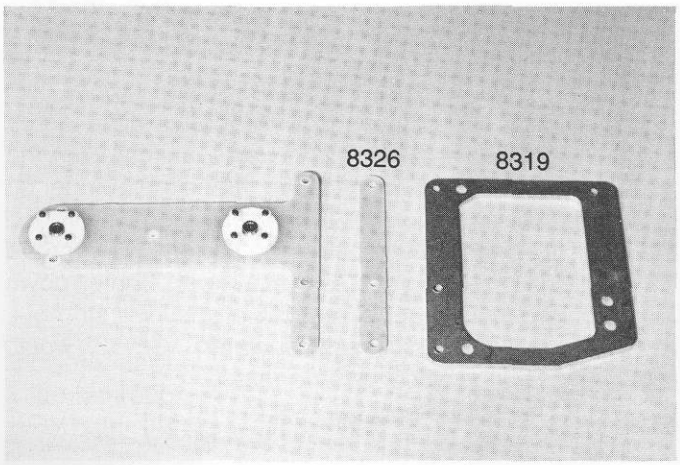
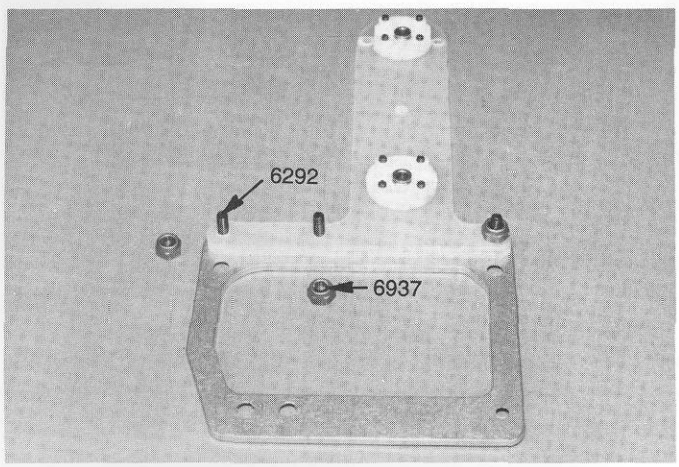


Fig. 23

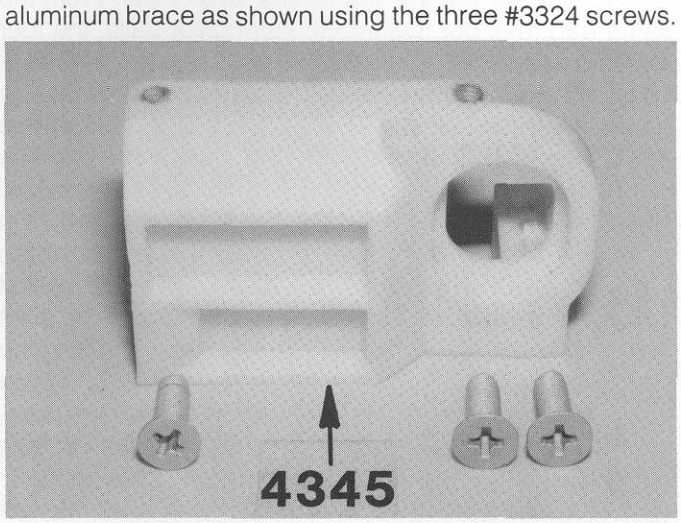


#6292
4-40 x 3/8

#6937
#4 locknut

Fig. 24

❑ **Figs. 25 & 26** In bag 5 you will find the #4345 nylon left hand bulkhead and three #3324 8-32 x 1/2" aluminum FHMScrews. Mount the nylon bulkhead to the aluminum brace as shown using the three #3324 screws.



#3324
8-32 x 1/2
aluminum

Fig. 25

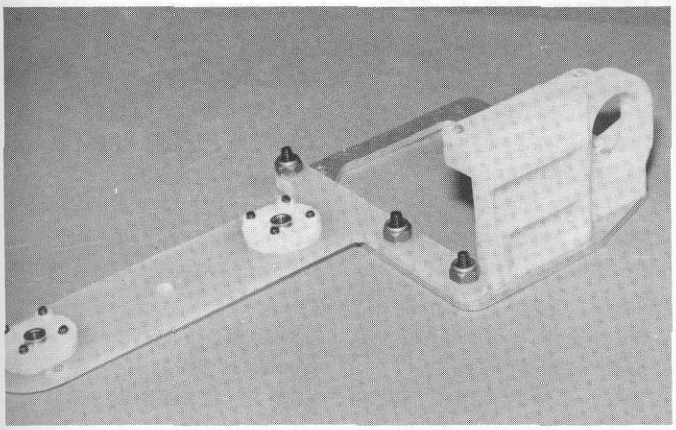
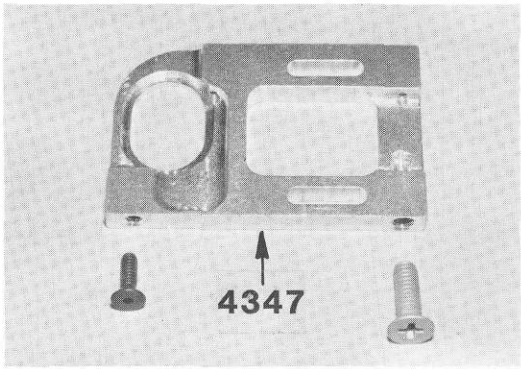


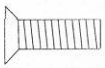
Fig. 26

❑ **Fig. 27** In the same bag 5 you will find the #4347 aluminum motor bulkhead, one #6292 4-40 x 3/8" FHSScrew and one #3324 8-32 x 1/2" aluminum FHSScrew. Install the #4347 motor bulkhead to the brace as shown, using the #6292 and #3324 screws as shown. ***Note:*** *You must be careful when threading an aluminum screw into an aluminum bulkhead. To prevent any problems, please place a drop of oil or silicone lube on the threads of the screw. This will prevent galling of the screw so that it will not break when it is time to remove the screw.*

Fig. 27



 #6292
4-40 x 3/8

 #3324
8-32 x 1/2
aluminum

❑ **Fig. 28** Your rear end and T-bar assembly will look like this now.

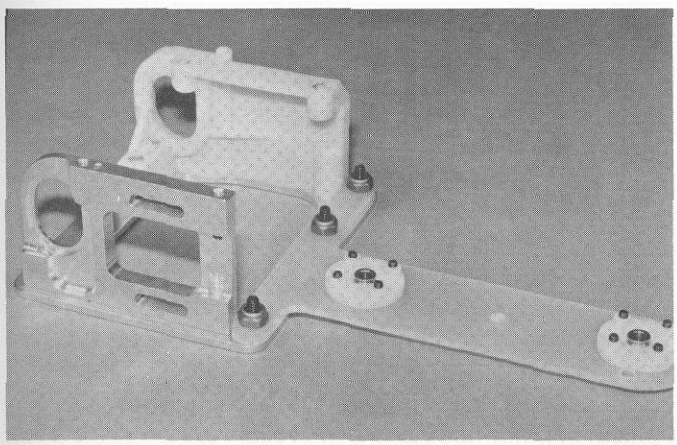


Fig. 28

❑ **Figs. 29 & 30** In bag 5 you will find three sets of plastic axle bearing height adapters (#4348, #4349, and #4350). Locate the #4350 axle bearing adapters (they have a small number 2 molded on the back side). These *have the bearing holes offset the farthest from the center* of the adapter. In the master kit bag you will find the small, unnumbered, bearing bag. Take out two of the larger #897 1/4" x 3/8" flanged bearings and install one into each bearing adapter. Starting with the left bulkhead, install one of the bearing adapters in each of the rear bulkheads making sure the bearing hole is above the centerline of the adapter and not below. We want the axle to sit as high in the car as possible.

Fig. 29

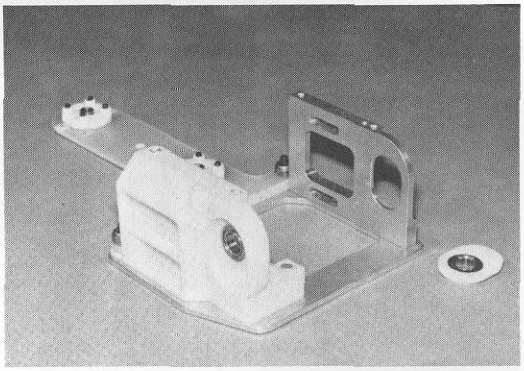
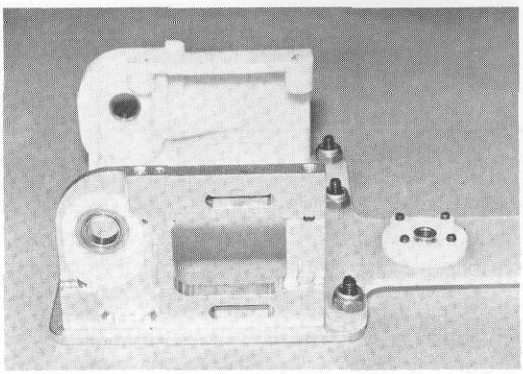
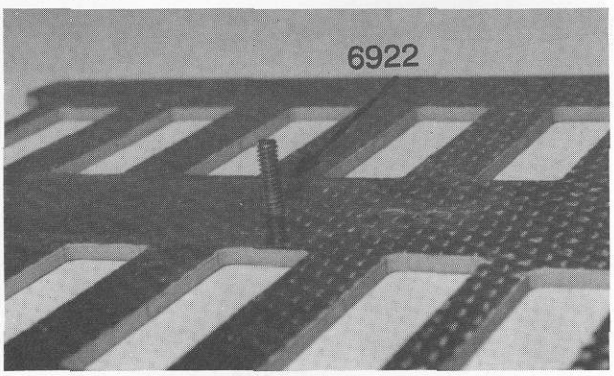


Fig. 30



 #897
1/4 x 3/8
flanged bearing

❑ **Fig. 31** Now we are ready to install the rear end/T-bar assembly onto the chassis. Take the #6922 4-40 x 1/2" FHSScrew from bag 3 and install it into the front t-bar mounting hole from the bottom of the chassis (second hole from the back).



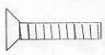
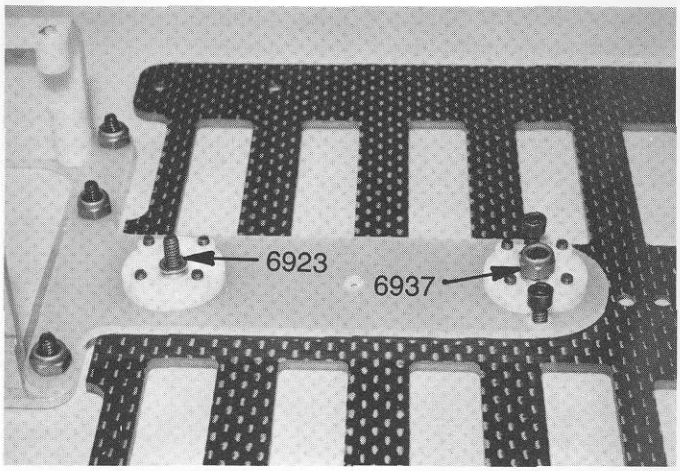
 #6922
4-40 x 1/2

Fig. 31

❑ **Fig. 32** Now slide the T-bar front pivot ball over the screw. Take one of the #6937 4-40 blue aluminum locknuts (from bag 3) and tighten in down onto the screw. In the same bag you will find one #6923 4-40 x 3/4" FHSScrew. Install this screw through the chassis and the rear pivot ball as shown in this photo.

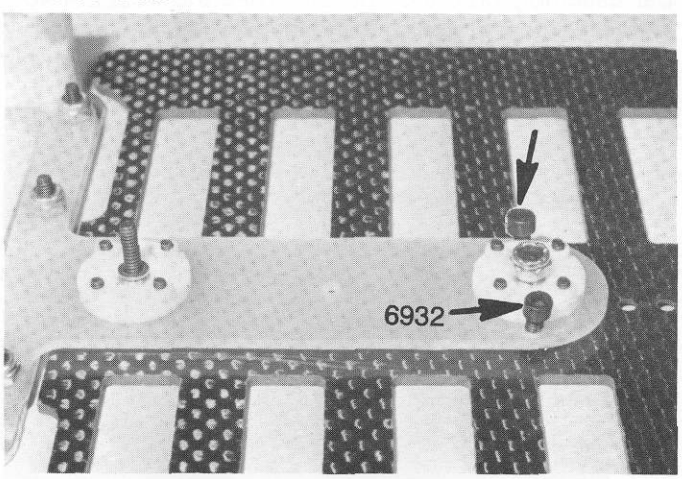


#6937
#4 locknut

#6923
4-40 x 3/4

Fig. 32

❑ **Fig. 33** We now need to install the two #6932 4-40 x 5/16" SHCScrews (from bag 3) used as tweak screws. Next to the front T-bar pivot you will find two holes. Thread the two 4-40 SHCScrews into these holes. It may be necessary to trim the sides of the front plastic pivot socket so that the 4-40 tweak screws can thread vertically into the T-bar. For now, adjust the tweak screws so that the T-bar is level with the chassis. We will make our final tweak adjustments later. ***Racer's Tip:*** *Racers glue small pieces of brass or equavalent shim stock onto the chassis where each of the two tweak screws will touch. this protects the chassis from damage and makes the tweak adjustments more consistent.*



#6932
4-40 x 5/16

Fig. 33

❑ **Figs. 34 & 35** In the master kit bag you will find a bag with all of the rear chassis brace and nerf wing parts. To start, remove the #8328 lower dampner standoff from this brace/nerf wing bag. This is the smallest of the aluminum tubes. Thread this onto the #6923 #4-40 x 3/4" FHSScrew sticking through the rear pivot ball.

In the same bag you will find the two #8315 graphite nerf bars, two #8311 aluminum rear chassis standoffs, two #6922 4-40 x 1/2" FHSScrews, two #6292 4-40 x 3/8" FHSScrews, and two #6937 4-40 blue aluminum locknuts. Mount the first nerf bar to the right side top of the chassis using one #6292 FHSScrew in the back hole and one #6922 FHSScrew in the front hole, the screws coming up through the chassis as shown. Thread one of the #8311 rear chassis standoffs onto the back screw and then thread one of the #6937 locknuts onto the front screw. Now install the left nerf bar.

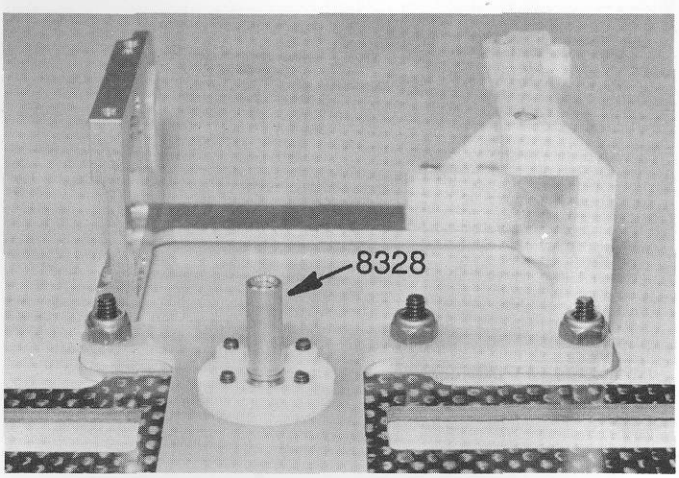


Fig. 34

#6922
4-40 x 1/2

#6292
4-40 x 3/8

#8328

#6937
#4 locknut

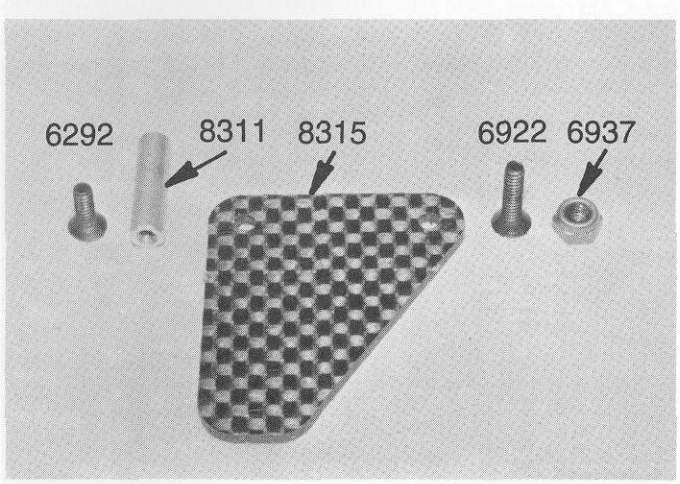
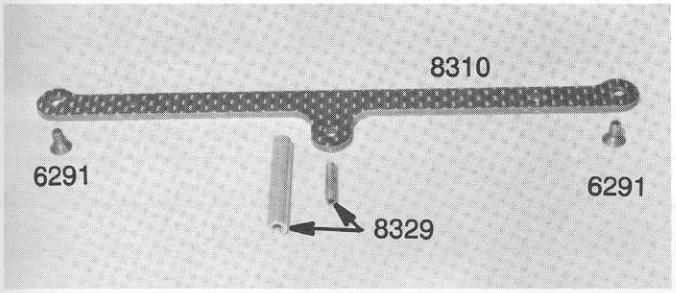


Fig. 35

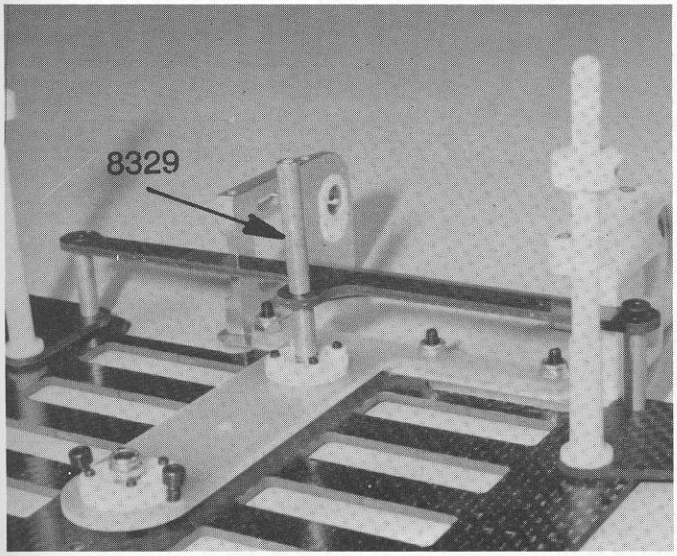
❑ **Figs. 36 & 37** In the same bag you will find the #8310 graphite rear chassis brace, two #6291 4-40 x 1/4" FHSScrews, the #8329 upper dampner post, and the #8329 4-40 x 1/2" set screw. Thread the #8329 4-40 set screw into the #8328 lower dampner standoff until only half of the threads are showing. Now place the #8310 graphite rear chassis brace over the set screw in the lower dampner standoff, countersunk side up. Take the two #6291 4-40 x 1/4" FHSScrews and thread them into the rear chassis standoffs. Now thread the #8329 upper dampner post onto the 4-40 set screw. Only one end of the upper dampner post is threaded, so make sure you install the correct end.



#8329 4-40 x 1/2 set screw

#6291 4-40 x 1/4

Fig. 36

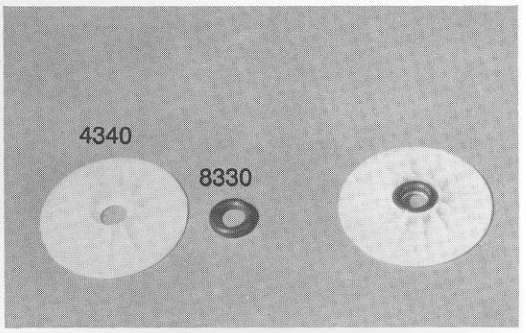


#8329

Fig. 37

❑ **Figs. 38 & 39** In bag 6 you will find two #8330 black O-rings and two #4330 plastic dampner washers. Install one #8330 black O-ring in the top of each #4340 plastic dampner washer. In the same bag you will find one #4338 nylon locking collar, one #6951 4-40 x 1/8" set screw, two #3323 #8 aluminum thick washers, and two #4341 dampner springs. Thread the #6951 4-40 x 1/8" set screw into the #4338 nylon locking collar and set it aside for a moment. Now install the two #3323 #8 aluminum washers over the #8329 upper dampner post. Next install one of the #4341 dampner springs. Before we install the #4340 plastic dampner washer with O-ring we want to take some of the #6636 Associated diff lube (from the master kit bag) and coat the #8330 black O-rings to improve the performance of the rear pod assembly. Install the dampner washer with the O-ring facing down and the smooth side up.

Fig. 38



#6951 set screw

#3323 #8 thick washer

#8330 black O-ring

#4341 spring

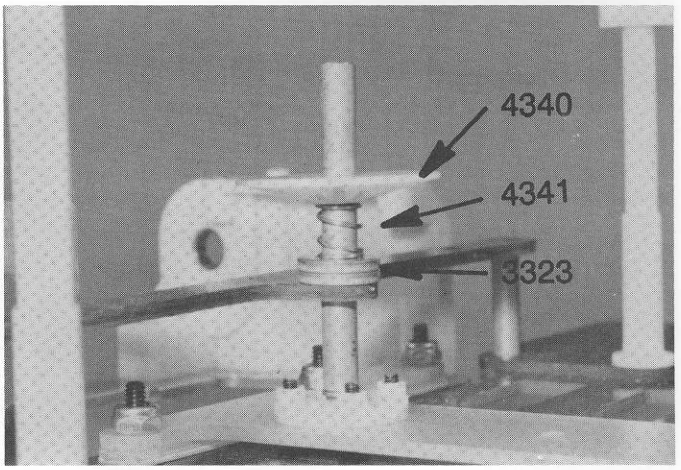


Fig. 39

❑ **Figs. 40 & 41** Back in bag 5 you will find the #8318 graphite upper brace. The arrow in the photo is pointing to the area where the dampner washers will ride. ***Racer's Tip:*** *The Team drivers will take some #600 grit wet or dry sandpaper and sand all of the edges and surfaces smooth where the dampner washers will ride. Do this for both the top and bottom sides of the upper brace. This will help the dampner washers slide freely over the upper brace.* ***WARNING!*** *Follow the earlier instructions and precautions on page four when working with graphite material.*

Open bag 4 and remove one #6270 steel ball end and one #6295 4-40 plain nut. Install the steel ball end on top of the graphite upper brace as shown in the photo. Now thread on the 4-40 plain nut on the bottom side.

#6270 4-40

#6295 4-40 nut plain

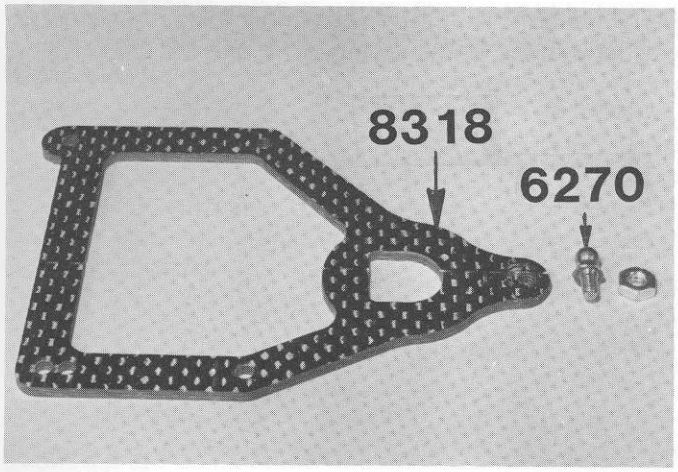


Fig. 40

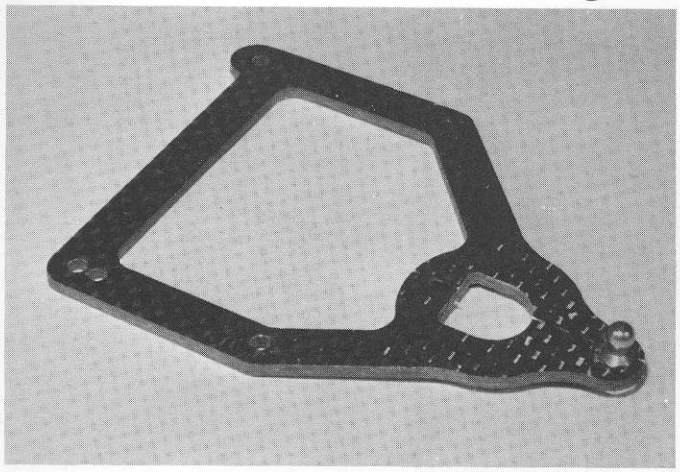


Fig. 41

❑ **Figs. 42 & 43** In bag 5 you will find four #6932 4-40 x 5/16" SHCScrews. Use these screws to mount the #8318 graphite upper rear brace to the rear pod assembly. Coat both sides of the brace, where the dampner washers will ride, with some of the #6636 Associated diff lube. Remember, when installed, the upper brace will fit over the #8329 upper dampner post. Fig. 43 shows the upper brace and mounting screws installed.

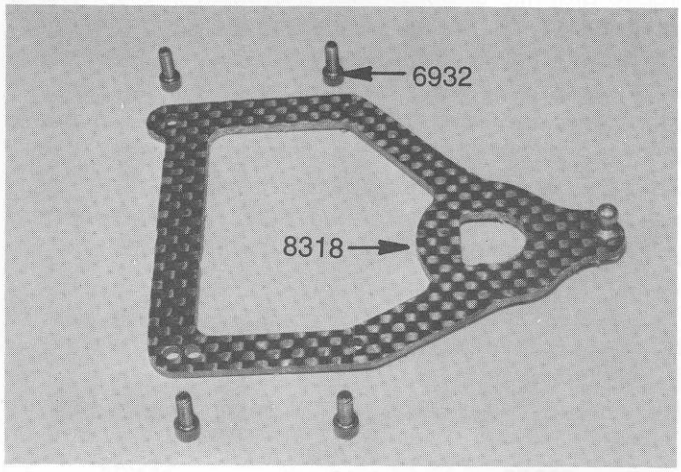


Fig. 42

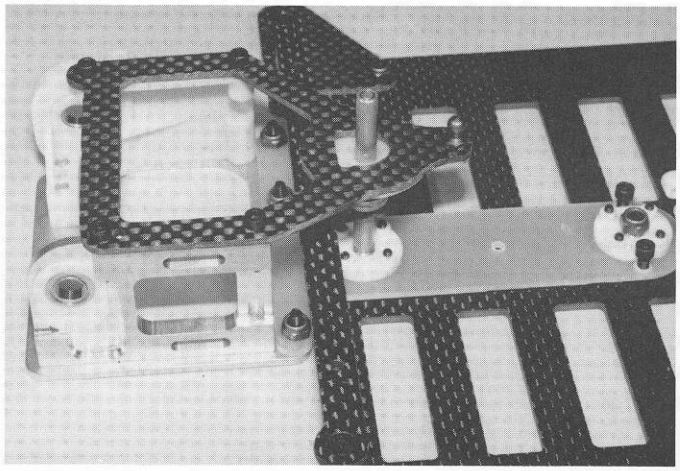


Fig. 43

#6932
4-40 x 5/16

❑ **Figs. 44 & 45** Go back to bag 6 and take out the second plastic dampner washer, with #8330 black O-ring installed, and **(1)** place it over the upper dampner post on top of the graphite upper brace. Make sure the smooth side is facing down. **(2)** Coat this black O-ring with diff lube if you haven't done so. **(3)** From the same bag, remove the #4341 dampner spring and the #4338 nylon locking collar with set screw which we set aside in fig. 38. **(4)** Install the spring on top of the dampner post, **(5)** the nylon locking collar and **(6)** lightly tighten down the set screw.

(7) Measure the spacing between the top of the two #3323 #8 aluminum washers and the bottom of the lower plastic dampner washer. **(8)** Adjust the upper collar until the gap between the top of the upper dampner washer and the bottom of the nylon locking collar is the same as the gap between the washers and the lower dampner washer. This should measure out to approximately .240" spacing. Equal spacing on the top and bottom will help make the car more consistent.

#4341
spring

#6951
set screw

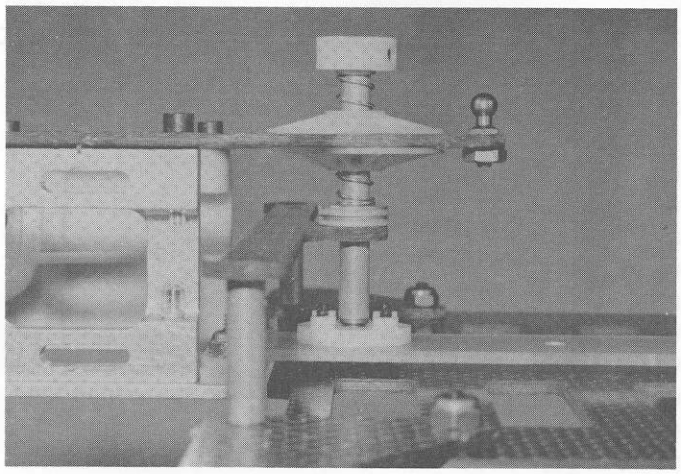


Fig. 44

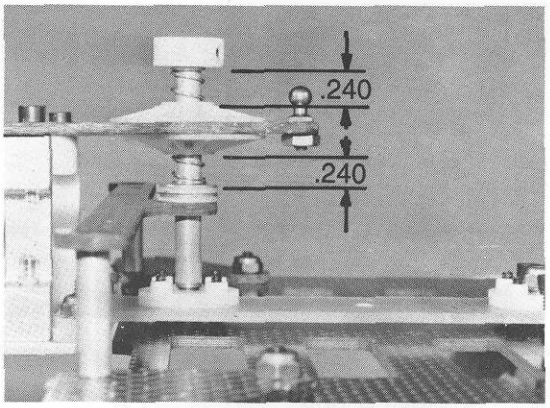
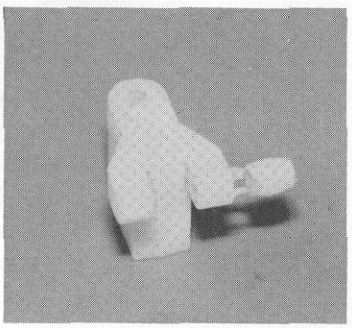


Fig. 45

❑ **Figs. 46 & 47** In bag 4 you will find the #8184 shock/antenna mount and two #6922 4-40 x 1/2" FHSScrews. The shock mount has a small football-shaped molded piece on one end; trim this off and set it aside; we will use it a little later. Using the two #6922 screws, install the shock/antenna mount on the chassis as shown.



#6922
4-40 x 1/2

Fig. 46

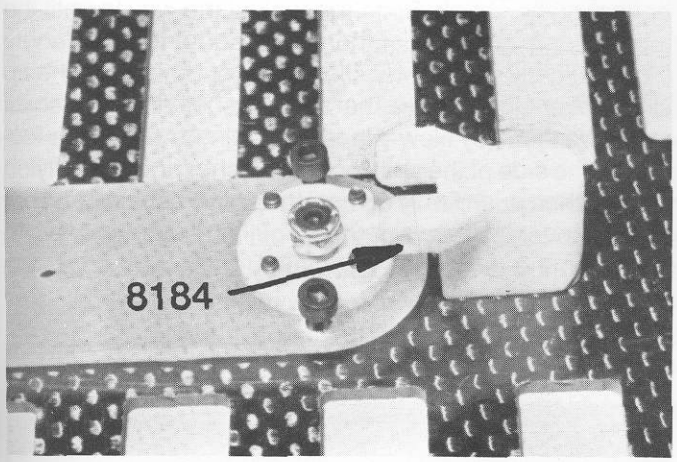


Fig. 47

SHOCK SECTION

❑ **Figs. 48, 49 & 50** Now it is time to assemble the new and improved shock for your RC10LS. In bag 4 you will find the #6461 .56 stroke shock shaft and a small roll of #6299 1/8" E-clips (fig. 49). Install an E-clip in the groove closest to the threaded end of the shaft.

install #6299 here ↓

#6461
0.56 stroke

#6299
e-clip
1/8 shaft

Fig. 48

Fig. 49

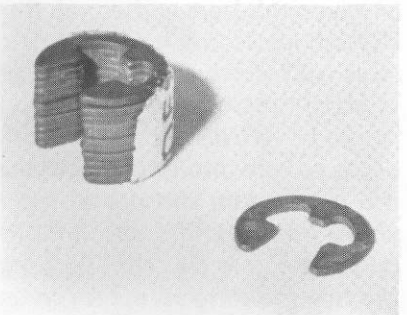
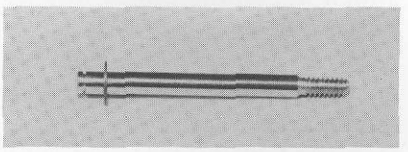


Fig. 50



❑ **Figs. 51, 52 & 53** In the same bag you will find the new style #6464 #1 teflon shock piston. The new teflon pistons are molded to help eliminate the possibility of burrs on the piston edge, which would interfere with smooth shock action in the shock body. To properly remove the shock piston from the tree, twist the piston up as shown in fig. 53. (Twisting down will leave a damaging burr on the piston.) If there are any remaining burrs **carefully** remove them with a sharp hobby knife.

Slip the piston onto the shaft and install another #6299 E-clip in the remaining groove to hold the piston in place. Make sure both E-clips are fully seated in their grooves.

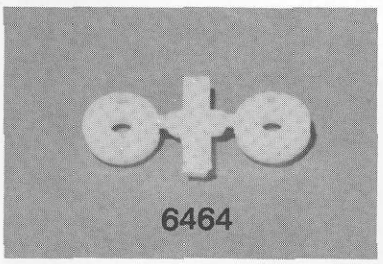


Fig. 51

#6299
e-clip
1/8 shaft

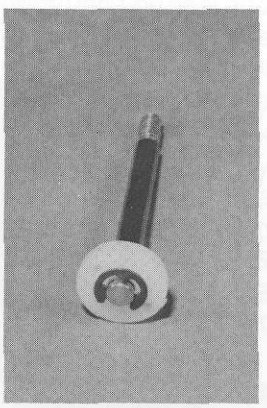


Fig. 52

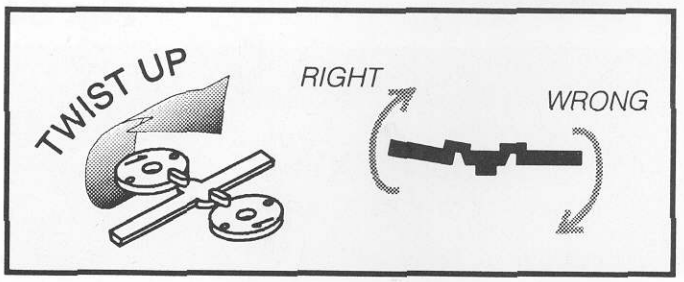


Fig. 53

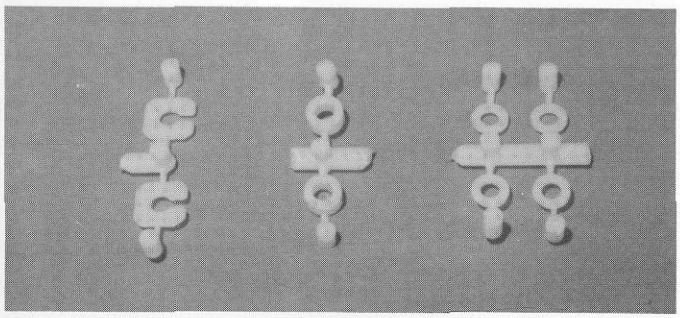
❑ **Figs. 54, 55 & 56** There is another bag inside bag 4 that contains the #6440 molded shock assembly parts and red and black shock O-rings. There will be enough molded nylon parts to assemble two shocks. Fig. 54 gives the part names, as they are described in the instructions, for each nylon part on the parts tree. Remove two small nylon washers, one large nylon spacer, and one nylon split locking washer.

WARNING! Because of the precision tolerances of these new molded nylon parts, correct removal of the parts from the parts tree is CRITICAL! Using a sharp hobby knife, carefully trim each part from the parts tree. It is EXTREMELY important that no part of the two molding runners (on each part) be left on the shock assembly parts. Any part of the mold runner remaining on a part will cause binding of the shock shaft or difficulty in assembling the internal shock seals both problems can reduce performance of the shock. Use your finger on the edge of the parts to feel for burrs that you cannot see and, if necessary, carefully remove them.

From bag 4 (shock bag) remove the #6429 shock assembly tool (fig. 55). Remove the red and black O-rings from the same bag the molded shock parts came out of.

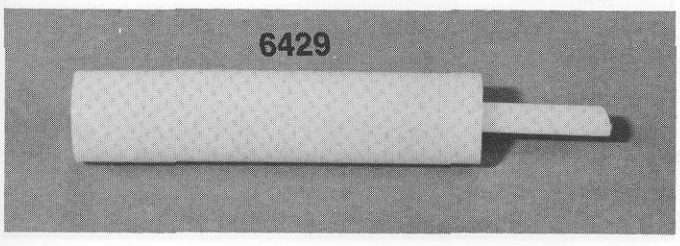
(1) Stand the assembly tool on end with the small tip up. Install the parts on the tool in the following order: **(2)** the nylon split locking washer, **(3)** then one small nylon washer, **(4)** red O-ring, **(5)** large nylon spacer, **(6)** red O-ring, and **(7)** second small nylon washer. You can compare this sequence with the layout in fig. 56. Fig. 57 shows a cutaway drawing of the shock body with the internal seal parts installed. You can purchase the red and black O-rings separately under part numbers #5407 (eight red O-rings) or #6469 (four black O-rings).

You can skip steps 57 and 58 for now, unless you need to remove the seal parts for some reason.



↑ *nylon split locking washers* ↑ *large nylon spacers* ↑ *nylon washers*

Fig. 54



#6429 shock assembly tool

Fig. 55

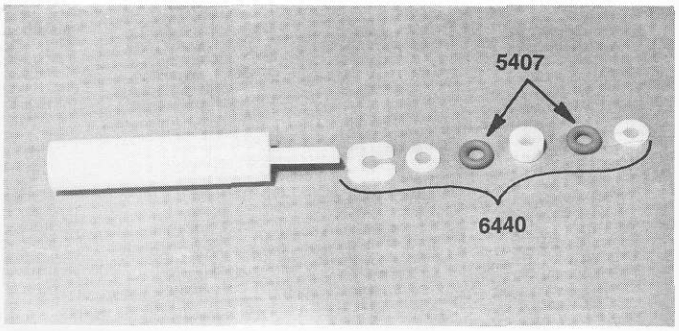


Fig. 56

#6469 black O-ring

#5407 red O-ring

(#6469 used in fig. 64)

❑ **Figs. 57 & 58 HOW TO DISMANTLE THE SHOCK SEAL PARTS.** Fig. 57 shows a cutaway of the bottom portion of the shock showing how all of the parts fit into the shock seal cavity. Fig. 58 depicts the shock assembly tool removing the shock seal parts.

To dismantle the shock seal parts you must **(1)** remove the shock cap, **(2)** drain the shock oil, and **(3)** remove the shock shaft with piston.

(4) Insert the small tip of the shock tool into the bottom of the shock. Slide the tool all the way in until the tool bottoms out against the shock body. **(5)** Now angle the tip slightly and slowly slide the tool down until the tip slides over underneath the split washer and first small nylon washer. **(6)** Now place the pointed tip of the tool under one side of the split locking washer and small nylon washer then push firmly up until the split washer snaps out of its groove. **(7)** Then pull the tip of the tool down and use it to push the rest of the internal parts up and out of the cavity.

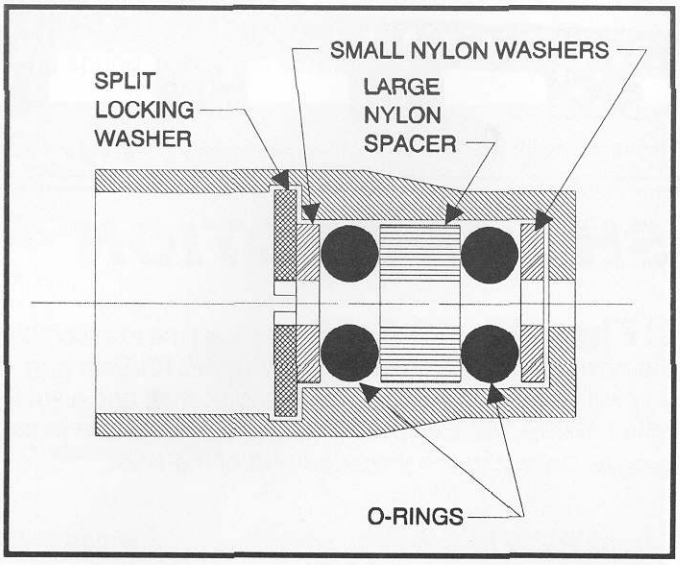


Fig. 57

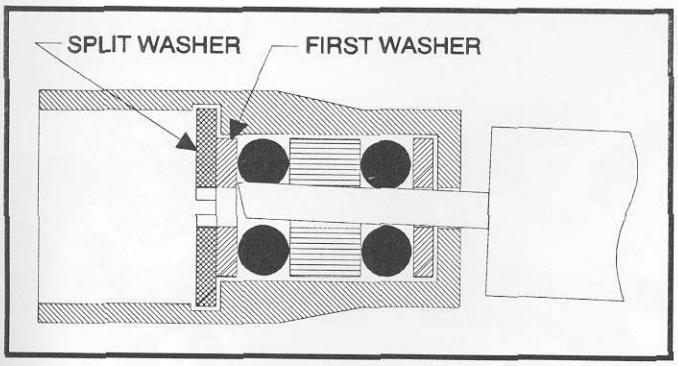


Fig. 58

❑ **Fig. 59** ***Note:*** *The shock oil that comes with your kit is of very high quality. But the very best for serious competition is Associated's #5421 20 weight Silicone Shock Oil, which we highly recommend. If you are going to use this oil, then do not build the shock with the kit oil because the oils do not mix. This Silicone oil is one of our our Speed Secrets!*

Fig. 59

❑ **Fig. 60** In the master kit bag you will find the container of #5415 20 weight shock oil. This is the recommended starting weight oil for the new shock piston. Now apply a liberal amount of oil to the internal seal parts on the assembly tool as shown.

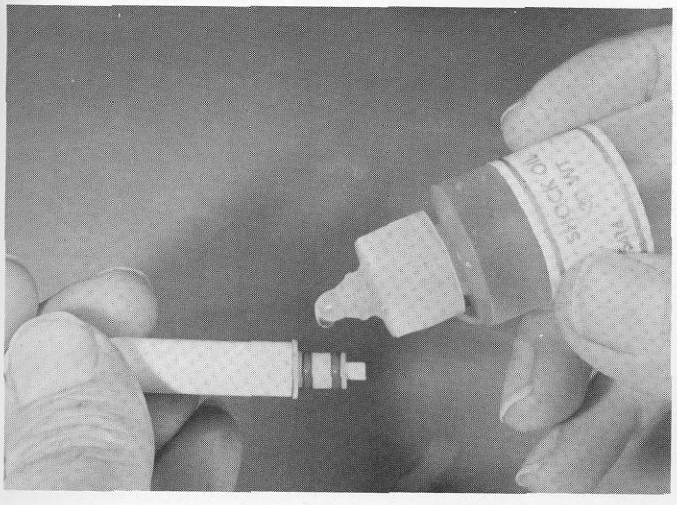


Fig. 60

❑ **Fig. 61** Put a few drops of oil into the bottom of the #6427 shock body. This will make installation of the internal parts easier. It is very important that we do not cut or damage the red O-rings as they are being installed.

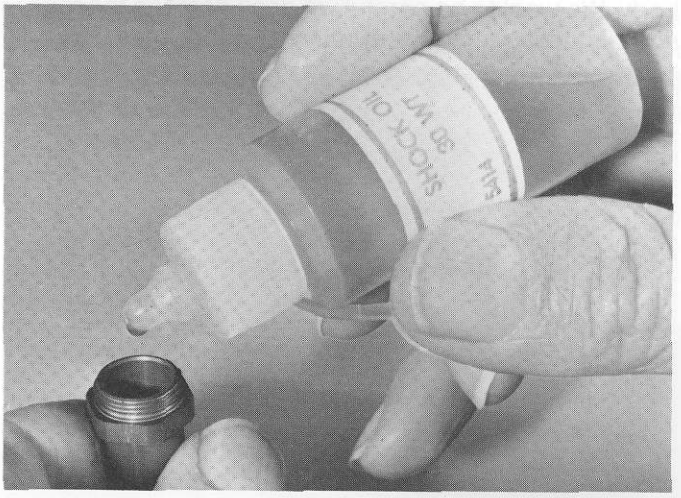


Fig. 61

❑ **Fig. 62** **(1)** Take the shock body and the shock tool, with the internal parts on it, and slowly insert the tool into the shock body until it bottoms out and all of the parts are fitting into the cavity. If everything goes in smoothly, this will allow the tip of the shock tool to be even with or just slightly out of the bottom of the shock body. If it's not, you may need to rotate the shock body to help it seat the parts the rest of the way into the shock cavity. **(2)** Now stand the shock tool on your workbench, with the shock body on top, and firmly push down on the shock body until you hear and feel the split washer snap into its groove. The new parts are of a harder material so you must push hard before it will go in. When the parts are properly installed, the end of the shock tool should be sticking out the bottom of the shock just about 1/8". **(3)** Once the parts have been properly snapped into place pull the tool out. **(4)** Look inside the shock body for any obvious signs that the parts did not go together correctly. **MAKE SURE THE SPLIT WASHER IS FULLY SEATED IN ITS GROOVE. IF THE PARTS ARE NOT SEATED CORRECTLY, THE SHOCK WILL LEAK OR EVEN COME APART INTERNALLY.**

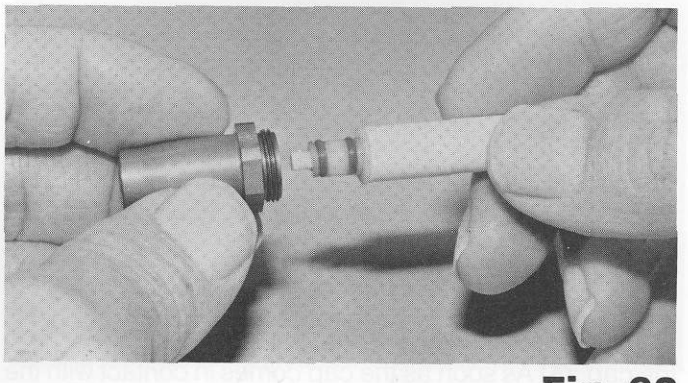


Fig. 62

❑ **Fig. 63** Now we will install the shock shaft with piston. Place two drops of oil on the shock shaft and slowly insert the shaft and piston into the shock body. Pull the shaft until the piston seats against the bottom of the shock body. We want to be careful we don't damage the red O-rings when inserting the shaft, or the shock will leak.

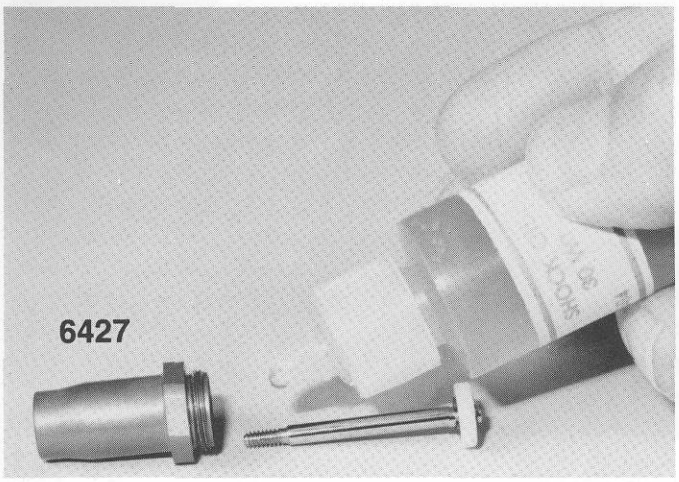


Fig. 63

❑ **Fig. 64** Locate the #6469 black O-ring which we pulled out at fig. 54. Install the black O-ring over the threads on the shock body and seat it flush in the pocket at the bottom of the threads.

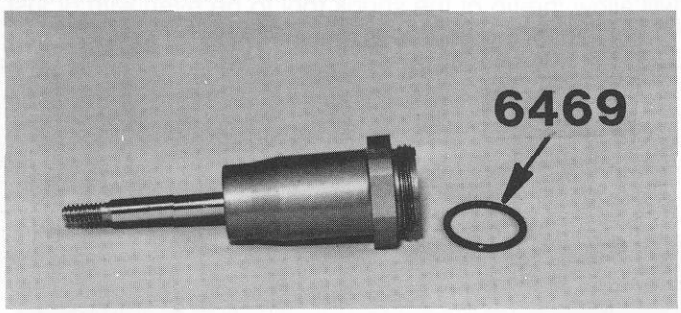


Fig. 64

#6469
black O-ring

❑ **Figs. 65 & 66** Now we fill the shock with shock oil. **(1)** Take your bottle of shock oil and fill the shock until the oil is flush with the top of the shock body. **(2)** Move the shock shaft up and down several times to make sure that there are no air bubbles trapped under the piston. If there were air bubbles, refill the shock with oil to the top again. **(3)** Push the shock shaft up until the piston is flush with the top of the shock body. **(4)** Now take your #6439 black aluminum shock cap, from bag 4, and thread it onto the shock body. There should be no gap between the cap and the hex portion of the shock body (see arrow in fig 65). The O-ring will actually be doing the sealing, so don't overtighten the cap. **(5)** As soon as the cap comes in contact with the body, just turn it a bit further to seat it.

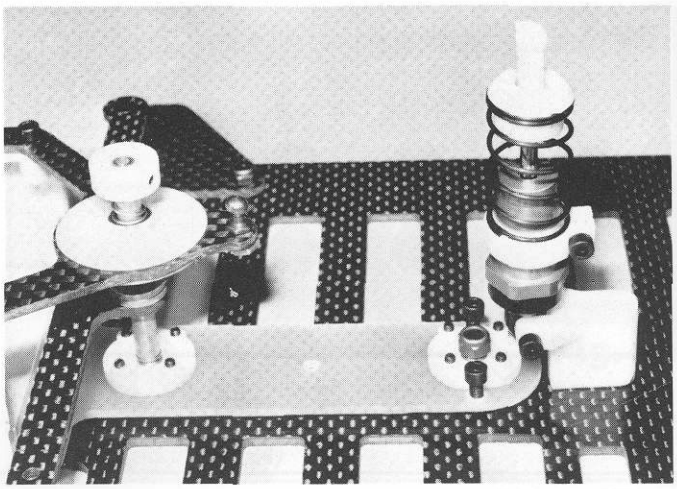


Fig. 65

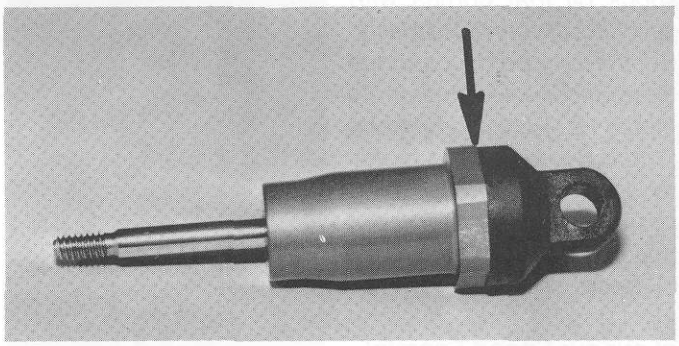


Fig. 66

❑ **Figs. 67 & 68** **(1)** In bag 4 you will find the #6474 spring clamp and cup parts and one #6924 4-40 x 3/8" SHCScrew. **(2)** The spring clamp has one hole that is slightly larger than the other. Install the #6924 screw through the larger hole and then thread it into the smaller hole. **(3)** Now slide the spring clamp collar to the top of the shock body and tighten it just enough to keep the collar from moving. Make sure the the side with the thin flange is away from the black aluminum shock cap. **(4)** In the same bag you will find one #6274 plastic ball end cap, one nylon spacer, and one #8232 black shock spring. **(5)** Slide the nylon spacer onto the shock shaft, **(6)** then thread the #6274 plastic ball end cap onto the shaft threads. **(7)** We now want to install the #8232 black shock spring and #6474 spring cup. First make sure the shaft is all the way out and that the nylon spacer is against the plastic ball end cap. **(8)** Slide the spring over the shock. **(9)** Now collapse it so that you can install the spring cup. When the spring cup is installed it should fit down over the nylon spacer and the end of the plastic ball end cap. **(10)** Collapse the shock a few times to make sure it is free and smooth.

(11) Now we need to adjust the tension setting on the spring and spring collar to get the correct ride height on the car. Adjust the collar so that there is a .200" gap between the collar and the hex portion of shock body. **(12)** Tighten down the spring clamp collar, but not too tight--it just needs to keep the spring collar from moving.