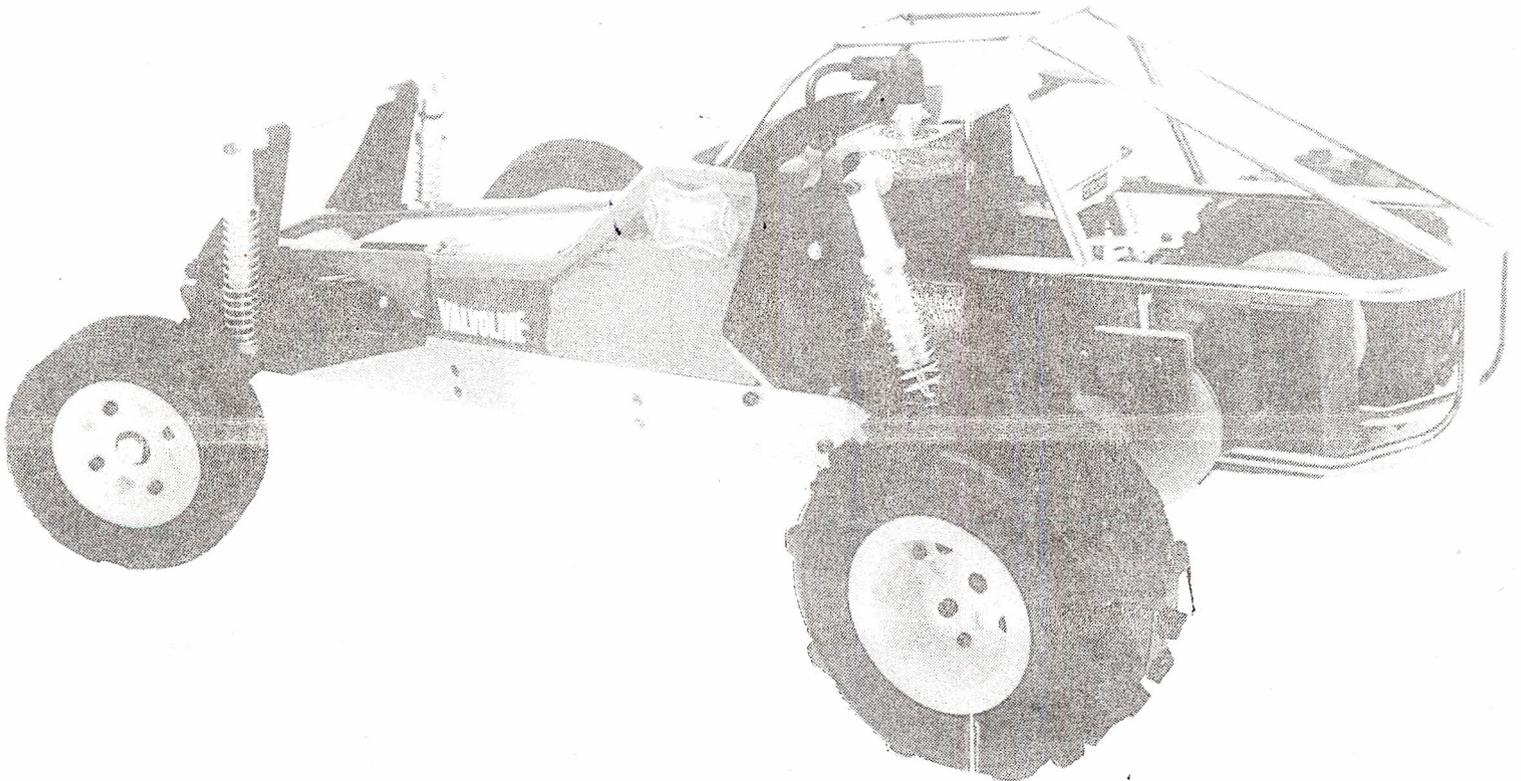


# JQC-Rabbit<sup>TM</sup>

Radio Controlled Off-Road Racer

## ASSEMBLY AND OPERATING INSTRUCTIONS



Read and follow all the information in this manual so that this product will provide you with hours of trouble free enjoyment. Pay close attention to the precautions thru-out the manual as safety is an important part of the fun.

We at RACO modelcraft take pride in the products we offer and invite any comments you may have.

You may write us at:



1840 S. Santa Fe #A Santa Ana CA 92705

**SAFETY INSTRUCTIONS FOR THE JAC-RABBIT™**  
**-WARNINGS-**

1. **Warning:** Read The Owner's Manual before operating the car. Never allow anyone to operate the car who does not understand the assembly and operating manual.
2. **Warning:** Do not operate the car unless you believe you understand all assembly and operation instructions first. Please refer to your Owner's Manual.
3. **Warning:** The Jac-Rabbit™ is not a toy. If operated unreasonably or recklessly the Jac-Rabbit™ can cause serious bodily injury. This product is not to be operated by persons under 16 years of age without adult supervision. The supervising adult should understand the assembly and operation of the car before allowing anyone to operate the Jac-Rabbit™.
4. **Warning:** Check all fasteners and parts for looseness or damage before each operation and correct before starting the car.
5. **Warning:** Always check your radio control for proper operation before starting the car. Please see Owner's Manual.
6. **Warning:** Do not start the car unless the front of the car is resting against a solid heavy object. Never switch "on" the radio gear without an immovable object in front of the car.
7. **Warning:** Always turn "on" the radio first and the car last. Always turn "off" the car first and the radio last.
8. **Warning:** If other radio controlled models are running in your area of operation, be sure that no other radio with your frequency is "on" while running your car.
9. **Warning:** Do not operate the Jac-Rabbit™ near large metal structures as there may be radio interference.
10. **Warning:** Always operate the car in an open area free of bystanders. Never operate the car when children or animals are nearby.
11. **Warning:** Always be certain your vision of the car is not obstructed by objects in the area of operation; loss of sight of the vehicle means loss of control.
12. **Warning:** Although the Jac-Rabbit™ is an off-the-road car made for rough terrain you should not use it for high jumping.
13. **Warning:** Do not accelerate the car to high speeds that could cause loss of control.
14. **Warning:** Use extreme care when handling gasoline during refueling. Gasoline is extremely flammable and dangerous. Do not refuel in an enclosed area or near an open flame or while smoking.

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## Additional Equipment Required

The Jac-Rabbit™ Racer is semi-assembled from the factory and requires approximately one hour of final assembly after painting.

The instructions in this manual will guide you step-by-step in the assembly and safe operation. However, you may need additional equipment from your local hobby store to make your car operational.

**You will need the following items if they were not ordered with your car:**

- 1 — Two channel radio with receiver
- 2 — Servos (Futaba S-34 or S-34L)
- 1 — 15 minute quick charger suitable for a 5-cell battery pack
- 1 — 5 cell battery pack (consisting of five Sub-C Nicad batteries)

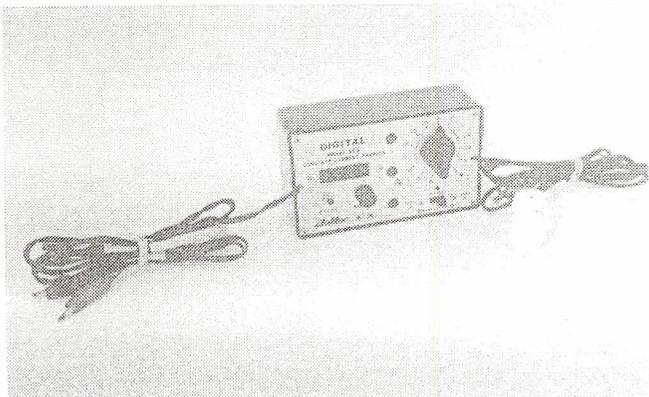
## RADIO/RECEIVER

Your car is designed to operate on most two channel radio systems. However, some systems are better than others for this car. See the recommended radio list included.

If you already have a radio, you should have it serviced and re-tuned to insure the radio and receiver are operating properly before installation in the car.

If you purchase a new radio, be certain that its frequency is specifically for surface vehicles (i.e. boats and cars) 75MHZ or 27MHZ. **It is illegal to operate this car on any other band.** From factory testing and experience a radio on 27MHZ bands works best.

In the event the receiver you use has a different type plug connector, you should ask your hobby dealer for adaptors to make the connection.

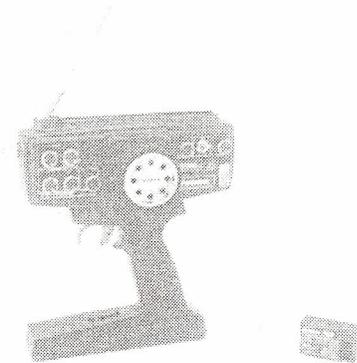


## BATTERY PACK (If not included)

The car's electrical system requires a 6-volt D.C. power pack. A pack of 5 Sub-C 1.2 volt Nicads, available at most hobby shops, will do the job. Do not use dry cell batteries. A plug is included for the battery pack you purchase.

## QUICK CHARGER (If not included)

For re-charging the battery pack, you will need a 15 minute quick charge suitable for charging 5-cells. Some chargers are made for high voltage batteries. Be certain you get one for 5-cell or 6 volts.



### WARNING:

If you use a radio and receiver that are not new, you should have them serviced and retuned to insure that they are operating properly before starting the car.

## SERVOS (If not included)

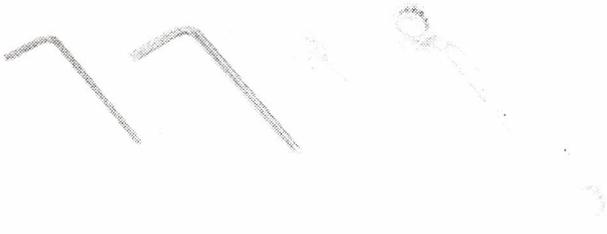
The steering and throttle mechanisms are designed to use Futaba S-34 or S-34L servos. If not included in the car kit, you will need two. The servo arms and linkage are included. The throttle servo may need a longer wire to reach the receiver.

A new radio will come with servos included. However, they are much smaller in size and power and should not be used in the Jac-Rabbit™ Racer.

## ASSEMBLY

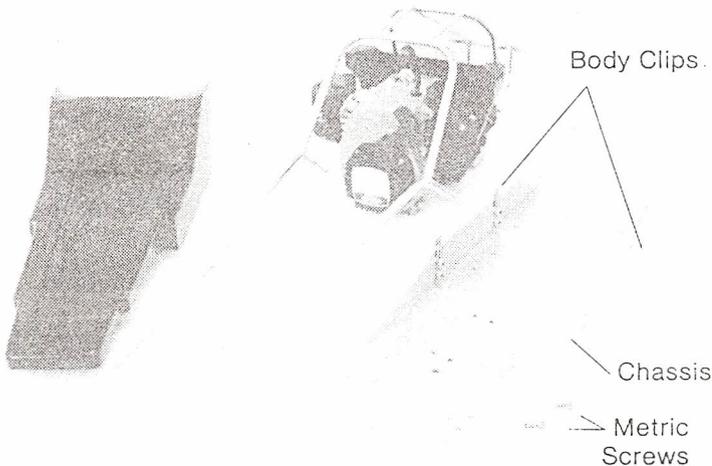
Since the Jac-Rabbit™ is semi-assembled, you will need only a small number of hand tools to finish the job. They consist of:

- 5/32 Allen Wrench
- 7/64 Allen Wrench
- 3/8 Open End Wrench
- 7/16 Open End Wrench
- 9/16 Open End Wrench
- External Snap Ring Pliers



## 1. PAINTING

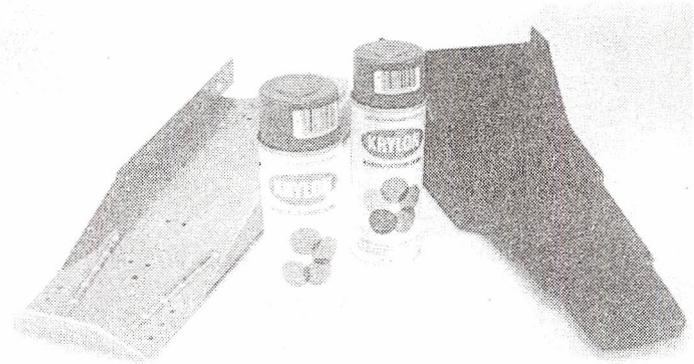
If you wish to paint the parts of your car to give it the personal touch, you should do so before doing any of the final assembly work. Only two parts should be painted - the chassis and the body. Remove the screws holding the engine/cage to the chassis before painting either part. You may want to sand the edges to remove any burrs or roughness by using fine grain sandpaper.



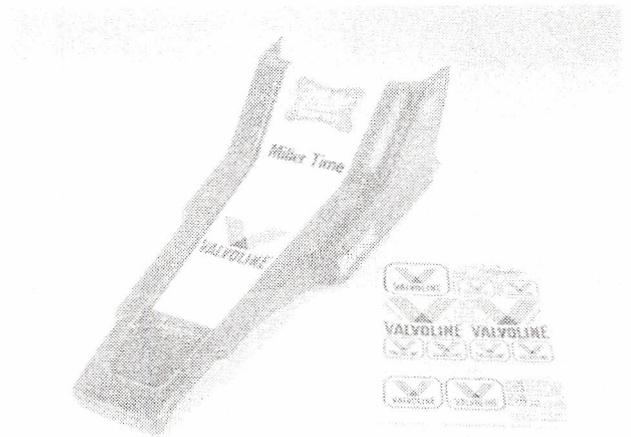
### NOTE:

The two screws that are holding the chassis to the engine are metric. **Do not misplace them.** Remove the body retaining clips before painting the chassis.

After sanding, clean each part in soap and water and dry them thoroughly. In painting the chassis, it is recommended to use a primer before spraying the final color to make paint adhere to the aluminum surface. It is not necessary to use a primer coat on the body, but you may do so to get a better finish.

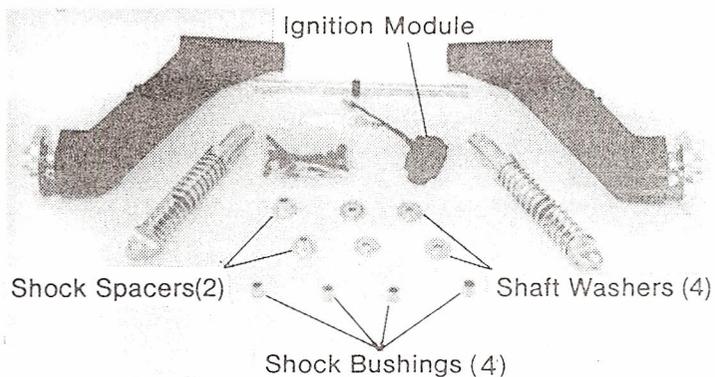


Do not use lacquer paints on the plastic body as they may cause damage to the surface. Any enamel paint is usable, however Krylon spray paint offers the easiest and best results for the novice painter.



After the painting is completed, allow sufficient time for the paint to dry then add the decals supplied.

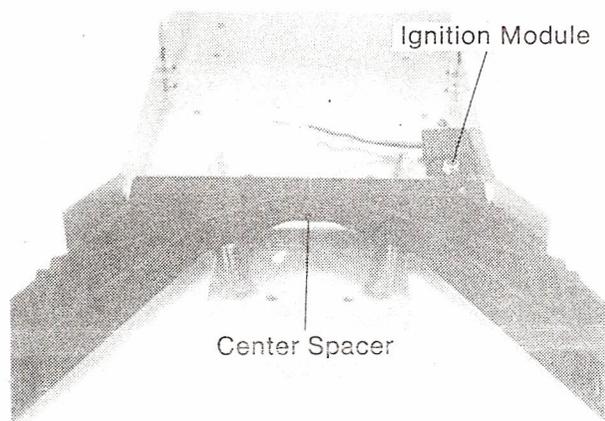
## 2. Rear Suspension



After painting, your Jac-Rabbit™ is ready for assembly. Open the package containing the rear trailing arms, shocks and related parts. Install the engine ignition module first using (2) 10-24x5/8 screws and lock-nuts.

Connect the red module lead to one of the two (2) mounting screws for a ground. After the engine is installed, connect the black module lead to the electrical connector plug located under the carburetor. These leads must be connected for the engine to run.

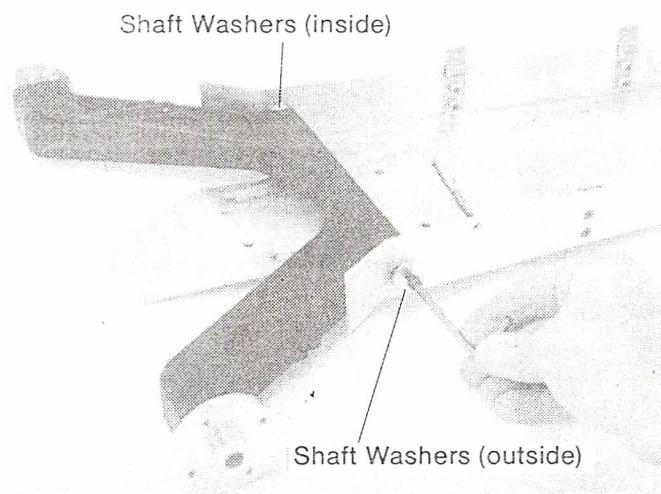
Slide the center spacer onto the crossshaft. Slide both trailing arms onto the rear crossshaft. It makes no difference as to left or right since both arms are the same.



Position the trailing arms and shaft, as shown below. Slip two of the shaft washers into the large holes in the chassis from the inside.

### NOTE:

The shoulder of each shaft washer must fit into the large chassis holes so that the step of each washer will face outward. It may be necessary to spread the chassis slightly. Place the remaining shaft washers (2) into the large chassis holes from the outside with their steps also fitting into the large hole.



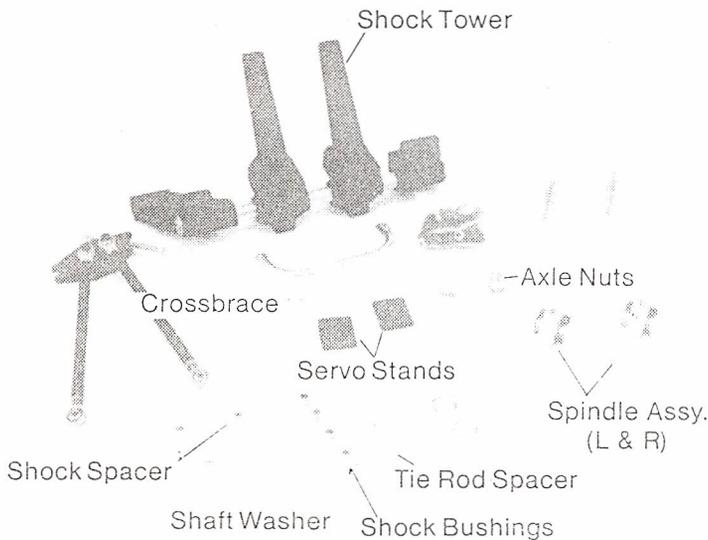
Install one 10-24x3/4 screw from each side thru the shaft washers. Thread them into the crossshaft and tighten securely with a 5/32 Allen Wrench. You may want to use Loc-Tite on these screws.

The arms should rotate on the shaft but will fit snugly.

Do not install the shocks yet as they will be added later. Keep the remaining parts from the rear suspension package together.

### 3. Front Suspension and Chassis

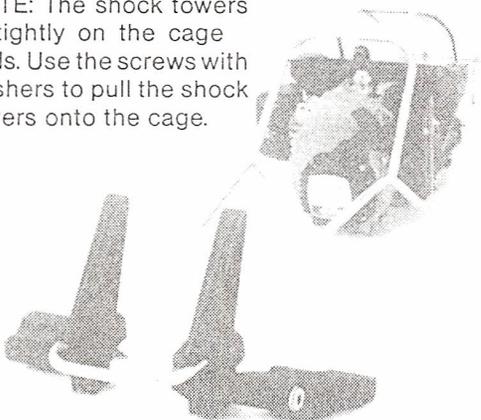
Open the front suspension package and learn the component names from the photo below.



Slide the shock towers and front assembly onto the cage, engine and transmission assembly using the **inner** shock tower holes as shown below. Install two (2) 10-24x5/8 screws with flat washers into the roll cage threaded ends and tighten securely.

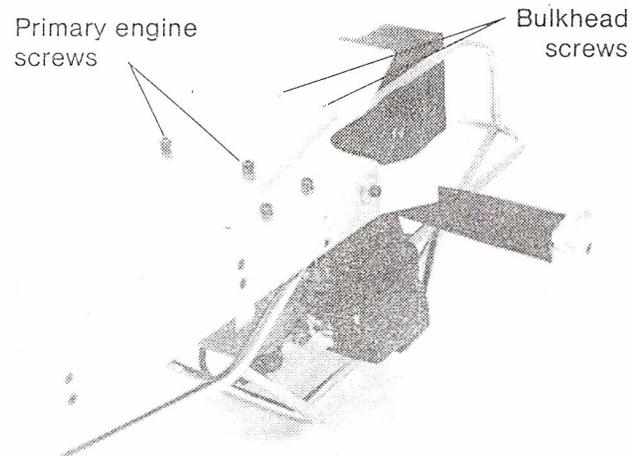
Slide each shock tower outward till the respective front trailing arms are resting against the retaining rings at each end of the crossshaft. This will roughly position the shock towers for assembly to the chassis. Install the front bumper using two (2) 10-24x3/4 screws. This will hold the shock towers in place.

NOTE: The shock towers fit tightly on the cage ends. Use the screws with washers to pull the shock towers onto the cage.



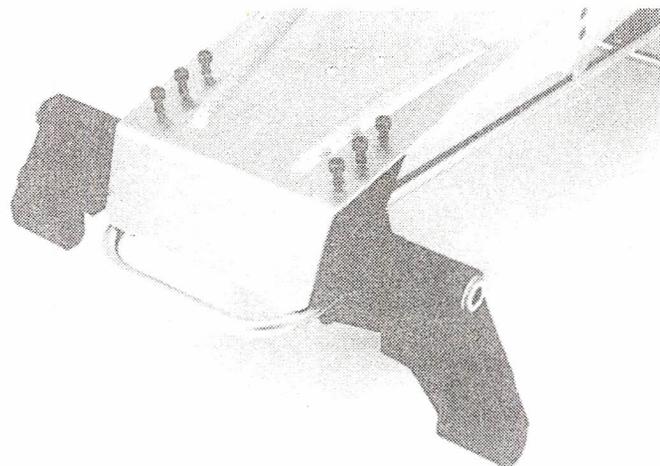
Turn the engine, transmission and roll cage assembly with front crossshaft assembly attached, upside down on your workbench as shown below.

Lay the chassis on top and line up the holes for the two primary engine mounting screws. These are the metric screws you removed to disassemble the chassis from the engine just prior to painting.



Install the two primary engine screws but do not tighten them as yet. They will hold the chassis in place while installing the balance of hardware from the bottom side.

Install the two (2) 10-24x1/2 screws for the motor bulkhead.



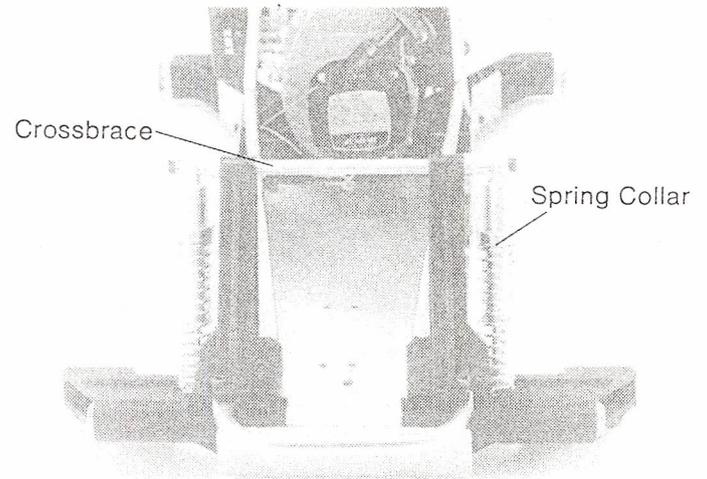
Next install the six (6) 10-24x1/2 screws for the shock towers. Again do not tighten them.

**NOTE:**

Many of the holes in the non-metal parts such as the shock towers are not threaded but are designed for self-tapping. Care must be taken not to over tighten and strip these screw holes. Tighten to snug only. **Do not use Loc-Tite on any of the nylon parts.**

Tighten all the screws now installed from the chassis bottom side.

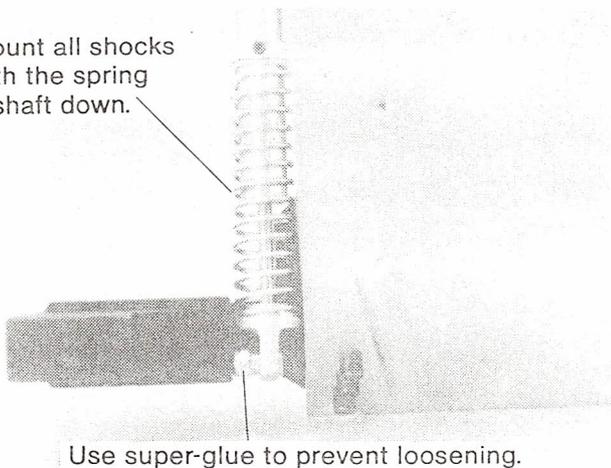
Next install the top shock screw, (10-24x2) washer and bushing into the shock. Add the shock spacer and slide the screw thru the shock tower and thread into the crossbrace as shown below. Tighten securely. Use Loc-Tite if you wish.



**4. Front Shocks and Spindles**

Slide one of the four shock bushings (brass) into the shock hole at the spring end. Install a #10 flat washer onto a 10-24x1 screw, slide the screw (with washer) thru the bushing and tighten a 10-24 locknut against the shock bushing.

Mount all shocks with the spring & shaft down.



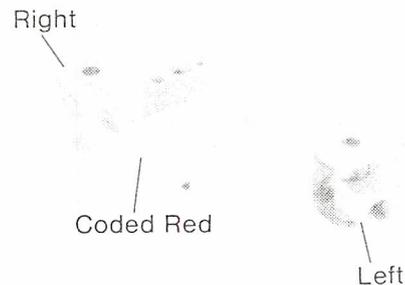
Use super-glue to prevent loosening.

Follow the same shock mounting procedure for the opposite side.

**NOTE:**

The shocks are oil filled at the factory and must be installed "spring and shaft down" to insure proper suspension and handling. Reversing will produce air pockets in the shock oil and poor handling of the car. Also the front suspension should be "stiff". Adjust the front shock spring collars to 1 1/4 inches below the top screw hole.

Thread the shock screw into the bottom hole (of three) in the trailing arm and tighten snugly. Use a drop of Super-Glue on the screw thread to prevent loosening.

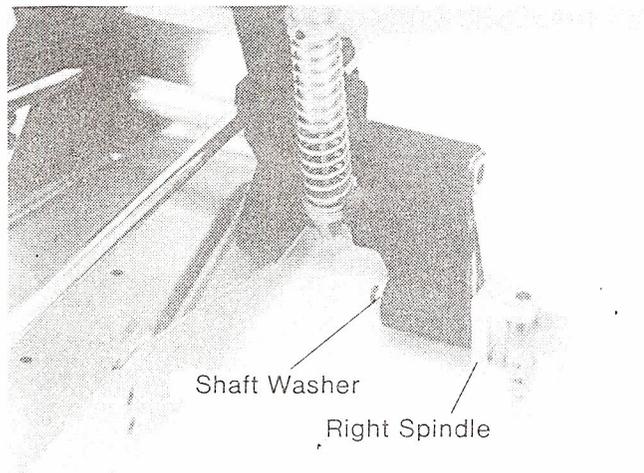


**NOTE:**

The three shock mount holes in each trailing arm allow for the adjustment of ground clearance. Each higher hole will increase ground clearance by approximately 1/4 inch. However, you will have to space the tie rods upward also to provide clearance thru the full wheel travel.

Before installing the spindle assemblies, make note they are assembled one left and one right. The right side will be color coded red on it's shank.

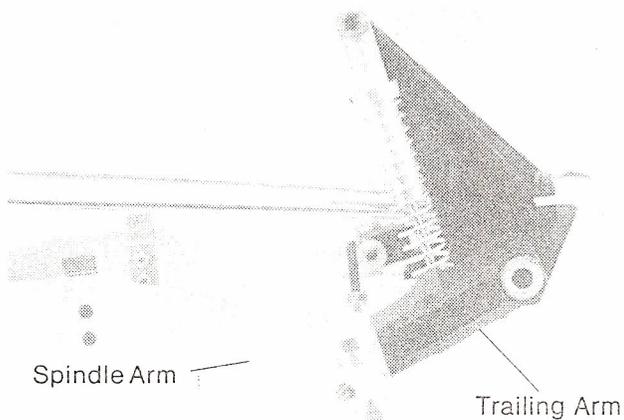
With the tie rod arm pointed to the rear of the car, install the red (right) spindle assembly into it's trailing arm. Slide a shaft washer onto a 10-24x1/2 screw with the washer's step nearest the screw head. Thread the screw with washer into the spindle shank but do not tighten.



The front end camber is not adjustable but set at 2 degrees positive.

The caster however is infinitely adjustable. For starting out, adjust as shown below and tighten the spindle shank screws securely.

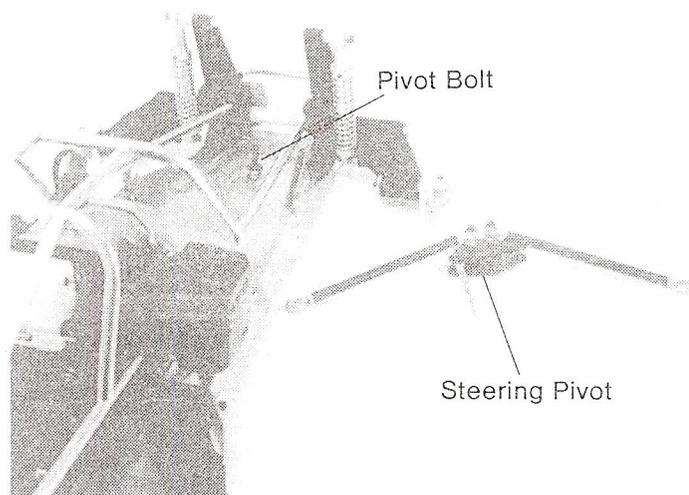
Use the same procedure for the other spindle assembly installation.



Starting Caster Adjustment :  
Spindle arm parallel with trailing arm angle.

As you learn about your Jac-Rabbit™ you will find that changing the caster angle greatly affects the car's handling. Example: more caster angle will correct a car that has a tendency to spin out. Generally the Jac-Rabbit™ "likes" substantial caster angle.

## 5. Tie Rods and Steering Linkage

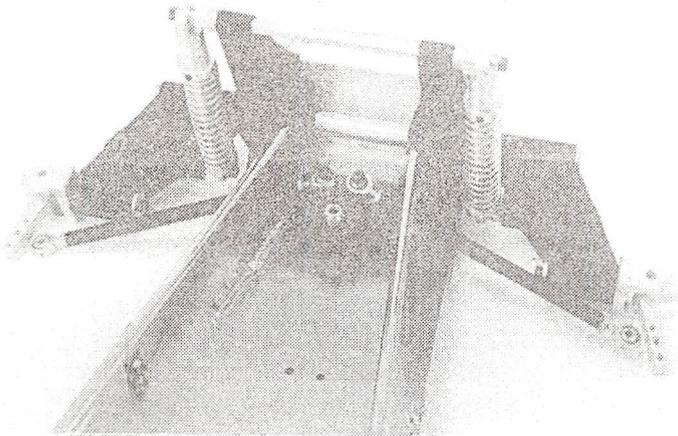


First install the 1/4-28x1 3/8 pivot bolt from the bottom and tighten the 1/4-28 jamnut tightly against the chassis floor. Install (2) 1/4 inch flat washers onto the pivot bolt.

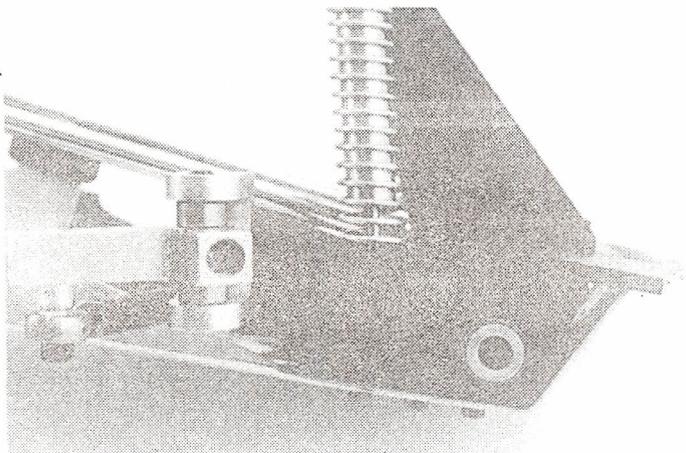
The steering mechanism has been assembled for you at the factory. Place it beside the car as shown above.

To install it in the car, slide one tie rod between the upper cage rail and chassis. Feed it thru both sides until the steering pivot will slide onto the pivot bolt. It may be necessary to move the tie rods about to slide the pivot onto the bolt.

Install a 1/4 flat washer and locknut. Tighten the locknut so that the steering mechanism will turn freely.



Attach the tie rods to the spindles using the 10-24x1 screws. The spacer must be installed as shown below. Install the tie rods in the center hole. If you want slower steering, move the tie rods to the rear hole.



**NOTE:**

The toe-in has been roughly adjusted at the factory. Final adjustment will come after the wheels and tires are installed.

Move the spindles and steering mechanism from lock to lock, left then right. There must be free movement throughout the swing from left to right stops. If a tightness is felt, find the source and correct it before proceeding.

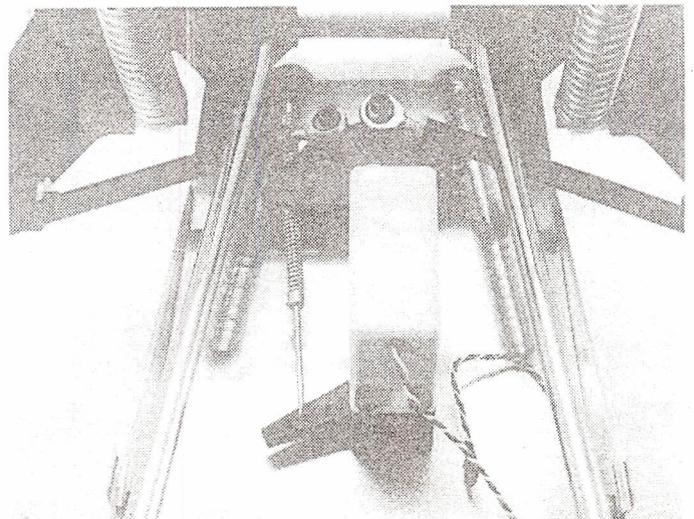
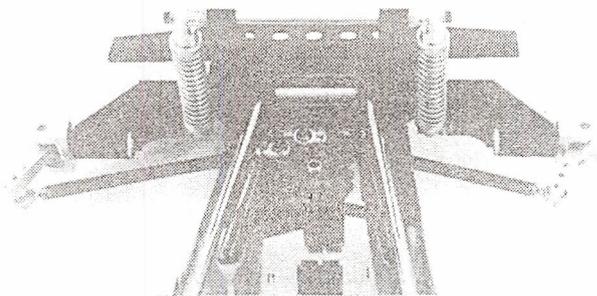
## 6. Steering Servo and Fuel Tank

If your car was supplied with servos from the factory, the steering servo has the linkage arm installed. Install the servo as outlined below.

If your car was not supplied with servos, you must use Futaba S-34 or S-34L servos. The proper servo arms have been supplied. Before the steering servo arm is installed, you must plug the servo into the operating radio system for it to center itself. The arm must be installed perpendicular to the side of the servo.

Contact your hobby shop if help is needed.

Install the servo stands (2) with the notches upwards and facing each other. Use 10-24x1/2 screws (4) from the bottom. The stands are not threaded; they will self tap. **Don't use Loc-Tite.**



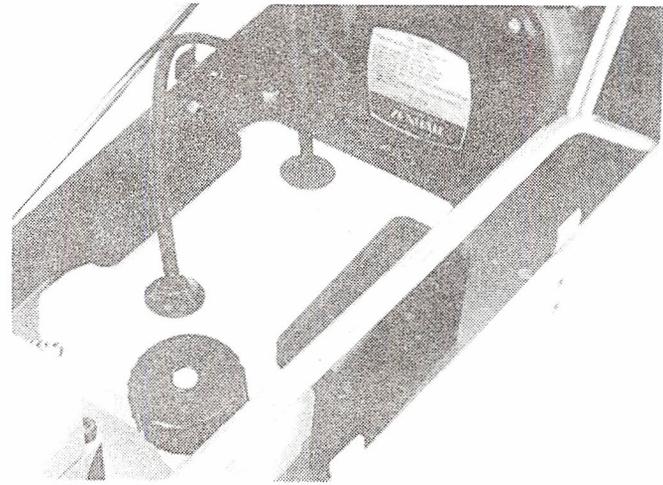
Install the steering servo with the arm to the rear and to the left.

Secure the servo in place with four 10-24x1/2 screws from the top. **Do not over tighten** as the servo housing will become distorted.

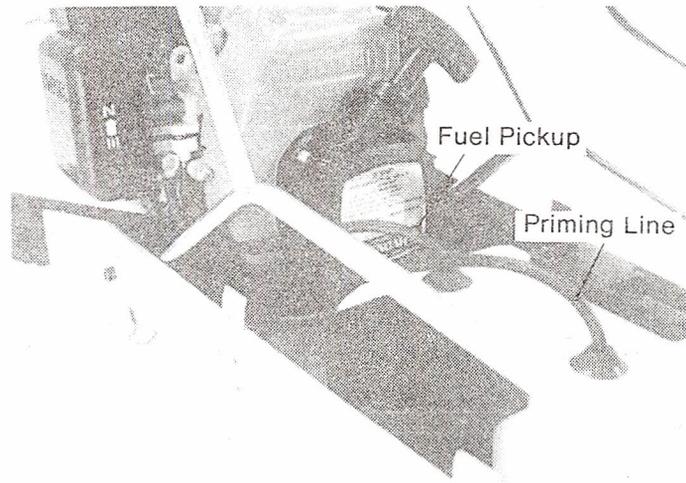
Connect the steering rod to the servo arm in the fourth hole from the outboard end. This will provide a medium steering speed setting which is good for learning to drive the car.

Install the 3/32 shaft collar below the servo arm so that the steering rod will not come out. Use the Allen Wrench supplied.

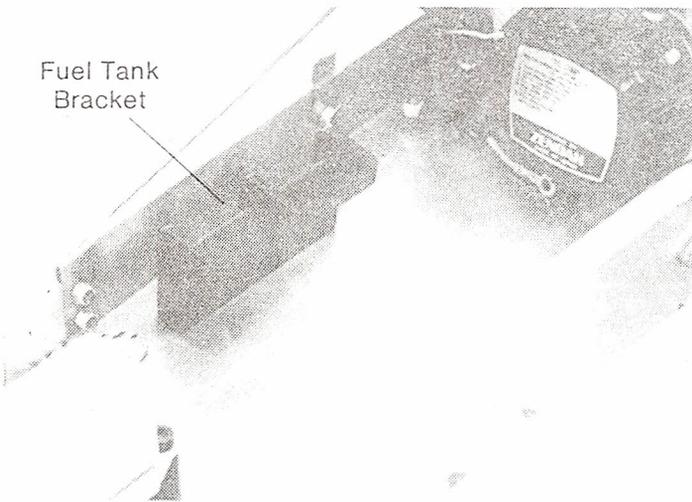
As you become acquainted with the car and gain confidence in your driving, you can move the steering rod to the outer holes which will make the steering faster.



Next slide the tank assembly under that bracket. Then install the second bracket from the opposite side and tighten all four screws.



Fuel Tank Bracket



For mounting the fuel tank, first install one of the fuel tank brackets with two (2) 10-24x1/2 screws from the bottom but do not tighten.

The tank has two fuel lines from it that connect to the engine carburetor. The forward fuel line is the priming pump return and must connect the carburetor brass pipe closest to the air filter.

The other fuel line is the fuel pickup and connects to the brass fitting nearest the engine crank case.

## 7. Throttle Servo

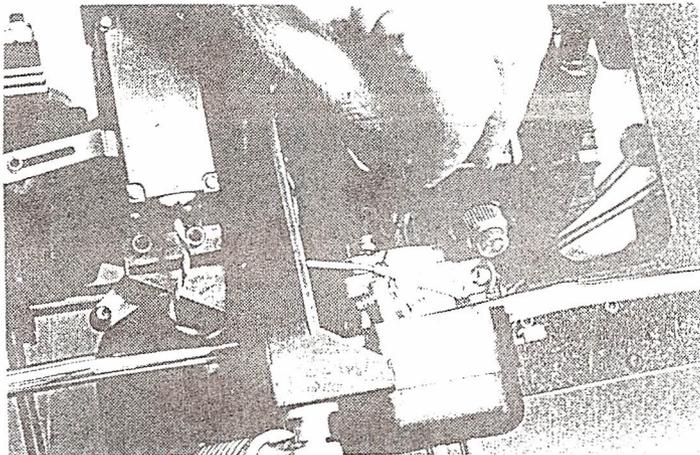
If your car is supplied with servos from the factory, the throttle/brake servo will already have the linkage arm installed and it will be mounted on the motor plate.

If servos were not included in your car kit, you must purchase 2 Futaba S34 or S34L servos. All other linkage and mounting hardware has been included. Before installing the servo arm, you must plug the servos into the operating radio system so that the servo can center itself. Consult your local hobby shop for assistance. Also, the lead wire for the throttle/brake may need to be lengthened to reach the receiver.

After centering, position the servo so the white output shaft is facing upward and to the right. Install the throttle servo arm on the shaft so it is parallel to the side of the servo case, with the angled arm end on the right. Install the small Phillips screw and tighten securely. Connect the single hole end of the slotted aluminum brake link to the No.2 hole in the left end of the servo arm using a 6-32 x  $\frac{3}{8}$  screw. Do not tighten.

Install the servo to the motor plate brackets from the bottom side using four 8-32 x  $\frac{1}{2}$  screws locknuts and flat washers. The lead wire should be on the right. Connect the slotted end of the brake link to the plastic brake arm on the gearbox using a second 6-32 x  $\frac{3}{8}$  screw. Do not tighten as the linkage must slide on the screw.

Slide the straight end of the wire throttle link (with shaft collar) into the slotted rotator on top of the carburetor from behind the motor plate through the slotted opening. Bend the plastic servo arm downward to connect the throttle link to the No.2 hole in the servo arm.



## Battery Power Pack

A. If your car kit was ordered without a Battery Power Pack; you will need battery pack consisting of 5 Sub-C size NI-CAD rechargeable batteries wired in series, with a plug compatible to the supplied on the wire harness in the car. An extra battery plug has been included should the battery pack you purchase not have the correct plug.

B. If your car kit was ordered with the Battery Pack included; it will have the correct plug installed. Velcro strips are also included for mounting the battery pack into the car chassis.



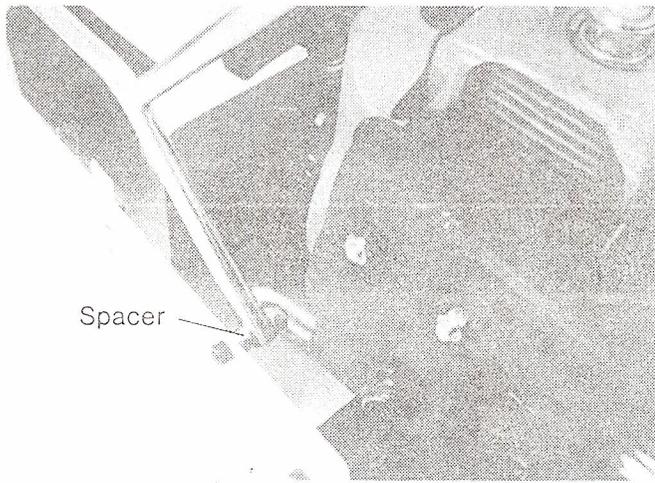
The battery pack should be mounted directly in front of the engine's starter and behind the fuel tank as shown below.

### NOTE:

Do not allow the battery plug pins to contact metal as a short circuit could occur.

## 8. Roll Cage Side Mounts

The roll cage mounts to the chassis at both sides just in front of the engine using two (2) 10-24 x screws, two (2) spacers and two (2) 10-24 locknuts. Slip the screws through the chassis from the outside, install the spacers and slide the screw through the cage tube. Install the nuts and tighten.



Spacer

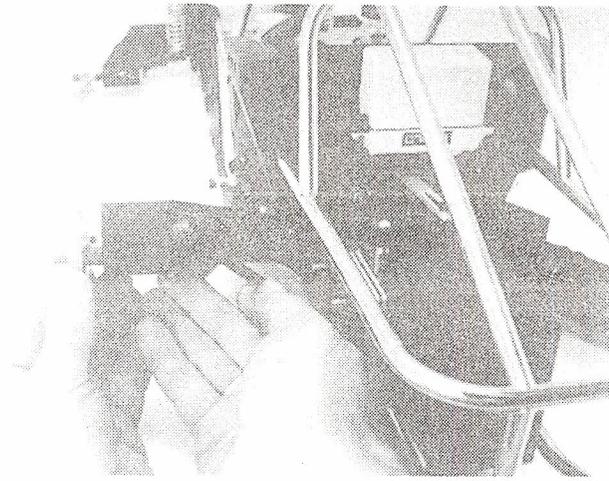
It may be necessary to flex the cage tubes to install the side screws.

## 9. Rear Axles and Shocks

Lift the rear trailing arm to its highest point. Slip the rear axle into the transmission drive cup by aligning the pins and slots. Do not slide the axle all the way into the cup, only far enough for the pins to barely engage the slots. This allows for the maximum axle angle while inserting the opposite axle end into the wheel drive cup.

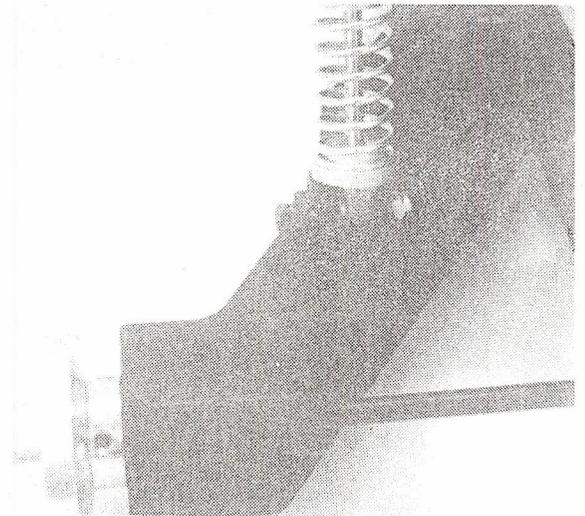


It is best to rotate the transmission drive cup so that its slots are horizontal before installing the axle. Next rotate the wheel drive cup so that its slots align with the axle pins.



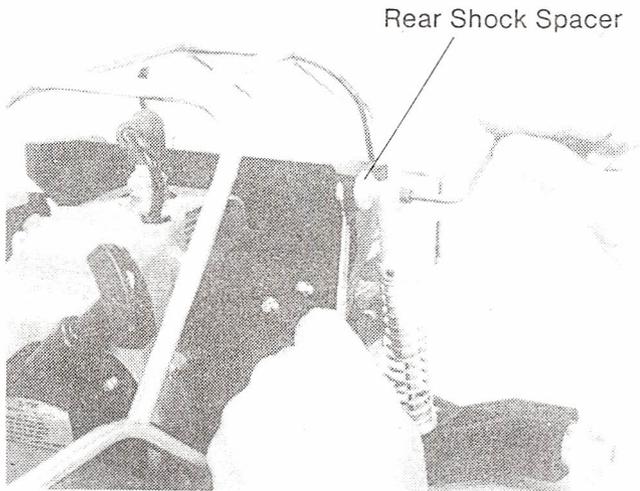
It will be necessary to lightly force the trailing arm upward to allow the axle to fall into the wheel drive cup. Once the axle has engaged then lower the trailing arm to its normal position. Install the snap rings onto both drive cups.

To install the shocks, first slide one of four (4) brass shock bushings into the spring end of the shock and insert the shock end (with bushing) into the trailing arm as shown below. Install the lower shock screw 10-24x1 from the side into the front hole in the trailing arm. Install a 10-24 locknut and tighten.



The two (2) shock locations in the trailing arm provide for two ratios of shock/spring action. The front hole provides a softer ride while the rear hole will stiffen the rear suspension. For starting out, the front hole is best.

Put a #10 flat washer and a brass shock bushing onto one of the 10-24x1 3/8 upper shock screws and slide it thru the upper shock hole. Install the rear shock spacer and mount the top of the shock in the middle hole in the bulkhead. Again there are three (3) holes to allow for adjustment of the rear suspension spring rate. The rear hole will make the ride stiffer. The front hole will make the ride softer.



You will find the upper shock nuts somewhat hard to get to, but a 3/8 inch open end wrench inserted from below, as shown above, will do the job.

Assemble the axle and shock for the other side using the same procedures.

## 10. Wheels and Tires

The wheels and tires have been assembled for you so that all that is needed is to install them on the car.

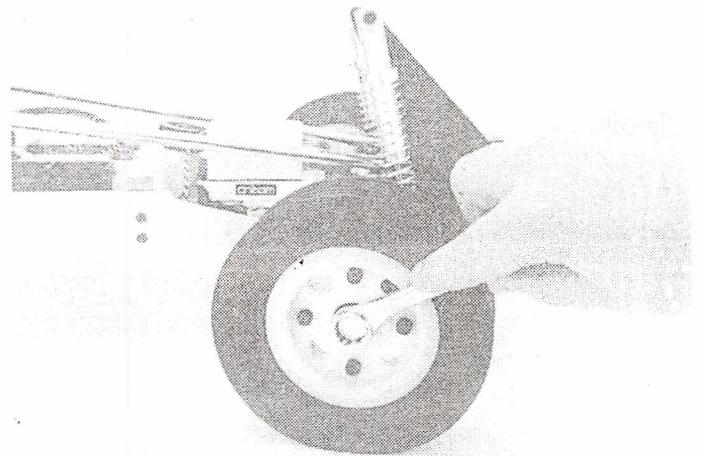
In the rear use four(4) 10-24x5/8 screws with flat washers per wheel. Install the wheel so that the allen head screws face outward.



### NOTE:

The tires are not glued onto the wheels. If you intend to race the Jac-Rabbit™, you should disassemble the wheels from the tires and use super-glue to bond the wheels to the tire beads.

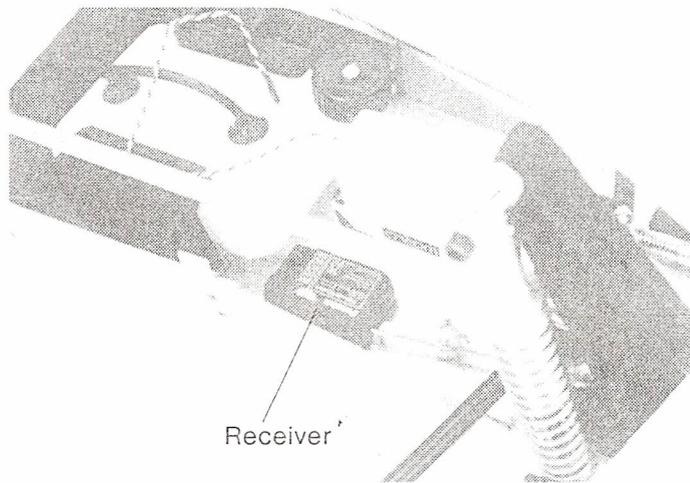
Use the two (2) brass wheel nuts to mount the front wheel assemblies. The wrench size is 9/16 and you will have to hold the spindle assembly while tightening to prevent it from turning.



With the steering pivot in the centered position, adjust the front wheel toe-in by turning each of the tie rods until both wheels are straight. It is not necessary to remove any tie rod screws to adjust the toe-in as the tie rods are threaded left and right. Tighten the nuts against the tie rod end.

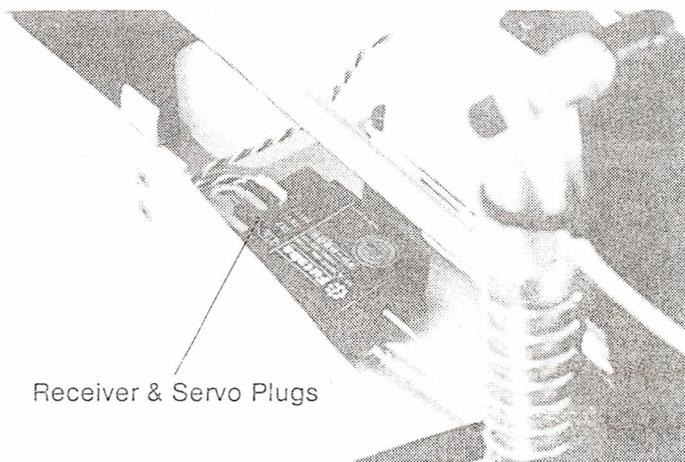
## 11. Radio Receiver

Your Jac-Rabbit™ is nearly finished except for the installation of the radio receiver. Using the servo tape supplied, mount it as shown below.



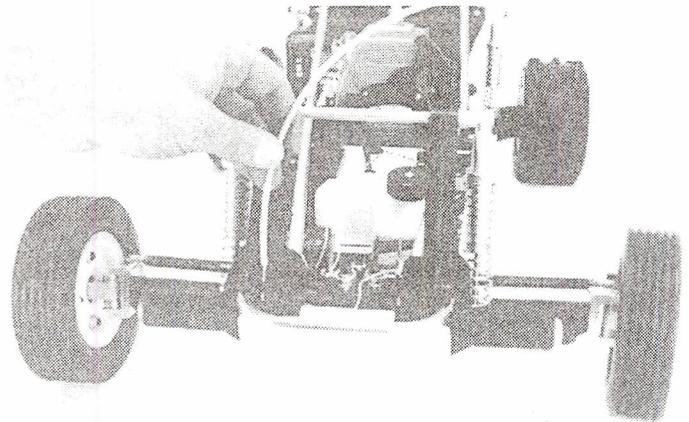
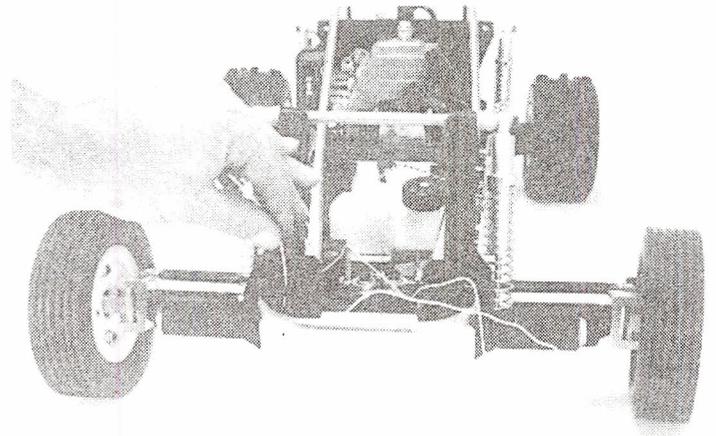
### WARNING:

The receiver you use must be tuned to the radio you intend to use and mounted as shown. The manufacturer will not be responsible for incidents involving mistuned radio gear or incorrectly mounted receivers. You should have the tuning checked before installing the receiver in the car and periodically checked to insure proper radio gear function.

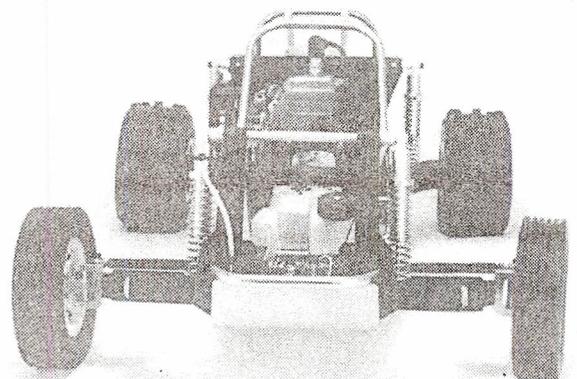


Plug in the leads from the battery, the steering servo and the throttle/brake servo.

Route the antenna over the tie rod and up thru the remaining hole adjacent to the front bumper as shown.

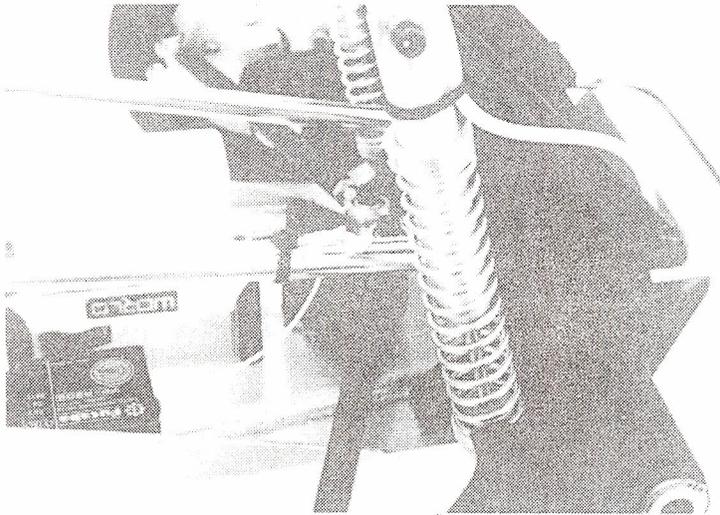


Feed the antenna wire thru the antenna tube so that approximately 1 inch sticks out the upper end.



Push the antenna tube into the shock tower hole until approximately 6 inches remain above the shock. Restrain the antenna tube to the shock using one of the tie wraps supplied. The antenna should be as vertical as possible.

Gather up and tie the remaining antenna wire as shown. **Do not shorten the antenna wire.**

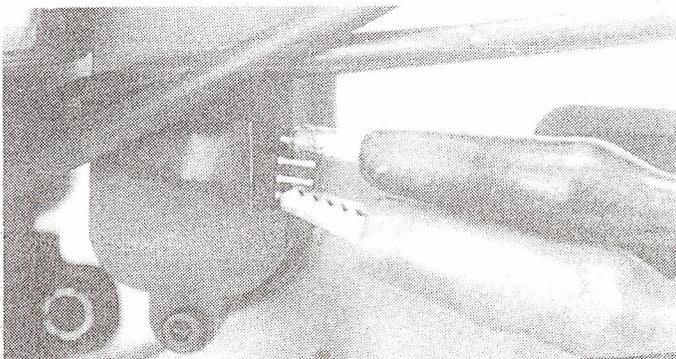


#### **WARNING:**

Never alter the antenna wire length or mount the antenna other than shown. Altered wire length or mounting closer to the engine may cause radio interference and control loss, for which the manufacturer is not responsible. If you encounter a servo "twitching" or minor reception problem, raise the antenna 3-6 inches higher. If the problem remains then have your radio & receiver retuned.

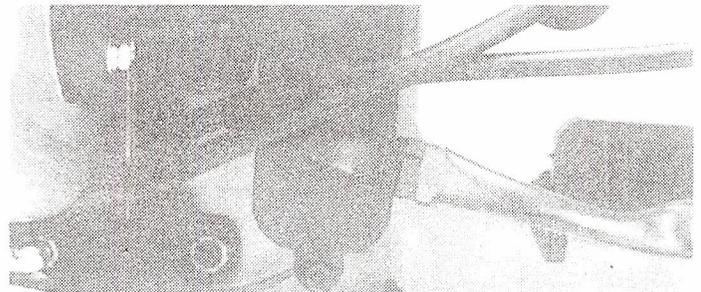
### **12. Charging the Batteries**

Connect the output lead from the quick charger to the battery pack using a compatible plug or alligator type clips as shown below. **The charger must be suitable for 4 cell charging.**



The car's battery pack plug has a groove on one side that locates the positive (+) side of the electrical system. The positive (red) charge lead must be connected to either of the two pins adjacent to that groove. Connect the negative charge lead to either of the other two pins.

Turn the charger on and charge for a maximum of 15 minutes. A semi-charged pack will not require a full 15 minutes as indicated by a slight drop in charging amps or a warming of the battery pack. Do not charge longer if either is noted. Battery damage could result. The charge rate should not exceed 5 amps.



After charging, connect the car's plug to the battery pack. **Make certain the two plugs are connected positive to positive by aligning the grooves of each plug.**

### **13. Checking the Radio**

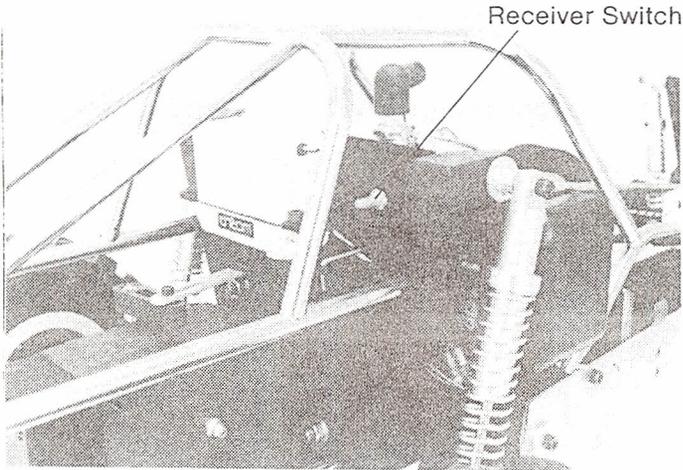
#### **Adjusting the Servos**

Turn on your radio transmitter. Make certain the battery indicator on the radio shows an acceptable charge level. If not, then recharge or replace the radio batteries.

Set the steering & throttle trim adjustments to their center position.

Turn on the car's electrical system with the red toggle switch at the rear of the bulkhead. The steering and throttle/brake servos should move to their neutral position and each should move as you manipulate the radio controls.

If you find the controls are reversed, ie the steering wheel on your radio operates the throttle, then reverse the channels one and two plugs at the receiver.

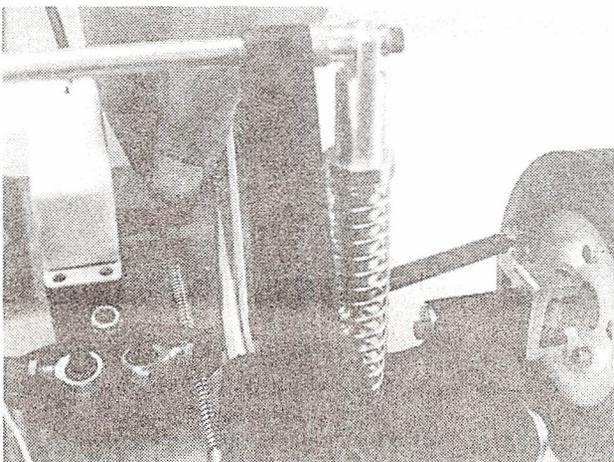


**NOTE:**

Always turn the radio switch on before turning "on" the car switch. Likewise always turn the car "off" before the radio.

If the servo operation is opposite the radio control, ie turning the steering wheel right turns the front wheels left, then locate the servo reversing switch on your radio to correct the problem.

Chances are adjustments will be needed to center the servos. With the radio and the car switches "on" check to see that the front wheels are pointed straight ahead.



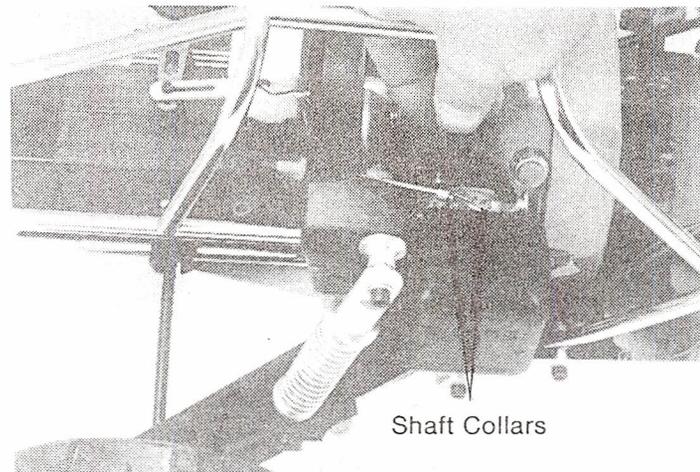
If they are not, then loosen the two shaft collars on the steering rod, re-position the springs and collars so that the wheels are straight. Use the allen wrench supplied.

**NOTE:**

Each servo saver spring should have a slight tension against it when the collars are tightened. Do not over tension the springs as servo damage could result.

Any further wheel adjustment can be done from the radio with the steering trim. The wheels should move full left and full right by turning the steering wheel.

The throttle/brake can be adjusted the same way if necessary. Radio and car switches "on", loosen the throttle rod shaft collars, allow the throttle rod plate to move against the idle speed screw. Retighten the shaft collars. The shaft collar ahead of the throttle plate must have 3/8 inch "free" movement for proper brake operation.

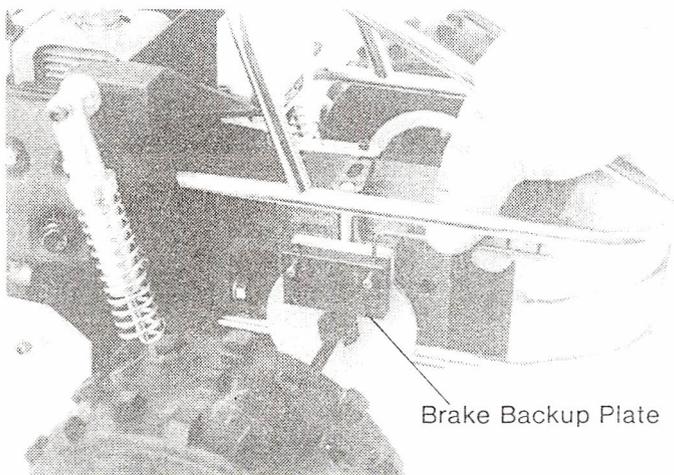


**WARNING:**

When the radio throttle control is in the neutral position, the throttle plate on the carburetor must rest against the idle speed screw so that the car's automatic clutch will be disengaged when the engine is idling.

Next check the brake operation by rolling the car forward. Apply the brakes from the radio control. The rear wheels should lock and slide the car.

If the brakes are dragging or the car does not stop, then loosen the two (2) set screws in the brake backup plate, move the plate in or out as needed. Moving it "in" will tighten the brake, "out" will loosen the brake. **Do not over tighten the setscrews.**



Brake Backup Plate

**WARNING:**

Never operate the car when the brakes are not working properly. They should be checked for stopping each time you run the car.

Whenever checking the steering with the car stopped, the front wheels should always be off the ground.

The preceding steering and throttle/brake trim checks should be performed each time you run the car prior to starting the engine. Be sure to turn "off" the car and radio transmitter.

## 14. Supplying Fuel and Starting

After you have made the radio check and servo adjustments, proceed by filling the fuel tank with fuel.

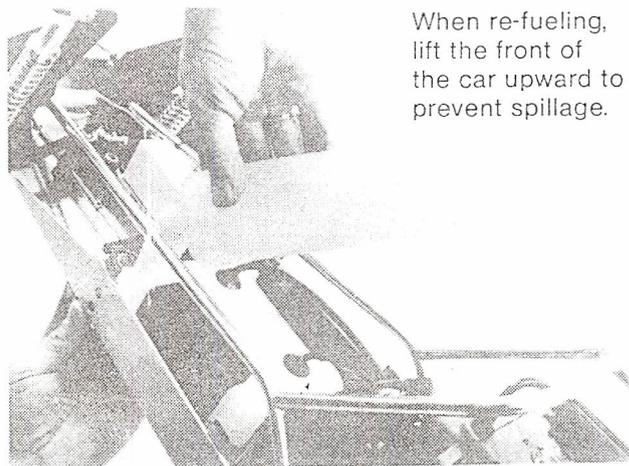
The Jac-Rabbit™ runs on a mixture of regular grade leaded or unleaded gasoline and 2 cycle engine oil. The mix ratio should be 25 to 1 during break in (approximately 3 hours of running) - 5 oz. oil to 1 gallon of gas. After break in you may use up to a 40 to 1 mix - 3.5 oz. oil to 1 gallon of gas.

Recommended oils include: chainsaw, motorcycle or brushcutter oils. Outboard and automotive oils are not recommended.

**WARNING:**

Do not use gasohol or any fuel other than gasoline.

Mix the gasoline and oil in a separate container by shaking vigorously. Fill the tank to about 3/4 full from the container as shown below.



When re-fueling, lift the front of the car upward to prevent spillage.

**WARNING:**

Use special care when re-fueling or handling gasoline as it is extremely flammable and dangerous. Never re-fuel in an enclosed area, near open flame or sparks or while smoking.

With the cap installed the fuel tank will not leak but care must be taken that the cap is screwed on straight. The cap will leak if it is cross threaded.

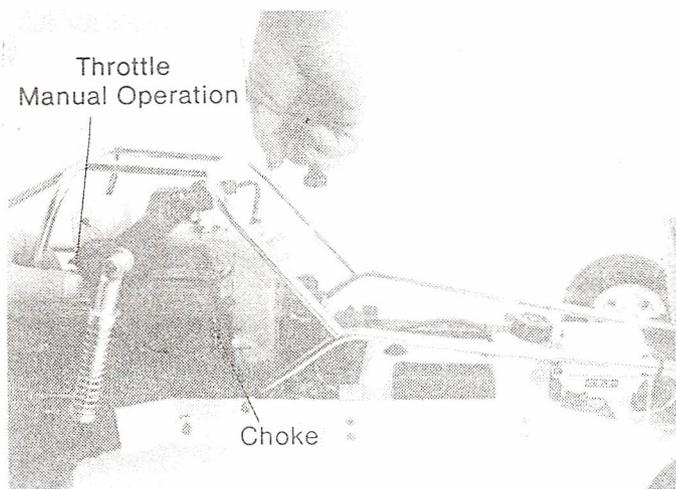
## 15. Starting the Car

Make sure the radio gear is turned off while starting the engine.

Pump the primer on the bottom side of the carburetor until you feel fuel flowing thru.

Move the choke lever to the closed position (up).

Control the throttle manually by moving the servo arm as shown below. Open the throttle approximately 1/4 open. Keep your hand on the servo arm as the throttle will not automatically return.



### **WARNING:**

Always start the engine with the front of the car resting against a vertical solid object such as a wall or workbench leg.

Pull the starter in short quick strokes until the engine starts. Move the throttle back until the clutch is disengaged. Slowly move the choke to open as the engine warms up.

Allow 3 to 5 minutes for engine warmup before returning the throttle to idle. If the engine idle seems low, increase by turning the idle speed screw clockwise. Decrease counterclockwise.

## 16. Your First Test Drive

Choose a large wide open space for your first driving experience with no obstructions. A baseball infield is ideal. **Never run the car on a street, near buildings or when bystanders are in the area.**

With the engine running, place your foot in front of the car, turn "on" your radio and then the car switch. The engine should continue to idle and the front wheels will move straight. Lift the car's front end with your toe, and turn the radio wheel left and right to be sure the steering is working properly.

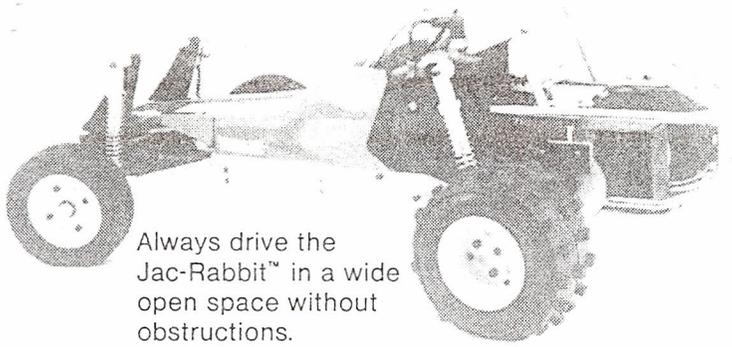
Now move the radio throttle control slightly until the car begins to move. Drive the car slowly turning the wheel left and right until you get the feel of driving. To apply the brakes, move the throttle control in the opposite direction.

After slow driving to gain driving experience, increase the speeds as you wish. The car will go any speed you want. However, it is strongly advised to restrict the full throttle movement thru adjustments on your radio or the car until you are thoroughly familiar with the Jac-Rabbit's abilities.

The Jac-Rabbit will run for approximately an hour on a tank of gas and full battery charge. However, the first few battery charges won't last that long. The batteries will charge to full capacity after about 6 - 10 charge cycles. Don't be discouraged if the charge only lasts 15 minutes the first few times out.

To stop the engine simply push in the red button near the carburetor until the engine dies.

Turn off the car switch and then the radio switch. You should unplug the battery pack overnight or for extended non-use periods.



Always drive the Jac-Rabbit™ in a wide open space without obstructions.

When you have confidence in your driving you will find the Jac-Rabbit™ to be very comfortable.

## 17. Maintenance

The Jac-Rabbit™ is a quality radio controlled car built for hours of enjoyment. It's life can be extended by following a few maintenance steps.

### Hardware

After the first half hour of use and before each use thereafter you should check all hardware for tightness, especially the shock screws, wheels and axle screws, gearbox mounting nuts and rear crossshaft screws.

### Air Filter

Since the Jac-Rabbit™ runs in dusty conditions, its vital to clean and service the air filter regularly.



Clean and re-oil the air filter regularly.

Push one side of the air cleaner cover inward to remove. Clean the element by washing in solvent and dry thoroughly. Add oil to all surfaces and squeeze out the excess. USE 30 WEIGHT OIL.

### NOTE

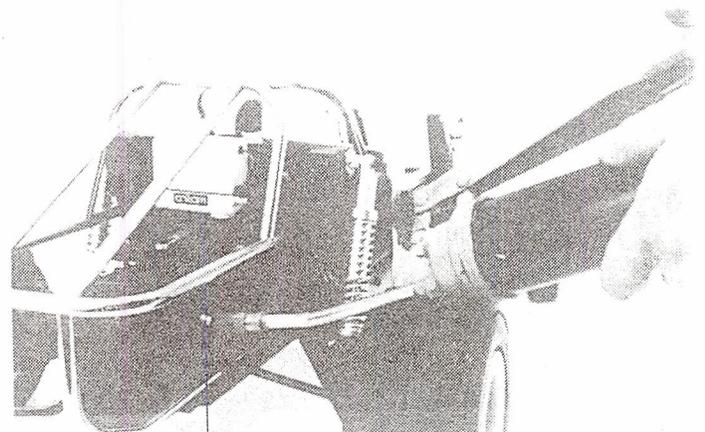
The air filter element should be serviced each time the car is taken out. It **MUST** be serviced each 1/2 hour when running in dusty areas. Failure to maintain a clean and oiled element will cause severe engine damage.

### SPARK PLUG WARNING:

Whenever the sparkplug is replaced you must use a resistor type to prevent radio interference from the ignition. NGK BMR7A is strongly recommended, however equivalent resistor plugs are available.

### GEAR LUBRICATION

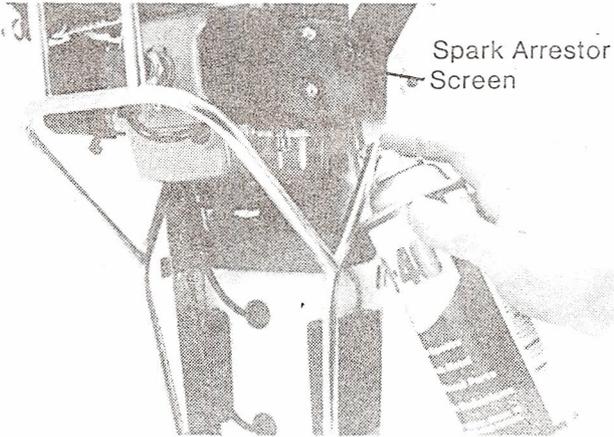
The primary gears may be greased thru the grease fitting on the right side of the gearcase. Remove the rear cover to apply grease to the quick change gears. All of the gears should be regreased each 3 hours of operation.



Grease Fitting

## STARTER

After running in particularly dusty conditions you may find the starter may begin to stick. In this case, hold the car as shown and spray WD-40 into the starter vent slots. Pull the starter rope a few times until it works freely.



## General Cleaning

The best way to clean the car is with compressed air and a small stiff bristled brush. If you wash the car with water always remove the receiver and battery pack and cover the servos and engine exhaust. Never wash the car with solvent.

## Spark Arrestor

The engine is equipped with a spark arrestor screen in the outlet to reduce the hazard of fire caused by exhaust sparks. The screen may become clogged with carbon causing the engine to lose power and become hard starting. If this occurs, remove the screen from the muffler outlet and clean or replace it. The screen is removable with a pair of pliers from the outside.

**Congratulations!**

**You are now the owner of the finest in radio controlled off road cars.**



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