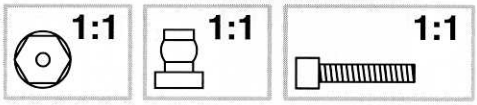
BAG G

REMOVE THESE PARTS FOR:

Sport: steps 6-7

Racer: steps 6-7

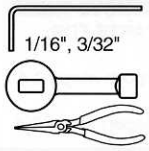


6222, qty 4
4-40/5-40 locknut

6473, qty 4
shock bushing

6925, qty 4
4-40 x 1/2

TOOLS USED



STEP 6 LEFT SIDE

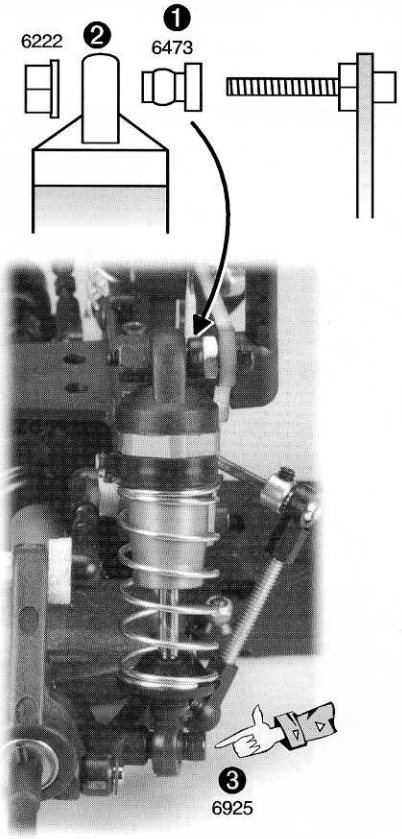
REAR SHOCK MOUNTING

❶ Add the #6473 bushings as shown.

❷ Push the shock cap over bushing and add #6222 locknut. Do not overtighten or the shock will bind.

❸ Fasten the lower shock with the #6925 screw into the suspension arm (see photo).

4 Do the other rear shock.



STEP 7 LEFT SIDE

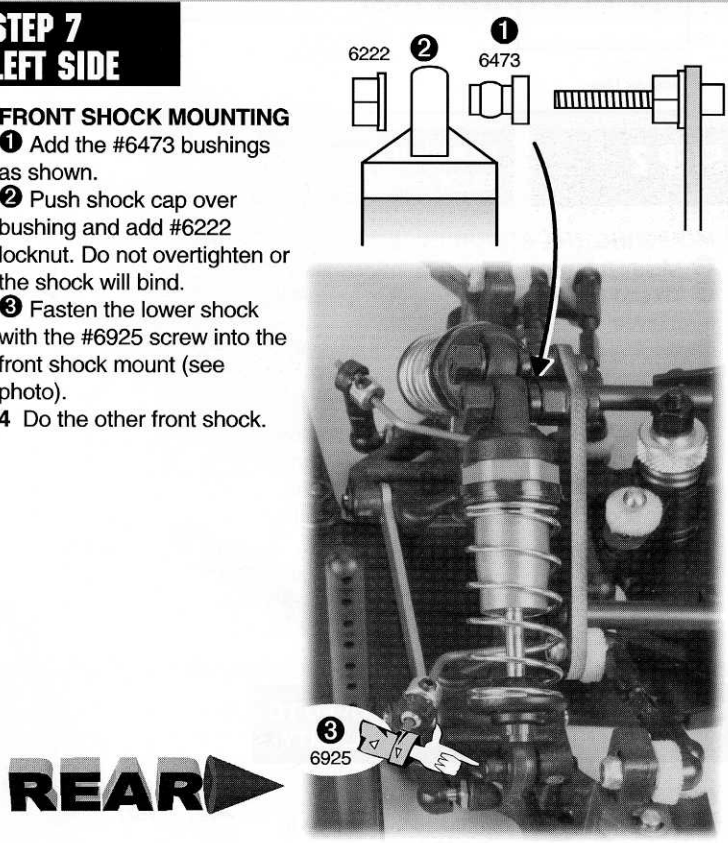
FRONT SHOCK MOUNTING

❶ Add the #6473 bushings as shown.

❷ Push shock cap over bushing and add #6222 locknut. Do not overtighten or the shock will bind.

❸ Fasten the lower shock with the #6925 screw into the front shock mount (see photo).

4 Do the other front shock.

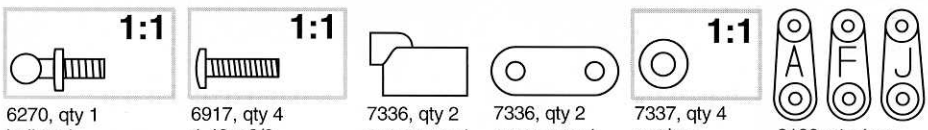


BAG H

REMOVE THESE PARTS FOR:

Sport: step 1

Racer: step 1



6270, qty 1
ball end

6917, qty 4
4-40 x 3/8

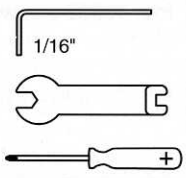
7336, qty 2
servo mount

7336, qty 2
servo mount spacer

7337, qty 4
washer

9180, qty 1 ea
servo horns

TOOLS USED



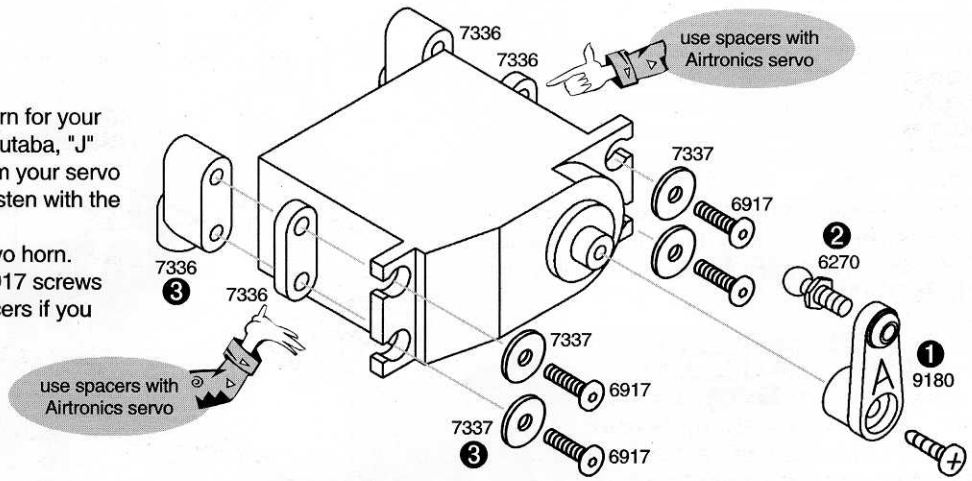
STEP 1

ASSEMBLE THE SERVO

❶ Find the approporiate #9180 servo horn for your servo, marked "A" for Airtronics, "F" for Futaba, "J" for JRPropo. Remove the servo horn from your servo and replace with the #9180 horn, then fasten with the stock mounting screw.

❷ Install the #6270 ball end into the servo horn.

❸ Attach the #7336 mounts with the #6917 screws and #7337 washers. Add the #7336 spacers if you have an Airtronics servo.

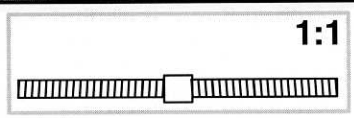


BAG H

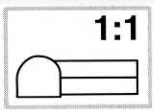
REMOVE THESE PARTS FOR:

Sport: steps 2-4

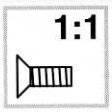
Racer: steps 2-4



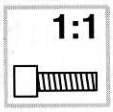
6262, qty 1
turnbuckle



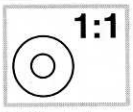
6274, qty 2
ball cup



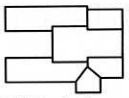
7673, qty 8
4-40 x 5/16



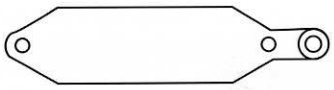
6932, qty 4
4-40 x 5/16



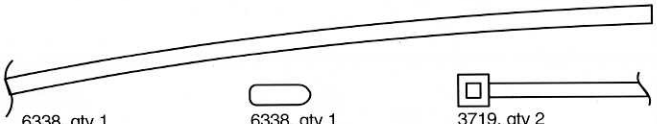
6936, qty 4
#4 washer



7527, qty 2
throttle servo mount



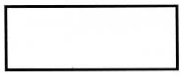
7528, qty 1
receiver mount



6338, qty 1
antenna tube

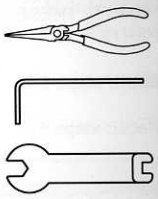
6338, qty 1
plastic end cap

3719, qty 2
wire tie



6726, qty 1
receiver tape

TOOLS USED

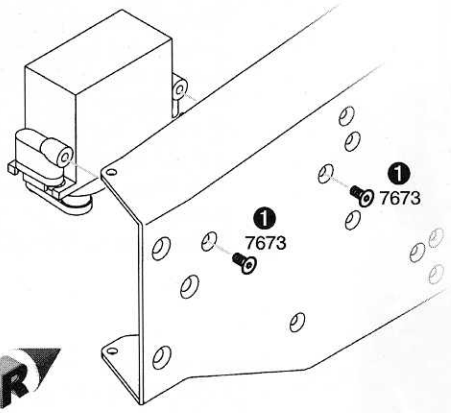


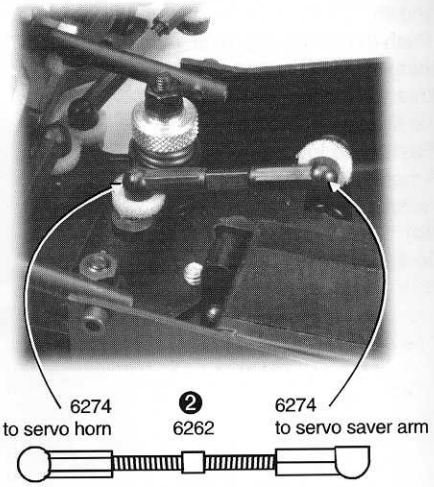
STEP 2

PARTS REMOVED TO IMPROVE CLARITY

MOUNTING THE STEERING SERVO

❶ Mount the servo with two #7673 screws.
❷ Thread the #6274 ball cups onto the #6262 turnbuckle. The length will be different depending on what type of servo you have. Adjust the length of this turnbuckle so the servo horn will be straight up and the left upper servo saver arm will be pointing across from the chassis. When set up this way, and all other adjustments are correct, both front wheels should be pointing straight (parallel with the centerline of the chassis).



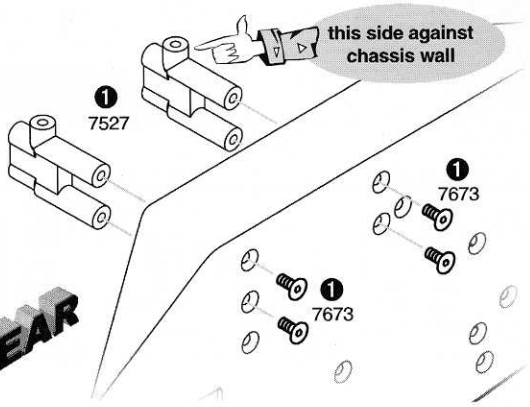


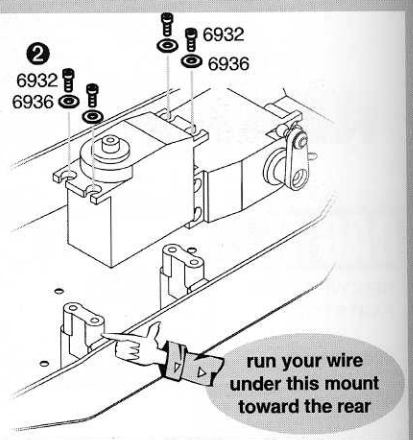
STEP 3

PARTS REMOVED TO IMPROVE CLARITY

MOUNTING THE THROTTLE SERVO

❶ Mount the #7527 throttle servo mounts in the chassis using four #7673 screws.
❷ Now take your throttle servo and mount it between the throttle servo mounts, the output shaft to the rear, with four #6936 washers and four #6932 screws. Run your throttle servo plug wire through the rear mount (in between the two mount legs) from front to back.

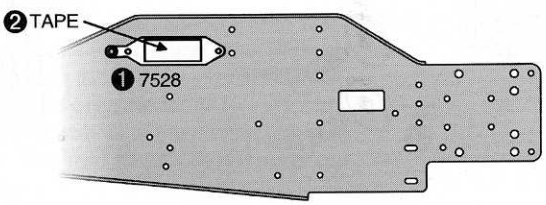


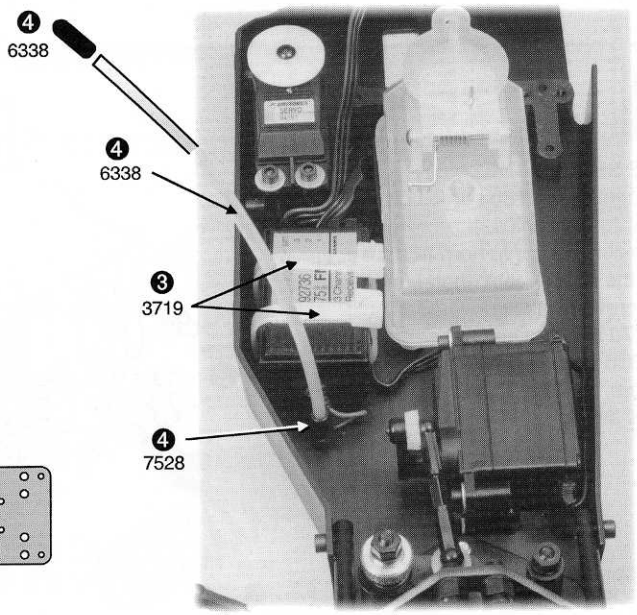


STEP 4

MOUNTING THE RECEIVER

❶ Mount the #7528 receiver mount to the chassis with two #7673 screws going up from under the chassis.
❷ Place a piece of double-sided tape onto the receiver mount, then stick your receiver to it (see drawing and photo).
❸ Use two #3719 wire ties to additionally secure the receiver as shown.
❹ Slide the receiver antenna wire through the #7528 mount, then through the #6338 antenna tube. Place the tube into the hole of the #7528 mount and place the plastic end cap on top of the antenna tube.



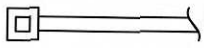


BAG H

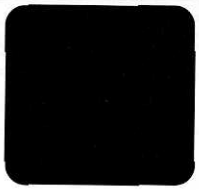
REMOVE THESE PARTS FOR:

Sport: steps 5-6

Racer: steps 5-6



7709, qty 1
4" wire tie



7530, qty 1
foam pad

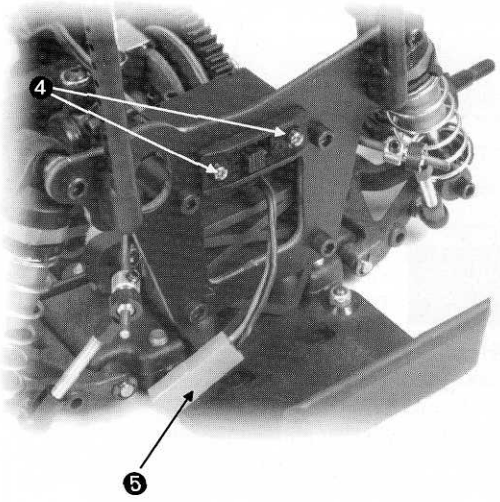
3720, qty 2
8" wire tie

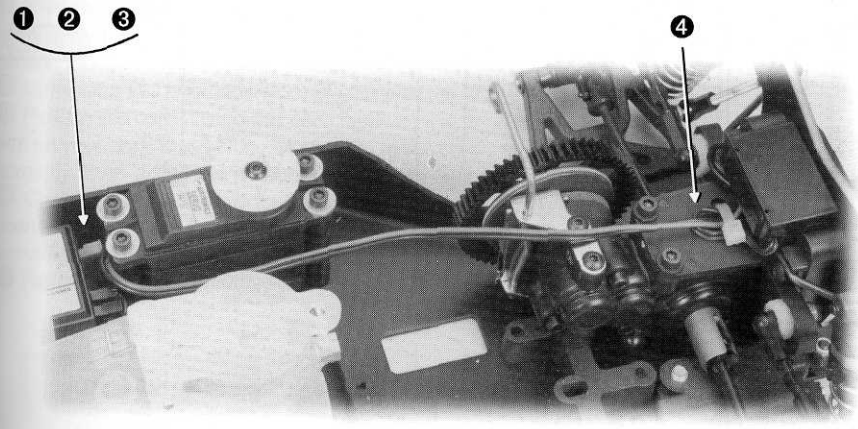
TOOLS USED

STEP 5

CONNECTING THE SERVO AND RECEIVER

❶ Plug the steering servo plug into the "Rudd" or "Rudder"or #1 channel of the receiver.
❷ Plug the throttle servo plug into the "Throttle" or "Thro" or #2 channel of the receiver.
❸ Locate your radio on/off switch and plug the red BEC plug end into the battery channel of receiver.
❹ Run the switch wire over the top of the transmission top brace. Mount the switch to the bulkhead with the two switch screws and cover plate, the switch facing rear. Use the two holes in the transmission brace to wrap a #7709 4" wire tie to hold down the switch wire, as shown.
❺ The other end of the switch will go through the rear bulkhead to the receiver battery pack plug.





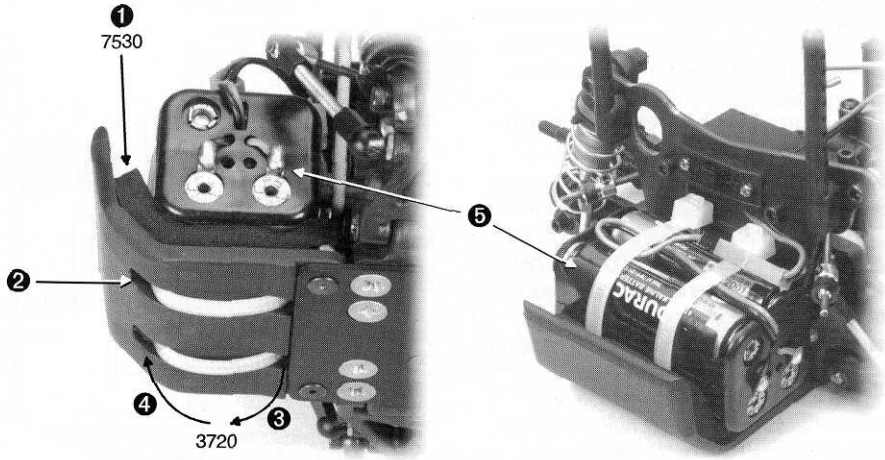
REAR

REAR

STEP 6

MOUNTING THE RECEIVER BATTERY PACK

❶ Attach the #7530 black adhesive-backed foam pad to the inside of the rear bumper.
❷ Cut out the part of the foam pad that covers the holes in the bottom of the rear bumper.
❸ Slide the tip of the large #3720 8" wire tie down through the forward hole in the rear bumper.
❹ Now slide it up through the back hole in the rear bumper. Do the same for the second wire tie.
❺ Add four batteries to your receiver battery pack. Place your receiver battery pack on top of the foam pad and secure using the wire ties. Before tightening the wire ties, slide any excess switch harness wire under the wire ties, allowing enough loose wire to let you plug and unplug the battery connector easily for charging.



REAR

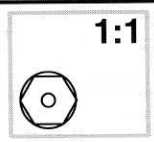
BAG I

REMOVE THESE PARTS FOR:

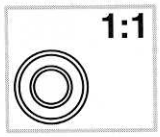
Sport: steps 1-2

Racer: steps 1-2

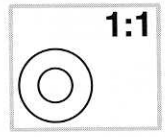
3438, qty 2
8-32 locknut



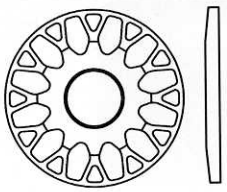
6222, qty 2
4-40/5-40 locknut



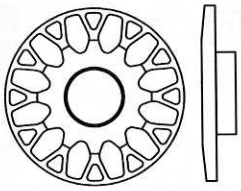
RACER KIT ONLY
6906, qty 4
3/8 x 3/16
unflanged bearing



SPORT KIT ONLY
6599, qty 4
3/8 x 3/16
unflanged bushing

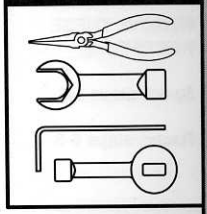


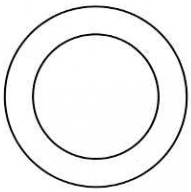
8879, qty 2
rear hub cap



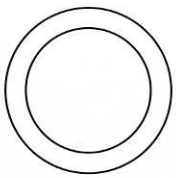
8879, qty 2
front hub cap

TOOLS USED

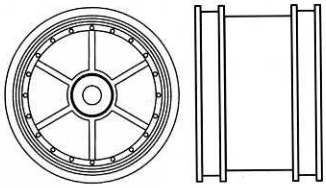




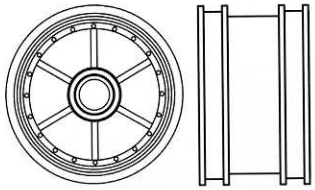
8889, qty 2
REAR foam tire insert



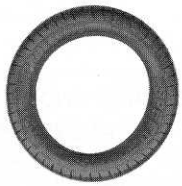
8889, qty 2
FRONT foam tire insert



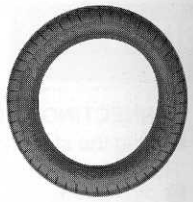
8890, qty 2
rear wheel



8880, qty 2
front wheel



8885, qty 2
front tire



8895, qty 2
rear tire

STEP 1

REAR WHEELS AND TIRES

❶ Make one 1/8" hole in the middle of the #8890 rear wheels for an air vent.

❷ Now slip the #8889 rear foam tire insert into the #8895 DS rear tire. Install the other foam insert into the other tire. Make sure the foam insert is centered.

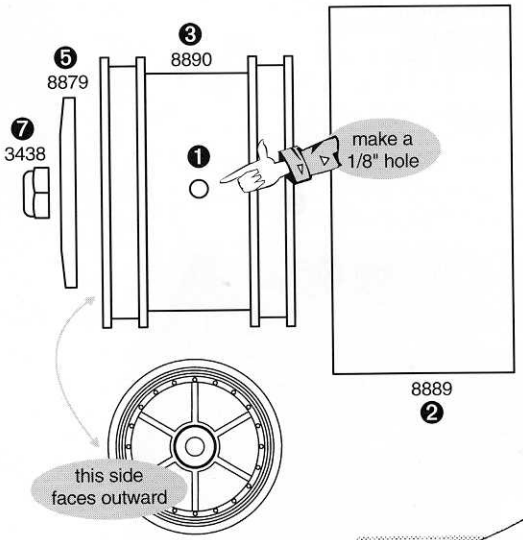
❸ Install the #8895 tire onto the #8890 rear wheel.

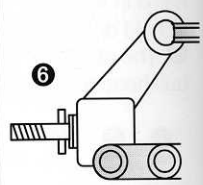
❹ Glue the tire onto the wheel with super glue (cyanoacrylic glue) in at least four spots around the tire on both sides. ***WARNING!*** *Follow the adhesive manufacturer's instructions for proper use and safety. Wear eye and hand protection.*

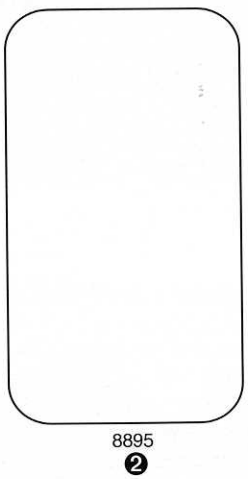
❺ Install the #8879 gold rear hub cap.

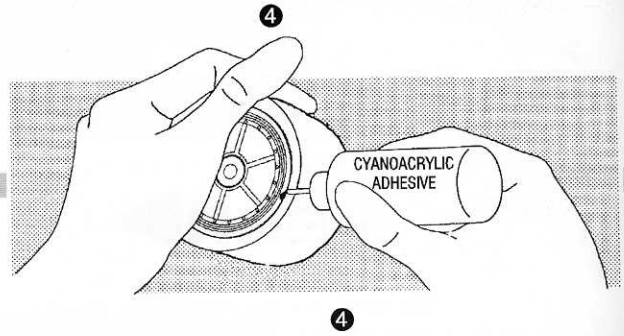
❻ Install the wheel onto the axle, lining up the roll pin with the slot in the back of the wheel.

❼ Secure the wheel with a #3438 locknut. Finish the other wheel.









STEP 2

FRONT WHEELS AND TIRES

❶ Make one 1/8" hole in the middle of the #8880 front wheels for an air vent.

❷ Now slip the #8889 front foam tire insert into the #8885 DS front tire. Install the other foam insert into the other tire. Make sure the foam insert is centered.

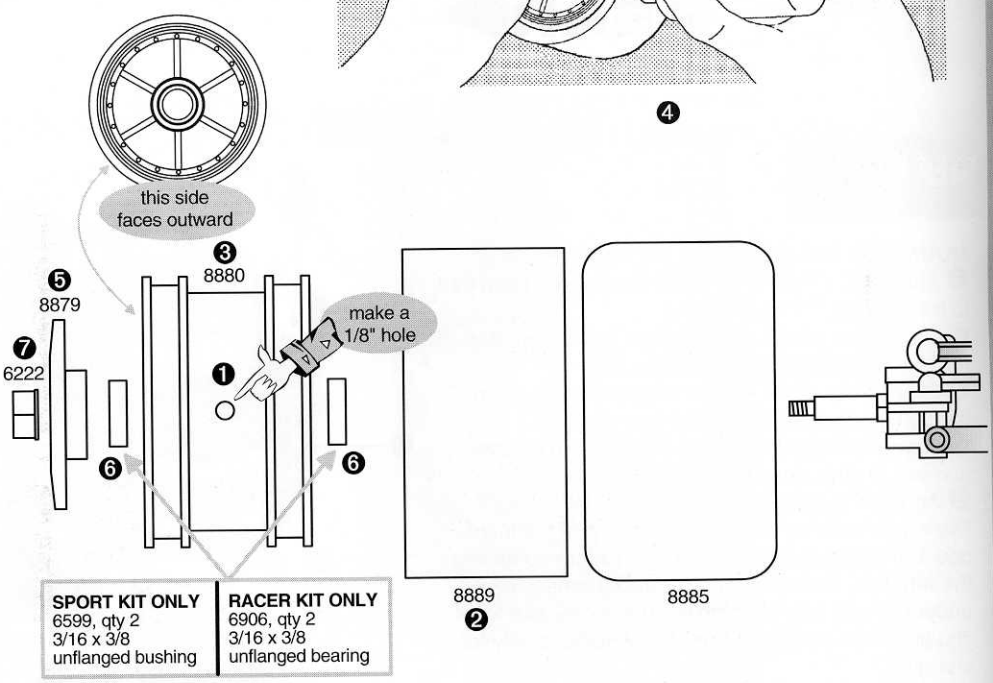
❸ Install the #8885 front tire onto the #8880 front wheel.

❹ Glue the tire onto the wheel with super glue (cyanoacrylic glue) in at least four spots around the tire on both sides. ***WARNING!*** *Follow the adhesive manufacturer's instructions for proper use and safety. Wear eye and hand protection.*

❺ Install the #8879 gold front hub cap.

❻ Install one #6599 bushing or #6906 bearing into each side of the front wheel.

❼ Slide the wheel onto the front axle and secure the wheel with a #6222 nylon locknut. Assemble and install the other wheel.



SPORT KIT ONLY	RACER KIT ONLY
6599, qty 2 3/16 x 3/8 unflanged bushing	6906, qty 2 3/16 x 3/8 unflanged bearing

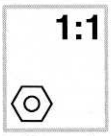
BAG J

REMOVE THESE PARTS FOR:

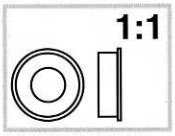
Sport: steps 1-2

Racer: steps 1-2

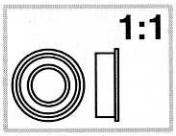
7560, qty 1
ball end (black)
DuBro 2-56



7560, qty 1
2-56 nut

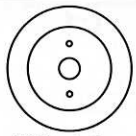


FOR SPORT KITS
6863, qty 2
3/16 x 5/16
flanged bushing

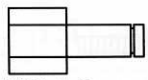


FOR RACER KITS
6902, qty 2
3/16 x 5/16
flanged bearing

2661, qty 1
E-clip



7612, qty 1
flywheel
pull start



7603, qty 1
clutch nut
non-Dynamite engines
OR
7602, qty 1
clutch nut
Dynamite engines

7601, qty 2
clutch shoe

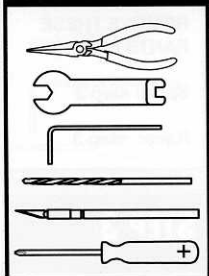
7618, qty 1
spacer

7618, qty 1
collet

8902, qty 1
clutch bell
22 tooth

7610, qty 1
flywheel
non pull start

TOOLS USED



STEP 1

CARBURETOR SETUP

❶ We need to modify the carburetor throttle arm and make sure it is facing the proper direction. Remove the carb mounting screws or loosen the carb clamping bolt. ***Note: The screws that fasten the carb into the engine case have thread locking compound applied to their threads. Be sure your Phillips screwdriver fits snugly or you can strip the screw head before it will come out.*** Pull the carb out of the engine.

❷ See if your #7560 ball end will fit in the hole on the throttle arm. If there are two holes, use the lower hole. If it doesn't, then use your 3/32" drill bit and carefully drill out the hole. Make sure no metal parts get inside the carb. ***WARNING! The throttle pivot arms are very small and are easily damaged. Use extreme care when drilling this hole.***

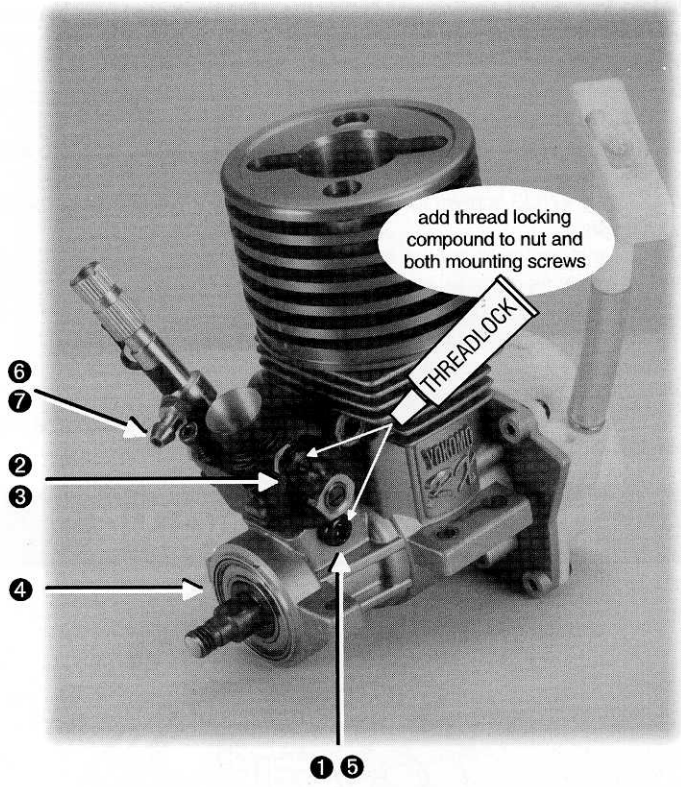
❸ Slide the #7560 ball end through the hole, then thread on the #7560 nut. We recommend using thread locking compound to keep the nut from coming loose.

❹ Now place the engine in front of you with the crankshaft facing you.

❺ Pick up the carb. Place the carb back on the engine with the throttle arm on your right hand side, as shown. Make sure the carb is lined up correctly, then install the mounting screws or tighten the carb clamp.

❻ Check the direction the fuel connector is facing. Make sure the fuel connection is facing the direction shown. If it isn't, then loosen the securing nut for the needlevalve and adjust its direction.

❼ Retighten the needlevalve securing nut.



STEP 2

READ THIS BEFORE CONTINUING

The following steps cover installing the flywheel and clutch onto the engine, then installing the engine. We are assuming in these steps that your engine came with the crankshaft already cut. If you chose an engine that still has a full length crankshaft, then refer to the additional engine installation information at the back of this manual before continuing.

FLYWHEEL INSTALLATION

❶ Slide the #7618 collet onto the crankshaft. It should go on all the way until it comes up against the front engine bearing. **Note:** For Yokomo engines you must install the #7618 spacer (not shown) before you install the collet.

❷ Now install the #7612 pull start flywheel or the #7610 non pull start flywheel over the collet.

❸ Secure the flywheel to the crank with the #7603 clutch nut (for most engines) or the #7602 clutch nut (for Dynamite engines). Fasten clutch nut tightly.

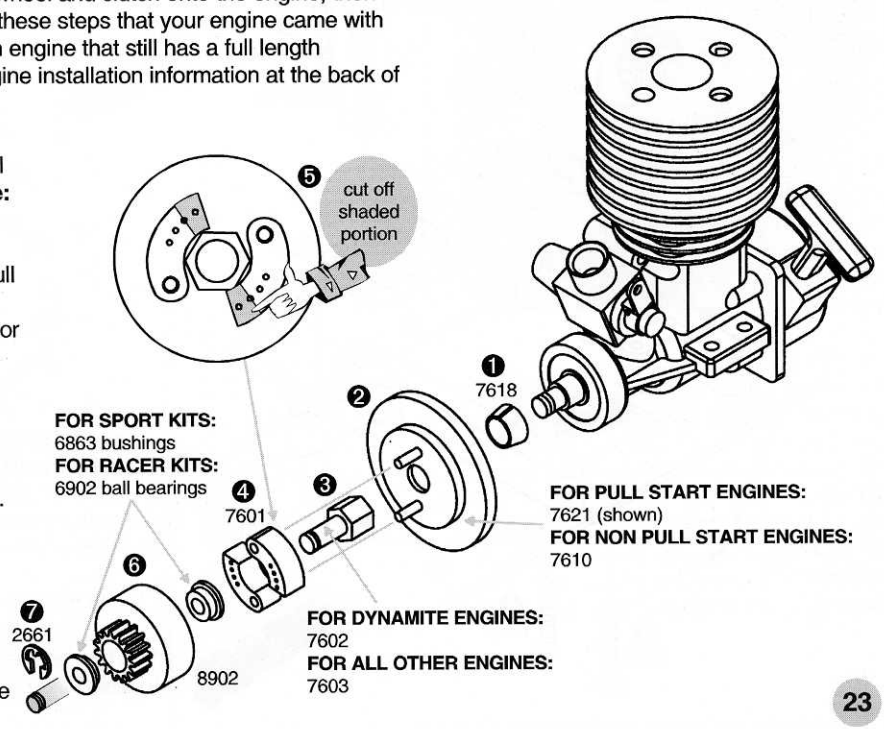
ENGINE CLUTCH INSTALLATION

❹ Remove the #7601 clutch shoes. Use your hobby knife and cut the clutch shoes in the middle of the second hole as shown. Refer to the tuning section at the end of this manual for an explanation of clutch tuning.

❺ Slide the #7601 clutch shoes onto the flywheel pins. See drawing for correct placement.

❻ Place two #6863 bushings or #6902 ball bearings into the #8902 clutch bell.

❼ Slide the clutch bell onto the clutch nut and secure it in place with a #2661 E-clip.

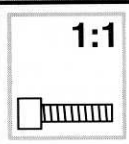


BAG J

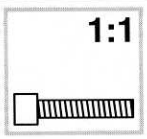
REMOVE THESE PARTS FOR:

Sport: step 3

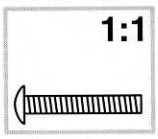
Racer: step 3



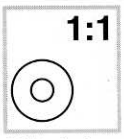
6924, qty 4
4-40 X 3/8



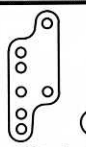
6925, qty 2
4-40 X 1/2

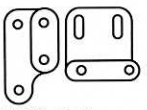


7633, qty 2
4-40 X 5/8

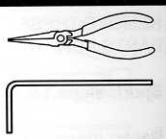


3216, qty 2
4-40 washer


7627, qty 1
engine mount adapters
non pull start


7629, qty 1
engine mount adapters
pull start

TOOLS USED



STEP 3

PARTS REMOVED TO IMPROVE CLARITY

INSTALL ENGINE MOUNT ADAPTERS

❶ Use four #6924 screws and fasten the #7629 pull start engine mount adapters or #7627 non-pull start adapters to the engine. Do not completely tighten just yet.

❷ Place the engine with mount adapters on top of the engine chassis mounts. Line up the mounting holes.

❸ Secure the front mount adapter to the chassis mount using two #6925 screws and two #3216 steel washers.

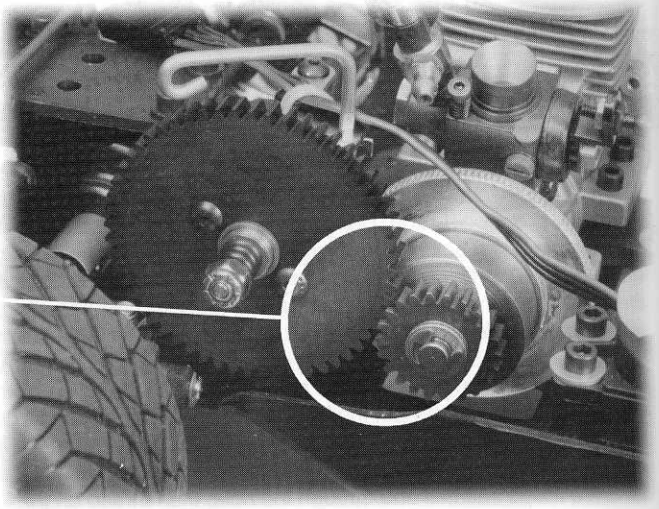
❹ Use two #7633 screws to fasten the rear mount adapter from the bottom of the chassis.

❺ Slide the engine to set the gear mesh. The correct gear spacing is to have the two gears as close as possible but to still be able to rock the spur gear back and forth (with light finger pressure) without moving the clutch bell pinion gear. Spin the gears and check the mesh in several different places.

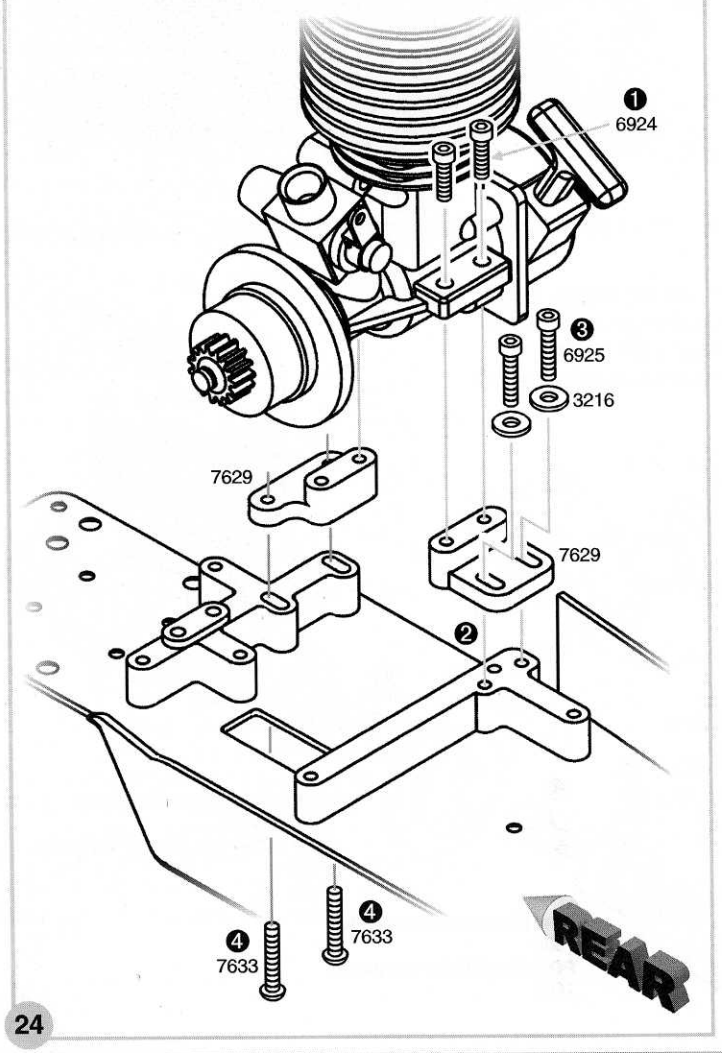
6 Now go back and tighten the #6924, #6925 and #7633 screws.

❼ Recheck the gear mesh and readjust if necessary.

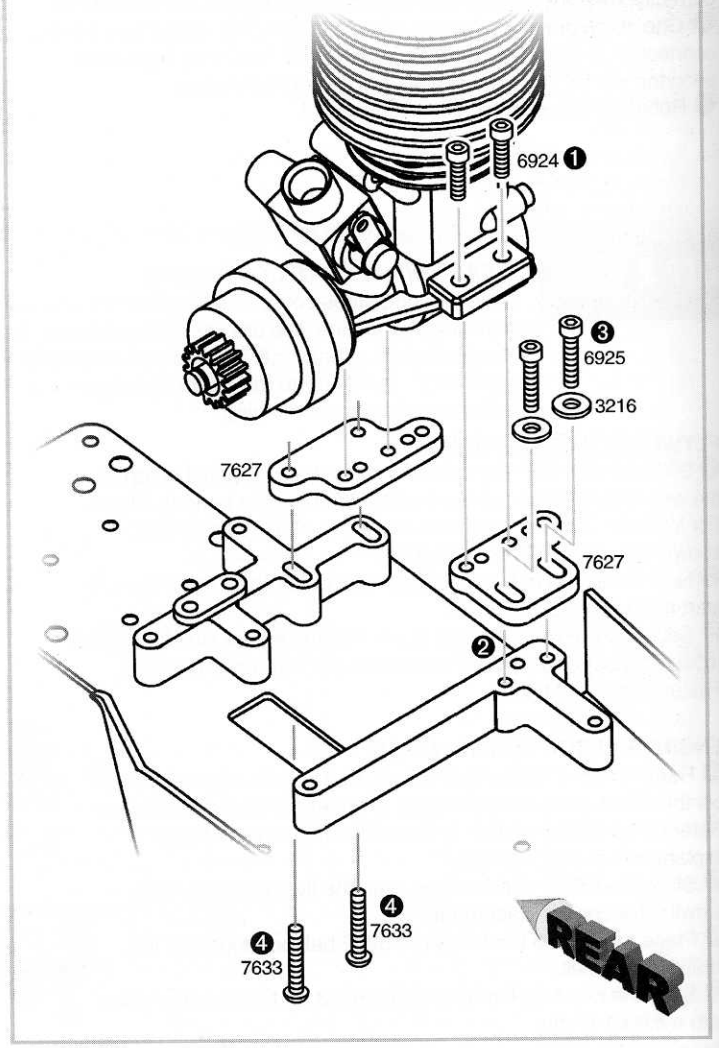
8 After all the screws have been tightened, remove one screw at a time and reinstall with thread lock.



PULL START ENGINE



NON PULL START ENGINE

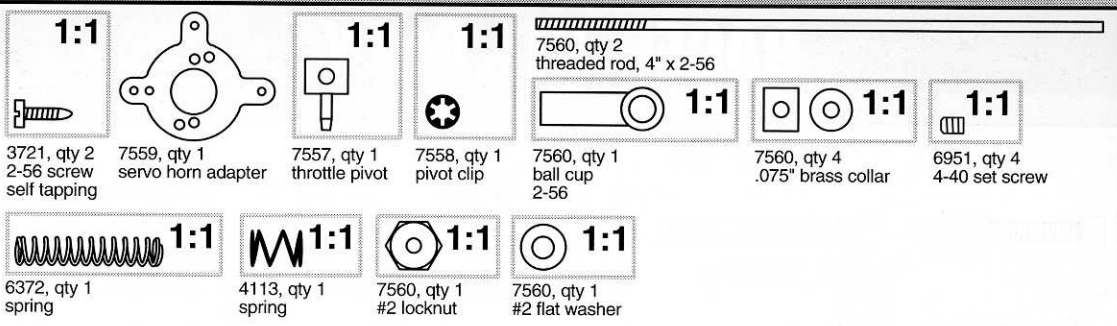


BAG J

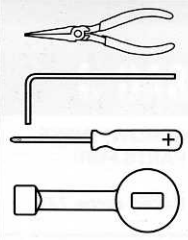
REMOVE THESE PARTS FOR:

Sport: steps 4-6

Racer: steps 4-6



TOOLS USED



STEP 4

THROTTLE SERVO SETUP

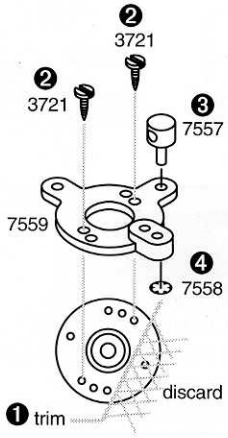
❶ Remove the servo horn from your throttle servo. Trim your servo horn to match the drawing.

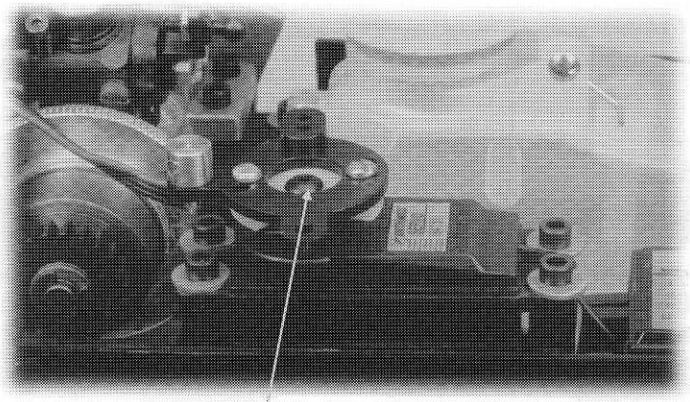
❷ Now attach our #7559 servo horn adapter to your modified servo horn using two #3721 #2 self-tapping screws.

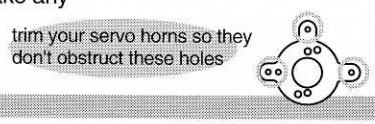
❸ Now insert the #7557 aluminum throttle pivot.

❹ Secure the pivot with the #7558 throttle pivot clip (small push nut). The throttle pivot should still be able to rotate freely.

❺ Reattach the servo horn and adapter to the servo as shown, the throttle pivot toward the rear. Leave the mounting screw loose so we can make any adjustments if necessary.







STEP 5

THROTTLE LINKAGE SETUP

❶ Thread the #7560 ball end cup onto the #7560 threaded rod.

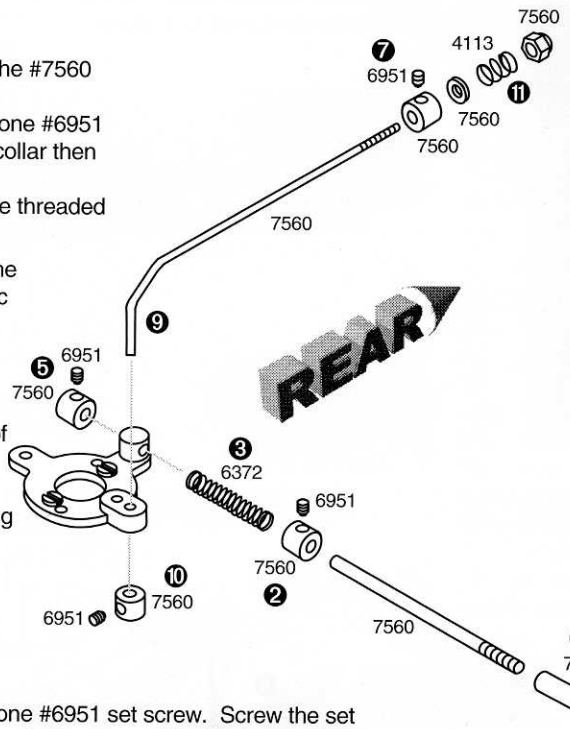
❷ Remove one #7560 brass collar and one #6951 set screw. Screw the set screw into the collar then slide the collar onto the threaded rod.

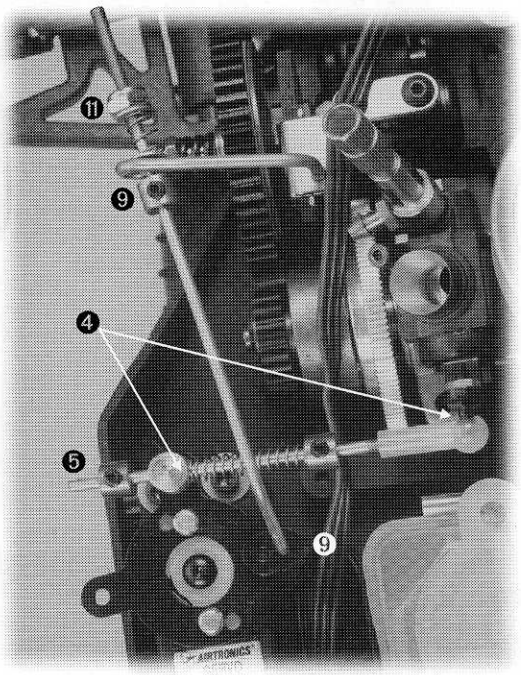
❸ Install the #6372 spring onto the same threaded rod.

❹ Now slip the end of the rod through the #7557 throttle pivot, then snap the plastic ball end cup onto the throttle arm pivot ball, as shown in photo.

❺ Remove a #7560 collar and a #6951 set screw. Thread the set screw into the collar then slide the collar onto the end of the rod close to the #7557 pivot, as shown in photo.

6 Cut off the excess threaded rod, leaving about 1/2" for final adjustments.





STEP 6

BRAKE LINKAGE SETUP

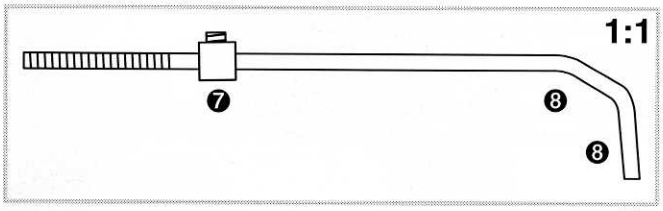
❼ Remove one #7560 brass collar and one #6951 set screw. Screw the set screw into the collar then slide the collar onto the second #7560 threaded rod.

❽ Bend the threaded rod to match the actual size drawing shown.

❾ Slide the threaded end through the brake cam on the transmission, then push the bent end down through the hole on the raised brake boss on the #7559 servo horn adapter, as shown in photo.

❿ Install another #7560 brass collar and #6951 set screw onto the end of the bent brake rod under the #7559 adapter, as shown in drawing.

⓫ Slide the #7560 #2 flat washer and #4113 spring onto the threaded end of the brake rod. Now thread on the #7560 #2 locknut onto the brake rod until most of the play is taken up. Final adjustments will be made later.

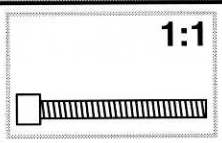


RACER KIT ONLY

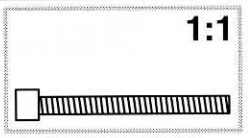
BAG J

REMOVE THESE PARTS FOR:

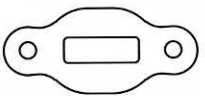
Racer: steps 7-8



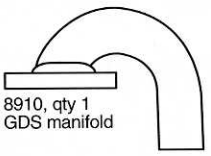
7738, qty 2
4-40 x 7/8



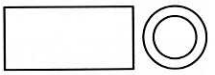
FOR YOKOMO ENGINE
6928, qty 2
4-40 x 1



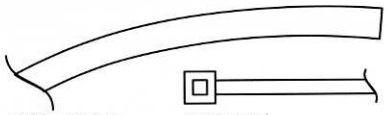
7734, qty 1
exhaust manifold gasket



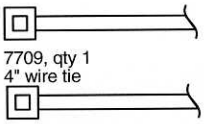
8910, qty 1
GDS manifold



7733, qty 1
silicone exhaust tubing

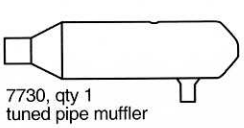


7724, qty 15"
fuel tubing



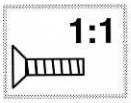
7709, qty 1
4" wire tie

3719, qty 2
wire tie

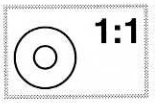


7730, qty 1
tuned pipe muffler

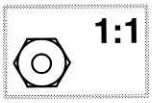
7729, qty 1
muffler bracket



6292, qty 1
4-40 x 3/8

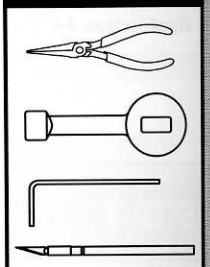


3216, qty 1
4-40 steel washer



6242, qty 1
4-40 locknut

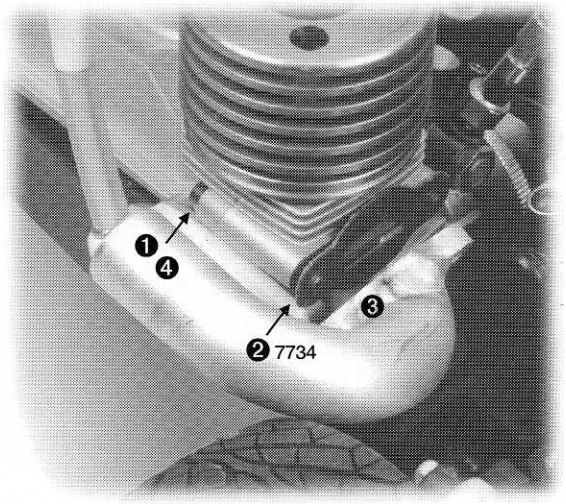
TOOLS USED



STEP 7

EXHAUST INSTALLATION

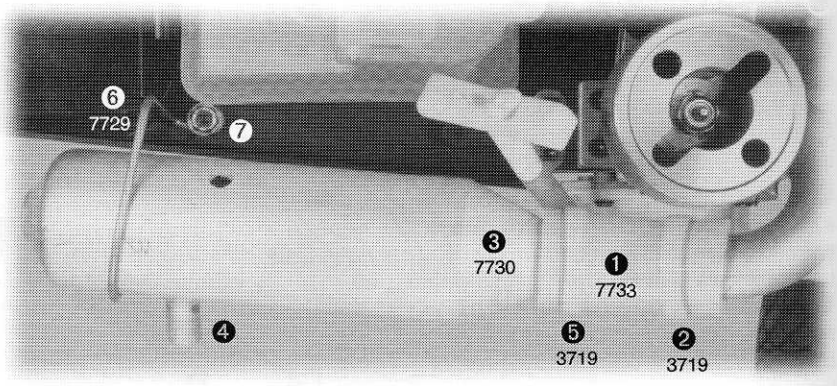
❶ Slide the two #7738 manifold mounting screws **(or #6928 screws for the Yokomo engine)** through the engine mounting holes from the front of the car.
❷ Now place the #7734 exhaust manifold gasket over the threaded ends of the screws.
❸ Bolt the #8910 GDS manifold onto the engine.
❹ Go ahead and tighten the exhaust manifold screws.



STEP 8

MUFFLER INSTALLAION

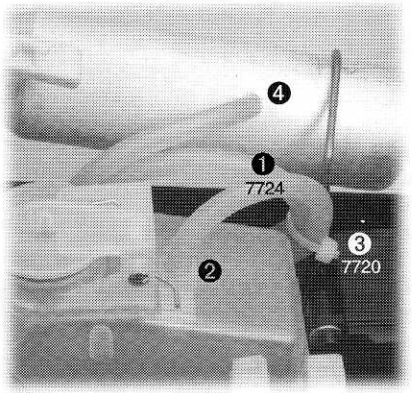
❶ Slip the #7730 silicone exhaust tubing over the exhaust manifold. Slide it on about half way, as shown.
❷ Secure the silicone tubing with one #3719 wire tie.
❸ Now slide the #7730 tuned pipe muffler into the open end of the #7733 exhaust tubing. Leave a slight gap between the muffler and manifold.
❹ Rotate the muffler so the exhaust nozzle points away and down about 45 degrees, as shown.
❺ Secure the muffler to the tubing with one #3719 wire tie.
❻ Place the #7729 muffler bracket over the end of the muffler.
❼ Push a #6292 screw up through the chassis where shown and push the other end of the muffler bracket over it. Place one #3216 steel washer on the threads, and then tighten one #6242 steel locknut over the screw.



STEP 9

FUEL TUBING

❶ Cut a piece of #7724 fuel tubing between 9 and 12 inches.
❷ Place one end of the tubing into the pressure line connector on top of the fuel tank.
❸ Now loop the tubing twice and secure the loops to the #7729 muffler bracket with one #7720 4" wire tie.
❹ Push the end of the tubing into the hole in the side of the tuned pipe muffler 3/8" to 1/2" inch.

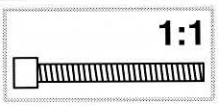


SPORT KIT ONLY

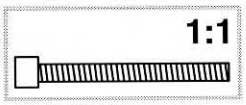
BAG J

REMOVE THESE PARTS FOR:

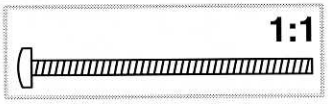
Sport: steps 7-8



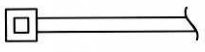
7738, qty 2
4-40 x 7/8



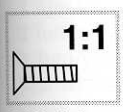
FOR YOKOMO ENGINE
6928, qty 2
4-40 x 1



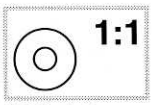
8915, qty 1
4-40 x 1 1/2



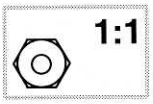
3719, qty1
wire tie



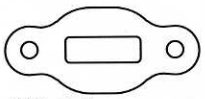
6292, qty 1
4-40 x 3/8



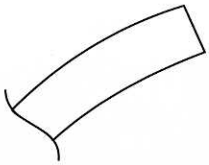
3216, qty 1
4-40 steel washer



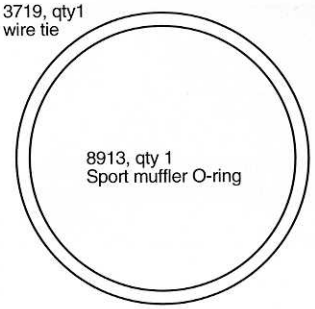
6242, qty 1
4-40 locknut



7734, qty 1
exhaust manifold gasket

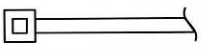


8914, qty 1
exhaust tube

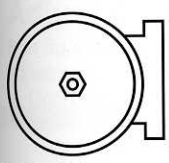


8913, qty 1
Sport muffler O-ring

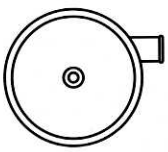
7724, qty 15"
fuel tubing



7720, qty 1
4" wire tie

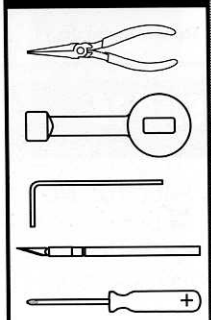


8912, qty 1
lower muffler half



8912, qty 1
upper muffler half

TOOLS USED



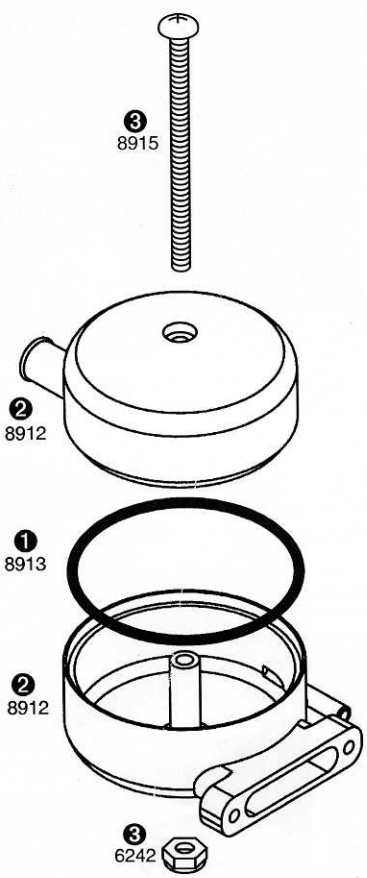
STEP 7

MUFFLER ASSEMBLY

❶ Place the #8913 O-ring around the lip of the #8912 upper muffler half.

❷ Next place the #8912 upper muffler half over the top of the lower muffler half. The #8914 exhaust (stinger) tube on the upper muffler half will face to the rear, and the engine mount will face to the front.

❸ Secure the two halves using a #8915 screw and a #6242 locknut.



STEP 8

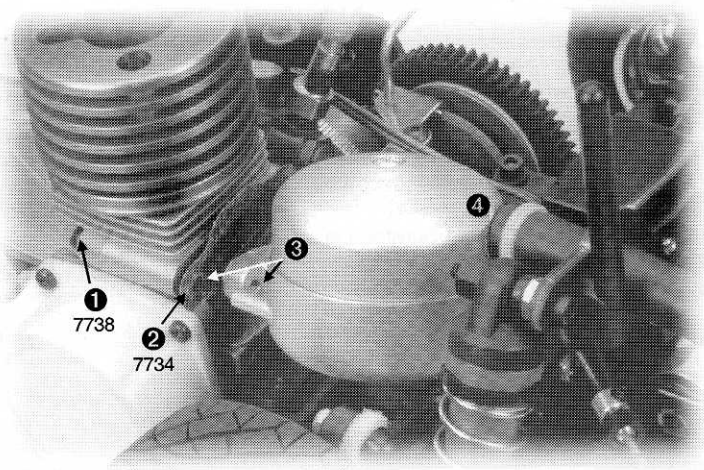
MOUNT MUFFLER TO ENGINE

❶ Slide the two #7738 mounting screws through the engine mounting holes from the front of the car.

❷ Now place the #7734 gasket over the threaded ends of the screws.

❸ Attach the muffler to the engine with the two #7738 screws. Tighten both screws.

❹ Next place the #8914 exhaust tube over the muffler as shown and secure with a #3719 wire tie.



STEP 9

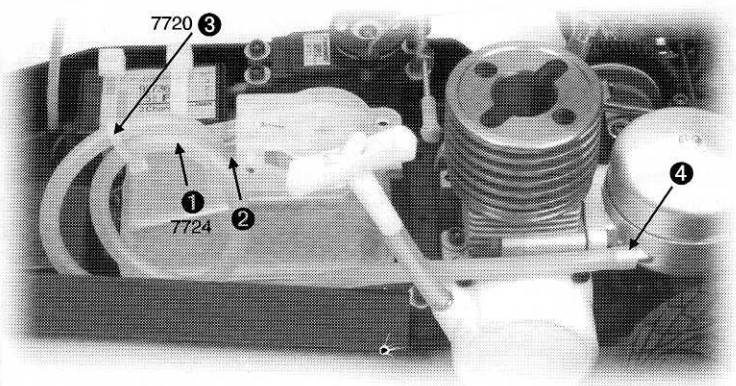
FUEL TUBING

❶ Cut a piece of #7724 fuel tubing between 9 and 12 inches.

❷ Place one end of the tubing into the pressure line connecton on top of the fuel tank.

❸ Now loop the tubing twice and bundle the loops with one #7720 4" wire tie.

❹ Push the end of the tubing onto the small tube in the lower muffler case.

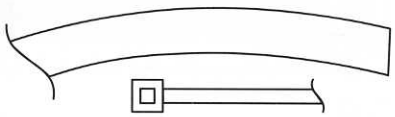


BAG J

REMOVE THESE PARTS FOR:

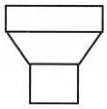
Sport: steps 10-11

Racer: steps 10-11



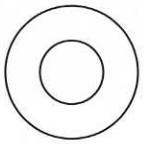
7724, qty 15" fuel tubing

7709, qty 2 4" wire tie



7708, qty 1 air filter boot rubber

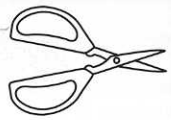
7706, qty 1 filter element paper



7707, qty 1 foam pre filter

1/32" gauge wire (used on page 28, step 8)

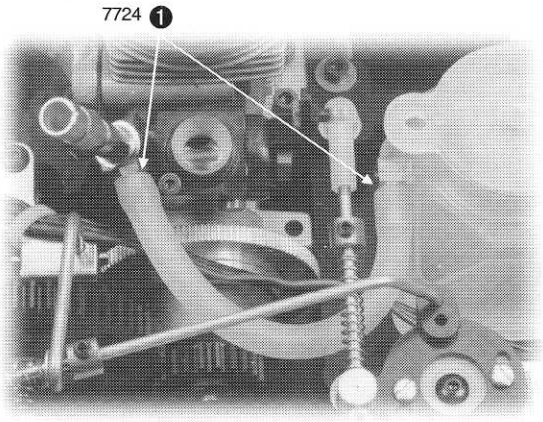
TOOLS USED



STEP 10

FUEL TUBING

❶ Cut a piece of #7724 fuel tubing to fit between the fuel tank pickup fitting and carb needlevalve fuel connector.



STEP 11

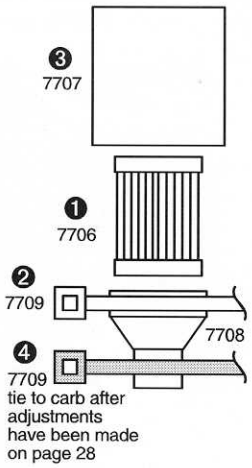
AIR FILTER ASSEMBLY

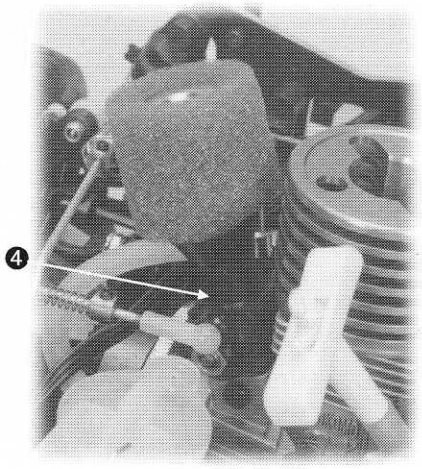
❶ Snap the open end of the #7706 paper filter element into the #7708 rubber air filter boot.

❷ Use one #7709 4" wire tie to secure the boot to the #7706 filter.

❸ Now slip the #7707 foam pre filter over the #7706 filter.

❹ Now slide the boot over the carburetor. Do not secure the boot until after adjustments are made later in the manual.



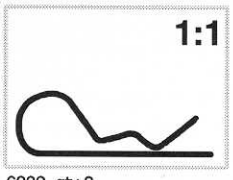


BAG K

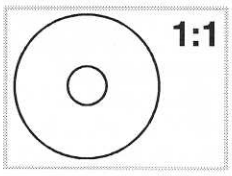
REMOVE THESE PARTS FOR:

Sport: step 1

Racer: step 1

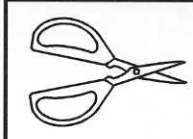


6332, qty 8 body clip



7320, qty 4 body washer

TOOLS USED



STEP 1

BODY MOUNTING

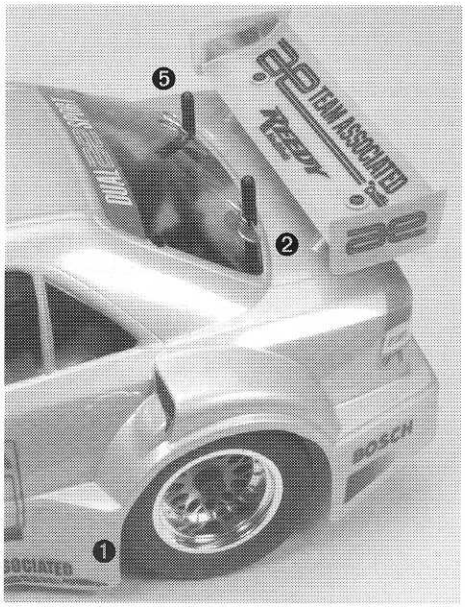
❶ Trim and paint the body. (See painting instructions later in the manual if you have not done this before.)

❷ Cut the holes for the body mounts, antenna, and, if applicable, the wing or spoiler and engine.

3 Install one #6332 body clip into each front and rear body mount.

4 Slide one #7320 body washer over each body mount so they rest on the body clips.

❺ Now install the body and secure with a #6332 body clip through each mount. Adjust the body ground clearance by using different holes in the body mounts.



FINAL ADJUSTMENTS *MAKE THESE ADJUSTMENTS BEFORE RACING*

Now we are going to check all of our radio and engine adjustments. Fully charge your radio transmitter and receiver batteries, and make sure your glow plug igniter is charged. Install new batteries if they are not Ni-Cads. Check your adjustments in the following order:

Adjust the radio settings

1 Turn the transmitter switch on.
2 Turn on the car's receiver pack on/off switch.
3 Turn your steering wheel to the right to see if your wheels turn to the right. Move the steering servo reversing switch if they go to the left. (See your manual on this.)
4 Take your hands off the transmitter steering wheel. Is the servo horn on the steering servo straight up? If it's off a little, use the steering trim knob on the transmitter. If it's off more then the trim can correct, remove the horn and reposition the horn.
5 With the servo horn straight up, are your wheels pointing straight forward? If not, adjust the steering servo turnbuckles. When this is correct, the servo arm on the servo saver will be pointing straight across the chassis.
6 Set your transmitter throttle travel setting to 70/30. This means you will be using 70% of the throttle servo travel for forward and 30% for brakes. (Read your radio manual for this.)
7 With the transmitter still on, look at your #7559 servo horn adapter. Its neutral position should look angled like the following photo A shows. Lift the horn and rotate it if necessary so it looks like the photo. Your throttle trim now can make fine adjustments.

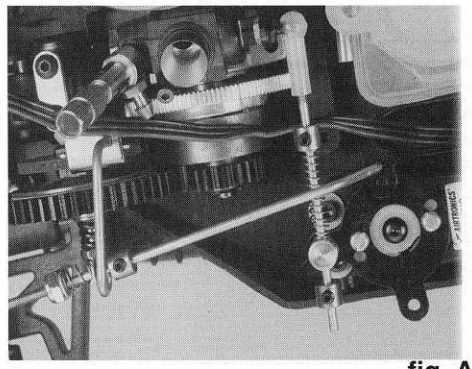


fig. A

Adjust the carb settings

8 In fig.'s B and C we have removed a carburetor so we can show you where each adjustment point is. Don't remove your carb when you make adjustments.

On the left (fig. B) is the needle valve assembly, the *high speed fuel mixture adjustment control.* The screwdriver is touching the *low speed/idle fuel mixture adjustment screw.* These two adjustments richen and lean the air/fuel mixture when turned in the direction shown in fig. C.

On the front of the carb (fig. C) is the *idle air speed adjustment screw.* Turn this until the throttle opening inside the throttle valve assembly is 1/32". Slip your 1/32" piano wire (from bag J) into the half-moon shaped opening to measure it.

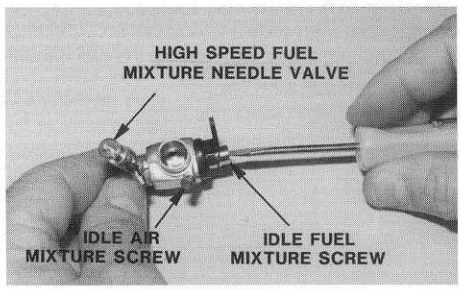


fig. B

Make sure your needle valve setting is set according to the manufacturer's instructions. Set your idle mixture screw according to the manufacturer's engine manual.

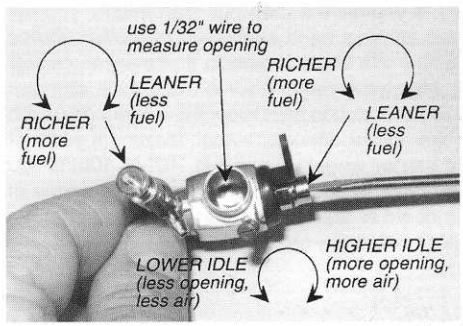


fig. C

Adjust the throttle linkage

9 Push closed the carburetor throttle pivot arm on the engine, fig. D. Adjust the outside collar on the throttle rod so that there is a gap of 1/16" between the #7557 aluminum throttle pivot and the collar. Now squeeze and release the throttle trigger on the transmitter. We need to adjust the inside collar (next to the spring) so that when we let off on the throttle trigger, the spring is tight enough to close the carburetor, but not tighter than this. Move the collar to accomplish this. Cut off any excess throttle rod past the collar, leaving about 1/8".
10 Now move the transmitter throttle to the full position. Does the throttle valve open fully? If not, shorten the length of the throttle rod by threading the plastic ball end on further, and recheck. If you adjusted the rod length, follow steps 8 through 10 again.

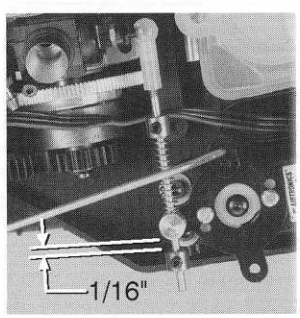


fig. D

Adjust the brake linkage

11 To adjust the brake, fig. E, make sure the #7555 brake cam arm is resting in its forward position (but with no pressure on it). The transmitter throttle position should be at neutral. The cam arm should be 1/16" from the collar. Tighten the 2-56 locknut so there is no play between the spring and the nut. With the engine running, the brake adjusting nut should just barely keep the car from moving at idle. To increase the brake, you tighten the locknut against the spring more.

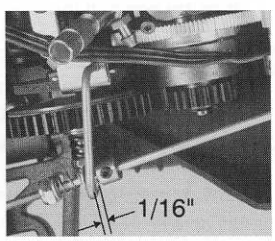


fig. E

Install the glow plug

12 If your motor does not come with a glow plug you will need to purchase one. Install it in the cylinder head with its washer. Hand tighten it.

Other items needed

13 Figs. F through J show what you'll need for your engine.

Glow plug igniter, fig. F, Ni-Cad style. Purchase a long reach model if you have a Stack type head sink or are planning on getting one. Associated recommends the Ni-Cad igniter so that you don't have any additional wires dangling around when you are starting the engine. If you are using one of the older wired igniters, you will also need a 1.5 volt dry cell battery to power the igniter.

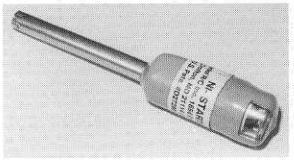


fig. F

Pull start engines do not requires a powered starting system. If you break or damage the pull start system you can still use a powered starting system on a pull start engine without modification. Just be sure the starting system will be turning the flywheel in the correct direction.

If you have a non pull start engine you will need either a hand starter with a power source (fig. G.) or a starter box with a power source (fig. H). Match the power source to the type of motor or motors used in the starter. Now check the width of the starter donut or wheel. Maximum width of the starter wheel or donut is .40" or 10mm. You may have to cut the width of bevel the edges of the donut or starter wheel so it fits inside the flywheel slot in the chassis.

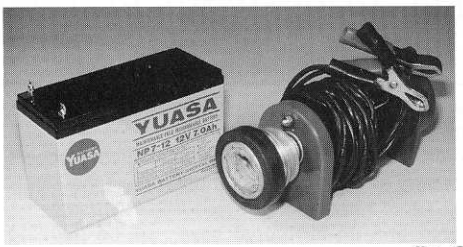


fig. G

fig. H

Raise the pull start engine's pull handle above the exhaust system to prevent being burned on the exhaust system, fig. I. Untie the handle from the pull start cord then slide a 2 inch piece of fuel tubing onto the pull start cord. Now tie the pull handle back onto the pull start cord.

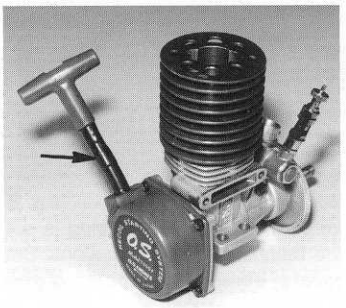


fig. I

We recommend only O'Donnell and Blue Thunder fuels, fig. J. They are available from hobby dealers or mail order companies. **Do not use airplane and helicopter fuels!** We recommend a maximum of 20% nitro in the fuel.

fig. J

Fill the fuel tank

14 Now pour a couple ounces of fuel into your fuel fill bottle. Open the quick fill top of the fuel tank and fill the tank from your fuel bottle to the base of the tank neck.

15 We must prime the fuel system for pull start engines. Place one finger over the exhaust nozzle on the muffler and pull the pull starter two or three times.

Watch the fuel line that goes from the fuel tank to the carb. When you see the fuel reach the carburetor high end needle valve, stop.

Start the engine

16 Make sure your radio transmitter and receiver switch are both still on. Attach your glow plug igniter to the glow plug.

17 Now start your engine. If your car is equipped with a pull-starter, just tug the starter cord several times until the engine fires.

For non pull start equipped cars, use a hand starter or electric starter box. Check to see that your starting wheel is turning clockwise so that it will turn the engine's flywheel counterclockwise.

Place your car's chassis on the starter box donut or over the handstarter donut so that the flywheel comes in contact with the donut through the opening in the bottom of the chassis (fig. K). Hoold it securely in place until the engine starts. ***Note:*** *If you have trouble getting the engine to turn over, use a 5/16" nut driver to loosen the glow plug 1/2 to 1 full turn. This will release some of the compression, making it easier to turn the engine over. After you have warmed up the engine, remove the glow plug igniter and then tighten the glow plug.*

If your adjustments are set according to the manuals for your engine and/or carburetor, the engine should start after a few attempts. When you have the engine running, give it a little more throttle to help clear the carburetor. Let the engine warm up for at lease 20 to 30 seconds before you remove the glow plug igniter.

18 The engine should idle easily. If the RPMs increase and then the engine shuts off, the idle mixture is a little lean. Open the idle mixture fuel screw about 1/8 of a turn counterclockwise and then try again. If the engine does not idle or idles then sounds like it is blubbering before it shuts off, you will need to decrease the fuel mixture a small amount. Tighten the idle mixture screw about 1/8 of a turn clockwise and then try again.

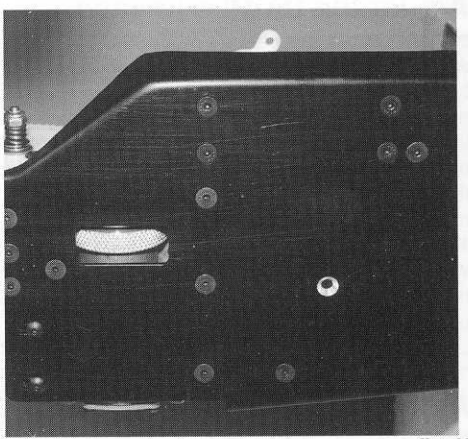


fig. K

Check for radio interference

18 Now check the car for possible radio interference. Outside, rev the engine and look for signs of radio interference, such as erratic servo movements. If it looks okay, then place the car on a raised block so the wheels may spin freely, or have someone hold the car, and you slowly walk away from the car with your transmitter antenna fully extended. Walking away, turn the steering and move the throttle. Walk from the car to a distance you will stand when you drive it. Once you have verified that there are no radio problems and you will be in full control of the car, you will then ready to put the car on the ground and check its performance.

Check the brakes

19 With the car on the ground, we need to check the brake function. If the car is moving or attempting to move, tighten the brake locknut a tiny amount. Now give the car some throttle, then apply the brakes, and check the car for movement again. Does it stop properly? Now slowly increase the speed and try again. Keep doing this until you are sure the car will stop correctly at any speed. Do not have the brakes on while the throttle is on.

Break in the new engine

20 Your engine should be warm now. We want to break in the new engine to extend its life. For the first three or four tanks of fuel, run the engine on the rich side (as explained in step 8) to prevent damaging it. During break-in period the engine should be close to blubbering and there should be a fair amount of smoke coming out of the muffler. Your run time will be short because you are not burning all of the fuel.

Now we begin to adjust the carburetor for the correct mixture at high speed. Run the car up and down the track. If the fuel mixture is too rich, you will see a lot of smoke, the engine may still be blubbering, and the engine tone will be a lower pitch. Adjust the high end needle valve clockwise 1/8 of a turn. If the engine mixture is too lean at high speed, there will be almost no smoke, the engine will shut off or have a very high pitch tone (almost tinny sounding). Adjust the needle valve assembly counterclockwise 1/8 of a turn. You should always see smoke coming out of your muffler. ***Racer's Tip:*** *The fuel is both your lubrication and main cooling system. If you try to run the car with the fuel mixture too lean, you will damage the engine because there will not be enough oil to lubricate the engine and it will get hot. This would occur because there is not enough fuel to help cool the engine.*

Shutting off the engine

21 Shut off your engine by: a) Completely block off the exhaust nozzle on the muffler with a rag. ***Warning! The muffler can be extremely hot.*** b) Pinch the fuel line from the tank. c) With the engine at idle, you can stop the flywheel with your shoe or a rag from the bottom of the chassis. ***Do not use your hand or fingers to attempt to stop the flywheel.***

After you have stopped the engine, turn off the receiver pack on/off switch.

22 Now turn off the transmitter on/off switch. **This switch is always the first switch turned on and the last switch turned off.**

Congratulations!

You now have a fully operational gas powered on road car. Give yourself a pat on the back and go out and have fun with your new car!

PAINTING THE BODY

1 While the body is still clear, mark and cut out the holes for the body mounts, antenna tube, and, if necessary, the engine.

2 Clean the body and wing thoroughly before painting with warm water and a mild dish soap.

3 Mask the inside of the body according to your paint scheme, using automotive masking tape for best results. Take the time to press down all edges of the tape. Mask off the holes you cut with tape on the outside of the body.

4 Spray the body and wing, applying the paint in thin coats and letting it dry between coats. We recommend Pactra paints.

MAINTENANCE

FOLLOW THESE STEPS TO KEEP YOUR CAR IN SHAPE FOR RACING

KEEPING THE CAR CLEAN

You will find your RC10 Nitro DS car will give you many more hours of trouble-free operation than any other gas car now available. Even so, you should periodically check all the moving parts: front and rear A-arms, steering blocks, steering linkage, servo saver, shocks, clutch, brake parts and so on. If any of these parts should get dirty, your car's performance will suffer.

A small paint brush or tooth brush will help you to get rid of dirt or mud in just about any location on the car.

DIFFERENTIAL MAINTENANCE

When the car is ready to run, apply a small amount of throttle while holding one of the rear wheels stationary. Do this for about 15 seconds. This will correctly seat all of the differential parts. Now readjust the differential by bottoming its spring and screw and backing the screw out 1/8 turn.

You should rebuild the differential when the action gets somewhat "gritty" feeling. Usually cleaning the diff and applying new lube per the instructions will bring it back to new condition. The tungsten carbide diff balls should rarely need changing. Normally as the parts seat, the diff will get smoother. If after carefully cleaning and relubing the diff parts, the diff still feels gritty, the 1/8" balls and drive rings should be checked and possibly replaced. Refer to the diff section to correctly assembly the diff.

RADIO MAINTENANCE

A radio problem is not always caused by the radio system. Often it is caused by a combination of several factors which can include: bad connections or chaffed wires, reversed or defective crystals, shortened receiver antenna wire or low receiver pack voltage. If your radio problem persists, you can try the following suggestions:

Try a different radio frequency (change crystals).

Try a different radio receiver.

Try mounting the receiver on its side with the crystal up.

Do you have any excess antenna wire bundled next to the chassis? If you do, try placing it on top of the receiver away from the chassis.

Make sure the servo wires are away from the antenna wire.

Make sure that no wires cross the antenna wire.

You can also run into outside interference at times; the 75mhz radio band will tend to be more susceptible to this problem than the 27mhz band. An AM transmitter will tend to have more problems than an FM transmitter. Large metal objects such as chain link fences, light poles, cars, vans, trailers or even fluorescent lights can occasionally cause local interference by momentarily blocking or reflecting a signal.

Several different adjustments on your RC10 Nitro DS car can help you adjust steering, traction, and handling for different track conditions.

ENGINE CLUTCH

Our Team drivers have worked out a way to improve the performance of the clutch (figs. L, M, N). It involves trimming the clutch shoes to the size needed, as shown in the shaded area in fig. M. The other drawings show the maximum you can go in either direction to tune your clutch.

1 Trim away the shaded area of fig. M with a hobby knife.

2 After this, test the clutch performance as follows. After you have warmed up your car, bring it to an idle in front of you. **NOTE:** You will probably need to raise your idle slightly with this modification.

3 Now apply full throttle from a standing start. Your car should accelerate quickly without hesitation or excessive RPMs. If your engine tends to "bog" (be slow in initial acceleration), then you may need to trim your clutch shoes a little more, then test your car again.

4 If your engine still bogs from a standing start, your maximum trim would be as shown in fig. N. This will allow the engine to rev-up higher into its power range before the clutch fully engages. ***WARNING! DO NOT TRIM AWAY MORE CLUTCH SHOE THAN NECESSARY OR ENGINE DAMAGE MAY OCCUR!***

If your engine tends to rev-up excessively without much acceleration, you may need to keep your clutch shoes closer to standard length.

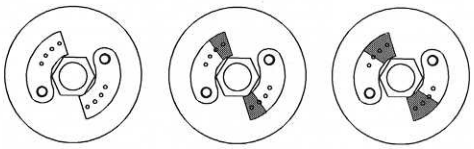


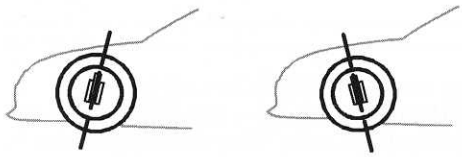
fig. L **fig. M** **fig. N**

CASTER

Caster describes the angle of the kingpin, in relation to the vertical plane, when looked at from the side of the car (fig. O). As an example, 0° of caster puts the kingpin in a vertical line. Positive caster means that kingpin leans rearward at the top. Increasing the positive caster on your car will slightly increase the steering turning into a corner and slightly decrease steering coming out of the corner. Reducing the positive caster will decrease the amount of steering you have going into a corner and increase the amount of steering you have in the middle of the corner and exiting the same corner.

NOTE: We are using the same caster blocks that we use in our off road cars, so the degrees of caster indicated on the front carrier blocks will be different because nose plate kickup angle differs. On our off road cars the kickup angle is 30°. For the new DS car the new kickup angle is 8°. This means our 30° caster blocks will actually give you 8° of caster on the DS. The following caster blocks are available for the DS:

Part	Description	Results on DS Car
#6210 (kit std.)	30° caster front carrier block	8° caster
#6215 (Opt.)	25° caster front carrier block	3° caster



8° positive caster *negative caster (not used)*

fig. O

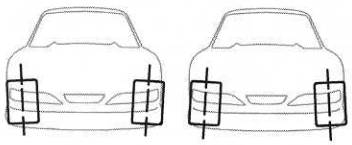
Adjustment:
Change front block carriers.
Effect:
Reducing caster: decreases steering into corners, increases steering at middle and end of corners.
Increasing caster: Increases steering at beginning of corners, decreases steering out of corners.
Recommended: 8° caster.
Positive caster options: #6215 front block carrier, 25° caster. #6210 front block carrier, 30° caster. Other caster blocks are available, but they will give you negative caster, which is not recommended.

CAMBER

Camber describes the angle at which the tire and wheel rides relative to the ground when looked at from the front or back (fig. P). This is one of the most important adjustments on your car. Negative camber means that the tire leans inward at the top, putting it closer to the centerline of the car than the bottom of the tire. Positive camber means just the opposite, the top of the tire is further away from the centerline of the car than the bottom of the tire.

Excessive negative camber will take away traction but increase stability. Positive camber will also take away traction but decrease stability. A tire's maximum traction is achieved when it is perpendicular to the ground (straight up and down). For the rear tires this will cause understeering in most conditions and possibly traction rolling in high traction condition. Also, adjust camber to achieve even tire wear to the best of your ability.

We suggest a starting setting 2° of negative camber from both front and rear. If you want to add a little more steering, reduce the front camber to 1° negative or even 0°. Keep in mind that using little or 0° camber will cause the car to slide unpredictably. Try to use at least 1° to 2° negative camber at all times. This can be adjusted by turning the upper control rod turnbuckles (front or rear) in the appropriate direction.



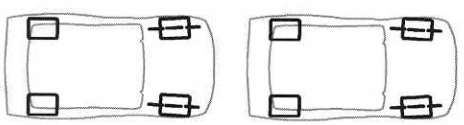
DO NOT USE positive camber *USE THIS negative camber*

fig. P

Adjustment:
Turn upper control rod turnbuckles.
Effect:
Negative (more than 2°): less traction, more stability.
Positive: less traction, less stability.
0° to 2°: maximum traction.
Recommended: 2° negative camber front and rear.

FRONT TOE-IN AND TOE-OUT

(Fig Q). Adding toe-in to the front tires helps stabilize your car under acceleration, but at the same time it removes a small amount of turn-in steering. Toe-out will add turn-in steering, but will reduce stability under acceleration. Both toe-in and toe-out will scrub speed, so try to use as little as possible of either.



front toe-out *front toe-in*

fig. Q

Adjustment:
Front toe-in and toe-out can be changed by adjusting the steering tie-rod turnbuckles.
Effect: Front toe-in: improves stability during acceleration; less turn-in steering.
Front toe-out: causes instability during acceleration, and more turn-in steering.
Recommended: Starting setting of 0° of front toe-in. Our Team almost never uses front toe-out.

REAR TOE-IN

Rear toe-in affects steering and rear traction. Decreasing rear toe-in increases steering, but decreases rear traction. Your new RC10 Nitro DS comes with 3° toe-in per side rear suspension mounts, and 0° toe-in per side rear hub carriers. To change the rear toe-in you must change the rear hub carriers. The standard kit mounts and hub carriers will work for most tracks

Adjustment:
Changing rear hub carriers will reduce the rear toe-in. Install them backwards left on right and right on left.

Effect:
Rear toe-in, increased: slightly reduces speed; less steering, more rear traction.
Rear toe-in, decreased: increases speed; more steering, less rear traction.

Hub carrier options:
#7365 0° toe-in per side (included in kit).
#6366 1.5° toe-in per side. When installed backwards it results in a 1.5° toe-in per side. ***Note:*** *requires #9277 ball bearing to fit DS rear axles.)*
#7358 3° toe-in per side. When installed backwards it results in 0° toe-in per side.

CHASSIS RIDE HEIGHT

We recommend a starting ride height of .40" (10.15mm) for both the front and rear. Because the body is a significant amount of weight, this will drop the actual running ride height down to about 3/8" (.38" or 9.5mm), which is what we feel is a good height for most surfaces. We also try to keep the chassis fairly close to level most of the time.

You adjust ride height by adding or subtracting to the thickness of the #8846 shock preload clips. If you are going to raise the ride height you would increase the thickness of the clips installed on the shocks that need to be changed. Lowering the ride height will require reducing the thickness of the preload clips.

The easy way to check ride height is as follows:

1 Place the car on a table or work bench that is flat, and bring the back or front wheels up to the outer edge of the table.
2 Push the suspension down on the end of the car several times, letting the car settle into its own ride height.
3 Now measure from the top of the table edge to the bottom of the chassis.

SHOCK SPRINGS

Several springs are available to help you to tune for different tracks:

#8232 Black (soft)
#6494 Green (medium)
#6496 Silver, kit spring for Nitro DS (firm)

REAR SPOILER HEIGHT

You can change the height of the rear spoiler above the back deck of the body on the Trans-Am or NASCAR style bodies. If you decrease the height of the rear spoiler, you will decrease rear down force, which decreases rear traction and increases steering. To reduce the height, trim the spoiler with a hobby knife or scissors.

ANTIROLL (OR SWAY) BAR

You can adjust both the amount of front steering and rear traction with either the front or rear antiroll bar. You can adjust the stiffness of the roll bar by where you locate the #8830 aluminum roll bar pivots. If you have the pivots at the outer end of the antiroll bar, this will be the softest position. If you move them farther in on the antiroll bar you will be stiffening the roll bar, which will decrease traction.

Very slight adjustments will make a fairly significant change in the car's handling, so try to keep adjustments small. On extremely rough surfaces you can also disconnect the antiroll bars. This allows the car to handle better over the bumps or rougher surfaces. It will also give you a lot more traction, but it does increase the body roll greatly. If the body roll is excessive you can run a heavier spring and or heavier shock oil. The resulting effect on each end of the car is as follows.

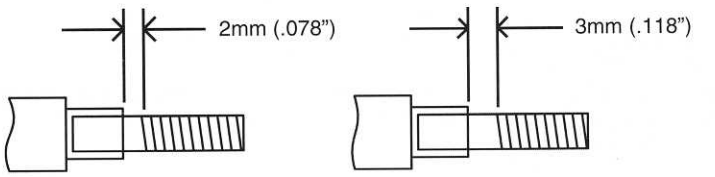
Front antiroll bar:
A softer front antiroll bar setting will result in slightly more front body roll and more front traction, which will also give you more steering. A stiffer front antiroll bar will reduce the body roll and front traction, meaning you will have less steering.

Rear antiroll bar:
A softer antiroll bar setting will result in slightly more rear body roll and more rear traction. You will then have less steering because of the increased rear traction. If the rear antiroll bar is stiffer, you will have less rear body roll and less rear traction, which will also mean you have more steering.

Antiroll bar tweak:
This process ensures that there is even pressure on all four tires. With the car ready to run (minus the body), disconnect one side of each front and rear roll bars' ball cups from the ball end on the suspension arm. Keep the other side connected. Place the car on a flat surface and push the suspension all the way down to the surface and then let go. This will let the suspension settle at ride height. Now starting with the rear antiroll bar, adjust the length of the link you disconnected until it exactly matches the position of the ball end on the suspension arm. Once you have it adjusted correctly, go ahead and snap it back on. Now follow the same procedures for the front antiroll bar.

ENGINE CRANKSHAFT MODIFICATION *PREPARING THE CRANKSHAFT TO FIT*

Special Note: Some engine crankshafts require a special clutch nut not included in your kit. Check your crankshaft to see if you require this clutch nut. To do so, measure the unthreaded portion of the smaller shaft diameter, as shown in fig. R. If you measured about 2mm (.078") then the #7603 clutch nut that comes in your kit will fit your engine. If the diamter is 3mm (.118") then you need the special #7604 clutch nut, which is not included in the kit. Order this part from your dealer or directly from Associated.



(uses #7603 clutch nut in kit)

(uses #7604 clutch nut not in kit. Must be ordered separately.)

fig. R

The engine on the left in fig. S shows the crankshaft before cutting. The engine on the right has the crankshaft at the correct length.

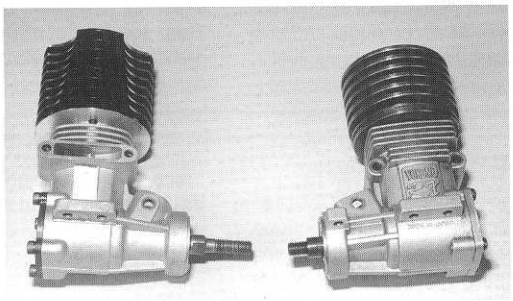


fig. S

This is how to cut the crankshaft to the proper length for the RC10 Nitro DS. ***WARNING!*** *IT IS THE RESPONSIBILITY OF THE USER TO VERIFY THAT THE GAS ENGINE WILL WORK IN THE RC10 NITRO DS KIT.*
Note: *Take your time and make sure you understand each step before you perform that step. You may not be able to correct a mistake made during this modification without replacing some very expensive parts!*
1 You will need: a Dremel tool (or equivalent) with a fiber reinforced cutoff wheel. A 5/16" nut driver or deep socket. A plastic sandwich bag. Safety goggles.
2 Look at the front of the engine where the crankshaft comes out. If you cannot see the bearing in the front of the engine, then remove the spacer that covers it. Then you will see that there are two different diameters to the crankshaft.
3 Install the #7618 collet and #7612 or #7610 flywheel (fig. T). The flywheel will fit over the collet.

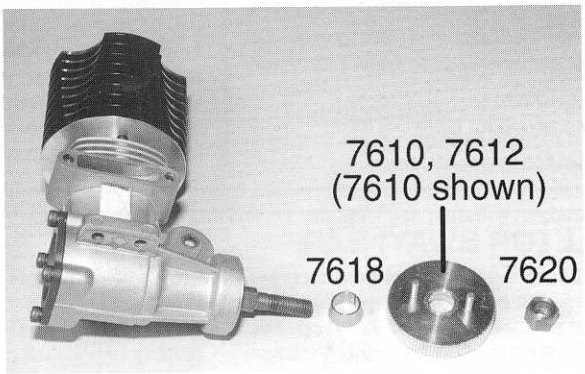


fig. T

4 Secure the flywheel with the #7620 special cutoff nut. Be sure to install the side of the nut with the recessed threads first. Hold the flywheel in one hand and use a 5/16" nut driver or deep socket to tighten the special nut onto the crankshaft.
5 Place your engine inside a plastic sandwich bag and close the bag around the engine. Push the end of the crankshaft through the plastic bag, exposing the cutoff nut and the end of the shaft (fig. U).
6 Put on your safety goggles. Cut the crankshaft flush with the end of the cutoff nut. ***WARNING:*** *Be sure to wear safety eyewear and that all parts of your body and clothing are away from the cutting area. Always use fiber reinforced cutoff wheels for safety. Cutoff stones can shatter and cause injury.*
7 Clean off any metal shavings around the crankshaft. Remove the engine from the plastic bag.

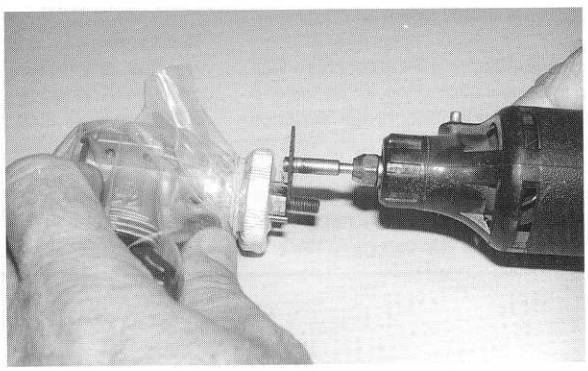


fig. U

8 Temporarily remove the flywheel. Now take out the #7603 clutch nut. See if the clutch nut will thread onto the crankshaft easily. If it does not, then carefully file or grind from the top of the first thread on the crankshaft. Be careful not to damage the threads. *Note: Remember to put the engine back in the plastic bag if you have to do any more filing or grinding.*
9 You can now go back to the manual where you left off and continue with the assembly from there.

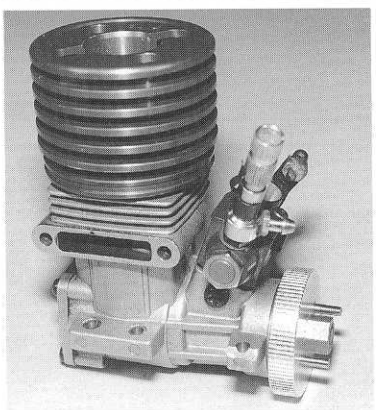


fig. V

RC10 NITRO DS SETUP SHEET FOR THE NITRO DS KITS

TEAM ASSOCIATED

driver _____

track _____

date _____

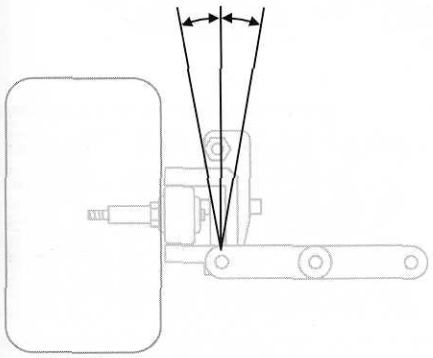
FRONT SUSPENSION

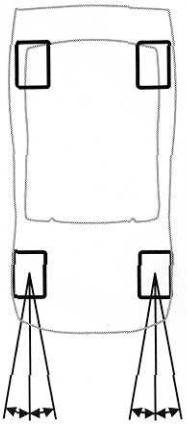
FRONT BLOCK CARRIER (caster setting)

❑ 25° ❑ 30°

FRONT RIDE HEIGHT _____

CAMBER _____





❑ TOE-IN _____°

❑ TOE-OUT _____°

FRONT SHOCKS

❑ STD ❑ OTHER OIL _____ PISTON _____

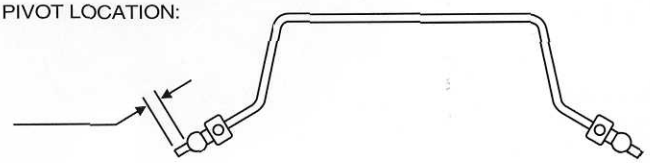
BODY _____ SHAFT _____ SPRING _____

LIMITERS, inside _____ outside _____

FRONT ANTIROLL BAR

WIRE THICKNESS ❑ STD .062 ❑ OTHER

PIVOT LOCATION:



REAR SUSPENSION

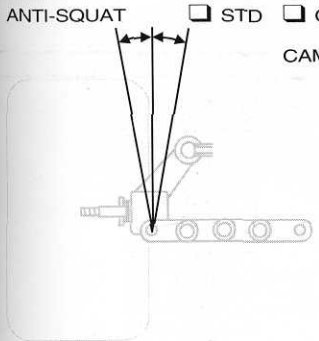
SUSPENSION MOUNTS ❑ 0° ❑ 1.5° ❑ 3°

WHEEL HUB ❑ 0° ❑ 1.5° ❑ 3°

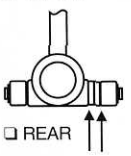
REAR RIDE HEIGHT _____

ANTI-SQUAT ❑ STD ❑ OTHER _____

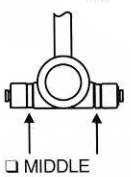
CAMBER _____



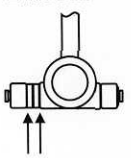
WHEEL HUB PLACEMENT REAR



❑ REAR



❑ MIDDLE



❑ FRONT

REAR SHOCKS

❑ STD ❑ OTHER OIL _____ PISTON _____

BODY _____ SHAFT _____ SPRING _____

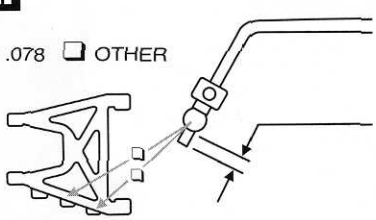
LIMITERS, inside _____ outside _____

REAR ANTIROLL BAR

WIRE THICKNESS ❑ STD .078 ❑ OTHER

PIVOT LOCATION:

LINK MOUNTING:

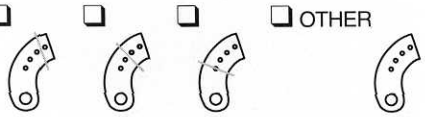


FRONT TIRES _____ ❑ FOAM _____

REAR TIRES _____ ❑ FOAM _____

CLUTCH SHOES # USED _____

HOW CUT: ❑ ❑ ❑ ❑ OTHER



ELECTRONICS

RADIO _____ SPD. CONT. _____

SERVO _____

ENGINE TYPE _____

PINION _____ SPUR GEAR _____

FUEL TYPE _____

CARB TYPE _____

RESTRICTOR SIZE _____

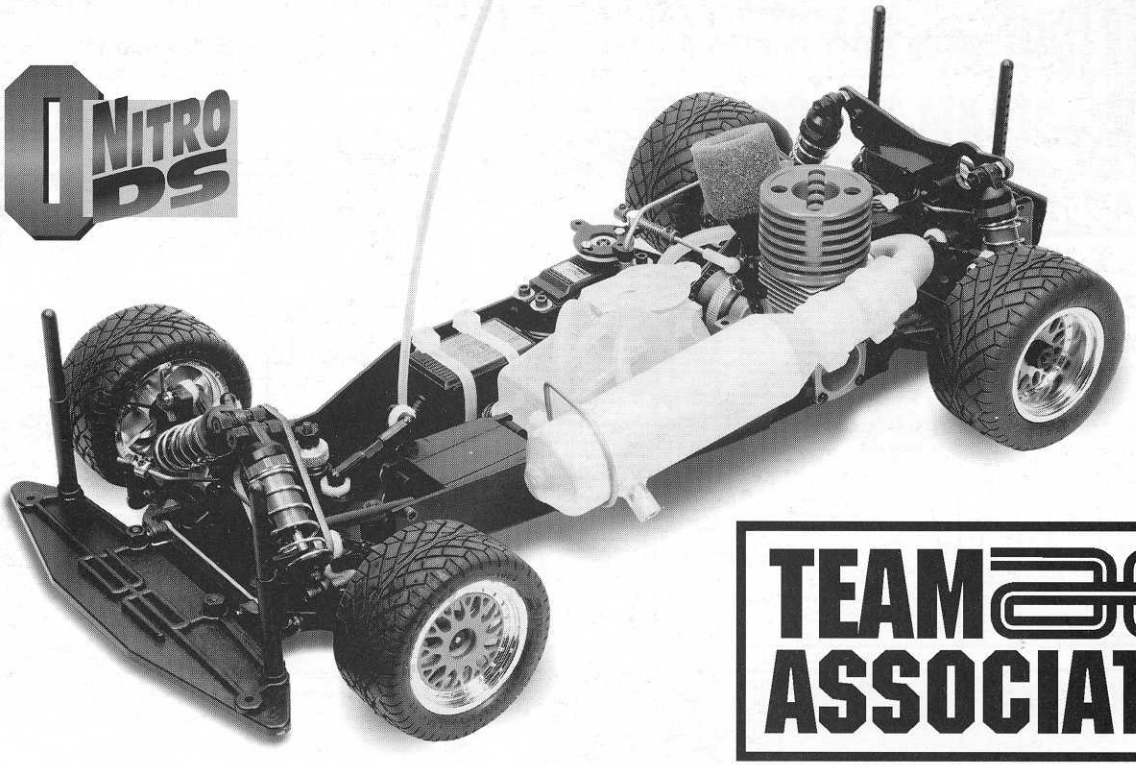
GLOW PLUG TYPE _____

ENGINE TEMP _____

DRIVESHAFTS _____

SLIPPER ❑ STD ❑ _____

RC10 NITRO DS
RACER



TEAM ASSOCIATED

RC10 NITRO DS
SPORT