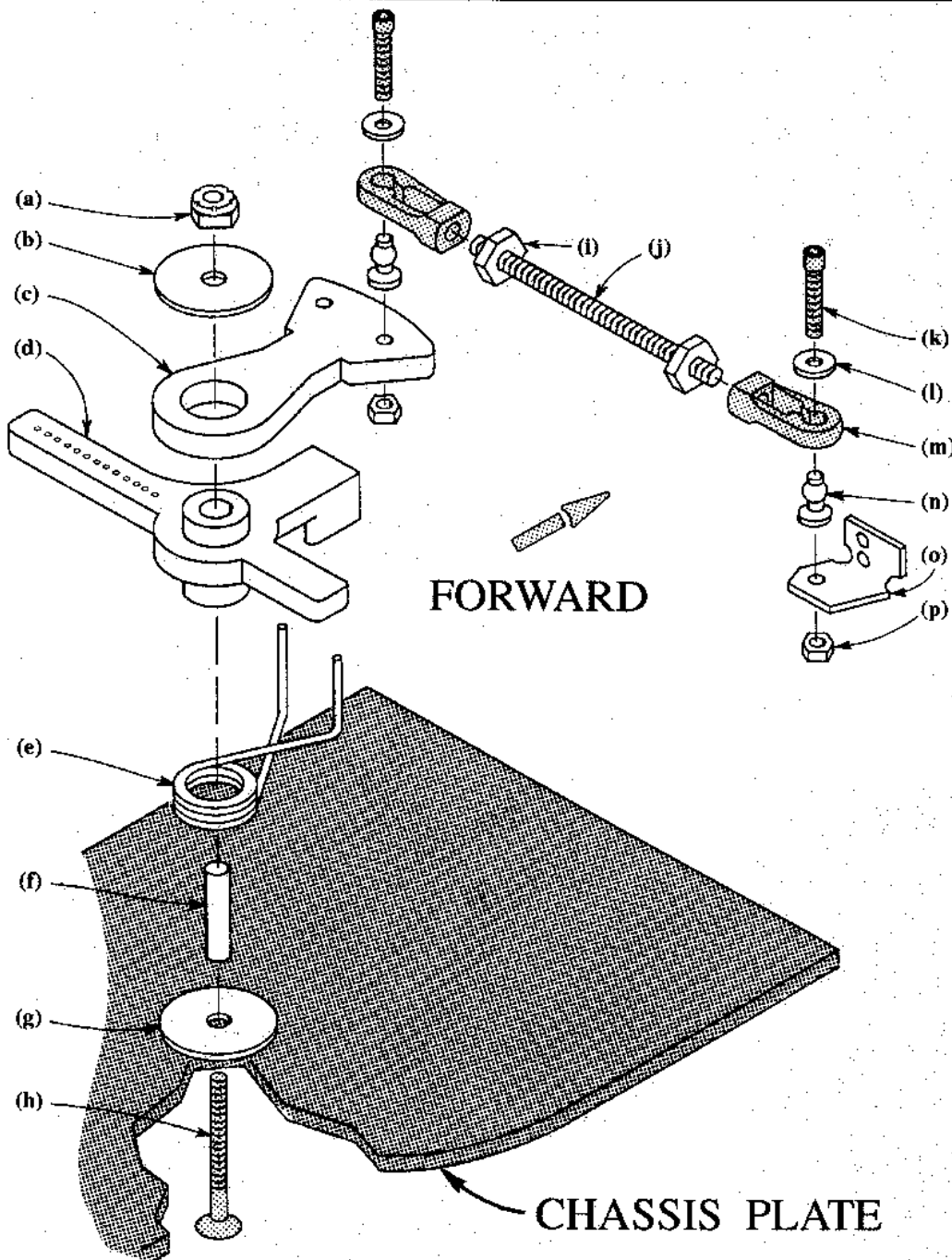


#2525 RC250/300 SERVO SAVER #2530 TIE ROD ASSEMBLY



STEP 1 First check to see if the upper arm (c) rotates freely on the lower arm (d). If not, then trim any burrs. The journal (f) should also fit easily into the lower arm (d), otherwise burr as needed. Now turn to page 2 and install the spring (e) onto the lower arm (d) as shown.

STEP 2 After completing the steps on page 2, slide the screw (h) up through the bottom of the chassis plate. Slide the lower washer (g) then the journal (f) onto the screw. Slip on the lower arm/spring assembly, then the upper arm (c) and upper washer (b). Tighten down the 10/32 locknut (a) last.

STEP 3 Assemble the tie rods as shown. Adjust the plastic ends (m) until you have 5 degrees toe-in, then tighten down on the 10/32 nuts (j).

SERVO SAVER REPLACEMENT PARTS

Letter	Description	Part #
(c, d)	Upper and lower arms, 1 ea.	2527
(e)	Servo saver spring, 1	2526
(f)	Servo saver journal, 2	1203

TIE ROD REPLACEMENT PARTS

Letter	Description	Part #
(i)	10/32 threaded rod, 2	2534
(k, l, m, n, p)	Tie rod end complete, 1 ea.	2531

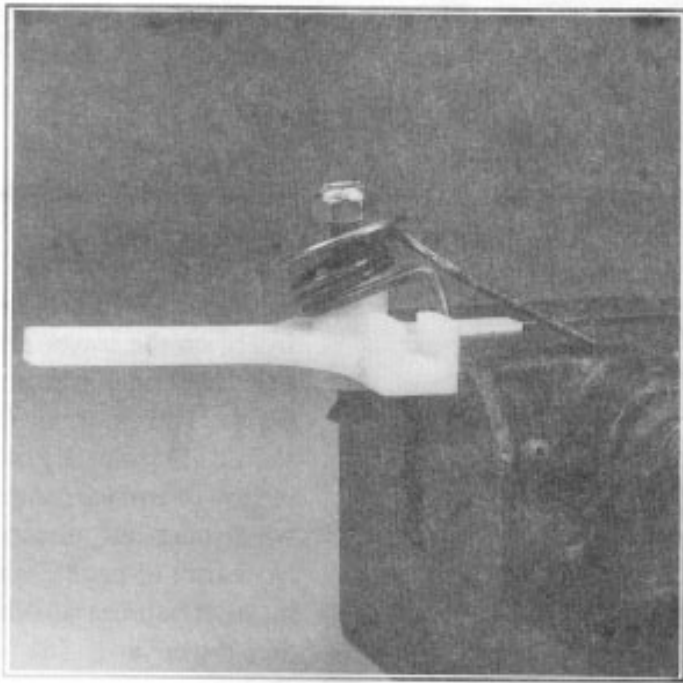


PHOTO 1 The easiest way to put the spring on the lower arm is as follows. Turn the servo saver arm upside down from that shown in the drawing on the reverse, slide the servo saver screw up from the bottom, slip the spring on as shown in Photo 1, then a washer, then the nut. Do not put on the journal. Screw the nut only part way down, as shown above.

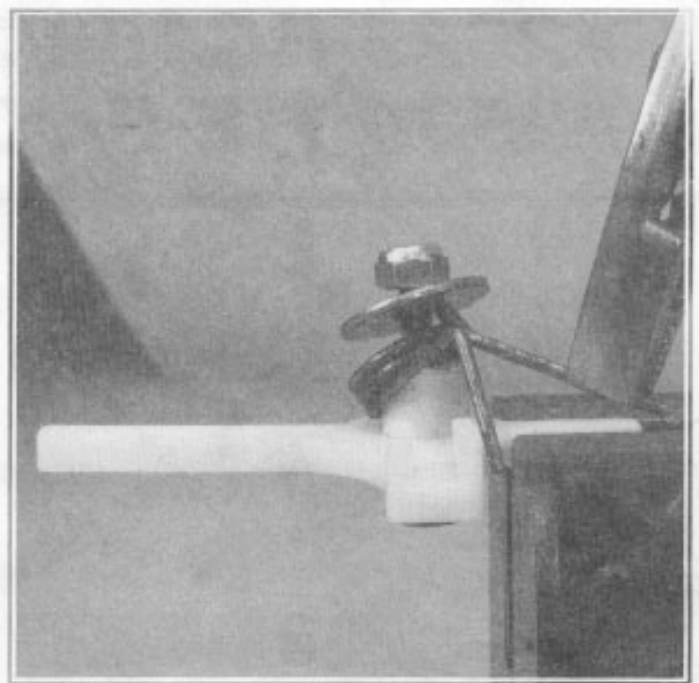


PHOTO 2 Grip the lower arm in a vise in the position shown in Photos 1 and 2. Grip the spring leg to the right with a pliers and pull it up and over the servo saver to the left side. The other spring leg should remain to the right. If you use a small vise as shown above, you will have to hold it down with your other hand.

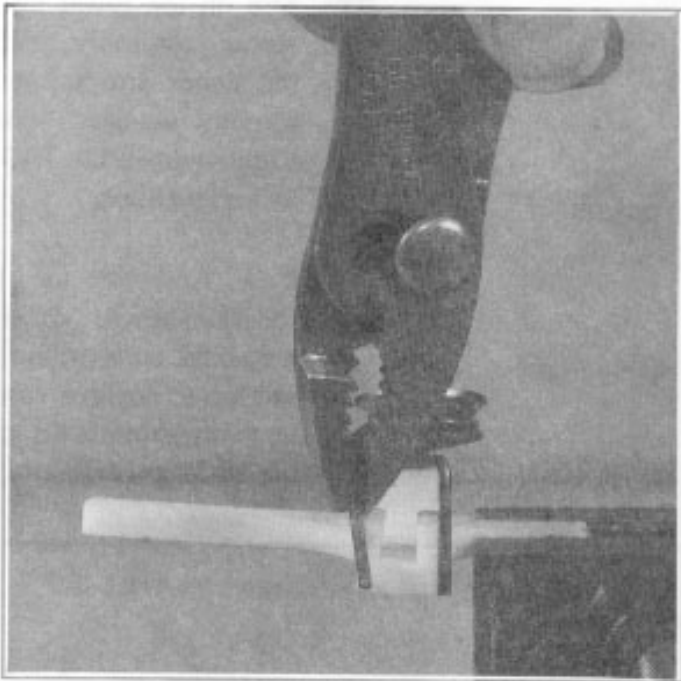


PHOTO 3 Keep your fingers away from the spring until you have safely completed moving the spring to the left side. If the other spring leg does not remain behind, you may push the washer down firmly with your other hand while you pull the spring leg over.

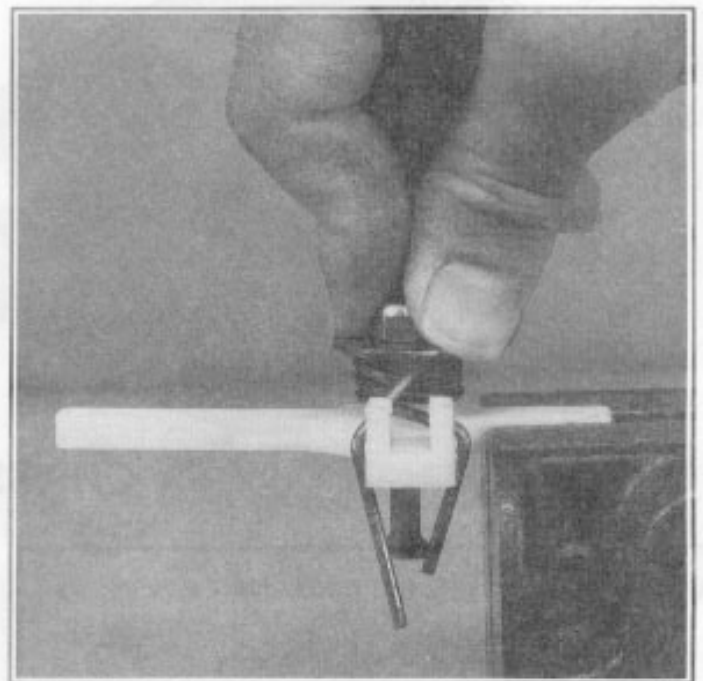


PHOTO 4 When you have the spring crossed over, push the coil down. The spring will now stay in place. Now assemble the servo saver from Step 2 on the reverse side.

#2710 #2711

DUAL DISK BRAKE KIT

STEP 1 First remove the existing brakes from your car and clean the area if necessary. Then, as shown at point "A" in fig. 1, glue one of the thin brake linings (b) to the steel shoe (a) using contact cement, such as 3M #8001. Do not make the glue joint too thick.

STEP 4 Now slide the two steel brake rotors (j) between the brake shoes from the forward side (figs. 1 and 3). When the rotors are between the linings, they should be free to turn, NOT TIGHT. If the rotors are tight in the lining, your glue joint may be too thick. Simply remove the linings and sand the two thin linings (b, d) to make them a little thinner. DO NOT sand the thick lining. Then recheck the rotors to see if they're free.

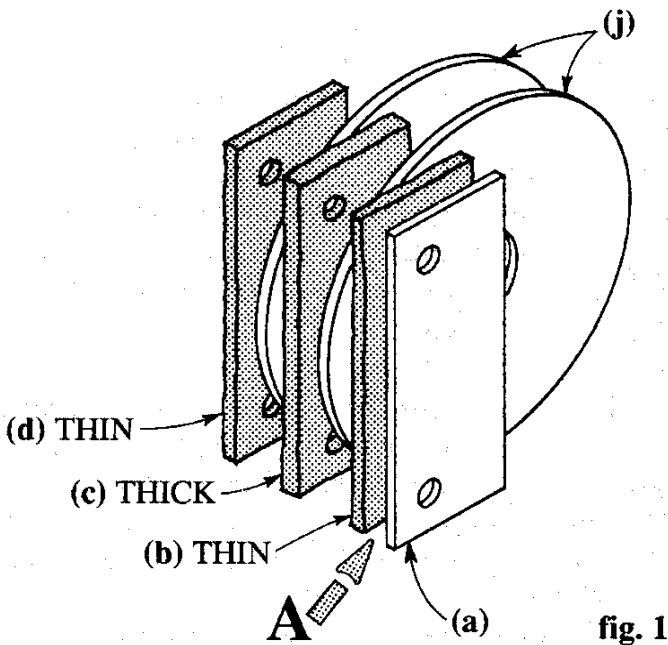


fig. 1

STEP 2 Next, slide the other thin brake lining (d) onto the two pins (e) on the bearing block (v), then the thick lining (c), then the lining (b) with the steel brake shoe (a), the steel shoe to the outside.

STEP 3 Now place the cam (f) in the hole in the pod chassis plate (g) (fig. 3). Then place the "L" bracket (h) down over the wing tube (i) and the brake cam (f).

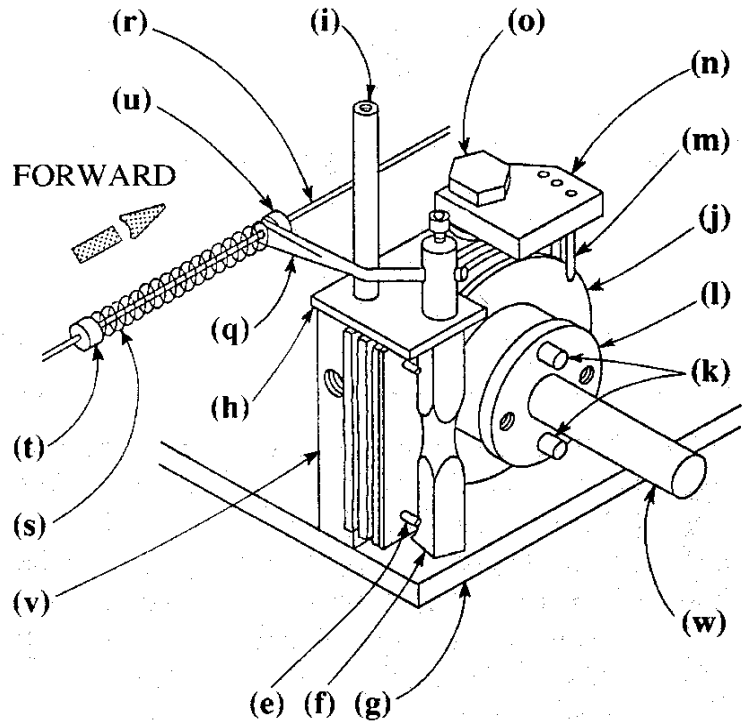


fig. 3

BRAKE CAM TOP VIEW

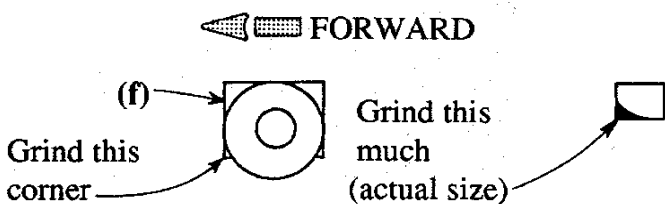


fig. 2

STEP 5 Remove the brake cam (f) and file or grind the FORWARD-INSIDE corner round, as shown in fig. 2, the full length from top to bottom for clearance between the cam (f) and steel brake shoe (a). (That is, with the flat, non-rounded side of the cam facing you, file the entire LEFT SIDE CORNER nearest you.) This is necessary because otherwise if the servo moves the cam arm (q) to its release position, it will again apply the brakes.

(continued on next page)

#2710**#2711****DUAL DISK BRAKE KIT (continued)**

STEP 6 Now install the two large 1/8" pins (k) into the gear hub (l) so they extend .240" out of the gear hub on the brake side. Then take the three 1/16" pins (m) and install them in the alignment bracket (n) (fig. 4). Tap them in with a hammer.

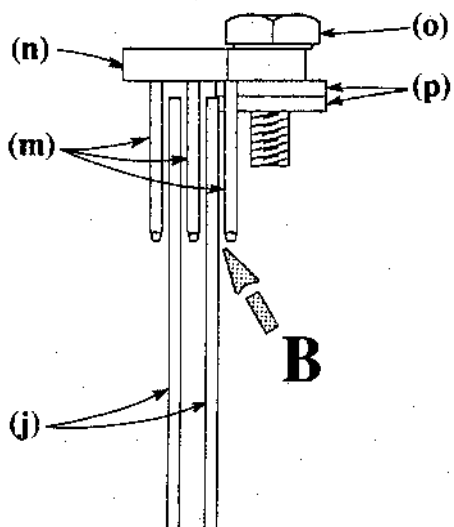


fig. 4

STEP 7 Re-install the brake linings (d, b, c), cam (f) and the upper "L" bracket (h). Slip the two rotors (j) between the brake linings. Now install the alignment plate (n) according to fig. 4, place the bolt (o) in it, and add the two washers (p) under the plate (n) and screw the bolt into the bearing block (v) (fig. 3). FINGER TIGHTEN ONLY. Install the brake arm (q).

STEP 8 Slide the gear hub (l) onto the solid axle (w) (or onto the differential; tighten the screw in the differential gear hub, but only enough to keep the hub from slipping on the differential. Do NOT over-tighten).

STEP 9 After putting the axle (w) and gear hub (l) on the car, move the brake arm (q) forward so the brakes are ON. Now line up the alignment plate (n) as in fig. 4 so the middle of the three pins (m) is centered between the two rotors (j). Now tighten down the alignment plate bolt (o). Be careful when

you tighten the bolt that you don't move the plate.

STEP 10 Insert the brake linkage wire (r) from your throttle servo through the brake arm (q). Slide on the spring (s) and collar (t) (we will set the tension later). With the motor at idle position, slide on the other collar (u) and tighten it, leaving a 1/16" clearance between it and the brake arm (q).

STEP 11 Put the rear wheels on now and we'll set the brake at a good starting position. With the radio's throttle/brake servo in the "throtte idle" position, adjust the tension spring so the rear wheels will just barely turn as you roll the car by hand across your work table. This adjustment will be close to what you need; now you must make the final adjustments at the track.

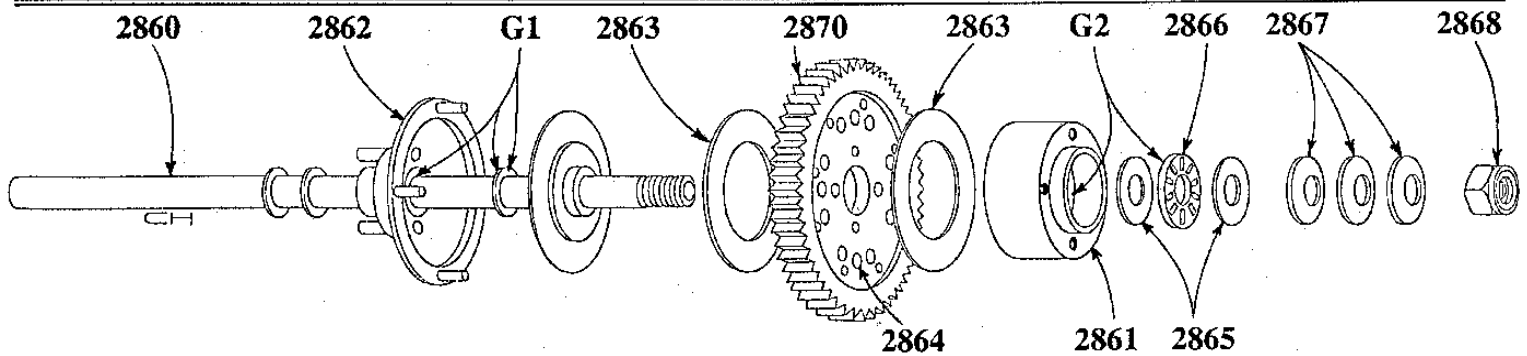
STEP 12 Now at the track, turn on your radio system and move the throttle part-way open. The rear axle and wheel should spin freely. Now open the throttle fully. If there is some brake drag, you'll have to round off a little more of the INSIDE-FORWARD corner of the brake cam (f) (fig. 3) from top to bottom where it touches the steel shoe (a) (fig. 3).

REPLACEMENT PARTS

Letter	Description	Part #
(a,b,c,d)	Dual disc brake lining	2712
(f)	Dual disc brake cam	2713
(h)	Disc brake bracket	2614
(j)	Disc brake rotor, 1	2610
(k,l)	Gear hub for #2710	2714
(k,l)	Gear hub for #2711	2715
(m,n)	Dual disc alignment plate	2716
(o)	10/32 bolts, 1/2" long, 10	869
(q)	Disc brake arm	2613
(s)	Spring set, pr.	2717

#2850 #2851

RC300 BALL DIFFERENTIAL



The Associated Ball Differential will help you to go faster easily. And with the dif's simple adjustment feature, you can adapt your car to any track you race on.

ASSEMBLING THE BALL DIFFERENTIAL

STEP 1 To assemble your diff, first push the #2864 balls into the twelve holes of the #2870 gear. Then lubricate the balls one drop apiece with Tri-Flon, WD-40 or #2780 grease.

STEP 2 Now using an Exacto knife, deburr the four screw holes of the #2861 wheel hub on the side one of the #2863 washer seats. The washer must seat flush with the wheel hub. Be very careful not to get any chips in the roller bearing (the narrow opening of the wheel hub). (To make assembling the diff easier, install the left hand wheel and hub on the axle and tighten the wheel hub set screw. Turn the left hand wheel sideways and set it flat on your table so the right hand threaded end of the axle points upward).

STEP 3 Slip one of the #2863 ball washers on the axle in place as shown. Then slip the gear on the axle and then the other #2863 washer.

STEP 4 Apply #2780 grease to the roller bearing in the #2861 gear hub and the #2866 roller thrust bearing. Slide the #2861 wheel hub down on the axle. Now, you'll have to carefully align the #2863 washer so the hub can slip over the washer. Just use a small screwdriver to move the washer around on the balls until the hub slips over the washer.

STEP 5 Slip one of the #2865 small thrust roller washers (the flat smooth washers) on the axle into the wheel hub. Now, slip the #2865 thrust roller bearing and the other #2865 flat washer onto the axle.

STEP 6 Place three #2867 Belleville washers (coned or tapered washers) onto the axle so the coned center of the washer is pointed up towards the #2868 adjusting nut. Now install that nut and tighten until it touches the Belleville washers. Do not overtighten. You'll adjust it later when you come to the section, "Adjusting the Ball Differential".

STEP 7 Install the right hand wheel on the wheel hub. Be sure to use the four star washers on the wheel screws.

STEP 8 Remove the left hand wheel. Slip one of the small polished washers on the axle and then grease both sides of it with diff grease as shown at points "G1" and "G2".

STEP 9 Add grease inside the #2862 gear hub and slip it on the axle as shown. Now slip the other two small polished washers on the axle.

STEP 10 Slip the diff axle into the bearings. (Please note: this diff assembly uses the standard rear bearing blocks as used on the RC300 car. If you have the RC300D car, you will have to install a #2627 right hand axle bearing block with a #2627 right hand axle bearing block with a #2614 disc brake bracket and #2517 axle ball bearing.) When sliding the axle in, you'll notice the #2862 gear hub will hit on the disc brake cam before the axle can go in all the way. Remove the axle and grind the disc brake cam until you have enough clearance between the gear hub and the disc brake cam when the cam is rotated during braking. After you have clearance, install the diff and left hand rear wheel.

ADJUSTING THE BALL DIFFERENTIAL

Hold the left hand tire in your left hand and hold the right hand tire and #2870 gear in your right hand **together**. You should be able to turn the left hand wheel quite easily while still holding the right hand wheel and gear. Start tightening the adjusting nut with a 1/2" nut driver or similar tool in **small amounts** until the left hand wheel is hard to turn, but still turns. You should start driving the car at this point. (The diff will actually be a little on the tight side.) You will make your final adjustments at the track you're racing on by loosening the diff; you do this by unscrewing the adjustment nut in very small amounts—about the width of one gear tooth. It takes only a small turn on the nut to make a big difference on the track.

IMPORTANT—The differential is not supposed to slip going straight forward. The differential is designed to work only in corners. If the differential is adjusted too loose, and the diff slips going straight forward, then the #2864 balls in the #2870 gear will be abnormally "flat spotted" and the diff will not work correctly. If this happens, simply install new #2864 balls and the diff will again work normally.

#5195 ASSOCIATED FUEL TANK

THIS IS THE FINEST FUEL TANK you can buy. It features a "Chicken Hopper" system, which means the carburetor mixture will not change between a full tank and a near empty tank. Included in the tank is a Du-Bro bronze fuel filter. The large cap makes it easy to fill and has a positive seal. Two fuel fittings are included.

STEP 1 Check the two holes in the tank to make sure there are no plastic strings in the holes. If necessary, clean out the holes.

STEP 2 Next, install the two fuel fittings. The 90° fitting goes on top of the tank and this is connected to the muffler. The straight fitting goes on the back of the tank and connected to the carb.

To install the fittings, first screw the fittings in just one thread depth. Next, it is important you coat the remaining threads with a silicon seal. If you do not use this seal, your tank will leak. Then screw the threads in all the way, or until the fitting gets tight.

WARNING—*Do not let the fuel stay in the tank overnight.* When the fuel dries out inside the tank, it turns into a sticky film which can obstruct the fuel flow through the filter. Therefore, when you're through running the car for the day, always turn the tank upside down, open the cap and drain out every ounce of the fuel.

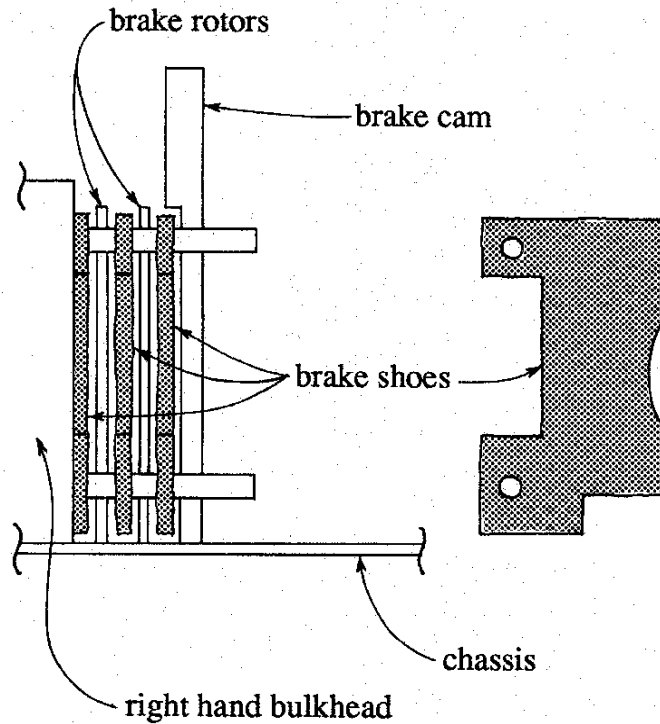


#5248

RC500 DISK BRAKE KIT

Team Associated does it again! Our R & D has produced brakes which work better than ever before. Therefore disregard the assembly procedures in the RC500 instruction booklet and assemble the new brake features as shown below.

VIEW FACING REAR



REPLACEMENT PARTS

Description	Part #
Disk brake lining kit, 3 shoes	5249

#5290

REAR SHOCK MOUNT KIT

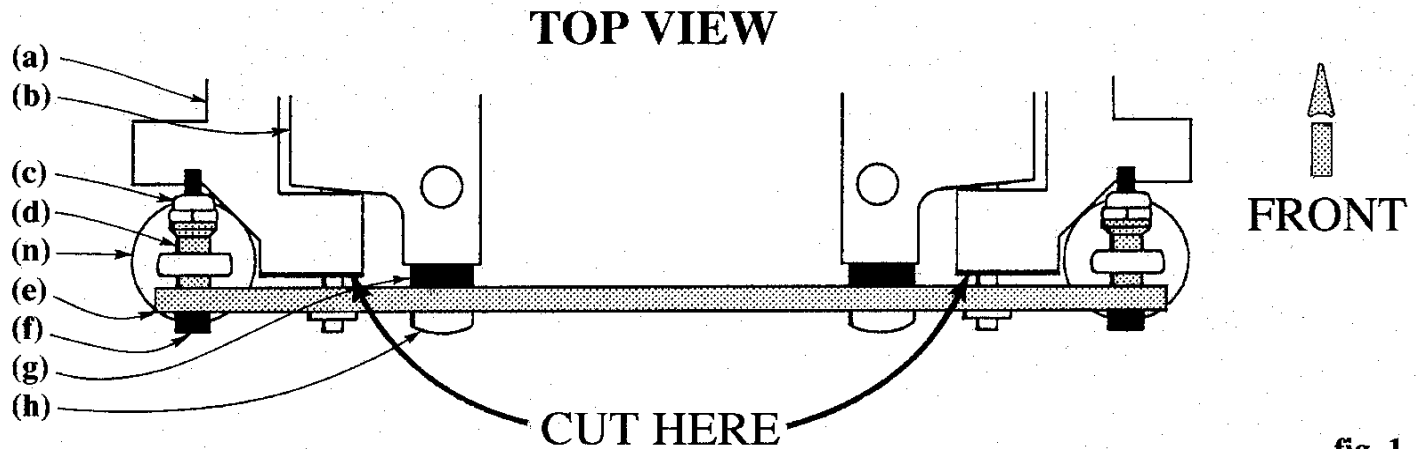


fig. 1

STEP 1 Remove the rear shocks from your car.

STEP 2 If you have not already done so, cut off the left and right "A" arms (a) with a saw or Dremel where shown at the bold line in fig. 1.

STEP 3 Now we can install the shock mount plate (e) as follows. Two long black fiberglass spacers (g) are included in the kit. They are used to space the shock mount plate (e) 1/8" farther to the rear of the car. Using the four aluminum screws (h), mount the shock mount plate (e) to each rear bulkhead (b) with the spacers in between.

STEP 4 We suggest at this point that you change the oil to 30 wt. (#5414) and the springs to 1" x .045 springs (#5468) for this configuration. With your tie rod steel ball joints (d) on your shocks (n), mount the shocks onto the forward side of the shock mount plate (e) with the accompanying hardware (c & f) as shown in fig. 1. Now we can mount the bottom of the shocks on the shock mount plate as follows.

STEP 5 Cut the two long 1/8" diameter pins (i) to 2 9/32". Slide them through each lower "A" arm (k) and hub carrier (l) (fig. 2). Then slide on the small plastic spacers (m) (two to each side), then the shocks (n). Slide on, then fasten, the locking collars (p) with the set screws (o). Use your existing snap ring clips (j) to fasten the other ends.

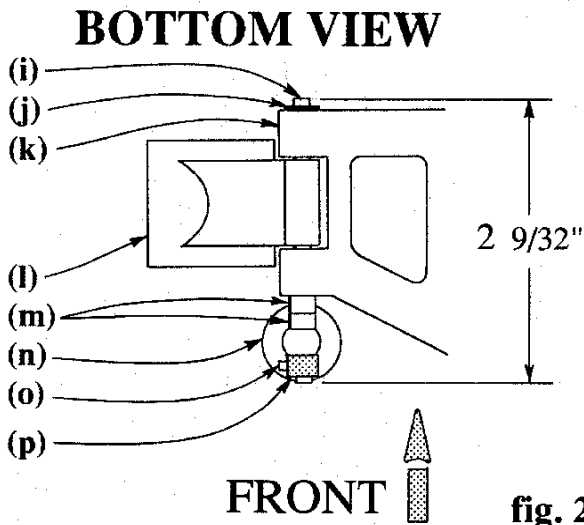


fig. 2

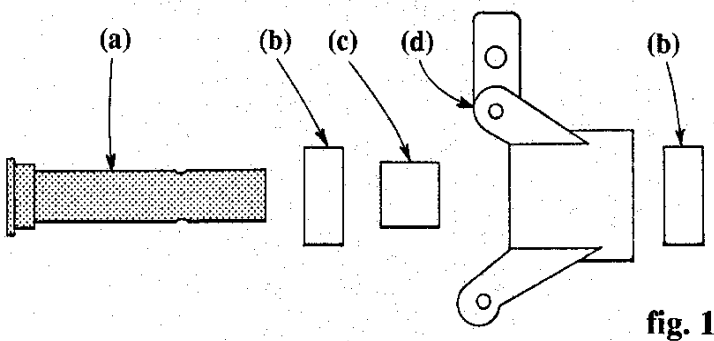
REPLACEMENT PARTS

Letter	Description	Part #
(c)	4/40 nuts, 6	6242
(e)	Rear shock mount plate, 1	5289
(h)	8-32 screws, 1/2", 6	4183
(i)	Pins--please specify 1/8", 3	5281-1/8
(f,g,j,m,o,p)	Misc. rear shock mount hardware, 16 pc.	4183

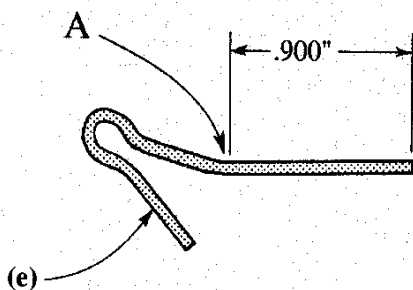
#5292

REAR WHEEL QUICK CHANGE KIT

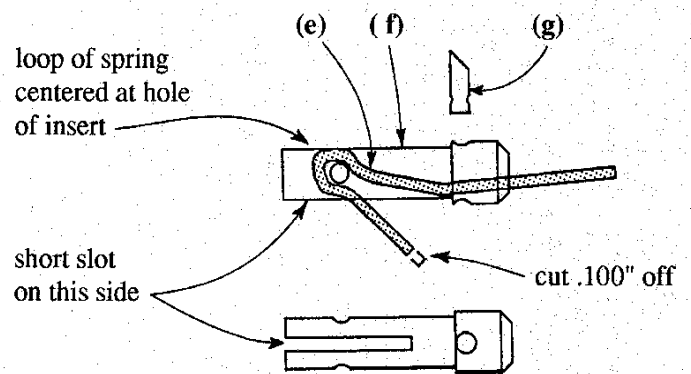
STEP 1 Remove your old rear wheel assembly, preserving the ball bearings, spacers and hub carriers. Slip a ball bearing (b) onto the axle (a) (fig. 1) and then slip on the spacer (c). Push the axle and bearing into the hub carrier (d) and then push the other ball bearing into the hub carrier as shown.



STEP 2 At point A of fig. 2 you must change the small bend in the spring (e) after measuring .900" (23mm) from the long end. Straighten out one spring and bend it as shown to the same angle. Now bend the second spring. The location of this bend is very important; it determines how freely the locking pin (g) (fig. 3) will move.



STEP 3 As shown in fig. 3, turn the insert (f) so the shortest slot is up and push the locking pin (g) in the insert. Now cut .100" (2.5mm) off the short end of the spring and install the spring in the insert, through the locking pin hole and through the small hole at the end of the insert.



STEP 4 Now, temporarily push this insert assembly into the axle (a). (It will go in easier if you hold the spring closed with a pliers.) Align the 1/8" hole in the insert with the 1/8" hole in the axle and make sure the coiled bend of the spring is centered with the hole, as shown in fig. 3.

The locking pin (g) should now move up and down quite freely when you move the spring wire (e) up and down. If it does not move freely, it is because either your bend of point A in fig. 2 is in the wrong place or the bend itself is the wrong angle. Remove the insert and bend the wire again, if necessary.

#5292 REAR WHEEL QUICK CHANGE KIT

(continued)

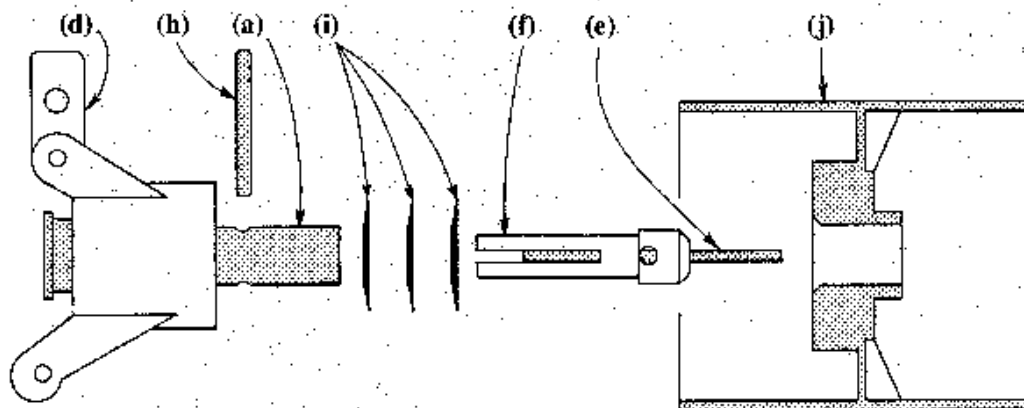


fig. 4

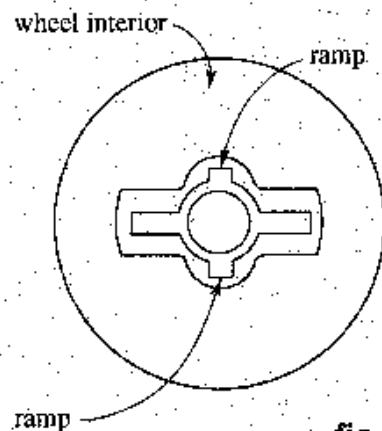


fig. 5

STEP 5 When you have the locking pins moving freely, slip the insert (f) back into the axle (a), again aligning the 1/8" holes in the axle, insert and spring. Now slip as many of the spring washers (i) on the axle as you can (fig. 4) and still be able to install the dowel pin (h). It will probably accept one or two washers. Make sure the spring washers (i) go on in the direction shown, with the small side of the washer touching the bearing (d). Then, very carefully tap the dowel pin through the 1/8" hole of the axle, insert and spring.

STEP 6 Push the wheel (j) onto the axle. Make sure the locking pin pops back up (noted at point B, fig. 6) when the wheel is pushed on. If it doesn't pop up, pull the wheel back off and trim a small amount of the hub where it contacts the pin and try it again. Fig. 5 shows the built-in ramps in the wheel hub, one of which helps force down the locking pin whenever you slide on a wheel. Just align a ramp with the locking pin and push the wheel on.

STEP 7 Before the wheel is on and locked in place, bend the end of the wire (e) with a pliers, as shown in fig. 6, so it will be easier on your thumb when you push down on the spring. Pushing the spring down also lowers the locking pin, allowing the wheel to be pulled off easily. The slanting portion of the locking pin enables the wheel to be slid on quickly and easily too when aligned with a ramp within the hub.

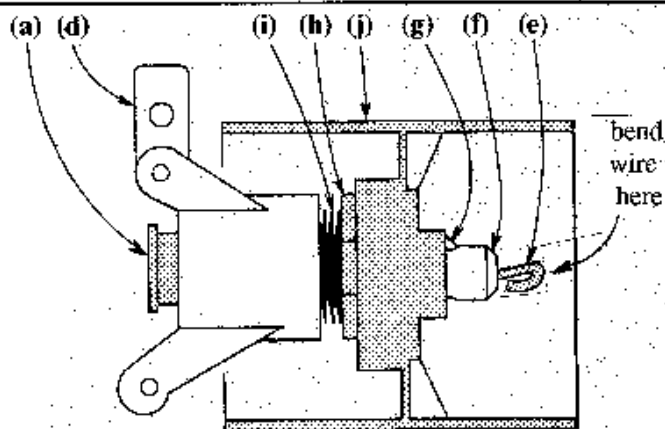


fig. 6

REPLACEMENT PARTS

Letter	Description	Part #
(a)	Stub axle, ea.	5294
(e,f,g)	Spring, insert, locking pin, fits one axle	5295

#5460 SPECIAL RC500 REAR SHOCKS

These shocks were designed for our RC10 off-road car, but when we tried them on the rear of the RC500, we found a great deal of increased rear traction, without losing any steering. (The photos are from the RC10 instruction manual.)

STEP 1 Remove two "E" clips and a shaft and piston as shown in photo 1.



photo 1

STEP 2 Slip one "E" clip onto the shaft (photo 2).

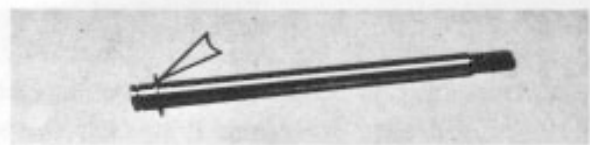


photo 2

STEP 3 Slide the piston onto the shaft, and then slip on the second "E" clip (photo 3).



(disregard this part)

photo 3

STEP 4 Now remove and align the parts shown as in photo 5. Push each part into the body in the order shown. First push the small nylon washer into the body, then a red "O" ring, then the aluminum collar spacer, then the second red "O" ring, followed by the large nylon washer, and finally the "C" clip. Make sure the "C" clip is fully seated (photo 4).



photo 4

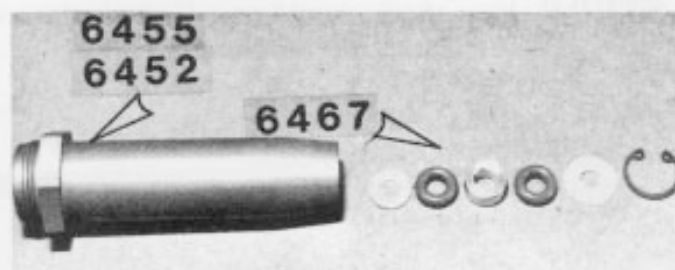


photo 5

STEP 5 Add a few drops of 40 wt oil to the shaft, and then push the shaft into the shock body. Push the shaft in slow and easy so you won't scratch the rubber "O" rings.

STEP 6 Hold the shock body upright with the shaft pushed all the way out, and fill the shock to the rim with 40 wt oil (photo 6).



photo 6

STEP 7 While still holding the shock body upright, slip the nylon washer shown in photo 7 over the top of the shock body, then tightly screw down the cap.

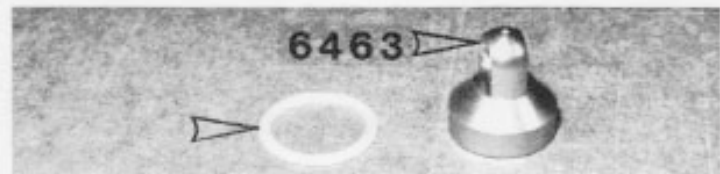


photo 7

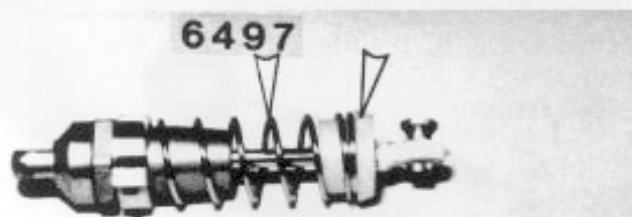
#5460 REAR SHOCKS, continued

STEP 8 Your shock should now look similar to the shock in photo 8, but with a shorter body.



photo 8

STEP 9 Slip the spring onto the shock. (Three sets of springs are available. Silver is the softest and gives the most rear end traction. Black is stiffer and is generally used on 4WD cars. Gold is the stiffest and is usually used on high traction tracks. You may want to try all three to see what works best for you.) Now push the round nylon spring retainer into the end of your spring, as shown in photo 9 (at the right end of the spring). Next, pull the spring and retainer back against the body to grip the end of the shock shaft just short of the threads with a needle-nose pliers. Then screw on the plastic shock ball end.



(disregard this part)

photo 9

STEP 10 Before installing the shocks, you'll have to space the rear black shock mount farther back by adding two thick aluminum washers to each of the fourscrews. Then replace the short pin in the lower "A" arm with a longer pin, if necessary. You will also have to add nylon tubing over the end of this pin; then mount the shock over it. (The left end of the shock in photo 9 shows the bottom end to be mounted.)

STEP 11 To mount the upper shock end, remove your 5/40 screw and replace it with the 4/40 screw. Screw on the plain 4/40 nut to tighten the mount. Now slip the ball end onto the screw and align it so the shock is mounted straight up and down (and not at an angle). Check for clearance between the spring and upper "A" arm and cut the "A" arm as needed to leave a gap. Test the shocks after the car is fully assembled by picking up the rear of the car two inches and dropping it on a table. Check the rear LOWER "A" arms. If the car is too low, remove the shocks, disassemble it down to as in photo 8, add extra nylon washers to the body, then reassemble as in steps 9 and 10.

#5500

2 SPEED TRANSMISSION

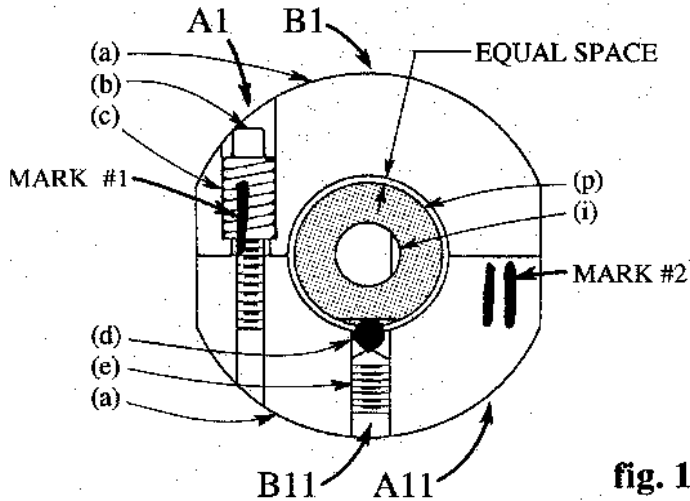


fig. 1

This 2 speed automatic transmission will give your car more acceleration off the corners and starting line, and then will give your car a higher top speed on the straightaway. The car starts off with a 6.31 low gear and then automatically shifts to a 5.31 high gear. This additional power works very good on high traction tracks. On low traction tracks it might be necessary to use a carb restrictor, which will still give you all the power you need. The carb restrictor and 2 speed combination will give you exceptional horsepower and fuel mileage.

The performance you get from your 2 speed will be determined by how well you assemble the unit and how precise you make the adjustments. These steps are not difficult to do, but they must be done carefully for its best performance.

STEP 1 Take the two clutch shoe halves (a) and lightly deburr the three outside holes in each shoe with an Exacto knife. Now hold the two clutch shoes together, as in fig. 1, and take

the two long allen screws (b) and springs (c) and assemble the clutch shoes. Tighten down on each allen screw until the springs bottom out—do not overtighten. Then unscrew each screw exactly 3 1/2 turns.

STEP 2 From the center hole of the clutch shoes, slip the two steel balls (d) into their holes, as shown in fig. 1. Now slip the center hub (p) into the center hole. Install the two set screws (e) so they close down on the balls. Do not overtighten. The adjustment of these balls is very important and determines whether you will have a good, strong shift or a missed shift. Screw the set screws in until they barely start to push the balls against the two grooves in the center hub.

The balls must be adjusted so the center hub is exactly centered with an equal space around the center hub and between the clutch shoes, as shown in fig. 1.

The set screws should be adjusted so the center hub can be rotated in the clutch shoes the smallest amount—about two degrees. If the set screws are too loose, the center hub will rotate too far and the clutch will not have a positive shift. If the set screws are too tight, they will expand the clutch shoes, and then the clutch shoes will not fit in the clutch bell.

The clutch spring adjustments determines at what RPM the transmission shifts, and the clutch bell adjustment determines how positive the shift will be.

STEP 3 Now slip the dust cover (q) over the center hub (p) as shown in fig. 2. Align the hole in the dust cover to match the hole in the hub and start the allen set screw in the hole. It is important to put a number 1 mark on the dust cover where shown in fig. 1. The number 1 should be marked exactly where the spring is, as shown. Now put a #11 mark on the cover where the second spring is.

STEP 4 First take an Exacto knife and clean all the burrs off the 42 tooth gear (m) where it has been machined. Slide

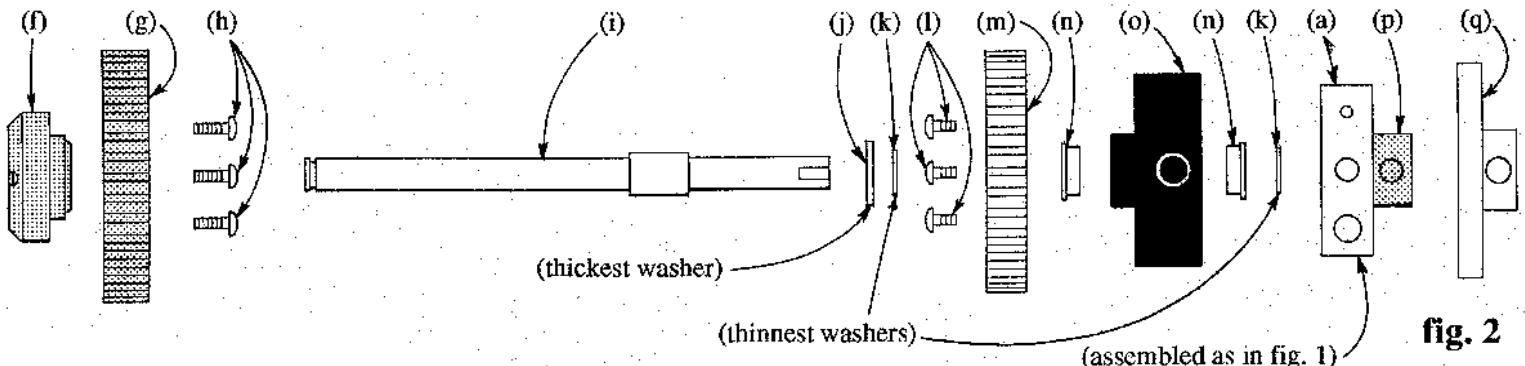


fig. 2

TEAM ASSOCIATED

wishes you high-performance racing!

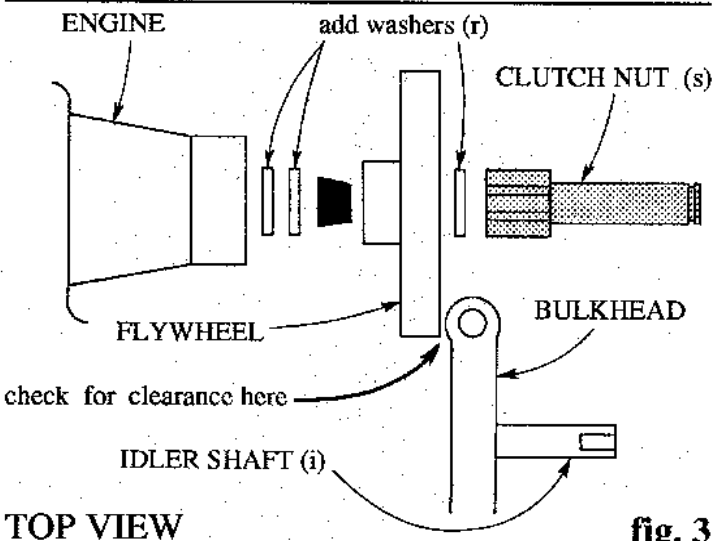
#5500 2 SPEED TRANSMISSION

the gear onto the clutch bell (o) (fig. 2). You'll notice one side of the gear is machined to slip over the bell. The gear is a tight fit on the bell. An easy way to get it aligned and installed is to take the three long round head allen screws and pull the gear down. Then remove the long round head screws and replace them with the three short round head screws, and tighten the screws down.

STEP 5 Before installing the 44 tooth gear (g) on the roller clutch bearing hub (f), de-burr the gear first, install the gear, then tighten down on the screws (h). The six screws (h, l) in both gears can loosen up so you must use an adhesive to hold them in place. Non-hardening Loc-Tite, contact cement or even fingernail polish will work.

STEP 6 Now we're ready to assemble the transmission. Slide the thick washer (j) onto the short end of the idler shaft (i) as in fig. 2. Then slide one of the thin washers (k) onto the shaft. Push the two ball bearings (n) into the clutch bell (o) with your fingers. Slide the bell on the shaft. Now slide the other thin washer (k) on. Now slide on the clutch shoes with the dust cover (a, p, q) and tighten down hard on the set screw. Spin the gear. It should spin very freely. If it doesn't spin freely, loosen up the set screw and slide the clutch shoes out a couple thousands and re-tighten the set screw. This gear must spin freely.

STEP 7 Now slip the gear (g) and hub (f) onto the shaft right next to the other gear (fig. 2). This gear will turn in only one direction and should not turn in the other direction. It will not spin as freely as the other gear.



STEP 8 Remove the single speed idler shaft and gear from the car and install the 2 speed idler shaft and gears.

STEP 9 You must add the three medium washers (r) (fig. 3) to your engine to get the correct spacing and to make sure the clutch bell gears on the engine align perfectly with the gears on the 2 speed. Make sure the flywheel clears the RH bulkhead. Use the stock clutch nut and bearings provided.

STEP 10 It is important the 15T/17T engine clutch bell be balanced to ensure long clutch bearing life. If you do not balance the clutch bell, the car will run, but you will lose your clutch bearings in a short time. A properly balanced bell will allow the bearings to last at least ten hours under normal conditions. An ideal balancer to do this job is a High Point balancer, available from your hobby dealer or from:

High Point Products
3013 Mary Kay Lane
Glenview, IL 60025
Phone: 312-272-8684

This balancer will allow you to finely balance the bell. To start with, check the bearing fit in the bell. You should be able to install the bearings in the bell by pushing them in with your finger. Never drive the bearing in. If the bearings are too tight to push in with your finger, then lightly sand the bell with 300 grip wet or dry sandpaper. Do so by taking a drill that is a little smaller than 3/8" and wrapping a couple turns of the sandpaper around the smooth end of the drill, and rotating it in and out of the bell until the bearings fit perfectly.

When you have the bearings installed in the bell, place the bell on the balancer. Spin the bell slowly. It will stop turning with the heavy side down. Put a pencil mark on the very top side, which will be the light side. Now take the bell and grind a small amount off the outside of the bell on the heavy side, opposite your pencil mark. Put the bell back on the balancer and check for balance. You may have to grind three or four more times to get it perfect. You'll know when it's perfect by noticing where the bell stops rotating on the balancer. If the pencil mark is always at the top, it's still out of balance. When the pencil mark stops in a different position every time you rotate the bell, then you've got it balanced.

STEP 11 When the bell is perfectly balanced, install it on the engine and install the engine in the car. Make sure the gears are perfectly aligned. The gears should be adjusted so they can spin freely. They should be neither bottomed out nor too loose.

#5500 2 SPEED TRANSMISSION

2 SPEED TRANSMISSION ADJUSTMENTS

There are only two adjustments necessary on your 2 speed transmission, which are shown in fig. 1 at points A1, A11, B1 and B11. The "A" adjustments control at what RPM point the 2 speed transmission shifts and the "B" adjustments determine how positive the shifts are.

As you'll notice in fig. 1 at the "A1" adjustment, there is an allen screw that controls the spring pressure. This spring pressure controls the RPM point where the clutch shoes engage and the 2 speed transmission shifts.

The initial spring adjustment is to tighten down on the allen screw until the spring is fully bottomed out. Do not overtighten these screws. When both of the A1 and A11 screws have been bottomed out, then they must both be backed out 3 1/2 full turns. Mark a spot on your allen wrench so you turn both of the screws out exactly 3 1/2 turns. At this point the 2 speed transmission should shift at approximately 20,000 RPM. Although your engine may turn at 30,000 RPM, it's best to have the transmission shift between 20,000 to 24,000 RPM. By increasing or decreasing the spring tension, you can change the shift RPM points.

If you tighten down on the A1 and A11 screws 1/4 turn clockwise, you'll be increasing the spring pressure, which will cause the transmission to shift at a higher RPM. 1/4 turn counter-clockwise will cause it to shift at a lower RPM.

CAUTION: Make your adjustments in 1/4 turn amounts.

And make sure you turn the A1 screw 1/4 turn at a time, and the A11 screw the exact amount of 1/4 turn; the two springs must always have the same amount of tension for the transmission to shift properly. Once you have the transmission adjusted where you want it, it will always shift at the same RPM. Remember, the cars' speed in MPH can vary at the shift point due to the changing tire diameter, but the shift RPM will remain constant.

The "B" adjustment controls how positive the shift will be. When the RPM gets high enough, the shoes will overcome the spring tension and the shoes will open up and contact the clutch bell, and the car shifts into second gear. At this point the shoes rotate on the center hub and a cam action takes place. This cam action is caused by the two grooves in the center hub rotating and locking against the two balls, which gives the clutch a very strong positive shift. When the

throttle is released and the RPM drops down, the clutch disengages and the car shifts back to first gear. This "B" adjustment is very critical because it determines whether you will have a very fast positive shift, or a missed shift which can cause the motor to "free wheel."

There are two very critical adjustments at the "B" adjustment points. The "B" adjustments should be set so the balls are ALMOST bottomed out in the grooves in the hubs. They should be set so the clutch shoes can just barely rotate the smallest amount on the center hub. A very small amount of about three degrees rotation is all that's required.

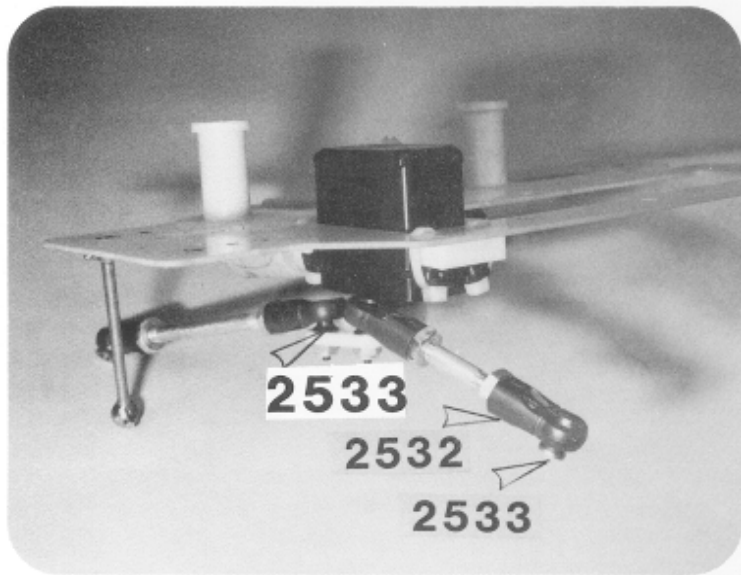
The second critical adjustment is that the balls must be adjusted so the center hub is EXACTLY centered in the clutch shoes, otherwise it will not shift correctly and the hub can drag on the shoes.

NOTE: The first time you drive the car at the start of each day, it likely will not shift, but "free wheel." If it "free wheels," back off on the throttle immediately. It will do this only the first shift of each day; the rest of the day it should shift perfectly. This seems to be a normal trait. Do not polish the inside of the 2 speed clutch bell. It is deliberately made a little rough to ensure a more positive shift.

REPLACEMENT PARTS

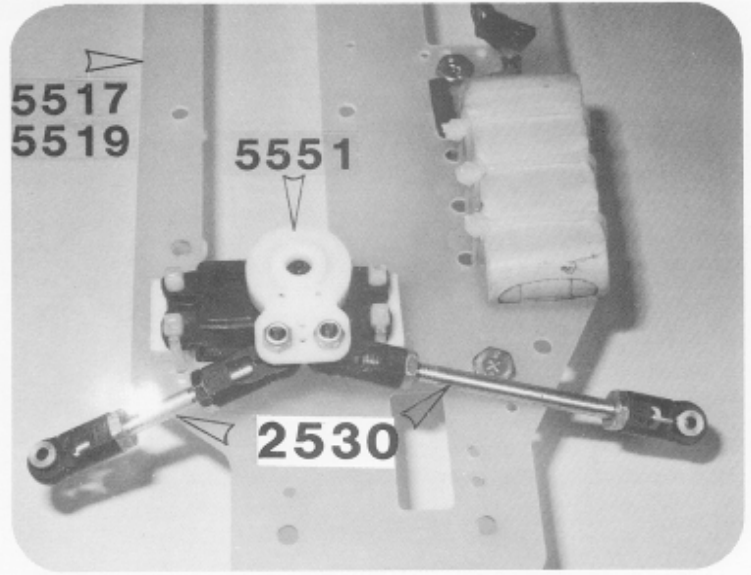
Letter	Description	Part #
(a,b,c,d,e)	2 Speed large shoes w/hardware	5506
(c)	2 Speed springs, pr.	5491
(d)	2 Speed balls, 12	2864
(f)	One-way Roller Bearing	5502
(g)	44 tooth 2 Speed gear	5504
(i)	Idler shaft	5511
(k)	Front axle washers, 6	5549
(l)	2 Speed small screws, 6	5492
(m)	42 tooth 2 Speed gear	5505
(n)	Ball bearings for #5503	897
(o)	2 Speed large clutch bell	5503
(p)	Large clutch shoe hub	5513
(q)	Large clutch shoe dust cover	5510
(s)	Long clutch nut	5508

DIRECT MOUNT SERVO SAVER AND TIE ROD FOR RC500 2WD



SIDE VIEW

fig. 1



BOTTOM VIEW

fig. 2

Install your servo in the #5517 radio tray. You'll have to drill out and cut the two nylon mounting blocks to fit your servo. Leave the rubber grommets on the servo, but remove the brass eyelets and tie wrap your servo in place, as shown. Install the servo saver onto the servo with the proper adaptor. Install the short ball ends on the servo saver in the farthest forward holes, as shown in fig. 2. Install the tie rods; you'll set final adjustment later. Depending on your type of servo, you might have to trim off your servo case a little. In fig. 1, this would be at the corner closest to you, in order to clear the tie rod arm. You'll have to check this clearance after the car is completed. Now you may slip the radio tray onto the chassis.

FUEL TANK ASSEMBLY INSTRUCTIONS

STOPPER ASSEMBLY

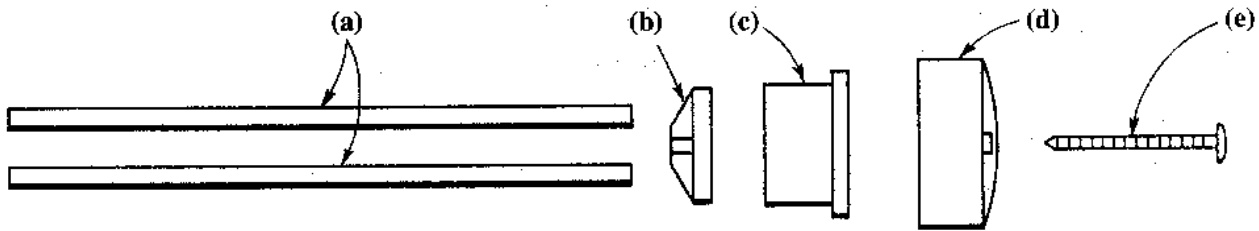


fig. 1

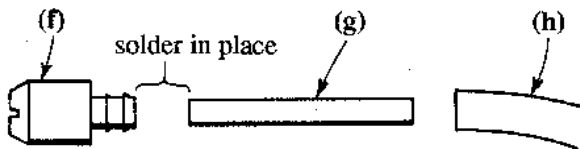
STEP 1 Assemble the stopper (fig. 1) by first pushing the long brass tubes (a) through the stopper (c). (The third hole is for an optional pressure fitting or spare fill/vent line, not required for normal operation). Do not tighten the screw (e). Assemble klapper klunk if needed (fig. 2). Attach flexible tubing (h) to outlet tube (g); cut to proper length for klunk (f) to move freely at back of tank.

STEP 2 Bend the vent tube (j) to desired position. Insert stopper assembly flush with the tank neck and tighten (fig. 3). Trim and deburr as required.

STEP 3 Carefully cut a hole in the radio tray (k) (fig. 4) to fit the assembled tank (i). Cut slots on either side to insert the long plastic ties to be wrapped around the tank and hold it in place. Mount the tank in place with the filler pointing forward.

Note: The gray Neoprene stopper (c) and flexible tubing (h) in this kit are for glow fuels; use Sullivan Products #484 Gasoline Conversion Kit for gasoline or diesel fuel. Replacement stopper assemblies for glow fuel (Sullivan Products #482) are also available from your dealer.

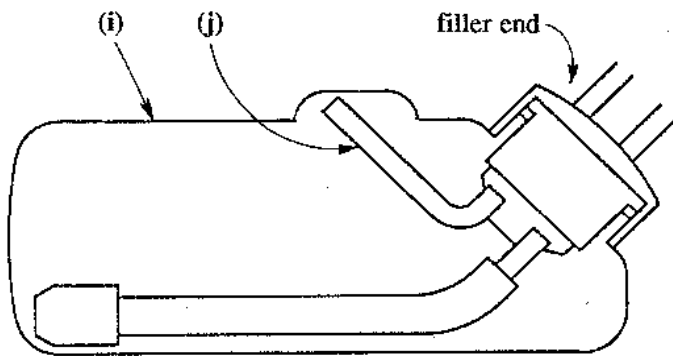
KLUNK ASSEMBLY



Omit tube (g) for normal operation. Retain tube for restricted motion or greater weight. Cut to desired length.

fig. 2

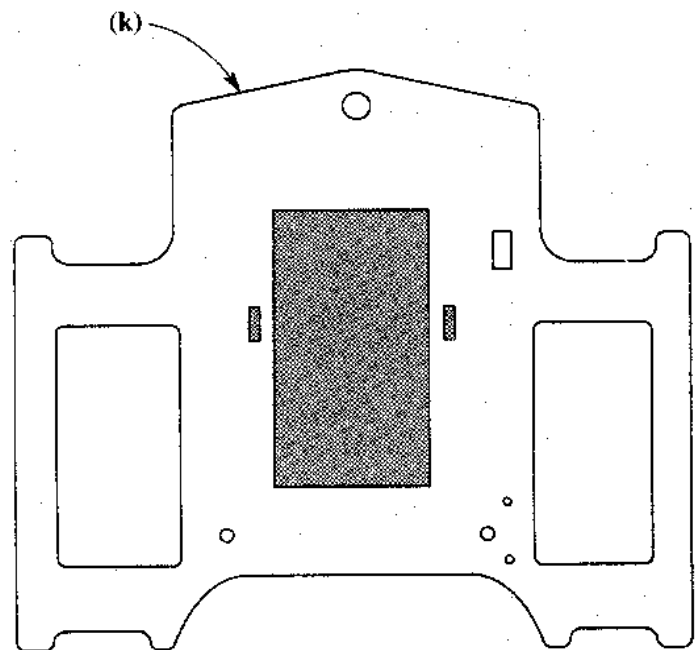
TANK ASSEMBLY



vary brass tubing positions to meet installation requirements

fig. 3

RADIO TRAY CUT-OUTS



cut out all shaded areas

fig. 4

RC250 CLUTCH INSTRUCTIONS

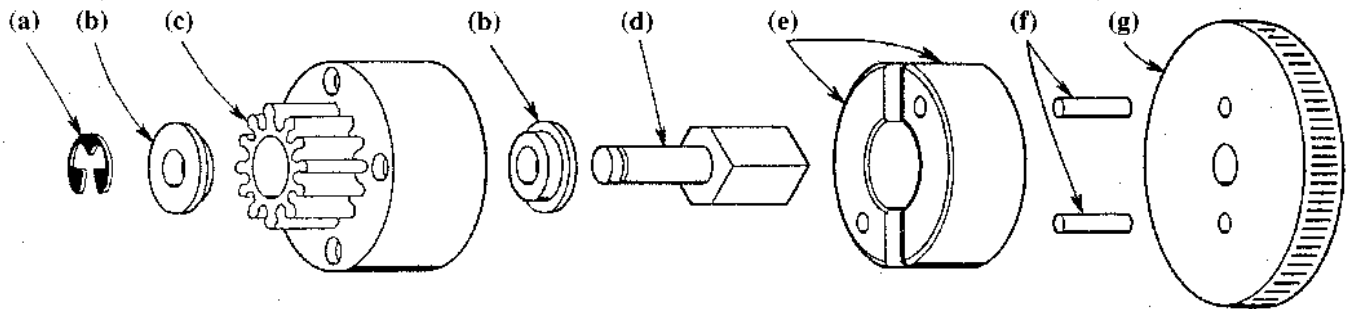
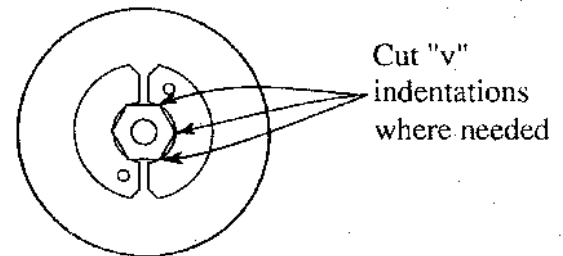


fig. 1

STEP 1 Tap the two dowel pins (f) into the two small holes of your flywheel (g) or press them in with a bench vise. The pins will go in very tight, so as soon as it seems the pins will not go in any farther, stop driving them in.

Trim them properly by just cutting small "v" indentations inside your clutch shoes where they touch the edges of the hex portion of the clutch nut (fig. 2).

STEP 2 Now cut off the pins with your Dremel so they stick out .430." This is the same dimension as the hex portion of the clutch nut (d).



Cut "v" indentations where needed

fig. 2

STEP 3 Install the flywheel (g) on your engine according to the instructions in your flywheel package. Tighten the clutch nut (d) securely.

STEP 6 When the bell spins freely, you can then slip the clutch clip (a) into the groove of the clutch nut (d) to hold the bell in place.

STEP 4 Slip the two clutch shoes (e) onto the pins in the direction shown (fig. 1, fig. 2). Push the bushings (b) firmly into the clutch bell (c).

STEP 5 Slide the clutch bell (c) onto the clutch nut (d). The clutch bell should be able to spin very freely over the clutch shoes (e). If the bell will not go on, or the bell does not spin freely, then you will have to trim the inside of the clutch shoes so the shoes will come closer together.

REPLACEMENT PARTS

Letter	Description	Part #
(a)	Clutch nut clips, 6	2661
(b)	Clutch bushings, 2 pr.	6863
(c)	Clutch bell, 11T	2663
(c)	Clutch bell, 12T	2664
(d)	Clutch nut (3/16 x 28)	2660
(e)	Clutch shoes, pr.	5201
(f)	Clutch pins, 4	5202
(g)	Flywheel, OS MAX	5210
(g)	" K&B 3.5	5211
(g)	" PICCO, OPS, ST, ROSSI	5212

RC300, RC300BD

CLUTCH INSTRUCTIONS

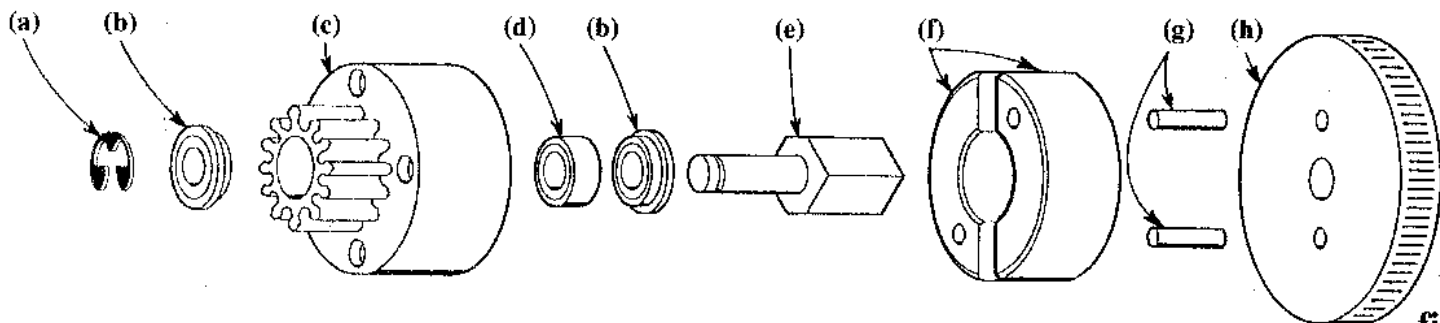


fig. 1

STEP 1 Tap the two dowel pins (g) into the two small holes of your flywheel (h) or press them in with a bench vise. The pins will go in very tight, so as soon as it seems the pins will not go in any farther, stop driving them in.

STEP 2 Now cut off the pins with your Dremel so they stick out .430." This is the same dimension as the hex portion of the clutch nut (e).

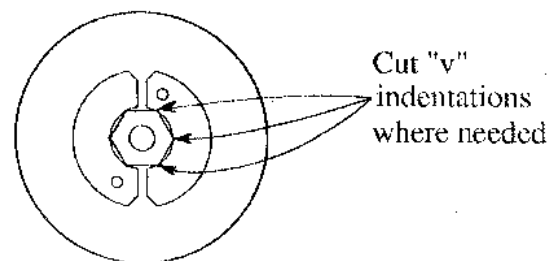
STEP 3 Install the flywheel (h) on your engine according to the instructions in your flywheel package. Tighten the clutch nut (e) securely.

STEP 4 Slip the two clutch shoes (f) onto the pins in the direction shown (fig. 1, fig. 2.) Insert the ball bearing without a flange (d) into the back of the clutch bell (c), then push the two flanged bearings (b) into either side (fig. 1).

STEP 5 Slide the clutch bell (c) onto the clutch nut (e). The clutch bell should be able to spin very freely over the clutch shoes (f). If the bell will not go on, or the bell does not spin freely, then you will have to trim the inside of the clutch shoes so the shoes will come closer together.

Trim them properly by just cutting

small "v" indentations inside your clutch shoes where they touch the edges of the hex portion of the clutch nut (fig. 2).



Cut "v" indentations where needed

fig. 2

STEP 6 When the bell spins freely, you can then slip the clutch clip (a) into the groove of the clutch nut (e) to hold the bell in place.

REPLACEMENT PARTS

Letter	Description	Part #
(a)	Clutch nut clips, 6	2661
(b,d)	Clutch ball bearings, 3 pc.	2662
(c)	Clutch bell, 11T	2663
(c)	Clutch bell, 12T	2664
(e)	Clutch nut (3/16 x 28)	2660
(f)	Clutch shoes, pr.	5201
(g)	Clutch pins, 4	5202
(h)	Flywheel, OS MAX	5210
(h)	" K&B 3.5	5211
(h)	" PICCO, OPS, ST. ROSSI	5212

RC500 CLUTCH INSTRUCTIONS

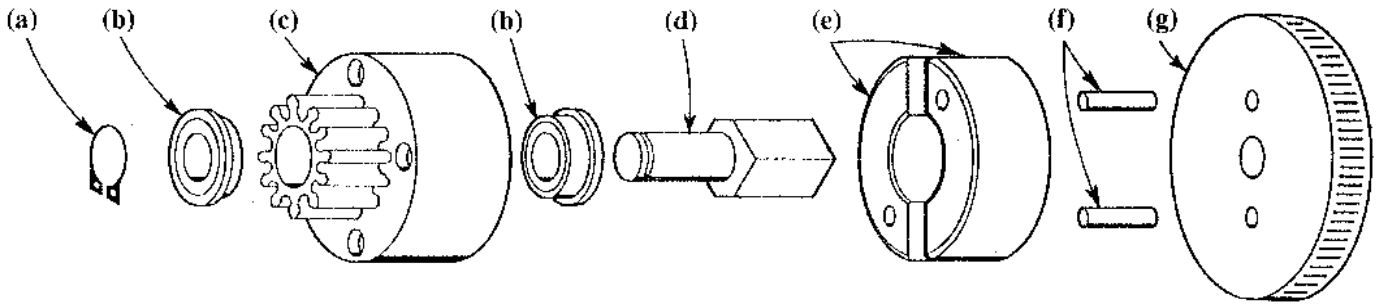


fig. 1

STEP 1 Tap the two dowel pins (f) into the two small holes of your flywheel (g) or press them in with a bench vise. The pins will go in very tight, so as soon as it seems the pins will not go in any farther, stop driving them in.

STEP 2 Now cut off the pins with your Dremel so they stick out .430." This is the same dimension as the hex portion of the clutch nut (d).

STEP 3 Install the flywheel (g) on your engine according to the instructions in your flywheel package. Tighten the clutch nut (d) securely.

STEP 4 Slip the two clutch shoes (e) onto the pins in the direction shown (fig. 1, fig. 2). Push the bearings (b) firmly into the clutch bell (c).

STEP 5 Slide the clutch bell (c) onto the clutch nut (d). The clutch bell should be able to spin very freely over the clutch shoes (e). If the bell will not go on, or the bell does not spin freely, then you will have to trim the inside of the clutch shoes so the shoes will come closer together.

Trim them properly by just cutting small "v" indentations inside your clutch shoes where they touch the edges of the hex portion of the clutch nut (fig. 2).

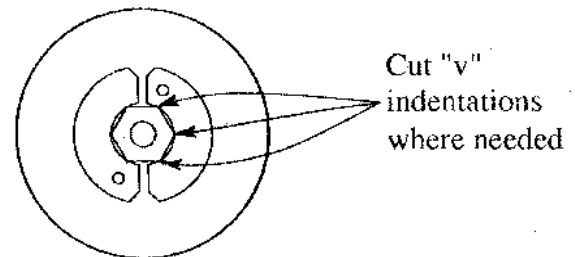


fig. 2

STEP 6 When the bell spins freely, you can then slip the clutch clip (a) into the groove of the clutch nut (d) to hold the bell in place.

REPLACEMENT PARTS

Letter	Description	Part #
(a)	Clutch nut clips, 6	858
(b)	Clutch bearings, pr.	5225
(c)	Clutch bell, 14T	5214
(c)	Clutch bell, 15T	5215
(c)	Clutch bell, 16T	5216
(d)	Clutch nut (1/4 x 28)	5200
(e)	Clutch shoes, pr.	5201
(f)	Clutch pins, 4	5202
(g)	Flywheel, OS MAX	5210
(g)	" K&B 3.5	5211
(g)	" PICCO, OPS, ST, ROSSI	5212