



OWNER'S MANUAL



Scan courtesy of Vintagelosi.com

- Carefully read through all instructions to familiarize yourself with the parts, construction, techniques, and tuning tips outlined in this manual. Being able to grasp the overall design of your Double-X racing car before construction will ensure a smooth assembly.
- Take your time and pay close attention to detail. Keep this manual for future reference.

TEAM LOSI
Racing

TEAM LOSI INC., CHINO, CA 91710 P/N 800-0051 (REVISION A)
MADE IN UNITED STATES OF AMERICA

WELCOME DOUBLE-X OWNER!

Thank you for purchasing the Team Losi Double-X. This kit represents the latest in 1/10 scale off-road racing technology. It is the result of over two years of intense design and development by the Team Losi racing team and design staff. In its very first outing at the 1993 IFMAR World Championships, it took the top two qualifying positions by over five seconds. This kit utilizes extraordinary design and construction that has made Team Losi famous world wide. The use of specialized materials, computer aided design (CAD), computer aided manufacturing (CAM) and finite element analysis (FEA stress analysis) is unequalled in the R/C racing world.

Before starting construction of your Double-X, please take a moment to read through these instructions. This will minimize building time and get you on the track sooner. Additionally, we have included a tip section in the back of the manual to help you tune your Double-X for optimum performance.

Once again, thank you for choosing the Double-X. Team Losi is racing to help you win.

TEAM LOSI

1. INTRODUCTION

DOUBLE-X COMPLETED KIT DIMENSIONS

Length: 15"	Front Width: 9-5/8"	Rear Width: 9-7/8"	Height: 6-1/4"
Wheel base: 10-5/8"	All dimensions at ride height.	Weight will vary depending on accessories.	

NOTES & SYMBOLS USED

* *Note*: this is a common note. It is used to call attention to specific details of a certain step in the assembly.

Ⓢ **IMPORTANT NOTE:** Even if you are familiar with Team Losi kits, be sure and pay attention to these notes. They point out very important details about a certain step in the assembly. Do not ignore these notes!

Ⓢ This flag designates a performance tip. These tips are not necessary, but can improve the performance of your Double-X car

KIT/MANUAL ORGANIZATION

The Team Losi Double-X is composed of different bags marked A through H. Each bag contains all of the parts necessary to complete a particular section of the Double-X car. Some of these bags have subassembly bags within them. It is essential that you open only one bag at a time and follow the correct sequence, otherwise you may face difficulties in finding the right part. It is helpful to read through the instructions for an entire bag prior to starting assembly. Key numbers (in circles) have been assigned to each part and remain the same throughout the manual. For your convenience, an actual size hardware identification guide is included with each step. To check a part, hold it against the silhouette until the correct part is identified.

In some cases extra hardware has been supplied to replace easily lost parts. Different fits have been designed into plastic parts (i.e. press, net, loose). To insure that parts are not lost during construction, it is recommended that you work over a towel or mat to prevent parts from rolling away.

IMPORTANT SAFETY NOTES

1. Select an area for assembly that is away from the reach of small children. *The parts in the kit are small and can be swallowed by children, causing choking and possible internal injury.*
2. The shock fluid and greases supplied should be kept out of children's reach. *They were not intended for human consumption!*
3. *Exercise care* when using any hand tools, sharp instruments, and power tools during construction.
4. *Carefully read all manufacturer's warnings and cautions* for any glues or paints that may be used for assembly purposes.

TOOLS REQUIRED

Team Losi has supplied all allen wrenches and a special wrench that is needed for assembly and adjustments. The following common tools will also be required: small flatblade screwdriver, needle nose pliers, regular pliers, scissors or other body cutting/trimming tool, 3/16", 1/4", and 3/8" nut drivers are optional.

RADIO/ELECTRICAL

A suggested radio layout is provided in this manual. Your high performance R/C center should be consulted regarding specifics on radio/electrical equipment.

HARDWARE IDENTIFICATION

When in question, use the hardware identification guide

in each step. For screws, the prefix number designates the screw size and number of threads per inch (i.e. 4-40 is #4 screw with 40 threads per inch of length). The fraction following designates the length of the threads for caphead screws, and the overall length for flathead screws. Bearings and bushings are referenced by the inside diameter x outside diameter. Shafts and pins are diameter x length. Washers are described by inside diameter or the screw size that will pass through the inside diameter. 'E' clips are sized by the shaft diameter that they are attached to.

MOTORS AND GEARING

Your Double-X car includes an 88 tooth, 48 pitch spur gear. The overall internal gearbox ratio is 2.19:1. The external pinion gear will determine your gear ratio. To figure out the final drive ratio first divide the spur gear size by the pinion gear size. Say you are using a 20 tooth pinion gear, you would divide 88 (spur gear size) by 20 (pinion gear size). For example: 4.4 is your external drive ratio. Now multiply the internal drive ratio (2.19) by the external drive ratio (4.4). For example: This tells you that using a 20 tooth pinion and a 88 tooth spur gear, the final drive ratio is 9.636:1.

Consult your high performance shop for recommendations to suit your racing style and class. The chart below lists Team Losi motors and recommended gearing for that motor. Ratios can be adjusted depending on various track layouts, tire sizes, and battery types.

RECOMMENDED GEARING FOR TEAM LOSI MOTORS

MOTOR	MODEL #	PINION	SPUR
Super Insane Stock 24°	TL-6024	24	88
Big Ed Stock 24°	TL-6028	24	88
Suicide Stock 24°	TL-6029	24	88
Double Trouble Stock 36°	TL-6027	23	88
Super Insane (11 double)	TL-6109	18	88
Motown Missile (12 single)	TL-6106	19	88
Off Road Special (14 double)	TL-6110	21	88
Big Ed (15 quad)	TL-6108	22	88
Jr's Choice (17 triple)	TL-6103	24	88
MTM (18 quint)	TL-6104	25	88

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Team Losi is continually changing and improving designs; therefore, the actual part may appear slightly different than the illustrated part. Illustrations of parts and assemblies may be slightly distorted to enhance pertinent details.

BAG A

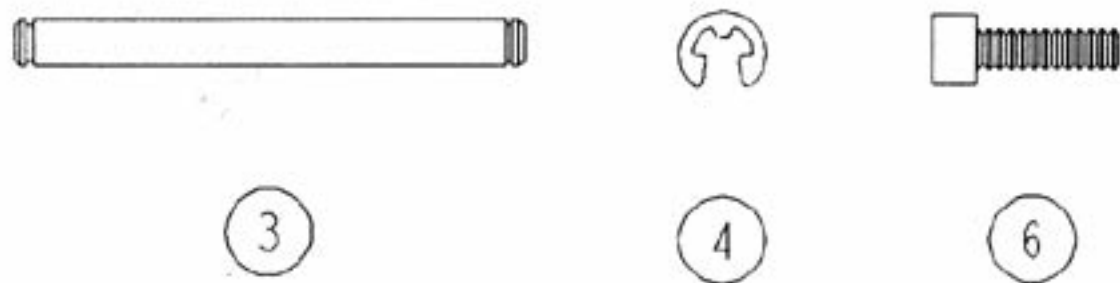


Fig 1.

Step 1. Attach the front chassis stiffener (1) to the front bulkhead (2) by aligning the holes in the stiffener (1) with the holes in the top hinge of the bulkhead (2). Secure by inserting the 1/8" upper bulkhead hinge pin (3) through both the bulkhead (2) and stiffener (1) * use the shortest 1/8" hinge pin without a groove in the center.

* NOTE: The hinge pin fit is tight! Lightly tap the hinge pin through both parts until it is centered.

Step 2. Center the hinge pin (3) and attach an 1/8" 'E' clip (4) to each end of the hinge pin (3).

Step 3. Place the chassis stiffener (1) through the front shock tower (5) and attach the shock tower (5) to the rear of the front bulkhead (2) with four 4-40 x 3/8" cap head screws (6).

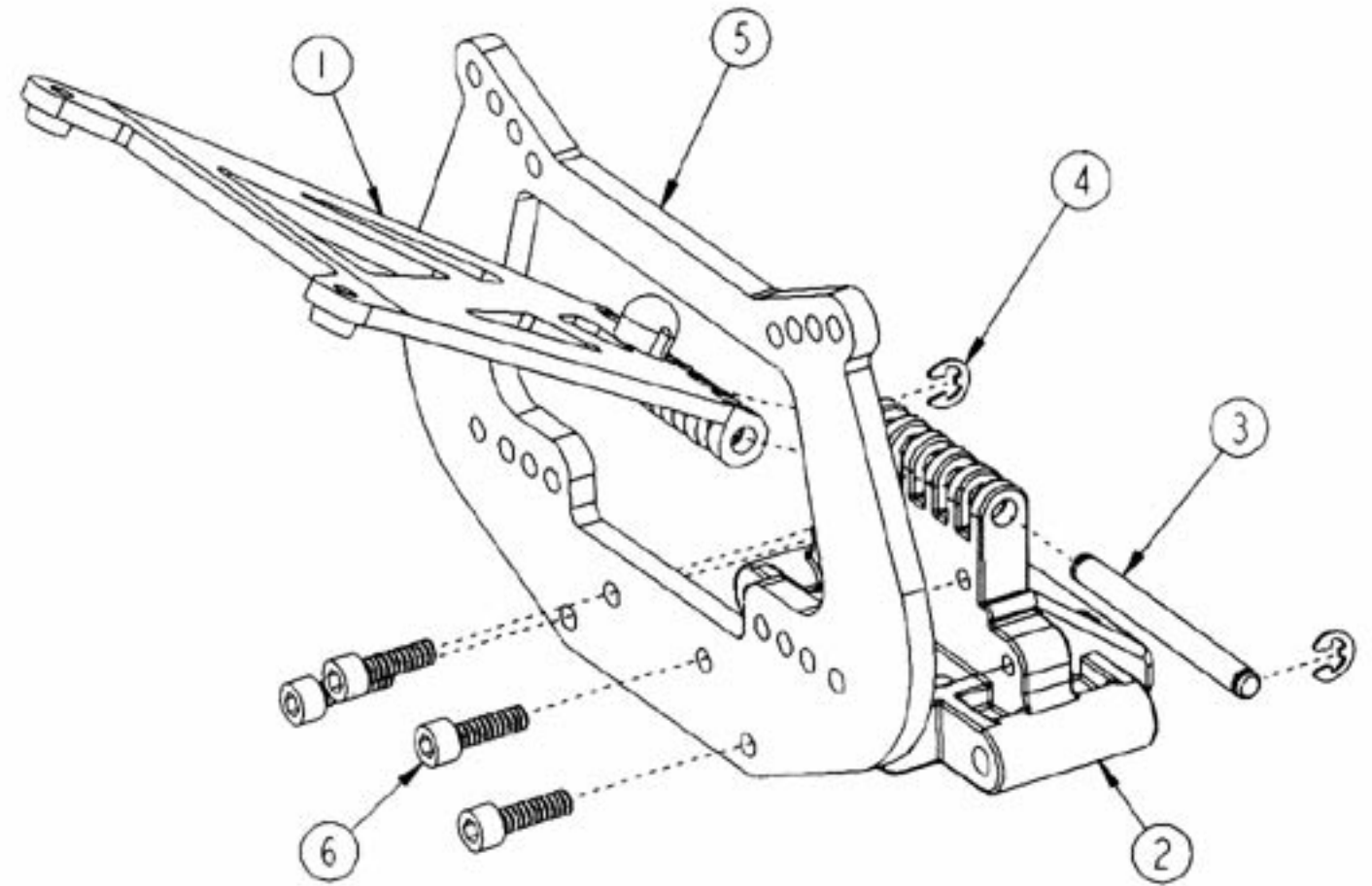


Figure 1



Fig 2.

Step 4. Insert a 3/8" ball stud (7) into the outside hole on the bottom of the shock tower (5). Mount the ball studs (7) from the rear on both sides of the shock tower (5) and secure each with a 4-40 mini lock nut (8).

Step 5. Insert a 4-40 x 3/4" cap head screw (9) from the rear, through the third hole in on the top of the shock tower (5) on each side. Thread a top shock mount bushing (10) onto each of the two screws (9) and tighten.

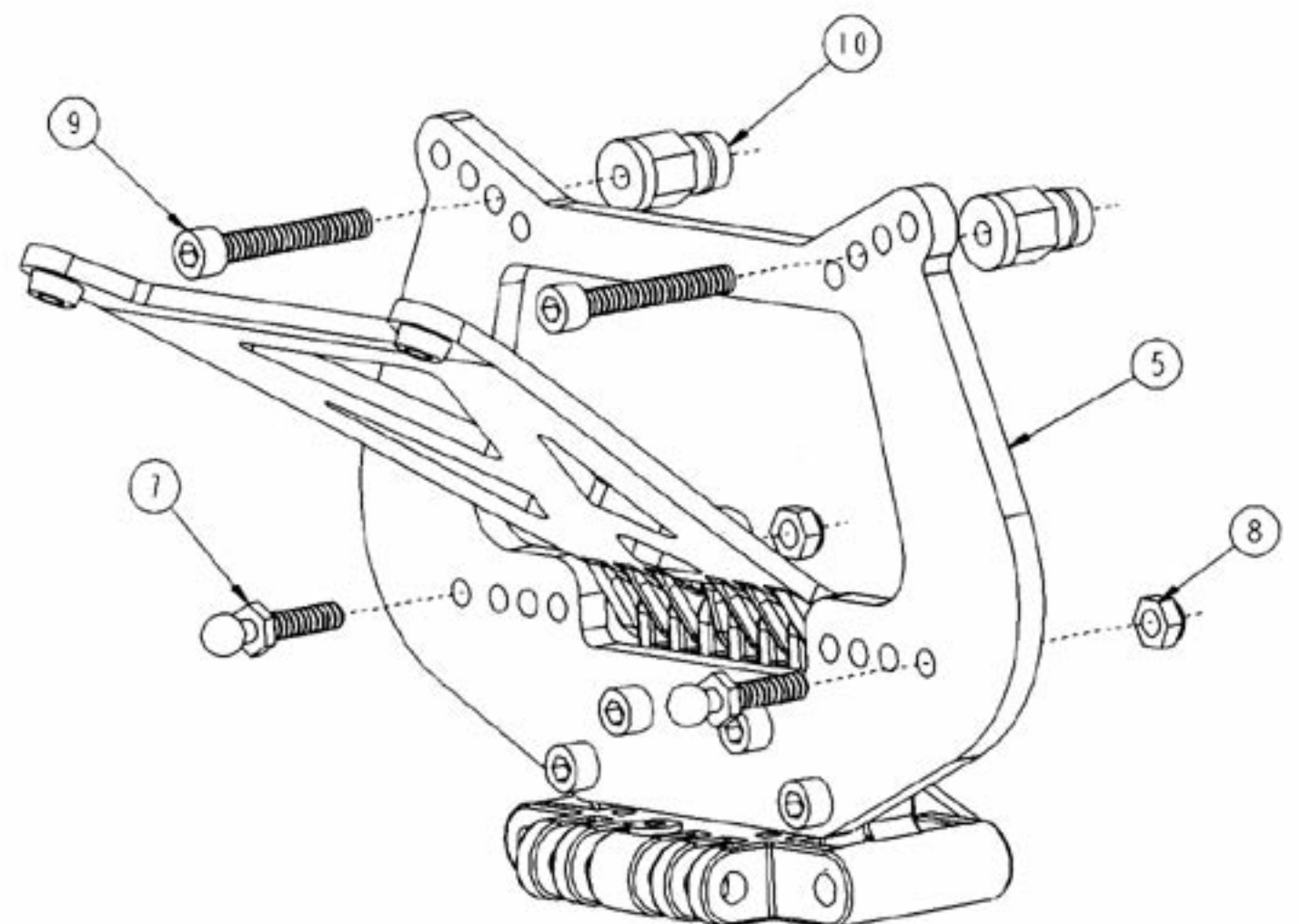


Figure 2

BAG A (Continued)

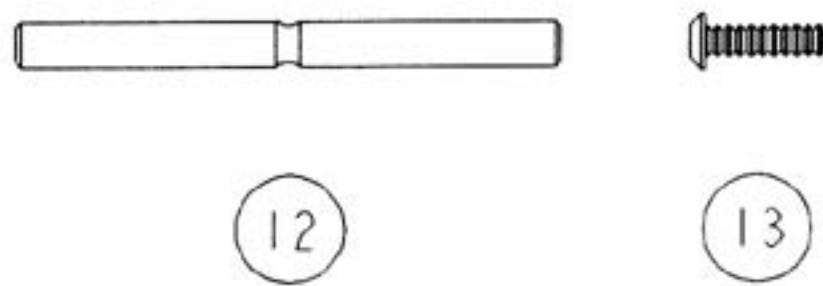


Fig 3.

Step 6. Attach the front bulkhead (2) to the main chassis (11) by aligning the bottom hinge holes on the bulkhead (2) and the main chassis (11). Once the holes are aligned, carefully tap the 1/8" lower bulkhead hinge pin (12) through both pieces until the hinge pin (12) is centered. ** Use the 1/8" hinge pin with the large groove in the center.*

** NOTE: The lower hinge pin fit is VERY TIGHT! Be sure that the holes are aligned and tap pin into place.*

Step 7. Secure the pin by threading a 2-56 x 5/16" button head screw (13) into the small hole in the top, rear of the front bulkhead (5). Thread the screw (13) all the way in. ** It is easiest to get to the screw if the chassis stiffener is swung down and the wrench is inserted through the forward hole in the stiffener.*

⚠ When removing the front bulkhead for any reason, the 2-56 x 5/16" button head screw must be completely removed before removing the lower hinge pin.

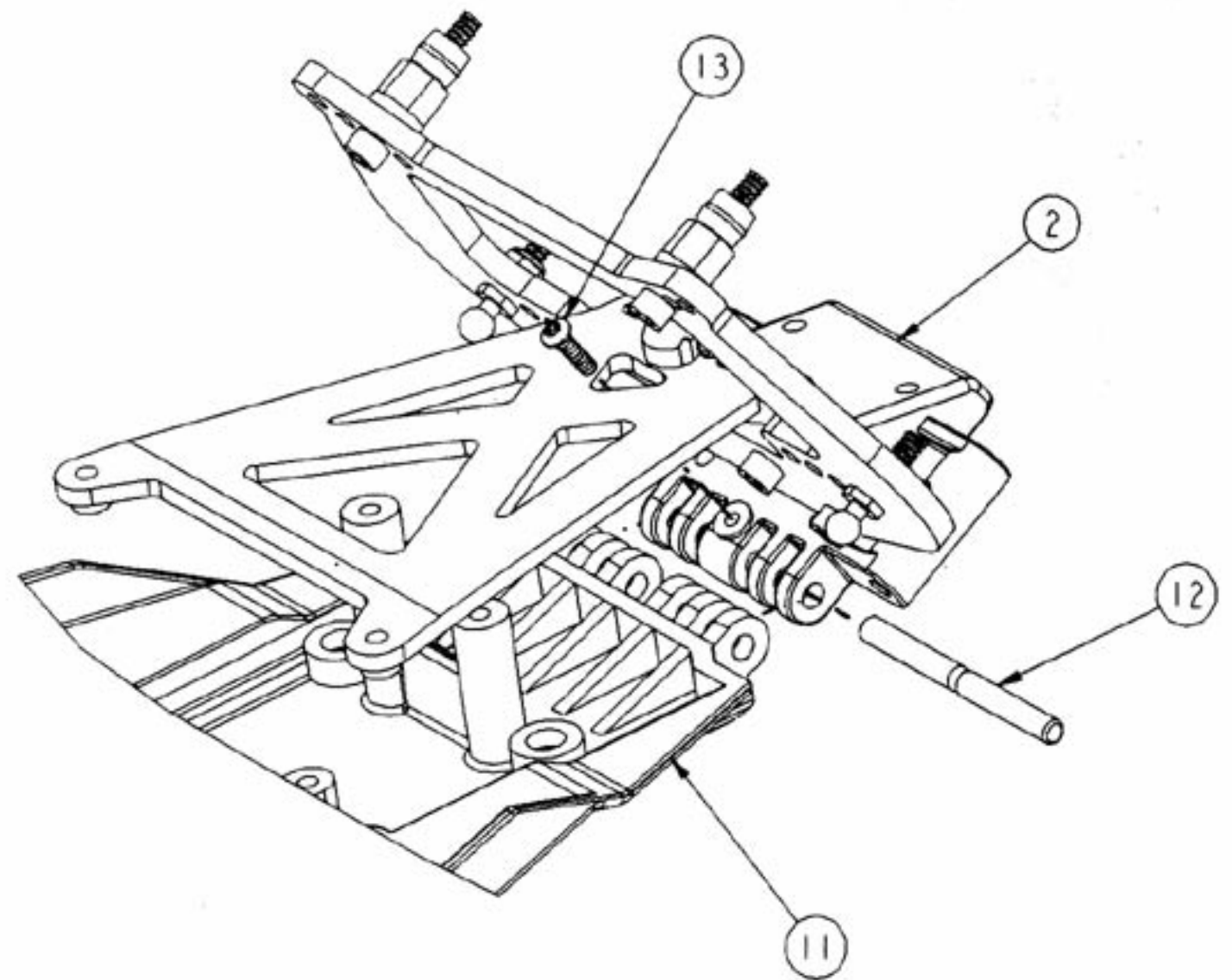


Figure 3

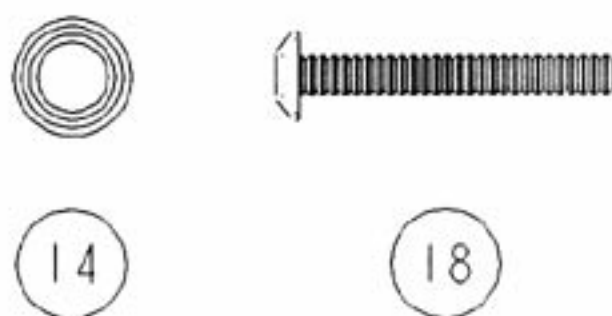


Fig 4.

Step 8. Insert a 3/16" x 5/16" sealed bearing (14) into each side of both front spindles [left (15), right (16)]. Insert a front stub axle (17) from the outside of both spindles (15), (16). Thread a 4-40 x 13/16" axle screw (18) into each stub axle (17) from the opposite side. Tighten the screw (18) while holding the stub axle (17) with a 3/8" socket wrench or pliers.

⚠ Be sure that the front axle screw is **TIGHT!** The thread lock compound that is on the screw takes 24 hours to set.

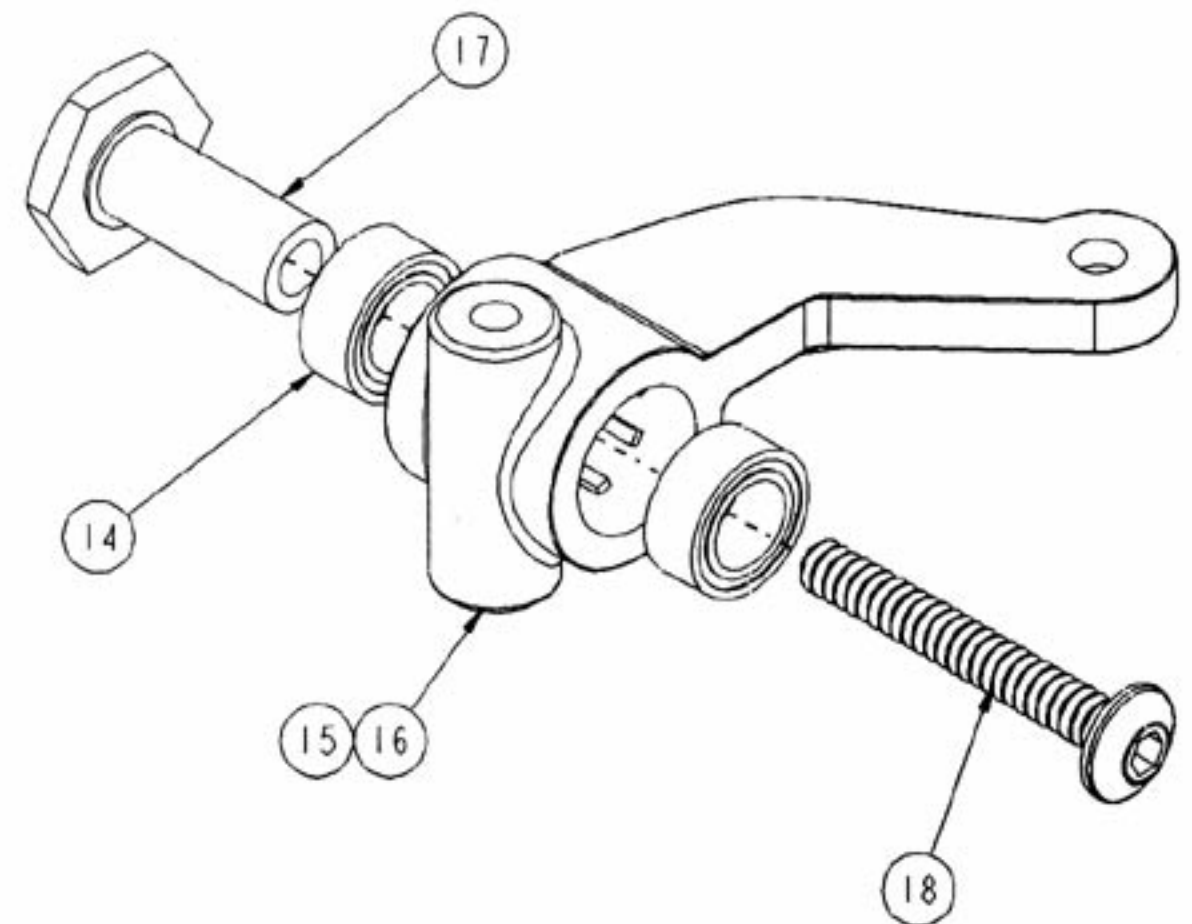


Figure 4

BAG A (Continued)

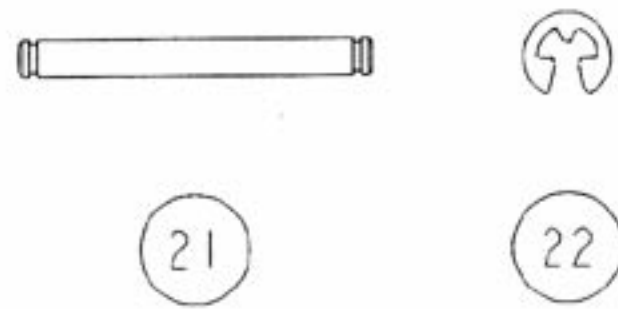


Fig 5.

Step 9. Attach the right spindle (16) to the right spindle carrier (20) by aligning the holes in each and inserting a 3/32" hinge pin (21) through both pieces. Be sure that the rib on the spindle (16) points down and the camber mount hole on the carrier (20) points up. Center the hinge pin (21) and secure it with two 3/32" 'E' clips (22).

● **IMPORTANT NOTE:** There are two sizes of 'E' clips in this assembly bag. Be sure to use the small 'E' clips on the 3/32" pins.

Step 10. Repeat for the left spindle (15) and left spindle carrier (19).

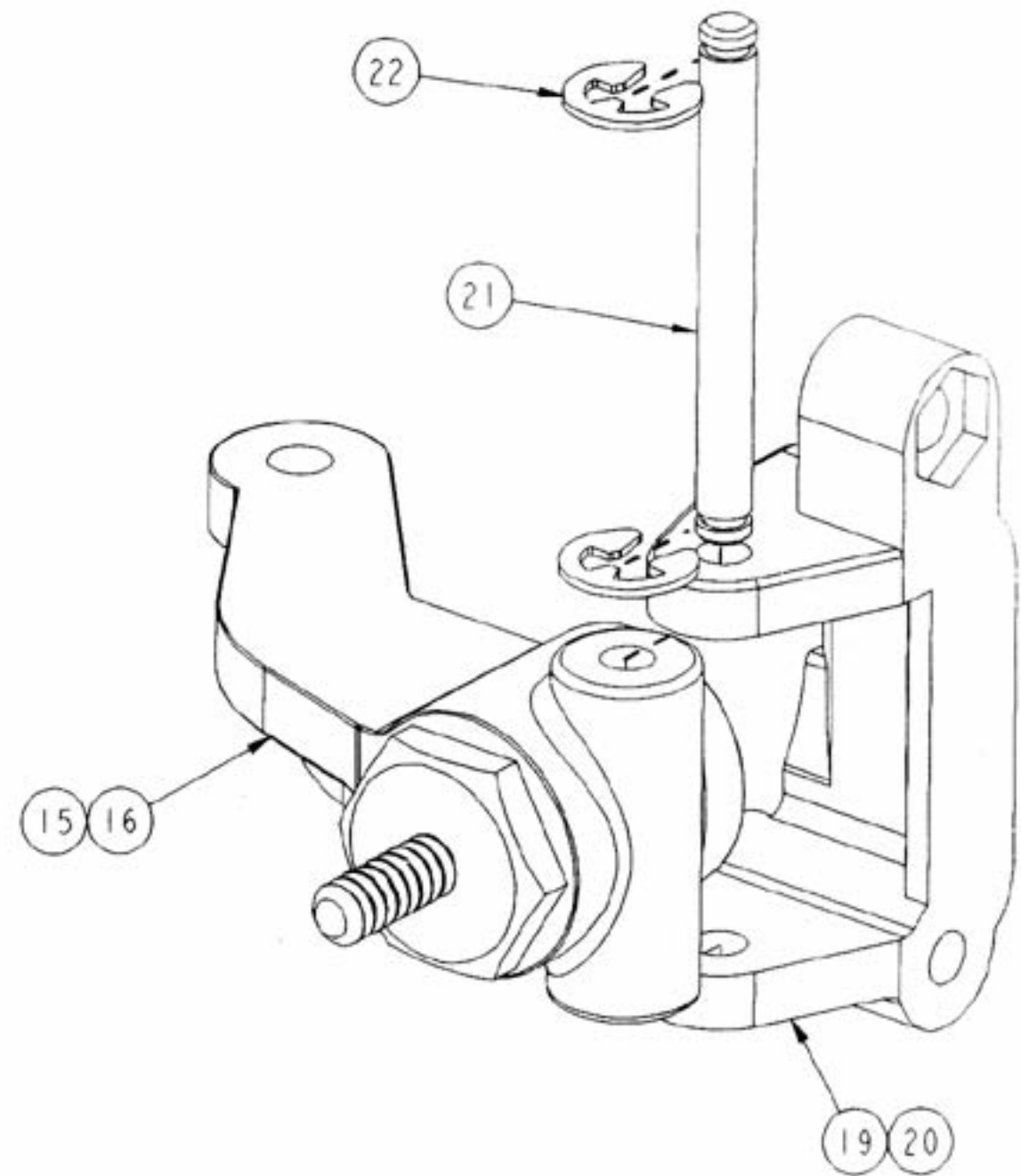


Figure 5



Fig 6.

Step 11. Insert a 4-40 mini lock nut (8) into the hex area in each spindle carrier (19), (20), thread a 3/8" ball stud (7) in from the rear and tighten. Insert a 4-40 mini lock nut (8) into the hex area in each spindle (15), (16), thread a 3/16" ball stud (23) in from the top and tighten.

● **IMPORTANT NOTE:** Do not over tighten the ball studs!

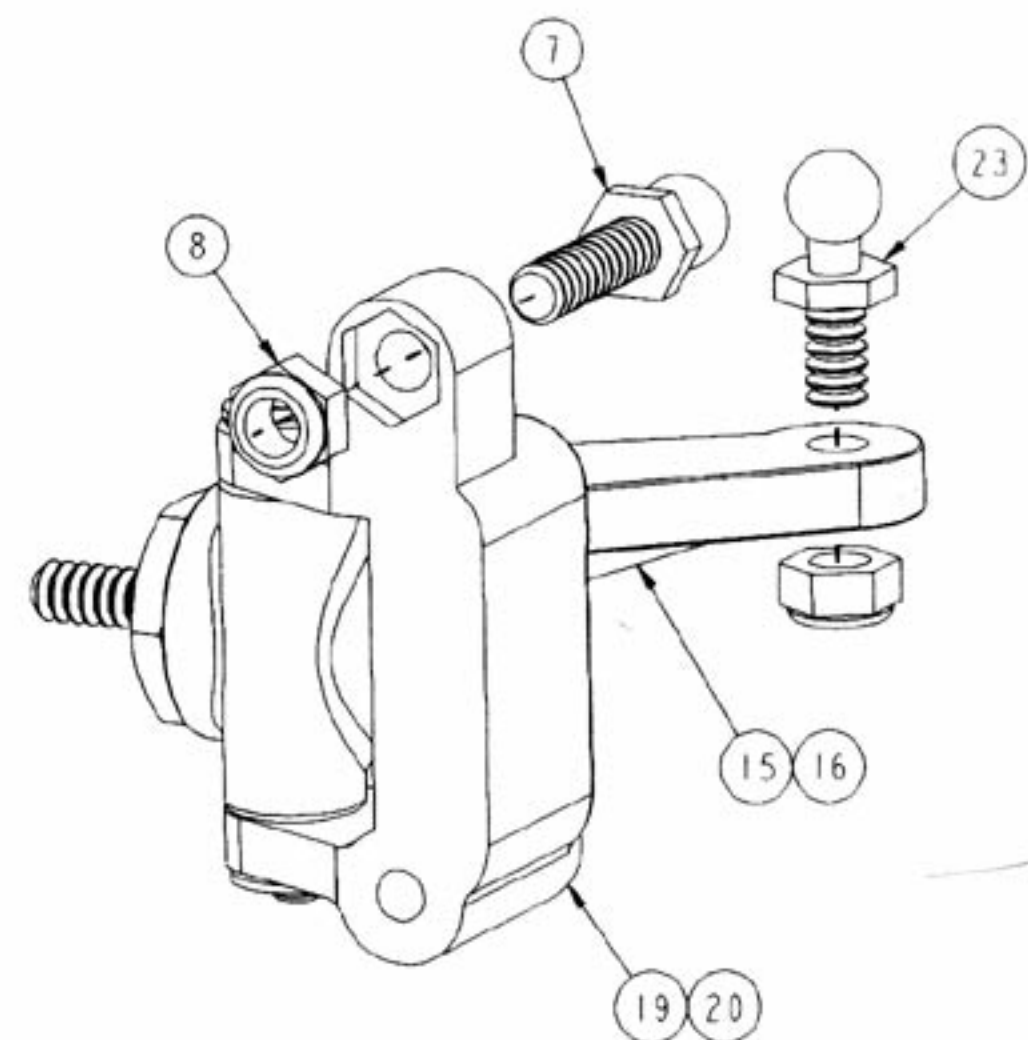


Figure 6

BAG A (Continued)



Fig 7.

Step 12. Attach the right spindle and carrier assembly to a front suspension arm (24) as shown. Line up the holes in the spindle carrier (19) with the holes in the front arm (24), insert a 3/32" hinge pin (21) and attach a 3/32" 'E' clip (22) to both sides of the hinge pin (21).

● **IMPORTANT NOTE:** There are two sizes of 'E' clips in this assembly bag. Be sure to use the small 'E' clips on the 3/32" pins.

Step 13. Attach the arm (24) to the right side of the front bulkhead (2) by inserting the 1/8" inner front hinge pin (25), from the front, through the arm (24) and bulkhead (2). Center the hinge pin (25) and secure it with two 1/8" 'E' clips (4).

Step 14. Repeat steps 12 and 13 for left side.

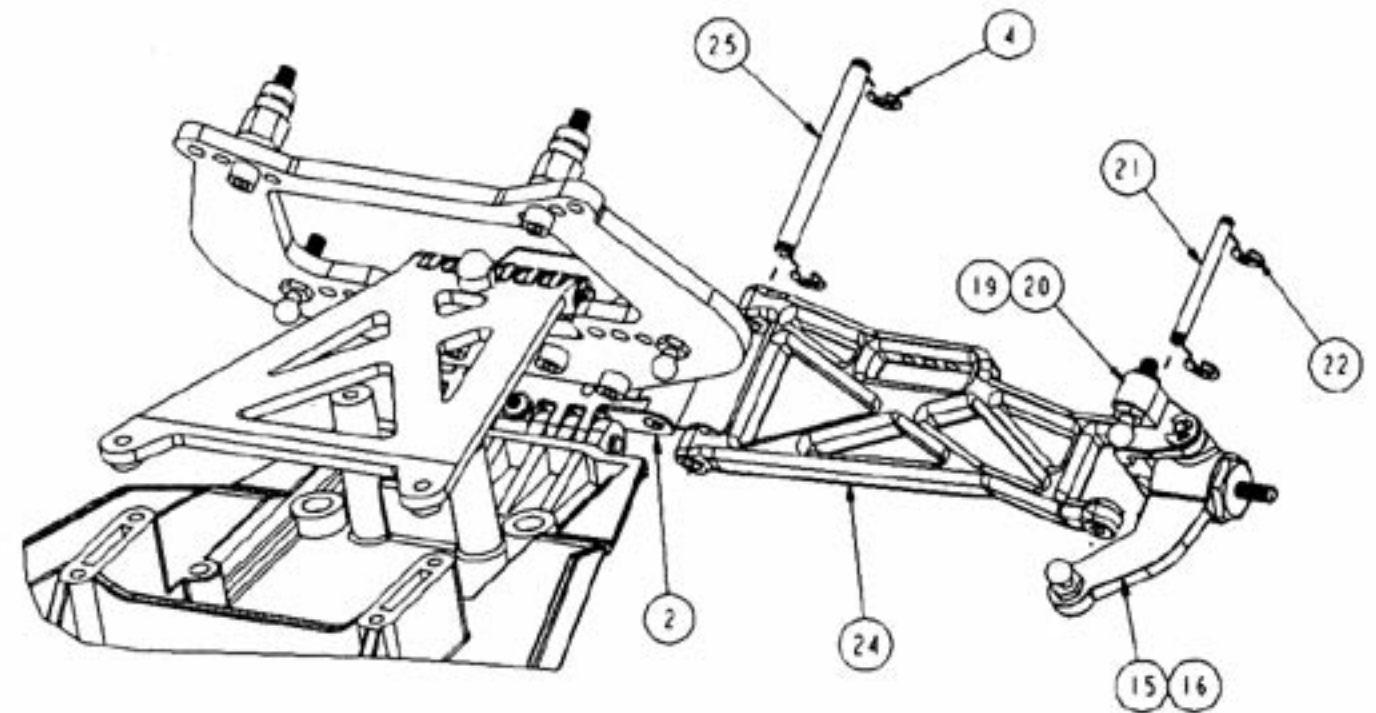


Figure 7

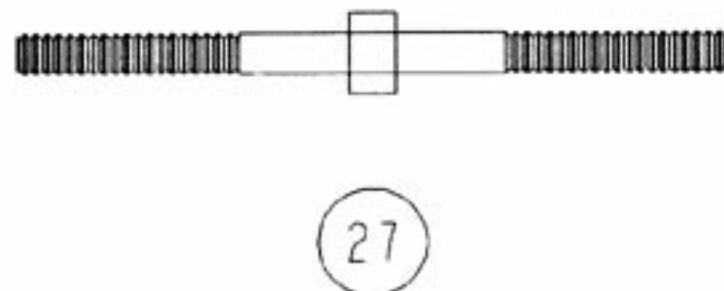


Fig 8.

Step 15. Thread a plastic rod end (26) onto each end of a 1-7/8" turnbuckle (27). Tighten both rod ends (26) equally until the rod is the same length as the rod in Fig. 8A. Make two camber link assemblies.

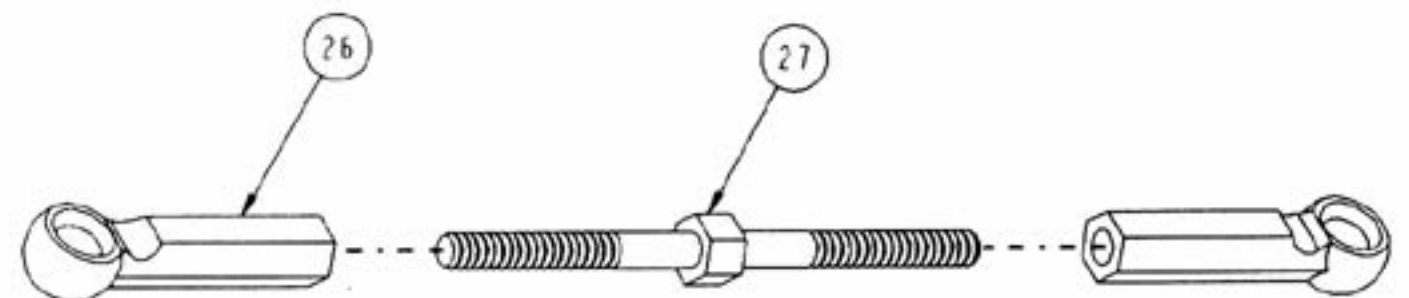


Figure 8

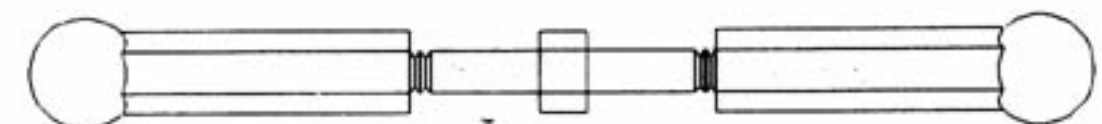


Figure 8A

Fig 9.

Step 16. Place a "foam thing" (28) over each of the ball studs on the spindle carriers (19), (20) and the shock tower (5). Next, attach one side of the camber link assembly to the ball stud on the shock tower (5) and the other side to the ball stud on the spindle carrier (19), (20). Attach a camber link to both the left and right side.

🔧 Try to mount all of the camber links so that the threads adjust the same direction. This makes it much easier to make adjustments later.

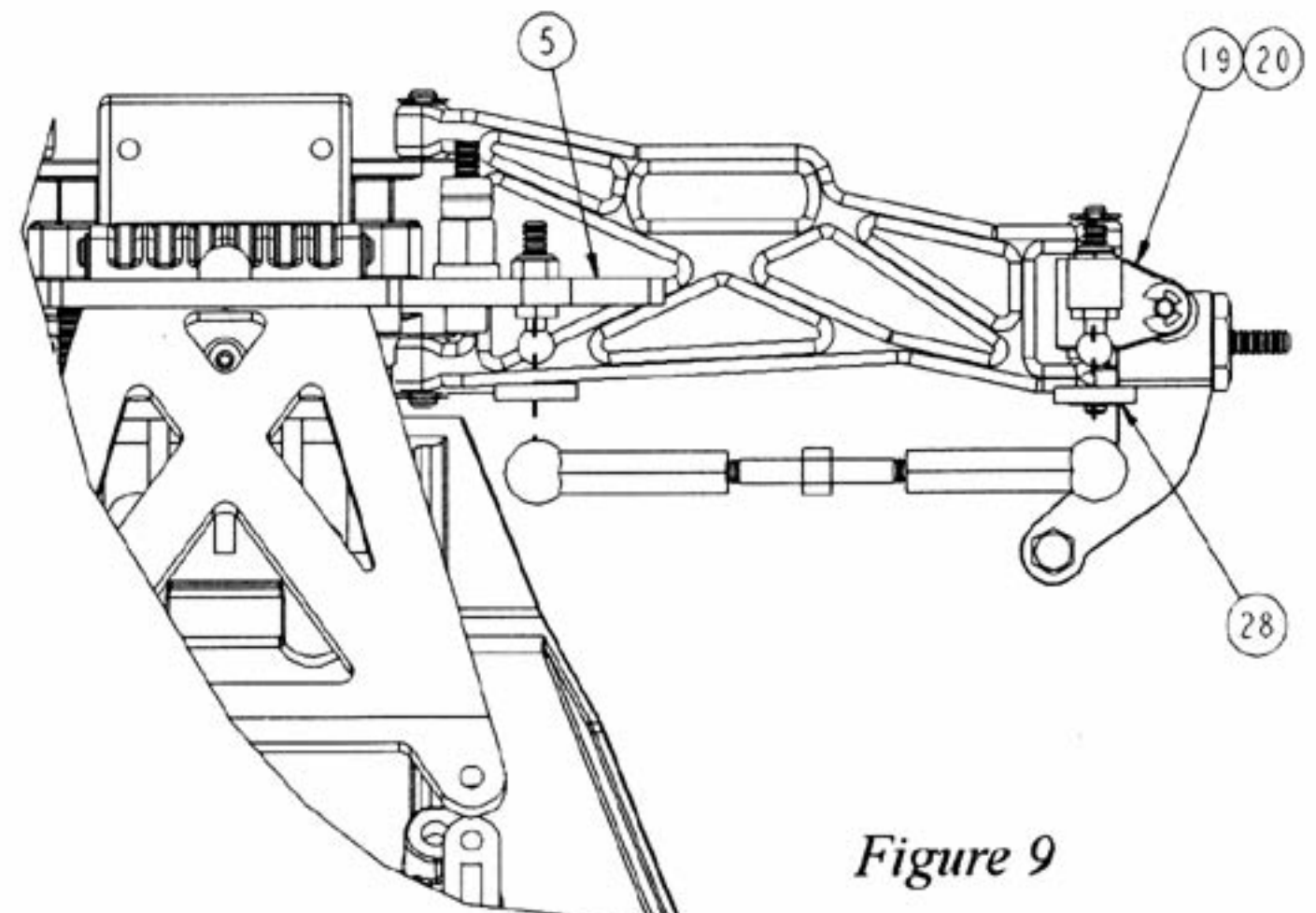


Figure 9

BAG B



Fig 10.

Step 1. Place servo saver bottom (29) over servo saver post (30) and slide servo saver bottom all of the way down. Be sure that the hex in the servo saver post (30) is inserted into the hex in the servo saver bottom (29).

Step 2. Slide the servo saver top (31) down over the servo saver post (30) so that it rests against the servo saver bottom (29). The arm on the servo saver top (31) and the arm on the servo saver bottom (29) should point in opposite directions.

Step 3. Slide the servo saver spring (32) over the servo saver post (30) and push it into the recessed area. Install the servo saver spring cap (33) and thread the 6-40 lock nut (34) onto the threads of the servo saver post (30).

Step 4. Tighten the 6-40 lock nut (34) all of the way down and then loosen it two full turns. This is a good starting point for the adjustment. Once assembly is complete, if you wish, the servo saver can be adjusted tighter or looser.

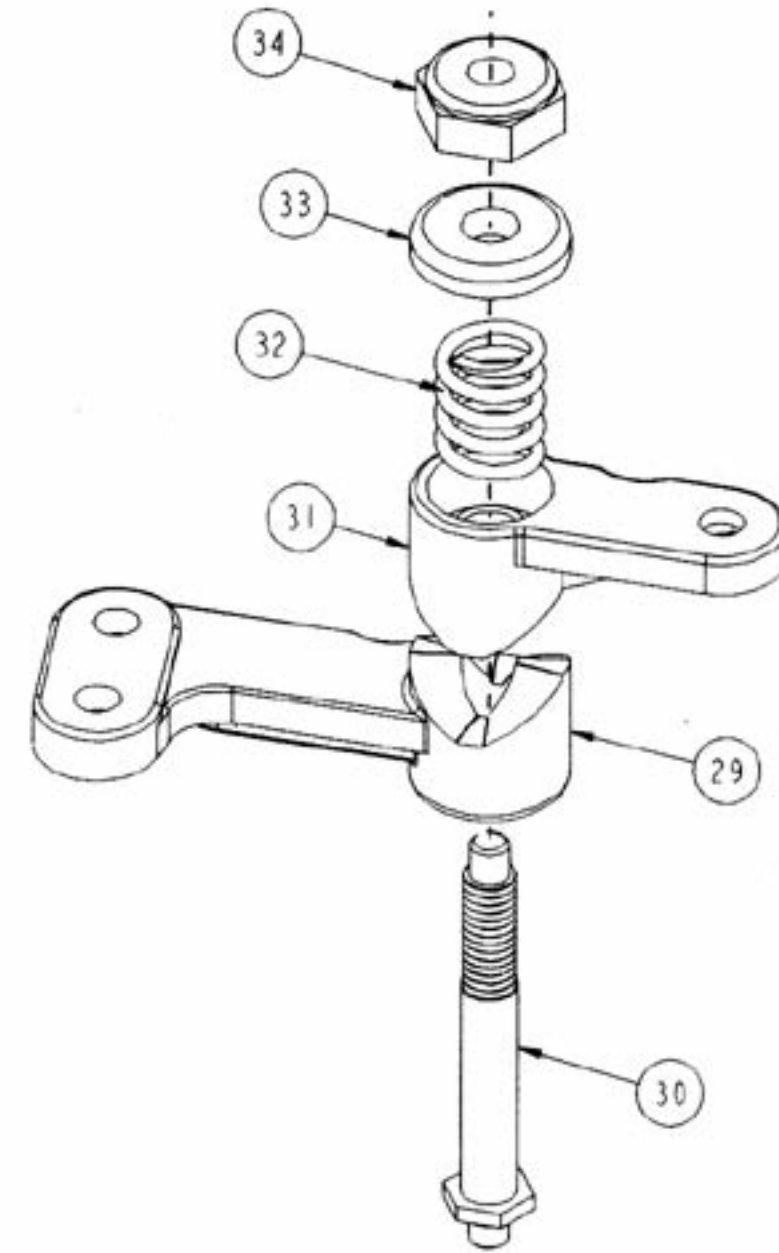


Figure 10



Fig 11.

Step 5. Insert a 4-40 mini lock nut (8) into each of the two hex areas in the servo saver bottom (29). Thread a 3/16" ball stud (23) into each nut (8) and tighten. Insert a 4-40 mini lock nut (8) into the hex area in the servo saver top. Thread a 3/16" ball stud (23) into the nut (8) and tighten.

Step 7. Insert a 4-40 mini lock nut (8) into each of the two hex areas in the steering idler arm (35). Thread a 3/16" ball stud (23) into each nut (8) and tighten.

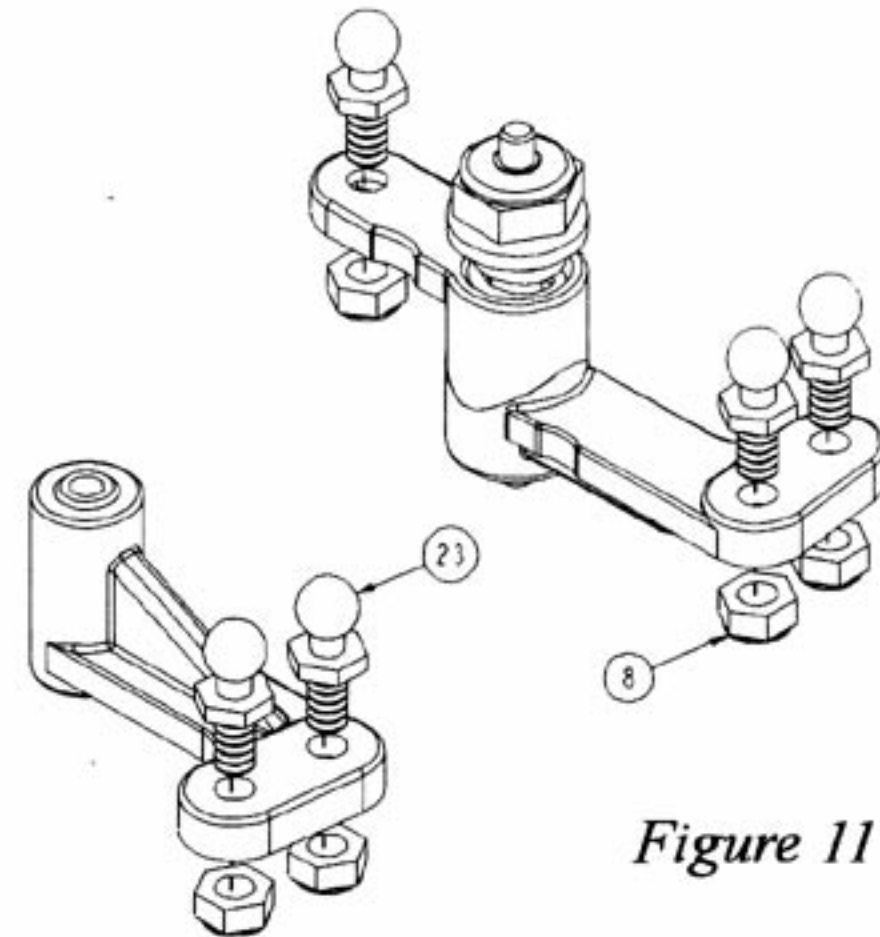


Figure 11



Fig 12.

Step 8. Thread a plastic rod end (26) onto each end of a 1-7/8" turnbuckle (27). Tighten both rod ends (26) equally until the completed tie rod is the same length as the one in figure 12A. Make two tie rod assemblies.

Step 9. Thread a short plastic rod end (36) onto each end of the 1-1/8" turnbuckle (37). Tighten both rod ends (36) equally until the completed drag link is the same length as the one in figure 12A.

Figure 12

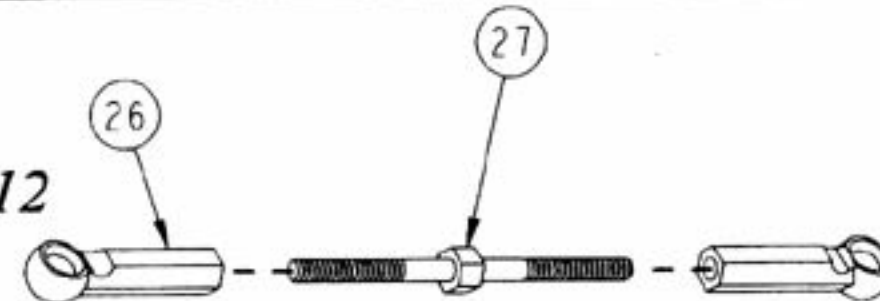
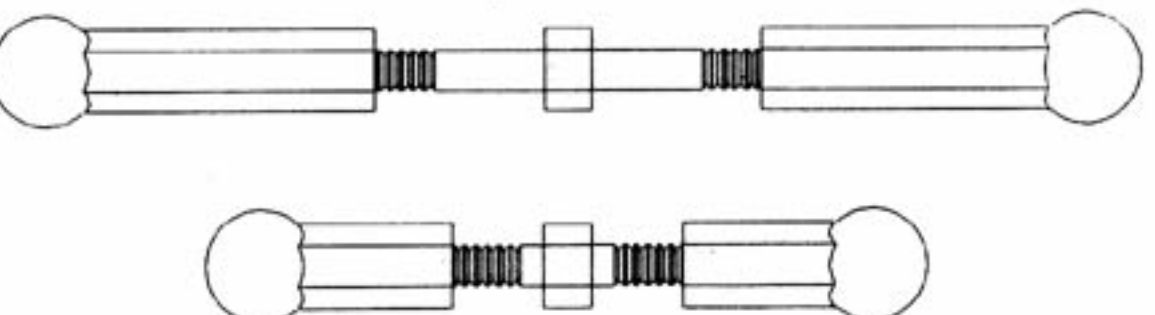
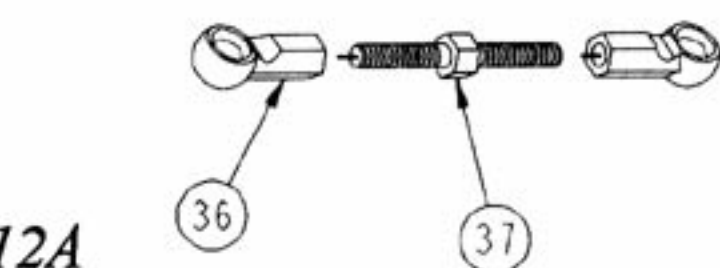


Figure 12A



BAG B (Continued)

Fig. 13

Step 10. Snap one end of the short drag link to the right ball stud (36) on the servo saver bottom (29). Snap the other end to the left ball stud on the steering idler arm (35).

** NOTE: Be sure to snap the rod onto the correct ball studs as shown!*

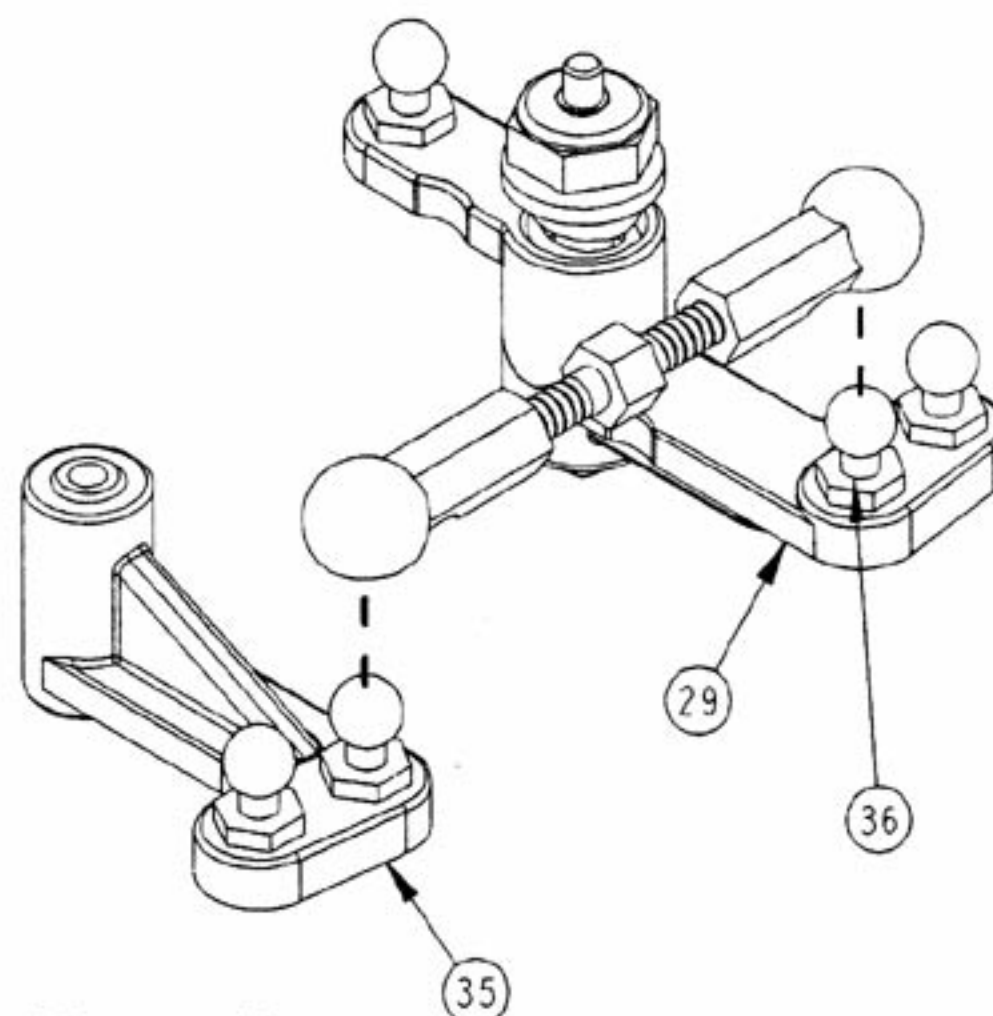


Figure 13

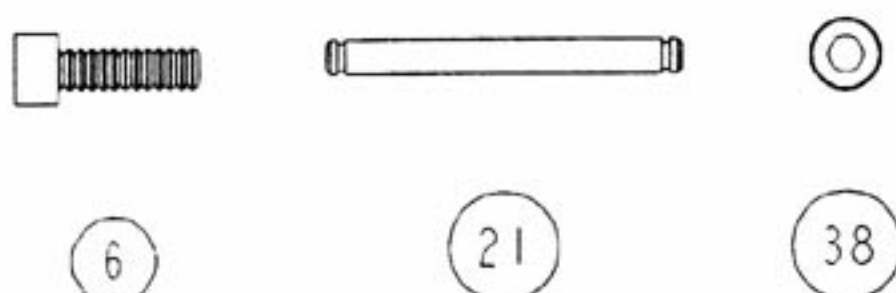


Fig 14.

Step 11. Insert a 3/32" x 3/16" bushing (38) into the two large holes in the bottom of the steering brace (39), chamfered end first. Insert the other two bushings (38) into the two holes in the main chassis (11).


** Note: Trim all flashing from the bushings to ensure proper fit.*

Step 12. Insert a 3/32" hinge pin (21) through the hole in the steering idler arm (35) and position it as shown in fig. 14A. Place the servo saver assembly and the steering idler arm (35) into the bushings (38) in the chassis (11) so that the installed drag link is in the front.

Step 13. Place the steering brace (39) on top of the servo saver assembly and steering idler arm (35) being sure that the bushings (38) slide over the pins.

Step 14. Attach the steering brace with two 4-40 x 3/8" cap head screws (6) through steering brace (39) and into chassis (11).

● IMPORTANT NOTE: Tighten the two 4-40 screws all the way and then back them off 1/8 of a turn. This will keep the posts on the chassis from "taking a set" if they should twist at all.

 If you should ever need to remove the small bushings, the easiest way to get them out is to slightly thread a 4-40 screw into them and pull them out.

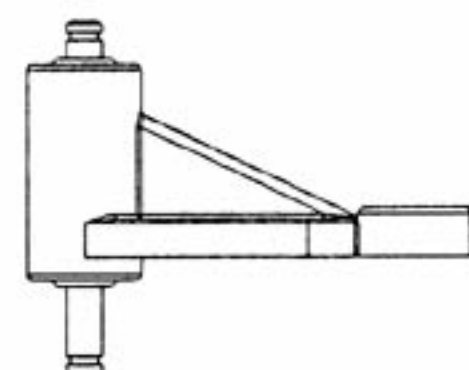
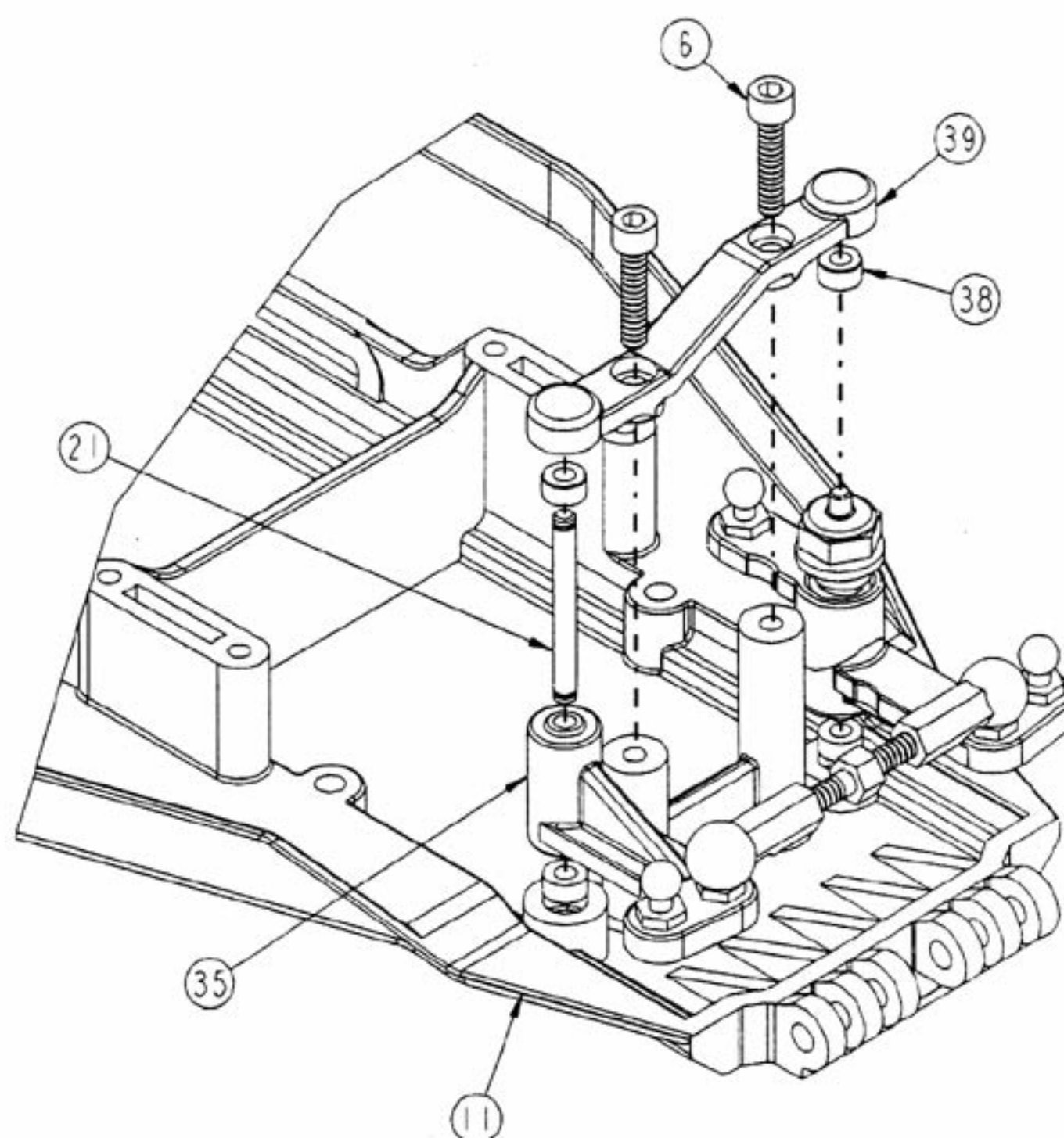


Figure 14

BAG B (Continued)

Fig 15.

Step 15. Snap one end of a completed tie rod to the servo saver assembly. Snap the other end to the left side spindle (15). Attach the other tie rod assembly to the steering idler arm (39) and the right spindle (16).

⚠ Once again, assure that all turnbuckles are mounted with the threads in the same direction for easier adjustment later!

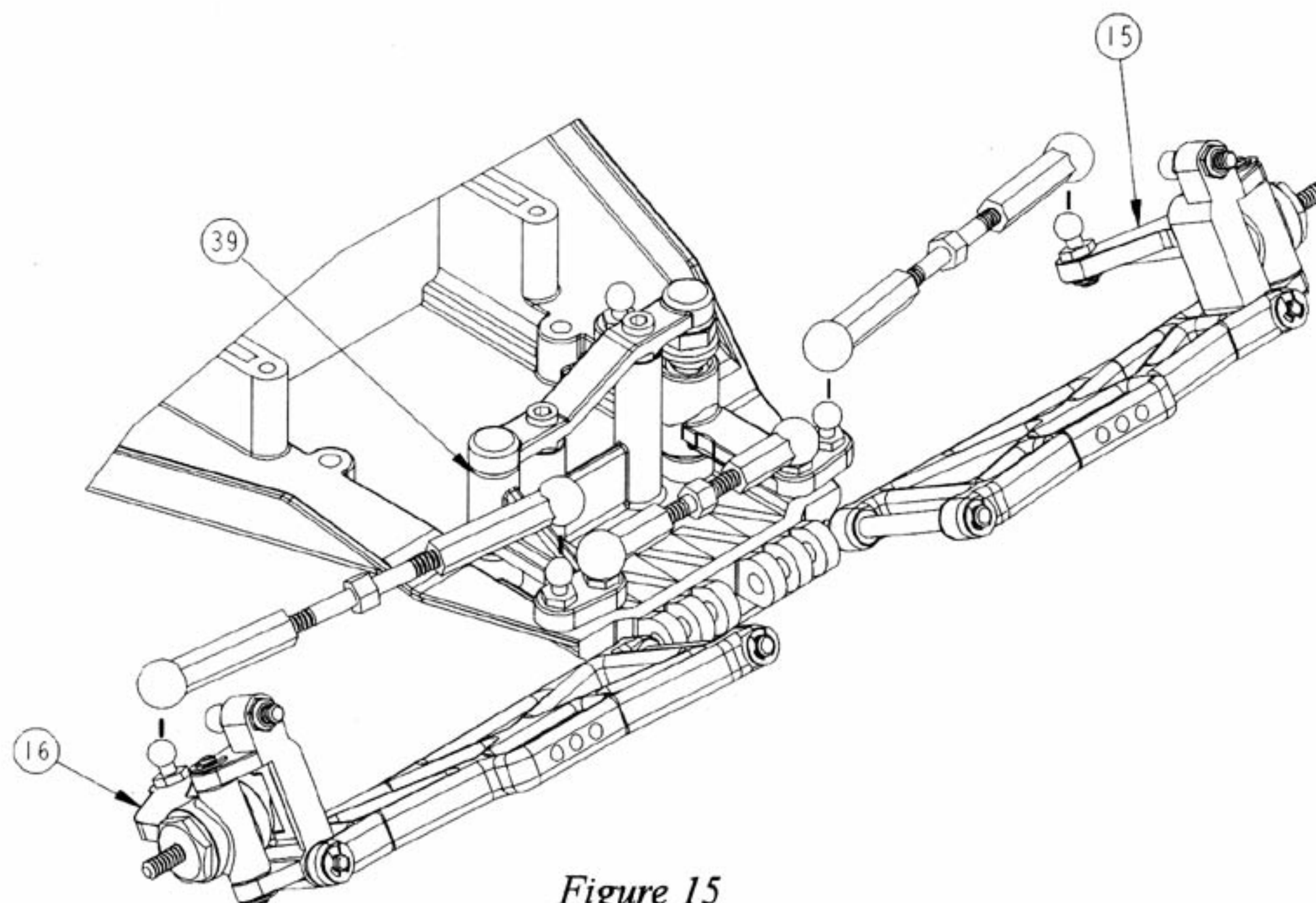


Figure 15

Fig 16.

* Note: If you do not have your servo at this time, skip to Bag C and continue assembly. It is recommended that the servo be installed at this time since much of the front end is built around the servo and minor disassembly will be required to install it later.

● **IMPORTANT NOTE:** If the servo mounting instructions are not followed carefully, your servo may be damaged!

Step 16. Using a file or a Dremel tool, trim the two lower ears off of your servo (*not included*) as shown in figure 16. Be very careful to trim the correct ears! If the wrong ears are trimmed, your servo will not be able to be mounted unless the servo case is replaced.

● **IMPORTANT NOTE:** It is not recommended that you use cutters or a hobby knife to remove the servo ears. Some cases are made of very brittle material and damage to your servo case may result.

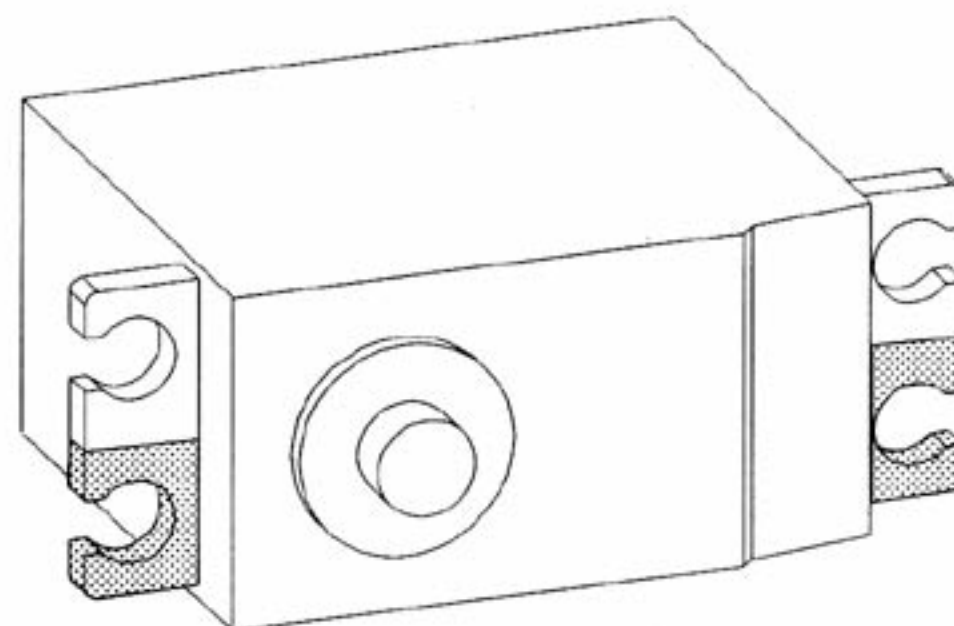


Figure 16

BAG B (Continued)

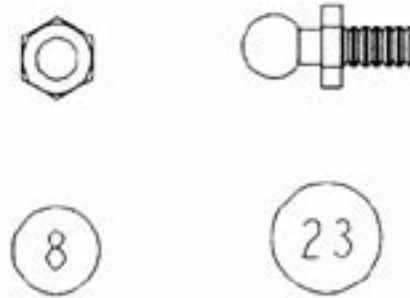


Fig 17.

Step 17. Using table 18B, determine which servo arm (40) is required for you servo. If your servo is not listed, try using the arm recommended for another servo made by the same manufacturer, or use one supplied with your servo that is the same length as either the 23L or the 25L arm.

Step 18. Insert a 4-40 mini lock nut (8) in the hex area of the servo arm (40). Thread a 3/16" ball stud (23) into the lock nut (8) and tighten.

Step 19. Plug you servo into your radio system's receiver. Make sure that there is power to the receiver, and switch the transmitter on followed by the receiver. Be sure that the trim settings for the steering on your transmitter are set to the middle. With the radio system still turned on, attach the servo arm (40) so that it points straight up, away from the ears that were trimmed off. Secure the arm (40) with the servo arm screw supplied with your servo.

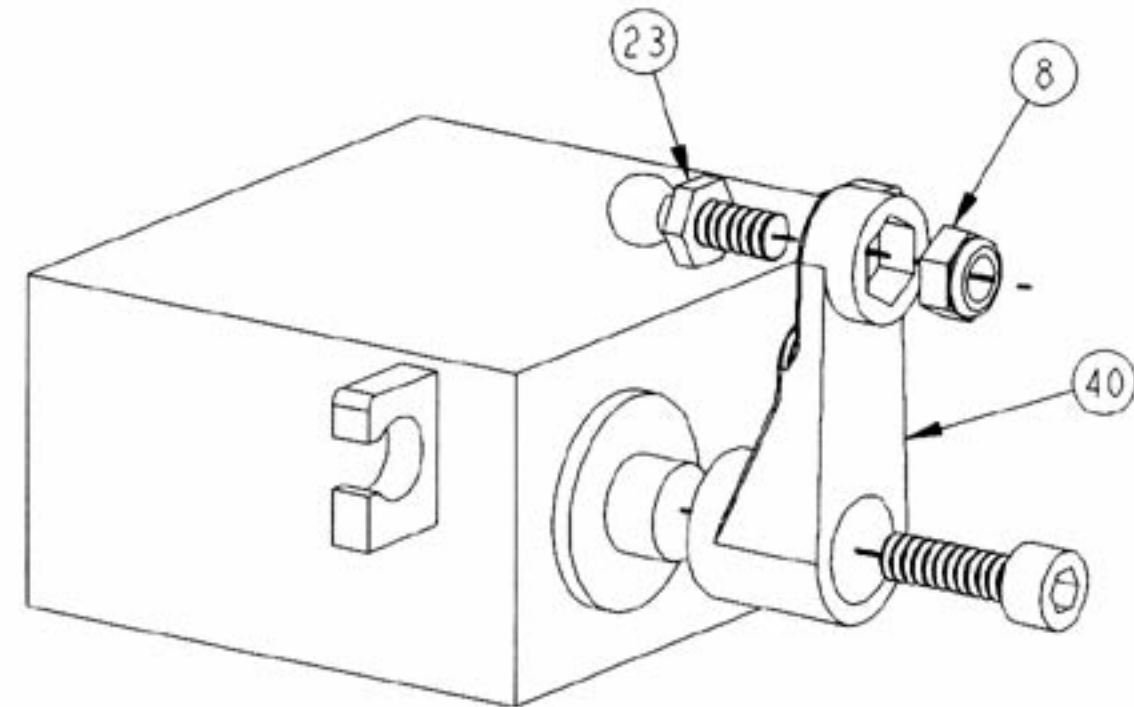


Figure 17

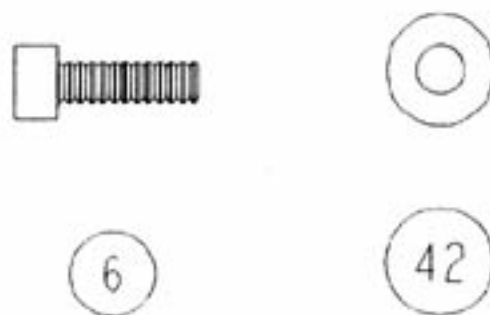



Fig 18.

Step 20. Use the tables below to determine how the servo mounting posts (41) should be attached.

 Trim flashing from the pins on the mounting posts so that they will seat all of the way into the holes in the chassis brace and chassis.

Step 21. Place a #4 washer (42) over each of the two 4-40 x 3/8" cap head screws (6) and attach the servo posts (41) to the servo by threading a screw (6) through the center hole in each post (41). Do not tighten the screws (6) all of the way yet! Just snug them up. The screws (6) will be tightened after the servo is installed so that the posts (41) have the correct spacing.

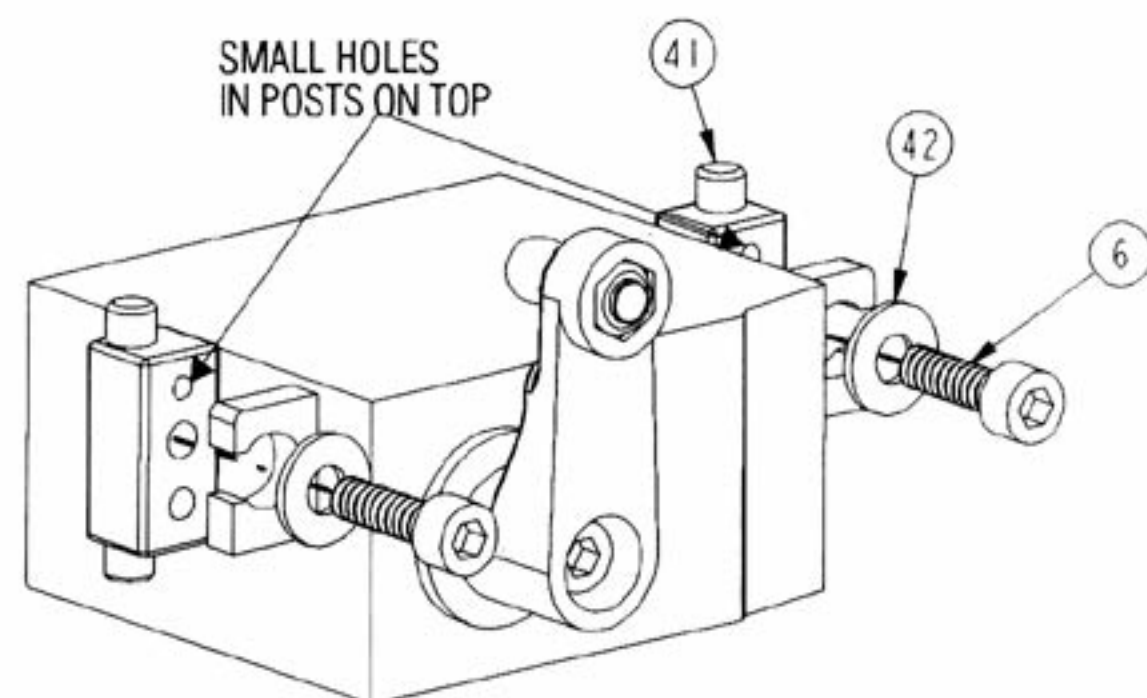


Figure 18

BAG B (Continued)



*Note: Posts are not to scale.

Position of pin on servo mounting post	
1	Forward away from servo
2	Forward next to servo
3	To rear away from servo
4	To rear next to servo

Table 18A

● **IMPORTANT NOTE:** Small, lightning hole in the servo mounting post should always be mounted to the top (the side opposite to where the mounting ears were removed from).

SERVO TYPE	MOUNTING POST PIN LOCATION	REQUIRED SERVO ARM
Airtronics 94151, 94152, 94737, 94738	3	23L
Airtronics 94102	1	23S
Futaba S131, S5101, S9101, S9201, S9301, S9401	2	25L
Futaba S148, S132H	1	25L
JR NES-507, NES-517, NES-901, NES-4131, NES-4721, NES-4735, NES-9021	2	23S
KO PS-702, PS-703, PS-1001, PS-1003	2	23S
KO PS-901BH, PS-902	1	23S

Table 18B



Fig 19.

Step 22. Place the servo, with servo mounting posts (41) attached, into the chassis (11). Align the pins in the mounting posts (41) with the holes in the chassis (11). Mount the chassis brace (43) on top of the servo. The slots in the chassis brace (43) should align with the grooves in the chassis (11). Make sure that the pins in the mounting posts (41) are inserted into the chassis brace (43) and the chassis (11). Using two 4-40 x 1/2" cap head screws (44) and two gold washers (46), attach the chassis brace (43) as shown.

Step 23. Tighten the screws (6) in the servo mounting posts (41)

● **IMPORTANT NOTE:** Don't over tighten the screws in the servo mounting posts! The mounting ears on the servo can be damaged if these screws are over tightened.

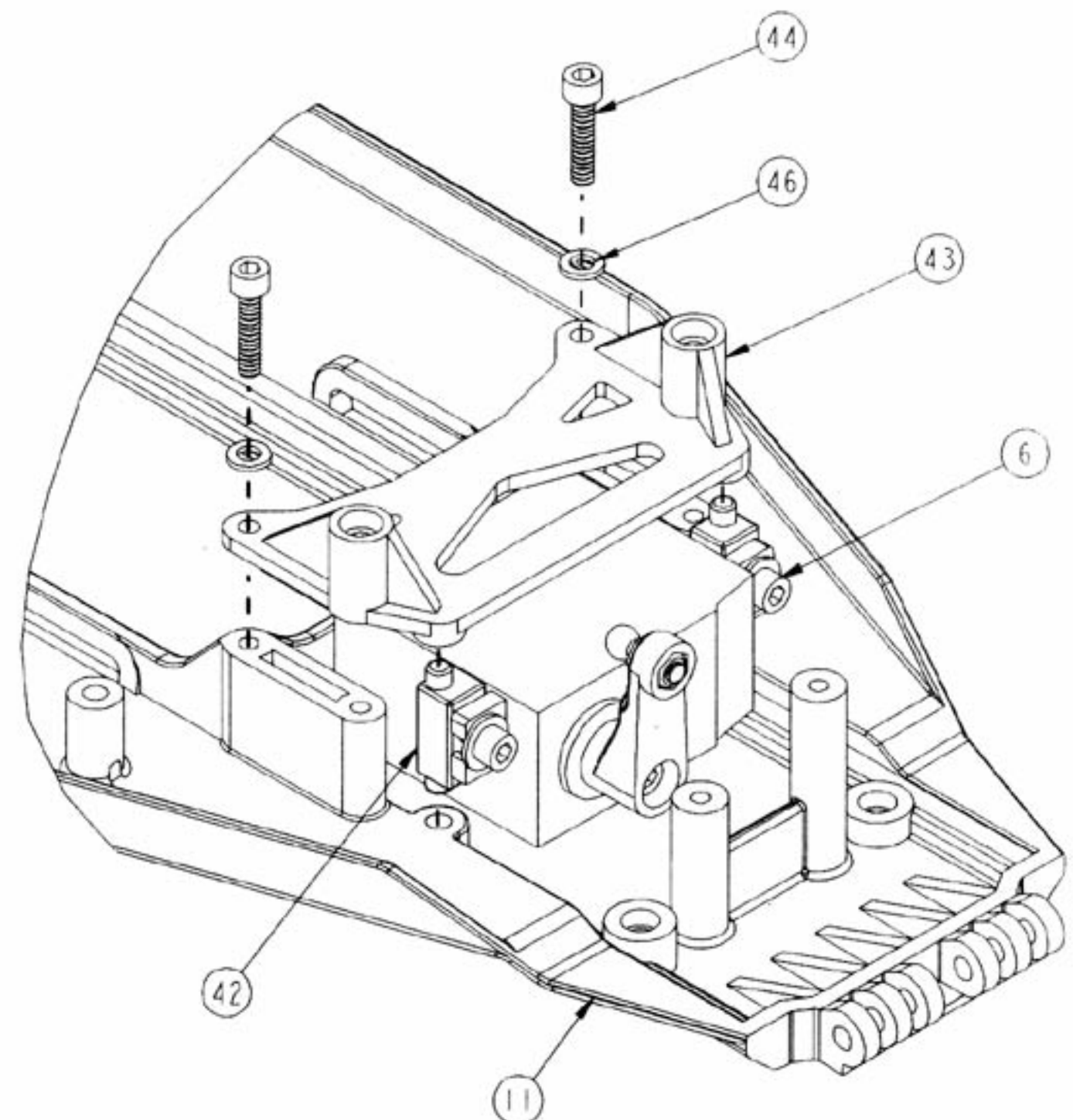


Figure 19

BAG B (Continued)



45

Fig 20.

Step 24. Thread a short plastic rod end (36) onto each end of the 4-40 x 5/8" threaded rod (45). Tighten both sides equally until the rod is the same length as the one shown in figure 20A. Attach one end of the rod to the ball stud (23) in the servo arm (40) and the other to the ball stud (23) in the servo saver. fig. 20B.

Figure 20

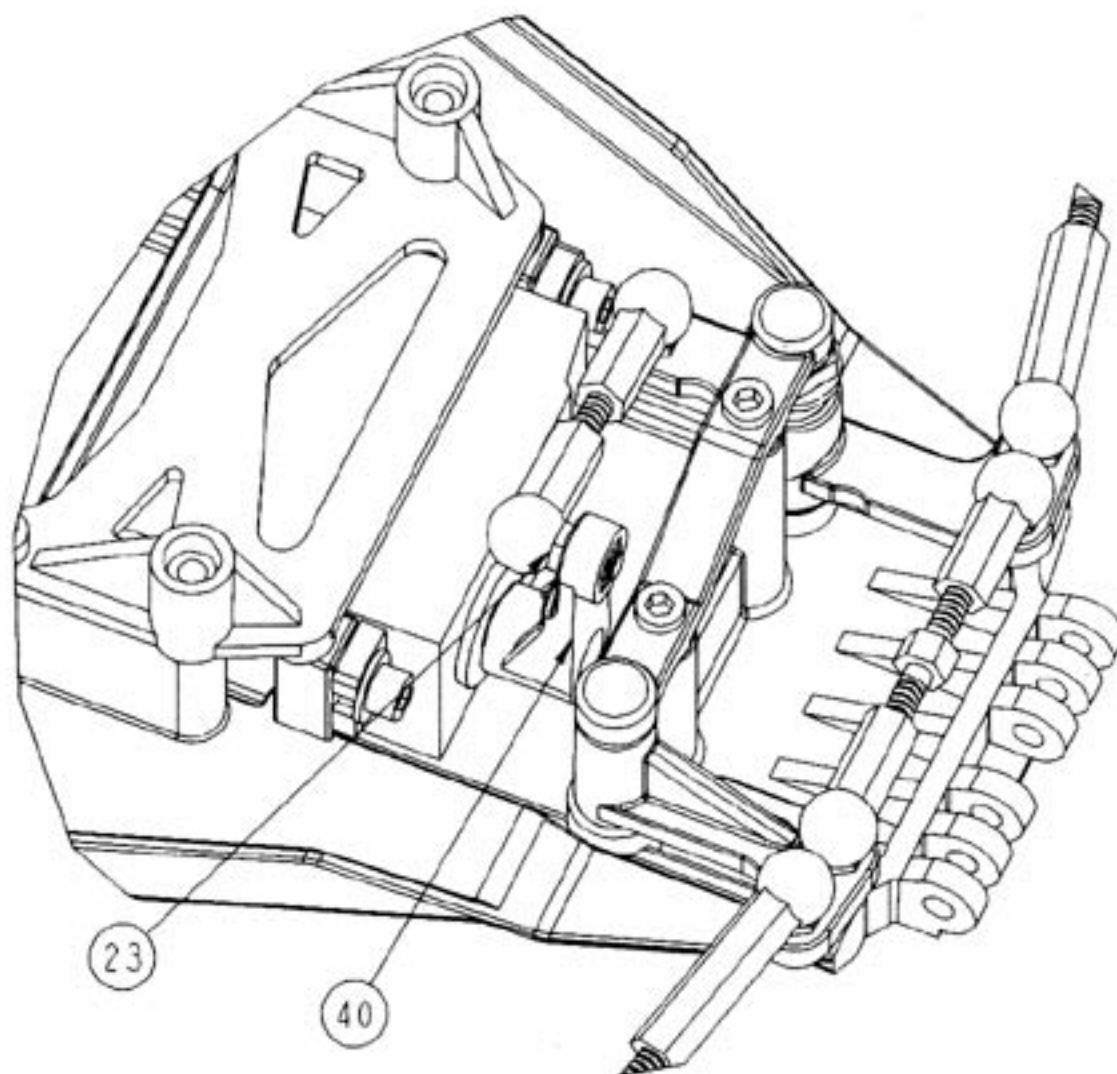
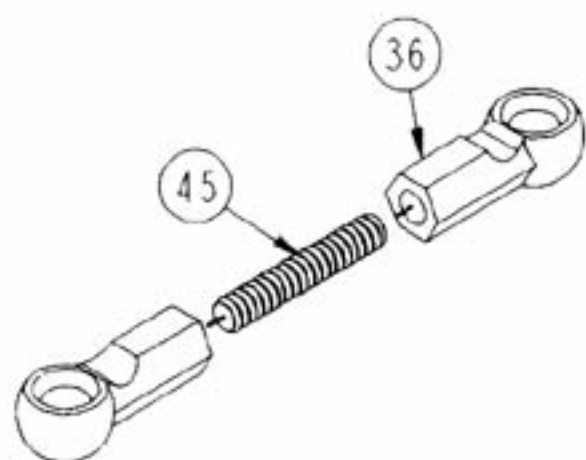


Figure 20A

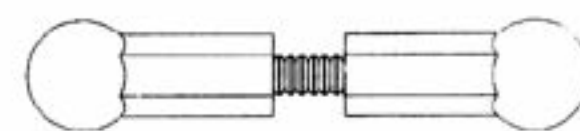


Figure 20B



46

47

Fig 21.

Step 25. Rotate the front end back until the front chassis stiffener (1) can be indexed into the chassis brace (43). Place a gold washer (46) over each of the two 4-40 x 7/8" cap head screws (47). Insert a screw (47) through each of the two holes in the front chassis stiffener (1) and tighten.

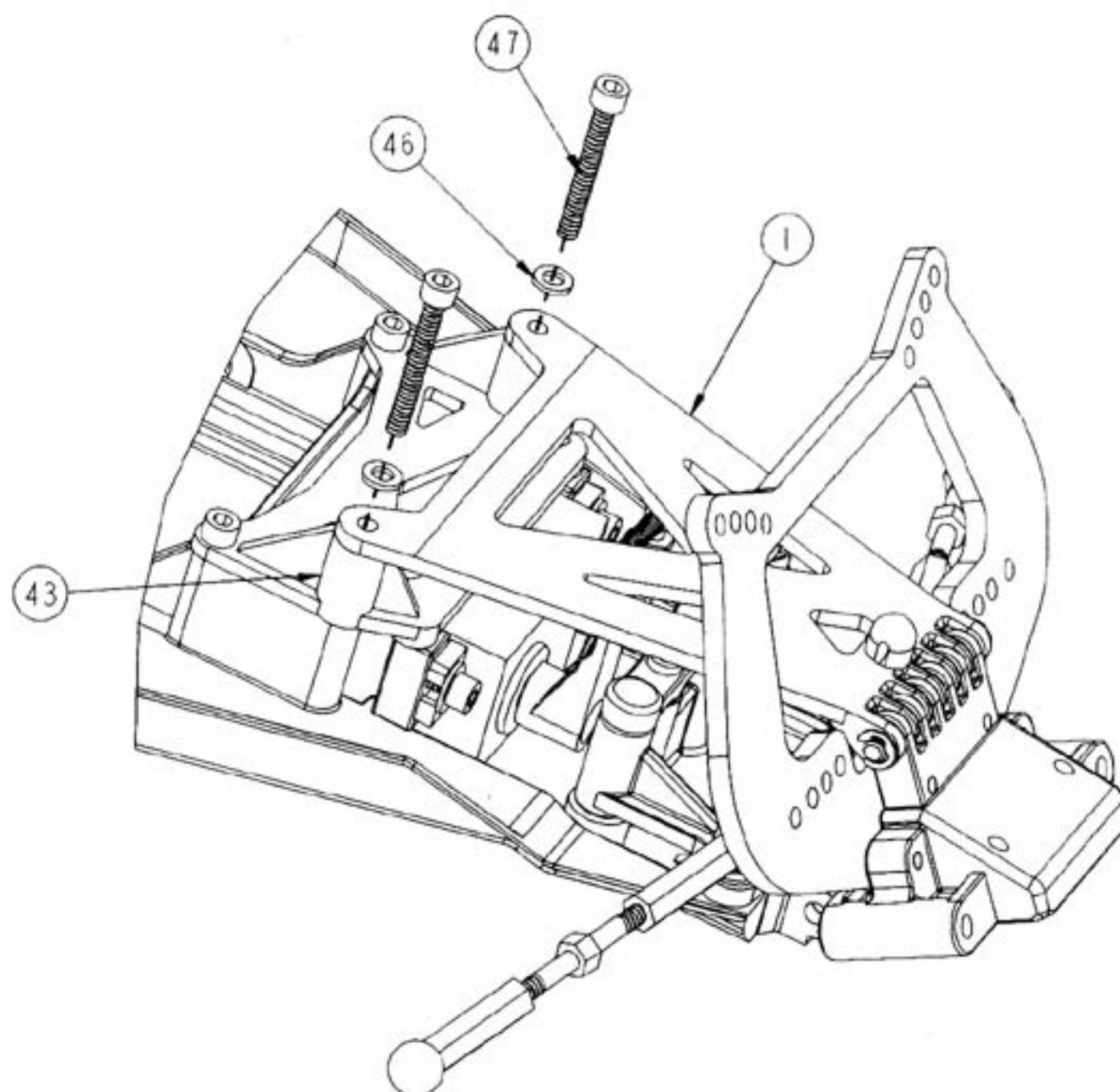


Figure 21



49

Fig 22.

Step 1. Holding the chassis (11) upside down, insert the tab on the rear pivot support (48) under the rear part of the chassis (11), so that the pivot support (48) is flush with the chassis (11). Make sure that the four holes in the chassis (11) line up with the four holes in the pivot support (48). Secure the pivot support (48) to the chassis (11) using four 4-40 x 1/2" flat head screws (49).

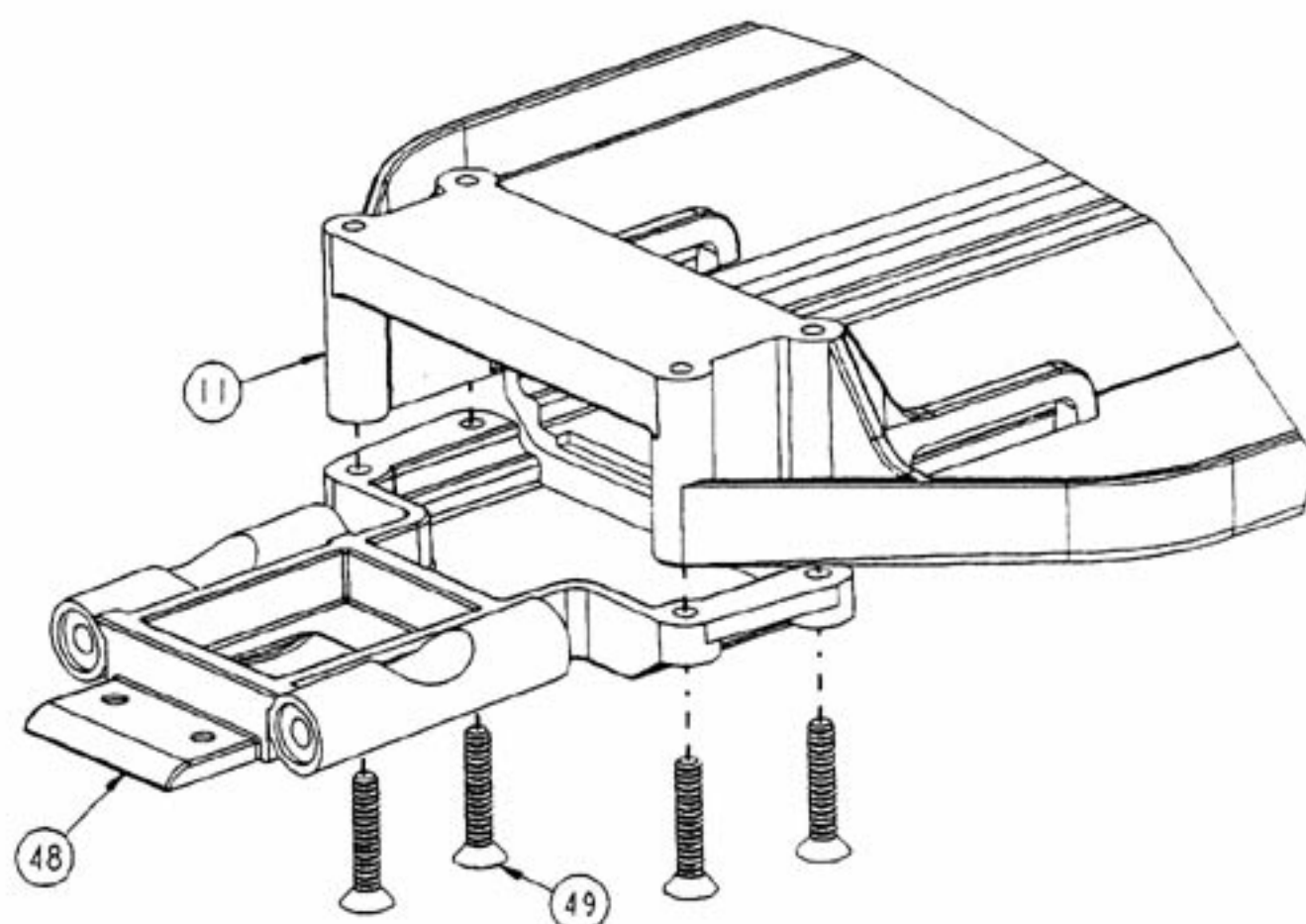
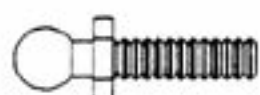


Figure 22



7



44



47

Fig 23.

Step 2. Insert two 4-40 x 7/8" cap head screws (47) through the third hole in on each side of the rear shock tower (50) as shown. Thread top shock mount bushings (10) onto the two screws (47) and tighten. The shock mount bushings (10) should be on the side of the shock tower (50) opposite the flat surface.

Step 3. Attach the rear shock tower (50) to the rear bulkhead (51) using four 4-40 x 1/2" cap head screws (44) as shown.

Step 4. Thread a 3/8" ball stud (7) into the #2 hole on each side of the rear bulkhead (51). Place a "foam thing" (28) over each of the two ball studs (7). See figure 23A

Figure 23A

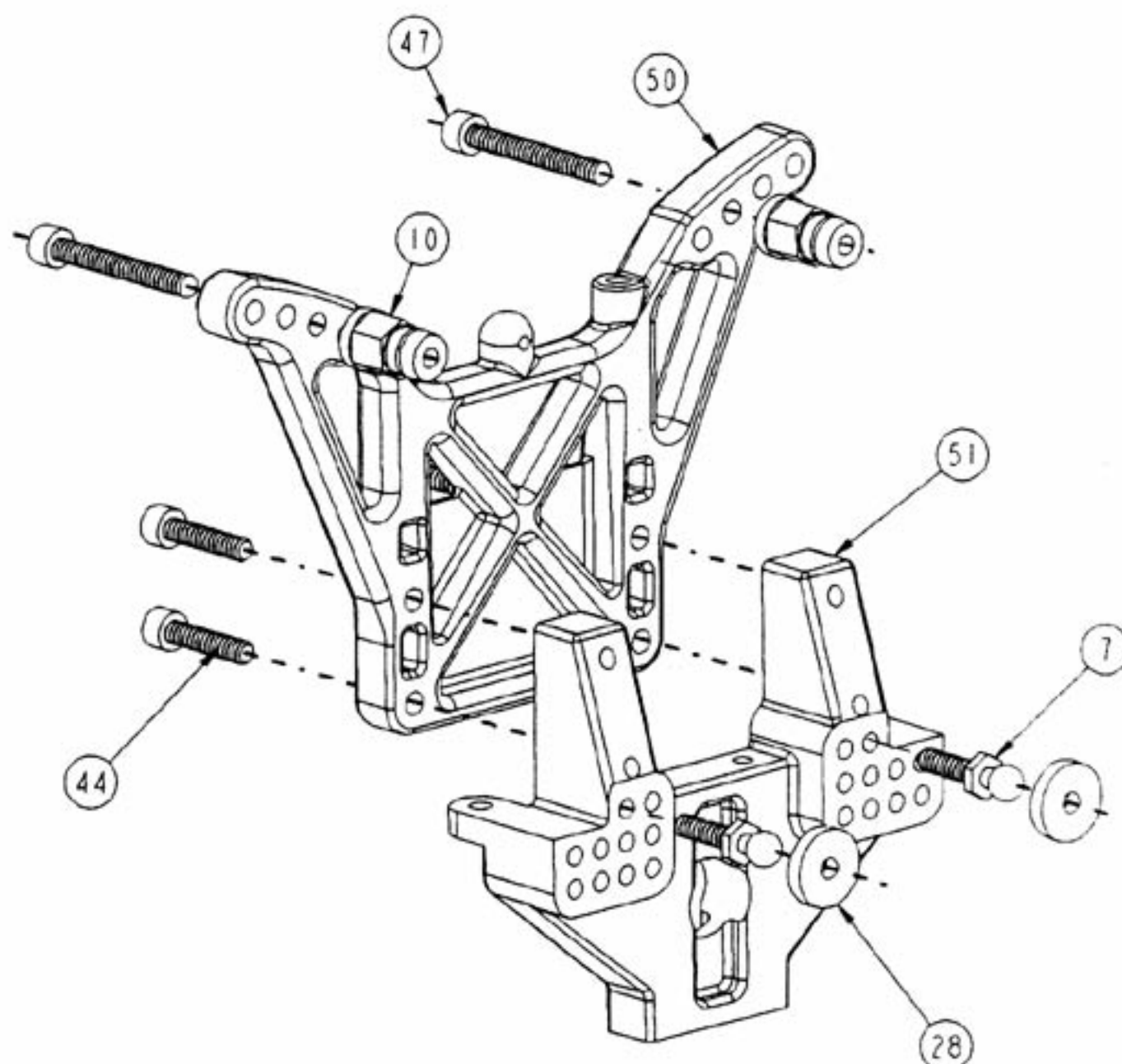
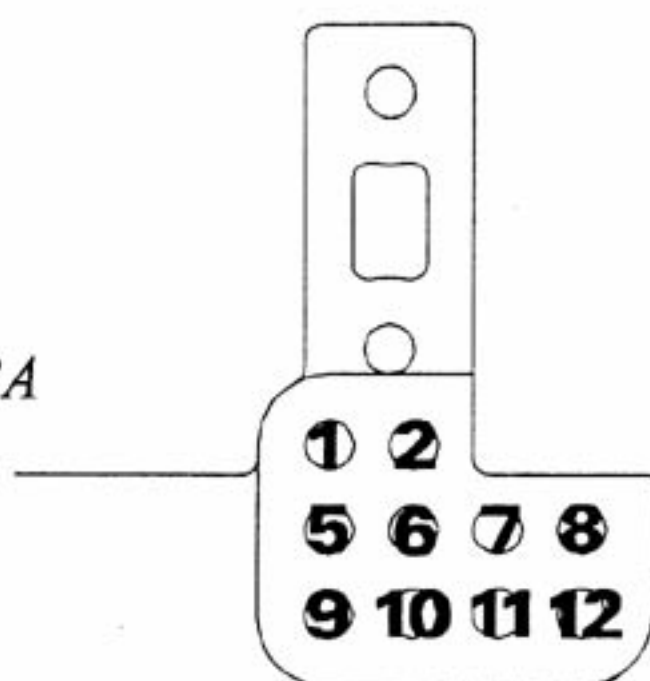


Figure 23

BAG C (Continued)



Fig 24

Step 5. Place the rear bulkhead (51) into the top, forward area of the rear pivot support (48). Make sure that the bulkhead (51) is all of the way down and that the mounting ears are flush with the chassis (11). Thread two 4-40 x 3/8" flat head screws (52) through the pivot support (48) and into the rear bulkhead (51). Do not tighten these screws yet.

Step 6. Place a gold washer (46) over each of the two 4-40 x 3/8" cap head screws (6) and partially thread them through the two ears in the top of the bulkhead (51), into the chassis (11). Now tighten all four screws starting with the flathead screws (52).

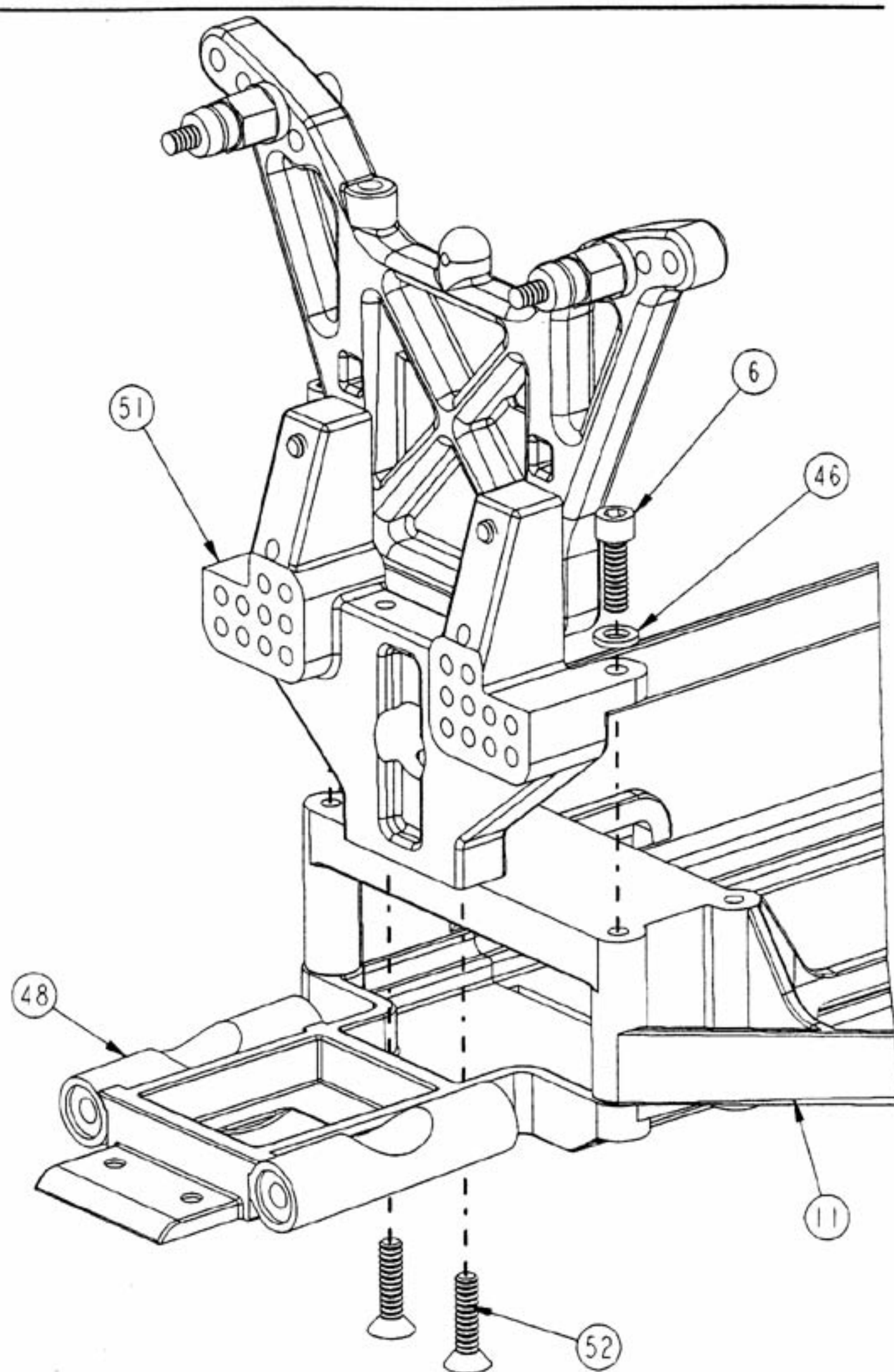


Figure 24

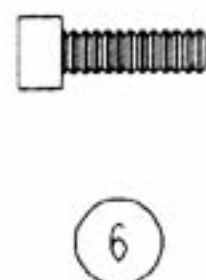


Fig 25.

Step 7. Attach the dog bones (53) to the plastic universal yokes (54) by lining up the slot on the dog bone (53) with the groove in the universal yoke (54). Secure the two pieces with a 4-40 x 3/8" cap head screw (6).

⚠ A small amount of thread lock compound on the threads of the 4-40 x 3/8" cap head screw will help hold it tight.

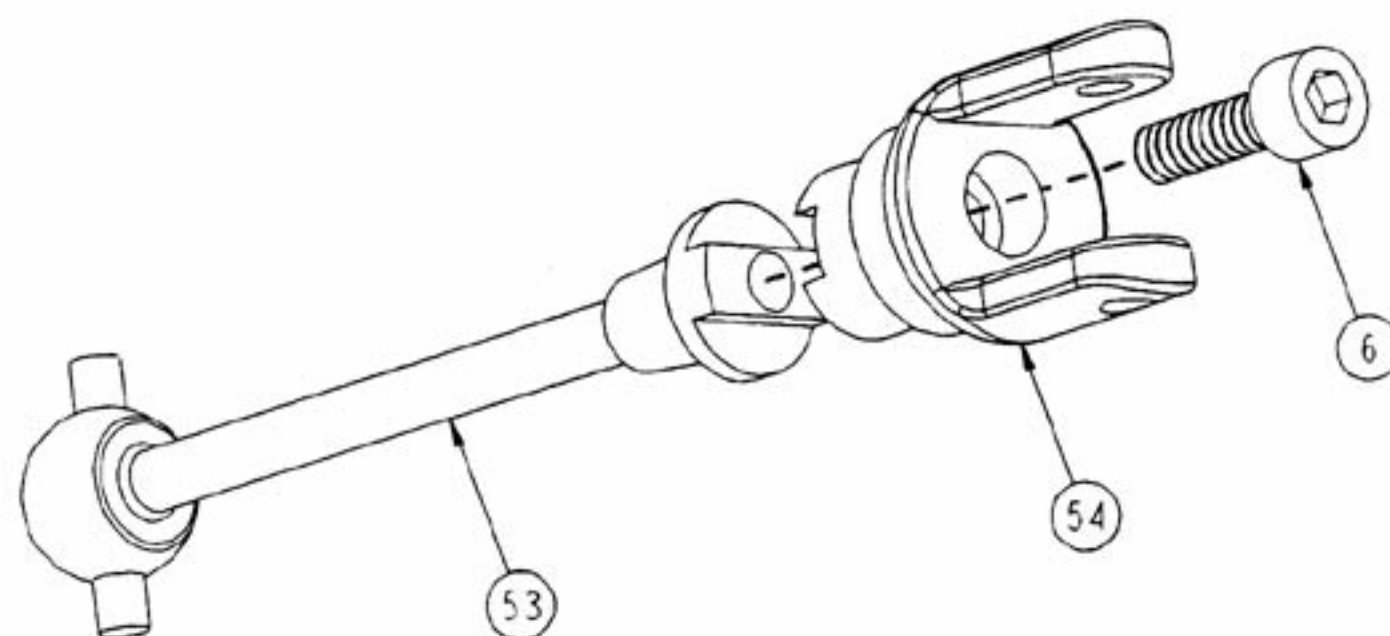


Figure 25

BAG C (Continued)

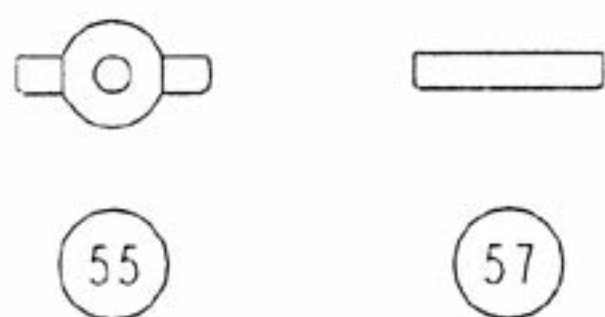



Fig 26.

Step 8. Position the universal pivot (55) in the rear axle (56) so that the holes in both are aligned.

Step 9. Using pliers, carefully push a 3/32" x 1/2" spirol pin (57) through the rear axle (56) and universal pivot (55) until the pin (57) extends evenly out of both sides of rear axle (56).

 The pin can be made to press in tighter. This will ensure that it stays firmly in place. To do so *SLIGHTLY* crimp the center of the pin with heavy duty wire cutters. When inserting the pin be careful not to smash the ends of the pin. This can cause the universal pivot to bind.

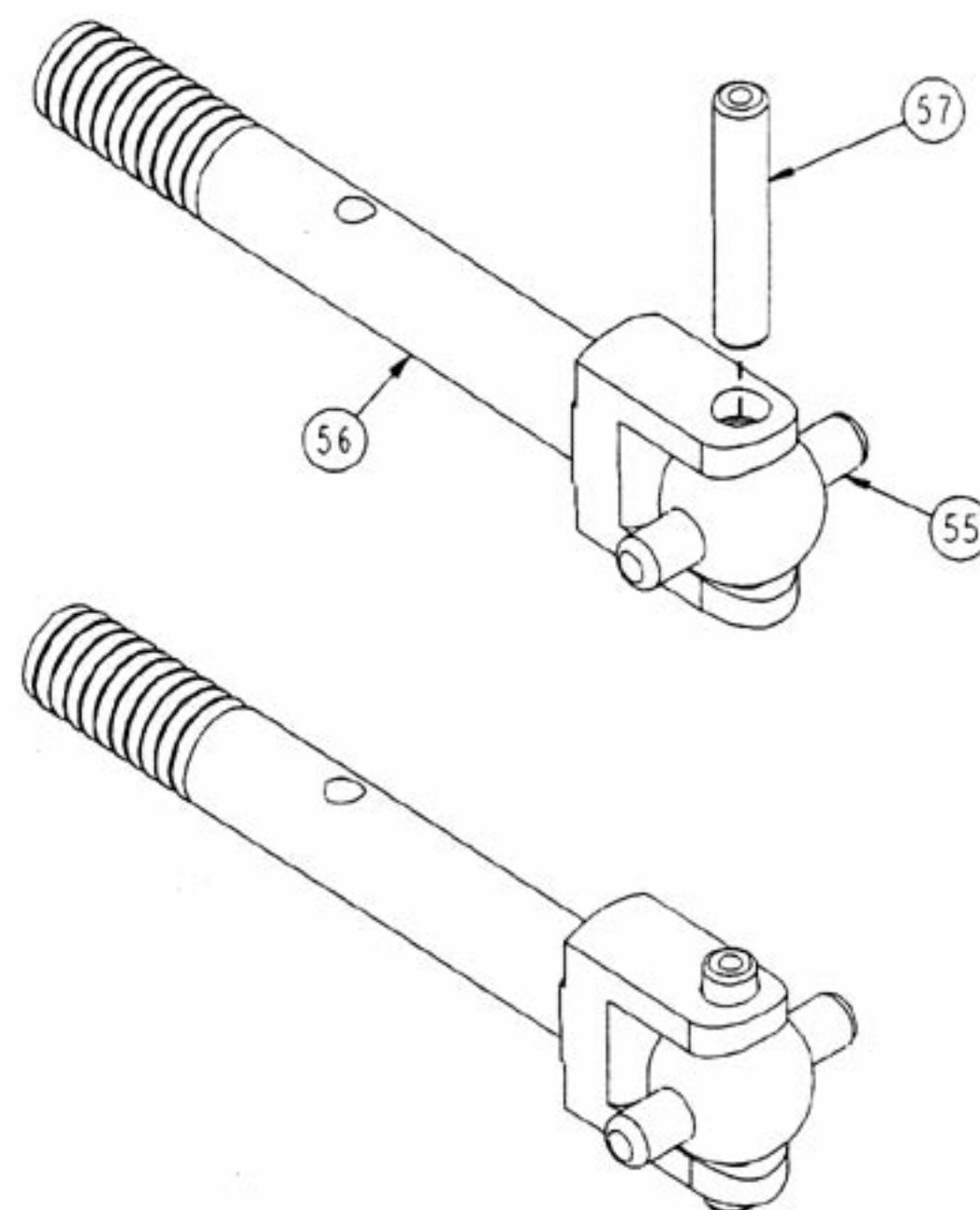


Figure 26

Fig 27.

Step 10. Using the small end of the Team Losi wrench (58) supplied with your kit, pry the pins on the universal pivot (55) into holes in the plastic universal yoke (54).

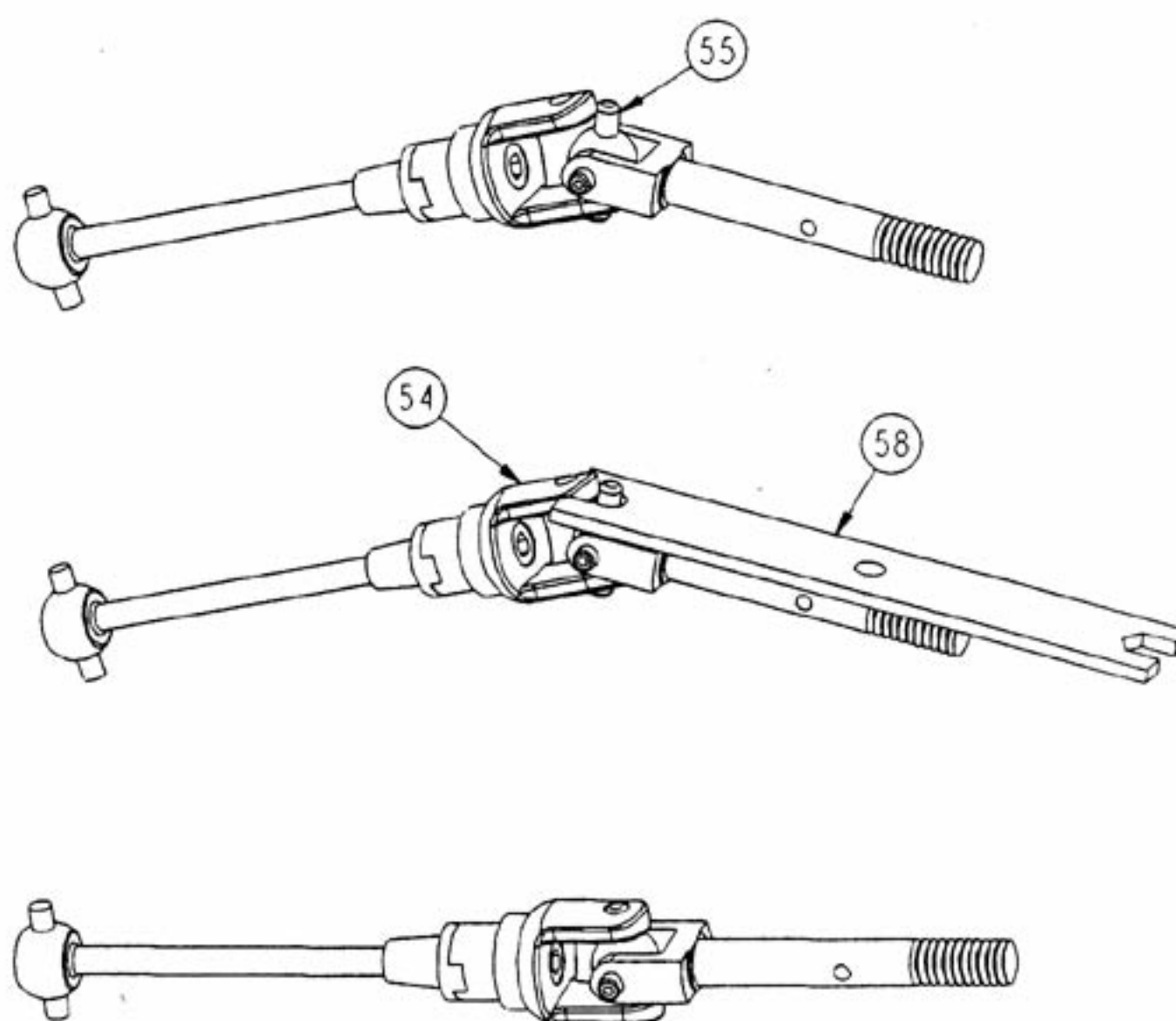


Figure 27

BAG C (Continued)

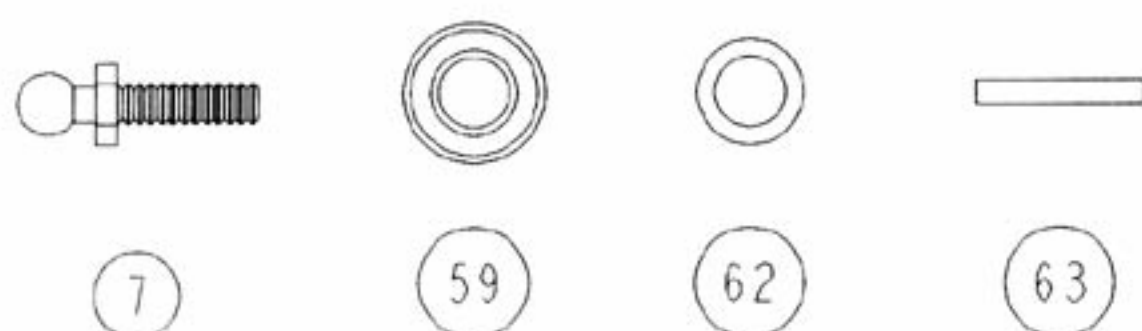


Fig 28

Step 11. Press a 3/16" x 3/8" bearing (59) into each side of the rear hub (61).

Step 12. Thread a 3/8" ball stud (7) into the #1 hole in the rear hub (61), from the front (the side with the recessed area).

● **IMPORTANT NOTE:** Do not over tighten the ball studs.

Step 13. Place a "foam thing" (28) over the ball stud (7).

Step 14. Repeat steps 11 - 13 for the left rear hub (60).

Step 15. Slide a rear axle (56) through the bearings (59) in each rear hub (60), (61) from the inside.

Step 16. Place a rear axle/gearbox spacer (62) over each rear axle (56), against the outside bearing (59).

Step 17. Secure the rear axle (56) and the spacer (62) by inserting a 1/16" x 7/16" pin (63) through the small hole in each of the rear axles (56). The pin (63) should be centered in the rear axle (56).

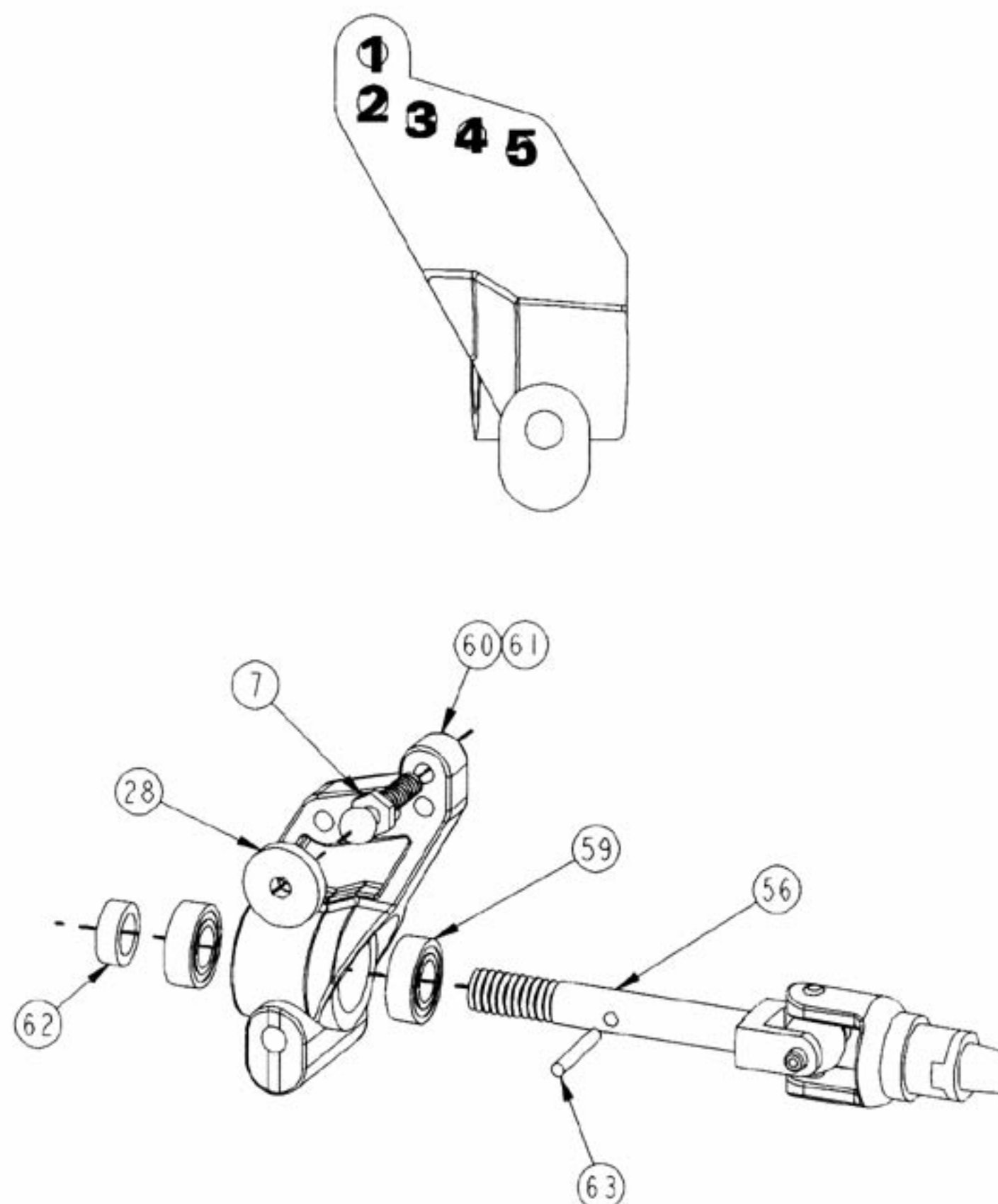


Figure 28

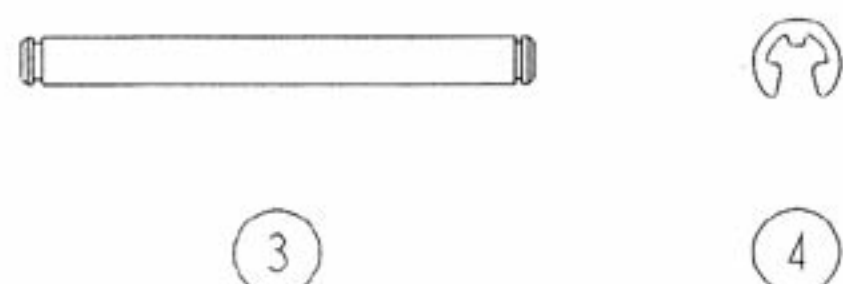


Fig 29.

Step 18. Place the right rear hub (61) between the outer rails of the right rear suspension arm (65). Be sure that the ball stud (7) is on the same side of the arm (65) as the shock mounting holes.

Step 19. Insert a 1/8" hinge pin (3) into the suspension arm (65) and through the rear hub (61). Secure the hinge pin (3) with two 1/8" 'E' clips (4)

Step 20. Repeat steps 18 and 19 for the left rear suspension arm (64).

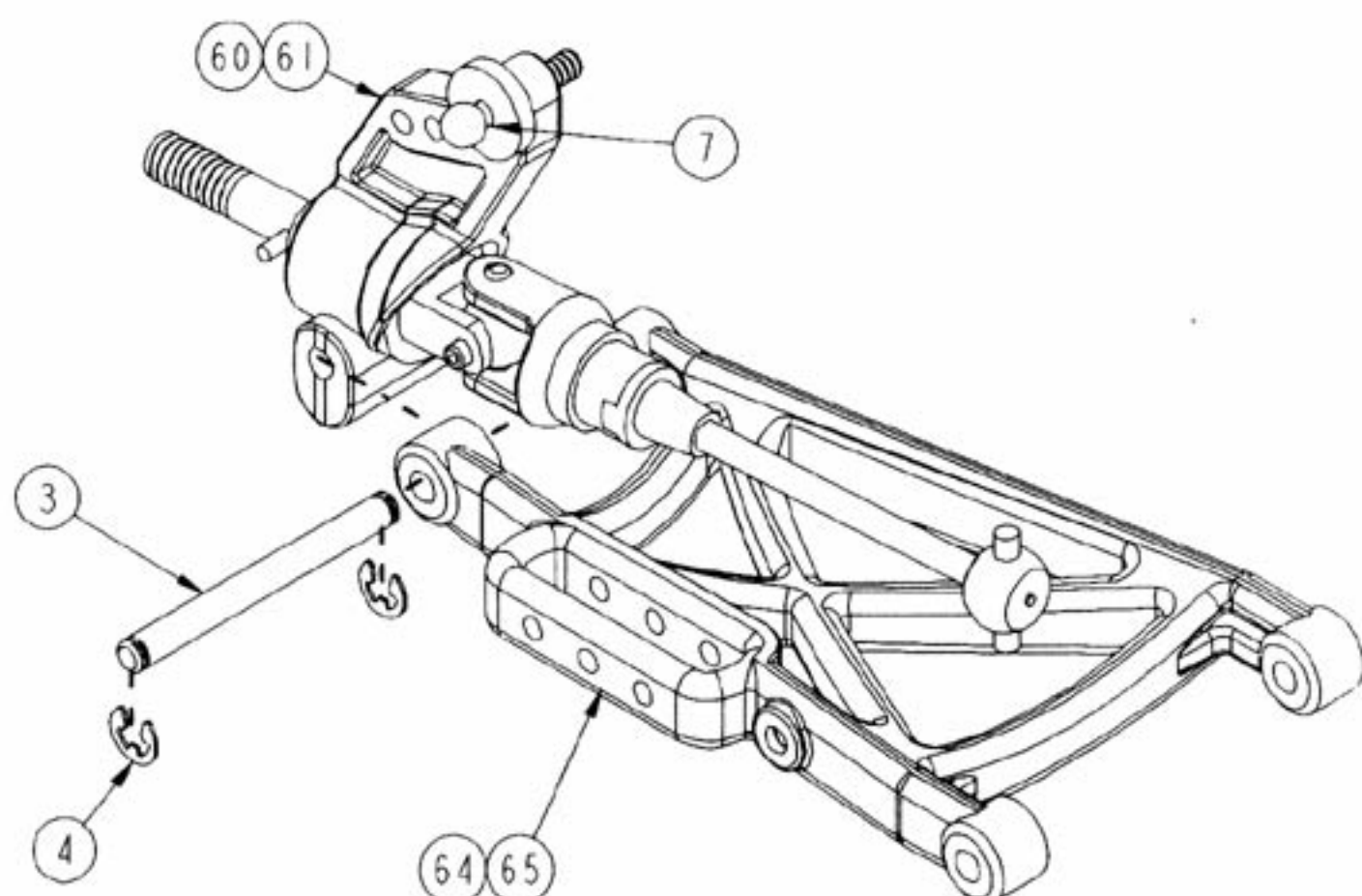


Figure 29

BAG C (Continued)



66

Fig 30.

Step 21. Thread a plastic rod end (26) onto each end of a 1-1/2" turnbuckle (66). Tighten both ends (26) evenly until the rod is the same length as the one shown below.

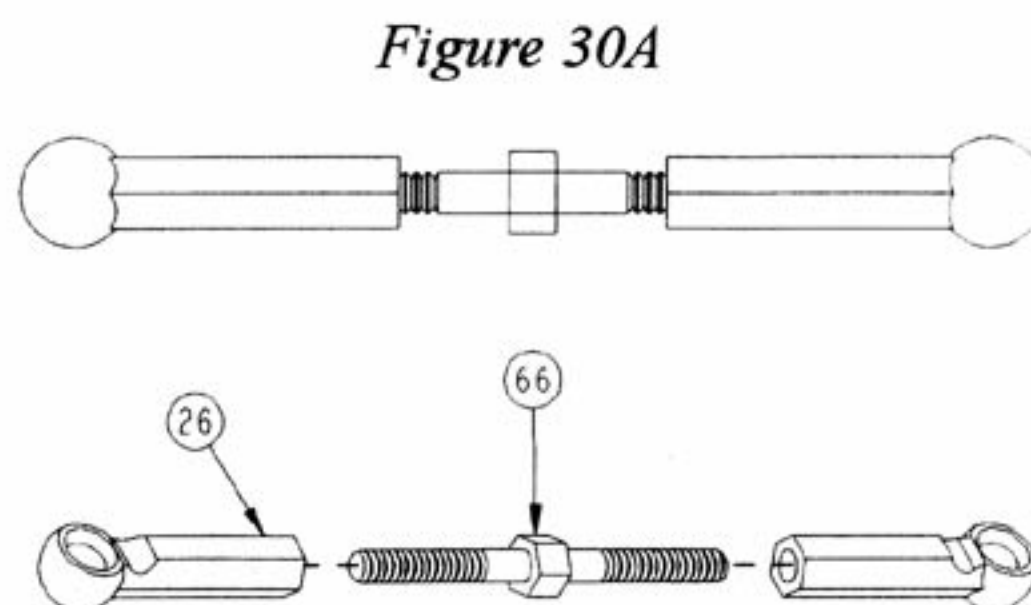



Figure 30A

Fig 31.

Step 22. Insert a 1/8" x 1/4" washer (67) into the recessed area on each side of the rear pivot support (48).

Step 23. Place the right rear suspension arm (65) over the right side of the rear pivot support (48). Line up the holes in the arm (65) with the holes in the pivot support (48) and attach them by inserting an inner rear hinge pin (68) from the rear all of the way through both pieces until the pin (68) is flush with the back of the arm (65).

Step 24. Attach one end of a rear camber link from step 21 to the ball stud (7) in the rear hub (61) and the other end to the ball stud (7) in the rear bulkhead (51).

 Remember to attach the turnbuckles so that the threads are in the same direction on all of your linkages.

Step 25. Repeat steps 23 and 24 for the left side of the car.

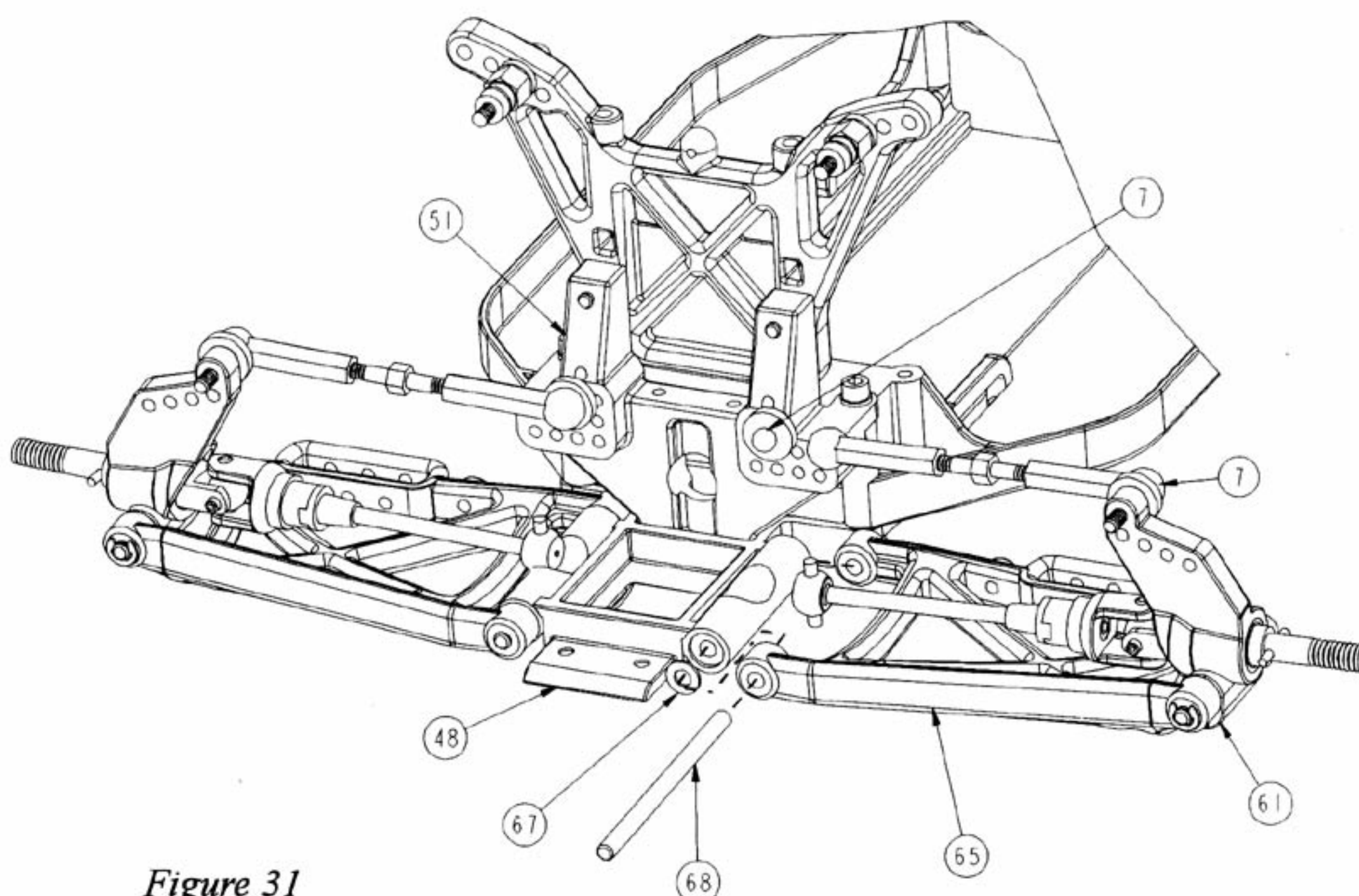


Figure 31

BAG D



Fig 32.

Step 1. Insert a 4-40 mini lock nut (8) into the hex area of the diff nut carrier (69). The thread locking portion of the nut (8) should be to the outside.

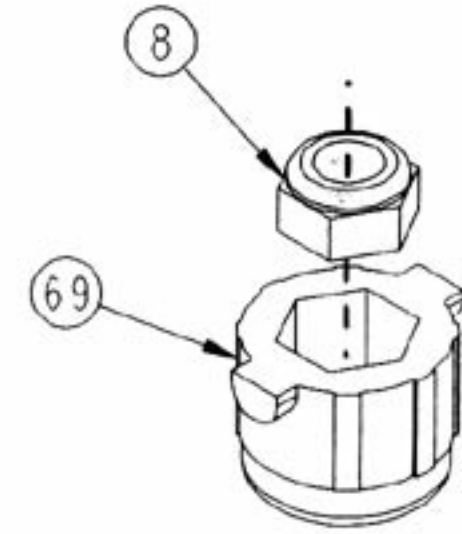


Figure 32

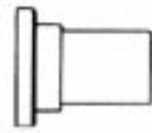


Fig 33.

Step 2. Locate the 5/64" allen wrench (70) supplied with the kit. Place the diff nut carrier (69), nut side first, over the allen wrench.

Step 3. Stack the six beveled washers (71) over the wrench next to the diff nut carrier (69). The washers (71) should all point the same direction and open away from the nut carrier (69).

Step 4. Place the diff tube (72) over the wrench, big side first, so that it rests against the beveled washers (71).

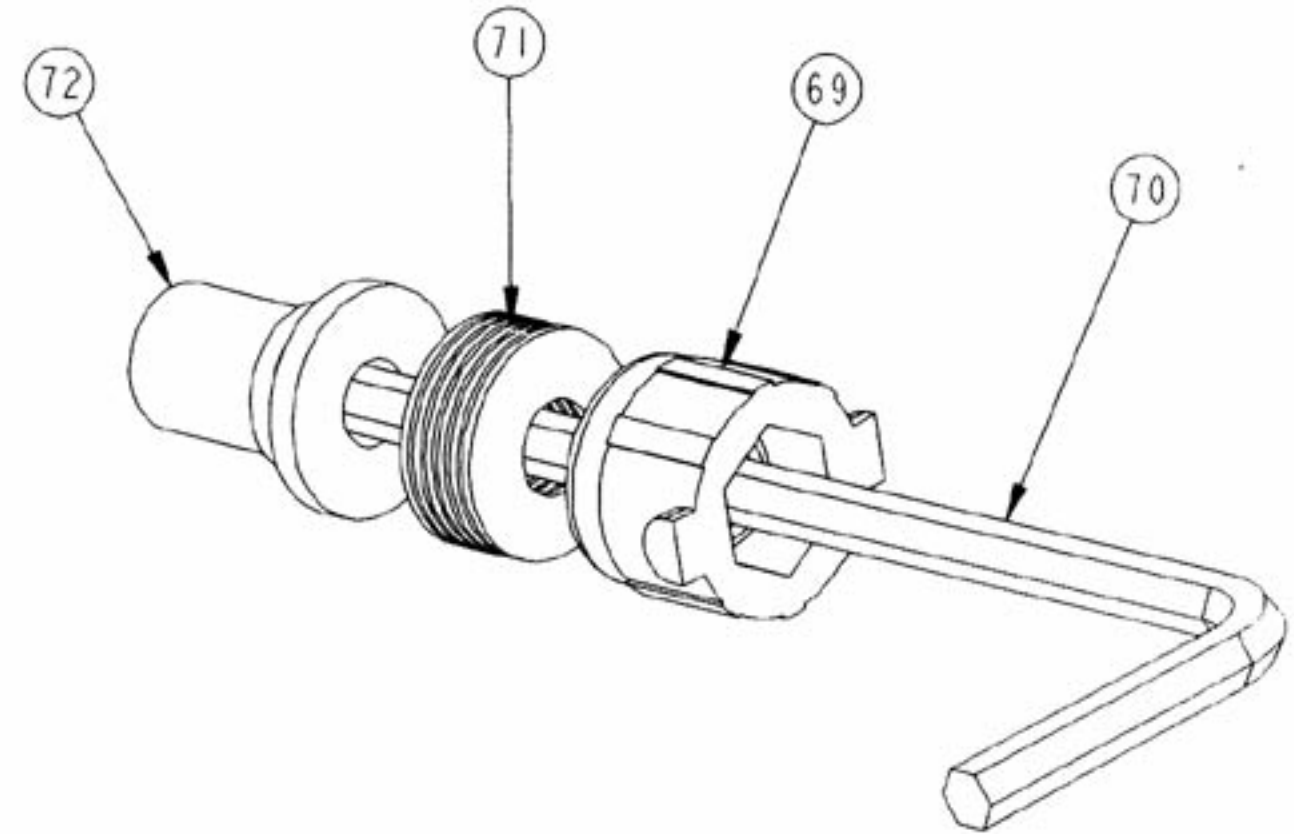


Figure 33

Fig 34.

Step 5. Insert all of the parts that are stacked on the wrench into one of the outdrive/diff halves (73). Line up the tabs on the diff nut carrier (69) with the slots in the outdrive (73). Make certain that the diff tube (72) is pressed all the way into the outdrive/diff half (73), and that it is straight. There is a small shoulder on the diff tube (72) that should be flush with the outer surface of the outdrive (73).

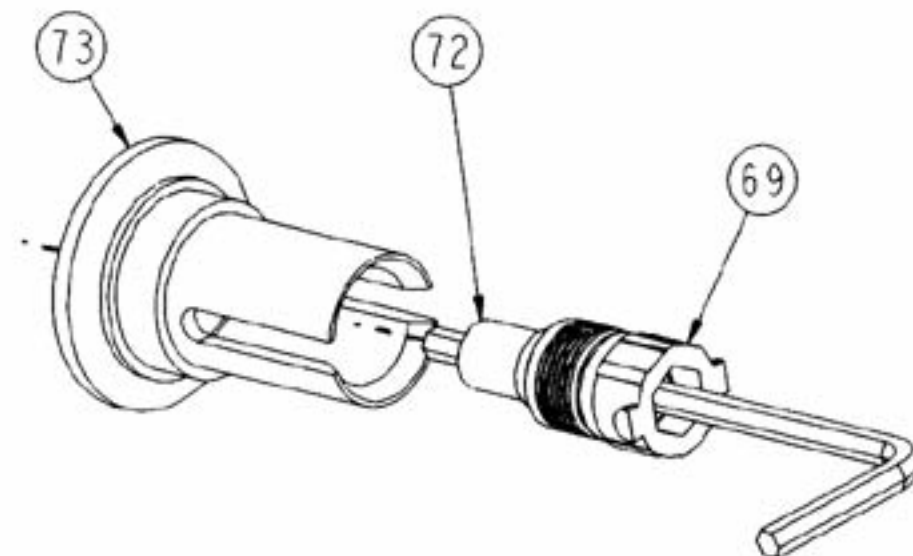


Figure 34

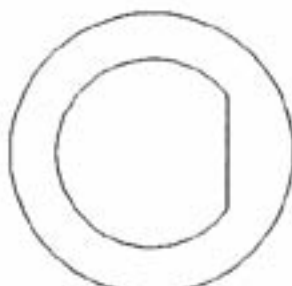


Fig 35.

Step 6. Apply a small amount of diff grease (74) to the outside ring of the outdrive (73). Attach a diff washer (75) to the outdrive (73) by lining up the slot in the washer (75) with the slot in the outdrive (73).

* Note: Only a small amount of grease is needed. It is only there to hold the diff washer in place.

● **IMPORTANT NOTE:** Do not glue the diff washers to the outdrive/diff halves. Doing so may not allow the washers to mount flat.

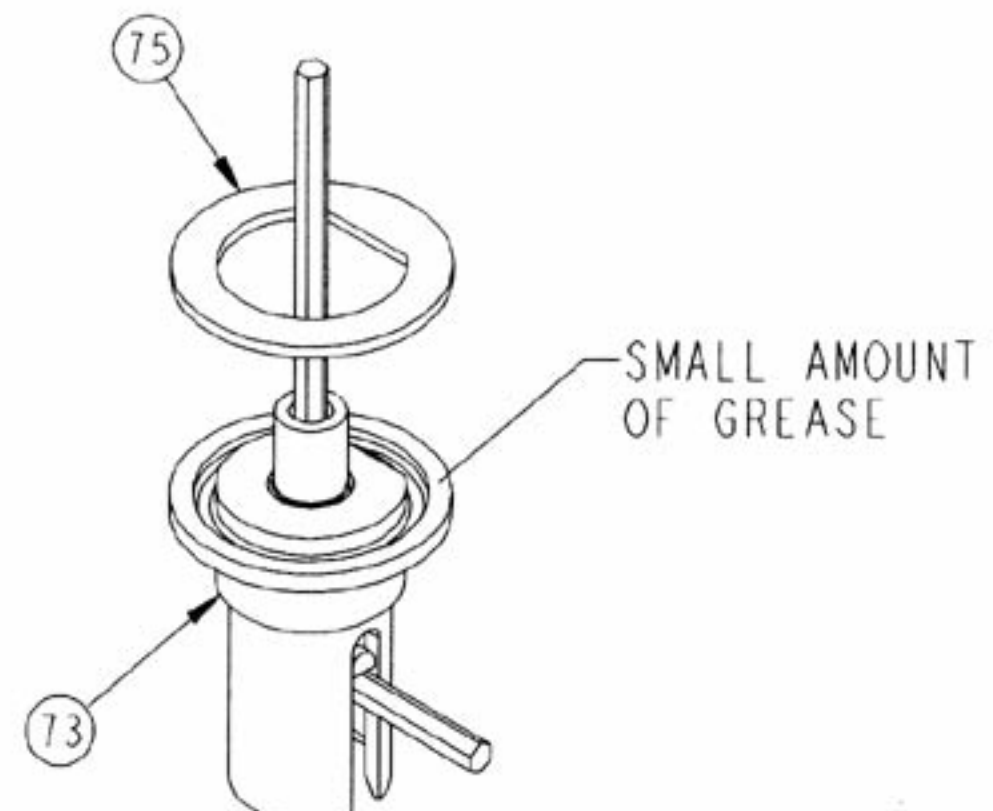


Figure 35

BAG D (Continued)

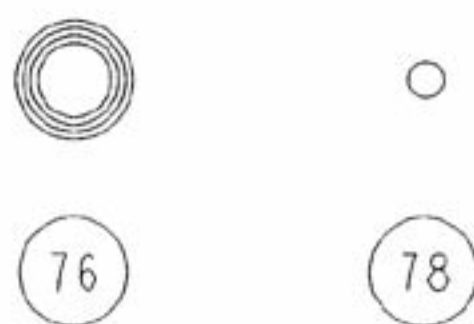


Fig 36.

Step 7. Insert a 5mm x 8mm bearing (76) into the center of the diff gear (77).

Step 8. Press a 3/32" diff ball (78) into each of the small holes in the diff gear (77). Using a toothpick or the small allen wrench, apply grease (74) to both sides of each diff ball (78) fig. 36A.

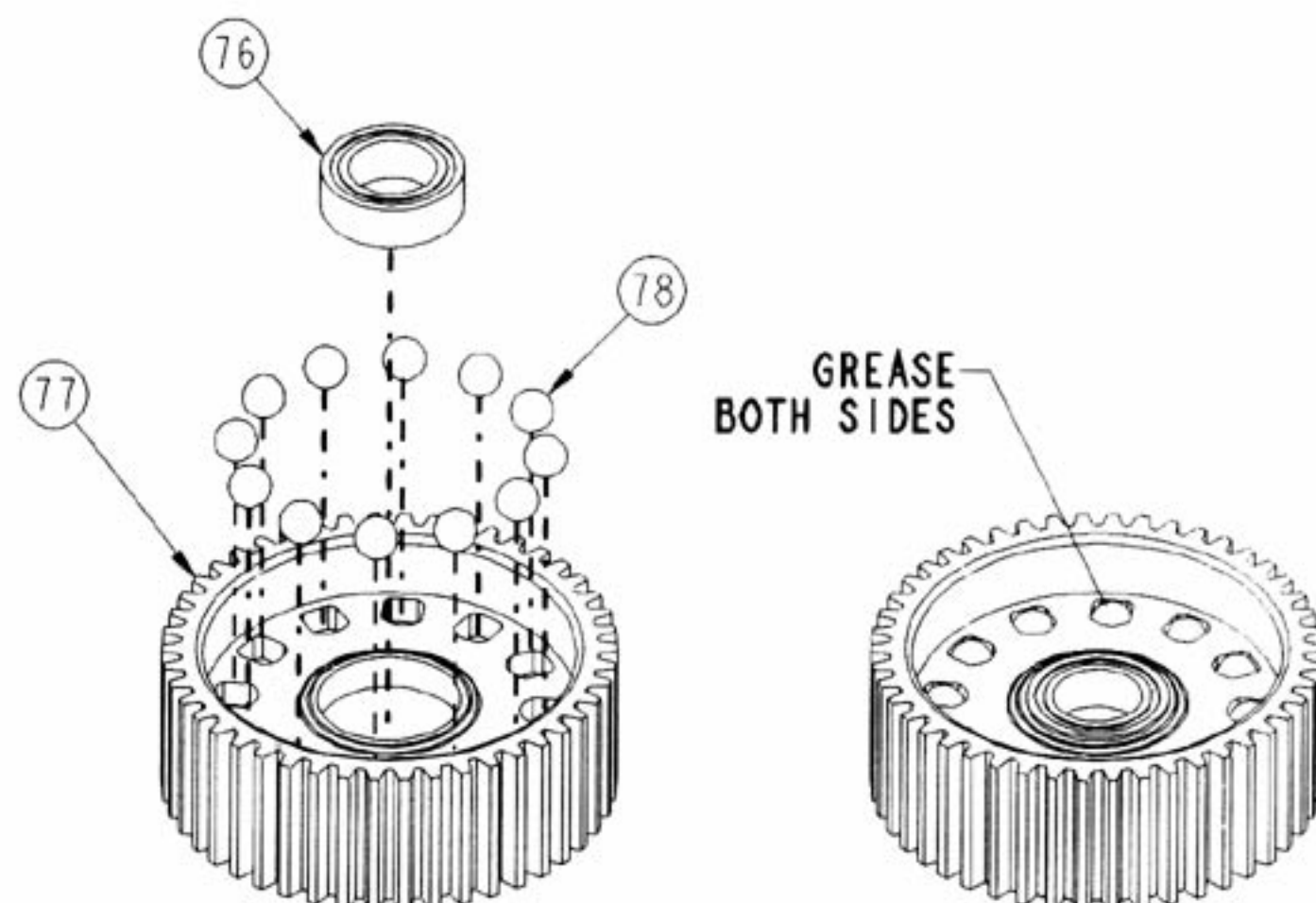


Figure 36

Fig 37.

Step 9. Carefully place the diff gear (77) over the diff tube (72) so that the diff balls (78) and diff gear (77) rest against the diff washer (75).

● **IMPORTANT NOTE:** It is a good idea to hold the diff nut carrier in place so the diff tube is not pushed through when the gear is pushed over it.

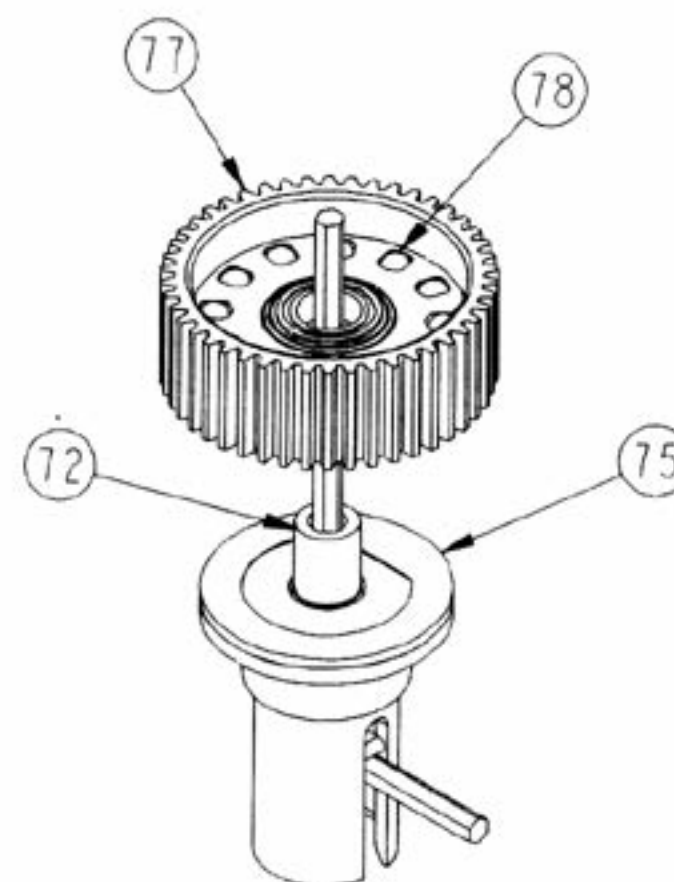


Figure 37

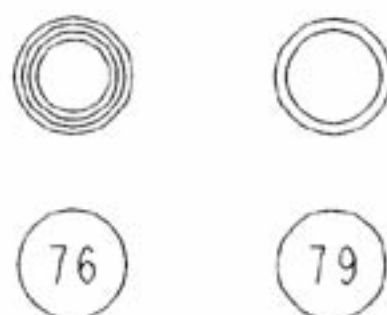


Fig 38.

Step 10. Insert a 5mm x 8mm bearing (76) into the second outdrive/diff half (73). Make sure that the bearing (76) is pushed all the way into the outdrive (73). The handle of a hobby knife or a pencil can be used to push the bearing (76) into place.

Step 11. Drop the 1/4" x 5/16" shim (79) into the outdrive (73) on top of the 5mm x 8mm bearing (76). Make sure that the shim (79) is flat against the bearing (76). *Be extra careful not to bend this shim!*

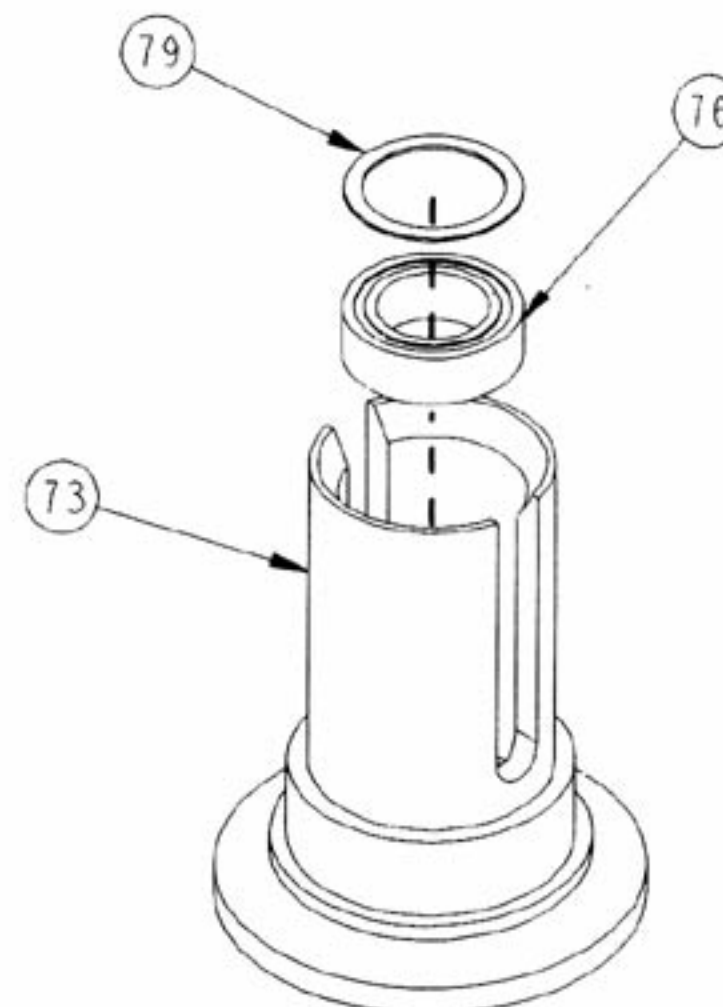


Figure 38

BAG D (Continued)

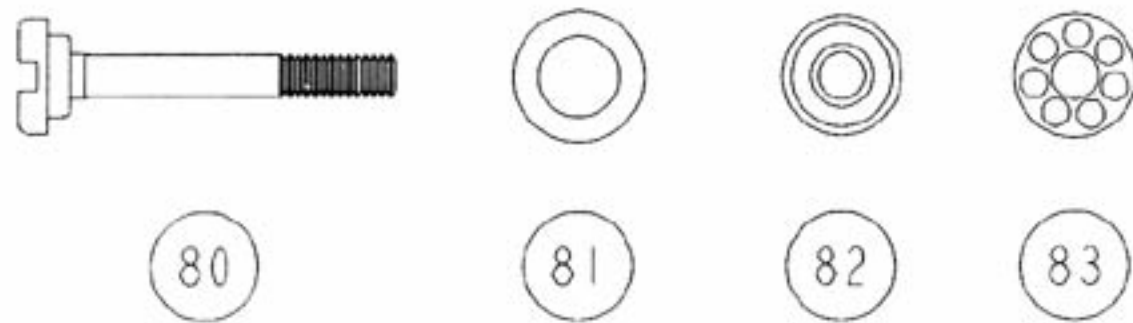


Fig 39.

Step 12. Locate the diff adjusting screw (80) and place the foam thrust bearing seal (81) over the shoulder of the screw (80).

Step 13. Place one of the 3mm x 8mm raced thrust bearing washers (82) over the diff screw (80) so that the groove faces up.

Step 14. Grease the thrust washer (82) well and place the 3mm x 8mm thrust bearing (83) over the screw (80) and next to the washer (82). Grease the exposed side of the thrust bearing (83) well and place the second thrust washer (82) over the screw and against the thrust bearing (83). This time the groove in the thrust washer (82) points down.

Step 15. Very carefully insert the diff screw (80), with the thrust bearing assembly installed, into the outdrive (73). Be very careful not to bend or pinch the shim (79) while inserting the diff screw (80). Pull the threaded end of the diff screw (80) until the thrust bearing assembly rests against the shim (79) and bearing (76) inside of the outdrive (73).

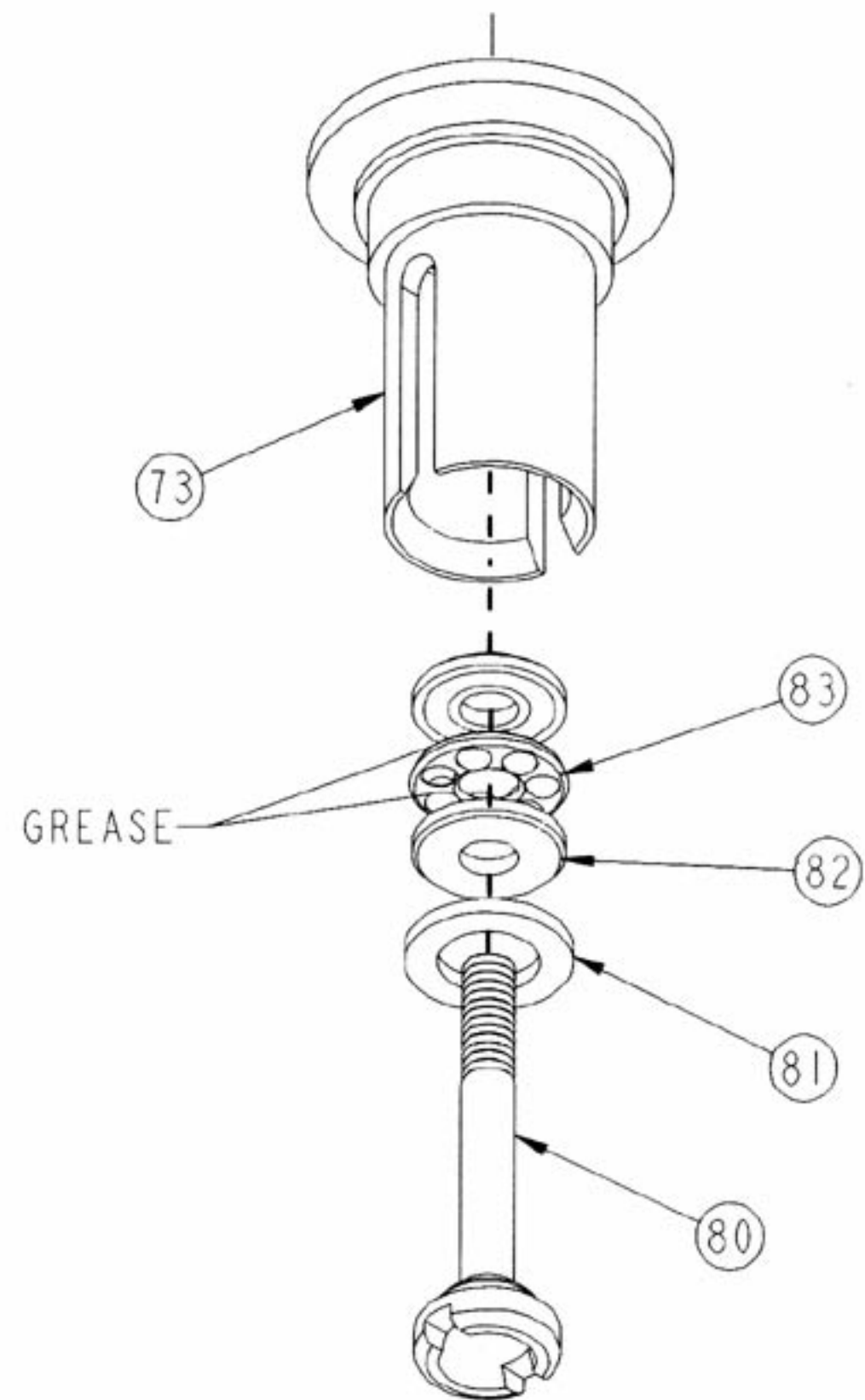


Figure 39

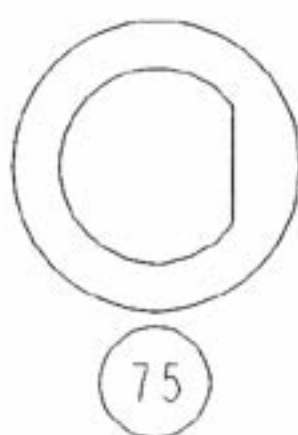


Fig 40.

Step 16. Locate the smallest of the allen wrenches (70) and place it through the slot in the outdrive (73) containing the diff screw (80). Slide the wrench all the way down against the screw (80). By handling the outdrive (73) with the wrench inserted, the diff screw (80) will be held in place while finishing assembly of the diff.

Step 17. Apply a small amount of grease (74) to the outer ring of the outdrive (73). Install the second diff washer (75) again lining up the slots in the outdrive (73) and the washer (75).

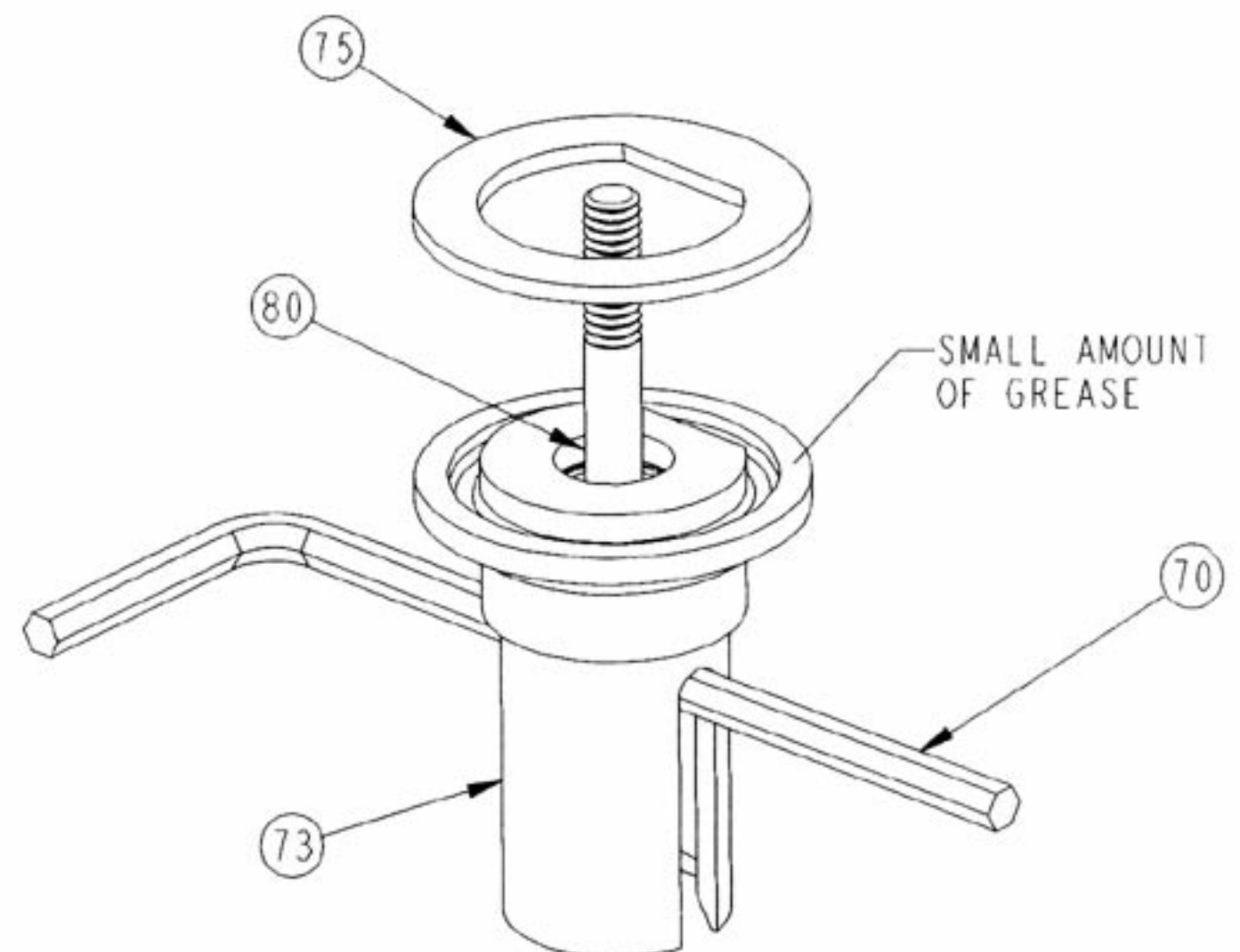


Figure 40

BAG D (Continued)

Fig 41.

Step 18. While holding the diff half (73) with the allen wrench inserted, carefully place the two outdrive/diff halves (73) together.

Step 19. Make sure that the slot in the diff screw (80) is lined up with the slot in the outdrive (73) and that the allen wrench is inserted in the diff screw (80).

Step 20. Hold the diff so that the outdrive (73) with the diff nut carrier (69) is pointing up. Slowly turn the top diff half clockwise to thread the diff screw (80) into the 4-40 mini nut (8) in the diff nut carrier (69). Thread the two halves together until the screw just starts to snug up.

** Note: If the screw will not thread into the nut, make sure that the nut carrier is pushed all the way into the outdrive.*

⚙ When tightening the diff, tighten the screw a little and then "work" the diff a little. Then tighten the diff a little more and "work" the diff again. Continue this until the diff is tight. This will insure proper seating of all the parts in the diff assembly.

Step 21. Tighten the diff until the gear (77) can not be turned while both of the outdrives (73) are being held. Final diff adjustment should be made after completion of the car.

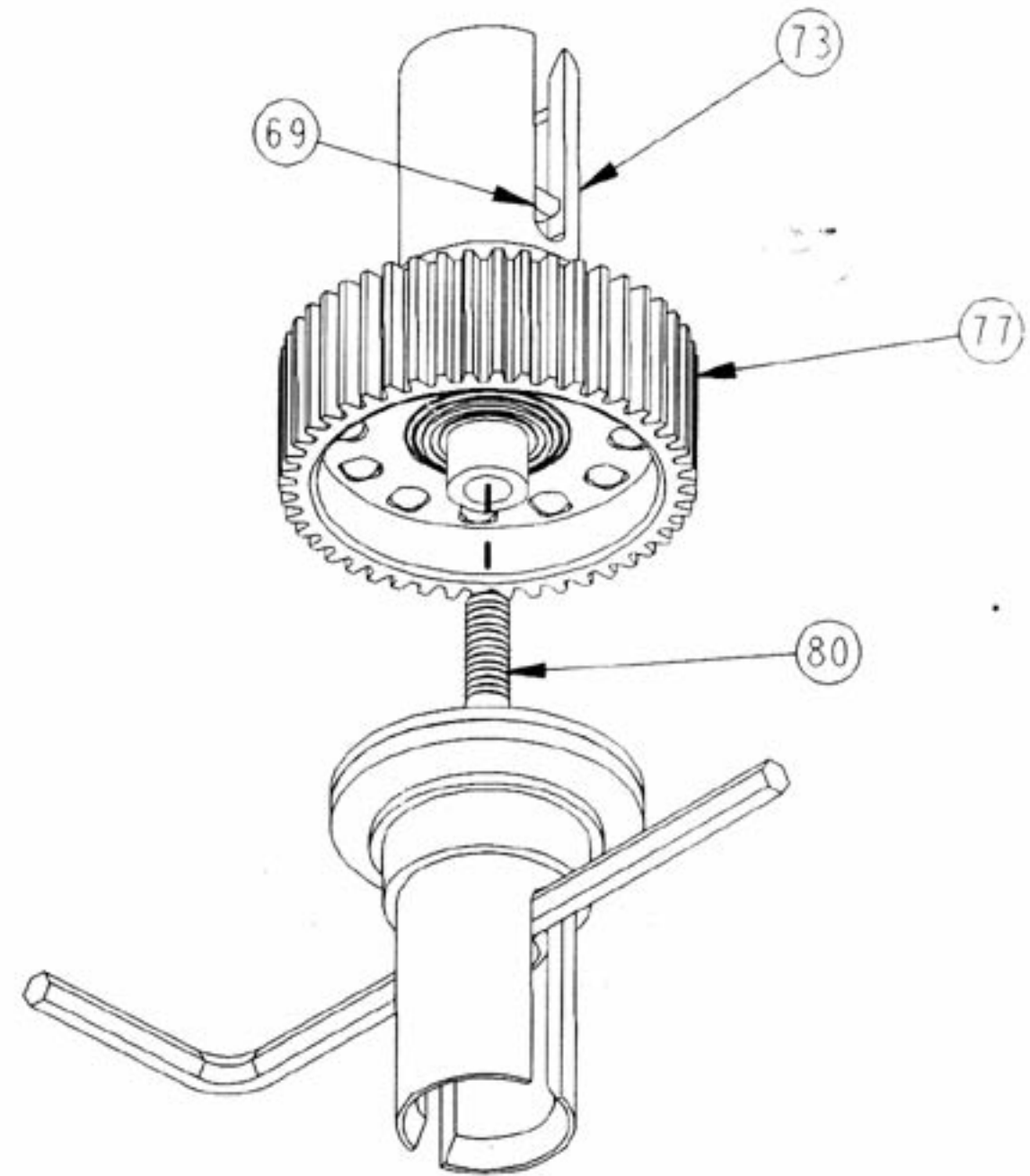


Figure 41

Fig 42.

Step 22. Thread the 4-40 x 1" set screw (84) all the way into the threaded side of the slipper shaft (85). Make sure that the set screw (84) is **TIGHT!**

⚙ A small amount of liquid thread lock will help to hold the set screw securely in place.

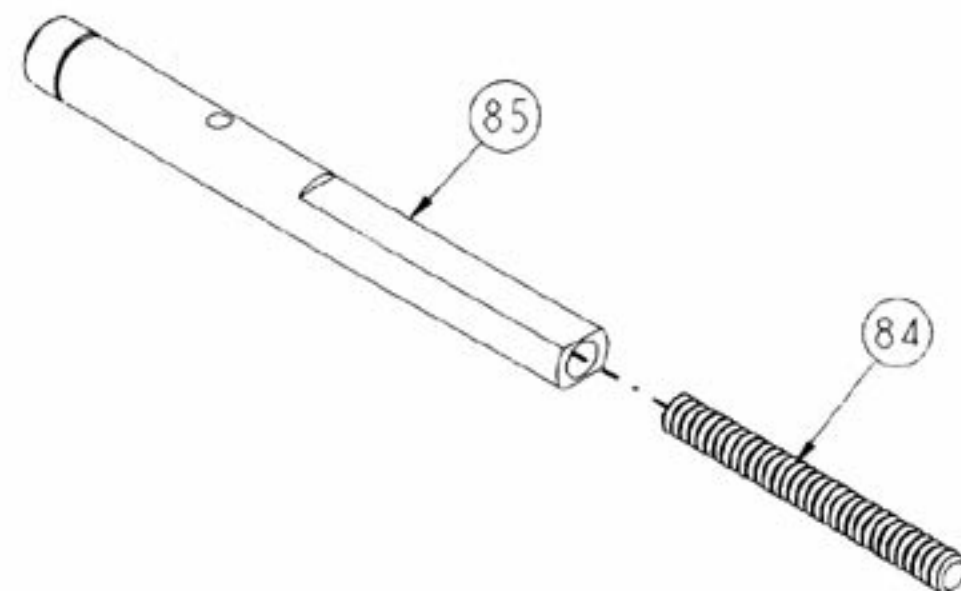


Figure 42

Fig 43.

Step 23. Press the 1/16" x 5/16" spirol pin (86) into the small hole in the slipper shaft (85) so that it extends evenly from both sides of the shaft (85).

Step 24. Slide the top gear (87) over the slipper shaft (85) from the side opposite the set screw (84). Line up the groove in the gear (87) with the pin (86) and slide the gear (87) over the pin (86).

Step 25. Secure the gear (87) to the shaft (85) by inserting a 3/16" 'C' clip (88) into the slot in the slipper shaft (85).

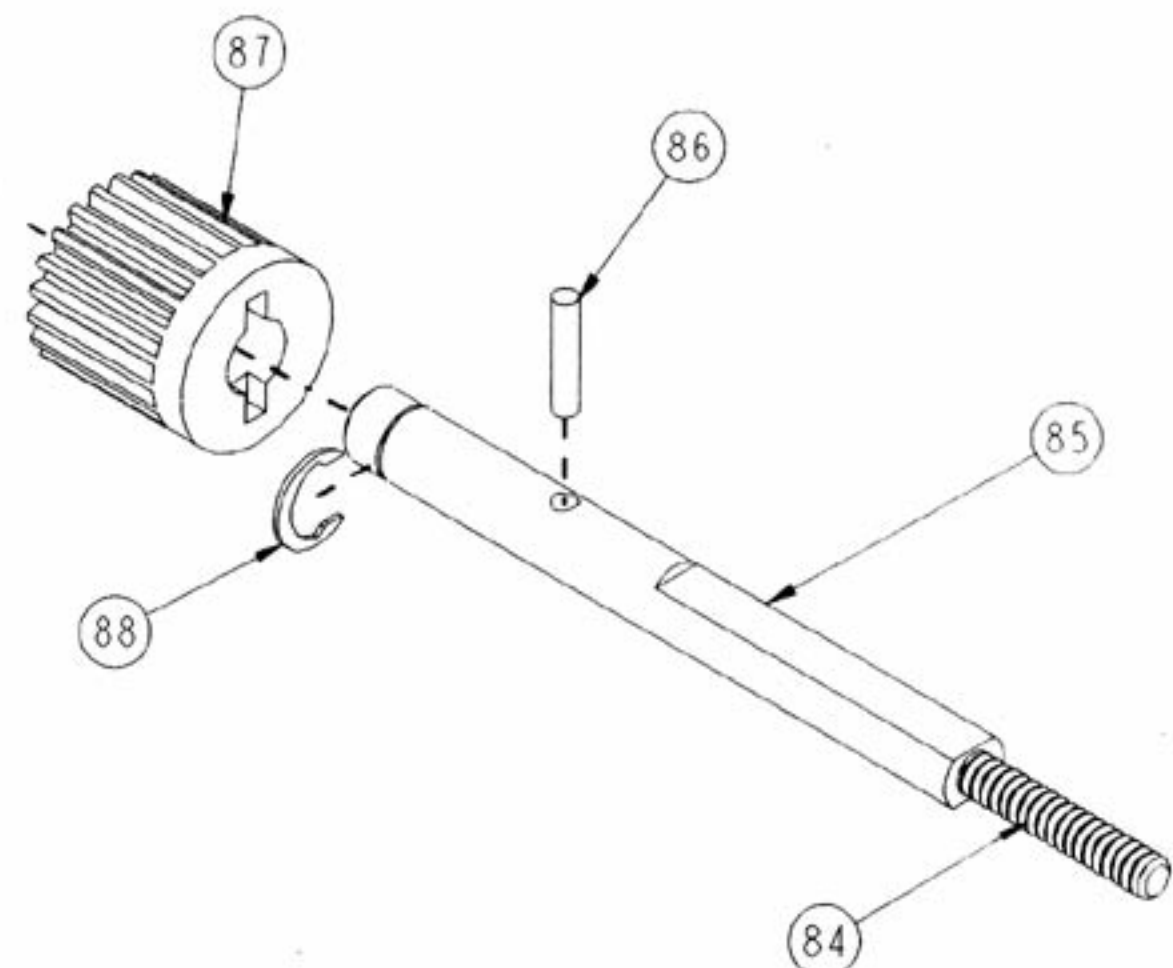


Figure 43

BAG D (Continued)

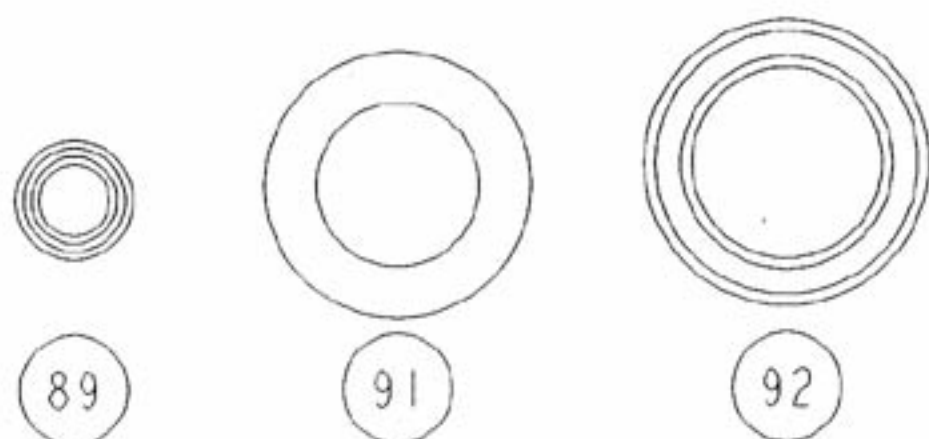


Fig 44.

Step 26. Insert a $\frac{3}{16}$ " x $\frac{5}{16}$ " bearing (89) into the top bearing seat of the left gearbox half (90).

Step 27. Insert a foam outdrive bearing shield (91) into the lower bearing seat of the left gearbox half (90).

Step 28. Insert a $\frac{1}{2}$ " x $\frac{3}{4}$ " bearing (92) into the lower bearing seat of the left gearbox half (90) being careful that the outdrive shield (91) is centered in the bearing seat.

● **IMPORTANT NOTE:** Never allow the gearbox halves to come into direct contact with any type of motor spray. The material used on these parts was selected with performance in mind, and some motor sprays can damage the parts.

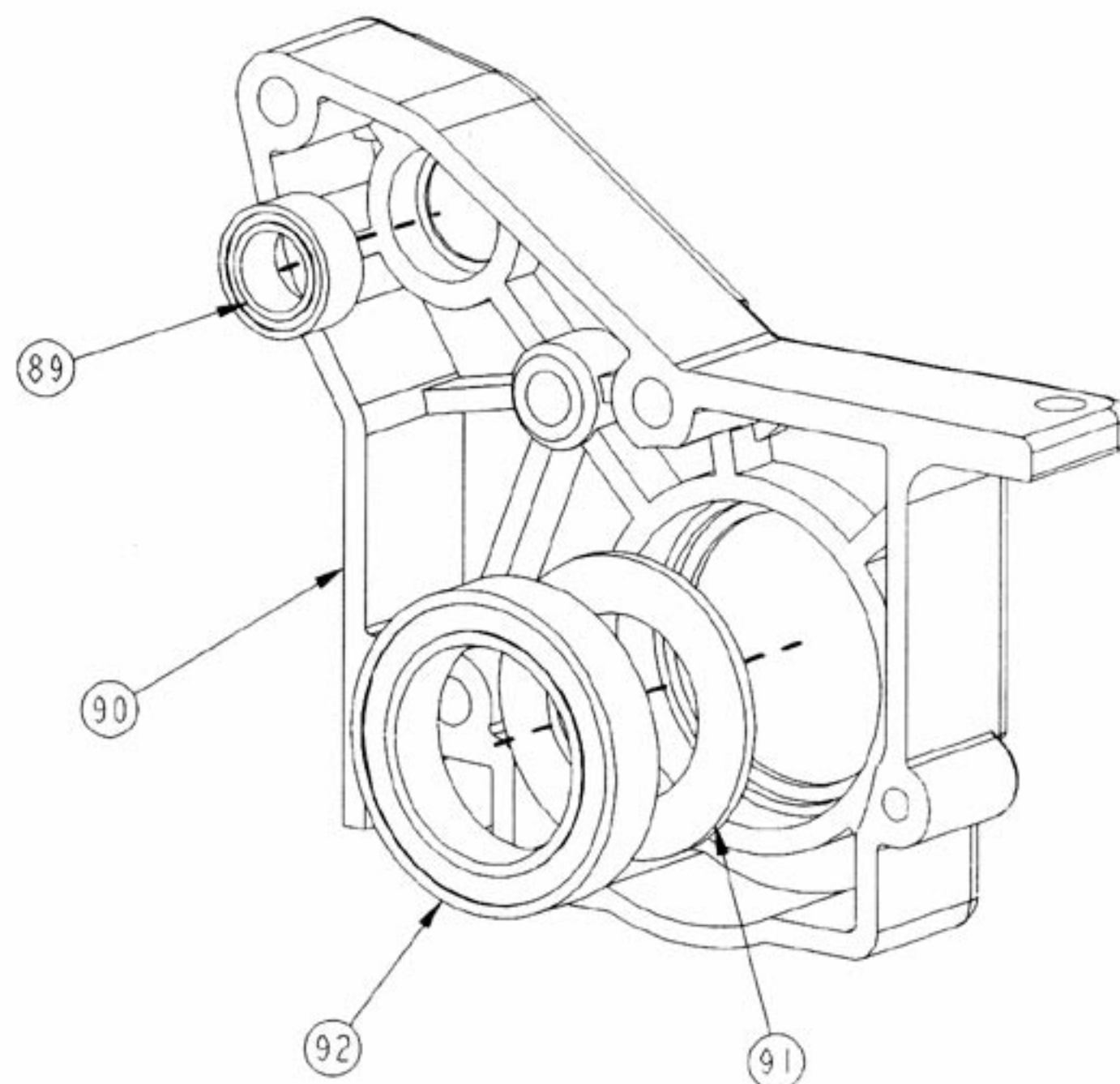


Figure 44

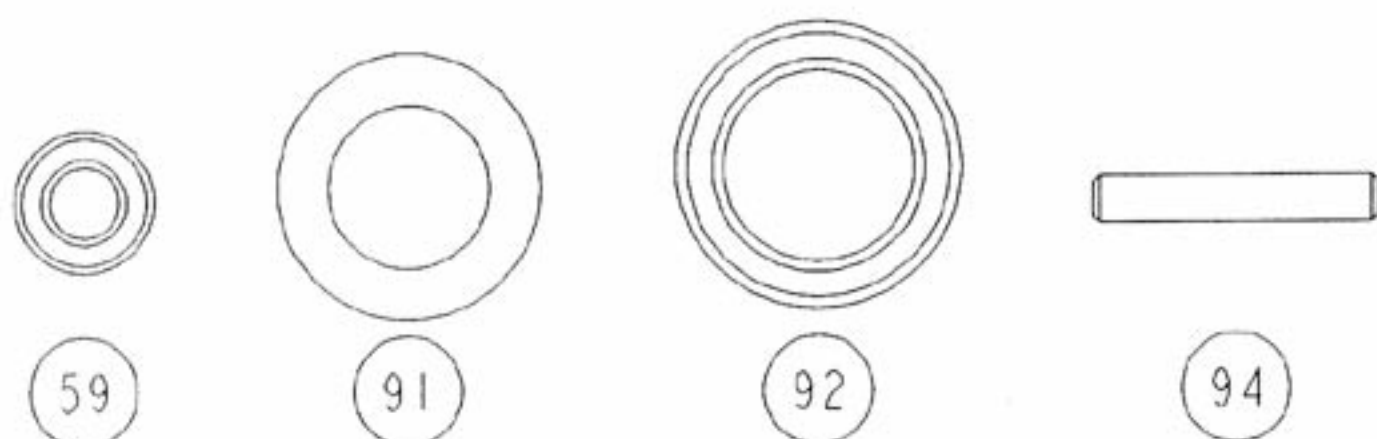


Fig 45.

Step 29. Insert a $\frac{3}{16}$ " x $\frac{3}{8}$ " bearing (59) into the top bearing seat of the right gearbox half (93). Carefully push the bearing (59) all the way into the bearing seat using a pen or the handle of a hobby knife. Care should be taken not to damage the seals on the bearing (59).

Step 30. Insert a bearing shield (91) and $\frac{1}{2}$ " x $\frac{3}{4}$ " bearing (92) into the lower bearing seat of the right gearbox half (93). Again be sure that the foam shield (91) is centered in the bearing seat.

Step 31. Press, and lightly tap the idler gear shaft (94), into the hole in the center of the right gearbox half (93).

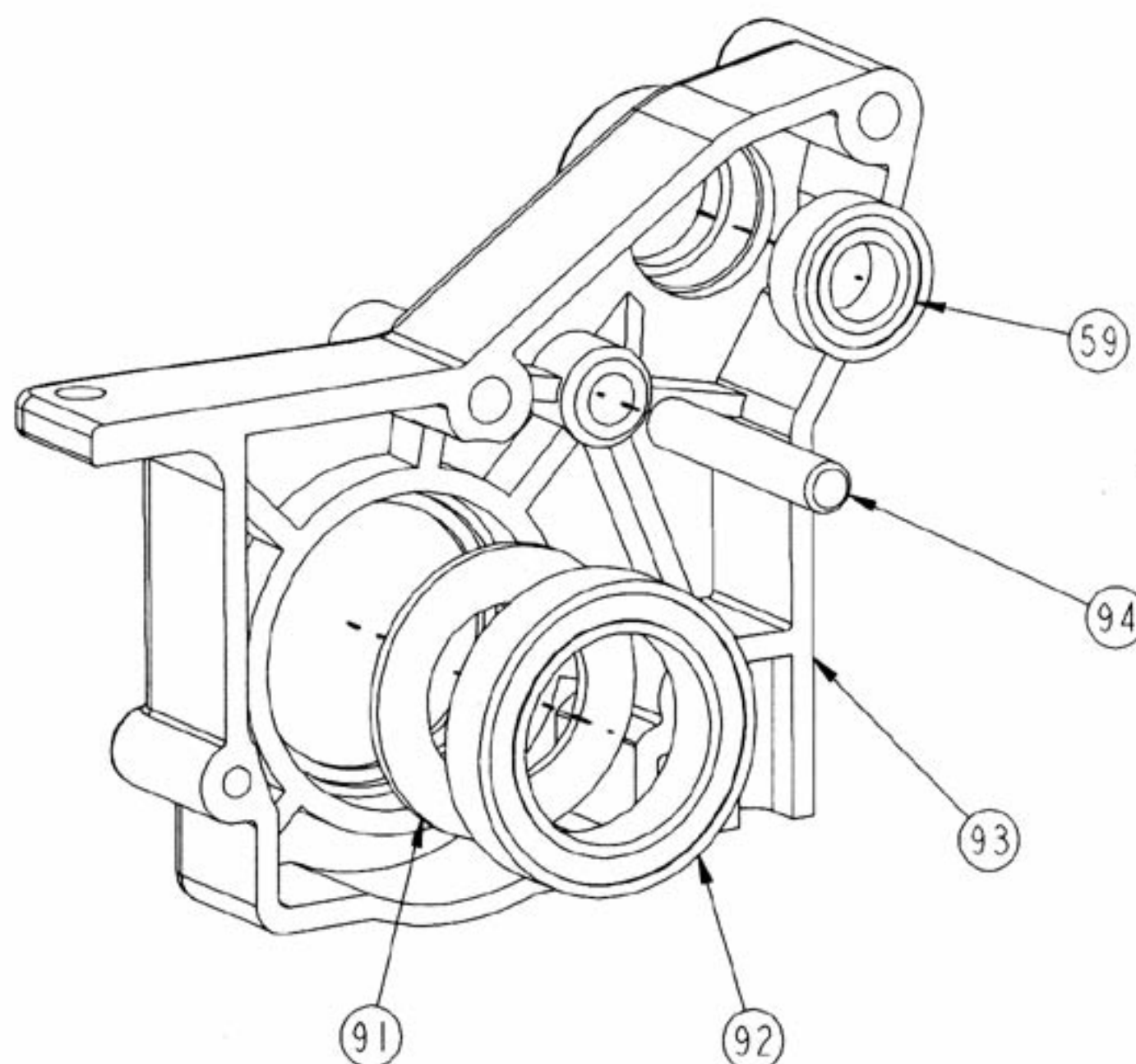


Figure 45

BAG D (Continued)

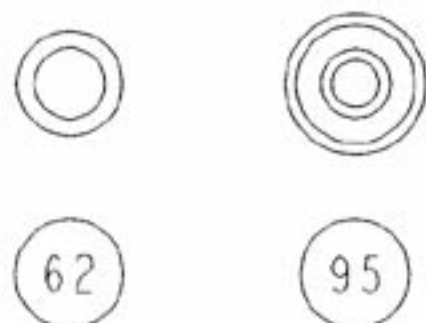


Fig 46.

Step 32. Slide the rear axle/gearbox spacer (62) over the slipper shaft (85), from the side with the set screw, and against the top gear (87).

Step 33. Insert the slipper shaft (85), threaded side first, through the bearing (59) in the right gearbox half (93).

Step 34. Insert a 1/8" x 3/8" bearing (95) into each side of the idler gear (96). Place the idler gear (96) over the idler gear shaft (94).

Step 35. Insert the differential assembly into the 1/2" x 3/4" bearing (92) in the right gearbox half (93). Insert the differential diff nut carrier (69) side first.

** Note: Align the teeth on all gears when installing the differential. Be careful when inserting the diff assembly so that the outdrive shield is not pushed through the other side.*

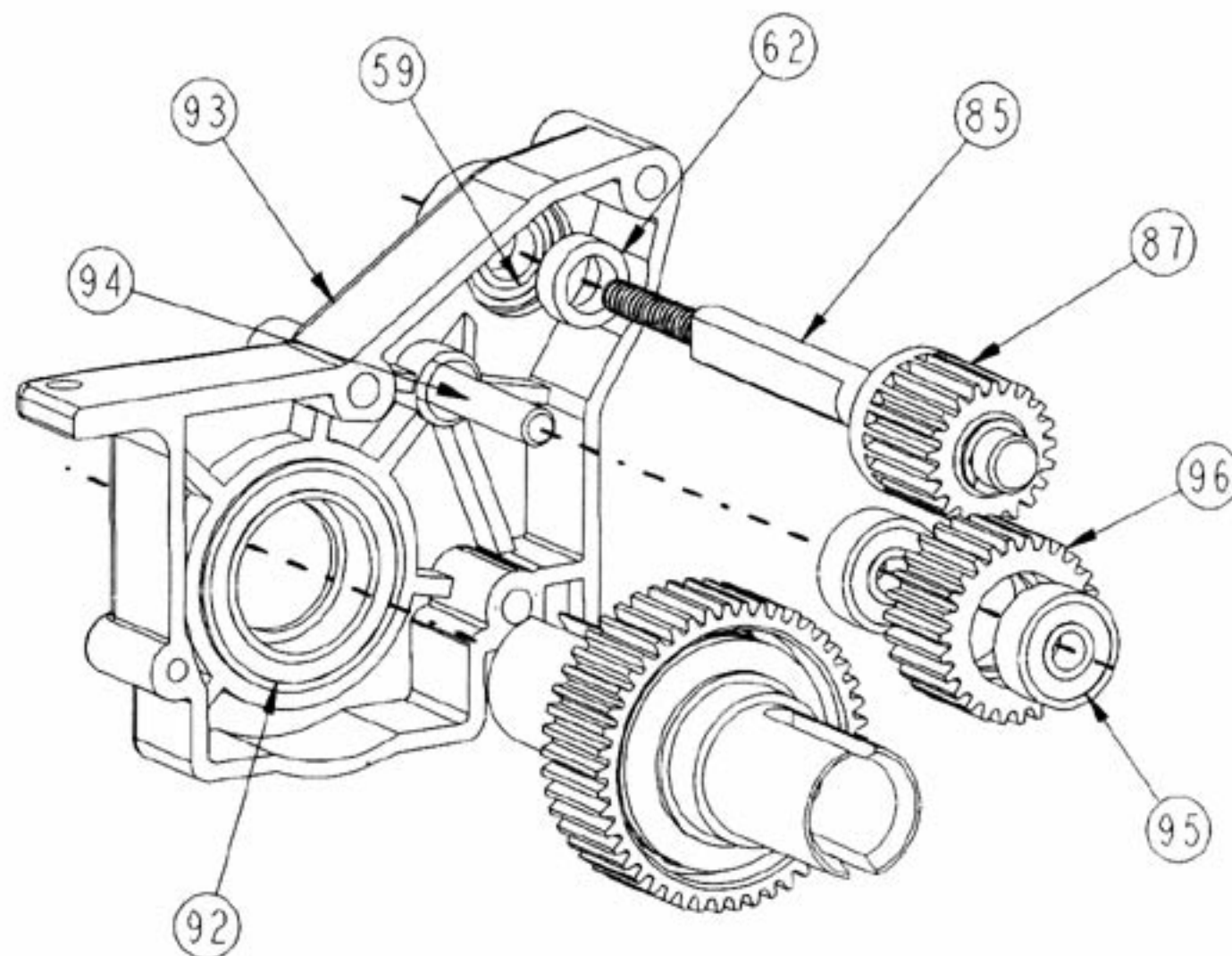


Figure 46



Fig 47.

Step 36. Carefully place the left gearbox half (90) over the assembled right gearbox half (93).

** Note: Again be careful not to push the outdrive shield through the outside of the bearing seat.*

Step 37. Thread the 2-56 x 5/8" cap head screw (97) into the lower, forward hole in the transmission housing from the left side.

** Note: Do not tighten the screw yet. Just snug it up.*

Step 38. Place the motor plate (98) against the right gearbox half (93) and line up the three holes in the transmission housing with the three holes in the motor plate (98).

Step 39. Insert a 4-40 x 1" cap head screw (99) into each of the three holes in the transmission housing and thread them into the motor plate (98). Tighten the three 4-40 x 1" (99) screws followed by the 2-56 x 5/8" cap head screw (97).

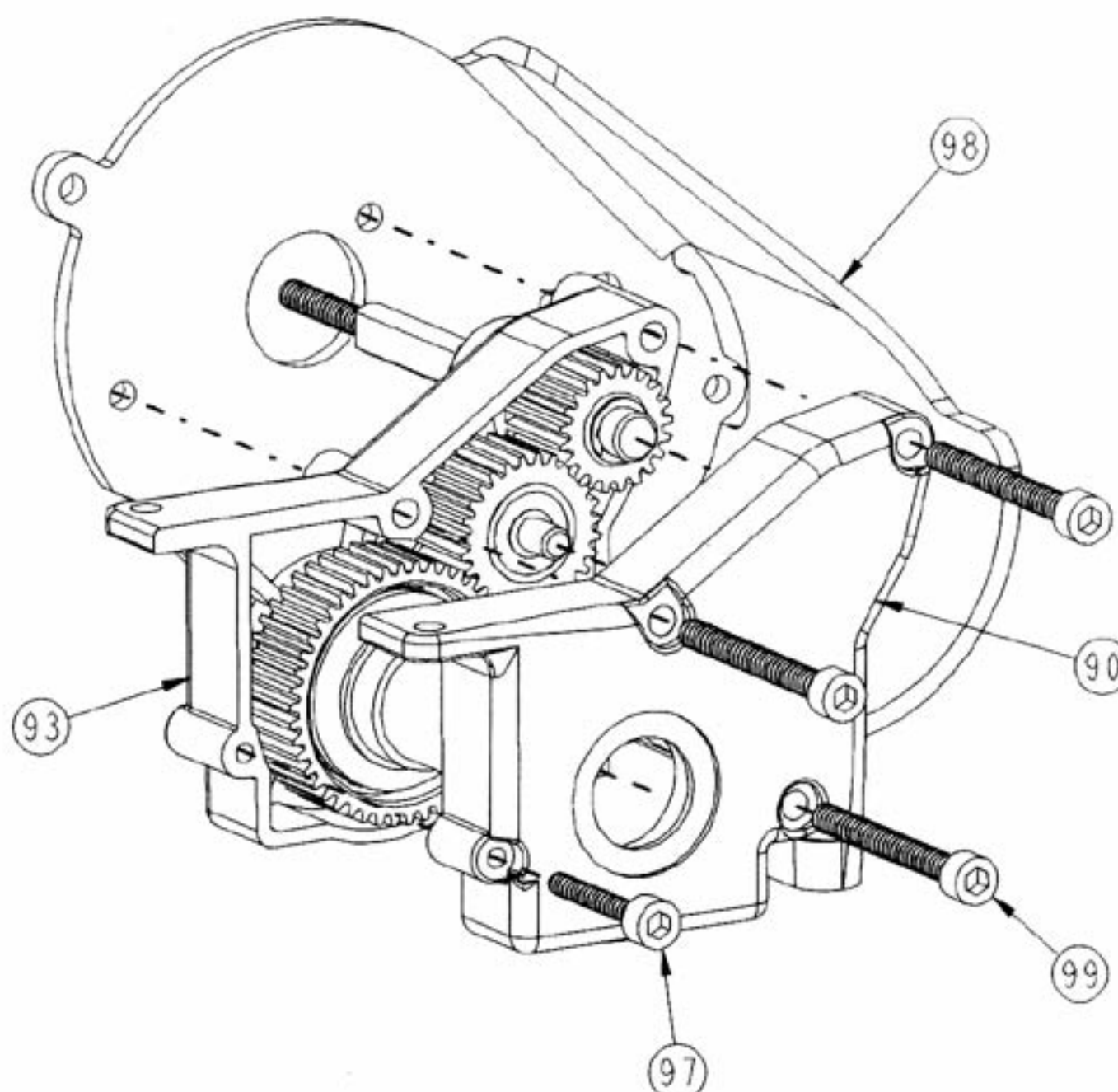


Figure 47

BAG E

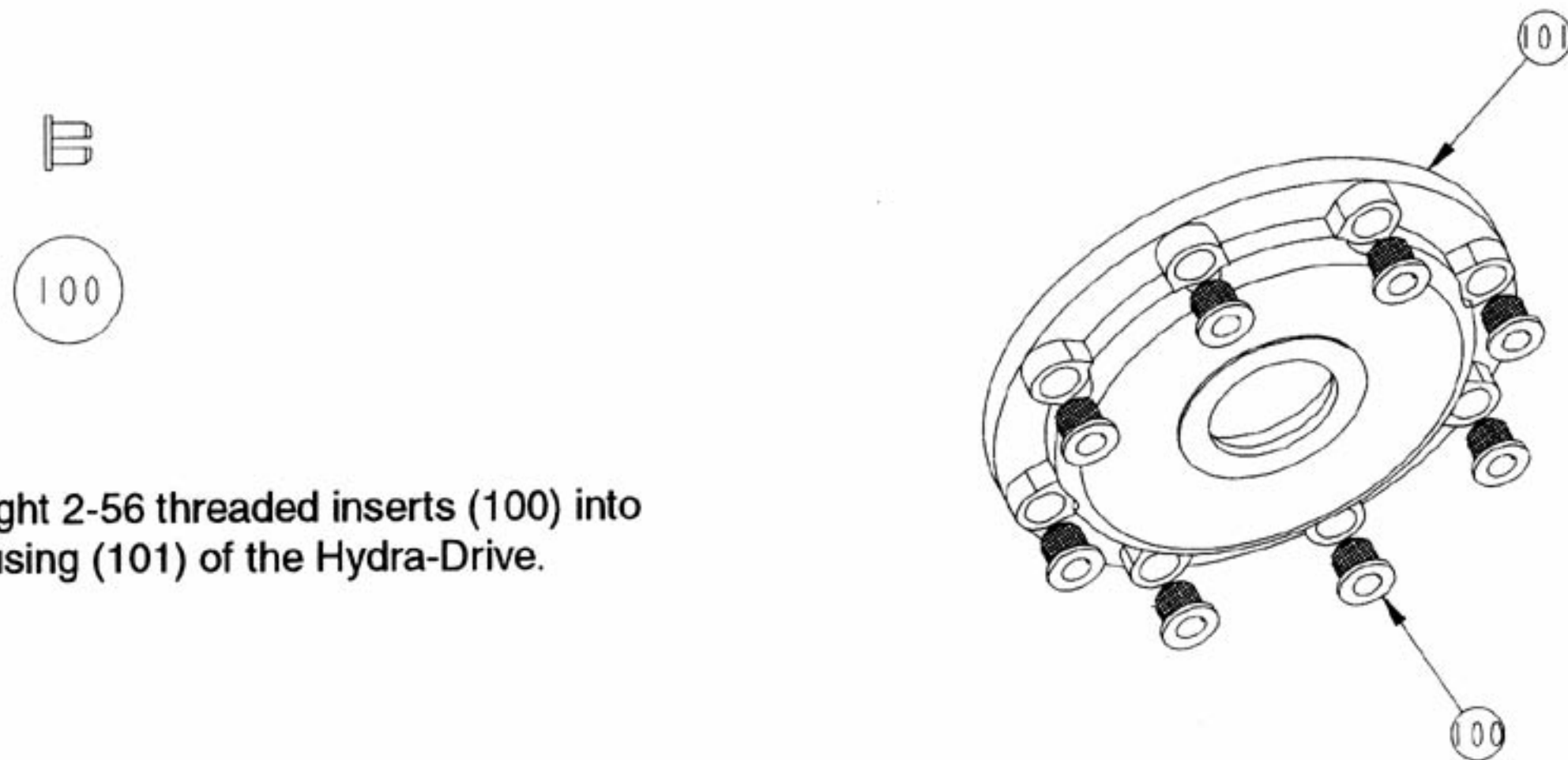


Fig 48.

Step 1. Press the eight 2-56 threaded inserts (100) into the holes in the inside housing (101) of the Hydra-Drive.

Figure 48

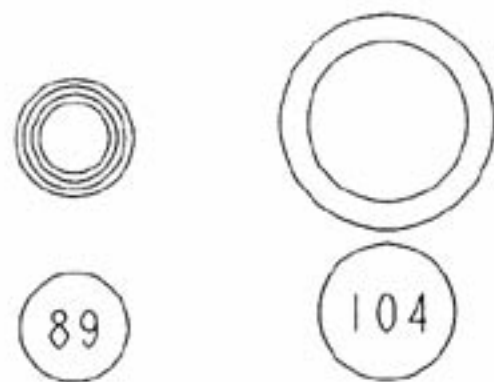


Fig 49.

Step 2. Insert a 3/16" x 5/16" bearing (89) into the short standoff on the impeller (102).

Step 3. Cut 3/16" off the tip of the Hydra fluid (103) bottle.

© **IMPORTANT NOTE:** *Do not* cut more than 3/16". If the hole in the bottle is too small, open it up with a pin or hobby knife. Cutting *too much* from the tip will leave the tip too large making it difficult to fill the Hydra-Drive unit in later steps.

Step 4. Apply a thin coat of fluid to each of the quad seals (104) and slide one over each standoff of the impeller (102).

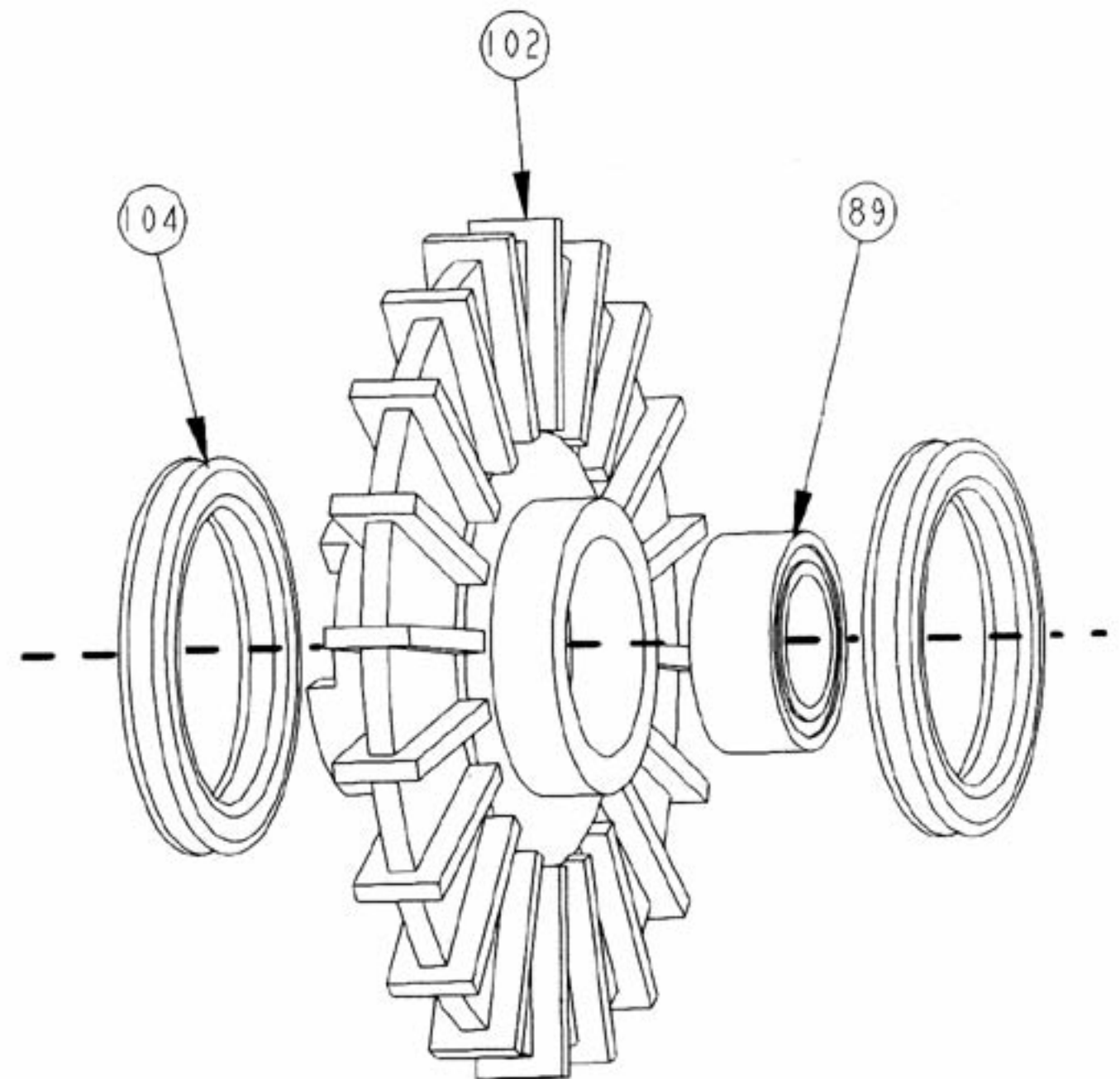


Figure 49

BAG E (Continued)



Fig 52.

Step 14. Press a 3/16" x 5/16" bearing (89) into the center of the spur gear (109) on the interlock side. The bearing will only go in about half way. *Do not try to force it!*

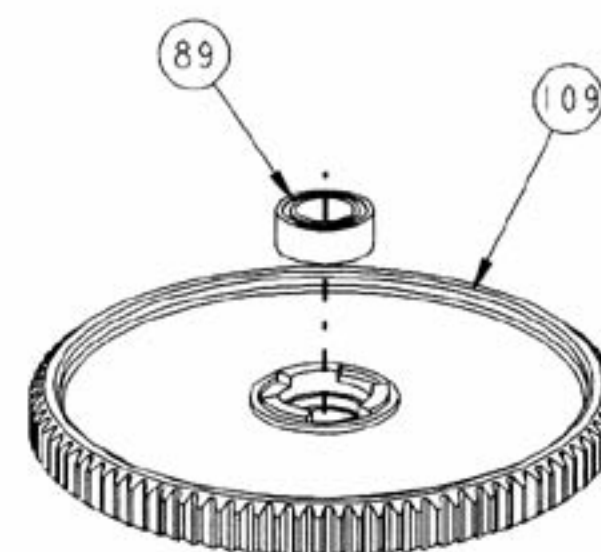


Figure 52

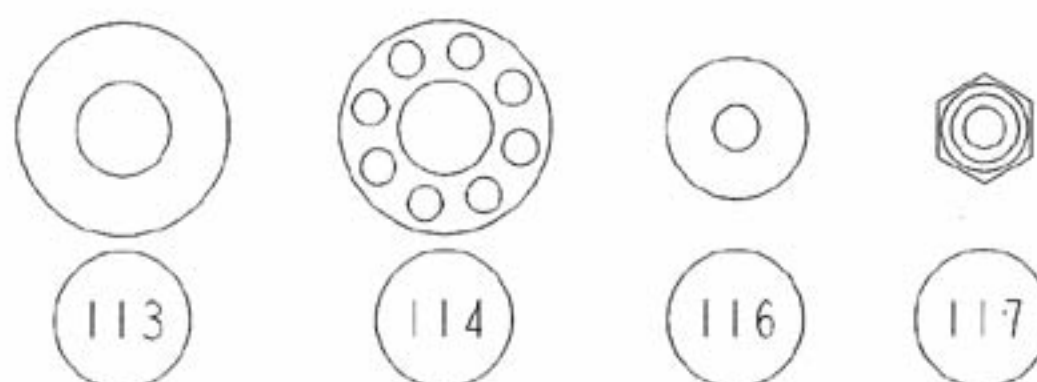


Fig 53.

Step 15. Slide the slipper back plate (110) over the slipper shaft (85), aligning the flat sections on the slipper shaft (85) with the flat sections of the back plate (110).

Step 16. Place the slipper pad (111) on the slipper gear plate (112) and align the notches on the gear plate (112) with the notches on the slipper pad (111).

Step 17. Place the slipper pad (111) and gear plate (112), pad side first, over the slipper shaft (85). Try to get this assembly as close to center on the shaft (85) as possible.

Step 18. Carefully install the spur gear (109) with the bearing side out. Lightly rotate the spur gear (109) until the three posts line up with the three holes in the gear plate (112). Snap into place being careful to keep the slipper pad (111) aligned with the gear plate (112).

Step 19. Place the assembled Hydra-Drive unit over the end of the shaft (85), interlock side first. Carefully line up the splines on the gear (109) with the splines on the Hydra-Drive, and push them together.

Step 20. Install 1/4" x 9/16" thrust washer (113) over the post on the Hydra-Drive unit. Slide the 1/4" x 9/16" thrust bearing (114) over the post, next to the thrust washer (113) and then install the second thrust washer (113).

Step 21. Place the silver Hydra-Drive slipper spring (115) over the shaft (85), next to the thrust bearing assembly.

Step 22. Install the Spring retaining washer (116) over the shaft, small side first. Next, thread the 4-40 aluminum lock nut (117) onto the shaft assembly.

● **IMPORTANT NOTE:** Before tightening the nut, check to see that the slipper pad is properly aligned with the gear plate. If it is not, correct it before proceeding.

Step 23. Tighten the 4-40 lock nut (117) all the way down, and then back it off three full turns. This is a good starting point for adjustment. Final adjustment can be made later.

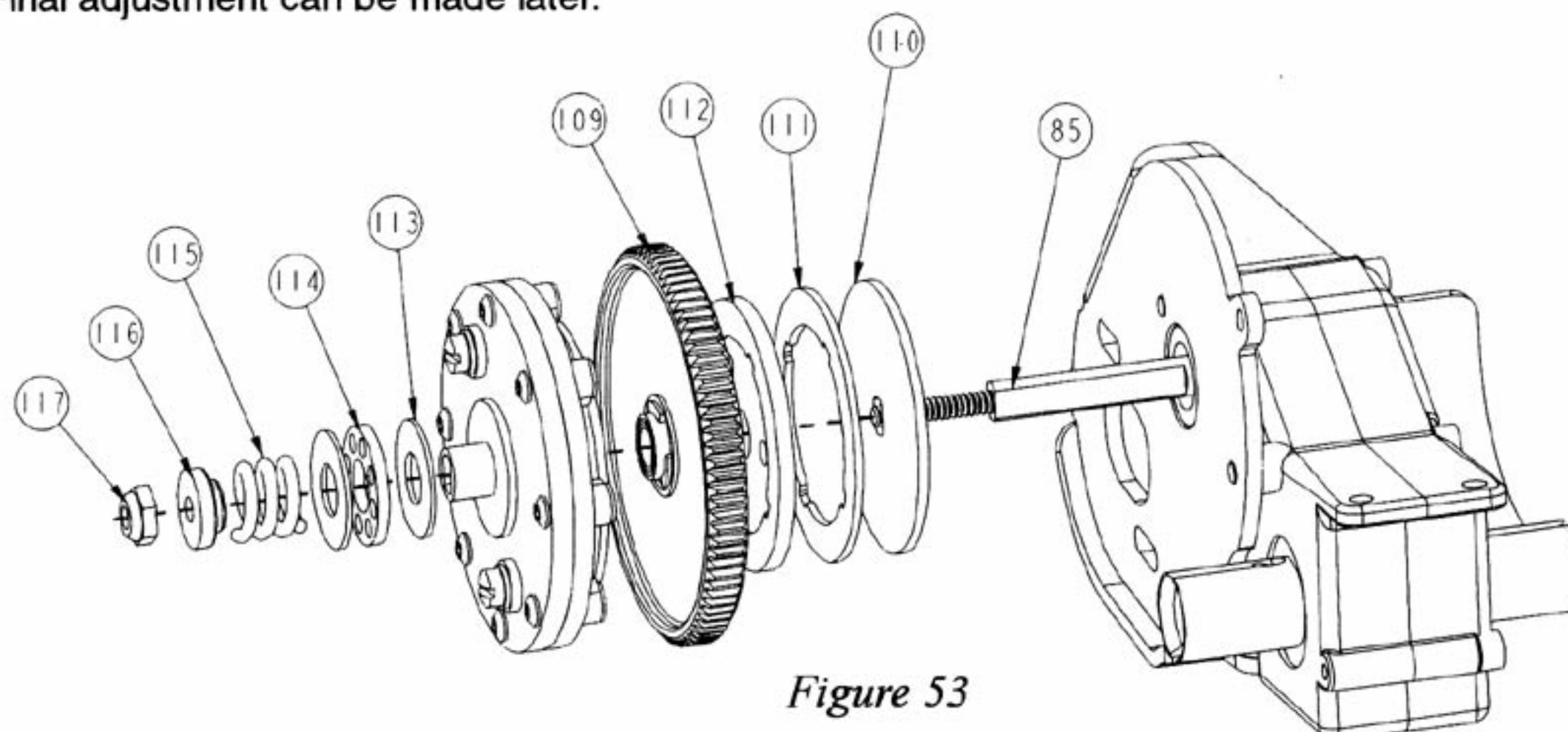


Figure 53

BAG E (Continued)

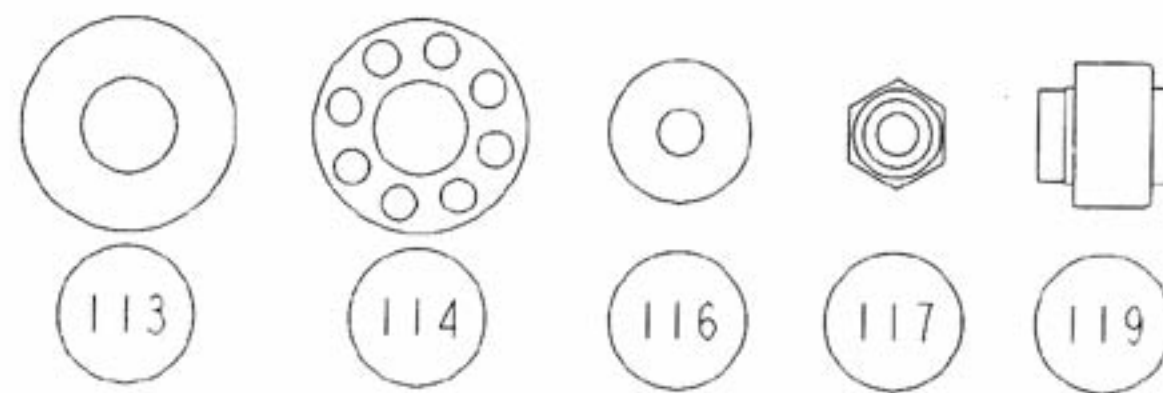


Fig 54

You will notice some extra parts in this assembly bag. These are for the standard slipper without the Hydra-Drive unit. Although it is recommended that the Hydra-Drive be installed and used, the following steps explain how to install the standard friction type slipper.

If you have installed the Hydra-Drive unit, go to figure 55, step 30.

Step 24. Follow steps 14 through 18, figures 52 and 53.

Step 25. Place the slipper spring cup (118), open side out, over the shaft (85) against the spur gear (109).

Step 26. Insert one 1/4" x 9/16" thrust washer (113) into the spring cup (118), then the 1/4" x 9/16" thrust bearing (114), followed by the second thrust washer (113). These should all sit in the cup (118).

Step 27. Slide the slipper spacer (119), long side first, onto the shaft (85) assembly.

Step 28. Place the gold slipper spring (120) over the shaft (85), followed by the spring retaining washer (116) and secure with the 4-40 aluminum lock nut (117).

● **IMPORTANT NOTE:** Before tightening the nut, check to see that the slipper pad is properly aligned with the gear plate. If it is not, correct it before proceeding.

Step 29. Tighten the 4-40 lock nut (117) all the way down, and then back it off four full turns. This is a good starting point for adjustment. Final adjustment can be made later.

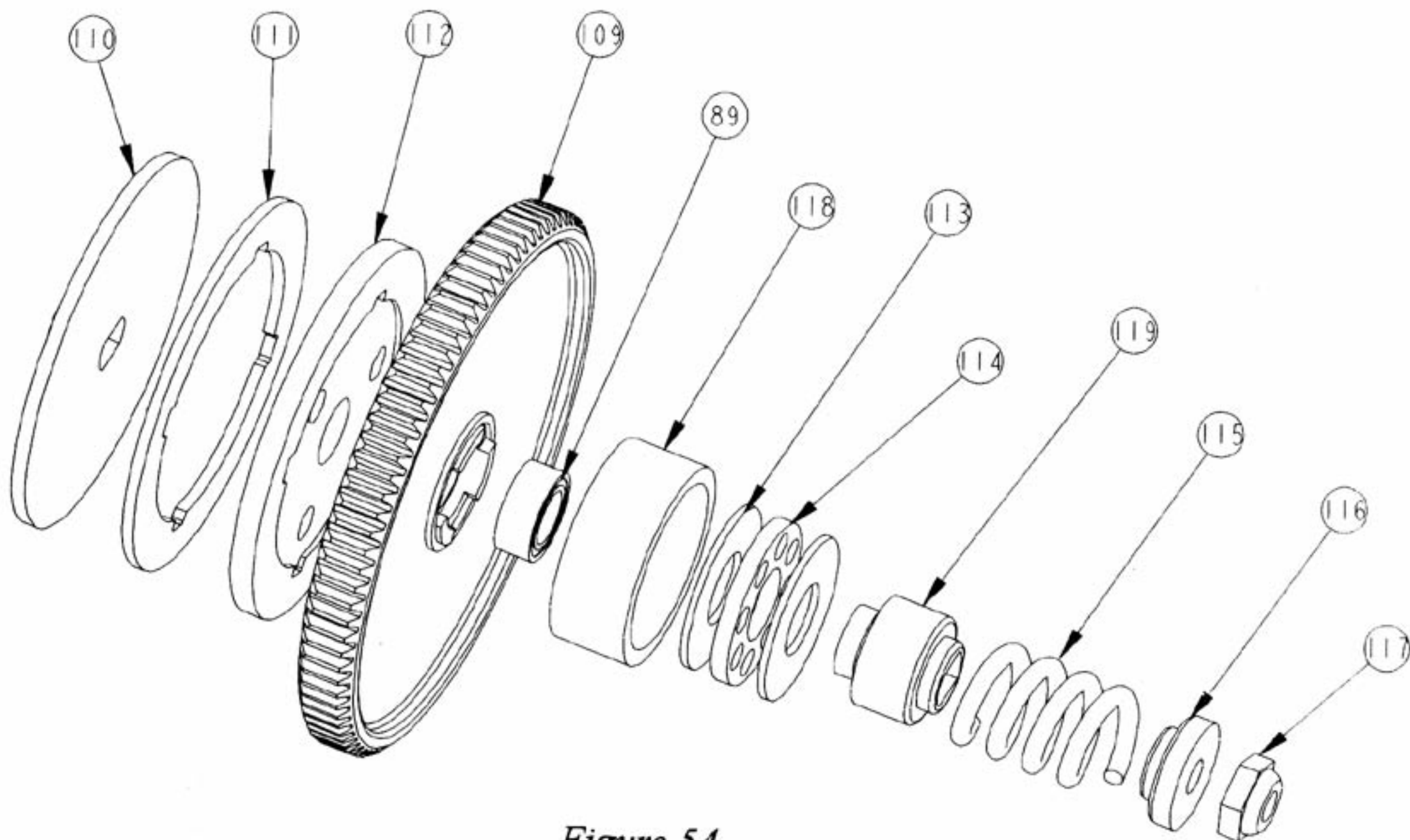


Figure 54

BAG E (Continued)

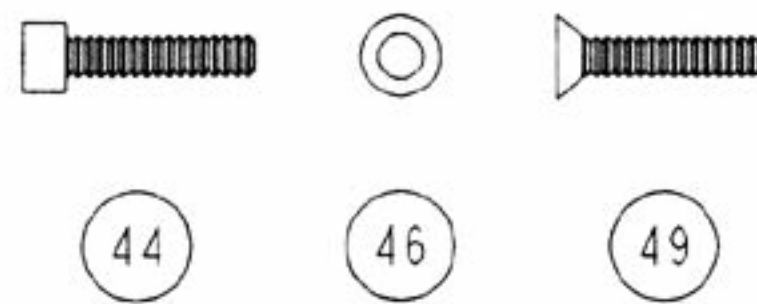


Fig 55.

Step 30. Place the assembled chassis on a flat table so that the rear suspension arms (64), (65) are flat and the chassis (11) is flat on the table. This will make installing the transmission a little easier.

Step 31. Insert the dog bones (53) into each of the outdrive/diff halves (73) and place the transmission into the rear pivot support (48).

Step 32. Align the two forward holes in the transmission housing with the two holes in the rear bulkhead (51).

Step 33. Place a gold washer (46) over each of the two 4-40 x 1/2" cap head screws (44) and thread one into each of the two holes in the transmission housing and into the rear bulkhead (51).

Do not tighten the screws all the way yet! Leave the screw head about 1/16" above the transmission housing.

Step 34. Hold the rear arms (64), (65) up so that the dog bones (53) stay in place, and turn the car over. Apply a small amount of diff grease (74) to each of the two 4-40 x 1/2" flat head screws (49). Thread the screws (49) through the two holes in the back of the rear pivot support (48), through the motor plate (98) and into the transmission housing.

Step 35. Tighten these two screws (49) all the way. Turn the car back over, being careful to keep the dog bones in place, and tighten the other two screws (44).

** Note: It's a good idea to leave your car sitting on a flat surface until the shocks are assembled and installed. This way the dog bones will stay in place.*

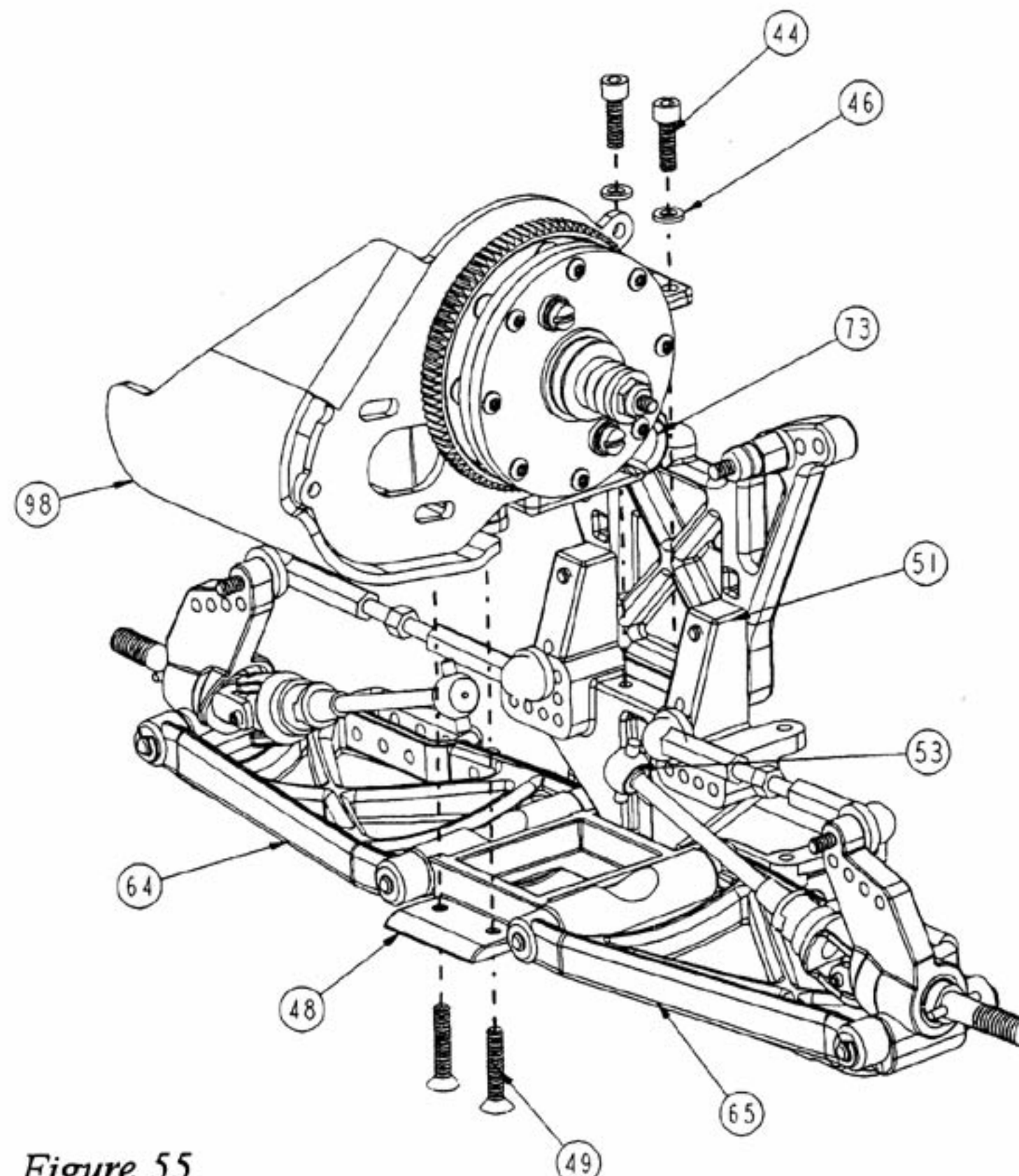


Figure 55

BAG F

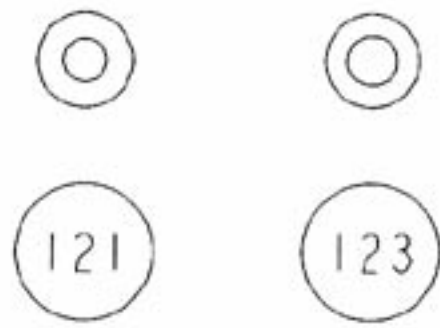


Fig 56.

Step 1. Place one shock 'O' ring (121) into the cartridge body (122), making sure that the 'O' ring (121) sits flat in the bottom of the cartridge body (122).

Step 2. Insert the cartridge spacer (123) into the cartridge body (122) followed by a second 'O' ring (121).

Step 3. Once the second 'O' ring (121) is inserted, and is flush with the top of the cartridge body (122), "snap" the cartridge cap (124) onto the cartridge body (122).

Step 4. Make four cartridge assemblies.

* Note: Cartridges in some kits may be pre-assembled at the factory.

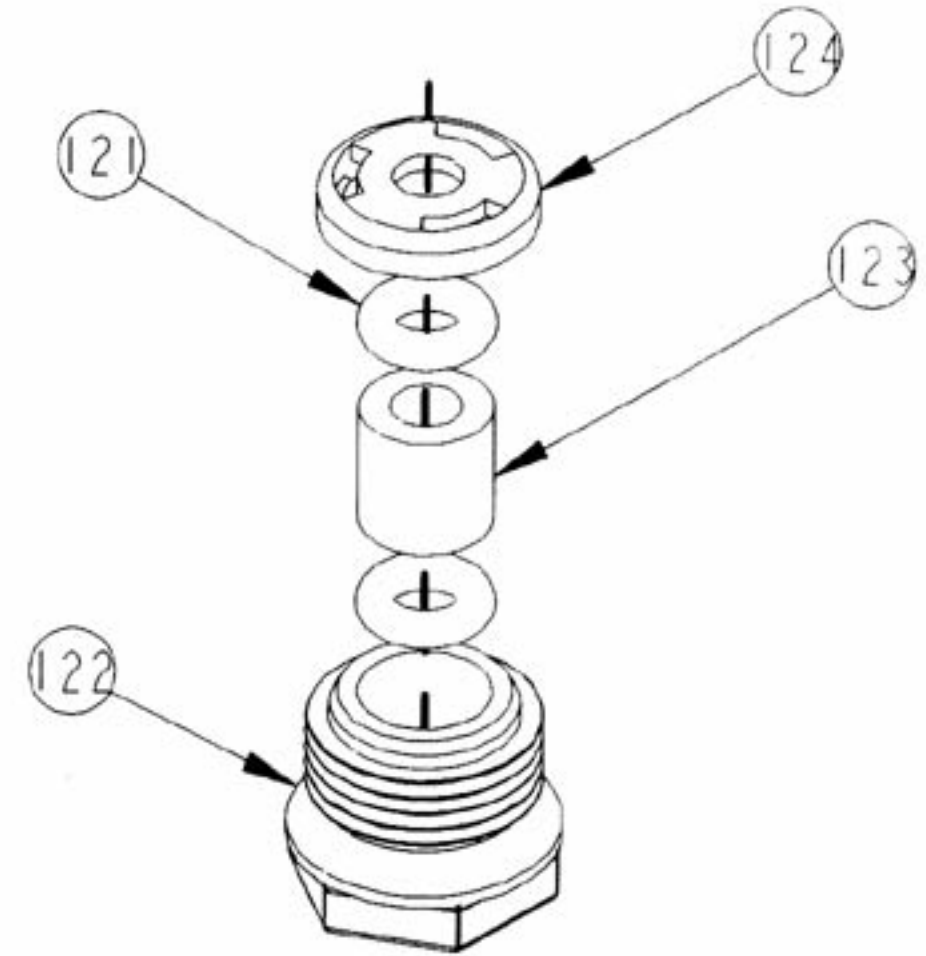


Figure 56

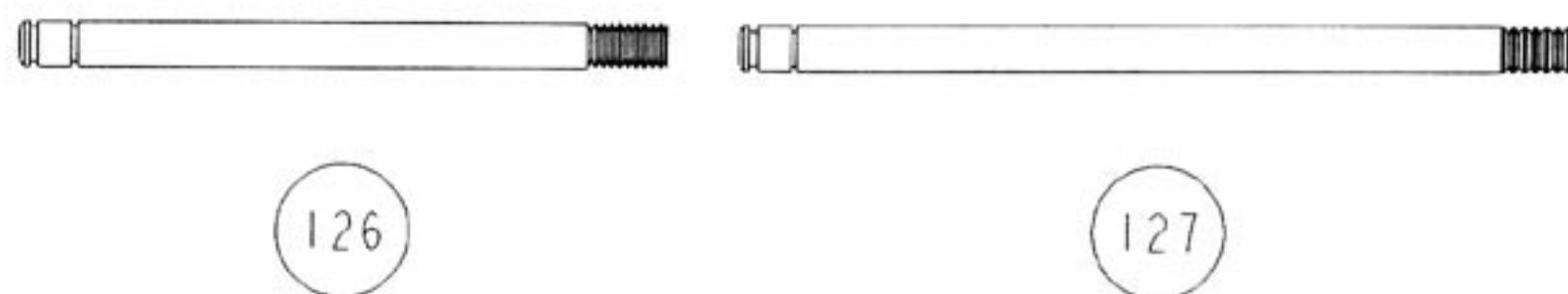


Fig 57.

Step 5. Place a drop of shock fluid (125) on the grooved end of each shock shaft [front (126), rear (127)] and slide a cartridge, hex end first, down the shock shaft (126), (127) towards the threads.

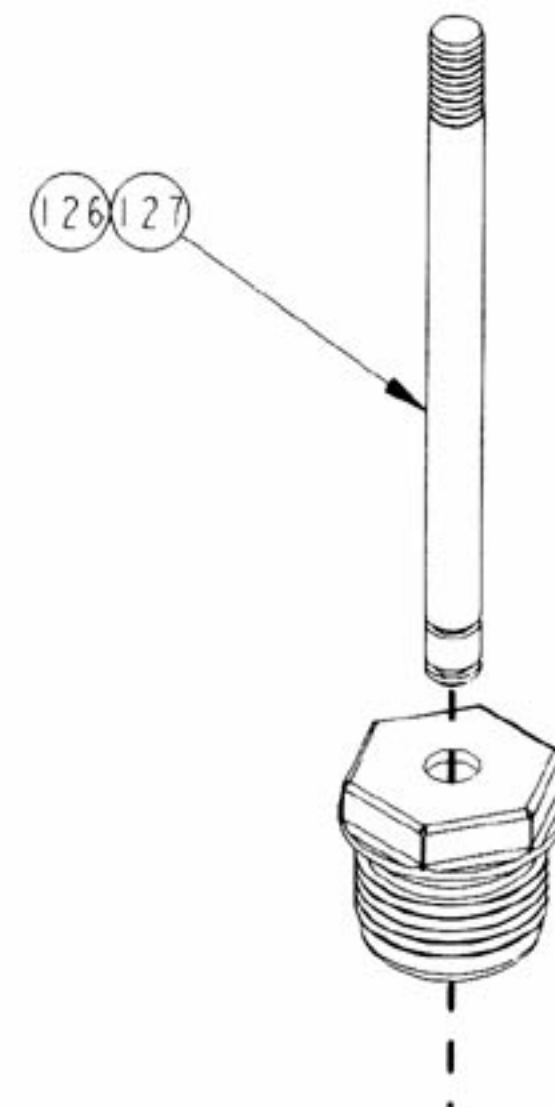


Figure 57

BAG F (Continued)



Fig 58.

Step 6. Using needle nose pliers, or small vise grips, grasp the front shock shaft (126) between the grooves and thread the shaft (126) into a shock end (128). Thread the shaft (126) all the way into the shock end (128) until the threads stop.

Step 7. Repeat step 6 for the second front shaft (126).

Step 8. Before threading the shock ends (128) onto the rear shock shafts (127), place a 'B' shock spacer (129) (larger of the two spacers, marked with a 'B') over the shaft (127) and next to the cartridge.

* Note: Shock spacers are only used on the rear shock shafts.

Step 9. Now, with the spacers in place, attach a shock end (128) to both rear shock shafts (127) as described in step 6.

Step 10. Carefully snap a 1/4" swivel ball (130) into each of the shock ends (128) on the four shock shafts (126), (127).

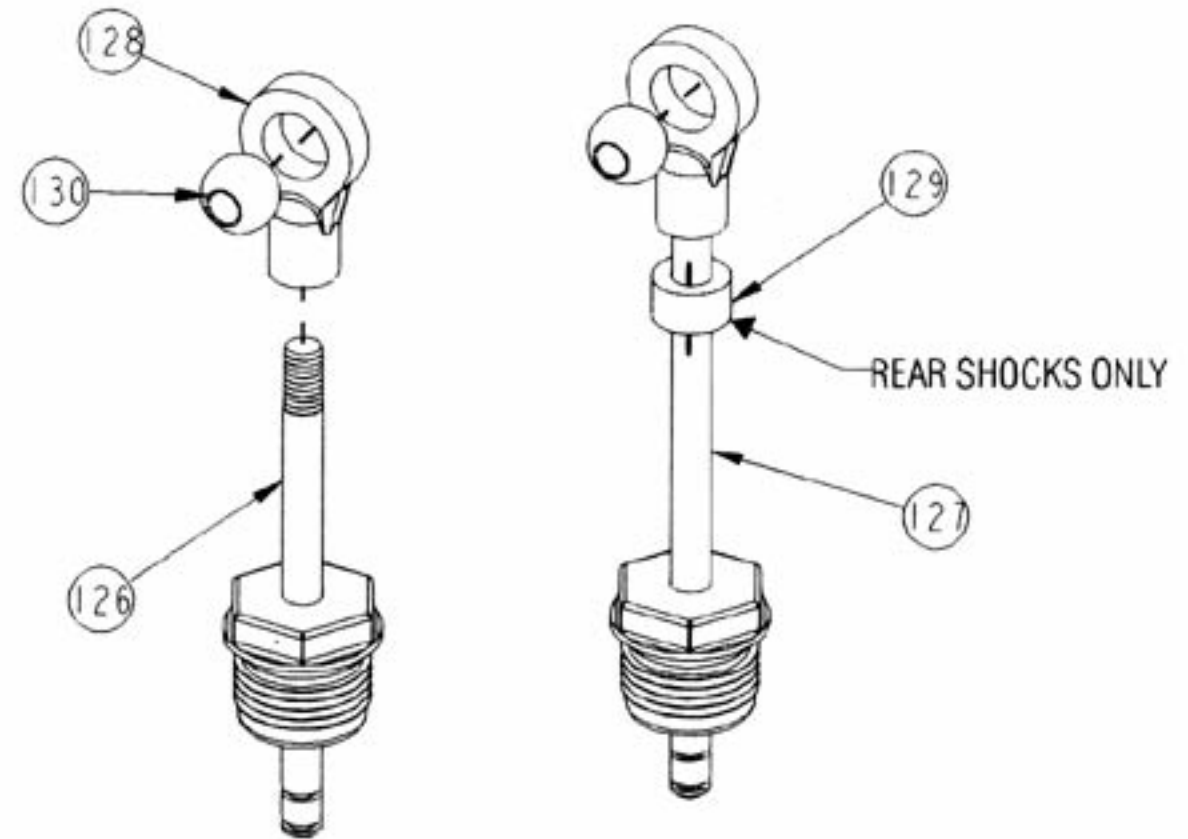


Figure 58

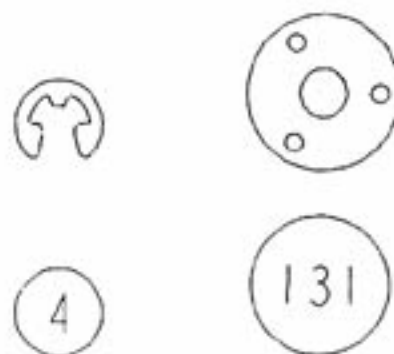


Fig 59.

Step 11. Snap a 1/8" 'E' clip (4) into the groove closest to the cartridge on both front shock shafts (126).

Step 12. Before installing the 'E' clip to the rear shock shafts (127), slide an 'A' shock spacer (129) (the smaller of the two spacers, marked 'A') over the shaft (127) next to the cartridge. Once the spacers are in place, snap a 1/8" 'E' clip (4) into the groove closest to the cartridge on both rear shock shafts (127).

* Note: Shock spacers are only used on the rear shock shafts.

Step 13. Slide a shock piston (131) onto each of the four shafts (126), (127) until it rests against the 'E' clip (4). Secure the piston (131) to the four shafts (126), (127) with a second 'E' clip (4).

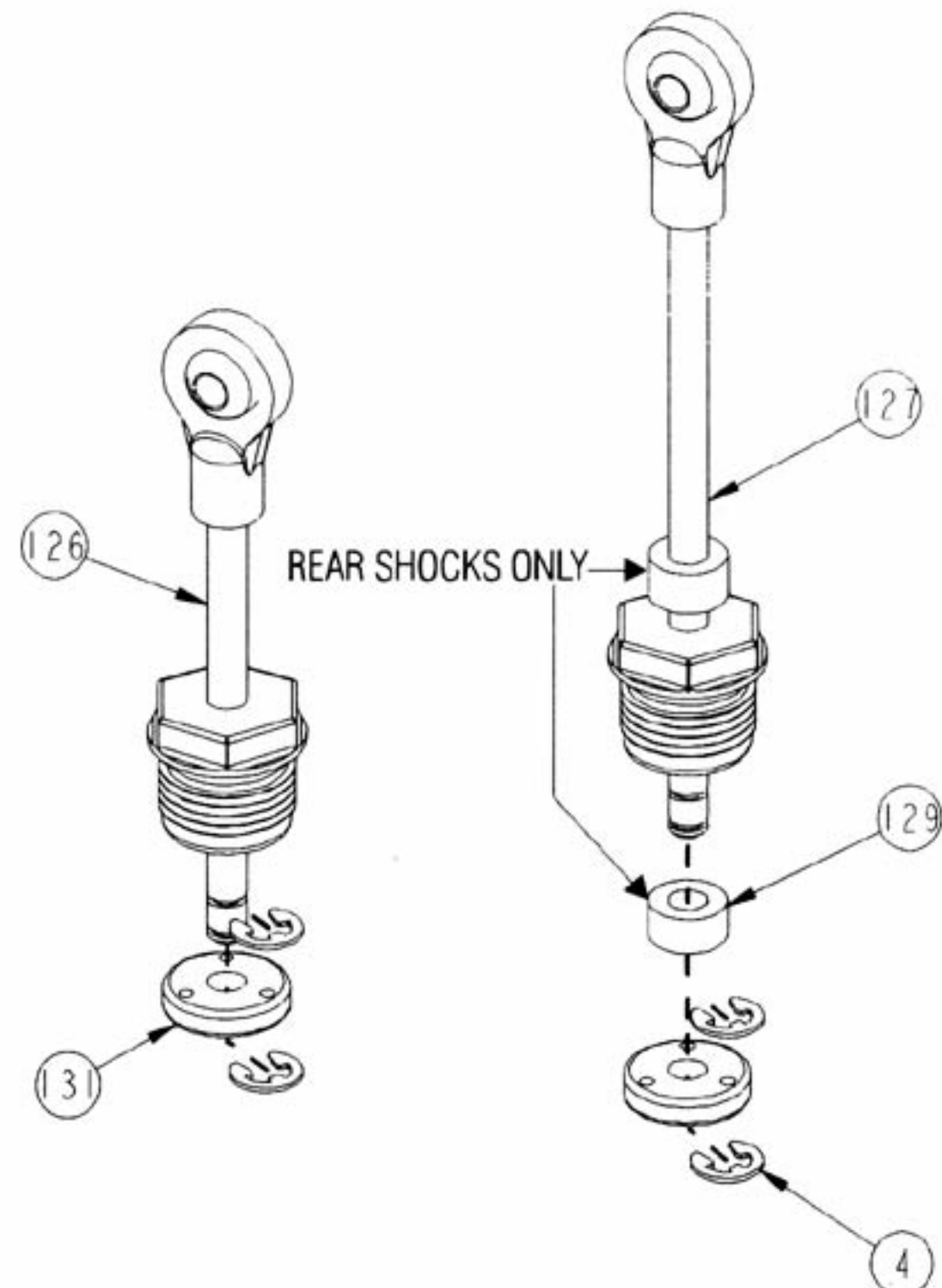


Figure 59

BAG F (Continued)

Fig 60.

Step 14. Match the short front shock bodies (132) to the short front shafts (126), and the long rear shock bodies (133) to the long rear shafts (127).

Step 15. Fill shock body (132), (133) with shock fluid (125) up to the bottom of the threads.

Step 16. Insert shaft assembly with the cartridge against the shock piston (131). Slowly tighten the cartridge about two full turns only. With the cartridge still a little loose, slowly push the shock shaft (126), (127) into the shock body (132), (133). This will bleed the excess fluid out of the shock. Once the shaft (126), (127) is all the way in, tighten the shock cartridge the rest of the way.

** Note: Be sure to match the front shock shafts with the front shock bodies.*

Step 17. Now, with the shaft (126), (127) still all the way in, secure the cartridge by tightening it with pliers approximately an additional 1/8 turn. There should be no air in the shock as you push the shaft (126), (127) in and out. If there is, the shock needs more oil. If the shock does not compress all the way, the shock has too much oil.

** Note: If leaking persists around the outside, tighten the cartridge more.*

Step 18. Repeat steps 15 - 17 for all four shocks.

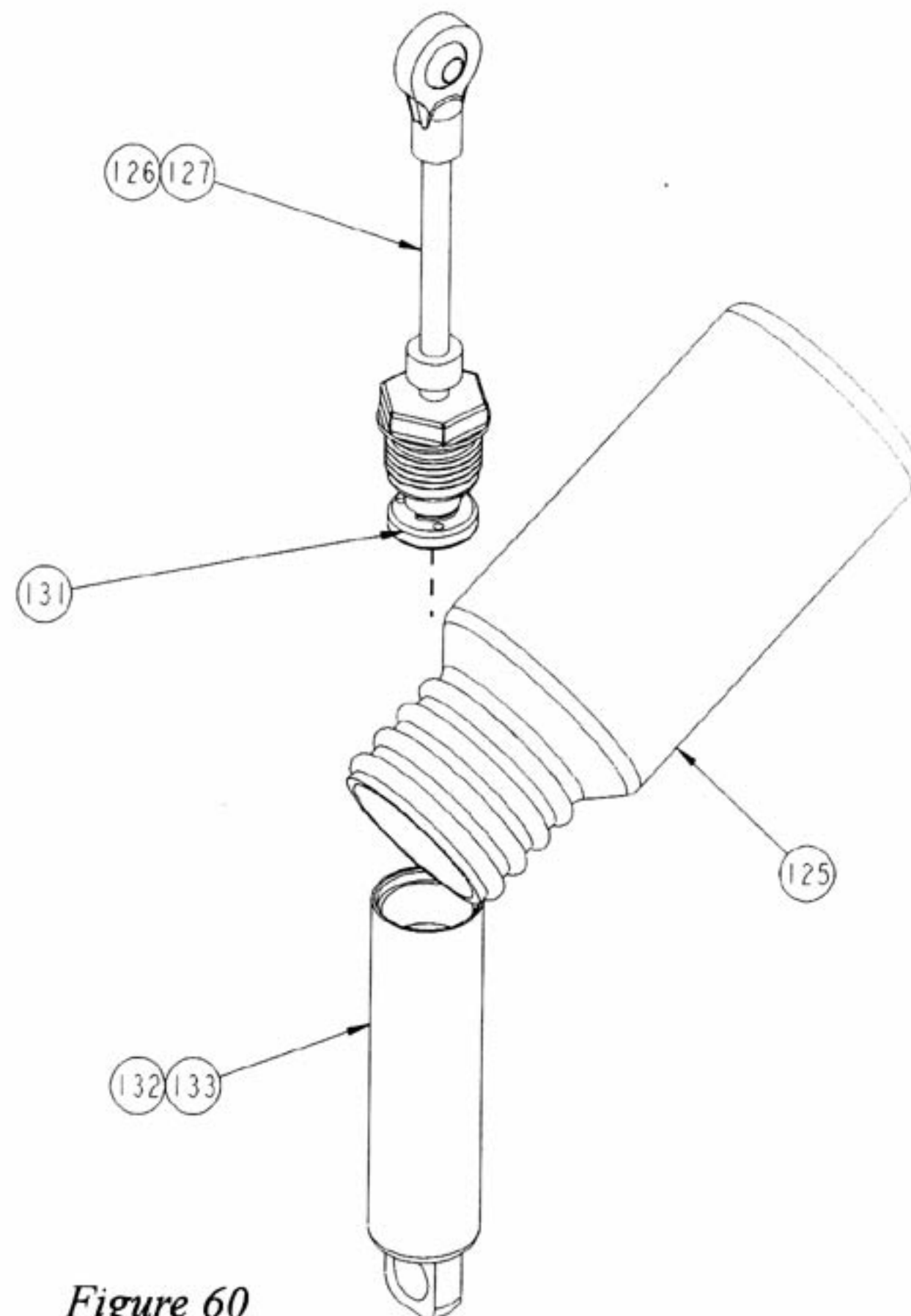


Figure 60



6

Fig 61.

Step 19. Snap a shock spring cup (134) onto each of the four shafts (126), (127) and down around the shock end (128).

** Note: On the rear shocks, the spring cup should be placed between the shock end and the shock spacer.*

Step 20. Slide a 2" front spring (135) (shorter of the two springs) down over each of the front shocks so that it rests on the spring cup (134).

Step 21. Slide a 2.5" rear spring (136) (longer of the two springs) down over each of the rear shocks so that it rests on the spring cup (134).

Step 22. Insert a 4-40 x 3/8" cap head screw (6) into the larger hole of each of the four shock collars (137) and thread it into the smaller hole.

Step 23. With the collar (137) loose, slide it down over the top of each shock body (132), (133) and against the spring (135), (136). Tighten the collar (137) to hold it in place.

** Note: Do not over tighten!*

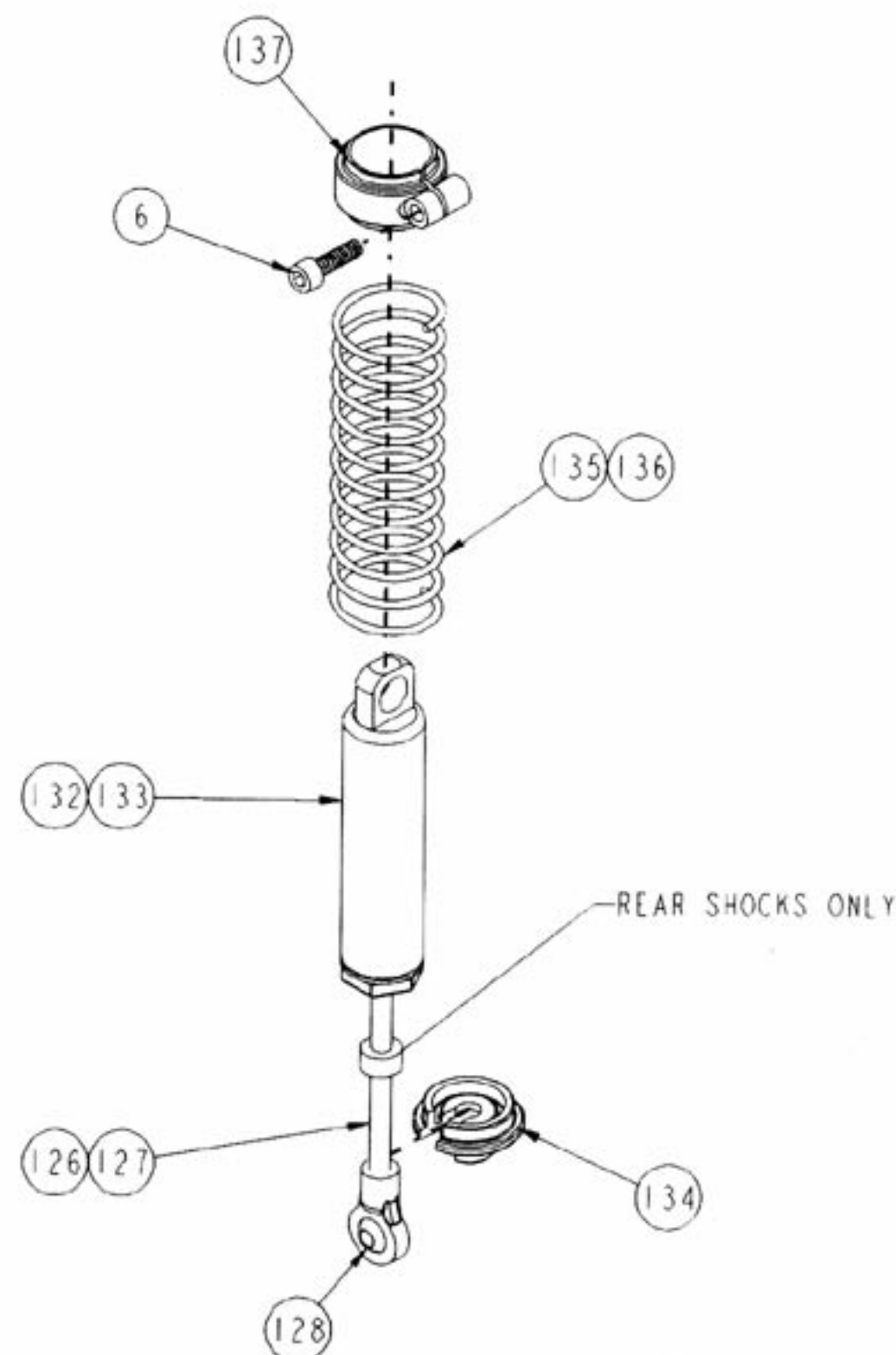


Figure 61

BAG F (Continued)

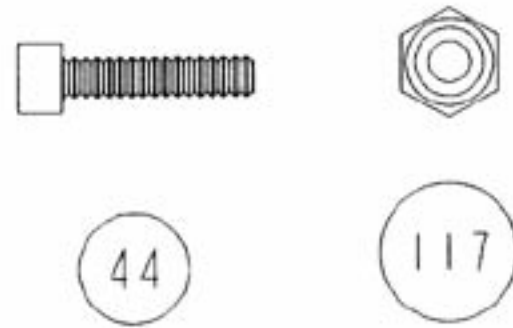


Fig 62.

Step 24. Pick up your car, making sure that the dog bones (53) stay in the outrives (73).

Step 25. Insert the shock end (128) of a rear shock into the shock mounting area of the rear suspension arm (64), (65) and line up the hole in the swivel ball (130) with the outside hole in the arm (64) (65).

Step 26. Attach the shock end (128) to the rear arm (64), (65) by threading a 4-40 x 1/2" cap head screw (44) all the way into the arm (64), (65).

Step 27. Place the top of the shock body (133) over the shock mount bushing (10) on the rear shock tower (50) and secure it with a 4-40 aluminum lock nut (117).

** Note: Before attaching the top of the shock, make sure that the dog bone is in place in the outdrive.*

Step 28. Repeat steps 25 - 27 for the second rear shock.

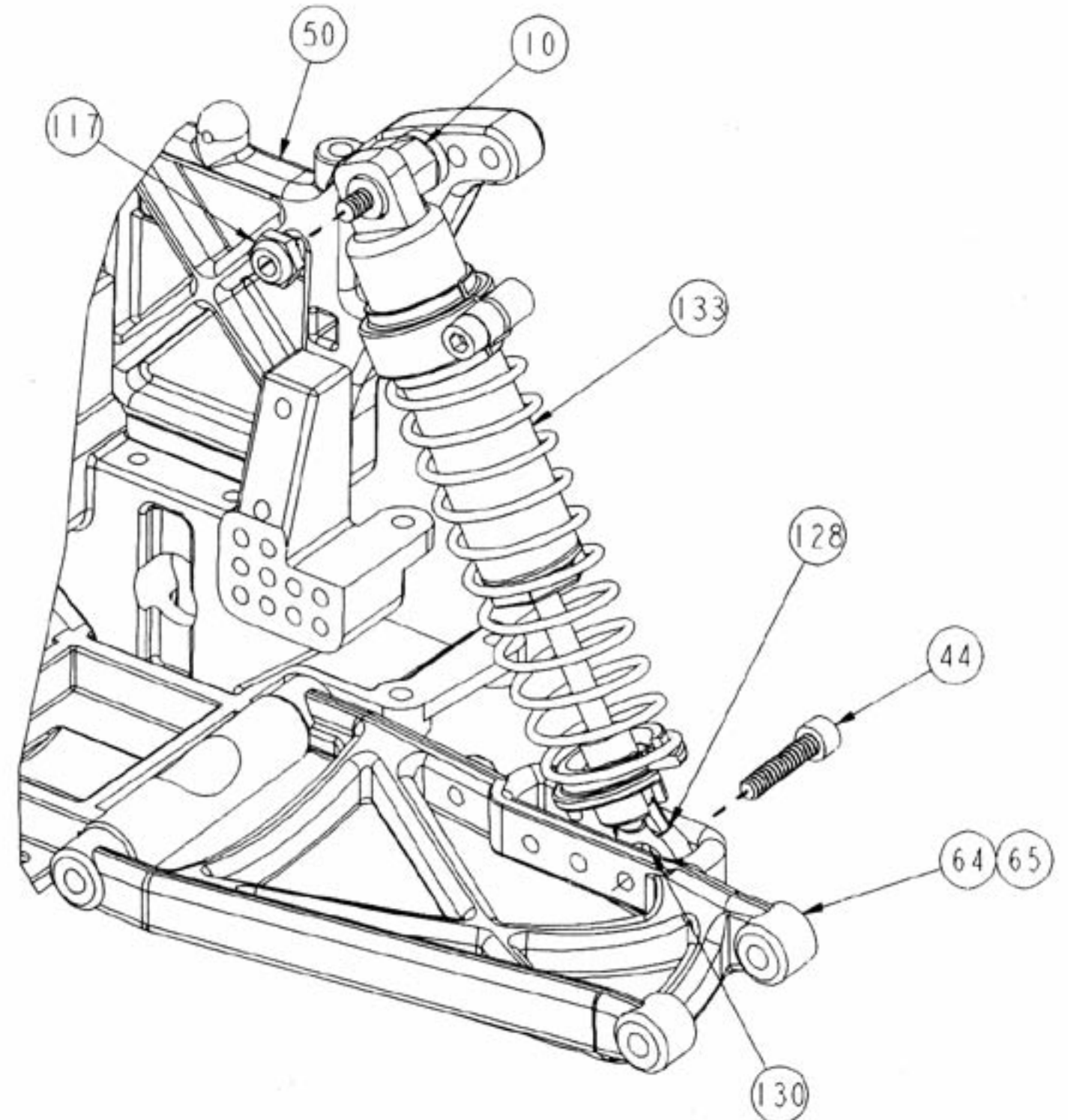


Figure 62

Scan courtesy of Vintagelosi.com

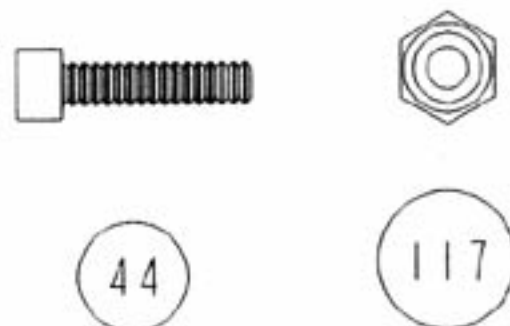


Fig 63.

Step 29. Insert the shock end (128) of a front shock into the shock mounting area of the front suspension arm (23) and line up the hole in the swivel ball (130) with the middle hole in the arm (23).

Step 30. Attach the shock end (128) to the front arm (23) by threading a 4-40 x 1/2" cap head screw (44) all the way into the arm (23).

Step 31. Place the top of the shock body (132) over the shock mount bushing (10) on the front shock tower (5) and secure it with a 4-40 aluminum lock nut (117).

Step 32. Repeat steps 29 - 31 for the second front shock.

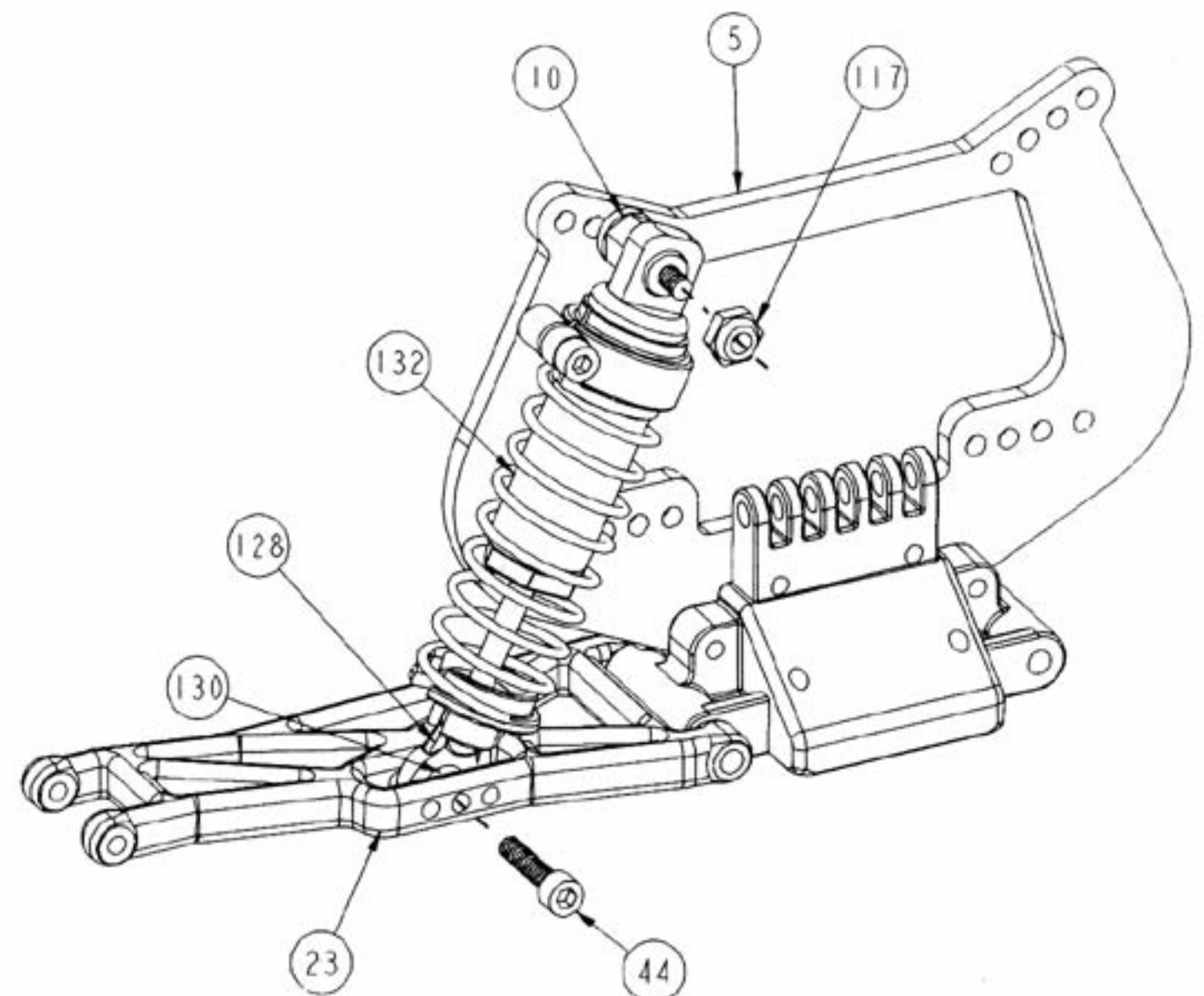


Figure 63

BAG G

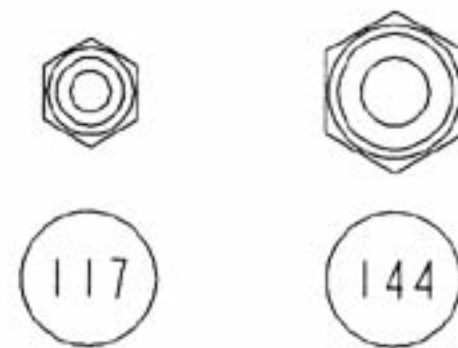


Fig 64.

Step 1. Inspect the inside of the tires [front (138), rear (139)] for any excess material. If present, trim excess rubber to insure proper seating of tire on wheel [front (140), rear (141)]. During tire assembly, make sure that all lettering faces to the outside of the wheel (*the side with the spokes*).

** Note: Do not set tires on furniture as they may leave permanent stains*

Step 2. Pull front tire (138) over front wheel (140) and squeeze tire (138) to properly seat it into the grooves in the wheel (140).

Step 3. Pull rear tire (139) over rear wheel (141) and squeeze tire (139) to properly seat it into the grooves in the wheel (141).

Step 4. It is recommended that the tires (138), (139) be glued to the wheels (140), (141). This can be done by using a fast curing super glue or cyanoacrylate glue available at your hobby shop. Be sure to follow the manufacturers warnings on the bottle.

⊗ **IMPORTANT NOTE:** Allow the glue to dry thoroughly before continuing.

Step 5. Place the front wheel discs (142) over the outside of the front wheels (140), and push the center part of the disc (142) into the wheels (140).

Step 6. Install the front wheel (140) to the front stub axle (17) by lining up the hex on the axle (17) with the hex in the front wheel (140).

Step 7. Secure the front wheel by attaching a 4-40 aluminum lock nut (117) to the front axle screw (18) and tightening.

Step 8. Insert the rear wheel discs (143) into the outside of the rear wheels (141).

Step 9. Install the rear wheels (141) to the rear axles (56) by lining up the pin (63) in the rear axle (56) with the groove in the rear wheel (141) and pushing the wheel (141) all the way onto the axle (56).

Step 10. Secure the rear wheel (141) by attaching a 10-32 lock nut (144) to the rear axle (56) and tightening.

⊗ **IMPORTANT NOTE:** Read and follow adhesive manufacturers safety warnings regarding use. DO NOT spray glue accelerator on wheel discs!

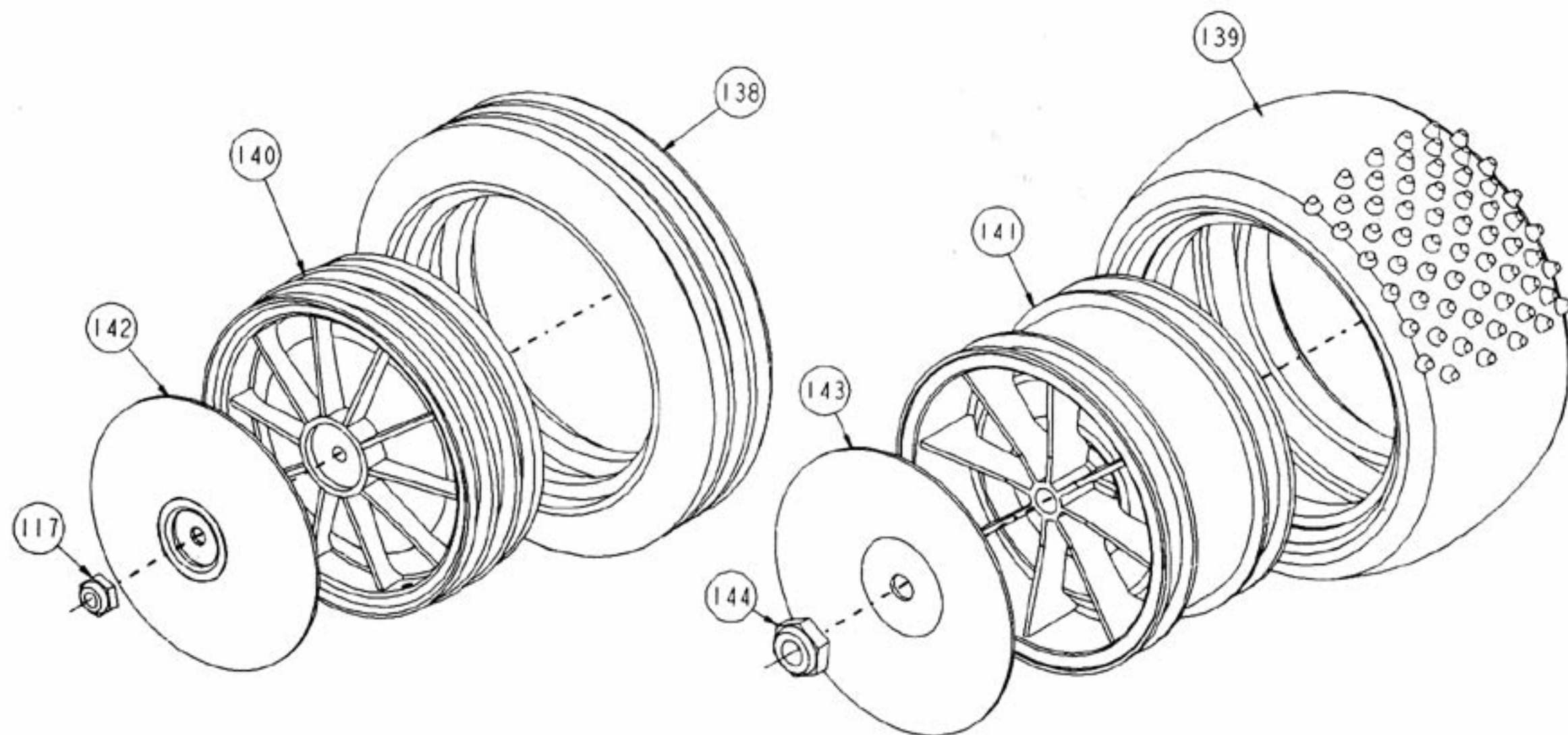


Figure 64

BAG H

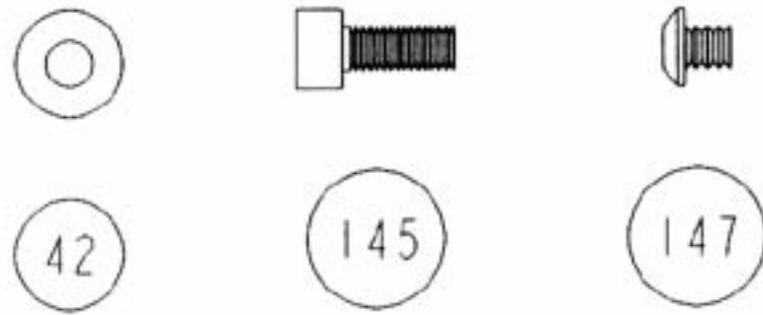


Fig 65.

Step 1. Attach motor (*not included*) to motor plate (98) using two 3mm x 8mm cap head screws (145) and #4 washers (42).

Step 2. Attach pinion gear (*not included*) to motor shaft, adjust gear mesh and tighten motor to motor plate (98).

* Note: The gears need some backlash in order to function properly.

Step 3. Locate gear cover (146) and cut the back side of it along the trim line. Drill two 1/8" mounting holes in the gear cover (146) at the two locations marked with dimples.

Step 4. Place the trimmed gear cover (146) over the motor plate (98) and secure it with two 4-40 x 1/8" button head screws (147) through the two holes in the motor plate (98).

Step 5. Insert gear cover plug (148) into the large hole in the gear cover (146).

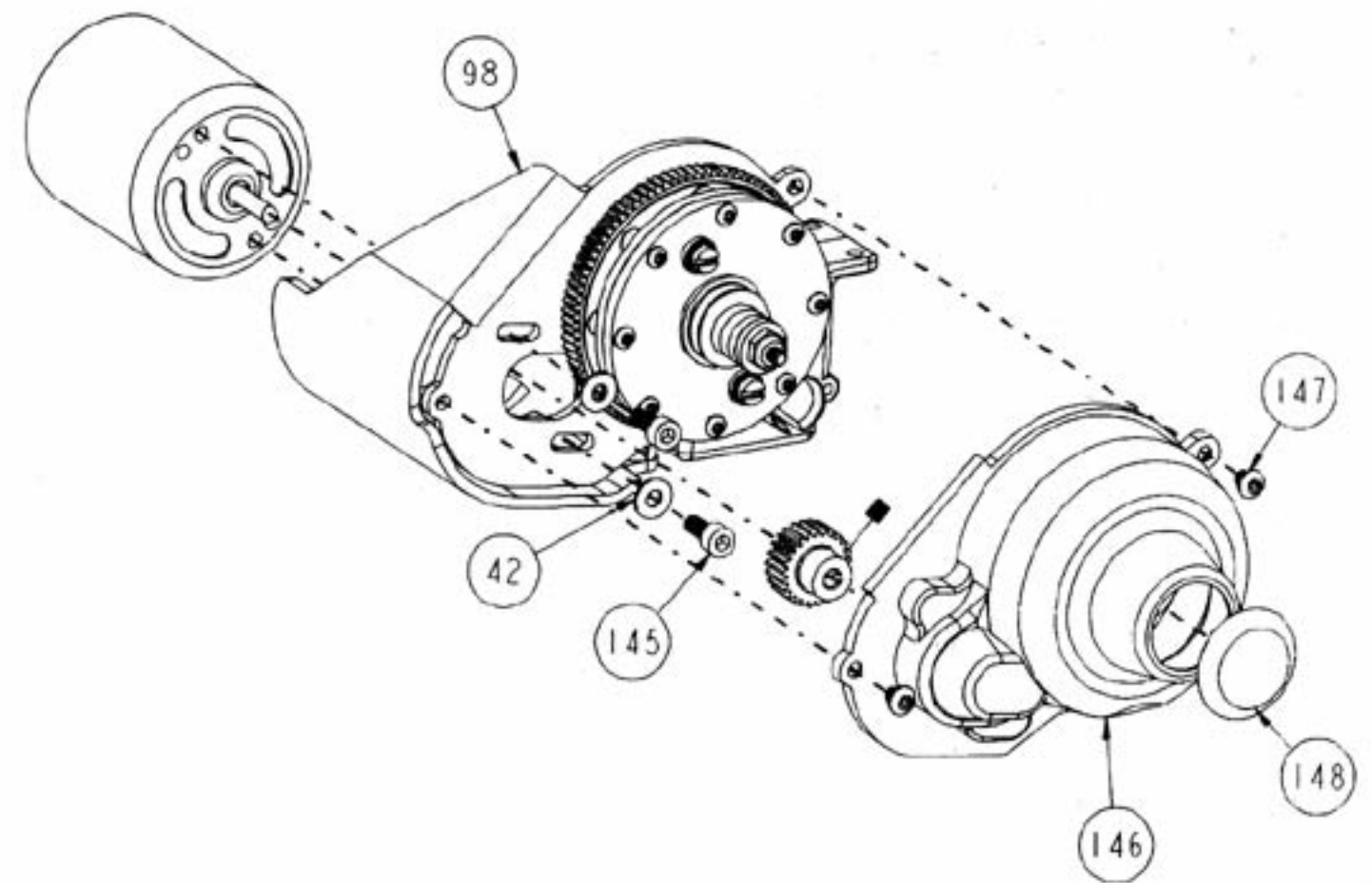
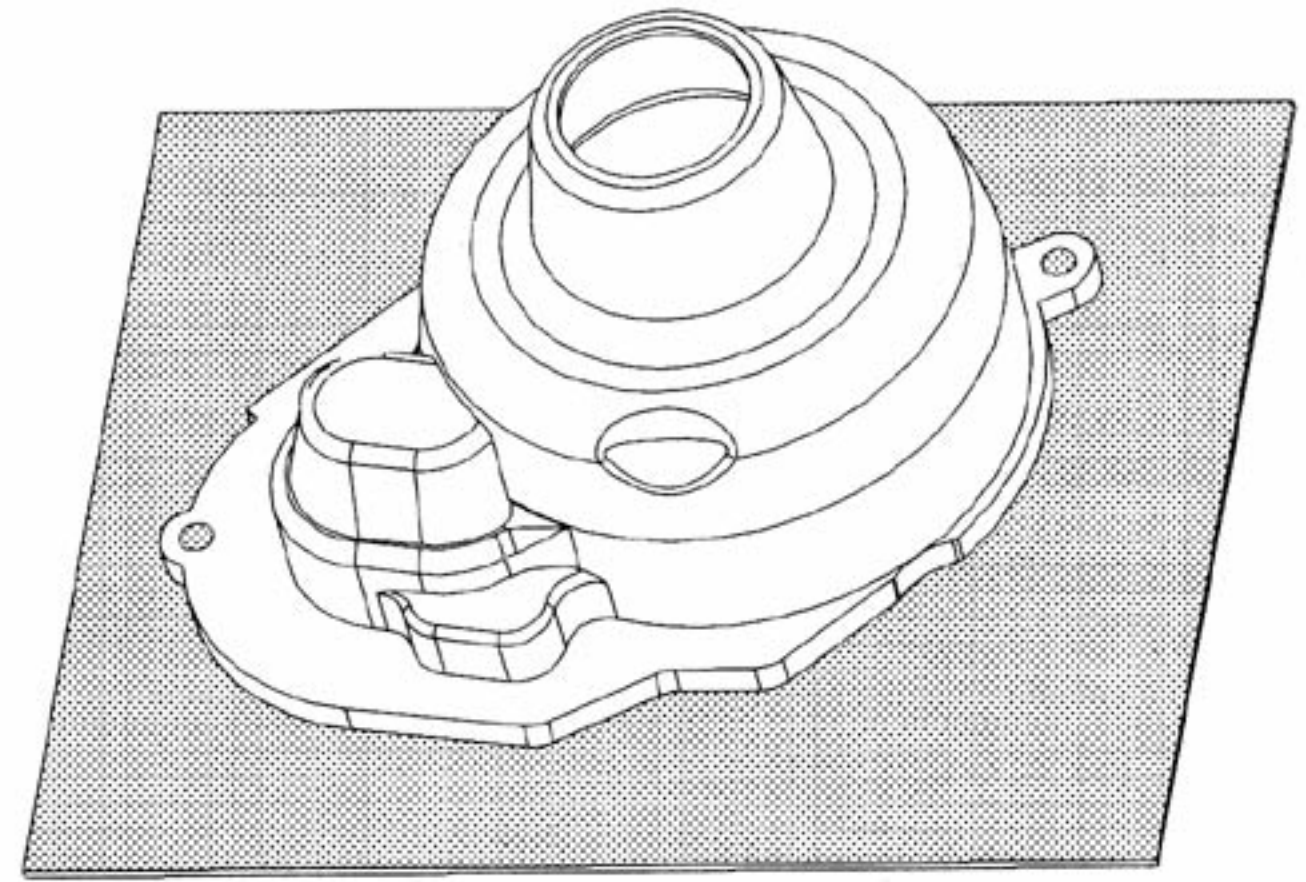


Figure 65

Fig 66.

Step 6. Place the battery spacing foam (149) into the rear of the chassis (11) and push it all the way back.

Step 7. Slide the battery straps (150) all the way through both tabs so that they are centered on the car. Now fold the left side up and over the top and then fold the right side over the top of it. The Velcro should now hold it in place. Insert both front and rear straps (150) in this manner.

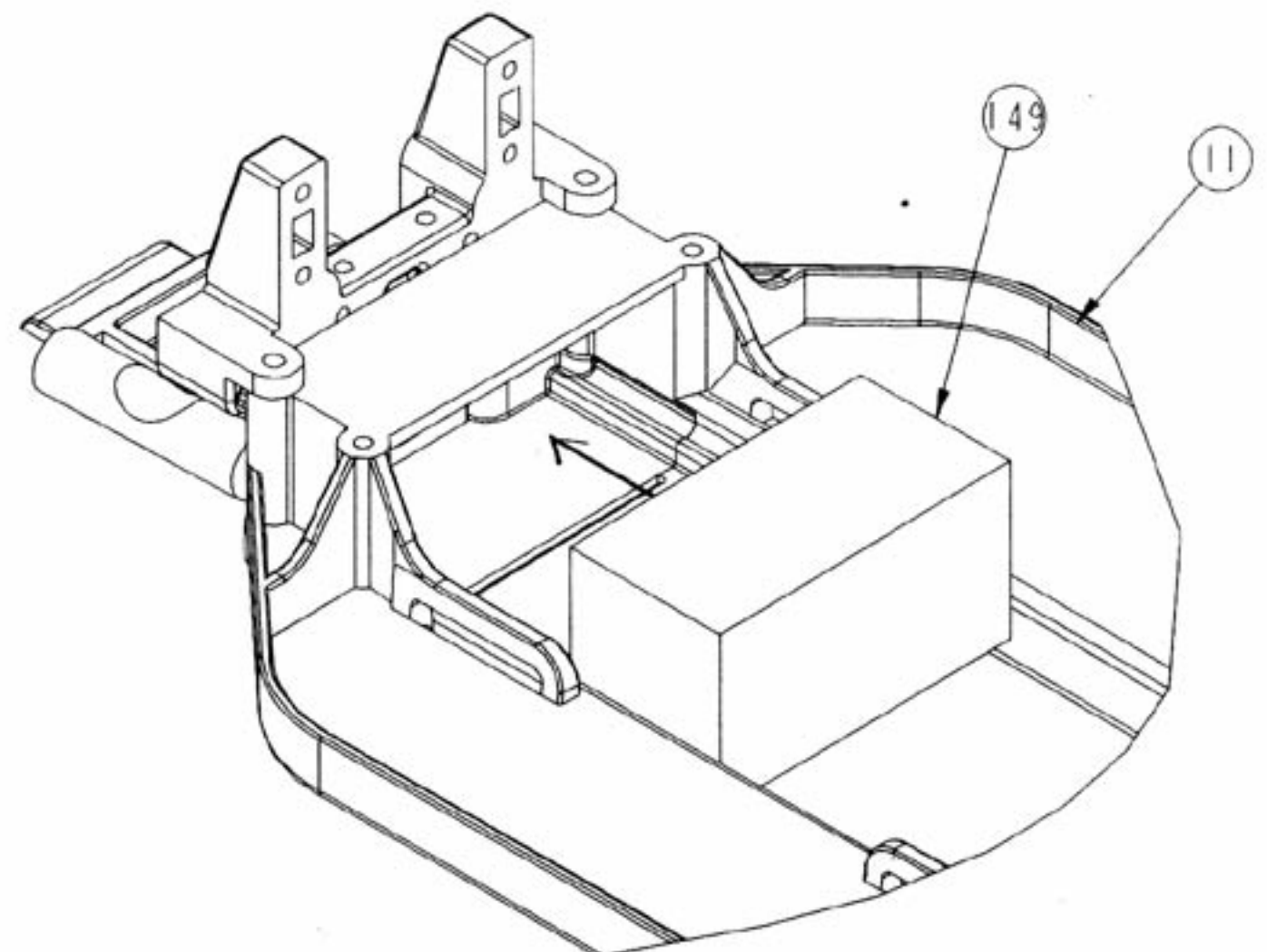


Figure 66

BAG H (Continued)

Fig 67.

Step 8. Cut a piece of two sided tape (151) to the same size as the bottom of your receiver (*not included*). Peel one side of the backing off and stick it to the bottom of the receiver.

Step 9. Make sure that the area on the right side of the chassis (11) just in front of the rear battery strap tab is clean. Wipe this area off with a clean cloth or rag.

Step 10. Peel the backing off of the two sided tape (151) and install the receiver to the right side of the chassis (11), just in front of the rear battery strap tab, and all the way against the outside of the chassis (11).

Step 11. Run the antenna wire forward to the antenna post on the chassis (11). Run the wire into the small hole in the bottom of the post, and up through the top of the post.

Step 12. Slide the antenna wire through the antenna tube (152) (*a small drop of oil in the tube will make this easier*) so that the wire comes out the other end.

Step 13. While pulling the wire through the antenna tube (152), slide the antenna tube (152) down and push it firmly into the antenna mounting post on the main chassis (11).

Step 14. Fold the wire down over the antenna tube (152) and place the antenna cap (153) over the tube (152) and excess wire.

** Note: If antenna wire is shorter than the tube, remove the tube and cut off enough so that the wire will extend about 3/4" past the end of the tube.*

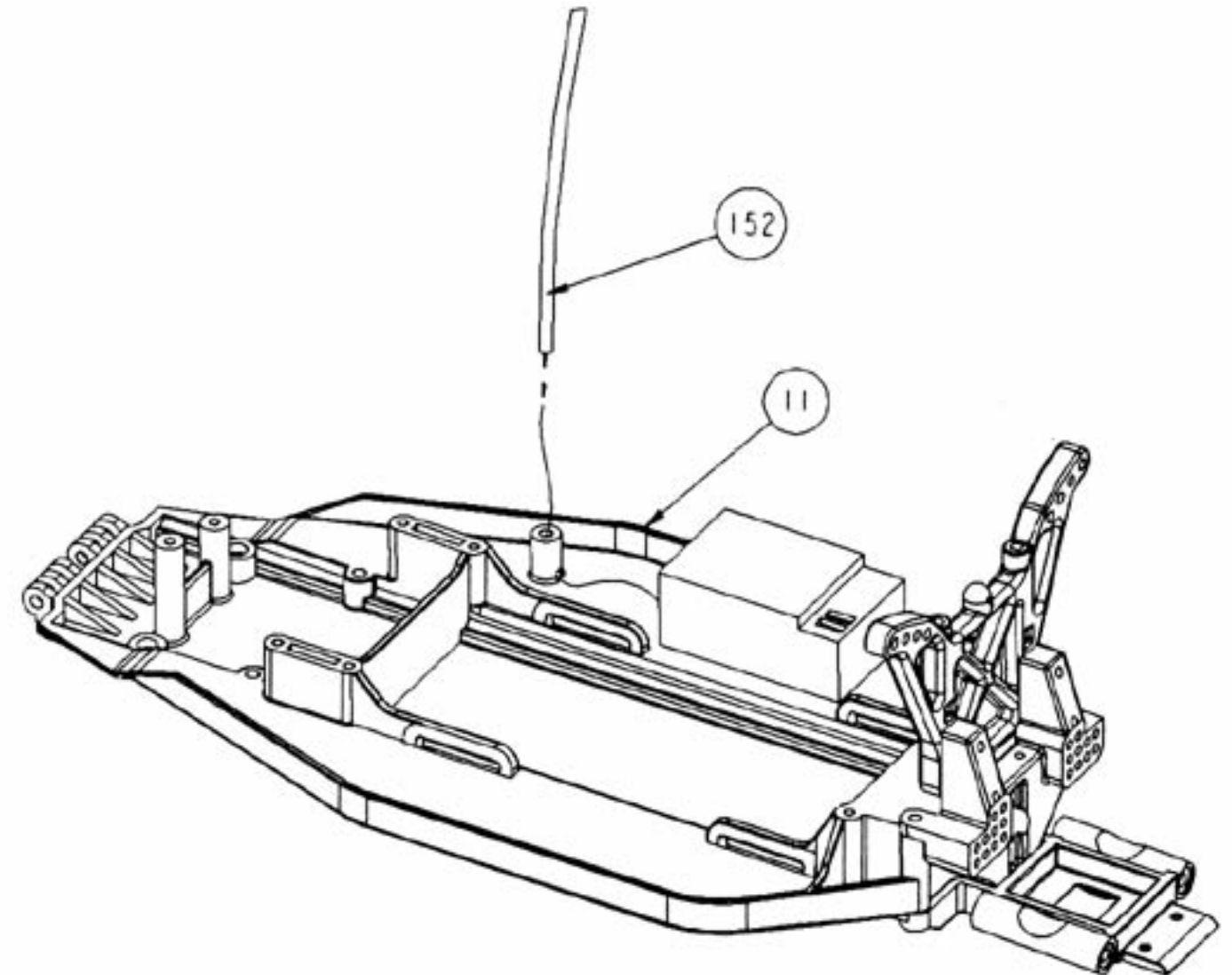


Figure 67

Fig 68.

Step 15. Using two sided tape (151), mount the speed control in one of the two locations shown. If mounting it to the chassis, be sure that there is sufficient room for the battery pack (*not included*) to fit in the center of the chassis.

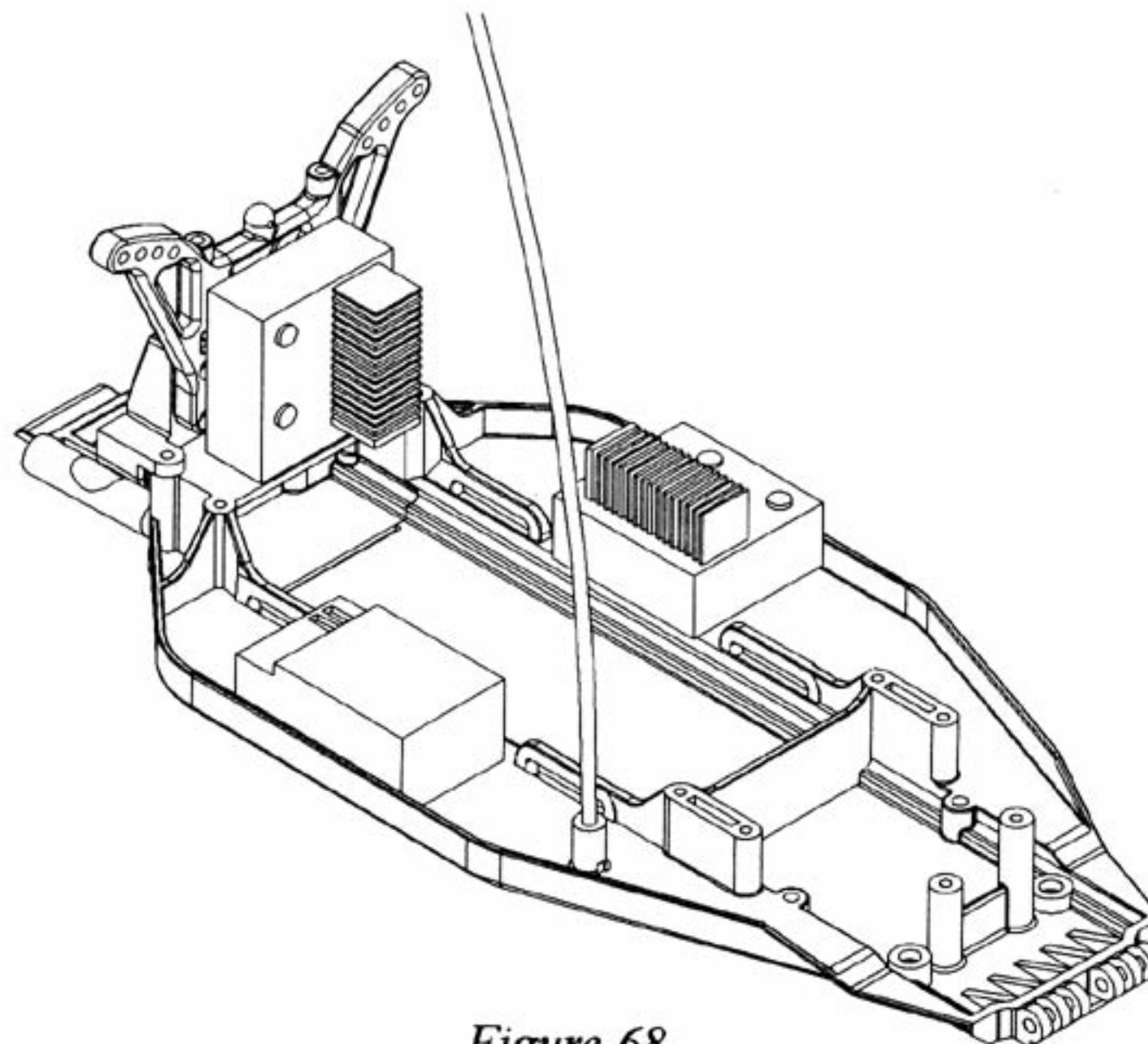
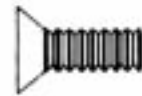


Figure 68

BAG H (Continued)




(155)

Fig 69.

Step 16. Turn on your radio system and check to make sure that the steering servo is centered and the front wheels are straight. If not refer to the bag 'B' instructions step 19 and correct the problem before continuing.

Step 17. Place the front bumper (154) onto the bottom of the front bulkhead (2) and line up the four holes in the bumper (154) with the holes in the bulkhead (2).

Step 18. Attach the bumper by threading four 4-40 x 1/4" flat head screws (155) into each of the four holes. Tighten all four screws.

 If you should need to work on your servo or move a ball stud for the front camber link, first remove the front bumper and then the two screws in the rear of the front chassis stiffener. Once these screws and the front bumper are removed, the front end will swing down and away allowing easy access to the front end components.

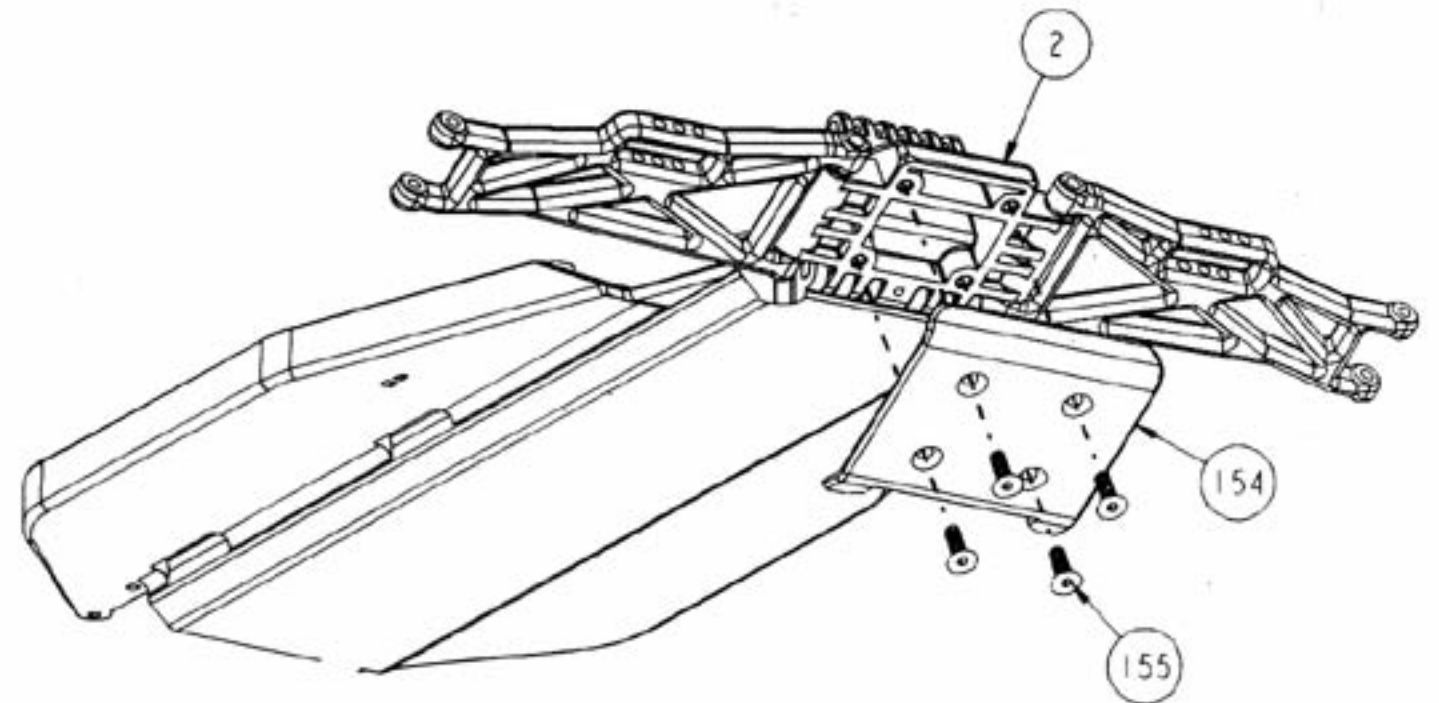


Figure 69

Fig 70.

BODY, WING, GEAR COVER AND WHEEL DISC PAINTING

Prepare the Lexan body shell by washing thoroughly with warm water and liquid detergent. Dry with a clean soft cloth. Use the window masks (156) supplied to cover the windows *from the inside*. A high grade of masking tape should be used on the inside to mask off any stripes, panels, or designs that you wish to paint on the body, wing, gear cover, or wheel discs. Use acrylic lacquer, acrylic enamel, or any other Lexan (polycarbonate) recommended paints. Apply paint to the inside of the parts. Remove the tape for the next color and continue. Try to use the darker colors first. If you use a dark color after a light color, apply a coat of white over the lighter color first.

Step 19. Trim the body (157) and wing (158) along the cut out lines marked on them.

Step 20. Using the dimples on the front and rear of the body (157) as a guide, make two 5/16" diameter holes at these locations. These will be the body mounting holes.

Step 21. Install the body (157) onto the rolling chassis and secure it with a body clip (158) through the post in the rear shock tower (50), and one through the post on the front chassis stiffener (1).

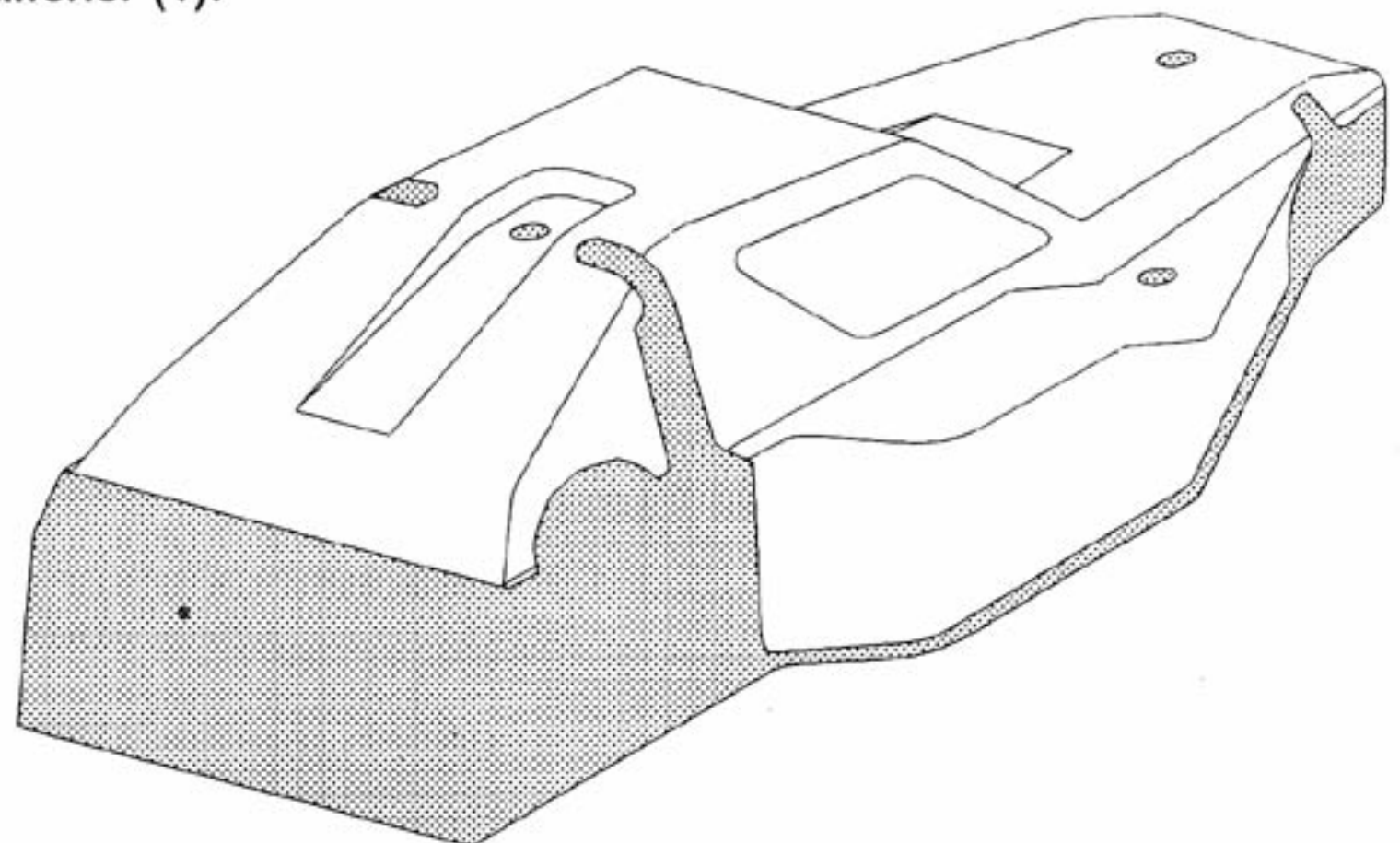
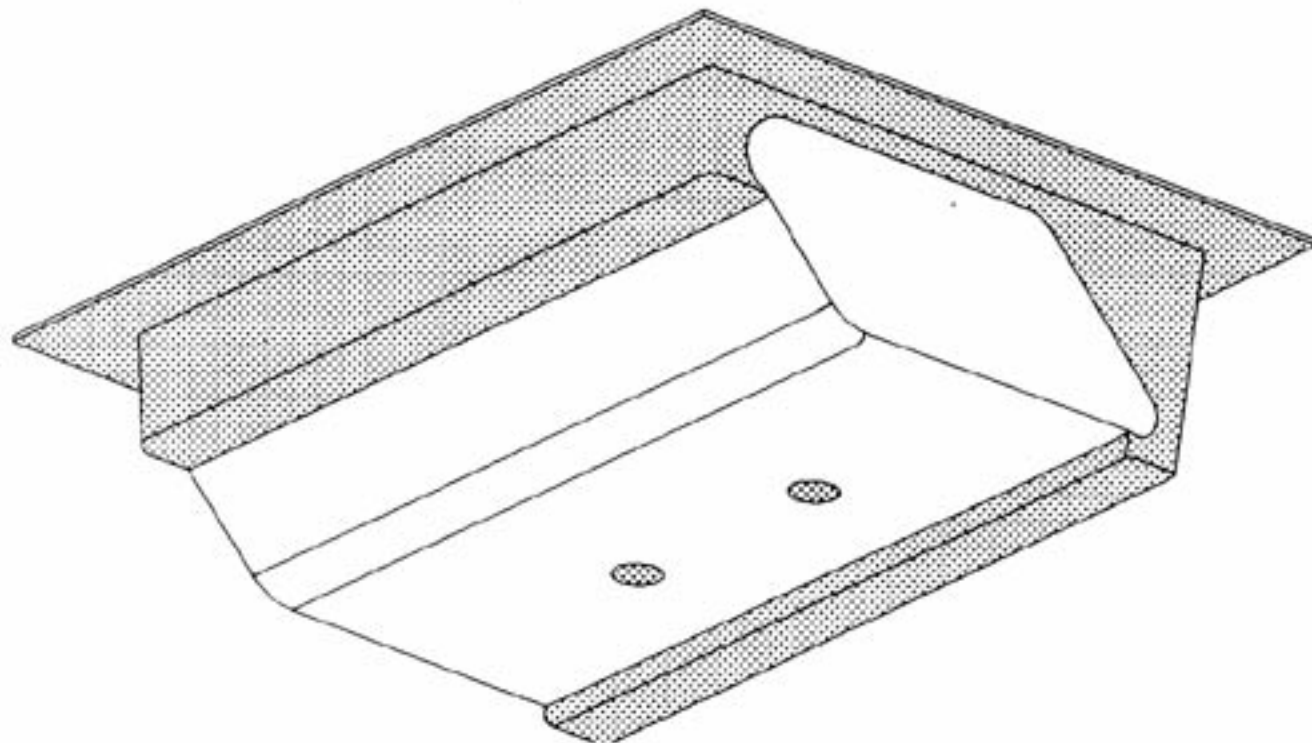


Figure 70

BAG H (Continued)

Fig 71.

Step 22. Using the dimples in the wing (158) as a guide, drill two 5/16" diameter holes in the locations marked.

Step 23. Insert a top wing button (160) into each of the holes in the wing (158) from the top so that the slot in the wing button (160) points to the center of the wing (158).

Step 24. Snap a bottom wing button (161) onto each of the top wing buttons (160). Make sure that the hole in the bottom wing button (161) is to the center of the wing (158) and lines up with the slot in the top wing button (160).

Step 25. Slide the wing wire (162) through both of the assembled wing buttons from the rear so that the wire (162) bends towards the bottom of the wing (158).

Step 26. Once the wire (162) is all the way through, rotate the top wing button (160) clockwise to lock it into place.

✚ Once the wing is installed, the wing location can be changed by rotating the wing buttons counter clockwise and sliding the wing into the desired location. Once the wing is in place, rotate the wing buttons clockwise to lock it into place again.

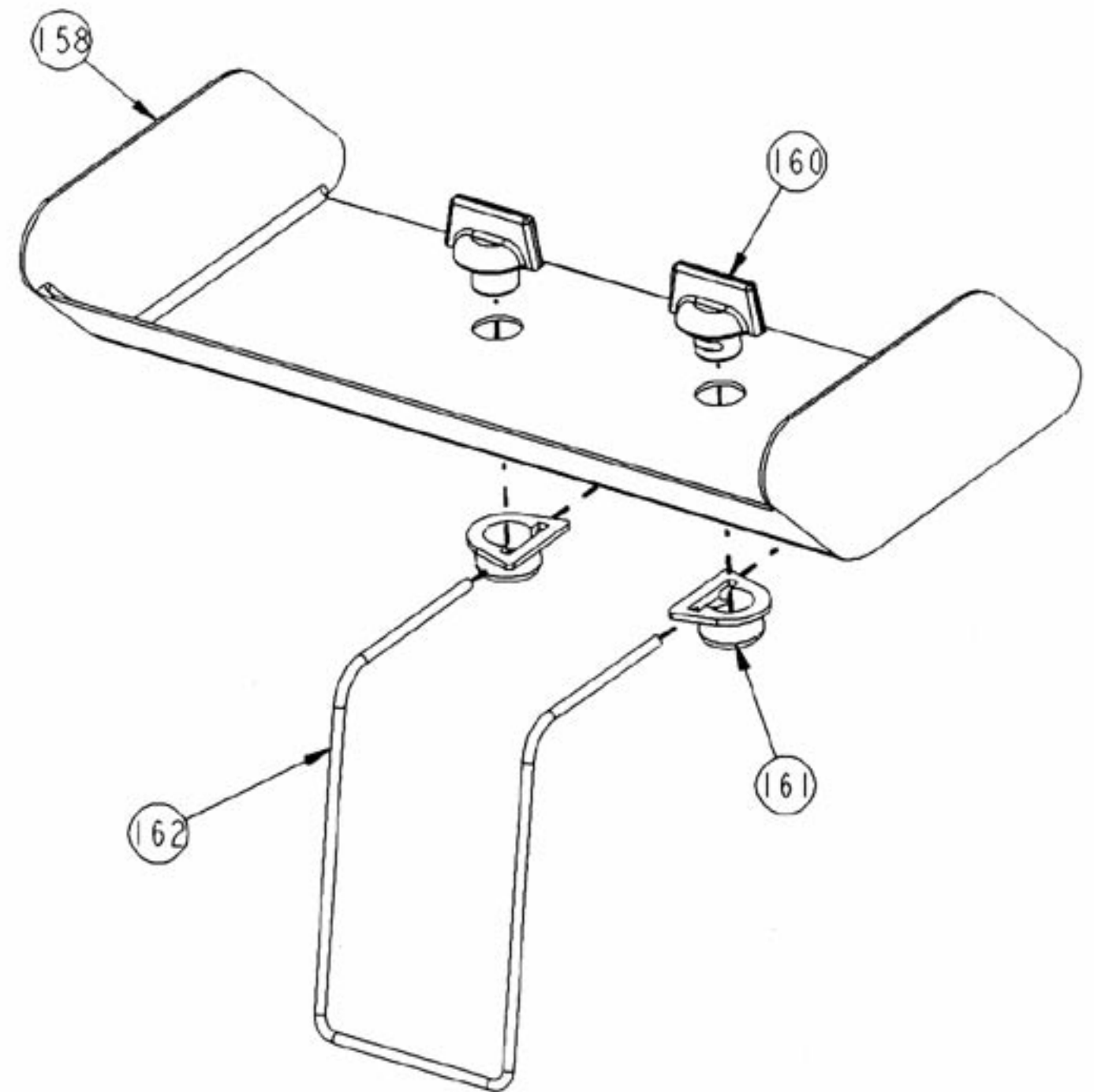


Figure 71

Fig 72.

Step 27. The wing angle can be changed by increasing and decreasing the bend in the wing wire (162).

Step 28. Insert the ends of the wing wire (162) into the two small holes in the top of the rear shock tower (50).

✚ The wing can be better held in place by bending a slight "kink" in the bottom of the wire. This will make the wire fit tighter into the wing mount.

STICKERS

Cut the stickers from the sticker sheet (163) that you wish to use. Before removing the protective backing, find the desired location. Remove the backing completely and reattach an edge of the sticker to the shiny side of the backing. Using the rest of the backing as a handle, position the sticker and press firmly into place to complete its application.

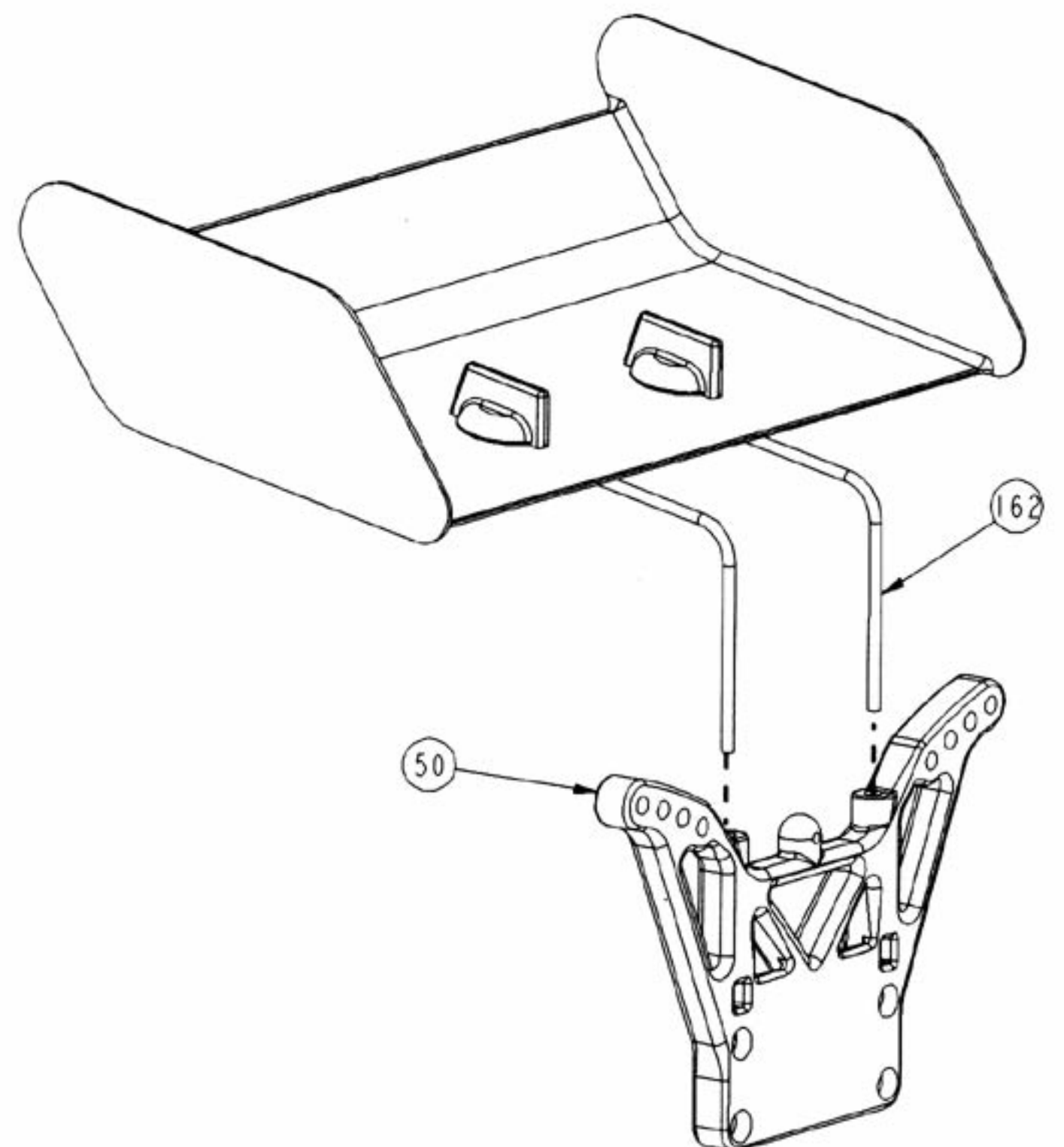


Figure 72

GLOSSARY of R/C RACING TERMS

Ackerman	A term used to explain the degree of difference in the steering angle of the inside and outside tire when a car is turning.
Anti-squat	The angle of the inner rear hinge pin in relationship to the chassis. Anti-squat helps to keep the rear suspension from squatting under acceleration.
C.G. (center of gravity)	The point on the chassis in which the car balances with all components in stalled.
Camber	A term to explain the angle of the wheels. See positive camber and negative camber.
Camber link	The rod assembly used to connect the rear hub to the rear bulkhead, or the front spindle carrier to the front shock tower.
Caster	The angle of the king pin in relationship to the ground.
Drag link	The rod assembly used to connect the servo saver to the steering idler arm.
Hook	A term used to describe oversteer out of a corner.
Kick-up	The angle of the entire front suspension in relationship to the rest of the chassis.
Negative camber	A camber angle in which the top of the tire is closer to the center of the car than the bottom of the tire. Negative camber is commonly used to add stability in bumps.
Oversteer	A situation in which the front tires have more traction than the rear tires. This causes the rear tires to lose traction in corners.
Positive camber	A camber angle in which the bottom of the tire is closer to the center of the car than the top of the tire. Positive camber is <u>not</u> commonly used.
Push	A term used to describe a car that has little steering. Same as understeer.
Ride height	The point in which the car settles after being dropped from a height of about four to five inches.
Tie rod	The rod assembly used to connect the servo saver and steering idler arm to the spindle arms.
Toe-in	The front edge of both tires are closer together than the rear edge of both tires.
Toe-out	The front edge of both tires are farther apart than the rear edge of both tires.
Understeer	A situation in which the rear tires have more traction than the front tires. This causes the car to have inadequate steering. Same as push.



THE GEAR BOX is the heart of every race car. The Double-X is no exception. Although the Double- X transmission is very efficient, there are certain adjustments that are necessary for top performance. The differential is the most important. From the several greases that were tested for use in the differential, the one that we found to work the best is included in the kit. This grease works extremely well, while at the same time allowing the diff to work very smoothly as well as free. Since this differential is a self aligning design, it is extremely important to take your time while assembling it to make sure that all of the parts are properly seated into the correct locations.

ADJUSTING THE DIFFERENTIAL This should be done before trying to adjust the slipper. If you have installed the Hydra-Drive (I don't know why you wouldn't!), adjusting the diff can be very simple. This may be a little complicated at first. So read this very carefully while trying to follow the actions on your car. If you try to do this as you read it, the procedure should be fairly simple. First remove the gear cover from your car. Now, with the wheels installed, and the tires glued in place, hold the right rear tire in your right hand. While holding the tire, place your index finger and thumb over the Hydra-Drive housing and hold it tight. Now try to turn the left tire wheel while holding the right rear tire and Hydra-Drive housing so they can't turn. It should be **VERY** difficult to turn the left rear tire. If it turns easily, the diff is too loose. Tighten it by lining up the slot in the diff screw with the groove in the outdrive and placing the small allen wrench through both slots. Now **slowly** turn the right rear tire about 1/8 turn. As long as the diff screw was held in place with the allen wrench, you have just tightened your diff. Pretty easy, huh? Continue tightening until the left rear tire can't be turned while holding the Hydra-Drive housing and the right rear tire. Be careful no to tighten the diff too much! Once the diff is adjusted, it should still operate freely and feel smooth. If the diff screw starts to get tight before the diff is close to being adjusted properly, the diff should be disassembled and checked for proper assembly.

If you are not using the Hydra-Drive (you'll be sorry!) start by tightening the slipper nut all the way down. Now following the same procedure as above, hold the right rear tire and the spur gear while trying to turn the left rear tire. Tighten the diff a little at a time until the left rear tire can't be turned easily. Check the diff for smooth, free operation.

Remember! The diff was not designed to operate as a slipper. The diff should never be run while it is adjusted too loose and is slipping. Doing so can damage the diff balls and drive rings. Always make sure that the slipper will slip before the differential!

SLIPPER ADJUSTMENTS should be done after the diff is properly adjusted. The slipper setting that the manual had you assemble your car with should be reasonably close to correct. To do the final adjustments, place your car on the surface that you will be running on. If the track has a high bite area and a low bite area, place the car on the high bite area. From a stop, give the car full throttle. The slipper should only slip for about one to two feet maximum. If it slips more than that, tighten the adjustment nut and try it again. If you can't hear the slipper slipping when you "punch off", hold the front of the car with the rear wheel on the surface and give the car full throttle. The car should push against your hand with a reasonable amount of force and the slipper should slip a little. If the slipper does not slip, it is too tight. Loosen the adjustment nut and try it again.

If you are using a Hydra-Drive for the first time, there are a few things that you should know. Because of the way the Hydra-Drive operates, it should not slip on the track for a long period of time like a friction slipper can. Once the Hydra-Drive is properly adjusted, if you feel the static adjustment by turning the spur gear, I'm sure you will find it to be looser than you think. Since the Hydra-Drive unit drives the car once there is enough traction, you will not hear the slipper slipping like you do on a friction slipper. If the Hydra-Drive is adjusted loose enough so that it slips for ten to twelve feet like a friction slipper, damage can result from the excessive heat that will occur. It's a good idea to check the temperature of the Hydra-Drive after a full battery charge. You should be able to comfortably hold your finger on the Hydra-Drive housing for about eight to ten seconds. If it is too hot, the adjustment is probably too loose. If the Hydra-Drive gets this hot, you may experience a "fading" feeling towards the end of the run where the slipper feels like it is getting looser.

CAMBER in the front end of the car is not really changed much. Normally, we will run between one and two degrees of negative camber in the front at ride height. A general rule of thumb is that more negative camber will go through bumps in turns a little more consistently. Less negative camber can give the car a more positive steering response on some tracks with hard packed surfaces.

The rear camber is used to help the car drive through bumps in corners a little better also. Generally, we will run between one to three degrees of negative rear camber at ride height. More negative camber will probably drive through bumps better, but you will usually lose a little straight line rear traction with more negative camber.

FRONT TOE-IN and TOE-OUT is fully adjustable by changing the length of the tie rods. When adjusting this, be sure to adjust both tie rods equally so that the steering balance from left to right will remain the same. Toe-out will make the car turn into the corner faster, but can cause oversteer. Toe-out can also make the car feel "wandery" exiting corners and cause the car to hook.

Toe-in makes the car a little easier to drive. It will make the car more neutral feeling and more stable exiting corners. We almost always run about one or two degrees of toe-in on the Double-X car.

ACKERMAN can be adjusted on the steering assembly. This is done by lengthening and shortening the drag link. The length of the link as built in the manual should be very good under all conditions and should not need to be changed, but if you want to, you can change it. Be sure to keep the manual around so you can refer back to the standard length.

FRONT RIDE HEIGHT is an adjustment that can change the way a car jumps, turns, and goes through the bumps. This is an adjustment that can vary from track to track slightly. You should try raising and lowering the front ride height to get a feel for it. We almost always run the front ride height just above arms level.

FRONT SHOCK LOCATION The front shock mounting location can be changed by simply moving to another hole in the tower. The location in the manual has proven to be the best all around location, and works well on all tracks. We have found that on tight, indoor tracks, moving the top of the shock in one more hole can give the car more steering. To do this, the ball stud and nut for the camber link must be filed down in order for the shock to clear.

Mounting the shock in the middle hole of the arm has proven to be very successful on all of the tracks we have been (and that's a lot!).

REAR TOE-IN and ANTI-SQUAT The best combination of both of these has proven to be what comes standard in the kit. The anti-squat can be changed by mounting a different rear pivot support to the Double-X car. The standard one has four degrees of anti-squat. Currently, there is a two degree block available as well. Less anti-squat can help a car accelerate through bumps, but also loses rear traction.

The rear toe-in is all in the rear hubs. On the stock rear hub, there is 3.5° of toe-in per side (7° total). In the future, different rear hubs may be available to adjust this. Currently, the standard hub has worked great under all conditions.

REAR RIDE HEIGHT can change the way a car turns, the amount of traction a car has, and the way a car goes through the bumps. Again, it is a good idea to play with this adjustment and get a feel for it. For most conditions, the rear ride should be set right in between arms level, and dog bones level.

REAR SHOCK LOCATION The rear shock location can be changed by moving the top shock mount to a different hole in the tower. Again, the location in the manual has proven to be the best all around location. Moving the top of the shock out can help the car land better on big jumps, but usually loses rear traction.

The bottom of the shock can be moved as well. Currently, we always run the bottom of the shock in the outside hole.

CAMBER LOCATIONS on the Double-X are very adjustable. Although there are many holes to choose from, it is suggested that the locations in the manual be used. We have done extensive testing with all of these locations both on the track, and on special computer programs, and have found the locations in the manual to be *very consistent* from track to track. These locations should be the best all around and work under all conditions.

The suggestions in this section are only general guidelines. There are so many variables in a racing car that they can't possibly be listed in a simple tip section. Go to the track, try various combinations of setups, and get a feel for what each one does to the handling. Look for setup updates as well as the latest hot tips in Tech-Talk each month in Car Action Magazine.

Good luck with your new Double-X. We're sure you will be pleased with it's superb performance.

SPARE PARTS LIST

KEY #	KIT/PART DESCRIPTION	PART NO.	SPARE PARTS DESCRIPTION
1	Front chassis stiffener	A-4110	'XX' Chassis Brace Set
2	Front bulkhead	A-1101	'XX' Front Bulkhead
3	1/8" upper bulkhead/outer rear hinge pin	A-2164	1/8" Upper Bulkhead /Outer Rear Pin (2)
4	1/8" 'E' clip	A-6100	1/8" 'E' Clips
5	Front shock tower	A-1105	'XX' Front Shock Tower
6	4-40 x 3/8" cap head screw	A-6206	4-40 x 3/8" cap head screws (10)
7	3/8" ball stud	A-6000	Ball Studs w/Rod Ends 4-40 x 3/8" (4)
8	4-40 mini lock nut	A-6306	4-40 Aluminum Mini Nuts (10)
9	4-40 x 3/4" cap head screw	A-6205	4-40 x 3/4" Cap Head screw (10)
10	Top shock mount bushings	A-5008	Upper Shock Mount Bushings (4)
11	Main chassis	A-4100	'XX' Main Chassis
12	1/8" lower bulkhead hinge pin	A-1141	'XX' Front Bulkhead Upper/Lower Pin Set
13	2-56 x 5/16" button head screw	A-6225	2-56 x 5/16" Button Head Screws (10)
14	3/16" x 5/16" sealed bearing	A-6911	3/16" x 5/16" Teflon Sealed Bearings (2)
15	left spindle	A-1120	'XX' Front Spindle and Carrier
16	right spindle	A-1120	'XX' Front Spindle and Carrier
17	Front stub axle	A-1131	'XX' Front Stub Axles and Screws (2)
18	4-40 x 13/16" front axle screw	A-1131	'XX' Front Stub Axles and Screws (2)
19	Left spindle carrier	A-1120	'XX' Front Spindle and Carrier
20	Right spindle carrier	A-1120	'XX' Front Spindle and Carrier
21	3/32" hinge pin	A-1146	'XX' Outer Front & King Pins 3/32" (2)
22	3/32" 'E' clip	A-6103	'E' Clips 3/32"
23	3/16" ball stud	A-6001	Ball Studs w/Rod Ends 4-40 x 3/16" (4)
24	Front suspension arm	A-1110	'XX' Front Suspension Arms (2)
25	1/8" inner front hinge pin	A-1143	'XX' Inner Front Hinge Pins (2)
26	Plastic rod end	A-6005	H.D. 30° Plastic Rod Ends (16)
27	1-7/8" turnbuckle	A-1011	Long L/R Threaded Tie Rod Set 1-7/8" (2)
28	Foam things	A-6003	Foam Things (Linkage Rings) (8)
29	Servo saver bottom	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
30	Servo saver post	A-1610	'XX' Steering Hardware Set (4)
31	Servo saver top	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
32	Servo saver spring	A-1610	'XX' Steering Hardware Set (4)
33	Servo saver spring cap	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
34	6-40 lock nut	A-1610	'XX' Steering Hardware Set (4)
35	Steering idler arm	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
36	Short plastic rod end	A-1615	Short Ball Cups & Threaded Rods
37	1-1/8" turnbuckle	A-2005	Rear Camber Link w/Ends 1-1/8"
38	3/32" x 3/16" bushings	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
39	Steering brace	A-4110	'XX' Chassis Brace Set
40	Servo arms (23S, 23L and 25L)	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
41	Servo mounting posts	A-1601	'XX' Steering/Servo Mount Assembly (Molded)
42	#4 washer	A-6201	3mm x 8mm Screws w/Washers (Motor) (10)
43	Chassis brace	A-4110	'XX' Chassis Brace Set
44	4-40 x 1/2" cap head screw	A-6204	4-40 x 1/2" Cap Head Screws (10)
45	4-40 x 5/8" threaded rod	A-1615	Short Ball Cups & Threaded Rods
46	Gold washer	A-6215	#4 Narrow Washers (Gold) (10)
47	4-40 x 7/8" cap head screw	A-6216	4-40 x 7/8" Cap Head Screws (10)
48	Rear pivot support 4°	A-2120	'XX' Rear Pivot Support #4
49	4-40 x 1/2" flat head screw	A-6220	4-40 x 1/2" Flat Head Screws(6)
50	Rear shock tower	A-2155	'XX' Rear Shock Tower
51	Rear bulkhead	A-2101	'XX' Rear Bulkhead
52	4-40 x 3/8" flat head screw	A-6210	4-40 x 3/8" Flat Head Screws (10)
53	Dog bones	A-3081	'XX' Dog Bone/DriveShaft w/Yoke & Screw (1)
54	Plastic universal yoke	A-3083	'XX' Yoke & Screw for Dog Bone (2)

SPARE PARTS LIST

<u>KEY #</u>	<u>KIT/PART DESCRIPTION</u>	<u>PART NO.</u>	<u>SPARE PARTS DESCRIPTION</u>
55	Universal pivot	A-3014	Universal Pivots (2)
56	Rear axle	A-3015	Rear Axle, Spacer & Pin (1)
57	3/32" x 1/2" spirol pin	A-6400	Pins, U-Joint (8)
58	Team Losi wrench	A-2012	Assembly Wrench
59	3/16" x 3/8" bearing	A-6903	3/16" x 3/8" Ball Bearing (2)
60	Left rear hub	A-2125	'XX' Rear Hub Set
61	Right rear hub	A-2125	'XX' Rear Hub Set
62	Rear axle/gearbox spacer	(A-3016)	Rear Axle Spacer & Pin
63	1/16" x 7/16" pin	A-6401	Pins, Wheel & Gear (4)
64	Left rear suspension arm	A-2130	'XX' Rear Suspension Arms (2)
65	Right rear suspension arm	A-2130	'XX' Rear Suspension Arms (2)
66	1-1/2" turnbuckle	A-1009	Camber Link/Tie Rod 1.5" (2)
67	1/8" x 1/4" washer	A-2110	'XX' Rear Pivot Support
68	Inner rear hinge pin	A-2161	'XX' Inner Rear Hinge Pins (2)
69	Diff nut carrier	A-3078	'XX' Retro Trans Diff Screw, Hdwe, Seal Set
70	Allen wrenches	N/A	N/A
71	Beveled washers	A-3078	'XX' Retro Trans Diff Screw, Hdwe, Seal Set
72	Diff tube	A-3072	'XX' Retrofit Trans Diff Tube
73	Outdrive/diff half	A-3073	'XX' Retro Trans Outdrive Cup/Diff Half
74	Diff grease	J-120	Jammin Special Diff Lube
75	Diff washer	A-3070	'XX' Retro Trans Drive Rings (2)
76	5mm x 8mm bearing	A-6907	5mm x 8mm Ball Bearings (XX Trans)
77	Diff gear	A-3074	'XX' Trans Diff Gear Only (2.19:1)
78	3/32" diff balls	TL-4016	3/32" Carbide Diff Balls (12)
79	1/4" x 5/16" shim	A-6230	Shim Assortment - 3/16", 1/4", 1/2" (20)
80	Diff adjusting screw	A-3078	'XX' Retro Trans Diff Screw, Hdwe, Seal Set
81	Foam thrust bearing seal	A-3078	'XX' Retro Trans Diff Screw, Hdwe, Seal Set
82	3mm x 8mm thrust bearing washer	A-3071	'XX' Retro Trans Thrust Bearing Assy.
83	3mm x 8mm thrust bearing	A-3071	'XX' Retro Trans Thrust Bearing Assy.
84	4-40 x 1" set screw	A-3060	'XX' Slipper Shaft, Spacer & Hardware
85	Slipper shaft	A-3060	'XX' Slipper Shaft, Spacer & Hardware
86	1/16" x 5/16" spirol pin	A-3060	'XX' Slipper Shaft, Spacer & Hardware
87	Top gear	A-3075	'XX' Retro Trans Upper Gear, Idler, Shaft (2.19:1)
88	3/16" 'C' clip	A-6102	'C' clips, .1875 - Large (12)
89	3/16" x 5/16" bearing	A-6905	3/16" x 5/16" Ball Bearing (Slipper) (2)
90	Left gearbox half	A-3058	'XX' Trans Case Set (2.19:1)
91	Foam outdrive bearing shield	A-3078	'XX' Retro Trans Diff Screw, Hdwe, Seal Set
92	1/2" x 3/4" bearing	A-6908	1/2" x 3/4" Ball Bearings w/Teflon Seal (2)
93	Right gearbox half	A-3058	'XX' Trans Case Set (2.19:1)
94	Idler gear shaft	A-3075	'XX' Retro Trans Upper Gear, Idler, Shaft (2.19:1)
95	1/8" x 3/8" bearing	A-6909	1/8" x 3/8" Ball Bearings (XX Trans) (2)
96	Idler gear	A-3079	'XX' Retrofit Idler Gear 2.19:1 (2)
97	2-56 x 5/8" cap head screw	A-3061	'XX' Transmission Screw Set
98	Motor plate	A-3063	'XX' Motor Plate
99	4-40 x 1" cap head screw	A-6223	4-40 x 1" Socket Head (6)
100	2-56 threaded inserts	A-3130	Hydra Drive Rebuild Kit
101	Hydra-Drive inside housing	A-3119	Hydra Drive Housing Set
102	Hydra-Drive impeller	A-3130	Hydra Drive Rebuild Kit
103	Hydra-Drive fluid	A-3126	Hydra Drive Fluid (Standard)
104	Quad seal	A-3130	Hydra Drive Rebuild Kit
105	Hydra-Drive outside housing	A-3119	Hydra Drive Housing Set
106	Large Hydra-Drive 'O' ring	A-3130	Hydra Drive Rebuild Kit
107	Nylon washer	A-6224	#4 Nylon Filler Screws, Washers - Hydra Drive (6)
108	4-40 x 1/8" nylon screw	A-6224	#4 Nylon Filler Screws, Washers - Hydra Drive (6)

SPARE PARTS LIST

KEY #	KIT/PART DESCRIPTION	PART NO.	SPARE PARTS DESCRIPTION
109	Spur gear 88 tooth	A-3908	88T Hydra Drive/ Slipper Gear
110	Slipper back plate	A-3132	'XX' Slipper Backing Plate
111	Slipper pad	A-3123	Hydra Drive/Friction Slipper Friction Pad
112	Slipper gear plate	A-3122	Hydra Drive/Friction Slipper Gear Plate
113	1/4" x 9/16" thrust washer	A-3125	9/16" x 1/4" Thrust Bearing Assy
114	1/4" x 9/16" thrust bearing	(A-3125)	9/16" x 1/4" Thrust Bearing Assy
115	Silver, Hydra-Drive, slipper spring	A-3124	Hydra Drive/Friction Slipper Springs, Cup, Washer
116	Spring retaining washer	A-3124	Hydra Drive/Friction Slipper Springs, Cup, Washer
117	4-40 aluminum lock nut	A-6305	4-40 Aluminum Locking Nuts, Low Profile (10)
118	Slipper spring cup	A-3124	Hydra Drive/Friction Slipper Springs, Cup, Washer
119	Slipper spacer	A-3124	Hydra Drive/ Friction Slipper Springs, Cup, Washer
120	Gold slipper spring	A-3124	Hydra Drive/ Friction Slipper Springs, Cup, Washer
121	Shock 'O' ring	A-5015	Double O'Ring Shock Cartridge (Front/Rear)
122	Shock cartridge body	A-5015	Double O'Ring Shock Cartridge (Front/Rear)
123	Shock cartridge spacer	A-5015	Double O'Ring Shock Cartridge (Front/Rear)
124	Shock cartridge cap	A-5015	Double O'Ring Shock Cartridge (Front/Rear)
125	Shock fluid	A-5224	SILATECH Competition Shock Fluid 350/35 wt
126	Front shock shaft	A-5004	Shock Shaft Front (Short) .6"
127	Rear shock shaft	A-5022	X-Long Shock Shaft 1.2"
128	Shock end	A-5023	Spring Clamp & Cups H-Arm (2)
129	Shock spacers	A-5015	Double O'Ring Shock Cartridge (Front/Rear)
130	1/4" swivel ball	A-2006	Swivel Suspension Balls .250 (8)
131	Shock piston	A-5046	Teflon Shock Pistons #56, Red (4)
132	Front shock body	A-5029	.6" Shock Body, Hard Anodized/Coated
133	Rear shock body	A-5031	1.2" Shock Body, Hard Anodized/Coated
134	shock spring cup	A-5023	Spring Clamp & Cups H-Arm (2)
135	2" front shock spring	A-5132	2" Spring 3.5 Rate (Green) (2)
136	2.5" rear shock spring	A-5152	2.5" Spring 2.6 Rate (Red) (2)
137	Shock collar	A-5023	Spring Clamp & Cups H-Arm (2)
138	Front tire	A-7201	Front Ribbed (HT) (2)
139	Rear tire	A-7364	2.2 Rear "IFMAR STUD" "HT" (2)
140	Front wheel	A-7031	'XX' Front Wheels w/Discs - Neon Yellow (2)
141	Rear wheel	A-7125	2.2 Rear Disc Wheels - Neon Yellow (2)
142	Front wheel disc	A-7039	'XX' Front Wheel Discs (4)
143	Rear wheel discs	A-7128	2.2 Rear Wheel Discs (4)
144	10-32 lock nut	A-6303	10-32 Locking Nuts (4ea Nylon & Steel) (8)
145	3mm x 8mm cap head screws	A-6201	3mm x 8mm Socket Head w/Washers (10)
146	Gear cover	A-3064	'XX' Gear Cover & Plug
147	4-40 x 1/8" button head screw	A-6212	4-40 x 1/8" Button Head Screws (4)
148	Gear cover plug	A-3045	Slipper Gear Cover Plug (4)
149	Battery spacing foam	A-4015	'XX' Foam Battery Block (2)
150	Battery strap	A-4010	Battery Strap Set
151	Two sided tape	A-4004	Servo Tape (6)
152	Antenna tube	A-4002	Antenna Kit
153	Antenna cap	A-4003	Antenna Caps (8)
154	Front bumper	A-4130	'XX' Front Bumper
155	4-40 x 1/4" flat head screw	A-6213	4-40 x 1/4" Flat Head Socket Screw (6)
156	Window masks	A-8008	'XX' Body w/ Masks
157	Double-X body	A-8008	'XX' Body w/ Masks
158	Wing	A-8105	'XX' Wing
159	Body clips	A-8200	Body Clips (12)
160	Top wing button	A-8102	Adjustable Wing Button Set
161	Bottom wing button	A-8102	Adjustable Wing Button Set
162	Wing wire	A-8106	'XX' Wing Wire
163	Sticker sheet	A-8306	Sticker Sheet "Team Losi" Set