

# OWNER'S MANUAL

# TEAM XX4 LOSI



- ① Carefully read through all instructions to familiarize yourself with the parts, construction, tuning tips, and techniques outlined in this manual. Being able to grasp the overall design of your XX-4 4WD off-road car before construction will ensure a smooth assembly.
- ② Take your time and pay close attention to detail. Keep this manual for future reference.

# TEAM LOSI

*Racing*

TEAM LOSI, INC., ONTARIO, CA 91761 P/N 800-0087  
MADE IN THE UNITED STATES OF AMERICA

# WELCOME XX-4 OWNER!

Thank you for selecting Team Losi and the XX-4 as your new off-road racing vehicle. As you will soon see, we have made every effort to produce a kit that is not only the most competitive, but easy to build and maintain as well. The simple bag-by-bag assembly sequence and unmatched easy-to-follow instructions, combined with Team Losi's famous quality-fitting parts, should make building your XX-4 an enjoyable project.

Before you open a bag or start any assembly, please take a few moments to read completely through the following instructions. This will familiarize yourself with not only the various parts, but the tools you will need as well.

Once again, thank you for choosing Team Losi.

Good luck and good racing!

## 1. INTRODUCTION

### XX-4 COMPLETED KIT DIMENSIONS

Overall Length: 15-1/2"  
Wheelbase: 10-3/4"

Front Width: 9-5/8"  
All dimensions at ride height.

Rear Width: 9-7/8"

Height: 5.75"

Weight will vary depending on accessories.


### NOTES & SYMBOLS USED


#### Figure 1

This is a common figure number found at the beginning of each new illustration throughout the manual.

Step 1. - Each step throughout the entire manual has a check box to the left of it. As you complete each step, mark the box with a check. If you need to take a break and return to building at a later time you will be able to locate the exact step where you left off.

\*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 during the assembly process. Do not ignore these notes!

 This wrench designates a performance tip. These tips are not necessary, but can improve the performance of your XX-4 car.



In illustrations where it is important to note which direction parts are pointing, a helmet like this one will be included in the illustration. The helmet will always face the front of the car. Any reference to the right or left side will relate to the direction of the helmet.

### KIT/MANUAL ORGANIZATION

The XX-4 is composed of different bags marked A through H. Each bag contains all of the parts necessary to complete a particular section of the XX-4 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 assembly sequence, otherwise you may face difficulties in finding the correct part. It is helpful to read through the instructions for an entire bag prior to beginning assembly. Key numbers (in parenthesis) have been assigned to each part and remain the same throughout the manual. In some illustrations, parts which have already been installed are not shown so that the current steps can be illustrated more clearly.

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 for parts that may be easy to lose.

The molded parts in the XX-4 are manufactured to demanding tolerances. When screws are tightened to the point of being snug, the parts are held firmly in place. For this reason it is very important that screws not be overtightened in any of the plastic parts.

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 are not intended for human consumption!*

3. *Exercise care* when using any hand tools, sharp instruments, or power tools during construction.

4. *Carefully read all manufacturer's warnings and cautions* for any glues, chemicals, or paints that may be used for assembly and operating purposes.

## TOOLS REQUIRED

Team Losi has supplied all necessary Allen wrenches and a special wrench that is needed for assembly and adjustments. The following common tools will also be required: Needle-nose pliers, regular pliers, hobby knife, scissors or other body cutting/trimming tools, and a soldering iron may be necessary for radio installation. 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). The second number or fraction designates the length of the screw. For flat-head screws, this number refers to the length of the threaded portion of the screw. For cap-head screws, this number refers to the overall length of the screw. 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 attach to.

## MOTORS AND GEARING

The XX-4 includes an 84-tooth, 48-pitch spur gear. The overall internal drive ratio of the XX-4 is 2.3:1. The pinion gear that is used will determine the final drive ratio. To calculate the final drive ratio, first divide the spur gear size by the pinion gear size. For example, if you are using a 20-tooth pinion gear, you would divide 84 (spur gear size) by 20 (pinion gear size).  $84/20 = 4.2$ . This tells you that 4.2 is the external drive ratio. Next, multiply the internal drive ratio (2.3) by the external drive ratio (in this case 4.2).  $2.3 \times 4.2 = 9.66$ . This means that by using a 20-tooth pinion gear with the standard 84-tooth spur gear, the final drive ratio is 9.66:1.

Consult your high-performance shop for recommendations to suit your racing style and class. The chart below lists some of the more common motor types and a recommended initial gearing for that motor. Ratios can be adjusted depending on various track layouts, tire sizes, and battery types.

### RECOMMENDED INITIAL GEARING FOR COMMON MOTORS

TYPE OF MOTOR	PINION	SPUR
24° Stock	??	84
36° Stock	??	84
10-Turn Modified	18	84
11-Turn Modified	19	84
12-Turn Modified	20	84
13-Turn Modified	21-22	84
14-Turn Modified	22-23	84
15-Turn Modified	24	84
16-Turn Modified	25	84

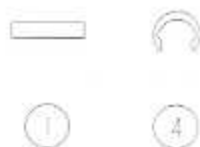
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*Team Losi is continually changing and improving designs; therefore, the actual part may appear slightly different than the illustrated part. Illustrations of parts and assemblies may be slightly distorted to enhance pertinent details.*

# BAG A

**Figure 1**



- Step 1. Press a .078" x 3/8" spirol pin (1) into the outer hole in each end of the layshaft (2). Center the pins (1) in the shaft (2) so that they extend evenly from both sides of the shaft (2).

*\*NOTE: The .078" x 3/8" pins are the two long spirol pins found in bag A. There is also a shorter spirol pin which will be used in step 4. The layshaft has three holes in it and no threads on the end.*

- Step 2. Place the large (42 tooth) 2mm belt pulley (3) over the end of the layshaft (2) with two grooves. Align the pin (1) with the slot in the pulley (3) and press the pulley (3) over the pin (1). Secure the pulley (3) to the layshaft (2) with a 3/16" C-clip (4).

**! IMPORTANT NOTE:** The C-clip must be attached to the layshaft in the wider of the two grooves. This is the groove farthest away from the end of the shaft.

- Step 3. Attach the small (17 tooth) 3mm belt pulley (5) to the open end of the layshaft (2). Align the pin (1) with the slot in the pulley (5) and press the pulley (5) over the pin (1). Secure the pulley (5) to the layshaft (2) with a 3/16" C-clip (4).

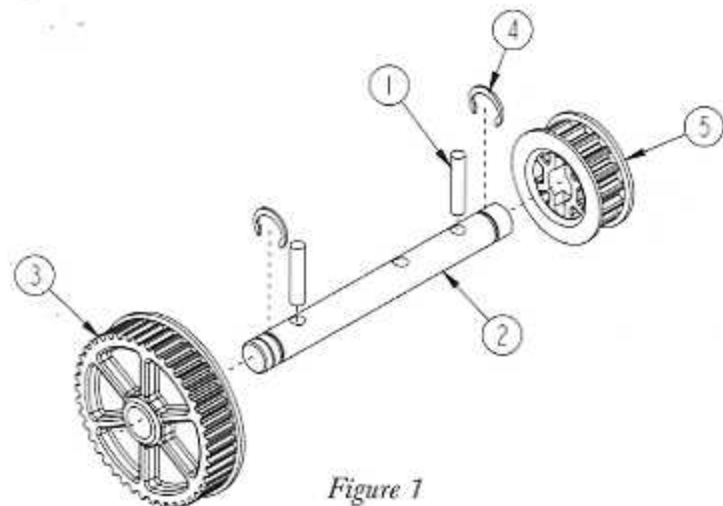


Figure 1

**Figure 2**



- Step 4. Press the .078" x 5/16" spirol pin (6) into the hole farthest from the groove in the slipper shaft (7). Center the pin (6) in the shaft (7) so that the pin (6) extends evenly from both sides of the shaft (7).

- Step 5. Thread the 5-40 x 5/8" set screw (8) all the way into the end of the slipper shaft (7). This is easiest accomplished by inserting the 1/16" Allen wrench (9) into the open hole in the shaft (7) to hold it in place while tightening the set screw (8).

**! IMPORTANT NOTE:** The pin must be centered in the slipper shaft.

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

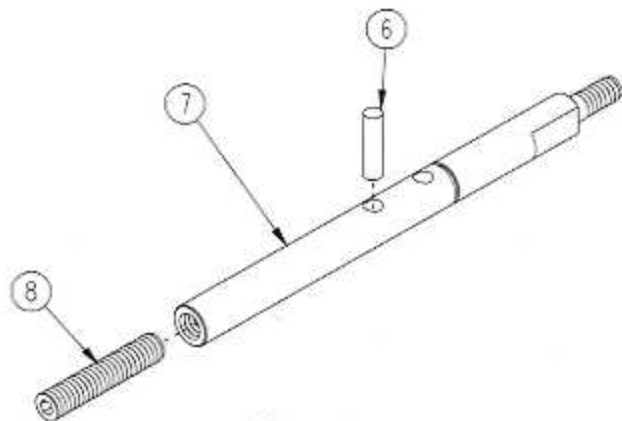
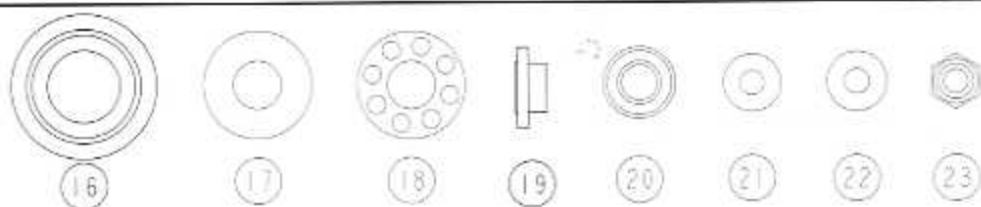


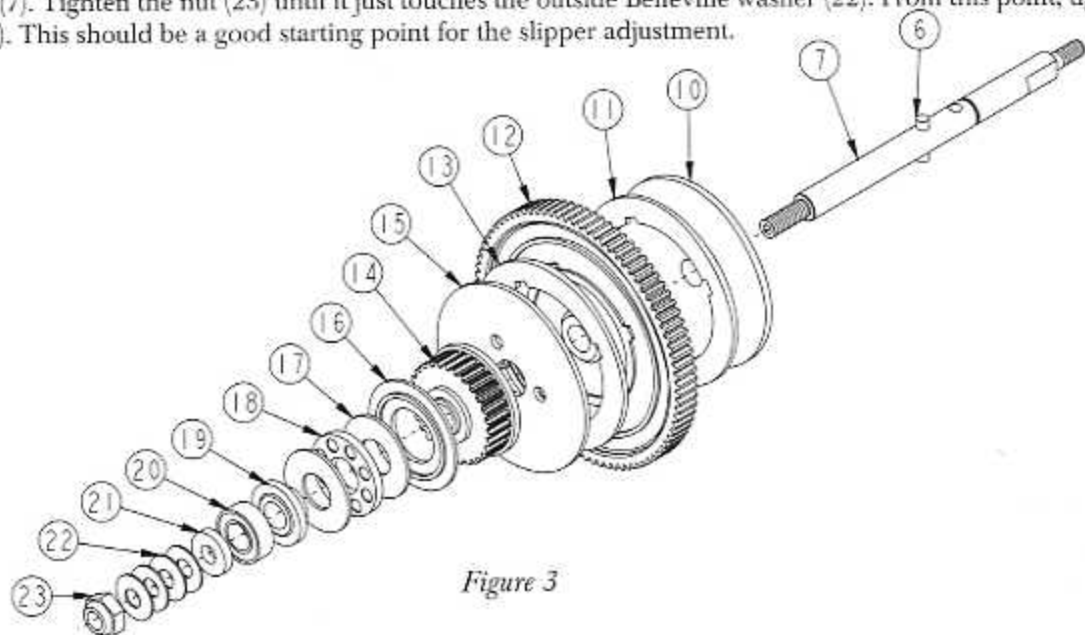
Figure 2

# BAG A (Continued)

**Figure 3**



- ❑ Step 6. Slide the front slipper back plate (10) over the end of the slipper shaft (7) with no flat spots. While aligning the pin (6) in the shaft (7) with the slot in the back plate (10), press the back plate (10) all the way against the pin (6).
- ❑ Step 7. Place the front (yellow) slipper pad (11) on the side of the spur gear (12) and align the notches on the spur gear (12) with the notches in the slipper pad (11).
- ❑ Step 8. Place the spur gear/slipper pad assembly, pad side first, on the slipper shaft (7). Slide the assembly all the way across the shaft, against the back plate (10). Ensure that the slipper pad (11) and spur gear (12) are still properly aligned.
- ❑ Step 9. Position the rear (dark-colored) slipper pad (13) over the slipper shaft (7) against the exposed side of the spur gear (12). Be certain that the notches in the slipper pad (13) align with the notches on the spur gear (12).
- ❑ Step 10. Align the three posts on the 29-tooth 2mm belt pulley (14) with the three holes in the rear slipper back plate (15). Press the pulley (14) flush against the back plate (15). Slide the pulley/back plate assembly, back plate (15) first, over the slipper shaft (7) and against the rear slipper pad (13).
- ⚠ If there is any flashing (three small points) present on the outside surface of the pulley, it should be cut off before continuing. Flashing is rarely present, but if it exists it could make alignment of parts in the upcoming steps more difficult.
- ❑ Step 11. Place the pulley flange (16) next to the pulley (14) and center it over the shoulder on the pulley (14). The side of the flange (16) with the ring cut in it should face away from the pulley (14).
- ❑ Step 12. Position one of the two slipper thrust washers (17) next to the pulley flange (16). Center the thrust washer so that it sits over the shoulder on the pulley (14). Slide the slipper thrust bearing (18) over the slipper shaft (7), next to the thrust washer (17), followed by the second thrust washer (17).
- ❑ Step 13. Slide the thrust bearing spacer (19), small flange side first, down the shaft (7) next to the outer thrust washer (17). The small flange on the spacer (19) should fit into the center of the outer washer (17) and the thrust bearing (18) so that the large portion of the spacer (19) rests flush against the outer washer (17).
- ❑ Step 14. Place a 3/16" x 3/8" bearing (20) next to the thrust bearing spacer (19). Slide the small plastic bearing washer (21) over the set screw (8) in the shaft (7) so that it rests against the bearing (20).
- \*NOTE: If the 3/16" x 3/8" bearing only has one Teflon™ seal (tan, woven looking) in it, position the seal to the outside – away from the spur gear.*
- ❑ Step 15. Stack the four 1/8" Belleville washers (22) in opposing directions as shown in Figure 3A so that the small side of the first washer (22) rests against the bearing washer (21). The small side of the fourth washer (22) should face the outside of the assembly.
- ❑ Step 16. Thread the 5-40 locknut (23) onto the set screw (8) by hand. Insert the 1/16" Allen wrench (9) into the open hole in the shaft (7). Tighten the nut (23) until it just touches the outside Belleville washer (22). From this point, tighten the nut (23) one full turn (360°). This should be a good starting point for the slipper adjustment.



*Figure 3A*

*Figure 3*

# BAG A (Continued)

## Figure 4

❑ Step 17. Snap a 3/16" C-clip (4) into the groove in the center of the slipper shaft (7).

❑ Step 18. Place a 3/16" x 3/8" bearing (20) over the shaft (7), next to the C-clip (4).

*\*NOTE: If the 3/16" x 3/8" bearing only has one Teflon™ seal (tan, woven looking) in it, position the seal to the outside – away from the center of the shaft.*

❑ Step 19. Slide the one-way/clicker pulley flange (175) over the shaft (7) so that the small shoulder rests against the bearing (20). Place the one-way/clicker pulley (24) over the shaft (7), next to the flange (175) so that the splines on the pulley (24) are to the outside.

❑ Step 20. Align the flat sections on the one-way/clicker plate (25) with the flat sections on the shaft (7). Place the one-way/clicker plate (25) next to the one-way/clicker pulley (24), aligning the teeth on both parts.

❑ Step 21. Center the one-way adjustment spring (26) on the end of the one-way/clicker plate (25). Position the adjustment spring washer (27), small side first, over the shaft (7) and in the end of the spring (26).

❑ Step 22. Thread the 4-40 mini locknut (28) onto the end of the shaft (7). Tighten the nut (28) all the way, then back it off two full turns (360° x 2). This should be a good initial adjustment.

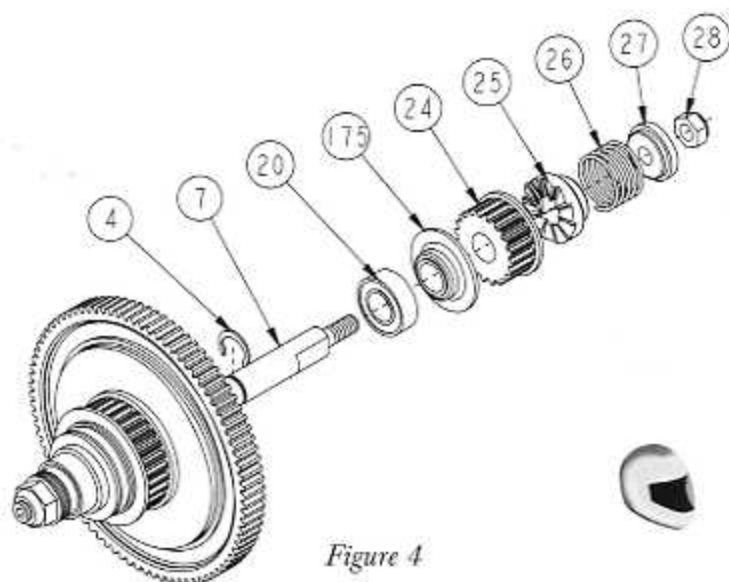


Figure 4

## Figure 5

❑ Step 23. Place a short 2mm drive belt (29) over each of the pulleys (14), (24).

❑ Step 24. With the belts (29) in place, install the slipper shaft assembly in the forward area of the chassis (30) with the spur gear (12) to the right side of the chassis (30).

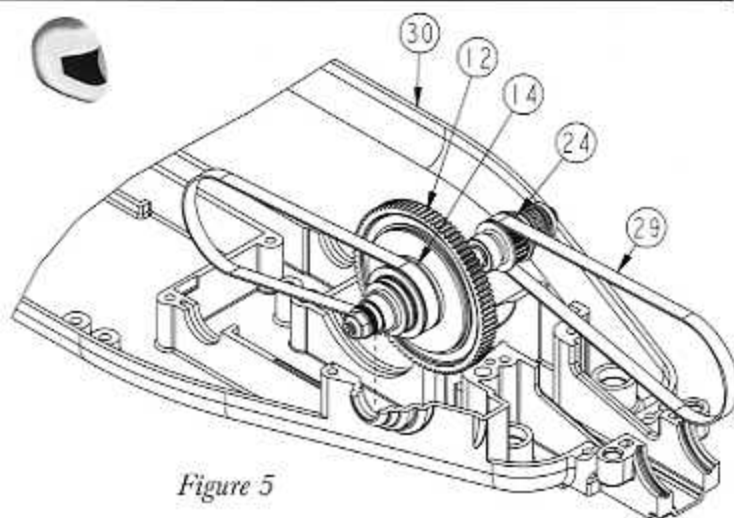


Figure 5

## Figure 6



❑ Step 25. Apply a small amount of white thrust bearing/assembly grease (49) to the belt roller shaft (32) and center the belt roller (31) on the belt roller shaft (32).

❑ Step 26. Place a 3/32" shim (33) over each end of the belt roller shaft (32).

🔑 Team Losi offers a bearing belt roller kit (A-6912). This kit replaces the bushing belt rollers in the kit with small ball bearings.

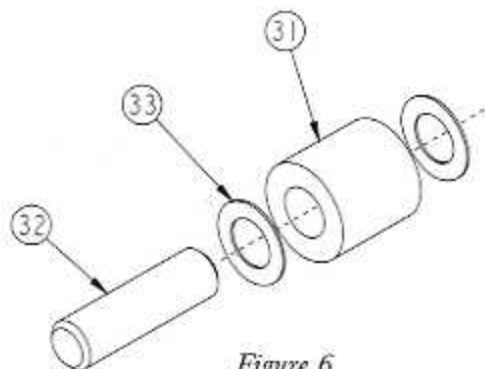


Figure 6

# BAG A (Continued)

## Figure 7

❑ Step 27. Carefully pick up the belt roller assembly using a pair of tweezers or small needle-nose pliers. Hold the assembly by the shims (33) on either end as shown. Position the assembly above the area for the shaft (32) in the chassis (30). This area is located in the center of the chassis (30), directly behind the vertical rib.

❑ Step 28. Once the assembly is in position, press the shaft (32) into place.

*\*NOTE: Be careful not to bend or damage the shims. The roller should rotate freely once in position.*

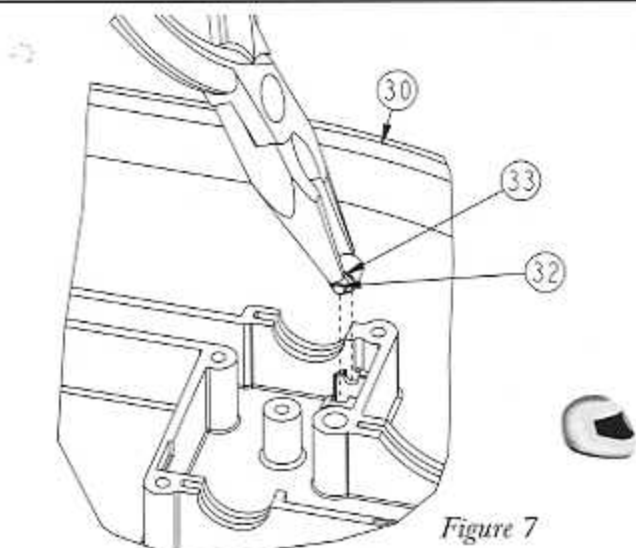


Figure 7

## Figure 8

❑ Step 29. Press a 3/16" x 3/8" bearing (20) into the right layshaft bearing insert (34). The right bearing insert (34) is the one with the small notch in the bottom corner.

❑ Step 30. Place the right bearing insert assembly over the end of the layshaft (2) with the groove (next to the large pulley).

❑ Step 31. Press a 3/16" x 3/8" bearing (20) into the left layshaft bearing insert (35). Place the left bearing insert assembly over the other end of the layshaft (2).

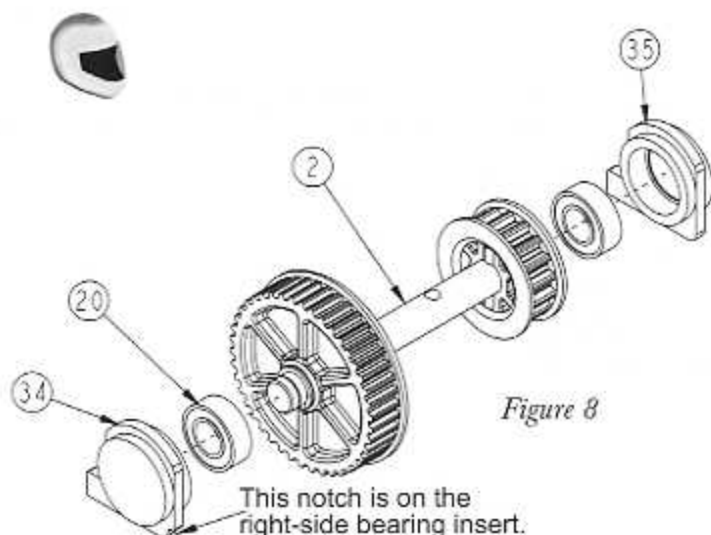


Figure 8

## Figure 9

❑ Step 32. Wrap the rear drive belt (36) around the small pulley (5) and hold the belt (36) tightly around the pulley (5).

❑ Step 33. Hook the side drive belt (29) around the large pulley (3).

❑ Step 34. Rotate the bearing inserts (34), (35) so that the flat edges face down and the tabs are to the rear. Press the layshaft assembly – with belts around the pulleys – into position in the chassis (30). The rear belt (36) should run between the center ribs of the chassis (30). Ensure that both bearing inserts (34), (35) are all the way down in the chassis (30).

*\*NOTE: The top, exposed end of both bearing inserts should be rounded.*

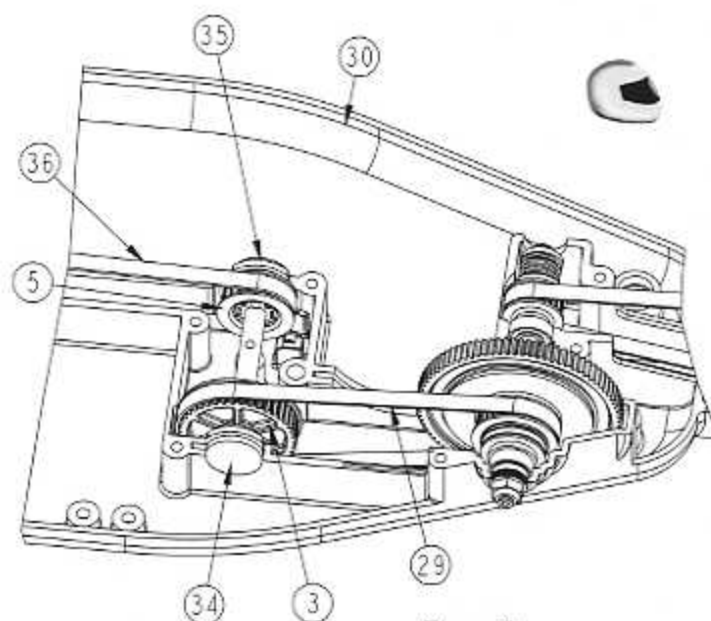


Figure 9

# BAG B

**Figure 10**



- Step 1. Insert a 4-40 mini lock nut (28) into the hex area of the diff nut carrier (37). The thread-locking portion of the nut (28) should face the outside.

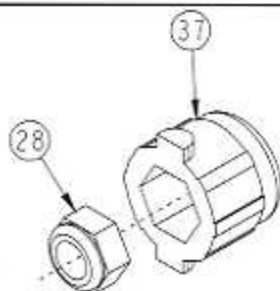


Figure 10

**Figure 11**



- Step 2. Locate the 5/64" Allen wrench (9) supplied with the kit. Place the diff nut carrier (37), nut side first, over the Allen wrench.

- Step 3. Stack the six 1/8" Belleville washers (22) over the wrench, next to the diff nut carrier (37). The washers (22) should all point the same direction and open away from the nut carrier (37) as shown in Figure 11A.

- Step 4. Place the diff tube (38) over the wrench, big side first, so that the tube (38) rests against the Belleville washers (22).

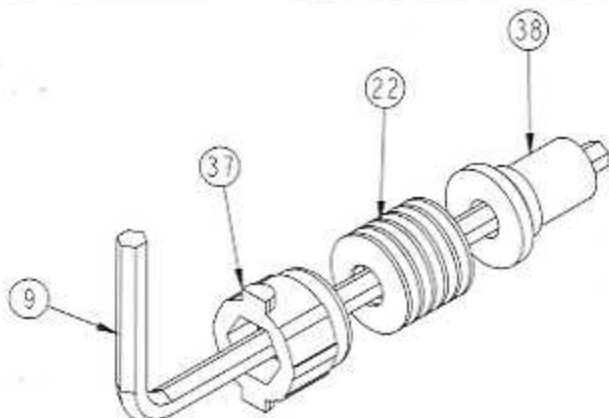


Figure 11



Belleville washers should face this direction  
Figure 11A

**Figure 12**



- Step 5. Insert all of the parts that are stacked on the wrench into one of the steel outdrive/diff halves (39). Line up the tabs on the diff nut carrier (37) with the slots in the outdrive (39). Make certain that the diff tube (38) is pressed all the way into the outdrive/diff half (39), and that the tube (38) is straight. There is a small shoulder on the diff tube (38) that should be flush with the outer surface of the outdrive (39).

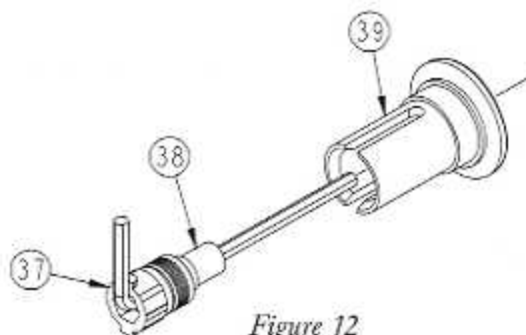
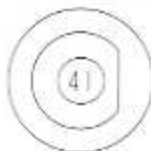


Figure 12

**Figure 13**



- Step 6. Apply a small amount of diff grease (40) (clear) to the outside ring of the outdrive (39). Attach a diff drive ring (41) to the outdrive (39) by lining up the slot in the ring (41) with the slot in the outdrive (39).

*\*NOTE: The diff grease is the clear grease— not the white colored grease. Only a small amount of grease is needed. It is only there to hold the drive ring in place.*

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

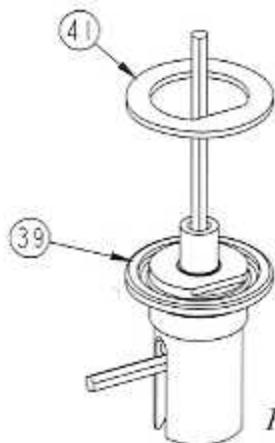
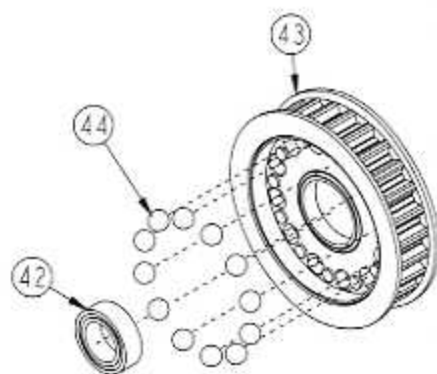
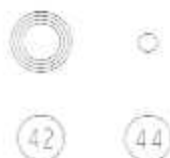


Figure 13

# BAG B (Continued)

**Figure 14**



❑ Step 7. Insert a 5mm x 8mm bearing (42) into the center of the rear diff pulley (43).

❑ Step 8. Press a 3/32" diff ball (44) into each of the small holes in the diff pulley (43).

Figure 14

**Figure 15**

❑ Step 9. Apply a fairly heavy coat of diff grease (40) to the exposed side of the drive ring (41) that is already attached to the outdrive (39).

❑ Step 10. Carefully place the diff pulley (43) over the diff tube (38) so that the diff balls (44) and diff pulley (43) rest against the greased drive ring (41).

**⚠ IMPORTANT NOTE:** It is a good idea to hold the diff nut carrier in place so that when installing the pulley, the diff tube isn't moved.

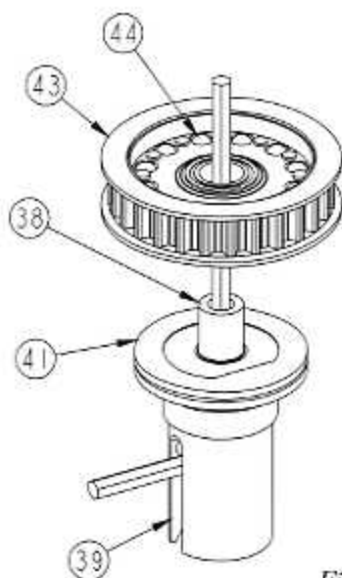
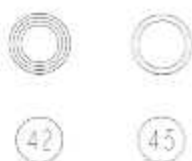


Figure 15

**Figure 16**



❑ Step 11. Insert a 5mm x 8mm bearing (42) into the second outdrive/diff half (39). Make sure that the bearing (42) is pushed all the way into the outdrive (39). The handle of a hobby knife (with the blade removed) or a pencil can be used to push the bearing (42) into place.

❑ Step 12. Drop the 1/4" x 5/16" shim (45) into the outdrive (39), on top of the 5mm x 8mm bearing (42). Make sure that the shim (45) sits flat against the bearing (42).

*\*NOTE: Be extra careful not to bend the shim!*

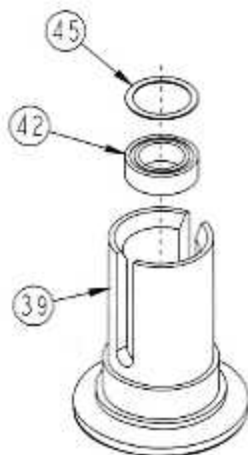
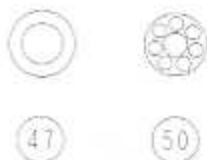


Figure 16

# BAG B (Continued)

**Figure 17**



❑ Step 13. Locate the diff adjusting screw (46) and place the foam thrust bearing seal (47) over the shoulder of the screw (46).

❑ Step 14. Place one of the 3mm x 8mm raced thrust bearing washers (48) over the diff screw (46) so that the groove in the washer (48) faces up.

❑ Step 15. Using the white thrust bearing/assembly grease (49), liberally grease the thrust washer (48) and place the 3mm x 8mm thrust bearing (50) over the screw (46), and next to the washer (48). Apply white thrust bearing/assembly grease (49) to the exposed side of the thrust bearing (50) and place the second thrust bearing washer (48) over the screw (46), against the thrust bearing (50). This time, the groove in the thrust washer (48) should face down.

*\*NOTE: The thrust bearing/assembly grease is the white colored grease – not the clear grease.*

❑ Step 16. Very carefully insert the diff screw (46), with the thrust bearing assembly installed, into the outdrive (39). Be extremely careful not to bend or pinch the shim (45) while inserting the diff screw (46). Pull the threaded end of the diff screw (46) until the thrust bearing assembly rests against the shim (45), next to the bearing (42) inside the outdrive (39).

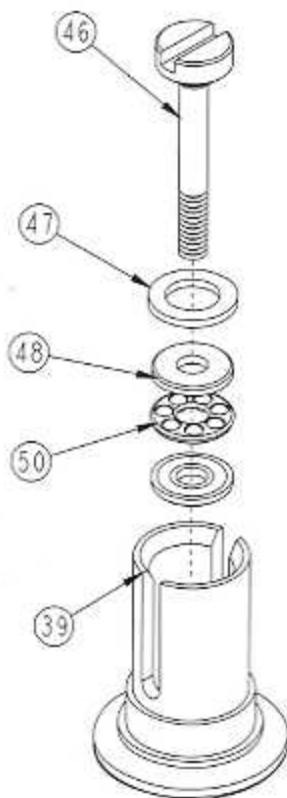
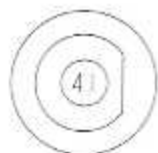


Figure 17

**Figure 18**



❑ Step 17. Locate the smallest of the supplied Allen wrenches (9) and place it in the slot in the outdrive (39) containing the diff screw (46). Slide the wrench all the way into the slot in the outdrive (39) against the screw (46). Handling the outdrive (39) with the wrench inserted, will hold the diff screw (46) in place while finishing assembly of the diff.

❑ Step 18. Apply a small amount of clear diff grease (40) to the outer ring of the outdrive (39). Install the second drive ring (41), again aligning the slots in the outdrive (39) and the drive ring (41).

*\*NOTE: The diff grease is the clear grease – not the white colored grease. Only a small amount of grease is needed. It is only there to hold the drive ring in place.*

❑ Step 19. Apply a fairly heavy coat of clear diff grease (40) to the exposed side of the drive ring (41).

➤ For best results, clean the drive rings with rubbing alcohol or motor spray before applying the grease to the exposed side.

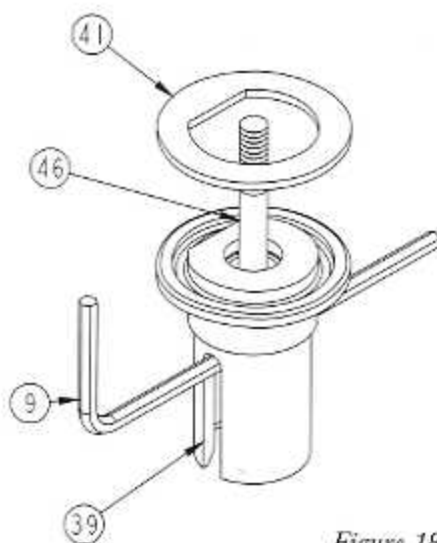


Figure 18

# BAG B (Continued)

## Figure 19

- ❑ Step 20. While holding the outdrive (39) with the Allen wrench inserted, carefully assemble it to the other outdrive/diff half (39).
- ❑ Step 21. Make sure that the slot in the diff screw (46) is lined up with the slot in the outdrive (39) and the Allen wrench is inserted in the diff screw (46).

❑ Step 22. Hold the diff so that the outdrive (39) with the diff nut carrier (37) is pointing up. Slowly turn the top outdrive (39) clockwise to thread the diff screw (46) into the 4-40 mini nut (28) in the diff nut carrier (37). Thread the two outdrives together until the screw (46) 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 screw a little more and work the diff again. Continue this until the diff is tight. This will ensure that all the parts in the diff assembly are properly seated.

❑ Step 23. Tighten the diff until the pulley (43) cannot be turned while both of the outdrives (39) are being held firmly. Final diff adjustment should be made after completion of the car.

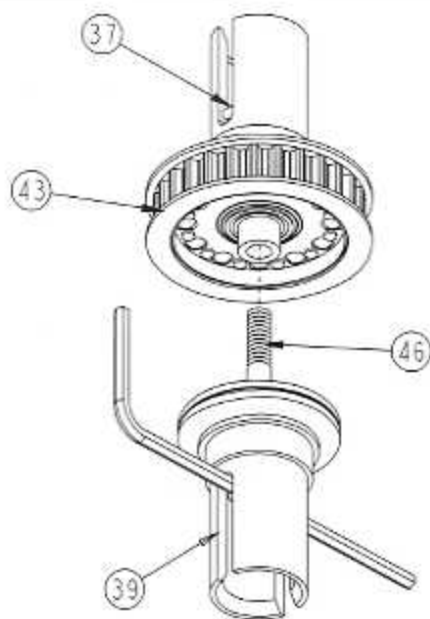


Figure 19

## Figure 20



❑ Step 24. There are two sets of rear bearing blocks (51) included in your XX-4 kit. One set is marked with the letter 'A', the other set with the letter 'B'. These two sets of bearing blocks allow for rear belt tension adjustment. The two sets of blocks can each be oriented two different ways to allow for four different tension settings. Look for more about rear belt tension adjustment in the tips section of the manual.

Locate the set of blocks marked 'B'. This is the set that will be used to assemble the car. You will want to keep the 'A' set in your spare parts.

❑ Step 25. Press a 1/2" x 3/4" bearing (52) into each of the rear bearing blocks (51) marked 'B'.

*\*NOTE: If the 1/2" x 3/4" bearing only has one Teflon™ seal (tan, woven looking) in it, position the seal to the outside of the bearing block (the side with the letter and arrow markings).*

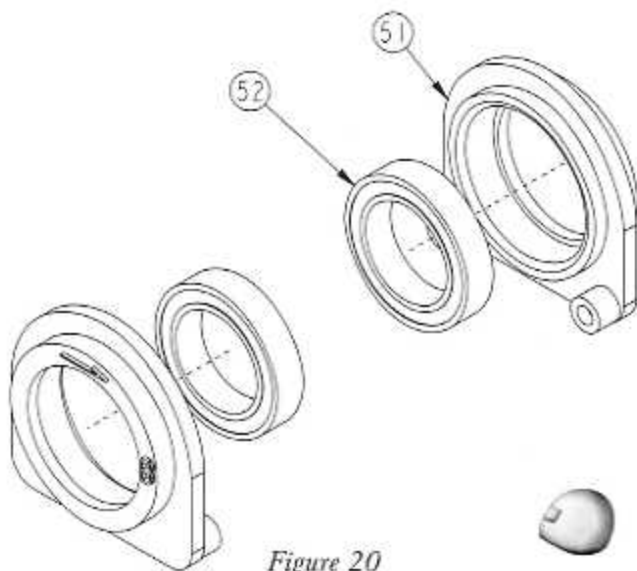


Figure 20

## Figure 21



❑ Step 26. Looking at the marked sides of the bearing blocks, locate the one with the arrow pointing from left-to-right. This will be the left bearing block. Insert the belt roller shaft (32) into hole in the rear (end that the arrow points to) of the bearing block.

❑ Step 27. Slide a 3/32" shim (33) down, over the roller shaft (32), next to the bearing block (51).

❑ Step 28. Apply a small amount of white thrust bearing/assembly grease (49) to the shaft (32) and position the belt roller (31) on the shaft (32), next to the shim (33), followed by the second shim (33).

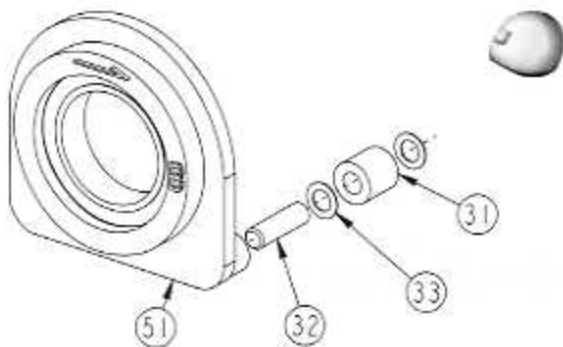


Figure 21

# BAG B (Continued)

## Figure 22

- ❑ Step 29. Position the rear differential in the center of the rear drive belt (36) so that the slot in the diff adjusting screw (46) faces to the left.
- ❑ Step 30. Pull the rear diff back so that the rear belt (36) wraps around the rear diff pulley (43). Ensure that the teeth on the belt (36) engage with the teeth on the pulley (43).
- ❑ Step 31. While holding the rear belt (36) around the rear diff pulley (43), carefully place the left rear bearing block assembly over the left side of the differential. The flat side of the rear bearing block (51) should be on the bottom (closest to the chassis) and the belt (36) should be positioned between the pulley (43) and the belt roller (31).
- ❑ Step 32. Place the right bearing block (51) over the other side of the differential. Align the hole in the rear of the block (51) with the roller shaft (32) and carefully slide the bearing block (51) over the outdrive (39) until the roller shaft (32) is inserted in the hole in the bearing block (51).

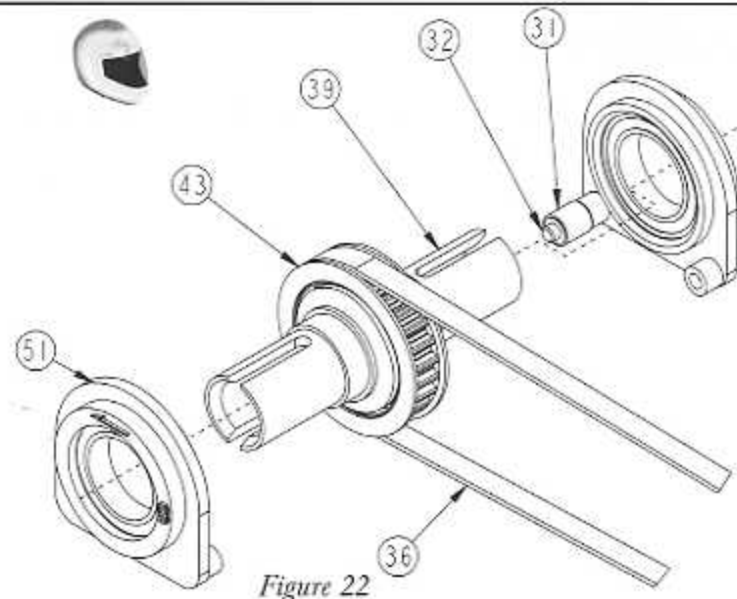


Figure 22

## Figure 23

- ❑ Step 33. With the flat side of the bearing blocks (51) to the bottom (closest to the chassis) and the roller to the rear, install the rear diff/bearing block assembly, with the arrows pointing rearward, in the rear portion of the chassis. Press the assembly all the way down into the chassis.

**⚠ IMPORTANT NOTE:** At this time you should check the belt tension. Due to production tolerances, belts vary slightly in length. To check the belt tension, hold the pulley on the idler shaft firmly in place. While holding the idler shaft pulley, rotate the rear diff pulley toward the idler pulley as much as you can, creating slack at the top of the belt. If the belt is adjusted correctly, there should be about 1/8"-1/4" of slack at the top of the belt. If the belt appears to be either too loose or too tight, refer to table 23 to find the desired tension and change the blocks accordingly. **Make sure that the belt roller is in place!**

Bearing Block & Direction	Adjustment
'A' - arrow pointing back	Tightest
'B' - arrow pointing back	Tight
'B' - arrow pointing forward	Loose
'A' - arrow pointing forward	Loosest

Table 23

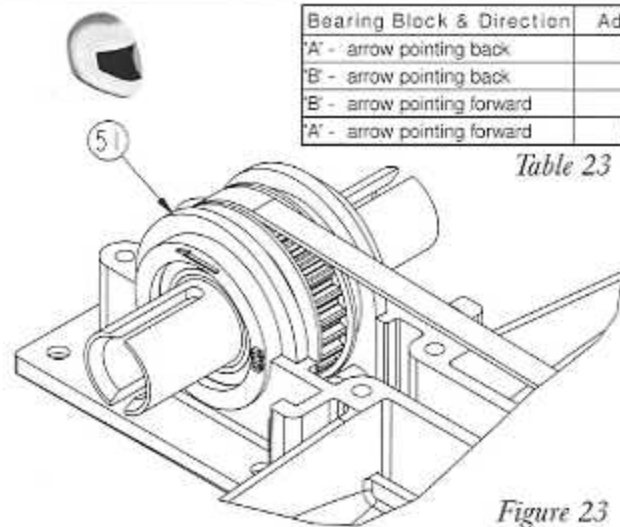


Figure 23

## Figure 24

Before continuing to step 34, locate the 4-40 thread-forming screw packed in the Allen wrench bag. Use this self-tapping screw to form threads in all of the holes in the top side of the chassis (11 total). This is accomplished by threading the screw all the way into the hole, and then removing the screw from the hole. Threading these holes before continuing to step 34 will make assembly much easier. It is recommended that you apply a small amount of white assembly grease to the self-tapping screws before threading them into the holes.

- ❑ Step 34. Place the main chassis cover (53) on the chassis (30) as shown. Ensure that the cover (53) is all the way down, and flush against the chassis (30).
- ❑ Step 35. Insert the two long threaded inserts (54) into the two holes, with hexes at the top, in the forward area of the cover (53) as shown. While lining up the hexes on the inserts (54) with the hex area in the cover (53), press the inserts (54) down, into the hex area of the cover (53).

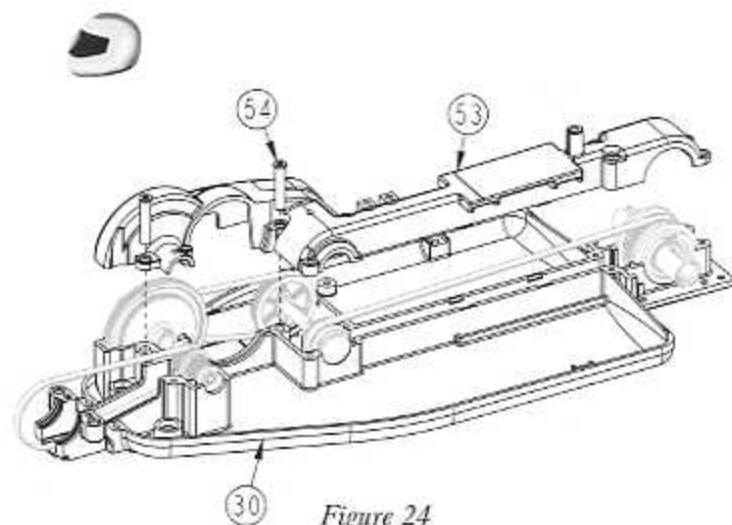
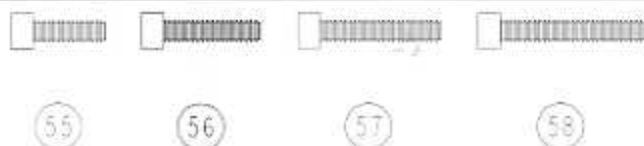


Figure 24

# BAG B (Continued)

**Figure 25.**



- ❑ Step 36. Thread a 4-40 x 3/8" cap-head screw (55) into each of the two rear-most holes in the cover (53).  
*\*NOTE: A small amount of the white assembly grease should be applied to the threads of all the screws in Figure 25. This will make installation of the screws easier. The holes for these screws should have been threaded with the thread-forming screw as indicated prior to step 34.*
- ❑ Step 37. Thread a 4-40 x 1/2" cap-head screw (56) into the hole to the left of the rear threaded insert (54). Thread a second 4-40 x 1/2" cap-head screw (56) into the hole behind, and to the right of, the rear threaded insert (54).
- ❑ Step 38. Thread a 4-40 x 5/8" cap-head screw (57) into the hole to the right of the one-way/clicker pulley (24).  
*\*NOTE: The screw should be threaded into the rear hole in this area. The forward of the two holes will be used for differential and slipper adjustment at a later time.*
- ❑ Step 39. Thread a 4-40 x 5/8" cap-head screw (57) into the hole just behind the slipper adjustment nut (23).
- ❑ Step 40. Thread a 4-40 x 3/4" cap-head screw (58) into each of the two holes just in front of the rear differential. Thread the remaining 4-40 x 3/4" cap-head screw (58) into the hole in the corner of the cover (53) just behind the layshaft area.
- ❑ Step 41. Tighten all nine screws in Figure 25, being careful not to overtighten any of them.

⚠ When removing the main cover from the chassis, try to keep the screws for the cover in their respective holes. This will ensure that all the screws are replaced in the proper holes. Threading a screw that is too long into a hole may cause interference with the drive train, or insufficient cover sealing.

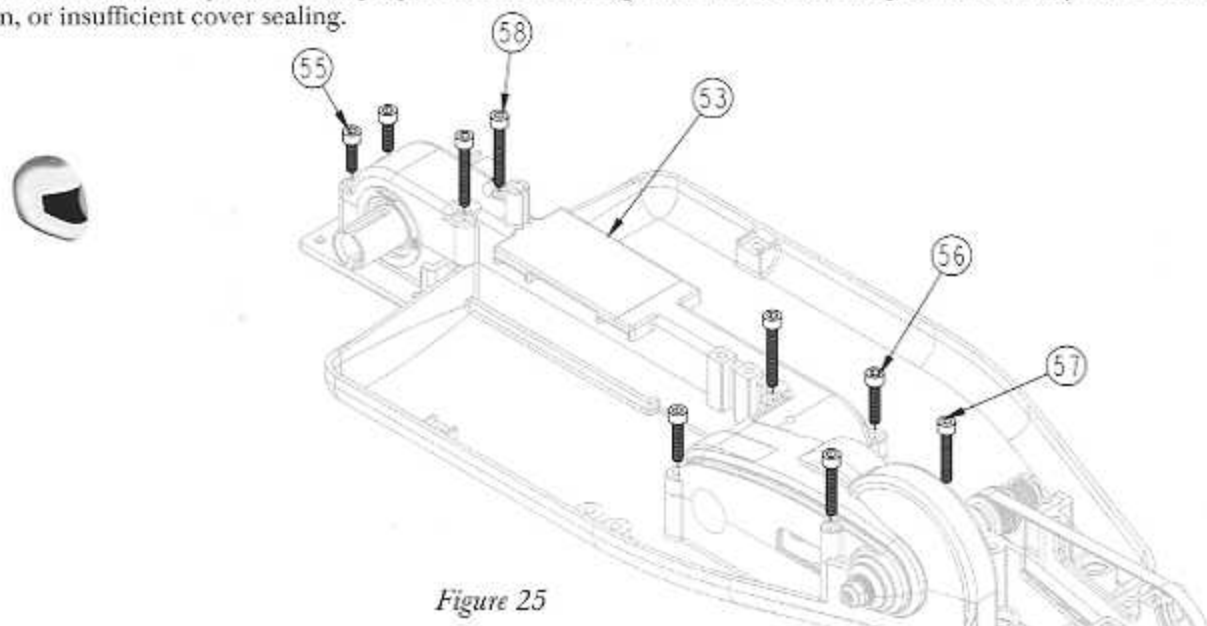


Figure 25

**Figure 26.**



- ❑ Step 42. Thread a 4-40 x 3/8" cap-head screw (55) through the bottom of the chassis (30), into each of the two threaded inserts (54).
- ❑ Step 43. Ensure that the hex area on both of the threaded inserts (54) is aligned with the hex area in the cover (53), and tighten both screws (55). Once the screws (55) are tight, the top of the hex on each of the threaded inserts (54) should be flush with the cover (53).

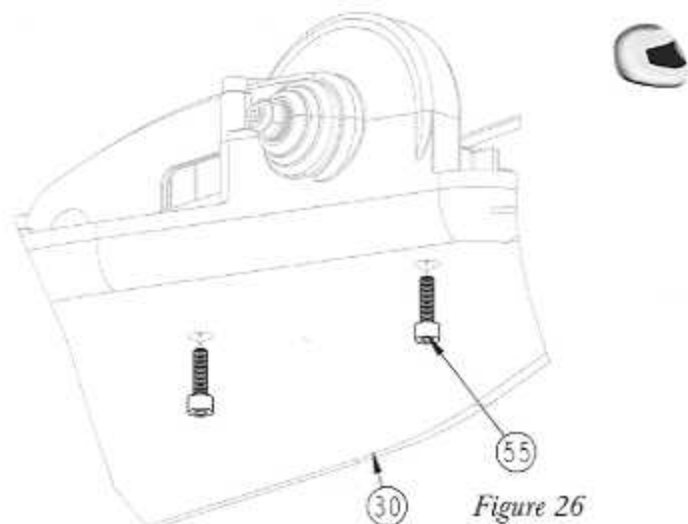


Figure 26

# BAG C

## Figure 27

❑ Step 1. Install the steering tunnel (59), tall end forward, in the front portion of the chassis (30) as shown. The top of the tunnel (59), when installed correctly, should be parallel to the chassis (30); and both the front and rear edges of the tunnel (59) should be vertical.

❑ Step 2. Press the tunnel (59) all the way down into position.

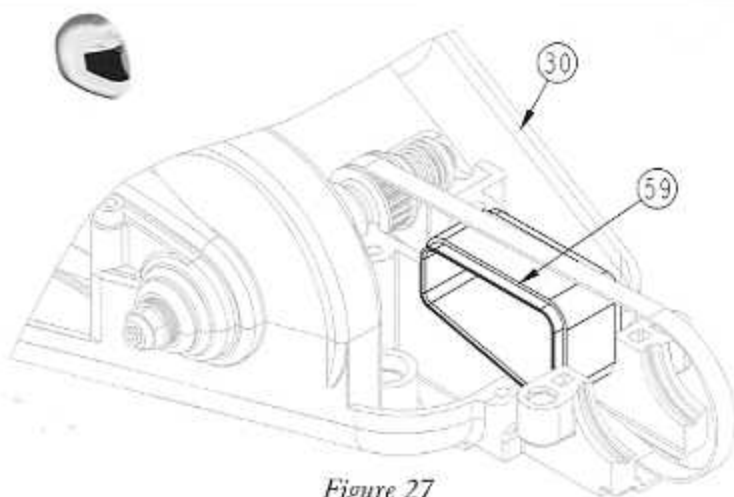


Figure 27

## Figure 28

❑ Step 3. Remove two 3/16" x 5/16" plastic steering bushings (60) from the steering parts tree. Press a bushing (60) into each of the two recessed areas at the front of the chassis (30).

**⚠ IMPORTANT NOTE:** Trim all flashing off of the bushings. If there is flashing present on the bushings when they are installed, the steering movement may be tight when assembly is complete.

➔ Team Losi offers a sealed steering bearing set (A-6914).

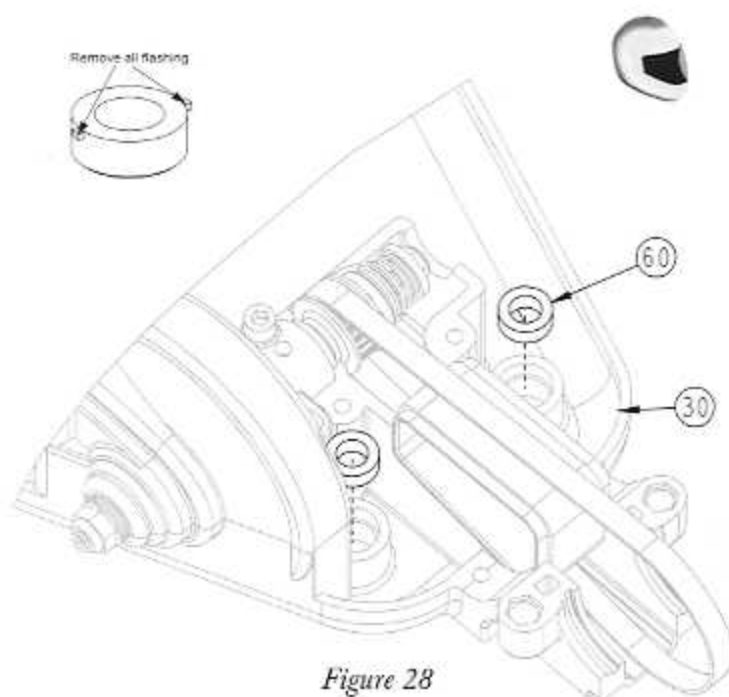


Figure 28

## Figure 29

❑ Step 4. Insert a 4-40 mini locknut (28) into the hex areas in the steering idler arm (61) as shown. Thread a 3/16" ball stud (62) into each nut (28), from the opposite side of the idler arm (61), and tighten.

*\*NOTE: The idler arm has no splines on the end of the shaft. The splines are on the steering bellcrank, used in step 5.*

❑ Step 5. Insert a 4-40 mini locknut (28) into the hex areas in the steering bellcrank (63) as shown. Thread a 3/16" ball stud (62) into each nut (28), from the opposite side of the bellcrank (63), and tighten.

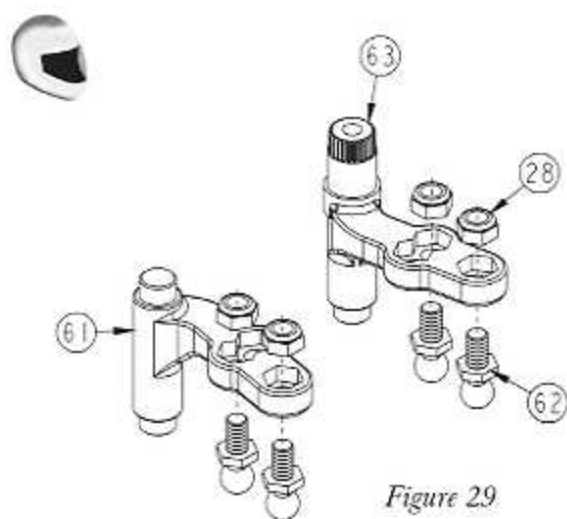


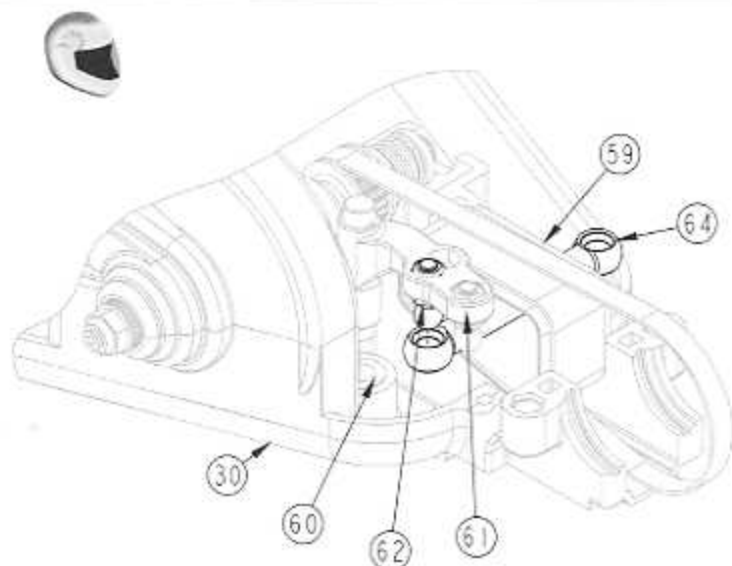
Figure 29

# BAG C (Continued)

**Figure 30**

❑ Step 6. Remove the steering drag link (64) from the tree of steering parts and attach it to the ball stud (62) in the idler arm (61) as shown. The drag link (64) should attach to the ball stud (62) toward the rear of the idler arm (61). This is the area of the idler arm (61) that has two holes.

❑ Step 7. Holding the idler arm (61) – with the drag link (64) attached – position the idler arm (61) so that the ball studs (62) point down. From the right side, slide the drag link (64) through the steering tunnel (59) and insert the bottom of the idler arm (61) in the steering bushing (60) on the right side of the chassis (30).



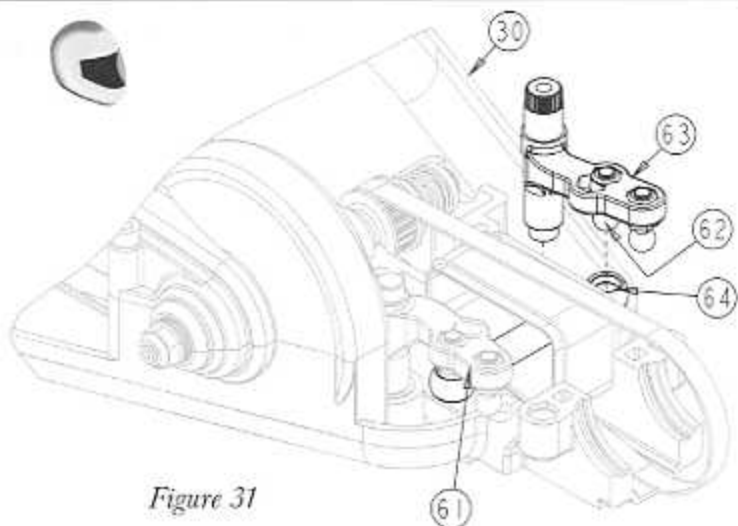
*Figure 30*

**Figure 31**

❑ Step 8. With the splined side of the steering bellcrank (63) pointing up, insert the bellcrank (63) in the steering bushing (60) on the left side of the chassis (30).

❑ Step 9. The rear ball studs (62) should be installed in the outside holes in both the steering bellcrank (63) and the idler arm (61). If they are not, move them to this location.

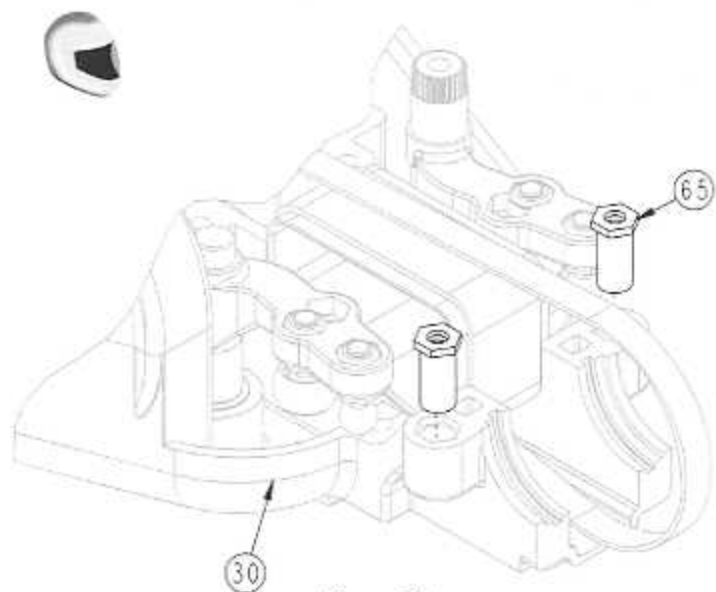
❑ Step 10. Attach the free end of the drag link (64) to the ball stud (62) in the steering bellcrank (63).



*Figure 31*

**Figure 32**

❑ Step 11. Install the short threaded inserts (65), from the top, in the two holes at the front of the chassis (30). While lining up the hexes on the inserts (65) with the hex area in the chassis (30), press the inserts (65) down, into the hex area of the chassis (30).



*Figure 32*

# BAG C (Continued)

**Figure 33**



- ❑ Step 12. Insert a 4-40 mini lock nut (28) into the hex area of the diff nut carrier (37). The thread-locking portion of the nut (28) should face the outside.

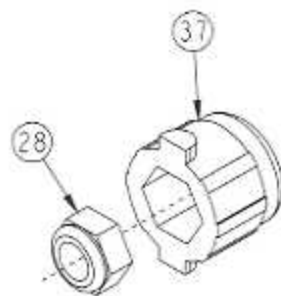


Figure 33

**Figure 34**



- ❑ Step 13. Locate the 5/64" Allen wrench (9) supplied with the kit. Place the diff nut carrier (37), nut side first, over the Allen wrench.

- ❑ Step 14. Stack the six 1/8" Belleville washers (22) over the wrench, next to the diff nut carrier (37). The washers (22) should all point the same direction and open away from the nut carrier (37) as shown in Figure 34A.

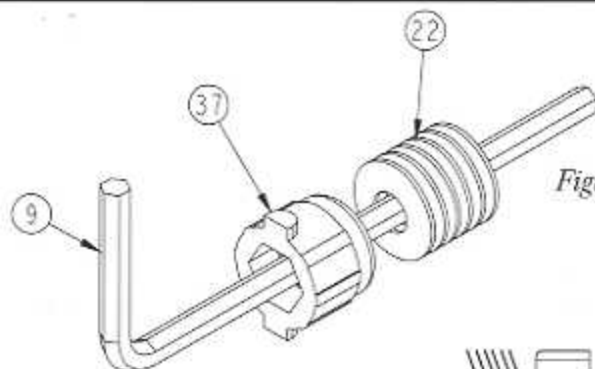


Figure 34



Belleville washers should face this direction

Figure 34A

**Figure 35**

- ❑ Step 15. Insert all of the parts that are stacked on the wrench into the right outdrive/diff half (66) (the one with the post). Line up the tabs on the diff nut carrier (37) with the slots in the outdrive (66). Press the parts all the way into the outdrive (66).

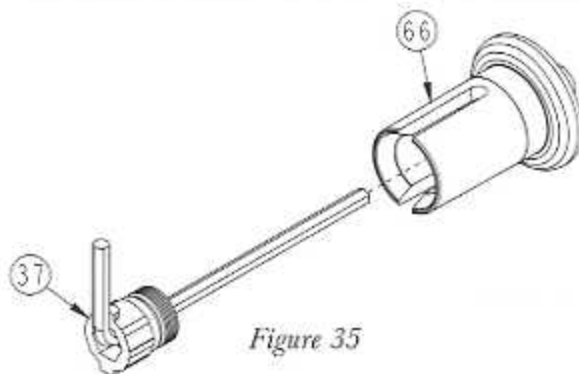


Figure 35

**Figure 36**



- ❑ Step 16. Apply a small amount of clear diff grease (40) to the outside ring of the right outdrive (66). Attach a diff drive ring (41) to the outdrive (66) by lining up the slot in the ring (41) with the slot in the outdrive (66).

*\*NOTE: Only a small amount of grease is needed. It is only there to hold the drive ring in place.*

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

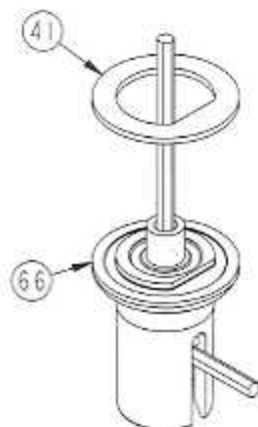
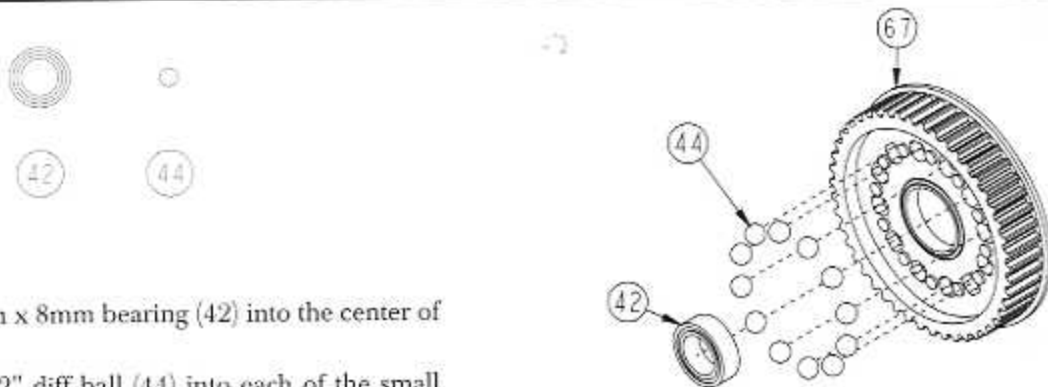


Figure 36

# BAG C (Continued)

**Figure 37**

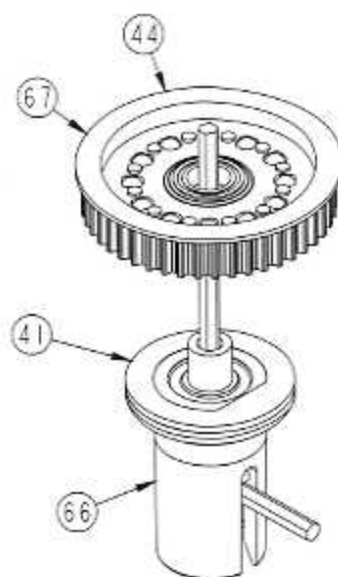


□ Step 17. Insert a 5mm x 8mm bearing (42) into the center of the front diff pulley (67).

□ Step 18. Press a 3/32" diff ball (44) into each of the small holes in the diff pulley (67).

*Figure 37*

**Figure 38**



□ Step 19. Apply a fairly heavy coat of diff grease (40) to the exposed side of the drive ring (41) that is already attached to the outdrive (66).

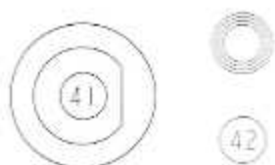
🔑 For best results, clean the drive rings with rubbing alcohol or motor spray before applying grease to the exposed side.

□ Step 20. Carefully place the diff pulley (67), flange side up, over the post on the outdrive (66) so that the diff balls (44) and diff pulley (67) rest against the greased drive ring (41).

⚠ **IMPORTANT NOTE:** The flange on the diff pulley should be positioned away from the diff half.

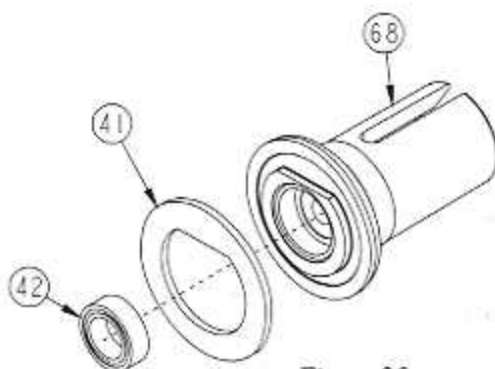
*Figure 38*

**Figure 39**



□ Step 21. Press a 5mm x 8mm bearing (42) into the center area of the left plastic outdrive/diff half (68) as shown. The edge of the bearing (42) should be flush with the outdrive (68).

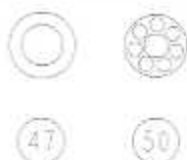
□ Step 22. Apply a small amount of clear diff grease (40) to the outer ring of the outdrive (68). Install the second drive ring (41), again aligning the slots in the outdrive (68) and the drive ring (41).



*Figure 39*

# BAG C (Continued)

**Figure 40**



❑ Step 23. Place the foam thrust bearing seal (47) over the shoulder of the diff adjusting screw (46).

❑ Step 24. Place one of the 3mm x 8mm raced thrust bearing washers (48) over the diff screw (46) so that the groove in the washer (48) faces up.

❑ Step 25. Using the white thrust bearing/assembly grease (49), apply a fairly heavy coat of grease to the thrust washer (48) and place the 3mm x 8mm thrust bearing (50) over the screw (46), and next to the washer (48). Apply white thrust bearing/assembly grease (49) to the exposed side of the thrust bearing (50) and place the second thrust bearing washer (48) over the screw (46), against the thrust bearing (50). This time, the groove in the thrust washer (48) faces down.

❑ Step 26. Insert the diff screw (46), with the thrust bearing assembly installed, into the left plastic outdrive/diff half (68). Pull the threaded end of the diff screw (46) until the thrust bearing assembly rests against the inside of the outdrive (68).

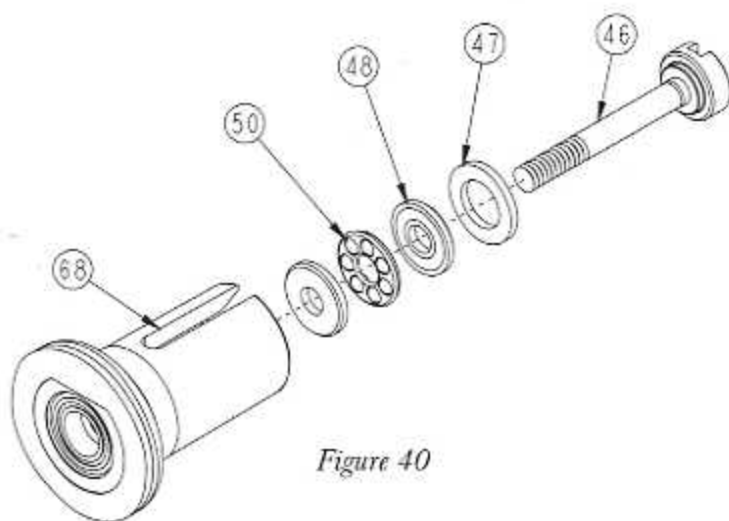


Figure 40

**Figure 41**

❑ Step 27. Locate the smallest of the supplied Allen wrenches (9) and place it in the slot in the outdrive (68) containing the diff screw (46). Slide the wrench all the way into the slot in the outdrive (68) against the screw (46). Handling the outdrive (68) with the wrench inserted, will hold the diff screw (46) in place while finishing assembly of the front diff.

❑ Step 28. Apply a fairly heavy coat of clear diff grease (40) to the exposed side of the drive ring (41).

❑ Step 29. While holding the left outdrive (68) with the Allen wrench inserted, carefully assemble it to the right outdrive/diff half (66).

❑ Step 30. Make sure that the slot in the diff screw (46) is lined up with the slot in the outdrive (68) and the Allen wrench is inserted in the diff screw (46).

❑ Step 31. Hold the diff so that the right outdrive (66) – with the diff nut carrier (37) – is pointing up. Slowly turn the right outdrive (66) clockwise to thread the diff screw (46) into the 4-40 mini nut (28) in the diff nut carrier (37). Thread the two outdrives together until the screw (46) 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 screw a little more and work the diff again. Continue this until the diff is tight. This will ensure that all the parts in the diff assembly are properly seated.

❑ Step 32. Tighten the diff until the pulley (67) cannot be turned while both of the outdrives (66), (68) are being held firmly. Final diff adjustment should be made after completion of the car.

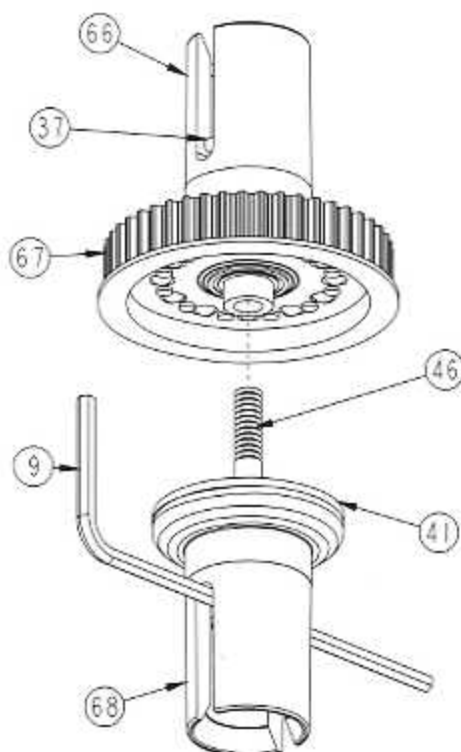
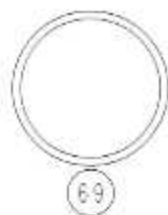


Figure 41

# BAG C (Continued)

**Figure 42**



- ❑ Step 33. Place a 1/2" x 3/4" bearing (52) over each outdrive (66), (68) and press the bearing over the stepped area, all the way against the inside edge.

*\*NOTE: If the 1/2" x 3/4" bearing only has one Teflon™ seal (tan, woven looking) in it, position the seal to the outside, away from the center of the diff pulley.*

- ❑ Step 34. Carefully place an outdrive bearing O-ring (69) over each of the bearings (52). Center the O-rings (69) around the outside of the bearings (52) as shown.

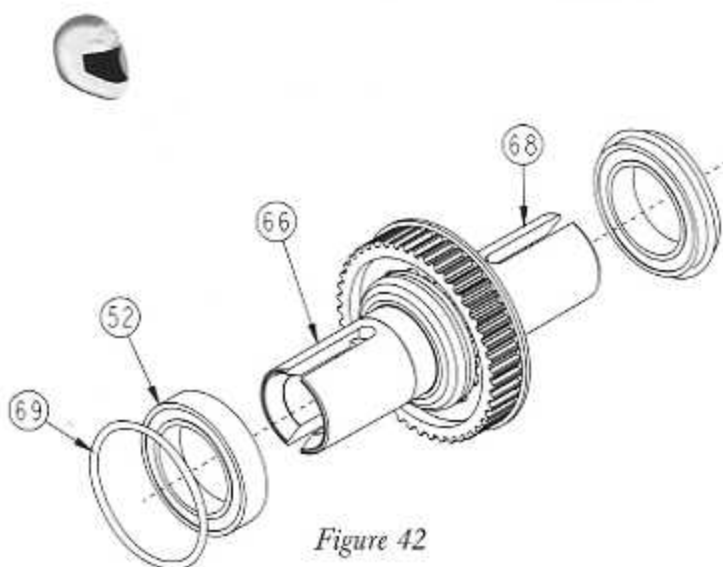


Figure 42

**Figure 43**

- ❑ Step 35. With the flange on the front diff pulley (67) to the left side of the chassis (30), position the front diff in the center of the front belt (29).

❑ Step 36. Move the front diff to the front edge of the chassis (30), wrapping the belt (29) around the pulley (67) as you do so. Place the outdrive bearings (52) into the curved, recessed area of the chassis (30). Ensure that the O-rings (69) are still centered on the bearings (52) and are seated in the groove in the center of the recessed area.

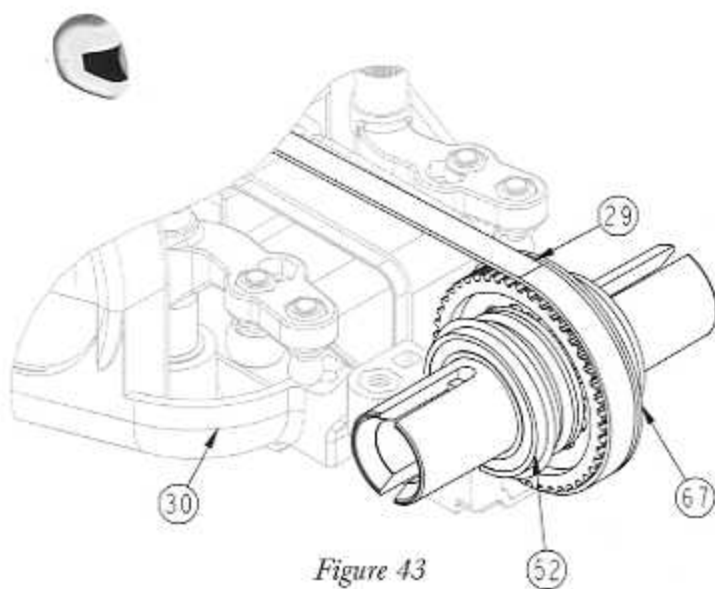


Figure 43

**Figure 44**



- ❑ Step 37. Apply a small amount of white thrust bearing/assembly grease (49) to the shaft (32) and center the belt roller (31) on the shaft (32).

❑ Step 38. Place a 3/32" shim (33) over each end of the belt roller shaft (32).

- ❑ Step 39. Make two of these belt roller assemblies.

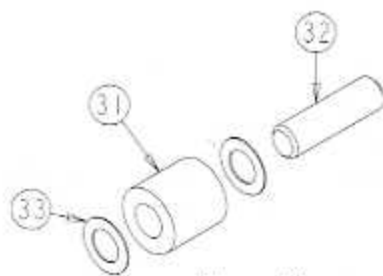


Figure 44

# BAG C (Continued)

## Figure 45

❑ Step 40. Carefully pick up one of the belt roller assemblies using a pair of tweezers or small needle-nose pliers. Hold the assembly by the shims (33) on either end as shown. Position the assembly above the area for the shaft (32) in the rear of the front belt cover (70).

🔑 If a small amount of white assembly grease is applied to the cover, in the area for the shaft prior to installation, the roller shaft will be held in place better – making installation easier.

❑ Step 41. Once the assembly is in position, press the shaft (32) into place.

\*NOTE: Be careful not to bend or damage the shims. The roller should rotate freely once in position.

❑ Step 42. Repeat steps 40 and 41 for the second belt roller assembly. This time the roller assembly is mounted in the front of the belt cover (70).

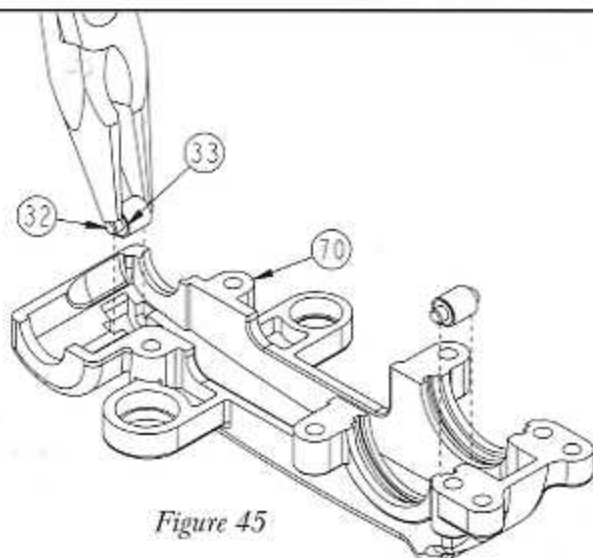
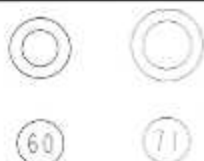


Figure 45

## Figure 46



❑ Step 43. Remove the remaining 3/16" x 5/16" plastic steering bushing (60) from the steering parts tree. Press a bushing (60) into the recessed area in the front belt cover (70). This bushing goes in the area that does not have a hole all the way through the cover (70).

❑ Step 44. Remove the 1/4" x 3/8" plastic steering bushing (71) from the steering parts tree. Press the bushing (71) into the recessed area around the hole that passes all the way through the cover (70).

⚠️ **IMPORTANT NOTE:** Trim all flashing off of the bushings. If there is flashing present on the bushings when they are installed, the steering movement may be tight when assembly is complete.

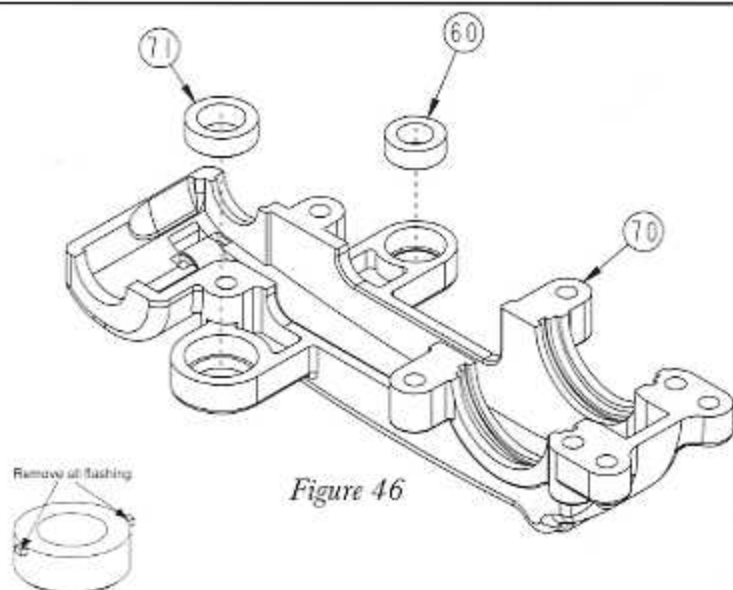
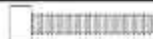


Figure 46

## Figure 47



❑ Step 45. Ensure that the hexes of the two threaded inserts (65) are still in the hex areas at the front of the chassis (30).

❑ Step 46. Attach the front belt cover (70) – with belt rollers and steering bushings installed – to the front of the chassis (30). Carefully align the tops of the steering bellcrank (63) and steering idler arm (61) so that they fit into the bushings (60), (71).

❑ Step 47. Press the cover (70) all the way down, into position. Check to be sure that the outdrive bearing O-rings (69) are in the center groove of the cover (70), and not pinched between the chassis (30) and the cover (70).

❑ Step 48. Secure the cover (70) to the chassis (30) with two 4-40 x 5/8" cap-head screws (57). Thread the screws (57) through the two rear holes in the cover (70), into the chassis (30), and tighten.

\*NOTE: Apply a small amount of the white assembly grease to the threads of the screws.

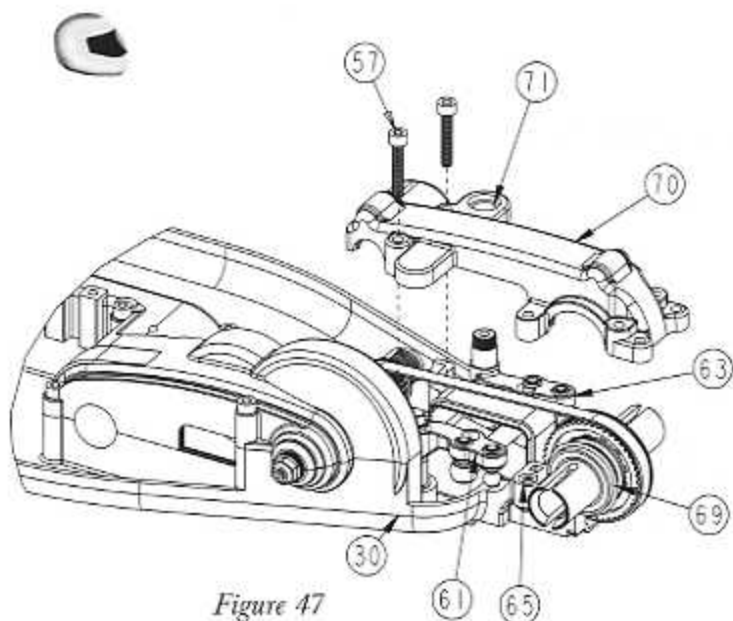
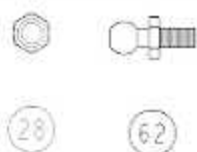


Figure 47

# BAG C (Continued)

**Figure 48**



❑ Step 49. Locate the steering bellcrank arm (72) on the tree of steering parts and remove it. The steering bellcrank arm (72) is the arm with a step in it. There are two other arms on the tree. These arms are flat. They will be used later for servo installation.

*\*NOTE: Set the tree with the remaining three steering parts on it aside for now. These parts will be used during Bag H assembly.*

❑ Step 50. Insert a 4-40 mini locknut (28) into the hex area to the outside of the bellcrank arm (72). Thread a 3/16" ball stud (62) into the nut (28), from the opposite side of the bellcrank arm (72), and tighten.

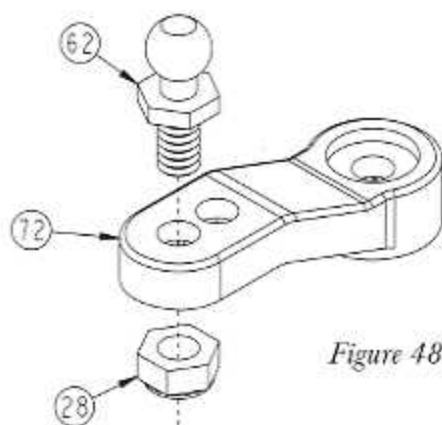


Figure 48

**Figure 49**



❑ Step 51. Press the bellcrank arm (72) onto the top of the steering bellcrank (63). The bellcrank arm (72) should point toward the center of the chassis (30) as shown. To ensure proper steering alignment, the splines on the bellcrank (63) and bellcrank arm (72) are indexed so the arm (72) can only be pressed on in one position – see figure 49A.

❑ Step 52. Secure the arm (72) to the bellcrank (63) with a 4-40 x 1/4" button-head screw (73).

Figure 49A

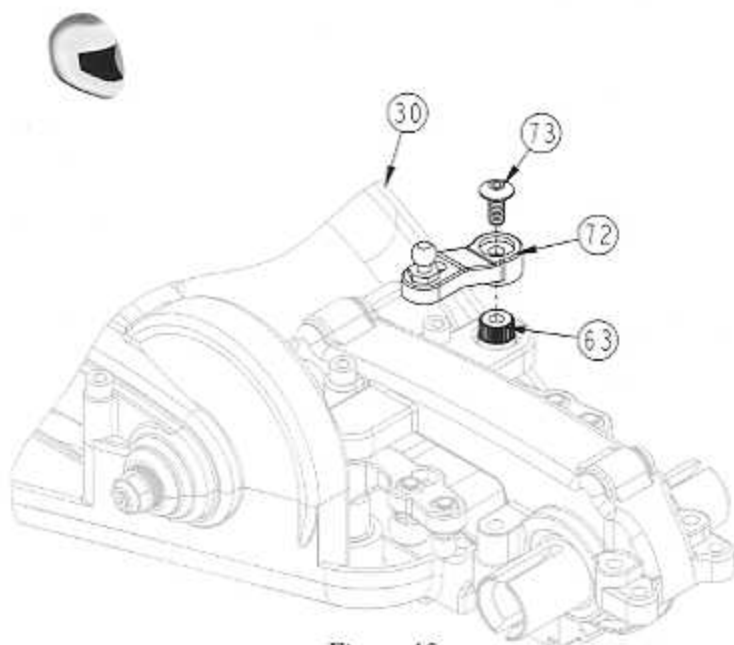


Figure 49

**Figure 50**

❑ Step 53. Locate the four black rectangular stickers on the XX-1 sticker sheet (74). Cut one of these stickers out and apply it to the seam of the chassis (30) and the front belt cover (70). The sticker will cover any small gaps that may be present and help seal the drive train.

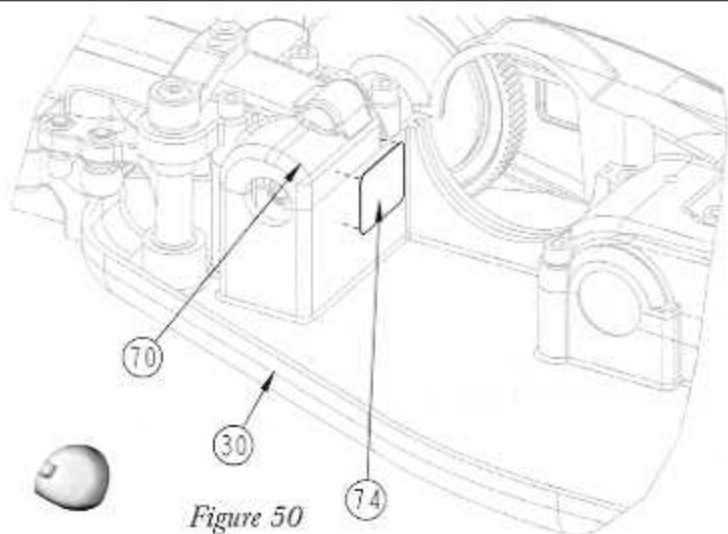


Figure 50

# BAG D

## Figure 51



❑ Step 1. Place a 1/8" stainless washer (75) in the recessed area at the rear of the front bulkhead (76).

❑ Step 2. Position a front suspension arm (77) over the right side of the front bulkhead (76). Line up the holes in the arm (77) with the holes in the bulkhead (76) and attach them by inserting an inner front hinge pin (78) all the way through both parts until the pin (78) extends evenly out both sides of the suspension arm (77).

**⚠ IMPORTANT NOTE:** Make sure that the front suspension arm is attached correctly. The shock mounting holes should be facing forward as shown.

❑ Step 3. Secure the hinge pin (78) with two 1/8" E-clips (79). Ensure that the hinge pin (78) is centered, and the E-clips (79) are not rubbing the suspension arm (77).

❑ Step 4. Thread a 5-40 x 1/8" set screw (80) into the hole in the bottom of the front bulkhead (76), near the front, next to the hinge pin (77).

*\*NOTE: The set screw will hold the pin in place should the E-clips come off while running. The set screw needs to be removed in order to remove the front hinge pin.*

❑ Step 5. Repeat steps 1-4 for the left side.

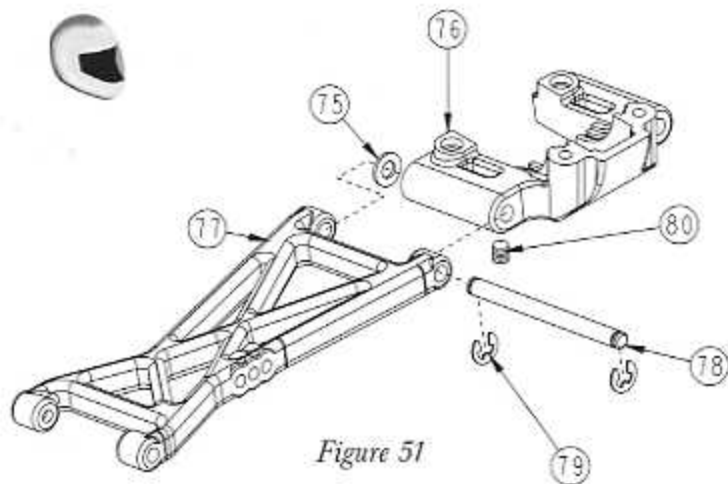
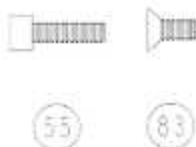


Figure 51

## Figure 52



❑ Step 6. Ensure that the O-rings (69) are still centered on the outdrive bearings (52) and attach the front bulkhead (76) to the bottom of the chassis (30).

*\*NOTE: The suspension arms should be swung all the way down. If they arms are in the upward position, they may interfere with the outdrives, keeping the bulkhead from being correctly positioned.*

❑ Step 7. Thread a 4-40 x 3/8" cap-head screw (55) through each of the two holes in the rear of the bulkhead (76) and into the threaded inserts (65).

❑ Step 8. Attach the front bumper (81) to the bottom of the chassis, aligning the holes in the center of the bumper (81) with the heads of the screws (55). Secure the bumper (81) by threading a 4-40 x 1/4" flat-head screw (83) through each of the two holes in the back of the bumper (81), and into the chassis (30).

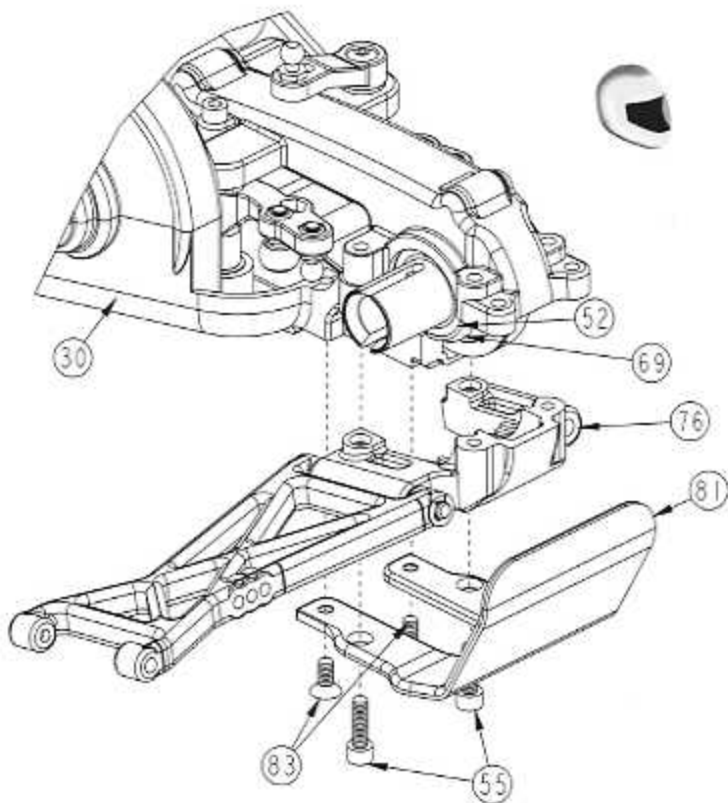
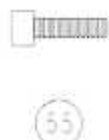


Figure 52

# BAG D (Continued)

**Figure 53**



- ❑ Step 9. Thread a 4-40 x 3/8" cap-head screw (55) through each of the two holes at the very front of the front belt cover (70), into the front bumper (81), and tighten.

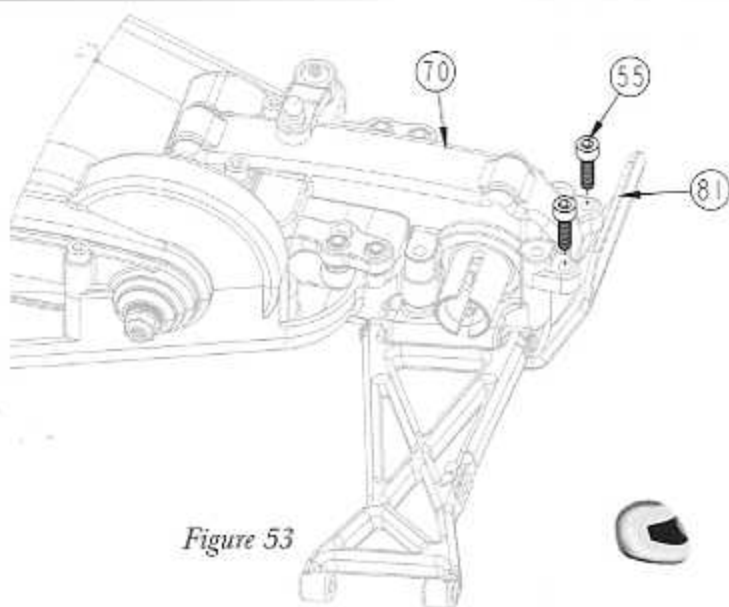
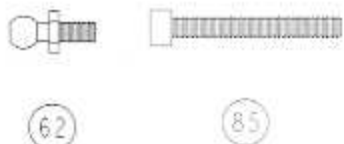


Figure 53

**Figure 54**



- ❑ Step 10. Thread a 3/16" ball stud (62) into each of the middle holes on the bottom of the front shock tower (84). Mount the ball studs (62) from the front as shown.

- ❑ Step 11. Insert a 4-40 x 7/8" cap-head screw (85), from the rear, through the third hole in on the top of the shock tower (84) on each side. Thread a top shock mount bushing (86) onto each of the two screws (85), and tighten.

**⚠ IMPORTANT NOTE:** The shock mount bushings and ball studs should be on the same side of the shock tower as shown in the illustration. Do not overtighten the shock mount bushings.

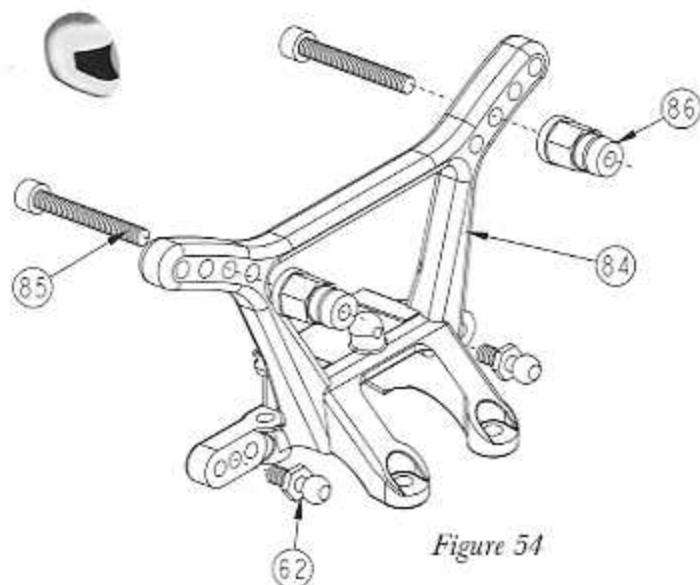
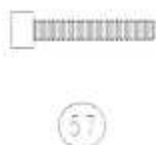


Figure 54

**Figure 55**



- ❑ Step 12. Place the front shock tower (84) on top of the front belt cover (70) with the shock mount bushings (86) pointing forward. Line up the four holes in the bottom of the shock tower (84) with the holes in the belt cover (70). Secure the shock tower by threading a 4-40 x 5/8" cap-head screw (57) into each of the four holes. Tighten all four screws (57).

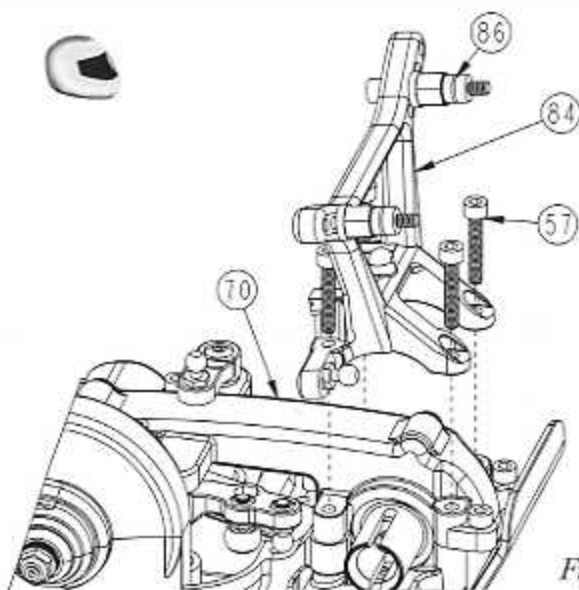
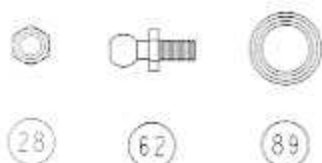


Figure 55

# BAG D (Continued)

**Figure 56**



□ Step 13. Insert a 4-40 mini locknut (28) into the hex area in the bottom of the right spindle (88). Thread a 3/16" ball stud (62) into the nut (28), from the opposite side of the spindle arm, and tighten.

□ Step 14. Install a 1/4" x 3/8" bearing (89) in each side of the spindle (88).

*\*NOTE: If the bearings only have one Teflon™ seal (tan, woven looking) in them, position the Teflon™ seal to the outside.*

□ Step 15. Repeat steps 13 and 14 for the left spindle (87).

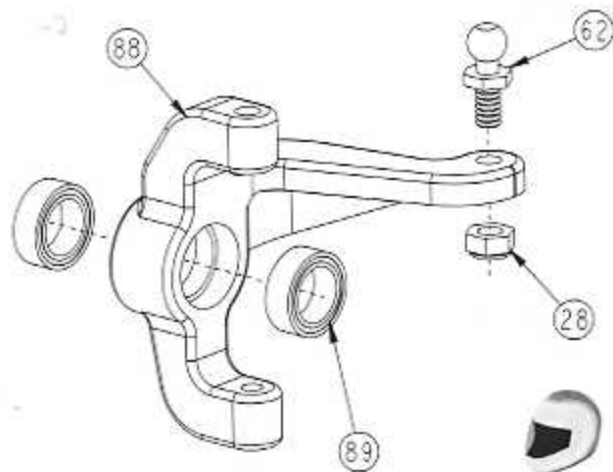


Figure 56

**Figure 57**



□ Step 16. Insert a front stub axle (90) into the bearings (89) in the right spindle (88), from the outside as shown.

□ Step 17. Lining up the slot on the axle (90) with the slot in the front universal yoke (91), attach the universal yoke (91) to the back of the stub axle (90) by pressing the yoke (91) through the bearing (89) on the back side of the spindle (88). Secure the yoke (91) to the axle (90) with a 2-56 x 1/4" cap-head screw (92).

□ Step 18. Repeat steps 16 and 17 for the left spindle (87).

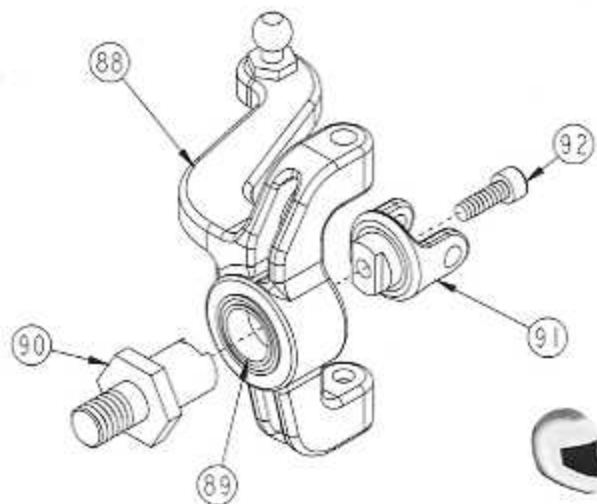
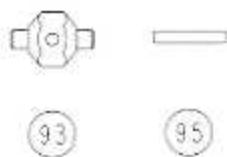


Figure 57

**Figure 58**



□ Step 19. Position the front universal pivot (93) in the front dogbone (94) so that the holes in both parts are aligned.

□ Step 20. Using pliers, carefully push a 1/16" x 3/8" spirol pin (95) through the dogbone (94) and universal pivot (93) until the pin (95) extends evenly out both sides of the dogbone (94).

*\*NOTE: Care should be taken not to "mushroom" the ends of the pins while pushing them in. Once the pin is in place, the dogbone should rotate freely around the universal pivot.*

□ Step 21. Make two of the front dogbone assemblies.

*\* NOTE: Dogbone assemblies in some kits may have been pre-assembled at the factory.*

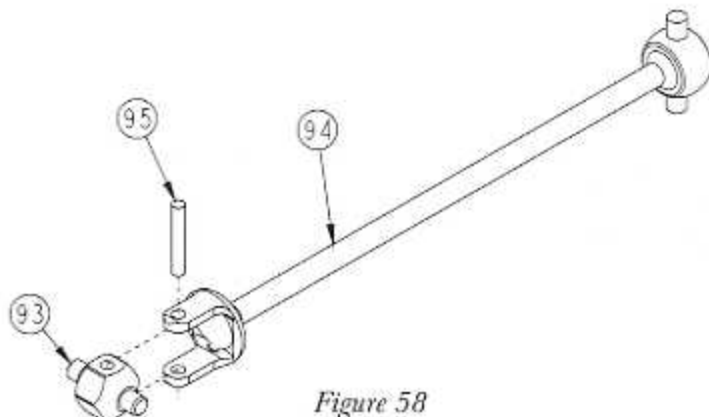


Figure 58