

# MAX IV

## Axle Replacement

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### Tools Required:

11/16" Wrench	6" Extension	Steel Straight Edge
9/16" Wrench	Ratchet	Pliers
3/4" Wrench	Hammer	3/8" Hex Wrench
3/4" Socket	Drift Pin/Alignment Tool	(Turned down front axles only)
9/16" Socket	5/32" Hex Wrench	#271 Loctite®
5/8" Socket	Grease Gun	Jack Stands
Threadlocker	Torque Wrench	Floor Jack
Propane Torch (Splined Axle)		Permatex® Anti-Seize
Standard Screw Driver		
Tape Measure		
1/8" Hex Wrench (Splined Axles Only S/N 17863 and earlier)		

### Procedure:

**Note:** Read through all of the instructions before you begin. Be sure to identify which style axle you are replacing and installing. There have been many axle design changes in the past.

1. Move the vehicle to a level surface.
2. Place the gear shift in REVERSE gear.
3. Remove the floorboards and the engine cover. Disconnect the negative battery cable
4. Raise the vehicle so the tires are off the ground.


 **WARNING** Securely support the vehicle so there is no danger of it falling.

5. Place the vehicle in NEUTRAL gear.
6. Remove the tire from the axle to be replaced.
7. Proceed to Part I for front axle replacement, Part II for center axle replacement, and Part III for rear axle replacement.

## Part I - Front Axle Replacement


### *Removal*

1. Unbolt the disk brake caliper and mounting bracket assembly from the chassis. The bracket is attached by two 5/16" bolts, one at the front and one at the rear of the mounting bracket. Be sure to keep track of any shims removed.
2. Pull the caliper and mounting bracket assembly up and slide it off the brake rotor.
3. Measure the distance from the outer chassis rail to the edge of the sprocket. Write this measurement down as it will be needed later in order to realign the chain(s). (See Figure IA).

 **CAUTION** Failure to align the chains will result in vehicle damage.

4. Loosen the set screw on the inner bearing locking collar with the hex wrench. If your vehicle has a Serial Number of 15632 or later or if the axle has been replaced in the past with a 'turned down end' splined axle, proceed to step 4a. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing.
  - 4a. Locate the steering lever plates at the front of the chassis. If you have a Serial Number of 15632 or later, you will have access holes in these plates for the bolt threaded into the end of the front axle. If not, locate the four bolts securing the steering lever plates to the front of the chassis. Remove these four bolts as well as the two clevis pins (one at the base of each steering rod) and move the steering lever assembly out of the way in order to gain access to the bolt threaded into the end of the front axle. Remove this bolt from the end of the axle to be removed/replaced. Loosen the two set screws on the inner bearing (see Figure VI).
5. Using an 11/16" wrench and a 5/8" socket, remove the axle bolt from the disk and sprocket assembly. You may need to tap the bolt out of the axle with a drift pin. If you have splined axles and O-Ring chain, remove the two set screws in the sprocket hub and disk hub (S/N 17864 and later will have one large set screw). This will unlock the sprocket/disk from the axle.

**Note:** There are two set screws secured with Loctite® in each hub. You must apply heat (400°F for 5 minutes) to these before removal.

 **WARNING** Use caution while applying heat to parts. Do not use heat near any fuel lines or near the battery or an explosion may occur. Do not touch any heated parts until they have cooled.

6. Locate the four, 3/8" nuts and lock washers which secure the outer bearing flange to the chassis. Remove these nuts and lock washers.
7. Remove the axle from the vehicle. The outer bearing, flange, and locking collar should remain on the axle. You may need to tap the axle out with a hammer by tapping on the back side of the wheel flange (the plate the wheel bolts to). If you have an axle with a 'turned down' end, keep track of any thick and/or thin shims and the order in which they are on the axle. This will allow proper sprocket alignment during the assembly process.

**Note:** If the axle will not come out, you may have to loosen the chains. Please refer to your *Operators Manual* for chain tensioning instructions and location of the chain adjusters. To loosen the chains, simply loosen idler sprocket bolts with a 3/4" wrench, 3/4" socket, and ratchet.

**Note:** Over time, there is a possibility of the axle becoming rusted to the inner bearing or sprocket/disk assembly. In this case, the axle must be cut with a grinding wheel or Sawzall. After the axle is cut and removed, remove the bearing or sprocket assembly from the chassis (see the *Bearing Replacement* section or *Sprocket Replacement* section of the service manual) and replace it with a new bearing or sprocket assembly if necessary.

 **NOTE** Always wear safety glasses when cutting metal objects.

8. Once the axle is removed, place it on a table or bench and in a vise if possible. Loosen the set screw on the locking collar. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing. Remove the bearing, flange, and locking collar from the axle.

## *Installation*

1. Reinstall the outer chassis bearing and flange, which was removed with the axle assembly, to the chassis. Be sure that the eccentric locking surface on the bearing is facing towards the outside of the vehicle and that the grease fitting on the outer flange is towards the top of the vehicle. Loosely install the lock washers and nuts onto the four, 3/8" bolts. These will be tightened down later.
2. Place the outer locking collar on the axle (the one from the outer chassis bearing). Make sure that the recessed portion on the locking collar is facing the vehicle body. Coat the Axle Shaft with Anti-Seize.

**Note:** If you are installing a new splined axle in a vehicle with a Serial Number of 15631 or earlier, you must change the inner bearing prior to installing the new axle. Please refer to the *Bearing Replacement* section in order to install the appropriate inner axle bearing.

3. Insert the axle into the outer chassis bearing. Slide the axle through the sprocket assembly or sprocket and disk assemblies if your vehicle has splined axles. If you are installing a new splined axle in a vehicle with a Serial Number of 15632 or later, place the shims removed in step 7 of the removal procedure (always use new thin shims) on the turned down portion of the axle (see Figure VI). If you have an earlier vehicle and are replacing a splined axle with a new splined axle, place one thick shim on the turned down portion of the axle (see Figure VI). If you are reinstalling the original axle in a vehicle with a Serial Number of 15631 or earlier, place the inner bearing locking collar on the end of the axle with the recessed portion facing the bearing. Make sure that the set screw on the sprocket/disk hub will be on the same spline as the holes in the axle shaft and that the sprocket and disk hubs are oriented correctly as shown in Figure II if your vehicle has splined axles. Slide the axle into the inner bearing. If you did not loosen the chains in step 7 of the removal procedure and the sprocket assembly will not line up with the axle, loosen the chains as described in step 7.
4. With the axle in place, tighten down the four nuts which were installed on the outer bearing flange assembly. These should be tightened down to 23 ft-lbs.

 **CAUTION** Failure to tighten down hardware will result in vehicle damage.

5. Place the axle bolt into the sprocket and through the axle. Tighten the nut down to 30 ft-lbs. If you have splined axles, line up the sprocket/disk hub with the correct axle hole (see Figure II). Double set screw each hub in place (S/N 17864 or later or any new sprocket will have one large set screw). Be sure to put #271 Loctite® on the set screw threads.

 **CAUTION** Failure to tighten down hardware will result in vehicle damage.

6. If you are installing a solid (not splined) or hollow axle or reinstalling an axle on a vehicle with a Serial Number of 15631 or earlier, slide the axle and sprocket assembly in or out of the vehicle until you obtain the same measurement as written down from step 3 of the removal procedure. This will give you proper chain alignment. If you are installing a new splined axle or reinstalling a splined axle on a vehicle with a Serial Number of 15632 or later, slide the axle in all of the way until the shims are seated tightly against the inner bearing. Measure for sprocket alignment and add or remove shims (thick or thin) until the same measurement as written down in step 3 of the removal procedure is obtained. Always make sure the axle is in towards the center of the vehicle all of the way when taking the measurements. This will give you proper chain alignment. All chains and sprockets must be aligned properly. If the chains are not aligned, equipment failure will result. Double check the alignment by measuring from the outer chassis rail to the outer center sprocket (see Figure IA). This should be the same as the measurement for the front sprocket that was written down in step 3.

 **CAUTION** Failure to align the chains will result in vehicle damage.

7. If you have installed a new splined axle or reinstalled a splined axle in a vehicle with a Serial Number of 15632 or later, proceed to step 7a. Tighten the outer chassis bearing locking collar. Use the following procedure; Turn the collar by hand in the same direction that the axle rotates when the vehicle is moving forward. Rotate the collar until it is snug on the bearing. Lock the collar using a hammer and drift pin. To lock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with a hammer (in the same direction as mentioned above) with 4 or 5 firm taps. Tighten down the set screw using a hex wrench. Repeat this procedure on the inner bearing if so equipped. Be sure that the inner locking collar set screw will sit square on a high or low point of the axle spline if your vehicle is equipped with splined axles.

- 7a. If you are installing a new splined axle or reinstalling an axle on a vehicle with a Serial Number of 15632 or later, secure the axle to the bearing using a bolt, lock washer, and flat washer as shown in Figure VI (the front axles use socket head bolts and no lock washers). Be sure to put some #271 Loctite® on the bolt and tighten it down to 30 ft-lbs. Tighten down the two inner bearing set screws. Proceed to tighten down the outer bearing locking collar as described in step 7 above. The move on to step 8.
8. Grease the outer and inner bearings with one or two pumps of grease with a grease gun. If an inner bearing was replaced, do not grease it at this time. New bearings have been pre-lubed by the manufacturer.

 **CAUTION** Too much grease in a bearing will damage the bearing seals.

- 8a. If the steering plates were removed in step 4a, reinstall them at this time. Also, reinstall the steering rods on to the steering levers using the clevis pins which were removed.
9. Now double check the alignment of the front idler sprocket (adjuster sprocket). Measure from the outer chassis rail to the center (of the width) of the front axle sprocket. With the idler sprocket bolt snug, measure from the outer chassis rail to the center of the idler sprocket (see Figure IB). Move the shims for the idler sprocket around until you have the same measurement as the outer chassis rail to the center of the front sprocket.
10. Reinstall the disk brake caliper onto the brake rotor. Be sure to replace any shims that were removed. Install the hardware and tighten until the nuts are just snug. Make sure that the top of the caliper mounting bracket is centered between the inner brake pad plate and the outer caliper plate. Tighten down the nuts to 10 ft-lbs.

 **WARNING** Failure to install the brake caliper properly can cause loss of control of the vehicle.

11. Adjust the chains as described in your owners manual.

 **CAUTION** Failure to properly adjust chains will result in vehicle damage.

12. Reinstall the tire on the axle. Tighten down the lug nuts to 55 ft lbs.

13. Reconnect the negative battery cable and install the floorboards and engine cover.

## Part II - Center Axle Replacement

### *Removal*

1. Measure the distance from the outer chassis rail to the edge of the outer sprocket. Write this measurement down as it will be needed later in order to realign the chain(s). (See Figure IA)


 **CAUTION** Failure to align the chains will result in vehicle damage.

2. Loosen the set screw on the inner bearing locking collar with the hex wrench. If your vehicle has a Serial Number of 15632 or later or if the axle has been replaced in the past with a 'turned down end' splined axle, proceed to step 2a. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing.

**2a.** Remove the bolt from the end of the axle to be removed/replaced. Loosen the two set screws on the inner bearing (see Figure VI).

3. Using an 11/16" wrench and a 5/8" socket, remove the axle bolt from the sprocket assembly. You may need to tap the bolt out of the axle with a drift pin. If you have O-Ring chain and splined axles, remove the two set screws in the sprocket hubs (S/N 17864 and later will have one large set screw). This will unlock the center sprocket assemblies from the axle.

**Note:** There are two set screws secured with Loctite® in each hub. You must apply heat (400°F for 5 minutes) to these before removal.

 **WARNING** Use caution while applying heat to parts. Do not use heat near any fuel lines or near the battery or an explosion may occur. Do not touch any heated parts until they have cooled.

4. Locate the four, 3/8" nuts and lock washers which secure the outer bearing flange to the chassis. Remove these nuts and lockwashers.

5. Remove the axle from the vehicle. The outer bearing, flange, and locking collar should remain on the axle. You may need to tap the axle out with a hammer by tapping on the back side of the wheel flange (the plate the wheel bolts to). If you have an axle with a 'turned down' end, keep track of any thick and/or thin shims and the order in which they are on the axle. This will allow proper sprocket alignment during the assembly process.

**Note:** If the axle will not come out, you may have to loosen the chains. Please refer to your *Operators Manual* for chain tensioning instructions and location of the chain adjusters. To loosen the chains, simply loosen idler sprocket bolts with a 3/4" wrench, 3/4" socket, and ratchet.

**Note:** Over time, there is a possibility of the axle becoming rusted to the inner bearing or sprocket assembly. In this case, the axle must be cut with a grinding wheel or Sawzall. After the axle is cut and removed, remove the bearing or sprocket assembly from the chassis (see the *Bearing Replacement* section or *Sprocket Replacement* section of the service manual) and replace it with a new bearing or sprocket assembly if necessary.

**NOTE**

**Always wear safety glasses when cutting metal objects.**

6. Once the axle is removed, place it on a table or bench and in a vise if possible. Loosen the set screw on the locking collar. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing. Remove the bearing, flange, and locking collar from the axle.

### *Installation*

1. Reinstall the outer chassis bearing and flange, which was removed with the axle assembly, to the chassis. Be sure that the eccentric locking surface on the bearing is facing towards the outside of the vehicle and that the grease fitting on the outer flange is towards the top of the vehicle. Loosely install the lock washers and nuts onto the four, 3/8" bolts. These will be tightened down later.
2. Place the outer locking collar on the axle (the one from the outer chassis bearing). Make sure that the recessed portion on the



locking collar is facing the vehicle body. Coat the Axle Shaft with Anti-Seize.

**Note:** If you are installing a new splined axle in a vehicle with a Serial Number of 15631 or earlier, you must change the inner bearing prior to installing the new axle. Please refer to the *Bearing Replacement* section in order to install the appropriate inner axle bearing.

3. Insert the axle into the outer chassis bearing. Slide the axle through the sprocket assembly or sprocket and disk assemblies if your vehicle has splined axles. If you are installing a new splined axle in a vehicle with a Serial Number of 15632 or later, place the shims removed in step 5 of the removal procedure (always use new thin shims) on the turned down portion of the axle (see Figure VI). If you have an earlier vehicle and are replacing a splined axle with a new splined axle, place one thick shim on the turned down portion of the axle (see Figure VI). If you are reinstalling the original axle in a vehicle with a Serial Number of 15631 or earlier, place the inner bearing locking collar on the end of the axle with the recessed portion facing the bearing. Make sure that the set screw on the sprocket/disk hub will be on the same spline as the holes in the axle shaft and that the sprocket and disk hubs are oriented correctly as shown in Figure II if your vehicle has splined axles. Slide the axle into the inner bearing. If you did not loosen the chains in step 5 of the removal procedure and the sprocket assembly will not line up with the axle, loosen the chains as described in step 5.
4. With the axle in place, tighten down the four nuts which were installed on the outer bearing flange assembly. These should be tightened down to 23 ft-lbs.

 **CAUTION Failure to tighten down hardware will result in vehicle damage.**

5. Place the axle bolt into the sprocket and through the axle. Tighten the nut down to 30 foot pounds. If you have splined axles, line up the sprocket hub with the correct axle hole (see Figure II). Double set screw the sprocket hub in place (S/N 17864 or later or any new sprocket will have one large set screw). Be sure to put #271 Loctite® on the set screw threads.

 **CAUTION Failure to tighten down hardware will result in vehicle damage.**


6. If you are installing a solid (not splined) or hollow axle or reinstalling an axle on a vehicle with a Serial Number of 15631 or

earlier, slide the axle and sprocket assembly in or out of the vehicle until you obtain the same measurement as written down from step 1 of the removal procedure. This will give you proper chain alignment. If you are installing a new splined axle or reinstalling a splined axle on a vehicle with a Serial Number of 15632 or later, slide the axle in all of the way until the shims are seated tightly against the inner bearing. Measure for sprocket alignment and add or remove shims (thick or thin) until the same measurement as written down in step 1 of the removal procedure is obtained. Always make sure the axle is in towards the center of the vehicle all of the way when taking the measurements. This will give you proper chain alignment. All chains and sprockets must be aligned properly. If the chains are not aligned, equipment failure will result. Double check the alignment by measuring from the outer chassis rail to the outer center sprocket (see Figure IA). This should be the same as the measurement for the front sprocket that was written down in step 1.

 **CAUTION** Failure to align the chains will result in vehicle damage.

7. If you have installed a new splined axle or reinstalled a splined axle in a vehicle with a Serial Number of 15632 or later, proceed to step 7a. Tighten the outer chassis bearing locking collar. Use the following procedure; Turn the collar by hand in the same direction that the axle rotates when the vehicle is moving forward. Rotate the collar until it is snug on the bearing. Lock the collar using a hammer and drift pin. To lock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with a hammer (in the same direction as mentioned above) with 4 or 5 firm taps. Tighten down the set screw using a hex wrench. Repeat this procedure on the inner bearing if so equipped. Be sure that the inner locking collar set screw will sit square on a high or low point of the axle spline if your vehicle is equipped with splined axles.
  - 7a. If you are installing a new splined axle or reinstalling an axle on a vehicle with a Serial Number of 15632 or later, secure the axle to the bearing using a bolt, lock washer, and flat washer as shown in Figure VI (the front axles use socket head bolts and no lock washers). Be sure to put #271 Loctite® on the bolt and tighten it down to 30 ft-lbs. Tighten down the two inner bearing set screws. Proceed to tighten down the outer bearing locking collar as described in step 7 above. The move on to step 8.
8. Grease the outer and inner bearings with one or two pumps of grease with a grease gun. If an inner bearing was replaced, do not

grease it at this time. New bearings have been pre-lubed by the manufacturer.

 **CAUTION** Too much grease in a bearing will damage the bearing seals.

9. Now double check the alignment of the front (between the front and center axles) and center idler (between the center and rear axles) sprockets (adjuster sprocket). Measure from the outer chassis rail to the center (of the width) of the outer center axle sprocket. With the idler sprocket bolt snug, measure from the outer chassis rail to the center of the front idler sprocket (see Figure IB). Move the shims for the idler sprocket around until you have the same measurement as the outer chassis rail to the center of the outer center axle sprocket. Repeat this procedure for the center idler sprocket. Be sure to measure to the inner center axle sprocket for aligning the center idler sprocket.
10. Adjust the chains as described in your owners manual.

 **CAUTION** Failure to properly adjust chains will result in vehicle damage.

11. Reinstall the tire on the axle. Tighten down the lug nuts to 55 ft-lbs.
12. Reconnect the negative battery cable, install the floorboards and the engine cover.

### **Part III - Rear Axle Replacement**

#### *Removal*


1. Measure the distance from the outer chassis rail to the edge of the outer rear sprocket. Write this measurement down as it will be needed later in order to realign the chain(s). (See Figure IA).

 **CAUTION** Failure to align the chains will result in vehicle damage.

2. Loosen the set screw on the inner bearing locking collar with the hex wrench. If your vehicle has a Serial Number of 15632 or later or if the axle has been replaced in the past with a 'turned down end' splined axle, proceed to step 2a. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing.

- 2a. Remove the bolt from the end of the axle to be removed/replaced. Loosen the two set screws on the inner bearing (see Figure VI).
3. Using an 11/16" wrench and a 5/8" socket, remove the axle bolt from the disk and sprocket assembly. You may need to tap the bolt out of the axle with a drift pin. If you have splined axles and O-Ring chain, remove the two set screws in the sprocket hubs (S/N 17864 and later will have one large set screw). This will unlock the sprockets assembly from the axle.

**Note:** There are two set screws secured with Loctite® in each hub. You must apply heat (400°F for 5 minutes) to these before removal.

 **WARNING** Use caution while applying heat to parts. Do not use heat near any fuel lines or near the battery or an explosion may occur. Do not touch any heated parts until they have cooled.

4. Locate the four, 3/8" nuts and lock washers which secure the outer bearing flange to the chassis. Remove these nuts and lock washers.
5. Remove the axle from the vehicle. The outer bearing, flange, and locking collar should remain on the axle. You may need to tap the axle out with a hammer by tapping on the back side of the wheel flange (the plate the wheel bolts to). If you have an axle with a 'turned down' end, keep track of any thick and/or thin shims and the order in which they are on the axle. This will allow proper sprocket alignment during the assembly process.

**Note:** If the axle will not come out, you may have to loosen the chains. Please refer to your *Operators Manual* for chain tensioning instructions and location of the chain adjusters. To loosen the long (final drive) chains, simply loosen idler sprocket bolts with a 3/4" wrench, 3/4" socket, and ratchet. To loosen the rear (short) chain, loosen the jam nut on the rear adjuster bolt (protruding through the angle on the rear of the chassis) and then loosen the adjuster nut with a 3/4" wrench. If you have lock washers and standard nuts on the two idler bracket bolts (3/8" bolts securing the rear idler assembly to the chassis) and on the idler sprocket bolt, you must loosen these also.

**Note:** Over time, there is a possibility of the axle becoming rusted to the inner bearing or sprocket assembly. In this case, the axle must be cut with a grinding wheel or Sawzall. After the axle is cut and removed, remove the bearing or sprocket assembly from the chassis (see the *Bearing Replacement* section or *Sprocket Replacement* Section of the service manual) and replace it with a new bearing or sprocket assembly if necessary.

■ **NOTE** Always wear safety glasses when cutting metal objects.

6. Once the axle is removed, place it on a table or bench and in a vise if possible. Loosen the set screw on the locking collar. Unlock the locking collar using a hammer and a drift pin. To unlock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with the hammer so that the collar will spin in the same direction that the axle rotates when the vehicle is moving backwards. Once loose, slide the locking collar away from the bearing. Remove the bearing, flange, and locking collar from the axle.

### *Installation*

1. Reinstall the outer chassis bearing and flange, which was removed with the axle assembly, to the chassis. Be sure that the eccentric locking surface on the bearing is facing towards the outside of the vehicle and that/the grease fitting on the outer flange is towards the top of the vehicle. Loosely install the lock washers and nuts onto the four, 3/8" bolts. These will be tightened down later.
2. Place the outer locking collar on the axle (the one from the outer chassis bearing). Make sure that the recessed portion on the locking collar is facing the vehicle body. Coat the Axle Shaft with Anti-Seize.

**Note:** If you are installing a new splined axle in a vehicle with a Serial Number of 15631 or earlier, you must change the inner bearing prior to installing the new axle. Please refer to the *Bearing Replacement* section in order to install the appropriate inner axle bearing.

3. Insert the axle into the outer chassis bearing. Slide the axle through the sprocket assembly or sprocket and disk assemblies if your vehicle has splined axles. If you are installing a new splined axle in a vehicle with a Serial Number of 15632 or later, place the shims removed in step 5 of the removal procedure (always use new

thin shims) on the turned down portion of the axle (see Figure VI). If you have an earlier vehicle and are replacing a splined axle with a new splined axle, place one thick shim on the turned down portion of the axle (see Figure VI). If you are reinstalling the original axle in a vehicle with a Serial Number of 15631 or earlier, place the inner bearing locking collar on the end of the axle with the recessed portion facing the bearing. Make sure that the set screw on the sprocket/disk hub will be on the same spline as the holes in the axle shaft and that the sprocket and disk hubs are oriented correctly as shown in Figure II if your vehicle has splined axles. Slide the axle into the inner bearing. If you did not loosen the chains in step 5 of the removal procedure and the sprocket assembly will not line up with the axle, loosen the chains as described in step 5.

4. With the axle in place, tighten down the four nuts which were installed on the outer bearing flange assembly. These should be tightened down to 23 ft-lbs.

 **CAUTION Failure to tighten down hardware will result in vehicle damage.**

5. Place the axle bolt into the sprocket and through the axle. Tighten the nut down to 30 foot pounds. If you have splined axles, line up the sprocket hub with the correct axle hole (see Figure II). Double set screw the sprocket hub in place (S/N 17864 or later or any new sprocket will have one large set screw). Be sure to put #271 Loctite® on the set screw threads.

 **CAUTION Failure to tighten down hardware will result in vehicle damage.**

6. If you are installing a solid (not splined) or hollow axle or reinstalling an axle on a vehicle with a Serial Number of 15631 or earlier, slide the axle and sprocket assembly in or out of the vehicle until you obtain the same measurement as written down from step 1 of the removal procedure. This will give you proper chain alignment. If you are installing a new splined axle or reinstalling a splined axle on a vehicle with a Serial Number of 15632 or later, slide the axle in all of the way until the shims are seated tightly against the inner bearing. Measure for sprocket alignment and add or remove shims (thick or thin) until the same measurement as written down in step 1 of the removal procedure is obtained. Always make sure the axle is in towards the center of the vehicle all of the way when taking the measurements. This will give you proper chain alignment. All chains and sprockets must be aligned properly. If the chains are not aligned, equipment failure will result.

7. Double check the alignment by measuring from the outer chassis rail to the inner center sprocket (see Figure IA). This should be the same as the measurement for the outer rear sprocket that was written down in step 1. Also, double check the alignment of the 34 tooth (large) rear sprocket to the transmission sprocket. Loosen the chain for these two sprockets (as described in step 5 of the removal procedure) and remove the chain. Be sure to keep track of the orientation of the master link. You may have to pry the master link plate off with a standard screwdriver. Lay a steel straight edge along the outside of the transmission sprocket and the outside edge of the large (34 tooth) rear sprocket (see Figure III). If you have a non-splined solid axle or a hollow axle, tap the axle in or out until the sprockets are in line. If you have a Serial Number of 15632 or later and splined axles or if you are replacing a splined axle with a new 'turned down end' axle, add or remove thick or thin shims in order to gain proper alignment. Repeat this process with the straight edge on the inside edge of both sprockets (see Figure IV).

**Note:** If there is a gap on one side of the 34 tooth sprocket while the other side is flush with the straight edge, move the axle so there is a smaller gap on between both sides of the 34 tooth sprocket and the straight edge. Sprocket thickness may vary due to machining tolerances.

 **CAUTION** Failure to align the chains will result in vehicle damage.

8. Once the alignment of the 34 tooth rear sprocket and the transmission sprocket has been verified, measure from the outer chassis rail to the outer rear sprocket (see Figure 1A). If this is the same as the measurement written down in step 1 of the removal procedure, proceed to step 9. If not, use this new measurement to align the center axle inner sprocket with the rear axle outer sprocket and then align the center axle outer sprocket with the front axle sprocket. Refer to the center and front axle replacement sections in order to properly align these axles.
9. If you have installed a new splined axle or reinstalled a splined axle in a vehicle with a Serial Number of 15632 or later, proceed to step 9a. Tighten the outer chassis bearing locking collar. Use the following procedure; Turn the collar by hand in the same direction that the axle rotates when the vehicle is moving forward. Rotate the collar until it is snug on the bearing. Lock the collar using a hammer and drift pin. To lock the collar, place the drift pin in the locking hole (not the set screw hole) and tap it with a hammer (in the same direction as mentioned above) with 4 or 5 firm taps.



Tighten down the set screw using a hex wrench. Repeat this procedure on the inner bearing if so equipped. Be sure that the inner locking collar set screw will sit square on a high or low point of the axle spline if your vehicle is equipped with splined axles.

- 9a.** If you are installing a new splined axle or reinstalling an axle on a vehicle with a Serial Number of 15632 or later, secure the axle to the bearing using a bolt, lock washer, and flat washer as shown in Figure VI (the front axles use socket head bolts and no lock washers). Be sure to put #271 Loctite® on the bolt and tighten it down to 30 ft-lbs. Tighten down the two inner bearing set screws. Proceed to tighten down the outer bearing locking collar as described in step 9 above. The move on to step 10.
- 10.** Grease the outer and inner bearings with one or two pumps of grease with a grease gun. If an inner bearing was replaced, do not grease it at this time. New bearings have been pre-lubed by the manufacturer.

 **CAUTION** Too much grease in a bearing will damage the bearing seals.

- 11.** Now double check the alignment of the center (between the center and rear axles) and rear idler (on the short/primary chain) sprockets (adjuster sprocket). Measure from the outer chassis rail to the center (of the width) of the outer rear axle sprocket. With the idler sprocket bolt snug, measure from the outer chassis rail to the center of the center idler sprocket (see Figure IB). Move the shims for the idler sprocket around until you have the same measurement as the outer chassis rail to the center of the outer center axle sprocket. Now, snug all the hardware on the rear adjuster assembly. Using a straight edge, align both sides of the rear idler sprocket with the transmission output sprocket (see Figure V). There should be a small gap (1/32" to 1/16") between the idler sprocket and the straight edge on both sides. Move the idler shims to obtain proper alignment.
- 12.** Reinstall the rear (short) primary chain. You may have to use a pair of pliers to get the master link plate on the master link pins. Adjust the chains as described in your owners manual. Be sure to tighten down all the hardware that was loosened on the rear idler assembly after adjusting the chains.

 **CAUTION** Failure to properly adjust chains will result in vehicle damage.


- 13.** Reinstall the tire on the axle. Tighten down the lug nuts to





55 ft-lbs.

14. Reconnect the negative battery cable and install the floorboards and engine cover.

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 **CAUTION** A CAUTION indicates special precautions that must be taken to avoid damage to the vehicle.

 **WARNING** Failure to follow WARNING instructions could result in severe injury or death the vehicle operator, any passenger, or a bystander.

 **NOTE** A note provides key information to make procedures more clear and easier.

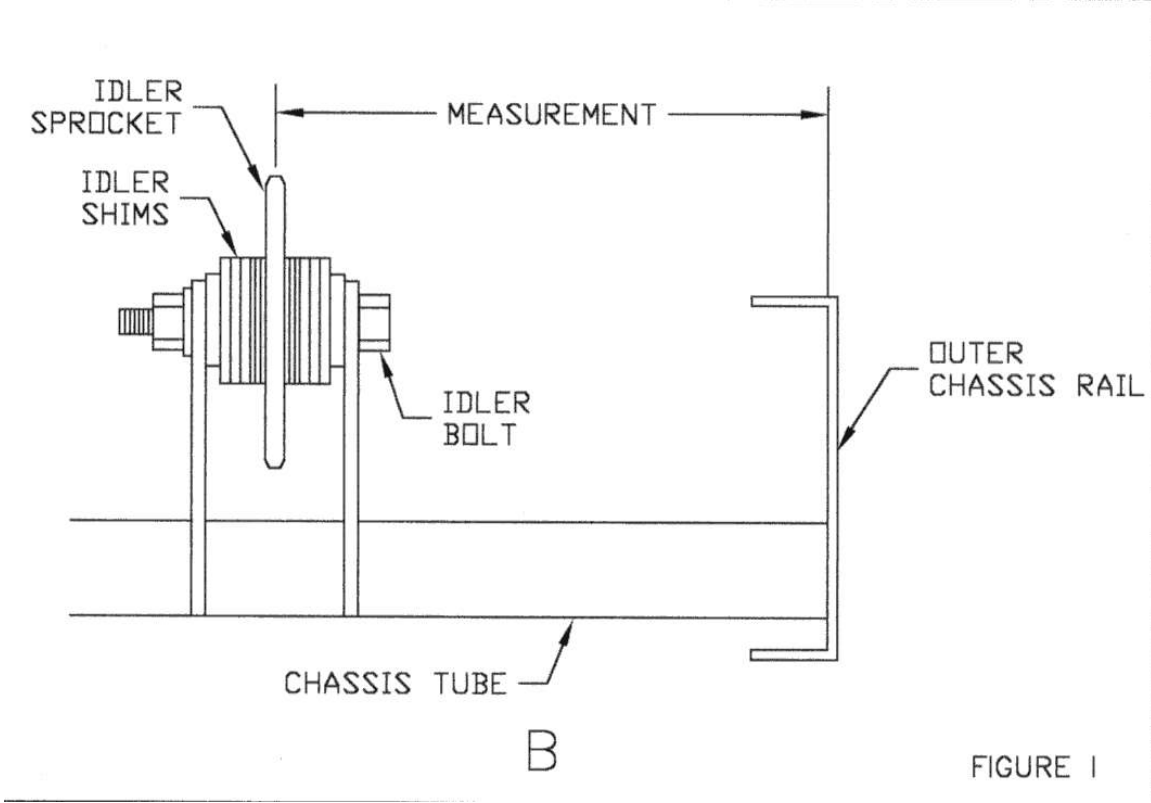
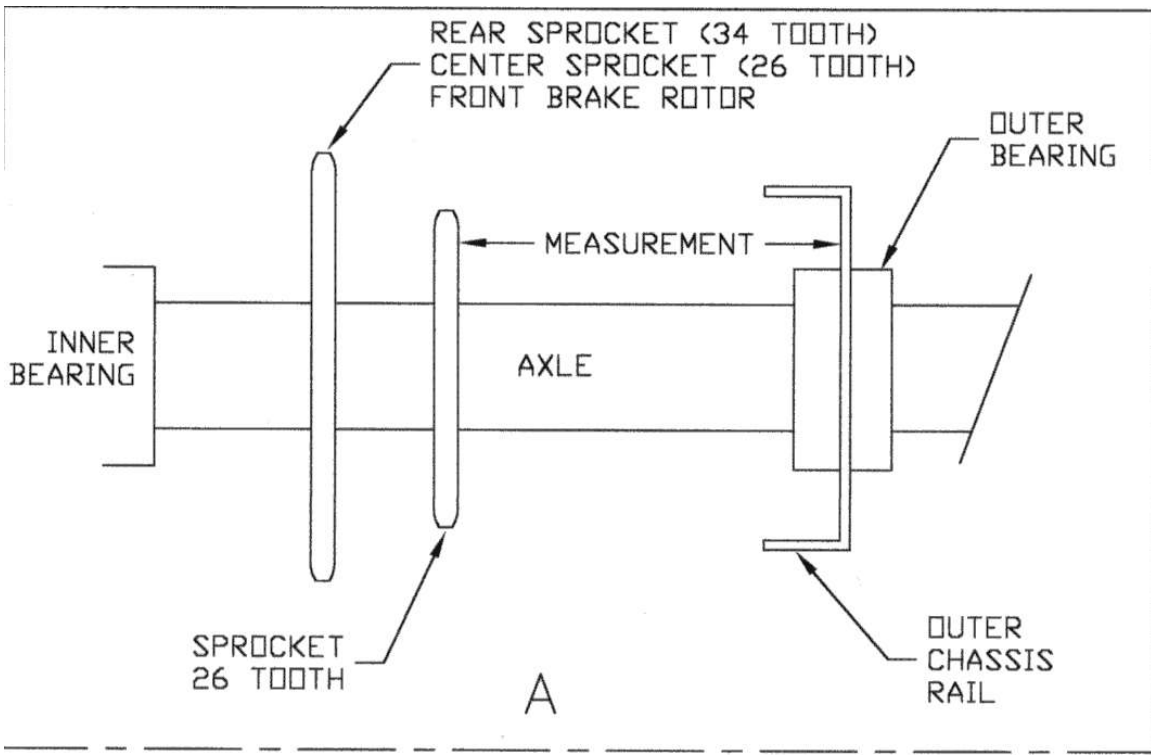


FIGURE 1

FRONT OF VEHICLE

C:\MAX\INSTRUCTIONS\SPLINELAYOUT.DWG

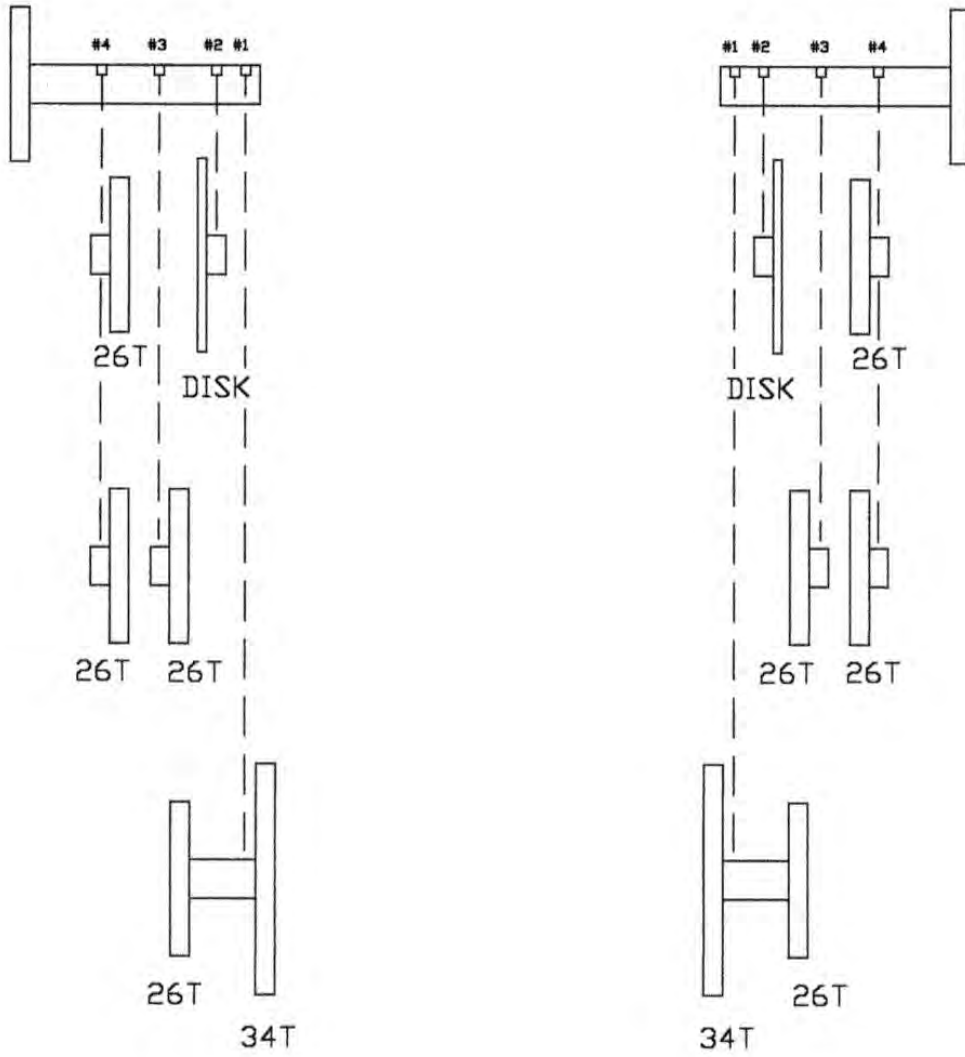
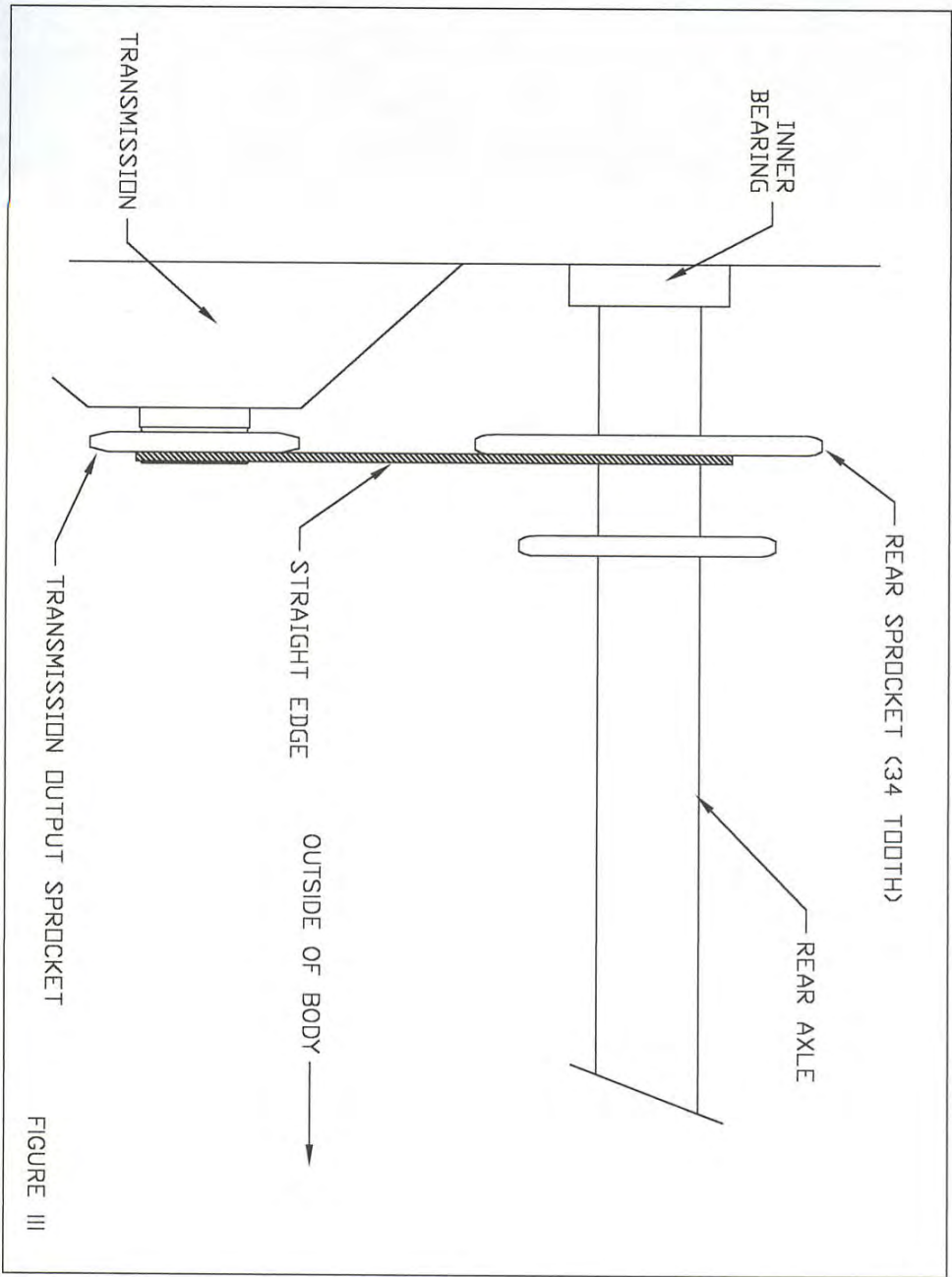


FIGURE II



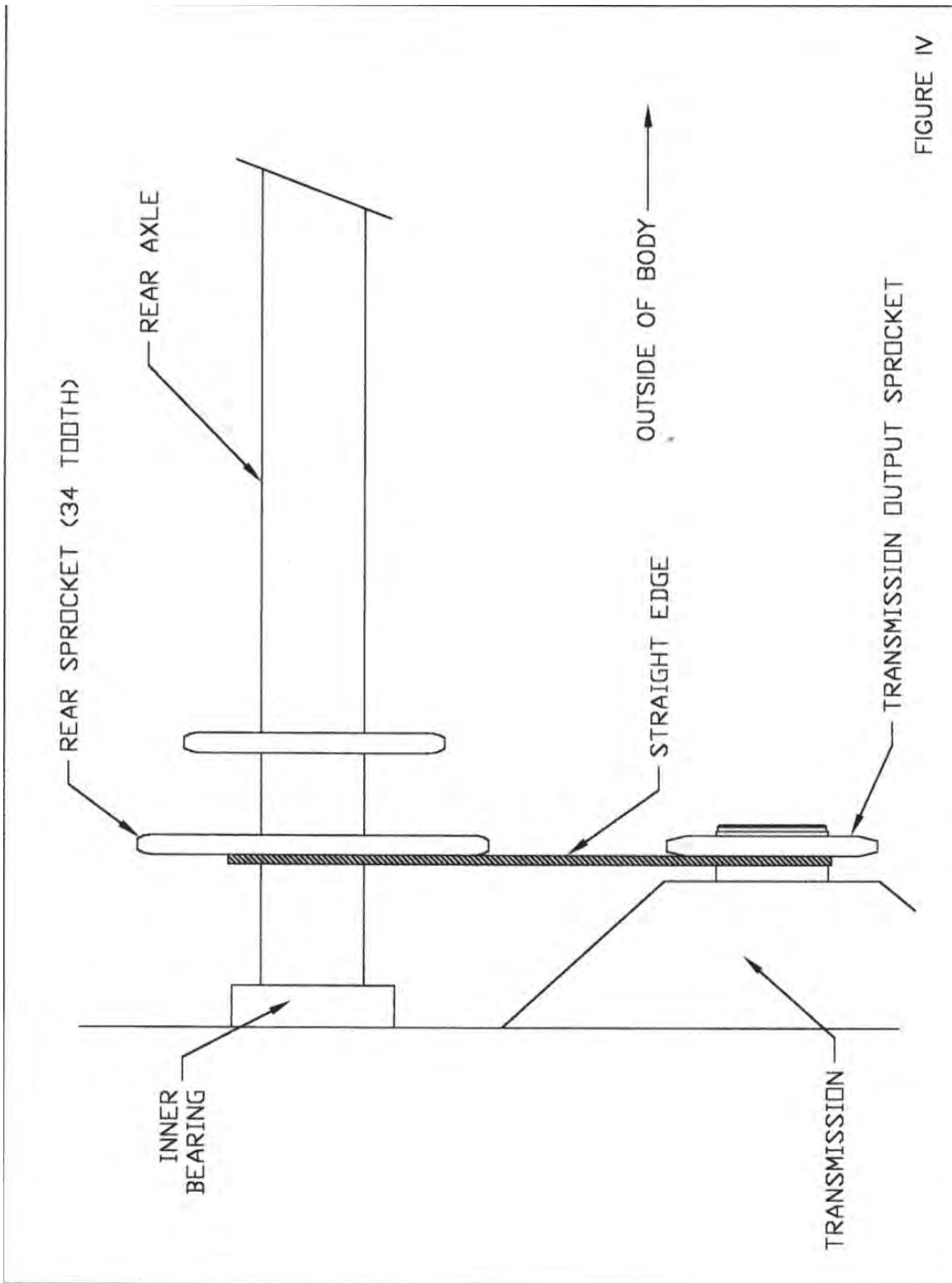


FIGURE IV

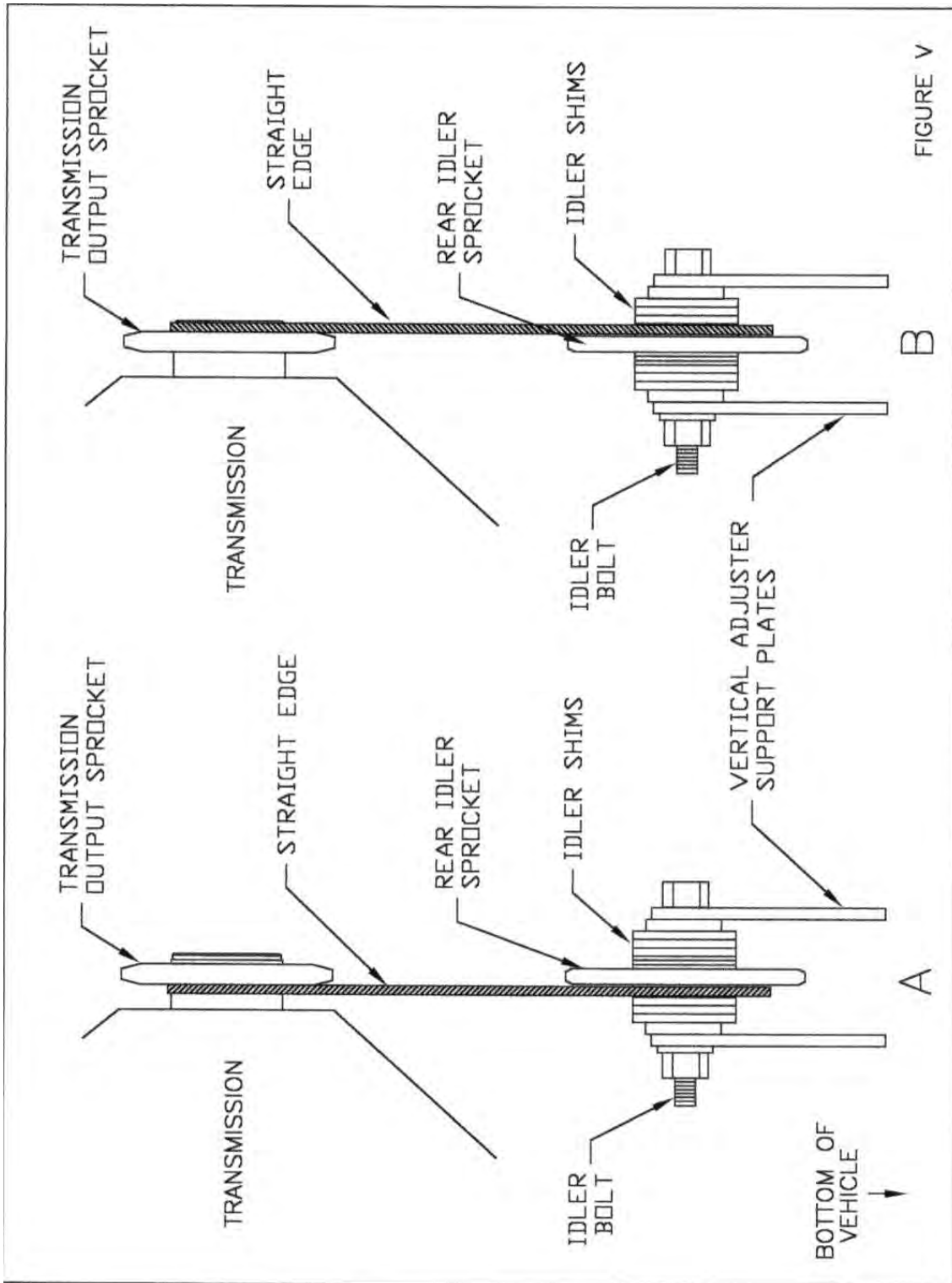


FIGURE V

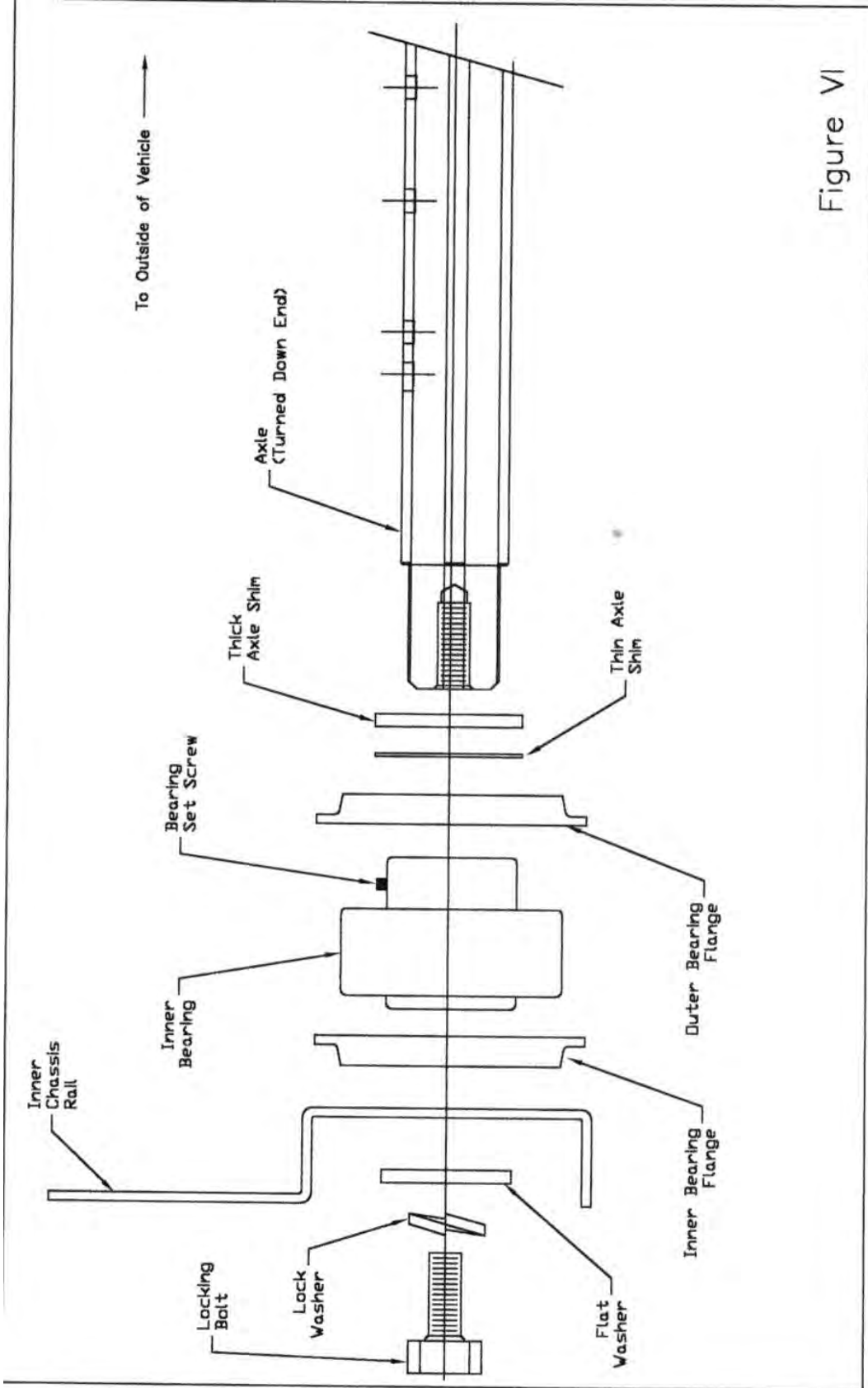


Figure VI

INTURNEDINNER.DWG