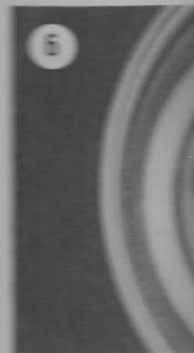
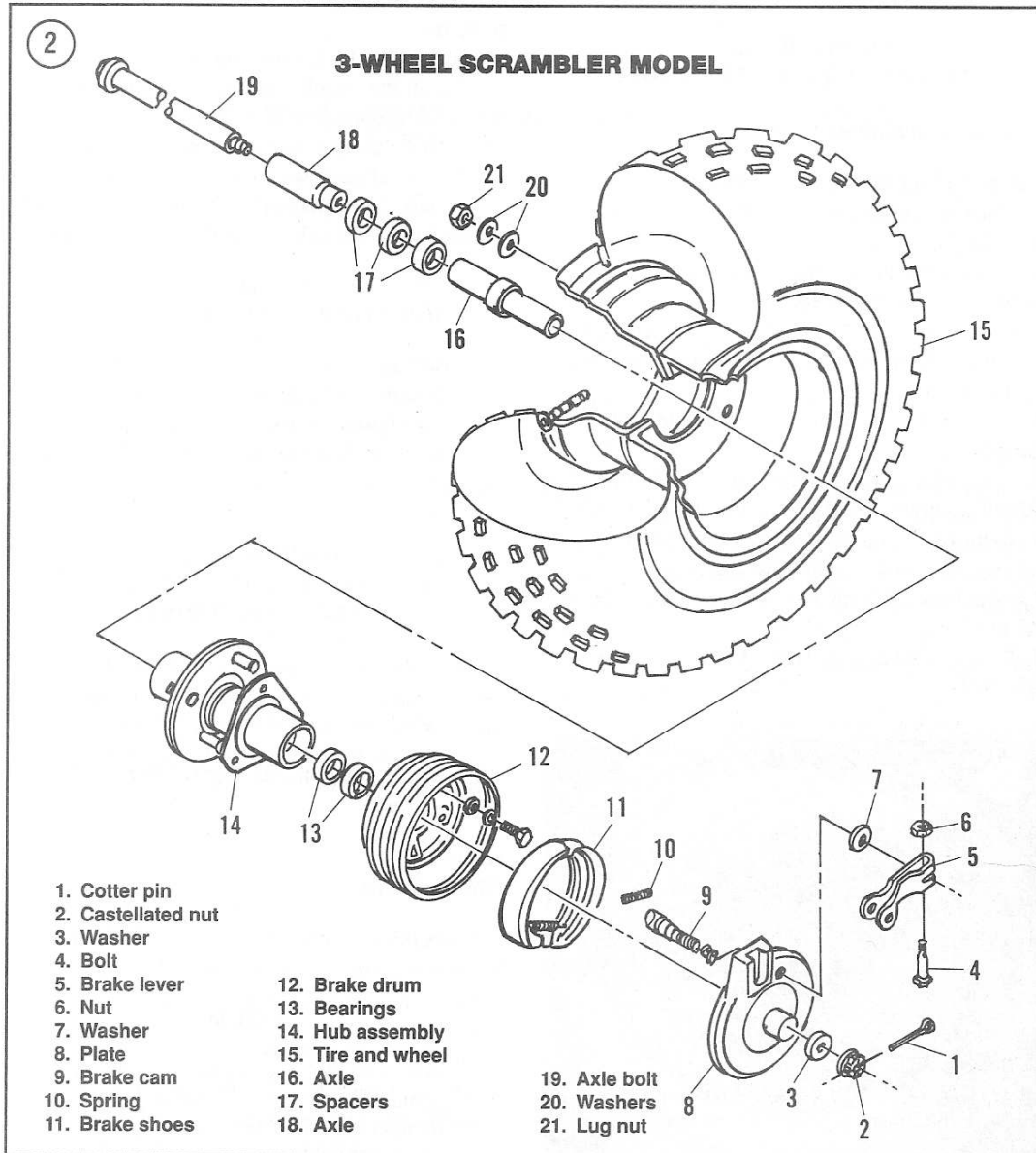


1. Check that lug nuts (Figure 1) are tightened to the torque specified in Table 2.
2. Place the vehicle on level ground and set the parking brake. Block the rear wheels so the vehicle will not roll in either direction.
3. Lift the front of the vehicle with a small jack. Place the jack under the frame with a piece of wood between the jack and the frame.

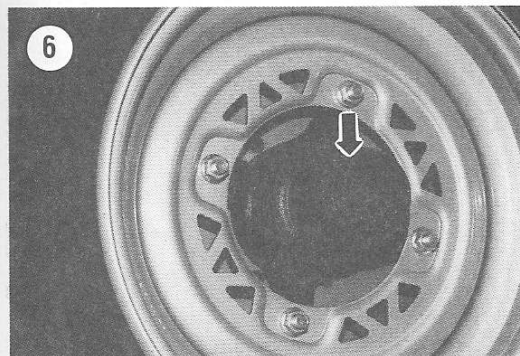
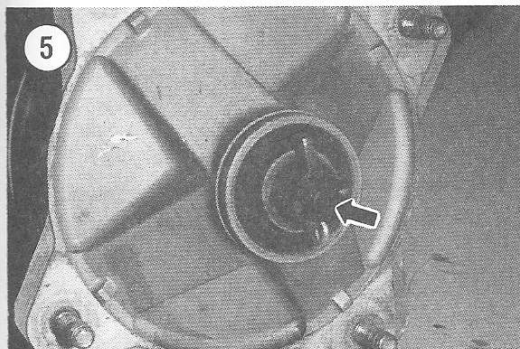
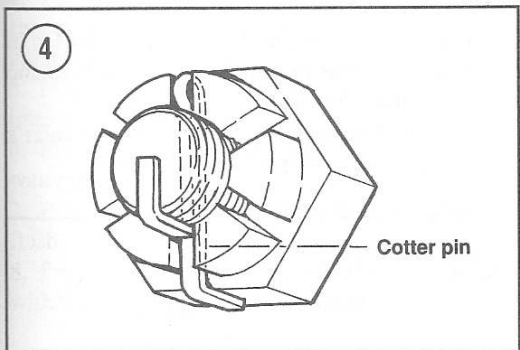
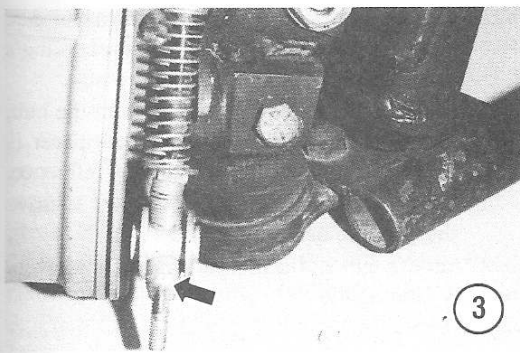
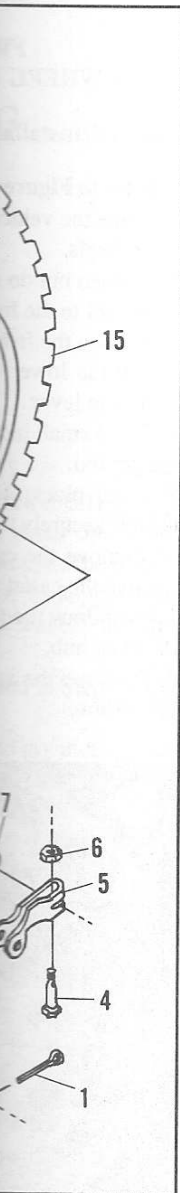
4. Place wooden block(s) under the frame to support the vehicle securely with the front wheels off the ground.
5. Shake the wheel to check for play. If the wheel is loose, remove the hub cap and check the castellated nut (Figure 5). If the nut is tight, make sure that the looseness is located in the hub bearings.
6. Rotate the wheel and check for roughness. The hub should turn smoothly without roughness, exces-



the frame to support front wheels off the

play. If the wheel is check the castellated make sure that the bearings.

for roughness. The roughness, exces-



sive play or other abnormal conditions. If hub does not turn smoothly, remove hub and check the bearings.

7. Mount a dial indicator against the wheel rim to measure radial and lateral runout. Turn the wheel slowly by hand and read movement indicated on dial indicator. If runout is excessive, check the condition of the wheel assembly. If the wheel is bent or otherwise damaged, it may require replacement.

8. If the wheel bearings are rough or otherwise damaged, remove the hub and install new bearings.

9. Remove the dial indicator and lower the vehicle to the ground.

**Hub Removal**

1. Remove the front wheel as described in this chapter.

2A. On models with hydraulic disc brakes, remove the 2 brake caliper mounting bolts and lift the caliper away from the brake disc. Hang the caliper from the vehicle with a stiff wire hook.

**NOTE**

*Insert a piece of vinyl tubing or plastic between the brake pads in the caliper, in place of the brake disc. That way if the brake lever is accidentally moved, the piston will not be forced from the cylinder. If the piston comes out of the cylinder, the caliper will have to be disassembled to reseat the piston and both front brakes will require bleeding. By blocking the brake pads, the piston cannot be forced out and bleeding the system should not be required.*

2B. On models with mechanical drum brakes, it may be necessary to loosen the front brake adjuster.

- 3. Remove the hub cap (Figure 6).
- 4. Remove and discard the axle nut cotter pin.
- 5. Loosen and remove the axle nut (Figure 5).
- 6. Slide the front hub from the steering knuckle.

**Inspection (Hub Removed)**

- 1. Remove the hub spacer from the outer seal.
- 2. Inspect the seals. Replace seals if cut, deteriorated or starting to harden.

3. Inspect the threaded studs on the front hub. Replace as necessary.
4. If necessary, remove the seals as described under *Disassembly* in this chapter.
5. Turn each bearing inner race with your fingers. The bearing should turn smoothly with no roughness, binding or excessive noise.
6. Inspect the play of the inner race of each hub bearing. Check for excessive lateral and radial play. Replace the bearings if play is excessive.
7. Always replace both bearings in the hub at the same time. When purchasing new bearings, write down the bearing manufacturer's code numbers from the old bearings (found on the outside of each bearing) and take them with you to ensure a perfect replacement.

### Disassembly

The bearings are installed with a tight fit and force is required to remove them from the bores in the hub. Because of the close fit between the bearings and hub spacer, the center hub spacer may be damaged when removing the first bearing. Remove the bearings only if the bearings must be replaced. The inner and outer bearings and the inner and outer seals are different. Prior to removing the seals and bearings, write down the size code of each part so the replacement parts can be installed correctly.

1. Remove the outer seal by prying it from the hub.

#### CAUTION

*When removing the bearings in the following steps, support the front hub carefully so that you do not damage the brake drum or disc.*

2. To remove the front hub bearings without special tools:
  - a. Using a long drift, tilt the center hub spacer away from one side of the outer bearing as shown in **Figure 7**.

#### NOTE

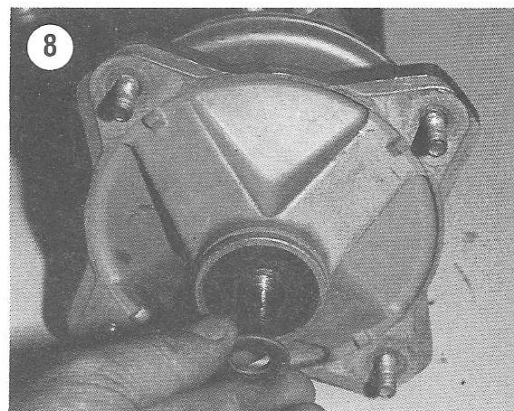
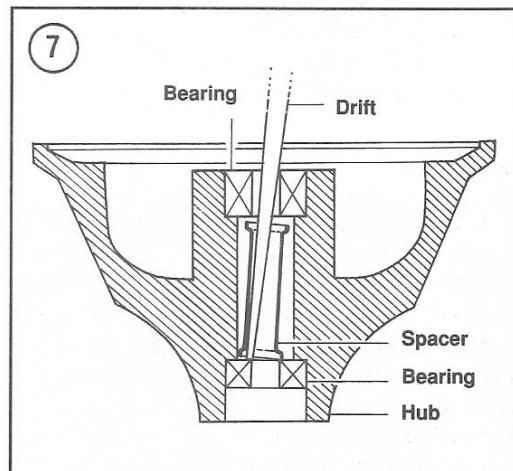
*Try not to damage the hub spacer when positioning and driving against the long drift. You may have to grind a clearance groove in the drift to enable it to contact the bearing while clearing the spacer.*

- b. Tap the bearing out of the hub with a hammer, working around the perimeter of the bearing's inner race.
  - c. Remove the center hub spacer from the hub, noting the direction in which the spacer is installed in the hub, for reassembly reference.
  - d. Use a large socket or bearing driver to drive the opposite bearing out of the hub.
3. Clean the hub and center hub spacer in solvent and dry thoroughly.

### Assembly

Single row, deep groove ball bearings are used in the front hub. Prior to installing new bearings and seals, note the following:

- a. Install bearings so that the manufacturer's code marks and numbers face out.



- b. Install bearing with a socket against the out
- c. Install seals w
1. Pack the bearing grease. Work the
- oughly. Turn the be
- grease is seated even
2. Blow any dirt or
- center hub spacer be
3. Press the inner b
- toms in the bore.
4. Turn the hub o
- spacer so that its lat
- the inner bearing.
5. Press the outer b
- toms in the bore.
6. Fill the space in
- waterproof bearing
7. Press in the inn
- flush with the seal b
8. Press the outer s
- with the seal bore.

### Installation

1. Clean the steer
- threads and axle m
- compressed air.
2. Install the hub-sp
3. Slide the front h
4. Install the flat w
- as shown in Figure
5. Install the castel
- knuckle, then tighte
- specification in Tab



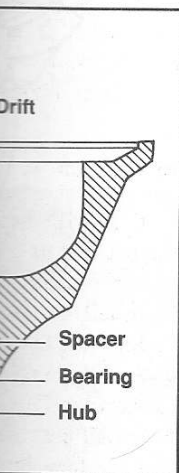
hub with a hammer, center of the bearing's

spacer from the hub, which the spacer is assembly reference. driving driver to drive of the hub.

to spacer in solvent

bearings are used in new bearings and

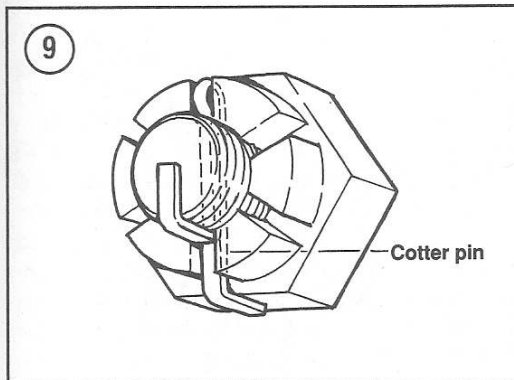
the manufacturer's face out.



- b. Install bearings by pressing them into hub with a socket or bearing driver that seats against the outer race only.
- c. Install seals with their closed side facing out.
  1. Pack the bearings with a good quality bearing grease. Work the grease in between the balls thoroughly. Turn the bearing by hand to make sure the grease is seated evenly inside the bearing.
  2. Blow any dirt or foreign matter out of the hub and center hub spacer before installing the bearings.
  3. Press the inner bearing into the hub until it bottoms in the bore.
  4. Turn the hub over and install the center hub spacer so that its larger inner diameter seats against the inner bearing.
  5. Press the outer bearing into the hub until it bottoms in the bore.
  6. Fill the space inside the lip of each seal with a waterproof bearing grease.
  7. Press in the inner seal until its outer surface is flush with the seal bore.
  8. Press the outer seal until its outer surface is flush with the seal bore.

**Installation**

1. Clean the steering knuckle bearing surface, threads and axle nut with solvent. Blow dry with compressed air.
2. Install the hub spacer into the front hub outer seal.
3. Slide the front hub onto the steering knuckle.
4. Install the flat washer onto the steering knuckle as shown in **Figure 8**.
5. Install the castellated axle nut onto the steering knuckle, then tighten the nut (**Figure 5**) to the torque specification in **Table 2**.



6. Check that one pair of openings in the castellated nut is aligned with the cotter pin hole in the steering knuckle. If not, align opening by tightening the axle nut. Do not loosen the axle nut to align the openings.

**WARNING**

*Always install a new cotter pin.*

7. Insert the new cotter pin through the openings in the castellated nut and steering knuckle hole. Bend the cotter pin as shown in **Figure 9** to lock the nut.
- 8A. On models with disc brake remove the spacer previously installed between the brake pads and slide the brake caliper over the brake disc. Install the brake caliper mounting bolts and tighten to the torque specification in **Table 2**. Apply the front brake lever a few times to seat the pads against the disc.
- 8B. On models with drum brakes, adjust the brake cable as described in Chapter Three.
9. Install the front wheel as described in this chapter.

**FRONT HUB  
(3-WHEEL TRICYCLE MODELS)**

The front hub consists of 2 sealed bearings and a center spacer. The front brake drum is bolted to the front hub.

**Inspection  
(Hub Installed)**

Inspect the bearings for each wheel before removing bearings from the wheel hub.

**CAUTION**

*Do not remove the wheel bearings for inspection, because the bearings may be damaged during the removal process. Remove the wheel bearings only if they are to be replaced.*

1. Check that lug nuts are tightened to the torque specified in **Table 2**.
2. Place the vehicle on level ground and set the parking brake. Block the rear wheels so the vehicle will not roll in either direction.
3. Lift the front of the vehicle with a small jack. Place the jack under the frame with a piece of wood between the jack and the frame.

4. Place wooden block(s) under the frame to support the vehicle securely with the front wheel off the ground.

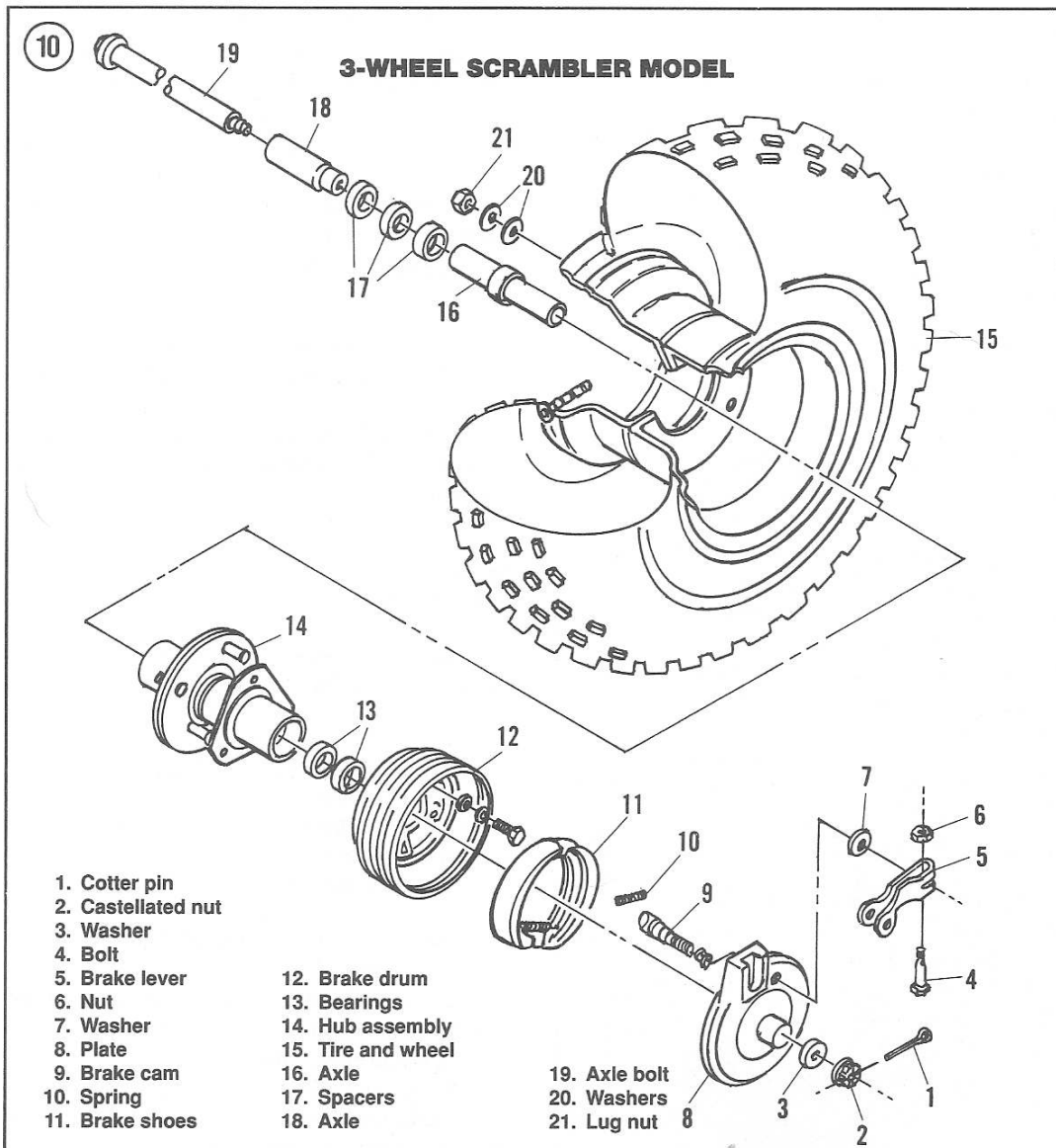
5. Shake the wheel to check for play. If the wheel is loose, check the castellated nut (2, **Figure 10**). If the nut is tight, make sure that the looseness is located in the hub bearings.

6. Rotate the wheel and check for roughness. The hub should turn smoothly without roughness, excessive play or other abnormal conditions. If the hub

does not turn smoothly, remove the hub and check the bearings.

7. Mount a dial indicator against the wheel rim to measure radial and lateral runout. Turn the wheel slowly by hand and read movement indicated on dial indicator. If runout is excessive, check the condition of the wheel assembly. If the wheel is bent or otherwise damaged, it may require replacement.

8. If the wheel bearings are rough or otherwise damaged, remove the hub and install new bearings.



9. Remove dial indicator.

### Removal/Inspection

Refer to **Figure 10**.

1. Remove the front tire.

2. Unbolt the wheel from the hub.

3. Remove the hub.

4. Inspect the seal and nut for damage or starting to leak.

5. Inspect the tire for damage and replace as necessary.

6. If necessary, remove the bearing. See **Disassembly/Assembly**.

7. Turn each bearing to check for roughness, binding or excessive play.

8. Inspect the play in the bearing. Check for excessive play. Replace the bearing if necessary.

9. Always replace the bearing at the same time. When you remove the bearing from the old bearing housing, take the bearing with you for replacement.

10. Clean all parts with solvent. Blow dry.

11. Install the hub on the axle.

12. Attach the brake drum to the hub and tighten the nut.

13. Install the front wheel.

14. Tighten the lug nuts.

15. Tighten the castellated nut.

16. Tighten the cotter pin.

### Disassembly/Assembly

The front hub bearing fit and force is recommended in the hub. Be careful not to damage the bearings and hub seal when you move the bearing.

replaced. Before you replace the bearing, write down the size of the bearing. The size of the bearing parts can be found in the **Parts List**.

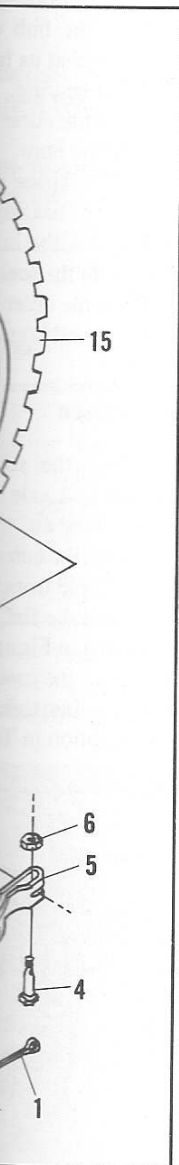
1. Remove the seal and nut.

2. Remove the bearing.

3. Clean the bearing housing.

4. Install the bearing.

the hub and check  
 the wheel rim to  
 Turn the wheel  
 indicated on dial  
 check the condition  
 is bent or other-  
 placement.  
 ough or otherwise  
 stall new bearings.



9. Remove dial indicator and lower vehicle to ground.

**Removal/Inspection/Installation**

Refer to **Figure 10**.

1. Remove the front wheel as described in this chapter.
2. Unbolt the wheel and the brake drum from the hub.
3. Remove the hub spacers from the seals.
4. Inspect the seals. Replace seals if cut, deteriorated or starting to harden.
5. Inspect the threaded studs on the front hub. Replace as necessary.
6. If necessary, remove the seals as described under *Disassembly/Assembly* in this chapter.
7. Turn each bearing inner race with your fingers. The bearing should turn smoothly with no roughness, binding or excessive noise.
8. Inspect the play of the inner race of each hub bearing. Check for excessive lateral and radial play. Replace the bearings if play is excessive.
9. Always replace both bearings in the hub at the same time. When purchasing new bearings, write down the bearing manufacturer's code numbers from the old bearings (found on the outside of each bearing) and take them with you to ensure a perfect replacement.
10. Clean all parts including the axle and axle nut with solvent. Blow dry with compressed air.
11. Install the hub spacers into the front hub seals.
12. Attach the brake drum and front wheel to the hub and tightening the retaining bolts to the torque listed in **Table 2**.
13. Install the front wheel as described in this chapter.

**Disassembly/Assembly**

The front hub bearings are installed with a tight fit and force is required to remove them from the bores in the hub. Because of the close fit between the bearings and hub spacer, the center hub spacer might be damaged when removing the first bearing. Remove the bearings only if the bearings must be replaced. Before removing the seals and bearings, write down the size code of each part so the replacement parts can be installed correctly.

1. Remove the seals by prying them from the hub.

**CAUTION**

*When removing the bearings in the following steps, support the front hub carefully so that you do not damage the brake drum or disc.*

2. To remove the front hub bearings without special tools:

- a. Use a long drift to move the center hub spacer to one side of the bearing as shown in **Figure 7**.

**NOTE**

*Try not to damage the hub spacer when positioning and driving against the long drift. You may have to grind a clearance groove in the drift to enable it to contact the bearing while clearing the spacer.*

- b. Tap the bearing out of the hub with a hammer, working around the perimeter of the bearing's inner race.
- c. Remove the center hub spacer from the hub.
- d. Use a large socket or bearing driver to drive the opposite bearing out of the hub.

3. Clean the hub and center hub spacer in solvent and dry thoroughly.

4. Single row, deep groove ball bearings are used in the front hub. Prior to installing new bearings and seals, note the following:

- a. Install bearings so the manufacturer's code marks and numbers face out.
- b. Install bearings by pressing them into the hub with a socket or bearing driver that seats against the outer race only.
- c. Install the seals with their closed side facing out.

5. Pack the bearings with a good quality bearing grease. Work the grease in between the balls thoroughly. Turn the bearing by hand to make sure the grease is distributed evenly inside the bearing.

6. Blow any dirt or foreign material out of the hub and center hub spacer before installing the bearings.

7. Press one of the bearings into the hub until it bottoms in the bore.

8. Turn the hub over and install the center hub spacer so it is against the inner race of the installed bearing.

9. Press the other bearing into the hub until it bottoms in the bore.

10. Fill the space inside the lip of each seal with a waterproof bearing grease.

11. Press one seal in until its outer surface is flush with the seal bore.
12. Press the remaining seal in until its outer surface is flush with the seal bore.

### FRONT FORK TUBES (3-WHEEL SCRAMBLER MODEL)

These tricycle models are equipped with a telescopic front fork front suspension.

#### Removal/Installation

1. Place the vehicle on level ground and block the rear wheels.
2. Use a small jack to lift the front of the vehicle off the ground.
3. Place block(s) under the frame to support the vehicle securely with the front wheel off the ground.
4. Remove the front wheel and hub as described in this chapter.
5. Unbolt and remove the front fender.
6. Loosen the bolts that clamp the upper end of the fork tubes.

#### NOTE

*Clean the outside of the front fork tubes before attempting to slide the tubes from the upper clamps.*

7. Withdraw the fork tubes from the upper clamps.
8. Install dust boots on the outer fork tubes before installing the fork tubes. Do not clamp the boots in place.
9. Slide the fork tubes into the upper clamps until the top of the tubes are flush with the upper crown.
10. Tighten clamp bolts to the torque listed in **Table 2**. Make sure that the top of the inner tube remains flush with the top of the upper crown.
11. Route the breather tubes from the dust boots into the pivot tube of the clamp bracket, then attach the boots.
12. Reinstall the front fender.
13. Reinstall the front wheel.

#### Disassembly/Inspection/Assembly

To simplify fork service and to prevent the mixing parts, the fork legs should be disassembled and assembled individually.

1. Clamp the front axle boss at the bottom of the fork tube in a vise with soft jaws. Do *not* clamp the slider in a vise at any point except the fork axle boss.

#### NOTE

*The Allen screw installed through the bottom of the slider has been secured using a locking and sealing compound and can be difficult to remove, because the damper rod will turn inside the slider. If you have access to an air-powered impact wrench, you can remove the Allen screw after removing the fork spring in the following steps. If you do not have access to an air-powered impact wrench, loosen the Allen screw before removing the fork spring. The fork spring will help keep the damper rod from turning and may allow the screw to be removed. If you are unable to remove the screw, take both fork tubes to a dealer and have the screws removed.*

2. If you do not have access to an air-powered impact wrench, loosen but do not remove the Allen screw located at the bottom of the fork slider.

#### WARNING

*The upper spring seat is under spring pressure. When removing, note that it may fly off. Keep your face away from the cap when removing it. Also make sure that the fork tube is fully extended. If the forks are damaged and stuck in a compressed position, the fork should be disassembled by a dealer or other qualified mechanic, because the upper seat may fly out of the fork tube with considerable force.*

3. Pull the rubber cap from the top of the fork tube.
4. Press the upper spring seat down against spring pressure.
5. Remove the retaining ring from inside the fork tube.
6. Allow the spring to push the upper spring seat up and out of the fork tube.
7. Remove the fork spring and pour the oil from the fork into a clean container. Pump the fork several times to expel most of the oil. Check the oil for evidence of sludge or debris that would indicate worn or damaged parts. Properly dispose the oil after examining it.

8. Remove the  
lower slider.

Be careful  
surfaces  
ing the rear

9. Carefully pry  
slider.

10. Remove the  
bottom of the fork

The bearing  
interference  
fork tube an  
removed with

11. Grasp the slider  
the other. Work th  
the upper bearing

12. Remove the  
end of the damper

13. Inspect all parts  
scratches or other



the bottom of the  
Do not clamp the  
the fork axle boss.

through the  
been secured  
g compound  
remove, be-  
turn inside  
access to an  
ch, you can  
er removing  
owing steps.  
s to an air-  
loosen the  
ing the fork  
ill help keep  
ng and may  
oved. If you  
screw, take  
er and have

o an air-powered  
remove the Allen  
e fork slider.

nder spring  
note that it  
away from  
Also make  
ly extended.  
d stuck in a  
k should be  
other quali-  
upper seat  
with consid-

p of the fork tube.  
wn against spring

m inside the fork

per spring seat up

ur the oil from the  
the fork several  
Check the oil for  
t would indicate  
spose the oil after

- Remove the retaining ring from the top of the lower slider.

**CAUTION**

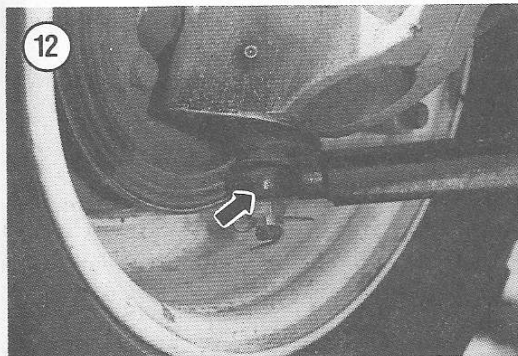
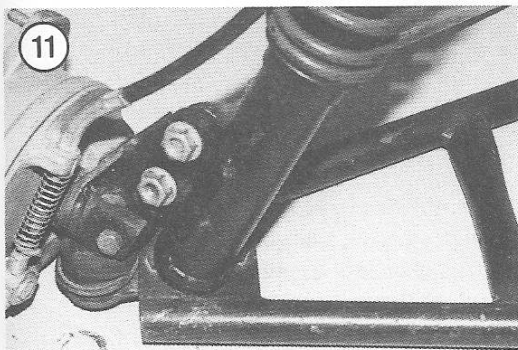
*Be careful not to damage the sealing surfaces of the fork tubes when removing the retaining ring or the seal.*

- Carefully pry the oil seal from the top of the lower slider.
- Remove the Allen screw and washer from the bottom of the fork slider.

**NOTE**

*The bushing installed in the slider is an interference fit. When separating the fork tube and slider, the bushing will be removed with the slider.*

- Grasp the slider in one hand and the fork tube in the other. Work the fork tube up and down to knock the upper bushing against the lower bushing.
- Remove the tapered rebound sleeve from the end of the damper rod.
- Inspect all parts for cracks, bends, dents, nicks, scratches or other obvious damage.



- Compare the length of the springs to each other and to the specification listed in Table 3. Install new springs if distorted, broken or significantly shorter than new. Both springs should be nearly the same height.

- Always install new fork seals. Install new fork seals by pressing against the outer edge of the seal. Install the seal retaining ring and make sure it is fully seated.

- Install the damper rod in the inner fork tube. Hold the damper rod and install the tapered rebound sleeve on the end of the damper rod.

- Coat the outer surface of the fork tube with oil before installing.

- Hold the damper rod in place inside the fork tube and carefully install the lower slider over the fork tube.

- Apply Loctite 680 to the Allen retaining screw and install the copper sealing washer over the screw. Continue holding the damper rod and install the Allen screw through the bottom of the slider. Tighten the screw to the torque listed in Table 2.

- Place the fork in the upright position and pour the type and amount of fork oil recommended in Table 3 into the fork tube. Work the fork up and down to bleed air from the lower surfaces.

- Check the oil level before finishing assembly and installation. Compress the fork before installing the spring and measure the level of the oil from the top of the fork tube with the fork compressed fully. Table 3 lists the correct oil level.

- Extend the fork and install the spring with the closely wound coils at the top.

- Make sure that the O-ring located on the spring seat is in good condition.

- Hold the fork tube and compress the fork spring in the tube using the spring seat, then install the retaining ring. Make sure that the retaining ring is fully seated before releasing the spring.

- Install the rubber cap in the top of the fork tube.

**FRONT SUSPENSION  
(4-WHEEL MODELS)**

The front suspension on all 4-wheel models consists of two lower A-arms and strut type shock absorbers and springs. Figure 11 shows a typical front suspension for 1985-1987 models without front drive. Figure 12 shows a typical front suspension for later models without front drive. A ball-joint



(Figure 12) connects the lower A-arm to the steering knuckle on all models. The lower steering knuckle on 1987 models with all-wheel drive and all later models is an aluminum casting.

Steering is controlled by tie rods attached to the steering shaft and steering knuckle.

### Front Suspension Tools

The threads of the tie rod ends and ball-joints are easily damaged. If you have difficulty removing the tapered studs of tie rods or ball-joints, have a dealer perform this operation. Using a forked tool (pickle fork) will almost certainly damage the boot.

In addition to common hand tools, a special tool set (part No. 2870871) will be required to remove and install the ball-joints from the steering knuckles. A special compressor tool (part No. 2870623) is available to compress the spring when removing or installing it.

A caster gauge (part No. 2870732) may be required to measure the front wheel caster on 1987 and 1988 models with all-wheel drive. The length of the A-arm rear tube is used to adjust the caster.

### Suspension Unit Removal/Installation

#### CAUTION

*The steering knuckle or suspension unit can be removed by raising and blocking the front of the machine, but some prefer to pad the floor of the work area and tip the vehicle on its side. The method of gaining access is left to the discretion of the owner and mechanic, but care should be taken to prevent the ATV from falling.*

1. Remove the front wheel as described in this chapter.

#### CAUTION

*Do not hammer on the threaded stud of the tie rod ball-joint when trying to remove it. Doing so will damage the threads and requires installation of a new tie rod end or complete tie rod assembly.*

2. Detach the tie rod end from the steering knuckle.

3A. On models with mechanical drum brakes, detach the brake cable from the brake arm.

3B. On models with hydraulic disc brakes, remove the 2 brake caliper mounting bolts and lift the caliper away from the brake disc. Hang the caliper from the vehicle with a stiff wire hook.

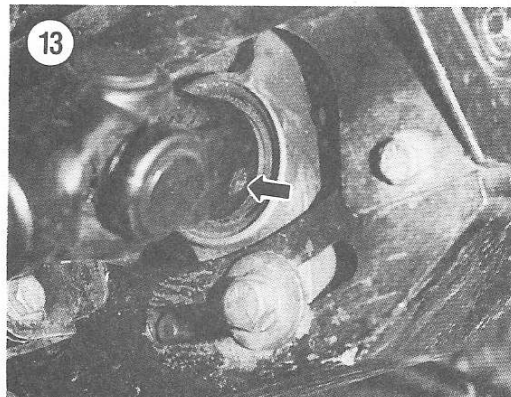
#### NOTE

*Insert a piece of vinyl tubing or plastic between the brake pads in the caliper, in place of the brake disc. That way if the brake lever is accidentally moved, the piston will not be forced from the cylinder. If the piston comes out of the cylinder, the caliper will have to be disassembled to reseat the piston and both front brakes will require bleeding. By blocking the brake pads, the piston cannot be forced out and bleeding the system should not be required.*

#### NOTE

*If the CV joint in the steering knuckle is withdrawn, it must be reassembled as described in Chapter Ten. The drive axle can remain in the steering knuckle while servicing the strut if disassembly is not required.*

4. On all models with all-wheel drive, remove the pin (Figure 13) from the inner universal joint and separate the inner universal joint from the center shaft. Hold the axle in place with wire to keep the CV joint from coming apart.
5. On 1989 and later 4-wheel drive models, detach the wires leading to the front wheel drive coil.
6. It is necessary to either separate the ball-joint from the steering knuckle or detach the inner end of



l drum brakes, de-  
ke arm.

disc brakes, remove  
s and lift the caliper  
the caliper from the

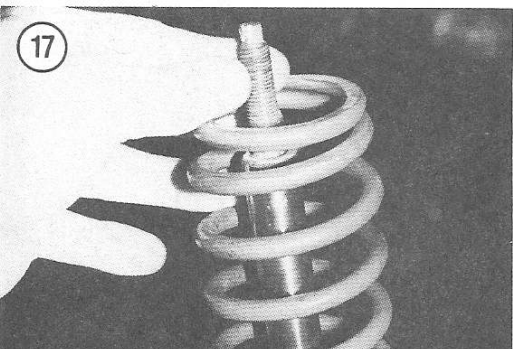
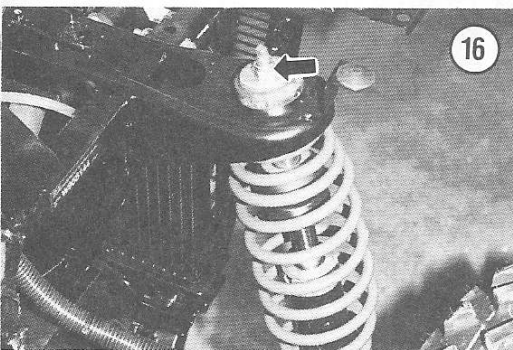
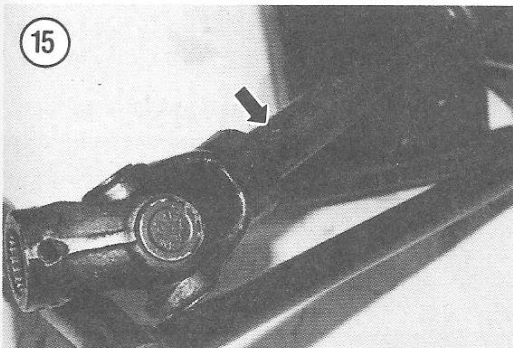
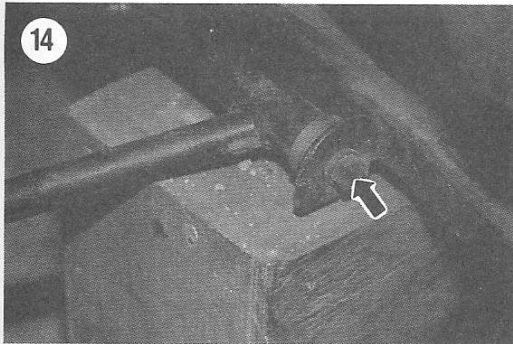
ng or plastic  
he caliper, in  
at way if the  
moved, the  
m the cylin-  
of the cylin-  
ave to be  
piston and  
re bleeding.  
t, the piston  
bleeding the  
ed.

g knuckle is  
sembled as  
The drive  
ing knuckle  
disassembly

rive, remove the  
iversal joint and  
from the center  
wire to keep the

e models, detach  
l drive coil.

te the ball-joint  
the inner end of



the A-arm from the vehicle frame. The procedure used should depend upon the service performed.

**CAUTION**

*Be careful not to damage the ball-joint unless a new unit and the special tools to remove and install it are available.*

- a. If the ball-joint is to be separated from the steering, remove the cotter pin and castellated nut (Figure 12) from the ball-joint. Separate the ball-joint from the A-arm.
  - b. If the A-arm is to be separated from the vehicle frame, remove the bolts (Figure 14) from the inner ends of the A-arm. On models with all-wheel drive attach, the front drive axle to the A-arm to prevent the CV joint from coming apart. Refer to Figure 15.
7. Support the suspension unit, remove the nut (Figure 16) from the top of the suspension shaft, then withdraw the suspension unit (shock absorber, spring and steering knuckle).
  8. Repeat for the other side as required.
  9. Install by reversing the removal procedure. Refer to Table 2 for tightening torques.

**Spring Removal/Installation**

The spring is installed on the hydraulically damped shock absorber. On all models, the shock damper unit is sealed and cannot be disassembled. Service is limited to removal and replacement of the damper unit, spring and mounting bushings.

**WARNING**

*Do not remove the spring without a spring compressor. The spring on some models is under considerable pressure and may fly off and cause injury.*

1. Attach a spring compressor to the shock absorber and compress the spring.
2. Remove the upper spring seat, then remove the spring (Figure 17).
3. Compare the spring free length with a new spring. Replace the spring if it is distorted, cracked, or otherwise damaged. If one spring is replaced, the other should be replaced also.
4. Reassemble by reversing the removal procedure.

### Shock Absorber Removal/Installation

Some conditions of the shock absorber can be evaluated before removing. If broken, bent or leaking fluid, replace the shock absorbers. The damper unit cannot be rebuilt and must be replaced as a unit. It is recommended to install shock absorbers for both sides at the same time.

1. To remove the shock absorber, first remove the spring as described in this chapter.

2A. On 1985-1987 rear wheel drive models, remove the attaching bolts (**Figure 18**), then separate the shock absorber from the steering knuckle.

2B. On 1988-on rear wheel drive models, remove the clamp bolts (**Figure 19** or **Figure 20**), then pull the shock absorber unit from the steering knuckle casting. It may be necessary to spread the clamp joint and to use penetrating oil before the unit can be withdrawn.

3. Clean the steering knuckle before installing the shock absorber.

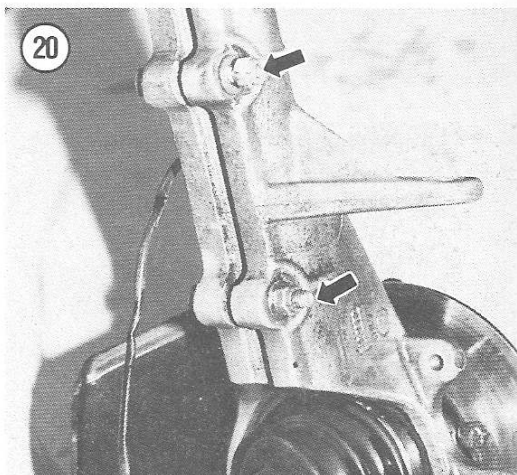
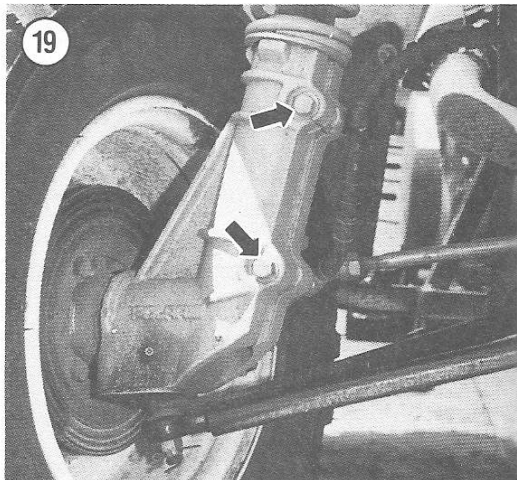
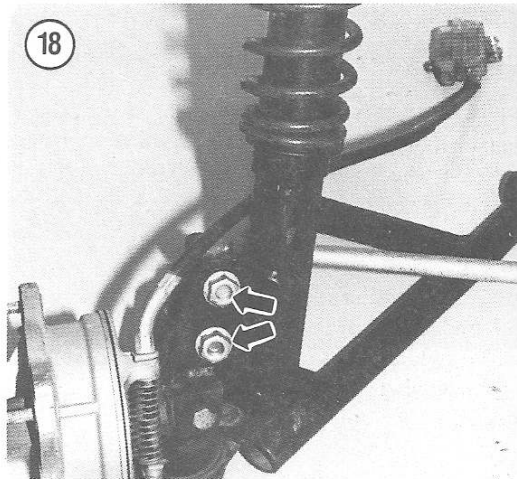
4A. On 1985-1987 rear wheel drive models, do not tighten the lower bolts (**Figure 18**) until after completing the remainder of reassembly. These bolts should be tightened after setting the camber on the front wheels.

4B. On 1987 all-wheel drive models and all 1988-on models, install the shock absorber making certain that the unit is fully seated in the steering knuckle. Tighten the clamp bolts to the torque listed in **Table 2**.

5. Complete assembly by reversing the removal procedure. Refer to **Table 2** for recommended torque values.

6A. On 1985-1987 rear drive models, measure, set and adjust the front wheel camber as follows.

- Place the vehicle on a level surface with the vehicle weight on the wheels.
- Set a square against the wheel as shown in **Figure 21**, then measure the distance between the square and the wheel.
- The top of the wheel (A, **Figure 21**) should be tilted outward approximately 1 cm (0.4 in.) further than the bottom of the wheel (B).
- If the camber is incorrect, loosen bolts (**Figure 18**) and reposition the shock absorber and steering knuckle. Tighten bolts enough to maintain the setting, then recheck.





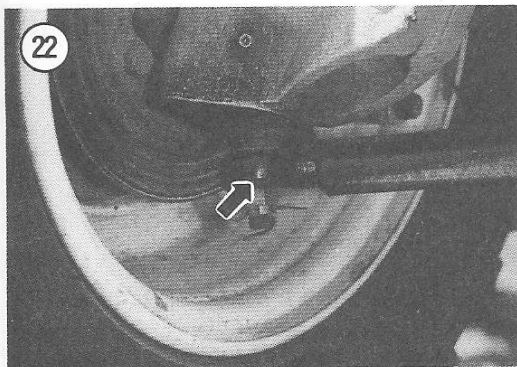
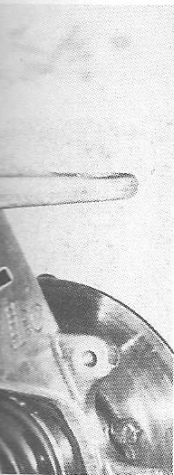
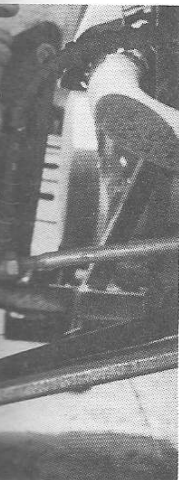
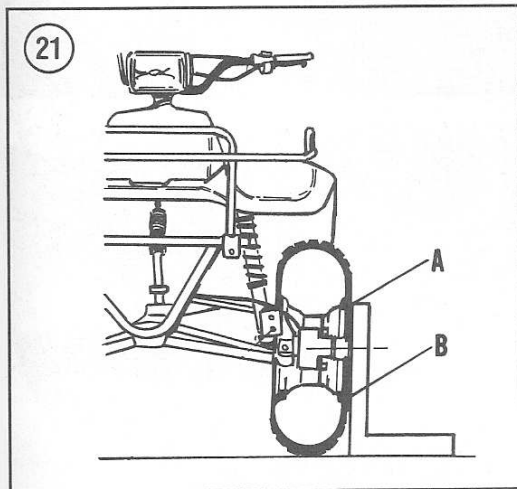
- e. When the camber is set correctly, tighten the 2 bolts (**Figure 18**) to the torque listed in **Table 2**.

6B. On 1987 and 1988 all-wheel drive models, the length of the A-arm rear tube is adjustable to change the front wheel caster. The front shock absorber tube should be inclined to the rear about 2°. The special caster gauge (part No. 2870732) can be used to measure the caster.

6C. On 1988 rear wheel drive models and all 1989-on models, the caster and camber is not adjustable and should be correct unless parts are bent. If the frame or other components is bent, consult a Polaris dealer.

### Steering Knuckle Removal/Installation

- 1A. On models with only rear wheel drive, remove the front hub as described in this chapter.



- 1B. On models with all-wheel drive, remove the front hub as described in Chapter Ten.

2. Use the procedure in this chapter to remove the suspension unit.
3. Remove the shock absorber from the steering knuckle as described in this chapter.
4. Install the steering knuckle by reversing the removal procedure.

### Control Arm (A-Arm) Removal/Installation

#### CAUTION

*The lower control arm (A-arm) can be removed by raising and blocking the front of the machine, but some prefer to pad the floor of the work area and tip the vehicle on its side. The method of gaining access is left to the discretion of the owner and mechanic, but care should be taken to prevent the ATV from falling.*

1. Remove the front wheel as described in this chapter.

#### NOTE

*If the CV joint in the steering knuckle is withdrawn, it must be reassembled as described in Chapter Ten. The drive axle can remain in the steering knuckle while servicing the strut if disassembly is not required.*

2. On models with all-wheel drive, wire the axle to the steering knuckle to keep the CV joint from coming apart.
3. Remove the cotter pin and castellated nut (**Figure 22**) from the threaded stud of the ball-joint.

#### CAUTION

*Be careful not to damage the ball-joint unless a new unit and the special tools to remove and install it are available. Do not hammer on the threaded stud of the ball-joint when trying to separate it from the A-arm. Doing so will damage the threads making it necessary to install a new ball-joint or steering knuckle assembly. Using a forked tool (pickle fork) will usually damage the boot.*

4. Carefully withdraw the tapered ball-joint stud from the end of the A-arm.

5. Remove the bolts (**Figure 23** and **Figure 24**) from the inner ends of the A-arm, then remove the A-arm.
6. Several different spacers and bushings have been used in the A-arm. If replacement parts are required, be sure the parts are correct. If not properly maintained by greasing, the bushings may be stuck in the A-arm.

**NOTE**

*Do not intermix the pivot bolts, nuts, bushings and thrust covers when disassembling and cleaning the A-arms. Separate the parts so they can be installed in their original mounting positions.*

7. Clean parts in solvent and dry with compressed air.
8. Inspect the A-arm for cracks, fractures and dents. If damage is severe, replace the control arm. Never try to straighten a damaged or dented control arm, because it cannot be straightened properly.
9. Inspect each bushing, washer and spacer for severe wear or damage. Replace rusted or otherwise damaged parts.
10. Inspect attaching bolts for bending or other damage. Replace damaged bolts.
11. Inspect the attaching tabs on the frame for damage. If repair is required, consult a competent welder familiar with this type of repair.
12. Inspect ball-joints as described under *Ball-joint Inspection and Replacement* in this chapter before reassembling.

**Ball-Joint Inspection/Replacement**

A single ball-joint is located in the bottom of each steering knuckle and is attached to each lower control arm (A-arm). The ball-joints are a tight fit in the steering knuckle and should not be removed unless replacement is necessary.

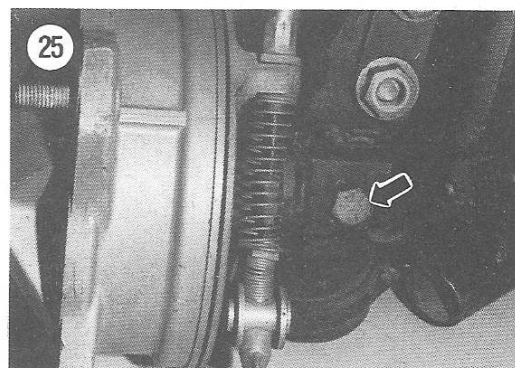
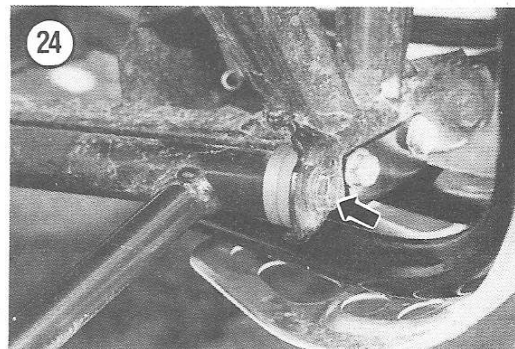
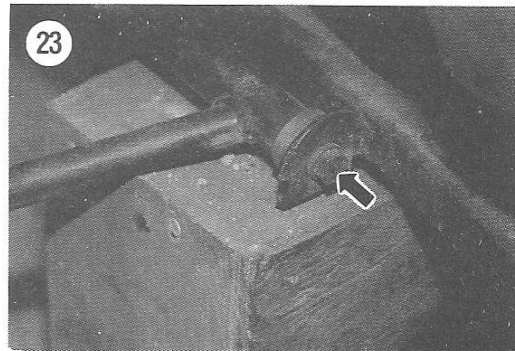
1. Inspect the ball-joint rubber boot. The swivel joint is packed with grease. If the rubber boot or ball-joint is damaged, replace ball-joint as follows.

2A. On 1985-1987 models with rear wheel drive, the ball-joint is retained in the steering knuckle by the screw shown in **Figure 25**. Remove the screw and pull the ball-joint from the steering knuckle.

**NOTE**

*It may be easier to remove the ball-joints if the steering knuckle is first removed as described in this chapter. It may be necessary to heat the steering knuckle to soften the thread-locking compound applied to screw threads when removing the ball-joint from the steering knuckle.*

- 2B. On all except early (1985-1987) rear drive models, the ball-joint is held in place by a plate, which is



Remove the ball-joint from the steering knuckle. It is first removed at the steering knuckle. Then, remove the retaining screw threads from the steering knuckle.

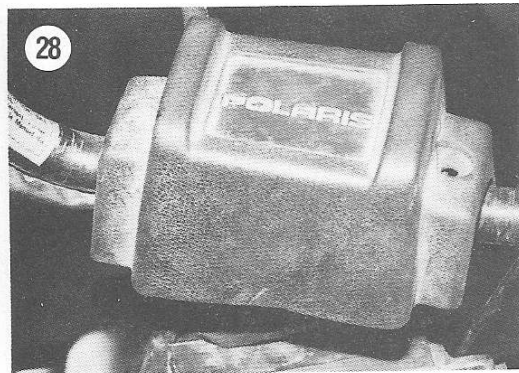
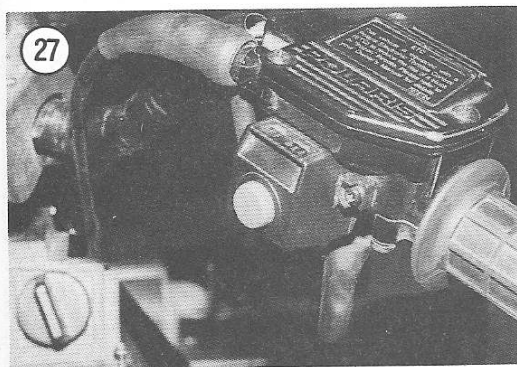
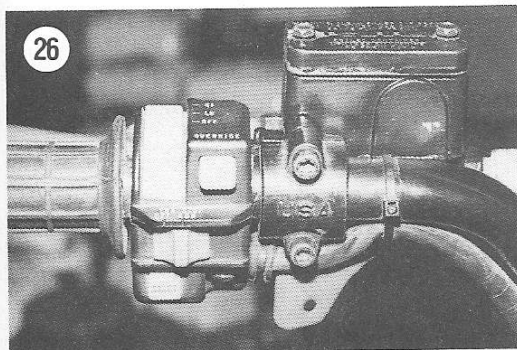
Remove the rear drive modulator from the rear drive modulator by a plate, which is



attached to the aluminum knuckle casting with 2 screws. The threads of the screws are coated with thread-locking compound and may be difficult to remove. Pull the ball-joint from the steering knuckle after removing the retaining plate.

3. Clean the pocket in the steering knuckle for the ball-joint and the retaining screw holes. If either is damaged, repair or replace the steering knuckle.

4. Install the new ball-joint and retaining screw(s). Refer to **Table 2** for correct tightening torque.



### Handlebar Removal/Installation

#### CAUTION

*Cover the fuel tank and front fender with a heavy cloth or tarp to protect them from any brake fluid that may be accidentally spilled. Use soapy water to wash any spilled brake fluid from painted or plated surface immediately to prevent damage to the finish. Rinse the area thoroughly with clean water making sure that brake fluid and soap are both removed.*

1. Refer to Chapter Fourteen and remove the mechanical brake lever assembly or hydraulic brake master cylinder from the left side of the handle bar. Refer to **Figure 26**. Rest the brake on the front fender. Keep the hydraulic brake reservoir upright to keep fluid from spilling and to prevent air from entering the brake system. Do not detach the brake line from the master cylinder unless you are going to remove the master cylinder from the vehicle.

#### CAUTION

*Do not allow the hydraulic cylinder to hang by its hose, because this could damage the hose.*

2. Remove all ties or bands holding the wires and cables to the handlebar.
3. Remove the screws securing the left-hand switch assembly, then remove the switch housing from the handlebar. Refer to **Figure 26**. Lay the switch assembly on the front fender.
4. Remove the screws and clamp securing the throttle and switch assembly to the right side of the handlebar and remove the assembly. Lay the assembly on the front fender. Do not allow the cable to be kinked, crimped or damaged.
5. Remove the cover (**Figure 28**) from the handlebar center clamp (if used), then remove the screws attaching the handlebar clamp (**Figure 29**). Nuts are located under the top flange of the steering shaft.
6. Remove the handlebar.
7. To maintain a good grip on the handlebar and to prevent it from slipping, clean the knurled section of the handlebar with a wire brush. It should be kept rough so it will be held securely by the clamp. The center clamp should also be kept clean and free of any metal that may have been gouged loose by handlebar slippage.

12

8. Position the handlebar on the lower handlebar holder and hold it in place.
9. Install the upper handlebar clamp. On some models, a plate may be installed above the clamp as shown in **Figure 29**.
10. Install the handlebar retaining screws and nuts. Tighten the forward screws first and then tighten the rear bolts. Tighten all 4 screws to the torque specification listed in **Table 4**.
11. If you have installed a new handlebar, install new grips. Follow their manufacturer's directions for installing and sealing grips to the handlebar.
12. Position the left-hand switch housing (**Figure 26**) onto the handlebar and seat it next to the grip as shown. Tighten the switch screws securely.
13. Position the brake assembly on the handlebar and install the clamp.
14. Position the throttle and switch assemblies (**Figure 27**) onto the handlebar and secure with clamp screws.
15. Check the brake lever, throttle lever and switch positions on both sides of the handlebars while sitting on the seat. Tighten the clamp screws securely when controls are comfortably positioned.
16. If so equipped, install the handlebar cover (**Figure 28**).
17. After all assemblies have been installed, test each one to make sure it operates correctly with no binding. Correct any problem at this time.
18. Secure the housing wiring harness to the handlebar with wire and cable ties, making sure that wires and cables are properly routed with no sharp bends.

### Tie Rod Removal/Installation

The tie rods connect the lever on the steering shaft to the steering arms on the steering knuckles. Each tie rod includes an inner and outer end attached to a threaded rod. The individual parts can be replaced separately. A puller may be required to separate the tie rod from the steering knuckle and steering shaft.

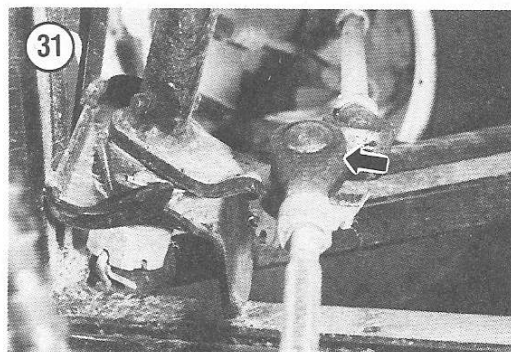
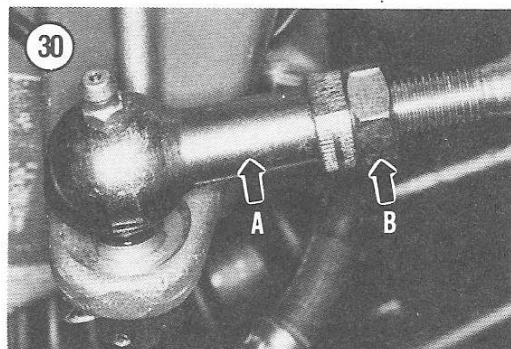
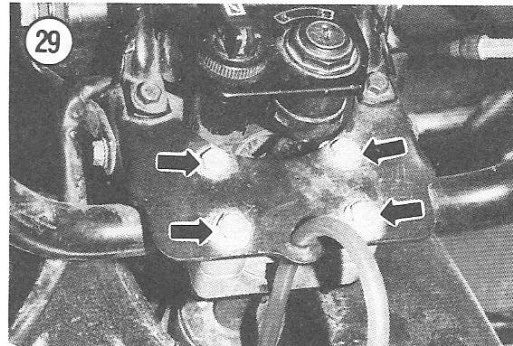
You can replace the outer tie rod ends (A, **Figure 30**) without detaching the tie rod inner end from the steering shaft. When replacing the inner tie rod end (**Figure 31**, **Figure 32** or **Figure 33**), first remove the complete tie rod from the vehicle so that the inner end and tie rod can be properly assembled.

1. Support the vehicle and remove the front wheel(s) as described in this chapter.

2. Before detaching either end of the tie rod, identify the placement of the ends. If improperly installed, the tie rod ends may hit other components causing damage and possible loss of control.

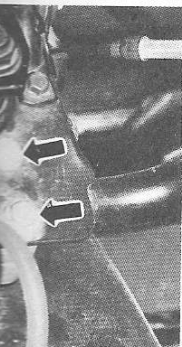
#### CAUTION

*Do not hammer on the threaded stud of the tie rod when trying to remove it. Doing so will damage the threads and require installation of a new tie rod end. Using a forked tool (pickle fork) may damage the boot or the tie rod.*



f the tie rod, identify  
nproperly installed,  
omponents causing  
ontrol.

aded stud of  
to remove it.  
t threads and  
w tie rod end.  
le fork) may  
rod.



3. To disconnect the tie rod ball-joint from the steering knuckle:

- a. Remove the cotter pin from the tie rod ball-joint stud nut. Discard the cotter pin and always install a new pin when installing.
- b. Remove the castellated nut from the ball-joint stud.

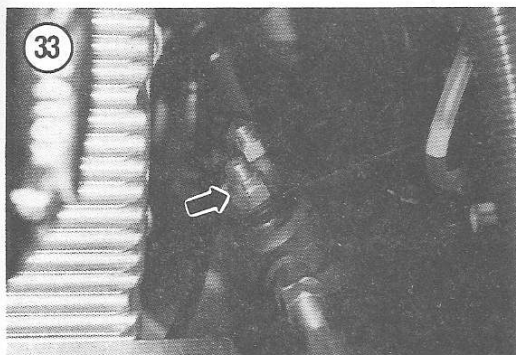
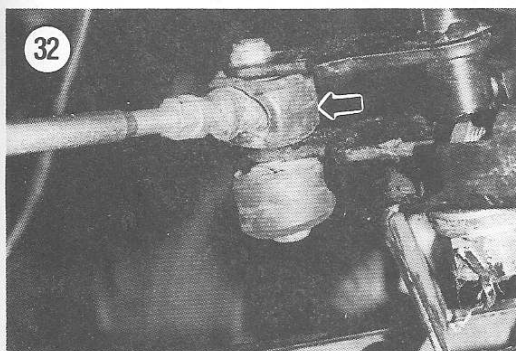
**NOTE**

*When installing the puller, make sure you do not damage the ball-joint rubber seal. If the angled arms on the puller are too thick, they can damage the seal.*

- c. Attach a 2-jaw puller to the steering knuckle and center the puller's pressure bolt against the ball-joint stud.
- d. Tighten the puller to apply pressure against the ball-joint stud, checking that the puller is not cocked to one side.

**NOTE**

*If the tie rod end does not move easily, it may be necessary to strike the top of the puller with a hammer to free the ball-joint from the steering knuckle.*



*Keep the ball-joint stud under pressure by keeping the puller tight and support the steering arm to keep from damaging it.*

4. If you are going to replace the outer tie rod end it is not necessary to detach the inner end. Refer to *Tie Rod Disassembly/Reassembly* in this chapter.
5. To disconnect the inner tie rod end from the steering shaft:

- a. Remove the cotter pin from the tie rod stud nut. Discard the cotter pin. Some models are equipped with a self-locking nut.
- b. Remove the nut or bolt from the tie rod.

6. Detach the inner end of the tie rod from the lever on the steering shaft.
7. Inspect the tie rod shaft for damage. There should be no creases or bends along the shaft. Check with a straightedge placed against the tie rod shaft.
8. Inspect the rubber boot at the tie rod ends. If the rubber boot is damaged, dirt and moisture can enter the swivel joint and destroy it. If the boot is damaged in any way, disassemble the tie rod and replace the boot and the tie rod end.
9. Pivot the tie rod end back and forth by hand. If the tie rod end moves roughly or with excessive play, replace it.
10. Hold the tie rod end (A, **Figure 30**) with one wrench and loosen the locknut (B, **Figure 30**) with a second wrench.

**NOTE**

*The tie rod ends marked with a groove (outer end), and the locknuts securing the outer tie rod ends have left-hand threads. The inner tie rod ends and locknuts have right-hand threads.*

11. Unscrew and remove the damaged tie rod end(s).
12. Clean the threaded ends of the shaft and threads in the tie rod end with contact cleaner.
13. Thread a locknut and tie rod end onto each end of the tie rod shaft. Thread the ends on approximately the same distance as originally installed. Do not tighten the locknuts until the toe-out is adjusted as described in Chapter Three.
14. It is important to install the tie rods with the ends facing the correct direction so the tie rods and ends will not interfere with any other parts.
  - a. On 1988-on models with rear wheel drive (except Magnum), the studs on the outer tie



rod ends should face up and the studs on the inner ends should face down as shown in **Figure 31**. Refer to **Table 2** for recommended tightening torques. Install new cotter pins in the castellated nuts at both ends.

- b. On 1988-1992 all-wheel drive models, the stud on the outer ends should face down as shown in **Figure 30**. The inner end is attached with a bolt installed from the bottom with a self-locking nut on the top as shown in **Figure 32**. Refer to **Table 2** for recommended tightening torques. Install new cotter pins in the castellated nuts on the outer ends.
  - c. On rear wheel drive Magnum models, the studs at both ends of the tie rods should face down as shown in **Figure 30**. Refer to **Table 2** for recommended tightening torques. Install new cotter pins in the castellated nuts at both ends.
  - d. On 1993-on all-wheel drive models (except Xplorer and Scrambler), the stud on the outer ends should face down as shown in **Figure 30**. The inner end is attached with a bolt installed from the bottom with the self-locking nut on the top as shown in **Figure 32**. Refer to **Table 2** for recommended tightening torques. Install new cotter pins in the castellated nuts at the outside ends.
  - e. On 1995 all-wheel drive Xplorer and Scrambler models, the stud on the outer ends should face down as shown in **Figure 30**. The inner end is attached with bolts installed from the bottom with a self-locking nut on the top as shown in **Figure 33**. Refer to **Table 2** for recommended tightening torques. Install new cotter pins in the castellated nuts at the outside ends.
15. Install the front wheels as described in this chapter.
  16. Check the front wheel toe-out and adjust as necessary before tightening the lock-nuts against the tie rod ends. Measure toe-out as described in Chapter Three.

## STEERING SHAFT

**Figure 34** and **Figure 35** are exploded views of the steering shaft and related components. The steering shaft pivots on split bearing blocks at the top and a bushing block at the lower end. Adjustable tie rods connect the steering shaft to the steering knuckles.

## Removal/Installation

Refer to **Figure 34** (models prior to 1993) or **Figure 35** (1993-on models) for this procedure.

1. Remove the fuel tank as described in Chapter Six and the front fender assembly as described in Chapter Fifteen.
2. Remove both front wheels as described in this chapter.

### CAUTION

*Cover the frame with a heavy cloth or tarp to protect it from any brake fluid that may be accidentally spilled. Use soapy water to wash any spilled brake fluid immediately to prevent damage to the finish. Rinse the area thoroughly with clean water making sure that brake fluid and soap are both removed.*

3. Remove the bolts that clamp the handlebar to the steering shaft. Remove the handlebar clamp.
4. Move the handlebar assembly back away from the steering shaft and place it on the frame. Keep the master cylinder upright to minimize the chance of spilling brake fluid and to keep air from entering the brake system. It is not necessary to detach the hydraulic brake line from the master cylinder.
5. Disconnect both tie rods from the steering shaft as described in this chapter.
- 6A. On early models, remove the cotter pin, nut and washer that secure the bottom of the steering shaft to the frame. See **Figure 34**, typical.
- 6B. On later models, remove the cotter pin, nut and washer that secure the bottom of the steering shaft. Refer to **Figure 36**.
7. Remove the bolts (21, **Figure 34** or 11, **Figure 35**) that hold the upper bearing blocks to the frame, then remove the clamp and block.
8. Carefully lift the steering shaft from the frame.
9. Install the steering shaft by reversing the removal procedure. Adjust the steering stops as described in this chapter.

## Inspection

Refer to **Figure 34** (models prior to 1993) or **Figure 35** (1993-on models) for this procedure.

1. Wash all parts in solvent and dry thoroughly.
2. Inspect the steering shaft carefully. Check the bushing areas of the shaft for wear. Check the shaft

1. Cover
2. Plate
3. Clamp
4. Handlebars
5. Instrument
6. Pad
7. Plate
8. Steering shaft
9. Adjustable tie rod collar
10. Frame
11. Washer
12. Bearing block
13. Washer
14. Tie rod
15. Strut casting
16. A-arm
17. Shaft
18. Bushing
19. Ball-joint
20. Boot
21. Upper bearing block
22. Clamp

prior to 1993) or this procedure. described in Chapter

s described in this

heavy cloth or brake fluid spilled. Use spilled brake damage to thoroughly are that brake moved.

the handlebar to the bar clamp.

back away from the frame. Keep the size the chance of from entering the to detach the hydraulic cylinder.

the steering shaft

cotter pin, nut and the steering shaft

al. cotter pin, nut and the steering shaft.

34 or 11, Figure 22. Locks to the frame,

from the frame. Using the removal as described in

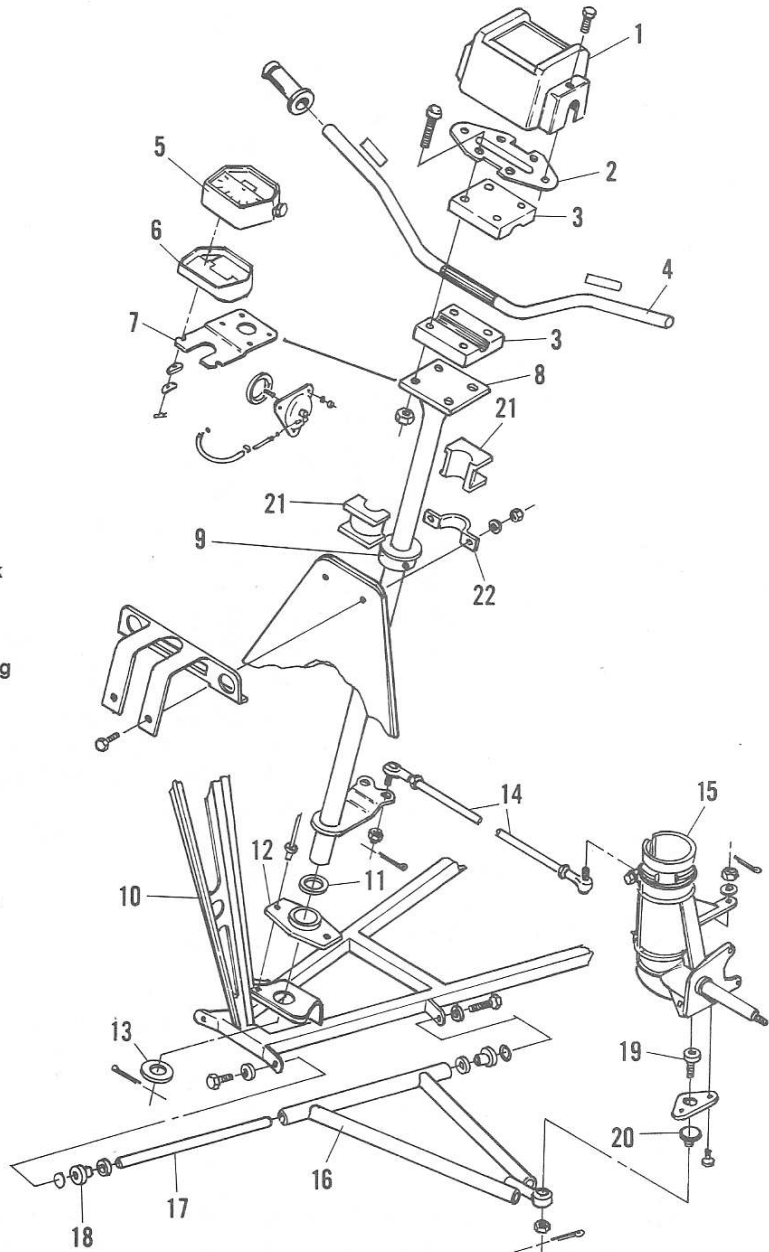
1993) or Figure 12.

thoroughly. Fully. Check the Check the shaft

34

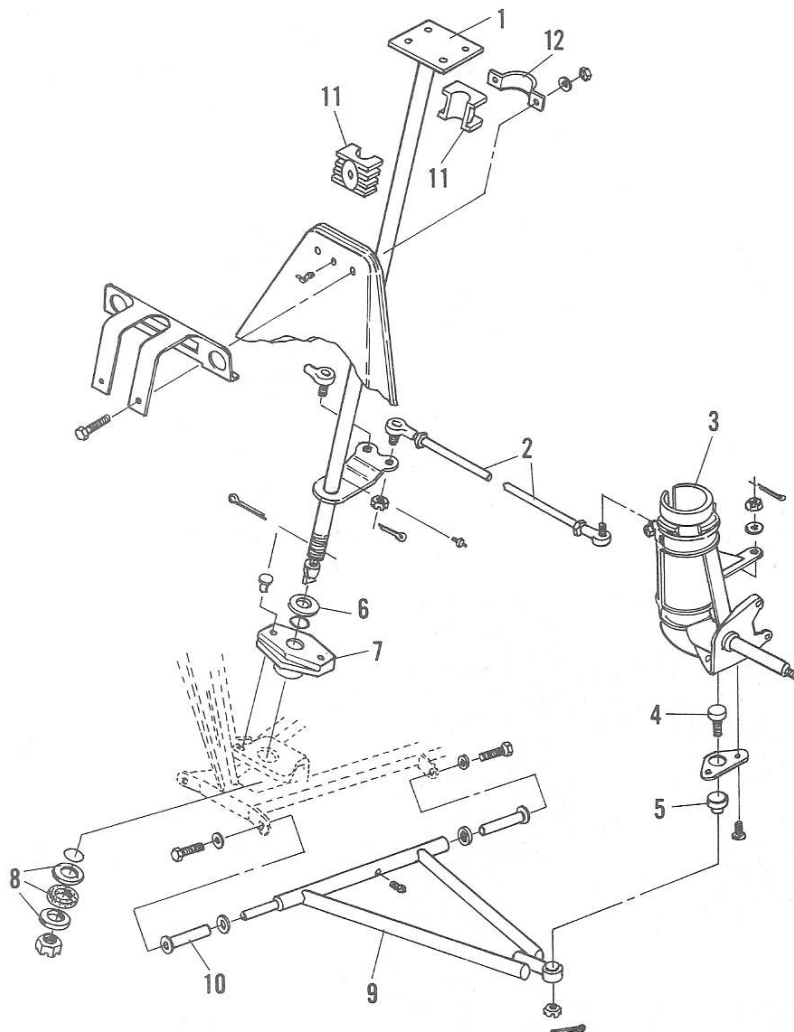
**STEERING AND SUSPENSION  
(TYPICAL, MODELS PRIOR TO 1993)**

1. Cover
2. Plate
3. Clamp
4. Handlebars
5. Instrument
6. Pad
7. Plate
8. Steering shaft
9. Adjustable lock collar
10. Frame
11. Washer
12. Bearing housing
13. Washer
14. Tie rod
15. Strut casting
16. A-arm
17. Shaft
18. Bushing
19. Ball-joint
20. Boot
21. Upper bearing block
22. Clamp



12

35

**STEERING AND SUSPENSION  
(1993-ON MODELS TYPICAL)**

1. Steering shaft
2. Tie rod
3. Strut casting
4. Ball-joint

5. Boot
6. Washer
7. Bearing housing
8. Thrust bearing

9. A-arm
10. Bushing
11. Upper bearing block
12. Clamp

for being bent, especially if the vehicle has been involved in a collision or spill. If the shaft is bent or twisted in any way it must be replaced. A bent shaft will cause rapid and excessive wear to the bushings and may stress other components in the frame and steering system. The shaft should be straight and can be checked between V-blocks.

3. Inspect the tie rod attachment holes in the lever on the lower section of the steering shaft. Check the hole(s) for elongation, cracks or wear. Check the steering shaft lever for being bent. Replace the steering shaft if necessary.
4. Inspect the upper bearing assembly for:
  - a. Worn or damaged bearing block halves.
  - b. Bent or damaged bolts or clamps.
  - c. Worn or damaged upper collar (early models shown in **Figure 34**).
5. Inspect the lower steering shaft machined bushing surface and the threads on the end on later models. If severely scored or damaged, replace the steering shaft and the bushing assembly.
6. Inspect the steering shaft washers and bushing assembly. If the bushing is severely worn or damaged, replace the bushing block as described later in

this chapter. If the O-rings (used on later models [**Figure 35**]) are worn, flattened, cut or swollen, replace both O-rings during reassembly.

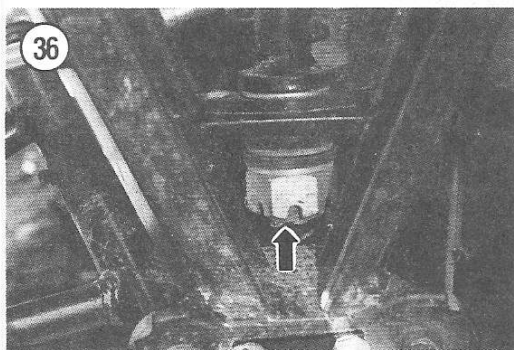
### Steering Shaft Bushing Replacement

All 4-wheel models are equipped with an upper bushing and lower bushing as shown in **Figure 34** or **Figure 35**. The upper bushing is a split block as shown and the lower bushing block is attached to the frame by rivets.

Use the procedure described in this chapter to remove the steering shaft for upper bearing removal. However the upper bushing can be removed before completely removing the steering shaft.

To remove the lower bushing block proceed as follows.

1. Remove the steering shaft from the frame as described in this chapter.
2. Drill out the rivets attaching the bushing block to the frame, then remove the bushing block.
3. Clean the frame bushing mounting area thoroughly.
4. Install the new bushing block using new hardened rivets.
5. Complete assembly by reversing the removal procedure. Coat the bushings with grease before assembling, then grease the bushings as described in Chapter Three again after assembly.



### Adjust Steering Stops

The steering stop screws are located as shown in **Figure 37**. Adjust the stop screws so the front wheels will not turn shorter than 40° from straight ahead. Check to make sure that the wheels cannot contact any part of the vehicle while turning. Depending upon equipment installed on the ATV, it may be necessary to adjust the stops to limit the amount of turning to less than the recommended 40°. It is important that the wheels or tires never rub against any part to the vehicle.

## TIRES AND WHEELS

The vehicle is equipped with tubeless, low-pressure tires designed specifically for off-road use only. Rapid tire wear will occur if the vehicle is ridden on paved surfaces. Due to their low-pressure require-

ments, they should be inflated only with a hand-operated air pump instead of using an air compressor, or the compressed air available at service stations.

#### CAUTION

*Do not overinflate the tires as they will be permanently distorted and damaged. If overinflated they will bulge out similar to an inner tube that is not within the constraints of a tire and will not return to their original contour.*

#### NOTE

*Additional inflation pressure in the stock tires will not improve the ride or handling characteristics of the vehicle. For improved handling, aftermarket tires may be installed.*

It's a good idea to carry a cold patch tire repair kit and hand held pump in the tow vehicle. Removing the tire from the rim is different than on a motorcycle or automobile wheel.

### Tire Changing

The front and rear tire rims used on all models have a very deep built-in ridge (Figure 38) to keep the tire bead seated on the rim under severe riding conditions. This feature also tends to keep the tire on the rim during tire removal.

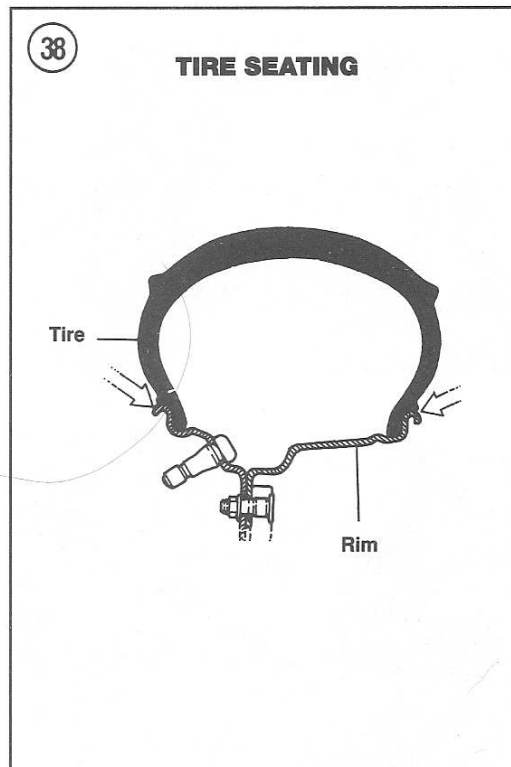
A special tool is required for tire changing on these models. A typical tool is shown in Figure 39.

1. Mark the tire with an arrow indicating the direction of rotation when moving forward. Also mark the tire to indicate its location on the vehicle.
2. Remove the valve stem cap and core and deflate the tire. Do not reinstall the core at this time.
3. Lubricate the tire bead and rim flanges with a liquid dish washing detergent or a rubber lubricant. Press the tire sidewall/bead down to allow the liquid to run into and around the bead area. Also apply lubricant to the area where the bead breaker arm will come in contact with the tire sidewall.
4. Position the wheel in the tire removal tool (Figure 39).
5. Slowly work the tire tool, making sure the tool is against the inside of the rim, and break the tire bead away from the rim.
6. Use your hands to press down on the tire on each side of the tool and break the rest of the bead free from the rim.

#### NOTE

*If the rest of the tire bead cannot be broken loose, raise the tool, rotate the tire/rim assembly and repeat Steps 4 and 5 until the entire bead is broken loose from the rim.*

7. Turn the wheel over and repeat Steps 4-6 to break the bead loose from the opposite side.
8. Remove the tire from the rim using tire irons and rim protectors (Figure 40 and Figure 41).
9. Inspect the tire sealing surface of the rim. If the rim has been severely hit it will probably leak air. Repair or replace the rim as required.
10. Inspect the tire for cuts, tears, abrasions or any other defects.
11. Clean the rims and tire sealing surfaces.
12. Apply clean water to the rim flanges, tire beads and on the outer flange of the rim. Make sure the rim flange is clean. Wipe with a lint-free cloth.
13. Coat both of the tire beads with tire mounting lubricant or a liquid dish washing detergent.
14. Position the rim on the floor with the outside flange up.



38

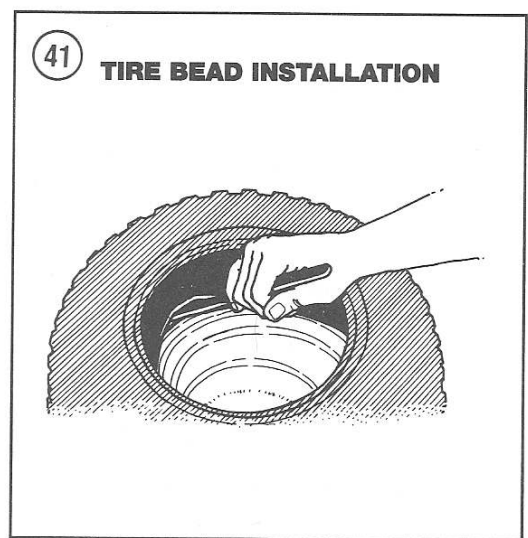
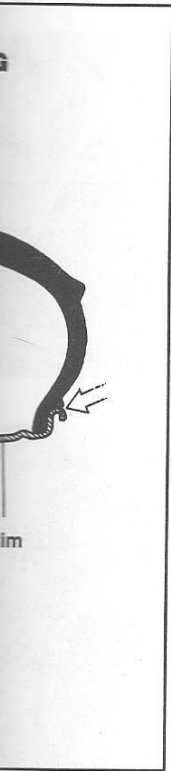
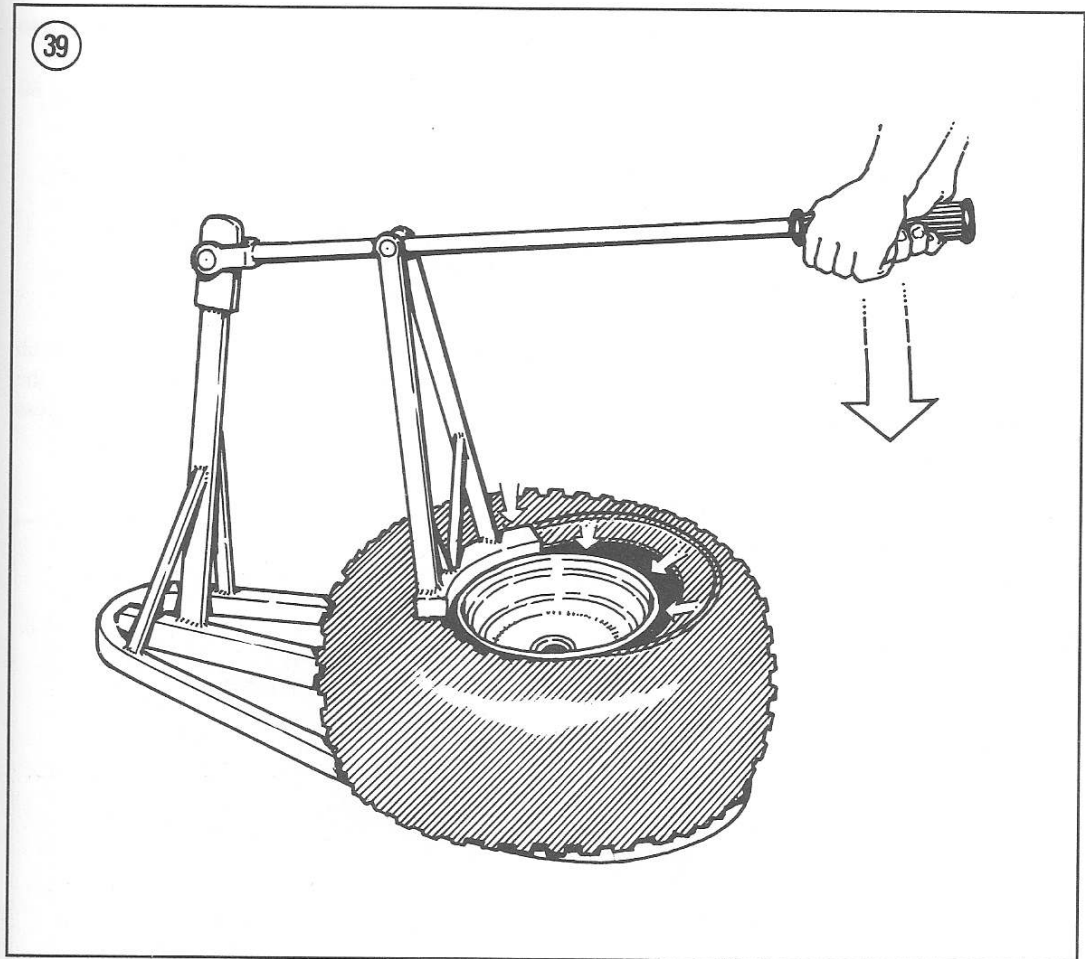
40

Tire Irons



d cannot be  
l, rotate the  
eat Steps 4  
d is broken

Steps 4-6 to break  
side.  
using tire irons and  
ure 41).  
e of the rim. If the  
probably leak air.  
red.  
, abrasions or any  
g surfaces.  
flanges, tire beads  
Make sure the rim  
ree cloth.  
with tire mounting  
detergent.  
with the outside



15. Position the tire so the arrow on the tire points toward the direction of rotation while moving forward.
16. Start the inside bead of the tire onto the outside of the rim.
17. Press the inside bead of the tire onto the rim with your hands.
18. Press the outside bead onto the tire in a similar manner (**Figure 42**).
19. Apply tire mounting lubricant to both beads and inflate the tire to the pressure value listed in **Table 4**.
20. Deflate the tire and let it sit for about 1 hour.
21. Inflate the tire to the recommended air pressure. Refer to **Table 4**.
22. Check the rim line (**Figure 43**) molded into the tire around the edge of the rim. It must be equally spaced all the way around. If the rim line spacing is not equal, the tire bead is not properly seated. Deflate the tire and unseat the bead completely. Lubricate the bead and reinflate the tire.
23. Check for air leaks and install the valve cap.

### Cold Patch Repair

This is the preferred method to patch a tire. The rubber plug type of repair is recommended only for an emergency repair, or until the tire can be patched correctly with the cold patch method.

Use the manufacturer's instructions for the tire repair kit you are going to use. If there are no instructions, use the following procedure.

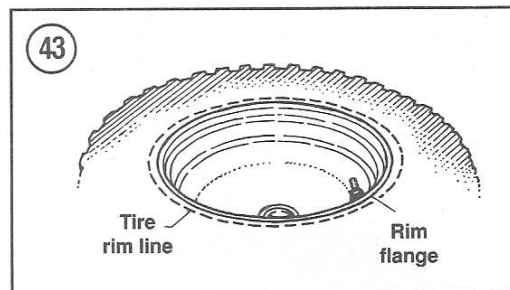
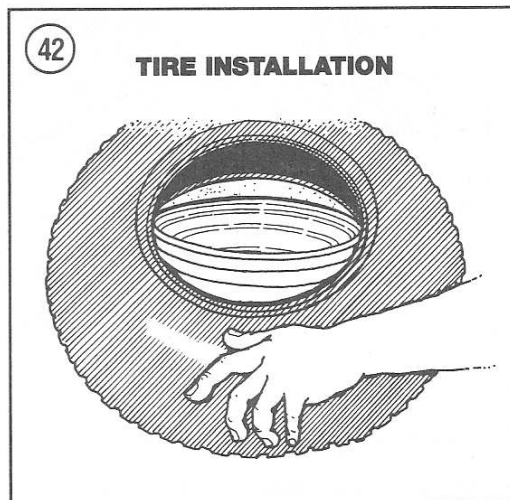
1. Remove the tire as described in this chapter.
2. Prior to removing the object that punctured the tire, mark the location of the puncture with chalk or crayon on the outside of the tire.
3. On the inside of the tire, roughen the area around the hole slightly larger than the patch. Use the cap from the tire repair kit, a pocket knife or coarse sandpaper. Do not scrape too vigorously or you may cause additional damage.
4. Clean the area with a nonflammable solvent. Do not use an oil base solvent as it will leave a residue rendering the patch useless.

5. Apply a small amount of the special cement to the puncture and spread it with your finger.
6. Allow the cement to dry until tacky—usually 30 seconds or so is sufficient.
7. Remove the backing from the patch.

#### CAUTION

*Do not touch the newly exposed rubber with your fingers or the patch will not stick firmly.*

8. Center the patch over the hole. Hold the patch firmly in place for about 30 seconds to allow the cement to dry. If you have a roller use it to help press the patch into place.
9. Dust the area with talcum powder.



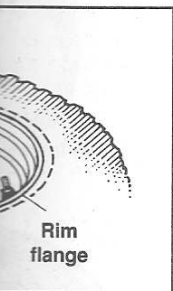
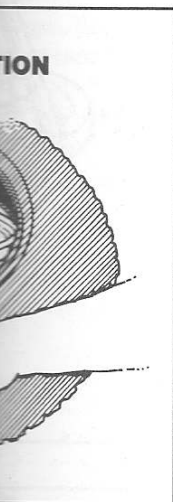
special cement to  
our finger.  
tacky—usually 30

patch.

osed rubber  
atch will not

e. Hold the patch  
onds to allow the  
use it to help press

der.



**Table 1 FRONT SUSPENSION AND FRONT WHEEL DRIVE**

	Drive wheels	Type	Brake type
<b>1985</b>			
Scrambler W857027	Rear	Tricycle	Mech. drum
Trail Boss W857527	Rear	4-wheel	Mech. drum
<b>1986</b>			
Scrambler W867027	Rear	Tricycle	Mech. drum
Trail Boss W867527	Rear	4-wheel	Mech. drum
Trail Boss W867627	Rear	4-wheel	Mech. drum
<b>1987</b>			
Trail Boss W877527	Rear	4-wheel	Mech. drum
Cyclone W877828	Rear	4-wheel	Mech. drum
Trail Boss 4 × 4 W878027, W878127 & W878327	All	4-wheel	Hyd. disc
<b>1988</b>			
Trail Boss 2 × 4 W887527	Rear	4-wheel	Hyd. disc
Trail Boss 4 × 4 W888127	All	4-wheel	Hyd. disc
T. B. 250 R/ES X888528	Rear	4-wheel	Hyd. disc
T. B. 250 R/ES W888528	Rear	4-wheel	Hyd. disc
<b>1989</b>			
Trail Boss W898527	Rear	4-wheel	Hyd. disc
Trail Boss 2 × 4 W897527	Rear	4-wheel	Hyd. disc
Trail Boss 4 × 4 W898127	All	4-wheel	Hyd. disc
Big Boss 4 × 6 X898627	Rear	6-wheel	Hyd. disc
Big Boss 4 × 6 W898627	Rear	6-wheel	Hyd. disc
<b>1990</b>			
Trail Blazer W907221	Rear	4-wheel	Hyd. disc
Trail Boss 250 W908527, 2 × 4 W907527 & 2 × 4-350L W907539	Rear	4-wheel	Hyd. disc
Trail Boss 4 × 4 W908127	All	4-wheel	Hyd. disc
T.B. 4 × 4-350L W908139	All	4-wheel	Hyd. disc
Big Boss 4 × 6 W908627	Rear	6-wheel	Hyd. disc
<b>1991</b>			
Trail Blazer W917221	Rear	4-wheel	Hyd. disc
Trail Boss 250 W918527, 2 × 4 W917527 & 2 × 4-350L W917539	Rear	4-wheel	Hyd. disc
Trail Boss 4 × 4 W918127	All	4-wheel	Hyd. disc
T.B. 4 × 4-350L W918139	All	4-wheel	Hyd. disc
Big Boss 4 × 6 W918627	Rear	6-wheel	Hyd. disc
Big Boss 6 × 6 W918727	All	6-wheel	Hyd. disc
<b>1992</b>			
Trail Blazer W927221	Rear	4-wheel	Hyd. disc
Trail Boss 250 W928527, 2 × 4 W927527 & 2 × 4-350L W927539	Rear	4-wheel	Hyd. disc
Trail Boss 4 × 4 W928127	All	4-wheel	Hyd. disc
T.B. 4 × 4-350L W928139	All	4-wheel	Hyd. disc
Big Boss 4 × 6 W928627	Rear	6-wheel	Hyd. disc
Big Boss 6 × 6 W928727	All	6-wheel	Hyd. disc
<b>1993</b>			
Trail Blazer W937221	Rear	4-wheel	Hyd. disc
Trail Boss W938527	Rear	4-wheel	Hyd. disc
Sportsman W938039	All	4-wheel	Hyd. disc
250 2 × 4 W937527	Rear	4-wheel	Hyd. disc
350 2 × 4 W937539	Rear	4-wheel	Hyd. disc
250 4 × 4 W938127	All	4-wheel	Hyd. disc
350 4 × 4 W938139	All	4-wheel	Hyd. disc
250 6 × 6 W938727	All	6-wheel	Hyd. disc
350 6 × 6 W938739	All	6-wheel	Hyd. disc

(continued)



Table 1 FRONT SUSPENSION AND FRONT WHEEL DRIVE (continued)

	Drive wheels	Type	Brake type
<b>1994</b>			
Trail Blazer 2W W947221	Rear	4-wheel	Hyd. disc
Trail Boss 2W W948527	Rear	4-wheel	Hyd. disc
Sport W948540	Rear	4-wheel	Hyd. disc
Sportsman 4 × 4 W948040	All	4-wheel	Hyd. disc
300 2 × 4 W947530	Rear	4-wheel	Hyd. disc
400 2 × 4 W947540	Rear	4-wheel	Hyd. disc
300 4 × 4 W948130	All	4-wheel	Hyd. disc
400 4 × 4 W948140	All	4-wheel	Hyd. disc
300 6 × 6 W948730	All	6-wheel	Hyd. disc
400 6 × 6 W948740	All	6-wheel	Hyd. disc
<b>1995</b>			
Trail Blazer W957221	Rear	4-wheel	Hyd. disc
Trail Boss W958527, 300 2 × 4 W957530 & 400 2 × 4 W957540	Rear	4-wheel	Hyd. disc
300 4 × 4 W958130	All	4-wheel	Hyd. disc
Scrambler W957840	Rear	4-wheel	Hyd. disc
Sport W958540	Rear	4-wheel	Hyd. disc
Sportsman 4 × 4 W958040	All	4-wheel	Hyd. disc
Xplorer 4 × 4 W959140	All	4-wheel	Hyd. disc
Magnum 2 × 4 W957444	Rear	4-wheel	Hyd. disc
Magnum 4 × 4 W958144	All	4-wheel	Hyd. disc
400 6 × 6 W958740	All	6-wheel	Hyd. disc

Table 2 TORQUE SPECIFICATIONS

	N-m	ft.-lb.
A-arm attaching bolt (inner end)	40.7	30
A-arm ball joint stud nut	33.9	25
Ball joint retainer plate screws	10.8	8
Fork tubes (3-wheel models)		
Lower retaining bolt*	23.0	17
Front axle nut (3-wheel models)	48.8	36
Front brake caliper bolts	24.4	18
Front hub nut (2 × 4)	54.2	40
Front wheel lug nuts	20.3	15
Handlebar clamp block	10.9-13.6	8-10
Rear wheel lug nuts	67.8	50
Steering crown (3-wheel models)		
Upper clamp bolts	19.0	14
Lower clamp bolts	29.8	22
Shock absorber (lower bolts)		
1985-1987, rear drive models	67.8	50
Shock absorber clamp bolts		
1988-on, all models	20.3	15
1987, all-wheel drive models	20.3	15
Tie rod attaching bolt	33.9-40.7	25-30
Tie rod castelated nut	31.2-32.5	23-24
Tie rod end jam nut	16.3-18.9	12-14
Top strut (shock absorber) nut	20.3	15

\* Apply Loctite 680 to the threads before installing.

FRONT SUSPENSION

Part oil  
typeCapacity  
Level\*\*  
Spring free length

\*\* Part oil should

1985

Scrambler W957840

Size

Pressure

Trail Boss W957840

Size

Pressure

1986

Scrambler W957840

Size

Pressure

Trail Boss W957840

Size

Pressure

Trail Boss W957840

Size

Pressure

1987

Trail Boss W957840

Size

Pressure

Cyclone W97700

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

1988

Trail Boss 2 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Trail Boss 250 R

Size

Pressure

**Table 3 TRICYCLE FORK SPECIFICATIONS**

Fork oil type	SAE 10
Capacity	117 mL (3.96 fl.oz.)
Level *	42 cm (16.5 in.)
Spring free length	50.1 cm (19.73 in.)
* Fork oil should be measured from top of inner tube with spring removed and tube fully compressed.	

**Table 4 TIRE SIZE AND PRESSURE**

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1985</b>		
Scrambler W857027		
Size	22 × 11.00 × 8	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss W857527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>1986</b>		
Scrambler W867027		
Size	22 × 11.00 × 8	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss W867527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss W867627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>1987</b>		
Trail Boss W877527		
Size	22 × 8.00 × 8	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Cyclone W877828		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878027		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878327		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>1988</b>		
Trail Boss 2 × 4 W887527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W888127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 250 R/ES X888528		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)

(continued)

Table 4 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
1988 (continued)		
Trail Boss 250 R/ES W888528		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
1989		
Trail Boss W898527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 W897527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 4 × 4 W898127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Big Boss 4 × 6 X898627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	34.5 (5)
Big Boss 4 × 6 W898627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	34.5 (5)
1990		
Trail Blazer W907221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 250 W908527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 W907527		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 - 350L W907539		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W908127		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 - 350L W908139		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
Big Boss 4 × 6 W908627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
1991		
Trail Blazer W917221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 250 W918527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 W917527		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 - 350L W917539		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)

(continued)

1991 (continued)

Trail Boss 4 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Big Boss 4 × 6

Size

Pressure

Big Boss 6 × 6

Size

Pressure

1990

Trail Blazer W90

Size

Pressure

Trail Boss 250 W

Size

Pressure

Trail Boss 2 × 4

Size

Pressure

Trail Boss 2 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Trail Boss 4 × 4

Size

Pressure

Big Boss 4 × 6

Size

Pressure

Big Boss 6 × 6

Size

Pressure

1990

Trail Blazer W90

Size

Pressure

Trail Boss W908

Size

Pressure

Sportsman W90

Size

Pressure

250 2 × 4 W9075

Size

Pressure

350 2 × 4 W9075

Size

Pressure

**Table 4 TIRE SIZE AND PRESSURE (continued)**

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1991 (continued)</b>		
<b>Trail Boss 4 × 4 W918127</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 - 350L W918139</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Big Boss 4 × 6 W918627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>Big Boss 6 × 6 W918727</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1992</b>		
<b>Trail Blazer W927221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 250 W928527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 W927527</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 - 350L W927539</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 W928127</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 - 350L W928139</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Big Boss 4 × 6 W928627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>Big Boss 6 × 6 W928727</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1993</b>		
<b>Trail Blazer W937221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss W938527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Sportsman W938039</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>250 2 × 4 W937527</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>350 2 × 4 W937539</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)

(continued)

Table 4 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1993 (continued)</b>		
250 4 × 4 W938127		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
350 4 × 4 W938139		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
250 6 × 6 W938727		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
350 6 × 6 W938739		
Size	25 × 8.00 × 10	25 × 12.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1994</b>		
Trail Blazer 2W W947221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2W W948527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Sport W948540		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Sportsman 4 × 4 W948040		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
300 2 × 4 W947530		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
400 2 × 4 W947540		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
300 4 × 4 W948130		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
400 4 × 4 W948140		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
300 6 × 6 W948730		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
400 6 × 6 W948740		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1995</b>		
Trail Blazer W957221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss W958527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
300 2 × 4 W957530		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)

(continued)

<b>1993 (continued)</b>	
400 2 × 4 W938127	
Size	
Pressure	
300 4 × 4 W938139	
Size	
Pressure	
Scrambler W938727	
Size	
Pressure	
Sport W938739	
Size	
Pressure	
Sportsman 4 × 4	
Size	
Pressure	
Explorer 4 × 4 W948527	
Size	
Pressure	
Magnum 2 × 4 W948540	
Size	
Pressure	
Magnum 4 × 4 W948040	
Size	
Pressure	
400 6 × 6 W948730	
Size	
Pressure	

**Table 4 TIRE SIZE AND PRESSURE (continued)**

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1995 (continued)</b>		
<b>400 2 × 4 W957540</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>300 4 × 4 W958130</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Scrambler W957840</b>		
Size	23 × 7.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Sport W958540</b>		
Size	23 × 7.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Sportsman 4 × 4 W958040</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Xplorer, 4 × 4 W959140</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Magnum 2 × 4 W957444</b>		
Size	23 × 7.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Magnum 4 × 4 W958144</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>400 6 × 6 W958740</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	34.5 (5)	34.5 (5)

## CHAPTER THIRTEEN

# REAR SUSPENSION

This chapter contains repair and replacement procedures for the rear wheel, rear hub and rear suspension components. Service to the rear suspension consists of periodically checking bolt tightness, replacing the swing arm bushings and servicing the rear spring/shock unit.

Drive chain size and the number of links are listed in **Table 1**. Tightening torques are listed in **Table 2**. **Table 3** lists the recommended tire sizes and inflation pressures. **Tables 1-3** are found at the end of this chapter.

### REAR WHEELS

#### Removal

1. Park the vehicle on level ground and set the parking brake. Block the front wheels so the vehicle will not roll in either direction.

2. Lift the vehicle so both rear wheels are off the ground. Support the vehicle with jackstands or wooden blocks.

3A. To remove the tire/wheel assembly only, remove the four lug nuts that hold the rear wheel to the hub.

3B. To remove the tire/wheel and the rear wheel hub, remove the cotter pin, axle nut (**Figure 1**) and washer that hold the rear hub to the rear axle. Remove the tire/wheel and hub from the rear axle as an assembly.

4. Install by reversing these removal steps, noting the following.

5A. If only the tire/wheel reassembly was removed, perform the following:

- a. Place the tire/wheel assembly onto the rear hub studs.
- b. Install the wheel lug nuts that secure the rear wheel to the rear hub. First tighten the nuts

Finger tight.  
listed in Table  
5B. If the tire/wheel  
as an assembly, per  
a. Slide the  
the rear axle  
b. Install the wa  
that secure th  
c. Tighten the r  
cation listed  
necessary, to  
nut slot.  
d. Insert a new  
slots in the re  
Bend the end  
to lock it.

The procedure is  
is the same as for  
Chapter Twelve 5



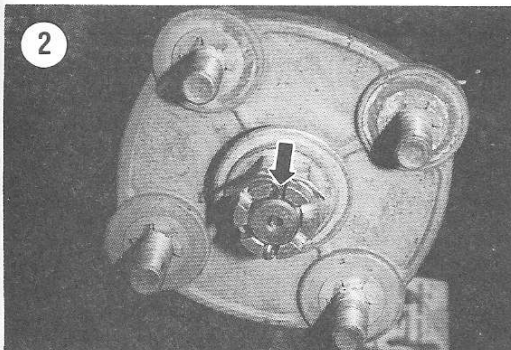
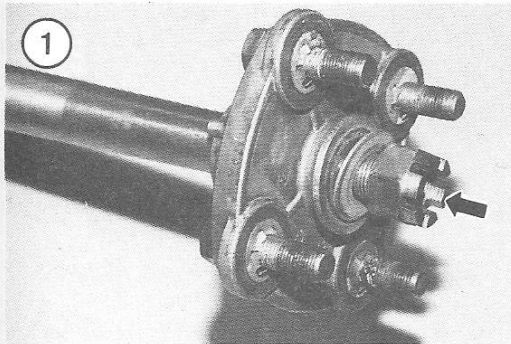
finger tight, then torque to the specification listed in **Table 2**.

5B. If the tire/wheel and the axle hub were removed as an assembly, perform the following:

- a. Slide the axle hub and wheel assembly onto the rear axle splines.
- b. Install the washer and the axle nut (**Figure 1**) that secure the axle hub to the rear axle.
- c. Tighten the rear axle nut to the torque specification listed in **Table 2**. Tighten the nut, if necessary, to align the cotter pin hole with the nut slot.
- d. Insert a new cotter pin (**Figure 2**) through the slots in the nut and through the hole in the axle. Bend the ends of the cotter pin around the nut to lock it.

**REAR TIRES**

The procedure to remove and repair the rear tires is the same as for servicing the front tires. Refer to Chapter Twelve for tire service.



**REAR AXLE**

**Figure 3** shows the rear axle and driven sprocket. Refer to the following for service to the rear axle on 3- or 4-wheel models. The same general procedures can be followed to service the center axle and the rearmost axle on 6-wheel models.

This section describes complete service to the axle, sprocket and center (bearing) housing. The driven sprocket can be removed with the rear axle installed on the vehicle. The axle and center (bearing) housing should be removed before disassembling the center housing or removing the axle from the bearings.

The swing arm can be removed from the vehicle before removing the rear axle and the center housing as described in the swing arm section of this chapter. If it is later determined that the rear spring, shock absorber and/or swing arm requires service, these parts can be removed after the rear axle.

**Removal**

1. Park the vehicle on a level surface and block the front wheels so the vehicle cannot roll in any direction.

*NOTE*

*Threads of the 2 large nuts (**Figure 4**) are coated with locking compound and are very fine threads. These nuts are very tight and may be difficult to remove, so be extremely careful. If necessary, apply heat to the nuts to soften the locking compound.*

2. If the center housing and sprocket hub are to be disassembled, it is often easier to loosen the 2 large nuts (**Figure 4**) before removing the axle.
3. Lift and support the rear of the vehicle. Secure the vehicle so it will not fall when removing the rear axle assembly. Allow sufficient room if the swing arm and/or the rear spring/shock absorber must also be removed.

*NOTE*

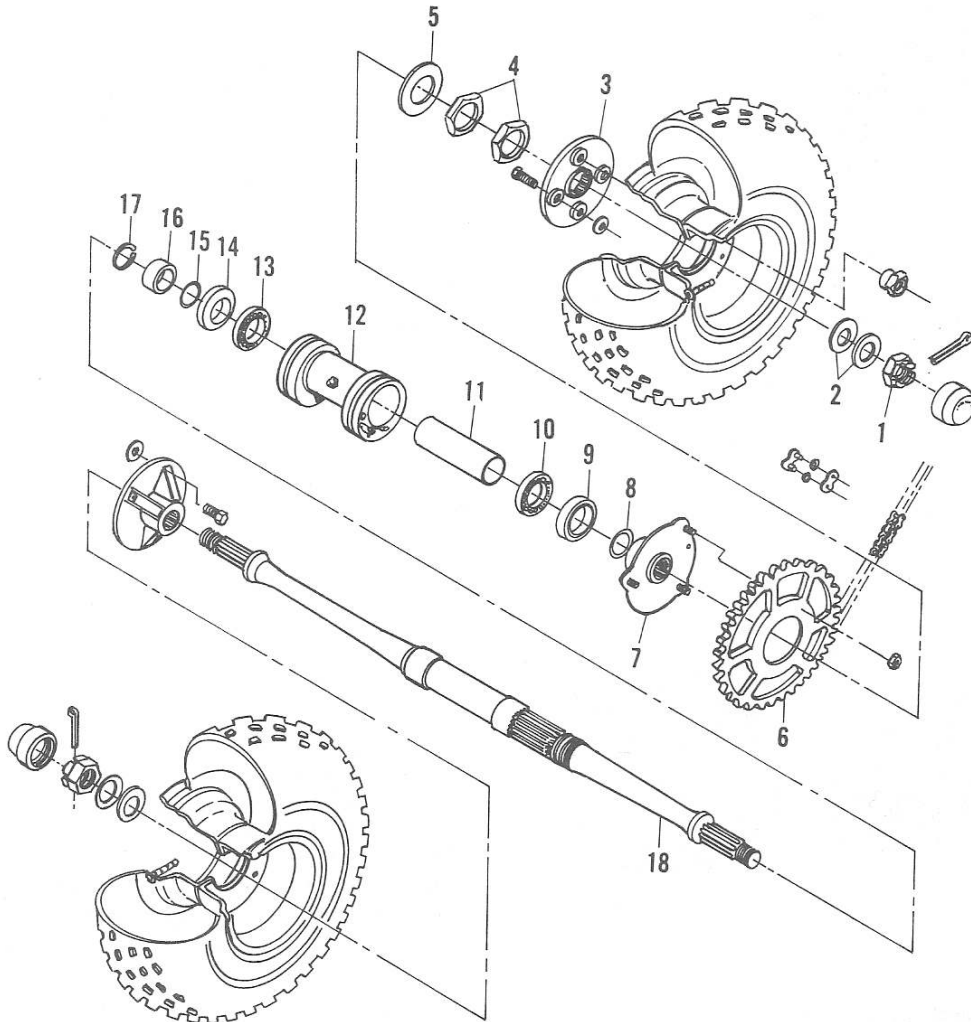
*It may be necessary to use a puller (**Figure 5**) to remove the wheel hubs from the ends of the axle.*

4. Remove both rear wheels as described in this chapter. The wheel hub (**Figure 6**) must be removed from the left side so the axle can be withdrawn from



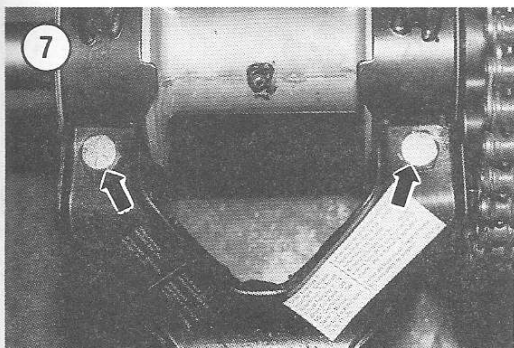
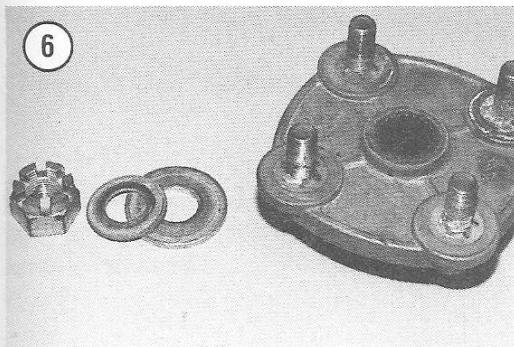
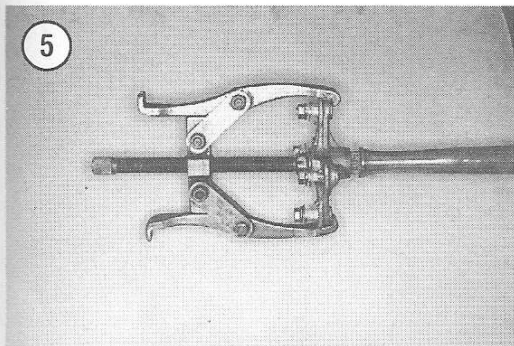
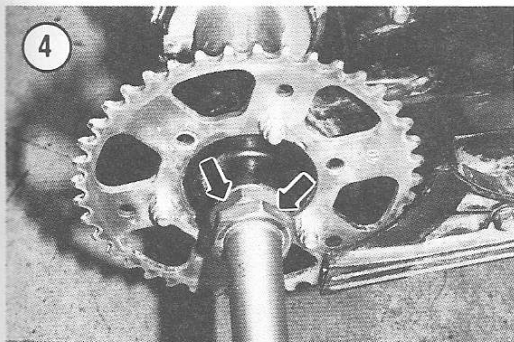
3

## REAR DRIVE AXLE ASSEMBLY



- |             |                    |                    |
|-------------|--------------------|--------------------|
| 1. Nut      | 7. Hub             | 13. Bearing        |
| 2. Washers  | 8. O-ring          | 14. Seal           |
| 3. Hub      | 9. Seal            | 15. O-ring         |
| 4. Nuts     | 10. Bearing        | 16. Spacer         |
| 5. Washer   | 11. Spacer         | 17. Retaining ring |
| 6. Sprocket | 12. Center housing | 18. Axle           |





- the swing arm. The hub must be removed from the right side to disassemble the axle and center housing.
5. Locate and remove the rear drive chain master link, then remove the drive chain.
6. Remove the two clamp screws (Figure 7).
7. Loosen the axle center housing by turning it in the swing arm clamp. If necessary, spread the rear clamps of the swing arm slightly to allow the center housing to be removed.
8. Withdraw the axle, sprocket and center housing from the vehicle.

**Disassembly/Inspection/Reassembly**

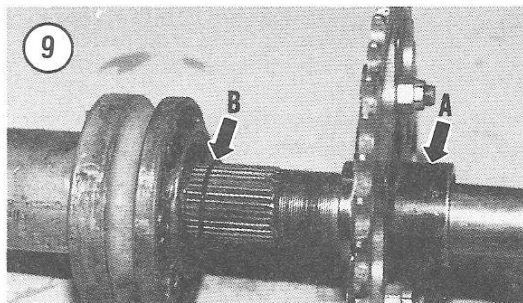
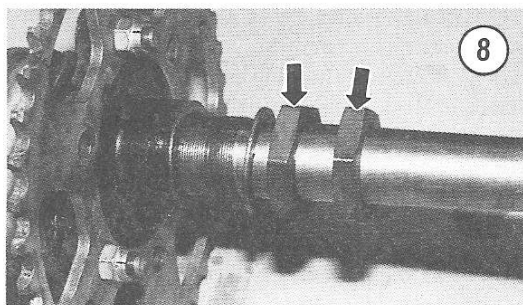
Refer to Figure 1 for this procedure.

1. Remove the 2 large nuts (Figure 8) and washer.

*NOTE*

*Threads of the 2 large nuts (Figure 8) are coated with locking compound and are very fine threads. These nuts are very tight and may be difficult to remove, so be extremely careful. If necessary, apply heat to the nuts to soften the locking compound.*

2. Remove the sprocket and hub (A, Figure 9) from the shaft splines.



3. Remove the O-ring (B, **Figure 9**), then slide the rear axle from the center housing, bearings and seals.

**NOTE**

*Do not remove the axle seals or bearings for inspection, because they will be damaged during removal. Remove the seals and bearings only if replacement is necessary.*

4. Turn the inner race of each bearing by hand. Make sure that the bearings turn smoothly. Some axial play is normal, but radial play should be negligible. The bearings should turn with no evidence of roughness or ratcheting.

5. Pry the seals from the housing with a wide-blade screwdriver. Pad the screwdriver to prevent it from damaging the axle housing bore.

6. Insert a drift into one side of the axle housing, push the spacer to one side and place the drift on the inner race of the opposite bearing.

7. Tap the bearing out of the hub with a hammer, working around the bearing's inner race to prevent the bearing from binding in the housing bore.

8. Remove the bearing and the center spacer.

9. Tap out the opposite bearing with a suitable driver inserted through the axle housing.

10. Clean the axle housing with solvent and dry with compressed air.

11. Clean the center spacer. Make sure that all corrosion and rust is removed.

12. Check the axle housing bores for cracks or other damage. Remove any burrs or nicks with a file or fine abrasive paper.

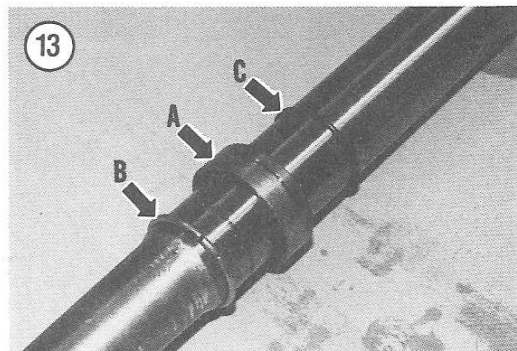
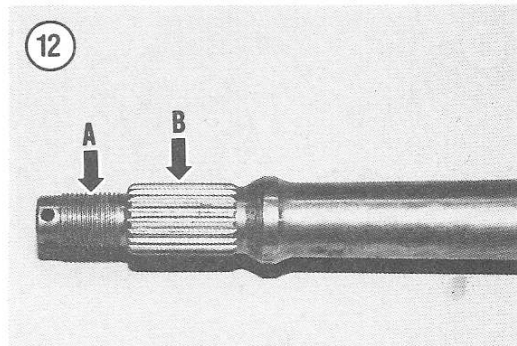
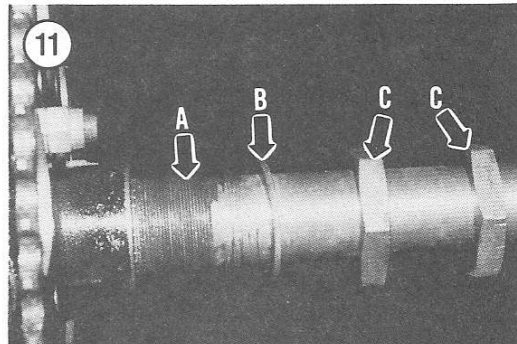
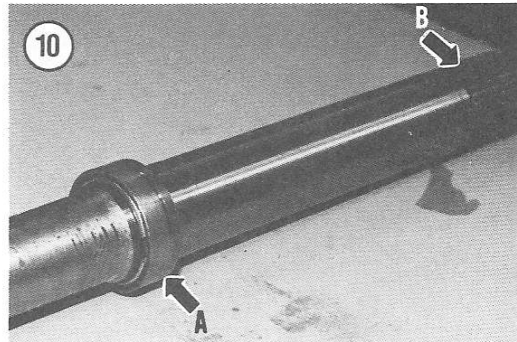
**NOTE**

*If one or both bearings are loose in the housing bore(s), do not attempt to repair the looseness by center punching or roughing up the area to tighten the bearing. This type of repair will not last long and the bearings will soon be loose again. If the bearing bores in the center housing are worn or damaged, install a new center housing.*

13. Inspect the seal ring (A, **Figure 10**) for damage. Replace the seal ring if the seal surface is rough.

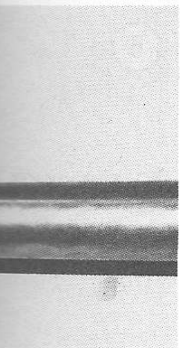
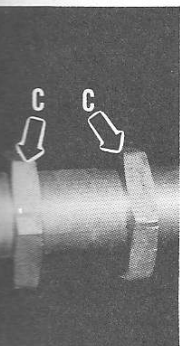
14. Inspect the axle carefully as follows:

- a. Clean the axle completely and make sure the threads (A, **Figure 11**) are not damaged.

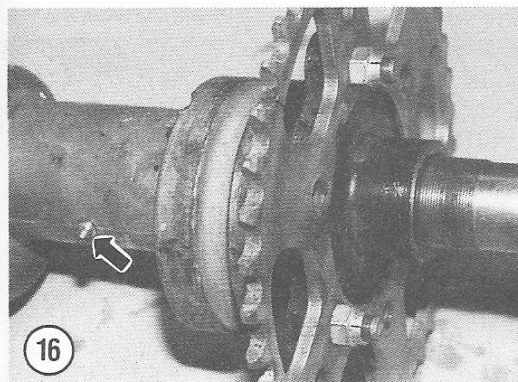
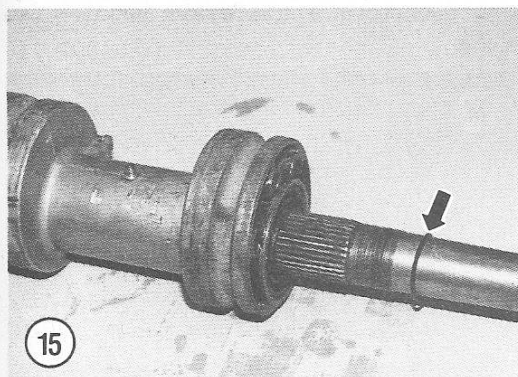
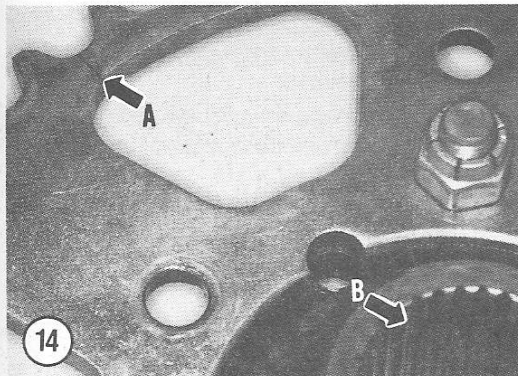


- b. Inspect the O-ring (B) at the seal ring.
- c. Inspect the center of the axle housing bore.
- d. Check the O-ring for damage. The O-ring should not be replaced if necessary.





- b. Inspect the threads (A, **Figure 12**) and splines (B) at the ends of the axle for damage.
- c. Inspect the splines (B, **Figure 10**) near the center of the axle for damage.
- d. Check the axle for straightness using a set of V-blocks and a dial indicator. Axle runout should not exceed 1.5 mm (0.06 in.). If runout is excessive, install a new axle.



**WARNING**

*Do not attempt to straighten a bent axle. Axle failure may occur during riding. A bent or a broken axle will cause loss of control that may result in personal injury.*

15. Make sure the seal ring (A, **Figure 13**) is fully seated against the retaining ring (B, **Figure 13**), then install a new O-ring (C, **Figure 13**).

16. Blow any dirt or foreign matter from the housing and from the spacer before installing the bearings.

17. Press the first bearing into the center housing with its manufacturer's code numbers toward the outside. Make sure the bearing is bottomed in its bore.

18. Install the spacer and press the second bearing into the bore until it bottoms in the housing bore. The manufacturer's code numbers must be toward the outside.

19. Pack the lip of each seal with grease and press into the housing until the closed side of the seal is flush with or slightly below the edge of the housing bore.

20. Insert the axle assembly through the seals and bearings and into the center housing.

21. Inspect the sprocket and sprocket hub as follows:

- a. Check the seal surface of the sprocket hub for roughness or other damage. Clean small imperfections using fine abrasive paper.
- b. Check the sprocket for wear, cracks (A, **Figure 14**) or other damage. Make sure the sprocket is not bent.
- c. Check the sprocket retaining bolts for tightness and condition. Install new bolts if damaged and tighten securely.
- d. Check the hub for damaged splines (B, **Figure 14**).

22. Install O-ring (**Figure 15**) and slide the O-ring against the bearing.

23. Install the sprocket hub on the shaft splines and slide the hub into the seal.

24. Grease the unit through the fitting (**Figure 16**) until grease is expelled from the seals at both ends of the center housing. Make sure that the bearings and housing are filled with grease.

25. Make sure that the threads are cleaned, then apply Loctite 242 to the threads (A, **Figure 11**).

26. Install the washer (A, **Figure 17**) and the first nut (B, **Figure 17**).

27. Tighten the inner nut (B, **Figure 17**) to the specification in **Table 2**. Then install and tighten the outer nut (C, **Figure 17**) to the same specification (**Table 2**).

### Installation

1. Insert the axle and center housing into the rear of the swing arm.
2. Install, but do not tighten the 2 clamp screws (**Figure 18**). The center housing must be free to rotate in the swing arm to adjust the drive chain.
3. Install the rear drive chain and install the master link so that the closed end of the retaining clip is toward the direction of chain movement as shown in **Figure 19**.
4. Adjust the chain free play as described in Chapter Three. Maintaining the correct chain adjustment is important.
5. Tighten the clamp screws (**Figure 18**) to the torque listed in **Table 2**.

#### WARNING

*Always install a new cotter pin.*

6. Install the rear wheel hubs and tighten the retaining nuts to the torque listed in **Table 2**. Install the locking cotter pins and bend the ends over the nut. If necessary, tighten the nut slightly beyond the recommended torque to install the cotter pin.

#### NOTE

*The nut should not be loosened to align slots in the nut with the hole in the axle.*

7. Install the rear wheels and tighten the lug nuts to the torque listed in **Table 2**.

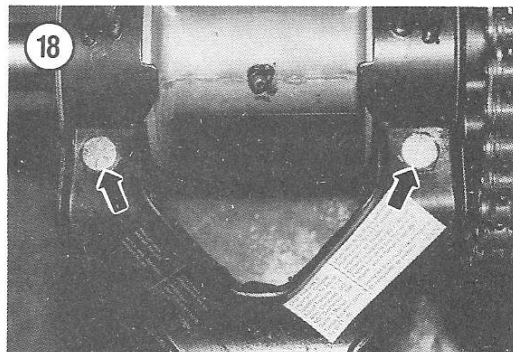
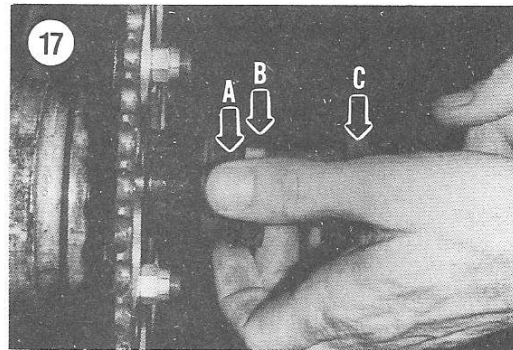
## DRIVE CHAIN

A 520 O-ring drive chain was originally installed on all models. O-ring drive chains are equipped with rubber O-rings between each side plate. The master link is equipped with 4 removable O-rings. O-ring chains are internally lubricated at the time of manufacture and assembly. The O-rings are designed to seal the chain's lubricant in while keeping dirt and moisture out.

**Table 1** lists drive chain specifications.

### Removal/Installation

1. Support the vehicle with both rear wheels off the ground.
2. Turn the rear axle and drive chain until the master link (**Figure 19**) is accessible.
3. Remove the master link spring clip with a pair of pliers.
4. Use a chain breaker to push the side plate from the master link. Remove the side plate and the 2 outside O-rings.
5. Push out the connecting link. Remove the 2 inside O-rings if required.
6. Lift the drive chain from the sprockets.
7. Install by reversing these removal steps, noting the following:
  - a. Install an O-ring on each connecting link pin.
  - b. Insert the connecting link through the chain to join it together.
  - c. Install the 2 remaining O-rings onto the connecting link pins.
  - d. Push the side plate onto the connecting link as far as it will go. Then press the side plate into position with a press-fit chain tool.



Most covers are designed to be removed if the cover will be removed. The master link spring clip should be removed if the cover is to be removed. The master link should be removed if the cover is to be removed. The master link should be removed if the cover is to be removed.

Attempting to remove the master link will cause damage to the drive chain.

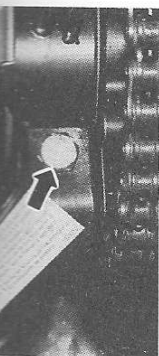
c. Install the master link so that the closed end of the retaining clip is toward the direction of chain movement.  
8. Adjust the drive chain to the specifications listed in Chapter Three.

### Cutting A Drive Chain

**Table 1** lists the required free play for standard number of teeth. Count the number of teeth on the chain links of the new chain. If long, cut it to length.  
1. Remove the master link from your workbench.



ear wheels off the  
in until the master  
clip with a pair of  
the side plate from  
e plate and the 2  
Remove the 2 in-  
rockets.  
oval steps, noting  
connecting link pin.  
ough the chain to  
gs onto the con-  
connecting link as  
the side plate into  
n tool.



**NOTE**

*Most commercial press-fit chain tools are designed to press the side plate onto the connecting link to its correct depth. If the side plate is pressed on too far, it will bind the chain where it joins the master link. If the side plate is not pressed on far enough, the spring clip cannot be installed correctly and may come off. What you are trying to do is press the side plate onto the connecting link until the slide plate is flush with both pin seating grooves in the connecting link.*

**CAUTION**

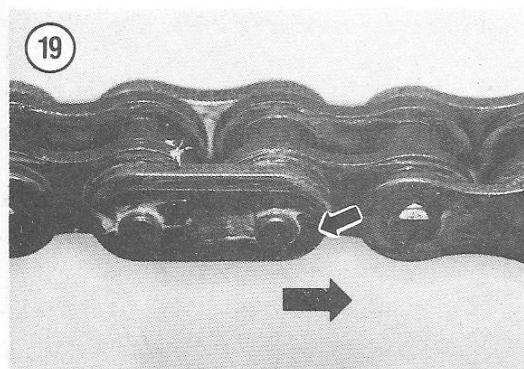
*Attempting to assemble a press-fit master link without the proper tools may cause damage to the master link and drive chain.*

- e. Install the spring clip on the master link so the closed end of the clip is facing the direction of chain travel (**Figure 19**).
- 8. Adjust the drive chain as described in Chapter Three.

**Cutting A Drive Chain To Length**

**Table 1** lists the correct number of chain links required for stock gearing. **Table 1** also lists the number of teeth on standard sprockets. Be sure to count the number of teeth on the sprockets and count the chain links of the original chain before cutting the new chain. If your replacement drive chain is too long, cut it to length as follows.

- 1. Remove the new chain from its box and stretch it out on your workbench. Set the master link aside for now.



- 2. Determine the correct number of links for your chain by referring to **Table 1** or counting the number of links in the original chain.
- 3. Count the correct number of links on the new chain and mark the 2 chain pins to cut. Count the chain links one more time to make sure you are correct.

**WARNING**

*A bench grinder or hand-operated high-speed grinding tool is required to grind the chain pins when cutting the chain. When using this equipment, safety glasses must be worn.*

- 4. Use a bench grinder or other suitable grinding tool to remove the heads from the two marked pins. Grind the heads flush with the face of the side plate.
- 5. Use a chain breaker or a punch and hammer and lightly tap the pins from the side plate. Support the chain carefully while driving the pins from the side plate. If the pins are still tight, grind away more material, then try again.
- 6. Remove the side plate and push out the connecting link.

**Drive Chain Cleaning/Lubrication**

**CAUTION**

*The O-rings in the drive chain can be easily damaged by improper cleaning and handling. Do not use a steam cleaner, a high-pressure washer or any solvent that may damage the rubber O-rings.*

- 1. Remove the drive chain as described in this chapter.
- 2. Immerse the chain in a pan of kerosene and allow it to soak for about 30 minutes. Move the chain around and flex it while soaking so the dirt between the links, pins, rollers and O-rings will work its way out.

**CAUTION**

*In the next step, do not use a wire brush to clean the chain or the O-rings will be damaged and the drive chain must be replaced.*

- 3. Scrub the rollers lightly with a soft brush and rinse away loosened dirt. Do not scrub hard or use a stiff brush that might damage the O-rings. Rinse the chain a couple of times in kerosene to make sure all

dirt and grit are washed out. Hang the chain up over a pan and allow the chain to dry.

4. After cleaning the chain, examine it carefully for wear or damage. Check the O-rings for damage. Replace the chain if necessary.

5. Externally lubricate the chain with SAE 30-50 motor oil or a good grade of chain lubricant (non-tacky) specifically formulated for O-ring chains, following its manufacturer's instructions.

#### CAUTION

*Do not use a tacky chain lubricant on O-ring chains. Dirt and other abrasive materials that stick to the lubricant will grind away at the O-rings and damage them. Remember, an O-ring chain is prelubricated during its assembly at the factory. External oiling is only required to prevent chain rust and to keep the O-rings pliable.*

### DRIVE AND DRIVEN SPROCKETS

The driven sprocket rides on a hub that is mounted on the rear axle. The driven sprocket can be removed without removing the rear axle from the vehicle. If the sprocket can not be easily and completely seen, it may be necessary to remove chain guards or the sprocket for proper inspection. See **Figure 20**.

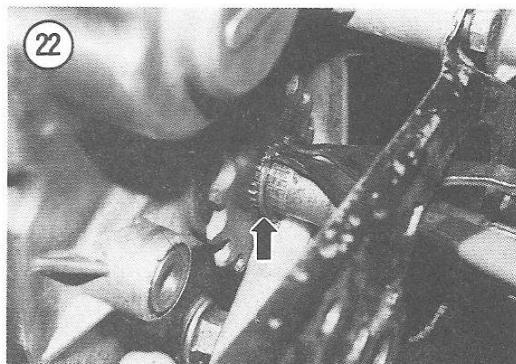
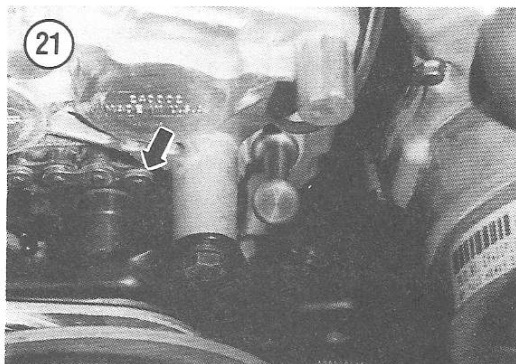
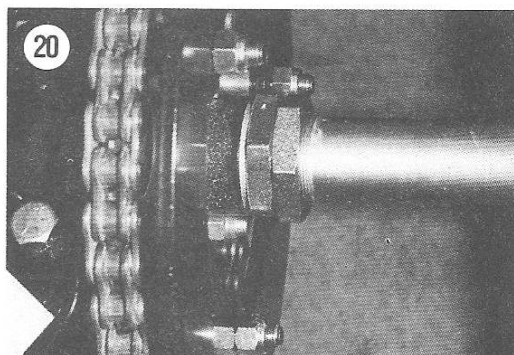
The drive sprocket (**Figure 21**) is located on the output shaft of the transmission. Refer to the appropriate transmission section in Chapter Nine to remove the drive sprocket. On models with all wheel drive, it is necessary to remove the center chain and front drive sprocket as described in Chapter Ten before the rear drive sprocket. On models with the output shaft mechanical disc brake, the brake caliper and disc must be removed as described in Chapter Fourteen before the rear drive sprocket can be removed.

#### Inspection

Check the sprocket teeth for severe wear or undercutting. Clean the sprocket and inspect for cracks (**Figure 14**) or other damage. Check to see if the sprocket is bent. If the sprocket is damaged, replace both sprockets and the chain at the same time. Installing a new chain over severely worn or damaged sprockets will cause rapid chain wear.

#### Removal/Installation

Refer to the appropriate transmission section in Chapter Nine to remove the drive sprocket. On models with all wheel drive, it is necessary to remove the center chain and front drive sprocket as described in Chapter Ten before the rear drive sprocket. The sprocket is retained by a snap ring (**Figure 22**). On models with the output shaft disc brake, the brake caliper and disc (**Figure 23**) must be removed as



described in Chapter  
sprocket can be re-  
1. Remove the  
in this chapter.

2. Remove the  
nut.

3. Remove the  
the sprocket to the  
4. Install by re-  
following.

5. Reinstall the  
were previously re-  
6. Tighten the  
secure the sprocket  
securely.

7. Refer to Table  
when installing the

THE  
AND

The procedure  
times on the same  
Refer to Chapter



mission section in sprocket. On mod- ary to remove the et as described in re sprocket. The (Figure 22). On brake, the brake t be removed as

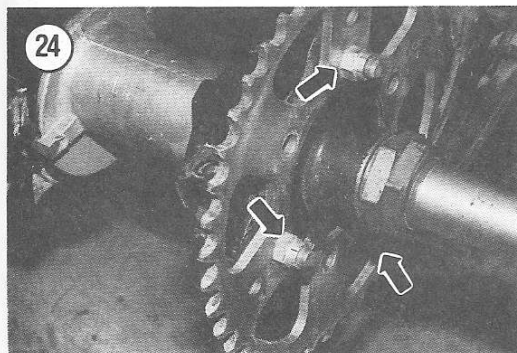
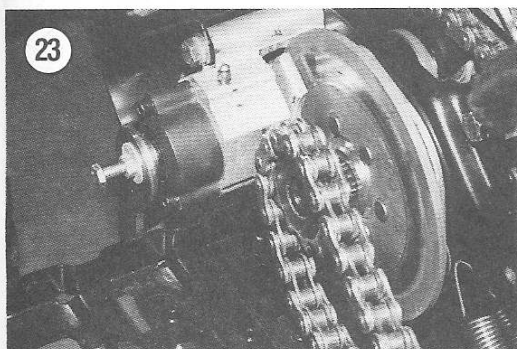


described in Chapter Fourteen before the rear drive sprocket can be removed.

1. Remove the right rear wheel and hub as described in this chapter.
2. Remove the drive chain as described in this chapter.
3. Remove nuts (Figure 24) from the bolts that hold the sprocket to the hub, then remove the sprocket.
4. Install by reversing these steps, noting the following.
5. Reinstall the chain guard and any spacers that were previously installed.
6. Tighten the sprocket nuts securely. Check to be sure the sprocket bolts are tight and hold the sprocket securely.
7. Refer to Table 2 for the correct tightening torque when installing the rear hub.

### TIRE CHANGING AND TIRE REPAIRS

The procedure for removing and repairing the rear tires are the same as for servicing the front tires. Refer to Chapter Twelve for tire service.



### SHOCK ABSORBER

All models use a single rear shock absorber and spring unit. Some models are equipped with a gas (nitrogen) filled shock which has a remote gas/oil reservoir. The gas filled shock should be disassembled, rebuilt and filled by dealers trained and equipped for their service.

#### Removal/Installation

Refer to Figure 25.

1. Lift the rear of the vehicle off the ground, then block the rear, so that both rear wheels are off the ground, but the swing arm is not supporting any weight.
2. Remove the nut from the bolt (A, Figure 26) that attaches the lower end of the shock absorber to the swing arm.
3. Support the weight of the rear axle and swing arm, so the bolt (A, Figure 26) can be withdrawn, then lower the swing arm to the floor.
4. Remove the nut, washer and bolt that attaches the upper end of the shock absorber (Figure 27) to the frame and remove the shock absorber.
5. Install by reversing these steps. Note the following.
6. Clean the shock bolts, nuts, washers and collars in solvent. Dry thoroughly.
7. Position the upper end of the shock absorber in the frame, then install the upper shock mounting bolt. Install the washer and nut.
8. Position the lower end of the shock absorber, then install the washer and nut.
9. Tighten the upper and lower shock absorber mounting nuts to the torque specification listed in Table 2.

#### Shock Inspection

##### WARNING

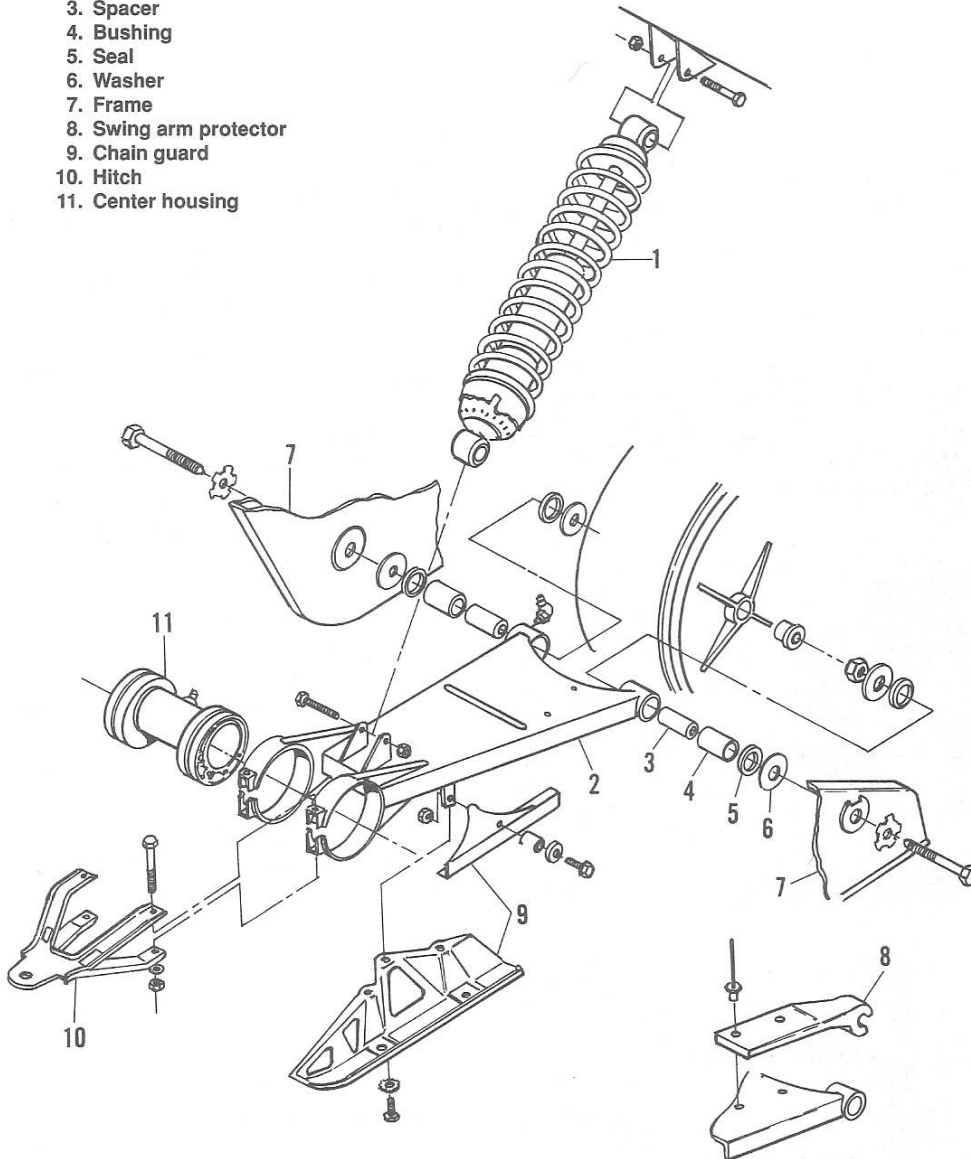
*The shock absorber damper unit may contain nitrogen gas. Do not tamper with or attempt to open or disassemble the unit. Do not place it near an open flame or other extreme heat. Do not dispose of the damper assembly yourself. Take it to a dealer where it can be deactivated and disposed of properly. Read the WARNING label fixed to the reservoir.*



25

### REAR SUSPENSION (TYPICAL)

1. Spring/shock
2. Swing arm
3. Spacer
4. Bushing
5. Seal
6. Washer
7. Frame
8. Swing arm protector
9. Chain guard
10. Hitch
11. Center housing



### REAR SUSPENSION

1. Inspect the shock
2. Check the spring damage.
3. Check the rear
4. Remove and install following procedure.

### Spring

### Removal/Installation

In addition to the spring, you can purchase suspension rates. To replace a spring, follow the following steps:

1. Remove the shock absorber.
2. If you are satisfied with the load setting and wheel

25

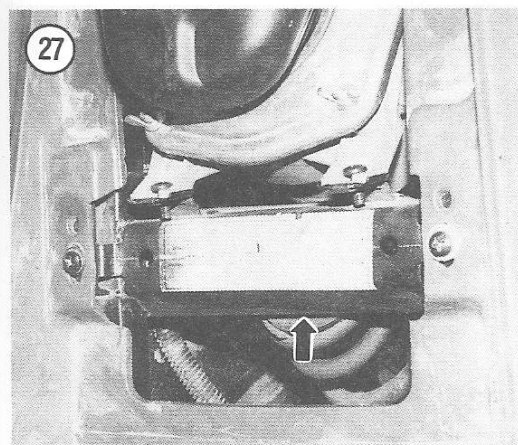
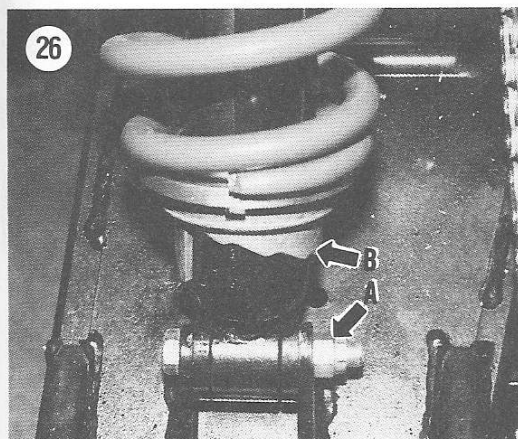
27

1. Inspect the shock absorber for gas and oil leaks.
2. Check the damper rod for bending, rust or other damage.
3. Check the reservoir for dents or other damage.
4. Remove and inspect the spring as described in the following procedure.

### Spring Removal/Installation

In addition to the standard replacement shock spring, you can purchase shock springs from after-market suspension specialists, in a variety of spring rates. To replace a spring, perform the following.

1. Remove the shock absorber as described in this chapter.
2. If you are satisfied with the existing spring preload setting and want to maintain it, measure and



record the spring preload position before removing the spring.

3. Use an appropriate spanner and adjust the spring tension to the lightest setting.
4. Secure the shock absorber upper mount in a vise with soft jaws.
5. Compress the spring using a suitable compressor tool (part No. 2870623).
6. Slide the rubber shock bumper down the shock shaft.
7. Remove the spring retainer, spring seat and spring from the shock.

#### NOTE

*Some models may have a spacer installed below the spring as thick as 25.5 mm (1 in.). Suspension damage can be the result of setting the suspension too soft, when the operation is severe over rough terrain.*

8. Measure spring free length and install a new spring if appreciably shorter than the free length of a new spring.
9. Install the spring by reversing these steps, noting the following.
10. Install the spring, spring guide and spring retainer. Make sure the spring guide and spring retainer seat flush against the spring.
11. Adjust the spring preload to the previous setting. Ride adjustment can be changed by turning the lower spring seat (B, Figure 26).

### REAR SWING ARM

Figure 25 is a typical exploded view of the rear swing arm. Bearings are pressed into both sides of the swing arm. Size and design of the bushings, seals and inner spacers may be slightly different than shown.

#### Swing Arm and Bushings

Lubricate the swing arm bearings regularly as described in Chapter Three. If the swing arm appears to have an excessive amount of side-to-side play, the swing arm should be removed and the bearings inspected for wear or damage.

### Inspection

1. Lift and support the rear of the vehicle so that the swing arm can be moved from side-to-side.
2. Make sure the chain has some free play and that the wheels are off the floor.
3. Have an assistant steady the vehicle, then grasp the rear of the swing arm and try to move it from side-to-side in a horizontal arc. There should be no noticeable side play.
4. If play is evident, check the pivot bolts for tightness as described in the following section. If the pivot bolts are tight, remove the swing arm and inspect the pivot bushings.

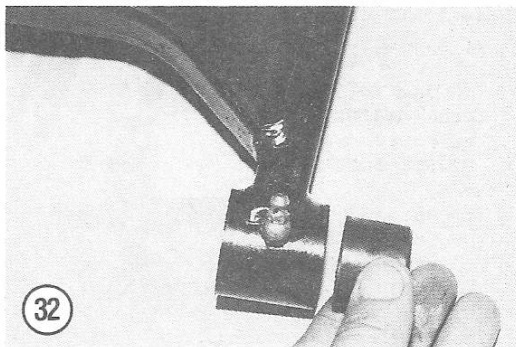
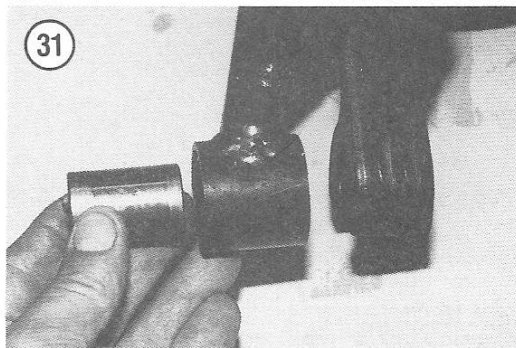
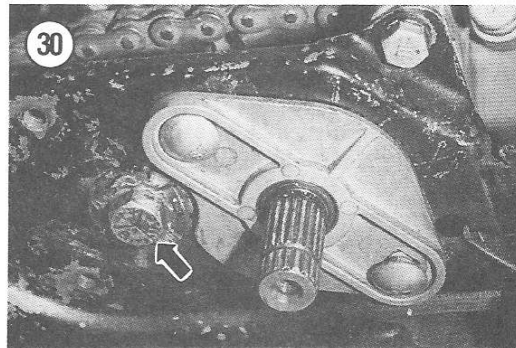
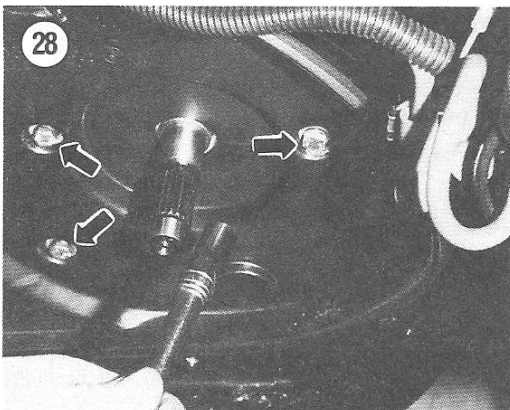
### Removal

The rear axle does not need to be removed from the swing arm to inspect or install pivot bushings.

1. Lift and support the rear of the vehicle so the swing arm can be separated from the frame. Make sure that the support does not interfere with removal. Be sure the vehicle is securely supported and will not move when removing the swing arm.
2. Remove the drive chain as described in this chapter.
3. Remove the lower bolt (A, **Figure 26**) attaching the shock absorber to the swing arm.
4. Remove the drive belt and driven pulley as described in Chapter Eight.

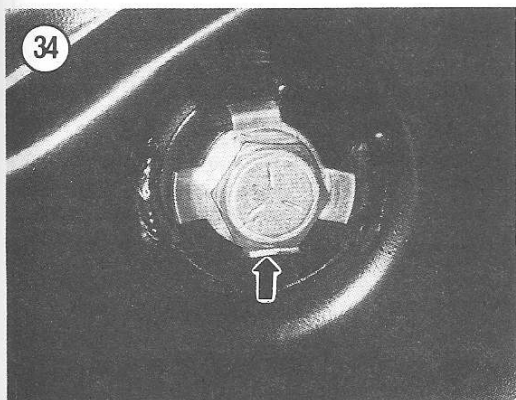
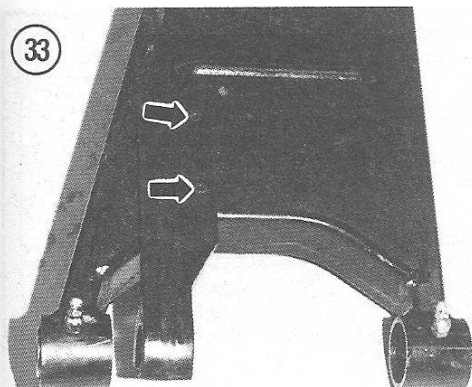
#### NOTE

*Some may prefer to remove the drive pulley and clutch inner cover as described in Chapter Eight instead of bending the inner cover.*



#### Model No.

1985  
Scrambler W67  
Trail Boss W67  
1986  
All models  
1987  
Trail Boss W67  
Cyclone W67  
Trail Boss 4 x 4  
W67B127 & W  
1988  
Trail Boss 2 x 4  
Trail Boss 4 x 4  
T.B. 250 RIES  
W68529



5. Unbolt the rear of the clutch inner cover (Figure 28) and pull the rear of the cover away from the frame far enough to remove the left swing arm pivot bolt (Figure 29).
6. Remove the brake assembly and covers as necessary to remove the swing arm pivot bolt (Figure 30) from the right side.
7. Pull the swing arm back, away from the frame.
8. Remove, clean and inspect bushings (Figure 31 and Figure 32). Bushings may be slightly different than shown.
9. If worn or damaged, the swing arm chain protector can be removed after drilling out the attaching rivets (Figure 33).
10. Install by reversing the removal procedure and observing the following:
  - a. Refer to Table 2 for recommended tightening torques.
  - b. Bend locking tabs (Figure 34) around the swing arm pivot bolts to prevent loosening.
  - c. Grease the swing arm bushings when installing the bushings and after completing assembly of the swing arm.
  - d. Refer to Chapter Eight for installation of the clutch inner cover. Make sure the inner cover is sealed properly.
  - e. Refer to Chapter Eight for installation of the clutch driven pulley and drive belt.

**Table 1 REAR DRIVE SPECIFICATIONS**

Model No.	Sprocket teeth	Chain size	Chain pitch
1985			
Scrambler W857027	13/42	520	74
Trail Boss W857527	13/38	520	-
1986			
All models	13/42	520	74
1987			
Trail Boss W877527	13/42	520	74
Cyclone W877828	13/42	520	74
Trail Boss 4 × 4 W878027, W878127 & W878327	13/42	520	74
1988			
Trail Boss 2 × 4 W887527	13/38	520	72
Trail Boss 4 × 4 W888127	12/42	520	74
T. B. 250 R/ES X888528 & W888528	13/42	520	88

(continued)

Table 1 REAR DRIVE SPECIFICATIONS (continued)

Model No.	Sprocket teeth	Chain size	Chain pitch
<b>1989</b>			
Trail Boss W898527	13/42	520	88
Trail Boss 2 × 4 W897527	13/38	520	86
Trail Boss 4 × 4 W898127	12/42	520	88
Big Boss 4 × 6 X898627 & W898627			
Center axle	12/42	520	88
Rear axle	30/30	520	108
<b>1990</b>			
Trail Blazer W907221	13/42	520	88
Trail Boss 250 W908527	13/34	520	84
Trail Boss 2 × 4 W907527	13/38	520	86
T.B. 2 × 4-350L W907539	13/34	520	84
Trail Boss 4 × 4 W908127	12/42	520	88
T.B. 4 × 4-350L W908139	13/34	520	88
Big Boss 4 × 6 W908627			
Center axle	12/42	520	88
Rear axle	30/30	520	108
<b>1991</b>			
Trail Blazer W917221	13/34	520	84
Trail Boss 250 W918527	13/34	520	84
Trail Boss 2 × 4 W917527	13/38	520	86
T.B. 2 × 4-350L W917539	13/34	520	84
Trail Boss 4 × 4 W918127	12/42	520	88
T.B. 4 × 4-350L W918139	13/34	520	88
Big Boss 4 × 6 W918627 & 6 × 6 W918727			
Center axle	12/42	520	88
Rear axle	30/30	520	108
<b>1992</b>			
Trail Blazer W927221	13/42	520	84
Trail Boss 250 W928527	13/34	520	84
Trail Boss 2 × 4 W927527	13/38	520	86
T.B. 2 × 4-350L W927539	13/34	520	84
Trail Boss 4 × 4 W928127	12/42	520	88
T.B. 4 × 4-350L W928139	13/34	520	84
Big Boss 4 × 6 W928627 & 6 × 6 W928727			
Center axle	12/42	520	88
Rear axle	30/30	520	108
<b>1993</b>			
Trail Blazer W937221	13/34	520	84
Trail Boss W938527	13/34	520	84
Sportsman W938039	12/34	520	84
250 2 × 4 W937527	13/38	520	86
350 2 × 4 W937539	13/34	520	84
250 4 × 4 W938127	12/42	520	88
350 4 × 4 W938139	12/34	520	84
250 6 × 6 W938727			
Center axle	12/42	520	88
Rear axle	30/30	520	108
350 6 × 6 W938739			
Center axle	13/42	520	88
Rear axle	30/30	520	108

(continued)

## Model No.

1984
Trail Blazer 250
Trail Boss 250
Sport W898039
Sportsman 4 × 4
350 2 × 4 W898039
400 2 × 4 W898039
350 4 × 4 W898039
400 4 × 4 W898039
350 6 × 6 W898039
Center axle
Rear axle
400 6 × 6 W898039
Center axle
Rear axle
1985
Trail Blazer W907221
Trail Boss W908527
350 2 × 4 W907527
400 2 × 4 W907527
350 4 × 4 W908127
Scrambler W908627
Sport W908627
Sportsman 4 × 4
Explorer 4 × 4
Magnum 2
Magnum 4
400 6 × 6 W908627
Center axle
Rear axle

Axle center to
Rear shock to
Lower
Upper
Rear sprocket
Rear wheel to
Rear wheel to
Swing arm pin

1985
Scrambler 1
Size
Pressure

**Table 1 REAR DRIVE SPECIFICATIONS (continued)**

Model No.	Sprocket teeth	Chain size	Chain pitch
<b>1994</b>			
Trail Blazer 2W W947221	11/40	520	86
Trail Boss 2W W948527	11/40	520	86
Sport W948540	12/34	520	84
Sportsman 4 × 4 W948040	13/34	520	84
300 2 × 4 W947530	13/38	520	86
400 2 × 4 W947540	13/34	520	84
300 4 × 4 W948130	12/42	520	88
400 4 × 4 W948140	13/34	520	84
300 6 × 6 W948730			
Center axle	12/42	520	88
Rear axle	30/30	520	108
400 6 × 6 W948740			
Center axle	13/42	520	88
Rear axle	30/30	520	108
<b>1995</b>			
Trail Blazer W957221	12/42	520	88
Trail Boss W958527	12/42	520	88
300 2 × 4 W957530	13/38	520	86
400 2 × 4 W957540	13/34	520	84
300 4 × 4 W958130	13/40	520	88
Scrambler W957840	13/38	520	84
Sport W958540	12/34	520	84
Sportsman 4 × 4 W958040	13/34	520	84
Xplorer 4 × 4 W959140	13/34	520	84
Magnum 2 × 4 W957444	12/38	520	86
Magnum 4 × 4 W958144	12/38	520	86
400 6 × 6 W958740			
Center axle	13/42	520	88
Rear axle	30/30	520	116

**Table 2 TORQUE SPECIFICATIONS**

	N·m	ft.-lb.
Axle center housing clamp bolts	81.4	60
Rear shock bolt		
Lower	33.9	15
Upper	33.9	15
Rear sprocket hub retaining nuts	203.4	150
Rear wheel hub center nut	108	80
Rear wheel lug nuts	67.8	50
Swing arm pivot screws	74.6	55

**Table 3 TIRE SIZE AND PRESSURE**

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1985</b>		
Scrambler W857027		
Size	22 × 11.00 × 8	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)

(continued)

Table 3 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
1985 (continued)		
Trail Boss W857527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
1986		
Scrambler W867027		
Size	22 × 11.00 × 8	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss W867527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss W867627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
1987		
Trail Boss W877527		
Size	22 × 8.00 × 8	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Cyclone W877828		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878027		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W878327		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
1988		
Trail Boss 2 × 4 W887527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W888127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 250 R/ES X888528		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 250 R/ES W888528		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
1989		
Trail Boss W898527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 W897527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 4 × 4 W898127		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)

(continued)

Table 3 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1989 (continued)</b>		
<b>Big Boss 4 × 6 X898627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	34.5 (5)
<b>Big Boss 4 × 6 W898627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	34.5 (5)
<b>1990</b>		
<b>Trail Blazer W907221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 250 W908527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 W907527</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 - 350L W907539</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 W908127</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 - 350L W908139</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Big Boss 4 × 6 W908627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1991</b>		
<b>Trail Blazer W917221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 250 W918527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 W917527</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2 × 4 - 350L W917539</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 W918127</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Trail Boss 4 × 4 - 350L W918139</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Big Boss 4 × 6 W918627</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>Big Boss 6 × 6 W918727</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)

(continued)



Table 3 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1992</b>		
Trail Blazer W927221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 250 W928527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 W927527		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss 2 × 4 - 350L W927539		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 W928127		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
Trail Boss 4 × 4 - 350L W928139		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
Big Boss 4 × 6 W928627		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
Big Boss 6 × 6 W928727		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1993</b>		
Trail Blazer W937221		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Trail Boss W938527		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
Sportsman W938039		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
250 2 × 4 W937527		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
350 2 × 4 W937539		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
250 4 × 4 W938127		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
350 4 × 4 W938139		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
250 6 × 6 W938727		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
350 6 × 6 W938739		
Size	25 × 8.00 × 10	25 × 12.00 × 10
Pressure	34.5 (5)	34.5 (5)

(continued)

Table 3 TIRE SIZE AND PRESSURE (continued)

	Front tires kPa (psi)	Rear tires kPa (psi)
<b>1994</b>		
<b>Trail Blazer 2W W947221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss 2W W948527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Sport W948540</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Sportsman 4 × 4 W948040</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>300 2 × 4 W947530</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>400 2 × 4 W947540</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>300 4 × 4 W948130</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>400 4 × 4 W948140</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>300 6 × 6 W948730</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>400 6 × 6 W948740</b>		
Size	25 × 8.00 × 12	25 × 12.00 × 10
Pressure	34.5 (5)	34.5 (5)
<b>1995</b>		
<b>Trail Blazer W957221</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>Trail Boss W958527</b>		
Size	22 × 8.00 × 10	22 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>300 2 × 4 W957530</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	20.7 (3)	20.7 (3)
<b>400 2 × 4 W957540</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>300 4 × 4 W958130</b>		
Size	22 × 8.00 × 10	24 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Scrambler W957840</b>		
Size	23 × 7.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)
<b>Sport W958540</b>		
Size	23 × 7.00 × 10	22 × 11.00 × 10
Pressure	27.6 (4)	20.7 (3)

(continued)