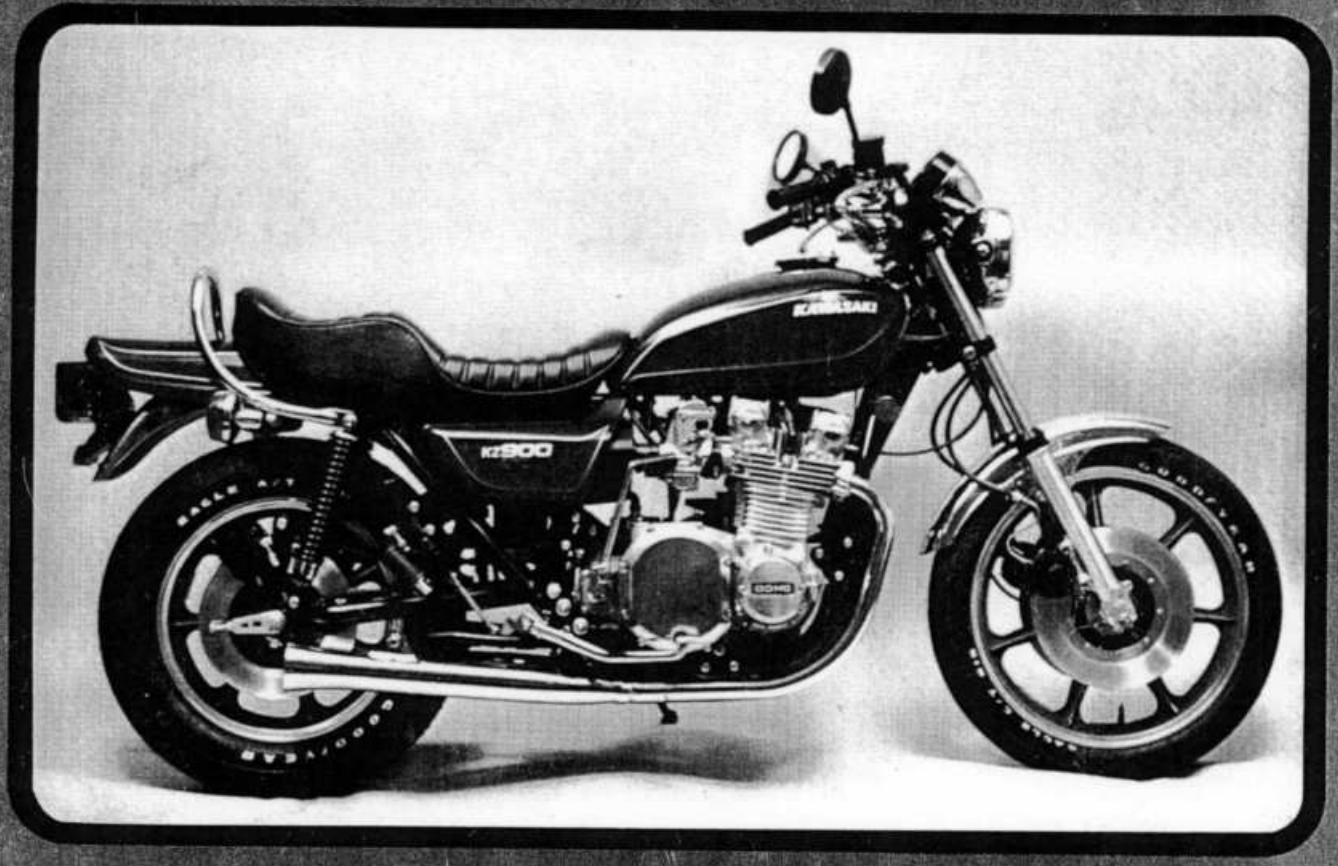
Kawasaki

KZ 900 LTD



MOTORCYCLE SHOP MANUAL

SUPPLEMENT

FOREWORD

This KZ900 LTD Shop Manual Supplement is designed to be used in conjunction with the KZ900 Shop Manual, Part No. 99997-700-05. The maintenance and repair procedures described in this Supplement are only those that are unique to the LTD model. Most LTD service operations are identical to those for the standard KZ900 model. Complete and proper servicing of the KZ900 LTD therefore requires *both* this LTD Supplement *and* the KZ900 Shop Manual.

The Manual and this Supplement are designed primarily for use by a motorcycle mechanic in a properly equipped shop, although they contain enough detail and basic information to make them useful to the motorcycle user who desires to carry out his own maintenance and repair work. Since a certain basic knowledge of mechanics, the proper use of tools, and workshop procedures must be understood in order to carry out the work satisfactorily; the adjustments, maintenance, and repair should be carried out only by qualified mechanics whenever the owner has insufficient experience, or has doubts as to his ability to do the work so that the motorcycle can be operated safely.

In order to perform the work efficiently and to avoid costly mistakes, the mechanic should read the text, thoroughly familiarizing himself with the procedures before starting work, and then do the work carefully in a clean area. Whenever special tools or equipment are specified, makeshift tools or equipment should not be used. Precision measurements can only be made if the proper instruments are used, and the use of substitute tools may adversely affect safe operation of the motorcycle.

This Supplement is divided into the following four sections, to correspond with the Manual:

(1) Adjustment

The adjustment section gives the procedure for adjustments which may become necessary periodically and which do not involve disassembly.

(2) Disassembly

This section shows the best method for the removal, disassembly, assembly, and installation which are necessary for maintenance and repair. Since assembly and installation are usually the reverse of disassembly and removal, assembly and installation are not explained in detail in many cases. Instead, assembly notes and installation notes are provided to explain special points.

(3) Maintenance and Theory of Operation

The procedures for inspection and repair are described in detail in this section.

(4) Appendix

The appendix in the back of this Supplement contains wiring diagrams.

Since the Supplement is based on the first production units of the KZ900 LTD, there may be minor discrepancies between some vehicles and the illustrations and text in this manual.

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MODEL IDENTIFICATION

KZ900-B1:LTD





BEGINNING FRAME NUMBER: KZ900B-500011
BEGINNING ENGINE NUMBER: Z1E086001 (non-consecutive)
REMARKS: Cast aluminum alloy wheels (16 in. rear); Double disc front brake, single disc rear brake; 4-into-2 exhaust system; Restyled seat, tank.

SPECIFICATIONS

Dimensions:
- Overall length . . . . . 2,215 mm
- Overall width . . . . . 830 mm
- Overall height . . . . . 1,170 mm
- Wheelbase . . . . . 1,490 mm
- Road clearance . . . . . 155 mm
- Dry weight . . . . . 233 kg
- Fuel tank capacity . . . . . 13.6 ℓ

Performance:
- SS ¼ mile . . . . . 12.3 sec
- Climbing ability . . . . . 30°
- Braking distance . . . . . 11 m @ 50 kph
- Minimum turning radius 2.5m

Engine:
- Type . . . . . DOHC 4 cylinder, transverse in-line 4 stroke, air-cooled
- Bore and stroke . . . . . 66 x 66 mm
- Displacement . . . . . 903 cc
- Compression ratio 8.5:1
- Maximum horsepower . . . . . 81 hp @ 8,500 rpm
- Maximum torque . . . . . 7.3 kg-m @ 7,500 rpm
- Valve timing:
  - Inlet — Open . . . . . 30° BTDC
  - Close . . . . . 70° ABDC
  - Duration . . . . . 280°
  - Exhaust — Open . . . . . 70° BBDC
  - Close . . . . . 30° ATDC
  - Duration . . . . . 280°
- Carburetors . . . . . Mikuni VM 26SS x 4
- Lubrication system . . . . . Forced lubrication
- Engine oil . . . . . SE class SAE 10W-40
- Engine oil capacity:
  - Less filter . . . . . 3.0 ℓ
  - Total including filter . . . . . 3.7 ℓ
- Starting system . . . . . Electric & kick
- Ignition system . . . . . Battery & coil
- Firing order 1–2–4–3
- Ignition timing . . . . . From 20° BTDC @ 1,500 rpm to 40° BTDC @ 2,350 rpm
- Spark plugs . . . . . NGK B8ES

Transmission:
- Type . . . . . 5-speed, constant-mesh, return-shift
- Clutch . . . . . Wet, multi-disc
- Gear ratio:
  - 1st 3.17 (38/12)
  - 2nd 2.19 (35/16)
  - 3rd 1.67 (35/21)
  - 4th 1.38 (29/21)
  - 5th 1.22 (28/23)
- Primary reduction ratio 1.73 (97/56)
- Final reduction ratio 2.33 (35/15)
- Overall drive ratio 4.92 (5th)

Electrical Equipment:
- Generator . . . . . Kokusan AR3701
- Regulator . . . . . Kokusan RS2123
- Ignition coil . . . . . Kokusan IG3303, IG3304
- Battery . . . . . Yuasa YB10; 12V, 10AH
- Starter . . . . . Mitsuba SM-226-K
- Head lamp . . . . . 12V 50/35W, sealed beam
- Tail/Brake lamp . . . . . 12V 3/32 c.p. 8/23W
- Speedometer lamp 12V 3.4W
- Tachometer lamp 12V 3.4W
- Neutral indicator lamp 12V 3.4W
- High beam indicator lamp 12V 3.4W
- Turn signal lamps . . . . . 12V 23W x 4
- Turn signal indicator lamp 12V 3.4W
- Oil pressure indicator lamp 12V 3.4W
- Brake lamp failure indicator lamp 12V 3.4W
- Horn . . . . . 12V 2.5A max.

Frame:
- Type . . . . . Tubular, double-cradle
- Steering angle . . . . . 41° to either side
- Castor . . . . . 64°
- Trail . . . . . 90 mm
- Tire Size:
  - Front . . . . . ML90-19 Load Range B
  - Rear . . . . . MT90-16T Load Range B
- Suspension:
  - Front . . . . . Telescopic fork
  - Rear . . . . . Swing arm
- Suspension Stroke:
  - Front . . . . . 140 mm
  - Rear . . . . . 84 mm
- Front fork oil capacity (each fork) . . . . . 192 cc
- Front fork oil type . . . . . SAE 10W, non-detergent
- Front brake:
  - Type . . . . . Double disc
  - Size . . . . . 296 mm
- Rear brake:
  - Type . . . . . Single disc
  - Size . . . . . 277 mm

Vehicle Loading Data:
- Gross vehicle weight rating (GVWR) . . . . . 400 kg
- Curb weight (with gas and oil) . . . . . 250 kg
- Maximum load (including all accessories, rider(s), baggage, etc.) . . . . . 150 kg

Specifications subject to change without notice.

TORQUE AND LOC-TITE TABLE

Tighten all bolts and nuts to the proper torque using an accurate torque wrench. If insufficiently tightened, a bolt or nut may become damaged or fall off, possibly resulting in damage to the motorcycle and injury to the rider. A bolt or nut which is over-tightened may become damaged, strip an internal thread, or break and then fall out. The following table lists the tightening torque for the bolts and nuts that are unique to the LTD model. For information on other fasteners, refer to the KZ900 Shop Manual (Appendix: Torque Table, Bolts Requiring Loc-Tite).

Part	Loc-Tite Required	Quantity	Metric (kg-m)	English (ft-lbs)	See Page
Brake Disc Bolts	–	10	3.5	25	13, 16
Coupling Housing Bolts	●	8	3.5	25	14
Sprocket Nuts	–	6	3.5	25	14
Torque Link Nuts	–	2	2.8	20	14

NOTE: The proper Loc-Tite compound is Stud N'Bearing Mount (red), Part No. K61079-002.

ADJUSTMENT

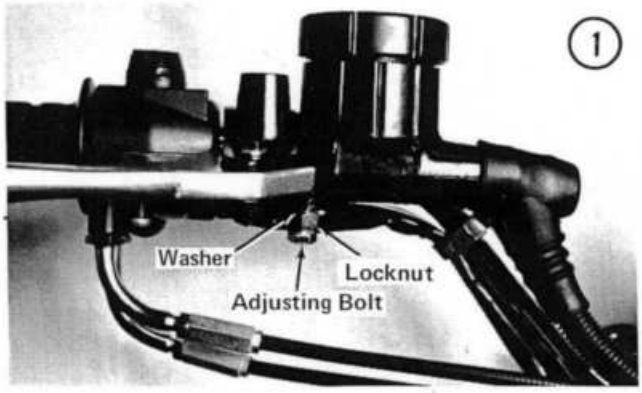
BRAKES

Disc and disc pad wear is automatically compensated for and has no effect on brake lever or brake pedal action. However, the brake lever or pedal may occasionally require adjustment due to wear inside the lever or pedal assembly itself, or in case of disassembly. Excessive play must be taken up to keep the lever from vibrating and to keep the braking action lag time to a minimum, but enough play must be left to ensure a full braking stroke.

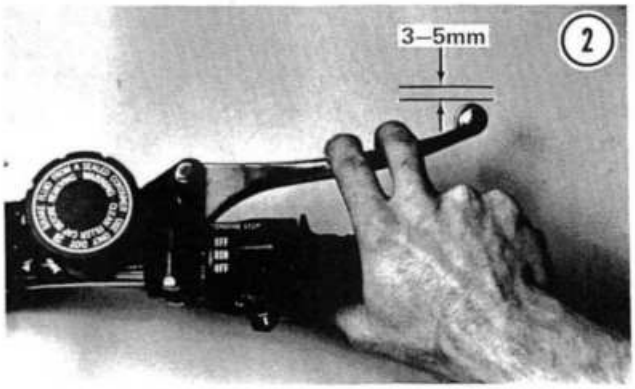
NOTE: Before adjusting the brakes, be sure that air is bled from the brake lines (Pg. 21).

Front Brake Lever Play

- Straighten the part of the washer that is bent over the side of the adjusting bolt locknut.



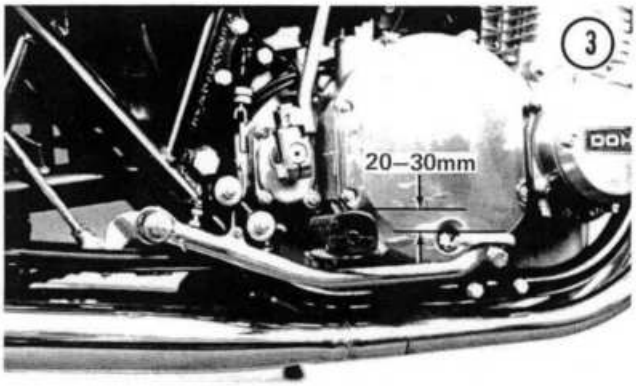
- Loosen the locknut, turn the adjusting bolt a fraction of a turn so that lever play is 3–5mm, and retighten the locknut with 2.0 kg-m (14.8 ft-lbs) of torque.



- Bend back part of the washer over the side of the locknut.

Rear Brake Pedal Position

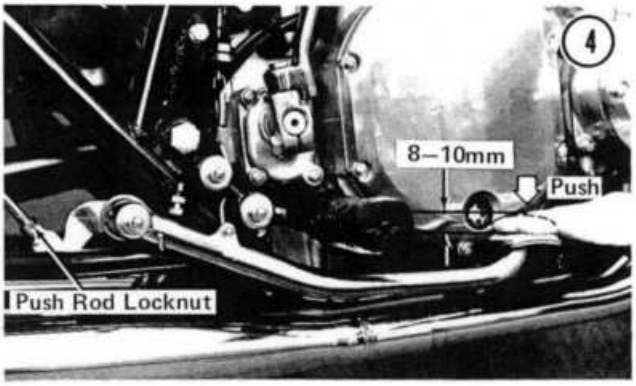
- In its rest position, the brake pedal should be 20–30mm below the top of the right front footrest. If it is too low, go directly to the next step. If it is too high, loosen the locknut and shorten the push rod to give the pedal plenty of play.



- Loosen the locknut and turn the pedal adjusting bolt to obtain the correct pedal position. Tighten the locknut. Check pedal play, then tighten the push rod locknut.

Rear Brake Pedal Play

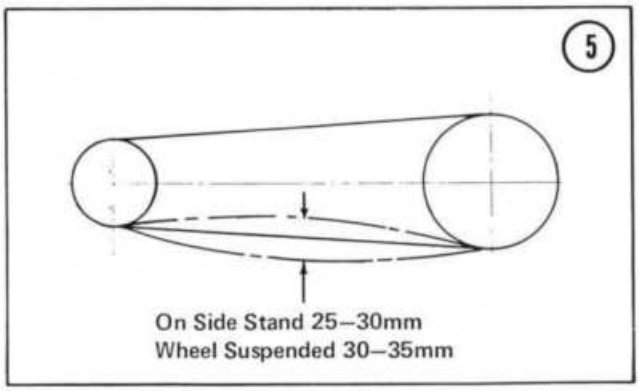
- The brake pedal should have 8–10mm of free play from the rest position before the push rod contacts the master cylinder piston.



- To adjust play, loosen the locknut and turn the push rod. Tighten the locknut.
- Check the rear brake light switch.
- Check for brake drag.
- Check braking effectiveness.

DRIVE CHAIN

Chain and sprocket wear causes the chain to become loose and results in power loss, increased wear, noise, and the



chain could slip off the sprockets and/or snap. Adjusting the chain too tightly will also cause excessive wear and possible chain breakage.

With the motorcycle resting on the side stand, the chain should have about 25–30mm slack measured midway between the sprockets. Rotate the rear wheel to find the place where the chain is tightest (because it may wear unevenly), and adjust if necessary.

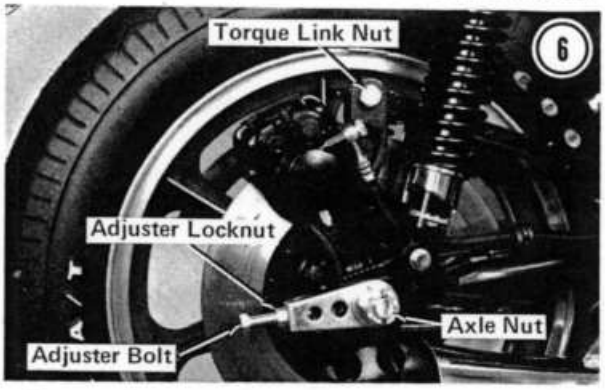
NOTE: With the rear wheel suspended off the ground, chain slack should be 30–35mm.

WARNING

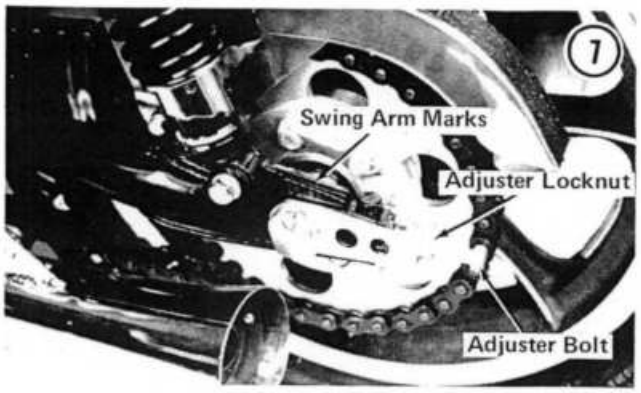
Do not try to adjust the drive chain to compensate for excessive wear. An overworn chain may break, causing a loss of control if it becomes caught in the rear wheel. Inspect the chain as directed in the KZ900 Shop Manual (Maintenance: Drive Chain), and replace it if necessary.

Adjustment Procedure:

- Remove the cotter pin and loosen the torque link nut.



- Remove the cotter pin and loosen the axle nut.
- Loosen the chain adjuster locknuts. If the chain is too tight, first back out the chain adjuster bolts and kick the wheel forward until the chain is loose.
- Now turn in the adjuster bolts, right and left sides evenly, until the chain has the correct amount of slack. To keep the chain and wheel aligned, the notch in the left chain adjuster must align with the same swing arm mark that the right chain adjuster notch aligns with.



NOTE: The accuracy of the swing arm marks can be verified by aligning the wheels using a straight-edge or length of string.

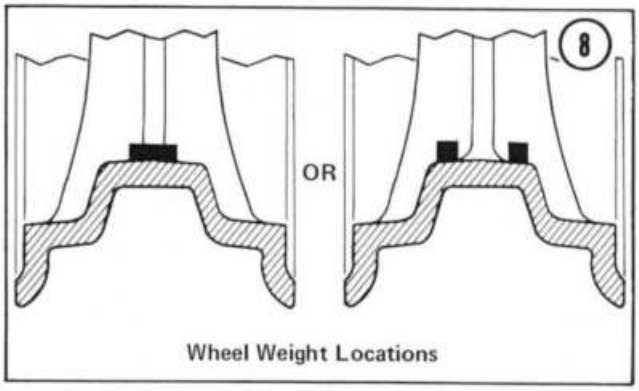
WARNING

Misalignment of the wheel will result in abnormal wear and may result in an unsafe riding condition.

- Tighten the adjuster locknuts. Tighten the axle nut with 12 kg-m (87 ft-lbs) of torque.
- Rotate the wheel to check adjustment, and be sure the chain is not too tight with the motorcycle resting on its wheels, and a rider seated. Readjust if necessary.
- Install a new cotter pin in the axle.
- Tighten the torque link nut with 3.0 kg-m (22 ft-lbs) of torque, and install a new cotter pin.

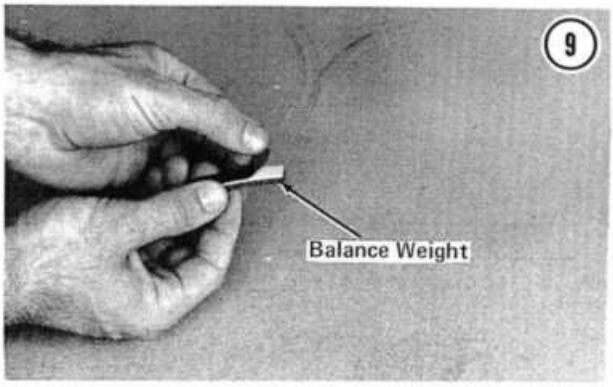
WHEEL BALANCE

- Remove the wheel from the motorcycle (Pg. 11, 14).
- Suspend the wheel so it can be spun freely. The grease seals may have to be removed if they drag excessively.
- Spin the wheel lightly several times, marking the point that stops at the bottom each time. If the wheel does not tend to always stop in one position, it is correctly balanced. If one side of the wheel always stops at the bottom, a balance weight must be attached to the rim opposite that side. Balance weights are available from Kawasaki Parts Department.
- Use an oilless solvent to clean the entire area where the weight may be attached. Weights should be attached to the raised center portion of the rim between spokes. If a spoke interferes with proper weight location, the weight can be cut and applied in equal amounts to each side of the rim center.



Wheel Weight Locations

- Temporarily tape the balance weight to the rim. Check the balance of the wheel again. Add, remove, or relocate weights as required.



- When the wheel is properly balanced, attach the new weights permanently by carefully marking their positions, removing the backing paper, and pressing them firmly into place.



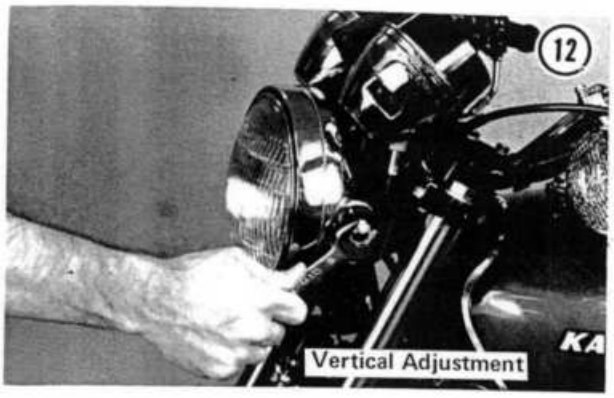
HEADLIGHT

The headlight beam is adjustable in both the horizontal and vertical directions. It should be aimed straight ahead, with the brightest spot slightly below horizontal on high beam. The proper angle is 0.4 degrees down. This is a 50mm drop at 7.6m, measured from the center of the headlight.

To adjust the horizontal (right and left) aim of the beam, turn the small screw in the front of the headlight rim.



To adjust the vertical (up and down) aim of the beam, move the headlight housing by hand.

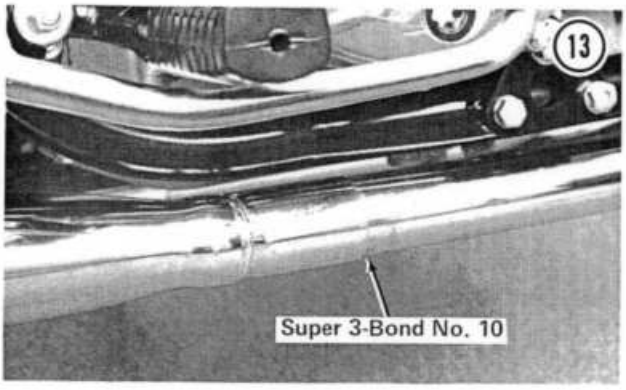


If the vertical aim does not remain in proper adjustment, the housing side bolts are probably too loose. Remove the two screws from the sides of the housing and drop out the lens assembly. Tighten the side bolts with 2.6 kg-m (18 ft-lb) of torque, and reinstall the lens assembly.

DISASSEMBLY

MUFFLERS

The mufflers are a 4-into-2 design, mounted in the same way as the standard 4-muffler exhaust system. For removal and installation procedures, refer to the KZ900 Shop Manual (Disassembly: Mufflers), noting the following:

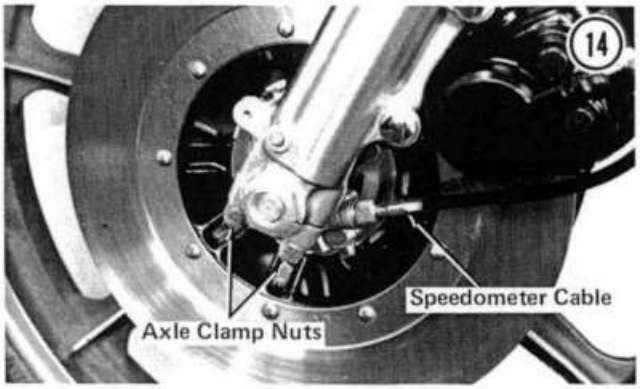


If a muffler has been disconnected from its head pipes, liberally coat the ends of the pipes with Super Three Bond No. 10 (Part No. 56019-120) before inserting them in the muffler.

FRONT WHEEL

Removal:

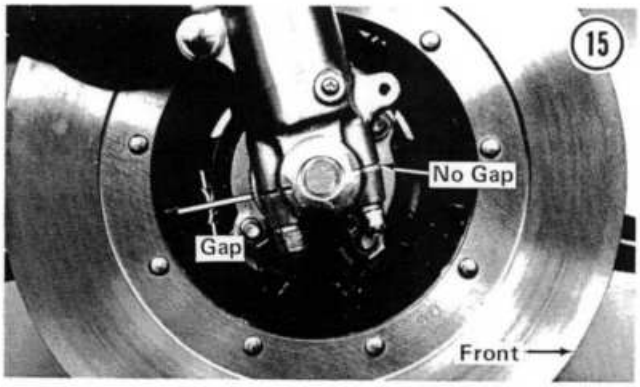
- Carefully support the motorcycle with its front wheel off the ground.
- Disconnect the speedometer cable from the wheel.



- Unbolt one brake caliper and move it free of the fork leg. Avoid straining the brake line and fittings.
- Remove the axle clamp nuts (4), and remove the wheel.
- Insert a 5–6mm thick wooden wedge between the pads of each caliper. This keeps them from moving if the brake lever is squeezed accidentally.

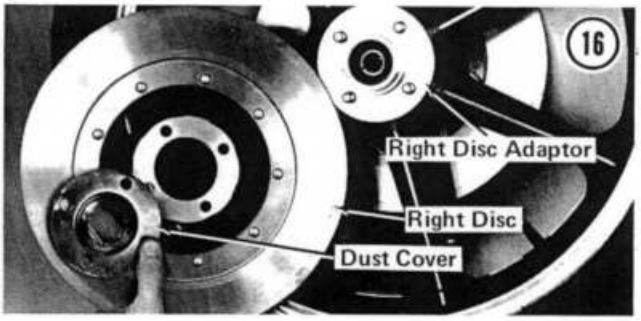
Installation Notes:

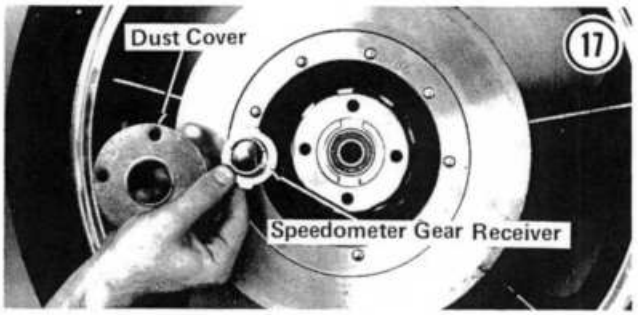
1. First tighten the front axle clamp nuts with 1.9 kg-m (13.7 ft-lbs) of torque, then tighten the rear clamp nuts with the same torque. Be sure each clamp is on correctly, with an even gap at the back, and no gap in front.
2. Turn the wheel while pushing the speedometer cable in gently until the tongue fits into the cable's slot.

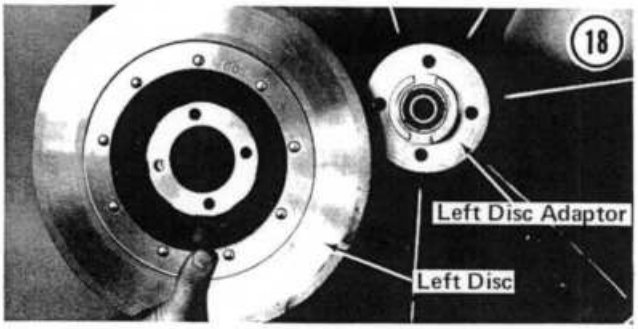


Front Hub Disassembly (Including disc removal)

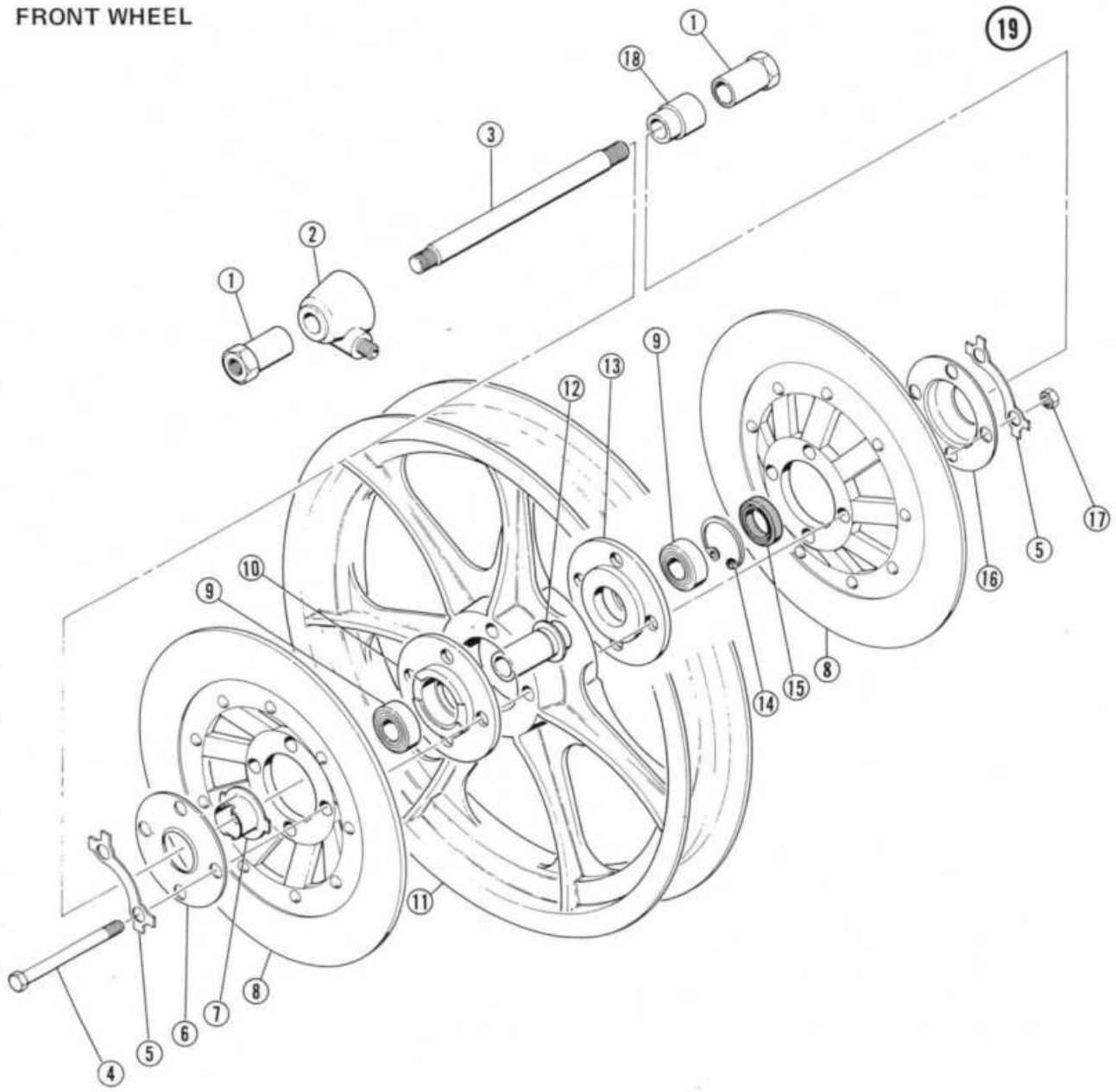
- Mark the right side of the tire so that the hub adaptors can be reinstalled in their original positions.
- Remove one axle nut and then remove the axle together with the speedometer gear housing and right-side collar.
- Straighten the double washer tabs that are bent up against the hub bolts and nuts.
- Remove the nuts (4) and pull out the hub bolts (4). Separate the discs and disc adaptors from the wheel.







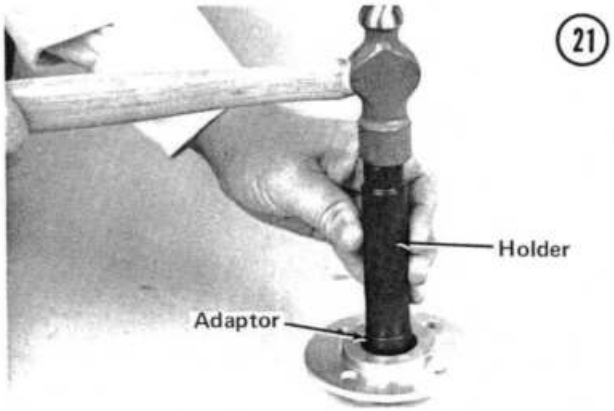
FRONT WHEEL

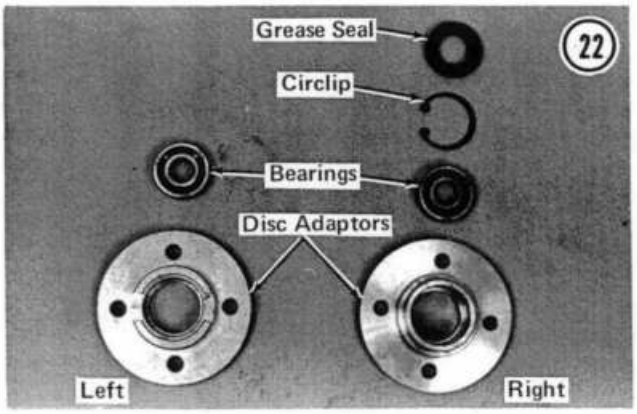


1. Axle Nut
2. Speedometer Gear Housing
3. Axle
4. Bolt
5. Double Washer
6. Dust Cover, Left
7. Speedometer Gear Receiver
8. Brake Disc
9. Bearing
10. Disc Adaptor, Left
11. Wheel
12. Spacer
13. Disc Adaptor, Right
14. Circlip
15. Grease Seal
16. Dust Cover, Right
17. Nut
18. Collar

- Remove the grease seal and bearings only if replacement is necessary, as they may be damaged during removal. Pry the grease seal out of the right disc adaptor, and remove the circlip.
- Remove the bearings using the bearing driver holder (Part No. 57001-139) and the bearing driver adaptor (Part No. 57001-283).





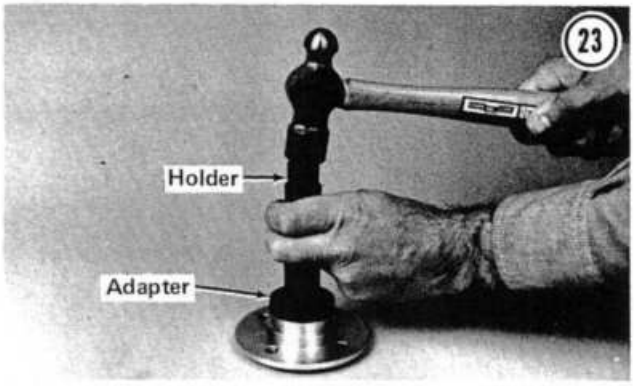


Assembly:

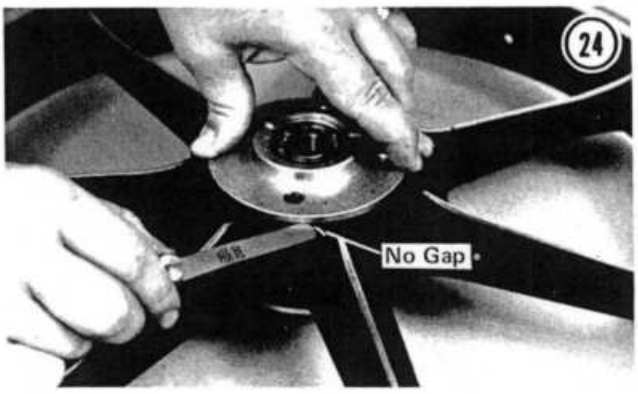
CAUTION

To avoid excessive side loads on the wheel bearings, follow the prescribed hub reassembly procedure carefully.

1. Install a bearing in the right disc adaptor using the bearing driver holder (Part No. 57001-139) and the bearing driver adaptor (Part No. 57001-140). Be sure the bearing goes in straight, and drive it down to the step inside the adaptor. Install the circlip. Drive in a new grease seal using the same tool.



2. Drive a bearing into the left disc adaptor to within about 5mm of the step inside the adaptor. The adaptors must now be put in place on the wheel before driving this bearing into its final position.
3. Fit the right disc adaptor into the wheel on the right side, tapping it carefully if necessary. Lay the wheel on a bench, right side down. Put in the spacer, then fit the left disc adaptor into place, tapping it carefully if necessary. Both adaptors must be firmly seated against the wheel.
4. The bearing must now be driven down just until it contacts the spacer. Reach through the bearing to feel for drag on the spacer after each hammer blow. Bearing location is correct when the spacer's freedom of movement is restricted, with the left disc adaptor still fully seated on the wheel.
5. Check the seating of the adaptor with a 0.05mm thickness gauge. Push down on the adaptor by hand, and see if the gauge can be inserted between the adaptor and the wheel. If it can, the bearing has moved in too far. Remove the left disc adaptor, drive the bearing back out slightly, and repeat steps 3 and 4 until bearing location is correct.



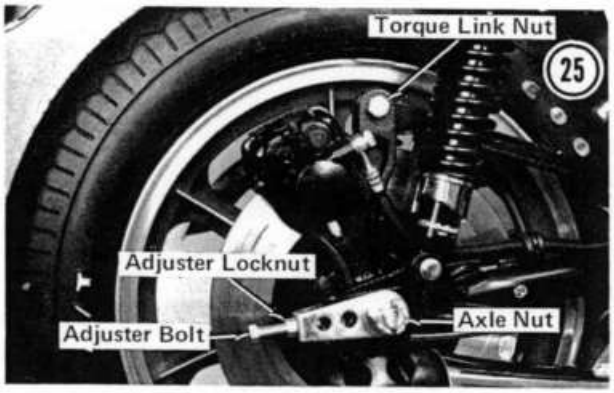
6. Assemble the hub components, fitting the speedometer gear receiver into the notches in the left disc adaptor. Install the left dust cover with its flat side facing in.

7. Center the spacer between the bearing inner races by inserting the axle. Tighten the hub bolts (4) with 3.5 kg-m (25 ft-lb) of torque, and bend a double washer tab up against each bolt and nut.
8. Install the speedometer gear housing so it fits into the notches in the speedometer gear receiver.
9. Tighten the axle nut with 8 kg-m (58 ft-lb) of torque.

REAR WHEEL

Removal:

- Carefully support the motorcycle with its rear wheel off the ground. A standard KZ900 center stand may be used temporarily for this purpose.



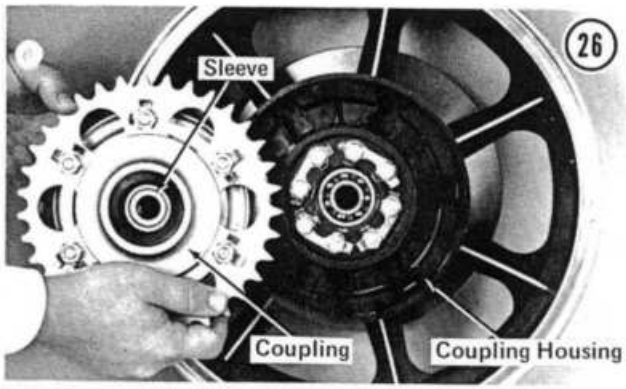
- Remove the cotter pin and loosen the rear torque link nut.
- Remove the cotter pin and remove the axle nut and washer.
- Pull out the axle, remove the drive chain from the sprocket, and remove the wheel.
- Insert a 7–8mm thick wooden wedge between the brake pads so they will not move if the brake pedal is pushed accidentally.

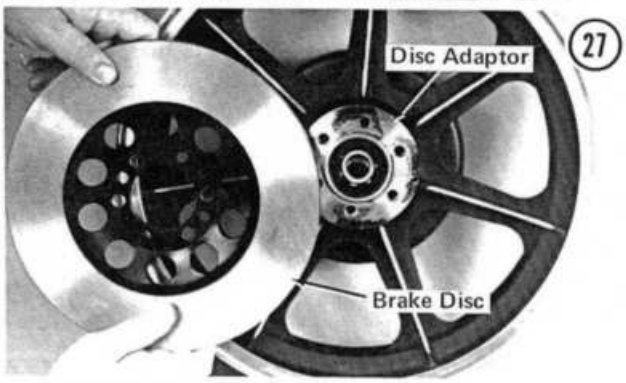
Installation Notes:

1. Adjust the chain before tightening the torque link and axle nuts (Pg. 7).
2. Tighten the axle nut with 12 kg-m (87 ft-lbs) of torque and install a new cotter pin.
3. Tighten the torque link nut with 3.0 kg-m (22 ft-lb) of torque, and install a new cotter pin.

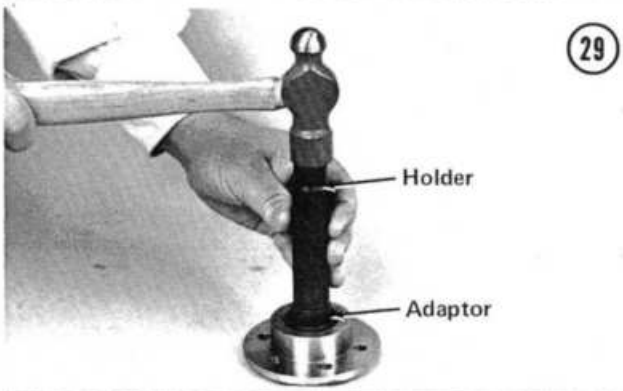
Rear Hub Disassembly (including disc and sprocket removal).

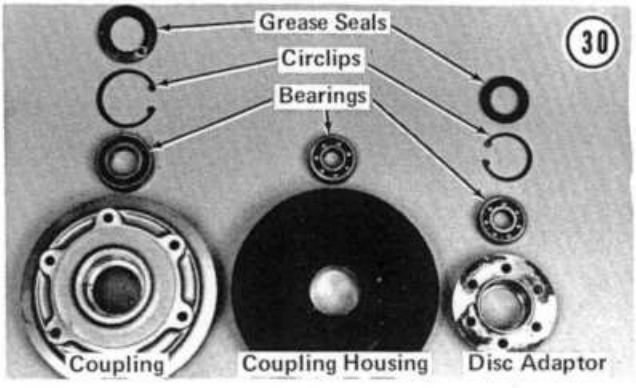
- Remove the coupling and sleeve from the wheel. If necessary, straighten the double washer tabs, remove the sprocket nuts (6), and remove the sprocket.
- If necessary, remove the shock damper and O-ring from the coupling housing.
- Straighten the double washer tabs, remove the brake disc bolts (6), and remove the disc and disc adaptor from the wheel.
- Straighten the double washer tabs, remove the coupling housing bolts (8), and tap the housing off the wheel.
- Remove the grease seals and bearings only if replacement is necessary, as they may be damaged during removal. Pry the grease seals out of the disc adaptor and coupling, and remove the circlips. Remove the bearings using the bearing driver holder (Part No. 57001-139) and the bearing driver adaptors (coupling and disc adaptor, Part No. 57001-283; coupling housing, Part No. 57001-140).





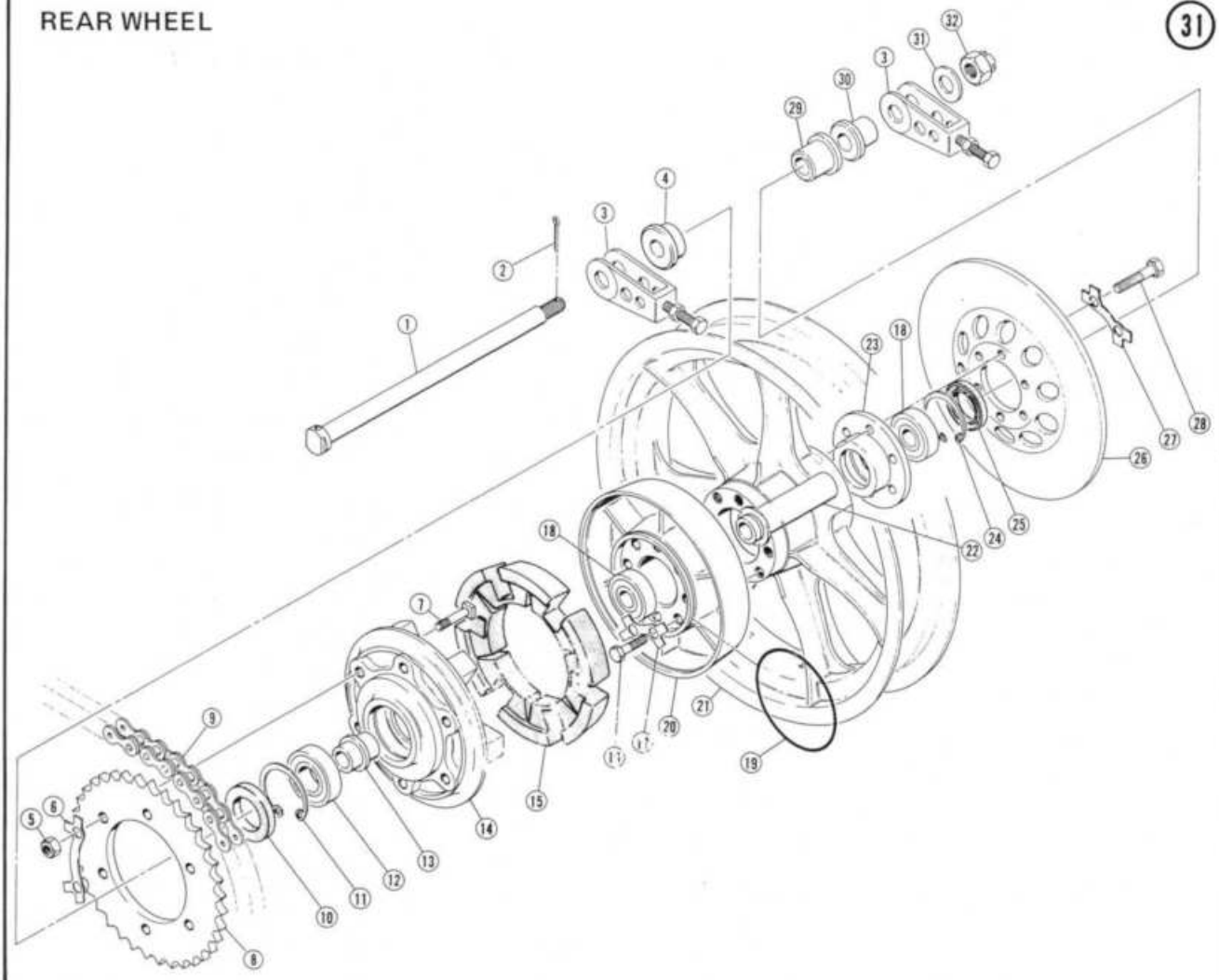






REAR WHEEL

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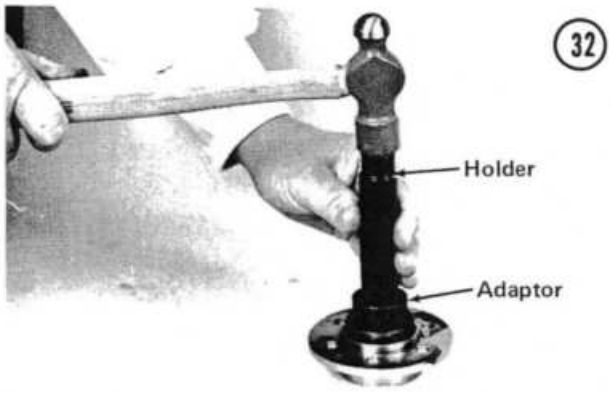
1. Axle
2. Cotter Pin
3. Chain Adjuster
4. Collar
5. Nut
6. Double Washer
7. Bolt, Square Head
8. Sprocket
9. Drive Chain
10. Grease Seal
11. Circlip
12. Bearing
13. Sleeve
14. Coupling
15. Shock Damper
16. Bolt
17. Double Washer
18. Bearing
19. O-ring
20. Coupling Housing
21. Wheel
22. Spacer
23. Disc Adaptor
24. Circlip
25. Grease Seal
26. Brake Disc
27. Double Washer
28. Bolt
29. Collar
30. Caliper Holder Sleeve
31. Flat Washer
32. Axle Nut

Assembly

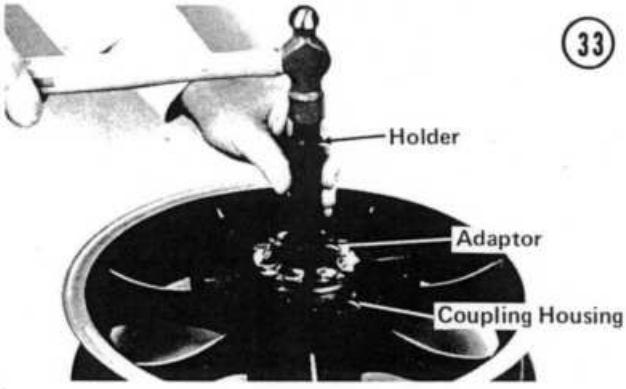
CAUTION

To avoid excessive side loads on the wheel bearings, follow the prescribed hub reassembly procedure carefully.

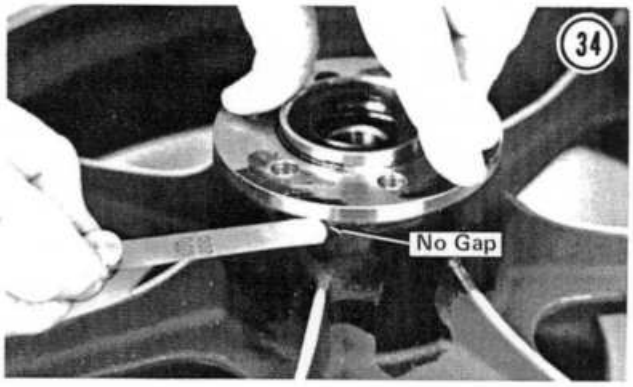
1. Install a bearing in the disc adaptor using the bearing driver holder (Part No. 57001-139) and bearing driver adaptor (Part No. 57001-140). Be sure the bearing goes in straight, and drive it down to the step inside the adaptor. Install the circlip. Drive in a new grease seal using the same tool.



2. Drive a bearing into the coupling housing to within about 10mm of the housing's inner edge. The housing and disc adaptor must now be put in place on the wheel before driving this bearing into its final position.
3. Fit the disc adaptor into place and lay the wheel on a bench, right side down. Put in the spacer, then tap the coupling housing into place.
4. Clean the threads of the housing bolts (8) and apply Loctite Stud N' Bearing Mount (red), Part No. K61079-002. Install the bolts, tighten them with 3.5 kg-m (25 ft-lb) of torque, and bend up the double washer tabs.



5. The bearing must now be driven down just until it contacts the spacer. Reach through the bearing to feel for drag on the spacer after each hammer blow. Bearing location is correct when the spacer's freedom of movement is restricted, with the disc adaptor still fully seated against the wheel.
6. Turn the wheel over and check the seating of the adaptor with a 0.05mm thickness gauge. Push down on the adaptor and see if the gauge can be inserted between the adaptor and the wheel. If it can, the bearing has moved in too far.



7. Remove the adaptor and spacer, put the bearing driver down through the wheel, and drive the bearing back out slightly. Repeat steps 6 and 7 until bearing location is correct.
8. Center the spacer by inserting the axle. Install the brake disc, tighten the bolts (6) with 3.5 kg-m (25 ft-lb) of torque, and bend up the double washer tabs.
9. Install the bearing, circlip, and grease seal in the coupling, using bearing driver adaptor, Part No. 57001-296. Install the sprocket, tightening the nuts with 3.5 kg-m (25 ft-lb) of torque. Bend up the double washer tabs.
10. Install the shock damper and O-ring in the coupling housing. Put in the sleeve, then fit the coupling into the housing.

TUBE, TIRE

Removal and installation of the tires and tubes is basically the same as for the standard model. Refer to the KZ900 Shop Manual (Disassembly: Tube, Tire), noting the following:

1. Bead protectors are not used with the one-piece wheels.
2. Mark the tire at the valve stem location so it can be reinstalled in the same position.
3. The rear wheel is of a special design intended to help retain the tire on the wheel in the event of a puncture while riding. The design can make it more difficult to separate the tire bead from the rim. A service tool is available from Kawasaki Parts Department to facilitate this operation.

REAR BRAKE

NOTE: Brake disc removal is covered in rear hub disassembly. Before working on any disc brake, carefully note the following:

WARNING

1. **Except for the brake pads and discs, use only disc brake fluid, isopropyl alcohol, or ethyl alcohol for cleaning brake parts. Do not use any other fluid for cleaning these parts. Gasoline, motor oil, or any other petroleum distillate will cause deterioration of the rubber parts. Oil spilled on any part will be difficult to wash off completely, and will eventually deteriorate the rubber used in the disc brakes.**

2. When handling the brake pads or discs, be careful that no disc brake fluid or any oil gets on them. Clean off any fluid or oil that inadvertently gets on the pads or discs with a high flash-point solvent. Replace the pads with new ones if they cannot be cleaned satisfactorily.
3. Brake fluid quickly ruins painted surfaces; any spilled fluid should be completely wiped up immediately.
4. If any of the brake line fittings or bleed valves are opened at any time, AIR MUST BE BLED FROM THE BRAKE SYSTEM (Pg. 21).
5. When installing or assembling the rear brake, tighten the disc brake fittings to the values given in Table 1. See the KZ900 Shop Manual for front brake torque values. Improper torque may cause a brake to malfunction.

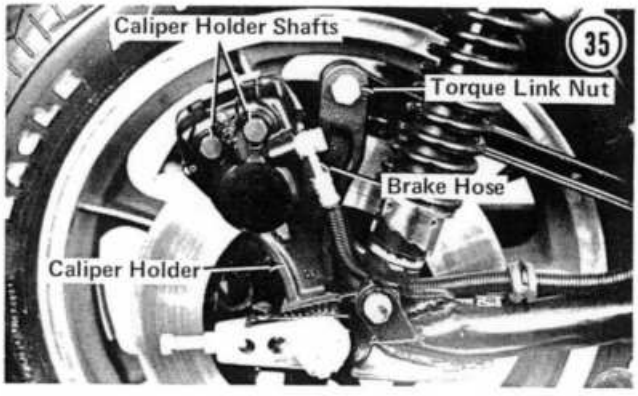
Table 1 Rear Disc Brake Torque

Fitting (banjo) bolts	3.0 kg-m	22 ft-lbs
Caliper holder shafts	2.6 kg-m	19 ft-lbs
Caliper mounting bolts	4.0 kg-m	29 ft-lbs
Bleed valve	0.8 kg-m	70 in -lbs
Disc mounting bolts	3.5 kg-m	25 ft-lbs

Pad Removal
- Remove the rear wheel (Pg. 14).
- Remove pads A and B, following the procedure for front brake pad removal. Refer to the KZ900 Shop Manual (Disassembly: Brake Pads).

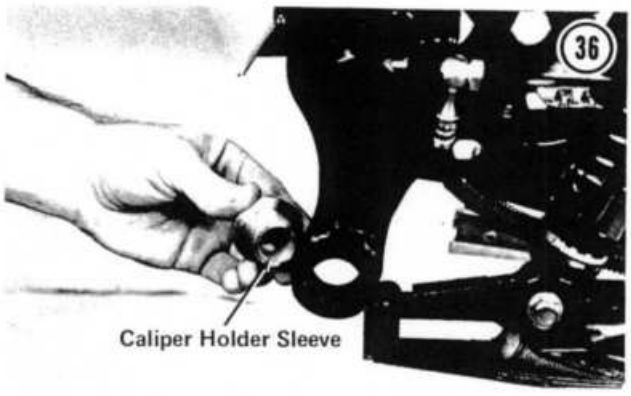
Installation Notes:
1. Install pads A and B, following the procedure for front brake pad installation. Refer to the KZ900 Shop Manual (Disassembly: Brake Pads).
2. Install the rear wheel (Pg. 14).
3. Bleed the rear brake (Pg. 21).
4. Adjust the drive chain (Pg. 7).

Rear Caliper Removal
- Remove the rear wheel (Pg. 14).



- Disconnect the brake hose and secure it in an elevated position to keep fluid from flowing out. Immediately wipe up any brake fluid that spills.
- If the caliper is to be disassembled, loosen the caliper holder shafts (2).
- Remove the rear torque link nut and bolt, and remove the caliper and holder.

Installation Notes:
1. Be sure the caliper holder sleeve is in place. Install the rear wheel, leaving the torque link nut, axle nut, and chain adjuster locknuts loose temporarily.



2. Tighten the caliper holder shaft nuts with 2.6 kg-m (19 ft-lbs) of torque.
3. Connect the brake hose to the caliper, tightening its banjo bolt with 3.0 kg-m (22 ft-lbs) of torque. There is a plain washer for each side of the brake hose fitting.
4. Check the fluid level in the master cylinder, and bleed the brake line (Pg. 21).
5. Adjust the drive chain (Pg. 7).

Rear Caliper Disassembly
Rear caliper disassembly and assembly are the same as for the front calipers. Refer to the KZ900 Shop Manual (Disassembly: Disc Brake).

Rear Master Cylinder Removal
- Slide down the push rod dust cover.
- Disconnect the brake hose from the master cylinder. Immediately wipe up any brake fluid that spills.
- Remove the master cylinder mounting bolts (2), spring washers (2), and plain washers (4), and remove the master cylinder.

Installation Notes:
1. Tighten the master cylinder mounting bolts securely.
2. Bleed the brake line after master cylinder installation (Pg. 21).
3. Adjust the rear brake pedal (Pg. 7).

Rear Master Cylinder Disassembly

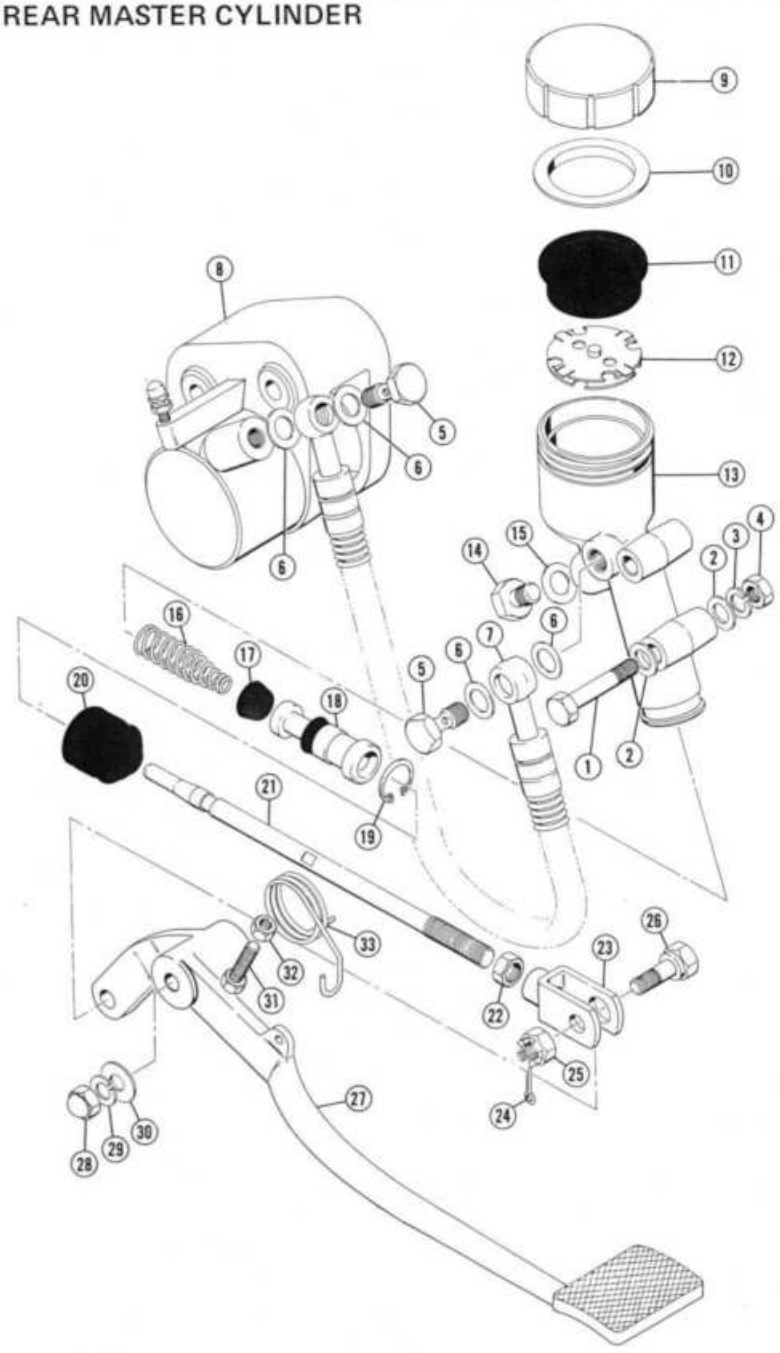
- Take off the master cylinder cap and diaphragm. Empty and discard the brake fluid.
- Remove the circlip and pull out the piston and secondary cup. Do not remove the secondary cup from the piston since removal will damage the cup.
- Remove the return spring and primary cup by lightly applying compressed air into the banjo bolt hole.

Assembly Notes:

1. Before assembly, clean all parts, including the master cylinder, with brake fluid or alcohol (See WARNING, Pg. 20). Apply brake fluid to the removed parts and the inner wall of the cylinder. Take care not to scratch the piston or the inner wall of the cylinder.
2. Install the bleed valve.
3. Put the return spring into the cylinder. The spring seat side must face out.
4. Install the primary cup. Be sure that the primary cup is not installed backward or turned sideways after insertion.
5. Install the piston and the circlip.
6. Put on the diaphragm and the master cylinder cap. When the master cylinder is reinstalled, fill the reservoir with fresh brake fluid, and bleed the rear brake (Pg. 21).

REAR MASTER CYLINDER

(37)



1. Bolt
2. Plain Washer
3. Spring Washer
4. Nut
5. Banjo Bolt
6. Plain Washer
7. Brake Hose
8. Caliper
9. Cap
10. Ring Plate
11. Diaphragm
12. Plate
13. Master Cylinder Body
14. Plug
15. Gasket
16. Spring
17. Primary Cup
18. Piston Assembly
19. Circlip
20. Dust Cover
21. Push Rod
22. Nut
23. Clevis
24. Cotter Pin
25. Castle Nut
26. Clevis Bolt
27. Brake Pedal
28. Cap Nut
29. Spring Washer
30. Plain Washer
31. Adjusting Bolt
32. Nut
33. Return Spring

MAINTENANCE

FUEL TANK

The fuel tank capacity is 13.6 liters, 0.8 liters of which form the reserve supply. Tank cap and fuel tap construction are identical to the standard model. Refer to the KZ900 Shop Manual (Maintenance: Fuel Tank) for inspection and cleaning procedures.

WHEELS

The wheels are of one-piece, cast aluminum alloy construction. The design eliminates conventional wire spokes for simplicity and maintenance-free operation. Aluminum adaptors are bolted to each side of the wheel hubs to carry the bearings, grease seals, speedometer drive, rear sprocket, shock damper, and brake discs.

The rear wheel is of a special design. The rim area is shaped so that the tire will tend to stay on the wheel, even with a loss of air pressure.

Table 2 Wheel Dimensions

	Diameter	Rim Width
Front	19 in.	2.156 in.
Rear	16 in.	3.0 in.

Wheel Runout

The wheels are manufactured to very high standards of accuracy and trueness, and should remain within manufacturing tolerances for runout. However, if the wheels have been subjected to severe impact, radial and axial runout should be checked using the procedure in the KZ900 Shop Manual (Maintenance: Rim, Spokes).

Table 3 Rim Runout

	Standard	Service Limit
Axial	under 0.8 mm	3 mm
Radial	under 1 mm	2 mm

If a wheel runout measurement exceeds the service limit, the wheel must be replaced, since adjustment is not possible.

WHEEL BEARINGS, GREASE SEALS

Grease seals are installed in the speedometer gear housing, in the right side of the front and rear hubs, and in the rear wheel coupling.

Wheel bearings are installed in both sides of each hub, and in the rear wheel coupling. Refer to the KZ900 Shop Manual (Maintenance: Wheel Bearings, Grease Seals) for inspection and lubrication procedures.

Table 4 Wheel Bearings, Grease Seals

	FRONT WHEEL		
	Disc Adaptors		Speedometer Gear Housing
	Left	Right	
Grease Seal	——	PJA254008	PJA304208
Bearing	#6203	#6203	——

	REAR WHEEL		
	Coupling	Coupling Housing	Disc Adaptors
Grease Seal	AJ406207	——	PJA355208
Bearing	#6206	#6304	#6304

TIRES

The tires are designed to provide good traction and power transmission during acceleration and braking even on bad surfaces. To do this, they must be inflated to the correct pressure and not overloaded. The maximum recommended load, including all accessories, rider(s), and baggage, is 150 kg; over and above vehicle curb weight.

If the tires are inflated to too high a pressure, riding becomes rough, the center portion of the tread wears quickly, and the tires are easily damaged.

If inflation pressure is too low, the shoulder portions wear quickly, the cord suffers damage, fuel consumption is high, and handling is poor. In addition, heat builds up at high speeds, and tire life is greatly shortened.

To ensure safe handling and stability, use only the recommended standard tires for replacement, inflating them to the standard pressures. However, for continuous high speed travel, increase the tire pressure 0.2~0.4 kg/cm² (3~6 psi) in order to minimize heat buildup. Also, a certain variation from the standard pressure may be desired depending on road surface conditions (rain, rough surface, etc.).

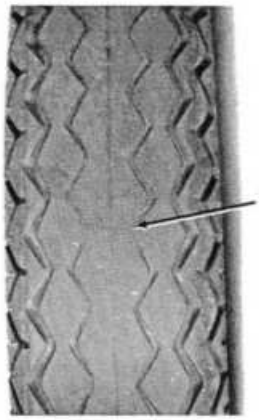
Table 5 Tires, Air Pressure

	Air Pressure (Cold)	Tire Size	Make Type	Minimum Tread Depth
Front	1.82 kg/cm² (26 psi)	ML90-19 Load Range B	Goodyear Eagle G/T	Raised Tread Wear Indicators are Molded into the Tire Tread.
Rear	One Rider: 1.54 kg/cm² 22 (psi)	MT90-16T Load Range B	Goodyear Eagle A/T	
	Two Riders: 1.68 kg/cm² (24 psi)			

Tire Wear, Damage

Tires must not be used if they are too worn, or if they are cut or otherwise damaged. As the tire tread wears down, the tire becomes more susceptible to puncture and failure. 90% of tire failures occur during the last 10% of tire life.

Visually inspect the tire for cracks and cuts, replacing the tire in case of bad damage. Remove any imbedded stones or other foreign particles from the tread. Swelling or high spots indicate internal damage, requiring tire replacement unless the damage to the fabric is very minor.



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Wear indicators are molded into the tread of the tires. The indicators are small raised areas in the bottom of each tread groove. As the tire wears down, the indicators will reach the surface before the rest of the tread grooving is worn away. The wear indicators, therefore, appear as small bare spots in the tread, and a tire that is worn to this point must be replaced.

DISC BRAKES

Hydraulic disc brakes are used on each wheel for superior braking performance and high reliability. Double discs are fitted on the front wheel, and a single disc is mounted on the rear.

Front Brake

Operation of the front brake and the construction of its components are basically the same as on the standard KZ900 model. Refer to the KZ900 Shop Manual (Maintenance: Front Brake) for detailed information.

Fluid pressure in the front brake system is transmitted simultaneously to two caliper assemblies that are identical except for their holders. To reduce weight, the discs these calipers grip are 5mm thick, compared to 7mm for the standard single disc. The master cylinder for this double disc system is slightly larger in diameter, 15.9mm compared to 14mm for the standard model.

Rear Brake

The rear brake operates on the same principle as the front, using a pedal-operated master cylinder to pressurize the system. Basic design and operation of the rear master cylinder are identical to those of the front cylinder. Refer to the KZ900 Shop Manual (Maintenance: Front Brake) for detailed information.

Fluid pressure in the system operates a caliper that is nearly identical to those used on the front. A single 7mm thick disc is bolted to the right side of the rear wheel.

WARNING

When working with the disc brakes, observe the precautions listed below.

1. **Never reuse old brake fluid.**
2. **Do not use fluid from a container that has been left unsealed or that has been open a long time.**
3. **Do not mix two types of fluid for use in a brake. This lowers the brake fluid boiling point and could cause the brake to be ineffective. It may also cause the rubber brake parts to deteriorate. Recommended fluids are given in Table 6.**

NOTE: The type of fluid originally used in the disc brakes is not available in most areas, but it should be necessary to add very little fluid before the first brake fluid change. After changing the fluid, use only the same type thereafter.

Table 6 Recommended Disc Brake Fluid

Atlas Extra Heavy Duty
Shell Super Heavy Duty
Texaco Super Heavy Duty
Wagner Lockheed Heavy Duty
Girling Amber

The correct fluid will come in a can labeled D.O.T.3. Do not use fluid that does not have this marking.

4. **Do not leave a reservoir cap off for any length of time to avoid moisture contamination of the fluid.**
5. **Do not change the fluid in the rain or when a strong wind is blowing.**
6. **Except for the brake pads and discs, use only disc brake fluid, isopropyl alcohol, or ethyl alcohol for cleaning brake parts. Do not use any other fluid for cleaning these parts. Gasoline, motor oil, or any other petroleum distillate will cause deterioration of the rubber parts. Oil spilled on any part will be difficult to wash off completely and will eventually reach and break down the rubber used in the disc brake.**
7. **When handling the brake pads or discs, be careful that no disc brake fluid or any oil gets on them. Clean off any fluid or oil that inadvertently gets on the pads or discs with a high flash-point solvent. Do not use one which will leave an oily residue. Replace the pads with new ones if they cannot be cleaned satisfactorily.**
8. **Brake fluid quickly ruins painted surfaces; any spilled fluid should be completely wiped up immediately.**
9. **If any of the brake line fittings or bleed valves are opened at any time, AIR MUST BE BLED FROM THE BRAKE.**
10. **When installing or assembling the rear brake, tighten the disc brake fittings to the values given in Table 1. See the KZ900 Shop Manual for front brake torque values. Improper torque may cause a brake to malfunction.**

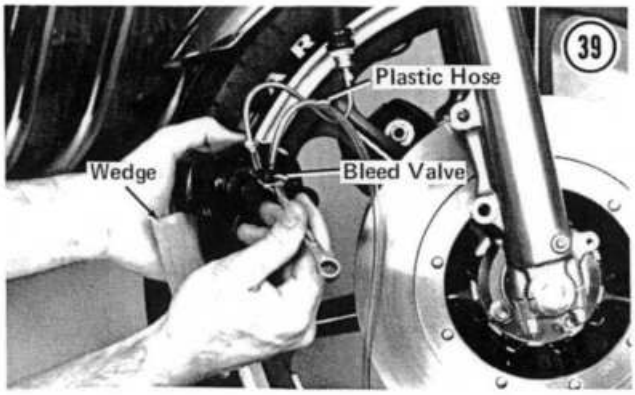
Bleeding the Brakes

The brake fluid has a very low compression coefficient so that almost all the movement of the brake lever or pedal is transmitted directly to the caliper for braking action. Air, however, is easily compressed. When air enters the brake lines, brake lever or pedal movement will be partially used in compressing the air. This will make the lever or pedal feel spongy, and there will be a loss of braking power.

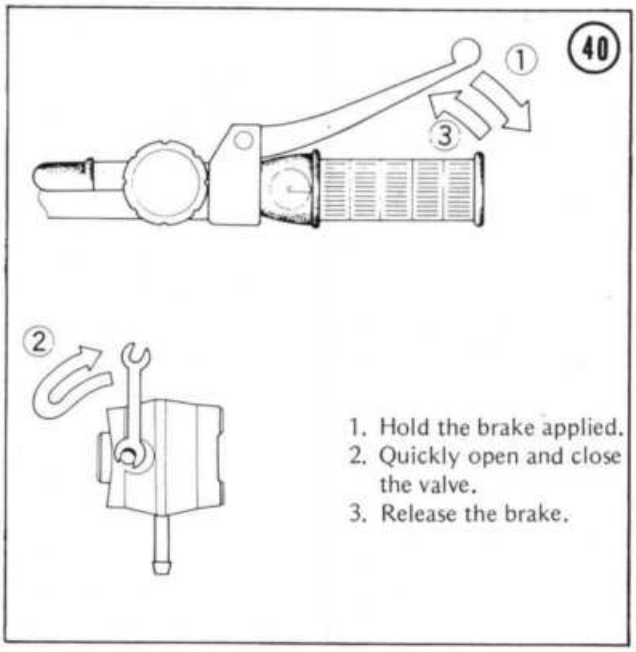
Bleed the air from the brake whenever brake lever or pedal action feels soft or spongy, after the brake fluid is changed, or whenever a brake line fitting has been loosened for any reason.

Front Brake

- Remove the reservoir cap, and check that there is plenty of fluid in the reservoir. The fluid level must be checked several times during the bleeding operation and replenished as necessary. If the fluid in the reservoir runs completely out any time during bleeding, the bleeding operation must be done over again from the beginning since air will have entered the line.
- With the reservoir cap off, slowly pump the brake lever several times until no air bubbles can be seen rising up through the fluid from the holes at the bottom of the reservoir. This bleeds the air from the master cylinder end of the line.
- Unbolt one caliper from the fork leg, and carefully pull the brake hose free of the wire loop guide. Insert a 5–6mm thick wooden wedge firmly between the pads of the caliper. Hold the caliper so the bleed valve points straight up.



- Connect a clear plastic hose to the caliper bleed valve, running the other end of the hose into a container. Install the master cylinder reservoir cap.
- Pump the brake lever a few times until it becomes hard and then, holding the lever squeezed, quickly open (turn counterclockwise) and close the bleed valve. Then release the lever. Repeat this operation until no more air can be seen coming out into the plastic hose. Check the fluid level in the reservoir frequently, replenishing it as necessary.
- When all the air is bled from the caliper, tighten the bleed valve with 0.8 kg-m (70 in-lbs), remove the plastic hose, and install the rubber cap on the bleed valve. Remove the wedge and reinstall the caliper on the fork leg.
- Check the reservoir fluid level, and then repeat the bleeding procedure for the other front caliper.



Rear Brake

- The rear brake may be bled without removing the caliper. Follow the same procedure used for bleeding the front brake, operating the rear brake pedal instead of the lever.

Master Cylinder Parts Wear

When master cylinder parts are worn or damaged, proper brake fluid pressure cannot be obtained in the line, and the brake will not hold.

If the small relief port becomes plugged, especially with a swollen or damaged primary cup, the brake pads will drag on the disc.

- Check that there are no scratches, rust or pitting on the inside of the master cylinder, and that it is not worn past the service limit.
- Check the piston for these same faults.
- Inspect the primary and secondary cups. If a cup is worn, damaged, softened (rotted), or swollen, replace it. When inserting the cup into the cylinder, see that it is slightly larger than the cylinder (standard values given in the table). If fluid leakage is noted at the brake lever or pedal, the cups should be replaced. (The secondary cup is part of the piston assembly. Replace the piston if its cup requires replacement).
- Check that the spring is not damaged and is not shorter than the service limit.
- Replace the dust seal (front) or push rod dust cover (rear) if damaged.

Table 7 Master Cylinder Parts

	Measurement	Standard	Service Limit
Front	Cylinder Inside Diameter	15.870 – 15.913mm	15.45mm
	Piston Outside Diameter	15.827 – 15.854mm	15.77mm
	Primary, Secondary Cup Diameter	16.45 – 16.95mm	16.30mm
	Spring free length	43.4mm	40.5mm
Rear	Cylinder Inside Diameter	15.870 – 15.913mm	15.95mm
	Piston Outside Diameter	15.827 – 15.854mm	15.75mm
	Primary, Secondary Cup Diameter	16.45 – 16.95mm	16.30mm
	Spring Free Length	41.2mm	39.0mm

Caliper Parts Wear
Refer to the KZ900 Shop Manual (Maintenance: Front Brake – 76 Model).

Brake Line Damage
Refer to the KZ900 Shop Manual (Maintenance: Front Brake).

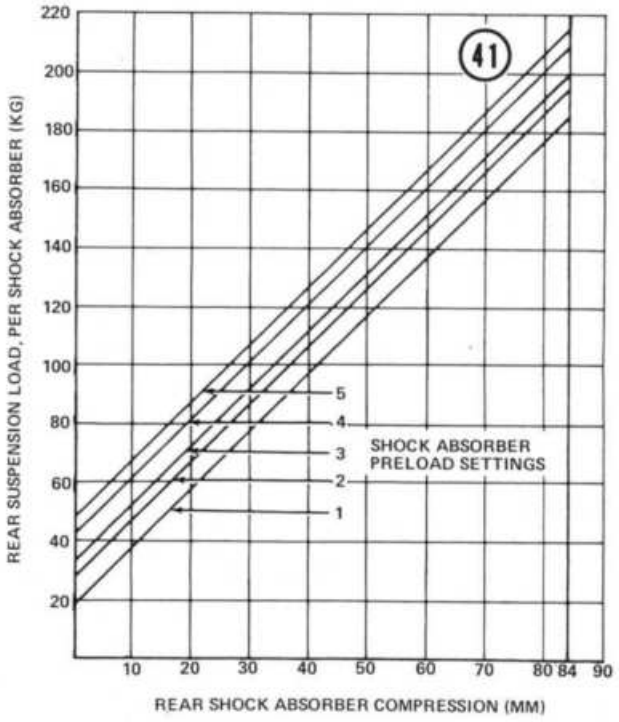
Disc Wear, Warp
Inspect disc wear and warp as directed in the KZ900 Shop Manual (Maintenance: Front Brake).

Table 8 Disc Runout, Front and Rear

Standard	Service Limit
Under 0.1mm	0.3mm

Table 9 Disc Thickness

	Standard	Service Limit
Front	4.9 – 5.1mm	4.5mm
Rear	6.9 – 7.1mm	6.0mm

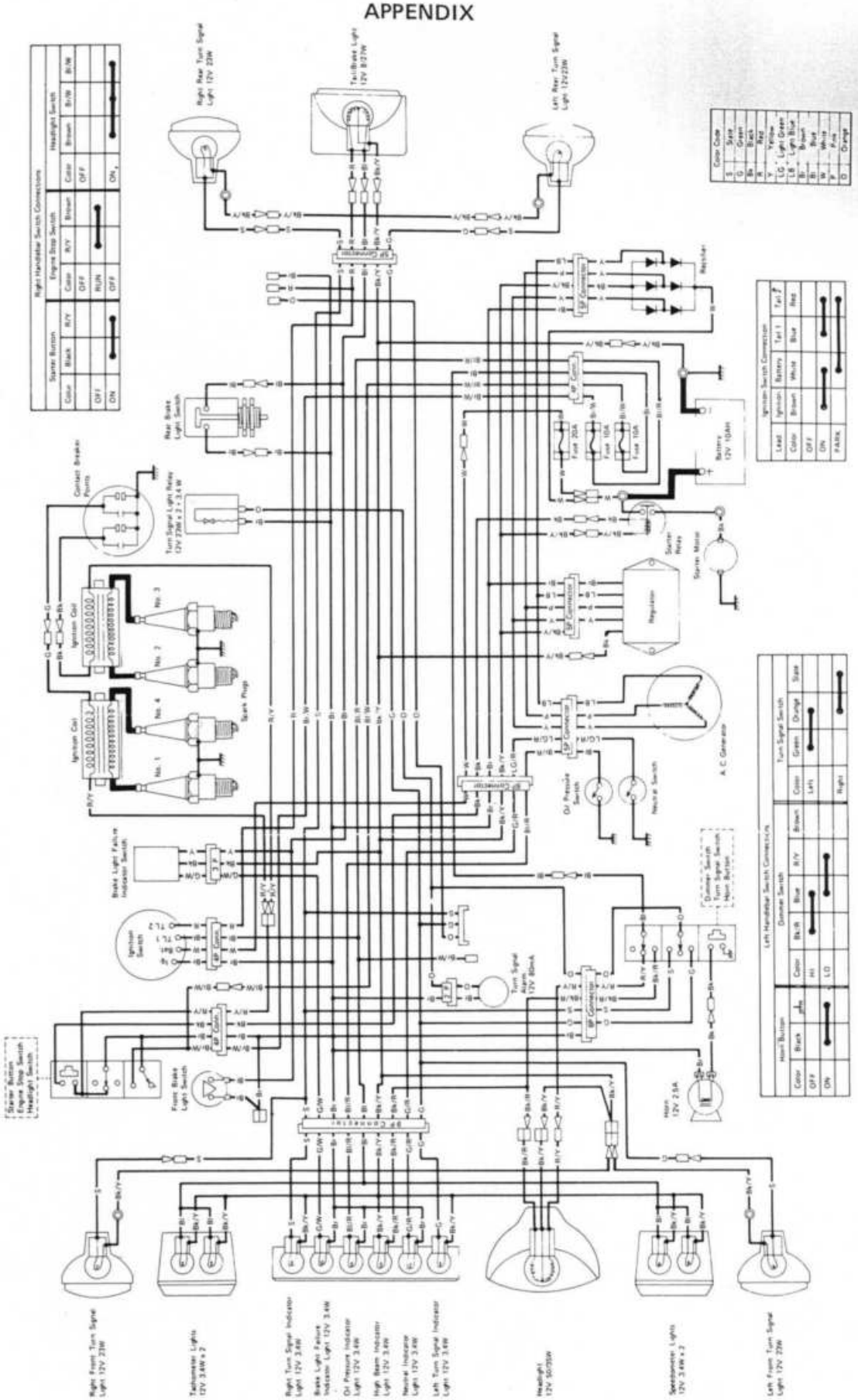


REAR SHOCK ABSORBERS
The rear shock absorbers and springs are different from the standard KZ900 model, though basic design and function are similar. Boge Mulholland shock absorbers, type LT-13110, are used with 2.0 kg-per-mm (110 ppi) straight-wound springs.

Inspect the rear shock absorbers as directed in the KZ900 Shop Manual (Maintenance: Rear Shock Absorber). If oil leakage is evident, replace the seals by installing the Suspension Rebuilding Kit, Part No. K45014-201. Follow the instructions provided with the kit.

MUFFLERS
The exhaust system is a four-into-two collector type. A single muffler on each side is connected to the two head pipes on that side. Inspect the mufflers as directed in the KZ900 Shop Manual (Maintenance: Mufflers).

KZ900-B1:LTD Wiring Diagram (U.S. Model)



KZ900-B1:LTD Wiring Diagram (Canada Model)

