



Kawasaki VN1500



**Motorcycle
Service Manual**

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forms the press fit with the base component to avoid damaging the bearings. This prevents severe stress on the balls or needles and races, and prevent races and balls or needles from being dented. Press a ball bearing until it stops at the stops in the hole or on the shaft.

(13) Oil Seal and Grease Seal

Replace any oil or grease seals that were removed with new ones, as removal generally damages seals. When pressing in a seal which has manufacturer's marks, press it in with the marks facing out. Seals should be pressed into place using a suitable driver, which contacts evenly with the side of seal, until the face of the seal is even with the end of the hole. Before a shaft passes through a seal, apply a little high temperature grease on the lips to reduce rubber to metal friction.

(14) Circlip, Retaining Ring, and Cotter Pin

Replace any circlips, retaining rings, and cotter pins that were removed with new ones, as removal weakens and deforms them. When installing circlips and retaining rings, take care to compress or expand them only enough to install them and no more.

(15) Lubrication

Engine wear is generally at its maximum while the engine is warming up and before all the rubbing surfaces have an adequate lubricative film. During assembly, oil or grease (whichever is more suitable) should be applied to any rubbing surface which has lost its lubricative film. Old grease and dirty oil should be cleaned off. Deteriorated grease has lost its lubricative quality and may contain abrasive foreign particles.

Don't use just any oil or grease. Some oils and greases in particular should be used only in certain applications and may be harmful if used in an application for which they are not intended. This manual makes reference to molybdenum disulfide grease (MoS₂) in the assembly of certain engine and chassis parts. Always check manufacturer recommendations before using such special lubricants.

(16) Electrical Wires

All the electrical wires are either single-color or two-color and, with only a few exceptions, must be connected to wires of the same color. On any of the two-color wires there is a greater amount of one color and a lesser amount of a second color, so a two-color wire is identified by first the primary color and then the secondary color. For example, a yellow wire with thin red stripes is referred to as a "yellow/red" wire; it would be a "red/yellow" wire if the colors were reversed to make red the main color.

Wire (cross-section)	Name of Wire Color
	Yellow/Red

(17) Replacement Parts

When there is a replacement instruction, replace these parts with new ones every time they are removed. These replacement parts will be damaged or lose their original function once removed.

(18) Inspection

When parts have been disassembled, visually inspect these parts for the following conditions or other damage. If there is any doubt as to the condition of them, replace them with new ones.

Abrasion	Crack	Hardening	Warp
Bent	Dent	Scratch	Wear
Color change	Deterioration	Seizure	

(19) Specifications

Specification terms are defined as follows:

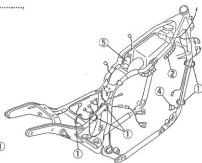
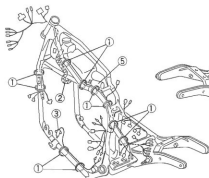
"Standards": show dimensions or performances which brand-new parts or systems have.

"Service Limits": indicate the usable limits. If the measurement shows excessive wear or deteriorated performance, replace the damaged parts.

1-12 GENERAL INFORMATION

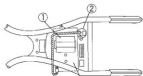
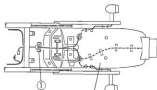
Cable, Wire, and Hose Routing

Wiring Routing

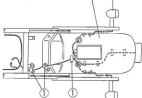


1. Wire Straps
2. Cooling Hoses
3. Side Stand Switch
4. Rear Brake Light Switch
5. Fuel Pump

(VN1500-B)



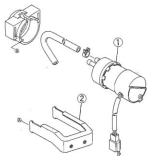
(VN1500-A)



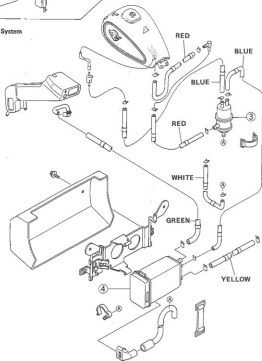
1. Wire Clamps
2. Rear Fender Rear Section
3. Rear Turn Signal Light

1. Junction Box
2. Starter Relay
3. Battery (+) Wire
4. Battery

24 FUEL SYSTEM



Exposptive Emission Control System
(California Model)



1. Fuel Pump
2. Bracket
3. Liquid/Vapor Separator
4. Canister

2-14 FUEL SYSTEM

Carburetor Inspection

WARNING

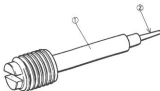
Gasoline is extremely flammable and can be explosive under certain conditions. Turn the ignition switch OFF. Do not smoke. Make sure the area is well ventilated and free from any source of flame or sparks; this includes any appliance with a pilot light.

- Move the choke lever to check that the starter plungers move smoothly and return by spring tension.
- If the starter plungers do not work properly, replace the carburetor.
- Turn the throttle lever to check that the throttle butterfly valves move smoothly and return by spring tension.
- If the throttle valves do not move smoothly, replace the carburetors.
- Check that the O-rings and diaphragms are in good condition.

O-rings for Drain Plug and Coasting Enricher

Diaphragms for Vacuum Piston and Coasting Enricher

- If any of the O-rings or diaphragms are not in good condition, replace them.
- Check the plastic tip of the float valve needle. It should be smooth, without any grooves, scratches, or other damage.



1. Pilot Screw

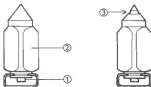
2. Tapered Portion

- If the pilot screw is worn or damaged on the tapered portion, it will prevent the engine from idling smoothly. Replace it.
- Check that the vacuum piston moves smoothly in the carburetor body. The surface of the piston must not be excessively worn.
- If the vacuum piston does not move smoothly, or if it is very loose in the carburetor body, replace both the body and the vacuum piston.
- Check the inlet vacuum passage for the coasting enricher system, if backfiring occurs too often.
- If the passage is clogged, blow it clear with compressed air.

Fuel Pump

Removal

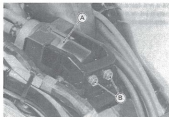
- Remove the fuel tank.



1. Rod

2. Valve Needle

3. Valve Needle Wear



A. Fuel Pump

B. Pump Bolts

- If the plastic tip is damaged, replace the needle.
- If it does not spring out, replace the needle.
- Check the tapered portion of the pilot screw for wear or damage.

- Remove the bolts and take the fuel pump out of the frame.
- Disconnect the pump wire connector.
- Pull the fuel hoses off the fuel pump.

3-6 COOLING SYSTEM

Pressure Testing

- Remove the radiator cap, and install a cooling system pressure tester on the radiator filler neck.

NOTE

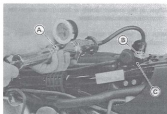
Wet the cap sealing surfaces with water or coolant to prevent pressure leaks.

- Build up pressure in the system carefully until the pressure reaches 123 kPa (1.25 kg/cm², 18 psi).

CAUTION

During pressure testing, do not exceed the pressure for which the system is designed. The maximum pressure is 123 kPa (1.25 kg/cm², 18 psi).

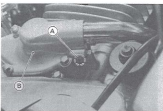
- Watch the gauge for at least 6 seconds.
- If the pressure holds steady, the system is all right.



A. Pressure Tester
B. Adapter

C. Radiator Cap

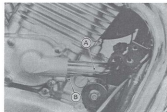
- If the pressure drops soon, check for leaks.



A. Drainage Outlet Passage
(at the bottom of the pump body)
B. Water Pump

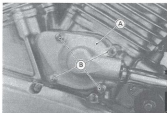
Water Pump, Mechanical Seal Removal

- Remove the following parts.
 - Radiator Cover (see Radiator Removal)
 - Radiator Lower Bolts (see Radiator Removal)
 - Water Pipe



A. Water Pipe B. Bolt

Water Pump Cover



A. Water Pump Cover B. Cover Bolts

Water Pump

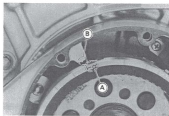
Visual Leak Inspection

- Check the drainage outlet passage at the bottom of the water pump body for coolant leaks. Pump removal is not required.
- If the mechanical seal is damaged, the coolant leaks through the seal and drains through the passage. Replace the water pump unit.

4-14 ENGINE TOP END

Rear Cylinder

- Check the camshaft chain timing for the front cylinder.
- Turn the crankshaft counterclockwise 310° from the T/F mark (left side view) to align the T/R (TDC mark).



A. TDC Mark (Rear Cylinder) B. Timing Mark

- Engage the camshaft chain sprocket with the camshaft chain as shown.



1. Timing Marks
2. R Mark

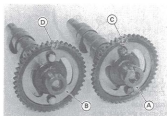
CAUTION

- The crankshaft may be turned while the camshaft is removed, but always pull the chain taut while turning the crankshaft. This avoids kinking the chain on the lower (crankshaft) sprocket. A kinked chain could damage both the chain and the sprocket.

Camshaft Sprocket Assembly

- Note the following.

- Use the sprocket marked F for the front cylinder camshaft and R for the rear cylinder camshaft.



A. Front Camshaft Sprocket C. F Mark
B. Rear Camshaft Sprocket D. R Mark

- Apply a non-permanent locking agent to the camshaft sprocket bolts and tighten them to the specified torque (see Exploded View).
- If the camshafts are replaced with new ones, apply a thin coat of a molybdenum disulfide grease to all cam parts and journals.

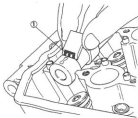
Camshaft, Rocker Case Wear

- Note the following.

- Measure each clearance between the camshaft and the rocker case using plastigage (press gauge).

NOTE

- Tighten the rocker case bolts and nuts to the specified torque (see Exploded View).



1. Plastigage Width

4-22 ENGINE TOP END

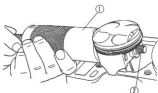
- Tighten the cylinder nuts temporarily.

NOTE

- Torque the cylinder nuts to the specification (see Exploded View) after tightening the rocker case bolts and nuts to the specified torque.

Piston Removal

- Remove the cylinder block.
- Place a clean cloth under the pistons and remove the piston pin snap rings from the outside of each piston.
- Using the piston pin puller assembly (special tool), remove the piston pins.



1. Piston Pin Puller Assembly: 57001-910
2. Adapter

Piston Installation

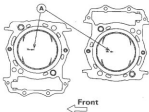
NOTE

- If a new piston or cylinder is used, check piston to cylinder clearance (see Specifications), and use new piston ring.

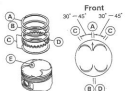
- The arrow [A] on each piston head must point forward.

CAUTION

Do not reuse snap rings, as removal weakens and deforms them. They could fall out and score the cylinder wall.



- The piston ring openings must be positioned as shown in the figure. The openings of the oil ring steel rails must be about 30° ~ 45° of angle from the opening of the top ring.

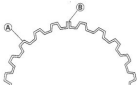


- Top Ring [A]
Second Ring [B]
Oil Ring Steel Rails [C]

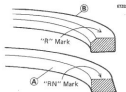
- Oil Ring Expander [D]
Arrow [E]

NOTE

- The oil ring rails have no "top" or "bottom".
- Install the oil ring expander [A] in the bottom piston ring groove so the ends [B] but together.
- Install the oil ring steel rails, one above the expander and one below it.
- Spread the rail with your thumbs, but only enough to fit the rail over the piston.
- Release the rail into the bottom piston ring groove.

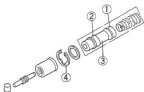


- Do not mix up the top ring and second ring.
- Install the second ring [A] so that the "RN" mark faces up.
- Install the top ring [B] so that the "R" mark faces up.



8328

5-6 CLUTCH



- 1. Primary Cup
- 2. Secondary Cup
- 3. Piston
- 4. Circlip

Assembly

- Clean the disassembled parts with clutch fluid and apply clutch fluid to the inner wall of the cylinder.

CAUTION

- Take care not to scratch the piston or the inner wall of the cylinder.

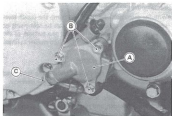
Inspection

- Check the following for wear, damage, cracks, or deterioration:
 - Cylinder Inner Wall and Piston
 - Primary and Secondary Cups
 - Dust Cover
 - Spring
- Check that the relief and supply ports on the cylinder are not plugged.

Clutch Slave Cylinder

Removal

- Perform the following if the clutch slave cylinder is to be disassembled.
- Loosen the clutch hose banjo bolt on the clutch slave cylinder.
- Remove the mounting bolts and take off the clutch slave cylinder.



- A. Slave Cylinder
- B. Mounting Bolts
- C. Banjo Bolt

- Remove the banjo bolt and free the cylinder from the hose.

- Perform the following if the clutch slave cylinder is to be removed but not disassembled.

CAUTION

- If the clutch slave cylinder is removed and left alone, the piston will be pushed out by the spring and the clutch fluid will drain out.

- Remove the clutch slave cylinder from the engine with the hose and push the piston into the cylinder as far as it will go.
- Squeeze the clutch lever slowly and hold it with a band.

NOTE

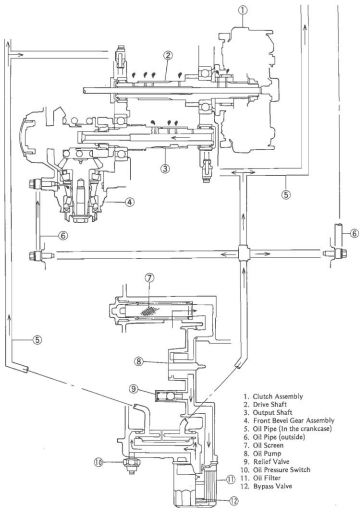
- Holding the clutch lever keeps the piston from coming out.

CAUTION

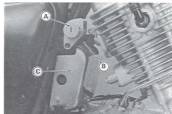
- Immediately wipe up any brake fluid that spills. It may damage painted or plated surfaces.

Installation

- Note the following.
- Replace the aluminum washers on each side of the clutch hose fitting with new ones.
- Tighten the banjo bolt to the specified torque (see Exploded View).
- Replace the spacer of the clutch slave cylinder with new one.
- Apply non-permanent locking agent to the slave cylinder mounting bolts.
- Check the fluid level in the master cylinder reservoir, and bleed the air in the clutch line.
- Check the clutch operation.



7-4 ENGINE REMOVAL/INSTALLATION



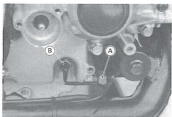
A. Ignition Switch
B. Clean Air Hose
C. Ignition Coil Assembly

Starter Motor Wire Terminal



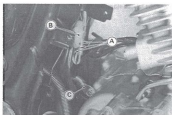
A. Starter Motor
B. Terminal

Oil Pressure Switch Wire Terminal Neutral Switch Wire Terminal



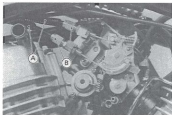
A. Oil Pressure Switch
B. Neutral Switch

Alternator and Pickup Coil Wire Connectors Ground Wire Terminal



A. Alternator Wire Connectors
B. Pickup Wire Connector
C. Ground Wire Terminal

Throttle Cable Adjuster



A. Throttle Cables
B. Adjusters

Carburetor Vacuum Hose (Both Side) Rear Brake Light Switch Wire Connectors

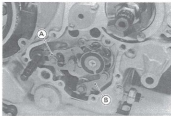
- Perform the following.
- Support the engine with a suitable stand, and remove the engine mounting bolts and bracket bolts.

8-8 CRANKSHAFT/TRANSMISSION

Crankcase

Splitting

- Remove the engine (see Engine Removal/Installation chapter).
- Set the engine on a clean surface and hold the engine steady while parts are being removed.
- Remove the following:
 - Engine Top
 - Rocker Cases
 - Cylinder Heads
 - Cylinders Blocks
 - Pistons
 - Engine Right Side
 - Water Pump
 - Clutch
 - Engine Left Side
 - Front Bevel Gear Case
 - Alternator Inner Cover
- Remove the shift mechanism arm and gear positioning lever with spring.



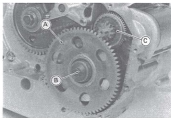
A. Shift Mechanism Arm B. Gear Positioning Lever

- Unscrew the damper cam nut using a damper cam holder (special tool) and deep socket wrench.
- Remove the retainer and needle bearing.
- Insert the bolt ($\phi 12$ mm, L100 mm) into the engine mounting bolt hole.



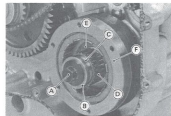
A. Damper Cam D. Retainer
B. Holder: 57001-1025 E. Bolt
C. Needle Bearing

- Pull the starter motor clutch gear out of the starter motor clutch, then take out the torque limiter.
- Loosen the starter motor clutch bolt while holding the alternator rotor steady with rotor holder (special tool: 57001-1248).



A. Starter Motor Clutch Gear C. Torque Limiter
B. Bolt

- Take the bolt, spacer, collar, needle bearing, copper washer and starter motor clutch off the balancer shaft.



A. Bolt D. Bearing
B. Spacer E. Washer
C. Collar F. Starter Motor Clutch

- Loosen the primary gear bolt while holding the alternator rotor steady with the rotor holder (special tool: 57001-1248).

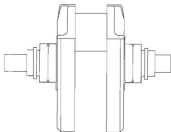
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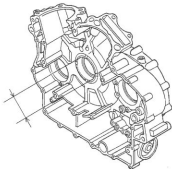


•If any journal has worn past the service limit, replace the crankshaft with a new one.

•Measure the main bearing bore diameter in the crankcase halves.

Crankcase Main Bearing Bore Diameter

Standard: 55.030 – 55.049 mm
Service Limit: 55.08 mm



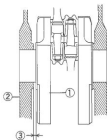
•If there are any signs of seizure, damage, or excessive wear, replace the crankcase halves as a set.

Crankshaft Side Clearance

•Measure crankshaft side clearance.

Crankshaft Side Clearance.

Standard: 0.05 – 0.55 mm
Service Limit: 0.75 mm

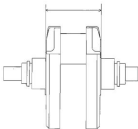


- 1. Crankshaft
- 2. Crankcase
- 3. Clearance

•If the clearance is greater than the service limit, measure the crankshaft web length to see whether the crankshaft or the crankcase is faulty.

Crankshaft Web Length

Standard: 96.85 – 96.95 mm
Service Limit: 96.6 mm



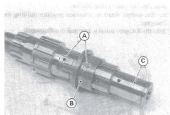
•If the length measurement is smaller than the service limit, replace the crankshaft. Otherwise, replace the crankcase halves as a set.

NOTE

○The right and left crankcase halves are machined at the factory in the assembled state, so they must be replaced as a set.

8-28 CRANKSHAFT/TRANSMISSION

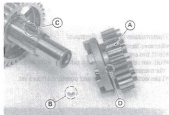
Install the gear bushing on the output shaft with its oil hole aligned with the shaft oil hole.



A. Oil Holes
B. Bushing

C. Output Shaft

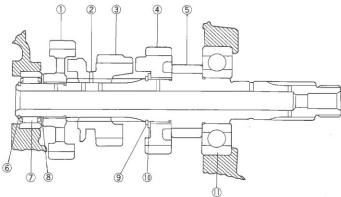
Fit the steel balls into the 3rd gear holes that are smaller than the other holes as seen from the outside of the gear, and then install the gear on the shaft so that the steel balls align with the recesses in the shaft.



A. 3rd Gear
B. Steel Balls

C. Recess
D. Small Hole

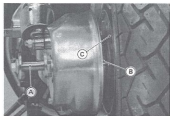
Drive Shaft



1. Top (4th) Gear
2. Oil Hole
3. 2nd Gear
4. 3rd Gear
5. 1st Gear (Drive Shaft)
6. Circlip

7. Needle Bearing
8. Thrust Washer
9. Circlip
10. Washer
11. Ball Bearing

9-8 WHEELS/TIRES



A. Axle
B. Ring Gear Hub
C. Coupling Hub

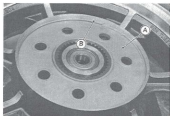
- Tighten the axle nut to the specified torque (see Exploded View).
- Tighten the rear brake caliper mounting bolts to the specified torque (see Exploded View).
- Tighten the caliper holder bolt to the specified torque (see Exploded View).
- Replace the cotter pin with a new one.
- Install the muffler (see Engine Top End chapter).

▲WARNING

Do not attempt to drive the motorcycle until a full brake pedal is obtained by pumping the brake pedal until the pads are against the disc. The brake will not function on the first application of the pedal if this is not done.

Wheel Coupling Removal

- Remove the rear wheel (see Rear Wheel Removal).
- Remove the coupling retainer.
- Remove the wheel coupling with suitable bearing puller if necessary.



A. Wheel Coupling
B. Coupling Retainer

Wheel Coupling Installation

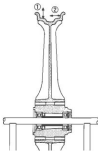
- Note the following.
- Apply molybdenum disulfide grease to the O-ring.



A. O-ring

Wheel (Rim) Inspection (for cast wheel)

- Remove the tire from the wheel.
- Measure the rim runout by using the dial gauge.



1. Radial Runout
2. Axial Runout

10-4 FINAL DRIVE

Specifications

Item	Standard
Final Gear Case Oil: Grade Viscosity Amount Oil Level	API GL-5 Hypoid Gear Oil When above 5°C (41°F) SAE90 When below 5°C (41°F) SAE80 200 mL Bottom of filler opening
Final Gear Case: Final bevel gear backlash	0.06 – 0.09 mm (at gear hub spline) 0.10 – 0.15 mm (at gear tooth)
Front Bevel Gear: Preload for driven gear bearings Front bevel gear backlash	0.5 – 0.9 N-m (0.05 – 0.09 kg-m, 4 – 8 in-lb) 0.10 – 0.15 mm (at gear tooth)

Special Tools

Bearing Puller: 57001-158



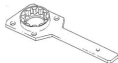
Damper Cam Holder: 57001-1025



Adapter: 57001-317



Driven Gear Holder: 57001-1027



Bearing Driver: 57001-382



Dial Gauge Holder: 57001-1049



10-14 FINAL DRIVE

Bevel Gear Inspection

- Remove the ring gear assembly and pinion gear from the final gear case (see Ring Gear Disassembly and Pinion Gear Disassembly).
- Visually check the bevel gears for scoring, chipping, or other damage.
- Replace the bevel gears as a set if either gear is damaged.

Pinion Gear Bearing Inspection

- Disassemble the pinion gear (see Pinion Gear Disassembly).
- Visually inspect the bearings for abrasion, color change, or other damage.
- If there is any doubt as to the condition of a bearing, replace it.

Oil Seal Inspection

- Inspect the oil seals.
- Replace any if the lips are misshapen, discolored (indicating that the rubber deteriorated), hardened, or otherwise damaged.

Propeller Shaft

Removal

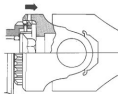
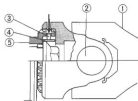
- Remove the following.
 - Rear Wheel
 - Final Gear Case
- Remove the propeller shaft from the front driven gear joint.
- Turn the propeller shaft so that the locking pin access hole on the propeller shaft comes outside.



A. Locking Pin Access Hole

- Slip the propeller shaft off the driven gear joint by pushing on the lock pin through the access hole.

Disengagement of Propeller Shaft from Drive Gear Joint



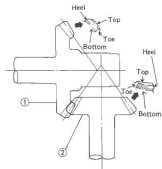
1. Propeller Shaft
2. Universal Joint
3. Locking Pin
4. Spring
5. Driven Gear Joint

- Remove the circlip from the rear end of the propeller shaft using a circlip pliers.
- Remove the washer and pull out the propeller shaft sliding joint.

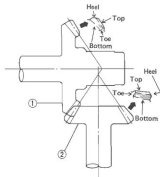
10-24 FINAL DRIVE

Incorrect Tooth Contact Patterns

Example 1: Increase the thickness of the drive gear shim(s) by 0.05 mm, and/or increase the thickness of the driven gear shim(s) by 0.05 mm to correct the pattern shown below. Repeat in 0.05 mm steps if necessary.



Example 2: Decrease the thickness of the drive gear shim(s) by 0.05 mm, and/or decrease the thickness of the driven gear shim(s) by 0.05 mm to correct the pattern shown below. Repeat in 0.05 mm steps if necessary.



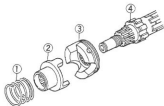
1. Drive Gear
2. Driven Gear

Bevel Gear Inspection

- Visually check the bevel gears for scoring, chipping, or other damage.
- Replace the bevel gears as a set if either gear is damaged.

Cam Damper Inspection

- Visually inspect the damper cam, cam follower, spring, and shaft.
- Replace the part if it appears damaged.



1. Spring
2. Cam Follower
3. Damper Cam
4. Output Shaft

Brake Disc

Wear

- Replace the disc if it has worn past the service limit.



1. Brake Disc 2. Measuring Area

Front Disc Thickness

	Standard	Service Limit
VN1500-A	4.8 – 5.1 mm	4.5 mm
VN1500-B	5.8 – 6.1 mm	5.5 mm

Rear Disc Thickness

Standard:	6.8 – 7.1 mm
Service Limit:	6 mm

Warp

- If runout exceeds the service limit, replace the disc.



1. Brake Disc 2. Measuring Area

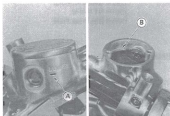
Disc Runout

Standard:	Under 0.16 mm
Service Limit:	0.3 mm

Brake Fluid

Fluid Level Inspection

- Check the brake fluid level in the reservoir.

Front Brake Fluid Reservoir

- A. Lower Level Line B. Upper Level Line

Rear Brake Fluid Reservoir

- A. Upper Level Line B. Lower Level Line

NOTE

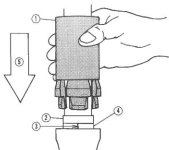
◊ Hold the reservoir horizontal when checking brake fluid level.

- If the fluid level is lower than the lower level line, fill the reservoir to the upper level line of the reservoir.

WARNING

◊ Change the brake fluid in the brake line completely if the brake fluid must be refilled but the type and brand of the brake fluid that already is in the reservoir are unidentified. After changing the fluid, use only the

12-8 SUSPENSION



1. Driver: 57001-1219
2. Used Guide Bush
3. Slit (toward the left or right)
4. New Guide Bush
5. Tap

- Use the fork oil seal driver (special tool) to install the oil seal in the front fork.
- Install the dust seal cover with a oil seal driver (special tool).

Inner Tube Inspection

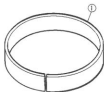
- ★If the inner tube is damaged, replace it.
- Nicks or rust damage can sometimes be repaired by using a wet-stone to remove sharp edges or raised areas which cause seal damage.
- ★If the damage is not repairable, replace the inner tube. Since damage to the inner tube damages the oil seal, replace the oil seal whenever the inner tube is repaired or replaced.

CAUTION

- If the inner tube is badly bent or creased, replace it. Excessive bending, followed by subsequent straightening, can weaken the inner tube.

Guide Bush Inspection

- ★Replace the guide bushes if they are damaged or worn.



1. Guide Bush

Oil Seal and Dust Seal Inspection

- ★If dust seal has any damage or wear, replace it.
- Replace the oil seal with a new one whenever it has been removed.



1. Oil Seal

2. Dust Seal

Spring Tension

- ★If the spring of either fork leg is shorter than the service limit, it must be replaced. If the length of a replacement spring and that of the remaining spring vary greatly, the remaining spring should also be replaced in order to keep the fork legs balanced for motorcycle stability.

Steering Stem Bearing

Bearing Lubrication

- Perform the following.
- Remove the steering stem.
- Using a high flash-point solvent, wash the upper and lower tapered roller bearings in the cages.
- Wipe the upper and lower outer races, which are press-fitted into the frame head pipe, clean off grease and dirt.
- Visually check the outer races and the rollers.
- ★Replace the bearing assemblies if they show wear or damage.
- Pack the upper and lower tapered roller bearings in the cages with grease, and apply light coat of grease to the upper and lower outer races.
- Install the steering stem, and adjust the steering.

Bearing Wear, Damage

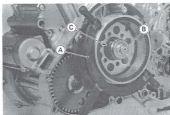
- ★Replace the bearing assemblies if they show damage.

Stem Cap Deterioration, Damage

- ★Replace the grease seal if necessary.

Steering Stem Warp

- ★If the steering stem shaft is bent, replace the steering stem.



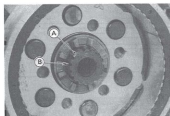
A. Rotor Holder: 57001-1248 C. Ratchet
B. Rotor Bolt

- Take the alternator rotor with spacer and ratchet of the crankshaft.

Alternator Rotor Installation

- Note the following.

Fit the alignment notch of the splines in the alternator rotor onto the alignment portion of the splines on the crankshaft end.



A. Alignment Portion B. Splines

Engage the alternator rotor mark with the balancer gear mark.



A. Alternator Rotor C. Alignment Marks
B. Balancer Gear

- Tighten the alternator rotor bolt to the specified torque (see Exploded View).
- Install the engine correctly (see Engine Removal/Installation chapter).

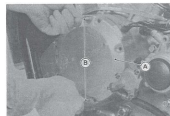
Alternator Stator Removal

- Remove the following parts.
Rear Exhaust Pipe Cover
LH Footpeg
Left Engine Cover
Ignition Coil Assembly
- Disconnect the stator coil yellow wire connectors.



A. Yellow Wires B. Connectors

- Unscrew the cover bolts and remove the alternator outer cover.
- Screw the two of the cover bolts into the bolt holes, and pull the outer cover out of the inner cover using the bolts.



A. Outer Cover B. Pull the bolts.

- Unscrew the Allen bolts and take the stator off the outer cover.

Filter Installation Note

- Connect the filter to the vacuum hoses so that the marked side of the filter faces to the opposite side of the IC igniter.



1. Filter

2. Marked Side

IC Igniter Inspection

- Set the ohmmeter to the x 1 k Ω range and make the measurements shown in the table.
- If the meter readings are not as specified, replace the IC igniter.

CAUTION

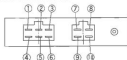
- Use only Hand Tester 57001-983 for this test. A tester other than the Kawasaki Hand Tester may show different readings.
- If a megger or a meter with a large-capacity battery is used, the IC igniter will be damaged.

VN1500-A1/B1~A8/B6 : refer to upper figure

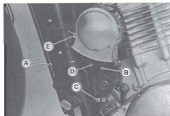
VN1500-A9~ : refer to lower figure

(k Ω)

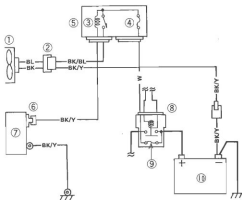
		Tester (+) Lead Connection									
Terminal No.		1	2	3	4	5	6	7	8	9	10
Tester (-) Lead Connection	1		∞	∞	∞	∞	∞				
	2	(25-45) 17-87		(∞) 13-60	(25-45) 18-80	(45-90) 30-150	(16-24) 10-45				
	3	(80-1000) 17-87	(120-1000) 13-60		(80-1000) 4.6-19	(15-23) 8.5-35	19-60 2.2-9.5				
	4	∞	∞	∞			∞				
	5	(40-100) 28-150	(60-150) 50-400	(∞) 17-70	(40-100) 28-150		(20-35) 12-50				
	6	(2.3-3.5) 1.2-5.5	(15-24) 10-40	(∞) 2.2-9	(2.3-3.5) 1.2-5.5	(14-21) 8-35					
	7								(∞) 0-0.8	(∞) 1-4.6	(∞) 1-4.6
	8							(∞) 0-0.8		(1.9-2.5) 1-4.6	(1.9-2.5) 1-4.6
	9							(∞) 1-4.8	(1.9-2.5) 1-4.4		(4-4.8) 2.2-9
	10							(∞) 1-4.8	(1.9-2.5) 1-4.4	(4-4.8) 2.2-9	

Connector Terminal Number**Starter Motor****Removal**

- Drain the coolant (see Cooling chapter).
- Remove the radiator lower bolts.
- Loosen the clamp and disconnect the lower radiator hose.

A. Radiator
B. Hose
C. ClampD. Fan Connector
E. Ground Wire

Cooling Fan Circuit



1. Cooling Fan
2. 2-pin Connector
3. Fan Relay
4. Fan Fuse 10A
5. Junction Box
6. Fan Switch
7. Radiator
8. Starter Relay
9. Main Fuse 30A
10. Battery

Meter, Gauge

Speedometer Removal

- Remove the headlight unit.
- Remove the speedometer cable upper end.
- Remove the speedometer bolts and lift the meter off the headlight cover.



A. Speedometer Cable Upper End
B. Speedometer Bolts

Appendix

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