Construction of CB500 clutch system

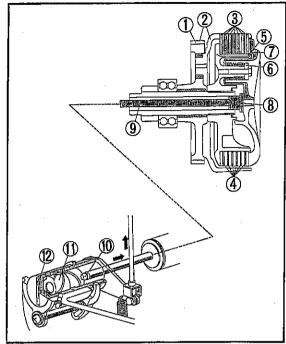


Fig. 334

Construction of CB550 clutch system

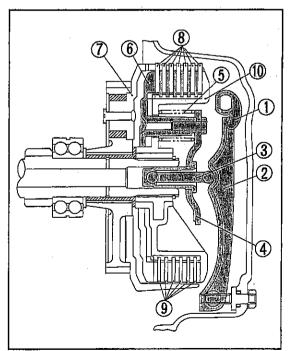


Fig. 335

Part or item	Model CB 500	Model CB550	Modified part
Countershaft lubrication	Fig. 336 By splashing	Fig. 337 By pump pressure ① Trochoid pump • The oil strainer assembly is provided with the transmission oil pipe. The oil comes up to the right side of the countershaft through the oil passage in the right side of the lower crankcase and is fed to the countershaft assembly by means of the trochoid pump. (See Fig. 339.)	Countershaft Trochoid pump bearing (Added)

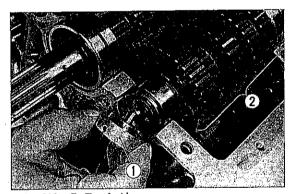


Fig. 338 ① Trochoid pump ② Countershaft assembly

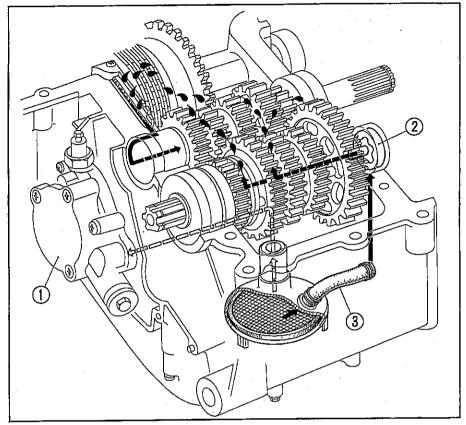


Fig. 339

① Oil pump ② Trochoid pump ③ Transmission oil pipe

Oil to countershaft Oil to cylinder head and crankshaft through oil pump



Unit: mm

		<u></u>	Unit: mm
Part or item	Model CB 500	Model CB550	Modified part
Gear shaft spindle	58 8.96 Fig. 340	76. 4 Fig. 341	• Gear shift spindle
Gear ratio	No. of teeth Part 1 64 Primary d 23 Primary d	riven gear 63	
Gear shift fork shaft (Added)	Fig. 342 ① Right and left gear shift forks ② Gear shift drum ③ Center gear shift fork • All forks are installed to the drum.	Fig. 343 ① Gear shift fork shaft ② Gear shift drum ③ Center gear shift fork ④ Right and left gear shift forks The center fork is installed to the drum and the right and left forks to the fork shaft.	 Right gear shift fork Left gear shift fork Center gear shift fork Gear shift fork shaft (Added)
Gear shift drum	Fig. 344 ① Groove for gear shift drum guide screw	Fig. 345 ② Press bearing in here • The groove for the drum guide screw was abolished. Instead a 16005 radial ball bearing was pressed in.	• Gear shift drum • Upper crankcase



(Frame)

Part or item	Model CB 500	Model CB550	Modified part
Air cleaner	Fig. 346 Air cleaner element seal case	Fig. 347 In connection with employment of the blow-by gas scavenging device, the air cleaner shape was changed.	· Air cleaner chamber · Element cover · Element cover seal · Element (wet type) · Plate seal · Air cleaner element (dry type)
Final driven sprocket	Number of teeth: 34	Number of teeth: 37	
Turn signal/ horn switch	2 Fig. 348	2 3 349 Fig. 349	• The turn signal/ horn switch was changed to the turn signal/horn/ dimmer switch (common with that of CB750).
	① Turn signal switch ② Horn switch	① Turn signal switch ② Horn switch ③ Dimmer switch	· · · · · · · · · · · · · · · · · · ·
Starter/ headlight/ ignition switch	2 3 Fig. 350	10 12 3 Fig. 351	• The starter/head- light/ignition switch shape was changed.
	① Ignition switch ② Headlight switch ③ Starter switch	① Ignition switch② Headlight switch③ Starter switch	

• \bigcirc \bigcirc



1. CLUTCH

A. Disassembly

- 1. Drain the engine oil. (See page 20 of the CB 500 Shop Manual issued separately).
 - 2. Remove the kick starter pedal.
 - 3. Remove the ten 6mm screws and the right crankcase cover.

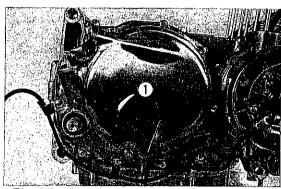


Fig. 352 ① Right crankcase cover

- 4. Remove the clutch lifter rod.
- 5. Remove the four clutch pressure plate mounting bolts.
- 6. Remove the clutch lifter plate.

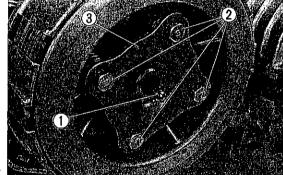


Fig. 353 (1) Clutch lifter rod

- ② Mounting bolts
 - 3 Lifter plate
- 7. Remove the 25 mm snap ring and shim and remove the clutch assembly from the mainshaft.
- 8. Remove the clutch outer and inner at the same time.

(Refer to page 40, Fig. 110)

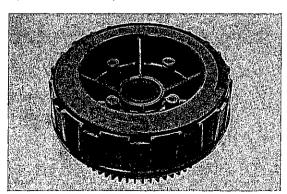


Fig. 354 ① Clutch assembly

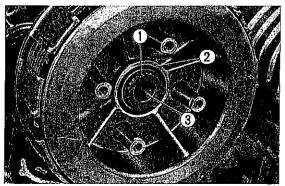


Fig. 355 (1) 25 mm snap ring

- 2 Shim
- 3 Main shaft



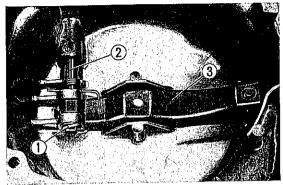


Fig. 356 ① Cotter pin ③ Clutch adjusting lever ② Clutch lever

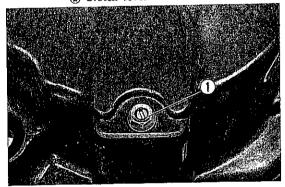


Fig. 357 (1) 6 mm nut

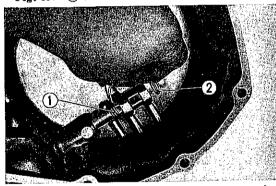


Fig. 358 ① Clutch lever spring ② 10 mm washer

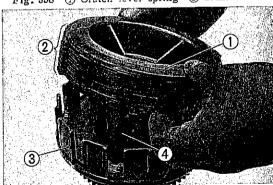


Fig. 359 ① Clutch center ② Friction discs and plates ③ Clutch outer ④ 25mm collar

 Remove the cotter pin from inside the right crankcase cover and pull the clutch lever out.

10. Remove the 6mm nut and the clutch adjusting lever.

B. Inspection

See page 41 of the CB500 Shop Manual issued separately.

Measurement of friction disc thickness.

Using a vernier caliper, measure the thickness of each friction disc. Replace a disc whose thickness is below the service limit.

Unit: mm (in.)

Assembly standard	Service limit
2.7 (0.1063)	2. 4 (0. 0945)

C. Assembly

- 1. Install and tighten the 6mm nut attaching the clutch adjusting lever.
- 2. As shown in Fig. 358, install the clutch lever spring and 10mm washer on the clutch lever. Insert the cotter pin and spread its ends.
- 3. Install the 25mm collar in the clutch outer.
- 4. Install the seven friction discs and six plates alternatively to the clutch center and to the clutch outer. Install to the mainshaft.

- 5. Attach a dial gauge to the end face of the clutch assembly to check for excessive looseness. If it exceeds 0.1 mm (0.0039 in.), install a washer or washers behind the snap ring. The washers are available in three thicknesses: 0.1 mm (0.0039 in.), 0.3 mm (0.0118 in.) and 0.5 mm (0.0197 in.).
- 6. Install the four clutch springs. Install the lifter plate and tighten the four 6 mm bolts in a criss-cross pattern.
- 7. Insert the lifter rod.
- 8. Install the right crankcase cover and kick starter pedal.

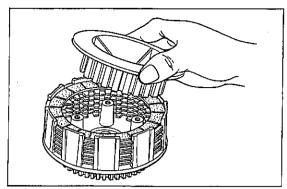
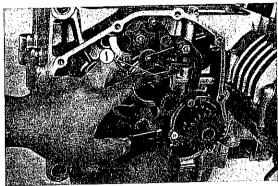


Fig. 360

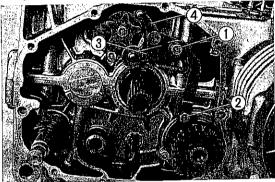


Fig. 361



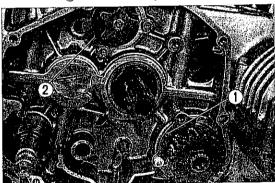


(1) Gearshift arm

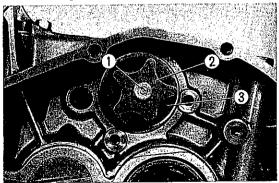


① Shift drum neutral stop bolt ② Shift drum stop bolt ③ Shift drum stop ④ Neut Fig. 363

4 Neutral stop



 Bearing set plate on primary shaft side
 Bearing set plate on shift drum side Fig. 364



3 Drum gearshift center 6 mm bolt
 Stop cam plate Fig. 365

GEARSHIFT MECHANISM 2.

Disassembly A.

- 1. Remove the clutch. (See page 121.)
- 2. Remove the gear change pedal.
- 3. While holding the gearshift arm down as shown in Fig. 262, pull the gearshift spindle out.
- 4. Remove the shift drum stop bolt, the neutral stop bolt, the shift drum stop and the neutral stop.

- 5. Remove the 6mm bolt and the bearing set plate on the primary shaft side.
- 6. Remove the two 6mm bolts and the bearing set plate on the gearshift drum side.

7. Remove the 6mm bolt, the drum stop cam plate and the drum gearshift center.

- Separate the crankcase into the upper and lower parts and remove the transmission gears. (See page 43 of the CB 500 Shop Manual issued separately.)
- 9. Remove the neutral stop switch from the gearshift drum.

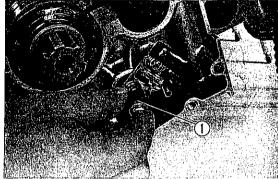


Fig. 366 ① Neutral stop switch

10. Remove the guide pin clip and guide pin and pull the gearshift drum from the upper crankcase.

B. Inspection

See page 44 of the CB500 Shop Manual issued separately.

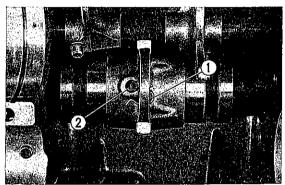


Fig. 567 (1) Guide pin clip

② Guide pin

C. Assembly

- 1. Position the center gearshift fork on the drum as shown in Fig. 368.
- Insert the guide pin into the center gearshift fork and secure with the guide pin clip.

NOTE:

Install the guide pin clip with it facing correctly. (See Fig. 367.)

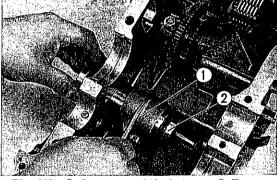


Fig. 368 ① Center gearshift fork

② Drum

3. Put the right and left gearshift forks in the upper crankcase and insert the gearshift fork shaft as shown in Fig. 369.

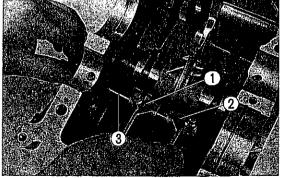
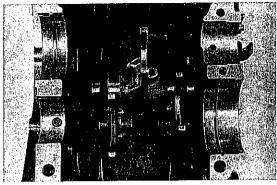


Fig. 369 ① Right gearshift fork

- 2 Left gearshift fork
- 3 Gearshift fork shaft



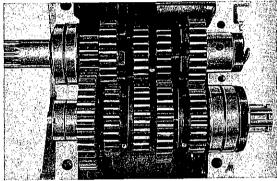


Fig. 371

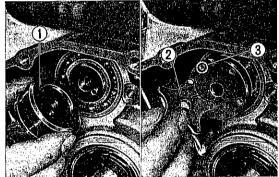


Fig. 372 1 Drum gearshift center 2 Drum stop cam plate

3 Lug

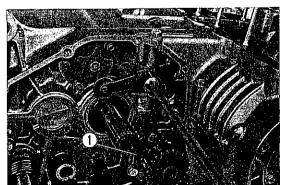


Fig. 373 ① Bearing set plate on primary shaft side

- 4. Make sure that the gearshift forks are installed correctly and securely.
- 5. Instal the neutral stop switch to the gearshift drum by fitting the lug into the groove in the drum and secure with the 6mm screw.
- 6. Install the transmission gears in the upper crankcase and put the upper and lower crankcases together. Install the primary shaft and tighten the crankcases securely.
- 7. Install the bearing set plate on the drum side and secure with the two 6mm bolts.

8. Install the drum gearshift center. NOTE:

Properly fit the lug of the drum into the hole in the drum gearshift center.

9. Install the drum stop cam plate. NOTE:

Properly fit the gearshift drum pin into the hole in the drum stop cam plate.

- 10. Instal the bearing set plate on the drum side.
- 11. As shown in Fig. 373, install the gearshift drum stop spring to the drum stop and the neutral stop and tighten the drum stop bolt, and neutral stop bolt securely. Also tighten the bearing set plate on the primary shaft side as shown in Fig. 373.

- 12. Rotate the gearshift drum and check each component for smooth movement.
- 13. Install the gearshift arm and check to see if it moves smoothly and equally in both directions.
- 14. Install the clutch. (See page 121.)

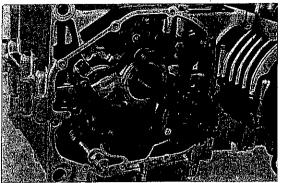


Fig. 374



11. TROUBLE SHOOTING

ENGINE

Trouble	Probable Causes	Remedies
Engine does not start	 Excessive piston ring or cylinder wear Seized valve in valve guide Seized piston Faulty valve timing Low or lack of compression pressure Pressure leak Blown out cylinder head gasket Warped gasketing surface of the cylinder and cylinder head 	Replace Replace Replace Adjust Lap the valve to obtain good valve seating or replace Replace Replace Repair or replace
Poor engine idling	Valve Mechanism 1. Incorrect tappet clearance 2. Low or lack of compression pressure 3. Excessive valve guide clearance	Adjust to standard value Repair Replace valve and guide
Loss of power	 Valve sticking open Incorrect seating of valve Weak or broken valve spring Faulty valve timing Blown out cylinder head gasket Excessive cylinder and piston wear Worn, weak or broken piston ring Loose spark plug 	Replace Lap valve Replace Check valve timing and adjust if necessary Replace Replace Replace Replace Retighten
Overheating	 Heavy carbon deposit on combustion chamber and piston head Lean fuel mixture Retarded ignition timing Low oil level, poor quality Extended operation in low gear 	Remove carbon Adjust the carburetor Adjust ignition timing Add good grade oil
Backfire	 Incorrect seating of intake valve Faulty valve timing Incorrect ignition timing Excessive spark plug gap Improper fuel 	Check the valve seating Adjust Adjust Adjust Adjust the gap to 0.024~0.028 in (0.6~0.7 mm) Replace
White exhaust smoke	Excessive cylinder and piston wear Overfilled engine oil Excessively high oil pressure Poor quality oil	Replace the piston Adjust the oil level Check the breather Replace with good quality oil
Black exhaust	Rich fuel mixture	Adjust the carburetor

Trouble	Probable Causes	Remedies
Difficult gear shifting	Improper clutch disengagement Damaged gear or foreign object lodged in the gear	Adjust the clutch Replace the defective parts
	 Gear shift fork inoperative Incorrect operation of the gear shift drum stopper and change pedal Mainshaft and countershaft out of alignment High oil viscosity 	Repair or replace Repair or replace Repair or replace Change the oil
Excessive high gear noise	Excessive gear backlash Worn main and countershaft bearing	Repair or replace Repair or replace
Gear slip out	 Worn fingers on gear shift fork Worn gear dog hole Worn spline 	Replace Replace Replace
Clutch slippage	No clutch lever play Weak or no uniform clutch pressure plate spring Worn or glazed friction disc	Adjust the clutch lever Replace the weak spring Replace
Poor clutch engagement	Excessive clutch lever play Warped friction disc Warped pressure plate Bent main shaft	Adjust clutch lever play Replace Replace Replace
Pedal does not return	Faulty return spring Unhook return spring	Replace Hook return spring
Kick starter gear does not rotate	1. Excessive kick starter pawl wear	Replace
Engine does not start	Carburetor 1. Choke fully open 2. Carburetor air screw improperly set 3. Air leaking into the cylinder head 4. Clogged carburetor slow jet 5. Clogged fuel valve or piping 6. Clogged vent hole in the fuel tank cap 7. No fuel in the tank	Close choke Adjust air screw Retighten carburetor connecting tube Check, clean and retighten Disassemble and clean Disassemble and clean Fill tank with gasoline
Poor engine idling	Carburetor 1. Clogged or loose carburetor slow jet 2. Improper float level 3. Incorrect air serew adjustment 4. Carburetor linkage malfunction 5. Air leaks	Check, clean and retighten Adjust Adjust Adjust Adjust Tighten all air passage connections
Improper run- ning of engine	Carburetor 1. Jet size too small 2. Improper float level 3. Clogged carburetor main jet 4. Carburetor linkage malfunction 5. Air leaks	Replace with larger size jet Adjust Clean and retighten Adjust Tighten all air passage connections



CHASSIS

eering stem excessively tightened amaged steering stem steel balls ent steering ow front tire pressure soes steering stem mounting bolt forn front and rear wheel bearings ent or rear wheel runout or distorted soes spoke effective tire sos of spring tension excessive load effective front fork damper effective rear damper rubbing	Loosen the steering stem nut Replace Replace Add air to the specified pressure of 1.8kg/cm² (25.6 psi) Retorque Replace bearing Repair or replace Retorque Replace Replace Replace
forn front and rear wheel bearings ont or rear wheel runout or distorted bose spoke effective tire boss of spring tension accessive load effective front fork damper effective rear damper	Replace bearing Repair or replace Retorque Replace Replace Replace
effective rear damper	Repair
effective rear damper	_
ent care or rose demons rubbing	
terference between cushion case and ring sulty fork stopper rubber sufficient front fork oil	Inspect cushion spring and case Repair or replace Replace Add damper oil
Forn or distorted front brake discrake lever out of adjustment ear brake Forn brake lining Forn brake shoe or poor contacts Forn brake cam	Add brake fluid Bleed brake system Replace pad Replace piston Replace disc Readjust Replace
	Forn piston Forn or distorted front brake discrete lever out of adjustment Forn brake lining Forn brake shoe or poor contacts Forn brake cam For brake from water or oil

ELECTRICAL

Troubles	Probable causes	Remedies
Engine does not	I. Battery	
start	• Discharged	Recharge or replace
-	Poor battery terminals contact	Repair
	2. Main switch	
	Open or shorted circuit, disconnected connections	Repair
*	Poor contact between main	Repair
	switch wire and wire harness	
	3. Ignition coil	
	 Improperly insulated high tension coil 	Replace
	Open or shorted circuit in ignition coil	Replace
	4. Contact breaker	
·	- Open circuit in the primary coil	Repair
ł	Dirty ground point with oil or dust	Clean
	 Point gap out of adjustment 	Readjust
	Improperly charged condenser	Replace
Starting motor	1. Defective battery	Charge or replace
does not operate	2. Poor magnetic switch contact	Repair or replace
1	3. Poor starting motor carbon brush contact	Repair or replace
Horn inopera-	1. Horn	
tive, poor sound	Cracked diaphragm	Replace
or too weak	2. Horn button	reprace
sound	• Poor grounding	Repair
Bound	3. Wiring	1 topan
	· Poor contact	Repair
	4. Adjusting screw	
	• Out of adjustment	Readjust
Mail light and	1. Fuse	
Tail light and head light	Blown fuse or burnt bulb filament	Replace
inoperative	2. Bulb	Kepiace
Inoberwitte	Burnt bulb filament	Readjust
	3. Switch	
	Poor lighting switch contact	Readjust
	4. Wiring	
G4 - 1:-14		
Stop light inoperative	Bulb Burnt or broken bulb filament	Replace
inoperative	2. Front and tail stop light switch	Replace
	Malfunction of switch	Readjust
	Warrangeron of switch Wiring	zeono juni
	• Poor contact of leads	Readjust
117° 1 - 1		
Winker lamp	Bulb Blinks unusually fast: improperly	Replace
blinks too fast	connected relay	210111111111111111111111111111111111111
or too slow	2. Wiring	
	Blinks too fast: bulb with unsuitable	Replace
	wattage Blinks too slow: burnt or broken bulb	Panlace
	- DHIRE TOO SIOW: DUTRIT OF DROKEN DUID	Replace
	3. Defective relay	Replace



Trouble	Probable causes	Remedies
Winker lamp	1. Winker lamp switch	·
inoperative	Poor winker relay contact	Replace
	· Open circuit in winker relay coil	Replace
	2 Bulb	
	- Bulb wattage is smaller than rated wattage	Replace
	3. Relay	:
	Poor winker relay contact	Replace
	· Improperly connected leads	Replace
	1. Broken wire or shorted, loose connection	Repair or replace
No charging		Replace
	2. Faulty coil due to short or grounding	Replace
	3. Faulty or shorted silicon diode	-
	4. Broken or shorted lead wire at regulator	Repair or replace
	5. Regulator voltage at no load is too low	Readjust
Insufficient	1. Wiring	
charging	Broken wire, intermittent shorting or loose	Repair, retighten
	connection	
	2. Generator	
	• Shorting across layer in the field coil	Replace
	(resistance indicated in continuity test)	Replace
	Shorting across layer in stator coil	I -
	Open circuit in one of the stator coil	Replace
	• Faulty or shorted silicon diode	Replace
	3. Regulator	75 11 .
	· Voltage below specified value at no load	Readjust
	• Dirty or pitted points	Polish or replace
	· Coil or resistor internally shorted	Replace
	4. Battery	
	· Low electrolyte level	Add distilled water
	Defective battery plates	Replace
Ylenanaira	1. Wiring	
Excessive	P terminal circuit and F terminal circuit	Repair
charging	shorted resulting in split wound generator	
	2. Battery	
	Internal short	Replace
	3. Regulator	
	· Excessive voltage at no load voltage	Repair
,	Improper grounding	Provide proper ground
	· Broken coil lead wire	Repair, replace
	1	1
Unstable	1 Wiring	
charging	· Bare wire shorting intermittently under	Repair or replace
voltage	vibration or broken wire making partial	
•	2. Generator	
		Repair or replace
	• Layer short (intermittent shorting)	The state of the s
	3. Generator	Repair or replace
	· Intermittent open circuit in the coil	1
	· Improperly adjusted voltage	Readjust
	- Defective key switch	Replace
	• Dirty points	Clean

Trouble	Probable causes	Remedies		
Self discharge Battery discharges in addition to that caused by the connected load.	Dirty contact areas and case. Contaminated electrolyte or electrolyte excessively concentrated.	Always keep the exterior clean. Handle the replenishing electrolyte with care.		
C. Large discharge rate Specific gravity gradually lowers and around 1.100 (S. G.), the winker and horn no longer function.	 The fuse and the wiring are satisfactory, but loads such as winker and horn do not function. In this condition the motorcycle will operate but with long use, both ⊕ and ⊕ plates will react with sulfuric acid and form lead sulfide deposits, (sulfation) making it impossible to recharge. 	 When the specific gravity falls below 1,200 (20°C: 68°F), the battery should be recharged immediately. When the battery frequently becomes discharged while operating at normal speed, check the generator for proper output. If the battery discharges under normal charge output, it is an indication of overloading. Remove some of the excess load. 		
High charging rate The electrolyte level drops rapidly but the charge is always maintained at 100% and the condition appears satisfactory. (Specific gravity over 1.260)	 The deposit will heavily accumulate at the bottom and will cause internal shorting and battery damage. 	1. Check to assure proper charging rate.		
Specific gravity drop Electrolyte evaporates	 Shorted. Insufficient charging. Distilled water overfilled. Contaminated electrolyte. 	Check specific gravity measurement. If the addition of distilled water causes a drop in specific gravity, add sulfuric acid and adjust to proper value.		
Sulfation The electrode plates are covered with a white layer or spots.	 Charging rate is too small or too large. The specific gravity or the mixture of the electrolyte is improper. Battery left in a discharge condition for a long period. (left with the switch turned on) Exposed to excessive vibration due to improper insulation. Motorcycle stored during the cold season with the battery connected. 	 When motorcycle is in storage, the battery should be recharged once a month even though the motorcycle is not used. Check the electrolyte periodically and always maintain the proper level. In a lightly discharged condition, perform recharging and discharging several times by starting the engine. 		
Spark plug electrode coated with carbon fideposit	 Too rich a fuel mixture. Excessive idle speed. Poor quality gasoline. Clogged air cleaner. Use of cold spark plug. 	Adjust carburetor. Adjust idle speed. Use good quality gasoline Service the air cleaner. Use proper heat range plug.		
Spark plug electrode fouled with oil	 Worn piston ring. Worn piston and cylinder. Excessive clearance between valve guide and valve stem. 	Replace piston ring. Replace piston or cylinder. Replace valve guide or valve.		
Spark plug electrode overheated or burnt	 Use of hot spark plug. Engine overheating. Improper ignition timing Loose spark plug or damaged spark plug hole thread. Too lean a fuel mixture. 	Use proper heat range plug. Readjust ignition timing. Retighten plug or replace cylinder head. Adjust carburetor.		
Damage	Spark plug overtorqued.	Replace with a new spark plug.		



12. MAINTENANCE SCHEDULE

This maintenance schedule is based upon average riding conditions. Machines subjected to severe use, or ridden in	INITIAL SERVICE PERIOD	PERIOD Ferform at every indicated information mileage interval, whichever first.			nonth or
unusually dusty areas, require more frequent servicing.	500 miles 800 km	1 month 500 miles 800 km	3 months 1,500 miles 2,500 km	6 months 3,000 miles 5,000 km	12 months 6,000 miles 10,000 km
ENGINE OIL-Change	•		0		
OIL FILTER ELEMENT—Replace	•			0	
OIL FILTER SCREEN—Clean					
SPARK PLUGS —Clean and adjust gap or replace if necessary.				0	
*CONTACT POINTS AND IGNITION TIMING —Clean, check, and adjust or replace if necessary.	•			0	
*VALVE TAPPET CLEARANCE —Check, and adjust if necessary.	•			0	
*CAM CHAIN TENSION—Adjust	•	<u> </u>	<u> </u>		
PAPER AIR FILTER ELEMENT AND POLYURETHAN FOAM ELEMENT—Clean (Service more frequently if operated in dusty areas)		. 0			
PAPER AIR FILTER ELEMENT—Replace	Operated	in dusty areas /			0
*CARBURETORS—Check, and adjust if necessary.	•	·			
THROTTLE OPERATION —Inspect cables. Check, and adjust free play.	•			0	
FUEL FILTER SCREEN—Clean				0	
FUEL LINES—Check			·	. 0	
*CLUTCH—Check operation, and adjust if necessary.	•			0_	
DRIVE CHAIN —Check, lubricate, and adjust if necessary.	**•	0			
BRAKE FLUID LEVEL —Check, and add fluid if necessary.	•			0	
*BRAKE SHOES/PADS —Inspect, and replace if worn.				0	
BRAKE CONTROL LINKAGE -Check linkage, and adjust free play if necessary.	•		<u></u>	0	
*WHEEL RIMS AND SPOKES—Check. Tighten spokes and true wheels, if necessary.	•			0	
TIRES—Inspect and check air pressure.	•	0_			
FRONT FORK OIL—Drain and refill.	***				
FRONT AND REAR SUSPENSION —Check operation.	•			0	
REAR FORK BUSHING —Grease, check for excessive looseness.				0	<u> </u>
*STEERING HEAD BEARING—Adjust				<u> </u>	0
BATTERY—Check electrolyte level, and add water if necessary.	•		0		
LIGHTING EQUIPMENT —Check and adjust if necessary.	•	0			
ALL NUTS, BOLTS, AND OTHER FASTENERS —Check security and tighten if necessary.	•	0		hoe proper	

Items marked * should be serviced by an authorized Honda dealer, unless the owner has proper tools and is mechanically proficient. Other maintenance items are simple to perform and may be serviced by the owner.

^{**} INITIAL SERVICE PERIOD 200 MILES *** INITIAL SERVICE PERIOD 1,500 MILES