11. TROUBLE SHOOTING

ENGINE

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

Trouble	Probable Causes	Remedies
Difficult gear shifting	1. Improper clutch disengagement	Adjust the clutch
	2. Damaged gear or foreign object lodged in the gear	Replace the defective parts
	3. Gear shift fork inoperative	Repair or replace
	4. Incorrect operation of the gear shift drum stopper and change pedal	Repair or replace
	5. Mainshaft and countershaft out of alignment	Repair or replace
	6. High oil viscosity	Change the oil
Excessive high gear noise	1. Excessive gear backlash	Repair or replace
	2. Worn main and countershaft bearing	Repair or replace
Gear slip out	1. Worn fingers on gear shift fork	Replace
	2. Worn gear dog hole	Replace
	3. Worn spline	Replace
Clutch slippage	1. No play in the clutch lever	Adjust the clutch lever
	2. Weak or none uniform clutch pressure plate spring	Replace the weak spring
	3. Worn or glazed friction disc	Replace
Poor clutch engagement	1. Excessive play of clutch lever	Adjust clutch lever play
	2. Warped friction disc	Replace
	3. Warped pressure plate	Replace
	4. Bent main shaft	Replace
Pedal does not return	1. Faulty return spring	Replace
	2. Unhook return spring	Hook return spring
Kick starter gear does not rotate	1. Excessive wear of kick starter pawl	Replace
Engine does not start	**Carburetor**	
	1. Choke fully open	Close choke
	2. Carburetor air screw improperly set	Adjust air screw
	3. Air leaking into the cylinder head	Retighten carburetor connecting tube
	4. Clogged carburetor slow jet	Check, clean and retighten
	5. Clogged fuel valve or piping	Disassemble and clean
	6. Clogged vent hole in the fuel tank cap	Disassemble and clean
	7. No fuel in the tank	Fill tank with gasoline
Poor engine idling	**Carburetor**	
	1. Clogged or loose carburetor slow jet	Check, clean and retighten
	2. Improper float level	Adjust
	3. Incorrect air screw adjustment	Adjust
	4. Carburetor linkage mulfunction	Adjust
	5. Air leaks	Tighten all air passage connection
Improper running of engine	**Carburetor**	
	1. Jet size too small	Replace with larger size jet
	2. Improper float level	Adjust
	3. Clogged carburetor main jet	Clean and retighten
	4. Carburetor linkage mulfunction	Adjust
	5. Air leaks	Tighten all air passage connection

CHASSIS

Trouble	Probable Causes	Remedies
Heavy steering	1. Steering stem excessively tightened	Loosen the steering stem nut
	2. Damaged steering stem steel balls	Replace
	3. Bent steering	Replace
	4. Low front tire pressure	Add air to the specified pressure of 1.8 kg/cm² (25.6 psi)
Front and rear wheel wobble	1. Loose steering stem mounting bolt	Retorque
	2. Worn front and rear wheel bearings	Replace bearing
	3. Front or rear wheel runout or distorted	Repair or replace
	4. Loose spoke	Retorque
	5. Defective tire	Replace
Soft suspension	1. Loss of spring tension	Replace
	2. Excessive load	
Hard suspension	1. Ineffective front fork damper	Repair
	2. Ineffective rear damper	Replace
Suspension noise	1. Front case or rear damper rubbing	Inspect cushion spring and case
	2. Interference between cushion case and spring	Repair or replace
	3. Faulty fork stopper rubber	Replace
	4. Insufficient front fork oil	Add damper oil
Defective brake	1. Front brake fluid	
	· Insufficent brake fluid	Add brake fluid
	· Air in the brake system	Bleed brake system
	· Worn brake pad	Replace pad
	· Worn piston	Replace piston
	· Worn or distorted front brake disc	Replace disc
	· Brake lever out of adjustment	Readjust
	2. Rear brake	
	· Worn brake lining	Replace
	· Worn brake shoe or poor contacts	Replace
	· Worn brake cam	Replace
	· Wet brake from water or oil	Clean
	· Worn brake shaft	Replace
	· Brake pedal out of adjustment	Readjust

ELECTRICAL

Troubles	Probable causes	Remedies
Engine does not start	1. Battery	
	• Discharged	Recharge or replace
	• Poor contact of battery terminals	Repair
	2. Main switch	
	• Open or shorted circuit, disconnected connections	Repair
	• Poor contact between main switch wire and wire harness	Repair
	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
	• Dirty ground point with oil or dust	Clean
	• Point gap out of adjustment	Readjust
	• Improperly charged condenser	Replace
Starting motor does not operate	1. Defective battery	Charge or replace
	2. Poor contact of magnetic switch	Repair or replace
	3. Poor contact of starting motor carbon brush	Repair or replace
Horn inoperative, poor sound or too weak sound	1. Horn	
	• Cracked diaphragm	Replace
	2. Horn button	
	• Poor grounding	Repair
	3. Wiring	
	• Poor contact	Repair
	4. Adjusting screw	
	• Out of adjustment	Readjust
Tail light and head light inoperative	1. Fuse	
	• Blown fuse or hurnt bulb filament	Replace
	2. Bulb	
	• Burnt bulb filament	Readjust
	3. Switch	
	• Poor contact of lighting switch	Readjust
	4. Wiring	
Stop light inoperative	1. Bulb	
	• Burnt or broken bulb filament	Replace
	2. Front and tail stop light switch	
	• Malfunction of switch	Readjust
	3. Wiring	
	• Poor contact of leads	Readjust
Winker lamp blinks too fast or too slow	1. Bulb	
	• Blinks unusually fast : improperly connected relay	Replace
	2. Wiring	
	• Blinks too fast : bulb with unsitable wattage	Replace
	• Blinks too slow : burnt or broken bulb	Replace
	3. Defective relay	Replace

Trouble	Probable causes	Remedies
Winker lamp inoperative	1. Winker lamp switch	
	• Poor contact of winker relay	Replace
	• Open circuit in winker relay coil	Replace
	2. Bulb	
	• Bulb wattage is smaller than rated wattage	Replace
	3. Relay	
	• Poor contact of winker relay	Replace
	• Improperly connected leads	Replace
No charging	1. Broken wire or shorted, loose connection	Repair or replace
	2. Faulty coil due to short or grounding	Replace
	3. Faulty or shorted silicon diode	Replace
	4. Broken or shorted lead wire at regulator	Repair or replace
	5. Regulator voltage at no load is too low	Readjust
Insufficient charging	1. Wiring	
	• Broken wire, intermittent shorting or loose connection	Repair, retighten
	2. Generator	
	• Shorting across layer in the field coil (resistance indicated in continuity test)	Replace
	• Shorting across layer in stator coil	Replace
	• Open circuit in one of the stator coil	Replace
	• Faulty or shorted silicon diode	Replace
	3. Regulator	
	• Voltage below specified value at no load	Readjust
	• Dirty of pitted points	Polish or replace
	• Coil or resistor internally shorted	Replace
	4. Battery	
	• Low electrolyte level	Add distilled water
	• Defective battery plates	Replace
Excessive charging	1. Wiring	
	P terminal circuit and F terminal circuit shorted resulting in split wound generator	Repair
	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
Unstable charging voltage	1 Wiring	
	• Bare wire shorting intermittently under vibration or broken wire making partial contact	Repair or replace
	2. Generator	
	• Layer short (intermittent shorting)	Repair or replace
	3. Generator	
	• Intermittent open circuit in the coil	Repair or replace
	• 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.	1. Dirty contact areas and case. 2. Contaminated electrolyte or electrolyte excessively concentrated.	1. Always maintain the exterior clean. 2. 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.	1. 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 the sulfuric acid and form lead sulfide deposits, (sulfation) making it impossible to recharge.	1. When the specific gravity falls below 1,200 (20°C : 68°F), the battery should be recharged immediately. 2. When the battery frequently becomes discharged while operating at normal speed, check the generator for proper output. 3. 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)	1. The deposit will heavily accumulate at the bottom and will cause internal shorting and damage the battery.	1. Check to assure proper charging rate.
Specific gravity drop Electrolyte evaporates	1. Shorted. 2. Insufficient charging. 3. Distilled water overfilled. 4. Contaminated electrolyte.	1. Check specific gravity measurement. 2. 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 white layer or in spot.	1. Charging rate is too small or else excessively large. 2. The specific gravity or the mixture of the electrolyte is improper. 3. Battery left in a discharge condition for a long period. (left with the switch turned on) 4. Exposed to excessive vibration due to improper insulation. 5. Motorcycle stored during cold season with battery connected.	1. When motorcycle is in storage, the battery should be recharged once a month even though the motorcycle is not used. 2. Check the electrolyte periodically and always maintain the proper level. 3. In a lightly discharged condition, perform recharging and discharging several times by starting the engine may be sufficient.
Spark plug electrode coated with carbon deposit	1. Too rich a fuel. 2. Excessive idle speed. 3. Poor quality gasoline. 4. Clogged air cleaner. 5. 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	1. Worn piston ring. 2. Worn piston and cylinder. 3. 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	1. Use of hot spark plug. 2. Engine overheating. 3. Improper ignition timing 4. Loose spark plug or damaged spark plug hole thread. 5. 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.