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# PREFACE

This Service Manual describes the technical features and servicing procedures for the KYMCO **FILLY 50**.

Section 1 contains the precautions for all operations stated in this manual. Read them carefully before starting any operation.

Section 2 is the removal/installation procedures for the frame covers which are subject to higher removal/installation frequency during maintenance and servicing operations.

Section 3 describes the inspection/adjustment procedures, safety rules and service information for each part, starting from periodic maintenance.

Sections 6 through 18 give instructions for disassembly, assembly and inspection of engine, chassis frame and electrical equipment.

Most sections start with an assembly or system illustration and troubleshooting for the section. The subsequent pages give detailed procedures for the section.

The information and contents included in this manual may be different from the motorcycle in case specifications are changed.
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**KWANG YANG MOTOR CO., LTD.**

OVERSEAS SALES DEPARTMENT

OVERSEAS SERVICE SECTION

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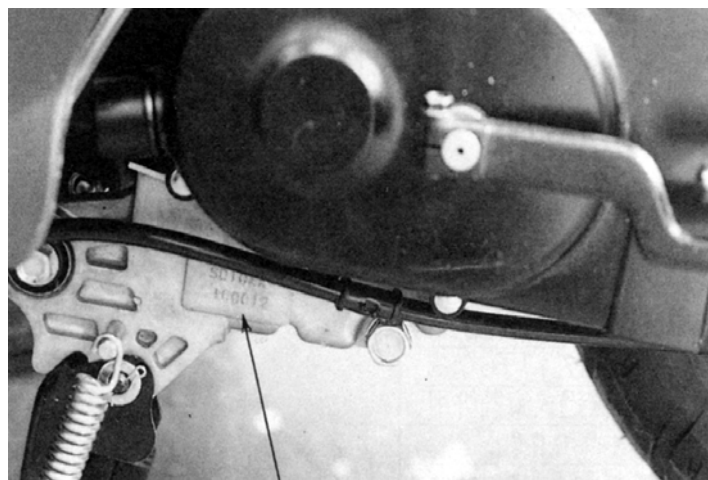
# 1. GENERAL INFORMATION

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## ENGINE SERIAL NUMBER



Location of Engine Serial Number

# 1. GENERAL INFORMATION

## SPECIFICATIONS

Motorcycle Name & Type						
Name & Model No.			SD10AA			
Overall length (mm)			1660			
Overall width (mm)			680			
Overall height (mm)			1070			
Wheel base (mm)			1195			
Engine type			O.H.C.			
Displacement			49.5cc			
Fuel Used			92# nonleaded gasoline			
Net weight (kg)	Front wheel			33		
	Rear wheel			46		
	Total			79		
Gross weight(kg)	Front wheel			32		
	Rear wheel			52		
	Total			84		
Tires	Front wheel			90/90-10 50J		
	Rear wheel			90/90-10 50J		
Ground clearance (mm)			100			
Perform- ance	Braking distance (m)		4.4 (Initial speed 30km/h)			
	Min. turning radius (m)		1.6			
Engine	Starting system		Starting motor & kick starter			
	Type		Gasoline, 4-stroke			
	Cylinder arrangement		Single cylinder			
	Combustion chamber type		Semi-sphere			
	Valve arrangement		O.H.C.			
	Bore x stroke (mm)		φ39 x 41.4			
	Compression ratio		10.5			
	Compression pressure (kg/cm <sup>2</sup> -rpm)		14-600			
	Max. output (ps/rpm)		4.0/8000			
	Max. torque (kg m/rpm)		1.04/6000			
	Port timing	Intake (1mm)	Open	0° BTDC		
			Close	34° ABDC		
		Exhaust (1mm)	Open	32° BBDC		
			Close	0° TDC		
	Valve clearance (cold) (mm)		Intake	0.10		
			Exhaust	0.10		
	Idle speed (rpm)			1700rpm		
	Lubrication System	Lubrication type		Forced pressure & wet sump		
		Oil pump type		Inner/outer rotor type		
		Oil filter type		Full-flow filtration		
		Oil capacity		0.9 liter		
	Cooling Type			Forced air cooling		

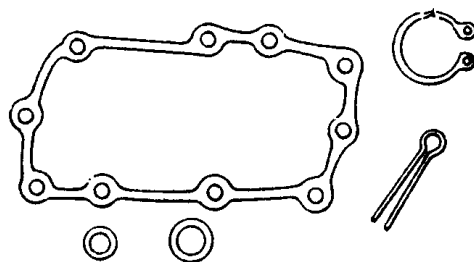
Fuel System	Air cleaner type & No		Paper element, wet	
	Fuel capacity		6.2 liter	
	Carburetor	Type	CVK	
		Piston dia. (mm)		
Venturi dia.(mm)		φ18 equivalent		
Throttle type		Butterfly type		
Electrical Equipment	Ignition System	Type	CDI	
		Ignition timing	15±2°BTDC/1700rpm	
		Contact breaker	Non-contact point type	
		Spark plug	NGK ND C7HSA U22FS-U	
	Spark plug gap	0.6 0.7mm		
	Battery	Capacity	12V4AH	
Power Drive System	Clutch	Type	Dry multi-disc clutch	
	Transmission Gear	Type	Non-stage transmission	
		Operation	Automatic centrifugal type	
	Reduction Gear	Type	Two-stage reduction	
		Reduction ratio	1st	10.85 3.0
2nd			11.05	
Moving Device	Front Axle	Caster angle	26.5°	
		Trail length	—	
	Tire pressure (kg/cm <sup>2</sup> )	Front	1.75	
		Rear	2.25	
	Turning angle	Left	45°	
Right		45°		
Brake svstem type		Front	Drum (110mm) brake	
		Rear	Drum (110mm) brake	
Damping Device	Suspension type	Front	Telescope	
		Rear	Unit Swing	
	Shock absorber type	Front	Telescope	
		Rear	Unit Swing	
Frame type			Under bone	

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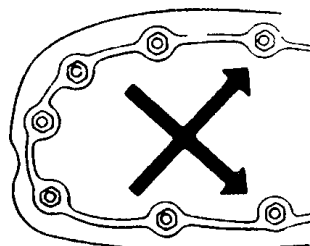
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## SERVICE PRECAUTIONS

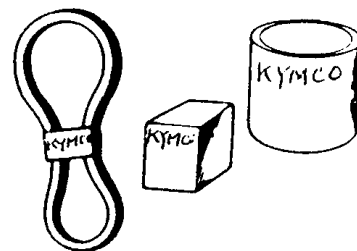
- Make sure to install new gaskets, O-rings, circlips, cotter pins, etc. when reassembling.



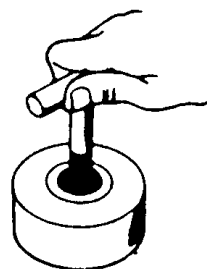
- When tightening bolts or nuts, begin with larger-diameter to smaller ones at several times, and tighten to the specified torque diagonally.



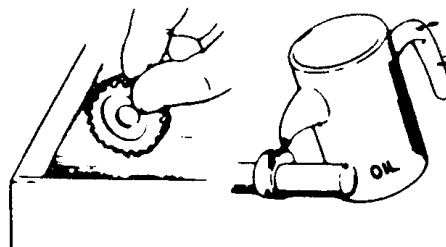
- Use genuine parts and lubricants.



- When servicing the motorcycle, be sure to use special tools for removal and installation.



- After disassembly, clean removed parts. Lubricate sliding surfaces with engine oil before reassembly.



- Apply or add designated greases and lubricants to

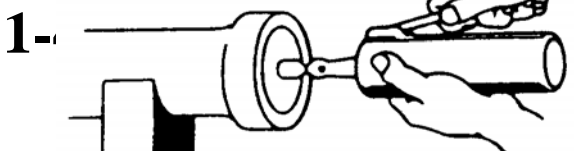
# 1. GENERAL INFORMATION

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the specified lubrication points.

- After reassembly, check all parts for proper tightening and operation.
- When two persons work together, pay attention to the mutual working safety.
- Disconnect the battery negative (-) terminal before operation.
- When using a spanner or other tools, make sure not to damage the motorcycle surface.
- After operation, check all connecting points, fasteners, and lines for proper connection and installation.
- When connecting the battery, the positive (+) terminal must be connected first.
- After connection, apply grease to the battery terminals.
- Terminal caps shall be installed securely.

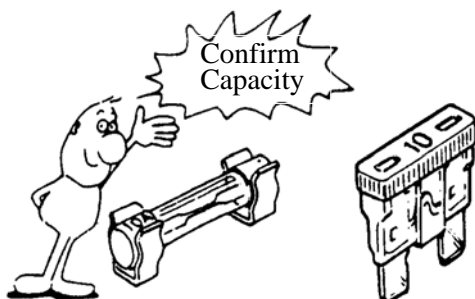
- If the fuse is burned out, find the cause and repair it. Replace it with a new one according to the specified capacity.



# 1. GENERAL INFORMATION

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- After operation, terminal caps shall be installed securely.
- When taking out the connector, the lock on the connector shall be released before operation.
- Hold the connector body when connecting or disconnecting it.
- Do not pull the connector wire.
- Check if any connector terminal is bending, protruding or loose.



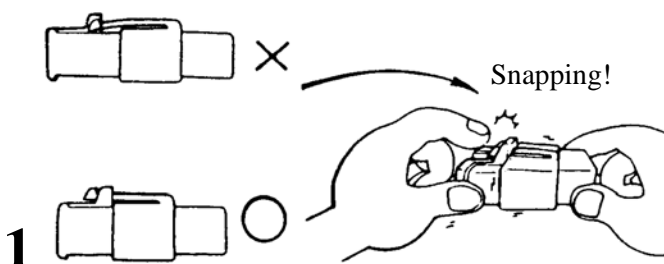
- The connector shall be inserted completely.
- If the double connector has a lock, lock it at the correct position.

# 1. GENERAL INFORMATION

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- Check if there is any loose wire.
  
  
  
  
  
  
  
  
  
  
- Before connecting a terminal, check for damaged terminal cover or loose negative terminal.
  
  
  
  
  
  
  
  
  
  
- Check the double connector cover for proper coverage and installation.
  
  
  
  
  
  
  
  
  
  
- Insert the terminal completely.
- Check the terminal cover for proper coverage.
- Do not make the terminal cover opening face up.
  
  
  
  
  
  
  
  
  
  
- Secure wire harnesses to the frame with their respective wire bands at the designated locations. Tighten the bands so that only the insulated surfaces contact the wire harnesses.

- After clamping, check each wire to make sure it is secure.



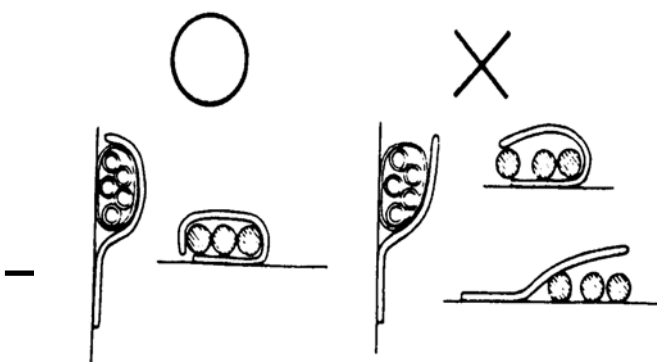
# 1. GENERAL INFORMATION

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- Do not squeeze wires against the weld or its clamp.
- After clamping, check each harness to make sure that it is not interfering with any moving or sliding parts.
- When fixing the wire harnesses, do not make it contact the parts which will generate high heat.
- Route wire harnesses to avoid sharp edges or corners. Avoid the projected ends of bolts and screws.
- Route wire harnesses passing through the side of bolts and screws. Avoid the projected ends of bolts and screws.

No Contact !

- Route harnesses so they are neither pulled tight nor have excessive slack.





# 1. GENERAL INFORMATION

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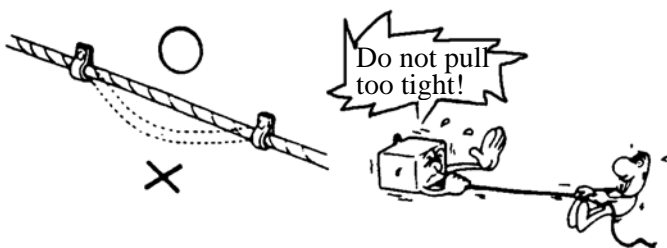
- Protect wires and harnesses with electrical tape or tube if they contact a sharp edge or corner.

- When rubber protecting cover is used to protect the wire harnesses, it shall be installed securely.

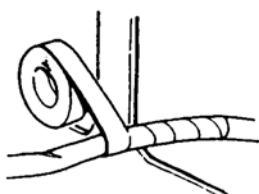
- Do not break the sheath of wire.
- If a wire or harness is with a broken sheath, repair by wrapping it with protective tape or replace it.

- When installing other parts, do not press or squeeze the wires.

Do not press or squeeze the wire.



- After routing, check that the wire harnesses are not twisted or kinked.



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- Wire harnesses routed along with handlebar should not be pulled tight, have excessive slack or interfere with adjacent or surrounding parts in all steering positions.

- When a testing device is used, make sure to understand the operating methods thoroughly and operate according to the operating instructions.

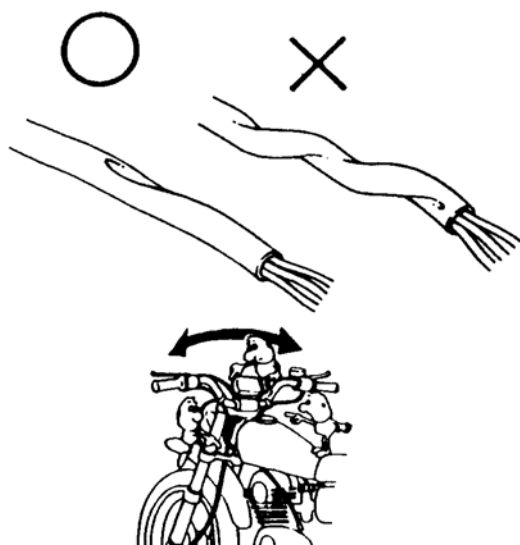
- Be careful not to drop any parts.

Do you understand the instrument? Is the instrument set correctly?

Remove Rust !

- When rust is found on a terminal, remove the rust with sand paper or equivalent before connecting.

- Do not bend or twist control cables. Damaged control cables will not operate smoothly and may stick or bind.



## ■ Symbols:

The following symbols represent the servicing methods and cautions included in this service manual.



Engine Oil

: Apply engine oil to the specified points. (Use designated engine oil for lubrication.)

# 1. GENERAL INFORMATION

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Grease

: Apply grease for lubrication.



Gear Oil

: Transmission Gear Oil (90#)



: Use special tool.

: Caution



: Warning

(⇒ 12-3)

: Refer to page 12-3.

## TORQUE VALUES

### STANDARD TORQUE VALUES

Item	Torque (kg-m)	Item	Torque (kg-m)
5mm bolt, nut	0.5	5mm screw	0.4

# 1. GENERAL INFORMATION

6mm bolt, nut	1.0	6mm screw, SH bolt	0.9
8mm bolt, nut	2.2	6mm flange bolt, nut	1.2
10mm bolt, nut	3.5	8mm flange bolt, nut	2.7
12mm bolt, nut	5.5	10mm flange bolt, nut	4.0

Torque specifications listed below are for important fasteners.

## ENGINE

Item	Q'ty	Thread dia.(mm)	Torque (kg-m)	Remarks
Cylinder head bolt A	2	8	0.9	Double end bolt
Cylinder head bolt B	4	8	0.9	
Oil filter screen cap	1	30	1.5	
Exhaust muffler lock bolt	2	6	3.5	Double end bolt
Cylinder head flange nut	4	8	2.0	Apply oil to threads
Valve adjusting lock nut	2	5	0.9	
Cam chain tensioner slipper bolt	1	6	1.0	
Oil bolt	1	8	1.3	
Clutch outer nut	1	10	5.5	
Clutch drive plate nut	1	28	5.5	
Starter motor mounting bolt	2	6	1.0	
Oil pump bolt	3	6	1.2	
Drive face nut	1	10	3.8	
Spark plug	1	10	1.2	
A.C. generator stator bolt	2	6	0.9	
Cam chain tensioner bolt	1	6	0.4	

## FRAME

Item	Q'ty	Thread dia.(mm)	Torque (kg-m)	Remarks
Steering stem lock nut	1	25.4	8.0 12.0	U-nut
Front axle nut	1	10	4.0 5.0	U-nut
Rear axle nut	1	14	8.0 10.0	U-nut
Rear shock absorber upper bolt	1	10	3.0 4.5	
Rear shock absorber lower bolt	1	8	2.0 3.0	
Speedometer cable set screw	1	5	0.45	
Rear shock absorber lock nut	1	8	2.5	Apply locking agent

## SPECIAL TOOLS

Tool Name	Tool No.	Remarks	Ref. Page
Valve adjuster			
Valve guide driver			
Valve guide reamer			

# 1. GENERAL INFORMATION

Valve spring compressor Lock nut wrench, 39mm Bearing driver Bearing driver Bearing remover, 12mm Remover set, 12mm Remove head, 12mm Remover shaft Remover weight Bearing remover, 15mm Driver set, 15mm Driver shaft, 15mm Driver head, 15mm Driver weight Bearing driver Driver handle Driver weight Outer extension Crankshaft assembly tool Crankshaft assembly collar Crankshaft assembly shaft Attachment Lock nut wrench Lock nut wrench Ball race remover extension Ball race remover Spring compressor Spring compressor attachment Spring compressor attachment Spring compressor attachment Lock nut wrench Driver outer extension Float level gauge Valve spring compressor Valve seat cutter, 24.5mm Valve seat cutter, 25mm Valve seat cutter, 22mm Valve seat cutter, 26mm Cutter clip, 5mm Universal holder Outer driver, 32x35mm Outer driver, 37x40mm Outer driver, 42x47mm Pilot, 12mm Pilot, 15mm Pilot, 17mm Pilot, 20mm Driver handle A Bearing remover shaft Bearing remover head, 12mm Flywheel puller				
			Seat cutter 45° IN/EX Plane cutter 32° IN Plane cutter 32° EX Plane cutter 60° IN/EX	

## LUBRICATION POINTS

### ENGINE

Lubrication Points	Lubricant
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# 1. GENERAL INFORMATION

Valve guide/valve stem movable part	<ul style="list-style-type: none"> <li>•Genuine KYMCO Engine Oil (SAE10W-30)</li> <li>•API-SG Engine Oil</li> </ul>
Cam lobes	
Valve rocker arm friction surface	
Cam chain	
Cylinder lock bolt and nut	
Piston surroundings and piston ring grooves	
Piston pin surroundings	
Cylinder inside wall	
Connecting rod/piston pin hole	
Connecting rod big end	
Crankshaft R/L side oil seal	
Starter reduction gear engaging part	
Countershaft gear engaging part	
Final gear engaging part	
Bearing movable part	
O-ring face	
Oil seal lip	
Starter idle gear	High-temperature resistant grease
Friction spring movable part/shaft movable part	
Shaft movable grooved part	
Kick starter spindle movable part	
A.C. generator connector	Adhesive
Transmission case breather tube	

## FRAME

The following is the lubrication points for the frame.

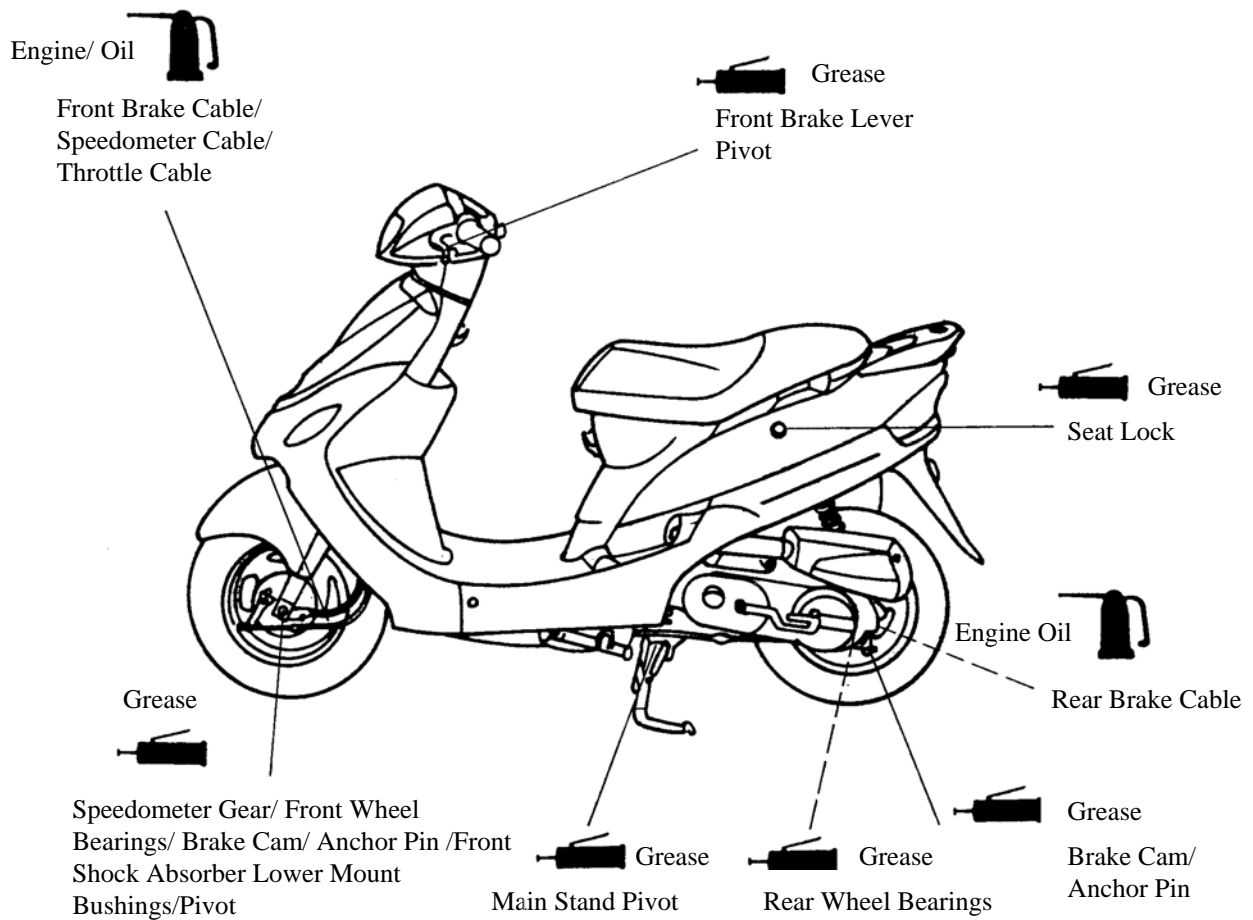
Use general purpose grease for parts not listed.

Apply clean engine oil or grease to cables and movable parts not specified.

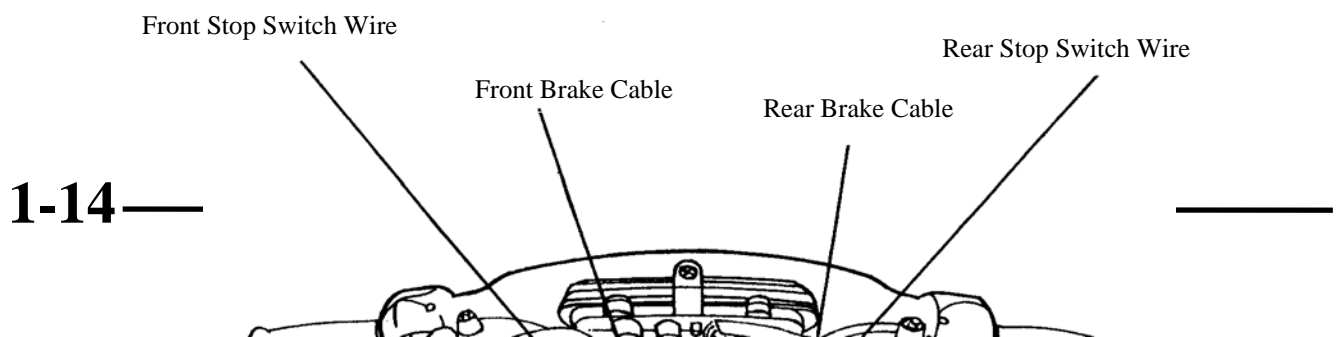
This will avoid abnormal noise and rise the durability of the motorcycle.

# 1. GENERAL INFORMATION

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## CABLE & HARNESS ROUTING



# 1. GENERAL INFORMATION

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Throttle Cable

Speedometer Cable

Ignition Switch

Headlight Wire  
Connector

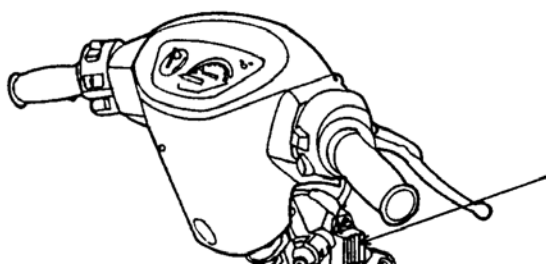
Regulator/Rectifier

Headlight Resistor

Horn

Auto Bystarter  
Resistor

Winker



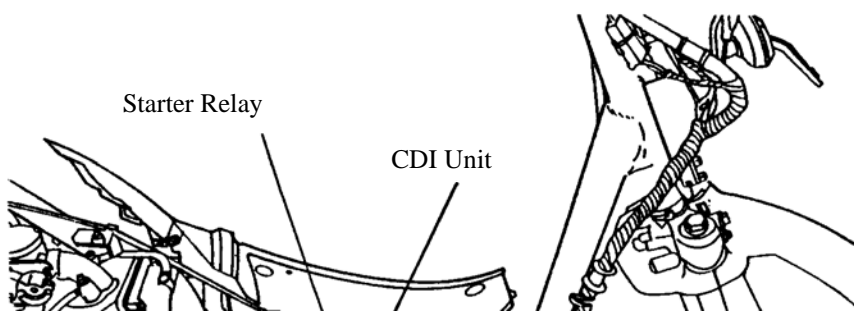
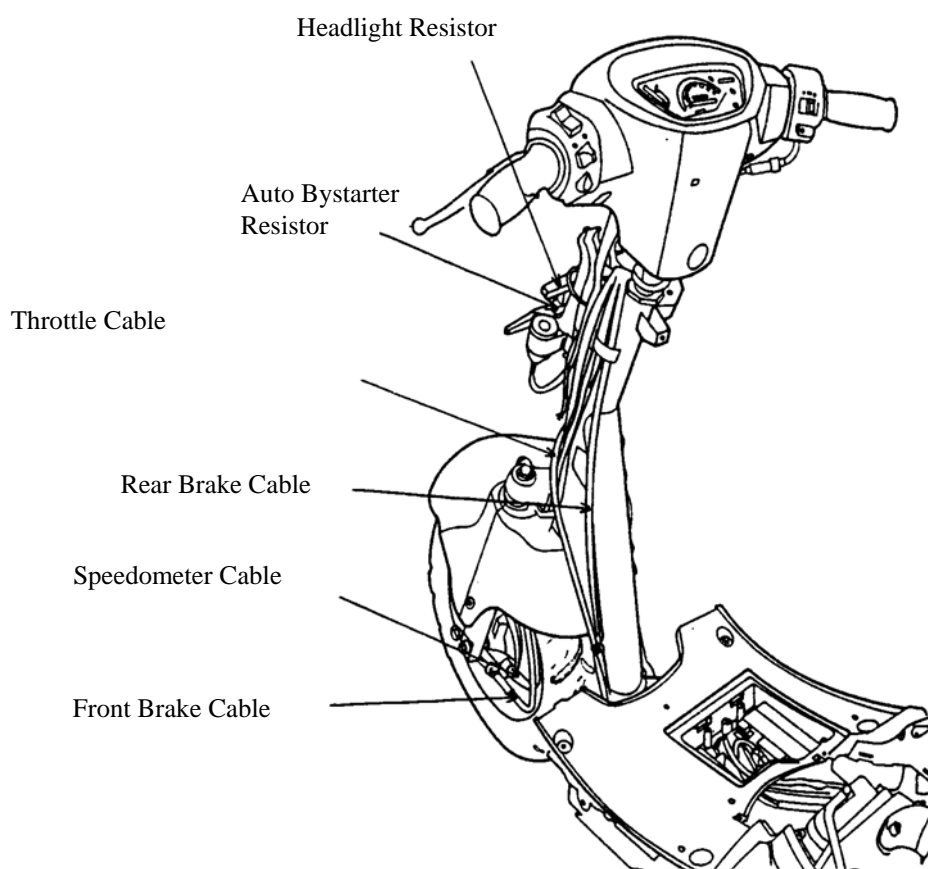


# 1. GENERAL INFORMATION

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Regulator/Rectifier

Wire Harness

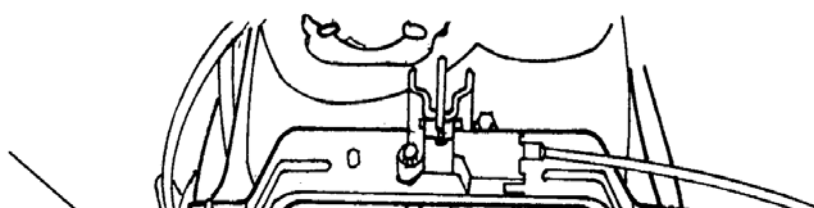
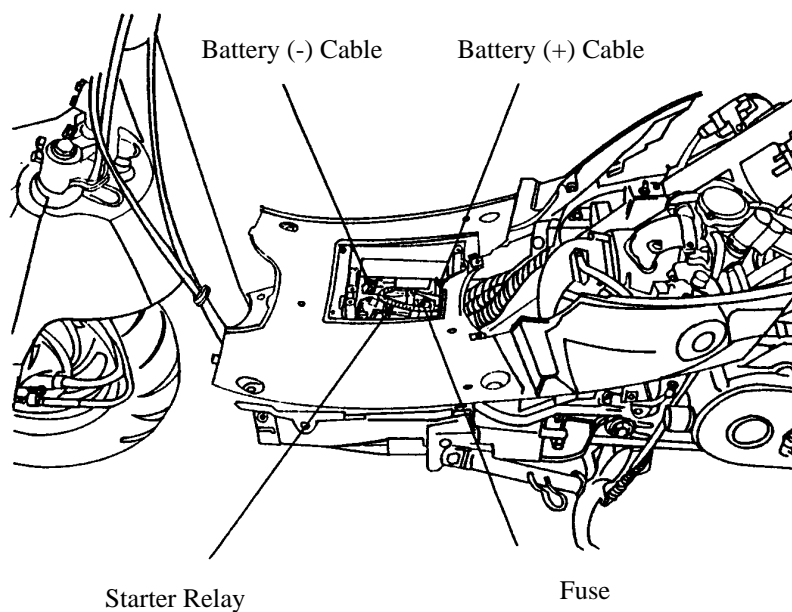


# 1. GENERAL INFORMATION

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Battery (+) Cable

Battery (-) Cable



# 1. GENERAL INFORMATION

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FCV (Fuel Control  
Valve

Purge Control Valve  
/Charcoal Canister

Ignition Coil  
Primary Wire

Ignition Wire

Vacuum Tee

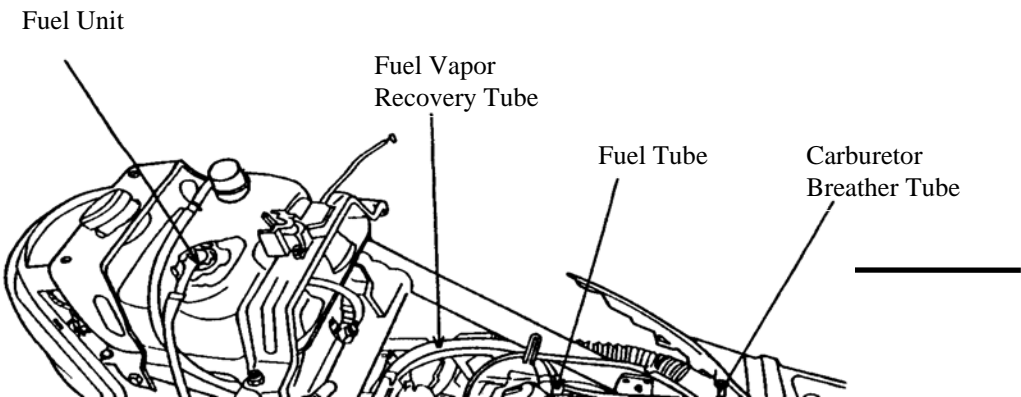
Fuel Vapor  
Recovery Tube

Fuel Tube

Throttle Cable

Carburetor  
Overflow Tube

Crankcase Breather  
Tube



## 1. GENERAL INFORMATION

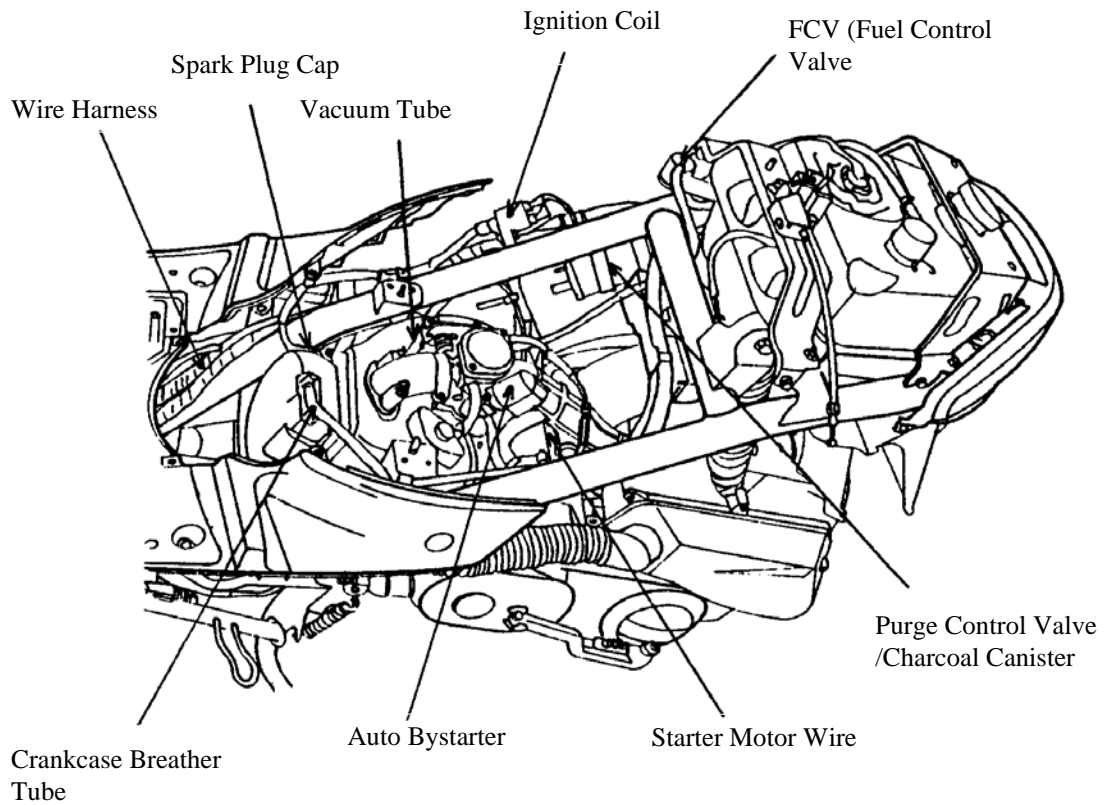
FCV (Fuel Control Valve)

### Throttle Cable

## Wire Harness

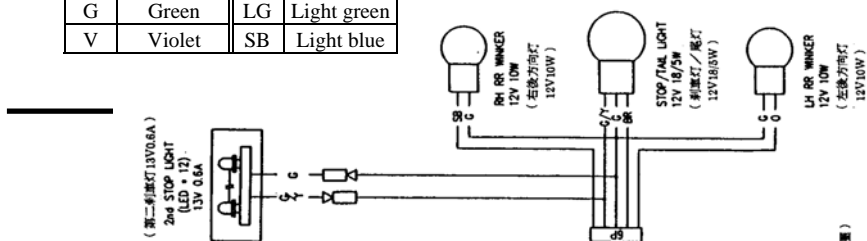
### Auto Bystarter Wire

## Vacuum Tube



## WIRING DIAGRAM

R	Red	O	Orange
B	Black	P	Pink
W	White	Br	Brown
G	Green	LG	Light green
V	Violet	SB	Light blue



代號	顏色
L/W	青白
Y/W	黃白

# 1. GENERAL INFORMATION

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L	Blue	GR	Gray
Y	Yellow		

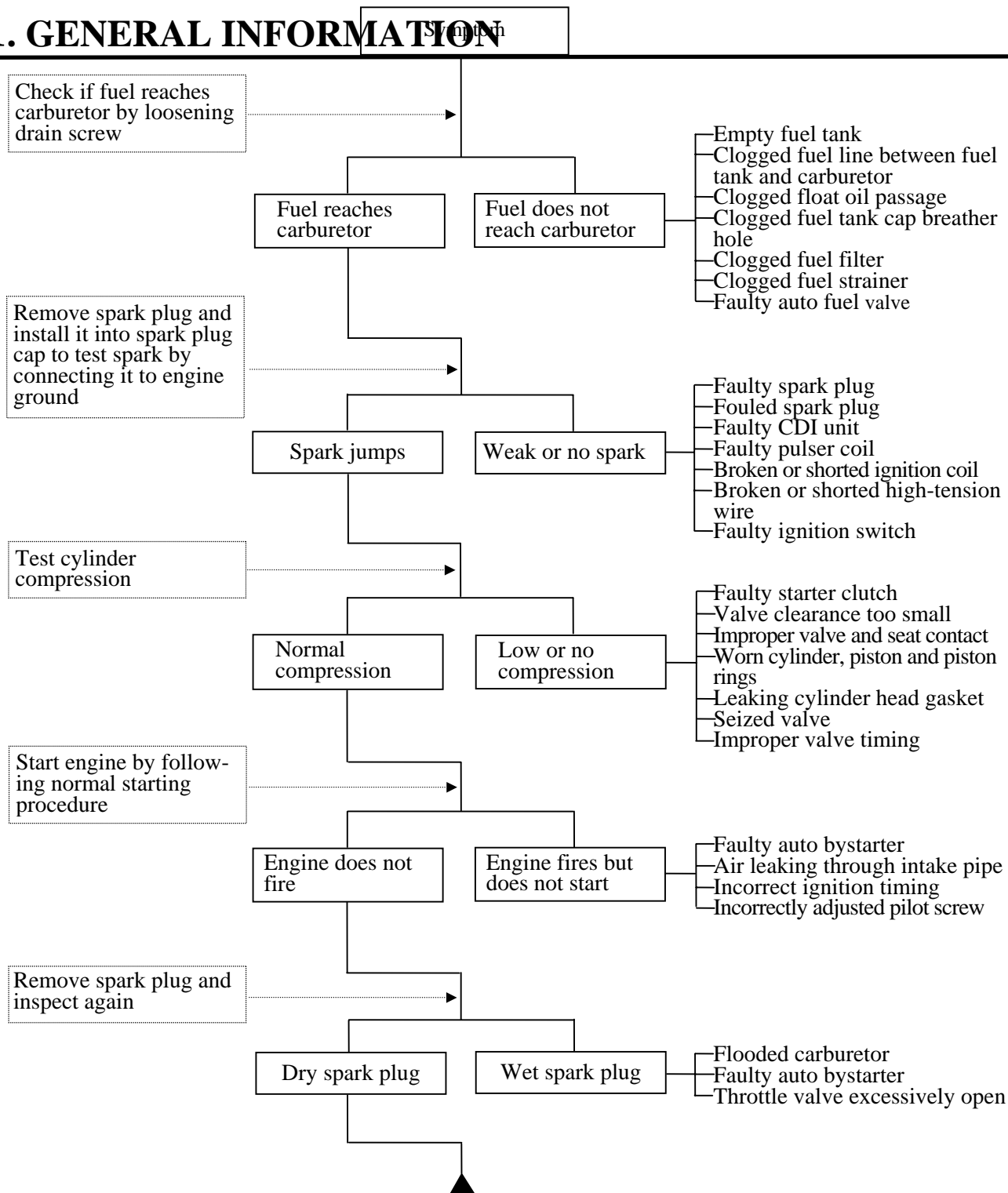
## TROUBLESHOOTING

ENGINE WILL NOT START OR IS HARD TO START

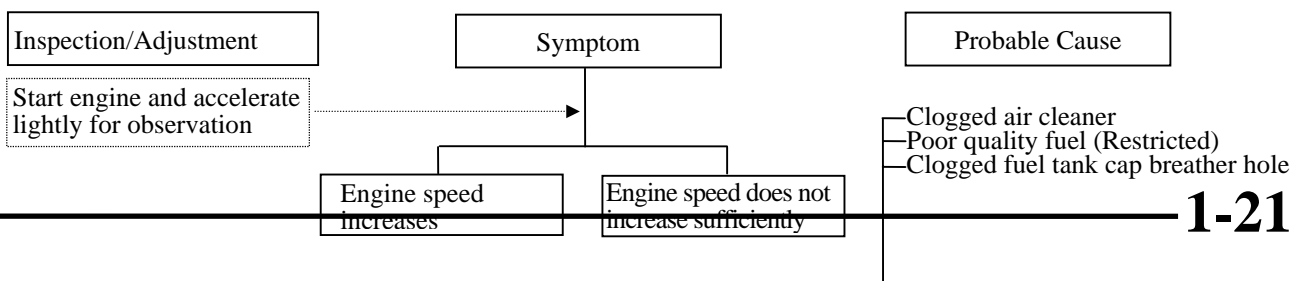
Inspection/Adjustment

Probable Cause

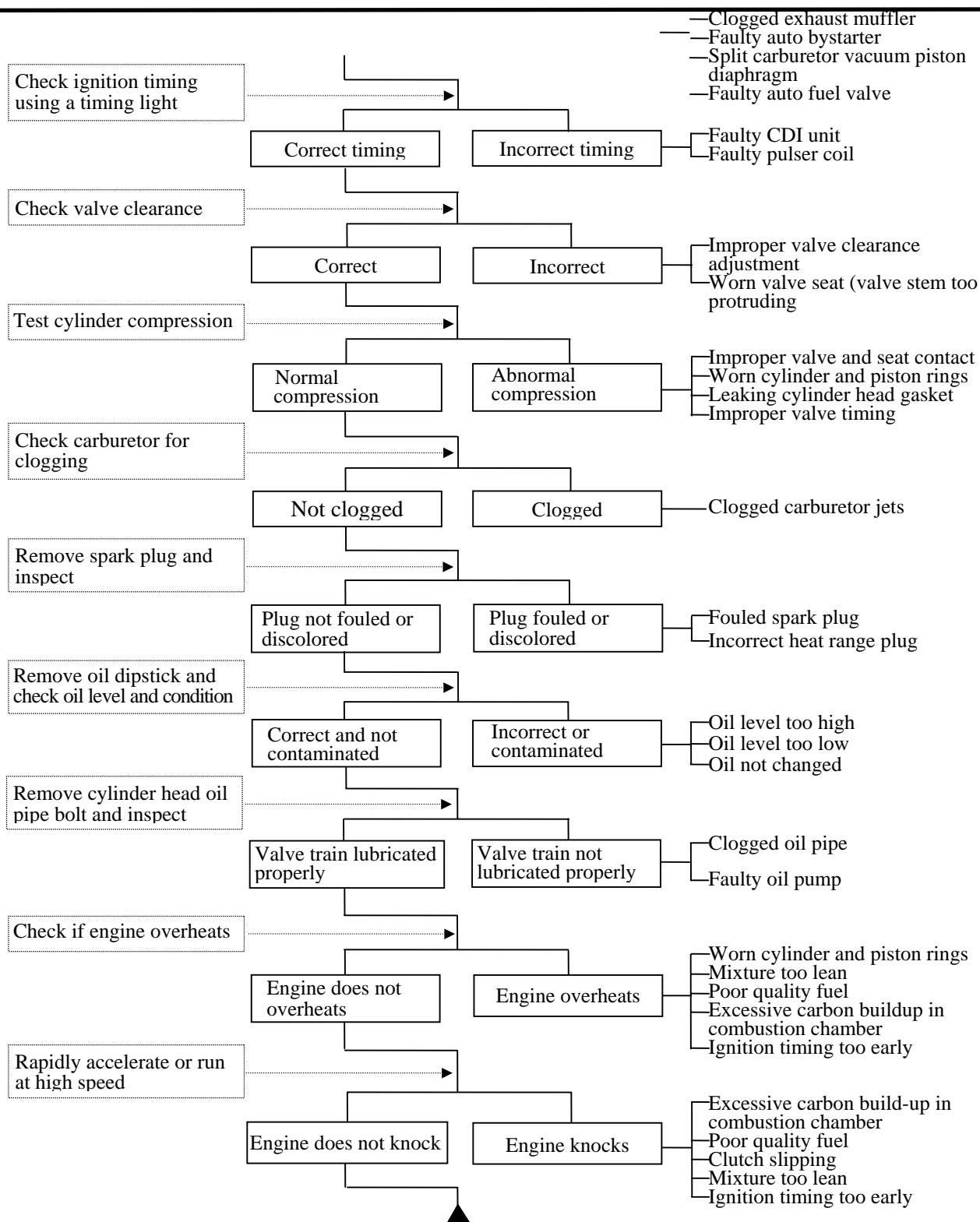
# 1. GENERAL INFORMATION



## ENGINE LACKS POWER



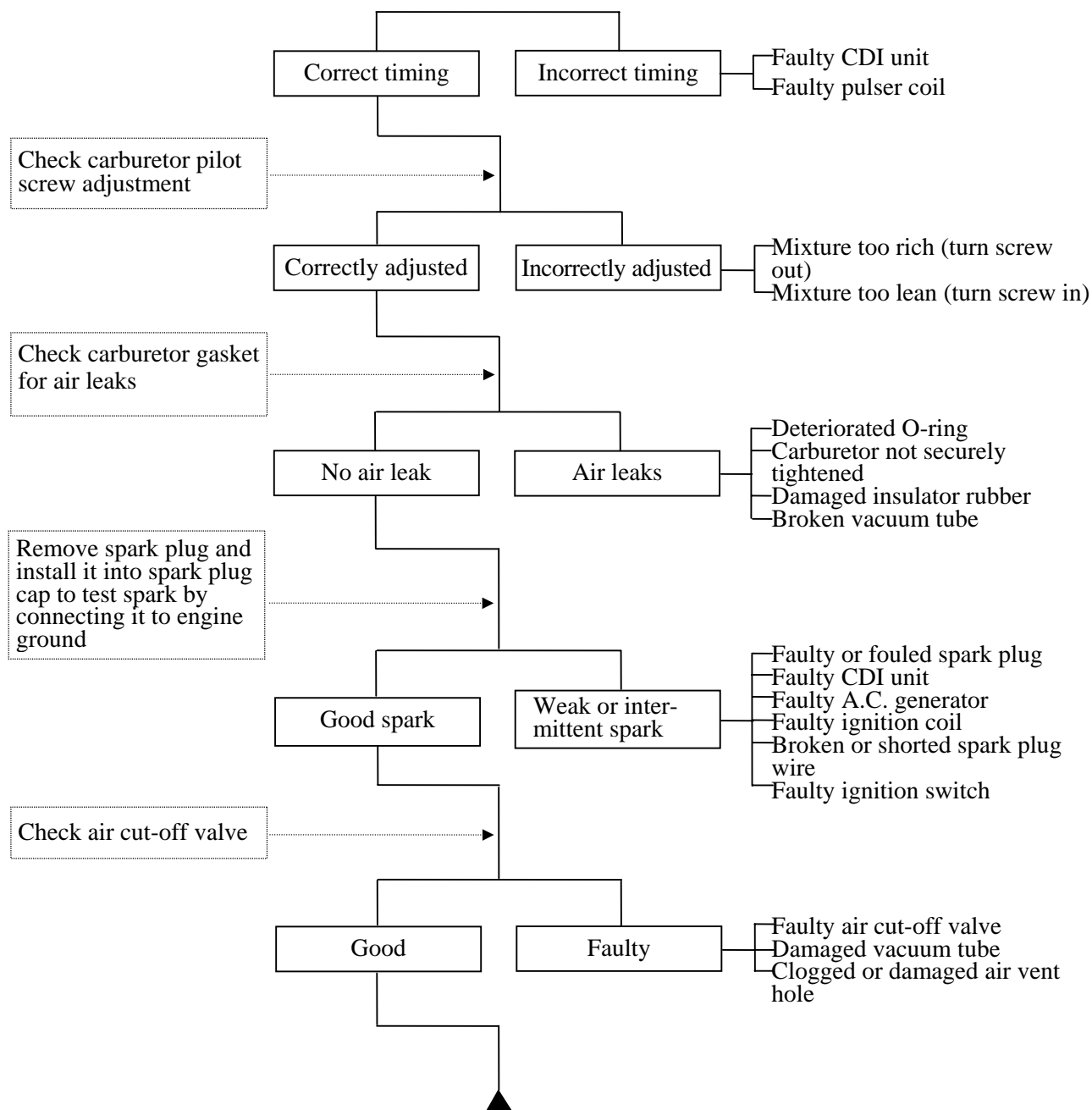
# 1. GENERAL INFORMATION



## POOR PERFORMANCE (ESPECIALLY AT IDLE AND LOW SPEEDS)

Inspection/Adjustment	Symptom	Probable Cause
Check ignition timing		

# 1. GENERAL INFORMATION

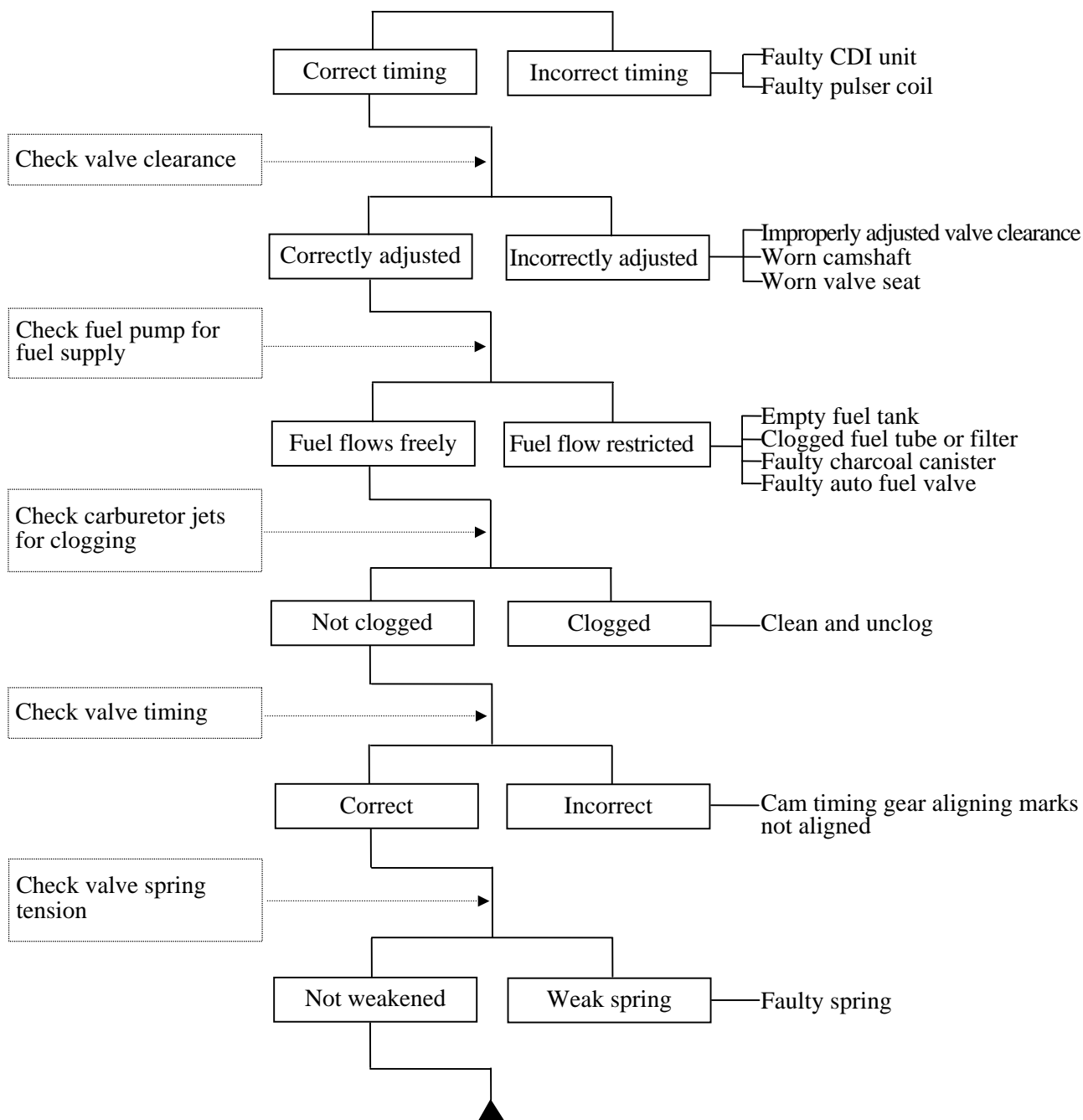


## POOR PERFORMANCE (AT HIGH SPEED)

Inspection/Adjustment	Symptom	Probable Cause
Check ignition timing		



# 1. GENERAL INFORMATION

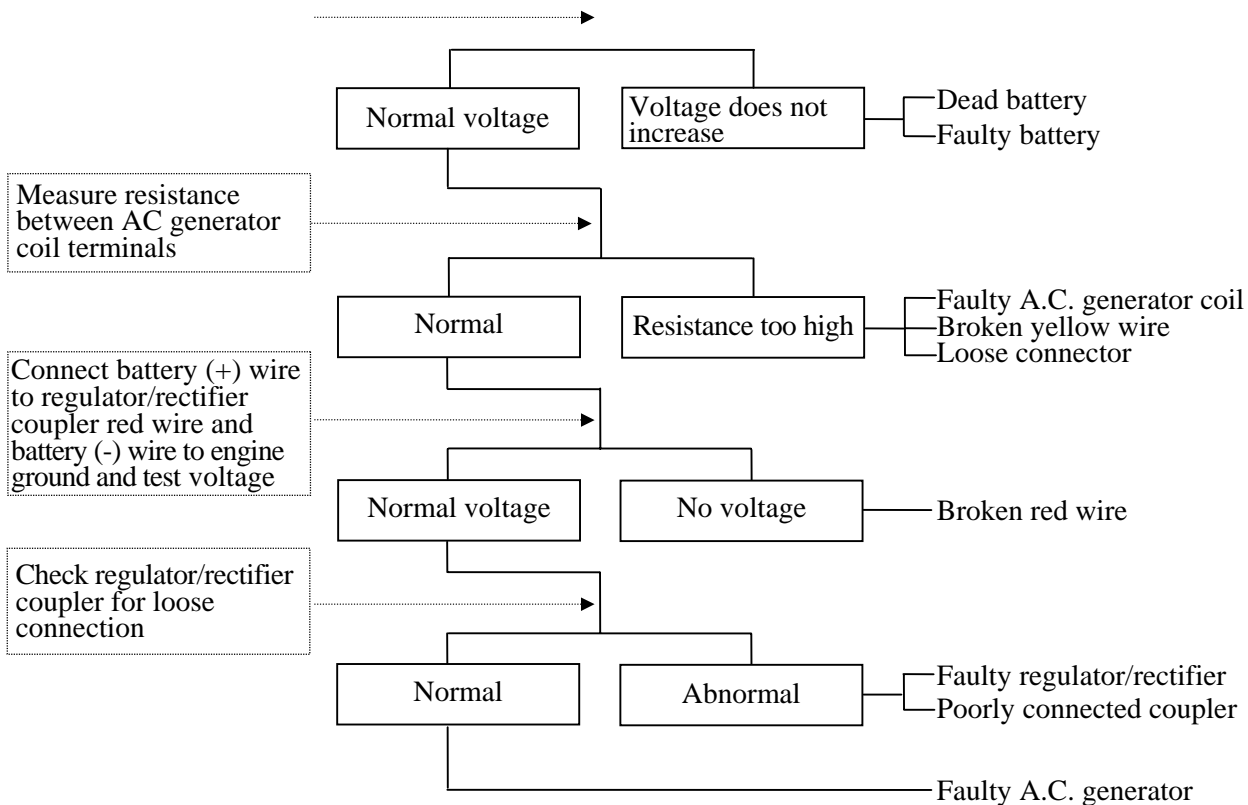


## POOR CHARGING (BATTERY OVER DISCHARGING OR OVERCHARGING)

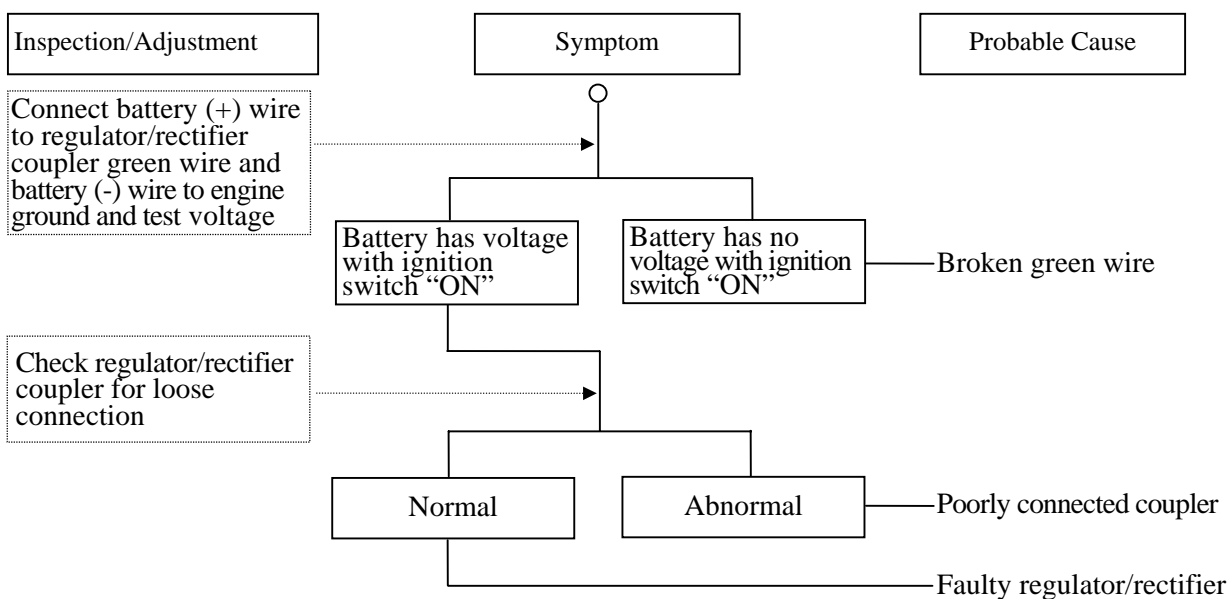
### Undercharging

Inspection/Adjustment	Symptom	Probable Cause
Start engine and test limit voltage between battery terminals		

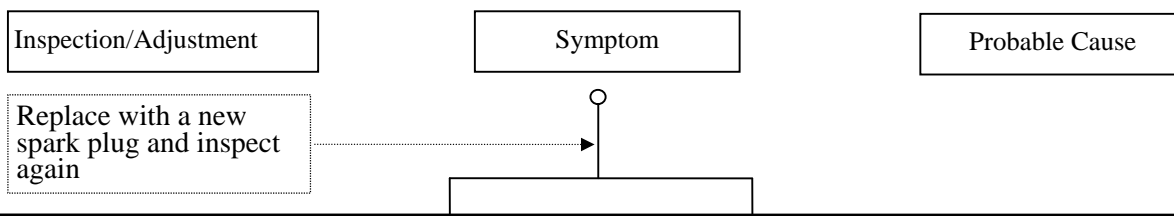
# 1. GENERAL INFORMATION



## Overcharging



## NO SPARK AT SPARK PLUG



# 1. GENERAL INFORMATION

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