TEXT

TEXT

PREFACE

This Service Manual describes the technical features and servicing procedures for the KYMCO B&W 50.

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

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 5 through 12 give instructions for disassembly, assembly and adjustment of engine parts. Section 13 is the removal/ installation of chassis. Section 15 states the testing and measuring methods of 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.

KWANG YANG MOTOR CO., LTD.
OVERSEAS SALES DEPARTMENT
OVERSEAS SERVICE SECTION

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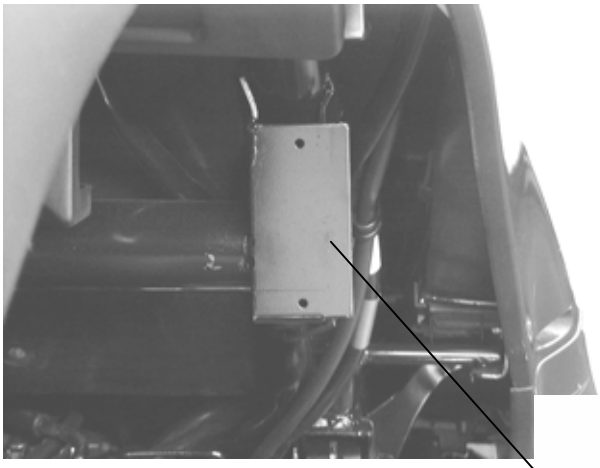
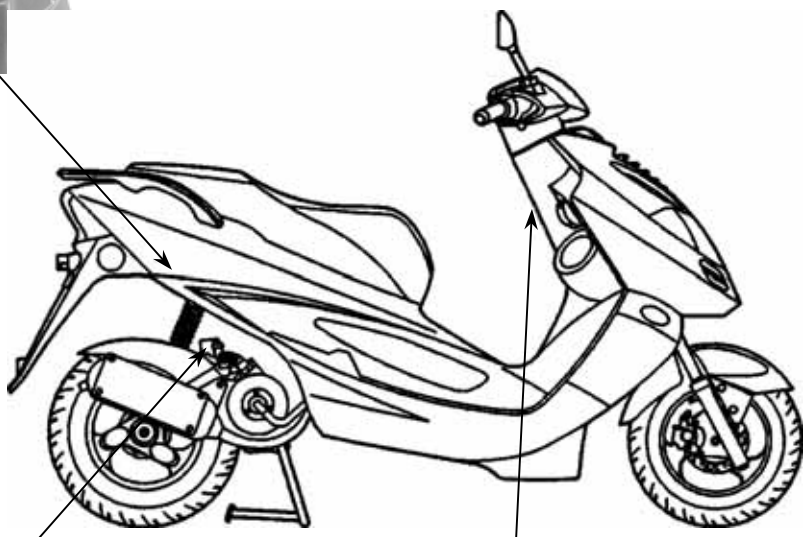
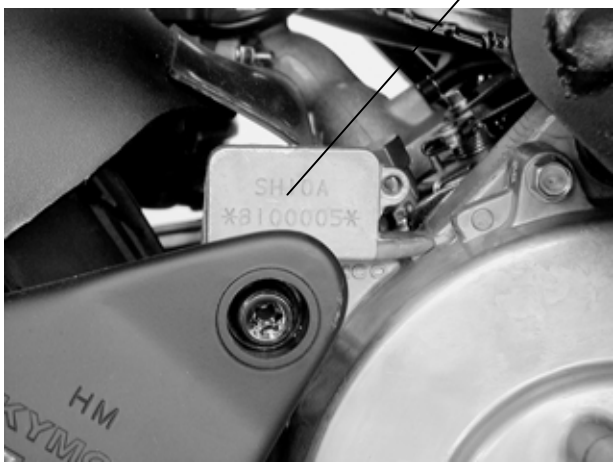
GENERAL INFORMATION

ENGINE SERIAL NUMBER



Vehicle Identification Serial Number





Location of Engine Serial Number

Location of Frame Serial Number

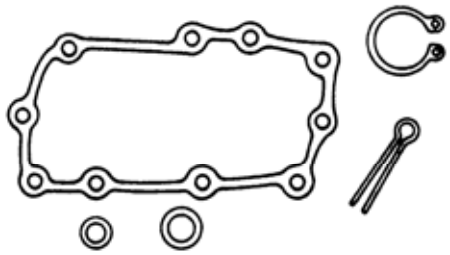
SPECIFICATIONS

Name & Model No.			B&W50
Overall length			1940mm
Overall width			740mm
Overall height			1173mm
Wheel base			1352mm
Engine type			Water cooled 2-stroke
Displacement			49.4cc
Fuel Used			nonleaded gasoline
Net weight (kg)		Front wheel	52.5
		Rear wheel	67.5
		Total	120
Gross weight(kg)		Front wheel	79
		Rear wheel	114
		Total	193
Tires		Front wheel	120/70-12 56J
		Rear wheel	130/70-12 59J
Ground clearance			155mm
Perform-ance	Braking distance (m)		4.4m /30km/H
	Min. turning radius		2300mm
Engine	Starting system		Starting motor & Kick starter
	Type		Gasoline,2-stroke
	Cylinder arrangement		Single cylinder
	Combustion chamber type		Semi-sphere
	Bore x stroke (mm)		39.0 x 41.4
	Compression ratio		7.2:1
	Compression pressure (kg/cm²-rpm)		11.8
	Max. output (kw/rpm)		3.09/6500
	Max. torque (kg-m/rpm)		0.5/6000
	Port timing	Intake (1mm) Open	
		Intake (1mm) Close	
		Exhaust (1mm) Open	
		Exhaust (1mm) Close	
	Valve clearance (cold)	Intake	
		Exhaust	
	Idle speed (rpm)		2000±100rpm
	Lubrication System	Lubrication type	Separate type
		Oil pump type	Plunger type
		Oil filter type	Full-flow filtration
		Oil capacity	1.1 liters
		Exchanging capacity	0.9 liters
	Cooling Type		Water cooling

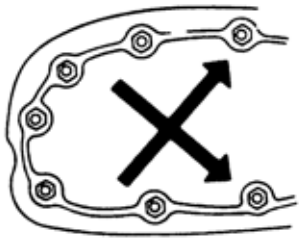
Fuel System	Air cleaner type & No		Sponge wet
	Gear oil capacity		0.12 liters
	Fuel capacity		10 liters
	Carburetor	Type	P B
		Piston dia.	13
		Venturi dia.	14 equivalent
Electrical Equipment	Ignition System	Type	CDI
		Ignition timing	13.5°±2°/2000rpm
		Spark plug	NGK BR8HSA
		Spark plug gap	0.6～0.7mm
	Battery	Capacity	12V4AH
Transmission / Power Drive System	Clutch	Type	Dry multi-disc clutch
		Type	Non-stage transmission
		Operation	Automatic centrifugal type
	Reduction Gear	Type	Two-stage reduction
		Reduction ratio 1st	
		Reduction ratio 2nd	
Moving Device	Front Axle	Caster angle	
		Connecting rod	
	Tire pressure (kg/cm²)	Front	1.75
		Rear	2.25
	Turning angle	Left	42.5°
		Right	42.5°
Brake system type		Front	Disk brake
		Rear	Drum brake
Damping Device	Suspension type	Front	Telescope
		Rear	Unit
Frame type			Under pipe

SERVICE PRECAUTIONS

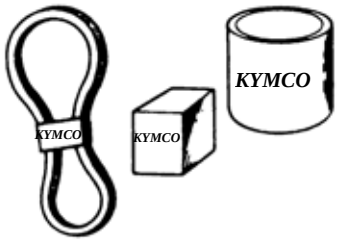
■ Make sure to install new gaskets, O-rings, circlips, cotter pins, etc. when reassembling.



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



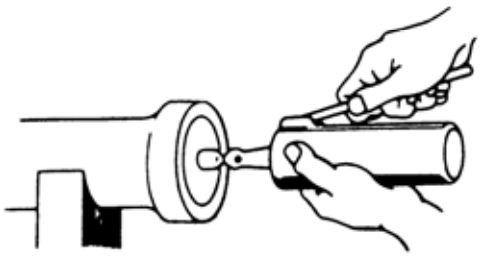
■ Use genuine parts and lubricants.



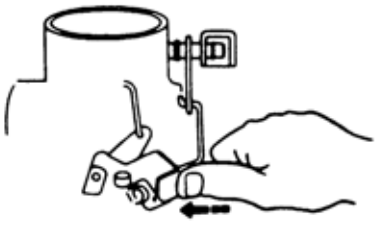
■ When servicing the motorcycle, be sure to use special tools for removal and installation.

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

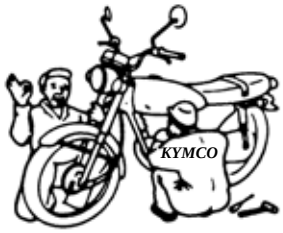
■ Apply or add designated greases and lubricants to the specified lubrication points.



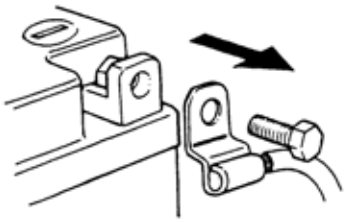
■ After reassembly, check all parts for proper tightening and operation.



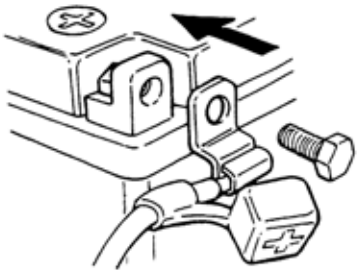
■ When two persons work together, pay attention to the mutual working safety.



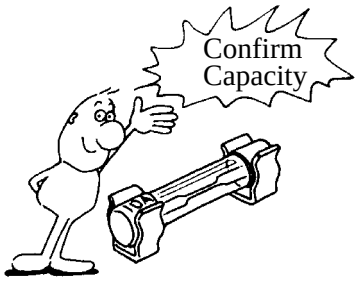
■ Disconnect the battery negative (-) terminal before operation.
■ When using a spanner or other tools, make sure not to damage the motorcycle surface.



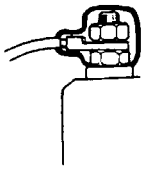
■ After operation, check all connecting points, fasteners, and lines for proper connection and installation.
■ When connecting the battery, the positive (+) terminal must be connected first.
■ After connection, apply grease to the battery terminals.
■ Terminal caps shall be installed securely.



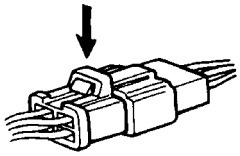
■ If the fuse is burned out, find the cause and repair it. Replace it with a new one according to the specified capacity.



■ After operation, terminal caps shall be installed securely.

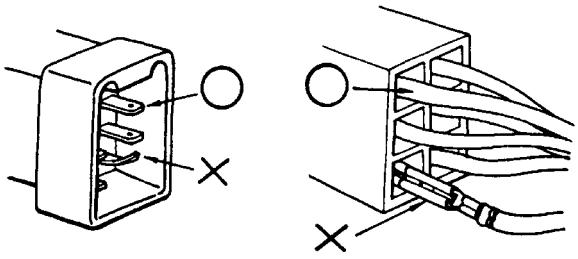


■ When taking out the connector, the lock on the connector shall be released before operation.

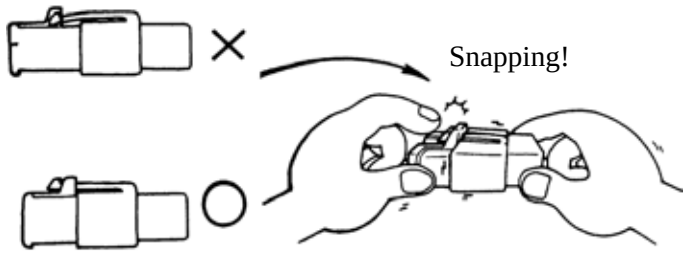


■ Hold the connector body when connecting or disconnecting it.
■ Do not pull the connector wire.

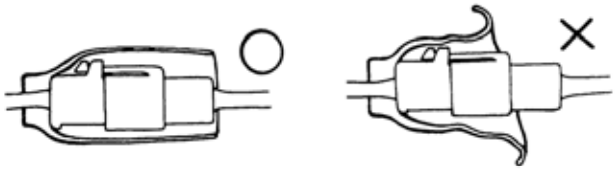
■ Check if any connector terminal is bending, protruding or loose.



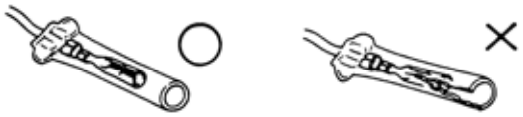
- The connector shall be inserted completely.
- If the double connector has a lock, lock it at the correct position.
- Check if there is any loose wire.



- Before connecting a terminal, check for damaged terminal cover or loose negative terminal.

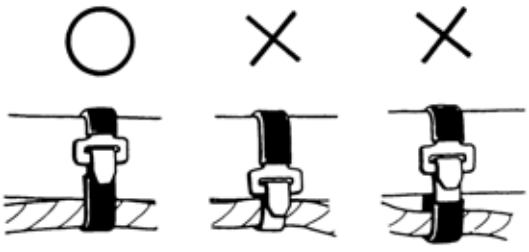


- Check the double connector cover for proper coverage and installation.

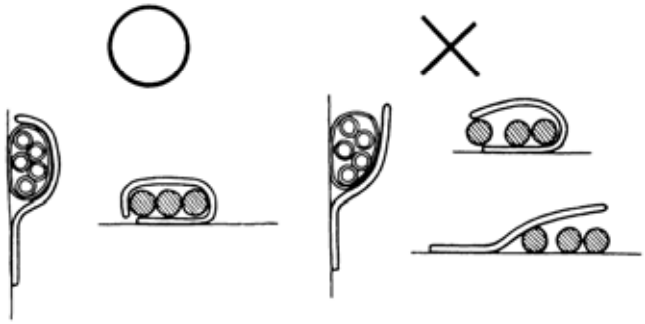


- Insert the terminal completely.
- Check the terminal cover for proper coverage.
- Do not make the terminal cover opening face up.

- 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.

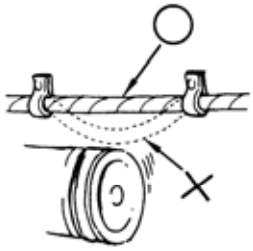


■ After clamping, check each wire to make sure it is secure.

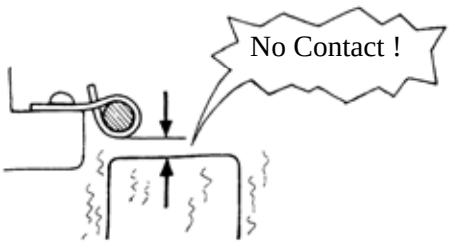


■ Do not squeeze wires against the weld or its clamp.

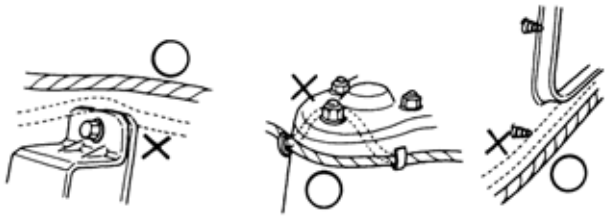
■ After clamping, check each harness to make sure that it is not interfering with any moving or sliding parts.



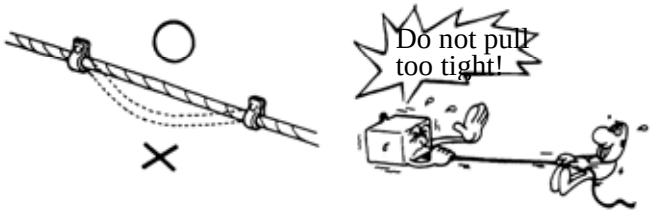
■ When fixing the wire harnesses, do not make it contact the parts which will generate high heat.



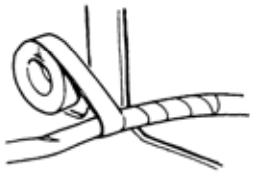
■ Route wire harnesses to avoid sharp edges or corners. Avoid the projected ends of bolts and screws.
■ Route wire harnesses passing through the side of bolts and screws. Avoid the projected ends of bolts and screws.



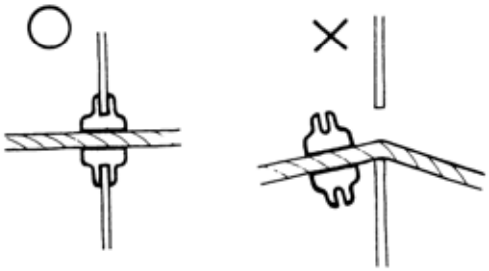
■ Route harnesses so they are neither pulled tight nor have excessive slack.



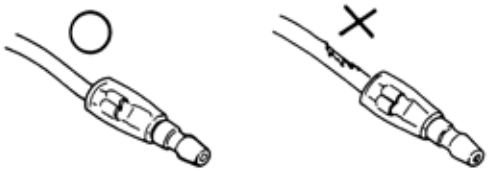
■ Protect wires and harnesses with electrical tape or tube if they contact a sharp edge or corner.



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

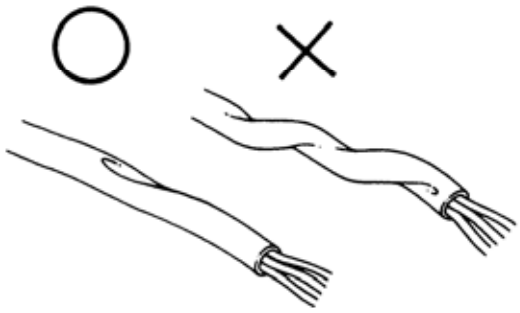


■ Do not break the sheath of wire.
■ If a wire or harness is with a broken sheath, repair by wrapping it with protective tape or replace it.

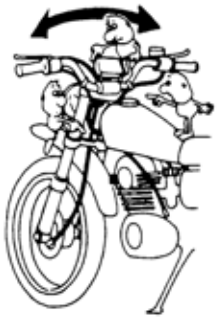


■ When installing other parts, do not press or squeeze the wires.

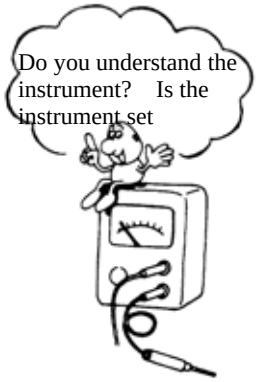
■ After routing, check that the wire harnesses are not twisted or kinked.



■ 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.

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

■ 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.)


Grease

: Apply grease for lubrication.


Gear Oil

: Transmission Gear Oil (90#)


Special

: Use special tool.

* : Caution


: Warning

SERVICE INFORMATION

ENGINE	Standard (mm)	Service Limit (mm)
Item	B&W50	B&W50
Cylinder head warpage	—	0.10
Piston O.D.(5mm from bottom of piston skirt)	38.955～38.970	38.90
Cylinder-to- piston clearance		0.10
Piston pin hole I.D.	12.002～12.008	12.03
Piston pin O.D.	11.994～12.0	11.98
Piston-to-piston pin clearance	0.002～0.014	0.03
Piston ring end gap (top/second)	0.10～0.25	0.40
Connecting rod small end I.D.	17.005～17.017	17.03
Cylinder bore	39.0～39.025	39.05
Drive belt width	18	17
Drive pulley collar O.D.	20.01～20.025	19.97
Movable drive face ID.	20.035～20.085	20.21
Weight roller O.D.	13.0	12.4
Clutch outer I.D.	107～107.2	107.5
Driven face spring free length	87.9	82.6
Driven face O.D.	33.965～33.985	33.94
Movable driven face I.D.	34.0～34.025	34.06
Connecting rod big end side clearance	—	0.60
Connecting rod big end radial clearance	—	0.04
Crankshaft runout A/B	—	L:0.15 R:0.10

CARBURETOR	SH10CA(SP)	SH10CA(IT)	SH10CA(GR)
Venturi dia.	14mm		
Identification number	PB109□	PB103□	PB118□
Float level	8.6mm		
Main jet(Unlimited/limited speed)	#75	#75	#88
Slow jet	#35		
Air screw opening	1¼±½		
Idle speed	2000±100rpm		
Throttle grip free play	2～6mm		
Jet needle clip notch	1st notch		

FRAME

Item		Standard (mm) B&W50	Service Limit (mm) B&W50
Axle shaft runout		—	0.2
Front wheel rim runout	Radial		
	Axial		
Front shock absorber spring free length		221.5	204.3
Rear wheel rim runout			2.0
Brake drum I.D.	Front/rear	110	111
Brake lining thickness	Front/rear	4.0/4.0	2.0/2.0
Brake disk runout	Front/rear	—	0.30
Rear shock absorber spring free length		214.7	197.7

ELECTRICAL EQUIPMENT

			B&W50
Battery	Capacity		12V4AH
	Voltage		13.0～13.2V
	Charging current	Standard	0.4A/5H
		Quick	4A/0.5H
Spark plug	(NGK)		BR8HSA
Spark plug gap			0.6～0.7mm
Ignition coil resistance	Primary coil		0.153～0.187Ω
	Secondary coil (with plug cap)		6.99～10.21KΩ
	Secondary coil (without plug cap)		3.24～3.96KΩ
Pulser coil resistance (20℃)			80～160Ω
Ignition timing			13.5°±2°BTDC/2000rpm

TORQUE VALUES

ENGINE

Item	Thread dia. (mm)	Torque (N-m)	Remarks
Cylinder head bolt	BF7x115	14.7～16.7	(cold)
Clutch drive plate nut	10	34.3～39.2	
Clutch outer nut	NH10	34.3～44.1	
Drive face nut	NH12	49.0～58.8	
Oil check bolt	10	9.8～14.7	
Engine mounting bolt	BF10x95	44.1～53.9	
Engine hanger bracket bolt	BF10x50	34.3～44.1	
Exhaust muffler joint lock nut	NC6mm	9.8～13.7	
Exhaust muffler lock bolt	BF8x35	29.4～35.3	
Spark plug		10.8～16.7	(cold)

FRAME

Item	Thread dia. (mm)	Torque (N-m)	Remarks
Handlebar lock nut	10	44.1～49.0	Flange bolt/U-nut
Steering stem lock nut	25.4	78.4～117.6	
Steering top cone race	25.4	4.9～12.7	
Front axle nut	12	49.0～68.6	Flange U-nut
Rear axle nut	16	107.8～127.4	Flange U-nut
Front shock absorber:			
upper mount bolt	8	32.3	Flange bolt/U-nut
lower mount bolt		32.3	Cross head
hex bolt		14.7～29.4	Apply locking agent
Front damper nut	8	14.7～29.4	
Front pivot arm bolt			Flange screw/U-nut
Rear shock absorber:			
upper mount bolt	10	34.3～44.1	Flange nut
lower mount bolt	8	23.5～29.4	
lower joint nut	8	14.7～24.5	

Torque specifications listed above are for important fasteners. Others should be tightened to standard torque values below.

STANDARD TORQUE VALUES

SH bolt: 8mm Flange 6mm bolt

Item	Torque (N-m)	Item	Torque (N-m)
5mm bolt, nut	4.4～5.9	5mm screw	3.43～4.9
6mm bolt, nut	7.8～11.8	6mm screw, SH bolt	6.86～10.8
8mm bolt, nut	17.6～24.5	6mm flange bolt, nut	9.8～13.7
10mm bolt, nut	29.4～39.2	8mm flange bolt, nut	23.5～29.4
12mm bolt, nut	49.0～58.8	10mm flange bolt, nut	14.7～44.1

SPECIAL TOOLS

Tool Name	Tool No.	Remarks
Universal bearing puller	E030	Crankshaft bearing removal
Lock nut socket wrench	F001	Top cone race holding
Lock nut wrench,	F001	Stem lock nut tightening
Crankcase puller	E026	Crankcase disassembly
Bearing remover set, 12mm (Spindle assy, 15mm) (Remover weight)	E020	Drive shaft bearing removal/installation
Bearing remover set, 15mm (Spindle assy, 15mm) (Remover head, 15mm) (Remover shaft, 15mm)	E018	Drive shaft bearing removal/installation
Bearing outer driver, 28x30mm	E014	Bearing installation
Clutch spring compressor	E027	Driven pulley disassembly/assembly
Crankcase assembly collar	E023	Driven shaft, crankshaft & crankcase assembly
Crankcase assembly tool	E024	Crankshaft & crankcase assembly
Ball race remover	F005	Steering stem bearing races
Rear shock absorber compressor	F004	Rear shock absorber disassembly/assembly
Universal holder	E017	Flywheel holding
Flywheel puller	E001	Flywheel removal
Pilot, 12mm	E020	Drive shaft bearing installation
Bearing outer driver, 32x35mm	E014	Drive shaft bearing installation Final shaft bearing installation
Bearing outer driver, 37x40mm	E014	Drive shaft bearing installation Final shaft bearing installation Crankshaft bearing installation
Outer driver, 24x26mm	E014	Driven pulley bearing installation

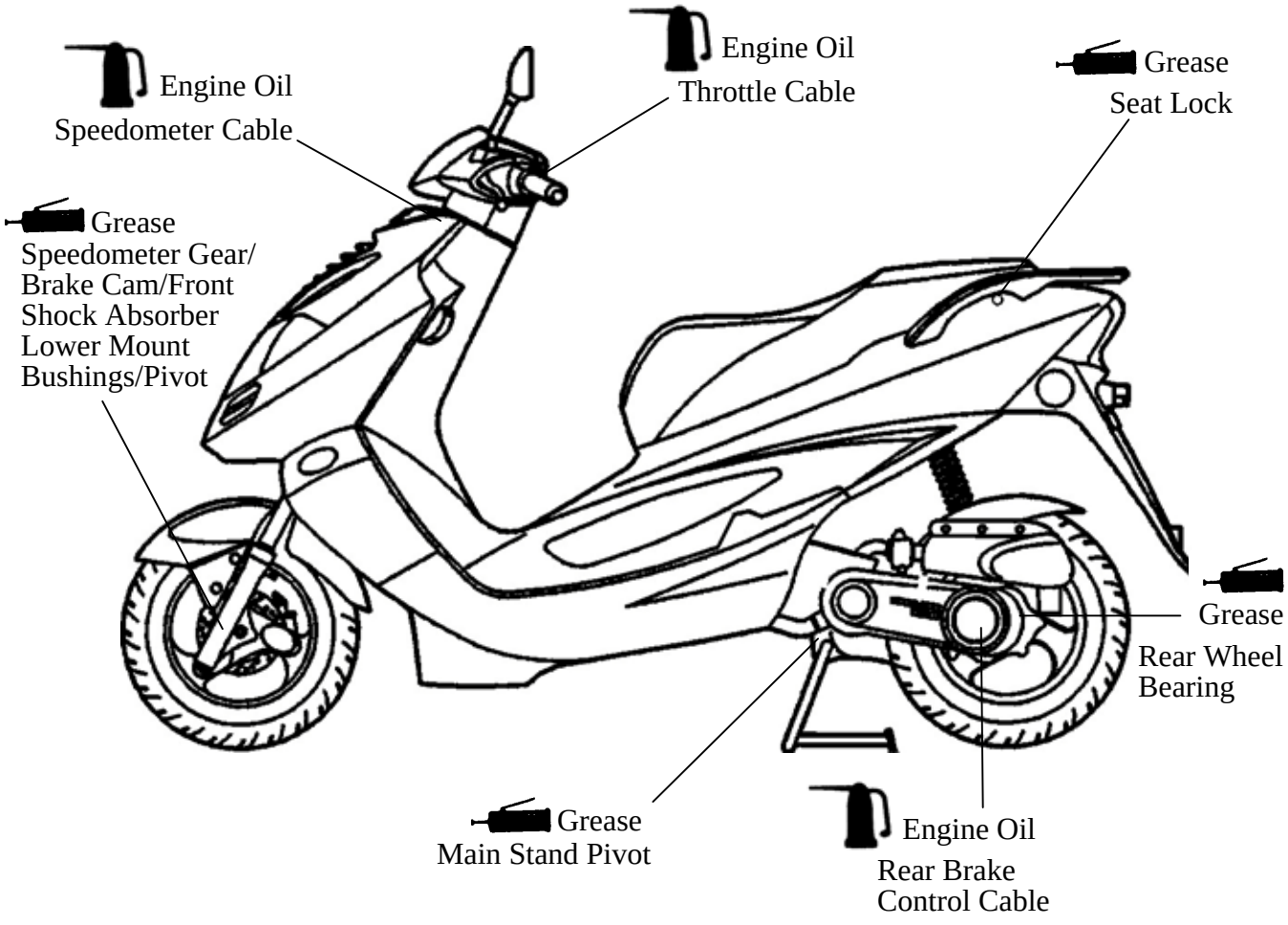
LUBRICATION POINTS

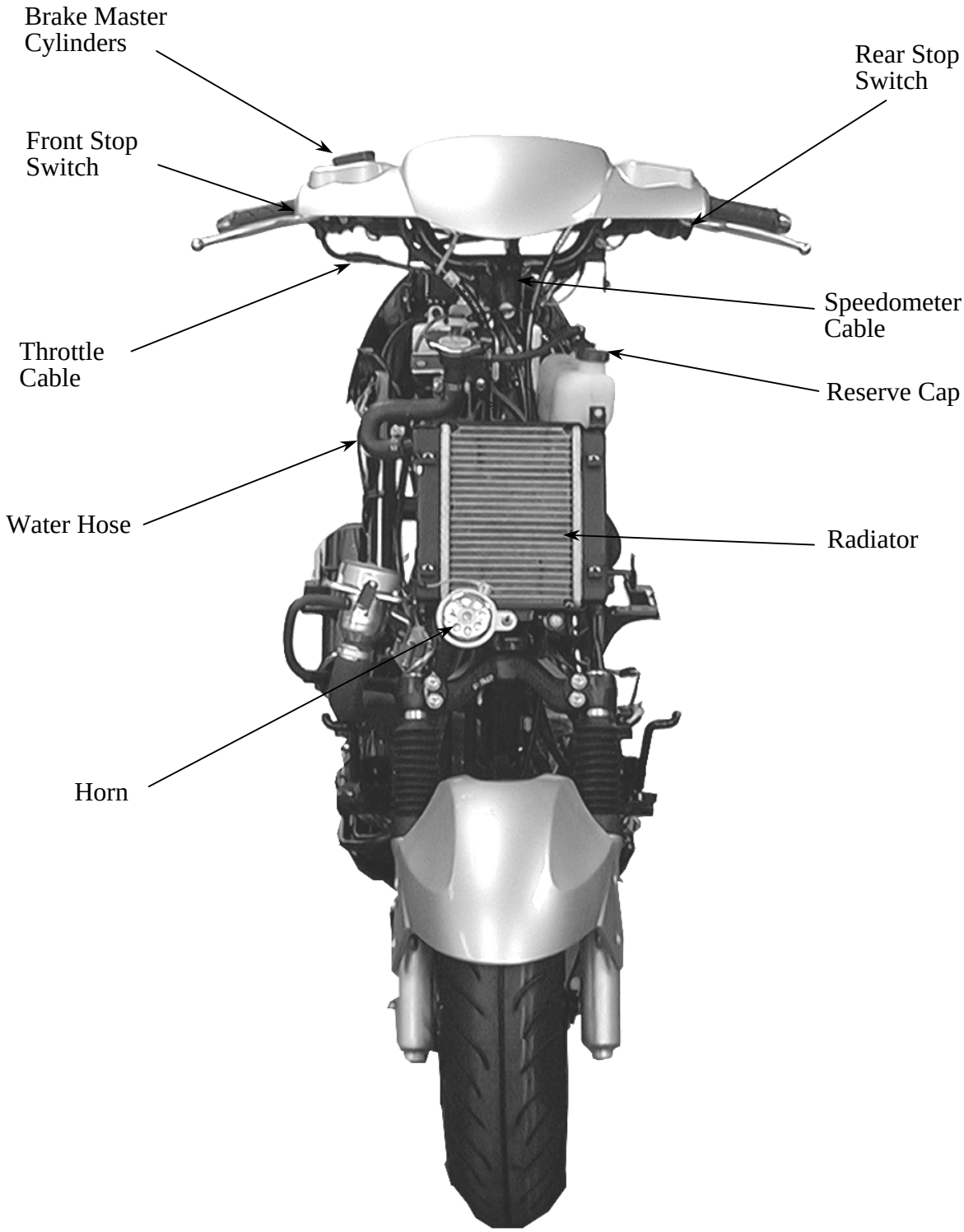
ENGINE

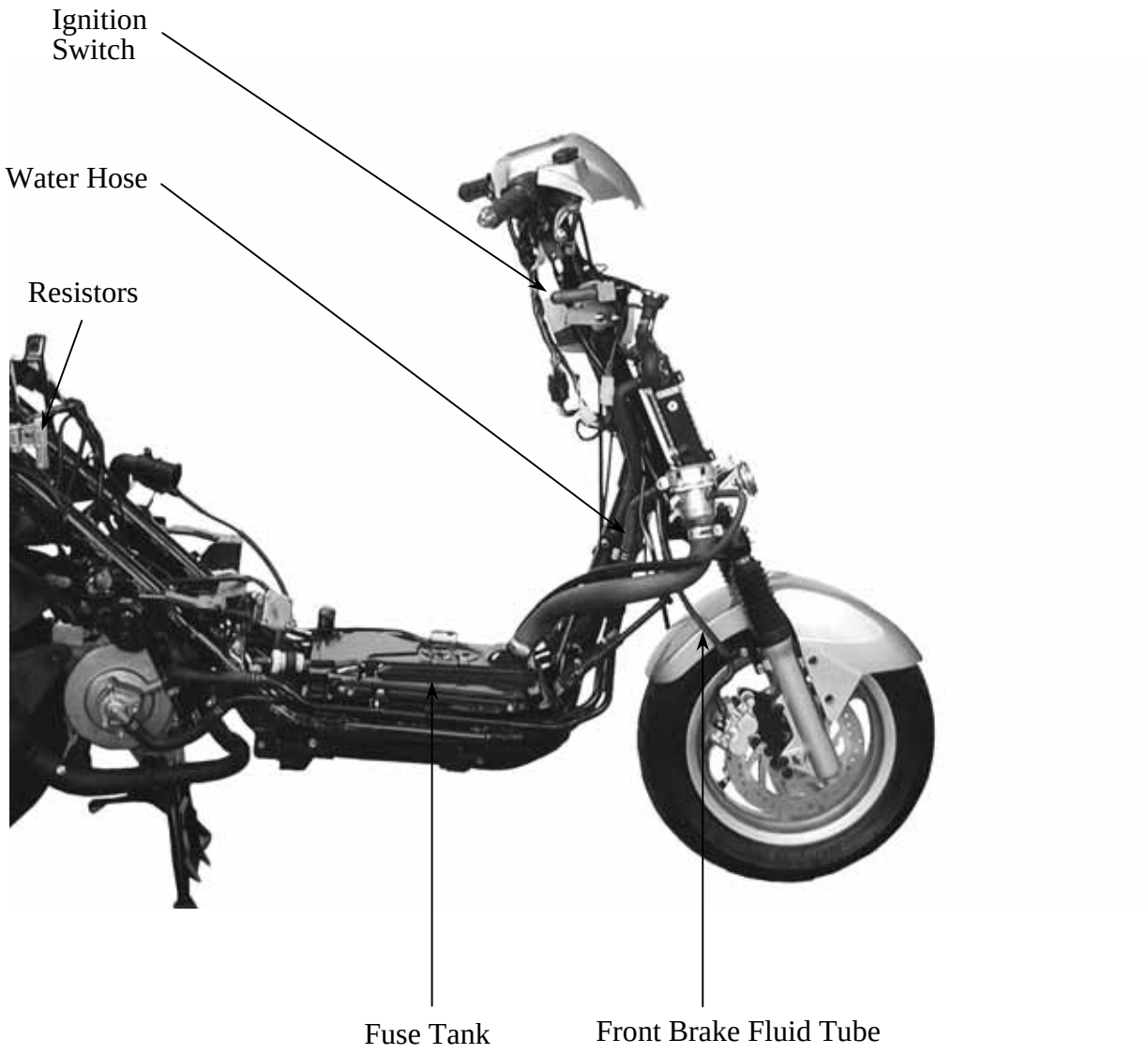
NO.	Lubrication Points	Lubricant	Remarks
1	Crankcase sliding & movable	JASO-FC or API-TC	
2	Cylinder movable parts		
3	Transmission gear (final gear)	SAE-90#	
4	Kick starter spindle bushing	Grease	
5	Drive pulley movable parts	Grease	
6	Starter pinion movable parts	Grease	

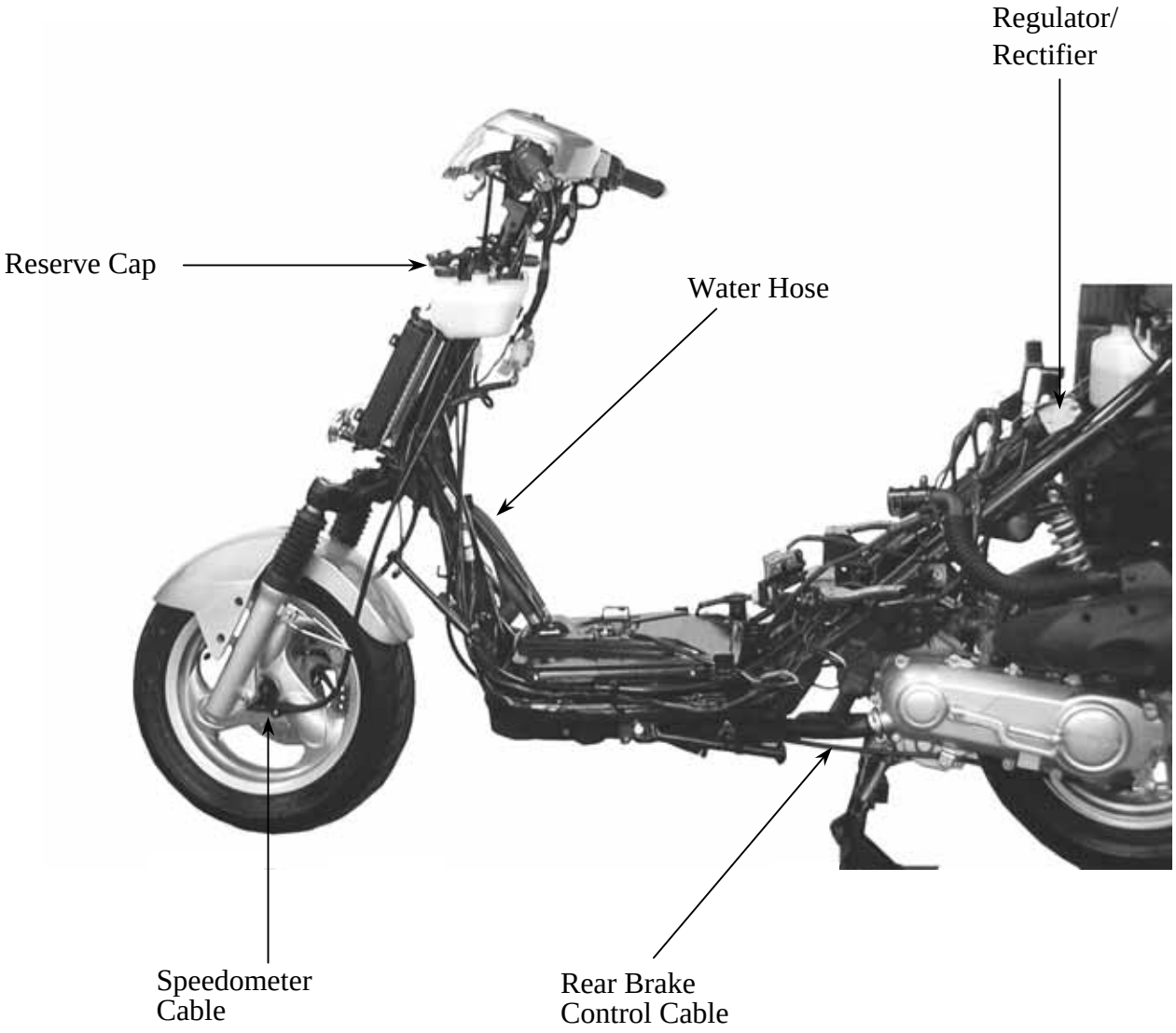
FRAME

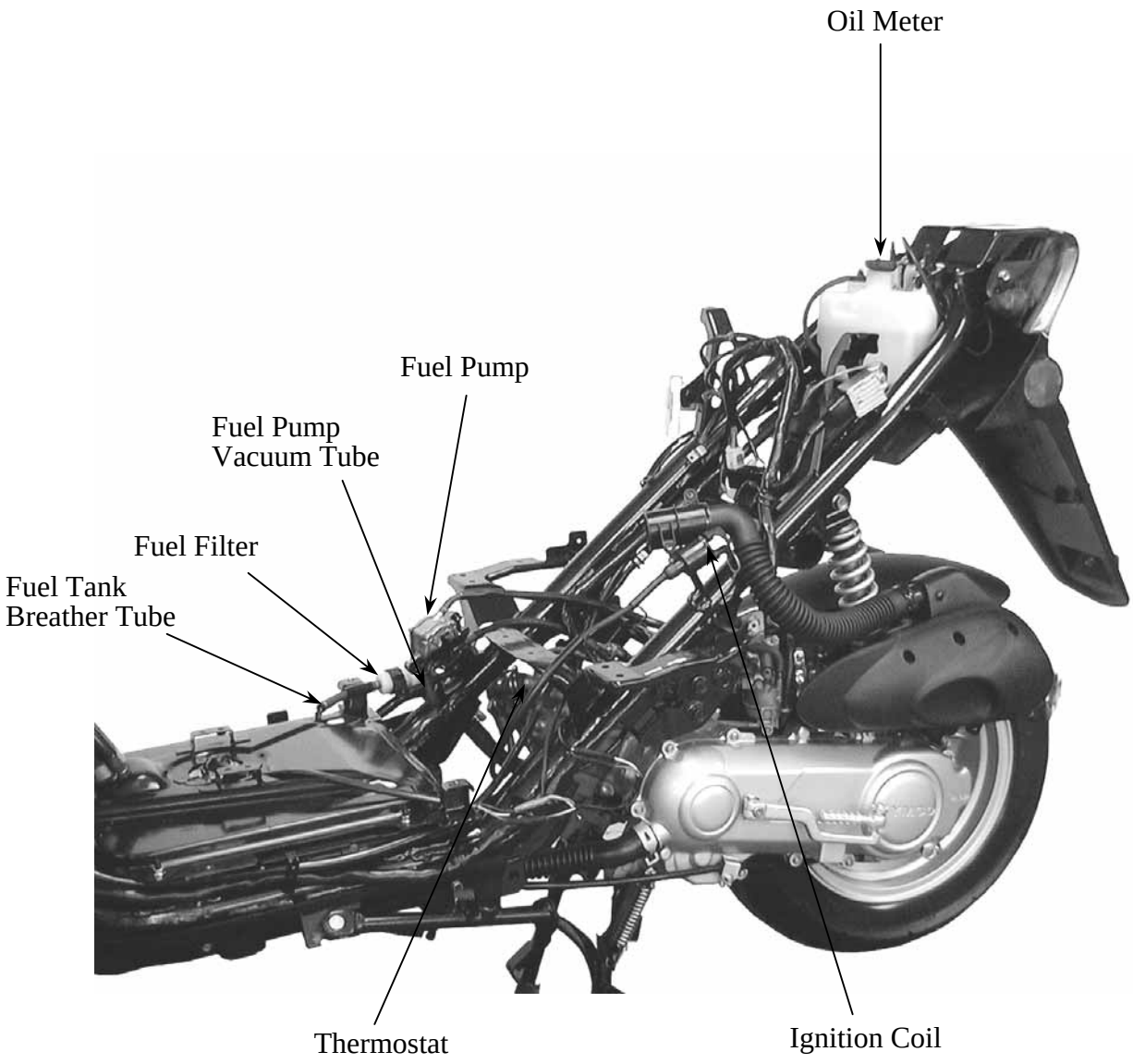
Apply clean engine oil or grease to cables and movable parts not specified. This will avoid abnormal noise and rise the durability of the motorcycle.

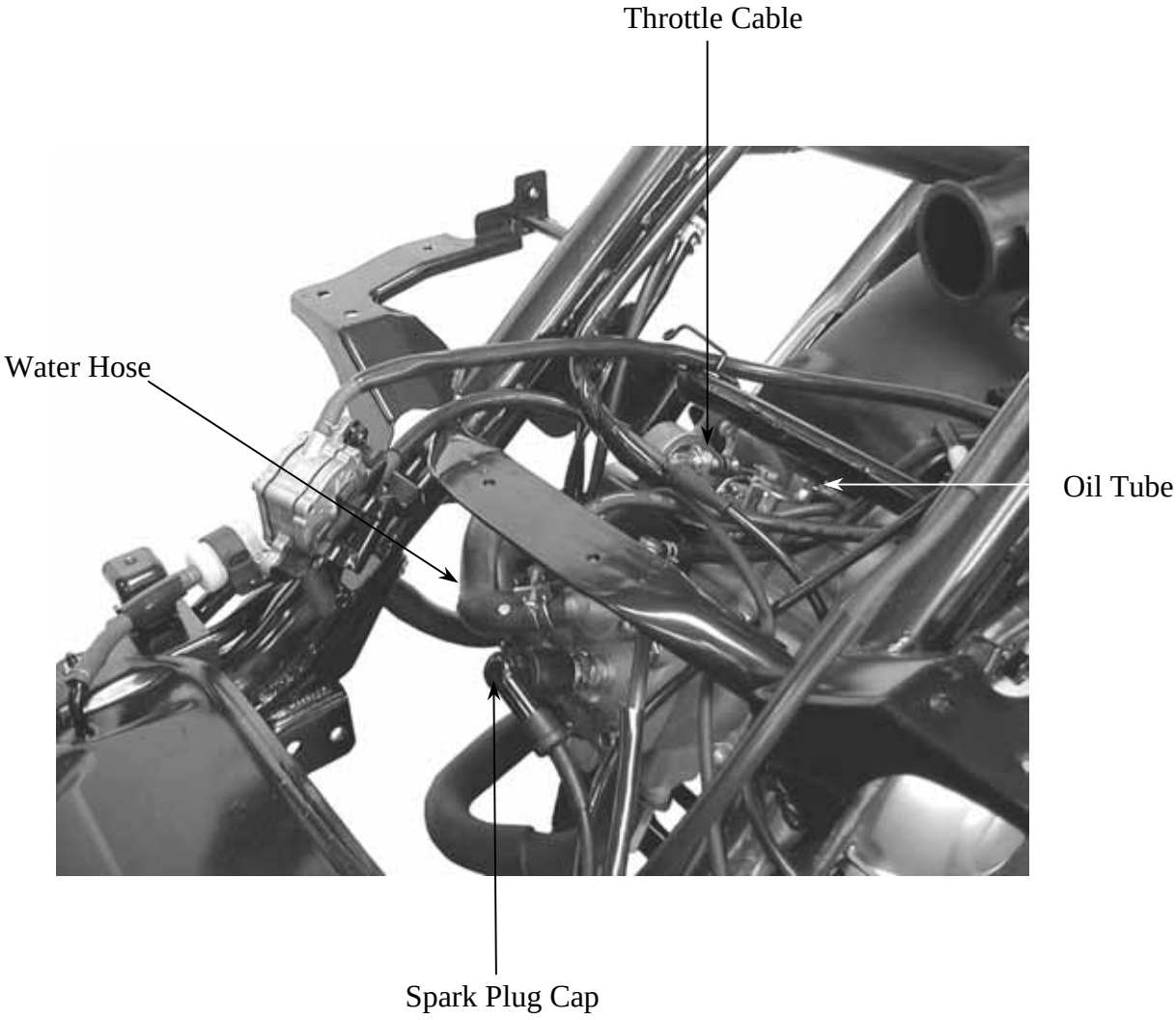



Brake Master Cylinders
Rear Stop Switch
Front Stop Switch
Speedometer Cable
Throttle Cable
Reserve Cap
Water Hose
Radiator
Horn

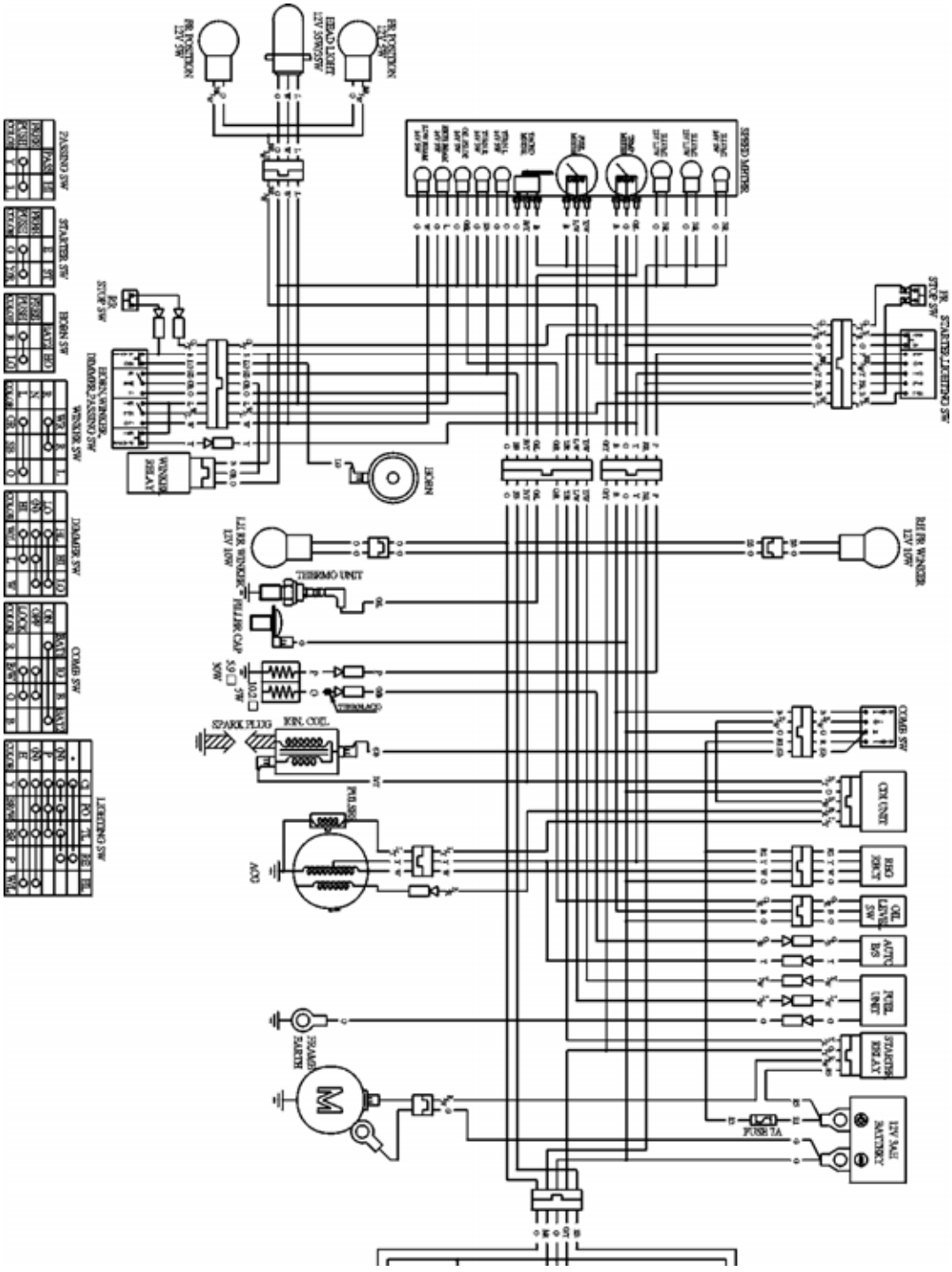

Ignition Switch
Water Hose
Resistors
Fuse Tank
Front Brake Fluid Tube


Regulator/
Rectifier
Reserve Cap
Water Hose
Speedometer
Cable
Rear Brake
Control Cable


Oil Meter
Fuel Pump
Fuel Pump
Vacuum Tube
Fuel Filter
Fuel Tank
Breather Tube
Thermostat
Ignition Coil

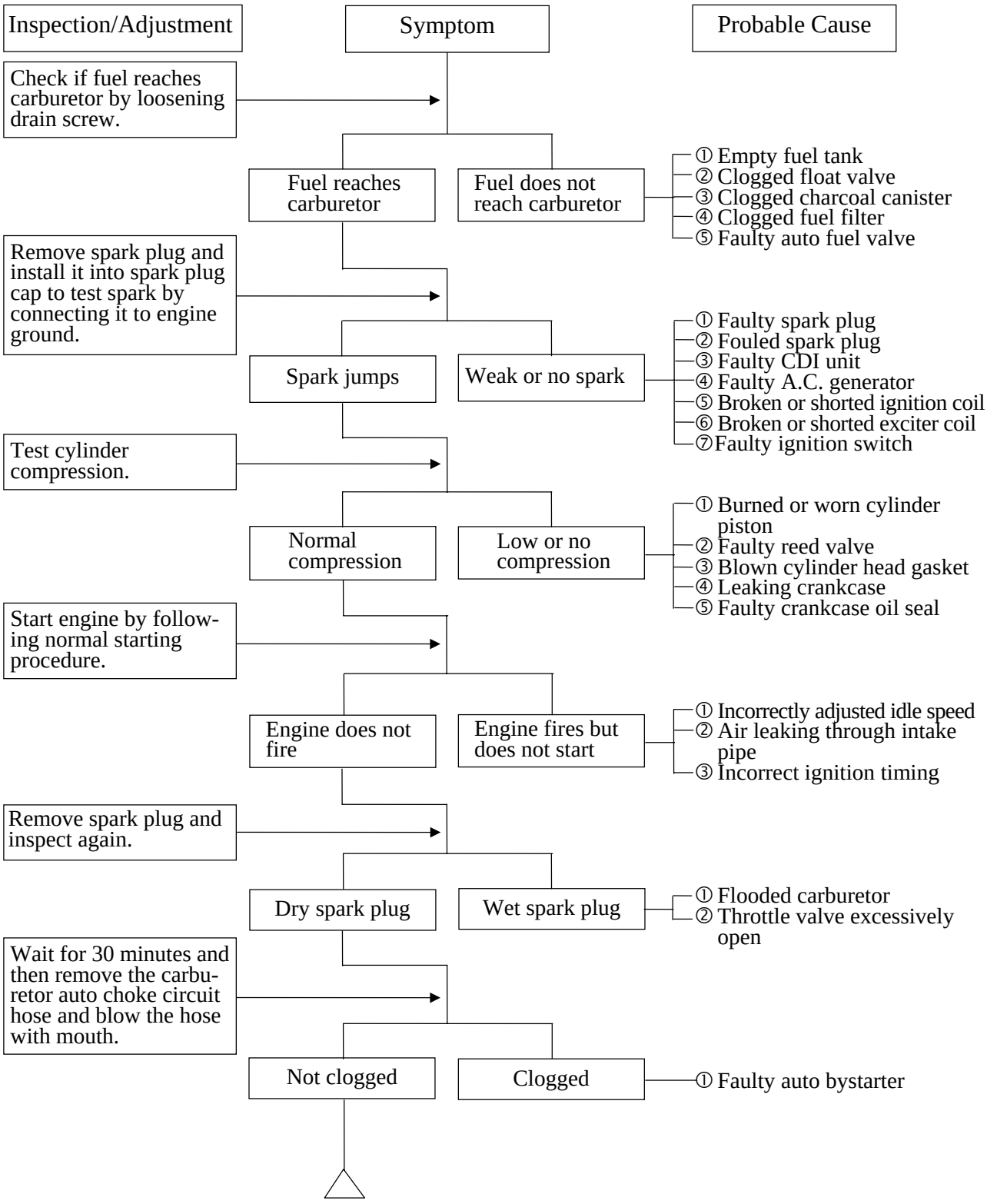

Throttle Cable
Water Hose
Oil Tube
Spark Plug Cap

WIRING DIAGRAM

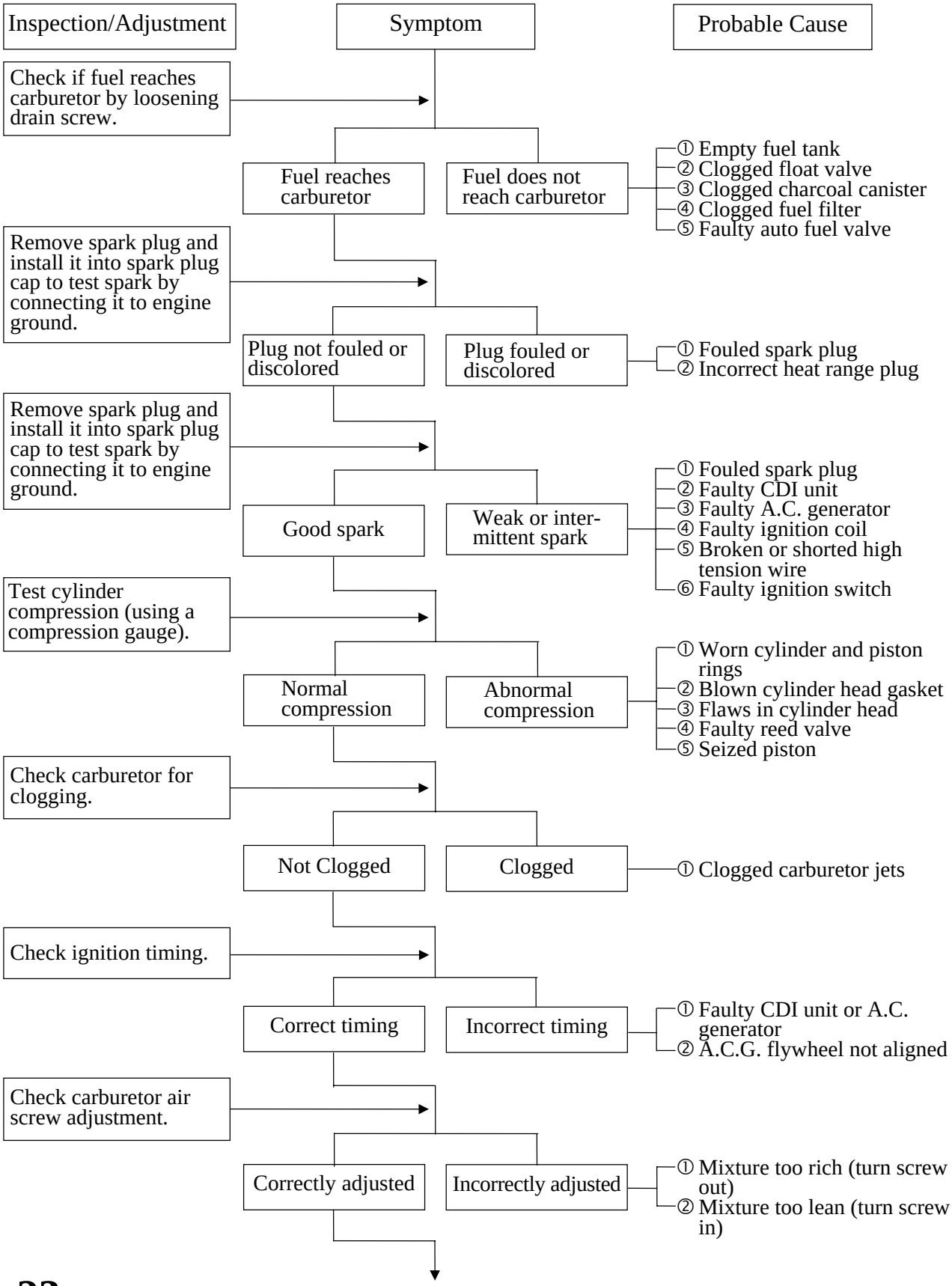


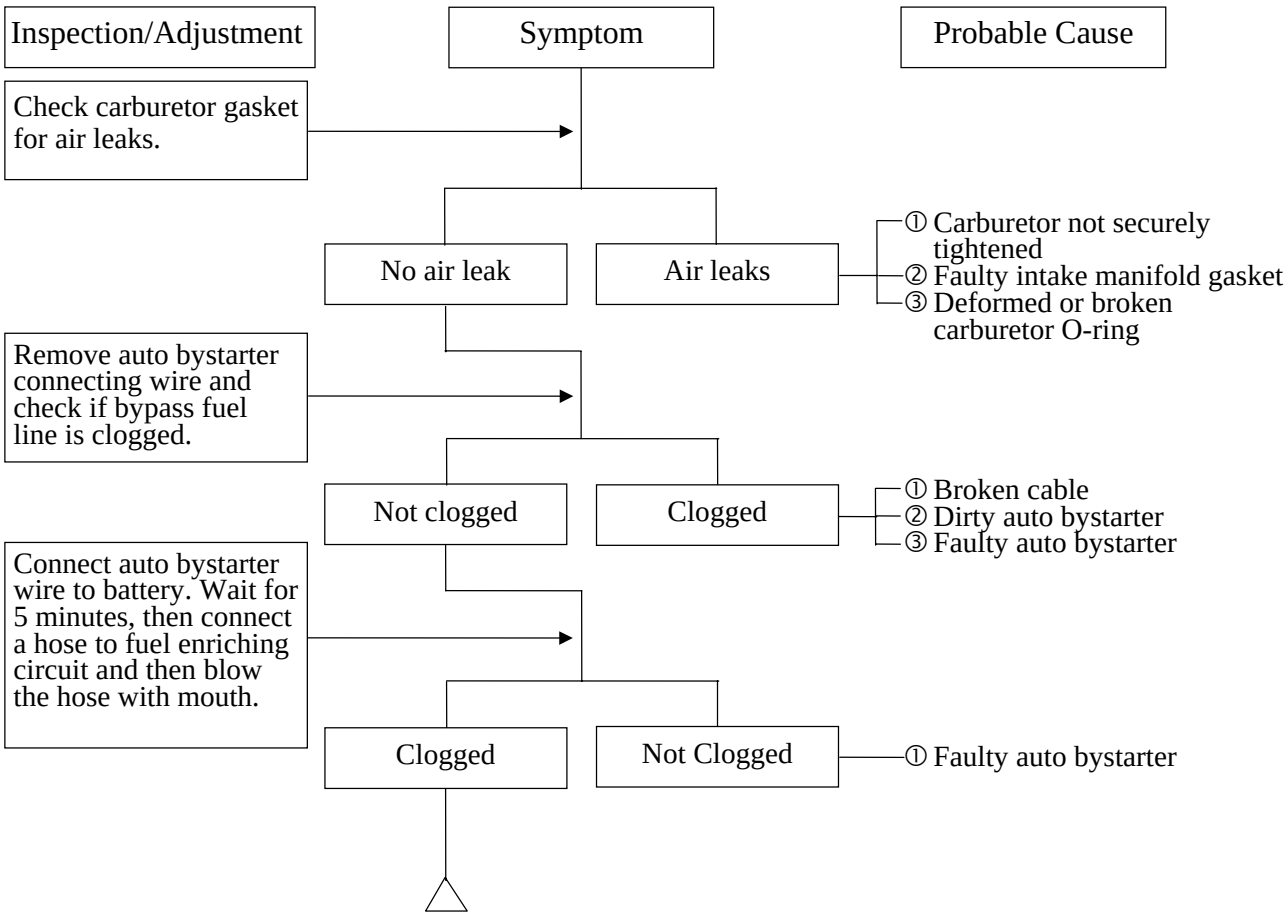
TROUBLESHOOTING

ENGINE WILL NOT START OR IS HARD TO START

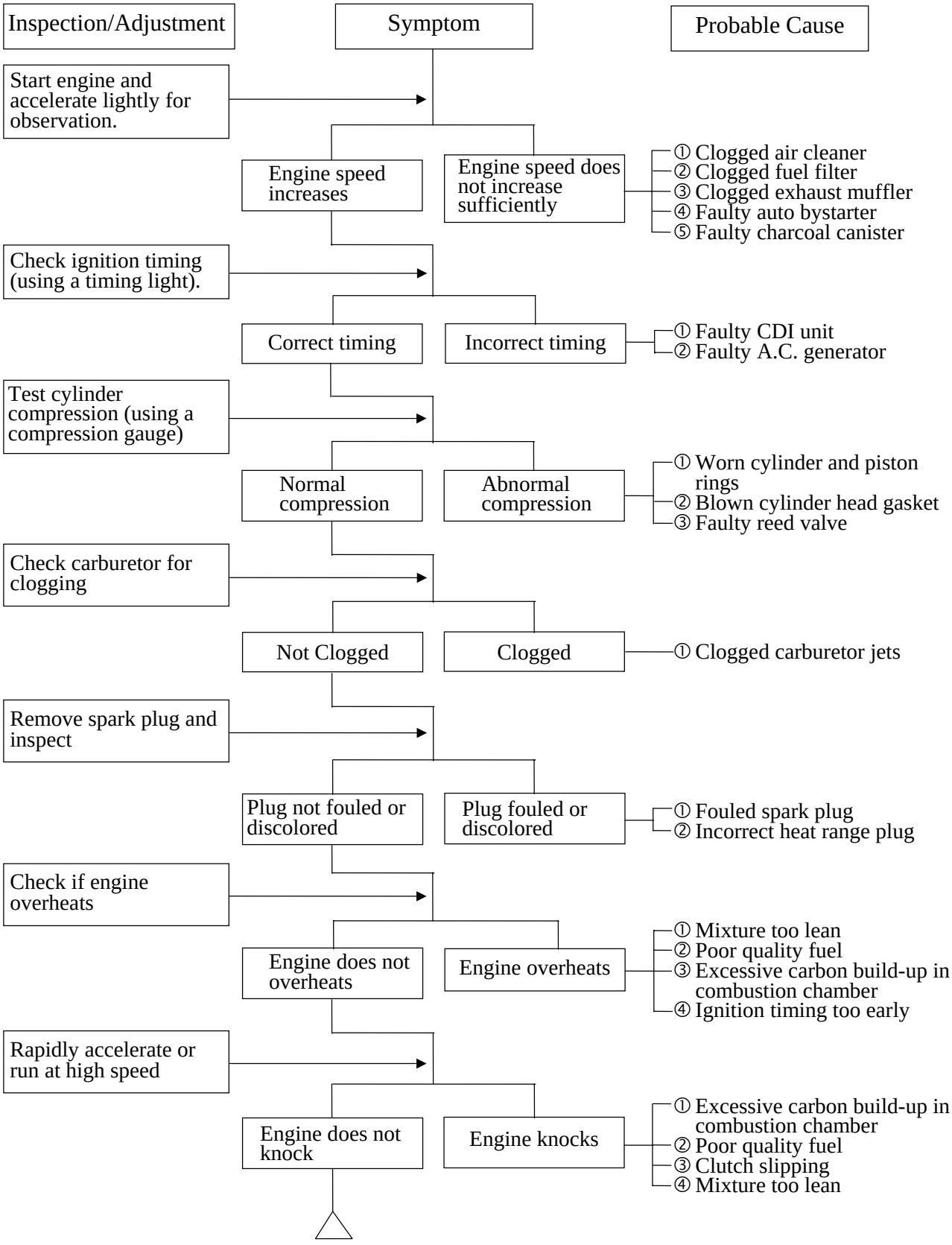


ENGINE STOPS IMMEDIATELY AFTER IT STARTS

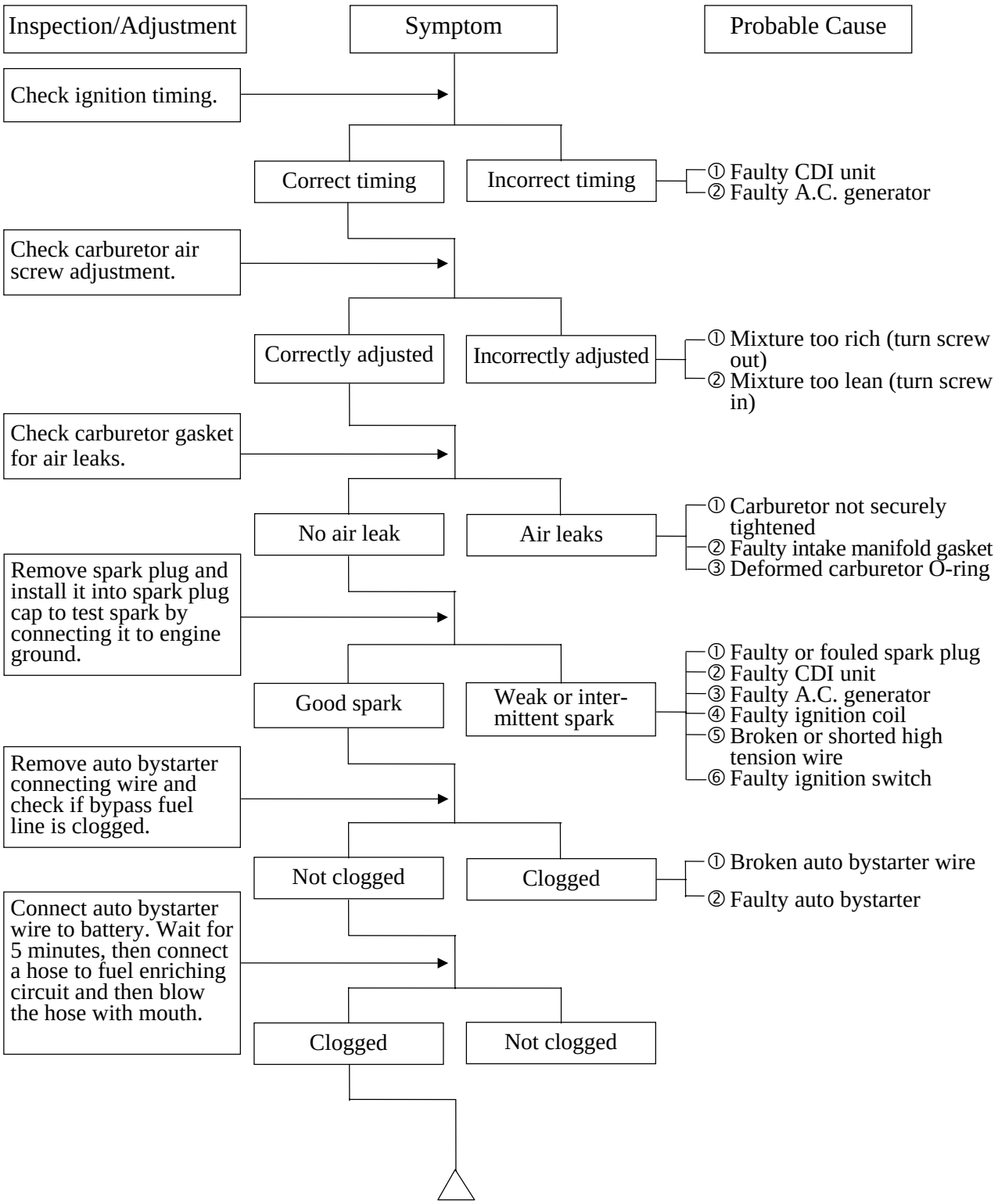



Inspection/Adjustment
Symptom
Probable Cause
Check carburetor gasket for air leaks.
No air leak
Air leaks
① Carburetor not securely tightened
② Faulty intake manifold gasket
③ Deformed or broken carburetor O-ring
Remove auto bystarter connecting wire and check if bypass fuel line is clogged.
Not clogged
Clogged
① Broken cable
② Dirty auto bystarter
③ Faulty auto bystarter
Connect auto bystarter wire to battery. Wait for 5 minutes, then connect a hose to fuel enriching circuit and then blow the hose with mouth.
Clogged
Not Clogged
① Faulty auto bystarter

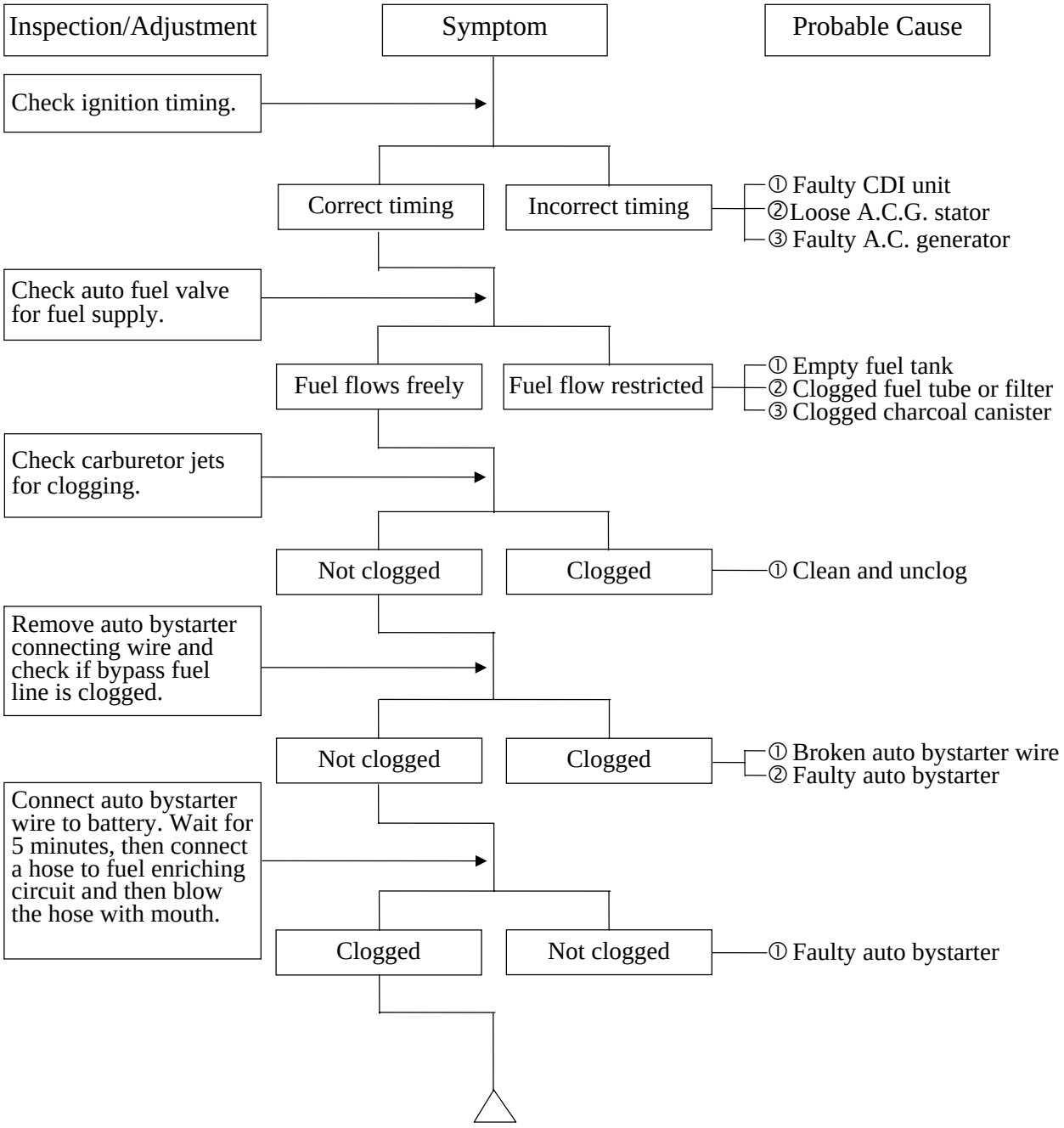
ENGINE LACKS POWER



POOR PERFORMANCE (ESPECIALLY AT IDLE AND LOW SPEEDS)



POOR PERFORMANCE (AT HIGH SPEED)



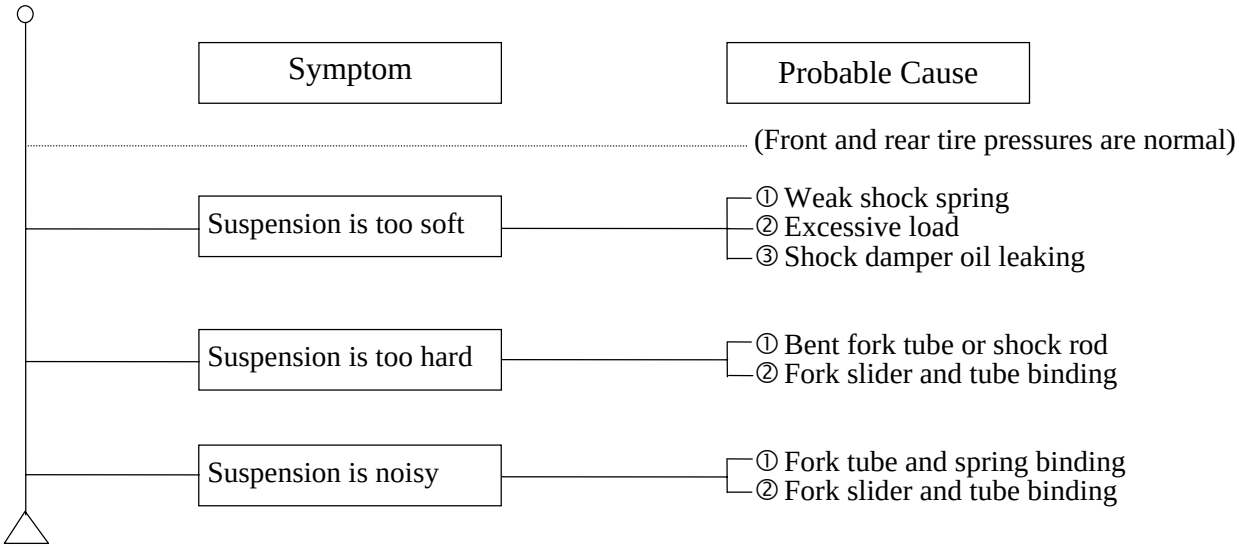
CLUTCH, DRIVE AND DRIVEN PULLEYS

Symptom	Probable Cause
Engine starts but motorcycle does not move	① Worn or slipping drive belt ② Broken ramp plate ③ Broken driven face spring ④ Separated clutch lining ⑤ Damaged driven pulley shaft splines ⑥ Damaged final gear ⑦ Seized final gear
Motorcycle creeps or engine starts but soon stops or seems to rush out (Rear wheel rotates when engine idles)	① Broken shoe spring ② Clutch outer and clutch weight stuck ③Seized pivot
Engine lacks power at start of a grade (poor slope performance)	① Worn or slipping drive belt ② Worn weight rollers ③ Seized drive pulley bearings ④ Weak driven face spring ⑤ Worn or seized driven pulley bearings
Engine lacks power at high speed	① Worn or slipping drive belt ② Worn weight rollers ③ Worn or seized driven pulley bearings
There is abnormal noise or smell while running	① Oil or grease fouled drive belt ② Worn drive belt ③ Weak driven face spring ④ Worn or seized driven pulley bearings

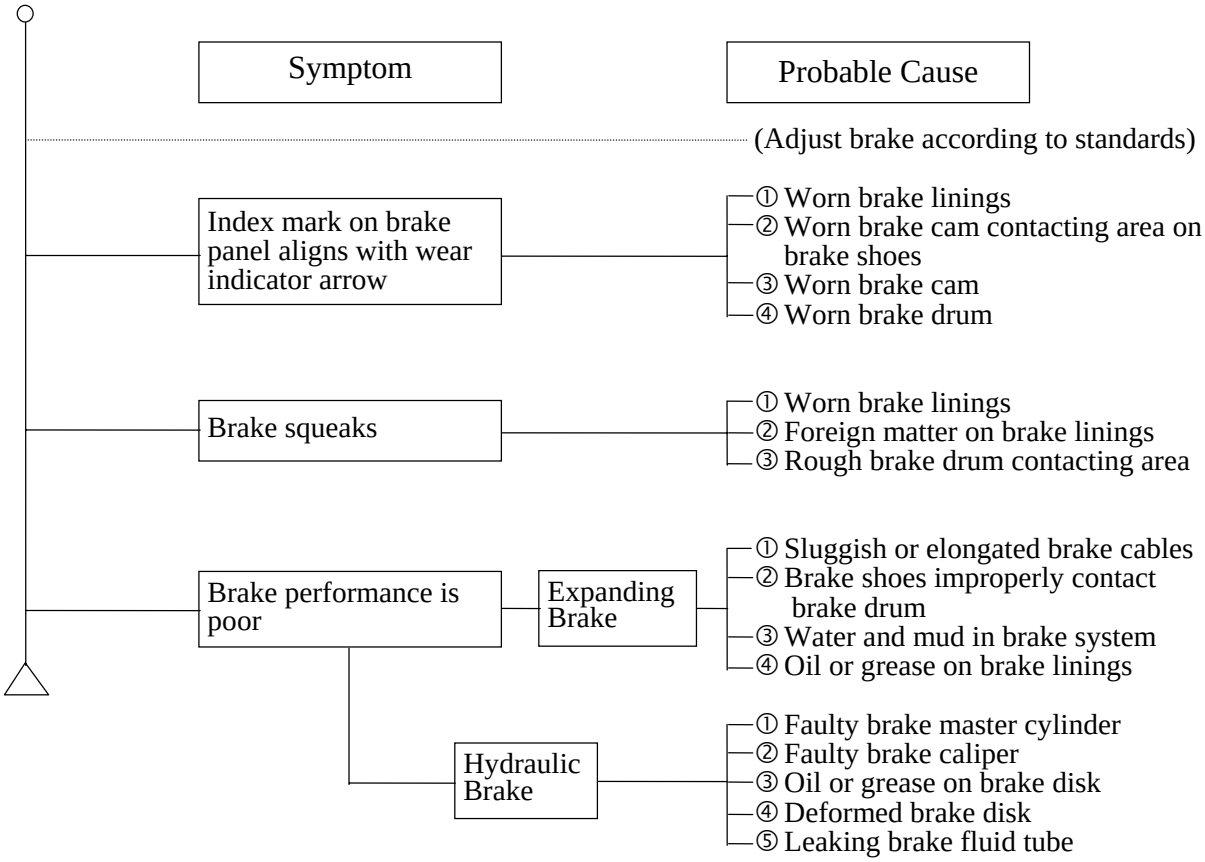
STEERING HANDLEBAR DOES NOT TRACK STRAIGHT

Symptom	Probable Cause
	(Front and rear tire pressures are normal)
Steering is heavy	① Steering stem nut too tight ② Broken steering steel balls
Front or rear wheel is wobbling	① Excessive wheel bearing play ② Bent rim ③ Loose axle nut
Steering handlebar pulls to one side	① Misaligned front and rear wheels ② Bent front fork

POOR SUSPENSION PERFORMANCE

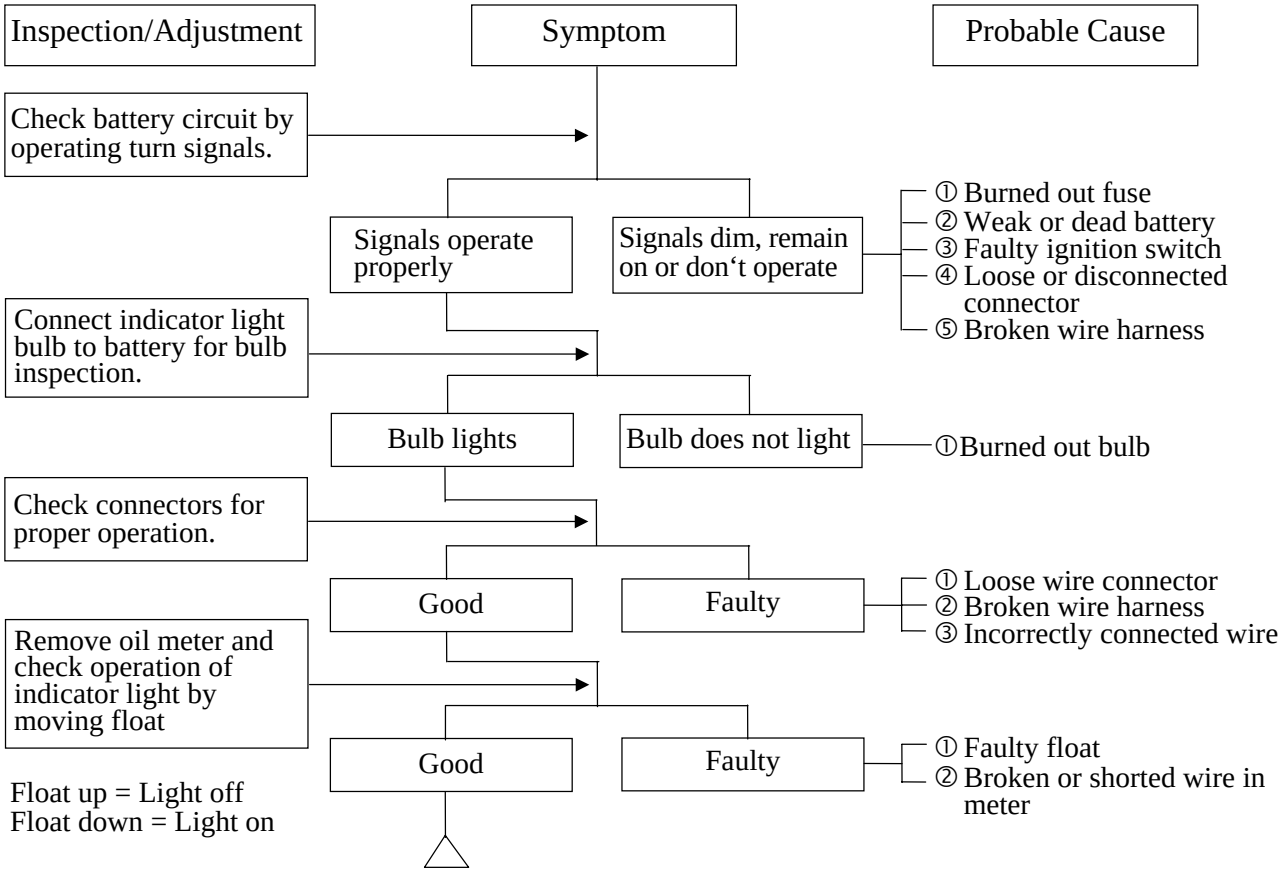


POOR BRAKE PERFORMANCE

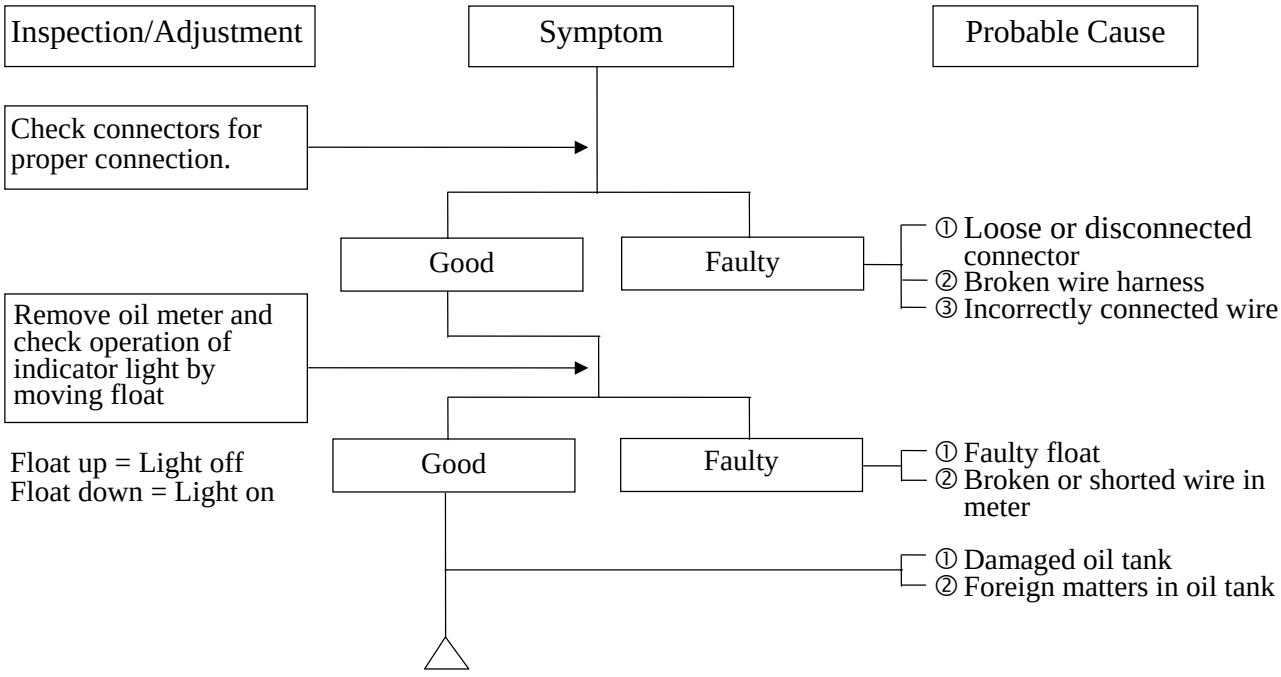


OIL METER

1. Motor oil indicator light does not come on when there is no motor oil (Ignition switch ON)

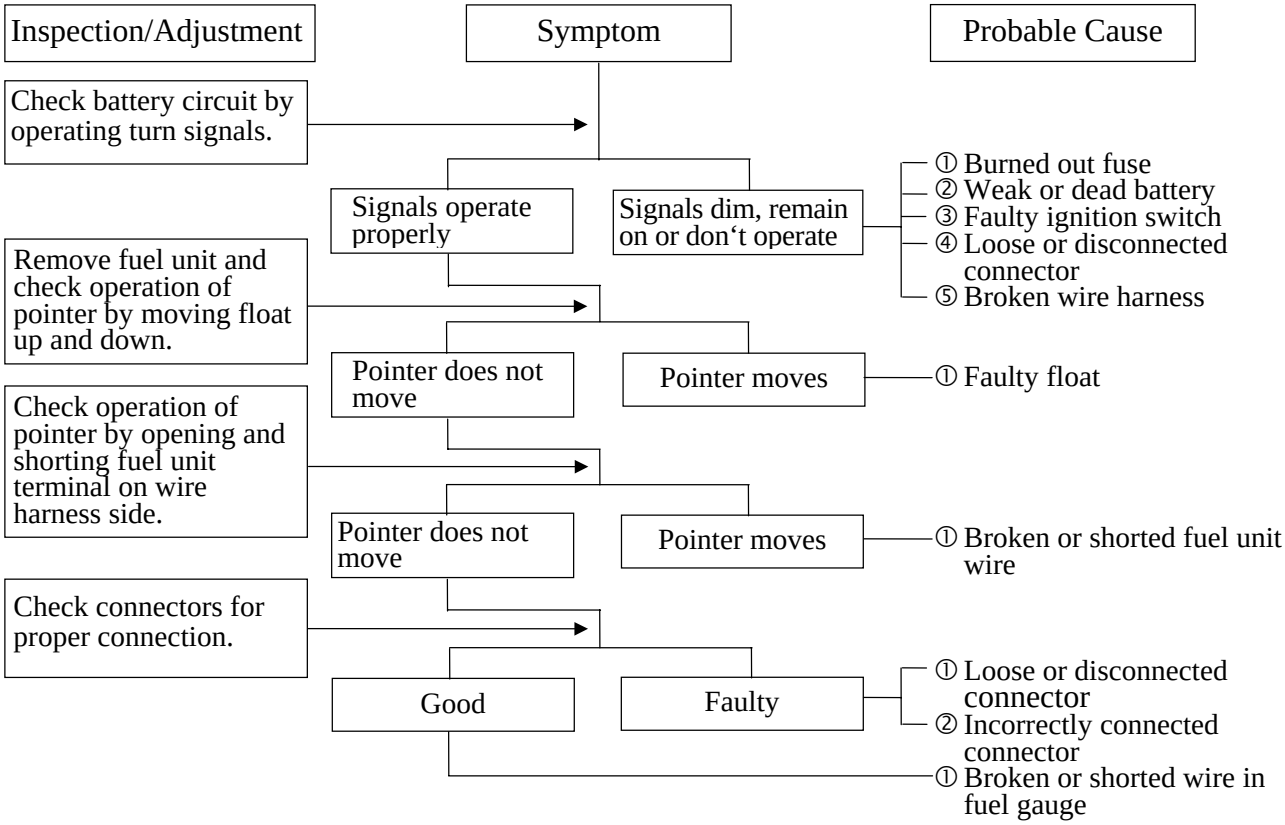


2. Motor oil is sufficient but the indicator light remains on (Ignition switch ON)

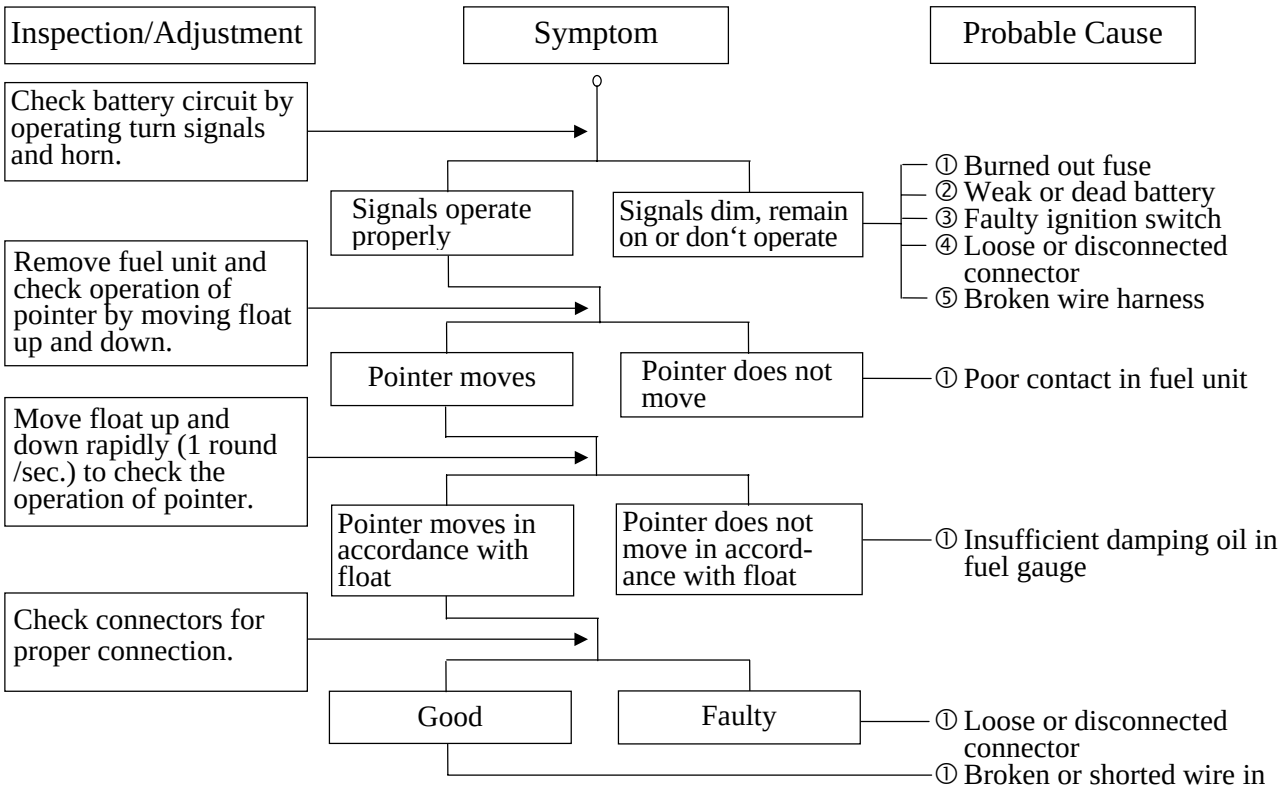


FUEL GAUGE

1. Pointer does not register correctly (Ignition switch ON)



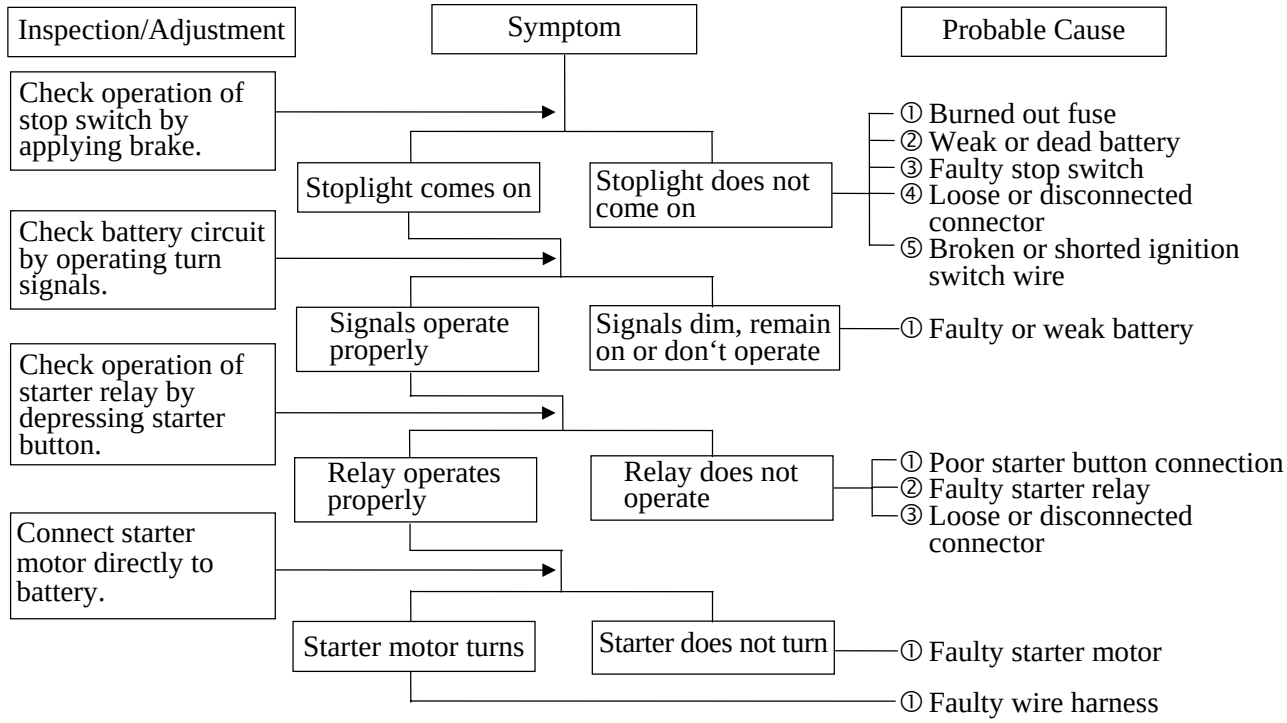
2. Pointer fluctuates or swings (Ignition switch ON)



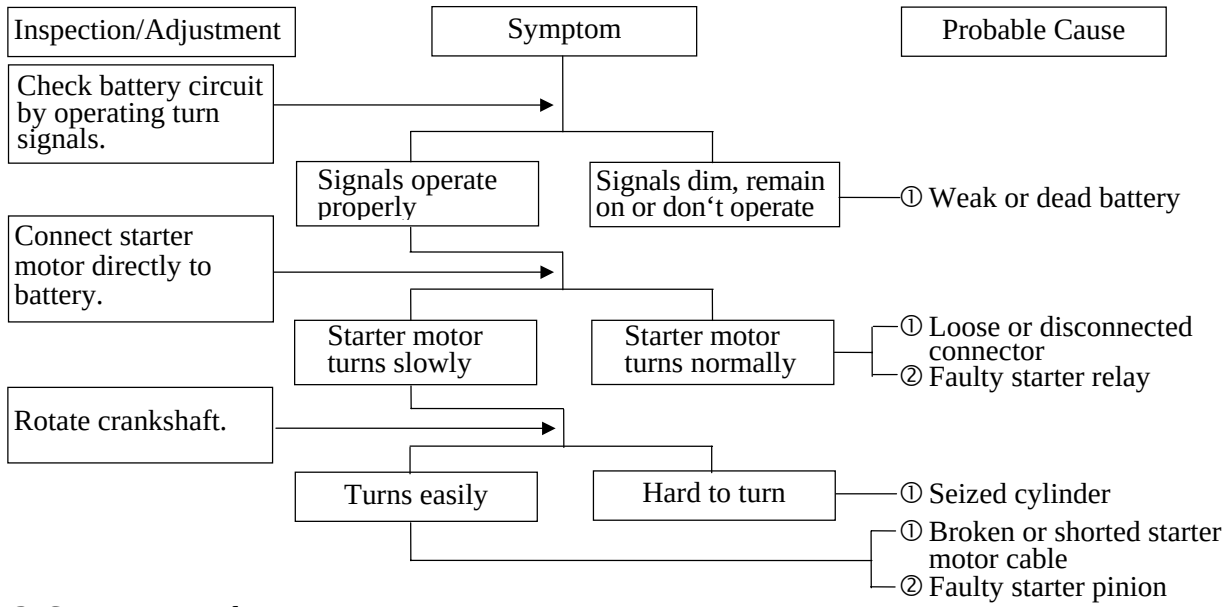
fuel gauge

STARTER MOTOR

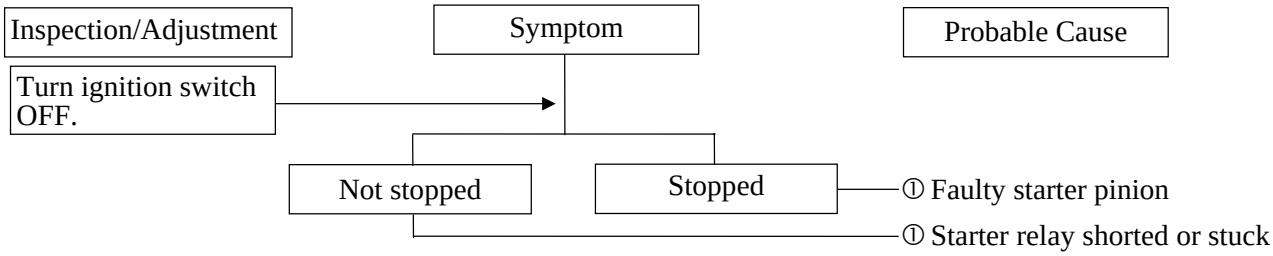
1. Starter motor won‘t turn



2. Starter motor turns slowly or idles



3. Starter motor does not stop turning



closed