

Product: Jinlang JL50QT-18,JL50QT-X1/8,JL50QT-14 Scooter Service Repair Workshop Manual  
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## **SERVICE AND REPAIR MANUAL**



## **4 STROKE ENGINE**

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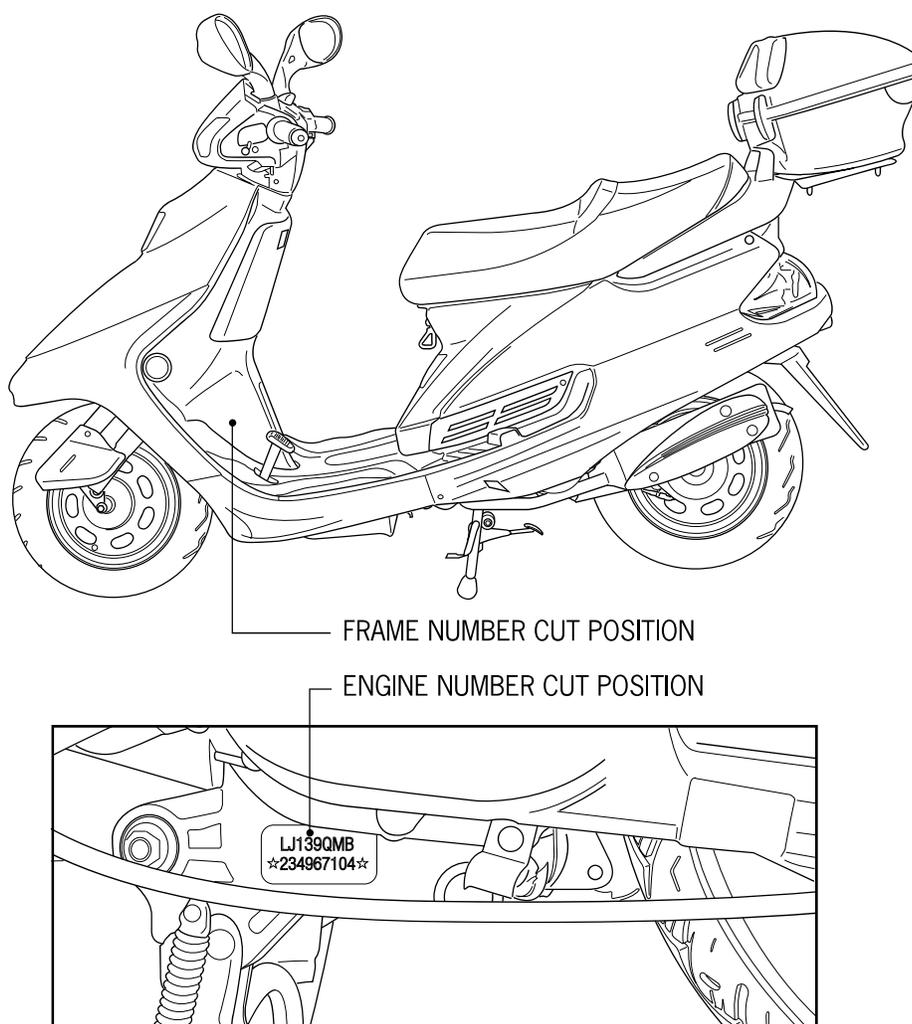
# 1. General Information

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## Location for: Engine Number/Frame Number



# 1. General Information

## Product Specifications and Technical Data

<b>Scooter Model</b>	JL50QT-18 JL50QT-X1/8 JL50QT-14	Power	2.2 HP @ 8000 RPM
<b>Length</b>	1685mm (66.5 inches)	Torque	4.5 ft lbs @ 6000 RPM
<b>Width</b>	660mm (26 inches)	Intake timing	6° BTDC-28° ATDC
<b>Height</b>	1070mm (42 inches)	Exhaust timing	38° BBDC-6° BTDC
<b>Wheel base</b>	1195mm (47 inches)	Valve lash	.05mm
<b>Engine type</b>	4-stroke OHC	Idle speed	1850-1900RPM
<b>Displacement</b>	49.5cc	Oil system	Pressure/splash
<b>Fuel requirements</b>	Lead-free gasoline	Oil pump	Internal gear
<b>Dry weight</b>		Oil filter	Full-flow filter and screen
Front	35kgs (77 lbs)	Oil capacity	.8L (32 oz)
Rear	56kgs (123 lbs)	Cooling	Ducted forced air
Total	91kgs (200 lbs)	<b>Air cleaner</b>	Foam and paper
<b>Curb weight</b>		<b>Carburetor type</b>	CVK 50
Front	37kgs (81.5 lbs)	<b>Venturi</b>	18mm
Rear	60kgs (132 lbs)	<b>Throttle mechanism</b>	Butterfly type
Total	97kgs (213.5 lbs)	<b>Ignition system</b>	CDI type
<b>Tire size</b>		Spark plug	13° BTDC @ 2000 RPM NGK C7HSA Champion
Front	3.00 x 10	Z9Y	
Rear	3.00 x 10	Gap	.5-.6mm (.022-.024 inch)
<b>Ground clearance</b>	80mm (3.25 inches)	Battery	12V 4AH
Stopping distance	4m from 30km/hr 16 ft from 18 mph.	<b>Drive system</b>	
Turning radius	1.65m (5.5 ft)	Clutch	Dry multi plate
<b>Engine Specs</b>		Transmission	CVT
Type	4-stroke SI	Shifting	Automatic
Starting	Electric/kick start	Final Drive	Double reduction
Cylinders	Single	1st step	3.2:1
Combustion chamber	Hemispherical	2nd step	3.4:1
Valve train	Single OHC	<b>Steer tube angle</b>	64°
Bore	39mm (1.34 inches)	<b>Steering angle</b>	45°
Stroke	41.4mm (1.63 inches)	<b>Tire pressure front</b>	1.75kg/cm (26psi)
Displacement	49.5cc	<b>Tire pressure rear</b>	2.25kg/cm (35psi)
Compression ratio	10.5:1	<b>Front brake</b>	Hydraulic disc
Compression pressure	15kg/cm 215psi	<b>Rear brake</b>	Mechanical drum
		<b>Suspension front</b>	Telescopic
		<b>Suspension rear</b>	Trailing arm
		<b>Shock absorber front</b>	Coil spring/hydraulic
		<b>Shock absorber rear</b>	Coil over hydraulic shock
		<b>Frame type</b>	Tubular space frame

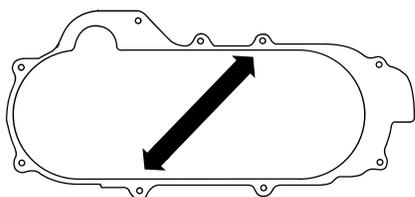
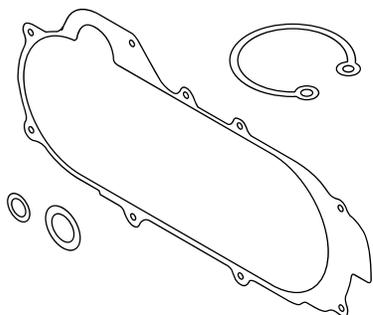
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# 1. General Information

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## Technical Tips

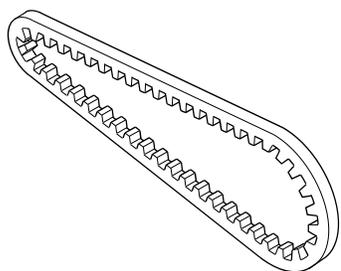
- Replace all gaskets, o-rings, circlips and cotter pins when performing maintenance on the scooter. Nuts and bolts on all engine covers should be tightened in a diagonal pattern to uniformly distribute clamp force.



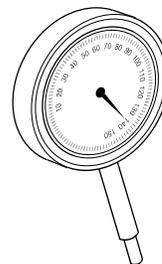
- Use lubricants recommended in this manual at all times to assure peak performance from the scooter.



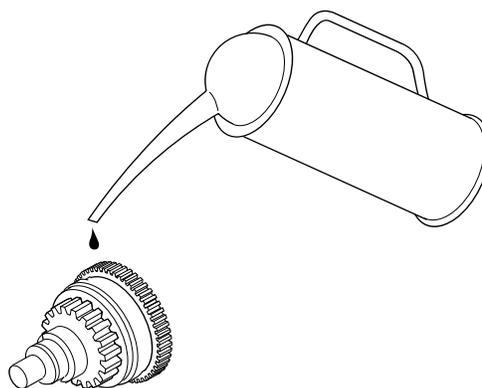
- Use only genuine replacement parts when performing repairs to the scooter.



- Special service tools may be required to perform maintenance and repairs on this scooter. Always use the proper tools to prevent damage to the scooter.



- Clean and lubricate all engine parts during the disassembly and reassembly process to prevent damage to the engine.



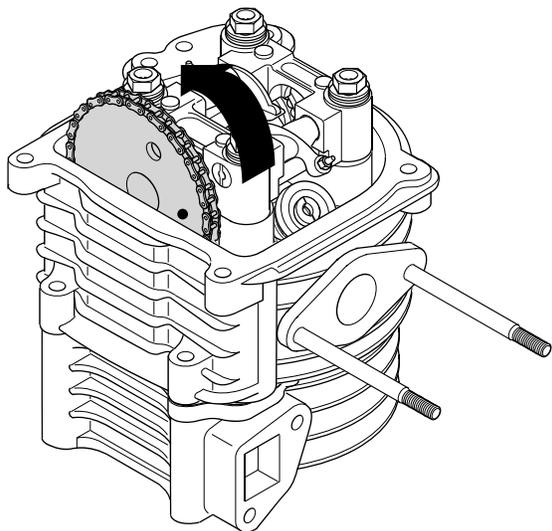
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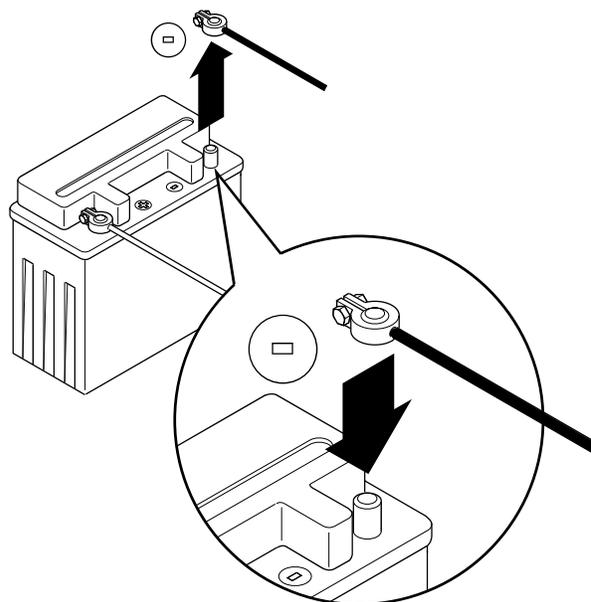
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## Technical Tips (continued)

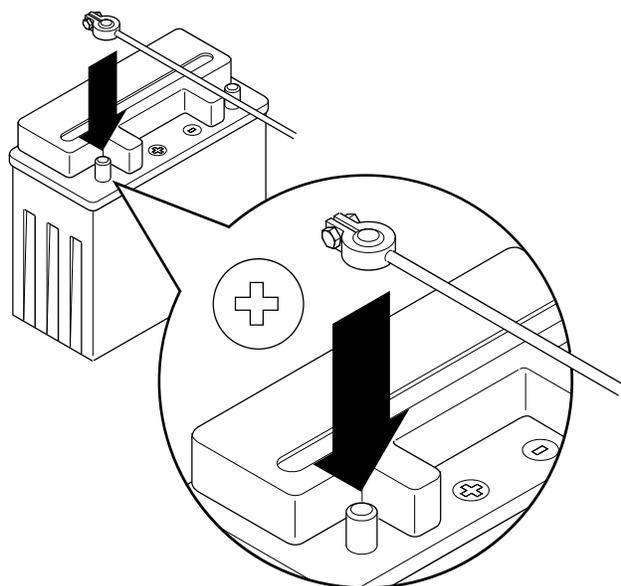
•When performing maintenance on the scooter, make sure that all moving parts and controls move freely and return to their proper position.



•When disconnecting the battery, always disconnect the negative terminal first.



•When connecting the battery, always connect the positive terminal first.



•Make sure that tools and service equipment do not come in contact with both battery terminals.

•Cover both battery terminals with a light coat of grease to prevent corrosion.

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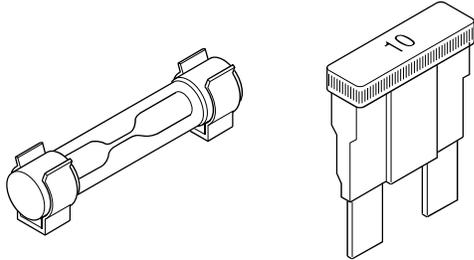
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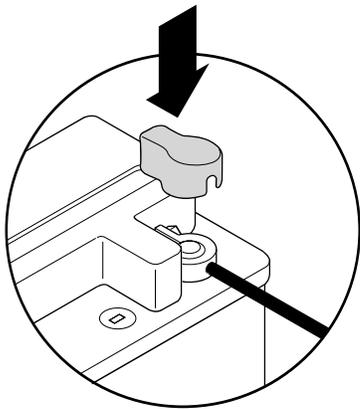
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## Technical Tips (continued)

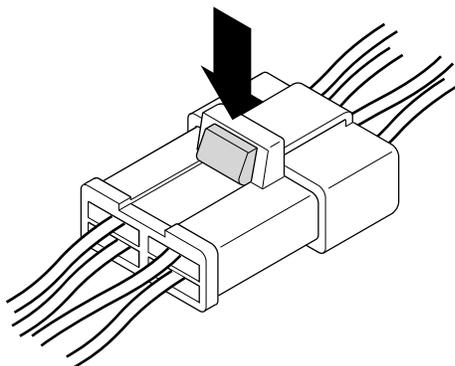
- When replacing fuses, always use an exact replacement. Do not use fuses of a higher amp rating!



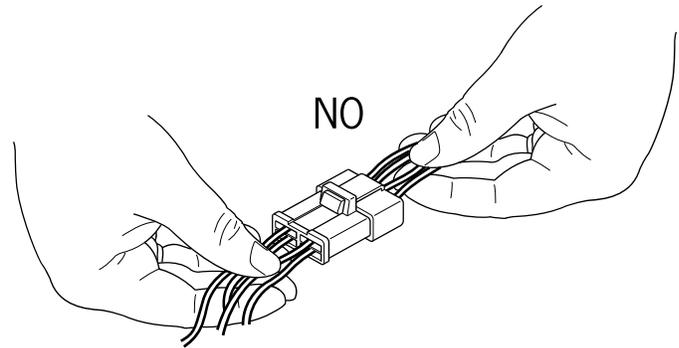
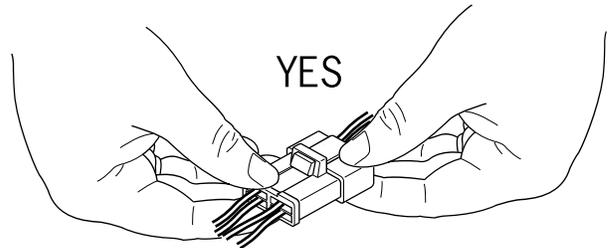
- Replace all rubber caps on wire connectors after performing maintenance.



- When disconnecting wire connectors, press firmly on the locking tab and pull the body of the connectors. Never pull on the wires



- When assembling wire connectors, press firmly to assure the lock tab fully engages.



- Make sure that all wire terminals are properly in place before attempting to assemble any wire connector.

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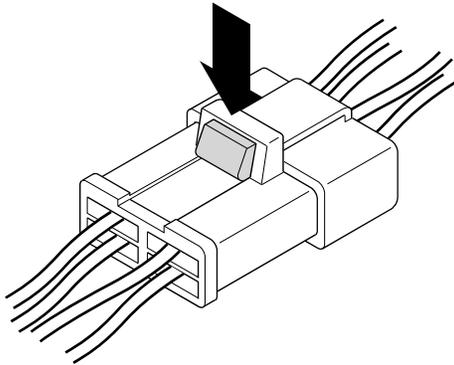
# 1. General Information

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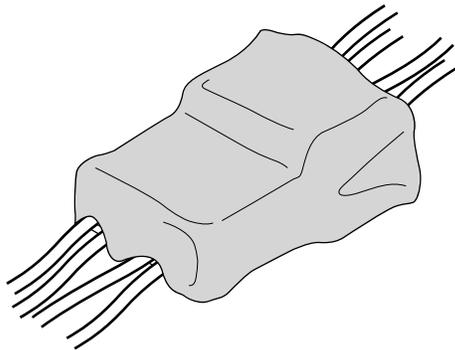
## Technical Tips (continued)

- Make sure that all wiring connectors are fully seated and lock tabs engaged.

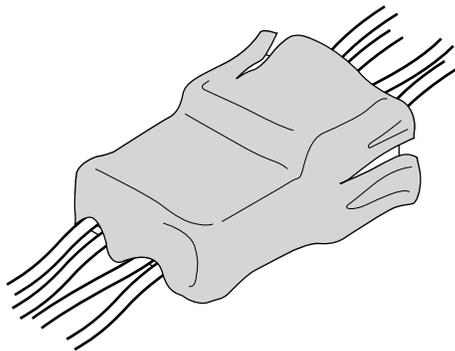
- Check if almuce of connector is covered and fixation is tight.



- Make sure that all protective covers are properly in place over the wiring connectors.



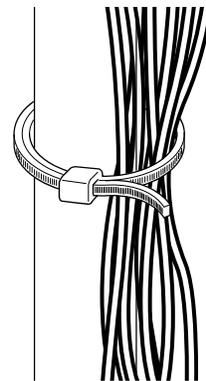
- Never reuse damaged wire terminals or connectors.



- Never reuse damaged wire terminals or connectors.

- Replace all rubber covers on wire connectors to prevent water from getting into the connector.

- Strip of main wire must be fixed on assigned position.



- Insulator of aluminum strip must be affixed to wires.

- Make sure that all wiring harness retainers are properly placed.

- Do not over tighten wiring ties to prevent pinching of wires.

- Do not allow wiring harness to hang in loose loops.

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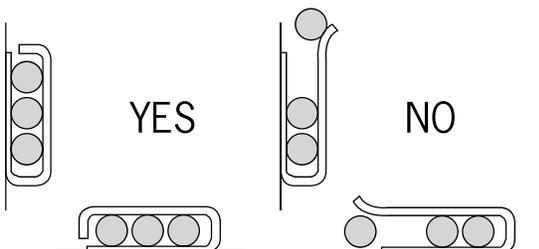
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# 1. General Information

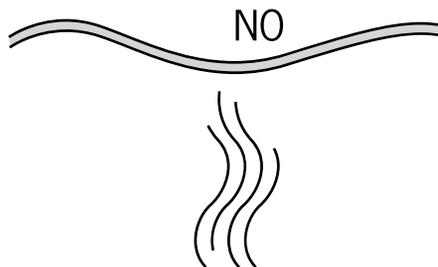
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## Technical Tips (continued)

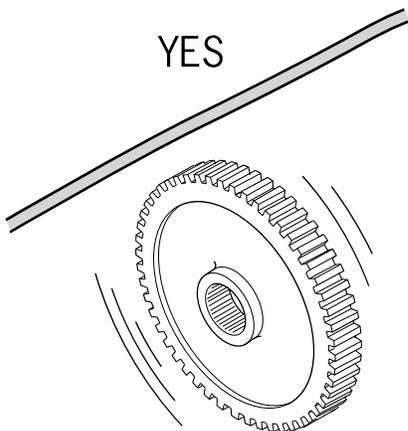
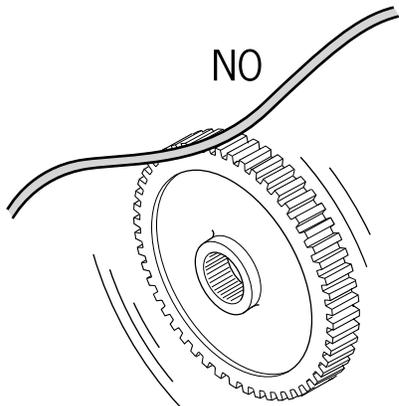
•Make sure that all wire clips are properly attached.



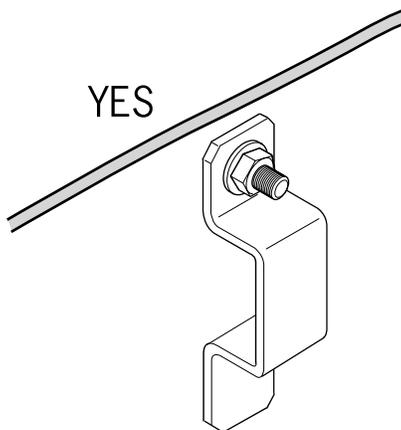
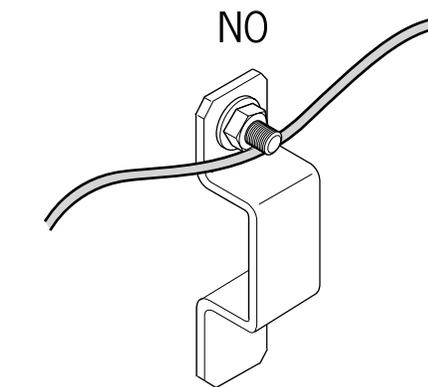
•Make sure that the wiring harness and all wires do not contact hot components or surface parts of the scooter.



•Make sure that the wiring harness and all wires do not contact moving or rotating parts of the scooter.



•Make sure that the wiring harness and all wires do not contact sharp edges or parts of the scooter. Use tape to prevent damage to wires on sharp edges.



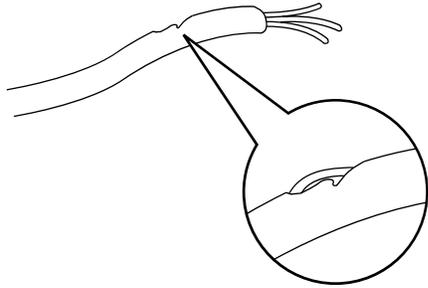
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# 1. General Information

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## Technical Tips (continued)

- Do not pull wires too tightly.
- Use tape to protect against sharp edges.
- Make sure that all rubber grommets are in place to protect the wiring harness.
- Do not reuse broken or frayed wires.
- Repair or replace wires as necessary.



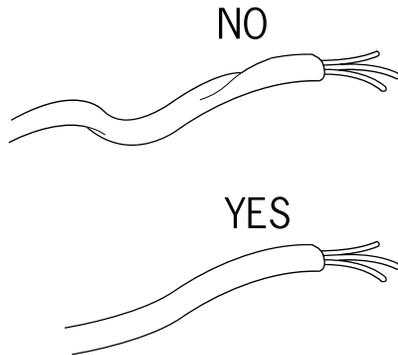
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# 1. General Information

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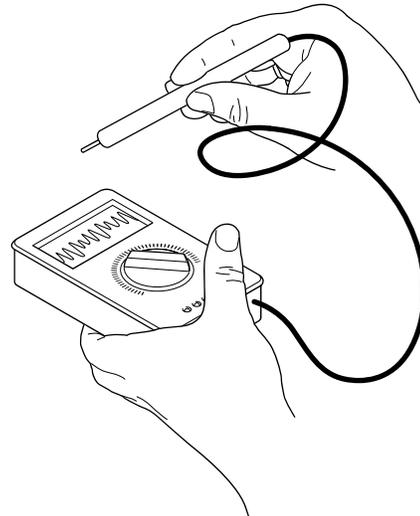
## Technical Tips (continued)

- Do not twist or knot wires when performing maintenance on the scooter.

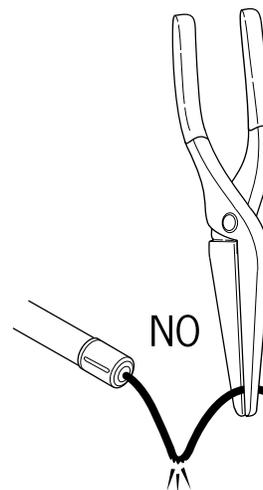


- Make sure the wiring harnesses to the handlebars are not too tight or too loose by turning the handlebars both right and left while making sure there is no pinching or pulling of the wires.

- Make sure that you understand the proper use of test equipment to perform maintenance on the scooter. This will prevent accidental damage to the electrical system of the scooter.



- Use electrical contact cleaner and abrasive paper to clean corrosion from any wire terminals.
- Take care to prevent inadvertent damage to wiring and cables.



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# 1. General Information

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## Technical Tips (continued)

### Definitions of diagrams

The following icons are used to highlight important operations in the service of the scooter.



Lubricating oil required.



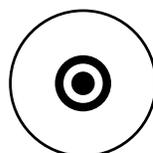
Grease required.



Engine oil required.



Special tools required.



Special attention required.



Dangerous and important,  
special care required.

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# 1. General Information

## Torque Settings

### Standard Torque Settings

General Torque Requirements for Standard Fasteners

Fastener Type	Torque	Fastener Type	Torque
5mm Cap Screw	.5 kg/cm	5mm Socket Head Screw	.4 kg/cm
6mm Cap Screw	1 kg/cm	6mm Socket Head Screw	.9 kg/cm
8mm Cap Screw	2.2 kg/cm	8mm Flange Head Screw	1.2 kg/cm
10mm Cap Screw	3.5 kg/cm	10mm Flange Head Screw	2.7 kg/cm
12mm Cap Screw	5.5 kg/cm	12mm Flange Head Screw	4.0 kg/cm

### Special Torque Settings

Torque Requirements for Engine Fasteners

Fastener Type	Number Used	Dia. (mm)	Torque kg m (in. lbs)	Comments
Cylinder Bolt A	2	8	.9	
Cylinder Bolt B	2	8	.9	
Oil Filter Screen Cap	1	30	1.5	
Exhaust Pipe Flange Bolt	2	6	.9	
Flange Screw Belt Pulley	4	8	2.0	Lubricate with Engine Oil
Valve Adjusters	2	5	.9	Lubricate with Engine Oil
Cam Chain Adjuster	1	6	1.0	
Guide Plate Screw / Oil Fill Screw	1	8	1.3	
Clutch Cover Screw	1	12	5.5	
Clutch Driven Unit Mounting Screw	1	12	5.5	
Starter Motor Mounting Screw	2	6	1.0	
Oil Pump Mounting Screw	3	6	1.2	
Clutch Driver Mounting Screw	1	12	5.5	
ACG coil Mounting Screw	3	6	1.0	
Cam Chain Adjuster Screw	1	6	.5	
Spark Plug	1	10	1.2	

Torque Requirements for Frame Fasteners

Fastener Type	Number Used	Dia. (mm)	Torque kg m (in. lbs)	Comments
Cylinder Bolt A	1	25.4	8-12	
Cylinder Bolt B	1	10	4-5	
Oil Filter Screen Cap	1	14	8-10	
Exhaust Pipe Flange Bolt	1	10	3-4	
Flange Screw Belt Pulley	1	8	2-3	Use Soft Set Lock-Tite
Valve Adjusters	1	5	.5	

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# 1. General Information

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## Tool Requirements

Repair of the scooter, a complete basic set of metric sized tools is required. This should include; Open-end wrenches, sockets and ratchet, hex keys, straight and Philips screw drivers, standard pliers, needle-nosed pliers, wire cutters, wire strippers, scraper, pin punch, hammer and soft faced mallet.

For a more extensive tear down and rebuild of the scooter, there are a variety of special tools that will be required. These include the following:

- Valve spring compressor
  - Valve guide reamer
  - Feeler gage set
  - Slide hammer bearing and seal remover
  - Bearing press
  - Torque wrench
  - Ring compressor
  - Clutch spring compressor
  - Fly wheel puller
  - Electronic multi meter
-

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# 1. General Information

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## Lubrication Requirements: Engine

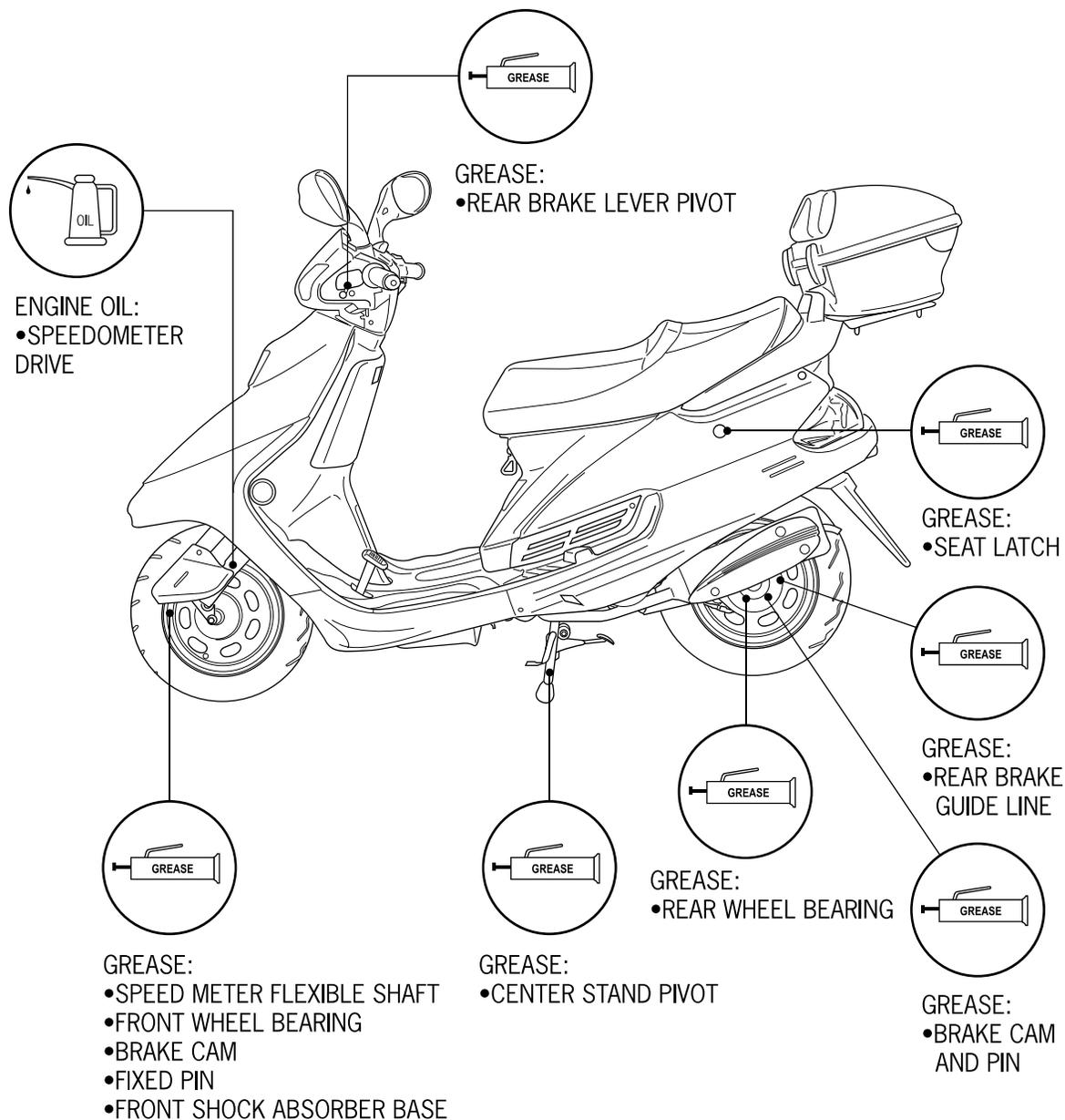
Item Location	Recommended Lubricant
valve guide valve stem moving part	SAE 5W 30 Engine Oil
cam shaft lug surface	API-SG Grade Engine Oil
valve rocking arm friction surface	oil
camshaft drive chain	grease
cylinder fixed screw bolts and nuts	oil
around piston and piston ring groove	oil
around piston pin	oil
cylinder surface	oil
connecting rod, piston pin bore	oil
connecting rod big end	oil
crankshaft R, L side oil seal	oil
starter reduction rear engaging (mating) part	
countershaft gear engaging part	oil
final gear engaging part	oil
each bearing rotational part	grease
o-ring surface	oil
oil seal lip	oil
starter idle gear	oil
friction spring moving part, shaft moving part	grease
shaft moving groove part	oil
starter drive axle	grease
AC-generator connector	adhesive

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# 1. General Information

## Chassis

- Apply oil to the following parts.
- Use grease in the parts other than specified ones.
- Apply engine oil or grease to the moving parts to prevent abnormal noise and to raise durability.

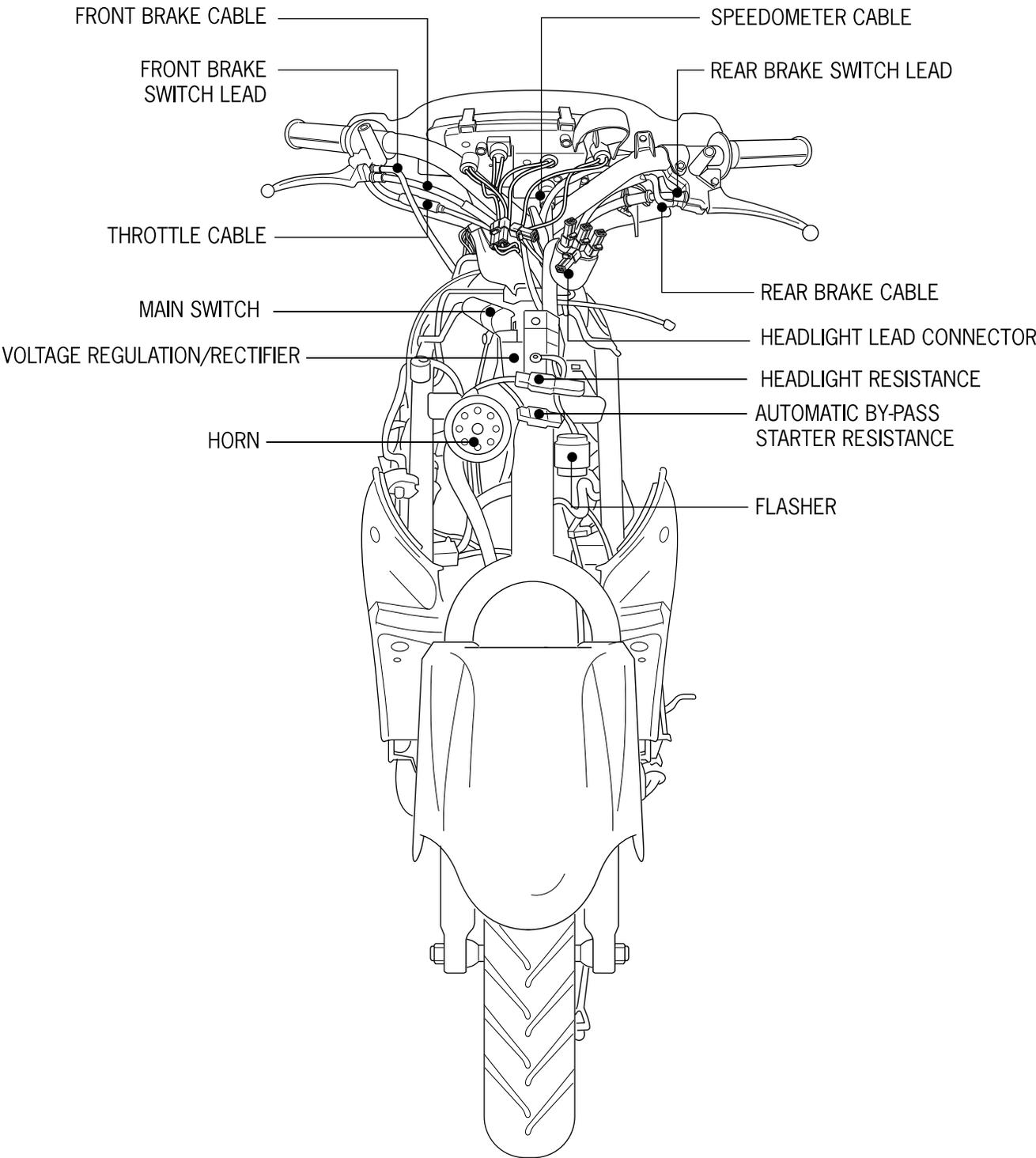


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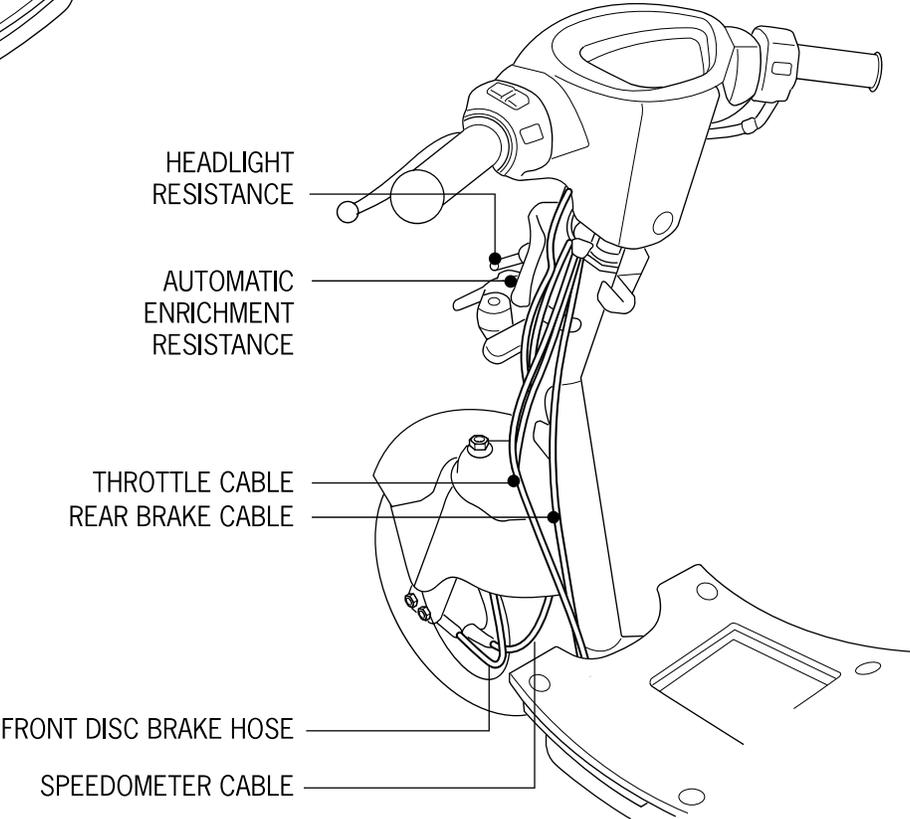
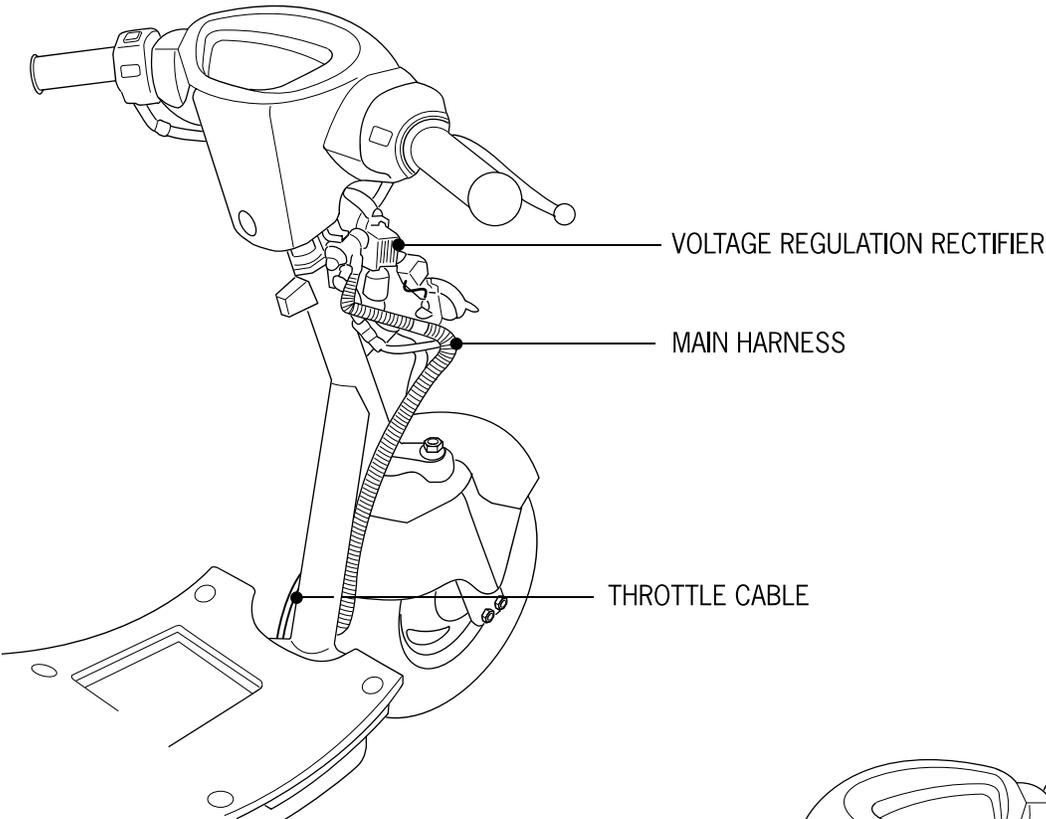
## Cable Routing Diagram



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# 1. General Information

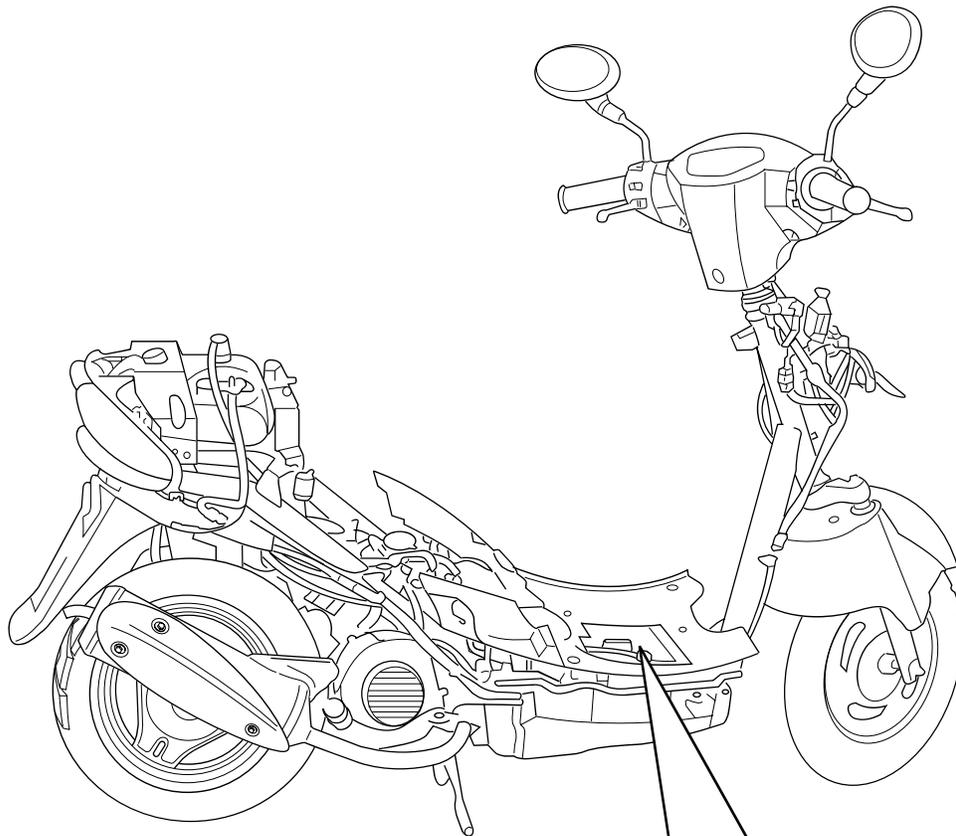
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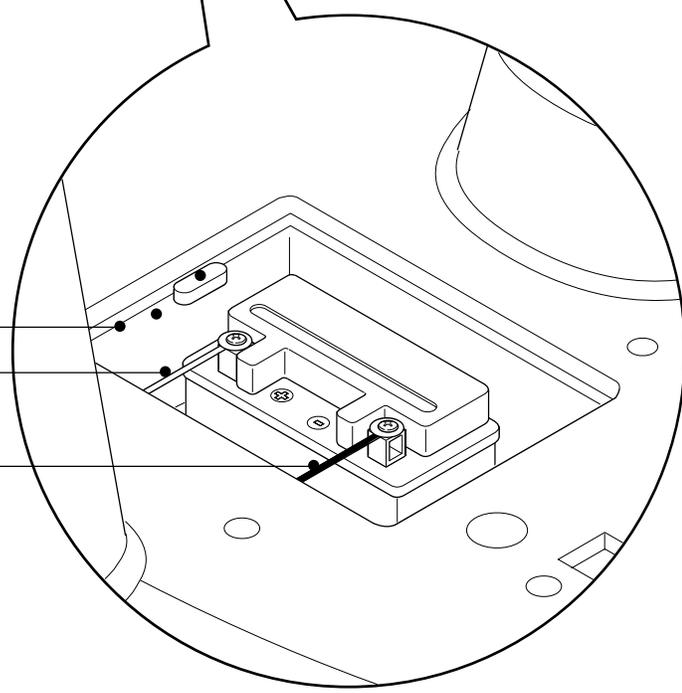
# 1. General Information

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- ⊕ RED BATTERY CABLE POSITIVE
- ⊖ GREEN BATTERY CABLE NEGATIVE

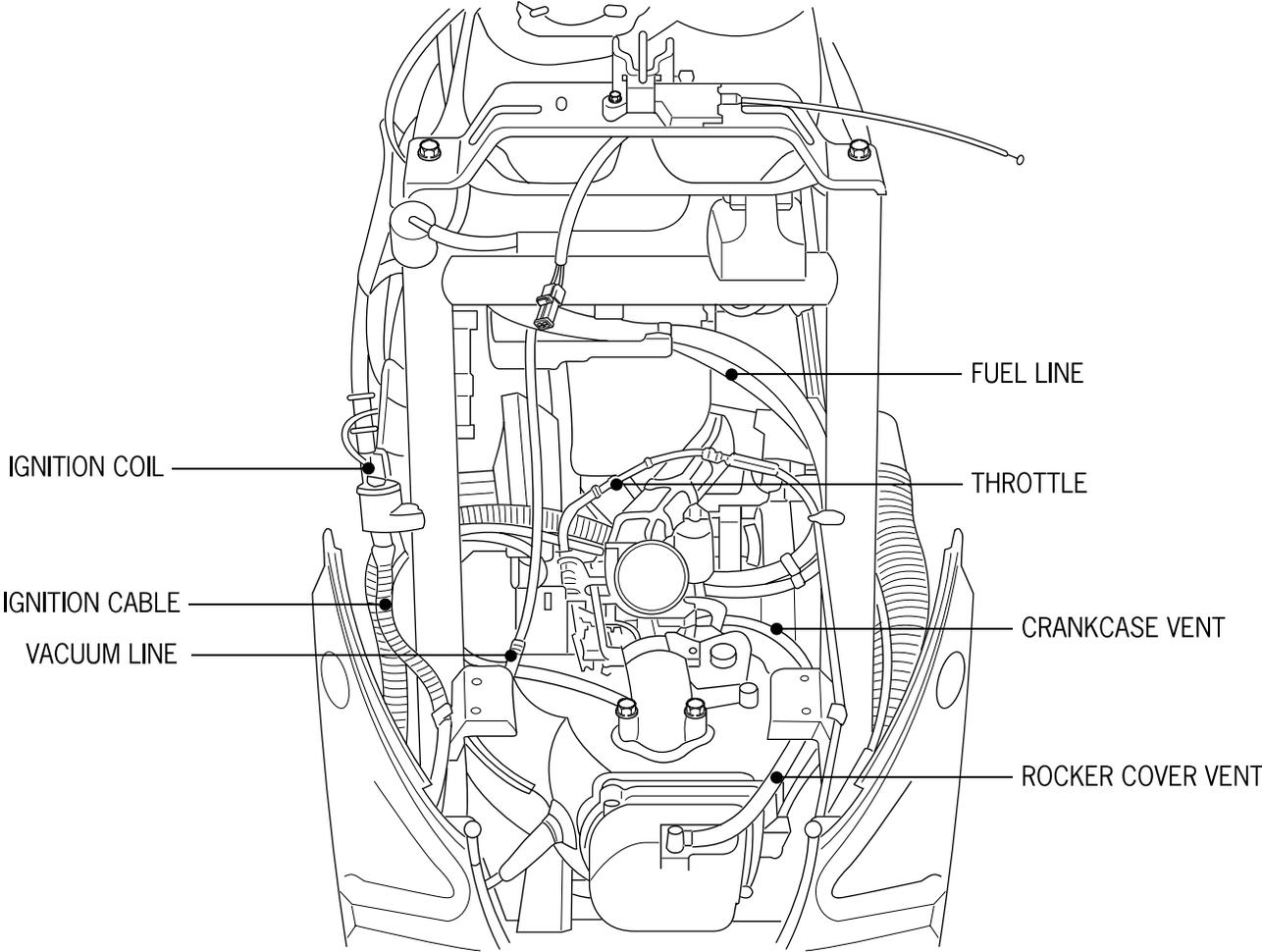
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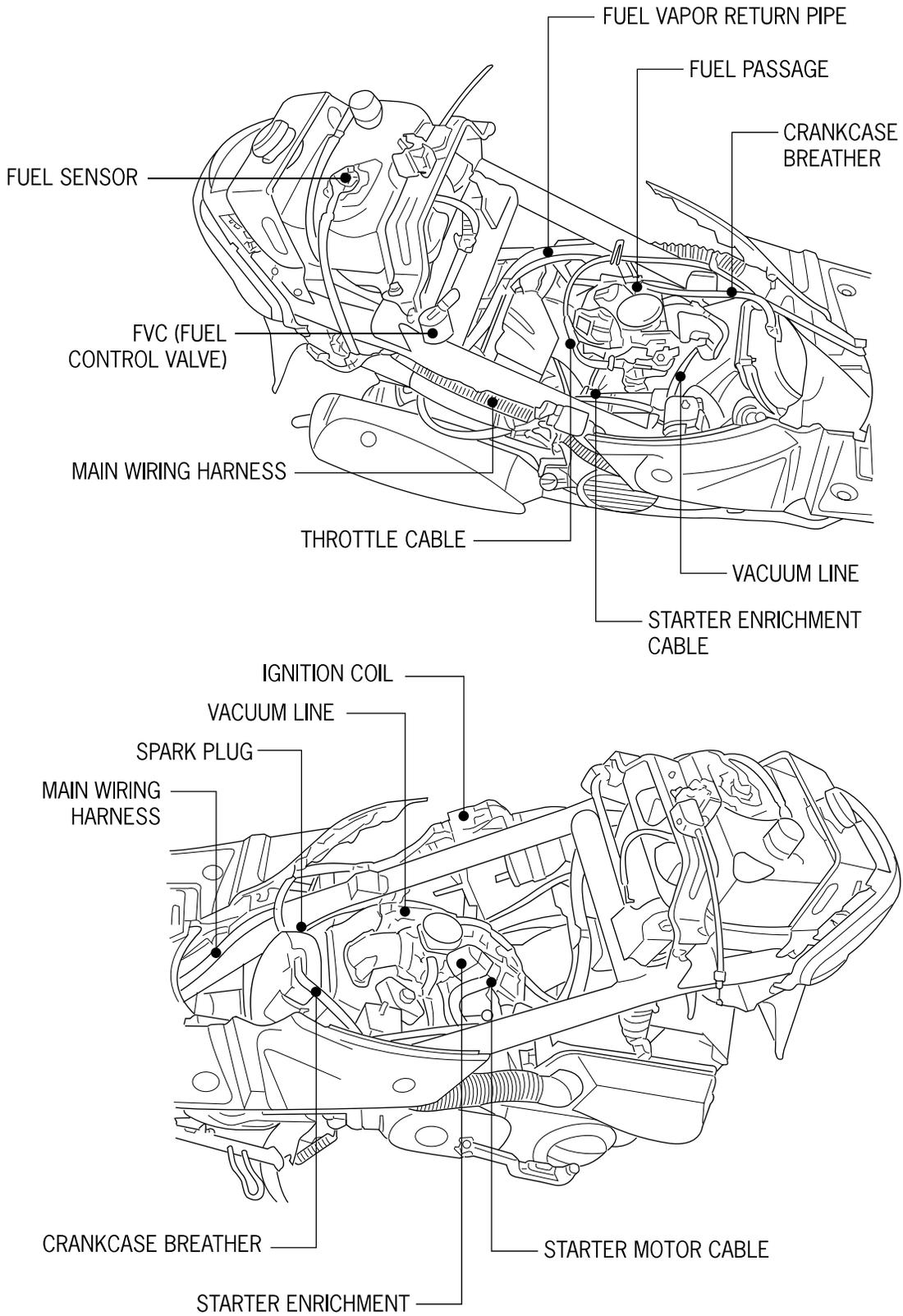
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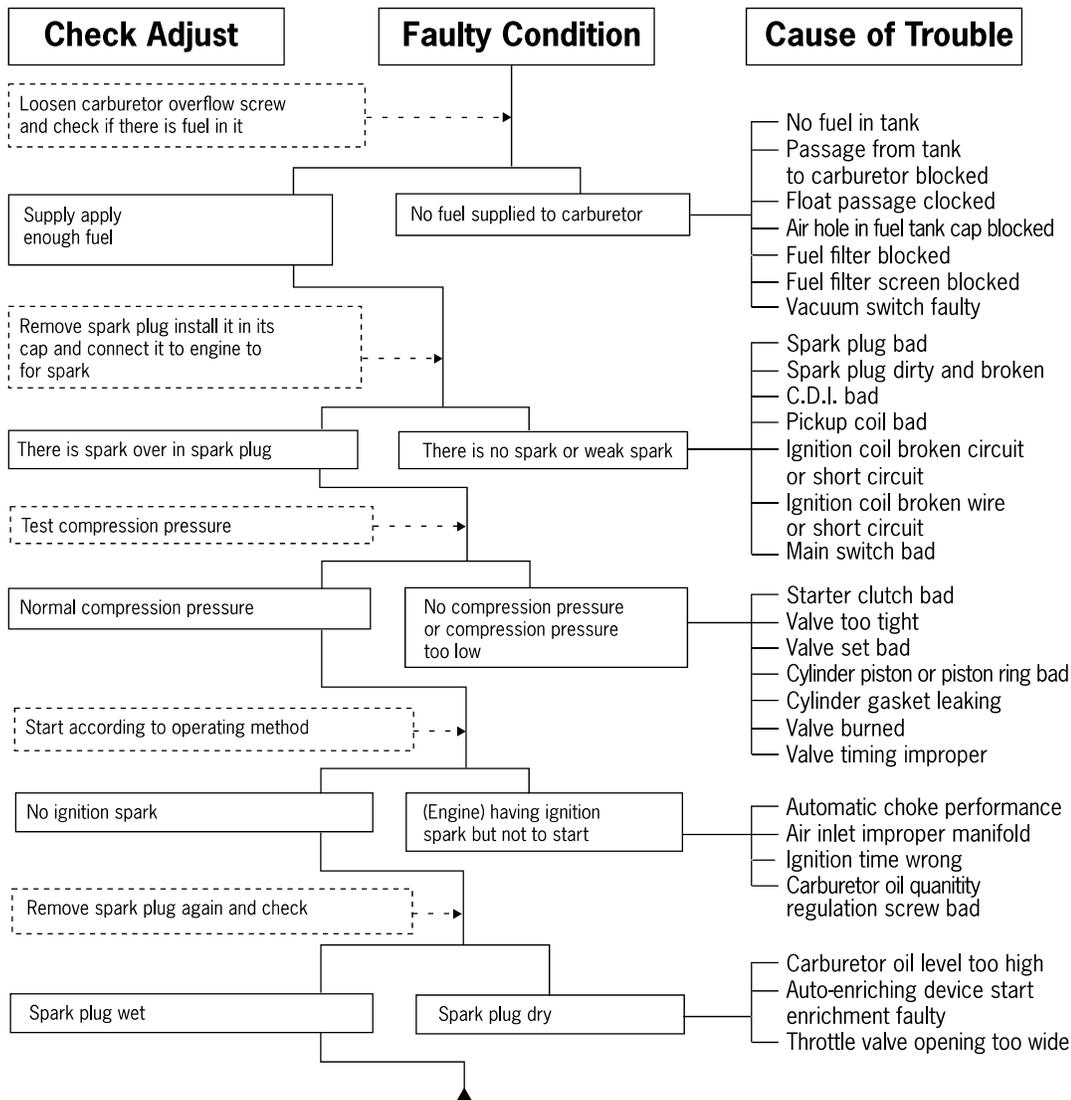
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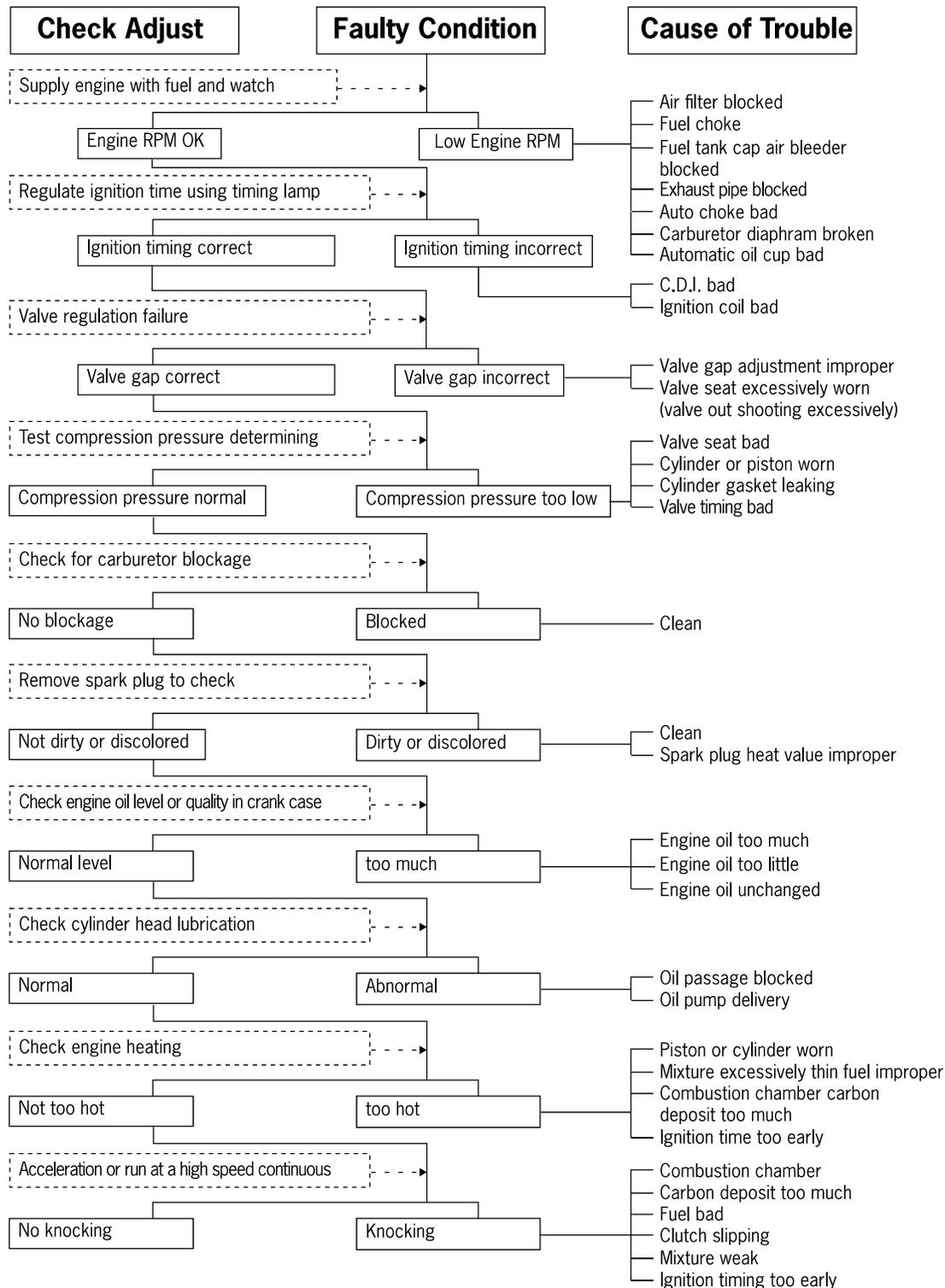
# 1. General Information

## Trouble Shooting Guide Starter Failure or Hard Starting



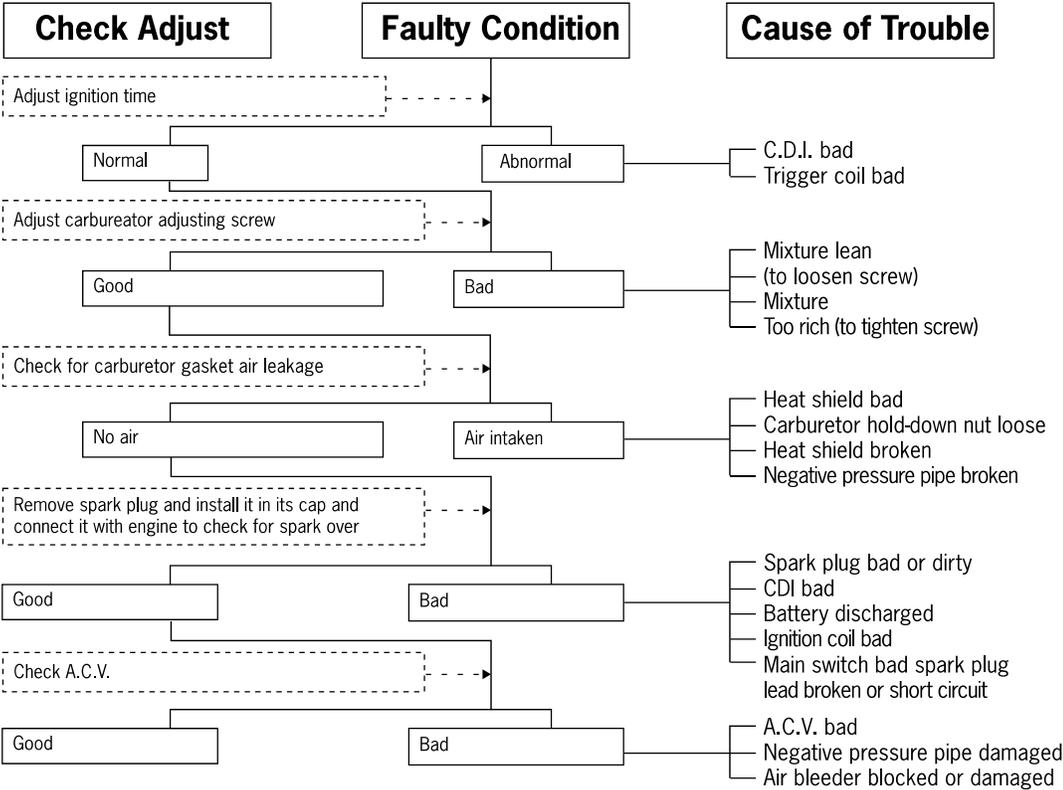
# 1. General Information

## Trouble Shooting Guide (under speed, no power)



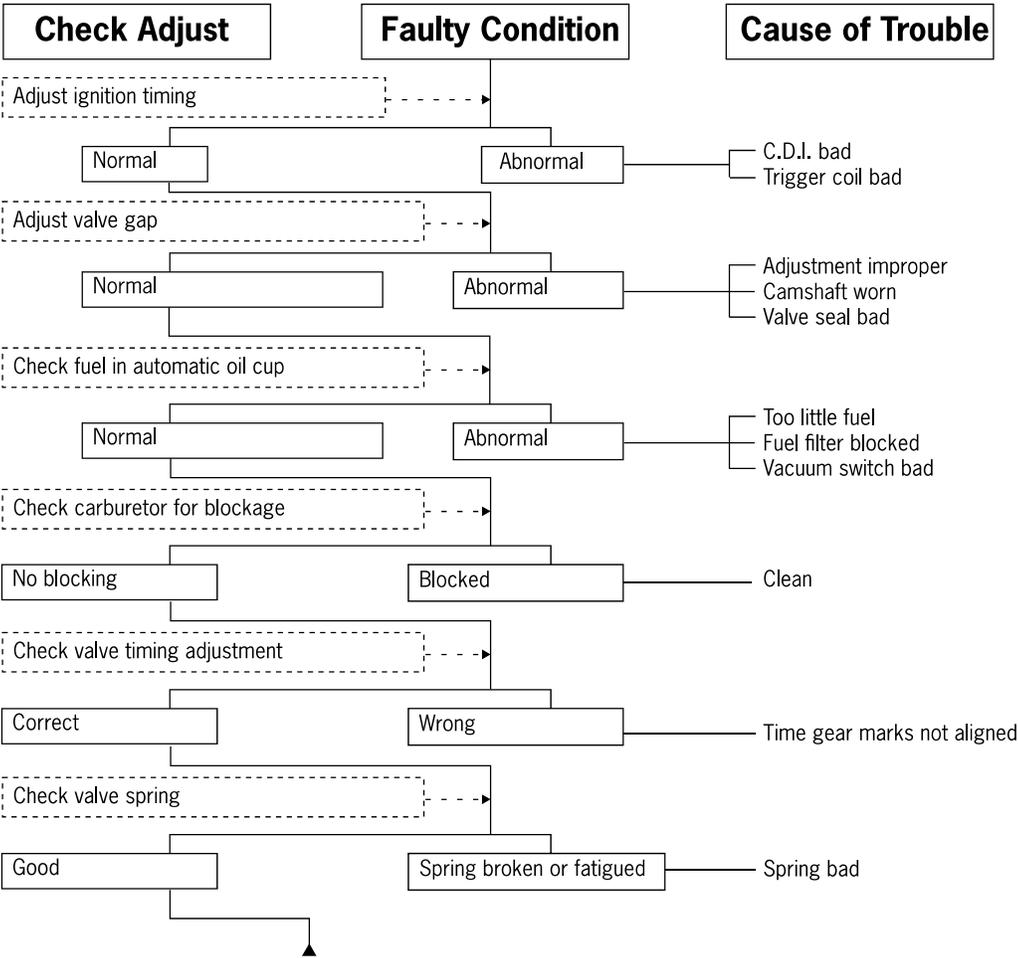
# 1. General Information

## Trouble Shooting Guide (under speed, no power)



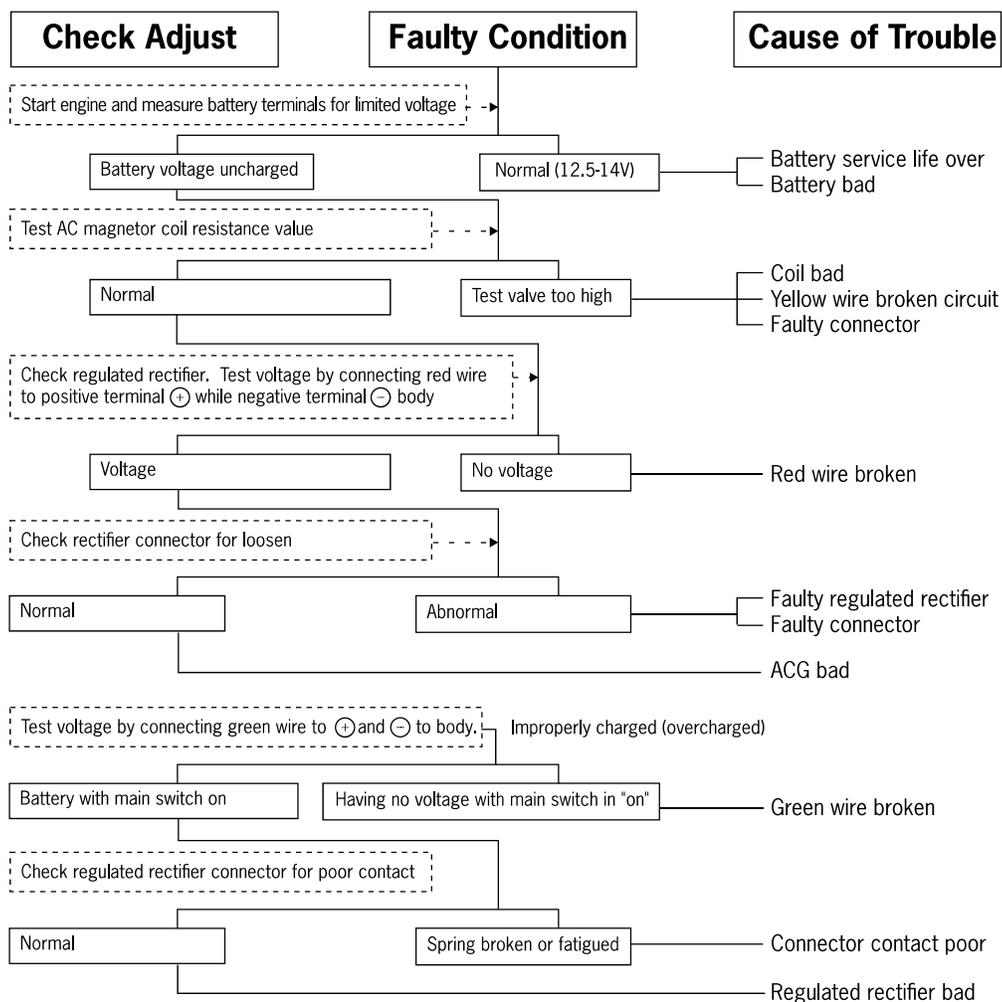
# 1. General Information

## Trouble Shooting Guide (high speed)



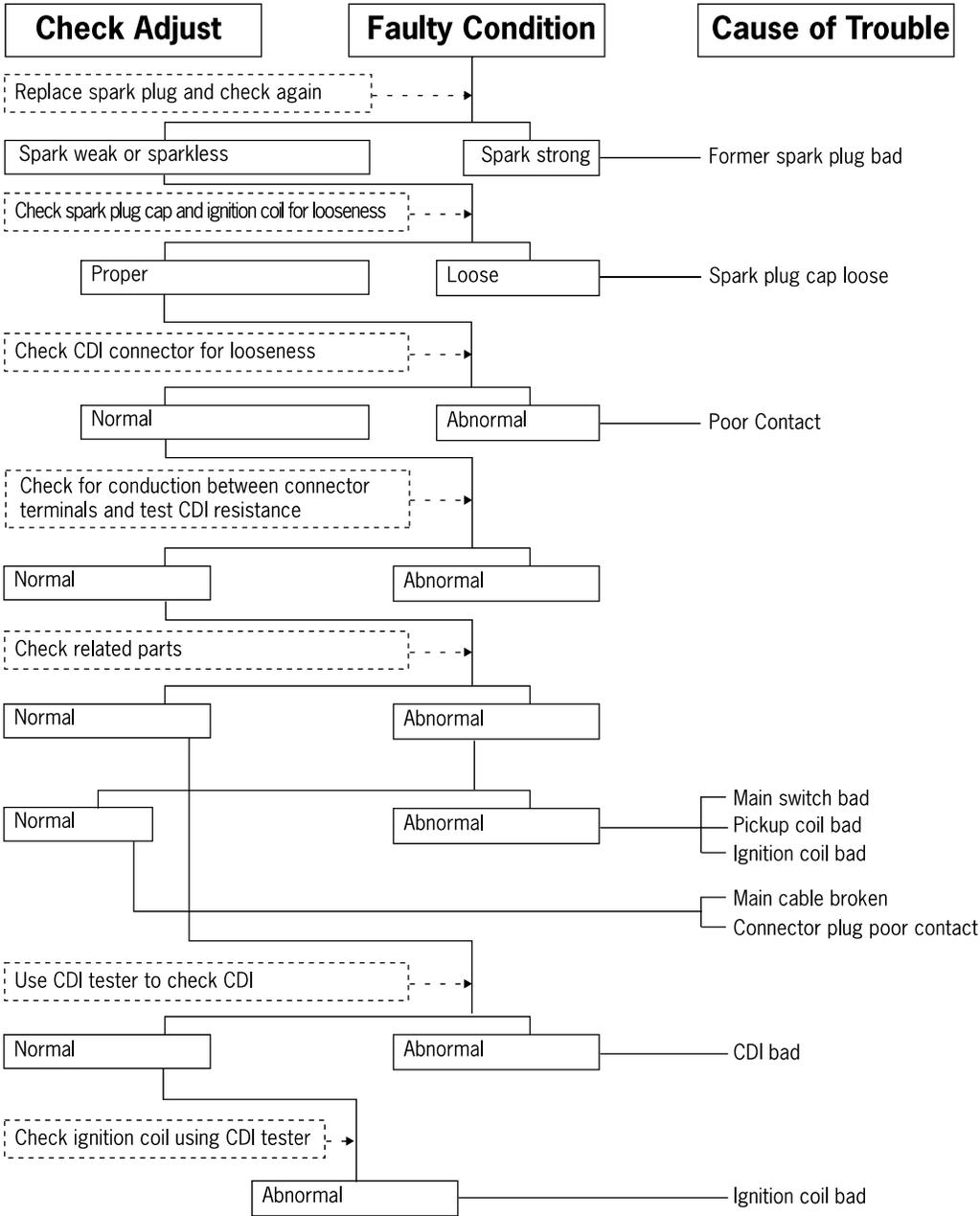
# 1. General Information

## Trouble Shooting Guide-Improper Battery Charging (Battery overdischarge or overcharge)



# 1. General Information

## Trouble Shooting Guide (no spark)



## Body Exploded View

