50CC - 150CC
GY6
Engine Service Manual

TANKS SPORTS INC
10925 Schmidt Rd
El Monte, CA 91733
1-626-350-4039 Info
1-626-442-8706 FAX

WWW.TANK-SPORTS.COM

This service manual covers the 50CC and 150CC GY6 Engine used in nearly all TANK Sports Inc. Scooters. Some images may differ slightly from the model you are working on but you will this manual extremely useful for all models.

TANK SPORTS INC
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The information contained in this service manual is based on the GY6 50CC – 150CC CVT Engine used in nearly all of TANK's scooter line up. Your actual model may very somewhat from the information pictured in the service manual. Please read the manual that came with the model scooter you are attempting to repair for any specifications that may differ from this service manual.

This manual is covers a wide range of service issues and has many tips that you will find useful no matter which model you are attempting to repair or rebuild.

Service should be completed by a qualified authorized technician. Failure to do so will result in the loss of your warranty if still covered.

Some sections of this manual refer to regular maintenance that the end user can perform. Again please check with the manual that came with your scooter for specific fluid levels and other information which may be unique to your model.

The wiring and electrical diagrams and other info will also very from your specific model.

For more information on our products and services please visit our web site.

Best Regards

TANK SPORTS SUPPORT TEAM

Dealer - Consumer Motor Vehicle Delivery Preparation and Inspection Form.

This form is to be completed by you or your dealer before you take procession of your TANK product.
Please enter the 17 Digit VIN# of the TANK Product in the fields below.

3	C	G														

Engine #:					
Model #:		**Color:**		**DOP:**	___/___/20___

Motorcycle	Dirt Bike	Scooter	ATV	Go Kart	Utility Vehicle	PWC	Snowmobile	Other:

Please fill out this form and mail to us for warranty verification.

Name:			
Address:			
Address:			
City:		**State:**	**ZIP:**
Phone:	(____) -	**Email:**	

Instructions for the dealer: Please use this form to inspect all TANK products before the customer takes delivery.
This form is used in conjunction with the warranty registration card (above) to track potential quality control or safety related problems. This form is NOT used to gather customer information for any other purpose. Also your state law and federal law (49CFR part 573) may require this form as well. Failure to fill out this form may result in loss of warranty for your customer. This form is to be filled out along with the customers warranty card mailed back to TANK within 5 business days after delivery to your customer.

Dealer: Check the OK box if item is in good working order. **DI = Dealer's Initials | CI = Customer's Initials 工厂标注 Factory Intials**.

Use N/A on items not applicable to the model being inspected.
Dealer is required to replace shipping fluids with new fluids based on climate and other factors. Failure to replace the fluids with US branded fluids may result in loss of warranty!

Inspection	工厂标注	DI	CI	Inspection	工厂标注	DI	CI	Inspection	工厂标注	DI	CI
Engine O/A:				Lights:				Tires:			
Starting:				Tail Light:				PSI Front L/R:			
Idle:				Brake Light:				PSI Rear L/R			
Throttle Up:				Left Dir F/R				Body Panels:			
Throttle DN:				Right Dir F/R:				Optional Equipment:			
Shut Off:				Hazzard:				Coolant:			
Transmission:				Head Light H/L:				Gear Oil:			
Shifting:				Instruments:				Transmission Oil:			
Reverse:				Speedometer:				Differential Oil:			
Brakes:				Tachometer:				Documentation:			
Front Free Spin:				Odometer:				Manual:			
Rear Free Spin:				Indicators:				Parts Manual:			
Front Brake:				Horn:				Safety Manual:			
Rear Brake:				Oil and others:				Copy of Warranty:			

Dealers are advised to direct customers to resources in regards to laws, safety courses and other information that the customers should be aware of before taking delivery of the vehicle.

DEALER TEST DRIVE REPORT: Dealer is required to test drive your vehicle before you take delivery to verify the items listed above are functioning properly.
You may enter any additional notes on the back of this form.

IMPORTANT NOTE TO DEALERS AND CONSUMERS:
During assembly you must drain all shipping fluids and replace them with a quality US branded fluids. This includes engine oil, gear oil and coolant.
Screws, nuts and bolts should be checked before each ride. It is advisable to use a product such as "Loctite" on screws that tend to back out.
If you are a dealer, you must contact your sales rep for instructions on obtaining warranty items. If you are a consumer, you must contact the dealer where you purchased your item.
All tech support inquires are handled through our web site.
Telephone tech support is offered to dealers only.

Complete the above form and mail it to us along with a copy of your receipt.
For complete information on our warranty and tech support please visit our web site or contact your local dealer. www.tank-sports.com

质量管理检验形式

检查员签名 ______________________

日期月 ________ 日的 ______ 年 _______

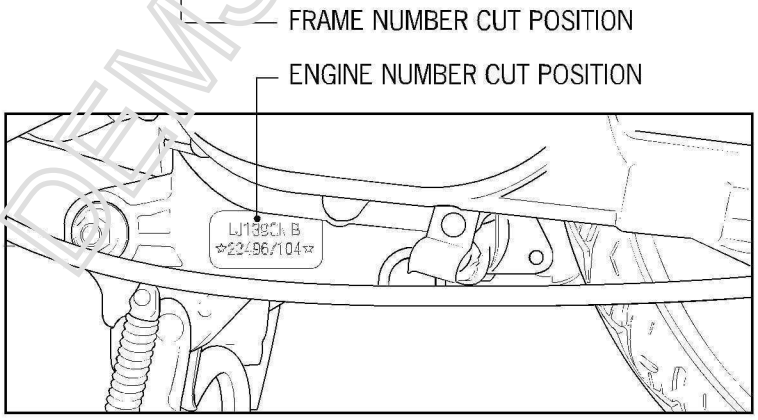
Mail To: TANK SPORTS INC.
Att: Warranty Dept
10925 Schmidt Rd.
El Monte, CA 91733

DO NOT FORGET TO INCLUDE DATED COPY OF YOUR SALES RECEIPT!

Table of Contents

1. General Information

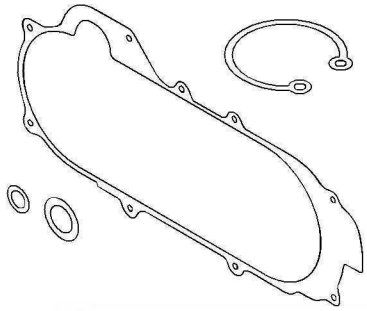
Location for: Engine Number/Frame Number

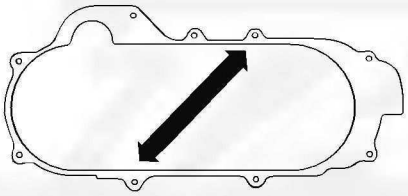


1. General Information

Technical Tips

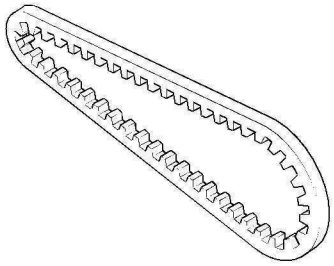
•Replace all gaskets, o-rings, circlips and cotter pins when performing maintenance on the scooter. Nuts and bolts on all engine covers should be tightened in a diagonal pattern to uniformly distribute clamp force.



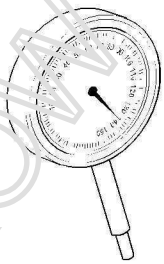


•Use lubricants recommended in this manual at all times to assure peak performance from the scooter.

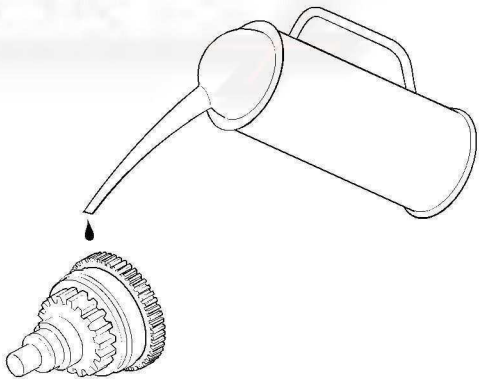
•Use only genuine replacement parts when performing repairs to the scooter.



•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.



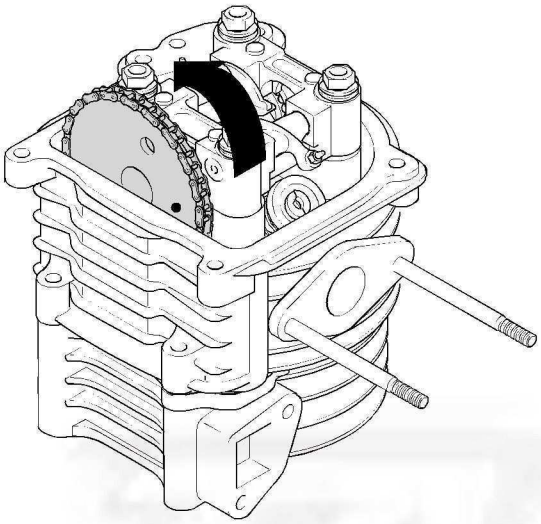
•Clean and lubricate all engine parts during the disassembly and reassembly process to prevent damage to the engine.



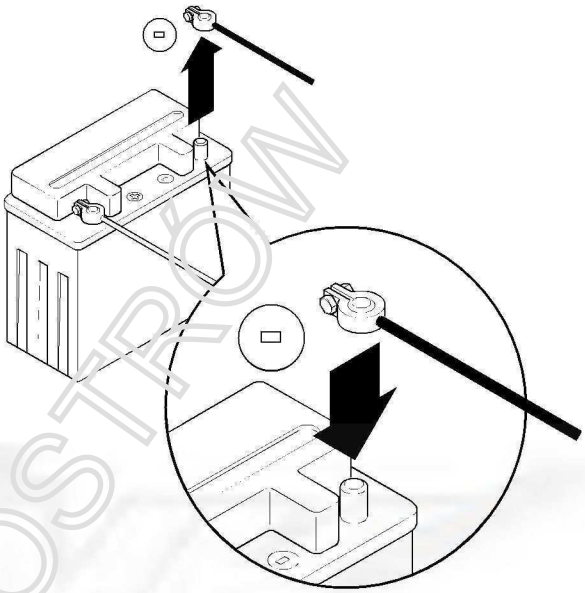
1. General Information

Technical Tips (continued)

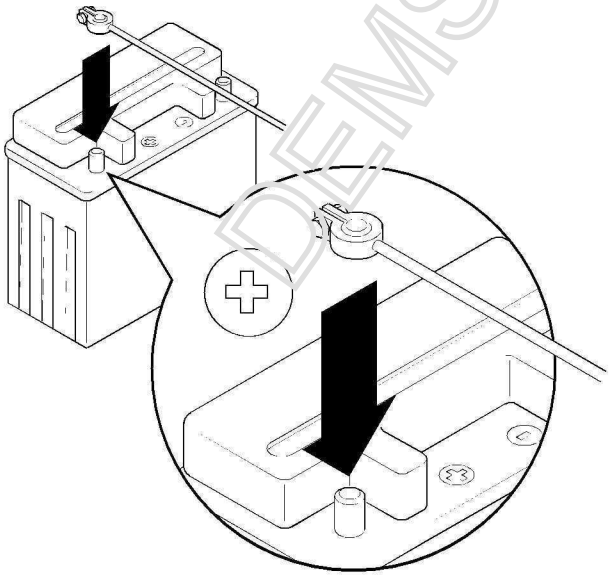
•When performing maintenance on the scooter, make sure that all moving parts and controls move freely and return to their proper position.



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



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



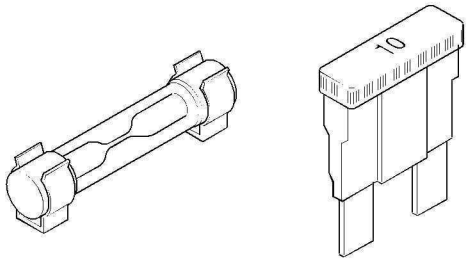
•Make sure that tools and service equipment do not come in contact with both battery terminals.

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

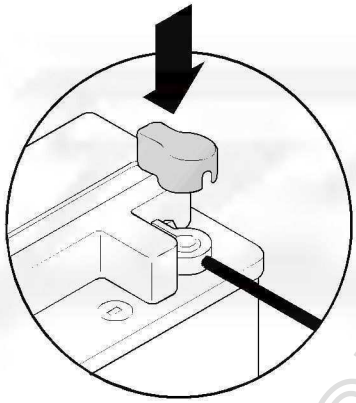
1. General Information

Technical Tips (continued)

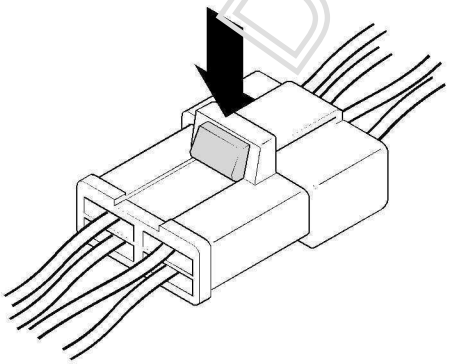
•When replacing fuses, always use an exact replacement. Do not use fuses of a higher amp rating!



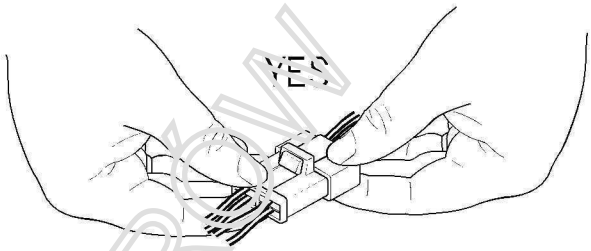
•Replace all rubber caps on wire connectors after performing maintenance.

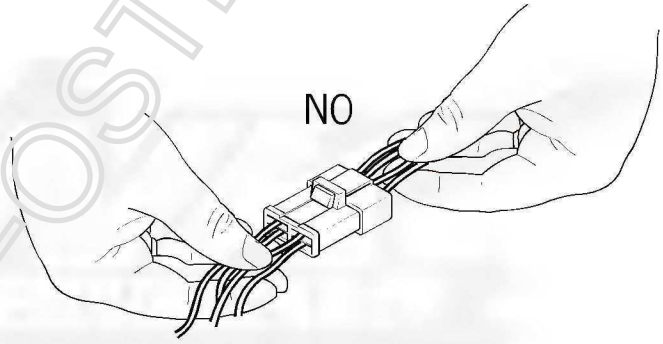


•When disconnecting wire connectors, press firmly on the locking tab and pull the body of the connectors. Never pull on the wires



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





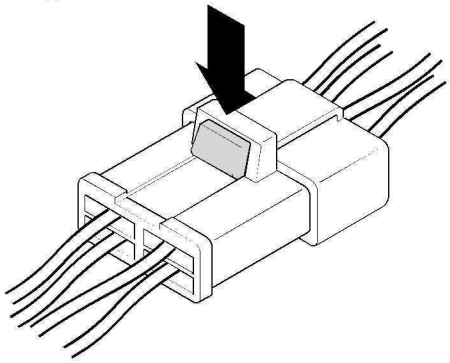
•Make sure that all wire terminals are properly in place before attempting to assemble any wire connector.

1. General Information

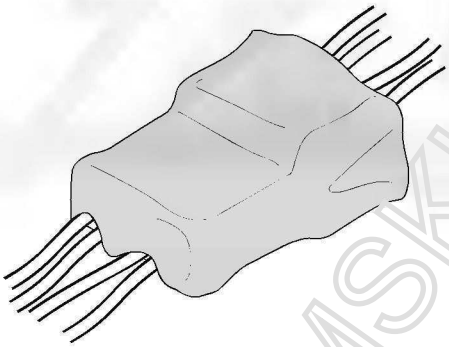
Technical Tips (continued)

•Make sure that all wiring connectors are fully seated and lock tubs engaged.

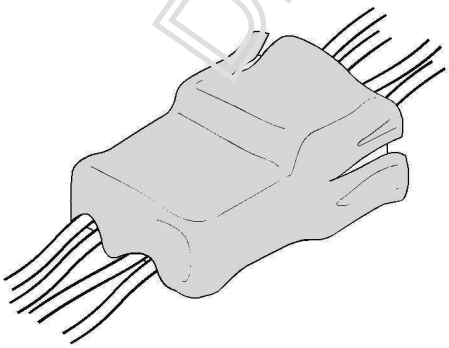
•Check if almuce of connector is covered and fixation is tight.



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



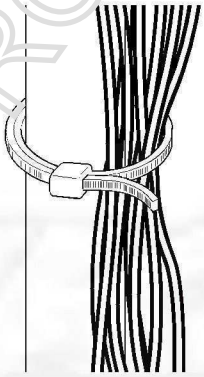
•Never reuse damaged wire terminals or connectors.



•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.

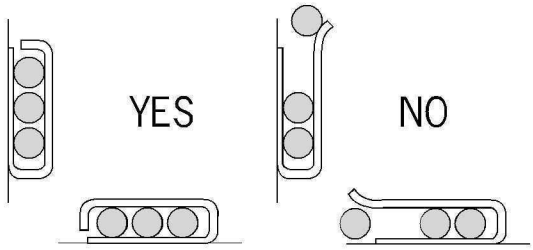
•Do not over tighten wiring ties to prevent pinching of wires.

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

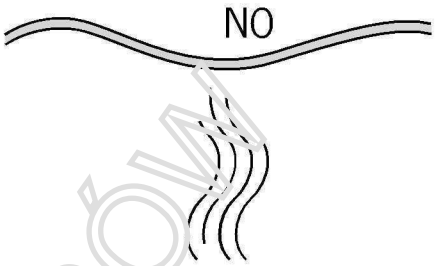
1. General Information

Technical Tips (continued)

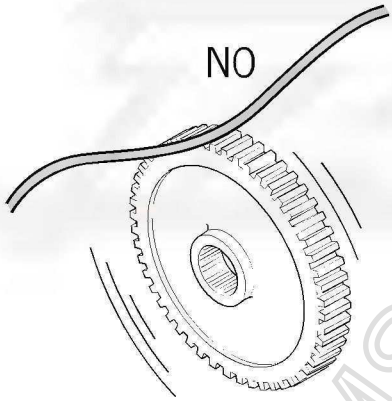
•Make sure that all wire clips are properly attached.

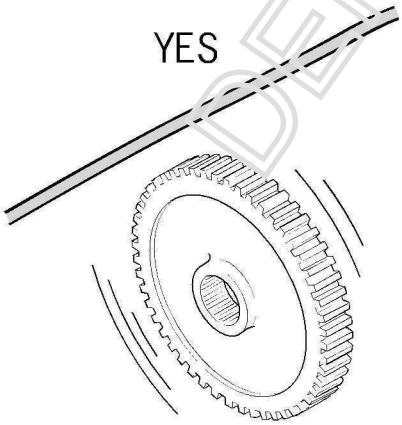


•Make sure that the wiring harness and all wires do not contact hot components or surface parts of the scooter.

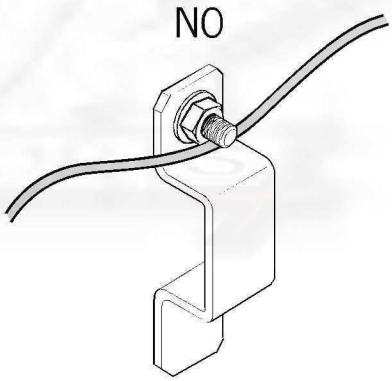


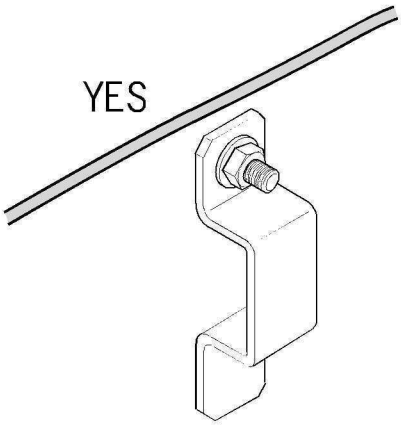
•Make sure that the wiring harness and all wires do not contact moving or rotating parts of the scooter.





•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.





1. General Information

Technical Tips (continued)

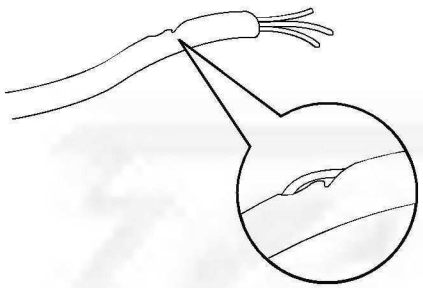
•Do not pull wires too tightly.

•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.

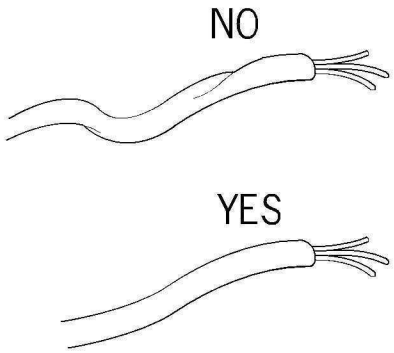
•Repair or replace wires as necessary.



1. General Information

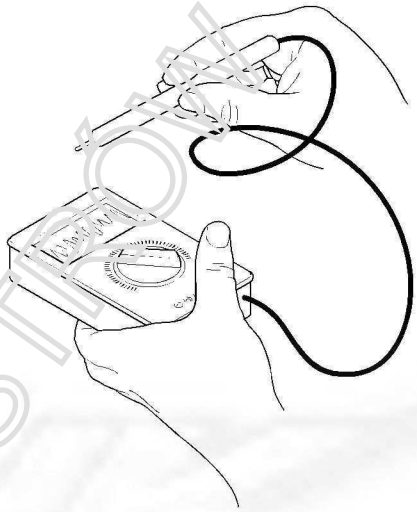
Technical Tips (continued)

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



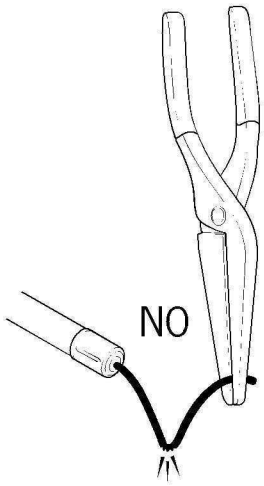
•Make sure the wiring harnesses to the handlebars are not too tight or too loose by turning the handlebars both right and left while making sure there is no pinching or pulling of the wires.

•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.

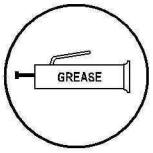


1. General Information

Technical Tips (continued)

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

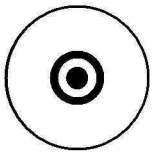
Lubricating oil required.



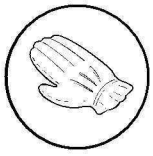
Grease required.

Engine oil required.

Special tools required.



Special attention required.



Dangerous and important, special care required.

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	

1. General Information

Tool Requirements

epair 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

1. General Information

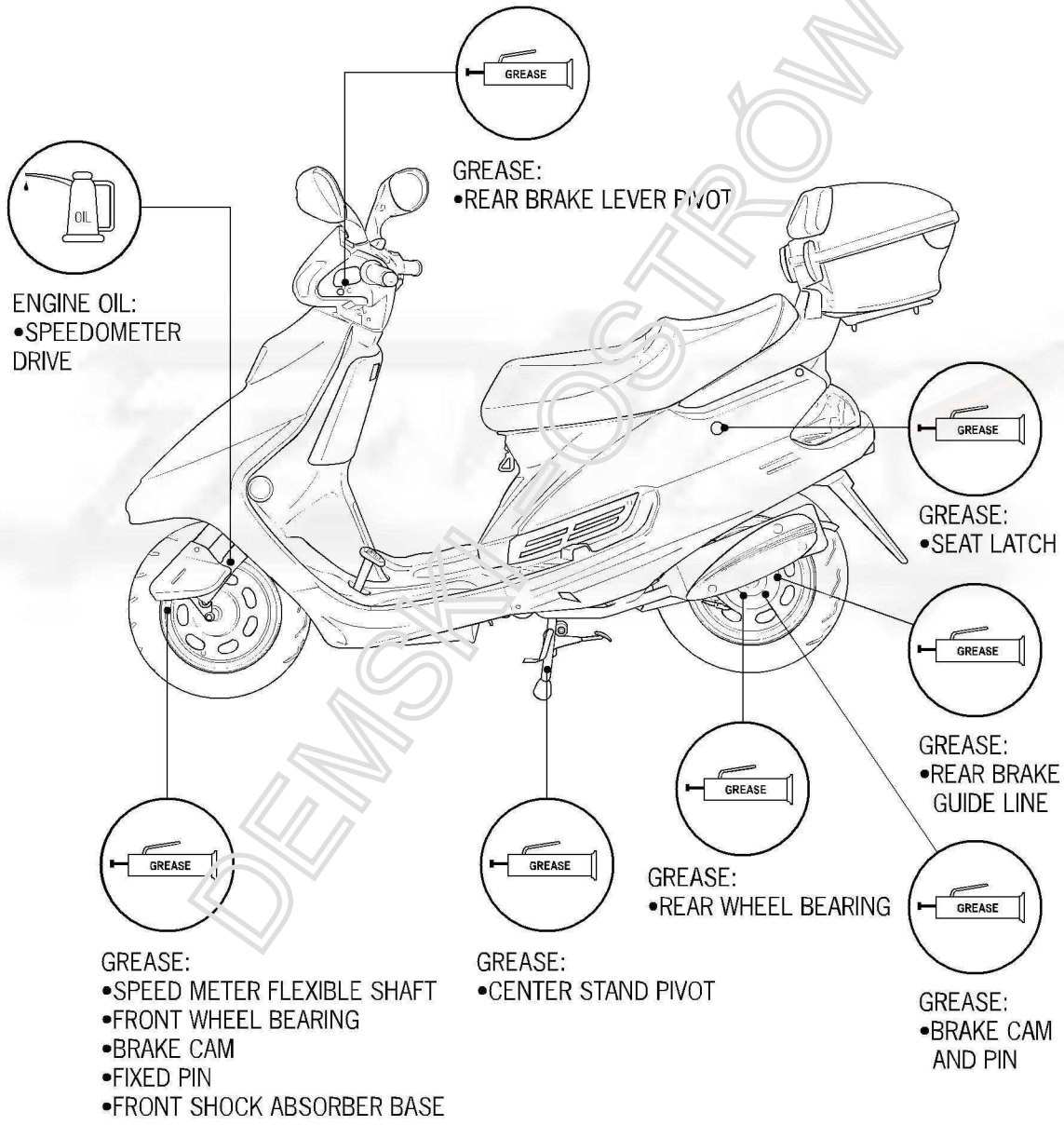
Lubrication Requirements: Engine

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 starter reduction rear engaging (mating) part coundershaft gear engaging part final gear engaging part each bearing rotational part o-ring surface	oil oil oil grease oil
oil seal lip	oil
 starter idle gear friction spring moving part, shaft moving part	 oil grease
shaft moving groove part	oil
starter drive axle	grease
AC-generator connector	adhesive

1. General Information

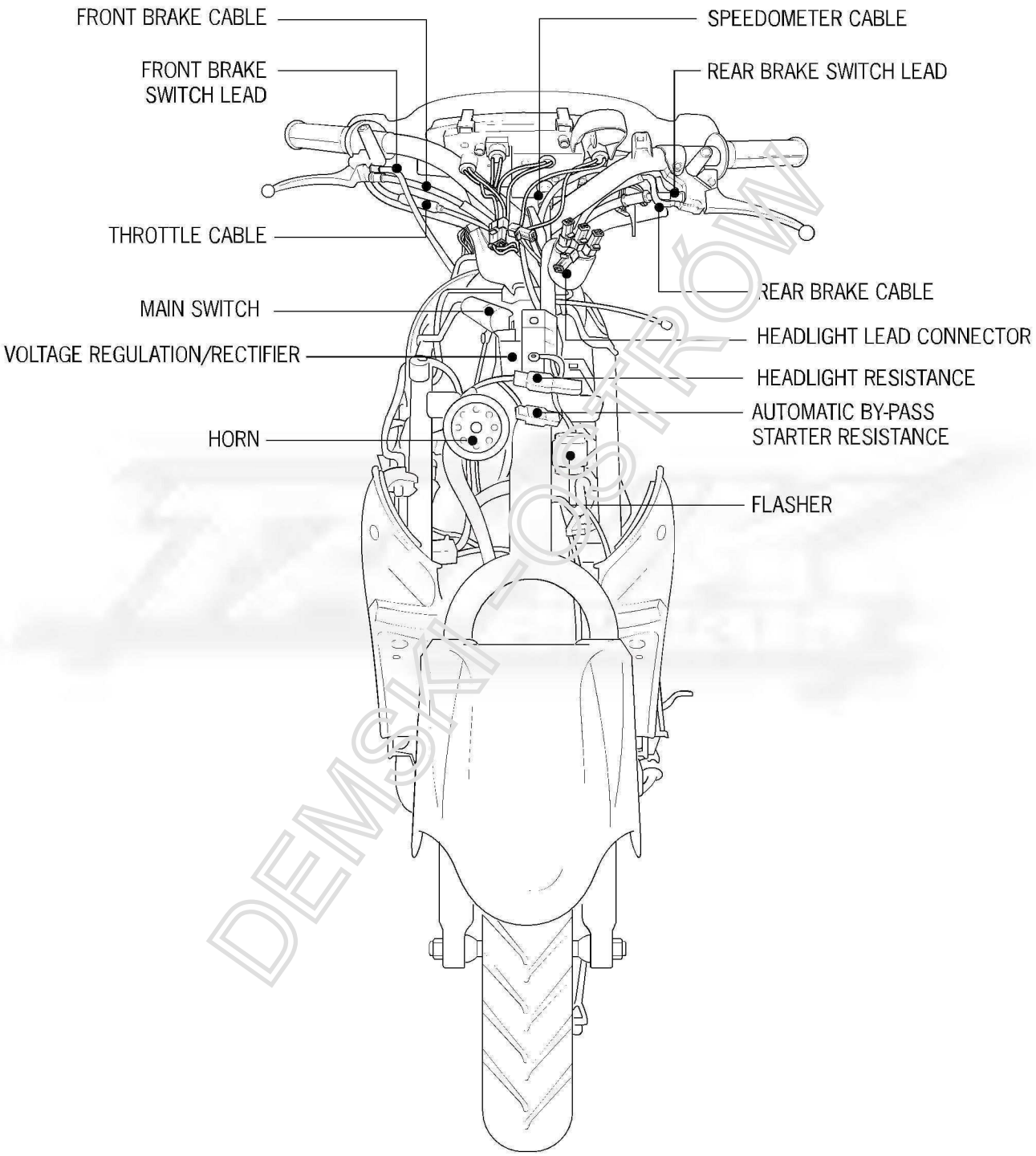
Chassis

•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.

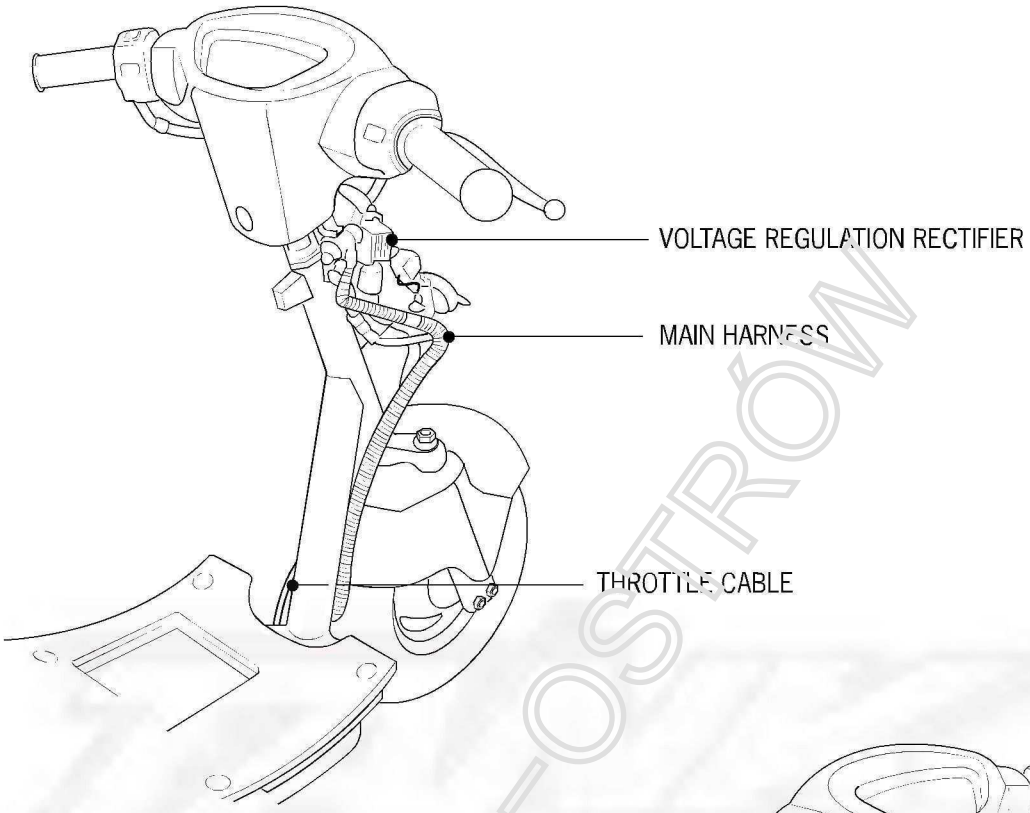


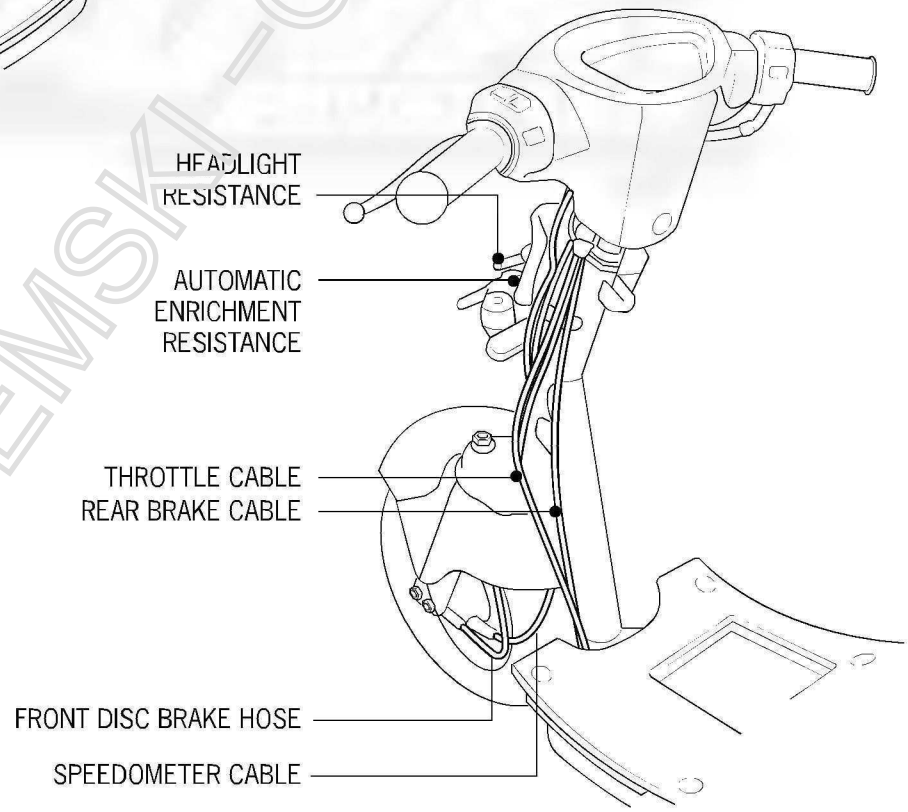
1. General Information

Cable Routing Diagram

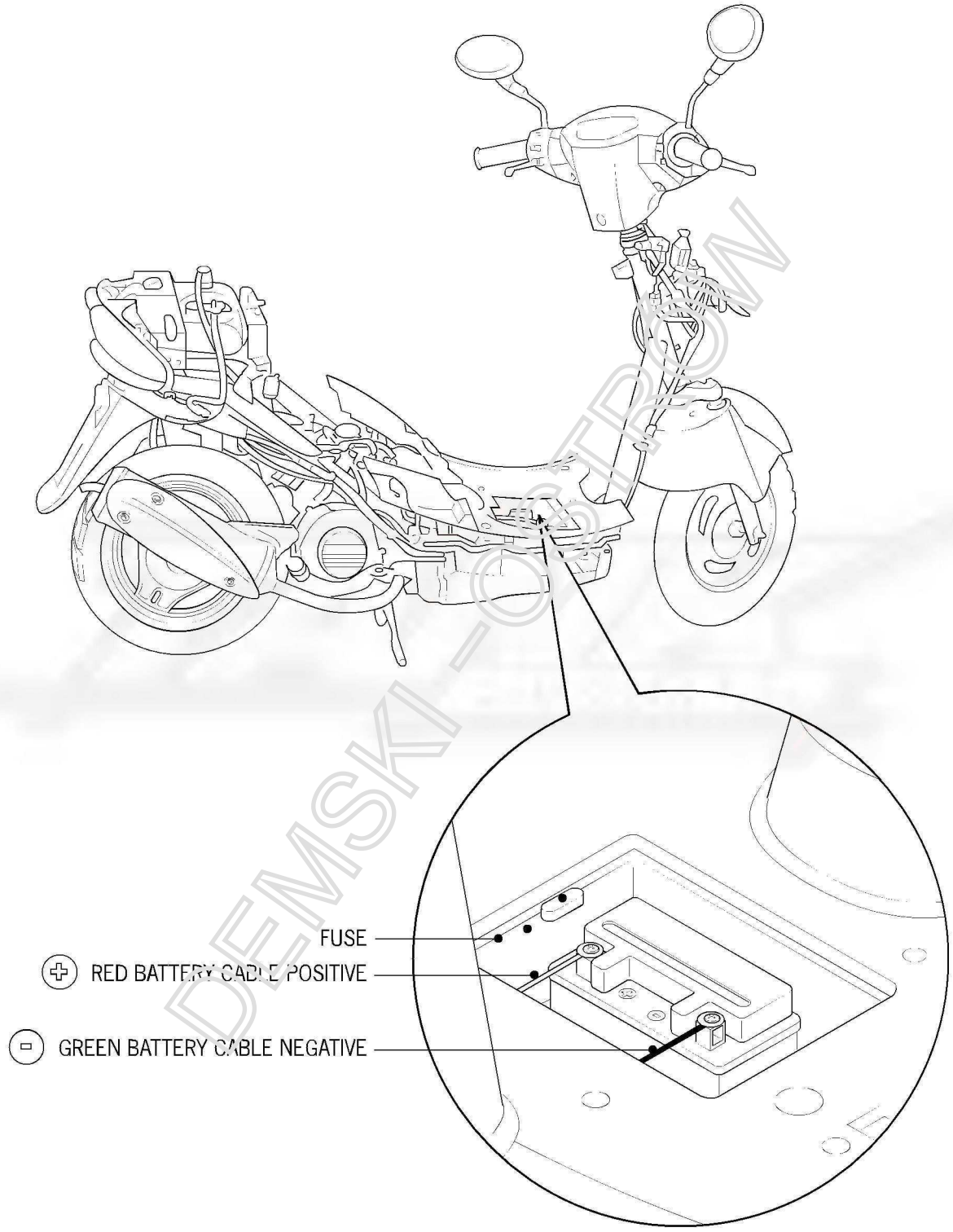


1. General Information

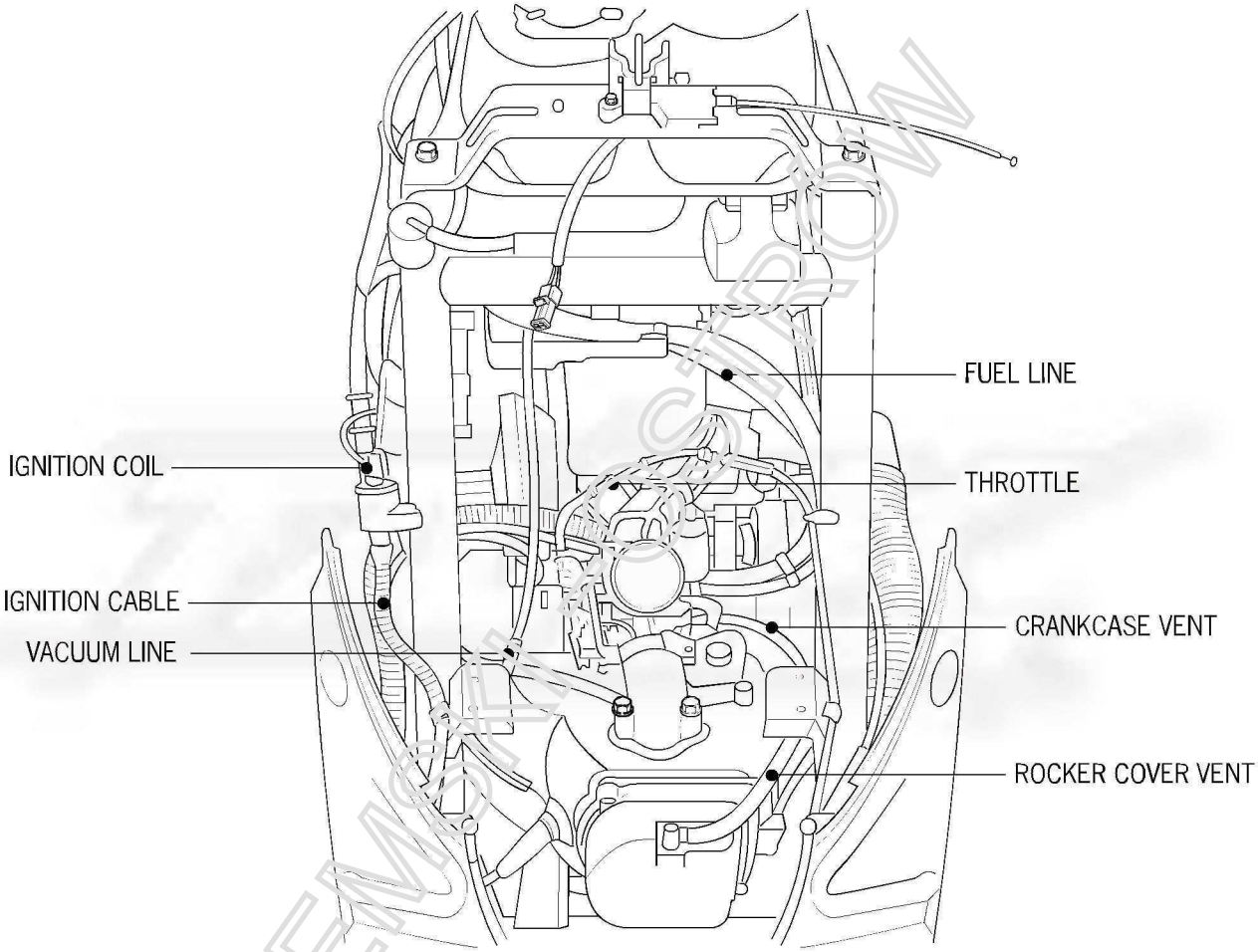




1. General Information



1. General Information



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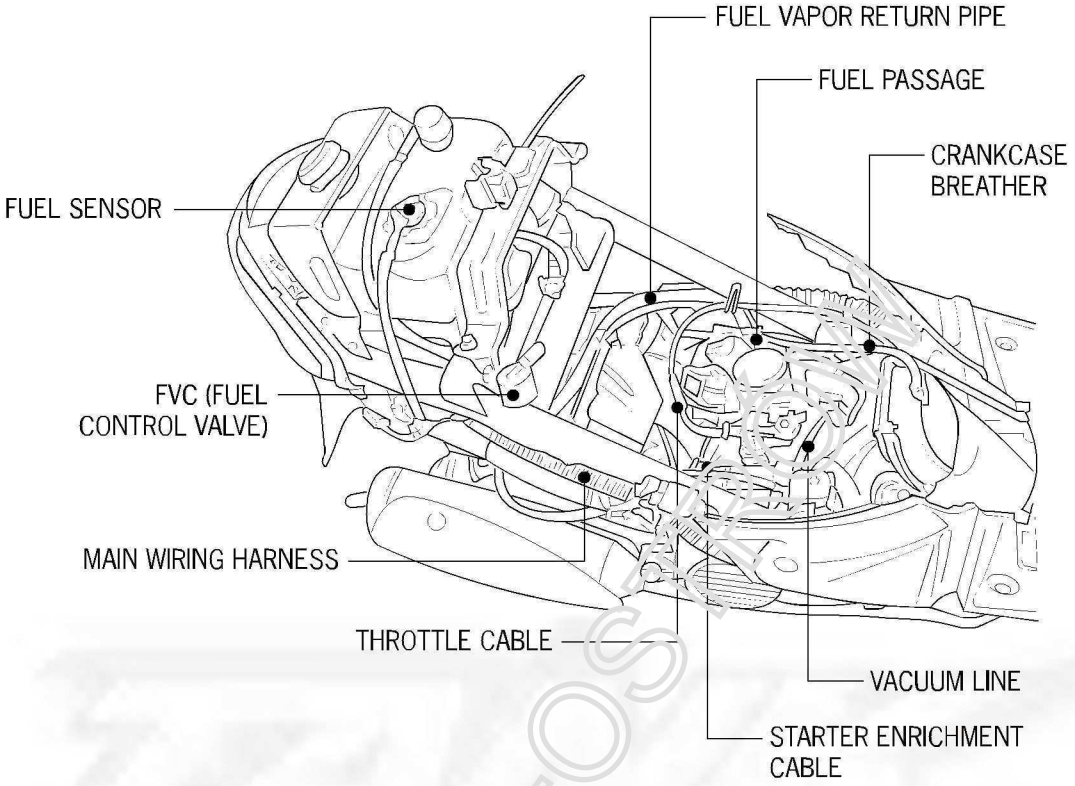
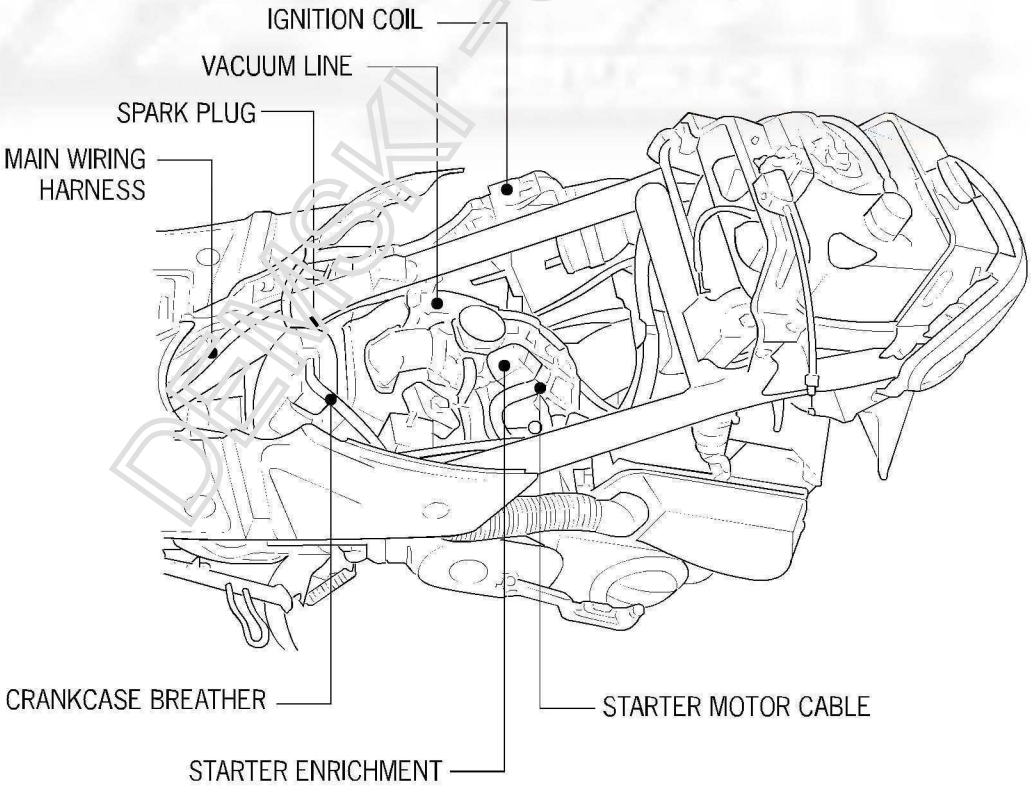
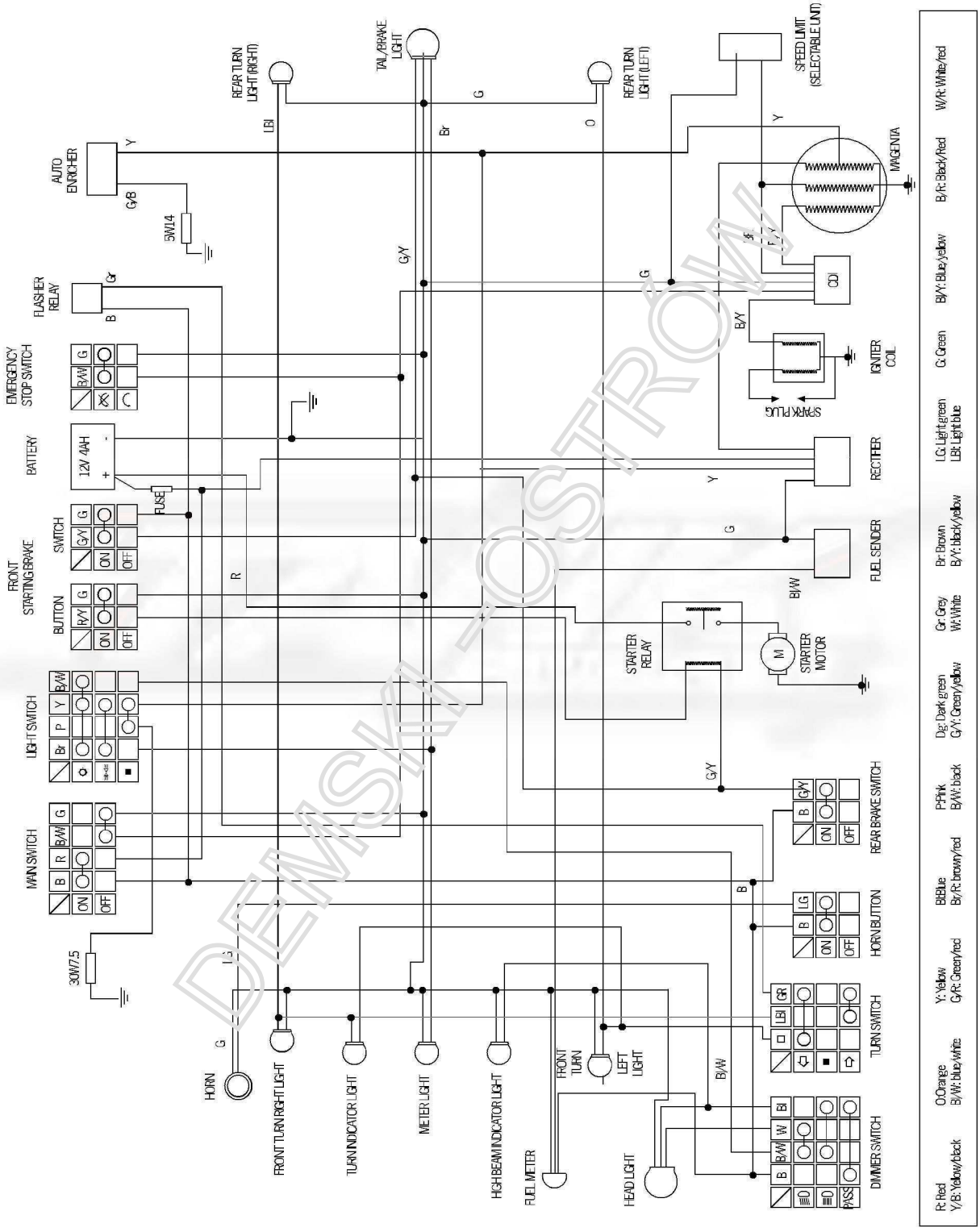


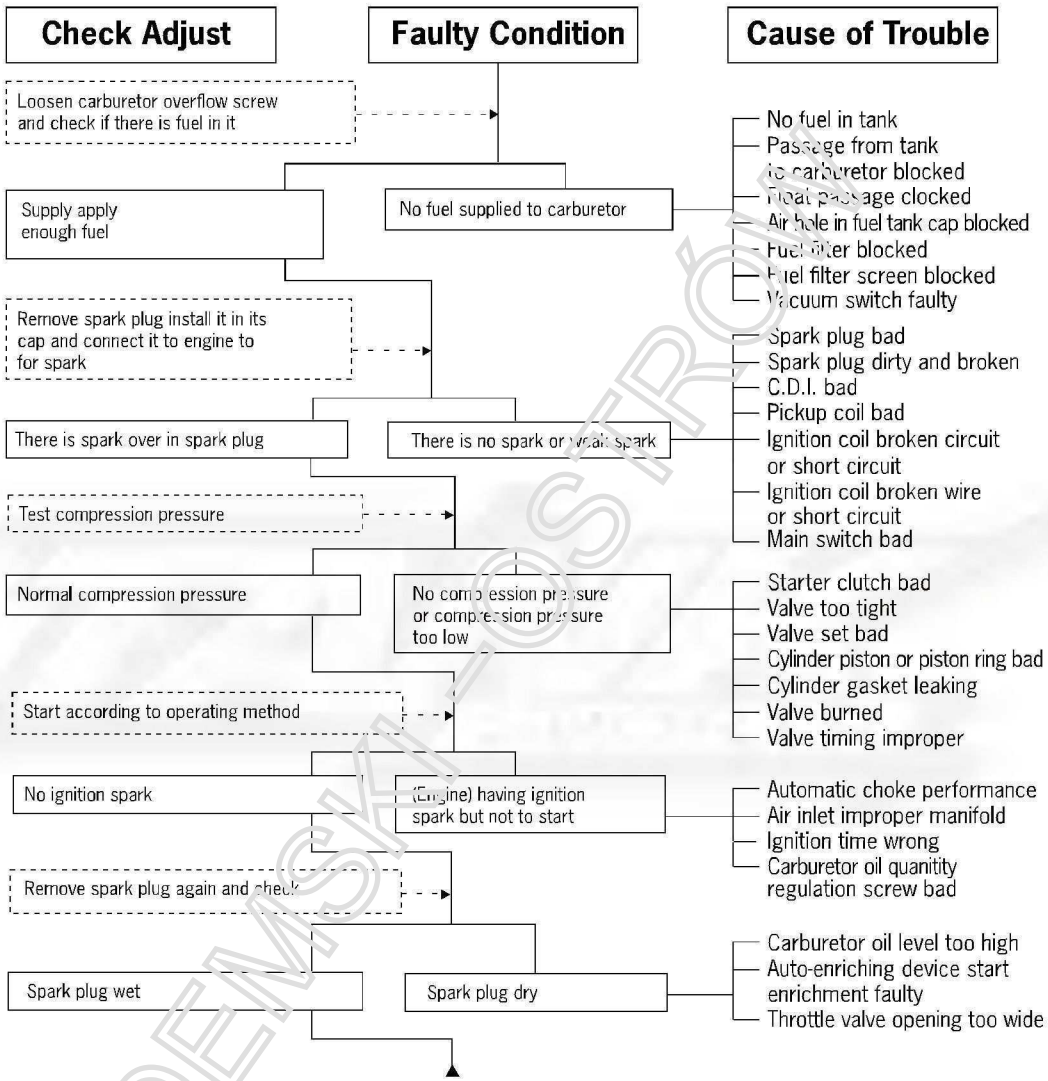


1. General Information



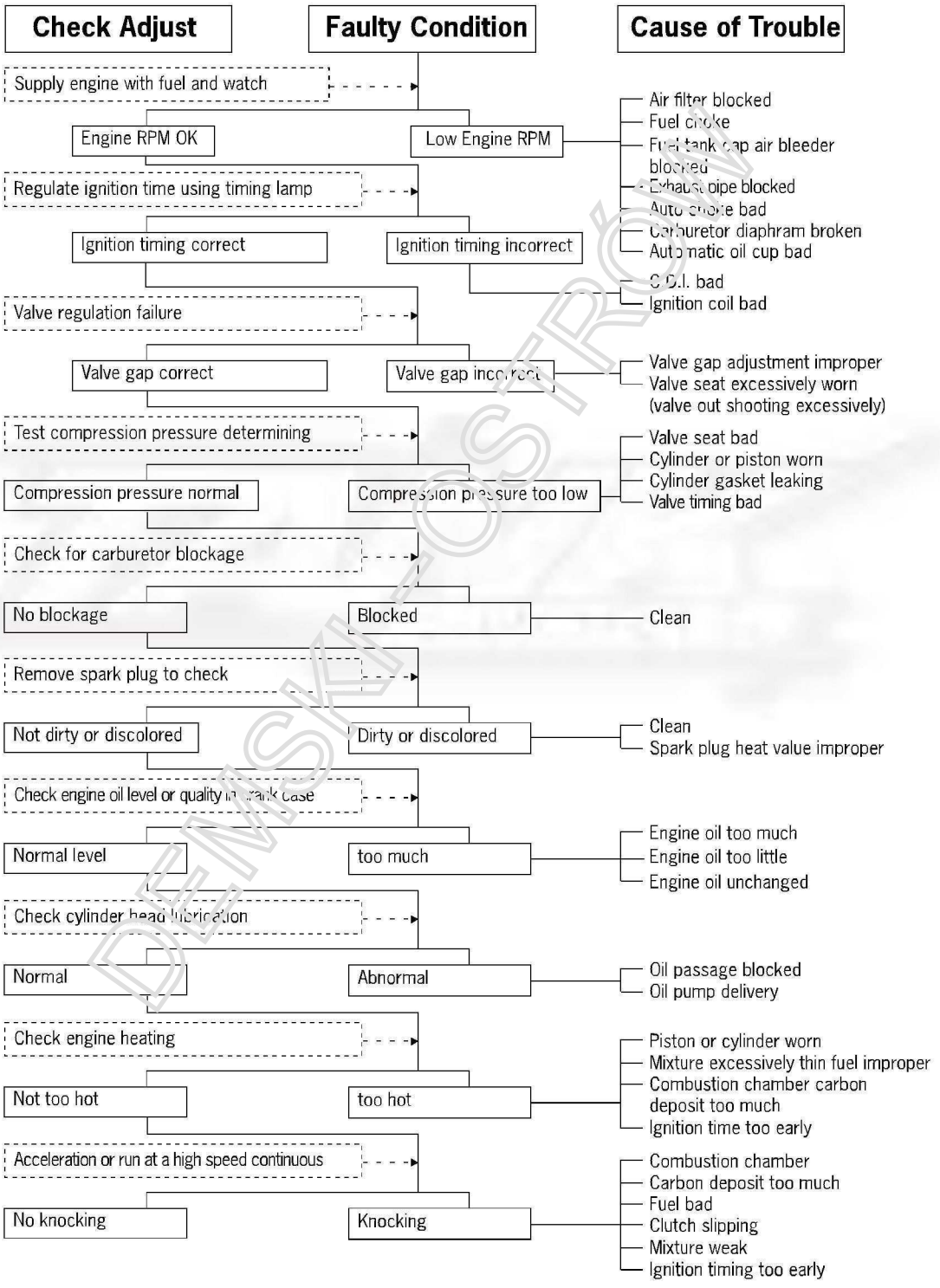
1. General Information

Trouble Shooting Guide
Starter Failure or Hard Starting



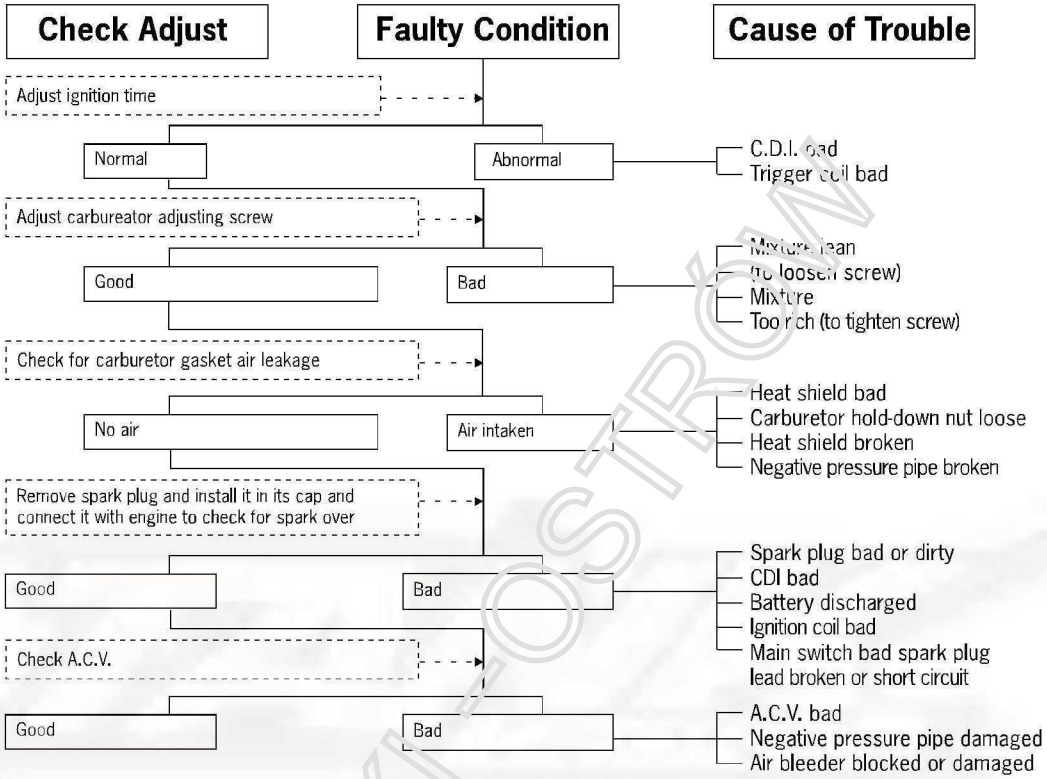
1. General Information

Trouble Shooting Guide (under speed, no power)



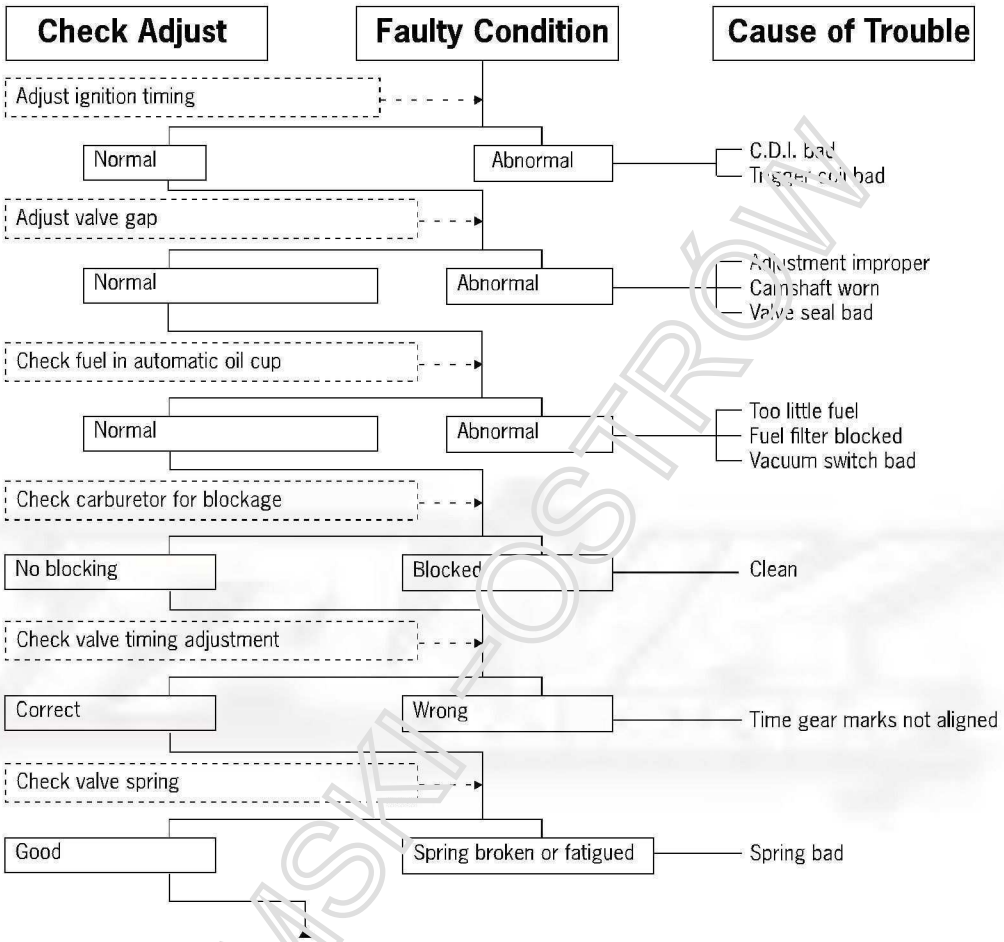
1. General Information

Trouble Shooting Guide (under speed, no power)



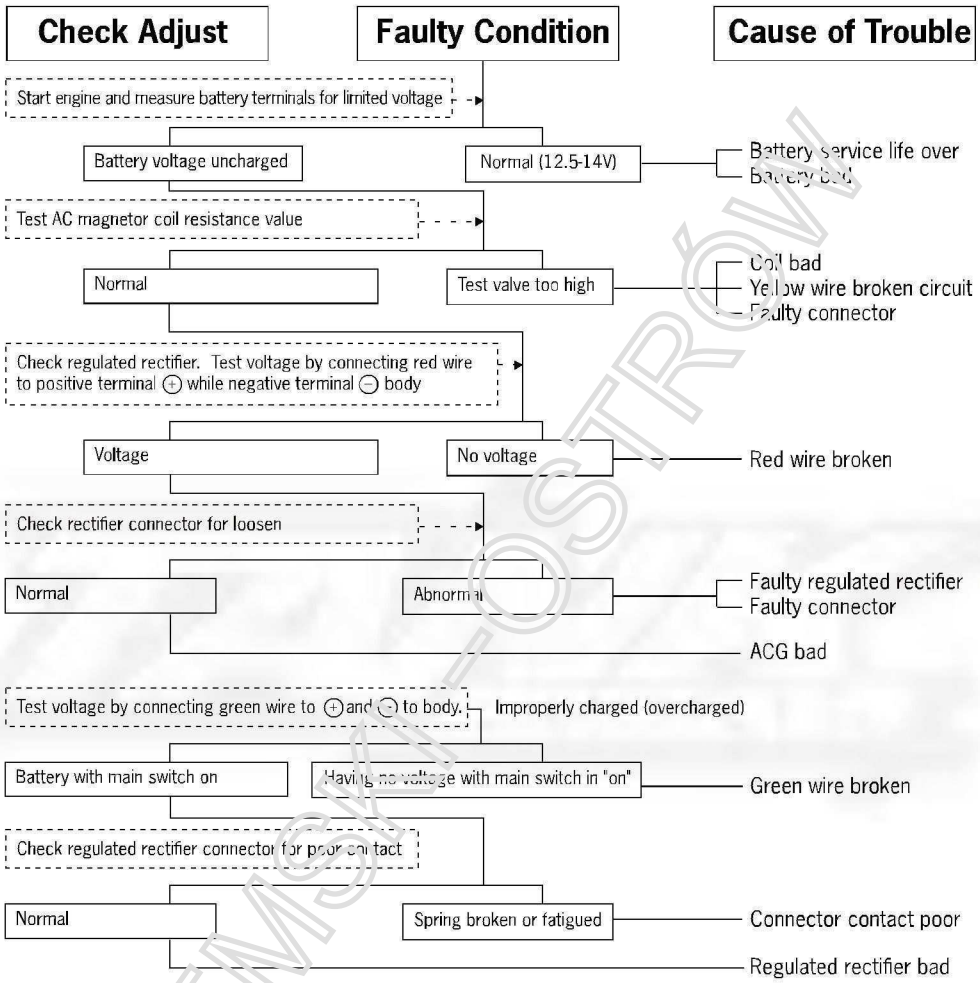
1. General Information

Trouble Shooting Guide (high speed)



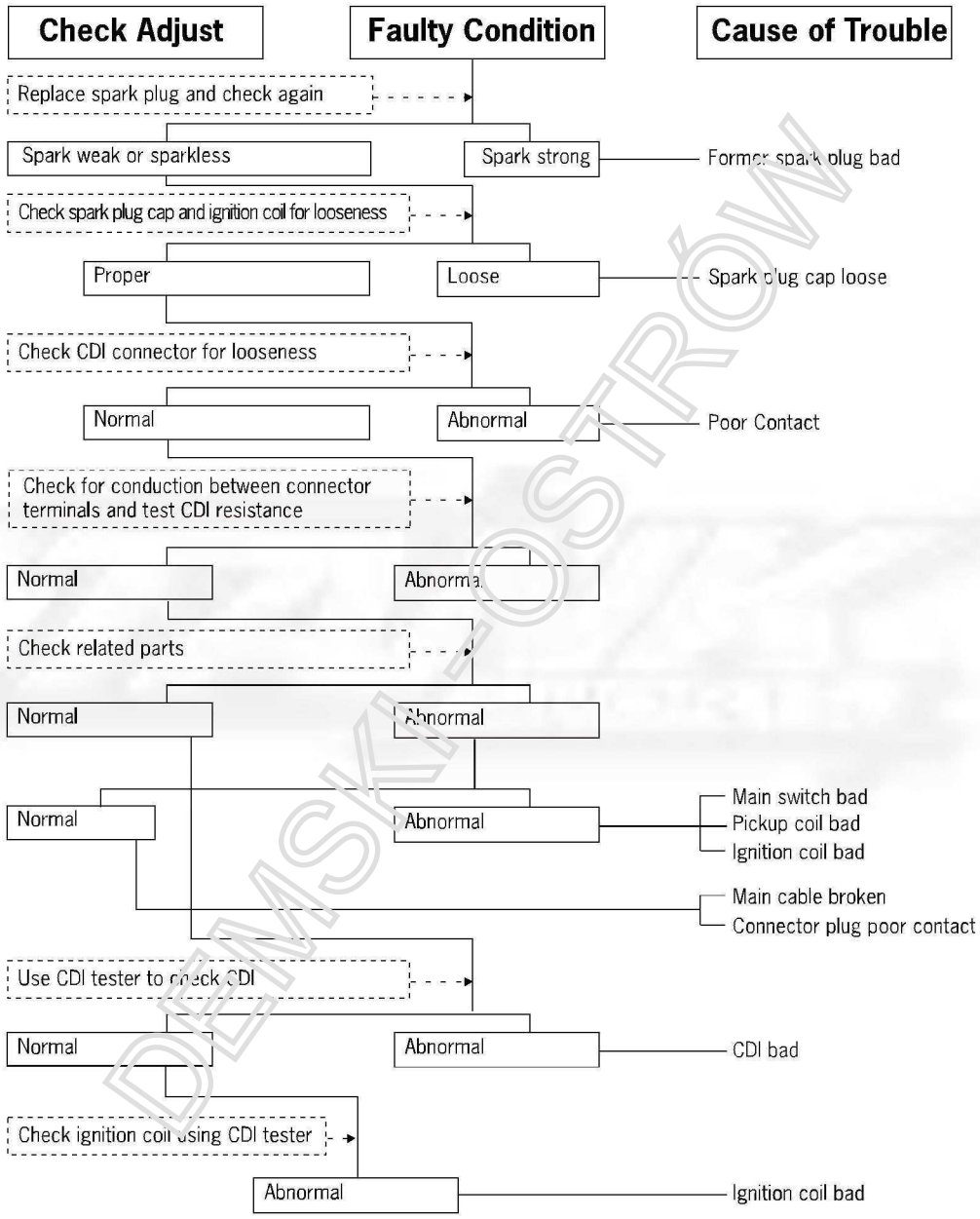
1. General Information

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



1. General Information

Trouble Shooting Guide (no spark)



1. General Information

Body Exploded View

2. Body Cover and Exhaust System

General Information

•Do not use excessive force when removing body panels. Use a firm, consistent force to disengage the tabs and remove the panels.

•Do not pry or pound on the body panels. The mounting tabs are not designed to withstand prying, pounding or twisting.

Parts to be removed and sequence of removal.
•Front headlight and meter cover.
•Back headlight and meter cover.
•Front fender.
•Front body cover.
•Front body panel.
•Seat and helmet box.
•Rear handhold and taillight assembly.
•Footboard cover and battery cover.
•Footboard and rear cover.
•Front frame cover.
•Covers and body side panels.
•Bottom cover.

Torque requirements
•Body mounting nuts and screws 1.2kg-m
•Exhaust pipe bolts 35kg-m

2. Body Cover and Exhaust System

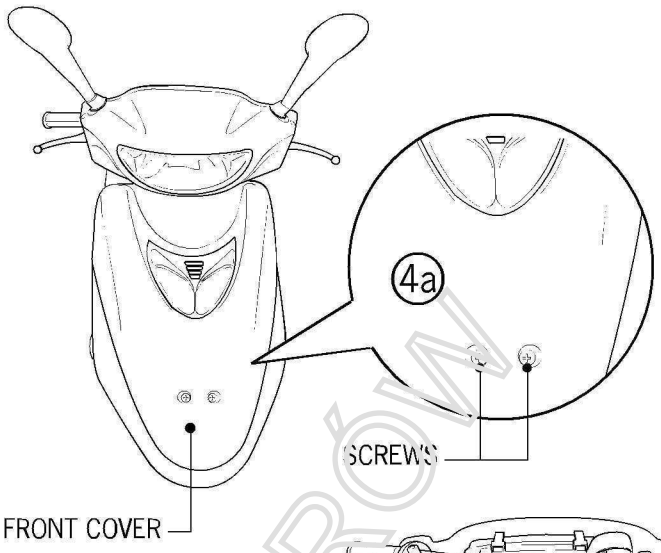
Body Cover Removal

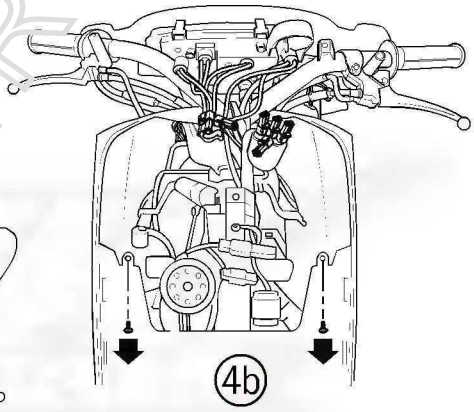
Front Panel Removal

1. Remove one front cover screw from front of panel.
2. Remove two screws on both left and right sides. Remove front panel. Install front panel in the reverse order.

Front Cover Removal

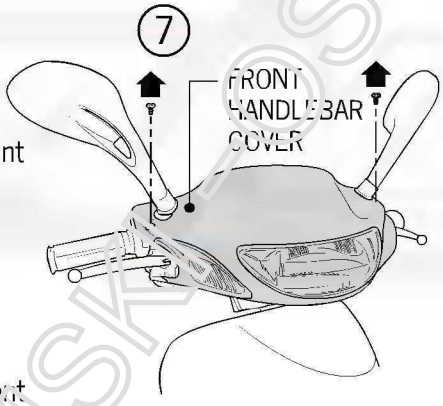
3. Remover rear cover, left and right side covers and front wheel.
4. Remove two screws in front cover (4a).
and remove two screws on each side (left and right) (4b). Remove front cover.
5. Install front cover in the reverse removal order.
6. Make sure to support the scooter while removing the front wheel to prevent it from falling.

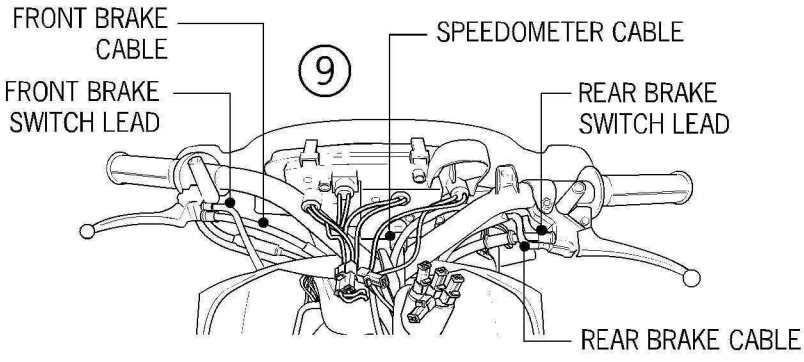




Front and Rear Handlebar Cover Removal

7. Remove two screws on front of handlebar cover and remove one screw in both right and left sides of rear handlebar cover.
8. Disconnect headlight lead and remove front handlebar cover.
9. Disconnect speedometer lead, left and right switches and brake switch connector. Remove one fix screw in rear handlebar cover.
10. Remove the fix screw in each side of rear handlebar cover. Remove rear handlebar cover.
11. Remove the removal order for installation.





2. Body Cover and Exhaust System

Body Cover Removal

1. Remove middle luggage box after opening the seat and removing the four lock nuts.

2. Remove two center cover screws.

3. Remove center cover.

4. Remove left and right cover. (2-3)

5. Remove three rear-rack screws.

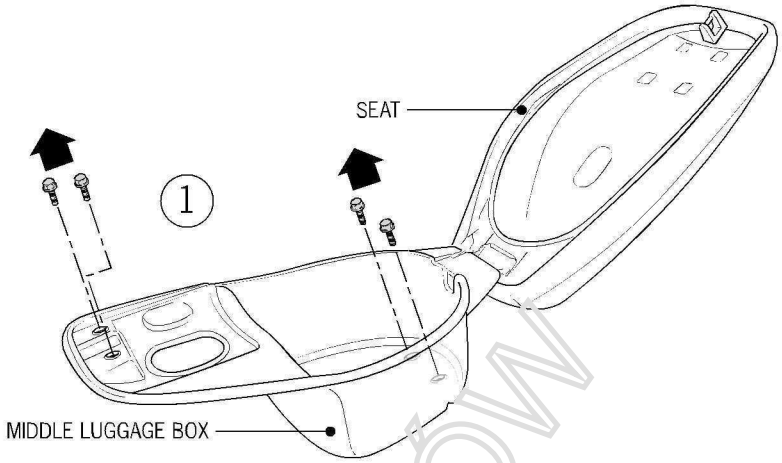
6. Remove rear rack.

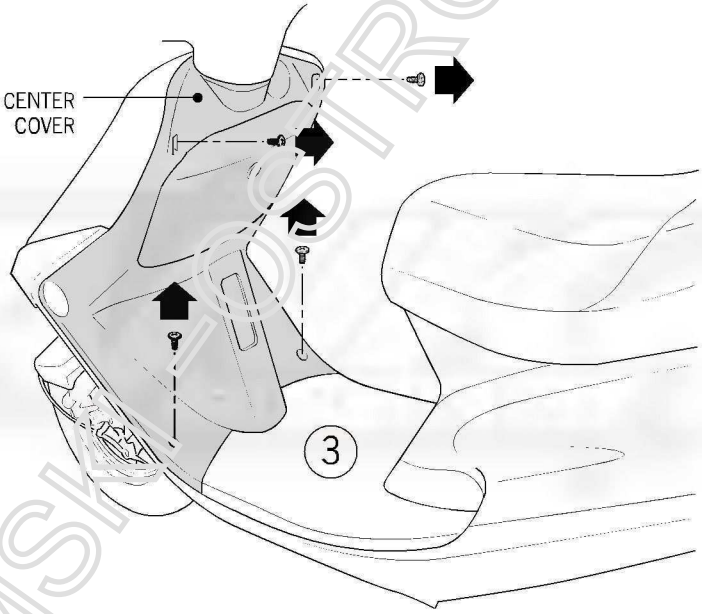
7. Remove screws in rear of body panel.

8. Remove the two screws in the front of the body panel.

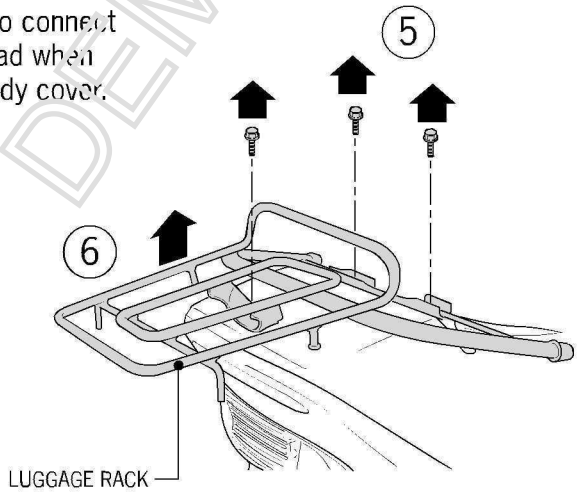
9. Disconnect seat lock lead.

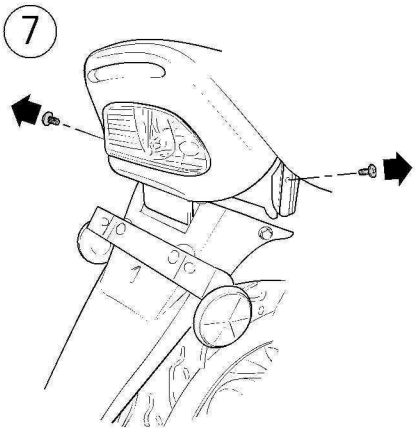
10. Remove the removal order for installation.





Make sure to connect seat lock lead when installing body cover.





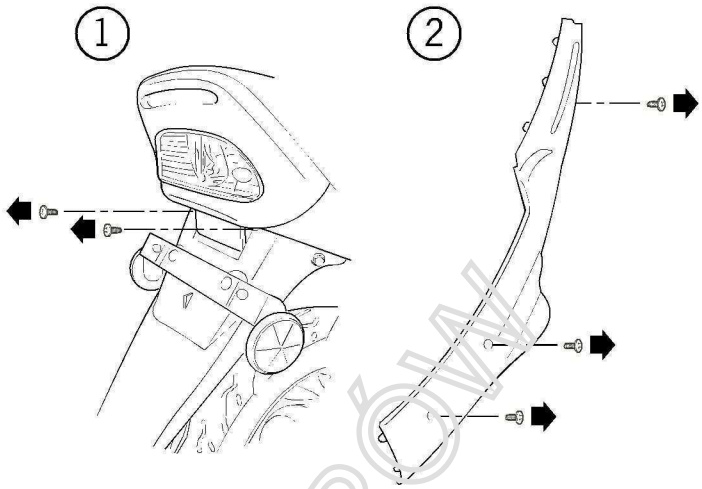
2. Body Cover and Exhaust System

Right and Left Side Mold Removal

1. Remove two rear body screws.

2. Remove three screws in either side of mold.

3. Remove left and right side panels.



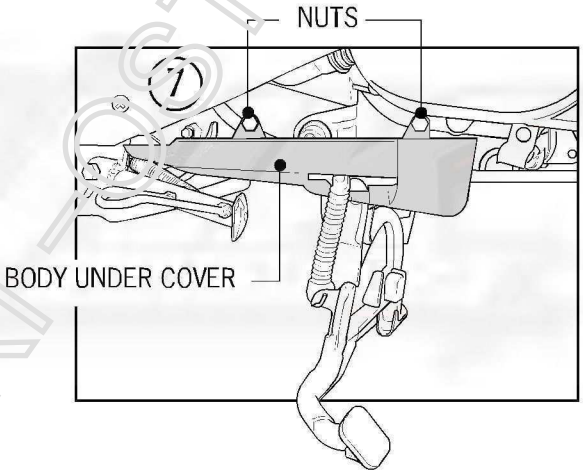
Body under Cover Removal

5. Remove rear body panel.

6. Remove left and right side panels.

7. Remove two nuts in either side of body under cover.

8. Remove body cover.



Floor Panel Removal

1. Remove battery cover, disconnect battery lead and dismount battery.

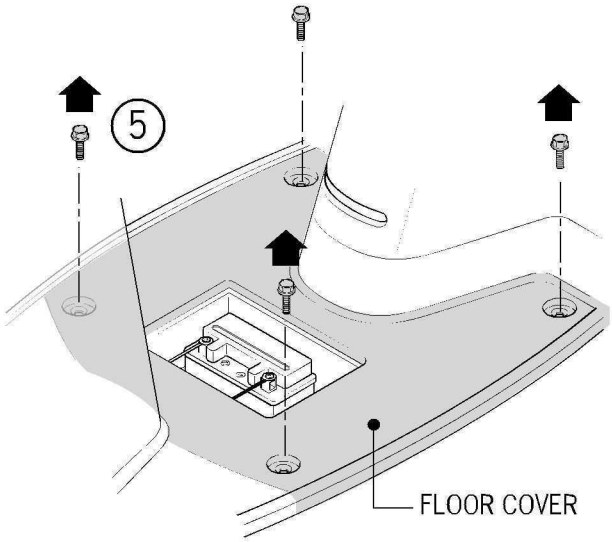
2. Disconnect C.D.I. wire and take it out of battery box.

3. Remove body cover.

4. Remove the speed-limiting governor.

5. Remove four check bolts in the floor panel.

6. Remove floor panel.



2. Body Cover and Exhaust System

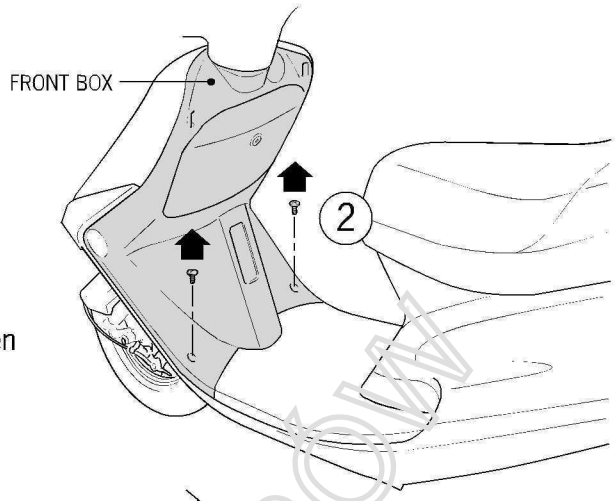
Front Box Removal

1. Remove front cover and front panel.

2. Remove two catch bolts in the front of the floor panel.

3. Remove the front box catch bolt.

4. Remove main switch outer ring and then remove front box outwardly and upwardly.



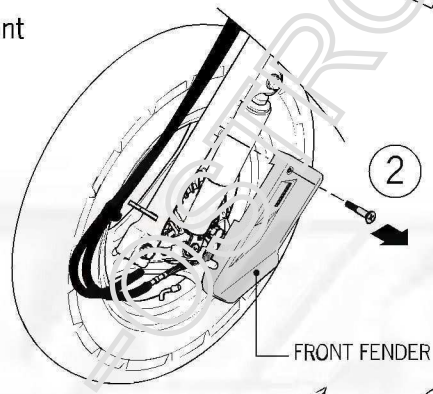
Front and Rear Fenders Removal

1. Remove the two fix screws in the front fender.

2. Dismount the front fender.

3. Remove the two catch bolts in the rear fender stay.

4. Remove the rear fender stay.



Exhaust Pipe Removal

1. Remove the two nuts in the pipe joint.

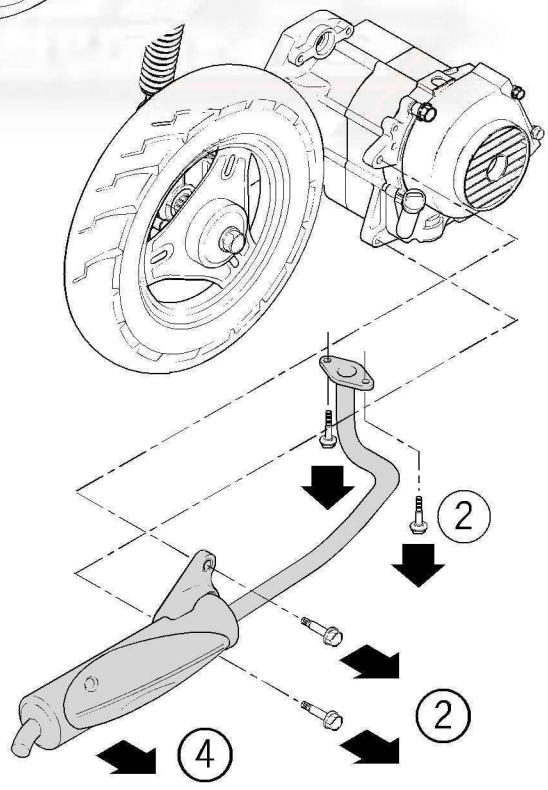
2. Remove the two pipe catch bolts.

3. Remove the exhaust pipe.

4. Remove the joint ring.

•Install exhaust pipe joint ring before installing exhaust pipe
•Install exhaust pipe joint nuts and fasten them and then install exhaust pipe catch bolts and fasten them.

Torque:
•Exhaust pipe catch bolt 3.5kg/m
•Exhaust pipe joint jam nut 1.2kg/m
•Use a new exhaust pipe carrier ring when reassembling the exhaust system.



3. Scheduled Maintenance

General Information

Warning
Always make sure you are in a well-ventilated area before the engine starts. Never start the engine in an enclosed area. Gasoline powered engine exhaust fumes are poisonous and can cause loss of consciousness and death. Do not smoke or allow open flames or sparks in or near the area where refueling is performed or where gasoline is stored.