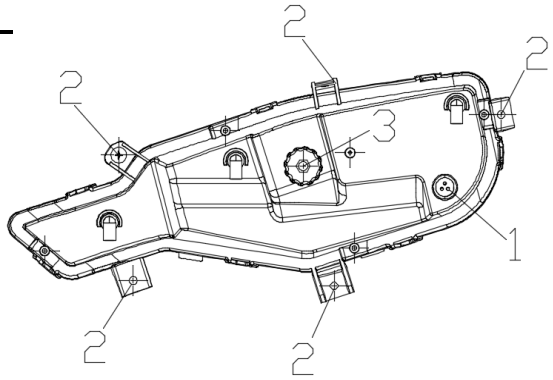
CHAPTER 8 ELECTRICAL

8.1 PARTS INSPECTION AND SERVICE

HEADLIGHT LAMP REPLACEMENT
ATV300-T3



1. Use LED light sources. High beam: 12V 7.8w;Low beam:12V 7.2w;Side Light:12V 2.4w.
2. Unplug the lamp (1)from the harness.
3. Loosen the five fastening screws(2), remove the lamp and replace it with a new headlamp assembly.

HEADLIGHT ADJUSTMENT

1. The headlight beam can be adjusted vertically. High beam and low beam can only be adjusted simultaneously.

2. Place the vehicle on a level surface with the headlight approximately 25'(7.6m) from a wall.
3. Measure the distance from the floor to the center of the headlight and make a mark on the wall at the same height.
4. Start the engine and turn the headlight switch to high beam.
5. Observe headlight aim. The most intense part of the headlight beam should be aimed 2' (51mm) below the mark placed on the wall in step 2. NOTE : Riding weight must be included on the seat.

6. Loosen(3) but not remove pivot bolt/ screw and adjust beam to desired position. The upper and lower adjustment range is ±3°

7. Tighten nut and bolt / screw.

8.2 BATTERY

Battery electrolyte is poisonous. It contains sulfuric acid. Serious burns can result from contact with skin, eyes or clothing Antidote:
External: Flush with water.

Internal: Drink large quantities of water or milk. Follow with milk of magnesia, beaten egg, or vegetable oil. Call physician immediately.

Eyes: Flush with water for 15 minutes and get prompt medical attention.

Batteries produce explosive gases. Keep sparks, flame, cigarettes, etc. away. Ventilate when charging or using in an enclosed space. Always shield eyes when working near batteries.
KEER OUT OF REACH OF CHILDREN

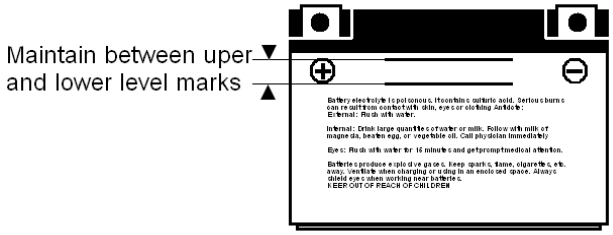
WARNING: The gases given off by a battery are explosive. Any spark or open flame near a battery can cause an explosion which will spray battery acid on anyone close to it. If battery acid gets on anyone, wash the affected area with large quantities of cool water and seek immediate medical attention.

To ensure maximum service life and performance from a new battery, perform the following steps.
NOTE: Do not service the battery unless it will be put into regular service within 30 days. After initial service, add only distilled water to the battery. Never add electrolyte after a battery has been in service.
NOTE: New Battery must be fully charged before use.
1. Remove vent plug from vent fitting.
2. Fill battery with electrolyte to upper level marks on case.
3. Set battery aside and allow it to cool and stabilize for 30 minutes.
4. Add electrolyte to bring level back to upper level mark on case.

NOTE: This is the last time that electrolyte should be added. If the level becomes low after this point, add only distilled water.
5. Charge battery at 1 /10 of its amp /hour rating. Examples: 1 /10 of 14 amp battery = 1.4 amp; 1/10 of 7 amp battery = 0.7 amp (recommended charging rates).
6. Check specific gravity of each cell with a hydrometer to assure each has a reading of 1.270 or higher.

BATTERY INSPECTION / REMOVAL

The battery is located under the left rear fender. Inspect the battery fluid level. When the battery fluid nears the lower level, the battery should be removed and distilled water should be added to the upper level line. To remove the battery:
1. Disconnect holder strap and remove cover.
2. Disconnect battery negative (-) (black) cable first,
followed by the positive (+) (red) cable.



CAUTION

Whenever removing or reinstalling the battery, disconnect the negative (black) cable first and reinstall the negative cable last!
3. Disconnect the vent hose.
4. Remove the battery.
5. Remove the filler caps and add *distilled water only* as needed to bring each cell to the proper

level.
Do not overfill the battery.

To refill use only distilled water. Tap water contains minerals which are harmful to a battery. Do not allow cleaning solution or tap water to enter the battery. It will shorten the life of the battery.

5. Reinstall the battery caps.

BATTERY INSTALLATION

1. Clean battery cables and terminals with a stiff wire brush. Corrosion can be removed using a solution of one cup water and one tablespoon baking soda. Rinse with clean water and dry thoroughly.
2. Reinstall battery, attaching positive (+) (red) cable first and then the negative (-) (black) cable.
3. Install clear battery vent tube from vehicle to battery vent.

WARNING: Vent tube must be free from obstructions and kinks and securely installed. If not, battery gases could accumulate and cause an explosion. Vent should be routed away from frame and body to prevent contact with electrolyte. Avoid frame, corrosion will occur.

4. Route cables so they are tucked away in front and behind battery.
5. Reinstall battery cover and holder strap.

Do not start the engine with the battery disconnected. Vehicle lamps will burn out if battery is disconnected during vehicle operation. Also, the reverse speed limiter can be damaged.

BATTERY TESTING

Whenever a service complaint is related to either the starting or charging systems, the battery should be checked first.
Following are three tests which can easily be made on a battery to determine its condition: OCV Test, Specific Gravity Test and Load Test.

MF (Maintenance Free) battery does not require the Specific Gravity Test and Refill

Open Circuit Voltage Test

Battery voltage should be checked with a digital multitester. Readings of 12.6 or less require further battery testing and charging.
NOTE: Lead acid batteries should be kept at or near a full charge as possible.

Load test

CAUTION: Remove spark plug high tension leads and connect securely to engine ground before proceeding.
NOTE: This test can only be performed on machines with electric starters. This test cannot be performed with an engine or starting system that is not working properly.
A battery may indicate a full charge condition in the OCV test and the specific gravity test, but still may not have the storage capacity necessary to properly function in the electrical system. For this reason, a battery capacity or load test should be conducted whenever poor battery performance is encountered. To perform this test, hook a multitester to the battery in the same manner as was done in the OCV test. The reading should be 12.6 volts or greater. Engage the electric starter and view the registered battery voltage while cranking the engine. Continue the test for 15 seconds. During this cranking period, the observed voltage should not drop below 9.5 volts. If the beginning voltage is 12.6 or higher and the cranking voltage drops below 9.5 volts during the test, replace the battery.

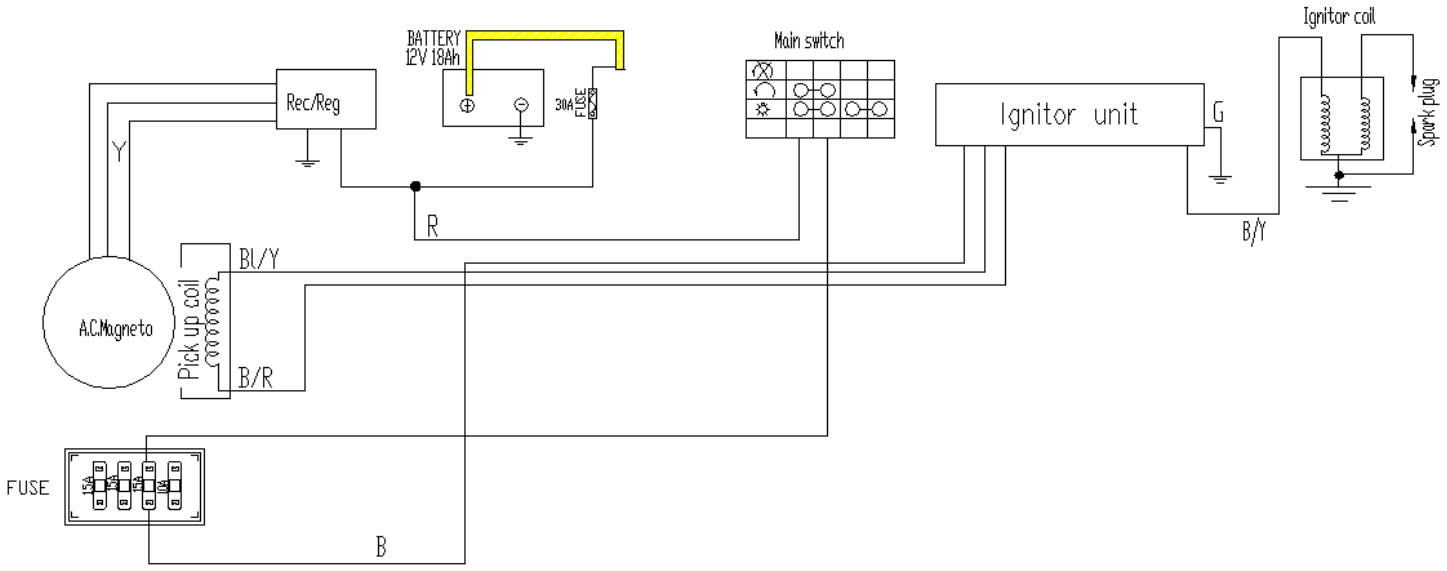
8.3 IGNITION SYSTEM

IGNITION SYSTEM TROUBLESHOOTING

No Spark, Weak or Intermittent Spark

- Spark plug gap incorrect
- Fouled spark plug
- Faulty spark plug cap or poor connection to high tension lead
- Related wiring loose, disconnected, shorted, or corroded
- Ignition switch faulty
- Terminal board or connections wet, corroded
- Poor ignition coil ground (e.g. coil mount loose or corroded)
- Faulty stator (measure resistance of all ignition related windings)
- Incorrect wiring (inspect color coding in connectors etc.)
- Faulty ignition coil winding (measure resistance of primary and secondary)
- Worn magneto (RH) end crankshaft bearings
- Sheared flywheel key
- Flywheel loose or damaged
- Trigger coil air gap too wide (where applicable) should be 0.030-0 .050" (0. 75-1.25 mm)
- Excessive crankshaft run out on magneto (RH) end should not exceed 0.005" (0.13mm)
- Faulty ECU model

CIRCUIT DIAGRAM



IF THE IGNITION SYSTEM FAILS TO OPERATE

Procedure

Check:

1. Fuse (Main)
2. Battery
3. Spark plug
4. Ignition spark gap
5. Spark plug cap resistance
6. Ignition coil
7. Pickup coil resistance
8. Main switch
9. Wiring connection (entire ignition system)

1.Fuse → NO → CONTINUITY

Replace the fuse.

Check switches

⇩ CONTINUITY

2. Battery → INCORRECT

- Check the battery condition.

Refer to "BATTERY INSPECTION"

- Clean battery terminals.
- Recharge or replace the battery.

⇩ CORRECT

Standard spark plug: DR8EA / NGK

3.Spark plug → OUT OF SPECIFICATION

- Check the spark plug condition.
- Check the spark plug type.
- Check the spark plug gap.

Repair or replace the spark plug

Spark plug gap: 0.6 ~ 0.7mm

⇩

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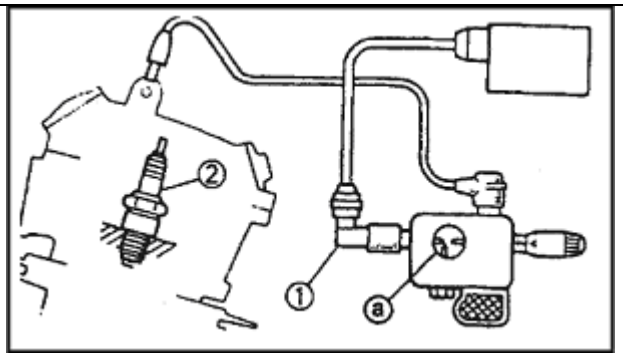
⇩

4.Ignition spark gap

● Disconnect the spark plug cap from the spark plug

●Connect the ignition tester 1 as shown.
2 Spark plug
●Turn the main switch to "ON".
●Check the ignition spark gap .
●Check the spark by pushing the starter switch, and increase the spark gap until a misfire occurs.



MEETS SPECIFICATION

The ignition system is not faulty.

Minimum spark gap: 6mm (0.24 in)

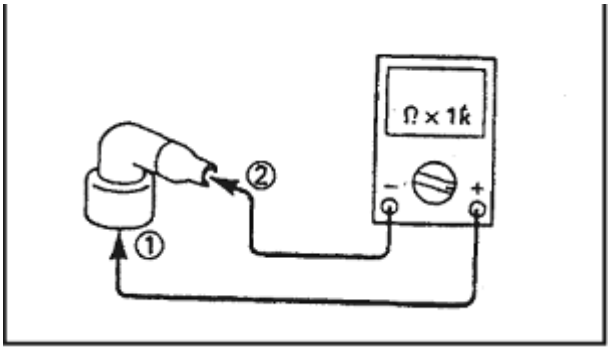
⇩ OUT OF SPECIFICATION OR NO SPARK

5.Spark plug cap resistance

●Remover the spark plug cap.

●Connect the pocket tester (ΩX1 k) to the spark plug cap.
NOTE:
● When removing the spark plug cap. do not pull the spark plug cap from high tension cord.
●Remove→Turning counterclockwise
●Connect→Turning clockwise.
●Check the high tension cord when connecting the spark plug cap.
● When connecting the spark plug cap, cut the high tension cord about 5mm.

Tester (+) lead →
Spark plug side①
Tester (—) lead→
High tension cord side ②



OUT OF SPECIFICATION

Replace the spark plug wire

Spark plug wire resistance: 5KΩ(20 ℃)

⇩ CORRECT

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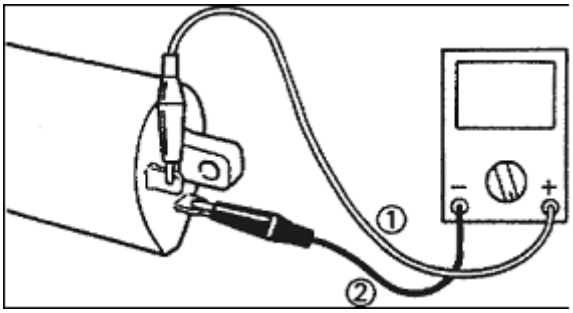
6. Ignition coil resistance

Disconnect the ignition coil connector from the wire harness.

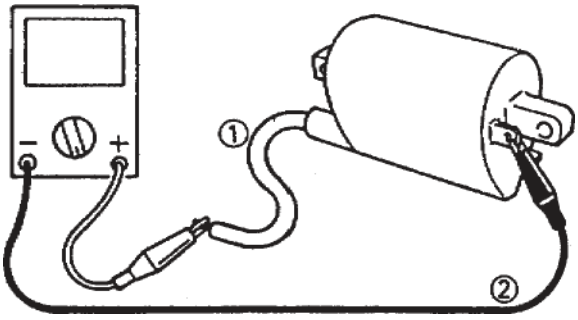
- Connect the pocket tester (1) to the ignition coil.
- Check if the primary coil has the specified resistance.

Primary coil resistance: 3.6-4.8Ω(20 ℃)

Tester (+) lead
Pink Terminal
Tester ( ) lead B/Y
Terminal



Tester (+) lead
Spark plug lead
Tester (—) lead
Pink Terminal



- Connect the pocket tester (Ω×1k) to the ignition coil.
- Check the secondary has the specified resistance

Secondary coil resistance: 10.7-14.5 KΩ (20℃)

OUT OF SPECIFICATION

⇩

Replace the ignition coil.

⇩ BOTH MEET SPECIFICATION

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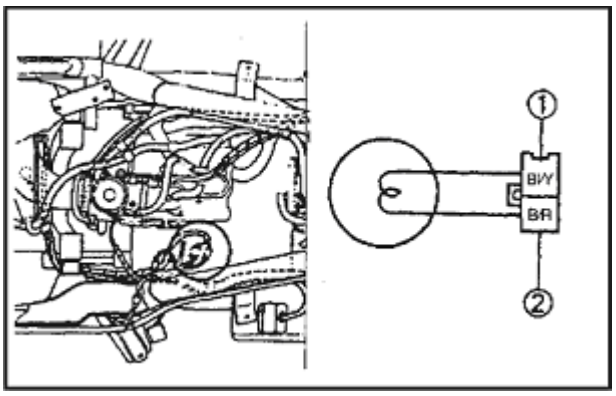
7. Pickup coil resistance

● Disconnect the pickup coil coupler from the wire harness.
●Connect the pocket tester (Ω 100) to the pickup coil coupler.



Tester (+) lead →

BI/Y Terminal ①

Tester (-) lead→

B/R Terminal ②

OUT OF SPECIFICATION

● Check the pickup coil has the specified resistance.

Primary coil resistance:
168 -252Ω (20℃)

Replace the pickup coil.

MEETS SPECIFICATION

8.Main switch

CHECK SWITCHES

NO CONTINUITY

Replace the main switch

CONTINIUTY

NO CONTINUITY

9.Wiring connection

●Check the connection of the entire ignition system
Refer to “CIRCUIT DIAGRAM”.

POOR CONNECTIONS

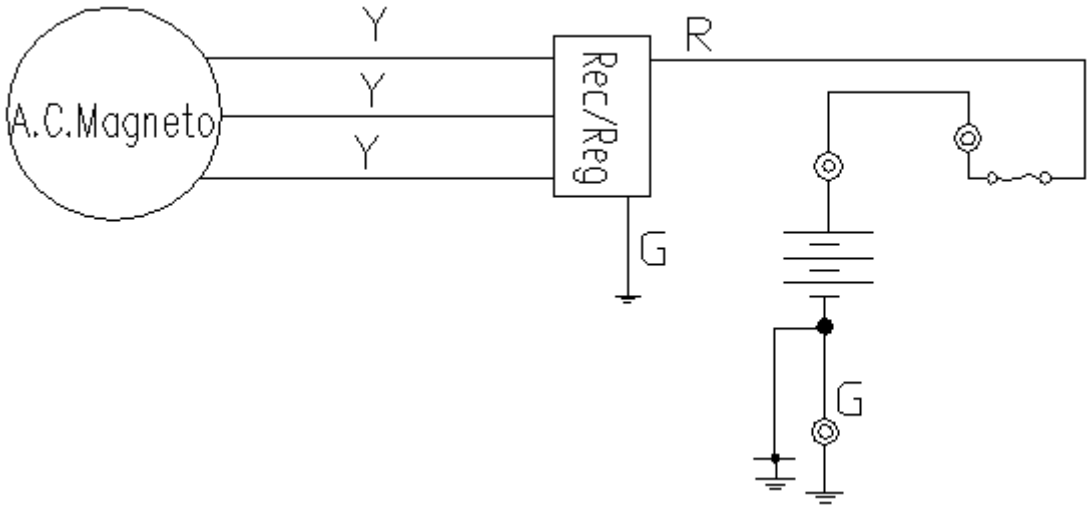
Correct

CORRECT

Replace the igniter unit.

8.4 CHARGING SYSTEM

CHARGING SYSTEM CIRCUIT DIAGRAM

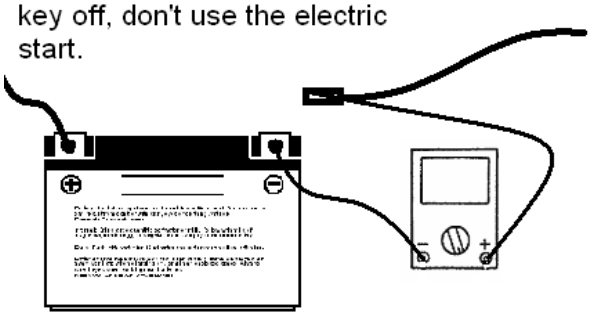


CURRENT DRAW - KEY OFF

CAUTION: Do not connect or disconnect the battery cable or ammeter with the engine running. Damage will occur to light bulbs and speed limiter.
Connect an ammeter in series with the negative battery cable. Check for current draw with the key off, if the draw is excessive, loads should be disconnected from the system one by one until the draw is eliminated. Check component wiring as well as the component for partial shorts to ground to eliminate the draw.

Current draw key off:
Maximum of 0.01DCA(10mA)

key off, don't use the electric start.



CHARGING SYSTEM

Procedure

Check:

1. Fuse (Main)
2. Battery
3. Charging voltage
4. Stator coil resistance
5. Wiring system (entire charging system)

1. fuse

NO CONTINUITY

Replace the fuse

2. Battery

Check the battery condition.
Refer to "BATTERY INSPECTION"

INCORRECT

Clean battery terminals
Recharge or replace the battery

3. Charging voltage

Connect the engine tachometer to the spark plug lead.

- Connect the pocket tester (DC20V) to the battery

Test (+) lead→
Battery (+) terminal ①
Tester (-) lead→
Battery (-) terminal ②

Measure the battery terminal voltage.
start the engine and accelerate to about 5,000rpm

- check the terminal voltage

Measured voltage-terminal Voltage:
0.2-2.5V up

NOTE: Use a fully changed battery.

MEETS SPECITICATION

The charging circuit is not faulty
Replace the battery

OUT OF SPECICATION

4. Starter coil resistance
Remove the A.C. magneto coupler from wire harness
Connect the pocket tester (ΩX1) to the stator coil
Tester (+) lead –yellow terminal
Tester (-) lead –yellow terminal
Measure the stator coil resistance
Stator coil resistance 0.5-0.8Ω（20℃）

OUT OF SPECITICATION

Replace the stator coil

MEETS SPECIFICATION

5.Wiring connection
check the entire charging system for connections
Refer to “CIRCUIT DIAGRAM”

POOR CONNECTION

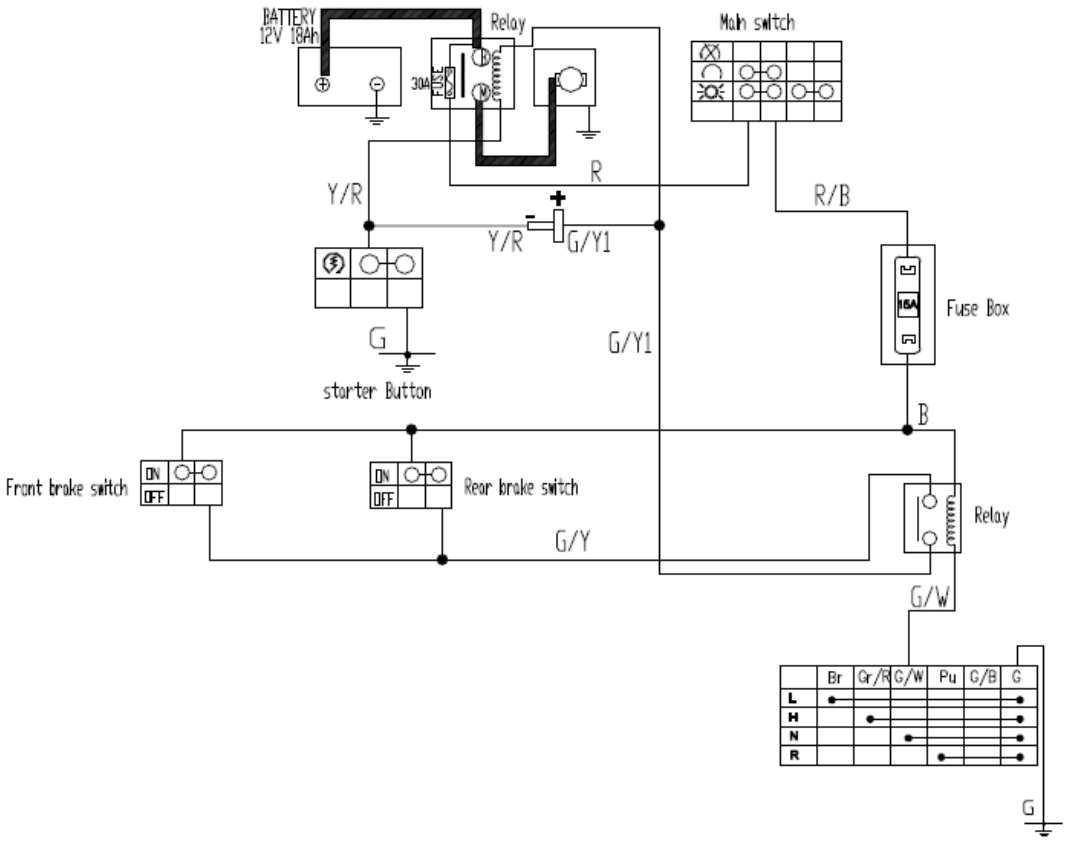
correct

CORRECT

Replace the rectifier/regulator

8.5 ELECTRICS STARTING SYSTEM

DIAGRAM



TROUBLESHOOTING

IF THE STARTER MOTOR FAILS TO OPERATE

Procedure

Check:

1. Fuse (Main)
2. Battery
3. starter motor
4. starter relay
5. starting circuit cut-off relay
6. main switch
7. front/rear brake switch
8. starter switch
9. wiring connection (entire starting system)

1. fuse

refer to “CHECKING SWITCHES” section

NO CONTINUITY → Replace the fuse

2. Battery

Check the battery condition.

Refer to "BATTERY INSPECTION" section in CHAPTER 3

INCORRECT → Clean battery terminals
Recharge or replace the battery

3. Starter motor

Connect the battery positive terminal and starter motor cable using a jumper lead.

Check the starter motor operation

DOES NOT MOVE →

Repair or replace the starter motor

4.Starter relay

●Disconnect the relay unit coupler from the wire harness.

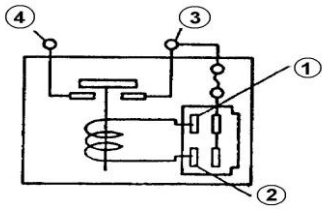
●Connect the pocket tester (Ωx1) and battery (12V) to the relay unit coupler terminals.

Battery (+) lead→
Green/Yellow terminal ①
Battery (-) lead→
Yellow/Red terminal ②

●Check the starter relay for continuity.

Test (+) lead → ③ terminal
Test (-) lead → ④ terminal

WARNING
A wire used as a jumper lead must have the equivalent capacity as that of the battery lead or more, otherwise it may burn.
This check is likely to produce sparks, so be sure that no flammable gas or fluid is in the vicinity



CONTINUITY

Replace the starter replay

5. .Starting circuit cut-off relay

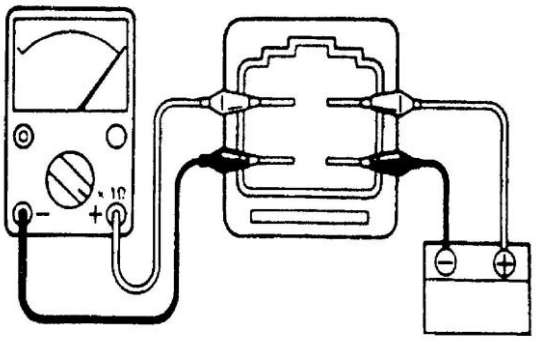
●Disconnect the starting circuit cut-off relay coupler from the wireharness.

●Connect the pocket tester (Ωx1) and battery (12V) to the starting circuit cut-off relay coupler terminals.

Battery (+) lead→ terminal ②
Battery (-) lead→ terminal ④

●Check the starting circuit cut-off relay for continuity.

Test (+) lead → ① terminal
Test (-) lead → ③ terminal

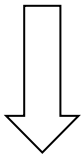


Replace the starting circuit cut-off relay

6. Main switch

CHECK SWITCHES

NO CONTINUITY

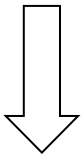


Replace the main switch

7. Front /rear brake switch

CHECKING SWITCHES

NO CONTINUITY

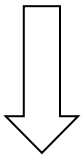


Replace the brake switch

8. Starter switch

CHECKING SWITCHES

NO CONTINUITY



Replace the handlebar switch

9. Wiring connection

Check the connections of the entire starting system.

Refer to “CIRCUIT DIAGRAM

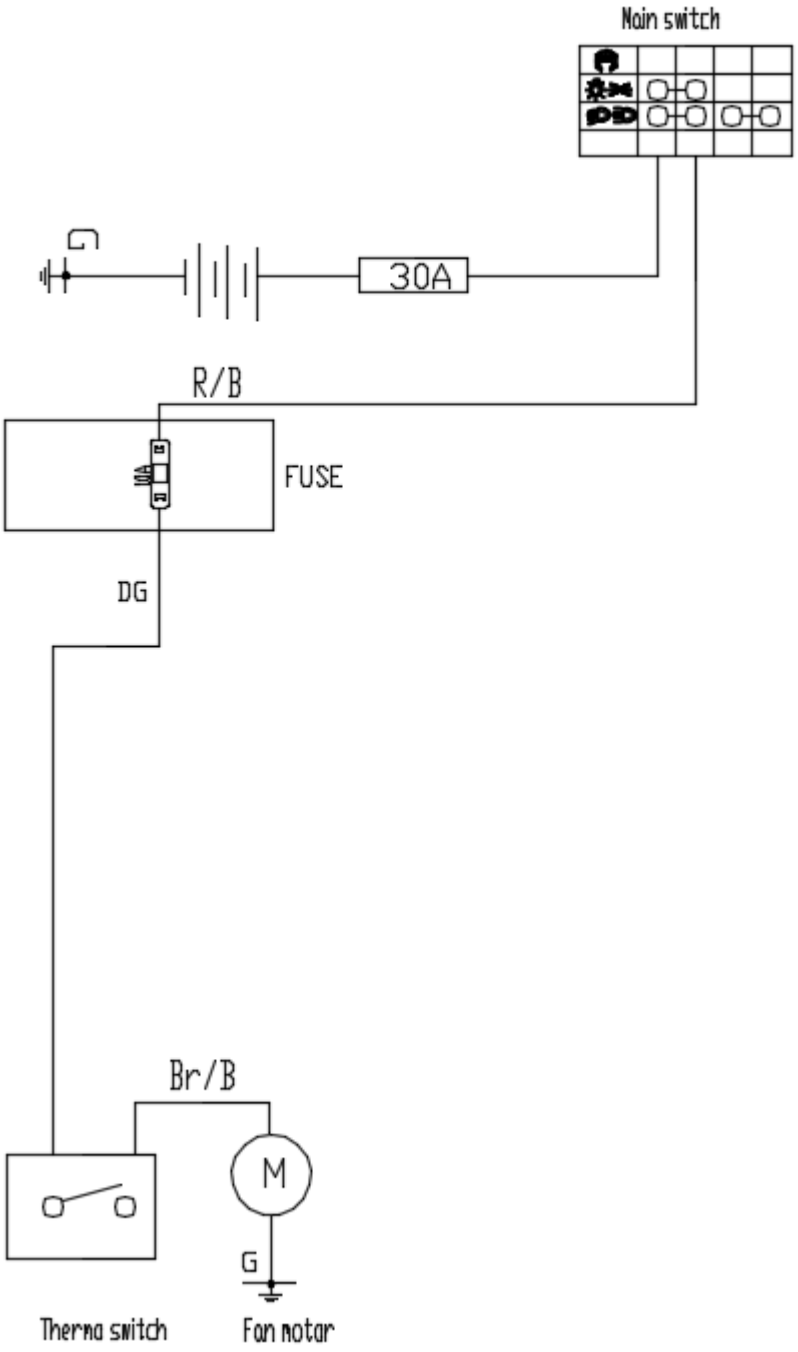
POOR CONNECTION

Correct

8.6 COOLING SYSTEM

IF THE FAN MOTOR FAILS TO TURN

Procedure
Check:
1. Fuse (Main, Fan)
2. Battery
3. Main switch
4. Fan motor (inspection)
5. Thermo switch
6. Wiring connection (entire cooling system)



1. fuse

CHECK SWITCHES

NO CONTINUITY

Replace the fuse

2. Battery
Check the battery condition.
Refer to "BATTERY INSPECTION" section

INCORRECT

Clean battery terminals
Recharge or replace the battery

3 Main switch
CHECK SWITCHES

NO CONTINUITY

Replace the main switch

4. Fan motor(inspection 1)
Connect the battery to the fan motor.
Battery (+) lead→Green/Blue terminal ①
Battery (-) lead→Green ground ②
Check the fan motor operation

DOES NOT MOVE

Replace fan motor

5. Fan motor (inspection 2)
Turn the main switch to off.
●Remove the thermo switch lead from thermo switch.
●Connect jumper lead to thermo switch leads.
●Turn the main switch to on

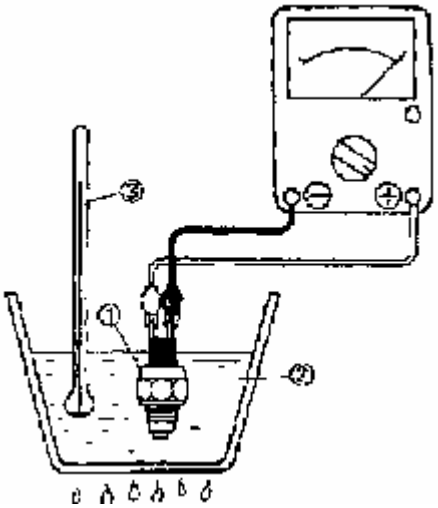
DOES NOT MOVE

The wiring circuit from battery to fan motor is faulty. Repair

6. Thermo switch
Remove the thermo switch from the radiator.

- Connect the pocket tester (ΩX1) to the thermo switch①.
- Immerse the thermo switch in the water ②
- Check the thermo switch for continuity.

NOTE:
Measure temperatures while heating the coolant with the temperature gauge



WARNING

- Handle the thermo switch with special care.

Never subject it to strong shocks or allow it to be dropped. Should it be dropped, it must be replaced.

- Do not touch the thermo switch to the bottom of the heated vessel.

88±3℃Thermo switch “ON”
80 ℃Thermo switch “OFF”

OUT OF SPECIFICATION

Replace the thermo switch

Wring connection

- Check the connection of the entire cooling system.

Refer to “CIRCUIT DIAGRAM”

UPPER CONNECTION

Correct

IF THE HEAT ALARM UNIT WORKING

When the main switch is turned on, the temperature of the engine begins to go up. As it comes to 88±3℃ the thermostat is connected and the fan starts to work, cooling the coolant, if the thermostat or the fan, fails to work; the coolant temperature will keep rising. The heat alarm unit operates the moment the temperature reaches 115±5℃ with the buzzer sounding and the signal flashing. Stop the engine now to have the circuit fixed.

Procedure

Check:

1 .Fuse(Main, Fan)
2. Battery
3.Main switch
4. Thermo unit
5. Voltage
6. Wiring connection (entire cooling system)

1. fuse

CHECKING SWITCHES → NO CONTINUITY → Replace the fuse

2. Battery

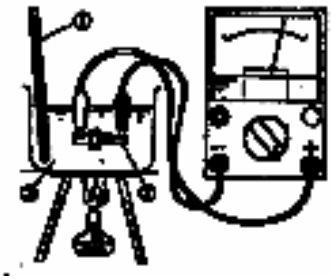
Check the battery condition.
Refer to "BATTERY INSPECTION"

→ INCORRECT → Clean battery terminals
Recharge or replace the battery

3.Main switch

CHECKING SWITCHES → NO CONTINUITY → Replace the main switch

4.Thermo unit
●Drain the coolant and remove the thermo unit from the cylinder head.
●Immerse the thermo unit ②in the coolant③ .
①Thermometer.



Handle the thermo unit with special care.
Never subject it to strong shocks or allow it to be dropped.
Should it be dropped, it must be replaced.
Do not touch the thermo unit to the bottom of the heated vessel.

Coolant temperature Resistance

OUT OF SPECIFICATION

Replace the thermo unit

MEETS SPECIFICATION

8. Voltage
●Connect the pocket tester (DC20V) to the
Temperature gauge couple.
Tester (+) lead→Green/Blue terminal
Tester (-) lead→Green ground
●Turn the main switch to on.
●Check for voltage (12V) on the temperature gauge lead.

OUT OF SPECIFICATION

The wiring circuit from main switch to temperature gauge is faulty. Repair.

8. Wiring connection check the connections of the entire cooling system.
Refer to “CIRCUIT DIAGRAM”

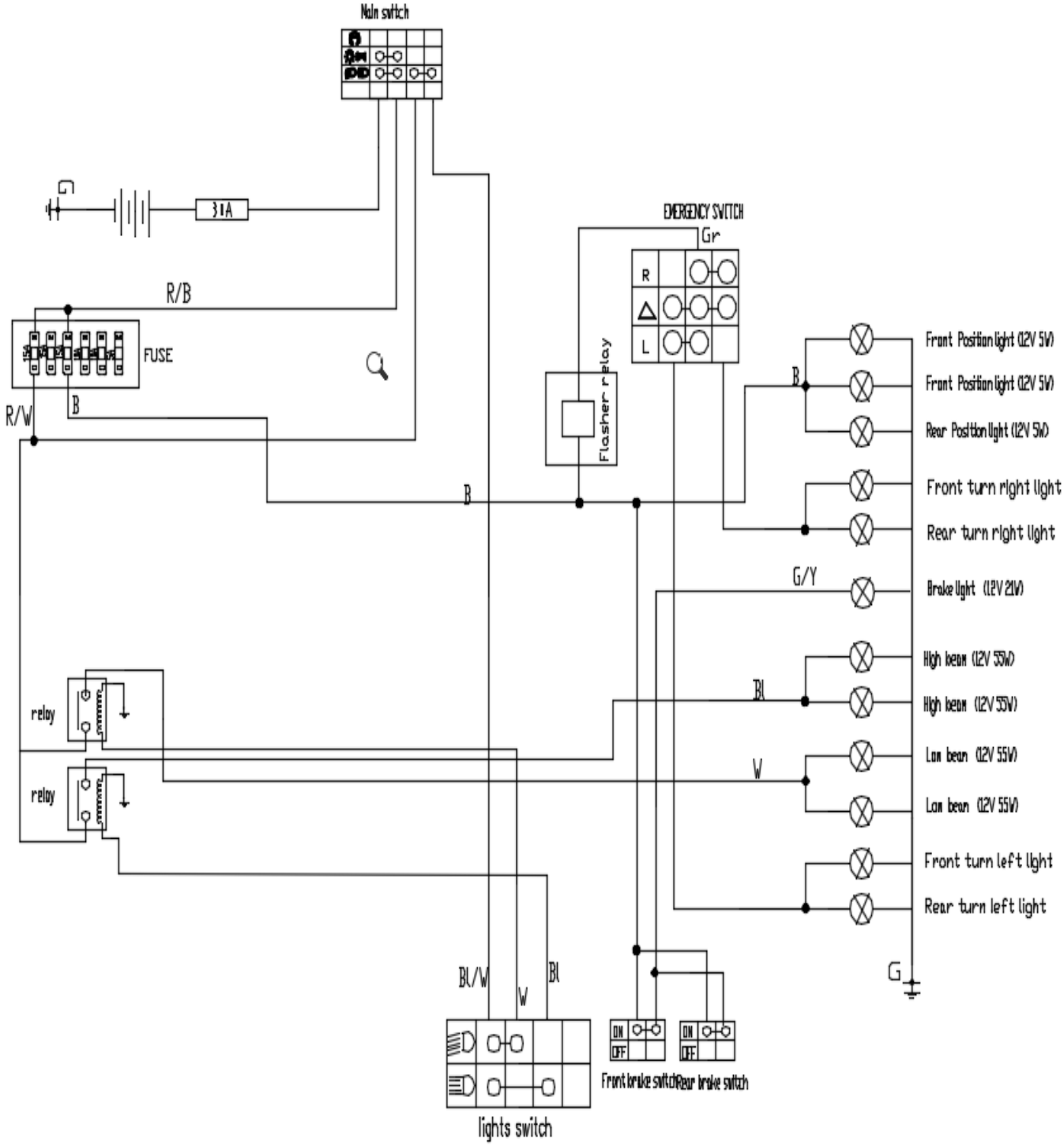
POOR CONNECTION

CORRECT

Replace the temperature gauge

8.7 LIGHTING SYSTEM

FOR EUROPE MODEL



TROUBLESHOOTING

Procedure

Check:

1. Fuse (Main)
2. Battery
3. Main switch
4. Lights switch
5. Dimmer switch
6. Wiring connection (entire lighting system)

1.fuse
refer to “CHECKING SWITCHES” section

NO CONTINUITY

Replace the fuse

2. Battery
Check the battery condition.
Refer to “BATTERY INSPECTION” section in CHAPTER 3

INCORRECT

Clean battery terminals
Recharge or replace the battery

3. Main switch

CHECK SWITCHES

NO CONTINUITY

Replace the main switch

4. Light switch

CHECK SWITCHES

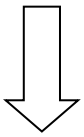
NO CONTINUITY

Replace the right handlebar switch

5. Dimmer sw

NO CONTINUITY

CHECK SWITCHES



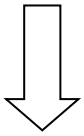
Replace the left handlebar switch

6. Wiring connection

Check the connection of the entire lighting system

POOR CONNECTIONS

correct



7. check the condition of each of the lighting system's circuits

Refer to "LIGHTING SYSTEM CHECK"

LIGHT SYSTEM CHECK

1. If the headlight and the high beam indicator light fail to come on

1.Blub and bulb socket

NO CONTINUITY

CHECK SWITCHES

Replace the bulb and/ or bulb socket

2. Voltage

Connect the pocket tester (DC20V) to the headlight and high beam indicator light couplers.

A When the dimmer switch is on low beam.

B When dimmer switch is on high beam

Headlight::

Tester (+) lead →White ①or Blue ②lead

Tester negative (-) lead →Green ③lead

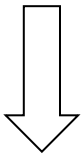
Turn the main switch to on.

Turn the light switch to on position.

Turn the dimmer switch to low beam or high beam.

Check for voltage (12V) on the lead at bulb socket connectors

OUT OF SPECIFICATION



The wiring circuit from the main switch to
bulb socket connector is faulty.
Repair

This circuit is not faulty

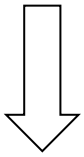
2. the taillight fails to come on

1. Bulb and bulb socket

NO CONTINUITY

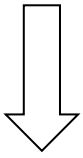
CHECK SWITCHES

Replace the bulb and /or bulb socket

CONTINUITY 

2. Voltage
Connect the pocket tester (DC20V) to the bulb
socket connector.
Tester (+) lead→
Black terminal ①
Tester (-) lead→
Green terminal ②
Turn the main switch to on.
Turn the lights switch to on pilot position.
Check the voltage (12V) on the bulb socket connector

OUT OF SPECIFICATION

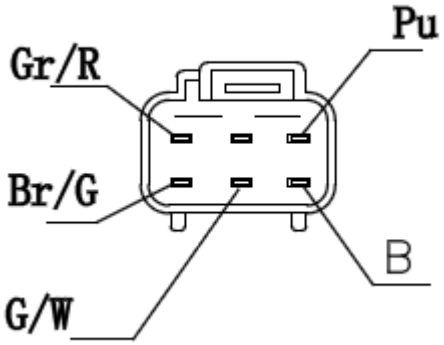


The wiring circuit from main switch to
bulb connector of faulty.
Repair

This circuit is not faulty

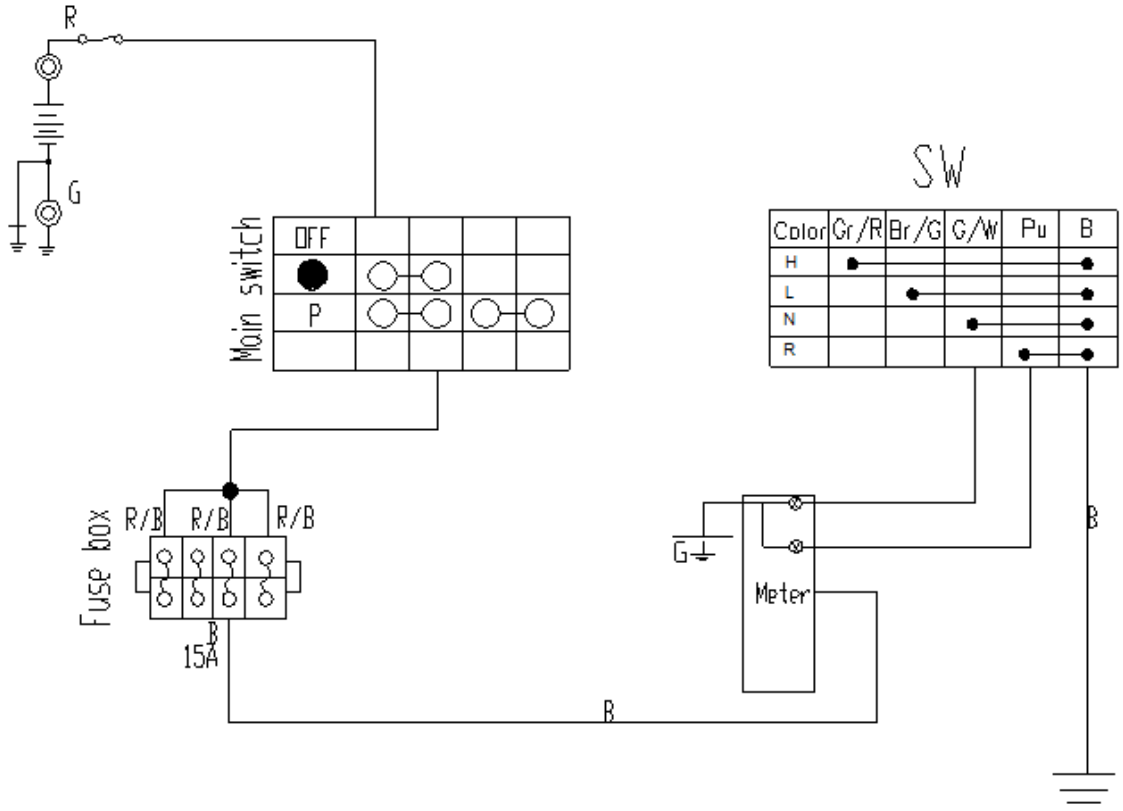
8.9 GEAR POSITION INDICATOR SWITCH TEST

Switch table



Color	Gr/R	Br/G	G/W	Pu	B
H	●				●
L		●			●
N			●		●
R				●	●

Switch schematic



8.10 SPEEDMETER SYSTEM

OPERATION OF SPPED SENSOR

Speed Sensor is on the rear axle

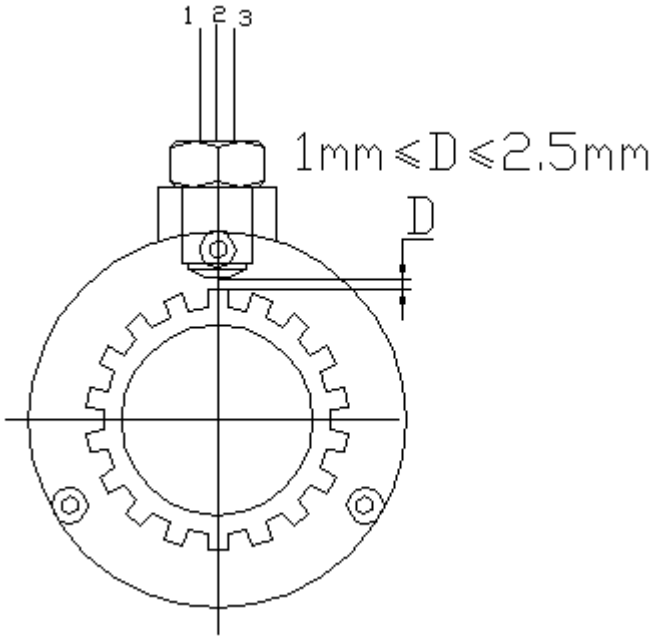
Operation Instructions of Electric Dial Meter and Speed Sensor/ Operation Instructions of LCD Meter and Speed Sensor

A. Hall Sensor is a new type sensor used to measure speed, angle, revolution and length, etc by means of voltage pulse signals converted from sensing gear ratio of black metal gear or gear rack.

B. Main Technical Parameter for sensor：

Item	Code	Vol value	Unit
Operating voltage	Vcc	5-20	V
Operating current	Icc	≤15	mA
Low voltage output	Vol	≤ 0.4	V
Hight voltage output	Voh	≥ (Vcc-1)	V
Operating distance	D	1mm ≤ D ≤ 2.5mm	mm

C. The following is the graphic illustration for sensor installation, Wire 1 (red) is positive and wire 2 (black) negative, Wire 3 (yellow) works as the one to output signals.



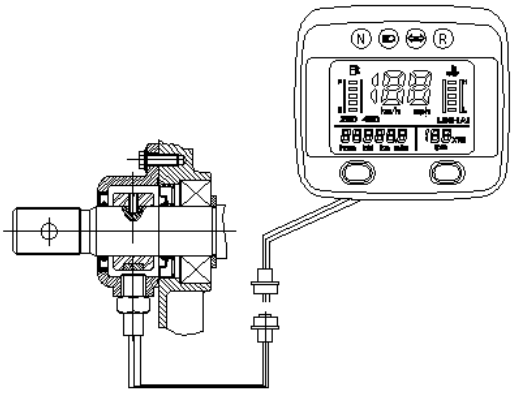
Note: Always screw in the sensor by hand when installation or adjustment.
1, Align one tooth of the splines to the centre of the hole of the sensor by turning the rear axle.
2. Screw the senor in (CW) by hand slightly until resistance is felt.
3. Turn the sensor CCW by 1 to 2 turn(s).
4. Tighten the jam nut.

Speed Sensor on the Transmission Out Put Shaft.
Operation Instructions of LCD Meter and Speed Sensor

Main Technical Parameter：

Item	Code	Vol value	Unit
Operating voltage	Vcc	5-20	V
Operating current	Icc	≤15	mA
Operating distance	D	1mm≤D≤8mm	mm

The following is the graphic illustration for sensor installation。



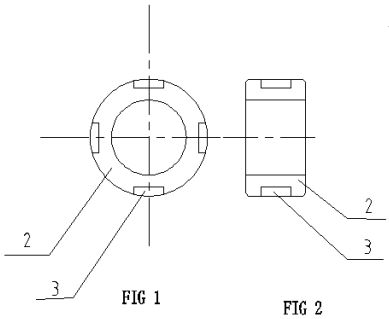


FIG 1

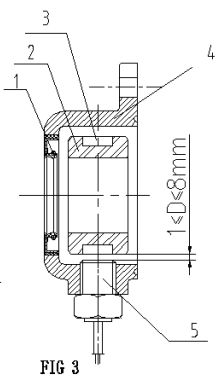


FIG 2

FIG 3

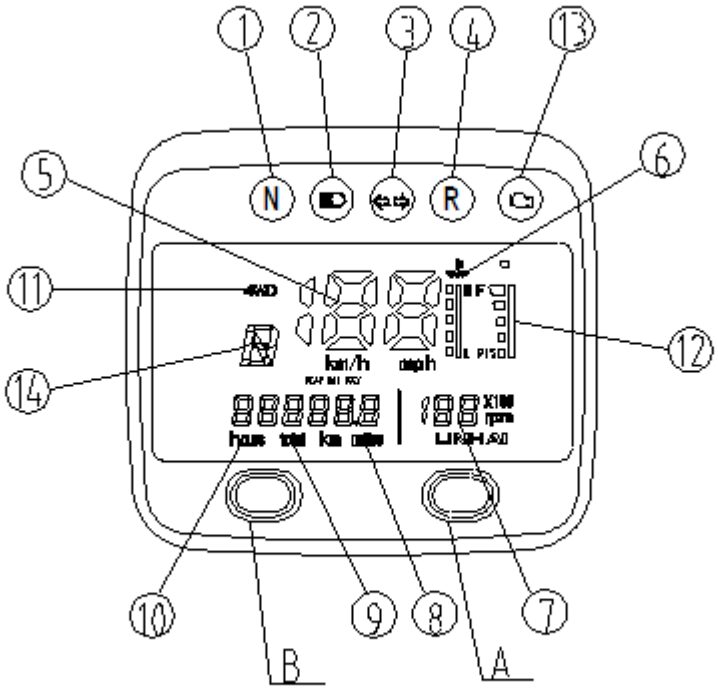
1. OIL SEAL	4. THE COVER
2. DOWEL PIN	5. THE HALL SENSOR
3. MAGNET	

METER

Dial Meter

Item	Vol value	Unit
Operating voltage	10V~18V	V
Operating current	≤ 500mA	A
Operating Environmental temperature	-10℃~65℃	℃
Battery warning voltage	≤11.5V	V

LCD Meter



1. Neutral indicator light
2. High beam indicator light
3. Turn indicator light
4. Reverse indicator light
5. Speedometer
6. Coolant temperature meter
7. Engine rpm meter
8、9. The odometer
10. Engine working hour counter
11. 2WD/4WD indicator
A: km/ mile selector
B: hour / distance selector
12. Fuel gauge Indicator
13. EFI
14. Gear position

8.11 MAIN SWITCH AND HANDLE SWITCH

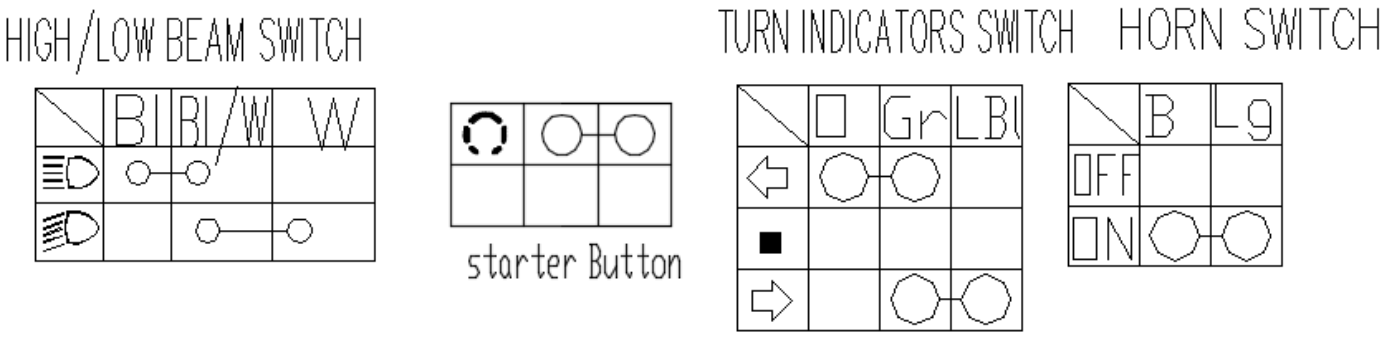
MAIN SWITCH

	R	R/B	B	Bl/W
OFF				
●	○	○		
●	○	○	○	○

OVERRIDE SW

	R/Bl	Pu
●	○	○

400ATV-F T3 HANDLE SWITCH SCHEMATIC FOR EUROPE MODEL



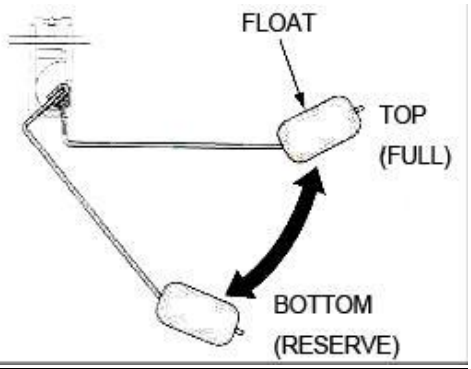
8.12 FUEL GAUGE/ FUEL LEVEL SENSOR

Removal

Turn the ignition switch to "OFF".

Remove the fuel tank cover.

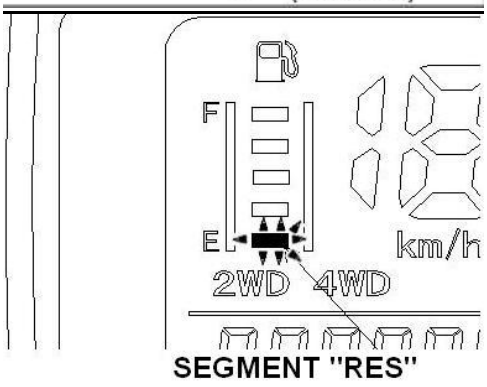
Remove the three bolts, retaining plate and fuel level sensor from the fuel tank.



Installation

Install a new seal rubber onto the fuel level sensor.

Install the retainer plate onto the sensor by aligning the tab with the grove.

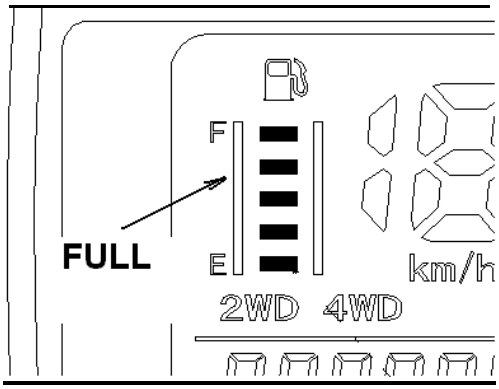


SEGMENT "RES"

Install the sensor into the fuel tank while aligning the grove in the plate with the boss on the fuel tank.

Install and tighten the bolts securely.

Install the removed parts in the reverse order of removal.



Fuel Gauge / Fuel level Sensor Inspection

Move the float to the bottom (RESERVE) position, turn the ignition switch to "ON" and check the fuel gauge.

Segment “RES” should blink.

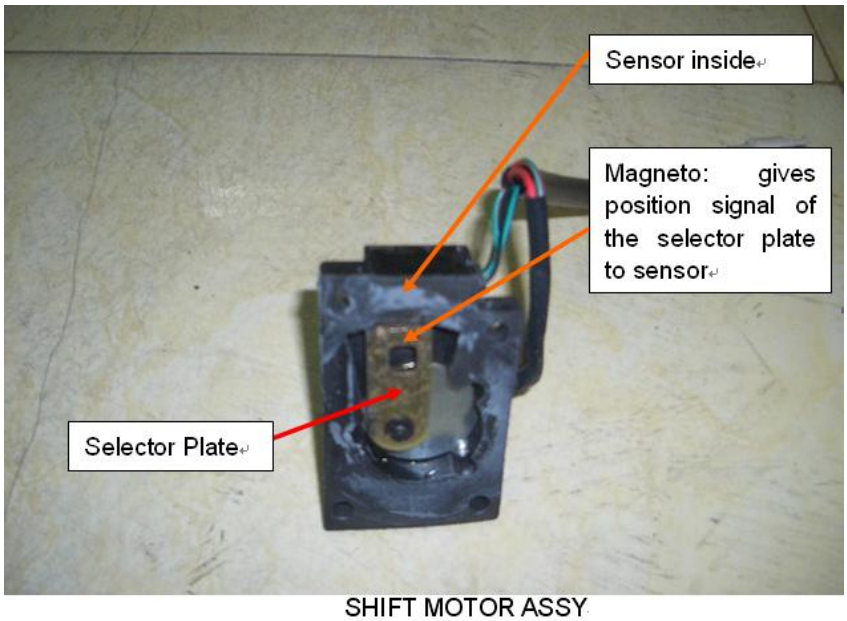
With the fuel level sensor float at the top (FULL) position, turn the ignition switch to “ON” and check the fuel gauge. All segments up to segment “F” should come on.

If the fuel gauge does not function properly, check the fuel level sensor
If the fuel level sensor is OK, replace the LCD Meter.

Fuel level Sensor Inspection
Disconnect the fuel level sensor 2p Green connector and connect the ohmmeter to the sensor side connector terminals.
Measure the fuel level sensor resistance with the float at the top (FULL)
And bottom (RESERVE) positions.

FLOAT POSITION	RESISTANCE(20℃/68°)
TOP(FULL)	4-10Ω
BOTTOM(RESERVE)	100-110Ω

8.13 THE OPERATION PRINCIPLE OF THE ELECTRIC 4WD SHIFT

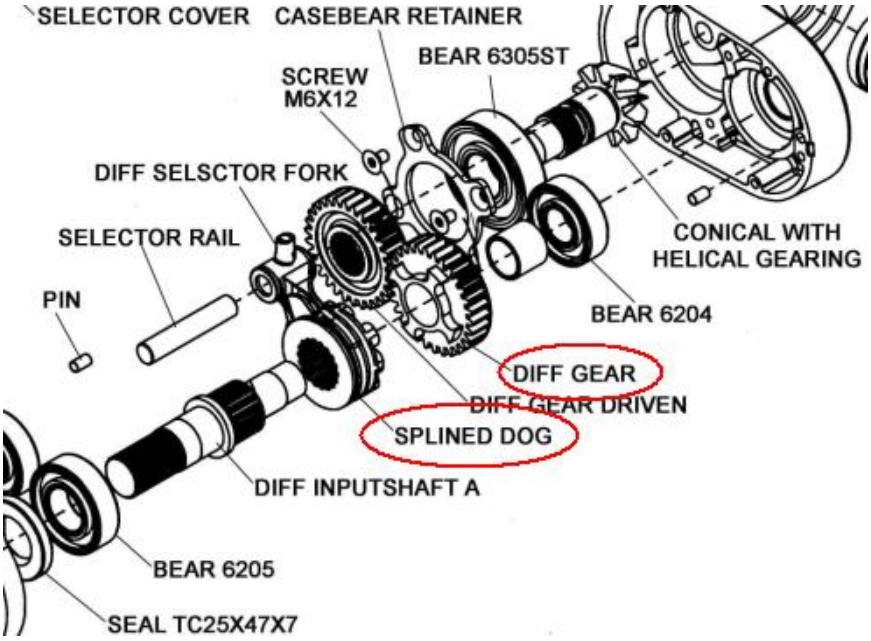


SHIFT MOTOR ASSY

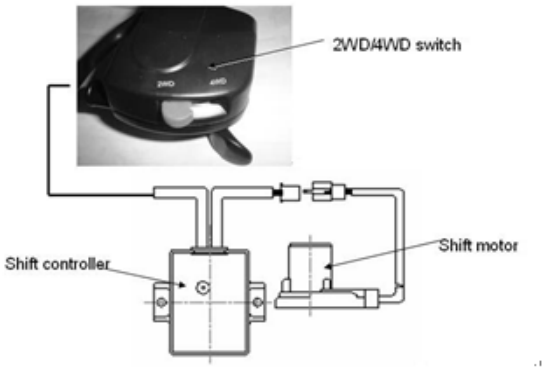
(Fig 1)

1, The rider shifts 2WD to 4WD by the Switch on handlebar.
2. The Switch gives signal to Controller.
3, The controller gives power to the Shift Motor.
4, If the Splined Dog (Fig 2) is in right position, 4WD will engage immediately. This information will be given to the Sensor by the Magneto on the Selector Plate, and then to the Controller. Controller lights the 4WD indicator.
5. If the Splined Dog is not in right position, 4WD won't engage, this information will be given to the Sensor by the Magneto on the Selector Plate, and then to the Controller. The controller will try to drive the Shift Motor several times in 1 min.
During this time, the 4WD indicator is not on, this requires the rider to back or move (ride) the ATV a little to allow the Dog change position for engagement. (See owner's manual or decal).
If the rider doesn't do as the owner's manual, after 1 min, the buzzer comes on and 4WD indicator blinks, remind the rider to re-shift.

Shift from 4WD to 2WD is same as above.


SELECTOR COVER
CASEBEAR RETAINER
BEAR 6305ST
SCREW M6X12
DIFF SELSCTOR FORK
SELECTOR RAIL
CONICAL WITH HELICAL GEARING
PIN
BEAR 6204
DIFF GEAR
DIFF GEAR DRIVEN
SPLINED DOG
DIFF INPUTSHAFT A
BEAR 6205
SEAL TC25X47X7

(Fig 2)



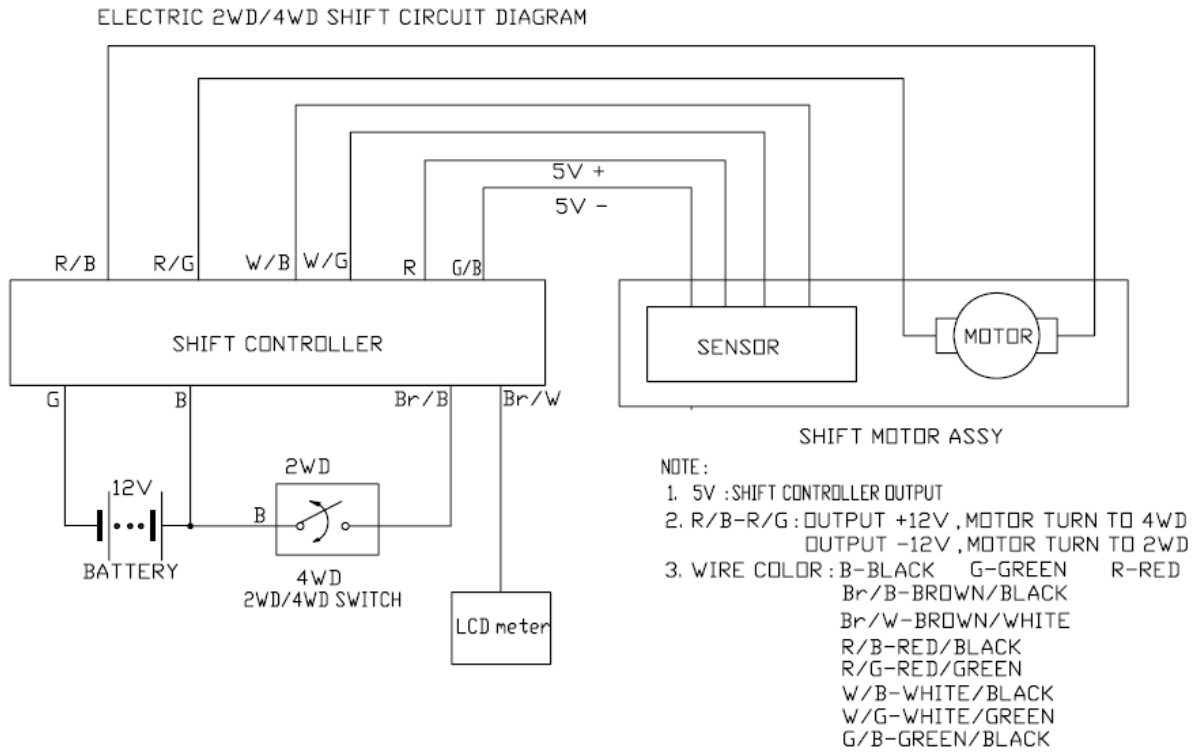
CAUTION:
Always shift as the vehicle stop.

NOTE:
When shift 2WD/ 4WD, the mechanics in the front gear box maybe still engaged/ disengaged, the mechanics would finally disengaged/ engaged when rides on a hard surface or rides in reverse.
The buzzer will beep if the procedure which list above is not done in 1 minute.
Re-shift to stop the buzzer.

CAUTION

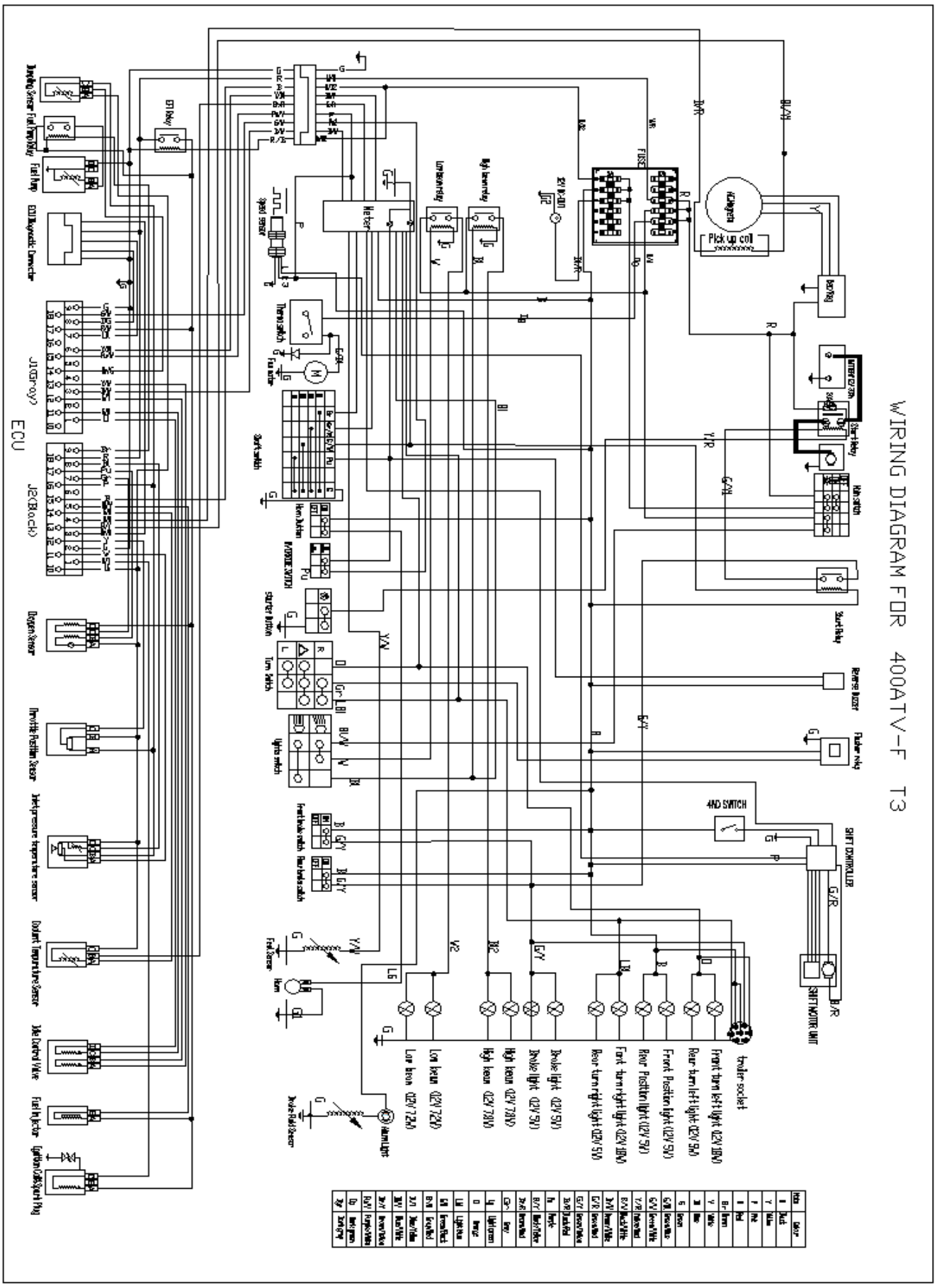
Do not switch on 4WD if the rear wheels are spining. This may cause severe machine damage. When switch on 4WD, the button will stay in 4WD position but 4WD mechanics maybe still disengaged. Always apply throttle gently and let the wheels move slightly to allow the 4WD mechanics finally engage. The 4WD indicator on the speedometer will come on when 4WD engaged.

（Fig 3）Page from owner's manual


ELECTRIC 2WD/4WD SHIFT CIRCUIT DIAGRAM
5V +
5V -
R/B
R/G
W/B
W/G
R
G/B
SHIFT CONTROLLER
SENSOR
MOTOR
G
B
Br/B
Br/W
SHIFT MOTOR ASSY
2WD
12V
B
BATTERY
4WD
2WD/4WD SWITCH
LCD meter
NOTE:
1. 5V : SHIFT CONTROLLER OUTPUT
2. R/B-R/G : OUTPUT +12V , MOTOR TURN TO 4WD
OUTPUT -12V , MOTOR TURN TO 2WD
3. WIRE COLOR : B-BLACK G-GREEN R-RED
Br/B-BROWN/BLACK
Br/W-BROWN/WHITE
R/B-RED/BLACK
R/G-RED/GREEN
W/B-WHITE/BLACK
W/G-WHITE/GREEN
G/B-GREEN/BLACK

（Fig 4）

8.14 WIRING DIAGRAM


WIRING DIAGRAM FOR 400ATV-F T3
ECU
J1(Gray)
J2(Black)
Pick up coil
Starter Relay
Starter Motor
Reverse Buzzer
Flasher Relay
4WD SWITCH
SHIFT CONTROLLER
SHIFT MOTOR UNIT
Trailer socket
Front turn left light (12V 10W)
Rear turn left light (12V 5W)
Front Position light (12V 5W)
Rear Position light (12V 5W)
Front turn right light (12V 10W)
Rear turn right light (12V 5W)
Brake light (12V 5W)
Brake light (12V 5W)
High beam (12V 7.5W)
High beam (12V 7.5W)
Low beam (12V 7.5W)
Low beam (12V 7.5W)
Horn
Meter
Fuse
Ignition Coil&Spark Plug
Fuel Injector
Idle Control Valve
Intake Temperature Sensor
Intake pressure temperature sensor
Throttle Position Sensor
Oxygen Sensor
Fuel Pump
ECT Sensor
Fuel Pump Relay
Starter Relay
Main switch
Fuse
Battery
Color
B Black
Y Yellow
P Pink
O Orange
Br Brown
V Violet
W White
G Green
G/B Green/Black
G/Y Green/Yellow
Y/R Yellow/Red
B/W Black/White
R/W Red/White
G/Y Green/Yellow
Sb Sky blue
R Red
Gr Grey
L Light blue
Lg Light green
Dg Dark green
Sb Sky blue

NOTES