2.8

ELECTRICAL CONNECTIONS
(Refer to the attached electrical schematic).

NOTE:
For a correct installation follow the under shown instructions.

2.8.1 INSERT THE BATTERY STRAP IN THE BATTERY SUPPORT (SEE FIG. 13).

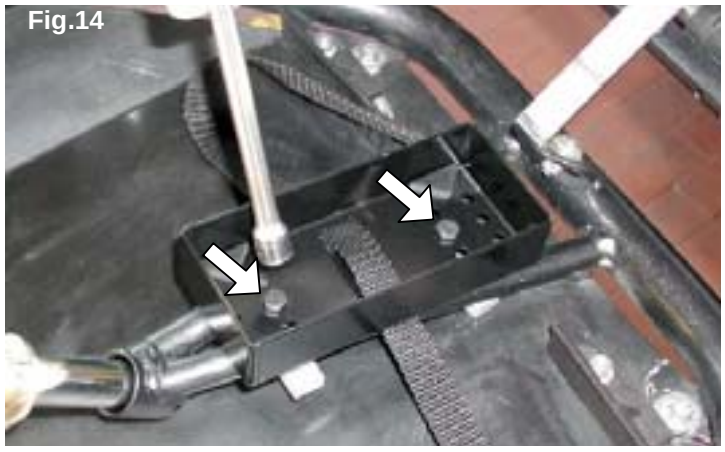
Fig.13

2.8.2 PLACE THE BATTERY SUPPORT BOX IN THE FRONT OF THE CHASSIS (UNDER THE FRONT FAIRING) AND FIX IT WITH THE CLAMPS TO THE LOWER STEERING COLUMN SUPPORT TUBES (M6x25 SCREWS– SEE FIG. 14).
TORQUE AT 8 ÷ 10 Nm (70÷ 90 in-lb)
THE SUPPORT BOX MUST BE FIXED WITH AT LEAST ONE BOLT FOR EACH CLAMP. FIX THE BOX WITH MORE THAN ONE BOLT DEPENDING ON THE TYPE OF CHASSIS.

NOTE:
THE BOX AND CLAMPS ARE PROVIDED WITH VARIOUS HOLES WHICH ALLOW INSTALLATION ON ALL KIND OF CHASSIS.

10mm BOX WRENCH

Fig.14



2.8.3 INSERT THE BATTERY IN THE BOX AND FASTEN WITH THE BATTERY STRAP (SEE FIG. 15).
POSITION THE BATTERY TERMINALS AS SHOWN ON THE FIGURE.

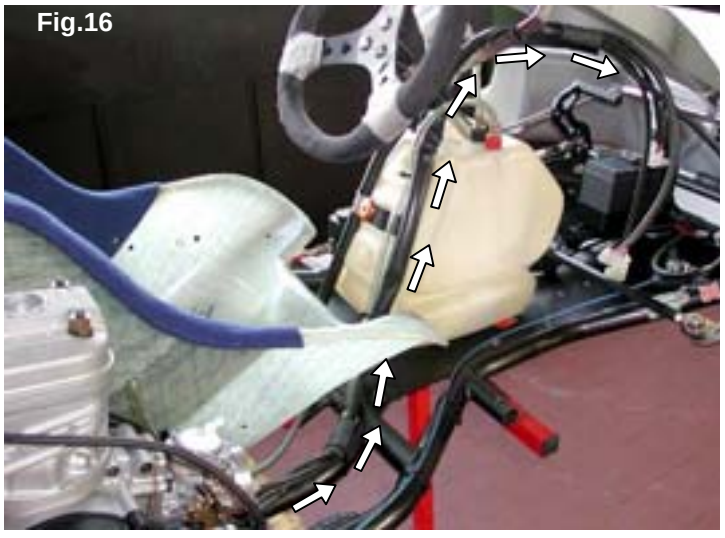
ATTENTION:
PAY ATTENTION NOT TO SHORT-CIRCUIT THE BATTERY TERMINALS AS THE BATTERY COULD BE DAMAGED BEYOND REPAIR.

Fig.15

2.8.4 POSITION THE WIRING HARNESS STARTING FROM THE ENGINE AND ALONG THE RAIL, THE STEERING COLUMN AND UNDER THE FRONT PANEL FAIRING (SEE FIG. 16).
TIGHTEN WITH PLASTIC CLAMPS.

ATTENTION:
NEVER LET THE HARNESS GET IN TOUCH WITH THE GROUND OR WITH ROTATING PARTS AS IT COULD BE DAMAGED BEYOND REPAIR .

Fig.16



2.8.5 –CONNECT THE TERMINAL FROM THE IGNITION WITH THE 8 POLE TERMINAL ON THE HARNESS SEE FIG. 17).

-CONNECT THE ONE WAY TERMINAL FROM THE ELECTRIC STARTER WITH THE ONE WAY TERMINAL ON THE HARNESS (SEE FIG. 18).

ATTENTION:
MAKE SURE THAT THE FIXING TONGUES ARE PROPERLY INSERTED TO GUARANTEE THE BEST POSSIBLE CONNECTION OF THE TERMINALS.


Fig.17

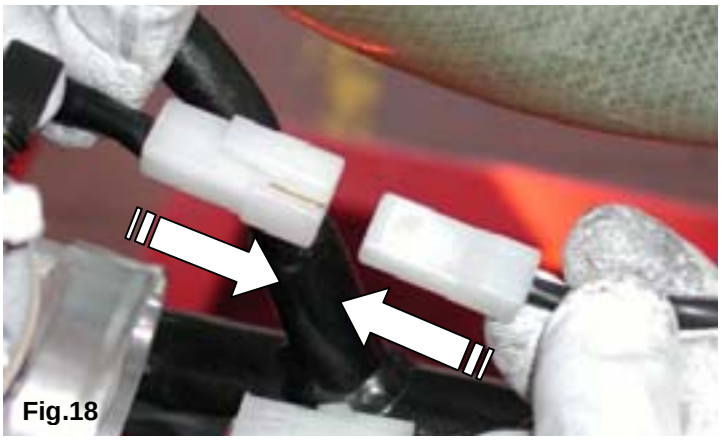


Fig.18

2.8.6 FASTEN THE CABLE FROM THE ELECTRIC STARTER TO THE STARTER BODY WITH A PLASTIC CLAMP (SEE FIG. 19).

ATTENTION:
THIS OPERATION IS EXTREMELY IMPORTANT OTHERWISE THE RESIDUAL ENGINE VIBRATIONS COULD DAMAGE THE ELECTRIC STARTER INNER CONNECTIONS BEYOND REPAIR.

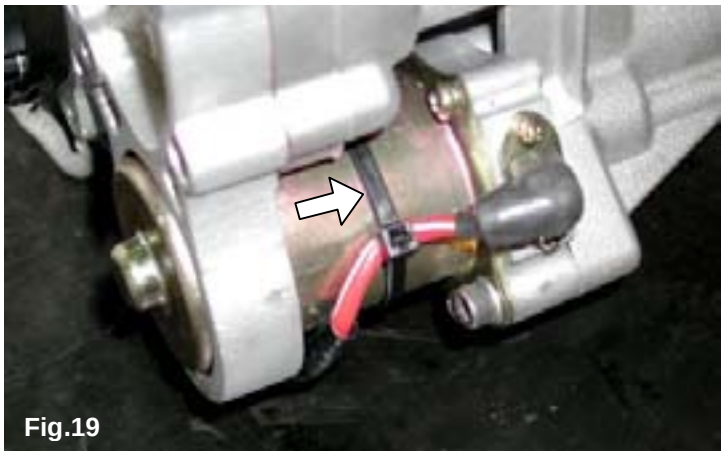


Fig.19

2.8.7 PLACE THE HARNESS GROUND CABLE WITH THE EYELET TERMINAL (Ø 6.5mm), BEHIND THE ENGINE (SEE FIG. 20).

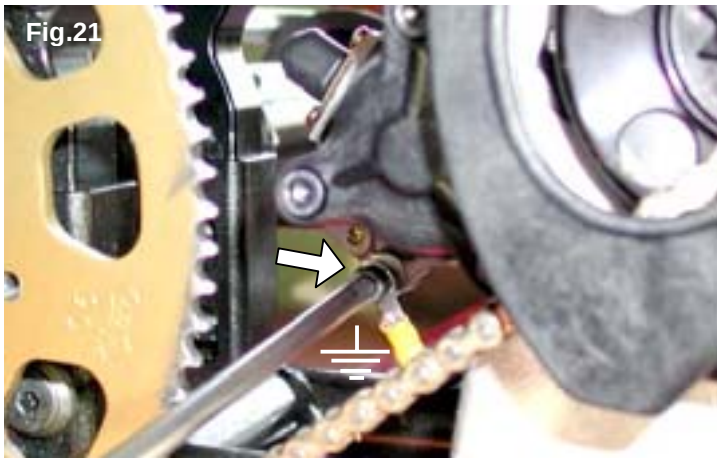

Fig.20

2.8.8 FIX THE GROUND CABLE TO THE ELECTRIC STARTER BY MEANS OF THE M6x12 SCREW (ALREADY ON THE ENGINE SEE FIG. 21).
TORQUE AT 8 ÷ 10 Nm (70 ÷90 in-lb)

ATTENTION:
THIS OPERATION IS EXTREMELY IMPORTANT AS AN UNCERTAIN GROUNDING COULD DAMAGE THE POWER-PACK BEYOND REPAIR.

5 mm ALLEN

Fig.21



2.8.9 FIX THE EYELET TERMINAL (Ø 6.5mm), OF THE SECOND GROUND CABLE IN THE HARNESS (CLOSE TO THE COIL CABLE) TO THE H.T. COIL. BY MEANS OF THE M6 NUT FIXING THE COIL (SEE FIG. 22).
TORQUE AT 8 ÷ 10 Nm (70 ÷90 in-lb)

ATTENTION:
THIS OPERATION IS EXTREMELY IMPORTANT AS AN UNCERTAIN GROUNDING COULD DAMAGE THE POWER PACK BEYOND REPAIR.

10mm BOX WRENCH

Fig.22

2.8.10 CONNECT THE H.T. COIL CABLE TO THE HARNESS TERMINAL (SEE FIG. 23).

ATTENTION:
FASTEN THE COIL CABLE WITH A PLASTIC CLAMP TO AVOID THAT EVENTUAL VIBRATIONS MIGHT DISCONNECT THE TERMINALS (SEE FIG. 24).

Fig.23

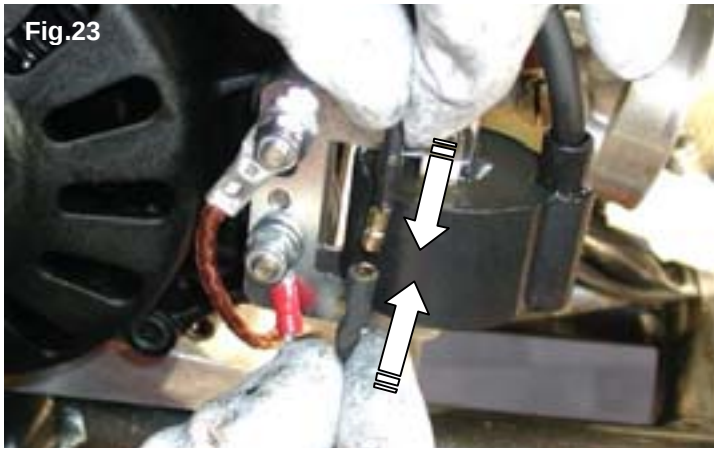


Fig.24

2.8.11 CUT THE DUAL-LOCK FIXING STRAP AND ATTACH IT TO THE ELECTRONIC BOX, THE STARTER FUSE, AND THE FUSE HOLDER (SEE FIG.25).

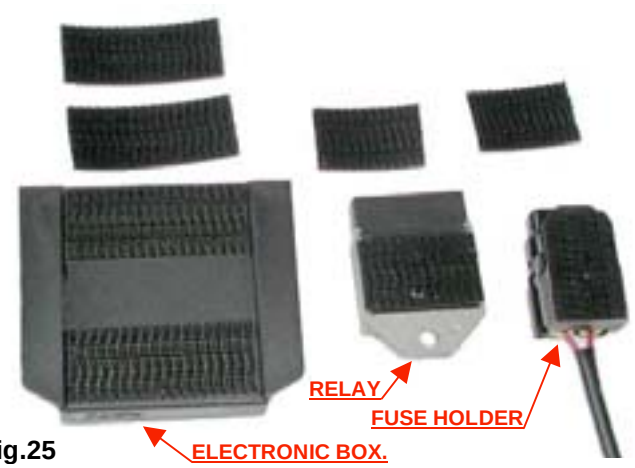


Fig.25

2.8.12 –CONNECT THE ELECTRONIC BOX TO THE 20 POLE TERMINAL IN THE WIRING HARNESS (SEE FIG. 26).

-CONNECT THE STARTER RELAY TO THE 4 POLE TERMINAL IN THE WIRING HARNESS (SEE FIG. 27).

ATTENTION:
MAKE SURE THAT THE FIXING TONGUES ARE PROPERLY INSERTED TO GUARANTEE THE BEST POSSIBLE CONNECTION OF THE TERMINALS .

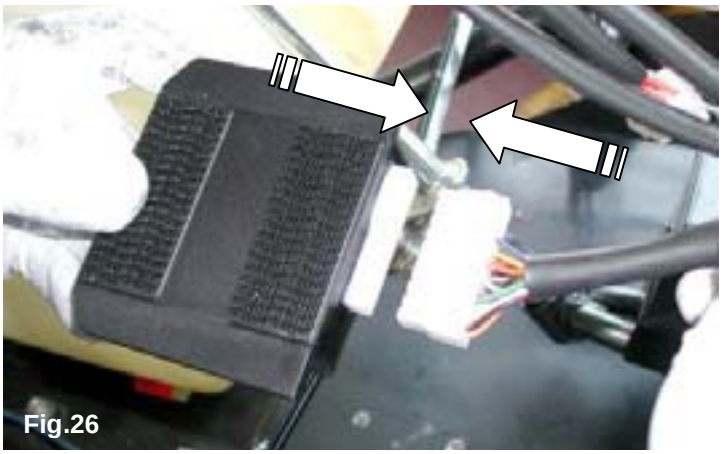


Fig.26

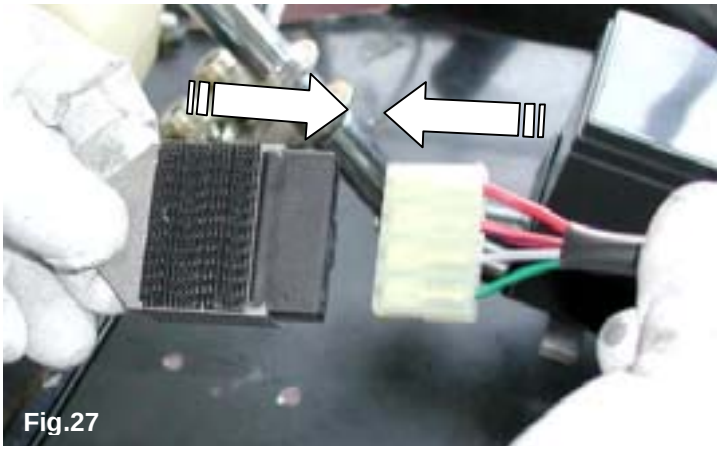


Fig.27

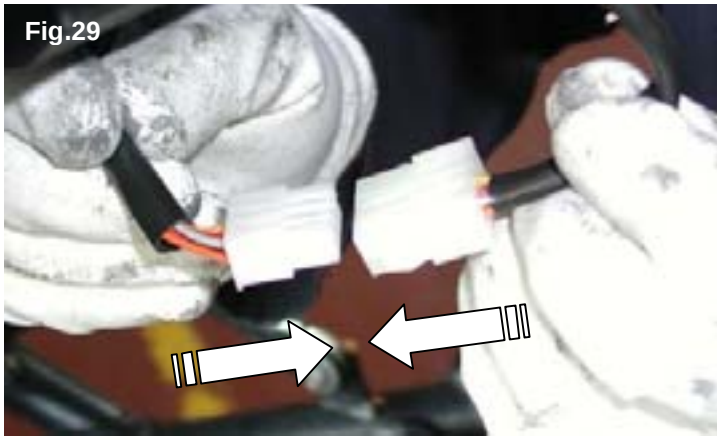
2.8.13 DRILL A Ø 22mm HOLE IN THE SIDE OF FRONT FAIRING (ENGINE SIDE) AND INSERT THE STARTING ASSEMBLY (SEE FIG. 28).
SECURE THE ASSEMBLY WITH THE THREADED RING NUT.

Fig.28

2.8.14 CONNECT THE CABLE FROM THE STARTING ASSEMBLY WITH THE 8 POLE TERMINAL IN THE WIRING HARNESS (SEE FIG. 29).

ATTENTION:
MAKE SURE THAT THE FIXING TONGUES ARE PROPERLY INSERTED TO GUARANTEE THE BEST POSSIBLE CONNECTION OF THE TERMINALS .

Fig.29



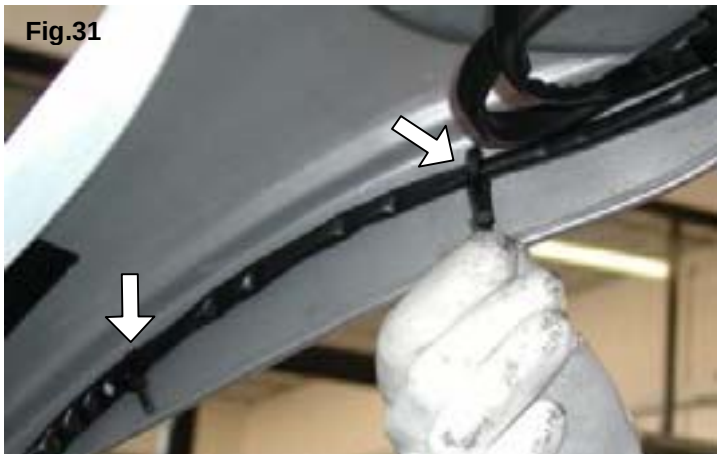
2.8.15 ATTACH THE DUAL LOCK FIXING STRAP (CLOSE TO THE STEERING COLUMN) AND PLACE THE ELECTRONIC BOX AND THE STARTER RELAY (SEE FIG. 30).

NOTE:
CLEAN AND DEGREASE THE FAIRING FIXING SURFACE WHERE THE STRAP IS TO BE PLACED TO GUARANTEE THE BEST POSSIBLE STRAP ATTACHMENT.

Fig.30

2.8.16 DRILL A FEW HOLES IN THE FAIRING TO ATTACH THE CABLES WITH PLASTIC CLAMPS (SEE FIG. 31).

Fig.31



2.8.17 ATTACH THE DUAL LOCK FIXING STRAP UNDER THE FRONT FAIRING (CLOSE TO THE BATTERY) AND PLACE THE FUSE HOLDER (SEE FIG. 32).

NOTE:
CLEAN AND DEGREASE THE FAIRING FIXING SURFACE WHERE THE STRAP IS TO BE PLACED TO GUARANTEE THE BEST POSSIBLE STRAP ATTACHMENT.

Fig.32

2.8.18 PLACE THE WIRING HARNESS BATTERY TERMINALS UNDER THE BATTERY STRP (SEE FIG. 33).

SUGGESTION:
NEVER CONNECT THE BATTERY UNTIL YOU ARE READY TO START THE ENGINE. SEAL THE BATTERY TERMINALS WITH PLASTIC TAPE TO AVOID THAT EVENTUAL VIBRATIONS MIGHT DISCONNECT THE TERMINALS.

Fig.33

2.8.19 SCREW THE SPARK CAP ON THE H.T. COIL (SEE FIG. 34).


Fig.34

2.8.20 FIX THE CAP TO THE H.T. CABLE WITH A PLASTIC CLAMP (SEE FIG. 35).

- INSTALL THE SPARK PLUG.
  TORQUE AT 20 ÷ 26 Nm (175÷230 in-lb)
- INSTALL THE CAP ON THE SPARK PLUG.

Fig.35

2.9 **INSTALL THE INTAKE SILENCER**

-MAKE SURE THAT THE FILTER HAS THE INLET HOLES TOWARDS THE UPPER SIDE.

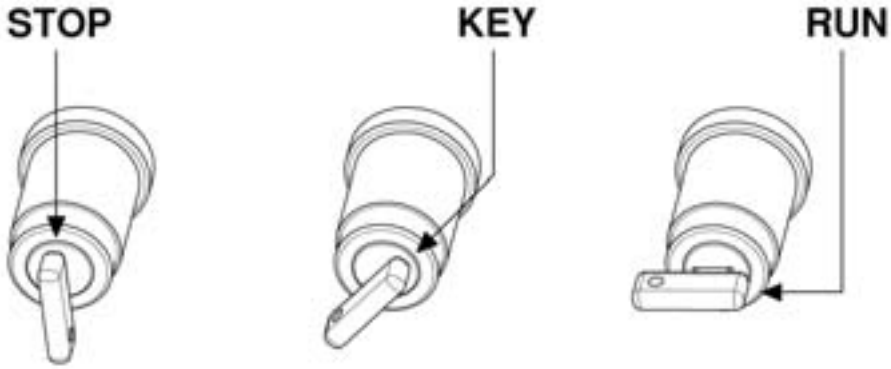
-FIX THE FILTER ON THE CARB. WITH A STEEL CLAMP AND THE FILTER TO THE CHASSIS SIDE RAILS WITH PLASTIC CLAMPS (SEE FIG. 36).


Fig.36

3.4 STARTING AND STOPPING THE ENGINE

Starting is achieved by the starting key.
This is a 3 position key:

1- STOP (key can be removed)
2- KEY
3- RUN



In STOP position the battery is disconnected and the engine stop signal is sent to the electronic box.
In KEY position the battery is connected to the system and the stop signal is removed.
In RUN position the battery is always connected and the electric starter, operation signal is sent to the electronic box.

ATTENTION:
The starting key assembly is supplied with two original keys. We recommend to separate the keys and to keep one in a protected place. In case of loss of both keys, it is necessary to replace the complete assembly.

The starting procedure, from STOP position, is as follows:

A) Turn the key to KEY position (this connect the battery).
B) Turn the key to RUN position to start the engine (the electric starter is immediately disengaged when turning the key to KEY position, or when the electronic box detects an engine RPM higher than 1500 RPM).
C) When the engine is running, the key can be left both in the RUN or KEY position. We suggest, for pratical reasons, to turn the key to KEY position; this allows with a single tripping to stop the engine (STOP position) or to restart it in case the engine is stopped (RUN position).

Note:
- in case the engine is stopped with the key in RUN position, to restart it, turn the key to KEY position and then again to RUN position to activate the electric starter.
- With the key in KEY or RUN position and if the engine is stopped, to start the engine an external starter unit can also be used.

In case the engine cannot be started within 5 seconds (check that gas gets to the carb.) interrupt and try again after 15 seconds. Short and frequent tries are better than long ones.
To stop the engine turn the key to STOP position both from KEY (1 tripping) or from RUN (2 trippings).

3.6 RPM LIMITATION

The electronic box incorporates an RPM limiter which prevents the engine from exceeding 17000 RPM.

This limit cannot be exceeded otherwise the engine could be damaged by the extremely high RPM.

ATTENTION:

Do not keep the engine for a long time at the RPM at which the limiter is functioning. This would cause malfunctions on the induction and damage the reed valve.

When choosing the sprocket ratio always refer to a maximum limit of 16500 RPM so that the incorporated limiter is not switched on continuously when the engine is running.

3.9 BATTERY

The battery (12 V – 7.2 Ah) is sealed and without maintenance.

In order to lenghten the battery life it is necessary though to follow a few recommendations:

- When the tension drops below 12.6V. It is necessary to recharge the battery.
- Max. allowed recharging current is 1.8A.
- The ideal recharge is achieved with an average charging current of 0.8 ÷ 1 A. (recharging time of appr. 10 h.) and at an ambient temperature between 0° and 40°C.

ATTENTION:

An overcharge or an extremely quick charge with excessive current could damage the battery (the battery would tend to swell).

Choose a battery charger with the following characteristics:

- Feed tension: 90/250 Vac – 50/60 Hz
- Outlet tension: 15 V full charge – 13.8 stand-by
- Max. outlet current: 2A full charge
- During transportation or storage the battery could loose its charge due to the self discharge (0.1% max per day).
  Fully recharge battery before use.

ATTENTION:

Always connect the - (negative) terminal before and the pole + (positive terminal after) .

Always disconnect the battery in opposite order.

- Recharge the battery at least once every 6 months.
- Never put the battery in contact with solvents, oils, plastifiers or rags containing such elements. The external case of the battery could be damaged.
- Never press or bend or overheat (by welding) the battery terminals.

Other recommendations

- Pay attention not to have free fires upon or around the battery.
- Never short-circuit the terminals.
- Never open the battery or throw it in the fire.
- In case the electrolyte (diluted Sulfuric Acid) gets in contact with skin or clothes, wash immediately with water. In case it gets in touch with eyes, wash and apply for medical assistance.
- Carefully check the external case of battery and replace in case of breakages, swellings of the case or of battery cover.
- Before use, clean the battery from dust and check that the terminals are not oxydized or damaged.
- When the battery comes to an end never throw it in the garbage but deliver it to an authorized disposer.

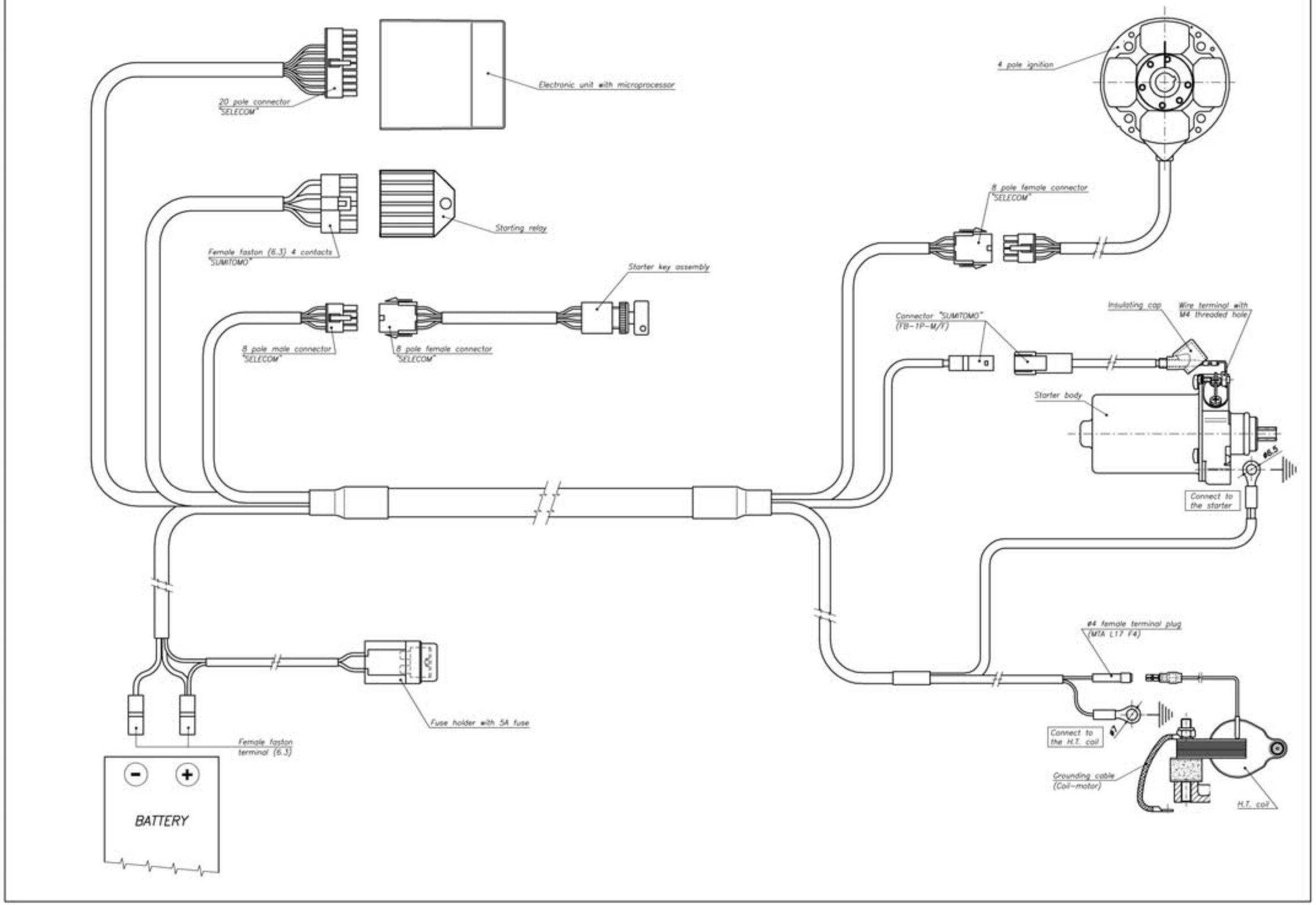
3.10 WARNINGS ON THE ELECTRICAL SYSTEM

We are here listing the main warnings on the electrical system.
Please keep this in mind during the whole life of the engine.

ATTENTION:

If these prescriptions are not followed the electrical system and the engine could be damaged beyond repair. No obligation of IAME exists in this case.

1) Please turn the key to STOP position every time the engine is stopped. If the key is left in KEY position, for a long time, even if the engine is stopped, the battery would be discharged completely.
2) Never disconnect the ground cables with eyelets when the engine is in operation.
3) Disconnecting the battery when the engine is in operation DOES NOT increase the engine performance. Vice versa, the ignition advance could become very irregular at low RPM thus reducing the performance.
4) To fasten the eyelet terminal (groundings) of the wiring harness always use flat or open washers. Never use tab washers.
5) When disconnecting the connectors, always press the fixing tongues. Always pull the connectors to disconnect. NEVER PULL THE CABLES.
6) The electronic box and the starting relay must always be installed with their connector towards the bottom to avoid back water, dampness or dirt in the connector body.
7) Always correctly fix the H.T. coil with both screws, make sure that the laminations pack on H.T. coil is connected to the engine with the grounding cable. The eyelet connector must be directly in contact with the laminations pack on the H.T. coil.
8) Never use H.T. coils different than the original coil on the engine. Use of different coil may cause damages to the electronic box.
9) The digital assembly needs use of a resistive spark plug cap or spark plug. The resistor value must be equal or higher than 5 Kohm. Avoid use of resistive H.T. cables.
10) **The electrical system is protected against battery polarity reversal. When reversing the connectors on the battery, the protection circuit activates the fuse as soon as the key is on KEY or RUN position. The fuse must then be replaced.**
11) **Replace the fuse after having disconnected both terminals on the battery. Only use 5A strip fuse. Use of fuses with higher amperage might damage the electronic box whenever the battery polarity is reversed.**
12) Only use sealed lead type batteries as specified by IAME. Only use 12V. batteries.
13) Always disconnect the battery from the electrical system when recharging the battery with an external battery charger, otherwise the internal voltage regulator could be damaged.
14) DO NOT connect batteries in parallel; this might cause explosions and damages to the operator. The recharge of the battery, in normal conditions, is guaranteed by the electrical system. A few minutes of engine in operation are sufficient to recover the energy lost when starting the engine.
15) In case the battery must feed other users (Tachometer, Telemetry etc…), first contact IAME to check the recharge capacity of the system.
16) Modifications, interventions and additions to the original electric system might cause malfunctions. No obligation of IAME exists in this case.


20 pole connector
"SELECOM"
Electronic unit with microprocessor
Starting relay
Female faston (6.3) 4 contacts
"SUMITOMO"
Starter key assembly
8 pole male connector
"SELECOM"
8 pole female connector
"SELECOM"
4 pole ignition
8 pole female connector
"SELECOM"
Connector "SUMITOMO"
(TS-1P-M/Y)
Insulating cap
Wire terminal with
M4 threaded hole
Starter body
ø6.5
Connect to
the starter
ø4 female terminal plug
(MTA L17 F4)
Fuse holder with 5A fuse
Female faston
terminal (6.3)
Connect to
the H.T. coil
Grounding cable
(Coil-motor)
H.T. coil
BATTERY