The feed from the battery positive terminal passes through the closed contacts of the starter motor solenoid and operates the starter motor. The starter motor is earthed through the motor body attachment.

When the ignition switch is released, it returns to position II. This terminates the feed from the ignition switch to the starter relay coil, de-energising the coil and opening the relay contacts. This, in turn removes the feed from fusible link 12 to the starter motor solenoid coil, opening the contacts and removing the battery feed to the starter motor.

Charging Operation

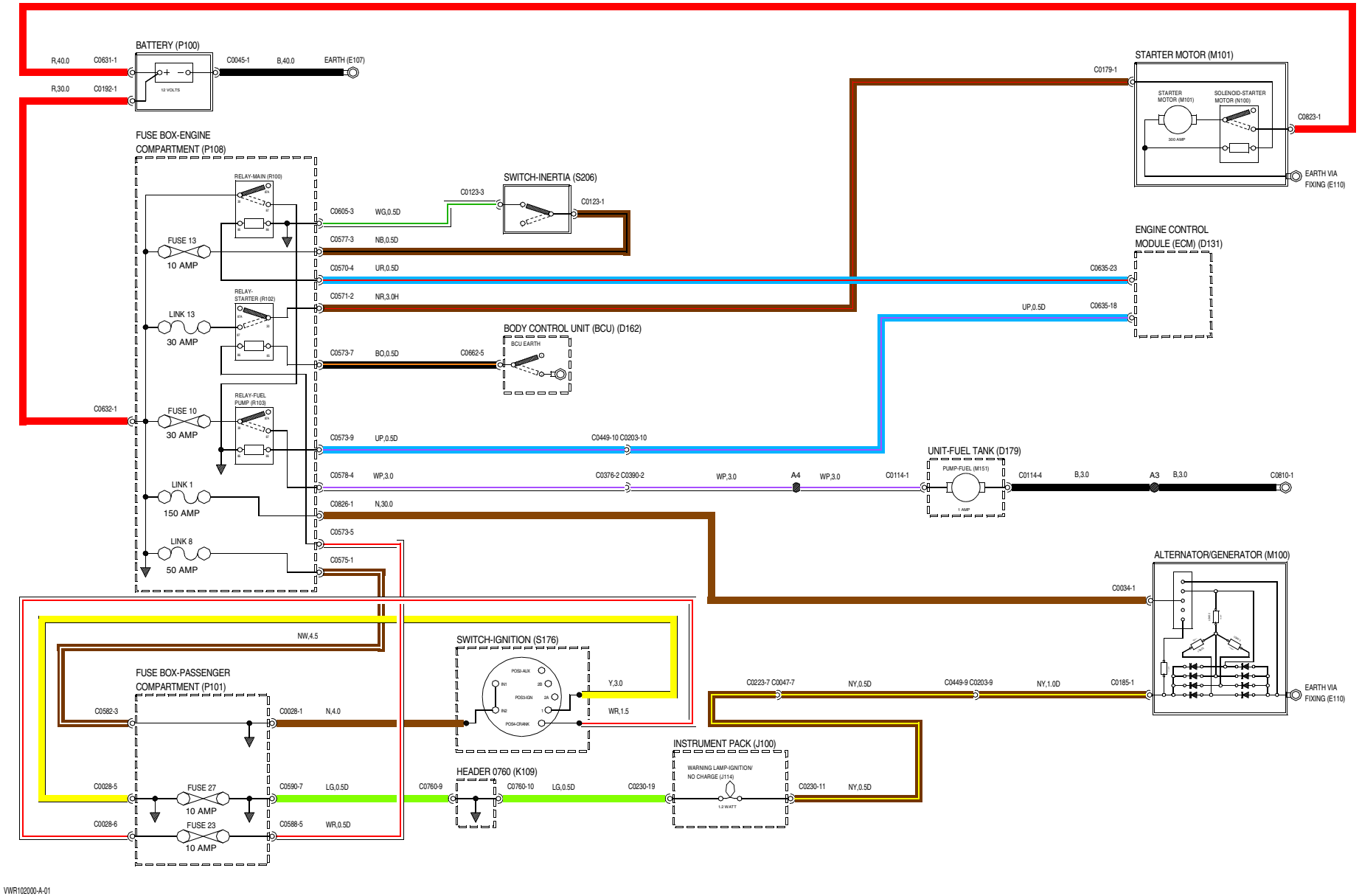
With the ignition switch in position II, the feed from fuse 27 is connected from the passenger compartment fusebox on an LG wire, through header C0760, to the ignition/no charge warning lamp in the instrument pack. From the instrument pack, the feed is connected on an NY wire to the alternator/ generator. The feed passes to earth via the brushes and regulator within the alternator, completing the warning lamp circuit which allows the warning lamp to illuminate.

When the engine is started, the magnetized rotor turns within the stator windings, generating 3 phase alternating current (ac) and a voltage that rises rapidly with rotor speed. The field diode in the rectifier pack converts the ac current into dc current flowing through the field windings. This causes an increase in the magnetic influence of the rotor, resulting in self-excitation of the alternator. The field current increases with rotor speed and thus increases the generated current and voltage until the alternator/generator is fully excited.

When the voltage applied to the alternator/generator side of the ignition/no charge warning lamp exceeds the battery voltage applied to the warning lamp, the lamp is extinguished. This shows that the alternator/generator is producing battery charging current.

When the battery is at a low state of charge or the current draw from the electrical functions of the vehicle causes a voltage drop, the alternator/ generator automatically charges at its maximum rate (dependant on rotor speed) until 14 volts is reached. When demand on the alternator/generator falls, the current output is reduced.

Battery charging is accomplished on an N wire from the alternator/generator through fusible link 1 in the engine compartment fusebox, and from fusible link 1 to the battery positive terminal on an R wire.


BATTERY (P100)
R,40.0
C0631-1
R,30.0
C0192-1
12 VOLTS
C0045-1
B,40.0
EARTH (E107)
STARTER MOTOR (M101)
C0179-1
STARTER MOTOR (M101)
SOLENOID-STARTER MOTOR (N100)
300 AMP
C0823-1
EARTH VIA FIXING (E110)
FUSE BOX-ENGINE COMPARTMENT (P108)
RELAY-MAIN (R100)
FUSE 13
10 AMP
LINK 13
30 AMP
RELAY-STARTER (R102)
RELAY-FUEL PUMP (R103)
FUSE 10
30 AMP
LINK 1
150 AMP
LINK 8
50 AMP
C0632-1
SWITCH-INERTIA (S206)
C0123-3
C0123-1
C0605-3
WG,0.5D
C0577-3
NB,0.5D
C0570-4
UR,0.5D
C0571-2
NR,3.0H
C0573-7
BO,0.5D
C0662-5
BODY CONTROL UNIT (BCU) (D162)
BCU EARTH
ENGINE CONTROL MODULE (ECM) (D131)
C0635-23
UP,0.5D
C0635-18
C0573-9
UP,0.5D
C0449-10 C0203-10
C0578-4
WP,3.0
C0376-2 C0390-2
WP,3.0
A4
WP,3.0
C0114-1
UNIT-FUEL TANK (D179)
PUMP-FUEL (M151)
1 AMP
C0114-4
B,3.0
A3
B,3.0
C0810-1
C0826-1
N,30.0
C0573-5
C0575-1
ALTERNATOR/GENERATOR (M100)
C0034-1
NW,4.5
FUSE BOX-PASSENGER COMPARTMENT (P101)
C0582-3
C0028-1
N,4.0
C0028-5
FUSE 27
10 AMP
C0028-6
FUSE 23
10 AMP
C0590-7
LG,0.5D
C0588-5
WR,0.5D
SWITCH-IGNITION (S176)
POS2-AUX
POS3-IGN
POS4-CRANK
Y,3.0
WR,1.5
HEADER 0760 (K109)
C0760-9
C0760-10
LG,0.5D
C0230-19
INSTRUMENT PACK (J100)
WARNING LAMP-IGNITION/ NO CHARGE (J114)
1.2 WATT
C0230-11
NY,0.5D
C0223-7 C0047-7
NY,0.5D
C0449-9 C0203-9
NY,1.0D
C0185-1
EARTH VIA FIXING (E110)
VWR102000-A-01