



DONGFENG FENGSHEN/AEOLUS

S30 | *H30*

Maintenance Manual

(Volume IV)

Dongfeng Motor Corporation

Oct., 2010



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This manual of maintenance shall be revised and interpreted by the company.

1. General
2. Vehicle Operation and Maintenance
3. Engine 1 (On-vehicle maintenance)
4. Engine 2 (Maintenance after disassembly of assemblies)
5. Clutch
6. Mechanical Gearbox
7. Automatic Gearbox
8. Semi-axle Wheel
9. Front Axle Front Suspension
10. Rear Axle Rear Suspension
11. Steering
12. Braking
13. Air Conditioning
14. Safety Equipment
15. Sunroof
16. Vehicle Body Equipment
17. Vehicle Body Equipment (H30)
18. Vehicle Body Inspection
19. Vehicle Body Construction
20. Vehicle Body Construction (H30)
21. Circuit Diagrams of Electrical Appliances
22. Maintenance of Electrical Appliances



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530 | 630

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21. Circuit Diagrams of Electrical Appliances

21. Circuit Diagrams of Electrical Appliances

List of harness	21-5
List of electrical appliance components	21-6
Engine-compartment fuse box	21-11
Cabin fuse box	21-13
Diagnostic socket	21-17
1. Electrical appliance schematic diagram of diagnostic socket.....	21-18
Combination instrument	21-19
1. Combination instrument diagram and indicating and alarming lamp.....	21-19
2. Combination instrument diagram and indicating and alarming lamp.....	21-20
3. Electrical appliance schematic diagram of combination instrument.....	21-21
Location plan of hinge points (S30)	21-22
Location plan of hinge points (H30)	21-23
List of hinge points	21-24
Location plan of junction connectors (S30)	21-46
Location plan of junction connectors (H30)	21-47
List of junction connectors	21-48
Location plan of ground points	21-108
Location plan of harness	21-109
Electrical appliance diagrams	21-110
1.1. Location plan of startup and charging apparatus (manual transmission) S30/H30	21-110
1.2. Electrical appliance diagram of startup and charging apparatus (manual transmission) S30/H30	21-111
2.1. Location plan of starter and charging unit (automatic transmission) S30/H30	21-112
2.2. The electrical schematic diagram for the start up and the charging (the automatic transmission) S30/H30	21-113
3.1 The electrical location diagram for the engine control S30/H30.....	21-114
3.2 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits after code VIN, VIN less than 015982).....	21-115
3.3 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits 015982 after code \leq VIN <037670).....	21-116
3.4 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits after code VIN \geq 037670).....	21-117
4.1 The electrical location diagram for the engine cooling control S30/H30.....	21-118
4.2 The electrical schematic diagram for the engine cooling control S30/H30.....	21-119
5.1 The electrical location diagram for the ignition switch S30/H30.....	21-120
5.2 The electrical location diagram for the ignition switch S30/H30.....	21-121

6.1 The electrical location diagram for the automatic transmission S30/H30.....	21-122
6.2 The electrical schematic diagram for the automatic transmission S30/H30.....	21-123
7.1 The electrical position diagram for the manual operated transmission S30/H30.....	21-124
7.2 The electrical schematic diagram for the manual operated air conditioning S30/H30.....	21-125
8.1 The electrical location diagram for automatic air conditioning S30/H30.....	21-126
8.2 The electrical schematic diagram for automatic air conditioning S30/H30.....	21-127
9.1 The electrical location diagram for safety air bag S30/H30.....	21-128
9.2 The electrical schematic diagram for safety air bag S30/H30.....	21-129
10.1 The electrical location diagram for the brake locking prevention system S30/H30.....	21-130
10.2 The electrical location diagram for the brake locking prevention system S30/H30.....	21-131
11.1 The electrical location diagram for the multiple functional display S30/H30.....	21-132
11.2 The electrical location diagram for the multiple functional display S30/H30 (it is applicable to VIN after 6 digits VIN<008679).....	21-133
11.3 The electrical location diagram for the multiple functional display S30/H30 (it is applicable to VIN after 6 digits VIN<008679).....	21-134
12.1 The electrical location diagram for the internal lighting S30/H30.....	21-135
12.2 The electrical location diagram for the internal lighting S30.....	21-136
12.3 The electrical schematic diagram for the internal lighting H30.....	21-137
13.1 The electrical location diagram for the external lighting S30.....	21-138
13.2 The electrical location diagram for the external lighting H30.....	21-139
13.3 The electrical schematic diagram for the external lighting H30.....	21-140
13.4 The electrical schematic diagram for the external lighting H30.....	21-141
14.1 The electrical location diagram for the steering and danger alarm light (S30).....	21-142
14.2 The electrical location diagram for the steering and danger alarm light (H30).....	21-143
14.3 The electrical schematic diagram for the steering and danger alarm light (H30).....	21-144
14.4 The electrical schematic diagram for the steering and danger alarm light (H30).....	21-145
15.1 The electrical location diagram for the electric sun roof S30/H30).....	21-146
15.2 The electrical schematic diagram for the electric sun roof S30/H30).....	21-147
16.1 The electrical location diagram for theft protection controller S30/H30).....	21-148
16.2 The electrical schematic diagram for theft protection controller S30/H30).....	21-149
17.1 The auxiliary electrical location diagram for the parking S30.....	21-150
17.2 The auxiliary electrical location diagram for the parking H30.....	21-151
17.3 The auxiliary electrical schematic diagram for the parking S30.....	21-152
17.4 The auxiliary electrical schematic diagram for the parking H30.....	21-153
18.1 The electrical location diagram for the back window and rear view mirror S30.....	21-154
18.2 The electrical location diagram for the back window and rear view mirror (H30).....	21-155
18.3 The electrical schematic diagram for the back window and rear view mirror 's fog removing (S30).....	21-156
18.4 The electrical schematic diagram for the back window and rear view mirror 's fog removing (H30).....	21-157
19.1 The electrical location diagram for the electric rear view mirror S30/H30).....	21-158

19.2 The electrical schematic diagram for the electric rear view mirror S30/H30) (it is applicable to 6 digits after VIN, VIN <005834.....	21-159
19.3 The electrical schematic diagram for the electric rear view mirror S30/H30) (it is applicable to 6 digits after VIN, VIN ≥005834.....	21-160
20.1 The electrical location diagram for the electric vehicle door and window S30/H30	21-161
20.2 The electrical schematic diagram for the electric vehicle door and window S30/H30.....	21-162
21.1 The electrical location diagram for the electric door lock S30/H30.....	21-163
21.2 The electrical schematic diagram for the electric door lock S30/H30 (It is applicable to 6 digits after VIN, VIN <037670).....	21-164
21.3 The electrical schematic diagram for the electric door lock S30/H30 (It is applicable to 6 digits after VIN, VIN≥037670).....	21-165
22.1 The electrical location diagram for the luggage compartment unlocking S30.....	21-166
22.2 The electrical location diagram for the back door unlocking H30.....	21-167
22.3 The electrical schematic diagram for the back door unlocking S30	21-168
22.4 The electrical schematic diagram for the back door unlocking H30.....	21-169
23.1 The electrical location diagram for the acoustic system S30 /H30.....	21-170
23.3 The electrical location diagram for the acoustic system S30 /H30.....	21-171
24.1 The electrical location diagram for the wind shield wiper and washing pump (S30).....	21-172
24.2 The electrical location diagram for the wind shield wiper and washing pump (H30).....	21-173
24.3 The electrical schematic diagram for the wind shield wiper and washing pump (S30).....	21-174
24.4 The electrical schematic diagram for the wind shield wiper and washing pump (H30).....	21-175
25.1 The electrical location diagram for the cigarette lighter (H30).....	21-176
25.2 The electrical schematic diagram for the cigarette lighter S30/H30.....	21-177
26.1The electrical location diagram for the horn S30/H30.....	21-178
26.2The electrical schematic diagram for the horn S30/H30.....	21-179
27.1 The electrical schematic diagram for the engine compartment power source distribution S30 (It is applicable to the 6 digits after code VIN, VIN <037670).....	21-180
27.2 The electrical schematic diagram for the engine compartment power source distribution S30 (It is applicable to the 6 digits after code VIN, VIN ≥037670).....	21-181
27.3 The electrical schematic diagram for the engine compartment power source distribution H30	21-182

List of harness

Harness code	Name of harness
FL_H	Front harness
IP_H	Instrument panel harness
EG_H	Engine harness
AB_H	Airbag harness
PD_H	Right front door harness
DD_H	Left front door harness
BD_H	Cabin harness
PA_H	Reverse sensor harness
RL_H	Left rear door harness
RR_H	Right rear door harness
LC_H	Luggage compartment harness (rear harness)
BlackD_H	Blackdoor harness-main
	Blackdoor harness-branch
RF_H	Roof harness
AC_H	Air conditioning harness
IGN_SW	Ignition switchharness
INJ_H	Injection harness
CS_H	Cooling fan harness
MIR_H	Electric rearview mirrorharness

List of electrical appliance components

Electrical appliance components	Pin (P)	Colour of connector
D000A (ignition switch)	2	Black
D000B(ignition switch)	2	Brown
D000C(ignition switch)	2	Grey
D001A(cockpit fuse box)	6	Black
D001B(cockpit fuse box)	10	Black
D001C(cockpit fuse box)	7	Black
D001D(cockpit fuse box)	6	White
D001E(cockpit fuse box)	12	Black
D001F(cockpit fuse box)	8	Black
D001G(cockpit fuse box)	2	Black
D001H(cockpit fuse box)	16	Grey red
D001I(cockpit fuse box)	6	Black
D002(engine compartment fuse box)	--	--
D003 (diagnostic unit)	16	Black
D004A(combination instrument A)	26	Blue
D004B(combination instrument B)	26	Yellow
D020A(light combination switch A)	9	Black
D020B(light combination switch B)	5	White
D101(starter)	1	
D102(generator)	1	
D1120(knock sensor)	2	Black
D1135(ignition coil)	4	Grey
D1203(inertia switch)	3	Black
D1210(fuel pump)	4	Black
D1211(fuel gauge)	3	Brown
D1215(canister purge valve)	2	Brown
D1256 (oil pump controller)	5	White
D1261.accelerator pedal sensor)	4	Black
D1262(throttle valve)	6	Brown
D1312(intake pressure sensor)	4	Grey
D1313(engine speed sensor)	2	Black

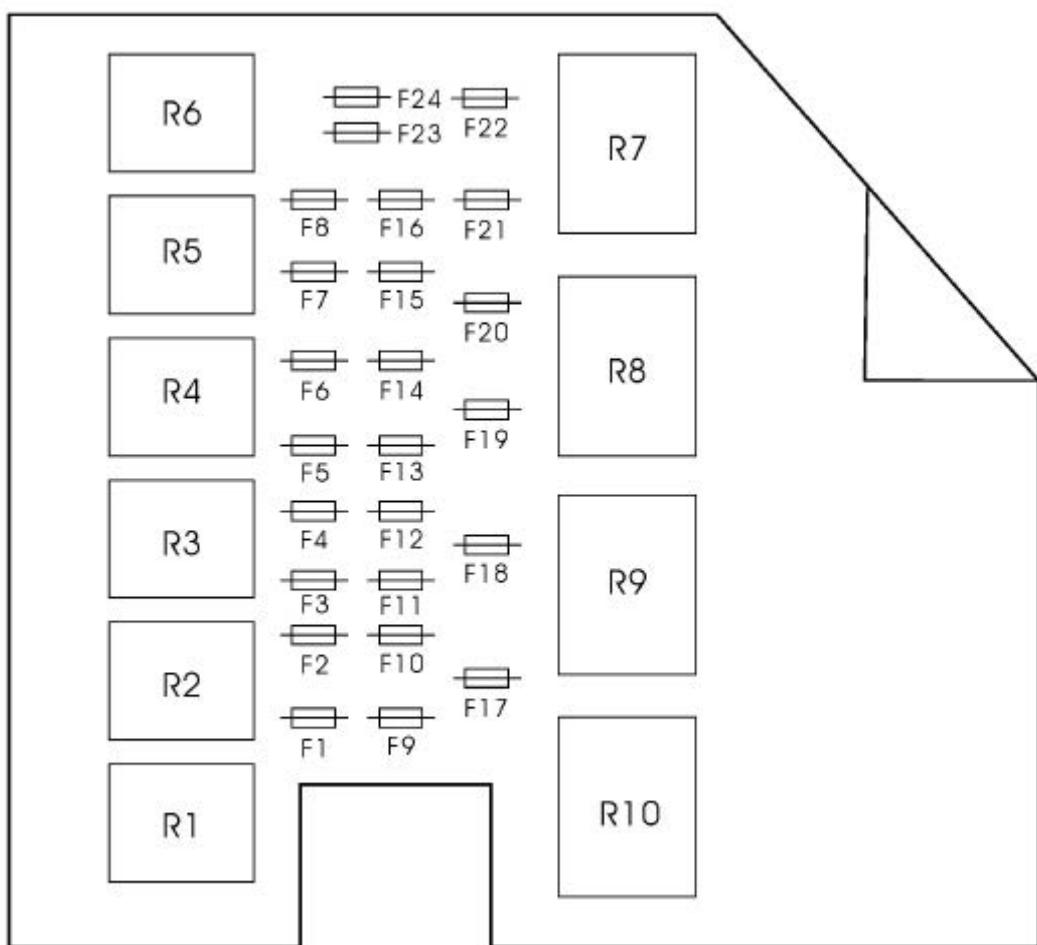
Electrical appliance components	Pin (P)	Colour of connector
D1320A(engine computer CLC)	48	Brown
D1320B(engine computer CLM1)	32	Black
D1320C(engine computer CLM2)	32	Grey
D1350(front oxygen sensor)	4	Green
D1351(rear oxygen sensor)	4	Blue
D1601A(transmission control module A)	24	White
D1601B(transmission control module B)	26	White
D1602A(transmission unit)	10	Grey
D1602B(gear selector switch)	9	Grey
D1603(mode selector switch)	8	Grey
D1604(transmission shift lock)	6	Grey
D1605(input speed sensor)	2	Blue
D1620(vehicle speed sensor)	3	White
D1620A(vehicle speed sensor)	3	Black
D210(brake switch)	2	Black
D210A(brake switch)	4	White
D2100(No.3 brake lamp)	2	White
D2100(No.3 brake lamp H30)	2	
D220(back-up lamp switch)	2	White
D2300(hazard warning lamp switch)	6	Brown
D252(high-pitched horn)	2	White
D2610(left headlamp)	6	Black
D2610A(left front steering lamp)	2	Black
D2615(right headlamp)	6	Black
D2615A(right front steering lamp)	2	Black
D2620(left rear combination lamp-body S30)	4	Black
D2620(left rear combination lamp H30)	6	
D2620A(left rear combination lamp-luggage compartment S30)	4	White
D2620A(left additional brake lamp/position lamp H30)	3	
D2625(right rear combination lamp-body S30)	4	Black
D2625(right rear combination lamp H30)	6	
D2625A(right rear combination lamp-luggage compartment)	4	White
D2625A(right additional brake lamp/position lamp H30)	3	

Electrical appliance components	Pin (P)	Colour of connector
D2630(left license plate lamp)	2	Black
D2630(left license plate lamp H30)	2	
D2635(right license plate lamp)	2	Black
D2635(right license plate lamp H30)	2	
D2640(left front fog lamp)	2	Black
D2645(right front fog lamp)	2	Black
D301(front dome lamp)	6	White
D302(rear dome lamp)	3	White
D310A(luggage compartment lamp+)	1	Black
D310B(luggage compartment lamp-)	1	Black
D4005(engine coolant temperature sensor)	3	Blue
D412(oil pressure sensor)	2	Grey
D500(wiper combination switch)	11	Grey
D501(wiper motor)	5	White
D501A(rear wiper motor H30)	3	
D510(washing pump motor)	2	Black
D6000(master switch of window lifter)	18	White
D6011(window lifter motor)	3	Orange
D6015(window lifter switch)	5	White
D6016(window lifter motor)	3	Orange
D602(economic mode switch)	6	Black
D6020(window lifter switch)	5	White
D6021(window lifter motor)	3	Orange
D6210(Door lock)	6	Brown
D6215(Door lock)	6	Brown
D6220(Door lock)	5	Brown
D6260(luggage compartment lock S30)	3	Green
D6260(hatchback door lock H30)	3	
D6265(luggage compartment switch)	2	Black
D6265(hatchback door lock H30)	2	
D641(rearview mirror regulator)	12	White
D6410(left rearview mirror regulator motor)	5	White
D6415 (right rearview mirror regulator motor)	5	White

Electrical appliance components	Pin (P)	Colour of connector
D650(SRS control module)	50	Pink
D6502(seat belt reminder switch)	2	White
D6520(driver seat belt pretensioner)	2	Brown
D6525(passenger seat belt pretensioner)	2	Brown
D6530 (driver airbag)	2	Green
D6532(driver lateral impact sensor)	2	Orange
D6535(passenger airbag)	2	Green
D6537(passenger lateral impact sensor)	2	Orange
D680(sunroof control module)	6	White
D700(ABS control module)	26	Black
D7010(left front wheel speed sensor)	2	Grey
D7015(right front wheel speed sensor)	2	Grey
D7020(left rear wheel speed sensor)	2	Grey
D7025(right rear wheel speed sensor)	2	Grey
D703(brake fluid switch)	2	Black
D704(parking brake switch)	1	Brown
D721(multi-functional screen)	12	Brown
D723 (quartz clock)	6	Black
D750A(parking assist computer 1)	8	White
D750B(reversing assist computer 2)	6	Black
D7511(right sensor)	3	Black
D7512(right middle sensor)	3	Black
D7513(left middle sensor)	3	Black
D7514(left sensor)	3	Black
D800B(manual air-conditioning control module)	32	Green
D801(air conditioning pressure switch)	4	Brown
D8010(air conditioning compressor)	2	White
D8013(sunshine sensor)	4	White
D8100(cigarette lighter)	3	Black
D820(anti-theft controller module)	18	Black
D820A (rear window defroster +)	1	Black
D820B (rear window defroster -)	1	Black
D821(anti-theft response module)	6	Black

Electrical appliance components	Pin (P)	Colour of connector
D840(rearview mirror fuse)	2	
D840A(radio cassette player A)	8	Black
D840B(radio cassette player B)	8	White
D8410A(bass horn)	2	Black
D8410B(high-pitched horn)	3	Black
D8415A(woofer)	2	Black
D8415B(tweeter)	3	Black
D8420(woofer)	2	Black

Engine compartment fuse box



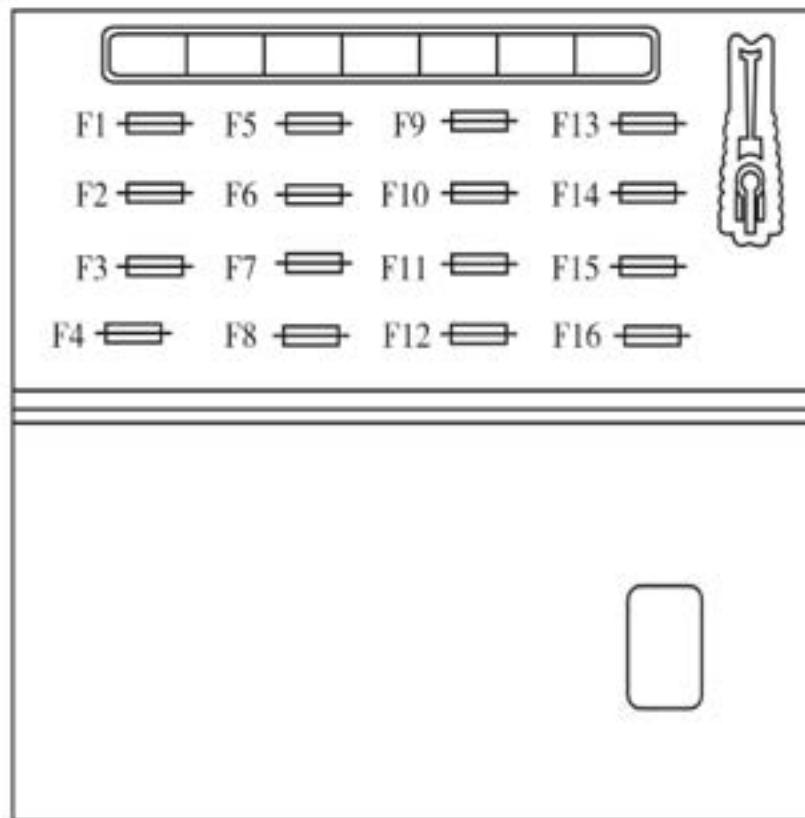
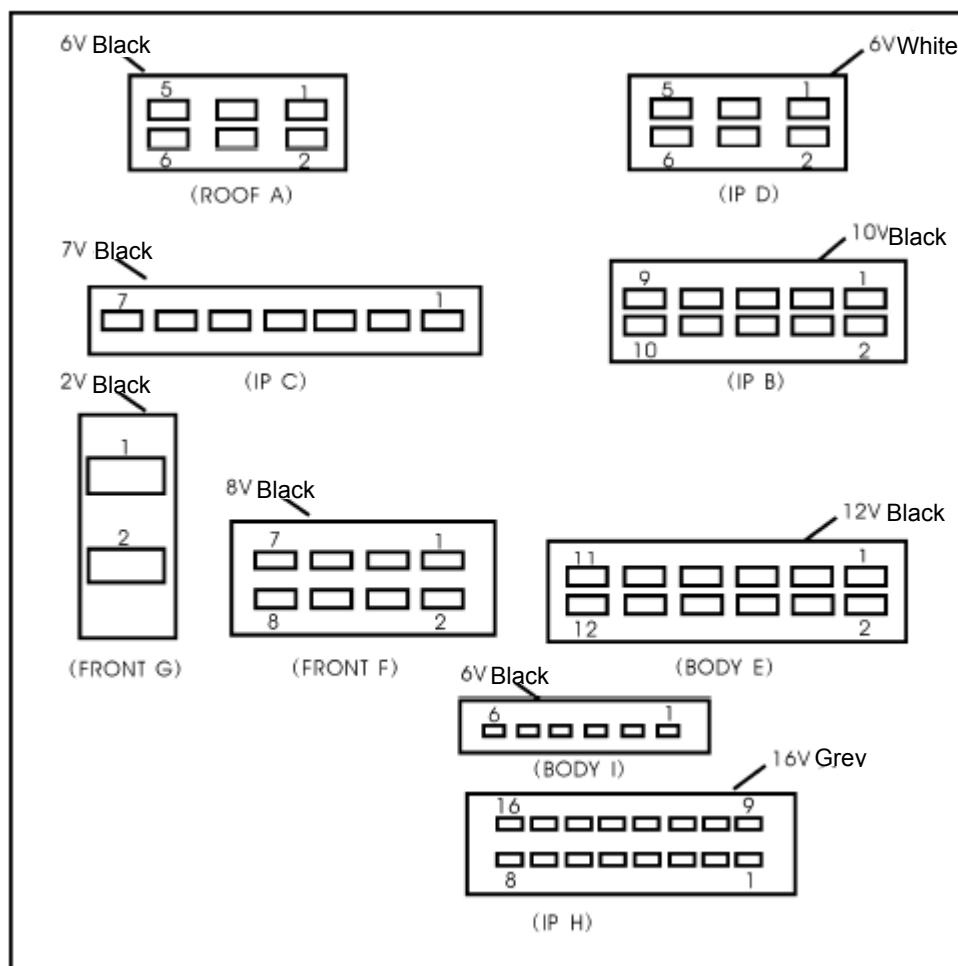
No.	Capacity	Function	Type of fuse
F1	10A	high beam light (left)	MINI
F2	10A	high beam light (right)	MINI
F3	10A	low beam light (left)	MINI
F4	10A	low beam light (right)	MINI
F5	15A	Startup&automatic gearshift lever lock, automatical transmission control unit	MINI
F6	10A	Rear wiper (H30)	MINI
F7	TBD	standby	MINI
F8	TBD	standby	MINI
F9	20A	Engine 1	MINI
F10	20A	Engine 2	MINI
F11	10A	ignition switch	MINI
F12	15A	ABS valve	MINI

No.	Capacity	Function	Type of fuse
F13	20A	ABS pump	MINI
F14	20A	front fog lamp	MINI
F15	10A	horn	MINI
F16	10A	air conditioning compressor clutch	MINI
F17	60A	cooling fan	JCASE
F18	40A	ignition switch	JCASE
F19	50A	cockpit central electric control box power supply	JCASE
F20	50A	cockpit central electric control box power supply	JCASE
F21	40A	air conditioning blower	JCASE
F22	30A	front electric window	JCASE
F23	TBD	standby	ATO
F24	TBD	standby	ATO

List of relays for the fuse box of engine compartment:

No.	Function
R1	starter relay
R2	automatic gearshift lever lock
R3	front fog lamp relay
R4	horn relay
R5	air conditioning compressor relay
R6	Rear wiper relay H30
R7	front electric window
R8	air conditioning blower relay
R9	engine relay-1
R10	engine relay-2

Cabin fuse box



List of fuse for the fuse box of cockpit

No.	Capacity	Function of fuse
F1	5A	Right front position lamp, left rear position lamp
F2	5A	Cab illumination
F3	5A	Left front position lamp, right rear position lamp
F4	20A	radio cassette player, theftproof control box, cockpit central control box, theftproof LED indicating lamp, password theftproof indicating lamp, diagnose interface, combination instrument, clock/ multi-functional screen, automatic air-conditioning control module
F5	15A	Theftproof control box, diagnose interface, brake lamp switch, reversing light switch, combination instrument, back-up lamp switch ECU, ABS module, gear selector switch, mode selector switch, multi-functional screen
F6	10A	SRS unit
F7	10A	Rear fog lamp
F8	30A	Cigarette lighter
F9	30A	Rear window heater, rearview mirror heater
F10	30A	left rear electric doors and windows, sunroof motor (motor power), front electric rearview mirror/electric rearview mirror adjusting control circuit
F11	5A	Front dome lamp, rear dome lamp, luggage compartment lamp
F12	20A	Door –locked/unlocked, luggage compartment-unlocked, front wiper automatic reset
F13	5A	radio cassette player, clock, battery charging indicator, sunroof module
F14	20A	front wiper brush, front windshield washer
F15	15A	fuel pump
F16	30A	right rear electric window power supply

List of relays for the fuse box of cockpit

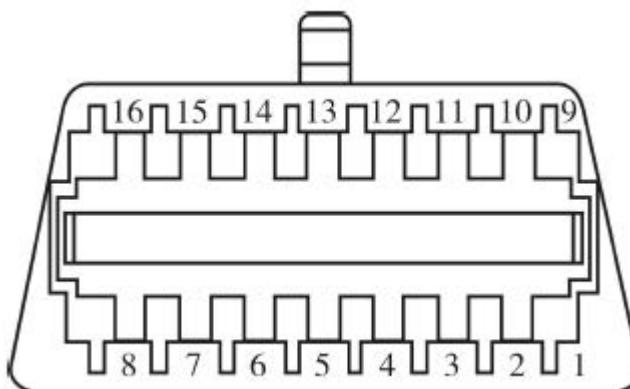
No.	Name of relay
1	left rear window relay
2	Door locking relay
3	Door unlocking relay
4	luggage compartment unlocking relay
6	front wiper relay
7	rear window defroster relay

List of pins for the fuse box of cockpit

Pin	Definition
IP B_1	Connected to rear fog lamp switch
IP B_2	DVD\radio cassette player, theft proof alarm controller, combination instrument, theftproof LED indicating lamp, diagnose interface, quartz clock \multi-functional screen, automatic transmission control module power supply
IP B_3	Combination instrument, air conditioning control panel, multi-functional screen, radio cassette player, quartz clock back lighting, cigar lighter, hazard warning lamp
IP B_4	
IP B_5	Airbag module APC power supply
IP B_6	Cigarette lighter socket B+power supply
IP B_7	DVD\radio cassette player, battery charging alarm lamp, quartz clock and ACC power supply of multi-functional screen
IP B_8	
IP B_9	Connected brake switch, brake lamp
IP B_10	APC power supply of combination instrument, ABSAPC power supply, diagnostic unit, automatic transmission, theftproof alarm controller, brake switch, back-up lamp switch(reverse sensor ECU) , gear selector switch, mode selector switch
IP C_1	Right front door close+
IP C_2	Right front door open-
IP C_3	Front/rear electric window, rearview mirror adjusting power supply drive
IP C_4	ACC power supply of wiper system
IP C_5	Connected to right rearview mirror heater, defroster indicating lamp
IP C_6	Connected to right steering lamp
IP C_7	Connected to left steering lamp
IP C_8	
IP D_1	Connected to ignition switch APC gear
IP D_2	Connected to position lamp switch
IP D_3	Connected to ignition switch ACC gear
IP D_4	Connected to ignition switch KK gear
IP D_5	
IP D_6	Power supply ground
IP H_1	Intermittent position of rear wiper switch (H30)
IP H_2	Connected to fuse box R6 relay of cockpit
IP H_3	Connected to front washer switch
IP H_4	Key reminder input of theftproof alarm controller
IP H_5	Intermittent position of front wiper switch
IP H_6	
IP H_7	
IP H_8	Connected to left steering switch
IP H_9	Connected to defroster switch
IP H_10	Connected to right steering switch
IP H_11	Connected to the slightly open switch of right front door and the open door indicating lamp of combination instrument
IP H_12	Connected to flushing switch (H30)
IP H_13	Connected to hazard warning lamp switch
IP H_14	Signal feedback of rear wiper

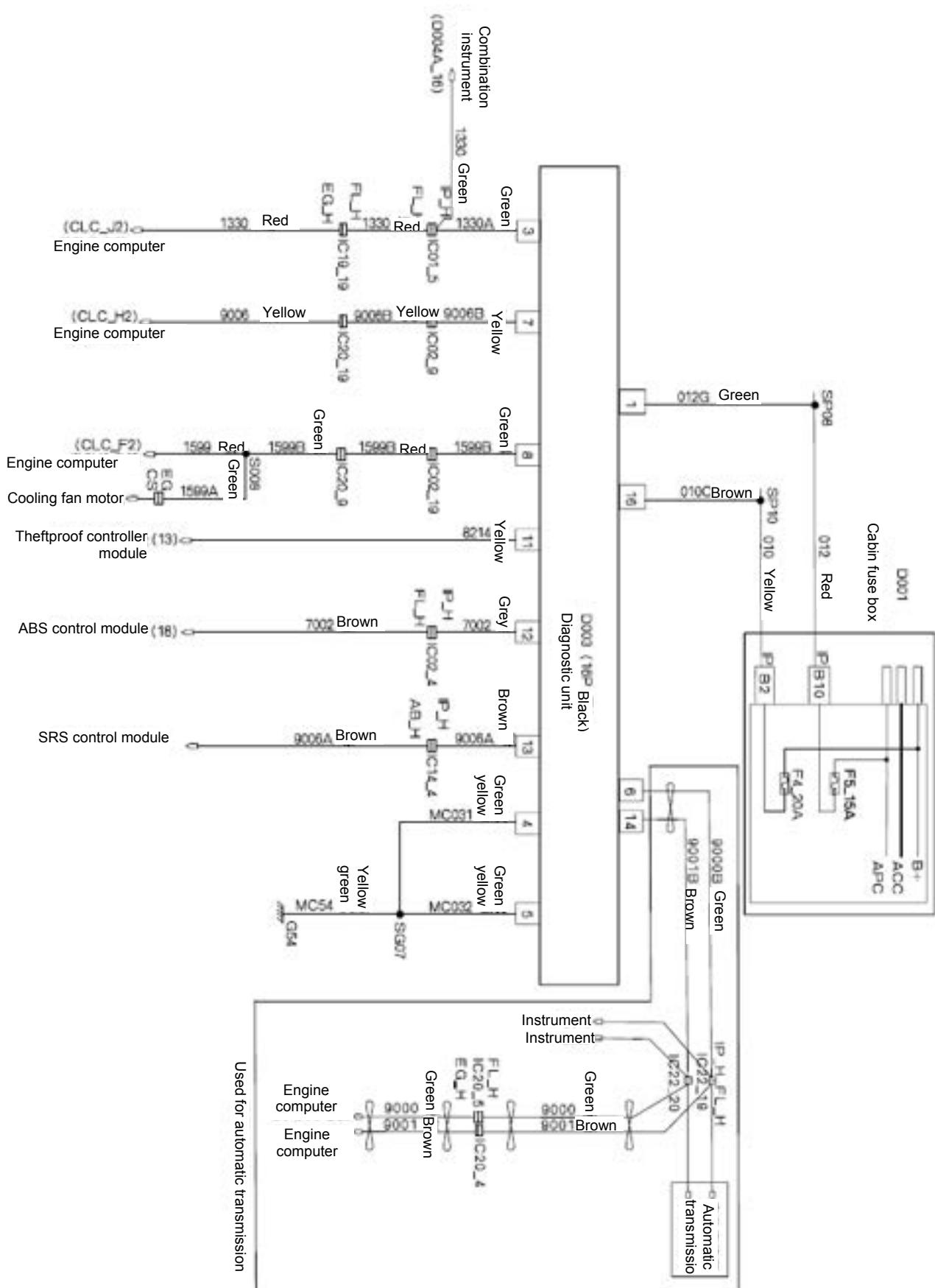
Pin	Definition
IP H_15	Connected to airbag trigger
IP H_16	Logic ground
RF A_1	Connected to the ON position of front/rear dome lamp switch, high-mounted stop lamp and sunroof module
RF A_2	Connected to high-mounted stop lamp
RF A_3	Connected to sunroof module
RF A_4	Connected to the DOOR position of front/rear dome lamp switch
RF A_5	Sunroof motor B+power supply
RF A_6	Connected to front dome lamp and rear dome lamp
BD E_1	Connected to right rear position lamp
BD E_2	Connected to left rear position lamp
BD E_3	Connected to luggage compartment lamp
BD E_4	Connected to rear fog lamp
BD E_5	Left front door, front door (left and right) open-
BD E_6	Connected to fuel pump
BD E_7	Main cab door and rear door (left and right) close+
BD E_8	
BD E_9	left rear electric window power supply drive
BD E_10	luggage compartment motor+
BD E_11	Rear windshield, left rearview heater
BD E_12	power supply drive of right rear electric window
BD I_1	left front door lock switch
BD I_2	
BD I_3	left front door lock state
BD I_4	Slightly open switch of left front door, rear door (left and right)
BD I_5	luggage compartment unlocking switch
BD I_6	luggage compartment contact switch
FL F_1	wiper low speed output
FL F_2	wiper stop position
FL F_3	Connected to right front position lamp
FL F_4	Connected to left front position lamp
FL F_5	speed signal input
FL F_6	wiper running position
FL F_7	Connected to cockpit fuse box R10 relay
FL F_8	
FL G_1	cockpit fuse box B+power supply
FL G_2	cockpit fuse box B+power supply

Diagnostic socket

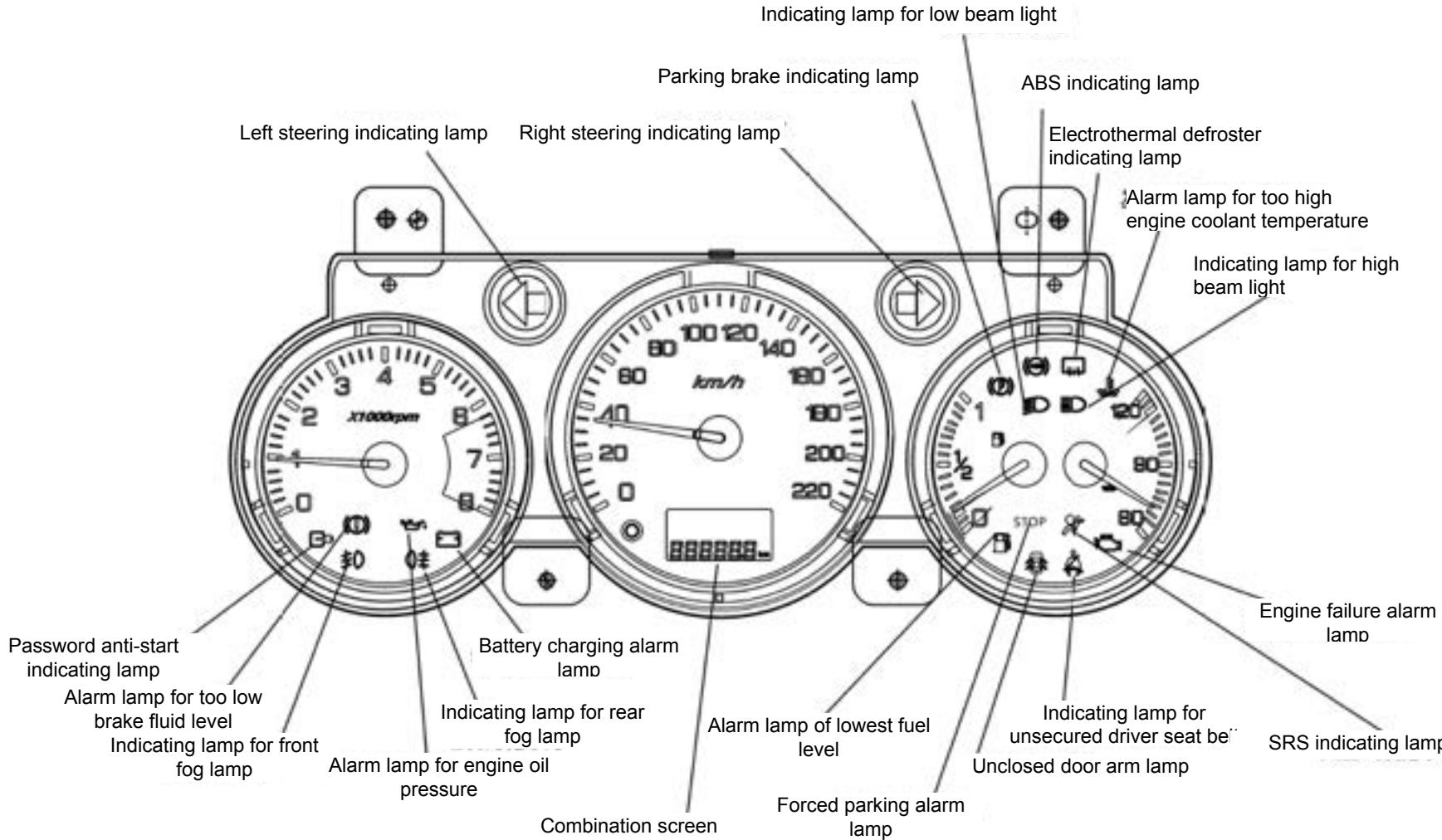


Pin	Function
1	Ignition switch
2	Unused
3	combination instrument ---engine computer
4	Grounding
5	Grounding
6	automatic transmission control module --engine computer
7	engine computer
8	engine computer ---cooling fan motor
9	Unused
10	Unused
11	Anti-theft controller module
12	ABS control module
13	SRS control module
14	automatic transmission control module --engine computer
15	Unused
16	Battery

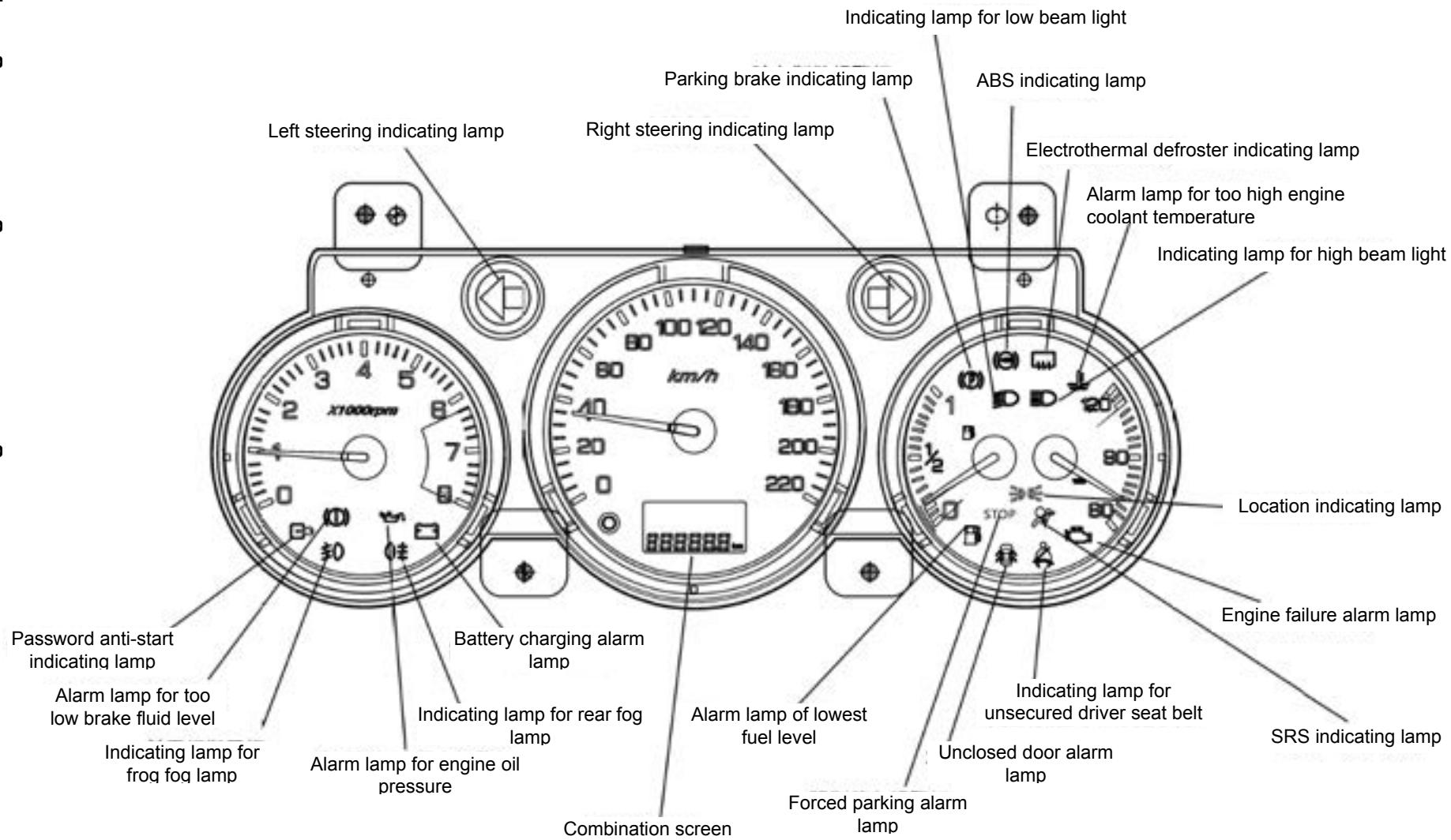
1. Electrical schematic diagram of diagnostic socket



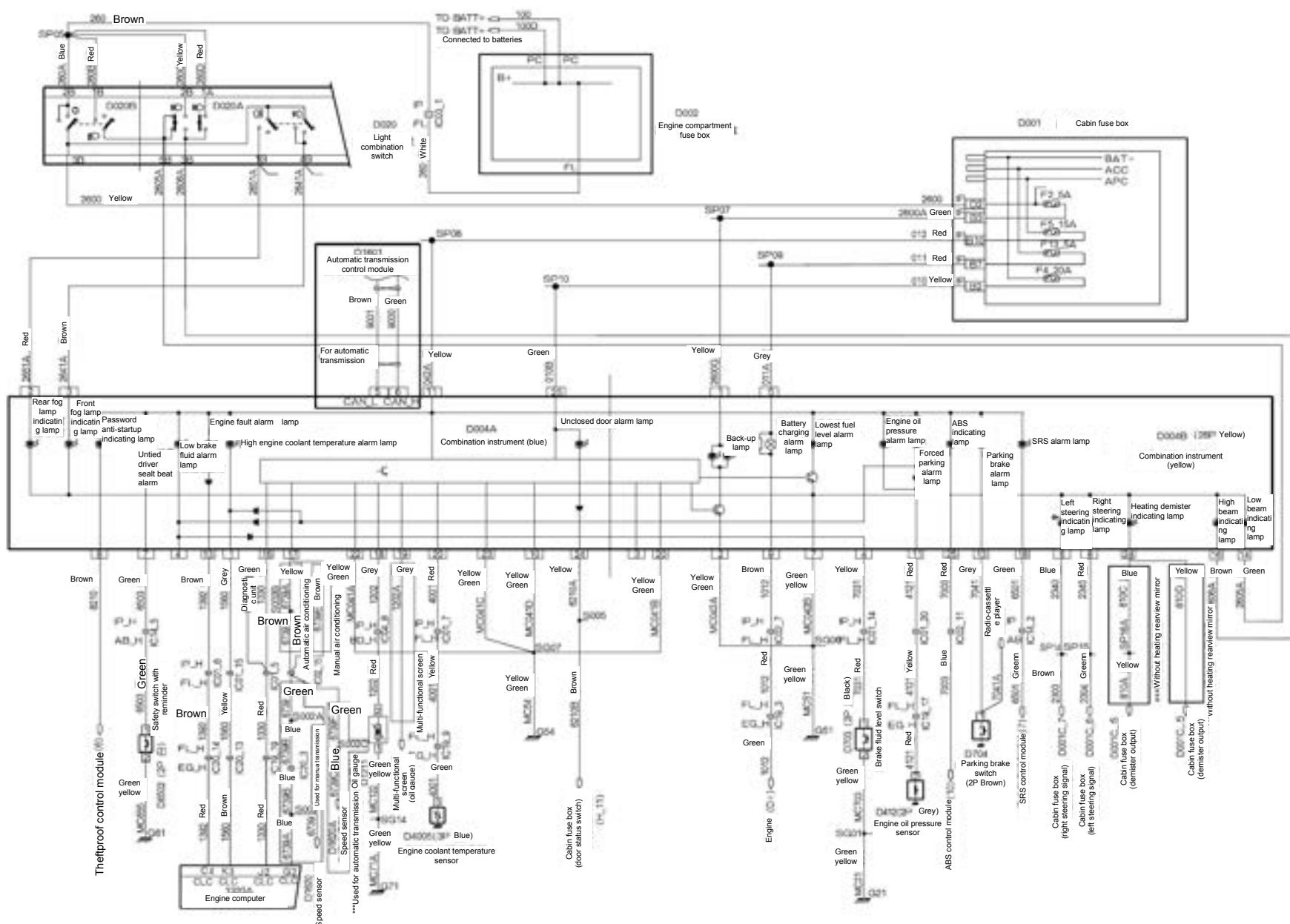
Combination instrument diagram and indicating and alarming lamp



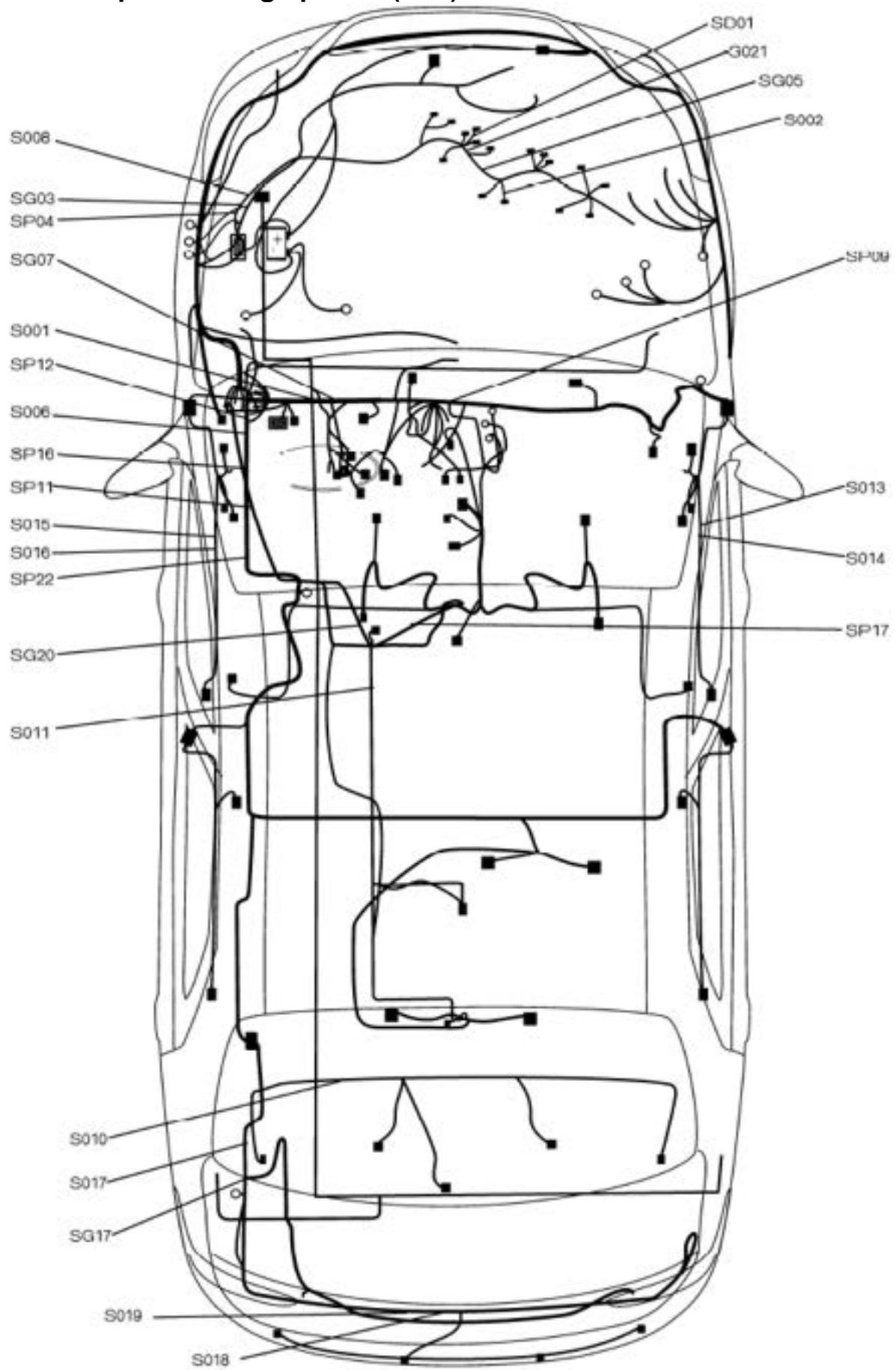
2. 2011-S30 combination instrument diagram and indicating and alarming lamp

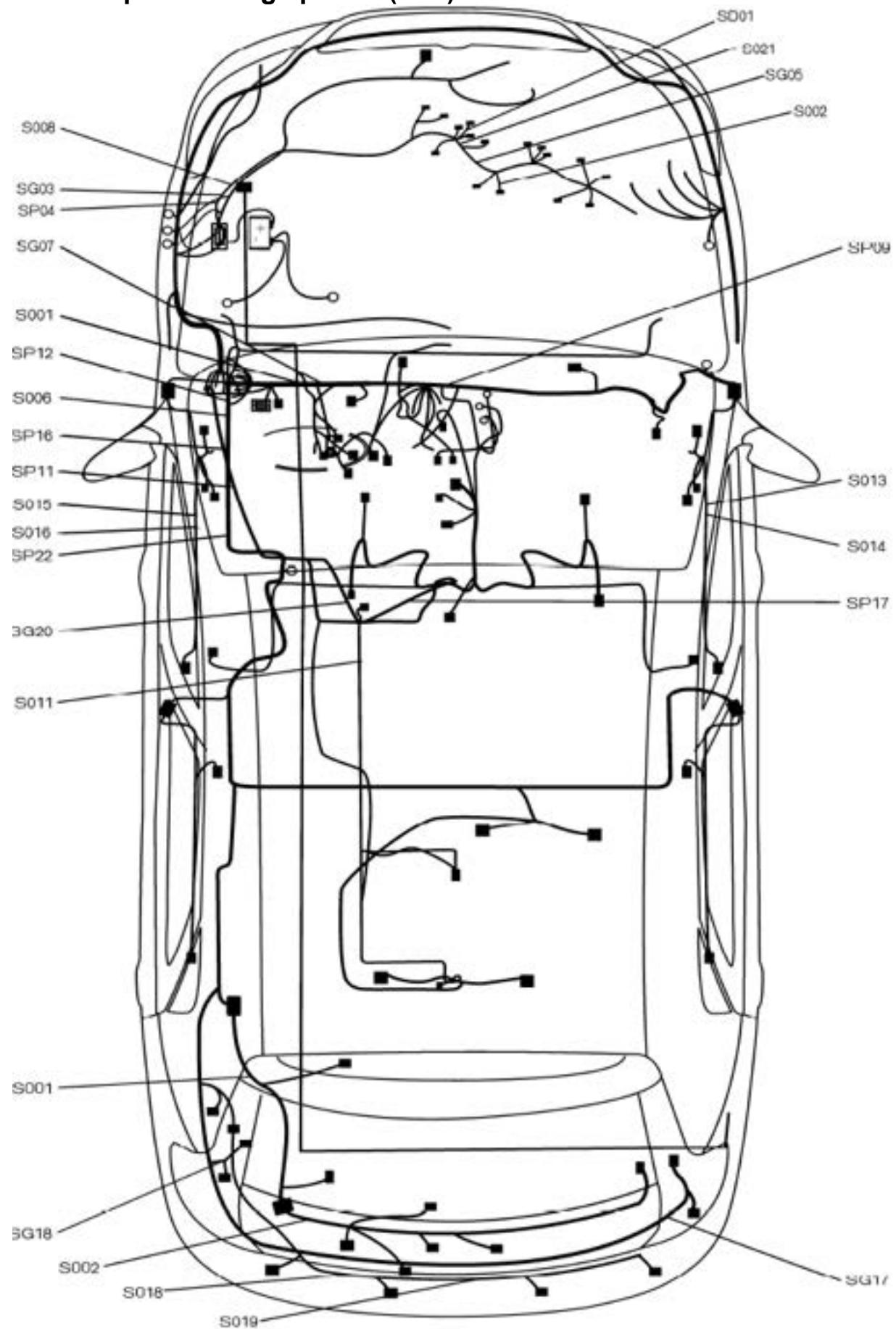


3. Electric schematic diagram of combination instrument



Location plan of hinge points (S30)



Location plan of hinge points (H30)

List of hinge points

List of hinge points of instrument panel harness (S30/H30)

A	manual transmission+manual air conditioning +clock
B	manual transmission+automatic air conditioning +display screen
C	automatic transmission+automatic air conditioning +display screen
D	automatic transmission+manual air conditioning +clock
E	manual transmission+manual air conditioning +display screen
F	automatic transmission+manual air conditioning +display screen
ALL	Shared

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S001	2100C	Green	ALL	Cabin fuse box	D001B	S001	
-	1633	Red	C/D/F	S001		Transmission shift lock	D1604
-	2100	Green	A/B/C	S001		Brake switch	D210
-	2100A	Green		S001		IC02F	
-	2100B	Green	ALL	S001		IC04F	
-	2100D	Green	C/D/F	S001		Brake switch	D210A
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S002B	6739B	Green	B/C	IC13F		S0026	
-	6739	Brown	B/C	S002B		IC02F	
-	6739A	Yellow	B / C	S002B		Combination instrument (Blue)	D004A
-	6739D	Green	B / C	S002B		Multi-functional screen	0721
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S005	6210C	Red	ALL	Woofer	D820	S005	
-	6210B	Brown	ALL	Cabin fuse box	D001H	S005	
-	6210	Green	ALL	IC05F		S005	
-	6210A	Yellow	ALL	S005		Combination instrument (Blue)	D004A

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG07	MC723	Yellow green	A/D	Quartz clock	D723	SG07	
-	MC721	Yellow green	B/C/E/F	Multi-functional screen	D721	SG07	
-	MC54	Yellow green	ALL	G54		SG07	
-	MC041D	Yellow green	ALL	Combination instrument (Blue)	D004A	SG07	
-	MC041C	Yellow green	ALL	Combination instrument (Blue)	D004A	SG07	
-	MC041B	Yellow green	ALL	Combination instrument (Yellow)	D004B	SG07	
-	MC041A	Yellow green	ALL	Combination instrument (Blue)	D004A	SG07	
-	MC002	Green yellow	ALL	SG07		Cabin fuse box	D001H
-	MC031	Green yellow	ALL	SG07		Diagnostic unit	D003
-	MC032	Green yellow	ALL	SG07		Diagnostic unit	D003
-	MC232	Yellow green	ALL	SG07		Light combination switch	D020A
-	MC820	Yellow green	ALL	SG07		Theftproof controller module	D820
SP05	260	White	ALL	IC03F		SP05	
-	260A	Blue	ALL	SP05		Light combination switch B	D020B
-	260B	Red	ALL	SP05		Light combination switch B	D020B
-	260C	Yellow	ALL	SP05		Light combination switch A	D020A
-	260D	Red	ALL	SP05		Light combination switch A	D020A
SP07	2600A	Green	ALL	Cabin fuse box	D0018	SP07	
-	2600B	Brown	ALL	SP07		Hazard warning switch	D2300
-	2600D	Green	ALL	SP07		Radio cassette player A	D840A
-	2600E	Blue	B/C/E/F	SP07		Multi-functional screen	D721
-	2600F	Red	A/D/E/F	SP07		IC12F	
-	2600G	Yellow	ALL	SP07		Combination instrument (Yellow)	D0048
-	2600G	Red	B/C	SP07		IC13F	
-	2600I	Blue	ALL	SP07		Cigarette lighter	D8100
-	2600J	Brown	A/D	SP07		Quartz clock	D723
SP10	840	Yellow	ALL	Audio system	D840A	SP10	
-	820A	Green	ALL	Hazard warming switch	D2300	SP10	
-	010D	Red	A/D	Quartz clock	D723	SP10	
-	010A	Grey	B/C/E/F	Multi-functional screen	D721	SP10	
-	010-	Yellow	ALL	SP10		Cabin fuse box	D001B
-	010B	Green	ALL	SP10		Combination instrument (Blue)	D004A
-	010C	Brown	ALL	SP10		Diagnostic unit	D003
-	010E	Yellow	C/D/F	SP10		IC22F	
-	820	Yellow	ALL	SP10		Theftproof controller	D820

Circuit Diagrams of Electrical Appliances

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SP14	2330	Brown	ALL	IC04F		SP14	
-	2320	Red	ALL	IC04F		SP14	
-	2310	Red	ALL	IC01F		SP14	
-	2303	Brown	ALL	SP14		Cabin fuse box	D001C
-	2340	Blue	ALL	SP14		Combination instrument (Yellow)	D004B
SP15	2345	Red	ALL	Combination instrument (Yellow)	D0048	SP15	
-	2335	Brown	ALL	IC05F		SP15	
-	2304	Green	ALL	SP15		Cabin fuse box	D001C
-	2315	Green	ALL	SP15		IC01F	
-	2325	Yellow	ALL	SP15		IC04F	
SP16A	810B	Yellow	B/C	IC05F		SP16A	
-	810A	Yellow	B/C	SP16A		Cabin fuse box	D001C
-	810C	Blue	B/C	SP16A		Combination instrument (Yellow)	D004B
SP20	002B	Pink	ALL	IC01F		SP20	
-	002A	Red	ALL	Cabin fuse box	00010	SP20	
-	002-	Yellow	ALL	SP20		Ignition switch	D000C
SP21	003D	Green	B/C	IC13F		SP21	
-	003C	Green	A/D/E/F	IC12F		SP21	
-	003-	Brown	ALL	SP21		Ignition switch	D000B
-	003A	Green	ALL	SP21		Cabin fuse box	D001D
-	003B	Yellow	ALL	SP21		IC01F	

List of hinge points of instrument panel harness (S30)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG06	MC160	Green yellow	ALL	Mode selector switch	D1603	SG06	
-	MC164	Green yellow	C/D/F	Transmission shift lock	D1604	SG06	
-	MC510	Green yellow	ALL	Wiper combination switch	D500	SG06	
-	MC51	Green yellow	ALL	D51		SG06	
-	MC230	Yellow green	ALL	Hazard warning switch	D2300	SG06	
-	MC001	Yellow green	ALL	SG06		Cabin fuse box	D001D
-	MC042A	Yellow green	ALL	SG06		Combination instrument (Yellow)	D0048
-	MC042B	Yellow green	ALL	SG06		Combination instrument (Yellow)	D0048
-	MC250	Yellow green	ALL	SG06		Light combination switch	D020B

List of hinge points of instrument panel harness (S30)

(Applicable to the last six digits of VIN<008679)

SP08	012W	Red	C/D/F	Brake switch	D210A	SP08	
-	822	Green	ALL	Theftproof controller module	D820	SP08	
-	012F	Red	C/D/F	Brake switch	D210A	SP08	
-	012A	Red	A/B/E	Brake switch	D210	SP08	
-	012-	Red	ALL	SP08		Cabin fuse box	D0018
-	012B	Green	ALL	SP08		IC01F	
-	012C	Brown	ALL	SP08		IC02F	
-	012G	Green	ALL	SP08		Diagnostic unit	D003
-	012H	Yellow	C/D/F	SP08		Mode selector switch	D1603
-	042A	Yellow	ALL	SP08		Combination instrument (Blue)	D004A
SP09	841	Red	ALL	Radio cassette player A	D840A	SP09	
-	011-	Red	ALL	SP09		Cabin fuse box	D001B
-	011A	Grey	ALL	SP09		Combination instrument (Yellow)	D004B
-	011B	Green	A/D	SP09		Quartz clock	D723
-	012E	Yellow	B/C/E/F	SP09		Multi-functional screen	D721

List of hinge points of instrument panel harness (S30)

(Applicable to the last six digits of VIN≥008679)

SP08	012W	Red	C/D/F	Brake switch	D210A	SP08	
-	822	Green	ALL	Theftproof controller module	D820	SP08	
-	012F	Red	C/D/F	Brake switch	D210A	SP08	
-	012A	Red	A/B/E	Brake switch	D210	SP08	
-	012-	Red	ALL	SP08		Cabin fuse box	D001B
-	012B	Green	ALL	SP08		IC01F	
-	012C	Brown	ALL	SP08		IC02F	
-	012E	Yellow	B/C/E/F	SP08		Multi-functional screen	D721
-	012G	Green	ALL	SP08		Diagnostic unit	D003
-	012H	Yellow	C/D/F	SP08		Mode selector switch	D1603
-	042A	Yellow	ALL	SP08		Combination instrument (Blue)	D004A
SP09	841	Red	ALL	Radio cassette player A	D840A	SP09	
-	011-	Red	ALL	SP09		Cabin fuse box	D001B
-	011A	Grey	ALL	SP09		Combination instrument (Yellow)	D004B
-	011B	Green	A/D	SP09		Quartz clock	D723

List of hinge points of instrument panel harness (H30)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG06	MC510	Green yellow	ALL	Wiper combination switch	D500	SG06	
-	MC51	Green yellow	ALL	G51		SG06	
-	MC230	Yellow green	ALL	Hazard warning switch	D2300	SG06	
-	MC164	Green yellow	C/D/F	Transmission shift lock	D1604	SG06	
-	MC160	Yellow green	C/D/F	Mode selector switch	D1603	SG06	
-	MC001	Yellow green	ALL	SG06		Cabin fuse box	D001D
-	MC042A	Yellow green	ALL	SG06		Combination instrument (Yellow)	D004B
-	MC042B	Yellow green	ALL	SG06		Combination instrument (Yellow)	D004B
-	MC250	Yellow green	ALL	SG06		Light combination switch	D020B
SP08	012A	Red	A/B/E	Brake switch	D210	SP08	
-	012F	Red	C/D/F	Brake switch	D210A	SP08	
-	012W	Red	C/D/F	Brake switch	D210A	SP08	
-	822	Green	ALL	Theftproof controller module	D820	SP08	
-	012-	Red	ALL	SP08		Cabin fuse box	D001B
-	012B	Green	ALL	SP08		IC01F	
-	012C	Brown	ALL	SP08		IC02F	
-	012E	Yellow	B/C/E/F	SP08		Multi-functional screen	D721
-	012G	Green	ALL	SP08		Diagnostic unit	D003
-	012H	Yellow	C/D/F	SP08		Mode selector switch	D1603
-	042A	Yellow	ALL	SP08		Combination instrument	D004A
SP09	841	Grey	ALL	Radio cassette player A	D840A	SP09	
-	011-	Yellow	ALL	SP09		Cabin fuse box	D001B
-	011A	Green	ALL	SP09		Combination instrument (Yellow)	D004B
-	011B	Red	A/D	SP09		Quartz clock	D723

List of hinge points of front harness (S30/H30)

A	manual transmission+manual air conditioning
B	manual transmission+automatic air conditioning
C	automatic transmission+automatic air conditioning
D	automatic transmission+manual air conditioning
ALL	Shared

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S002A	6739A	Green	A/B	Cabin fuse box	D001F	S002A	
-	6739	Green	A/B	IC02M		S002A	
-	6739B	Blue	A/B	S002A		IC20M	
S002C	6739G	Green	C/D	Cabin fuse box	D001F	S002C	
-	6739F	Green	C/D	IC02M		S002C	
-	6739E	Green	C/D	IC19M		S002C	
-	6739D	Blue	C/D	Transmission control module B	D1601B	S002C	
-	6739C	Blue	C/D	S002C		Speed sensor	D1620A
SD02	MC162	Green yellow	C/D	SG00		S002	
-	MC161	Green yellow	C/D	Transmission control module A	D1601A	S002	
-	MC160	Green yellow	C/D	Transmission control module A	D1601A	S002	
-	Drain	-	C/D	SD02		Drain	
SG00	MC24	Yellow green	C/D	G24		SG00	
-	MC164	Green yellow	C/D	Engine compartment fuse box	D002	SG00	
-	MC163	Green yellow	C/D	Engine compartment fuse box	D002	SG00	
-	MC162	Green yellow	C/D	SG00		SD02	
-	MC671A	Green yellow	C/D	SG00		Speed sensor	D1620A
SG02	MC22	Green yellow	ALL	G22		SG02	
-	MC262	Green yellow	ALL	SG02		Right headlamp	D2615
-	MC262A	Green yellow	ALL	SG02		Right headlamp	D2615
-	MC262B	Yellow green	ALL	SG02		Right front fog lamp	D2645
-	MC262C	Green yellow	ALL	SG02		Right front steering lamp	D2615A
SP03	1204B	Grey	ALL	IC20M		SP03	
-	1204A	Green	ALL	IC19M		SP03	
-	1201	Blue	ALL	Engine compartment fuse box	D002	SP03	
-	1201A	Green	ALL	SP03		Cabin fuse box	D001F

Circuit Diagrams of Electrical Appliances

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SP05A	2606	Pink	ALL	IC02M		SP05A	
-	2603A	Green	ALL	SP05A		Engine compartment fuse box	D002
-	2604A	Green	ALL	SP05A		Engine compartment fuse box	D002
SP05B	2602A	Red	ALL	Engine compartment fuse box	D002	SP05B	
-	2601A	Yellow	ALL	Engine compartment fuse box	D002	SP05B	
-	2605	Pink	ALL	SP05B		IC01M	
SP23	002-	Yellow	ALL	IC01M		SP23	
-	002A	Pink	ALL	SP23		Engine compartment fuse box	D002
-	002C	Blue	ALL	SP23		IC21M	
SP24	672A	Grey	C/D	Speed sensor	D1620A	SP24	
-	162	Pink	C/D	Transmission control module A	D1601A	SP24	
-	132A	Green	C/D	IC20M		SP24	
-	002D	Yellow	C/D	SP24		Engine compartment fuse box	D002
-	1631A	Brown	C/D	SP24		Engine compartment fuse box	D002
SP26	1201C	Yellow	ALL	Air conditioning pressure switch	D801	SP26	
-	1201B	Yellow	ALL	Air conditioning pressure switch	D801	SP26	
-	003B	Blue	ALL	SP26		IC01M	
-	003C	Yellow	B/C	SP26		Engine compartment fuse box	D002
-	003D	Yellow	B/C	SP26		Engine compartment fuse box	D002
-	003E	Yellow	A/D	SP26		Engine compartment fuse box	D002

List of hinge points of front harness (S30)

SP25	120A	Green	ALL	SP25		Engine compartment fuse box	D002
-	120B	Red	ALL	SP25		Engine compartment fuse box	D002
-	120C	Yellow	ALL	SP25		Engine compartment fuse box	D002
-	120D	Blue	ALL	SP25		Engine compartment fuse box	D002
-	120E	Red	ALL	SP25		Engine compartment fuse box	D002
SD00	000K	Red	C/D	Engine compartment fuse box	D002	SD00	
-	000B	Red	C/D	SD00		Cabin fuse box	D000A
-	001H	Yellow	C/D	SD00		Oil pump controller	D1256

List of hinge points of front harness (S30)
(Applicable to the last six digits of VIN<015982)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG01	MC261C	Green yellow	ALL	Left headlamp	D2610A	SG01	
-	MC261B	Yellow green	ALL	Left front fog lamp	D2640	SG01	
-	MC252	Green yellow	ALL	Tweeter	D252	SG01	
-	MC21	Green yellow	ALL	SG01		G21	
-	MC261	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC261A	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC500	Yellow green	ALL	SG01		Wiper motor	D501
-	MC703	Green yellow	ALL	SG01		Brake fluid switch	D703
-	MC800A	Green yellow	ALL	SG01		Engine compartment fuse box	D002
-	MC601	Green yellow	ALL	SG01		Engine compartment fuse box	D002
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SPWD0	601A	Red	ALL	Engine compartment fuse box	D002	SPWD0	
-	602	Red	ALL	SPWD0		IC02M	
-	601B	Pink	ALL	SPWD0		IC02M	

List of hinge points of front harness (S30)
(Applicable to the last six digits of VIN≥015982)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG01	MC261C	Green yellow	ALL	Left headlamp	D2610A	SG01	
-	MC261B	Yellow green	ALL	Left front fog lamp	D2640	SG01	
-	MC252	Green yellow	ALL	Tweeter	D252	SG01	
-	MC21	Green yellow	ALL	SG01		G21	
-	MC261	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC261A	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC500	Yellow green	ALL	SG01		Wiper motor	D501
-	MC703	Green yellow	ALL	SG01		Brake fluid switch	D703
-	MC800A	Green yellow	ALL	SG01		Engine compartment fuse box	D002
-	MC261F	Green yellow	ALL	SG01		Engine compartment fuse box	D002
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SPWD0	601A	Red	ALL	Engine compartment fuse box	D002	SPWD0	
-	601B	Pink	ALL	SPWD0		IC02M	
-	602	Red	ALL	SPWD0		IC02M	

List of hinge points of front harness (H30)

SG01	MC261C	Green yellow	ALL	Left headlamp	D2610A	SG01	
-	MC261B	Yellow green	ALL	Left front fog lamp	D2640	SG01	
-	MC252	Green yellow	ALL	Tweeter	D252	SG01	
-	MC21	Green yellow	ALL	SG01		G21	
-	MC261	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC261A	Green yellow	ALL	SG01		Left headlamp	D2610
-	MC500	Yellow green	ALL	SG01		Wiper motor	D501
-	MC703	Green yellow	ALL	SG01		Brake fluid switch	D703
-	MC800A	Green yellow	ALL	SG01		Engine compartment fuse box	D002
-	MC261F	Green yellow	ALL	SG01		Engine compartment fuse box	D002
SPWD0	601A	Red	ALL	Engine compartment fuse box	D002	SPWD0	
-	601B	Pink	ALL	SPWD0		IC02M	
-	602	Red	ALL	SPWD0		IC02M	
SD00	000K	Red	C/D	Engine compartment fuse box	D002	SD00	
-	000B	Red	C/D	SD00		Cabin fuse box	D000A
-	000H	Yellow	C/D	SD00		Oil pump controller	D1256
SP25	120A	Green	ALL	SP25		Engine compartment fuse box	D002
-	120B	Red	ALL	SP25		Engine compartment fuse box	D002
-	120C	Grey	ALL	SP25		Engine compartment fuse box	D002
-	120D	Blue	ALL	SP25		Engine compartment fuse box	D002
-	120E	Red	ALL	SP25		Engine compartment fuse box	D002
SP502	5201A	Red	ALL	Engine compartment fuse box	D002	SP502	
-	5201B	Red	ALL	SP502		Engine compartment fuse box	D5002
-	5201C	Red	ALL	SP502		Engine compartment fuse box	D5002
SP505	000A	White	ALL	Ignition switch	D000A	SP505	
-	000AA	White	ALL	SP505		Engine compartment fuse box	D002
-	5288	Red	ALL	SP505		Engine compartment fuse box	D002

List of hinge points of roof harness (S30/H30)

A	Without sunroof module		
C	With sunroof module		
ALL	Shared		

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S011	3001B	Green	ALL	Rear dome lamp	D302	S011	
-	3001	Green	ALL	S011		Cabin fuse box	D001A
-	3001A	Green	ALL	S011		Front dome lamp	D301
SP17	300A	Red	ALL	Front dome lamp	D301	SP17	
-	300	Red	ALL	SP17		Cabin fuse box	D001A
-	300B	Red	ALL	SP17		Rear dome lamp	D302

List of hinge points of roof harness (S30)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG20	MC680	Yellow green	C	Sunroof control module	D680	SG20	
-	MC3018	Green yellow	ALL	Rear dome lamp	D302	SG20	
-	MC301A	Green yellow	ALL	Front dome lamp	D301	SG20	
-	MC210	Green yellow	ALL	High-mounted stop lamp	D2100	SG20	
-	MC51	Yellow green	C	SG20		Cabin fuse box	D001A
	MC51A	Yellow green	A	SG20		Cabin fuse box	D001A

List of hinge points of roof harness (H30)

Hinge point	Conductor No.	Colour	Model	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SG20	MC680	Yellow green	C	Sunroof control module	D680	SG20	
-	MC301B	Green yellow	ALL	Rear dome lamp	D302	SG20	
-	MC301A	Green yellow	ALL	Front dome lamp	D301	SG20	
-	MC51	Yellow green	C	SG20		Cabin fuse box	D001A
-	MC51A	Yellow green	A	SG20		Cabin fuse box	D001A

List of hinge points of engine harness (MT) (S30/H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S002	6739B	Blue	IC20F		S002	
-	6739A	Blue	Engine computer	D1320A	S002	
-	6739	Brown	S002		Speed sensor	D1620
S008	1599	Red	Engine computer	D1320A	S008	
-	1599A	Green	S008		IC20F	
-	1599B	Green	S008		IC20F	
S021	1150B	-	CAP		S021	
-	1150A	White	Ignition coil	D1135	S021	
-	1150	Green	S021		SP04	
SD01	MC135	Green yellow	SG05		SD01	
-	Drain	-	SD01		Drain	
SG03	MC32	Green yellow	G32		SG03	
-	MC131	Yellow green	SG03		Engine computer	D1320A
-	MC132	Yellow green	SG03		Engine computer	D1320A
SG05	MC802	Green yellow	Air condition compressor	D8010	SG05	
-	MC671	Green yellow	Speed sensor	D1620	SG05	
-	MC135	Green yellow	SG05		SD01	
-	MC33	Yellow green	SG05		G33	
SP04	1351	White	IC19F		SP04	
-	1204B	Yellow	IC20F		SP04	
-	1150	Green	SP04		S021	
-	1320	Green	SP04		IC10F	
-	1351A	Grey	SP04		Front oxygen sensor	D1350
-	1351B	Grey	SP04		Rear oxygen sensor	D1351
-	1355	Brown	SP04		Canister purge valve	D1215
-	672	Yellow	SP04		Speed sensor	D1620
SP03A	1229	Blue	IC19F		SP03A	
-	1229B	Red	IC19F		SP03A	
-	1229A	Blue	SP03A		Engine computer	D1320B

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SP306	1228B	Red	IC19F		SP306	
-	1226	Green	SP306		Inertia switch	D1203
-	1226A	Green	SP306		Engine computer	D1320C

List of hinge points of engine harness (AT) (S30/H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S008	1599	Red	Engine computer	D1320A	S008	
-	1599A	Green	S008		IC20F	
-	1599B	Green	S008		IC20F	
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S021	1150B		CAP		S021	
-	1150A	White	Ignition coil	D1135	S021	
-	1150	Green	S021		SP04	
<hr/>						
SD01	MC135	Green yellow	SG05		SD01	
-	Drain		SD01		Drain	
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SG03	MC32	Green yellow	G32		SG03	
-	MC131	Yellow green	SG03		Engine computer	D1320A
-	MC132	Yellow green	SG03		Engine computer	D1320A
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SG05	MC802	Green yellow	Air condition compressor	D8010	SG05	
-	MC135	Green yellow	SG05		SG01	
-	MC33	Yellow green	SG05		G33	
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SP04	1351	White	IC19F		SP04	
-	1204B	Yellow	IC20F		SP04	
-	1150	Green	SP04		8021	
-	1320	Green	SP04		IC10F	
-	1351A	Grey	SP04		Front oxygen sensor	D1350
-	1351B	Grey	SP04		Rear oxygen sensor	D1351
-	1355	Brown	SP04		Canister purge valve	D1215
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SP03A	1229	Blue	IC19F		SP03A	
-	1229B	Red	IC19F		SP03A	
-	1229A		SP03A		Engine computer	D1320B
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SP306	1228B	Red	IC19F		SP306	
-	1226	Green	SP306		Inertia switch	D1203
-	1226A	Green	SP306		Engine computer	D1320C

List of hinge points of cockpit harness(S30/H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S006	6210D	Brown	IC09F		S006	
-	6210C	Green	IC08F		S006	
-	6210	Red	S006		Cabin fuse box	D001I
-	6210A	Red	S006		IC06F	
SG14	MC623	Green yellow	IC08F		SG14	
-	MC71A	Green yellow	G71		SG14	
-	MC121	Green yellow	SG14		Fuel pump	D1210
-	MC122	Green yellow	SG14		Oil level sensor	D1211
-	MC624	Green yellow	SG14		IC09F	
SP11	6201D	Red	IC09F		SP11	
-	6201C	Brown	IC08F		SP11	
-	6201	Grey	SP11		Cabin fuse box	D001E
-	6201A	Green	SP11		IC06F	
SP12	6200D	Red	IC09F		SP12	
-	6200C	Red	IC08F		SP12	
-	6200	Green	SP12		Cabin fuse box	D001E
-	6200A	Red	SP12		IC06F	

List of hinge points of cockpit harness (S30)

SP16	810C	Red	IC07F		SP16	
-	810A	Yellow	SP16		Cabin fuse box	D001E
-	810B	Brown	SP16		IC06F	
SP307	6250B	Brown	IC06F		SP307	
-	6250A	Brown	SP307		IC04M	
-	6250	Brown	SP307		Cabin fuse box	0001I

List of hinge points of cockpit harness(H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SP16	810C	Red	IC07M		SP16	
-	810A	Yellow	SP16		Cabin fuse box	D001E
-	810B	Brown	SP16		IC06F	
SP17	2201A	Brown	Left rear combination lamp	D2620	S017	
-	2201B	Yellow	Right rear combination lamp	D2625	S017	
-	2201	Brown	S017		IC04M	
-	2201C	Green	S017		Parking assist computer	D750A
S100	2620	Brown	Cabin fuse box	D001E	S100	
-	2620A	Brown	S100		IC07M	
-	2620C	Brown	S100		Left additional brake lamp/position lamp	D2620A
-	2620D	Brown	S100		Left rear combination lamp	D2620
S101	2110C	Brown	Right rear combination lamp	D2625	S101	
-	2115A	Brown	Right additional brake lamp/position lamp	D2625A	S101	
S101	2100D	Green	S101		IC07M	
-	2110	Green	S101		Left rear combination lamp	D2620
-	2110A	Green	S101		Left additional brake lamp/position lamp	D2620A
S500	2650A	Green	Left rear combination lamp	D2620	S500	
-	2650B	Brown	Right rear combination lamp	D2625	S500	
-	2650	Green	S500		Cabin fuse box	D001E
S501	2625A	Green	Right additional brake lamp/position lamp	D2625A	S501	
-	2625B	Green	Right rear combination lamp	D2625	S501	
-	2625	Green	S501		Cabin fuse box	D001E
SG17	MC264	Green yellow	Right rear combination lamp	D2625	SG17	
-	MC264A	Green yellow	Right additional brake lamp/position lamp	D2625A	SG17	
-	MC81	Green yellow	SG17		G81	
SG18	MC263	Yellow green	Left rear combination lamp	D2620	SG18	
-	MC263A	Green yellow	Left additional brake lamp/position lamp	D2620A	SG18	
-	MC750	Green yellow	Parking assist computer 1	D750A	SG18	
-	MC501	Yellow green	SG18		IC07M	
-	MC81A	Yellow green	SG18		G81	

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
SP307	6250B	Brown	IC06F		SP307	
-	6250A	Brown	SP307		IC04M	
-	6250	Brown	SP307		Cabin fuse box	D001I

List of hinge points of rear harness (S30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S010	3101	Brown	Luggage compartment lamp-	D310B	S010	
-	6260	Green	S010		Luggage compartment lock	D6260
-	6260A	Brown	S010		IC07M	
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S017	2201C	Green	Parking assist computer 1	D750A	S017	
-	2201B	Yellow	Right rear combination lamp-Luggage compartment	D2625A	S017	
-	2201A	Brown	Left rear combination lamp-Luggage compartment	D2620A	S017	
-	2201	Green	S017		IC07M	
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SG17	MC820	Yellow green	Rear window dimister	D8208	SG17	
-	MC81	Yellow green	G81		SG17	
-	MC263	Green yellow	Left rear combination lamp-Body	D2620	SG17	
-	MC264	Green yellow	SG17		Right rear combination lamp	D2625
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SG18	MC81A	Yellow green	G81		SG18	
-	MC750	Green yellow	Parking assist computer 1	D750A	SG18	
-	MC263B	Green yellow	Left rear combination lamp-Luggage compartment	D2620A	SG18	
-	MC263A	Green yellow	Left rear combination lamp-Luggage compartment	D2620A	SG18	
-	MC264A	Green yellow	SG18		Right rear combination lamp-Luggage compartment	D2625A
-	MC264B	Green yellow	SG18		Right rear combination lamp-Luggage compartment	D2625A
-	MC265	Green yellow	SG18		Left license plate lamp	D2630
-	MC625	Green yellow	SG18		Luggage compartment lock	D6260
-	MC626	Yellow green	SG18		Right license plate lamp	D6265

List of hinge points of main backdoor harness (H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S001	MC500	Grey	No.3 brake lamp	D2100	S001	
-	MC501A	Yellow green	SDL		S001	
-	MC501	Yellow green	S001		IC07F	

List of hinge points of backdoor harness branch (H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S002	MC263B	Green yellow	Left license plate lamp	D2630	S002	
-	MC266	Green yellow	Right license plate lamp	D2635	S002	
-	MC626	Yellow green	Hatchback door switch	D6265	S002	
-	MC820	Yellow green	Rear window defroster-	D820B	S002	
-	MC501	Yellow green	S002		SDR	
-	MC521	Green yellow	S002		Rear wiper motor	D501A
-	MC625	Green yellow	S002		Hatchback door lock	D6260

List of hinge points of right front door harness (S30/H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S013	8415A	Red	Woofer	D8415A	S013	
-	8415	Yellow	S013		IC05M	
-	8415B	Green	S013		Tweeter	D8415B

List of hinge points of right front door harness (S30/H30)

(Applicable to the last six digits of VIN<005834)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S014	8416A	Yellow	Woofer	D8415A	S014	
-	8416	Brown	S014		IC05M	
-	8416B	Brown	S014		Tweeter	D8415B
SG13	MC642	Yellow green	IC18F		SG13	
-	MC55	Green yellow	SG13		IC05M	
-	MC622	Yellow green	SG13		Door lock	D6215

List of hinge points of right front door harness (S30/H30)

(Applicable to the last six digits of VIN≥005834)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S014	8416A	Yellow	Woofer	D8415A	S014	
-	8416	Blue	S014		IC05M	
-	8416B	Brown	S014		Tweeter	D8415B
SG13	MC55	Green yellow	IC05M		SG13	
-	MC642	Yellow green	SG13		IC18F	
-	MC622	Yellow green	SG13		Door lock	D6215

List of hinge points of left front door harness (S30/H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S012	6402	Green	IC17F		S012	
-	6400	Green	S012		Rearview mirror regulator	D641
-	6401	Green	S012		IC06M	
S016	8411A	Brown	Bass horn	D8410A	S016	
-	8411	Brown	S016		IC06M	
-	8411B	Brown	S016		Tweeter	D8410B

List of hinge points of left front door harness (S30/H30)
(Applicable to the last six digits of VIN<005834)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S015	8410A	Green	Bass horn	D8410A	S015	
-	8410	Red	S015		IC06M	
-	8410B	Green	S015		Tweeter	D8410B
SG16	MC621A	Green yellow	IC06M		SG16	
-	MC621	Yellow green	Door lock	D6210	SG16	
-	MC601	Green yellow	SG16		Main window regulator switch	D6000
-	MC620	Green yellow	SG16		Main window regulator switch	D6000
-	MC641	Yellow green	SG16		IC17F	
-	MC641A	Yellow green	SG16		Rearview mirror regulator	D641
SP19	601	Pink	IC06M		SP19	
-	601A	Brown	SP19		Main window regulator switch	D6000
-	641	Red	SP19		Rearview mirror regulator	D641

List of hinge points of left front door harness (S30/H30)

(Applicable to the last six digits of VIN≥005834)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S015	8410A	Green	Bass horn	D8410A	S015	
-	8410	Grey	S015		IC06M	
-	8410B	Green	S015		Tweeter	D8410B
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SG16	MC621A	Green yellow	IC06M		SG16	
-	MC601	Green yellow	SG16		Main window regulator switch	D6000
-	MC620	Green yellow	SG16		Main window regulator switch	D6000
-	MC641	Yellow green	SG16		IC17F	
-	MC641A	Yellow green	SG16		Rearview mirror regulator	D641
-	MC621	Yellow green	SG16		Door lock	D6210
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SP19	601	Pink	IC06M		SP19	
-	601B	Pink	Rearview mirror fuse	D840	SP19	
-	601A	Brown	SP19		Main window regulator switch	D6000

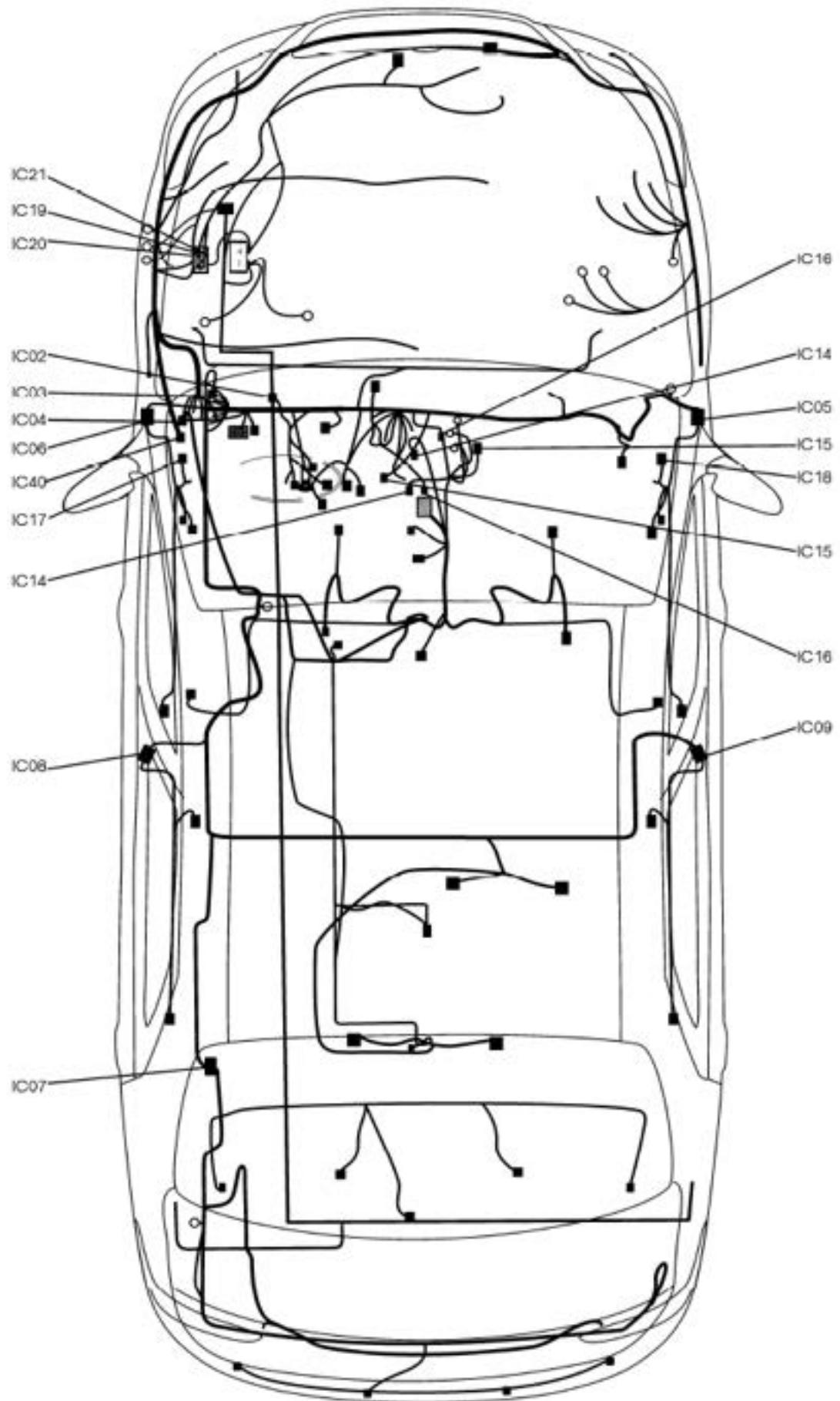
List of hinge points of reverse sensor harness (S30)

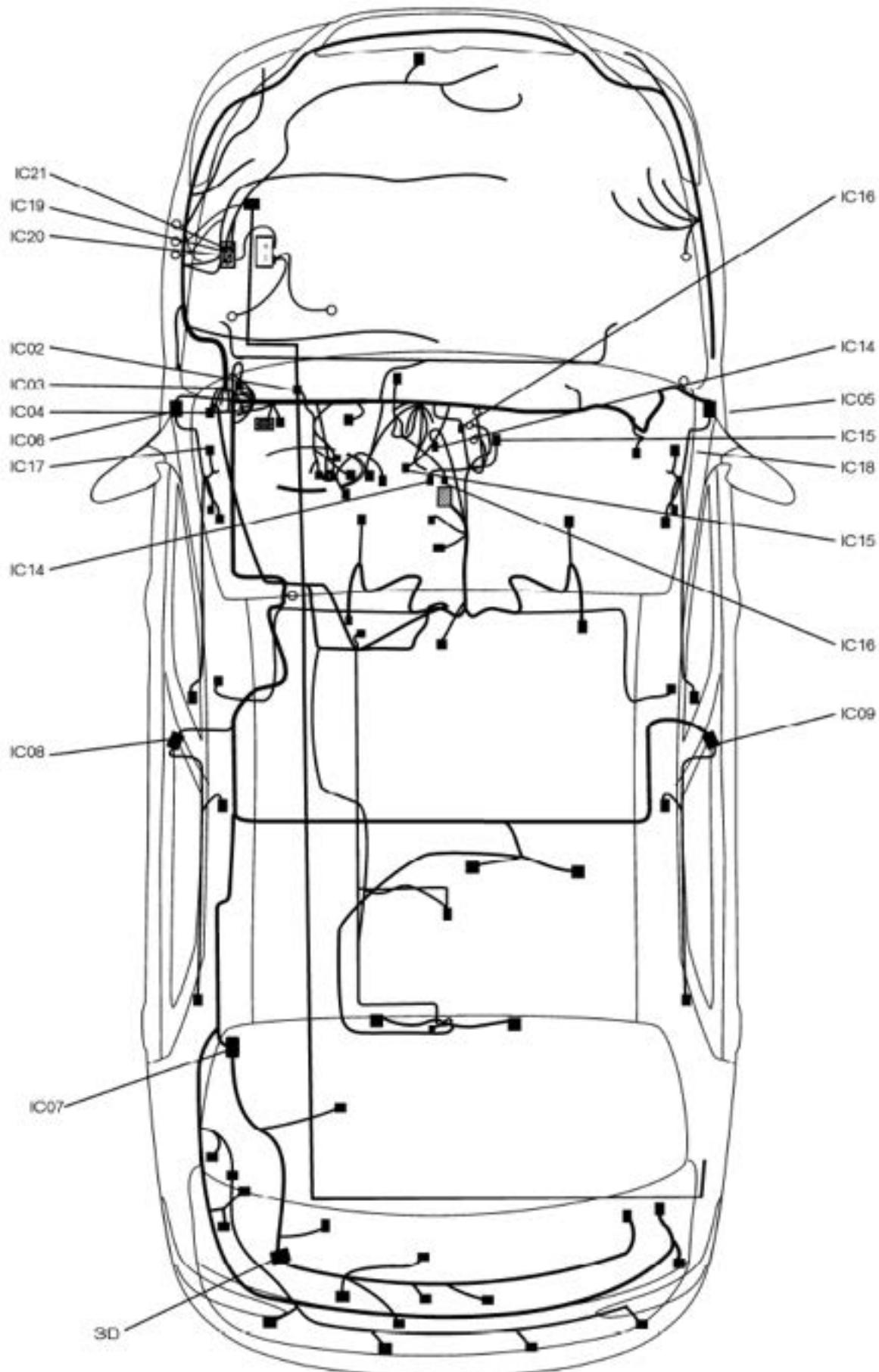
Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S018	7501	Red	Reversing assist computer 2	D750B	S018	
-	7501A	Red	S018		Right sensor	D7511
-	7501B	Red	S018		Right middle sensor	D7512
-	7501C	Red	S018		Left middle sensor	D7513
-	7501D	Red	S018		Left sensor	D7514
-						
S019	7502		Reversing assist computer 2	D750B	S019	
-	7502A		S019		Right sensor	D7511
-	7502B	Blue	S019		Right middle sensor	D7512
-	7502C	Blue	S019		Left middle sensor	D7513
-	7502D	Blue	S019		Left sensor	D7514

List of hinge points of reverse sensor harness (H30)

Hinge point	Conductor No.	Colour	No.1 terminal	Electrical appliance No.	No.2 terminal	Electrical appliance No.
S018	7501	Red	Reversing assist computer 2	D7508	S018	
-	75010	Red	Left sensor	D7514	S018	
-	7501A	Red	S018		Right sensor	D7511
-	75018	Red	S018		Right middle sensor	D7512
-	75010	Red	S018		Left middle sensor	D7513
-						
S019	7502	Blue	Reversing assist computer 2	D7508	S019	
-	7502D	Blue	Left sensor	D7514	S019	
-	7502A	Blue	S019		Right sensor	D7511
-	7502B	Blue	S019		Right middle sensor	D7512
-	7502C	Blue	S019		Left middle sensor	D7513

Location plan of junction connectors (S30)



Location plan of junction connectors (H30)

List of junction connectors

Note: the VIN code stated in the list is the the last six digits of VIN code.

Instrument panel harness (S30)	
B	manual transmission+automatic air conditioning+display screen
C	automatic transmission+automatic air conditioning+display screen
E	manual transmission+manual air conditioning+display screen
F	automatic transmission+manual air conditioning+display screen
ALL	Shared

IC01F: instrument panel harness--front harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Yellow	D020A	ALL	12	8077	Brown	IC12F	E/F
2	012B	Green	SP08	ALL	12	8077A	Brown	IC13F	B/C
3	2201	Brown	IC04F	ALL	13	5011	Yellow	D500	ALL
4	2310	Red	SP14	ALL	14	7031	Yellow	D004B	ALL
5	1330	Green	D004A	ALL	15	1560	Grey	D004A	ALL
5	1330A	Green	D003	ALL	16	003B	Yellow	SP21	ALL
6	1392	Brown	D004A	ALL	17	2641	Red	D020A	ALL
7	4001	Red	D004A	ALL	18	1368	Grey	D721	B/C/E/F
8	2315	Green	SP15	ALL	19	8081	Yellow	IC12F	E/F
9	8080	Grey	IC12F	E/F	19	8081A	Yellow	IC13F	B/C
9	8080A	Grey	IC13F	B/C	20	4121	Red	D004B	ALL
10	5014	Red	D500	ALL	21	8001	Brown	IC12F	E/F
11	002B	Pink	SP20	ALL	21	8001A	Brown	IC13F	B/C
					22	1011	Green	D000B	B/E
					22	1610	Green	D000B	C/F

IC02F: instrument panel harness--front harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Green	D020A	ALL	14	5111	Red	D500	ALL
2	012C	Brown	SP08	ALL	15	6739	Brown	S002B	B/C
3	8200	Red	D820	ALL	15	6739E	Brown	D004A	E/F
3	8200A	Green	D820	ALL	15	6739G	Brown	D721	E/F
4	7002	Grey	D003	ALL	16				
5	8269	Blue	D820	ALL	17				
6	602B	Brown	D001C	ALL	18				
7	1012	Brown	D004B	ALL	19	1599B	Green	D003	ALL
8	2500	Red	D020B	ALL	20	602	Red	IC05F	ALL
9	9006B	Yellow	D003	ALL	21				
10	601	Pink	IC04F	ALL	22	5112	Brown	D500	ALL
11	7003	Red	D004B	ALL	23	7020	White	IC04F	ALL
12	5016	Yellow	D500	ALL	24	7021	Red	IC04F	ALL
13	2100A	Green	S001	ALL	25	7025	Green	IC04F	ALL
					26	7026	Brown	IC04F	ALL

IC03F: instrument panel harness--front harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	SP05	ALL	2	803	Red	IC12F	E/F
					2	803A	Red	IC13F	B/C

IC04F: instrument panel harness--cockpit harness (22P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	7020	White	IC02F	ALL	12	6017	Brown	IC05F	ALL
2	7021	Red	IC02F	ALL	13	2325	Yellow	SP15	ALL
3	2320	Red	SP14	ALL	14	601	Pink	IC02F	ALL
4	2330	Brown	SP14	ALL	15	6411	Blue	IC05F	ALL
5	8425	Green	D840B	ALL	16	8426	Yellow	D840B	ALL
6	6412	Red	IC05F	ALL	17	6401	Blue	IC05F	ALL
7	8420	Yellow	D840B	ALL	18	8421	Green	D840B	ALL
8	1202	Grey	D004A	ALL	19	7026	Brown	IC02F	ALL
9	7025	Green	IC02F	ALL	20	8411	Red	D840B	ALL
10	8410	Green	D840B	ALL	21	2100B	Green	S001	ALL
11	2201	Brown	IC01F	ALL	22	6019	Yellow	IC05F	ALL

IC05F: instrument panel harness--right front door harness (20P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	810B	Yellow	SP16A	B/C	11				
2	6017	Brown	IC04F	ALL	12	MC804	Green yellow	IC13F	B/C
3	6401	Blue	IC04F	ALL	13	8011	Yellow	IC13F	B/C
4					14				
5	6210	Green	S005	ALL	15	2335	Brown	SP15	ALL
6					16	6412	Red	IC04F	ALL
7	6019	Yellow	IC04F	ALL	17	6201	Yellow	D001C	ALL
8	602	Red	IC02F	ALL	18	8415	Brown	D840B	ALL
9	MC55	Green yellow	G55	ALL	19	8416	Grey	D840B	ALL
10	6411	Blue	IC04F	ALL	20	6200	Red	D001C	ALL

IC12F: instrument panel harness--manual air conditioning harness (16P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	003C	Green	SP21	E/F	9	803	Red	IC03F	E/F
2	2600F	Red	SP07	E/F	10	MC51A	Yellow green	051	E/F
3	8100	Brown	D001H	E/F	11	8001	Brown	IC01F	E/F
4	8081	Yellow	IC01F	E/F	12				
5					13				
6					14				
7	8080	Grey	IC01F	E/F	15				
8	8077	Brown	IC01F	E/F	16	MC52	Yellow green	G52	E/F

IC13F: instrument panel harness--automatic air conditioning harness (16P Grey) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2600H	Red	SP07	B/C	9	MC52A	Yellow green	G52	B/C
2	8100A	Red	D001H	B/C	10	MC53A	Green yellow	G53	B
3	MC803	Yellow green	D8013	B/C	10	MC801	Green yellow	SG09	C
4	6739B	Green	S002B	B/C	11	MC51B	Yellow green	G51	B/C
5	8013	Red	D8013	B/C	12	8081A	Yellow	IC01F	B/C
6	8011	Yellow	IC05F	B/C	13	8080A	Grey	IC01F	B/C
6	8011A	Yellow	D721	B/C	14				
7	8001A	Brown	IC01F	B/C	15	8077A	Brown	IC01F	B/C
8	003D	Green	SP21	B/C	16	803A	Red	IC03F	B/C

IC14M: instrument panel harness--SRS harness (10P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D001B	ALL	6				
2	6501	Green	D004B	ALL	7				
3					8	6502	Brown	D001H	ALL
4	9006A	Brown	D003	ALL	9				
5	6503	Green	D004A	ALL	10				

IC15AF: instrument panel harness--driver airbag (2P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15M	ALL	2	6511	Yellow	IC15M	ALL

IC15M: instrument panel harness--SRS harness (2PBrown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15AF	ALL	2	6511	Yellow	IC15AF	ALL

IC16M: instrument panel harness--SRS harness (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	ICI6AF	ALL	2	6516	Yellow	ICI6AF	ALL

IC16AF: instrument panel harness--passenger airbag (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16M	ALL	2	6516	Yellow	IC16M	ALL

IC22F: instrument panel harness--front harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	010E	Yellow	SP10	C/F	11	1623	Red	D1603	C/F
2	1622	Blue	D1603	C/F	12	1620	Brown	D1603	C/F
3					13				
4	1621	Grey	D1603	C/F	14				
5	1631	Green	D1604	C/F	15				
6	1632	Grey	D1604	C/F	16				
7	7309	Red	D210A	C/F	17				
8					18				
9	1625	Yellow	D1603	C/F	19	9000	Green	D004A	C/F
10	1624	Green	D1603	C/F	19	9000B	Green	D003	C/F
					20	9001	Brown	D004A	C/F
					20	9001B	Brown	D003	C/F

Instrument panel harness (S30)			
B	manual transmission+automatic air conditioning+display screen		008679≤VIN<038979
C	automatic transmission+automatic air conditioning+display screen		008679≤VIN<037670
E	manual transmission+manual air conditioning+display screen		008679≤VIN<038932
F	automatic transmission+manual air conditioning+display screen		008679≤VIN<037670
ALL		Shared	

IC01F: instrument panel harness--front harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Yellow	D020A	ALL	12	8077	Brown	IC12F	E/F
2	012B	Green	SP08	ALL	12	8077A	Brown	IC13F	B/C
3	2201	Brown	IC04F	ALL	13	5011	Yellow	D500	ALL
4	2310	Red	SP14	ALL	14	7031	Yellow	D004B	ALL
5	1330	Green	D004A	ALL	15	1560	Grey	D004A	ALL
5	1330A	Green	D003	ALL	16	003B	Yellow	SP21	ALL
6	1392	Brown	D004A	ALL	17	2641	Red	D020A	ALL
7	4001	Red	D004A	ALL	18	1368	Grey	D721	B/C/E/F
8	2315	Green	SP15	ALL	19	8081	Yellow	IC12F	E/F
9	8080	Grey	IC12F	E/F	19	8081A	Yellow	IC13F	B/C
9	8080A	Grey	IC13F	B/C	20	4121	Red	D004B	ALL
10	5014	Red	D500	ALL	21	8001	Brown	IC12F	E/F
11	002B	Pink	SP20	ALL	21	8001A	Brown	IC13F	B/C
					22	1011	Green	D000B	B/E
					22	1610	Green	D000B	C/F

IC02F: instrument panel harness--front harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Green	D020A	ALL	14	5111	Red	D500	ALL
2	012C	Brown	SP08	ALL	15	6739	Brown	S002B	B/C
3	8200	Red	D820	ALL	15	6739E	Brown	D004A	E/F
3	8200A	Green	D820	ALL	15	6739G	Brown	D721	E/F
4	7002	Grey	D003	ALL	16	600	Brown	D001C	ALL
5	8269	Blue	D820	ALL	17	601	Pink	IC04F	ALL
6					18	602	Red	IC05F	ALL
7	1012	Brown	D004B	ALL	19	1599B	Green	D003	ALL
8	2500	Red	D020B	ALL	20				
9	9006B	Yellow	D003	ALL	21				
10					22	5112	Brown	D500	ALL
11	7003	Red	D004B	ALL	23	7020	White	IC04F	ALL
12	5016	Yellow	D500	ALL	24	7021	Red	IC04F	ALL
13	2100A	Green	S001	ALL	25	7025	Green	IC04F	ALL
					26	7026	Brown	IC04F	ALL

IC03F: instrument panel harness--front harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	SP05	ALL	2	803	Red	IC12F	E/F
					2	803A	Red	IC13F	B/C

IC04F: instrument panel harness--cockpit harness (22P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	7020	White	IC02F	ALL	12	6017	Brown	IC05F	ALL
2	7021	Red	IC02F	ALL	13	2325	Yellow	SP15	ALL
3	2320	Red	SP14	ALL	14	601	Pink	IC02F	ALL
4	2330	Brown	SP14	ALL	15	6411	Blue	IC05F	ALL
5	8425	Green	D840B	ALL	16	8426	Yellow	D840B	ALL
6	6412	Red	IC05F	ALL	17	6401	Blue	IC05F	ALL
7	8420	Yellow	D840B	ALL	18	8421	Green	D840B	ALL
8	1202	Grey	D004A	ALL	19	7026	Brown	IC02F	ALL
9	7025	Green	IC02F	ALL	20	8411	Red	D840B	ALL
10	8410	Green	D840B	ALL	21	2100B	Green	S001	ALL
11	2201	Brown	IC01F	ALL	22	6019	Yellow	IC05F	ALL

IC05F: instrument panel harness--right front door harness (20P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	810B	Yellow	SP16A	B/C	11				
2	6017	Brown	IC04F	ALL	12	MC804	Green yellow	IC13F	B/C
3	6401	Blue	IC04F	ALL	13	8011	Yellow	IC13F	B/C
4					14				
5	6210	Green	S005	ALL	15	2335	Brown	SP15	ALL
6					16	6412	Red	IC04F	ALL
7	6019	Yellow	IC04F	ALL	17	6201	Yellow	D001C	ALL
8	602	Red	IC02F	ALL	18	8415	Brown	D840B	ALL
9	MC55	Green yellow	G55	ALL	19	8416	Grey	D840B	ALL
10	6411	Blue	IC04F	ALL^	20	6200	Red	D001C	ALL

IC12F: instrument panel harness--manual air conditioning harness (16P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	003C	Green	SP21	E/F	9	803	Red	IC03F	E/F
2	2600F	Red	SP07	E/F	10	MC51A	Yellow green	051	E/F
3	8100	Brown	D001H	E/F	11	8001	Brown	IC01F	E/F
4	8081	Yellow	IC01F	E/F	12				
5					13				
6					14				
7	8080	Grey	IC01F	E/F	15				
8	8077	Brown	IC01F	E/F	16	MC52	Yellow green	G52	E/F

IC13F: instrument panel harness--automatic air conditioning harness (16P Grey) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2600H	Red	SP07	B/C	9	MC52A	Yellow green	G52	B/C
2	8100A	Red	D001H	B/C	10	MC53A	Green yellow	G53	B
3	MC803	Yellow green	D8013	B/C	10	MC801	Green yellow	SG09	C
4	6739B	Green	S002B	B/C	11	MC51B	Yellow green	G51	B/C
5	8013	Red	D8013	B/C	12	8081A	Yellow	IC01F	B/C
6	8011	Yellow	IC05F	B/C	13	8080A	Grey	IC01F	B/C
6	8011A	Yellow	D721	B/C	14				
7	8001A	Brown	IC01F	B/C	15	8077A	Brown	IC01F	B/C
8	003D	Green	SP21	B/C	16	803A	Red	IC03F	B/C

IC14M: instrument panel harness--SRS harness (10P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D001B	ALL	6				
2	6501	Green	D004B	ALL	7				
3					8	6502	Brown	D001H	ALL
4	9006A	Brown	D003	ALL	9				
5	6503	Green	D004A	ALL	10				

IC15AF: instrument panel harness--driver airbag (2P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15M	ALL	2	6511	Yellow	IC15M	ALL

IC15M: instrument panel harness--SRS harness (2PBrown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15AF	ALL	2	6511	Yellow	IC15AF	ALL

IC16M: instrument panel harness--SRS harness (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	ICI6AF	ALL	2	6516	Yellow	ICI6AF	ALL

IC16AF: instrument panel harness--passenger airbag (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16M	ALL	2	6516	Yellow	IC16M	ALL

IC22F: instrument panel harness--front harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	010E	Yellow	SP10	C/F	11	1623	Red	D1603	C/F
2	1622	Blue	D1603	C/F	12	1620	Brown	D1603	C/F
3					13				
4	1621	Grey	D1603	C/F	14				
5	1631	Green	D1604	C/F	15				
6	1632	Grey	D1604	C/F	16				
7	7309	Red	D210A	C/F	17				
8					18				
9	1625	Yellow	D1603	C/F	19	9000	Green	D004A	C/F
10	1624	Green	D1603	C/F	19	9000B	Green	D003	C/F
					20	9001	Brown	D004A	C/F
					20	9001B	Brown	D003	C/F

Instrument panel harness (S30)			
B	manual transmission+automatic air conditioning+display screen		VIN≥038979
C	automatic transmission+automatic air conditioning+display screen		VIN≥037670
E	manual transmission+manual air conditioning+display screen		VIN≥038932
F	automatic transmission+manual air conditioning+display screen		VIN≥037670
ALL	Shared		

IC01F: instrument panel harness--front harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Yellow	D020A	ALL	12	8077	Brown	IC12F	E/F
2	012B	Green	SP08	ALL	12	8077A	Brown	IC13F	B/C
3	2201	Brown	IC04F	ALL	13	5011	Yellow	D500	ALL
4	2310	Red	SP14	ALL	14	7031	Yellow	D004B	ALL
5	1330	Green	D004A	ALL	15	1560	Grey	D004A	ALL
5	1330A	Green	D003	ALL	16	003B	Yellow	SP21	ALL
6	1392	Brown	D004A	ALL	17	2641	Red	D020A	ALL
7	4001	Red	D004A	ALL	18	1368	Grey	D721	B/C/E/F
8	2315	Green	SP15	ALL	19	8081	Yellow	IC12F	E/F
9	8080	Grey	IC12F	E/F	19	8081A	Yellow	IC13F	B/C
9	8080A	Grey	IC13F	B/C	20	4121	Red	D004B	ALL
10	5014	Red	D500	ALL	21	8001	Brown	IC12F	E/F
11	002B	Pink	SP20	ALL	21	8001A	Brown	IC13F	B/C
					22	1011	Green	D000B	B/E
					22	1610	Green	D000B	C/F

IC02F: instrument panel harness--front harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Green	D020A	ALL	14	5111	Red	D500	ALL
2	012C	Brown	SP08	ALL	15	6739	Brown	S002B	B/C
3	8200	Red	D820	ALL	15	6739E	Brown	D004A	A/D/E/F
3	8200A	Green	D820	ALL	15	6739G	Brown	D721	E/F
4	7002	Grey	D003	ALL	16	600	Brown	D001C	ALL
5	8269	Blue	D820	ALL	17	601	Pink	IC04F	ALL
6					18	602	Red	IC05F	ALL
7	1012	Brown	D004B	ALL	19	1599B	Green	D003	ALL
8	2500	Red	D020B	ALL	20				
9	9006B	Yellow	D003	ALL	21				
10	6250	Brown	IC04F	ALL	22	5112	Brown	D500	ALL
11	7003	Red	D004B	ALL	23	7020	White	IC04F	ALL
12	5016	Yellow	D500	ALL	24	7021	Red	IC04F	ALL
13	2100A	Green	S001	ALL	25	7025	Green	IC04F	ALL
					26	7026	Brown	IC04F	ALL

IC03F: instrument panel harness--front harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	SP05	ALL	2	803	Red	IC12F	E/F
					2	803A	Red	IC13F	B/C

IC04F: instrument panel harness--cockpit harness (26P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	7020	White	IC02F	ALL	14	601	Pink	IC02F	ALL
2	7021	Red	IC02F	ALL	15	6411	Blue	IC05F	ALL
3	2320	Red	SP14	ALL	16	8426	Yellow	D840B	ALL
4	2330	Brown	SP14	ALL	17	6401	Blue	IC05F	ALL
5	8425	Green	D840B	ALL	18	8421	Green	D840B	ALL
6	6412	Red	IC05F	ALL	19	7026	Brown	IC02F	ALL
7	8420	Yellow	D840B	ALL	20	8411	Red	D840B	ALL
8	1202	Grey	D004A	ALL	21	2100B	Green	S001	ALL
9	7025	Green	IC02F	ALL	22	6019	Yellow	IC05F	ALL
10	8410	Green	D840B	ALL	23	6250	Brown	IC02F	ALL
11	2201	Brown	IC01F	ALL					
12	6017	Brown	IC05F	ALL					
13	2325	Yellow	SP15	ALL					

IC05F: instrument panel harness--right front door harness (20P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	810B	Yellow	SP16A	B/C	11				
2	6017	Brown	IC04F	ALL	12	MC804	Green yellow	IC13F	B/C
3	6401	Blue	IC04F	ALL	13	8011	Yellow	IC13F	B/C
4					14				
5	6210	Green	S005	ALL	15	2335	Brown	SP15	ALL
6					16	6412	Red	IC04F	ALL
7	6019	Yellow	IC04F	ALL	17	6201	Yellow	D001C	ALL
8	602	Red	IC02F	ALL	18	8415	Brown	D840B	ALL
9	MC55	Green yellow	G55	ALL	19	8416	Grey	D840B	ALL
10	6411	Blue	IC04F	ALL^	20	6200	Red	D001C	ALL

IC12F: instrument panel harness--manual air conditioning harness (16P Black) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	003C	Green	SP21	E/F	9	803	Red	IC03F	E/F
2	2600F	Red	SP07	E/F	10	MC51A	Yellow green	051	E/F
3	8100	Brown	D001H	E/F	11	8001	Brown	IC01F	E/F
4	8081	Yellow	IC01F	E/F	12				
5					13				
6					14				
7	8080	Grey	IC01F	E/F	15				
8	8077	Brown	IC01F	E/F	16	MC52	Yellow green	G52	E/F

IC13F: instrument panel harness--automatic air conditioning harness (16P Grey) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2600H	Red	SP07	B/C	9	MC52A	Yellow green	G52	B/C
2	8100A	Red	D001H	B/C	10	MC53A	Green yellow	G53	B
3	MC803	Yellow green	D8013	B/C	10	MC801	Green yellow	SG09	C
4	6739B	Green	S002B	B/C	11	MC51B	Yellow green	G51	B/C
5	8013	Red	D8013	B/C	12	8081A	Yellow	IC01F	B/C
6	8011	Yellow	IC05F	B/C	13	8080A	Grey	IC01F	B/C
6	8011A	Yellow	D721	B/C	14				
7	8001A	Brown	IC01F	B/C	15	8077A	Brown	IC01F	B/C
8	003D	Green	SP21	B/C	16	803A	Red	IC03F	B/C

IC14M: instrument panel harness--SRS harness (10P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D001B	ALL	6				
2	6501	Green	D004B	ALL	7				
3					8	6502	Brown	D001H	ALL
4	9006A	Brown	D003	ALL	9				
5	6503	Green	D004A	ALL	10				

IC15AF: instrument panel harness--driver airbag (2P Yellow) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15M	ALL	2	6511	Yellow	IC15M	ALL

IC15M: instrument panel harness--SRS harness (2PBrown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15AF	ALL	2	6511	Yellow	IC15AF	ALL

IC16M: instrument panel harness--SRS harness (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	ICI6AF	ALL	2	6516	Yellow	ICI6AF	ALL

IC16AF: instrument panel harness--passenger airbag (2P Green) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16M	ALL	2	6516	Yellow	IC16M	ALL

IC22F: instrument panel harness--front harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	010E	Yellow	SP10	C/F	11	1623	Red	D1603	C/F
2	1622	Blue	D1603	C/F	12	1620	Brown	D1603	C/F
3					13				
4	1621	Grey	D1603	C/F	14				
5	1631	Green	D1604	C/F	15				
6	1632	Grey	D1604	C/F	16				
7	7309	Red	D210A	C/F	17				
8					18				
9	1625	Yellow	D1603	C/F	19	9000	Green	D004A	C/F
10	1624	Green	D1603	C/F	19	9000B	Green	D003	C/F
					20	9001	Brown	D004A	C/F
					20	9001B	Brown	D003	C/F

Instrument panel harness (H30)			
B	manual transmission+automatic air conditioning+display screen		VIN<038052
C	automatic transmission+automatic air conditioning+display screen		VIN<037836
E	manual transmission+manual air conditioning+display screen		VIN<037957
F	automatic transmission+manual air conditioning+display screen		VIN<037831
ALL	Shared		

IC01F: instrument panel harness--front harness (22P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Yellow	D020A	ALL	12	8077	Brown	IC12F	E/F
2	012B	Green	SP08	ALL	12	8077A	Brown	IC13F	B/C
3	2201	Brown	IC04F	ALL	13	5011	Yellow	D500	ALL
4	2310	Red	SP14	ALL	14	7031	Yellow	D004B	ALL
5	1330	Green	D004A	ALL	15	1560	Grey	D004A	ALL
5	1330A	Green	D003	ALL	16	003B	Yellow	SP21	ALL
6	1392	Brown	D004A	ALL	17	2641	Red	D020A	ALL
7	4001	Red	D004A	ALL	18	1368	Grey	D721	B/C/E/F
8	2315	Green	SP15	ALL	19	8081	Yellow	IC12F	E/F
9	8080	Grey	IC12F	E/F	19	8081A	Yellow	IC13F	B/C
9	8080A	Grey	IC13F	B/C	20	4121	Red	D004B	ALL
10	5014	Red	D500	ALL	21	8001	Brown	IC12F	E/F
11	002B	Pink	SP20	ALL	21	8001A	Brown	IC13F	B/C
					22	1011	Green	D000B	B/E
					22	1610	Green	D000B	C/F

IC02F: instrument panel harness--front harness (26P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Green	D020A	ALL	14	5111	Red	D500	ALL
2	012C	Brown	SP08	ALL	15	6739	Brown	S002B	B/C
3	8200	Red	D820	ALL	15	6739E	Brown	D004A	A/D/E/F
3	8200A	Green	D820	ALL	15	6739G	Brown	D721	E/F
4	7002	Grey	D003	ALL	16	600	Brown	D001C	ALL
5	8269	Blue	D820	ALL	17	601	Pink	IC04F	ALL
6	5210	White	D001H		18	602	Red	IC05F	ALL
7	1012	Brown	D004B	ALL	19	1599B	Green	D003	ALL
8	2500	Red	D020B	ALL	20	5299	Grey	IC30F	ALL
9	9006B	Yellow	D003	ALL	21	5203	Red	IC30F	ALL
10					22	5112	Brown	D500	ALL
11	7003	Red	D004B	ALL	23	7020	White	IC04F	ALL
12	5016	Yellow	D500	ALL	24	7021	Red	IC04F	ALL
13	2100A	Green	S001	ALL	25	7025	Green	IC04F	ALL
					26	7026	Brown	IC04F	ALL

IC03F: instrument panel harness--front harness (2P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	SP05	ALL	2	803	Red	IC12F	E/F
					2	803A	Red	IC13F	B/C

IC04F: instrument panel harness--cockpit harness (22P Black) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	7020	White	IC02F	ALL	12	6017	Brown	IC05F	ALL
2	7021	Red	IC02F	ALL	13	2325	Yellow	SP15	ALL
3	2320	Red	SP14	ALL	14	601	Pink	IC02F	ALL
4	2330	Brown	SP14	ALL	15	6411	Blue	IC05F	ALL
5	8425	Green	D840B	ALL	16	8426	Yellow	D840B	ALL
6	6412	Red	IC05F	ALL	17	6401	Blue	IC05F	ALL
7	8420	Yellow	D840B	ALL	18	8421	Green	D840B	ALL
8	1202	Grey	D004A	ALL	19	7026	Brown	IC02F	ALL
9	7025	Green	IC02F	ALL	20	8411	Red	D840B	ALL
10	8410	Green	D840B	ALL	21	2100B	Green	S001	ALL
11	2201	Brown	IC01F	ALL	22	6019	Yellow	IC05F	ALL

IC30F:instrument panel harness—Cabin harness (2P) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	5203	Red	IC02F	ALL	2	5299	Grey	IC02F	ALL
					2	5299A	Grey	D001H	ALL

IC05F: instrument panel harness--right front door harness (20P Yellow) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	810B	Yellow	SP16A	B/C	11				
2	6017	Brown	IC04F	ALL	12	MC804	Green yellow	IC13F	B/C
3	6401	Blue	IC04F	ALL	13	8011	Yellow	IC13F	B/C
4					14				
5	6210	Green	S005	ALL	15	2335	Brown	SP15	ALL
6					16	6412	Red	IC04F	ALL
7	6019	Yellow	IC04F	ALL	17	6201	Yellow	D001C	ALL
8	602	Red	IC02F	ALL	18	8415	Brown	D840B	ALL
9	MC55	Green yellow	G55	ALL	19	8416	Grey	D840B	ALL
10	6411	Blue	IC04F	ALL^	20	6200	Red	D001C	ALL

IC12F: instrument panel harness--manual air conditioning harness (16P Black) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	003C	Green	SP21	E/F	9	803	Red	IC03F	E/F
2	2600F	Red	SP07	E/F	10	MC51A	Yellow green	051	E/F
3	8100	Brown	D001H	E/F	11	8001	Brown	IC01F	E/F
4	8081	Yellow	IC01F	E/F	12				
5					13				
6					14				
7	8080	Grey	IC01F	E/F	15				
8	8077	Brown	IC01F	E/F	16	MC52	Yellow green	G52	E/F

IC13F: instrument panel harness--automatic air conditioning harness (16P Grey) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2600H	Red	SP07	B/C	9	MC52A	Yellow green	G52	B/C
2	8100A	Red	D001H	B/C	10	MC53A	Green yellow	G53	B
3	MC803	Yellow green	D8013	B/C	11	MC804	Green yellow	IC05F	B/C
4	6739B	Green	S002B	B/C	12	8081A	Yellow	IC01F	B/C
5	8013	Red	D8013	B/C	13	8080A	Grey	IC01F	B/C
6	8011	Yellow	IC05F	B/C	14				
6	8011A	Yellow	D721	B/C	15	8077A	Brown	IC01F	B/C
7	8001A	Brown	IC01F	B/C	16	803A	Red	IC03F	B/C
8	003D	Green	SP21	B/C					

IC14M: instrument panel harness--SRS harness (10P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D001B	ALL	6				
2	6501	Green	D004B	ALL	7				
3					8	6502	Brown	D001H	ALL
4	9006A	Brown	D003	ALL	9				
5	6503	Green	D004A	ALL	10				

IC15AF: instrument panel harness--driver airbag (2P Yellow) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15M	ALL	2	6511	Yellow	IC15M	ALL

IC15M: instrument panel harness--SRS harness (2PBrown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15AF	ALL	2	6511	Yellow	IC15AF	ALL

IC16M: instrument panel harness--SRS harness (2P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16AF	ALL	2	6516	Yellow	IC16AF	ALL

IC16AF: instrument panel harness--passenger airbag (2P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16M	ALL	2	6516	Yellow	IC16M	ALL

IC22F: instrument panel harness--front harness (20P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	010E	Yellow	SP10	C/F	11	1623	Red	D1603	C/F
2	1622	Blue	D1603	C/F	12	1620	Brown	D1603	C/F
3					13				
4	1621	Grey	D1603	C/F	14				
5	1631	Green	D1604	C/F	15				
6	1632	Grey	D1604	C/F	16				
7	7309	Red	D210A	C/F	17				
8					18				
9	1625	Yellow	D1603	C/F	19	9000	Green	D004A	C/F
10	1624	Green	D1603	C/F	19	9000B	Green	D003	C/F
					20	9001	Brown	D004A	C/F
					20	9001B	Brown	D003	C/F

Instrument panel harness (H30)			
B	manual transmission+automatic air conditioning+display screen		VIN≥038052
C	automatic transmission+automatic air conditioning+display screen		VIN≥037836
E	manual transmission+manual air conditioning+display screen		VIN≥037957
F	automatic transmission+manual air conditioning+display screen		VIN≥037831
ALL	Shared		

IC01F: instrument panel harness--front harness (22P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Yellow	D020A	ALL	12	8077	Brown	IC12F	E/F
2	012B	Green	SP08	ALL	12	8077A	Brown	IC13F	B/C
3	2201	Brown	IC04F	ALL	13	5011	Yellow	D500	ALL
4	2310	Red	SP14	ALL	14	7031	Yellow	D004B	ALL
5	1330	Green	D004A	ALL	15	1560	Grey	D004A	ALL
5	1330A	Green	D003	ALL	16	003B	Yellow	SP21	ALL
6	1392	Brown	D004A	ALL	17	2641	Red	D020A	ALL
7	4001	Red	D004A	ALL	18	1368	Grey	D721	B/C/E/F
8	2315	Green	SP15	ALL	19	8081	Yellow	IC12F	E/F
9	8080	Grey	IC12F	E/F	19	8081A	Yellow	IC13F	B/C
9	8080A	Grey	IC13F	B/C	20	4121	Red	D004B	ALL
10	5014	Red	D500	ALL	21	8001	Brown	IC12F	E/F
11	002B	Pink	SP20	ALL	21	8001A	Brown	IC13F	B/C
					22	1011	Green	D000B	B/E
					22	1610	Green	D000B	C/F

IC02F: instrument panel harness--front harness (26P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Green	D020A	ALL	14	5111	Red	D500	ALL
2	012C	Brown	SP08	ALL	15	6739	Brown	S002B	B/C
3	8200	Red	D820	ALL	15	6739E	Brown	D004A	A/D/E/F
3	8200A	Green	D820	ALL	15	6739G	Brown	D721	E/F
4	7002	Grey	D003	ALL	16	600	Brown	D001C	ALL
5	8269	Blue	D820	ALL	17	601	Pink	IC04F	ALL
6	5210	White	D001H	ALL	18	602	Red	IC05F	ALL
7	1012	Brown	D004B	ALL	19	1599B	Green	D003	ALL
8	2500	Red	D020B	ALL	20	5299	Grey	IC30F	ALL
9	9006B	Yellow	D003	ALL	21	5203	Red	IC30F	ALL
10	6250	Brown	IC04F	ALL	22	5112	Brown	D500	ALL
11	7003	Red	D004B	ALL	23	7020	White	IC04F	ALL
12	5016	Yellow	D500	ALL	24	7021	Red	IC04F	ALL
13	2100A	Green	S001	ALL	25	7025	Green	IC04F	ALL
					26	7026	Brown	IC04F	ALL

IC03F: instrument panel harness--front harness (2P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	SP05	ALL	2	803	Red	IC12F	E/F
					2	803A	Red	IC13F	B/C

IC04F: instrument panel harness--cockpit harness (26P Black) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	7020	White	IC02F	ALL	14	601	Pink	IC02F	ALL
2	7021	Red	IC02F	ALL	15	6411	Blue	IC05F	ALL
3	2320	Red	SP14	ALL	16	8426	Yellow	D840B	ALL
4	2330	Brown	SP14	ALL	17	6401	Blue	IC05F	ALL
5	8425	Green	D840B	ALL	18	8421	Green	D840B	ALL
6	6412	Red	IC05F	ALL	19	7026	Brown	IC02F	ALL
7	8420	Yellow	D840B	ALL	20	8411	Red	D840B	ALL
8	1202	Grey	D004A	ALL	21	2100B	Green	S001	ALL
9	7025	Green	IC02F	ALL	22	6019	Yellow	IC05F	ALL
10	8410	Green	D840B	ALL	23	6250	Brown	IC02F	ALL
11	2201	Brown	IC01F	ALL	24				
12	6017	Brown	IC05F	ALL	25				
13	2325	Yellow	SP15	ALL	26				

IC30F:instrument panel harness—Cabin harness (2P) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	5203	Red	IC02F	ALL	2	5299	Grey	IC02F	ALL
					2	5299A	Grey	D001H	ALL

IC05F: instrument panel harness--right front door harness (20P Yellow) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	810B	Yellow	SP16A	B/C	11				
2	6017	Brown	IC04F	ALL	12	MC804	Green yellow	IC13F	B/C
3	6401	Blue	IC04F	ALL	13	8011	Yellow	IC13F	B/C
4					14				
5	6210	Green	S005	ALL	15	2335	Brown	SP15	ALL
6					16	6412	Red	IC04F	ALL
7	6019	Yellow	IC04F	ALL	17	6201	Yellow	D001C	ALL
8	602	Red	IC02F	ALL	18	8415	Brown	D840B	ALL
9	MC55	Green yellow	G55	ALL	19	8416	Grey	D840B	ALL
10	6411	Blue	IC04F	ALL^	20	6200	Red	D001C	ALL

IC12F: instrument panel harness--manual air conditioning harness (16P Black) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	003C	Green	SP21	E/F	9	803	Red	IC03F	E/F
2	2600F	Red	SP07	E/F	10	MC51A	Yellow green	051	E/F
3	8100	Brown	D001H	E/F	11	8001	Brown	IC01F	E/F
4	8081	Yellow	IC01F	E/F	12				
5					13				
6					14				
7	8080	Grey	IC01F	E/F	15				
8	8077	Brown	IC01F	E/F	16	MC52	Yellow green	G52	E/F

IC13F: instrument panel harness--automatic air conditioning harness (16P Grey) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2600H	Red	SP07	B/C	9	MC52A	Yellow green	G52	B/C
2	8100A	Red	D001H	B/C	10	MC53A	Green yellow	G53	B
3	MC803	Yellow green	D8013	B/C	11	MC804	Green yellow	SG09	C
4	6739B	Green	S002B	B/C	12	8081A	Yellow	IC01F	B/C
5	8013	Red	D8013	B/C	13	8080A	Grey	IC01F	B/C
6	8011	Yellow	IC05F	B/C	14				
6	8011A	Yellow	D721	B/C	15	8077A	Brown	IC01F	B/C
7	8001A	Brown	IC01F	B/C	16	803A	Red	IC03F	B/C
8	003D	Green	SP21	B/C					

IC14M: instrument panel harness--SRS harness (10P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D001B	ALL	6				
2	6501	Green	D004B	ALL	7				
3					8	6502	Brown	D001H	ALL
4	9006A	Brown	D003	ALL	9				
5	6503	Green	D004A	ALL	10				

IC15AF: instrument panel harness--driver airbag (2P Yellow) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15M	ALL	2	6511	Yellow	IC15M	ALL

IC15M: instrument panel harness--SRS harness (2PBrown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	IC15AF	ALL	2	6511	Yellow	IC15AF	ALL

IC16M: instrument panel harness--SRS harness (2P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	ICI6AF	ALL	2	6516	Yellow	ICI6AF	ALL

IC16AF: instrument panel harness--passenger airbag (2P Green) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	IC16M	ALL	2	6516	Yellow	IC16M	ALL

IC22F: instrument panel harness--front harness (20P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	010E	Yellow	SP10	C/F	11	1623	Red	D1603	C/F
2	1622	Blue	D1603	C/F	12	1620	Brown	D1603	C/F
3					13				
4	1621	Grey	D1603	C/F	14				
5	1631	Green	D1604	C/F	15				
6	1632	Grey	D1604	C/F	16				
7	7309	Red	D210A	C/F	17				
8					18				
9	1625	Yellow	D1603	C/F	19	9000	Green	D004A	C/F
10	1624	Green	D1603	C/F	19	9000B	Green	D003	C/F
					20	9001	Brown	D004A	C/F
					20	9001B	Brown	D003	C/F

Front harness (S30)												
A	manual transmission+manual air conditioning						VIN<015982					
B	manual transmission+automatic air conditioning											
C	automatic transmission+manual air conditioning											
D	automatic transmission+automatic air conditioning											
ALL	Shared											

IC01M: front harness--instrument panel harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Pink	SP05B	ALL	12	8077	Green	D801	ALL
2	012B	Yellow	IC19M	A/B	13	5011	Yellow	D001F	ALL
2	012D	Grey	D1602B	C/D	14	7031	Red	D703	ALL
3	2201	Green	IC20M	A/B	15	1560	Yellow	IC20M	ALL
3	2201A	Green	D16028	C/D	16	003B	Blue	SP26	ALL
3	2201B	Yellow	D16018	C/D	17	2641	Green	D002	ALL
4	2310	Brown	D2610A	ALL	18	1368	Red	IC20M	ALL
5	1330	Red	IC19M	ALL	19	8081	Blue	IC20M	ALL
6	1392	Brown	IC20M	ALL	20	4121	Yellow	IC19M	ALL
7	4001	Yellow	IC19M	ALL	21	8001	Grey	IC20M	A/D
8	2315	Brown	D2615A	ALL	21	8001A	Red	D002	B/C
9	8080	Green	IC19M	ALL	22	1011	Green	IC19M	A/B
10	5014	Grey	D501	ALL	22	1610	Green	D1602B	C/D
11	002-	Yellow	SP23	ALL					

IC02M: front harness--instrument panel harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Pink	SP05A	ALL	15	6739	Green	S002A	A/B
2	012C	Yellow	D700	ALL	15	6739F	Green	S002C	C/D
3	8200	Red	IC19M	ALL	16				
4	7002	Brown	D700	ALL	17				
5	8269	Blue	IC19M	ALL	18				
6	602A	Brown	D002	ALL	19	1599B	Red	IC20M	ALL
7	1012	Red	IC19M	ALL	20	602	Red	SPWD0	ALL
8	2500	Blue	D002	ALL	21				
9	9006B	Yellow	IC20M	ALL	22	5112	Yellow	D510	ALL
10	601B	Pink	SPWD0	ALL	23	7020	Green	D700	ALL
11	7003	Blue	D700	ALL	24	7021	Brown	D700	ALL
12	5016	Brown	D501	ALL	25	7025	Green	D700	ALL
13	2100	Green	D700	ALL	26	7026	Brown	D700	ALL
14	5111	Green	D510	ALL					

IC03M: front harness--instrument panel harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	D002	ALL	2	803	Red	D002	ALL

IC19M: front harness--engine harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1					15	1228	Green	D002	ALL
2	8076	Green	D801	ALL	16	6739E	Green	S002C	C/D
3	1012	Red	IC02M	ALL	17	4121	Yellow	IC01M	ALL
4	1229	Blue	D002	ALL	18	8269	Blue	IC02M	ALL
5	1592	Green	IC21M	ALL	19	1330	Red	IC01M	ALL
6	1203	Grey	D002	ALL	20				
7	8200	Red	IC02M	ALL	21	012B	Yellow	IC01M	A/B
8	8080	Green	IC01M	ALL	22	1011	Green	IC01M	A/B
9	4001	Yellow	IC01M	ALL	22	1611A	Green	D002	C/D
10	1204A	Green	SP03	ALL	23				
11					24	7309	Red	IC22M	C/D
12					25				
13					26				
14									

IC20M: front harness--engine harness (22P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1204B	Grey	SP03	ALL	12	8001	Grey	IC01M	A/D
2					12	8001B	Grey	D002	B/C
3	6739B	Blue	S002A	A/B	13	1560	Yellow	IC01M	ALL
4	9000A	Green	IC22M	C/D	14	1392	Brown	IC01M	ALL
5	9001A	Brown	IC22M	C/D	15	1368	Red	IC01M	ALL
6					16				
7	8081	Blue	IC01M	ALL	17				
8	132A	Green	SP24	C/D	18	1599A	Yellow	IC21M	ALL
8	132B	Green	D002	A/B	19	9006B	Yellow	IC02M	ALL
9	1599B	Red	IC02M	ALL	20				
10	1595	Brown	IC21M	ALL	21				
11	2201	Green	IC01M	A/B	22				

IC21M: front harness--cooling fan harness (6P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1592	Green	IC19M	ALL	4	1590	Grey	D002	ALL
2	1595	Brown	IC20M	ALL	5	1599A	Yellow	IC20M	ALL
3	002C	Blue	SP23	ALL	6	150	Black	D002	ALL

IC22M: front harness--instrument panel harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	160	Yellow	D1601A	C/D	11	1623	Red	D1601B	C/D
2	1622	Blue	D1601B	C/D	12	1620	Brown	D1601B	C/D
3					13				
4	1621	Grey	D1601B	C/D	14				
5	1631	Green	D002	C/D	15				
6	1632	Grey	D002	C/D	16				
7	7309	Red	IC19M	C/D	17				
8					18				
9	1625	Yellow	D1601B	C/D	19	9000	Green	D1601A	C/D
10	1624	Green	D1601B	C/D	19	9000A	Green	IC20M	C/D
					20	9001	Brown	D1601A	C/D
					20	9001A	Brown	IC20M	C/D

Front harness (S30)			
A		manual transmission+manual air conditioning	015982≤VIN<038932
B		manual transmission+automatic air conditioning	015982≤VIN<038979
C		automatic transmission+manual air conditioning	015982 ≤VIN<037670
D		automatic transmission+automatic air conditioning	015982≤VIN<037670
ALL		Shared	

IC01M: front harness--instrument panel harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Pink	SP053	ALL	12	8077	Green	D801	ALL
2	012B	Yellow	IC19M	A/B	13	5011	Yellow	D001F	ALL
2	012D	Grey	D1602B	C/D	14	7031	Red	D703	ALL
3	2201	Green	IC19M	A/B	15	1560	Yellow	IC20M	ALL
3	2201A	Green	D1602B	C/D	16	0038	Blue	SP26	ALL
3	2201B	Yellow	D1601B	C/D	17	2641	Green	D002	ALL
4	2310	Brown	D2610A	ALL	18	1368	Red	IC20M	ALL
5	1330	Red	IC19M	ALL	19	8081	Blue	IC20M	ALL
6	1392	Brown	IC20M	ALL	20	4121	Yellow	IC19M	ALL
7	4001	Yellow	IC19M	ALL	21	8001	Grey	IC20M	A/D
8	2315	Brown	D2615A	ALL	21	8001A	Red	D002	B/C
9	8080	Green	IC19M	ALL	22	1011	Green	IC19M	A/B
10	5014	Grey	D501	ALL	22	1610	Green	D160B	C/D
11	002-	Yellow	SP23	ALL					

IC02M: front harness--instrument panel harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Pink	SP05A	ALL	15	6739	Green	S002A	A/B
2	012C	Yellow	D700	ALL	15	6739F	Green	S002C	C/D
3	8200	Red	IC19M	ALL	16	600	Brown	D002	ALL
4	7002	Brown	D700	ALL	17	601B	Pink	SPWD0	ALL
5	8269	Blue	IC19M	ALL	18	602	Red	SPWD0	ALL
6					19	1599B	Red	IC20M	ALL
7	1012	Red	IC19M	ALL	20				
8	2500	Blue	D002	ALL	21				
9	9006B	Yellow	IC20M	ALL	22	5112	Yellow	D510	ALL
10					23	7020	Green	D700	ALL
11	7003	Blue	D700	ALL	24	7021	Brown	D700	ALL
12	5016	Brown	D501	ALL	25	7025	Green	D700	ALL
13	2100	Green	D700	ALL	26	7026	Brown	D700	ALL
14	5111	Green	D510	ALL					

IC03M: front harness--instrument panel harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	D002	ALL	2	803	Red	D002	ALL

IC19M: front harness--engine harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1					15	1228	Green	D002	ALL
2	8076	Green	D801	ALL	16	6739E	Green	S002C	C/D
3	1012	Red	IC02M	ALL	17	4121	Yellow	IC01M	ALL
4	1229	Blue	D002	ALL	18	8269	Blue	IC02M	ALL
5	1592	Green	IC21M	ALL	19	1330	Red	IC01M	ALL
6	1203	Grey	D002	ALL	20				
7	8200	Red	IC02M	ALL	21	012B	Yellow	IC01M	A/B
8	8080	Green	IC01M	ALL	22	1011	Green	IC01M	A/B
9	4001	Yellow	IC01M	ALL	22	1611A	Green	D002	C/D
10	1204A	Green	SP03	ALL	23				
11					24	7309	Red	IC22M	C/D
12					25				
13					26				
14									

IC20M: front harness--engine harness (22P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1204B	Grey	SP03	ALL	12	8001	Grey	IC01M	A/D
2	1377	Red	D1261	ALL	12	8001B	Grey	D002	B/C
3	6739B		S002A	A/B	13	1560	Yellow	IC01M	ALL
4	9000A	Green	IC22M	C/D	14	1392	Brown	IC01M	ALL
5	9001A	Brown	IC22M	C/D	15	1368	Red	IC01M	ALL
6	1378	Green	D1261	ALL	16				
7	8081	Blue	IC01M	ALL	17	1380	Yellow	D1261	ALL
8	132A	Green	SP24	C/D	18	1599A	Yellow	IC21M	ALL
8	132B	Green	D002	A/B	19	9006B	Yellow	IC02M	ALL
9	1599B	Red	IC02M	ALL	20	1379	Brown	D1261	ALL
10	1595	Brown	IC21M	ALL	21				
11	2201	Green	IC01M	A/B	22				

IC21M: front harness--cooling fan harness (6P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1592	Green	IC19M	ALL	4	1590	Grey	D002	ALL
2	1595	Brown	IC20M	ALL	5	1599A	Yellow	IC20M	ALL
3	002C	Blue	SP23	ALL	6	150	Black	D002	ALL

IC22M: front harness--instrument panel harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	160	Yellow	D1601A	C/D	11	1623	Red	D1601B	C/D
2	1622		D1601B	C/D	12	1620	Brown	D1601B	C/D
3					13				
4	1621	Grey	D1601B	C/D	14				
5	1631	Green	D002	C/D	15				
6	1632	Grey	D002	C/D	16				
7	7309	Red	IC19M	C/D	17				
8					18				
9	1625	Yellow	D1601B	C/D	19	9000	Green	D1601A	C/D
10	1624	Green	D1601B	C/D	19	9000A	Green	IC20M	C/D
					20	9001	Brown	D1601A	C/D
					20	9001A	Brown	IC20M	C/D

Front harness (S30)			
A		manual transmission+manual air conditioning	015982≤VIN<038932
B		manual transmission+automatic air conditioning	015982≤VIN<038979
C		automatic transmission+manual air conditioning	015982 ≤VIN<037670
D		automatic transmission+automatic air conditioning	015982≤VIN<037670
ALL		Shared	

IC01M: front harness--instrument panel harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Pink	SP053	ALL	12	8077	Green	D801	ALL
2	012B	Yellow	IC19M	A/B	13	5011	Yellow	D001F	ALL
2	012D	Grey	D1602B	C/D	14	7031	Red	D703	ALL
3	2201	Green	IC19M	A/B	15	1560	Yellow	IC20M	ALL
3	2201A	Green	D1602B	C/D	16	003B	Blue	SP26	ALL
3	2201B	Yellow	D1601B	C/D	17	2641	Green	D002	ALL
4	2310	Brown	D2610A	ALL	18	1368	Red	IC20M	ALL
5	1330	Red	IC19M	ALL	19	8081	Blue	IC20M	ALL
6	1392	Brown	IC20M	ALL	20	4121	Yellow	IC19M	ALL
7	4001	Yellow	IC19M	ALL	21	8001	Grey	IC20M	A/D
8	2315	Brown	D2615A	ALL	21	8001A	Red	D002	B/C
9	8080	Green	IC19M	ALL	22	1011	Green	IC19M	A/B
10	5014	Grey	D501	ALL	22	1610	Green	D1602B	C/D
11	002-	Yellow	SP23	ALL					

IC02M: front harness--instrument panel harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Pink	SP05A	ALL	15	6739	Green	S002A	A/B
2	012C	Yellow	D700	ALL	15	6739F	Green	S002C	C/D
3	8200	Red	IC19M	ALL	16	600	Brown	D002	ALL
4	7002	Brown	D700	ALL	17	601B	Pink	SPWD0	ALL
5	8269	Blue	IC19M	ALL	18	602	Red	SPWD0	ALL
6					19	1599B	Red	IC20M	ALL
7	1012	Red	IC19M	ALL	20				
8	2500	Blue	D002	ALL	21				
9	9006B	Yellow	IC20M	ALL	22	5112	Yellow	D510	ALL
10					23	7020	Green	D700	ALL
11	7003	Blue	D700	ALL	24	7021	Brown	D700	ALL
12	5016	Brown	D501	ALL	25	7025	Green	D700	ALL
13	2100	Green	D700	ALL	26	7026	Brown	D700	ALL
14	5111	Green	D510	ALL					

IC03M: front harness--instrument panel harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	D002	ALL	2	803	Red	D002	ALL

IC19M: front harness--engine harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1229B	Red	D1256	ALL	15	1228	Green	D002	ALL
2	8076	Green	D801	ALL	16	6739E	Green	S002C	C/D
3	1012	Red	IC02M	ALL	17	4121	Yellow	IC01M	ALL
4	1229	Blue	D002	ALL	18	8269	Blue	IC02M	ALL
5	1592	Green	IC21M	ALL	19	1330	Red	IC01M	ALL
6	1203	Grey	D002	ALL	20				
7	8200	Red	IC02M	ALL	21	012B	Yellow	IC01M	A/B
8	8080	Green	IC01M	ALL	22	1011	Green	IC01M	A/B
9	4001	Yellow	IC01M	ALL	22	1611A	Green	D002	C/D
10	1204A	Green	SP03	ALL	23				
11					24	7309	Red	IC22M	C/D
12					25				
13					26				
14									

IC20M: front harness--engine harness (22P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1204B	Grey	SP03	ALL	12	8001	Grey	IC01M	A/D
2	1377	Red	D1261	ALL	12	8001B	Grey	D002	B/C
3	6739B	Blue	S002A	A/B	13	1560	Yellow	IC01M	ALL
4	9000A	Green	IC22M	C/D	14	1392	Brown	IC01M	ALL
5	9001A	Brown	IC22M	C/D	15	1368	Red	IC01M	ALL
6	1378	Green	D1261	ALL	16				
7	8081	Blue	IC01M	ALL	17	1380	Yellow	D1261	ALL
8	132A	Green	SP24	C/D	18	1599A	Yellow	IC21M	ALL
8	132B	Green	D002	A/B	19	9006B	Yellow	IC02M	ALL
9	1599B	Red	IC02M	ALL	20	1379	Brown	D1261	ALL
10	1595	Brown	IC21M	ALL	21				
11	2201	Green	IC01M	A/B	22				

IC21M: front harness--cooling fan harness (6P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1592	Green	IC19M	ALL	4	1590	Grey	D002	ALL
2	1595	Brown	IC20M	ALL	5	1599A	Yellow	IC20M	ALL
3	002C	Blue	SP23	ALL	6	150	Black	D002	ALL

IC22M: front harness--instrument panel harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	160	Yellow	D1601A	C/D	11	1623	Red	D1601B	C/D
2	1622	Blue	D1601B	C/D	12	1620	Brown	D1601B	C/D
3					13				
4	1621	Grey	D1601B	C/D	14				
5	1631	Green	D002	C/D	15				
6	1632	Grey	D002	C/D	16				
7	7309	Red	IC19M	C/D	17				
8					18				
9	1625	Yellow	D1601B	C/D	19	9000	Green	D1601A	C/D
10	1624	Green	D1601B	C/D	19	9000A	Green	IC20M	C/D
					20	9001	Brown	D1601A	C/D
					20	9001A	Brown	IC20M	C/D

Front harness (S30)			
A	manual transmission+manual air conditioning		VIN≥038932
B	manual transmission+automatic air conditioning		VIN≥038979
C	automatic transmission+manual air conditioning		VIN≥037670
D	automatic transmission+automatic air conditioning		VIN≥037670
ALL	Shared		

IC01M: front harness--instrument panel harness (22P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Pink	SP053	ALL	12	8077	Green	D801	ALL
2	012B	Yellow	IC19M	A/B	13	5011	Yellow	D001F	ALL
2	012D	Grey	D1602B	C/D	14	7031	Red	D703	ALL
3	2201	Green	IC19M	A/B	15	1560	Yellow	IC20M	ALL
3	2201A	Green	D1602B	C/D	16	0038	Blue	SP26	ALL
3	2201B	Yellow	D1601B	C/D	17	2641	Green	D002	ALL
4	2310	Brown	D2610A	ALL	18	1368	Red	IC20M	ALL
5	1330	Red	IC19M	ALL	19	8081	Blue	IC20M	ALL
6	1392	Brown	IC20M	ALL	20	4121	Yellow	IC19M	ALL
7	4001	Yellow	IC19M	ALL	21	8001	Grey	IC20M	A/D
8	2315	Brown	D2615A	ALL	21	8001A	Red	D002	B/C
9	8080	Green	IC19M	ALL	22	1011	Green	IC19M	A/B
10	5014	Grey	D501	ALL	22	1610	Green	D1602B	C/D
11	002-	Yellow	SP23	ALL					

IC02M: front harness--instrument panel harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Pink	SP05A	ALL	15	6739	Green	S002A	A/B
2	012C	Yellow	D700	ALL	15	6739F	Green	S002C	C/D
3	8200	Red	IC19M	ALL	16	600	Brown	D002	ALL
4	7002	Brown	D700	ALL	17	601B	Pink	SPWD0	ALL
5	8269	Blue	IC19M	ALL	18	602	Red	SPWD0	ALL
6					19	1599B	Red	IC20M	ALL
7	1012	Red	IC19M	ALL	20				
8	2500	Blue	D002	ALL	21				
9	9006B	Yellow	IC20M	ALL	22	5112	Yellow	D510	ALL
10	6250	Brown	D1265	ALL	23	7020	Green	D700	ALL
11	7003	Blue	D700	ALL	24	7021	Brown	D700	ALL
12	5016	Brown	D501	ALL	25	7025	Green	D700	ALL
13	2100	Green	D700	ALL	26	7026	Brown	D700	ALL
14	5111	Green	D510	ALL					

IC03M: front harness--instrument panel harness (2P Brown) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	D002	ALL	2	803	Red	D002	ALL

IC19M: front harness--engine harness (26P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1229B	Red	D1256	ALL	15	1228	Green	D002	ALL
2	8076	Green	D801	ALL	16	6739E	Green	S002C	C/D
3	1012	Red	IC02M	ALL	17	4121	Yellow	IC01M	ALL
4	1229	Blue	D002	ALL	18	8269	Blue	IC02M	ALL
5	1592	Green	IC21M	ALL	19	1330	Red	IC01M	ALL
6	1203	Grey	D002	ALL	20	1229	Blue	D1256	ALL
7	8200	Red	IC02M	ALL	21	012B	Yellow	IC01M	A/B
8	8080	Green	IC01M	ALL	22	1011	Green	IC01M	A/B
9	4001	Yellow	IC01M	ALL	22	1611A	Green	D002	C/D
10	1204A	Green	SP03	ALL	23				
11					24	7309	Red	IC22M	C/D
12					25				
13					26				
14									

IC20M: front harness--engine harness (22P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1204B	Grey	SP03	ALL	12	8001	Grey	IC01M	A/D
2	1377	Red	D1261	ALL	12	8001B	Grey	D002	B/C
3	6739B	Blue	S002A	A/B	13	1560	Yellow	IC01M	ALL
4	9000A	Green	IC22M	C/D	14	1392	Brown	IC01M	ALL
5	9001A	Brown	IC22M	C/D	15	1368	Red	IC01M	ALL
6	1378	Green	D1261	ALL	16				
7	8081	Blue	IC01M	ALL	17	1380	Yellow	D1261	ALL
8	132A	Green	SP24	C/D	18	1599A	Yellow	IC21M	ALL
8	132B	Green	D002	A/B	19	9006B	Yellow	IC02M	ALL
9	1599B	Red	IC02M	ALL	20	1379	Brown	D1261	ALL
10	1595	Brown	IC21M	ALL	21				
11	2201	Green	IC01M	A/B	22				

IC21M: front harness--cooling fan harness (6P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1592	Green	IC19M	ALL	4	1590	Grey	D002	ALL
2	1595	Brown	IC20M	ALL	5	1599A	Yellow	IC20M	ALL
3	002C	Blue	SP23	ALL	6	150	Black	D002	ALL

IC22M: front harness--instrument panel harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	160	Yellow	D1601A	C/D	11	1623	Red	D1601B	C/D
2	1622	Blue	D1601B	C/D	12	1620	Brown	D1601B	C/D
3					13				
4	1621	Grey	D1601B	C/D	14				
5	1631	Green	D002	C/D	15				
6	1632	Grey	D002	C/D	16				
7	7309	Red	IC19M	C/D	17				
8					18				
9	1625	Yellow	D1601B	C/D	19	9000	Green	D1601A	C/D
10	1624	Green	D1601B	C/D	19	9000A	Green	IC20M	C/D
					20	9001	Brown	D1601A	C/D
					20	9001A	Brown	IC20M	C/D

Front harness (H30)			
A	manual transmission+manual air conditioning		VIN<037957
B	manual transmission+automatic air conditioning		VIN<038052
C	automatic transmission+manual air conditioning		VIN<037831
D	automatic transmission+automatic air conditioning		VIN<037836
ALL	Shared		

IC01M: front harness--instrument panel harness (22P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2605	Pink	SP053	ALL	12	8077	Green	D801	ALL
2	012B	Yellow	IC19M	A/B	13	5011	Yellow	D001F	ALL
2	012D	Grey	D1602B	C/D	14	7031	Red	D703	ALL
3	2201	Green	IC19M	A/B	15	1560	Yellow	IC20M	ALL
3	2201A	Green	D1602B	C/D	16	0038	Blue	SP26	ALL
3	2201B	Yellow	D1601B	C/D	17	2641	Green	D002	ALL
4	2310	Brown	D2610A	ALL	18	1368	Red	IC20M	ALL
5	1330	Red	IC19M	ALL	19	8081	Blue	IC20M	ALL
6	1392	Brown	IC20M	ALL	20	4121	Yellow	IC19M	ALL
7	4001	Yellow	IC19M	ALL	21	8001	Grey	IC20M	A/D
8	2315	Brown	D2615A	ALL	21	8001A	Red	D002	B/C
9	8080	Green	IC19M	ALL	22	1011	Green	IC19M	A/B
10	5014	Grey	D501	ALL	22	1610	Green	D1602B	C/D
11	002-	Yellow	SP23	ALL					

IC02M: front harness--instrument panel harness (26P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	2606	Pink	SP05A	ALL	15	6739	Green	S002A	A/B
2	012C	Yellow	D700	ALL	15	6739F	Green	S002C	C/D
3	8200	Red	IC19M	ALL	16	600	Brown	D002	ALL
4	7002	Brown	D700	ALL	17	601B	Pink	SPWD0	ALL
5	8269	Blue	IC19M	ALL	18	602	Red	SPWD0	ALL
6	5210	White	D002	ALL	19	1599B	Red	IC20M	ALL
7	1012	Red	IC19M	ALL	20	5299	Grey	D002	ALL
8	2500	Blue	D002	ALL	21	5203	Red	D022	ALL
9	9006B	Yellow	IC20M	ALL	22	5112	Yellow	D510	ALL
10					23	7020	Green	D700	ALL
11	7003	Blue	D700	ALL	24	7021	Brown	D700	ALL
12	5016	Brown	D501	ALL	25	7025	Green	D700	ALL
13	2100	Green	D700	ALL	26	7026	Brown	D700	ALL
14	5111	Green	D510	ALL					

IC03M: front harness--instrument panel harness (2P Brown) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	260	White	D002	ALL	2	803	Red	D002	ALL

IC19M: front harness--engine harness (26P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1					15	1228	Green	D002	ALL
2	8076	Green	D801	ALL	16	6739E	Green	S002C	C/D
3	1012	Red	IC02M	ALL	17	4121	Yellow	IC01M	ALL
4	1229	Blue	D002	ALL	18	8269	Blue	IC02M	ALL
5	1592	Green	IC21M	ALL	19	1330	Red	IC01M	ALL
6	1203	Grey	D002	ALL	20				
7	8200	Red	IC02M	ALL	21	012B	Yellow	IC01M	A/B
8	8080	Green	IC01M	ALL	22	1011	Green	IC01M	A/B
9	4001	Yellow	IC01M	ALL	22	1611A	Green	D002	C/D
10	1204A	Green	SP03	ALL	23				
11					24	7309	Red	IC22M	C/D
12					25				
13					26				
14									

IC20M: front harness--engine harness (22P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1204B	Grey	SP03	ALL	12	8001	Grey	IC01M	A/D
2	1377	Red	D1261	ALL	12	8001B	Grey	D002	B/C
3	6739B	Blue	S002A	A/B	13	1560	Yellow	IC01M	ALL
4	9000A	Green	IC22M	C/D	14	1392	Brown	IC01M	ALL
5	9001A	Brown	IC22M	C/D	15	1368	Red	IC01M	ALL
6	1378	Green	D1261	ALL	16				
7	8081	Blue	IC01M	ALL	17	1380	Yellow	D1261	ALL
8	132A	Green	SP24	C/D	18	1599A	Yellow	IC21M	ALL
8	132B	Green	D002	A/B	19	9006B	Yellow	IC02M	ALL
9	1599B	Red	IC02M	ALL	20	1379	Brown	D1261	ALL
10	1595	Brown	IC21M	ALL	21				
11	2201	Green	IC01M	A/B	22				

IC21M: front harness--cooling fan harness (6P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	1592	Green	IC19M	ALL	4	1590	Grey	D002	ALL
2	1595	Brown	IC20M	ALL	5	1599A	Yellow	IC20M	ALL
3	002C	Blue	SP23	ALL	6	150	Black	D002	ALL

IC22M: front harness--instrument panel harness (20P White) (H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	160	Yellow	D1601A	C/D	11	1623	Red	D1601B	C/D
2	1622	Blue	D1601B	C/D	12	1620	Brown	D1601B	C/D
3					13				
4	1621	Grey	D1601B	C/D	14				
5	1631	Green	D002	C/D	15				
6	1632	Grey	D002	C/D	16				
7	7309	Red	IC19M	C/D	17				
8					18				
9	1625	Yellow	D1601B	C/D	19	9000	Green	D1601A	C/D
10	1624	Green	D1601B	C/D	19	9000A	Green	IC20M	C/D
					20	9001	Brown	D1601A	C/D
					20	9001A	Brown	IC20M	C/D

SRS harness	
A	SRS (without sidebag)
B&C	SRS (with sidebag)
ALL	Shared

IC14F: SRS harness--instrument panel harness (10P Green) (S30/H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	652	Brown	D650	ALL	6				
2	6501	Green	D650	ALL	7				
3					8	6502	Brown	D650	ALL
4	9006A	Brown	D650	ALL	9				
5	6503	Green	D6502	ALL	10				

IC15F: SRS harness--instrument panel harness (2P Brown) (S30/H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6510	Orange	D650	ALL	2	6511	Yellow	D650	ALL

IC16F: SRS harness--instrument panel harness (2P Green) (S30/H30)

Pin	Conductor No.	Colour	Connection	Model	Pin	Conductor No.	Colour	Connection	Model
1	6515	Orange	D650	ALL	2	6516	Yellow	D650	ALL

Engine harness (MT)	VIN<007559
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IC10F: engine harness (MT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (MT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16			
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21	012B	Green	D220
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24			
12				25			
13				26			

IC20F: engine harness (MT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	12048	Yellow	SP04	12	8001	Green	D8010
2				13	1560	Brown	D1320A
3	67398	Blue	S002	14	1392	Red	D1320A
4				15	1368	Brown	D1320A
5				16			
6				17			
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20			
10	1595	Blue	D1320A	21			
11	2201	Grey	D220	22			

Engine harness (MT)	007559≤VIN<015982
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IC10F: engine harness (MT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (MT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16			
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21	012B	Green	D220
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24			
12				25			
13				26			

IC20F: engine harness (MT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1204B	Yellow	SP04	12	8001	Green	D8010
2				13	1560	Brown	D1320A
3	6739B	Blue	S002	14	1392	Red	D1320A
4				15	1368	Brown	D1320A
5				16			
6				17			
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20			
10	1595	Blue	D1320A	21			
11	2201	Grey	D220	22			

Engine harness (MT)	015982≤VIN<037957
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IC10F: engine harness (MT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (MT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16			
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21	012B	Green	D220
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24			
12				25			
13				26			

IC20F: engine harness (MT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	12048	Yellow	SP04	12	8001	Green	D8010
2	1377	Red	D1320A	13	1560	Brown	D1320A
3	67398	Blue	S002	14	1392	Red	D1320A
4				15	1368	Brown	D1320A
5				16			
6	1378	Green	D1320A	17	1380	Yellow	D1320A
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20	1379	Brown	D1320A
10	1595	Blue	D1320A	21			
11	2201	Grey	D220	22			

Engine harness (MT)	VIN≥037957
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IC10F: engine harness (MT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (MT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1228B	Red	SP306	14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16			
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20	1229B	Blue	SP03A
8	8080	Yellow	D1320A	21	012B	Green	D220
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24			
12				25			
13				26			

IC20F: engine harness (MT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1204B	Yellow	SP04	12	8001	Green	D8010
2	1377	Red	D1320A	13	1560	Brown	D1320A
3	6739B	Blue	S002	14	1392	Red	D1320A
4				15	1368	Brown	D1320A
5				16			
6	1378	Green	D1320A	17	1380	Yellow	D1320A
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20	1379	Brown	D1320A
10	1595	Blue	D1320A	21			
11	2201	Grey	D220	22			

Engine harness (AT)	VIN<009772
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IC10F: engine harness (AT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (AT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16	6739C	Blue	D1320A
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21			
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24	7309	Red	D1320A
12				25			
13				26			

IC20F: engine harness (AT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1204B	Yellow	SP04	12	8001	Green	D8010
2				13	1560	Brown	D1320A
3				14	1392	Red	D1320A
4	9000	Green	D1320A	15	1368	Brown	D1320A
5	9001	Brown	D1320A	16			
6				17			
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20			
10	1595	Blue	D1320A	21			
11				22			

Engine harness (AT)	009772≤VIN<015982
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IC10F: engine harness (AT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (AT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16	6739C	Blue	D1320A
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21			
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24	7309	Red	D1320A
12				25			
13				26			

IC20F: engine harness (AT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	12048	Yellow	SP04	12	8001	Green	D8010
2				13	1560	Brown	D1320A
3				14	1392	Red	D1320A
4	9000	Green	D1320A	15	1368	Brown	D1320A
5	9001	Brown	D1320A	16			
6				17			
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20			
10	1595	Blue	D1320A	21			
11				22			

Engine harness (AT)	015982≤VIN<037633
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IC10F: engine harness (AT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (AT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1				14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16	6739C	Blue	D1320A
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20			
8	8080	Yellow	D1320A	21			
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24	7309	Red	D1320A
12				25			
13				26			

IC20F: engine harness (AT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	12048	Yellow	SP04	12	8001	Green	D8010
2	1377	Red	D1320A	13	1560	Brown	D1320A
3				14	1392	Red	D1320A
4	9000	Green	D1320A	15	1368	Brown	D1320A
5	9001	Brown	D1320A	16			
6	1378	Green	D1320A	17	1380	Yellow	D1320A
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20	1379	Brown	D1320A
10	1595	Blue	D1320A	21			
11				22			

Engine harness (AT)	VIN≥037633
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IC10F: engine harness (AT)--ejector harness (6P Grey) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1321	Grey	D1320C	4			
2	1322	Grey	D1320C	5	1323	Green	D1320C
3	1320	Green	SP04	6	1324	Green	D1320C

IC19F: engine harness (AT)-- front harness (26P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1228B	Red	SP306	14			
2	8076	Blue	D1320A	15	1228	Red	D1203
3	1012	Green	D102	16	6739C	Blue	D1320A
4	1229	Blue	D1320B	17	4121	Red	D412
5	1592	Yellow	D1320A	18	8269	Green	D1320A
6	1203	Green	013203	19	1330	Red	D1320A
7	8200	Brown	D1320A	20	1229B	Blue	SP03A
8	8080	Yellow	D1320A	21			
9	4001	Green	D4005	22	1011	Yellow	D101
10	1351	White	SP04	23			
11				24	7309	Red	D1320A
12				25			
13				26			

IC20F: engine harness (AT)-- front harness (22P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	1204B	Yellow	SP04	12	8001	Green	D8010
2	1377	Red	D1320A	13	1560	Brown	D1320A
3				14	1392	Red	D1320A
4	9000	Green	D1320A	15	1368	Brown	D1320A
5	9001	Brown	D1320A	16			
6	1378	Green	D1320A	17	1380	Yellow	D1320A
7	8081	Green	D1320A	18	1599A	Green	S008
8	132A	Green	D1320A	19	9006	Yellow	D1320A
9	1599B	Green	S008	20	1379	Brown	D1320A
10	1595	Blue	D1320A	21			
11				22			

Cabin harness (S30)	
manual transmission+manual air conditioning	VIN< 008679
manual transmission+automatic air conditioning	
automatic transmission+manual air conditioning	
automatic transmission+automatic air conditioning	

IC04M: cockpit harness--instrument panel harness (22P Black) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	7020	White	D7020	12	6017	Yellow	IC06F
2	7021	Red	D7020	13	2325	Red	IC07F
3	2320	Red	IC07F	14	601	Pink	IC06F
4	2330	Yellow	IC06F	15	6411	Brown	IC06F
5	8425	Green	IC09F	16	8426	Red	IC09F
6	6412	Brown	IC06F	17	6401	Yellow	IC06F
7	8420	Yellow	IC08F	18	8421	Brown	IC08F
8	1202	Red	D1211	19	7026	Brown	D7025
9	7025	Green	D7025	20	8411	Yellow	IC06F
10	8410	Green	IC06F	21	2100B	Green	IC07F
11	2201	Brown	IC07F	22	6019	Red	IC06F

IC06F: cockpit harness—left front door harness (20P Yellow) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC71	Green yellow	G71	11	6401	Yellow	IC04M
2	6029	Yellow	IC09F	12	6205	Green	D001I
3	6027	Grey	IC09F	13	810B	Brown	SP16
4	6024	Green	IC08F	14	2330	Yellow	IC04M
5	6022	Brown	IC08F	15	6201A	Green	SP11
6	6019	Red	IC04M	16	6412	Blue	IC04M
7	6017	Yellow	IC04M	17	6200A	Red	SP12
8	601	Pink	IC04M	18	6411	White	IC04M
9	6250	Brown	D001I	19	8410	Grey	IC04M
10	6210A	Red	S006	20	8411	Pink	IC04M

IC07F: cockpit harness—rear harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810C	Red	SP16	11			
2				12	6206	Green	D001E
3	2651B	Yellow	D001E	13			
4				14	2620	Brown	D001E
5	310	Red	D001E	15			
6	2320	Red	IC04M	16	6265	Green	D001I
7				17	6260	Yellow	D001I
8	2325	Red	IC04M	18	2625	Green	D001E
9	2201	Brown	IC04M	19			
10				20	2100B	Green	IC04M

IC08F: cockpit harness—left rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200C	Red	SP12	6			
2	6022	Brown	IC06F	7	6023	Red	D001E
3	6210C	Green	S006	8	MC623	Green yellow	SG14
4	8421	Brown	IC04M	9	6024	Green	IC06F
5	8420	Yellow	IC04M	10	6201C	Brown	SP11

IC09F: cockpit harness—right rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200D	Red	SP12	6			
2	6027	Grey	IC06F	7	6028	Yellow	D001E
3	6210D	Brown	S006	8	MC624	Green yellow	SG14
4	8426	Red	IC04M	9	6029	Yellow	IC06F
5	8425	Green	IC04M	10	6201D	Red	SP11

Cabin harness (S30)							
manual transmission+manual air conditioning				008679≤VIN<038932			
manual transmission+automatic air conditioning				008679≤VIN<038979			
automatic transmission+manual air conditioning				008679≤VIN<037670			
automatic transmission+automatic air conditioning				008679≤VIN<037670			
IC04M: cockpit harness--instrument panel harness (26P Black) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	7020	White	D7020	12	6017	Yellow	IC06F
2	7021	Red	D7020	13	2325	Red	IC07F
3	2320	Milk white	IC07F	14	601	Pink	IC06F
4	2330	Yellow	IC06F	15	6411	Brown	IC06F
5	8425	Green	IC09F	16	8426	Red	IC09F
6	6412	Brown	IC06F	17	6401	Yellow	IC06F
7	8420	Yellow	IC08F	18	8421	Brown	IC08F
8	1202	Red	D1211	19	7026	Brown	D7025
9	7025	Green	D7025	20	8411	Yellow	IC06F
10	8410	Grey	IC06F	21	2100B	Green	IC07F
11	2201	Brown	IC07F	22	6019	Red	IC06F
IC06F: cockpit harness--left front door harness (20P Yellow) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC71	Green yellow	G71	11	6401	Yellow	IC04M
2	6029	Yellow	IC09F	12	6205	Green	D001I
3	6027	Grey	IC09F	13	810B	Brown	SP16
4	6024	Green	IC08F	14	2330	Yellow	IC04M
5	6022	Brown	IC08F	15	6201A	Green	SP11
6	6019	Red	IC04M	16	6412	Blue	IC04M
7	6017	Yellow	IC04M	17	6200A	Red	SP12
8	601	Pink	IC04M	18	6411	White	IC04M
9	6250	Brown	D001I	19	8410	Grey	IC04M
10	6210A	Red	S006	20	8411	Pink	IC04M

IC08F: cockpit harness--left rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200C	Red	SP12	6			
2	6022	Brown	IC06F	7	6023	Red	D001E
3	6210C	Green	S006	8	MC623	Green yellow	SG14
4	8421	Brown	IC04M	9	6024	Green	IC06F
5	8420	Yellow	IC04M	10	6201C	Brown	SP11

IC09F: cockpit harness--right rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200D	Red	SP12	6			
2	6027	Grey	IC06F	7	6028	Yellow	D001E
3	6210D	Brown	S006	8	MC624	Green yellow	SG14
4	8426	Red	IC04M	9	6029	Yellow	IC06F
5	8425	Green	IC04M	10	6201D	Red	SP11

IC07M: cockpit harness--main backdoor harness (10P White) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2100B	Green	IC04M	6	MC501	Yellow green	SG18
1	2100D	Green	S101	7	810C	Red	SP16
2	6206	Green	D001E	8	5299	Grey	IC30M
3	2620A	Brown	S100	9			
4	6265	Green	D001I	10	3101	Brown	D310B
5	5203	Red	IC03M	10	6260	Yellow	D001I

IC30M: cockpit harness--instrument panel harness (2P) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	5203	Red	IC07M	2	5299	Grey	IC07M

Cabin harness (S30)	
manual transmission+manual air conditioning	VIN≥038932
manual transmission+automatic air conditioning	VIN≥038979
automatic transmission+manual air conditioning	VIN≥037670
automatic transmission+automatic air conditioning	VIN≥037670

IC04M: cockpit harness--instrument panel harness (26P Black) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	7020	White	D7020	14	601	Pink	IC06F
2	7021	Red	D7020	15	6411	Brown	IC06F
3	2320	Milk white	IC07F	16	8426	Red	IC09F
4	2330	Yellow	IC06F	17	6401	Yellow	IC06F
5	8425	Green	IC09F	18	8421	Brown	IC08F
6	6412	Brown	IC06F	19	7026	Brown	D7025
7	8420	Yellow	IC08F	20	8411	Pink	IC06F
8	1202	Red	D1211	21	2100B	Green	IC07F
9	7025	Green	D7025	22	6019	Red	IC06F
10	8410	Grey	IC06F	23	6250A	Brown	SP307
11	2201	Brown	IC07F	24			
12	6017	Yellow	IC06F	25			
13	2325	Red	IC07F	26			

IC06F: cockpit harness--left front door harness (20P Yellow) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC71	Green yellow	G71	11	6401	Yellow	IC04M
2	6029	Yellow	IC09F	12	6205	Green	D001I
3	6027	Grey	IC09F	13	810B	Brown	SP16
4	6024	Green	IC08F	14	2330	Yellow	IC04M
5	6022	Brown	IC08F	15	6201A	Green	SP11
6	6019	Red	IC04M	16	6412	Blue	IC04M
7	6017	Yellow	IC04M	17	6200A	Red	SP12
8	601	Pink	IC04M	18	6411	White	IC04M
9	6250B	Brown	SP307	19	8410	Grey	IC04M
10	6210A	Red	S006	20	8411	Pink	IC04M

IC07F: cockpit harness--rear harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810C	Red	SP16	11			
2				12	6206	Green	D001E
3	2651B	Yellow	D001E	13			
4				14	2620	Brown	D001E
5	310	Red	D001E	15			
6	2320	Milk white	IC04M	16	6265	Green	D001I
7				17	6260	Yellow	D001I
8	2325	Red	IC04M	18	2625	Green	D001E
9	2201	Brown	IC04M	19			
10				20	2100B	Green	IC04M

IC08F: cockpit harness--left rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200C	Red	SP12	6			
2	6022	Brown	IC06F	7	6023	Red	D001E
3	6210C	Green	S006	8	MC623	Green yellow	SG14
4	8421	Brown	IC04M	9	6024	Green	IC06F
5	8420	Yellow	IC04M	10	6201C	Brown	SP11

IC09F: cockpit harness--right rear door harness (10P Black) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200D	Red	SP12	6			
2	6027	Grey	IC06F	7	6028	Yellow	D001E
3	6210D	Brown	S006	8	MC624	Green yellow	SG14
4	8426	Red	IC04M	9	6029	Yellow	IC06F
5	8425	Green	IC04M	10	6201D	Red	SP11

Cabin harness (H30)							
manual transmission+manual air conditioning				VIN<037957			
manual transmission+automatic air conditioning				VIN<038052			
automatic transmission+manual air conditioning				VIN<037831			
automatic transmission+automatic air conditioning				VIN<037836			
IC04M: cockpit harness--instrument panel harness (22P White) (H30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	7020	White	D7020	12	6017	Yellow	IC06F
2	7021	Red	D7020	13	2325	Yellow	IC07F
3	2320	Milk white	D2620	14	601	Pink	IC06F
4	2330	Yellow	IC06F	15	6411	White	IC06F
5	8425	Green	IC09F	16	8426	Red	IC09F
6	6412	Blue	IC06F	17	6401	Yellow	IC06F
7	8420	Yellow	IC08F	18	8421	Brown	IC08F
8	1202	Red	D1211	19	7026	Brown	D7025
9	7025	Green	D7025	20	8411	Pink	IC06F
10	8410	Grey	IC06F	21	2100B	Green	IC07M
11	2201	Brown	S017	22	6019	Red	IC06F
IC06F: cockpit harness--left front door harness (20P Yellow) (S30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC71	Green yellow	G71	11	6401	Yellow	IC04M
2	6029	Yellow	IC09F	12	6205	Green	D001I
3	6027	Grey	IC09F	13	810B	Brown	SP16
4	6024	Green	IC08F	14	2330	Yellow	IC04M
5	6022	Brown	IC08F	15	6201A	Green	SP11
6	6019	Red	IC04M	16	6412	Blue	IC04M
7	6017	Yellow	IC04M	17	6200A	Red	SP12
8	601	Pink	IC04M	18	6411	White	IC04M
9	6250	Brown	D001I	19	8410	Grey	IC04M
10	6210A	Red	S006	20	8411	Pink	IC04M

IC08F: cockpit harness--left rear door harness (10P Black) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200C	Red	SP12	6			
2	6022	Brown	IC06F	7	6023	Red	D001E
3	6210C	Green	S006	8	MC623	Green yellow	SG14
4	8421	Brown	IC04M	9	6024	Green	IC06F
5	8420	Yellow	IC04M	10	6201C	Brown	SP11

IC09F: cockpit harness--right rear door harness (10P Black) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200D	Red	SP12	6			
2	6027	Grey	IC06F	7	6028	Yellow	D001E
3	6210D	Brown	S006	8	MC624	Green yellow	SG14
4	8426	Red	IC04M	9	6029	Yellow	IC06F
5	8425	Green	IC04M	10	6201D	Red	SP11

IC07M: cockpit harness--main backdoor harness (10P White) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2100B	Green	IC04M	6	MC501	Yellow green	SG18
1	2100D	Green	S101	7	810C	Red	SP16
2	6206	Green	D001E	8	5299	Grey	IC30M
3	2620A	Brown	S100	9			
4	6265	Green	D0011	10	3101	Brown	D310B
5	5203	Red	IC30M	10	6260	Yellow	D0011

IC30M: cockpit harness--instrument panel harness (2P) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	5203	Red	IC07M	2	5299	Grey	IC07M

Cabin harness (H30)							
manual transmission+manual air conditioning				VIN≥037957			
manual transmission+automatic air conditioning				VIN≥038052			
automatic transmission+manual air conditioning				VIN≥037831			
automatic transmission+automatic air conditioning				VIN≥037836			
IC04M: cockpit harness--instrument panel harness (26P White) (H30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	7020	White	D7020	14	601	Pink	IC06F
2	7021	Red	D7020	15	6411	Brown	IC06F
3	2320	Milk white	IC07F	16	8426	Red	IC09F
4	2330	Yellow	IC06F	17	6401	Yellow	IC06F
5	8425	Green	IC09F	18	8421	Brown	IC08F
6	6412	Blue	IC06F	19	7026	Brown	D7025
7	8420	Yellow	IC08F	20	8411	Pink	IC06F
8	1202	Red	D1211	21	2100B	Green	IC07M
9	7025	Green	D7025	22	6019	Red	IC06F
10	8410	Grey	IC06F	23	6250A	Brown	SP307
11	2201	Brown	S017	24			
12	6017	Yellow	IC06F	25			
13	2325	Yellow	D2625	26			
IC06F: cockpit harness--left front door harness (20P Yellow) (H30)							
Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC71	Green yellow	G71	11	6401	Yellow	IC04M
2	6029	Yellow	IC09F	12	6205	Green	D001I
3	6027	Grey	IC09F	13	810B	Brown	SP16
4	6024	Green	IC08F	14	2330	Yellow	IC04M
5	6022	Brown	IC08F	15	6201A	Green	SP11
6	6019	Red	IC04M	16	6412	Blue	IC04M
7	6017	Yellow	IC04M	17	6200A	Red	SP12
8	601	Pink	IC04M	18	6411	White	IC04M
9	6250	Brown	D001I	19	8410	Grey	IC04M
10	6210A	Red	S006	20	8411	Pink	IC04M

IC08F: cockpit harness--left rear door harness (10P Black) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200C	Red	SP12	6			
2	6022	Brown	IC06F	7	6023	Red	D001E
3	6210C	Green	S006	8	MC623	Green yellow	SG14
4	8421	Brown	IC04M	9	6024	Green	IC06F
5	8420	Yellow	IC04M	10	6201C	Brown	SP11

IC09F: cockpit harness--right rear door harness (10P Black) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200D	Red	SP12	6			
2	6027	Grey	IC06F	7	6028	Yellow	D001E
3	6210D	Brown	S006	8	MC624	Green yellow	SG14
4	8426	Red	IC04M	9	6029	Yellow	IC06F
5	8425	Green	IC04M	10	6201D	Red	SP11

IC07M: cockpit harness--main backdoor harness (10P White) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2100B	Green	IC04M	6	MC501	Yellow green	SG18
1	2100D	Green	S101	7	810C	Red	SP16
2	6206	Green	D001E	8	5299	Grey	IC30M
3	2620A	Brown	S100	9			
4	6265	Green	D001I	10	3101	Brown	D310B
5	5203	Red	IC03M	10	6260	Yellow	D001I

IC30M: cockpit harness--instrument panel harness (2P) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	5203	Red	IC07M	2	5299	Grey	IC07M

IC07M: rear harness --cockpit harness (20P White) (S30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810C	Pink	D820A	12	6206	Yellow	D6260
2				13			
3	2650	Green	D2620A	14	2620	Brown	D2620
3	2655	Brown	D2625A	14	2620A	Red	D2630
4				15			
5	310	Green	D310A	16	6265	Yellow	D6265
6	2320	Red	D2620	17	6260A	Brown	S010
7				18	2625	Green	D2625
8	2325	Yellow	D2625	19			
9	2201	Green	8017	20	2110	Green	D2620
10				20	2115	Brown	D2625
11							

IC05M: right front door harness --instrument panel harness (20P Yellow) (S30/H30)

(Applicable to the last six digits of VIN<005834)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810B	Green	IC18F	11			
2	6017	Grey	D6015	12	MC804	Yellow green	IC18F
3	6401	Green	IC18F	13	8011	Brown	IC18F
4				14			
5	6210	Yellow	D6215	15	2335	Yellow	IC18F
6				16	6412	Brown	IC18F
7	6019	Grey	D6015	17	6201	Green	D6215
8	602	Brown	D6015	18	8415	Yellow	S013
9	MC55	Green yellow	SG13	19	8416	Brown	S014
10	6411	Yellow	IC18F	20	6200	Red	D6215

IC05M: right front door harness --instrument panel harness (20P Yellow) (S30/H30)

(Applicable to the last six digits of VIN≥005834)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810B	Green	IC18F	11			
2	6017	Grey	D6015	12	MC804	Yellow green	IC18F
3	6401	Green	IC18F	13	8011	Brown	IC18F
4				14			
5	6210	Yellow	D6215	15	2335	White	IC18F
6				16	6412	Brown	IC18F
7	6019	Yellow	D6015	17	6201	Green	D6215
8	602	Brown	D6015	18	8415	Yellow	S013
9	MC55	Green yellow	SG13	19	8416	Blue	S014
10	6411	Yellow	IC18F	20	6200	Red	D6215

IC05M: right front door harness --instrument panel harness (20P Yellow) (S30/H30)
(Applicable to the last six digits of VIN≤005834)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	810B	Green	IC18F	11			
2	6017	Grey	D6015	12	MC804	Yellow green	IC18F
3	6401	Green	IC18F	13	8011	Brown	IC18F
4				14			
5	6210	Yellow	D6215	15	2335	White	IC18F
6				16	6412	Brown	IC18F
7	6019	Yellow	D6015	17	6201	Green	D6215
8	602	Brown	D6015	18	8415	Yellow	S013
9	MC55	Green yellow	SG13	19	8416	Blue	S014
10	6411	Yellow	IC18F	20	6200	Red	D6215

IC18F: right front door harness --rearview (8P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2335	White	IC05M	5	MC804	Yellow green	IC05M
2	1642	Yellow green	SG13	6	810B	Green	IC05M
3	6401	Green	IC05M	7	6411	Yellow	IC05M
4	8011	Brown	IC05M	8	6412	Brown	IC05M

IC06M: left front door harness--cockpit harness (20P Yellow) (S30/H30)
(Applicable to the last six digits of VIN<005834)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC621A	Green yellow	SG16	11	6401	Green	S012
2	6029	Yellow	D6000	12	6205	Brown	D6000
3	6027	Green	D6000	13	8108	Red	IC17F
4	6024	Red	D6000	14	2330	Yellow	IC17F
5	6022	Yellow	D6000	15	6201	Green	D6210
6	6019	Brown	D6000	16	6412	Brown	D641
7	6017	Grey	D6000	17	6200	Red	D6210
8	601	Pink	SP19	18	6411	Yellow	D641
9	6250	Red	D6210	19	8410	Red	S015
10	6210	Yellow	D6210	20	8411	Brown	S016

IC06M: right front door harness --instrument panel harness (20P Yellow) (S30/H30)
 (Applicable to the last six digits of VIN≥005834)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC621A	Green yellow	SG16	11	6401	Green	S012
2	6029	White	D6000	12	6205	Brown	D6000
3	6027	Green	D6000	13	8108	Red	IC17F
4	6024	Red	D6000	14	2330	Yellow	IC17F
5	6022	Yellow	D6000	15	6201	Green	D6210
6	6019	Brown	D6000	16	6412	Brown	D641
7	6017	Grey	D6000	17	6200	Red	D6210
8	601	Pink	SP19	18	6411	Yellow	D641
9	6250	Blue	D6210	19	8410	Grey	S015
10	6210	Yellow	D6210	20	8411	Brown	S016

IC17F: left front door harness--rearview (8P White) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2330	Yellow	IC06M	5			
2	MC641	Yellow green	SG16	6	810B	Red	IC06M
3	6402	Green	S012	7	6415	Grey	D641
4				8	6416	Yellow	D641

IC08M: rear door harness--cockpit harness (10P Black) (S30/H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	6200	Red	D6220	6			
2	6022	Green	D6020	7	6023	Brown	D6020
3	6210	Yellow	D6220	8	MC623	Yellow green	D6220
4	8421	Green	D8420	9	6024	Grey	D6020
5	8420	Brown	D8420	10	6201	Green	D6220

IC07F: main backdoor harness --cockpit harness (10P White) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	2100B	Green	D2100	6	MC501	Yellow green	S001
2	6206	Yellow	SDL	7	810C	Red	D820A
3	2620A	Red	SDL	8	5299	Grey	SDL
4	6265	Yellow	SDL	9			
5	5203	Red	SDL	10	6260	Green	SDL

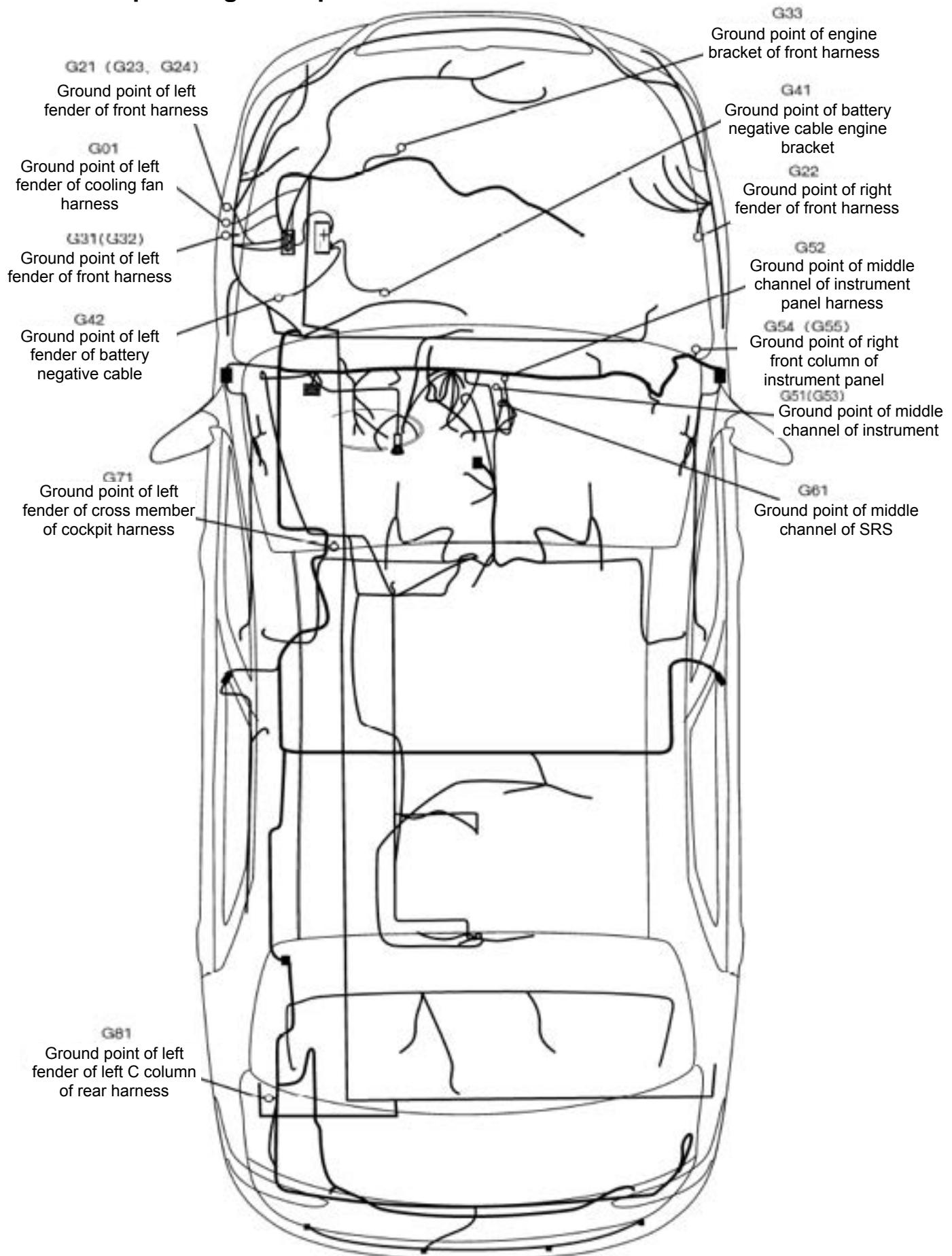
SDL: main backdoor harness --backdoor harness branch (10P) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC501A	Yellow green	S001	6			
2	6265	Yellow	IC07F	7	5203	Red	IC07F
3	6206	Yellow	IC07F	8	2620A	Red	IC07F
4	6260	Green	IC07F	9	5299	Grey	IC07F
5				10			

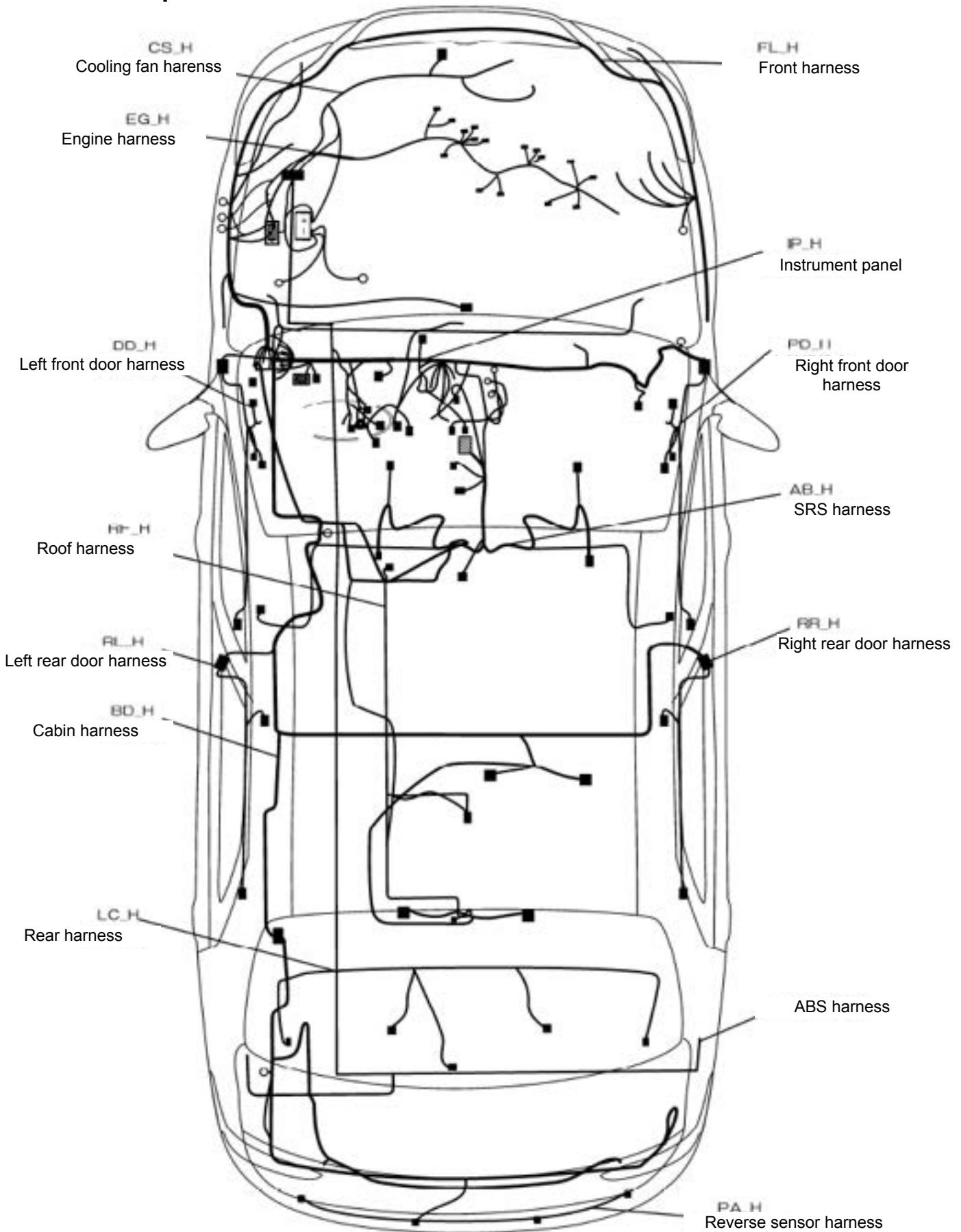
SDR: backdoor harness branch --main backdoor harness (10P) (H30)

Pin	Conductor No.	Colour	Connection	Pin	Conductor No.	Colour	Connection
1	MC501A	Yellow green	S002	6			
2	6265	Yellow	D6265	7	5203	Red	D501A
3	6206	Yellow	D6260	8	2620A	Red	D2630
4	6260	Green	D6260	9	5299	Grey	D501A
5				10			

Location plan of ground points

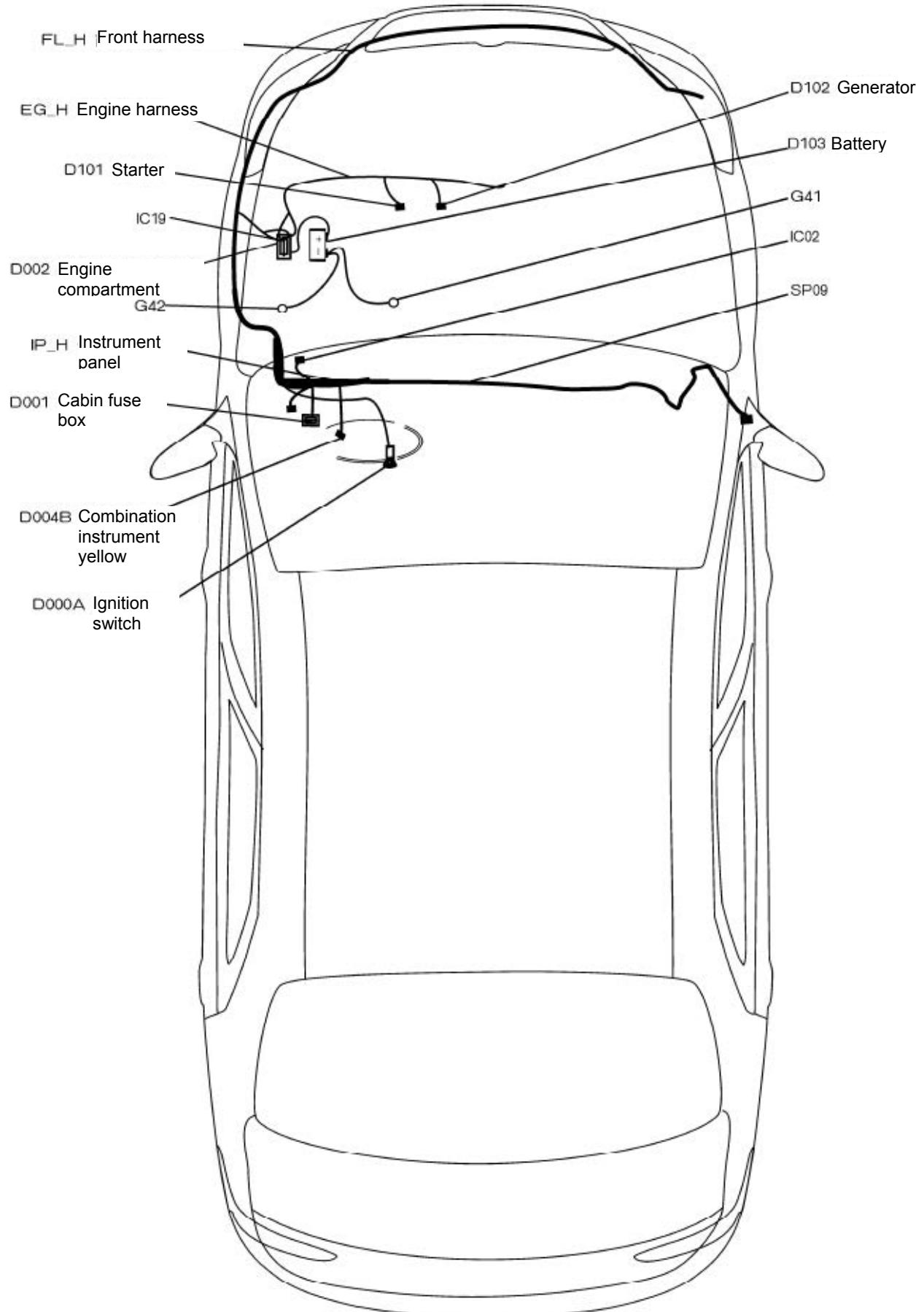


Location plan of harness

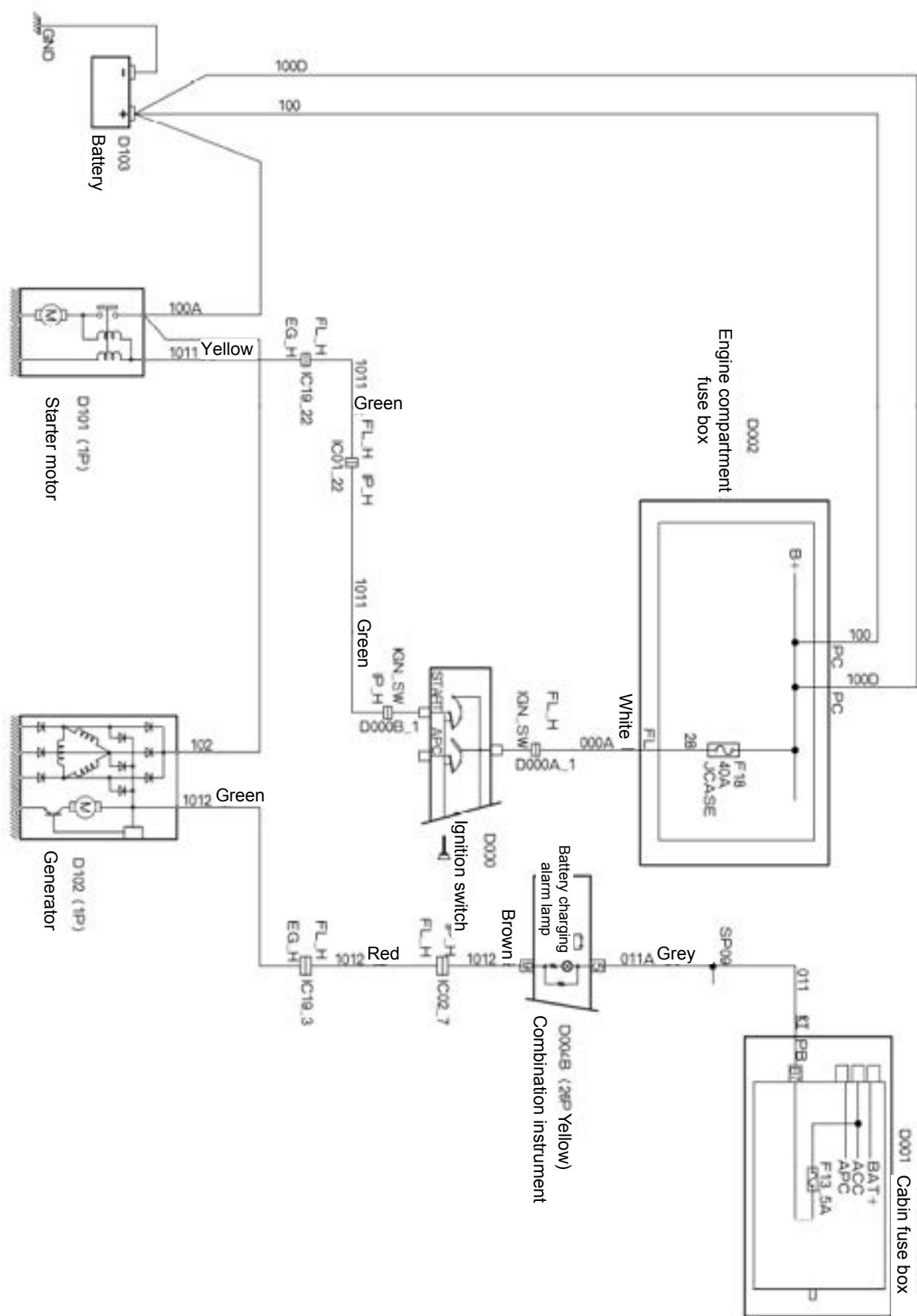


Electrical appliance diagrams

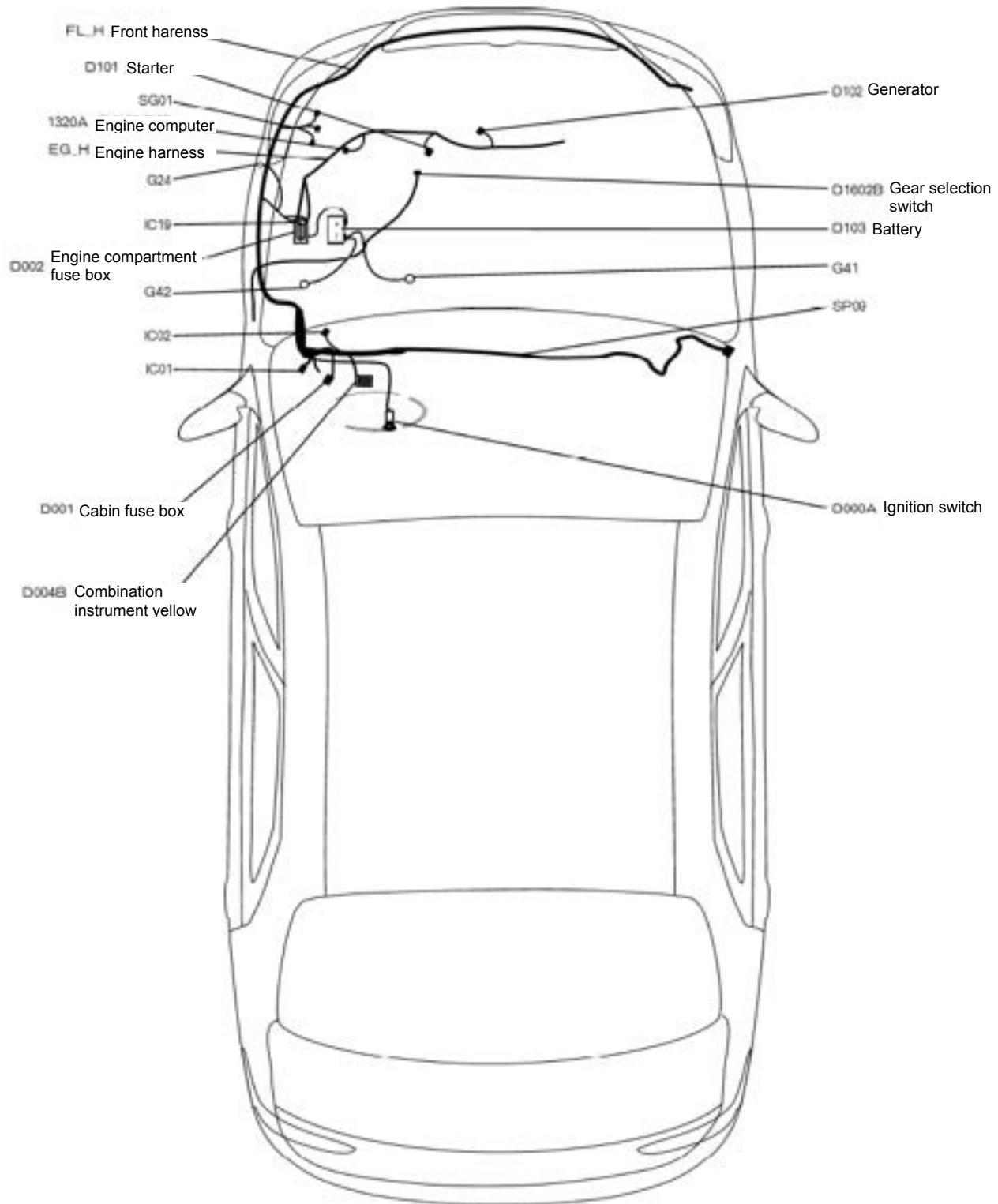
1.1. Location plan of startup and charging apparatus (manual transmission) S30/H30



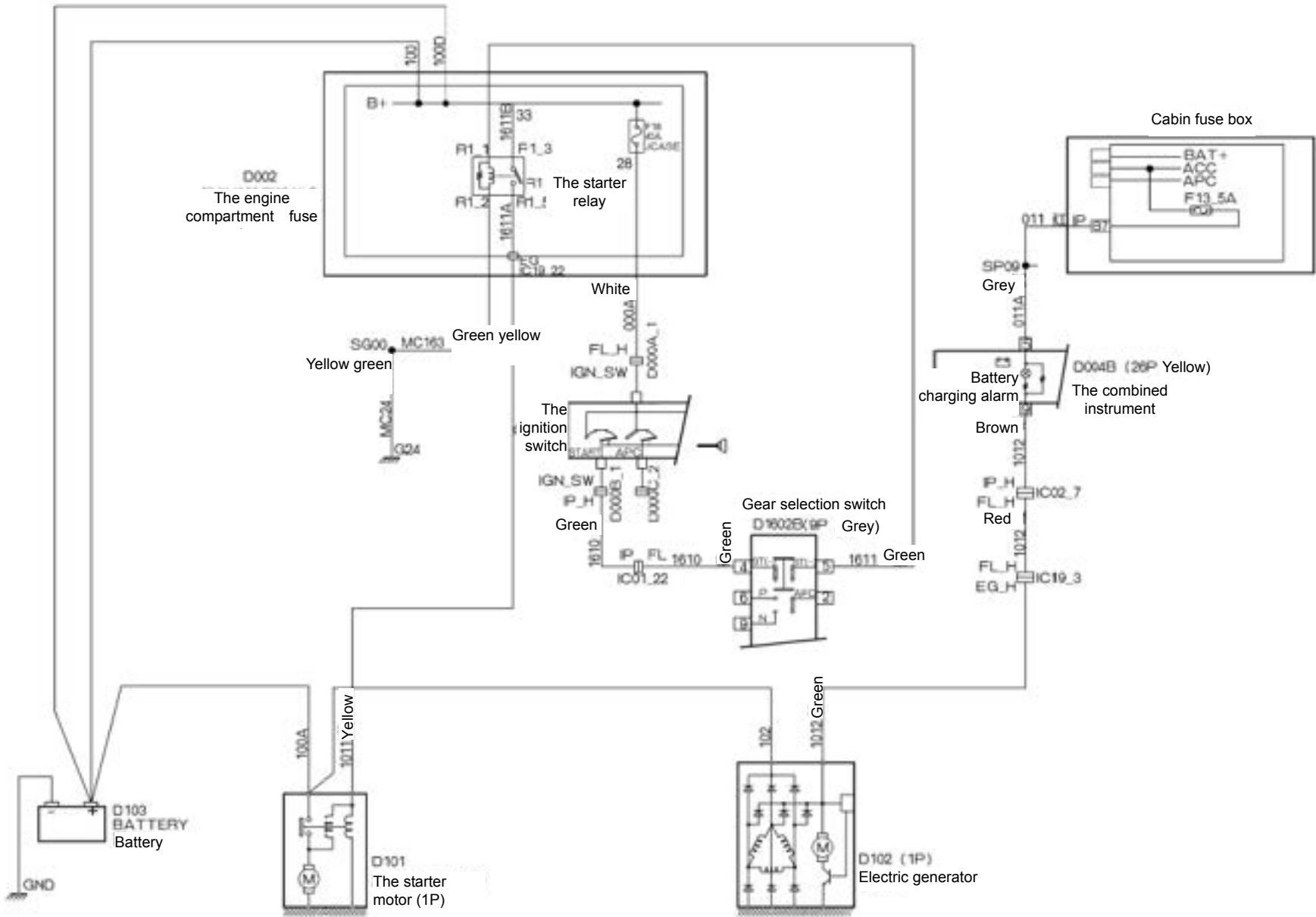
1.2. Electrical appliance diagram of startup and charging apparatus (manual transmission) S30/H30



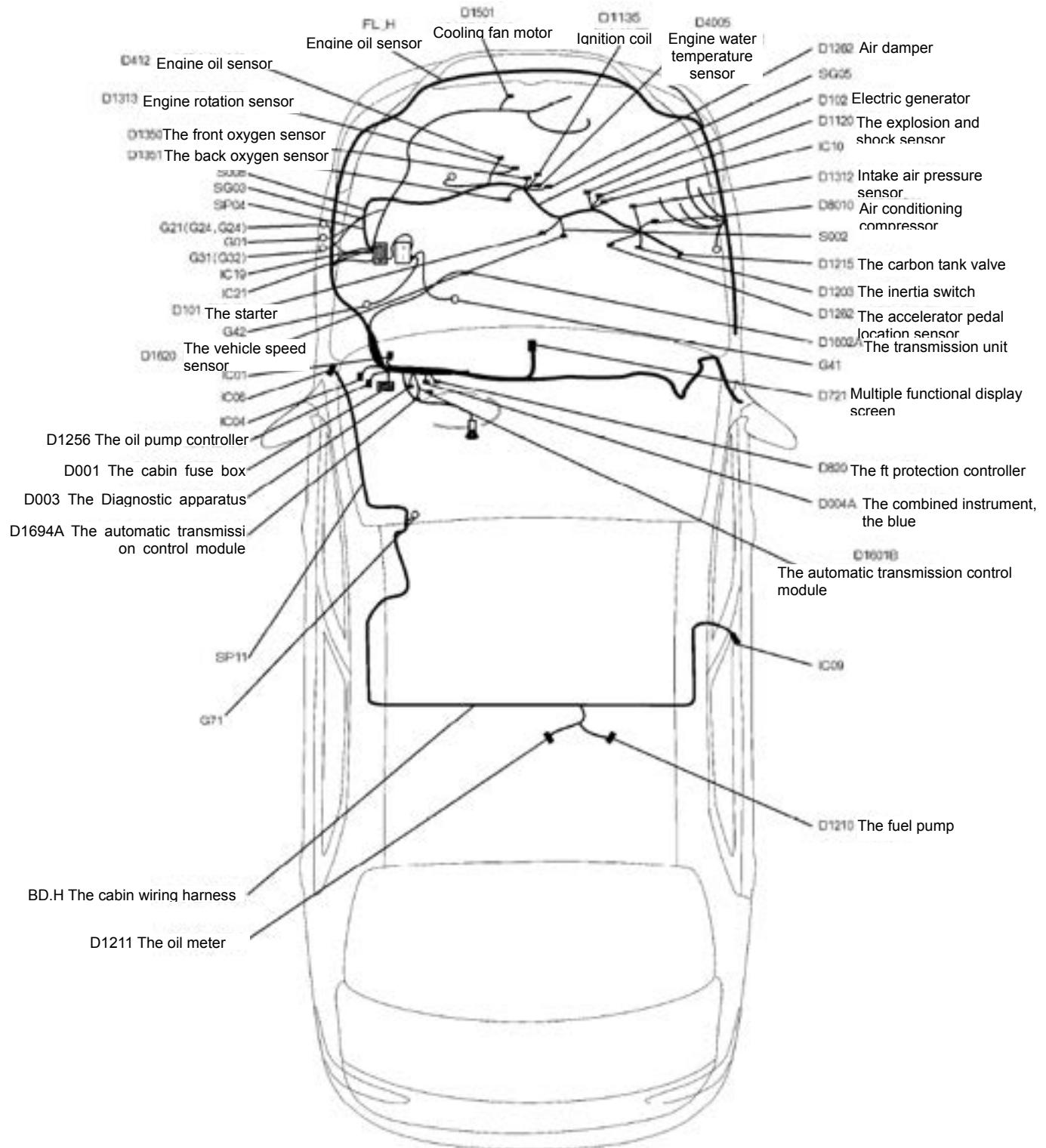
2.1. Location plan of starter and charging unit (automatic transmission) S30/H30



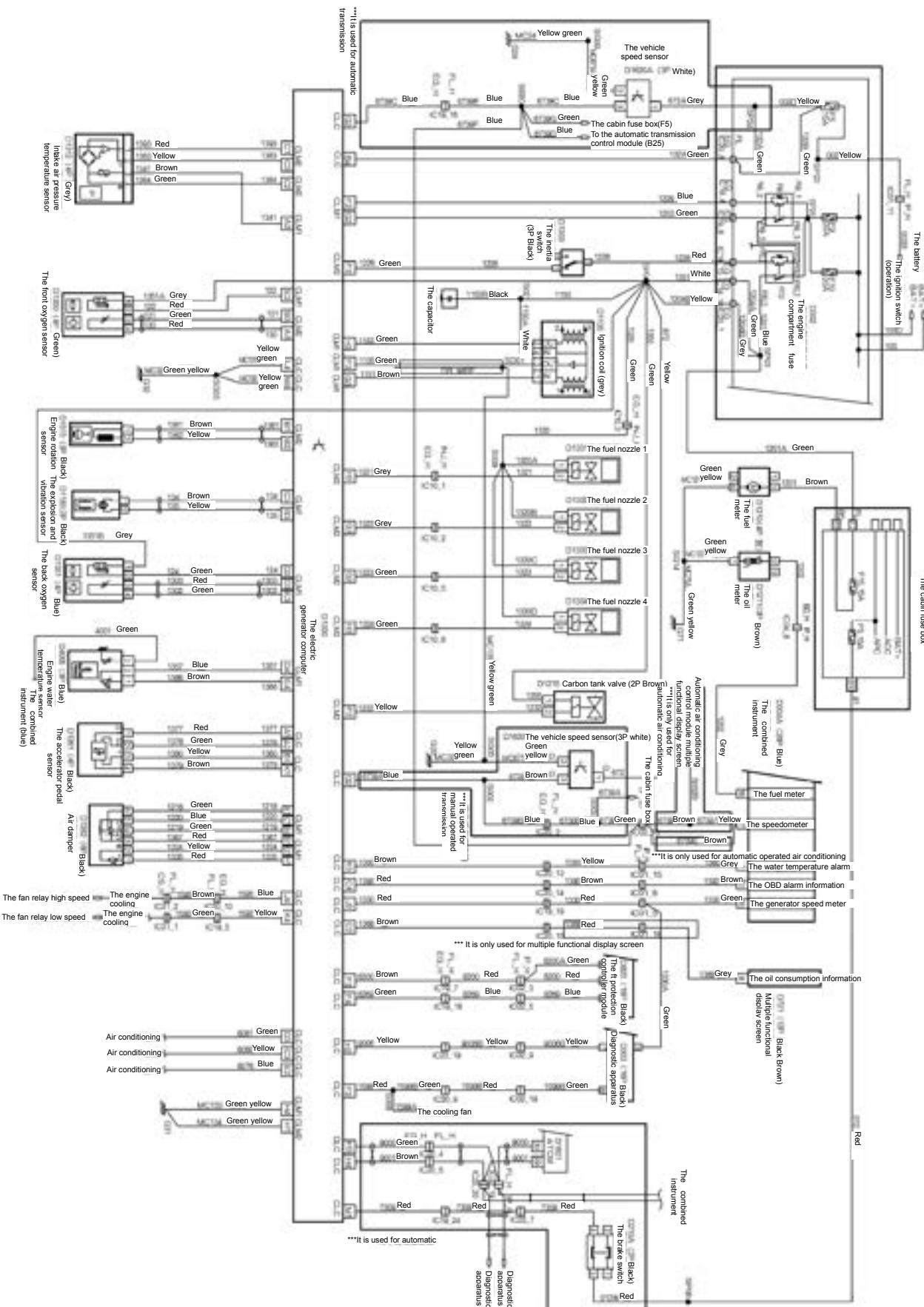
2.2. The electrical schematic diagram for the start up and the charging (the automatic transmission) S30/H30



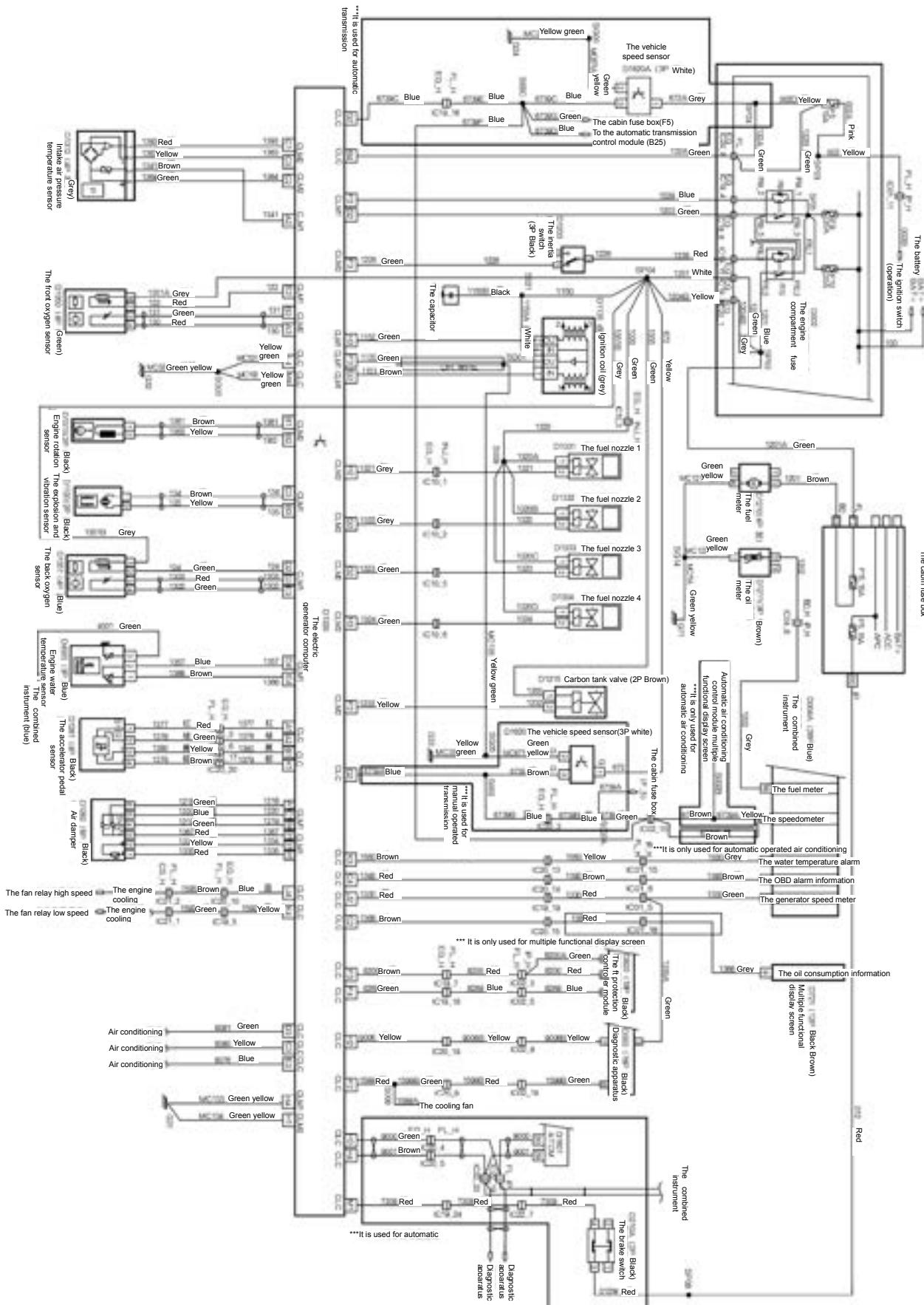
3.1 The electrical location diagram for the engine control S30/H30



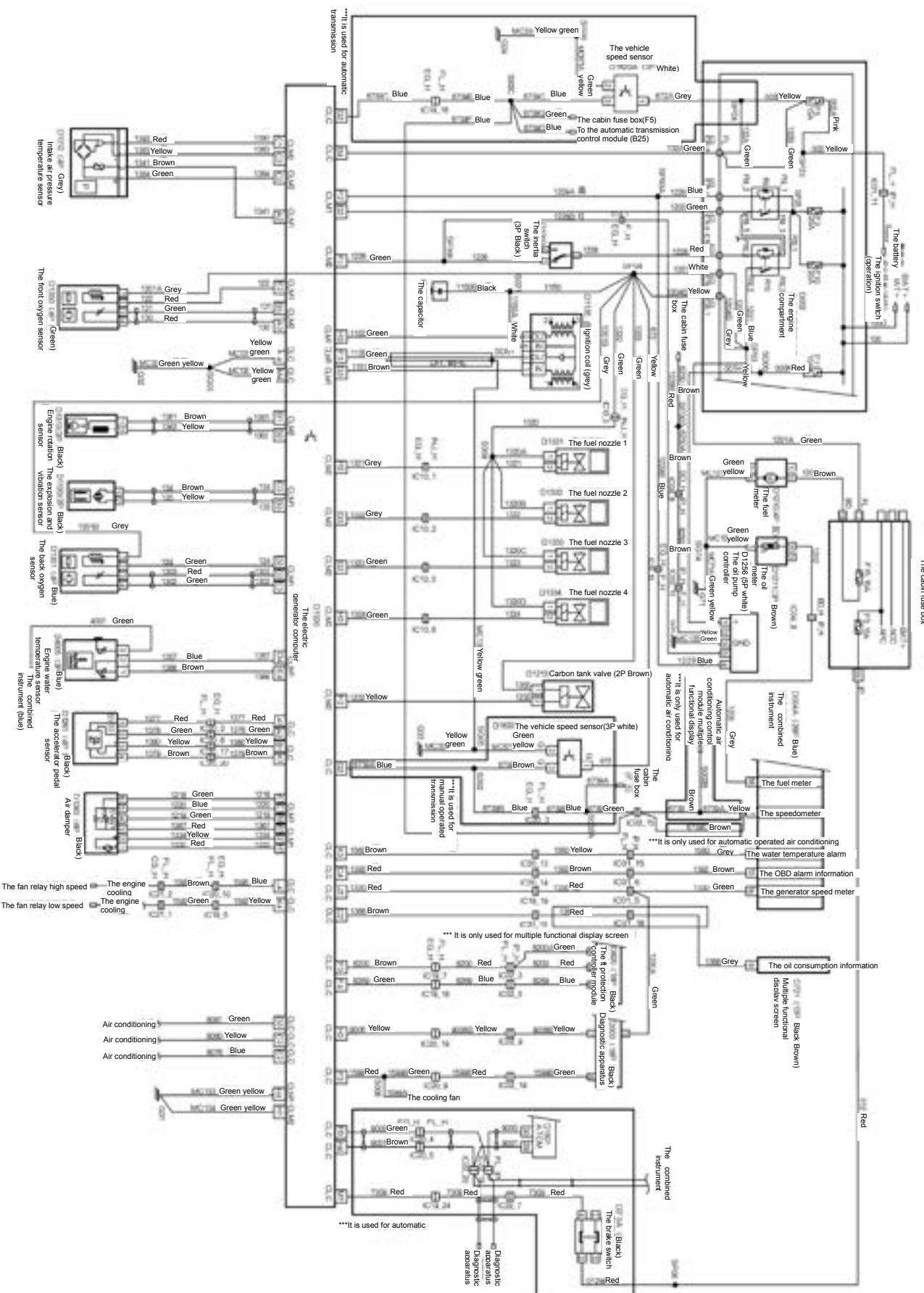
3.2 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits after code VIN, VIN less than 015982)



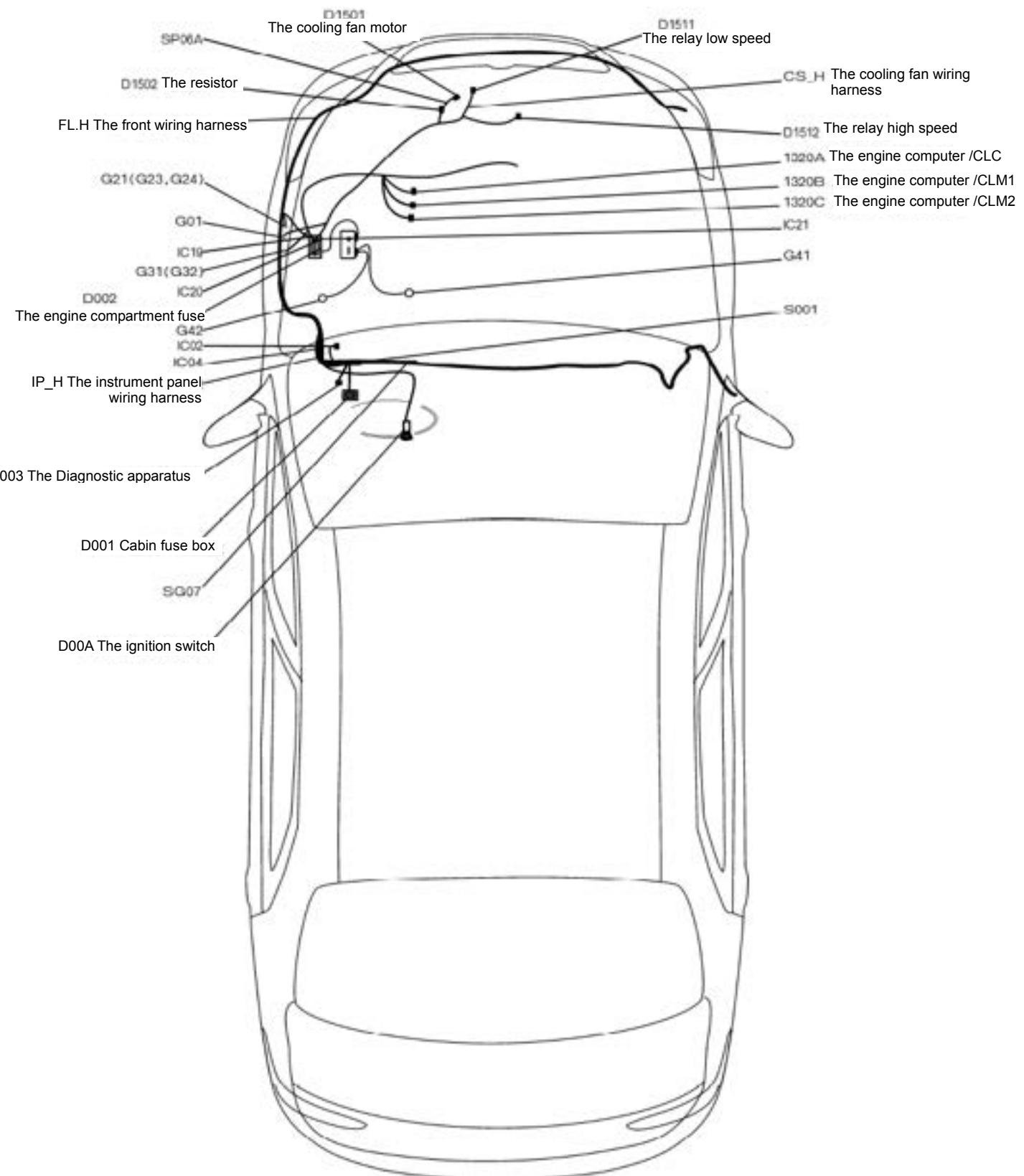
3.3 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits 015982 after code ≤ VIN < 037670)



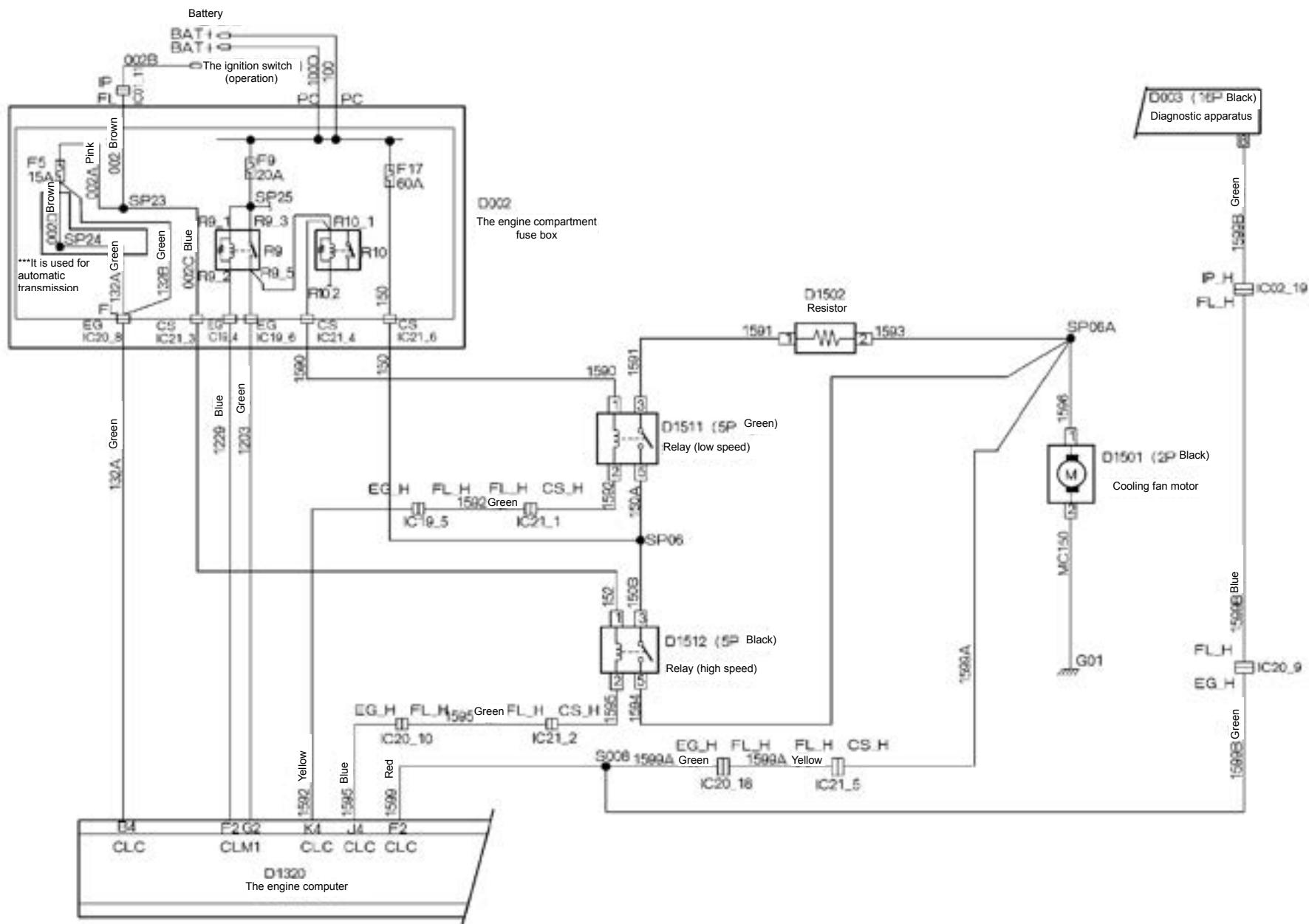
3.4 The electrical location diagram for the engine control S30/H30 (It is applicable to the 6 digits after code VIN≥037670)



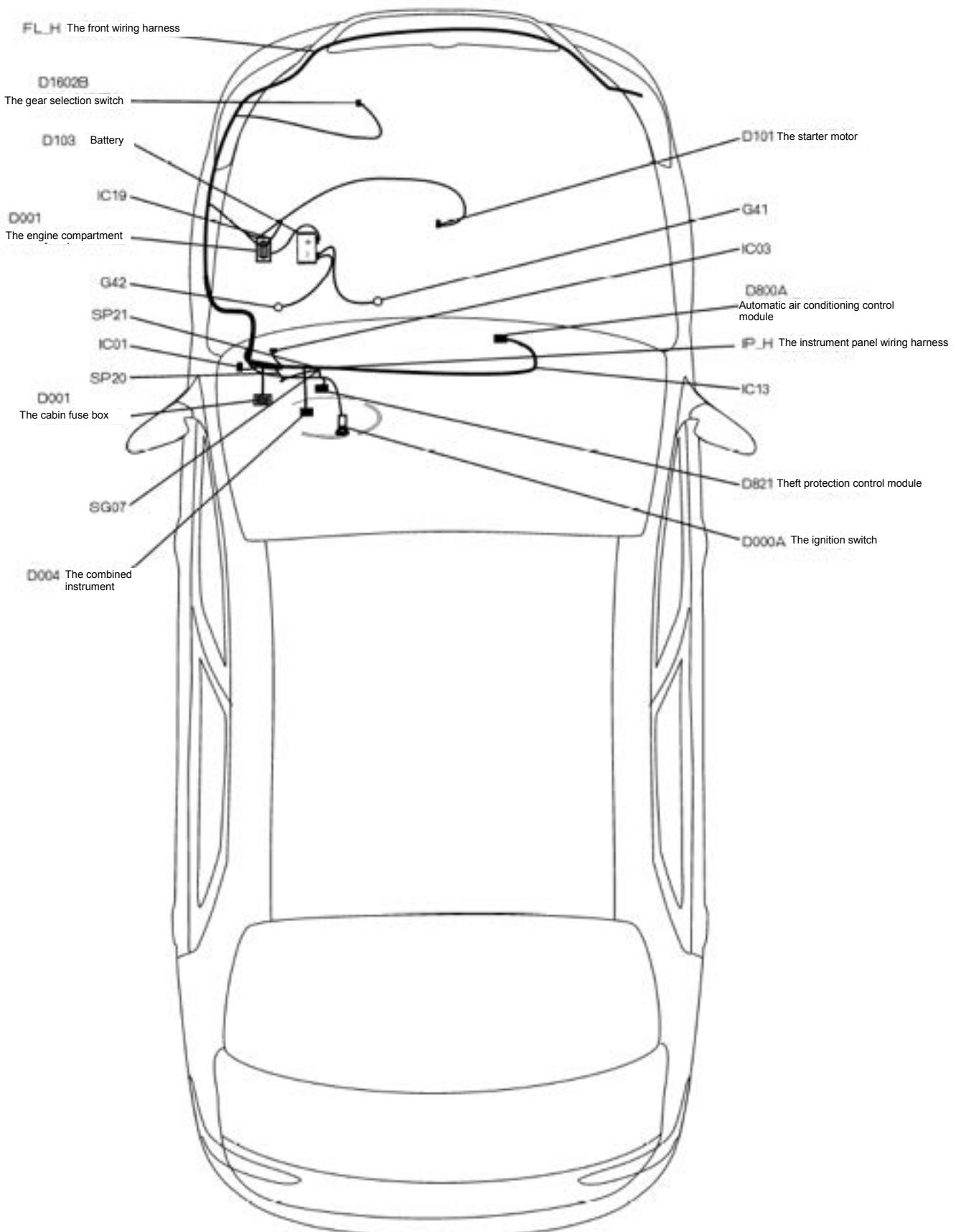
4.1 The electrical location diagram for the engine cooling control S30/H30



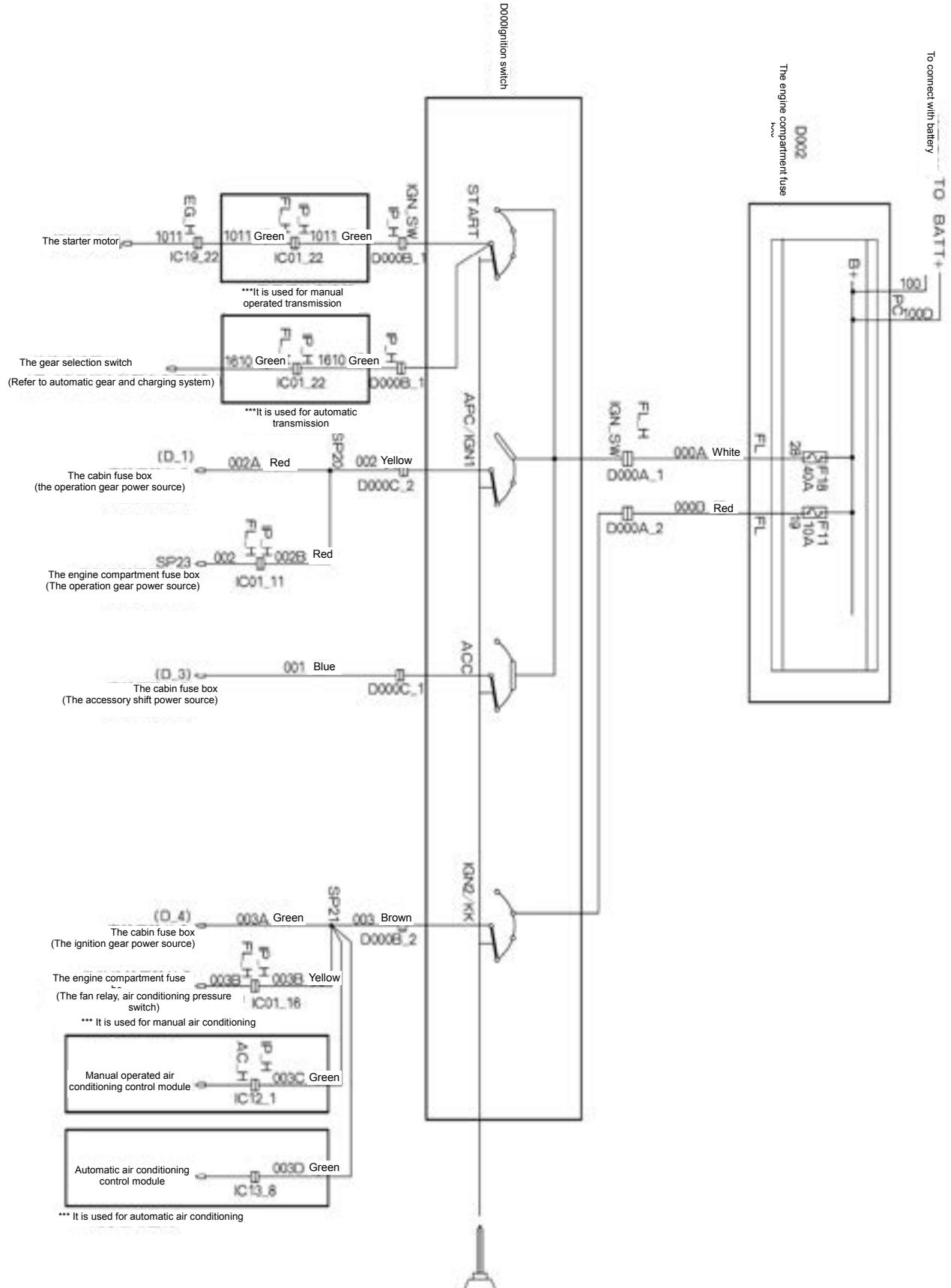
4.2 The electrical schematic diagram for the engine cooling control S30/H30



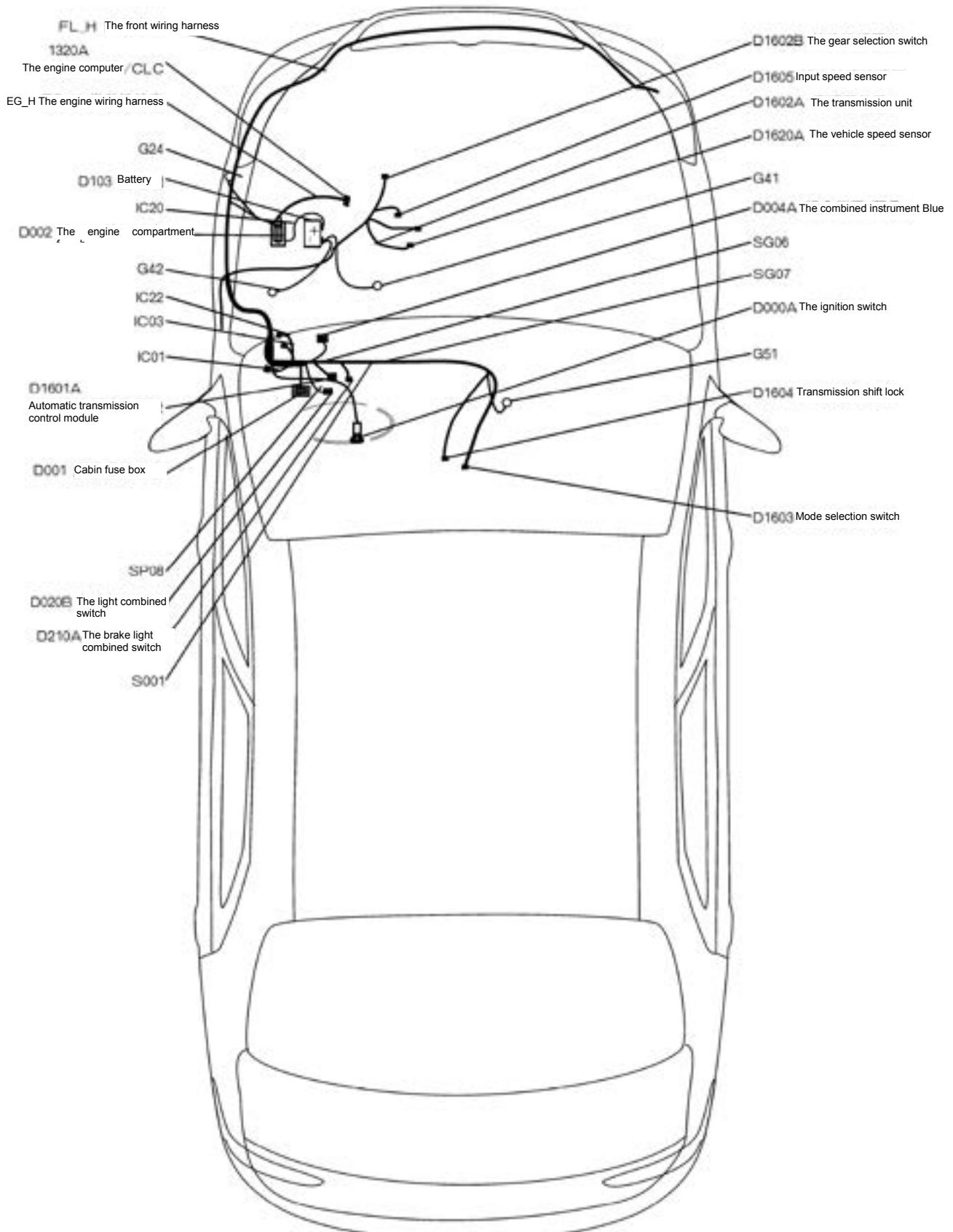
5.1 The electrical location diagram for the ignition switch S30/H30



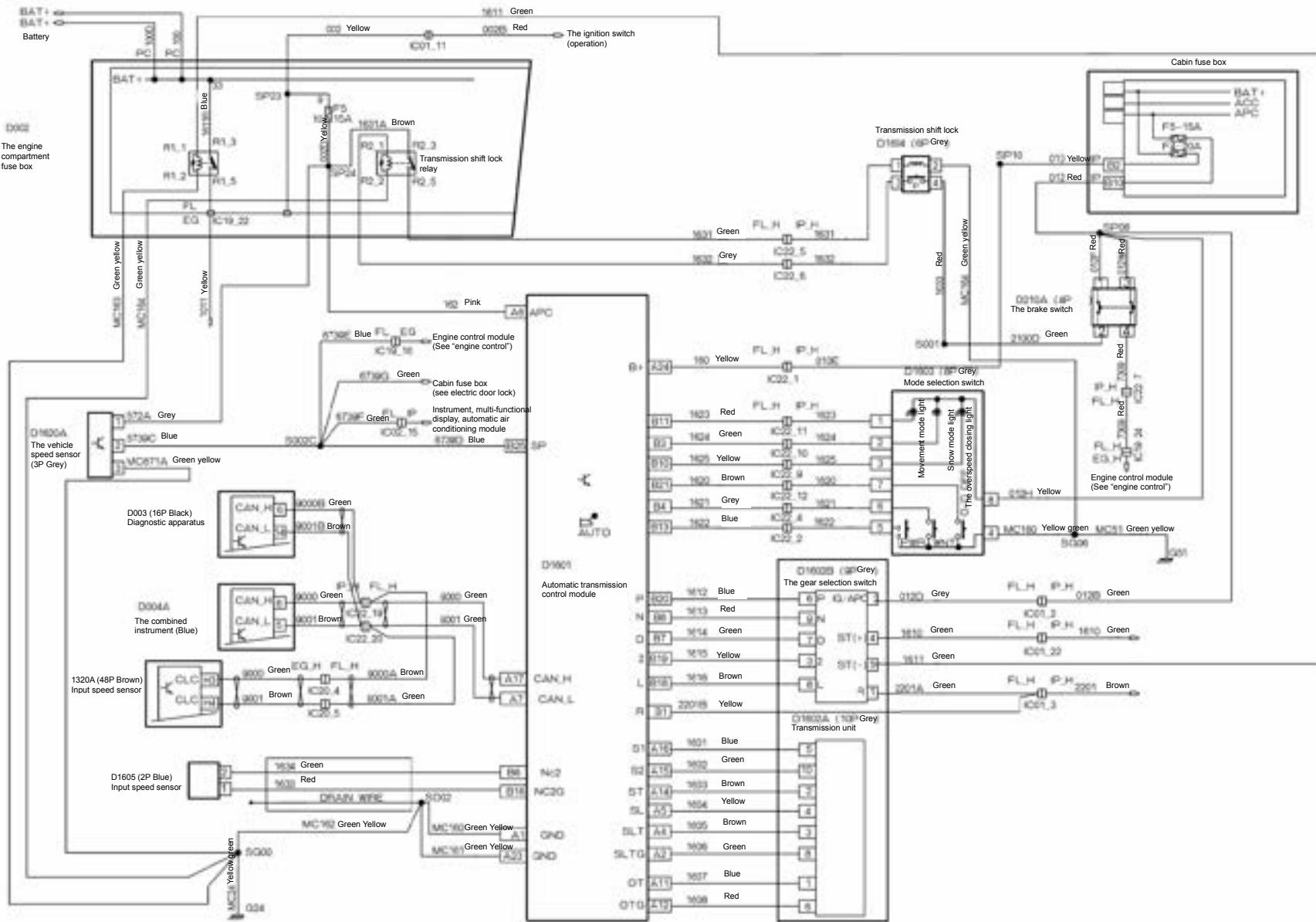
5.2 The electrical location diagram for the ignition switch S30/H30



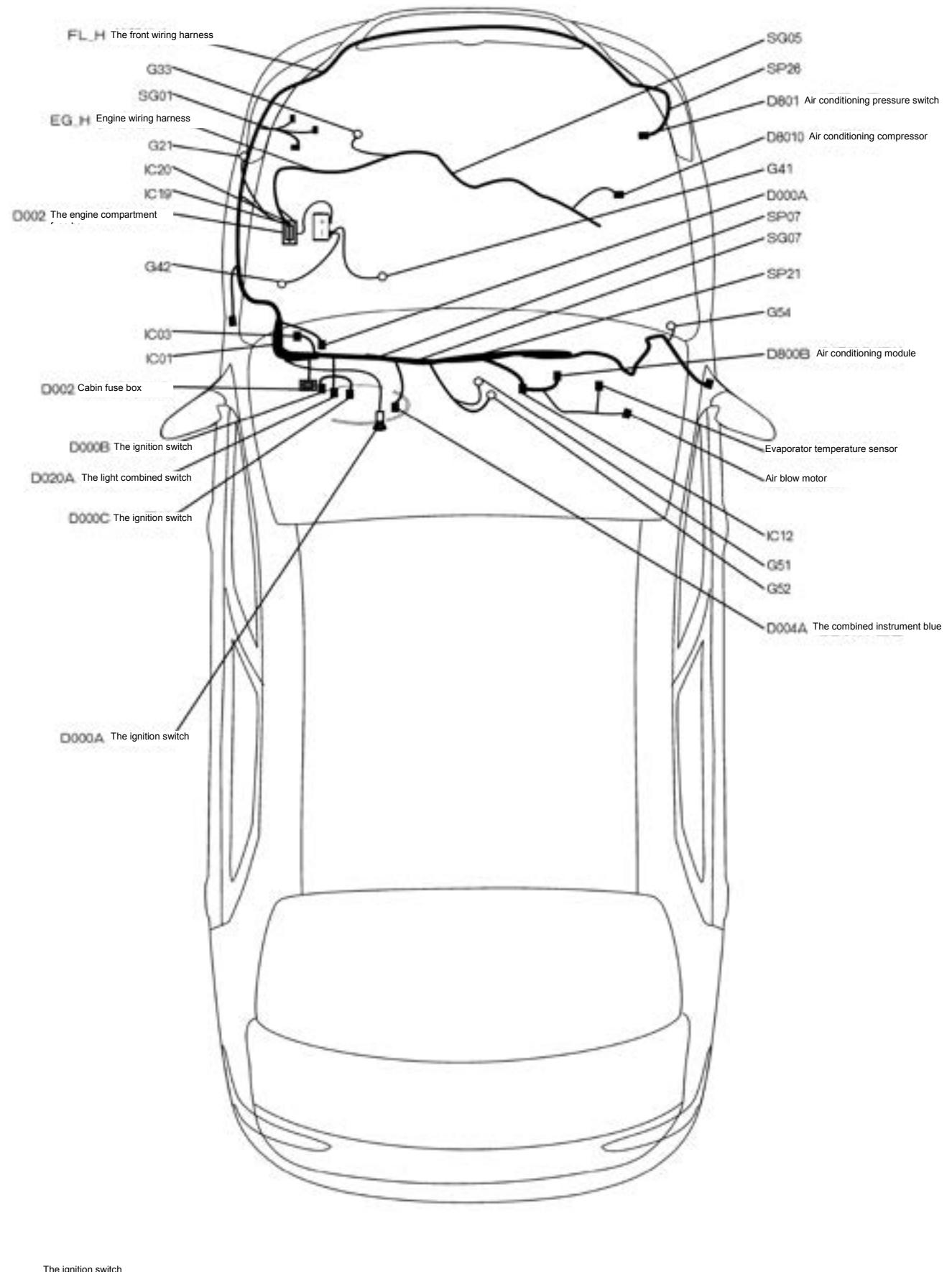
6.1 The electrical location diagram for the automatic transmission S30/H30



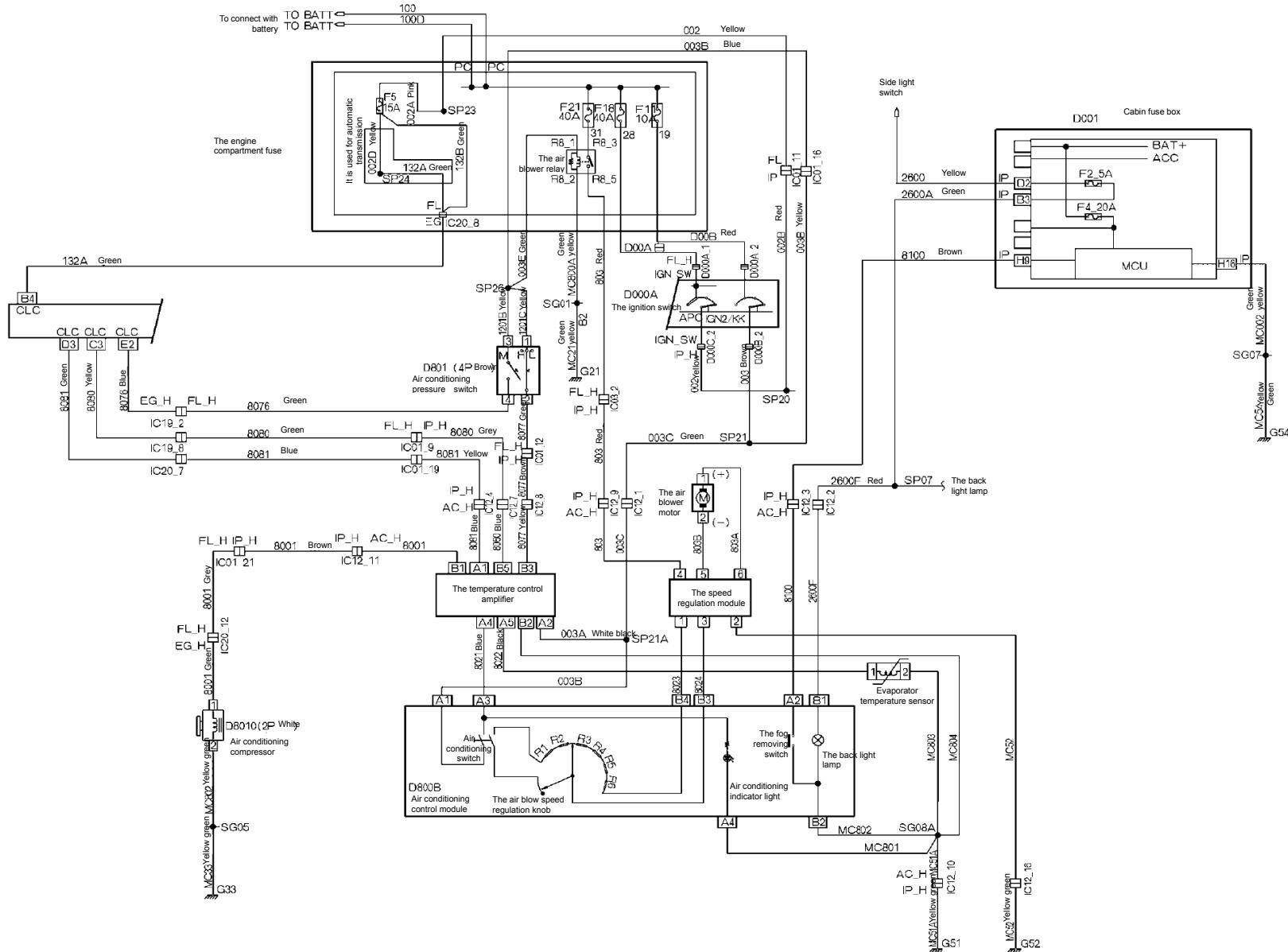
6.2 The electrical schematic diagram for the automatic transmission S30/H30



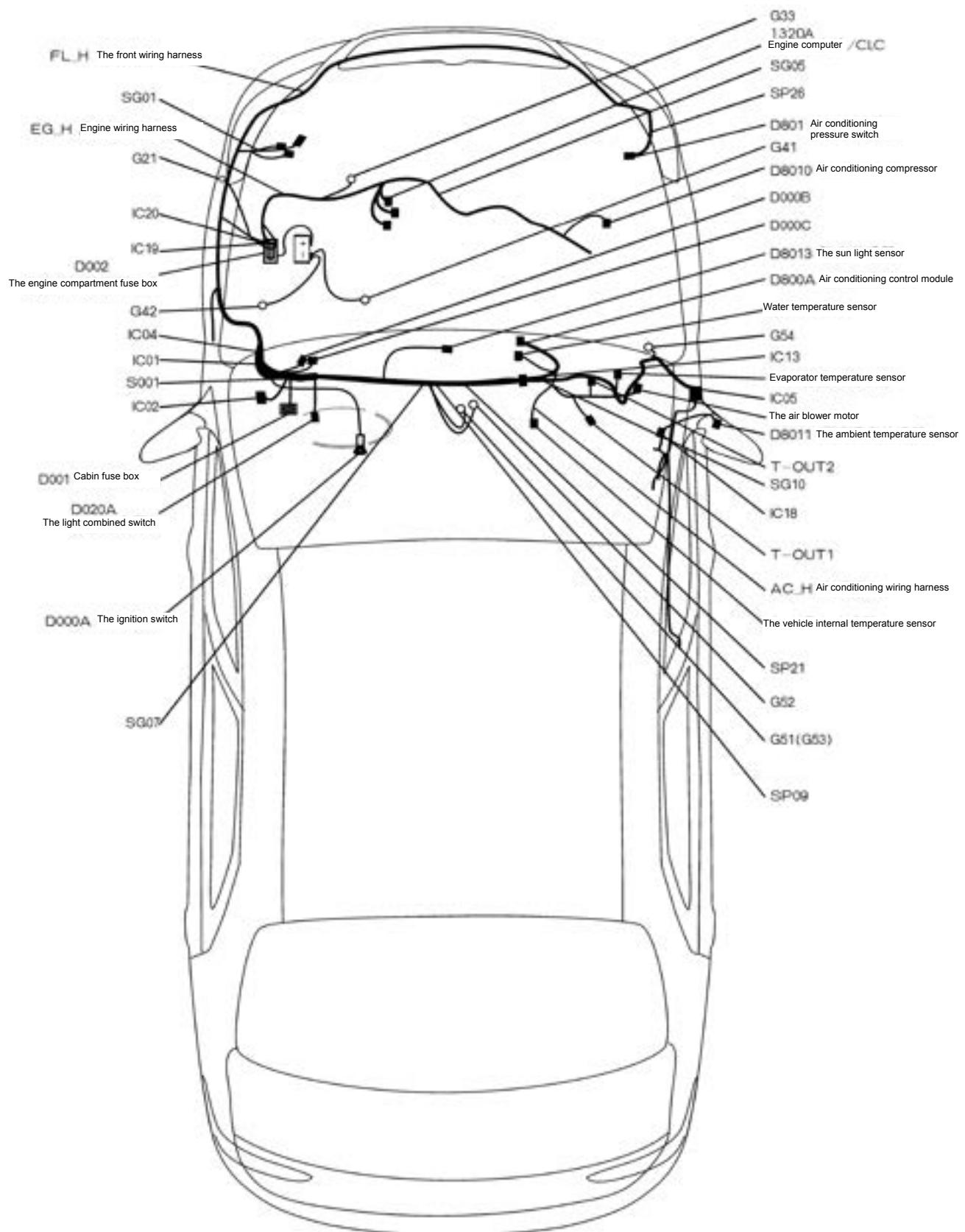
7.1 The electrical position diagram for the manual operated transmission S30/H30



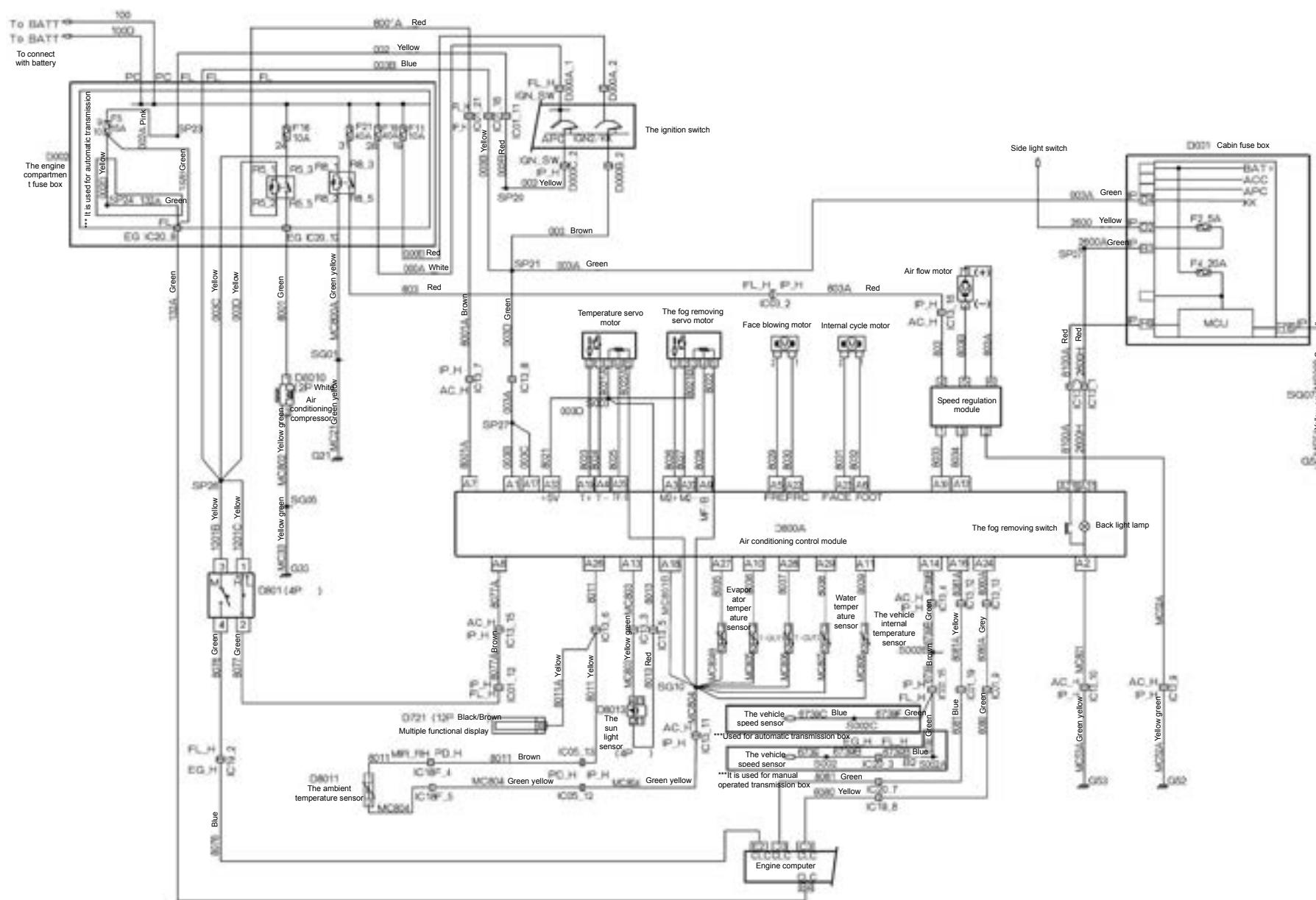
7.2 The electrical schematic diagram for the manual operated air conditioning S30/H30



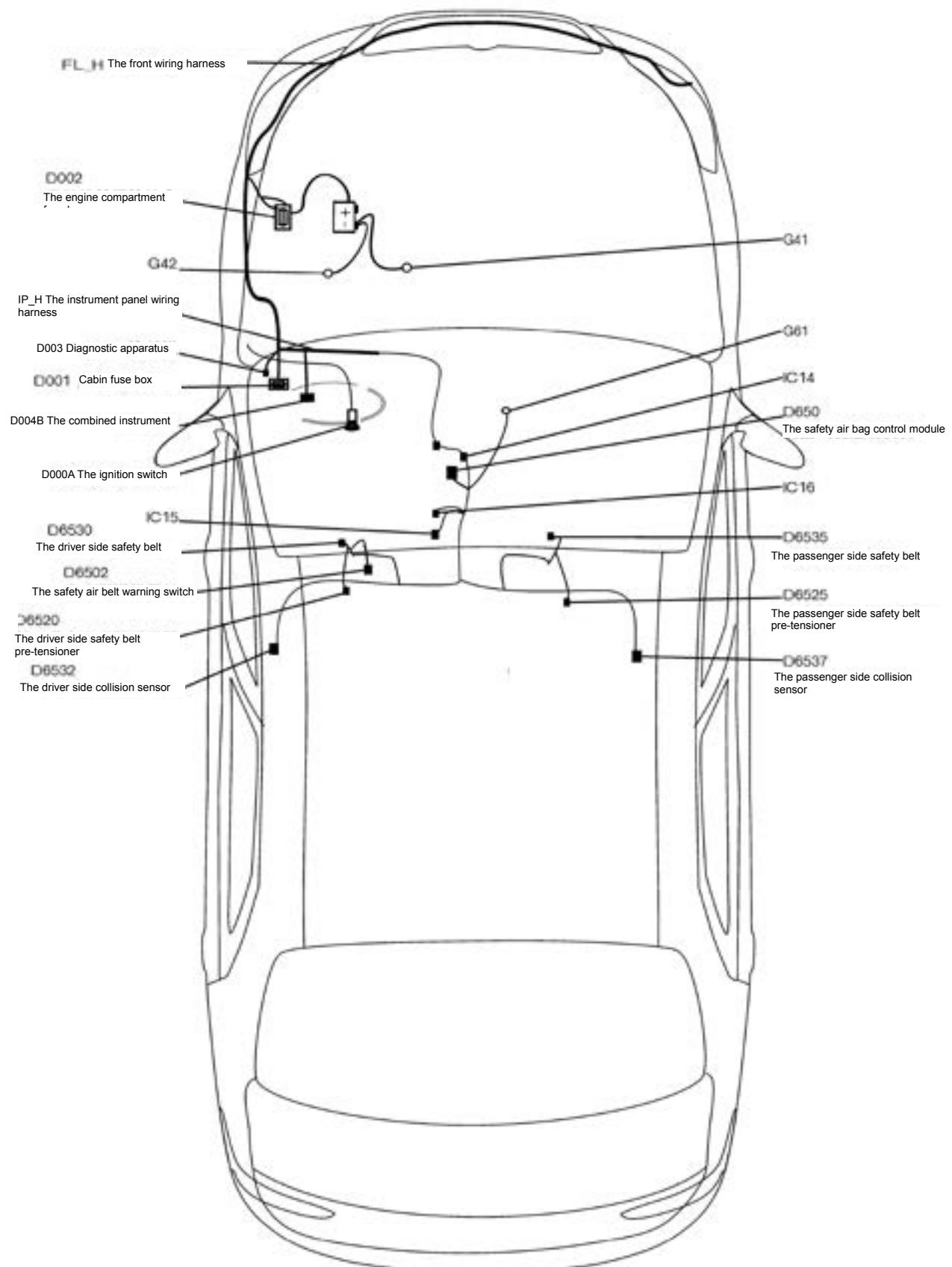
8.1 The electrical location diagram for automatic air conditioning S30/H30



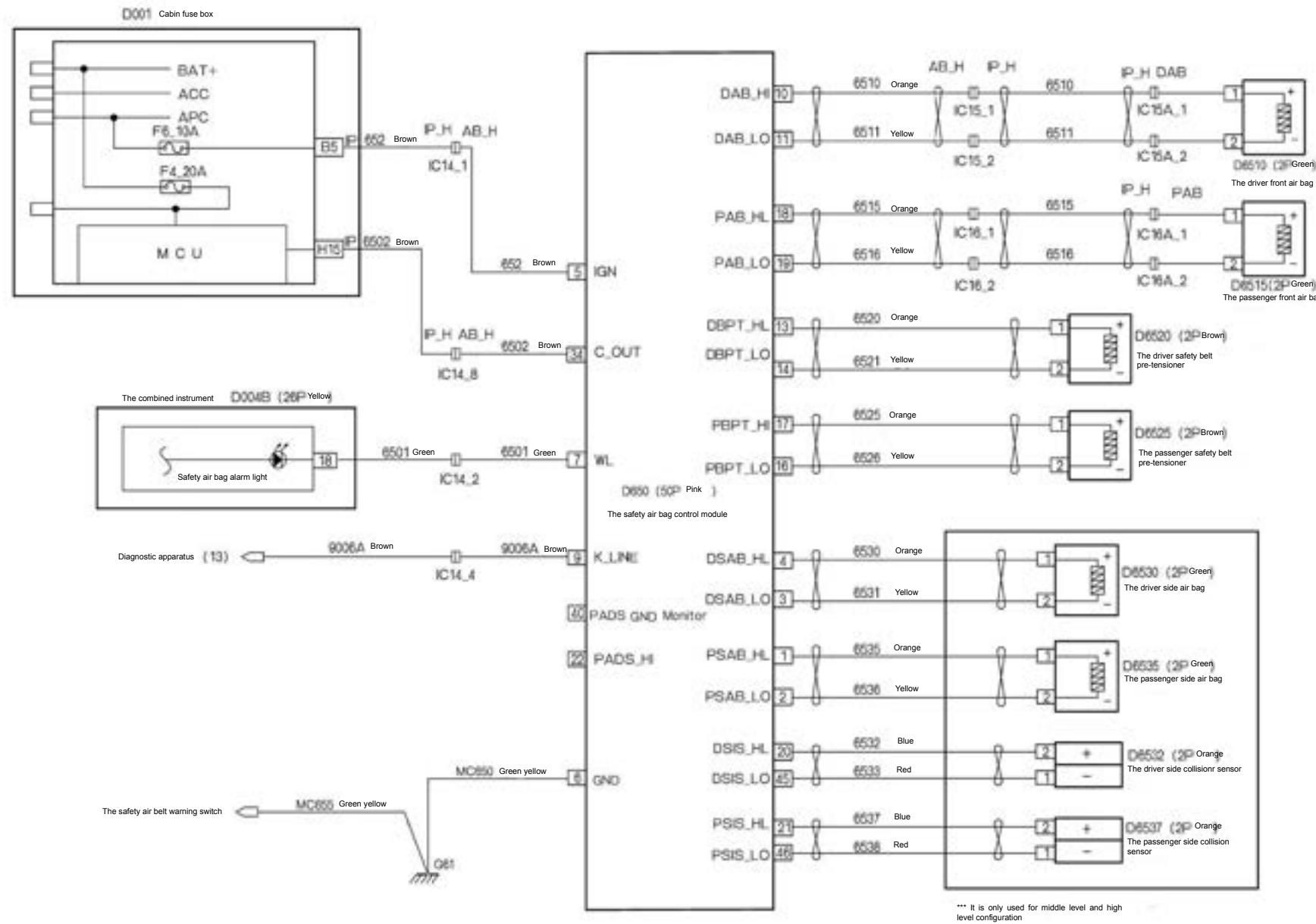
8.2 The electrical schematic diagram for automatic air conditioning S30/H30



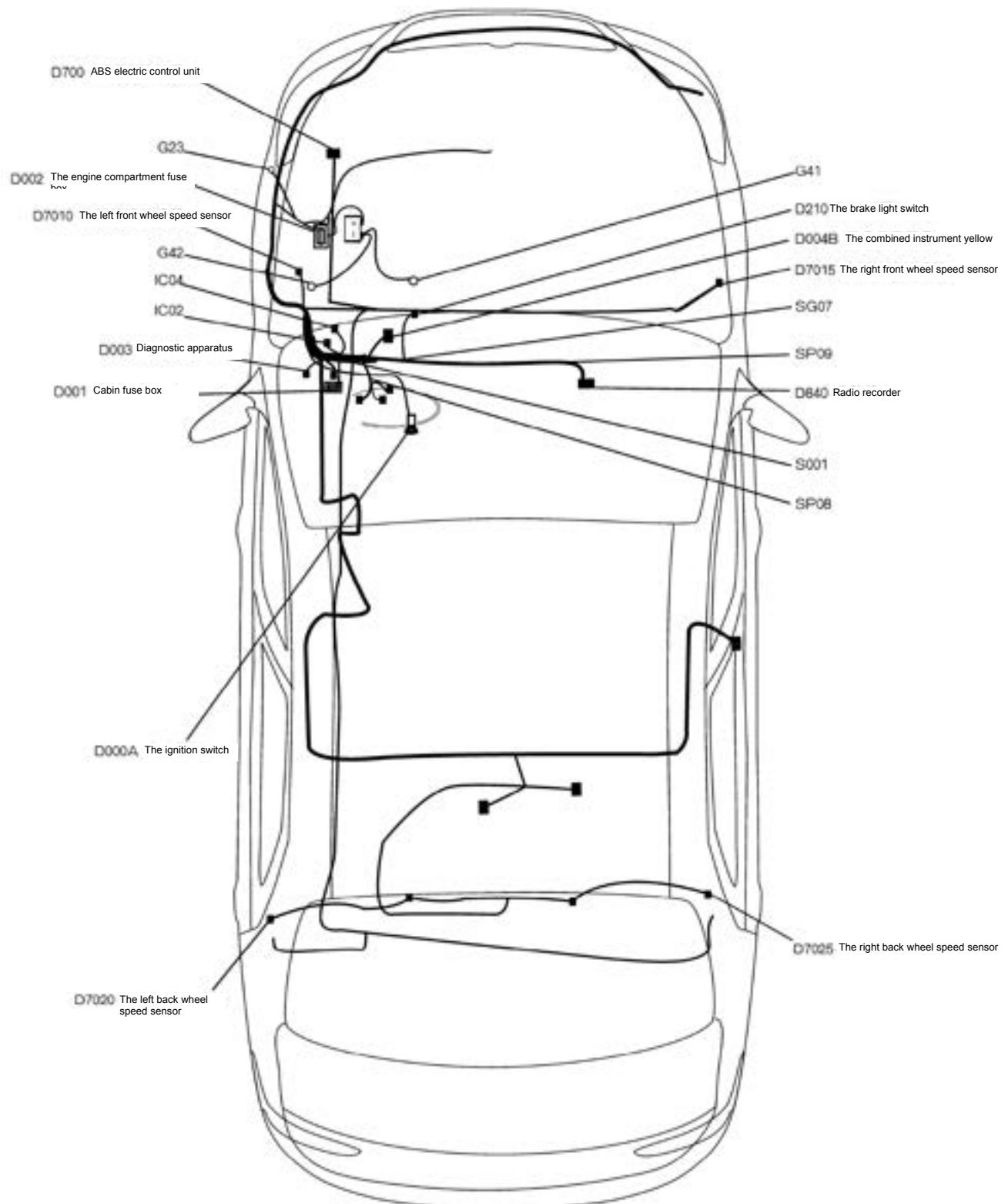
9.1 The electrical location diagram for safety air bag S30/H30



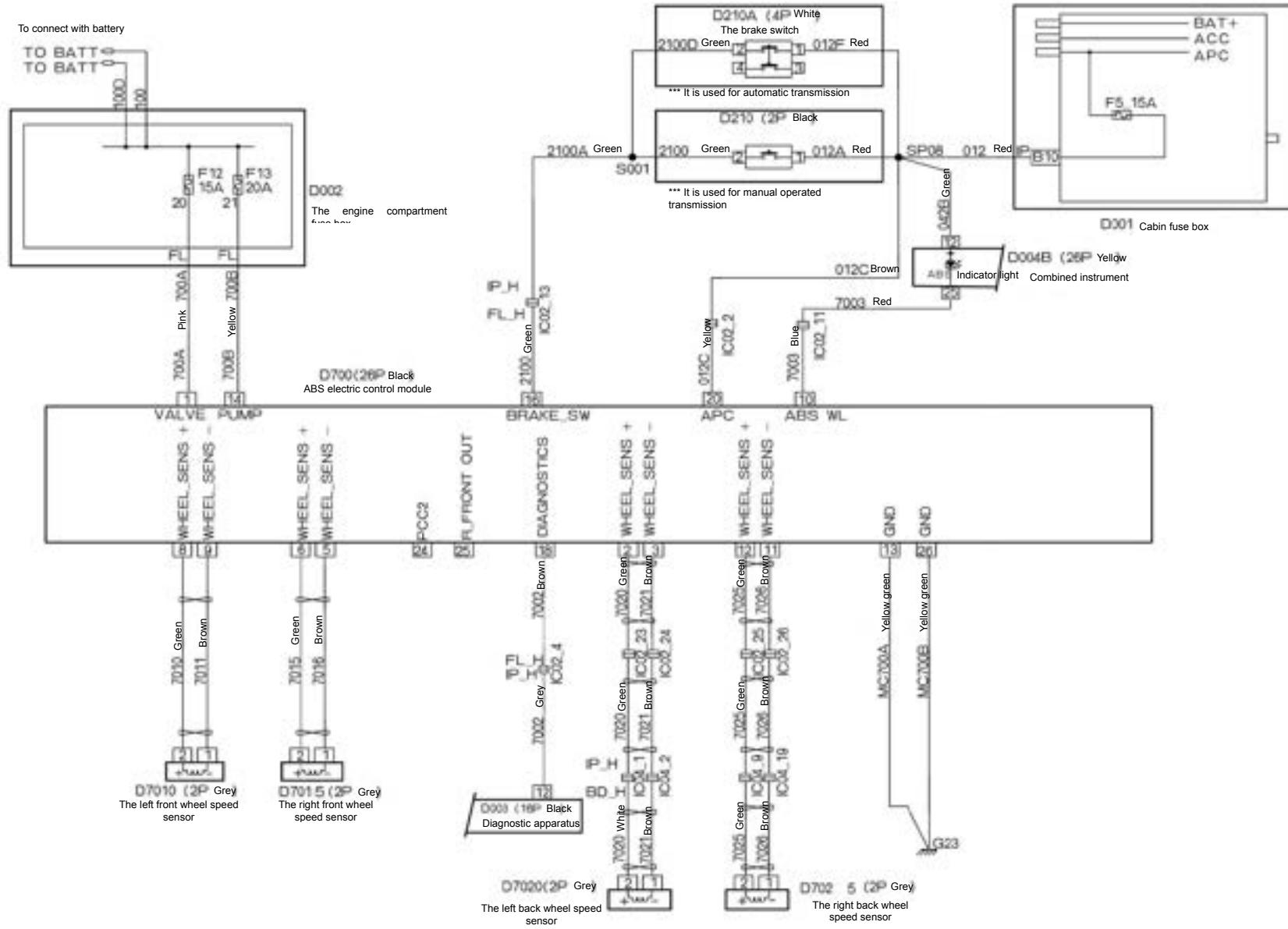
9.2 The electrical schematic diagram for safety air bag S30/H30



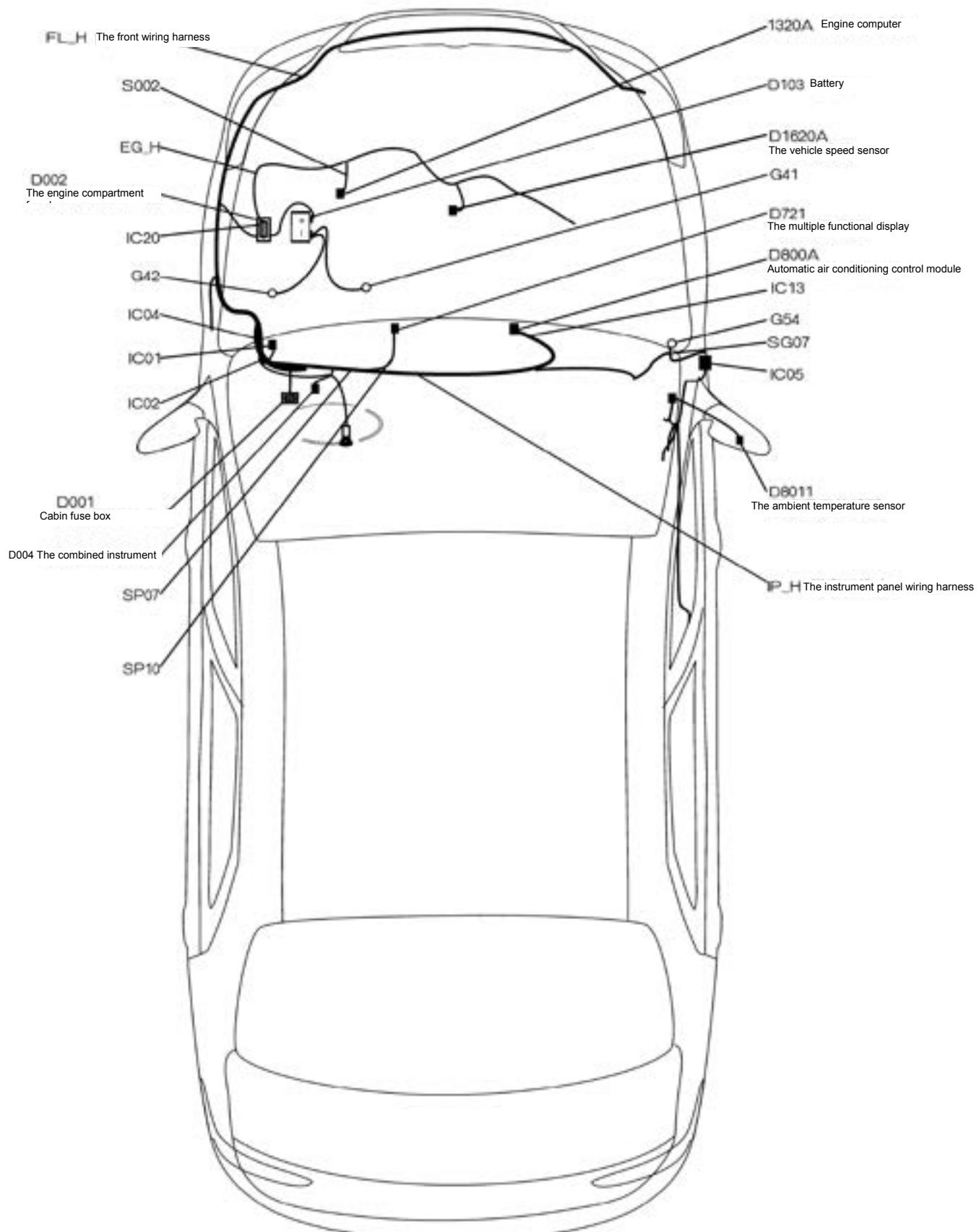
10.1 The electrical location diagram for the brake locking prevention system S30/H30



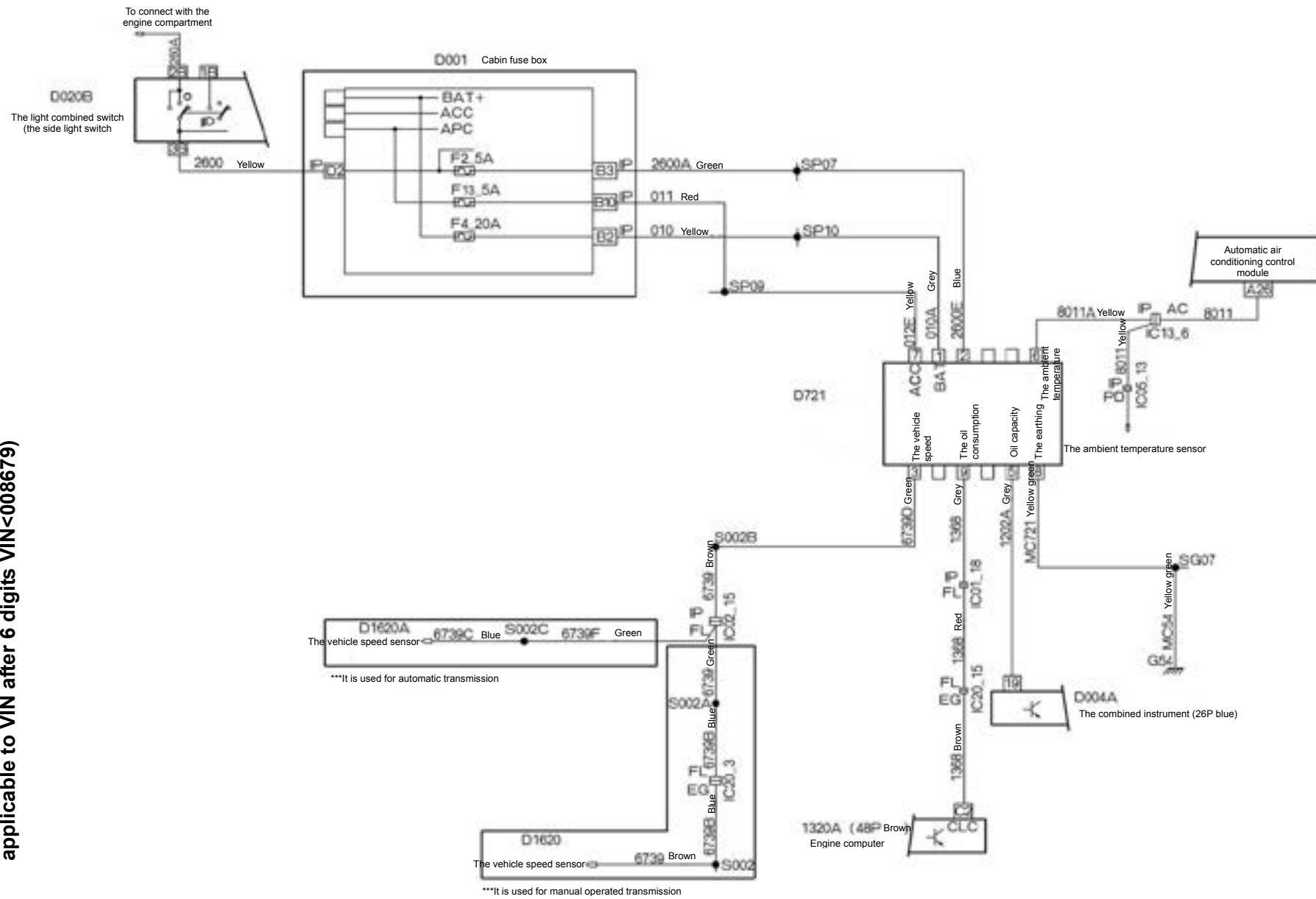
10.1 The electrical location diagram for the brake locking prevention system S30/H30



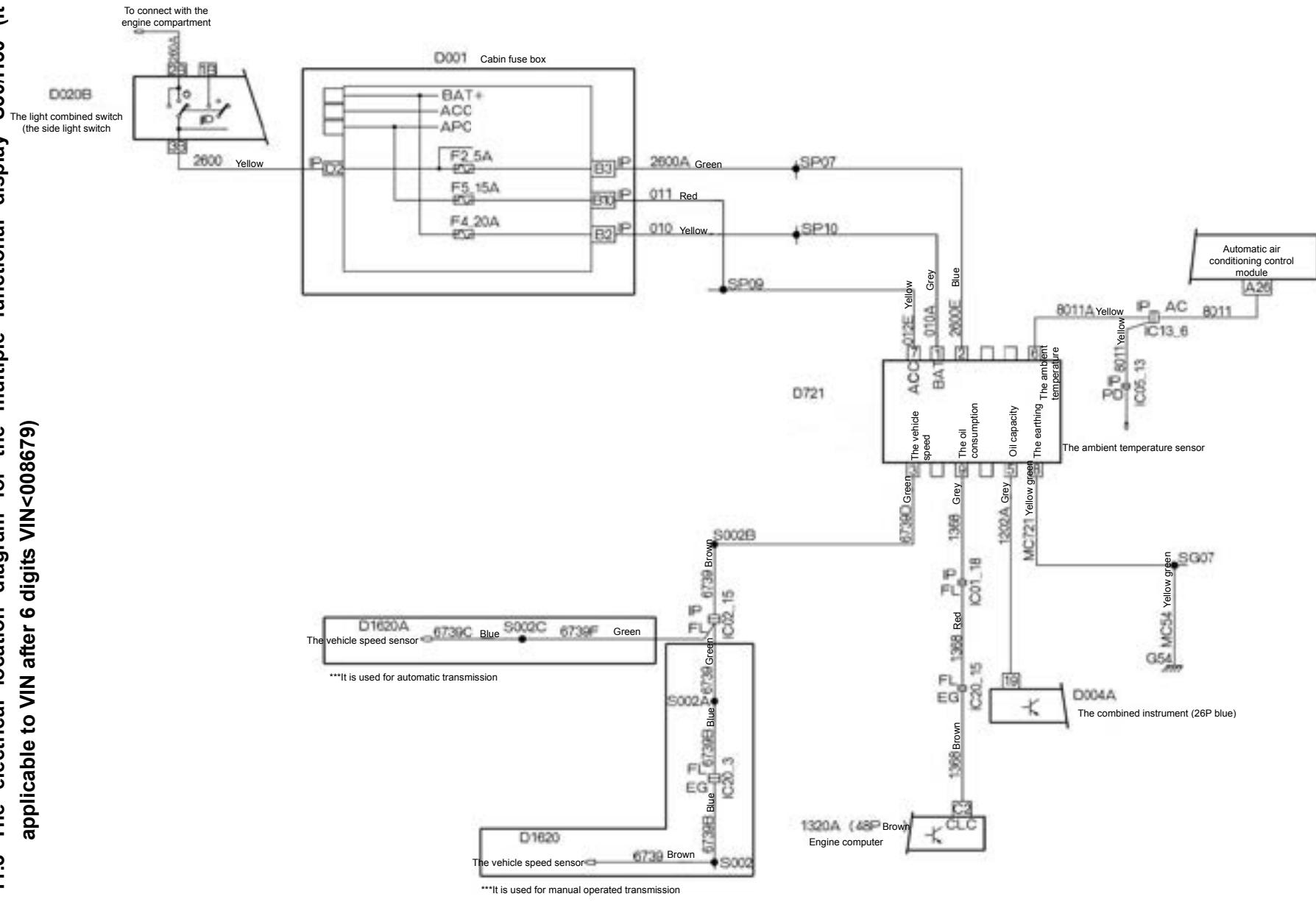
11.1 The electrical location diagram for the multiple functional display S30/H30



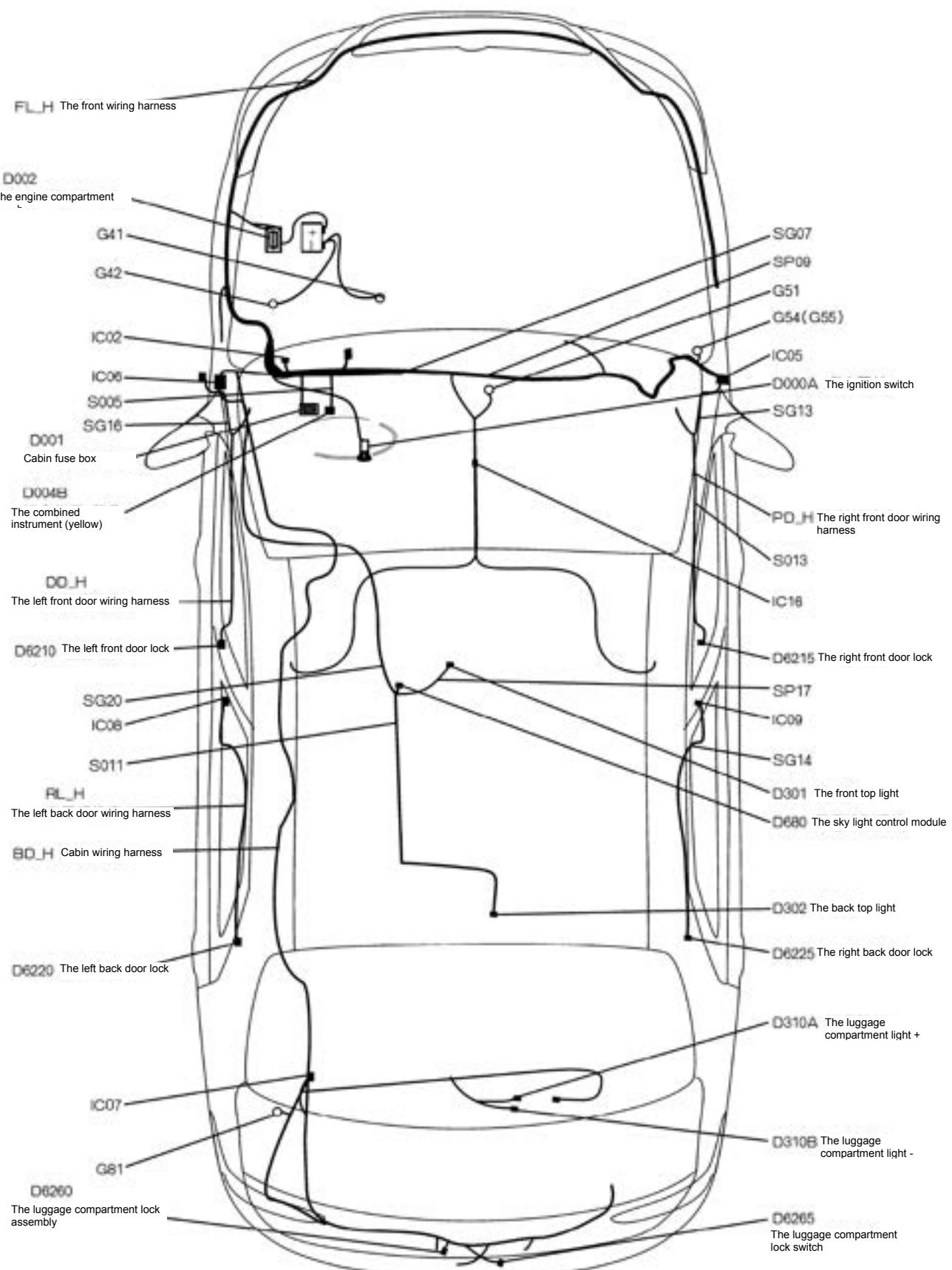
11.2 The electrical location diagram for the multiple functional display S30/H30 (it is applicable to VIN after 6 digits VIN<008679)



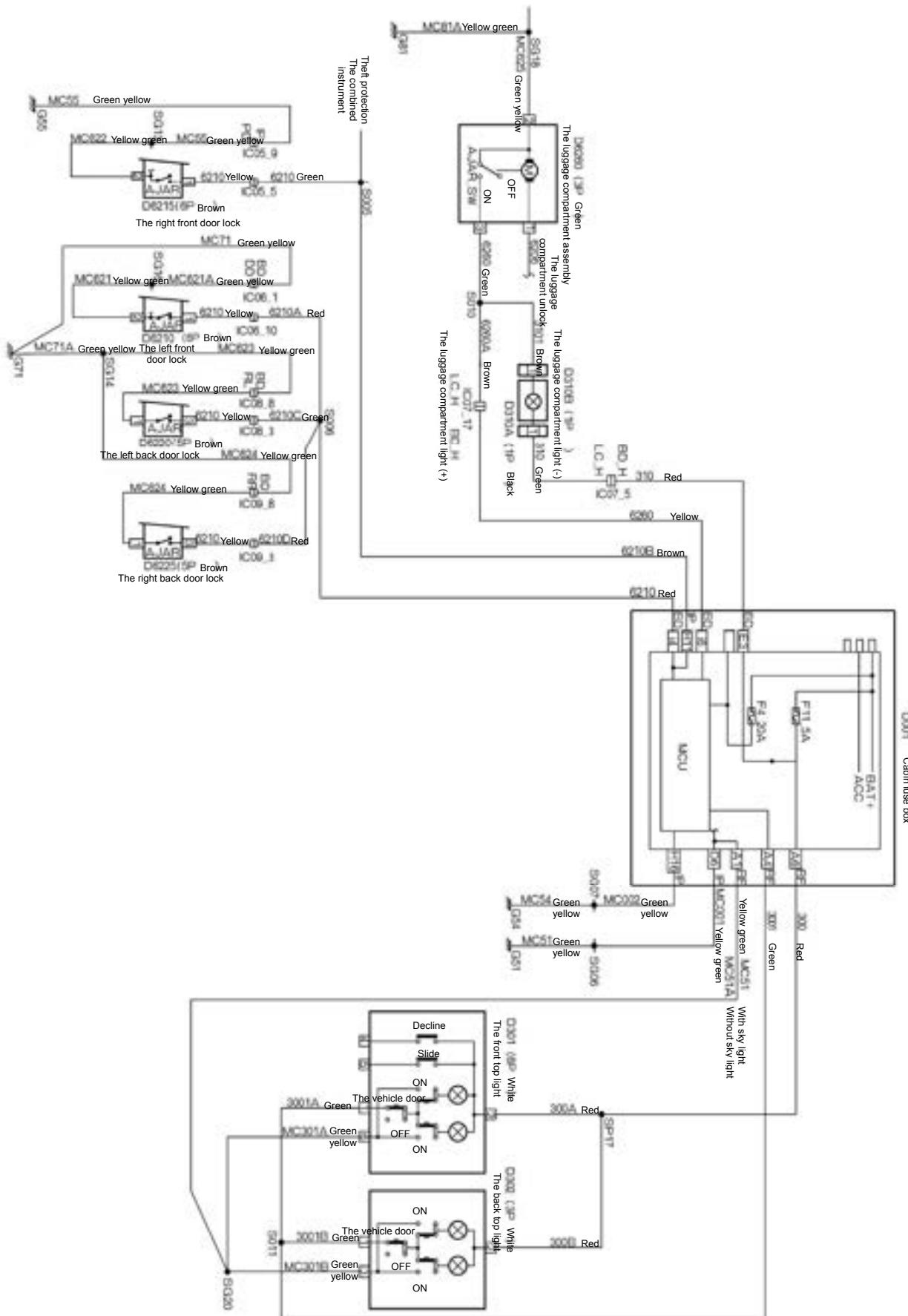
11.3 The electrical location diagram for the multiple functional display S30/H30 (it is applicable to VIN after 6 digits VIN<008679)



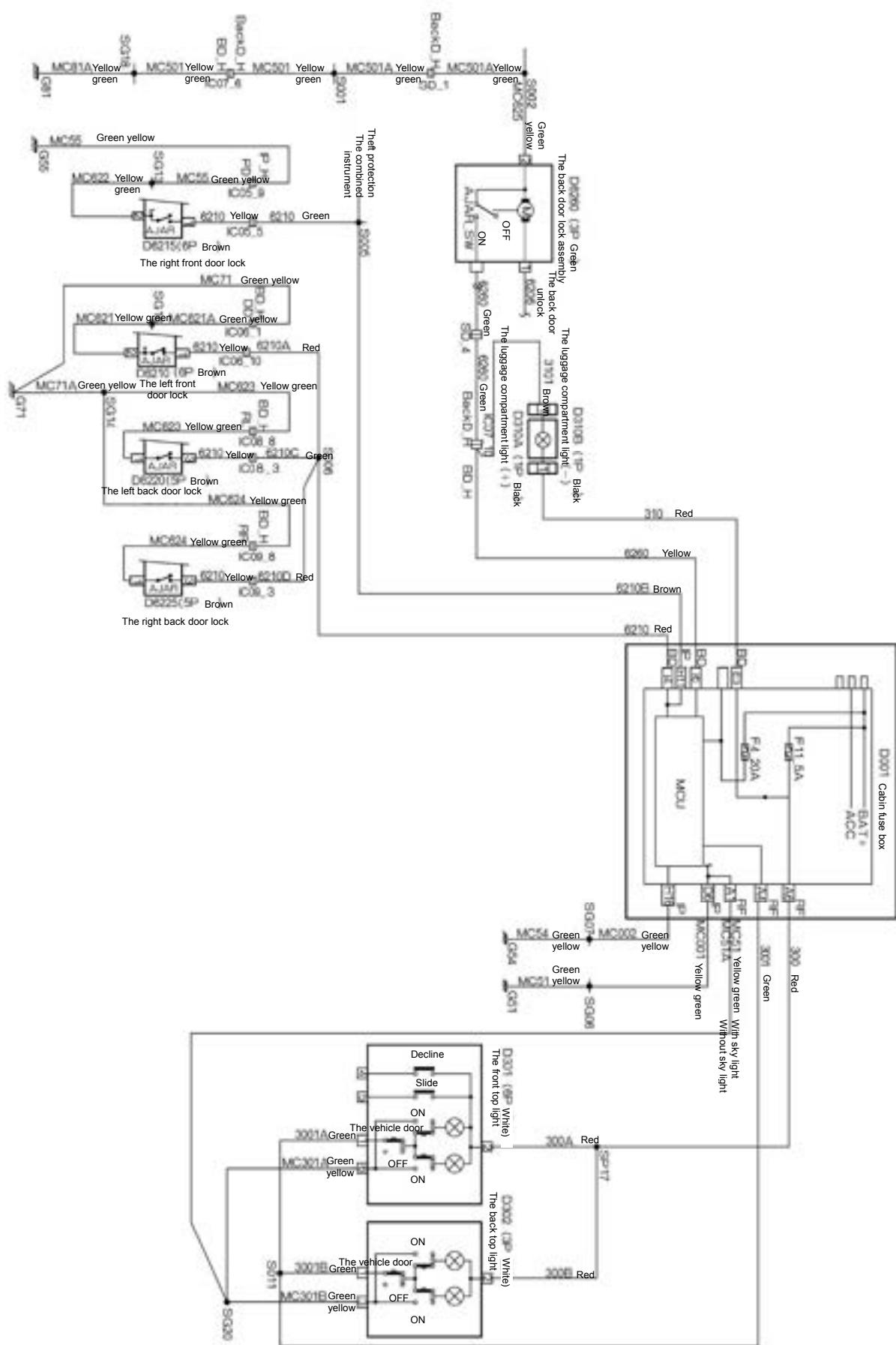
12.1 The electrical location diagram for the internal lighting S30/H30



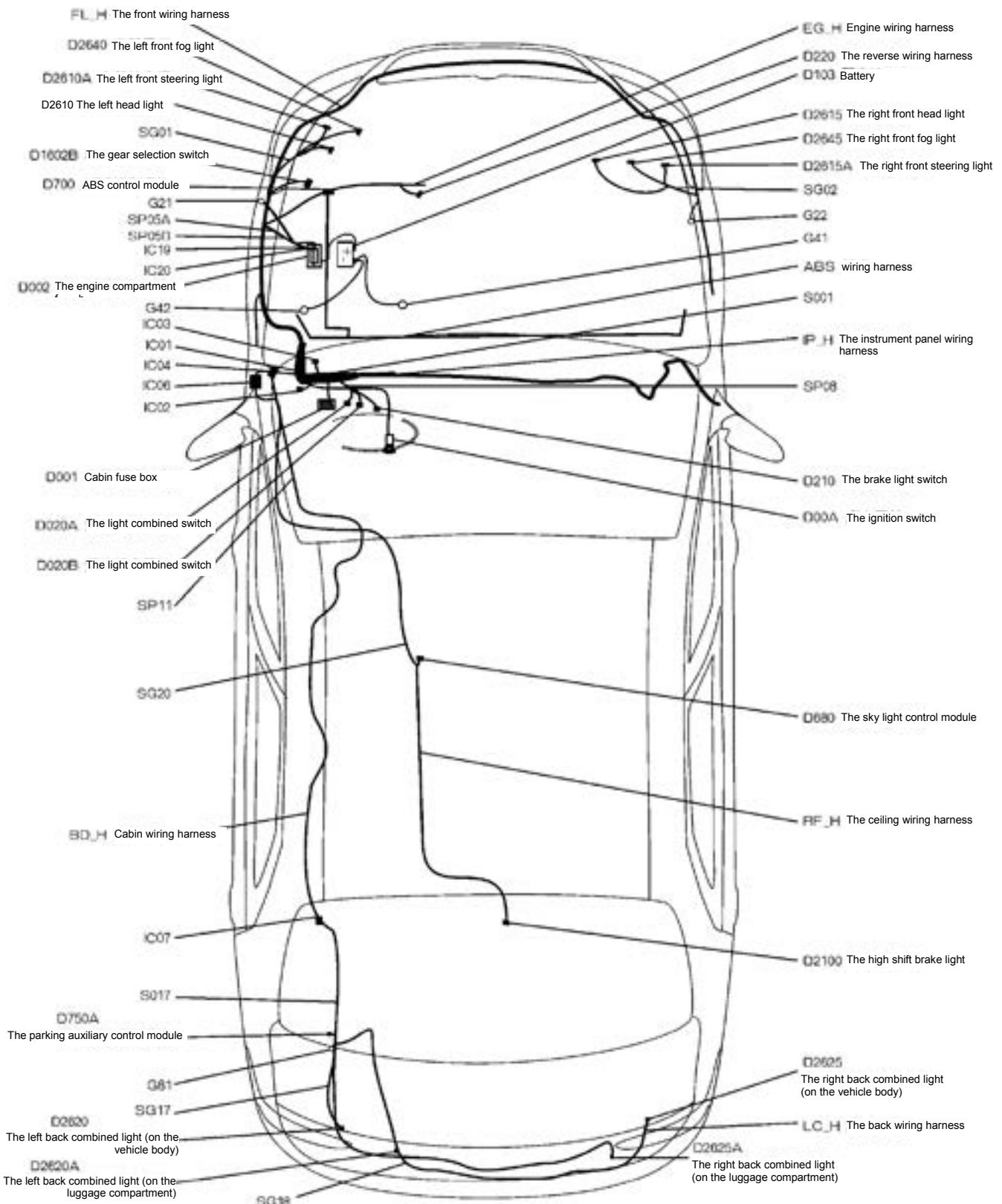
12.2 The electrical location diagram for the internal lighting S30



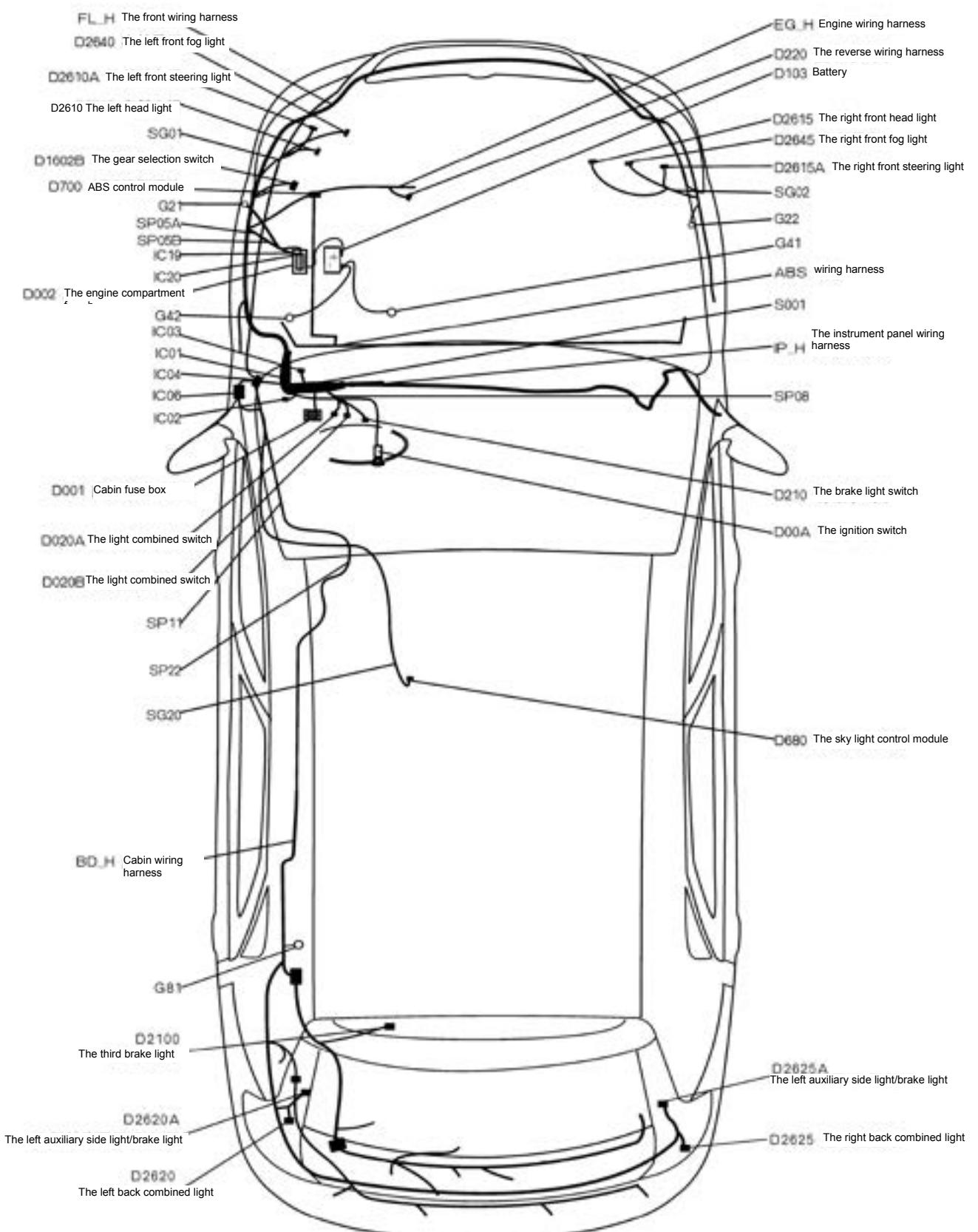
12.3 The electrical schematic diagram for the internal lighting H30



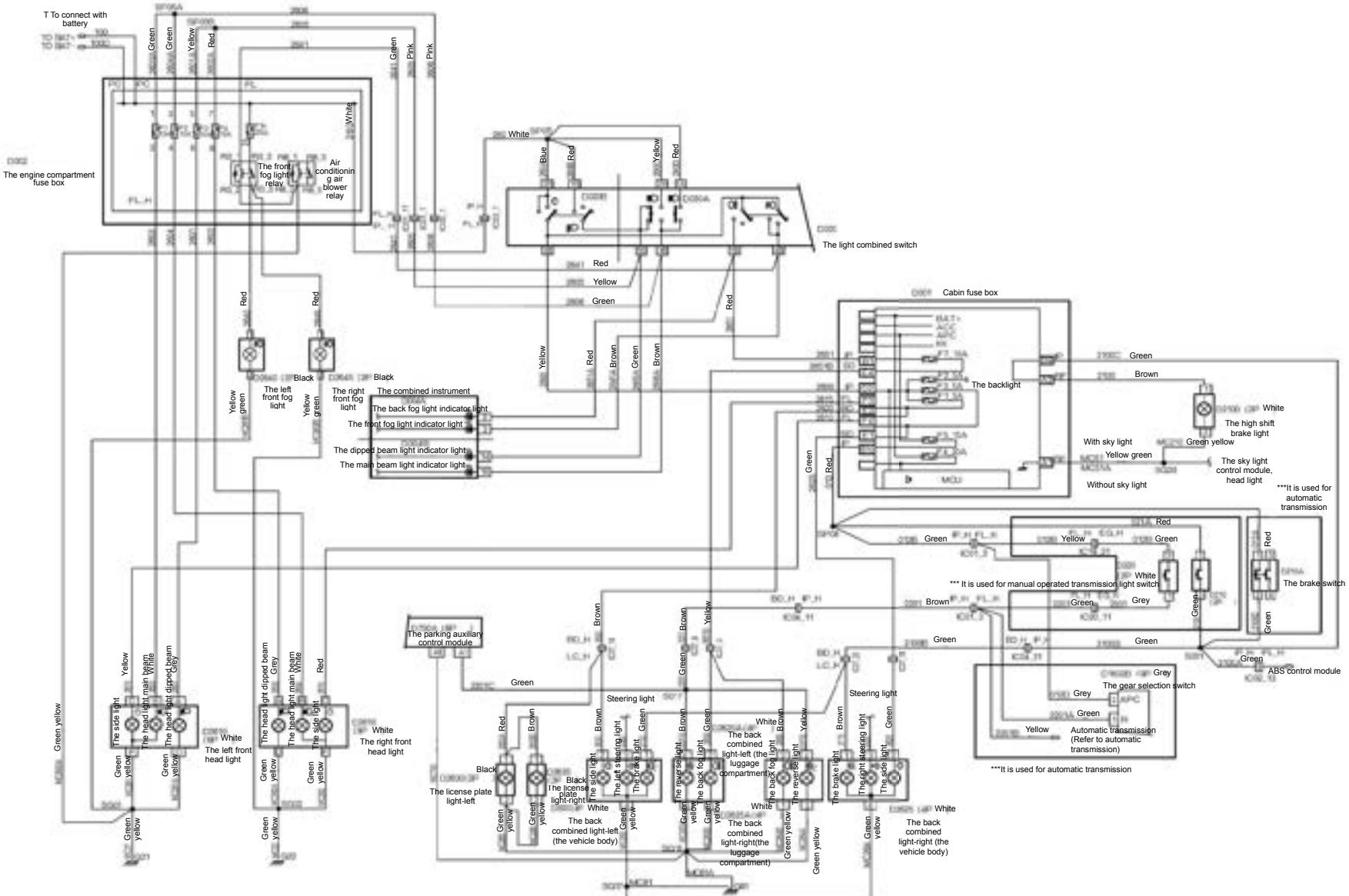
13.1 The electrical location diagram for the external lighting S30



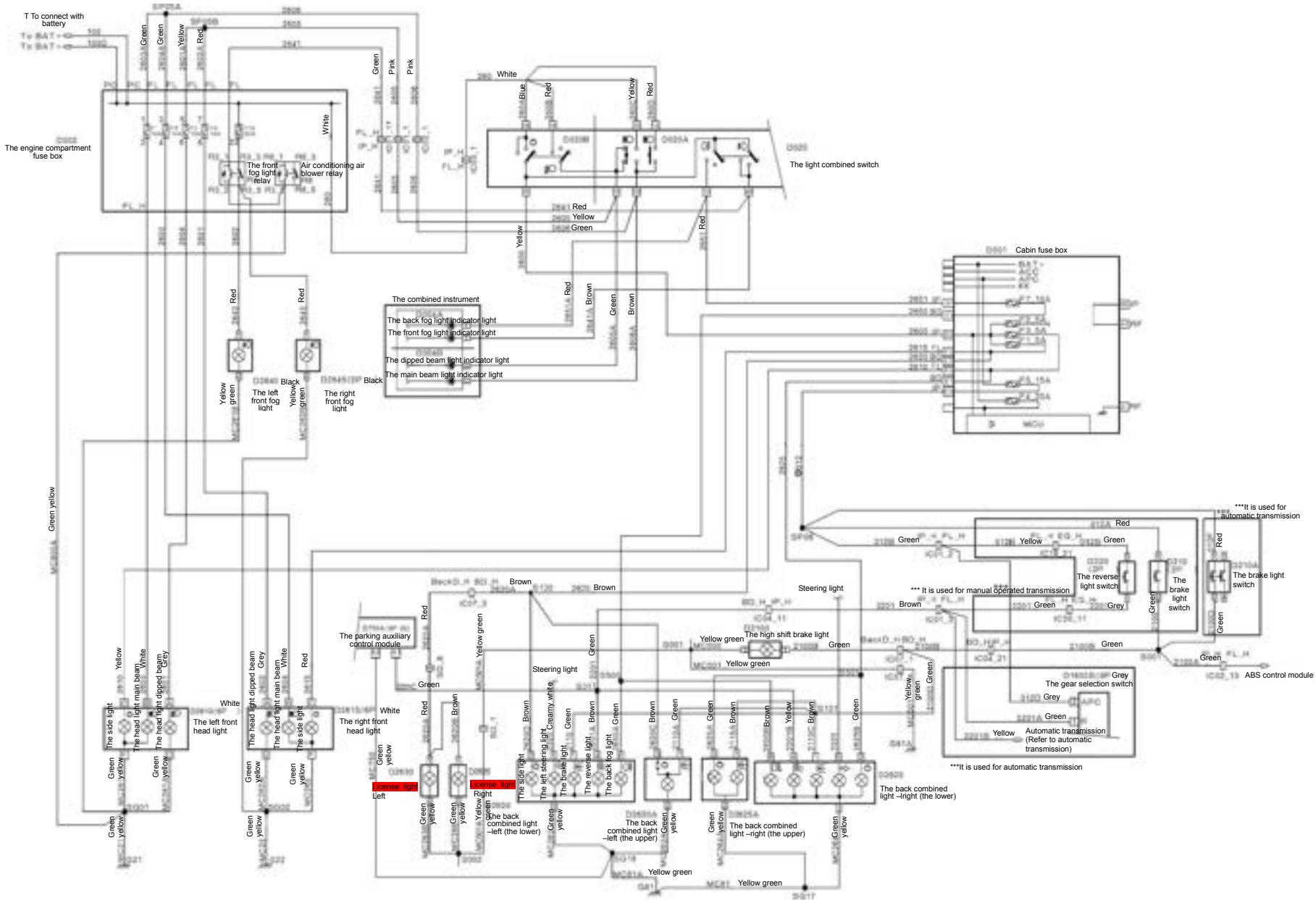
13.2 The electrical location diagram for the external lighting H30



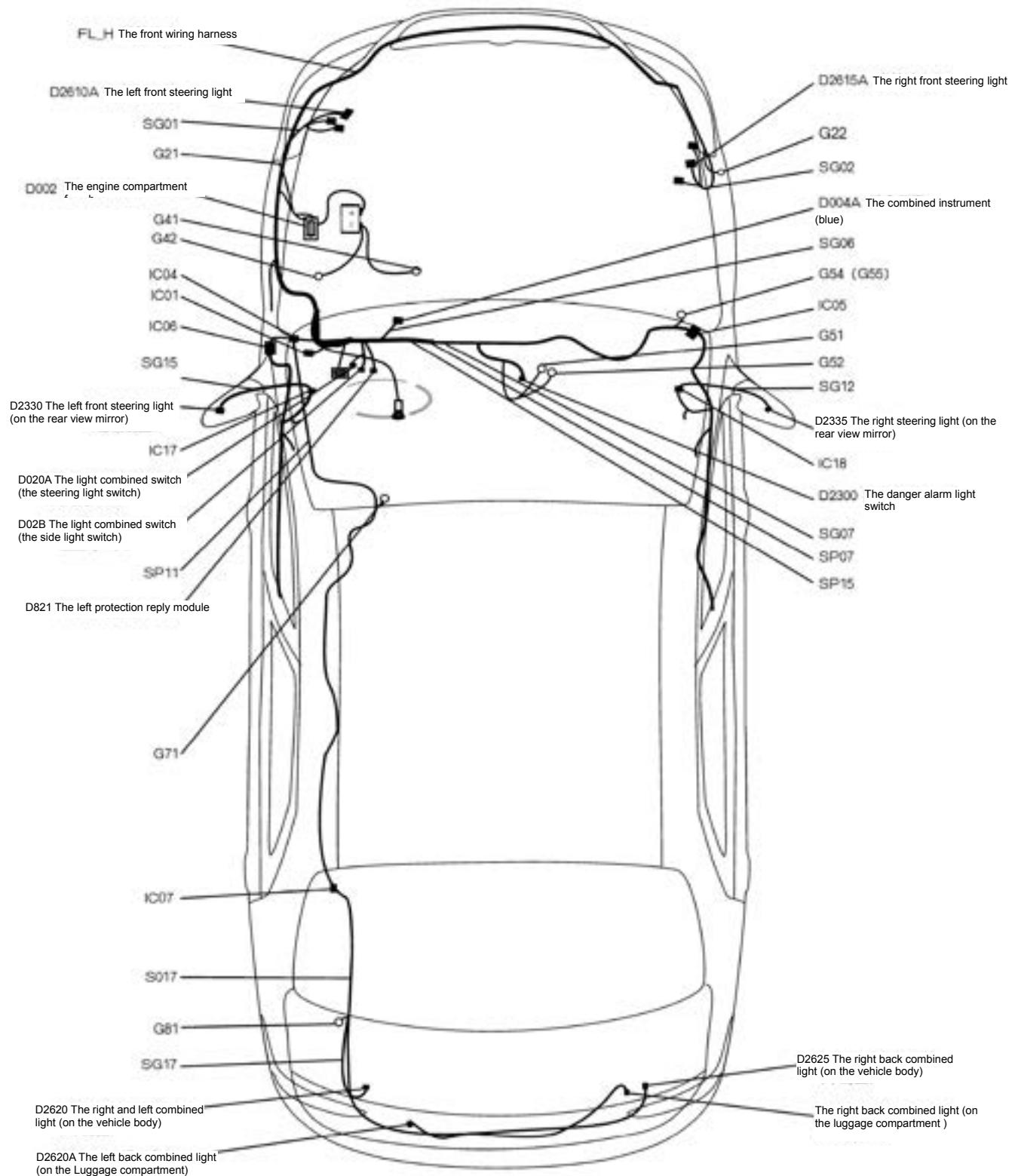
13.3 The electrical schematic diagram for the external lighting H30



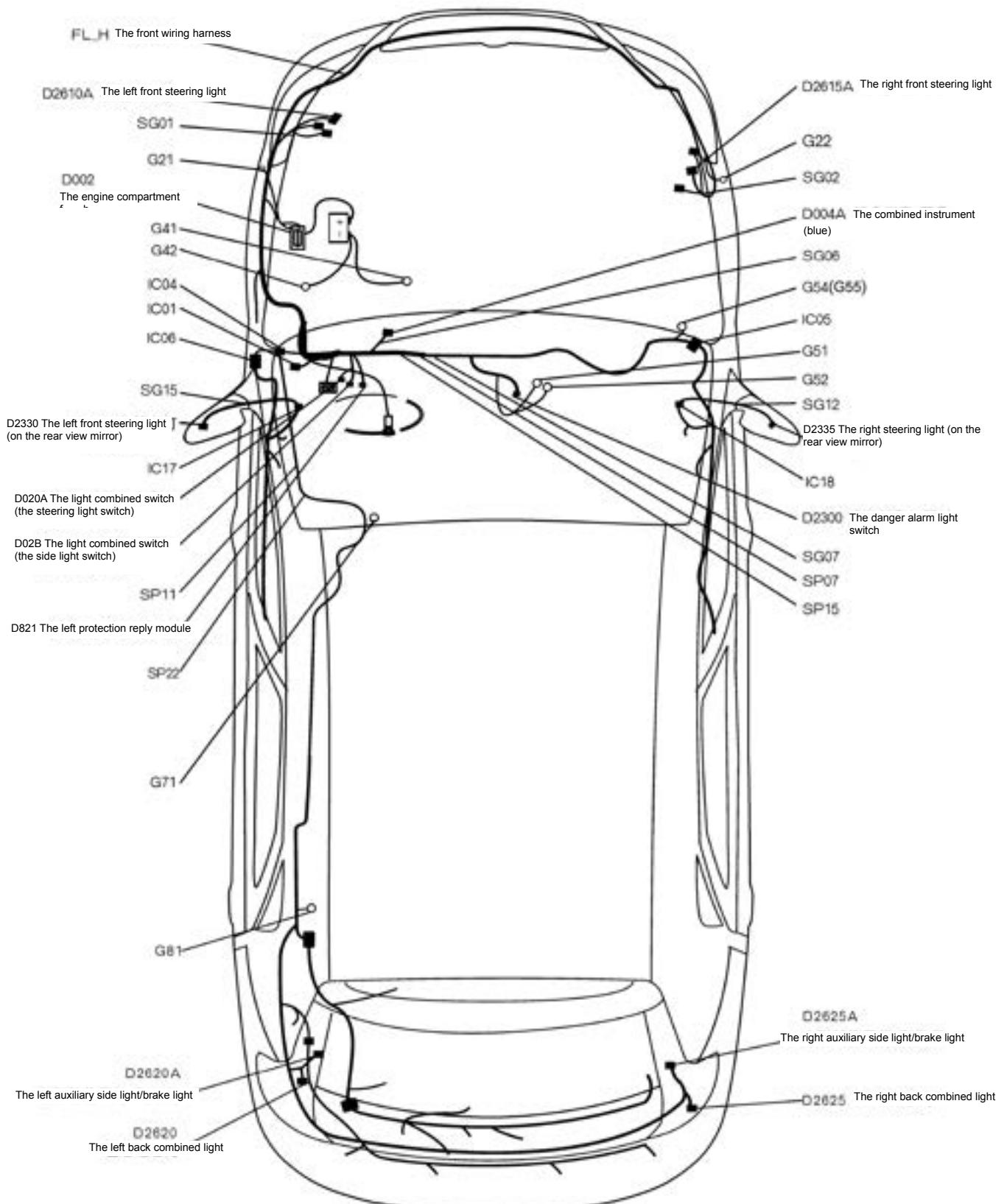
13.4 The electrical schematic diagram for the external lighting H30



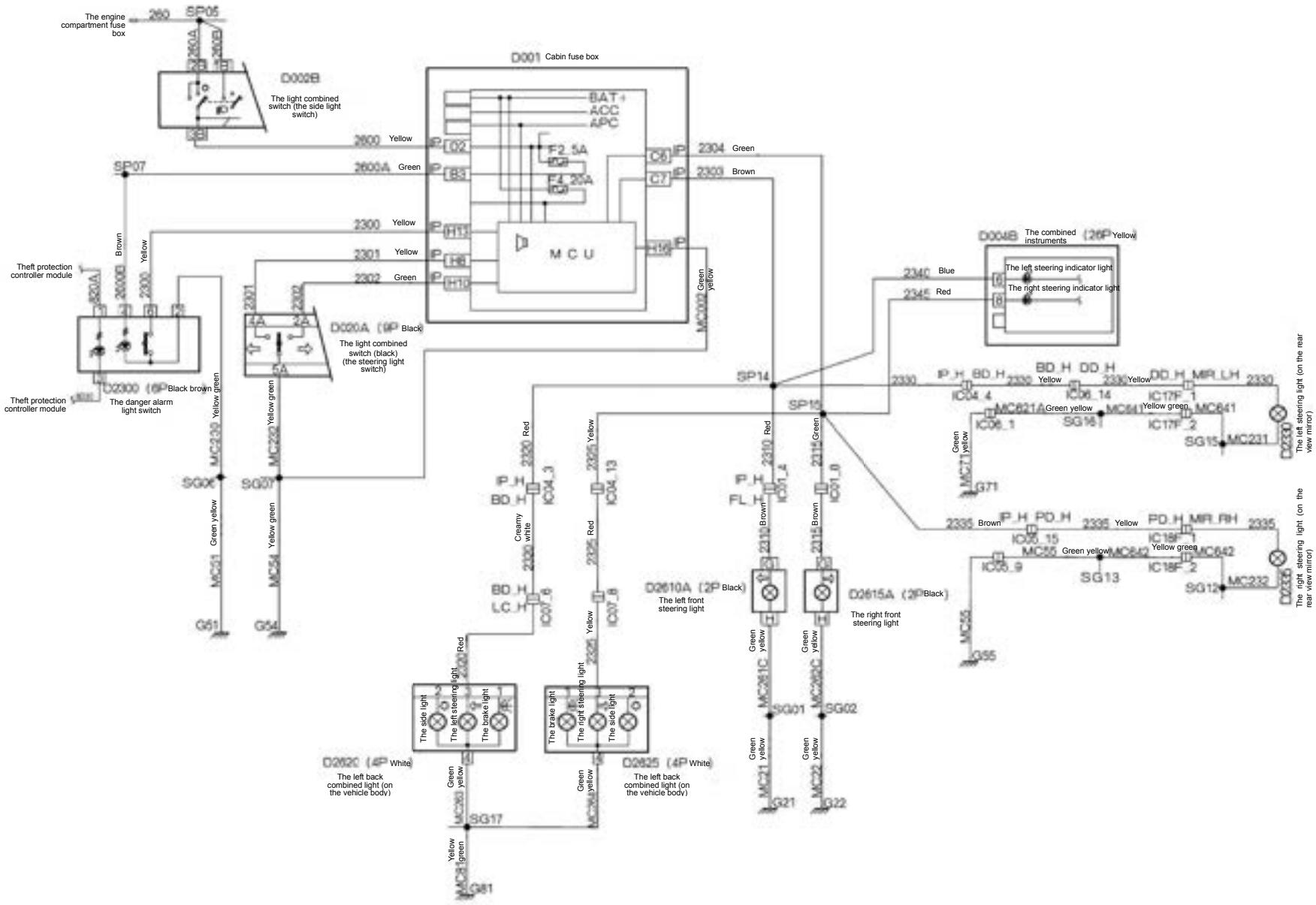
14.1 The electrical location diagram for the steering and danger alarm light (S30)



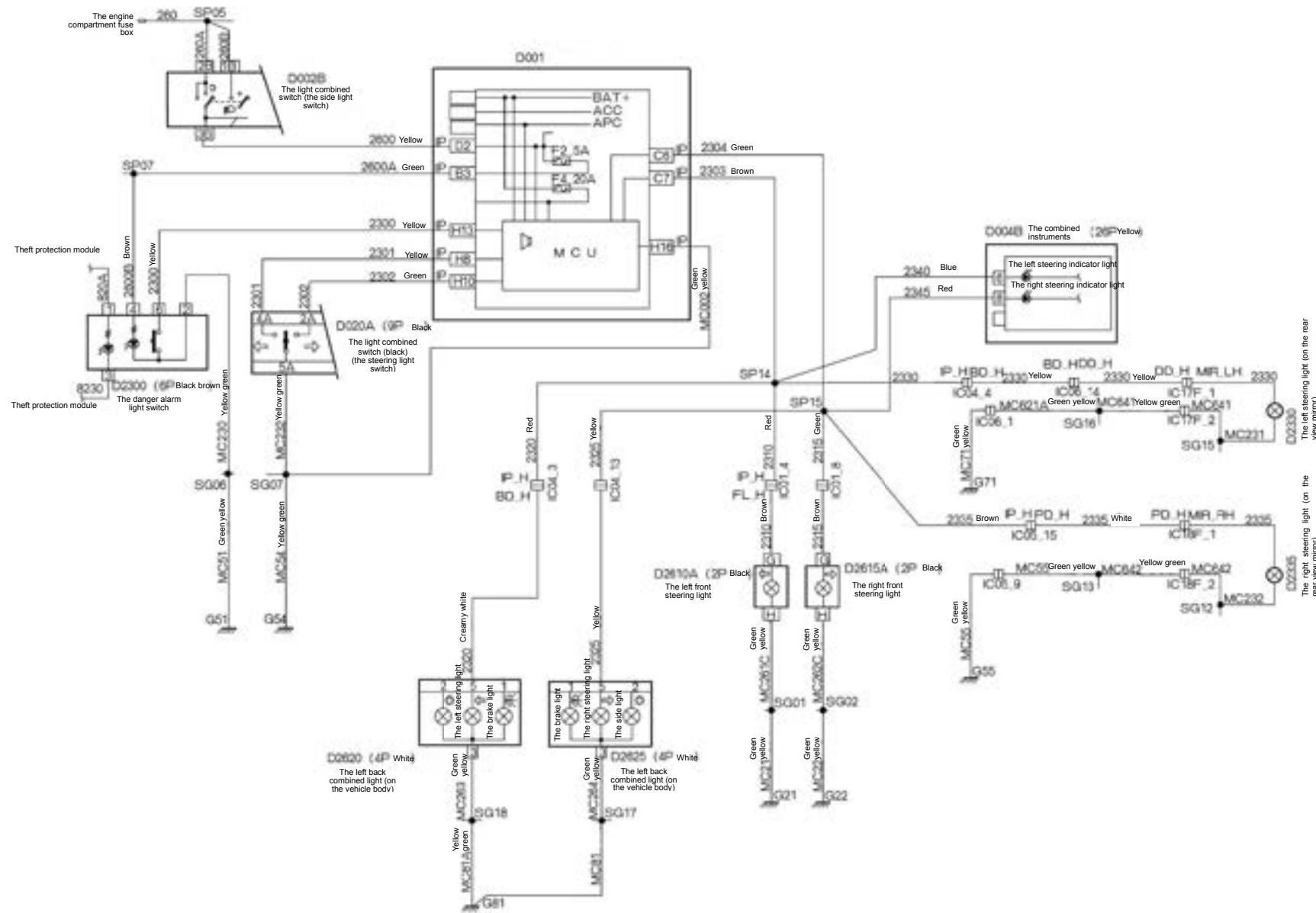
14.2 The electrical location diagram for the steering and danger alarm light (H30)



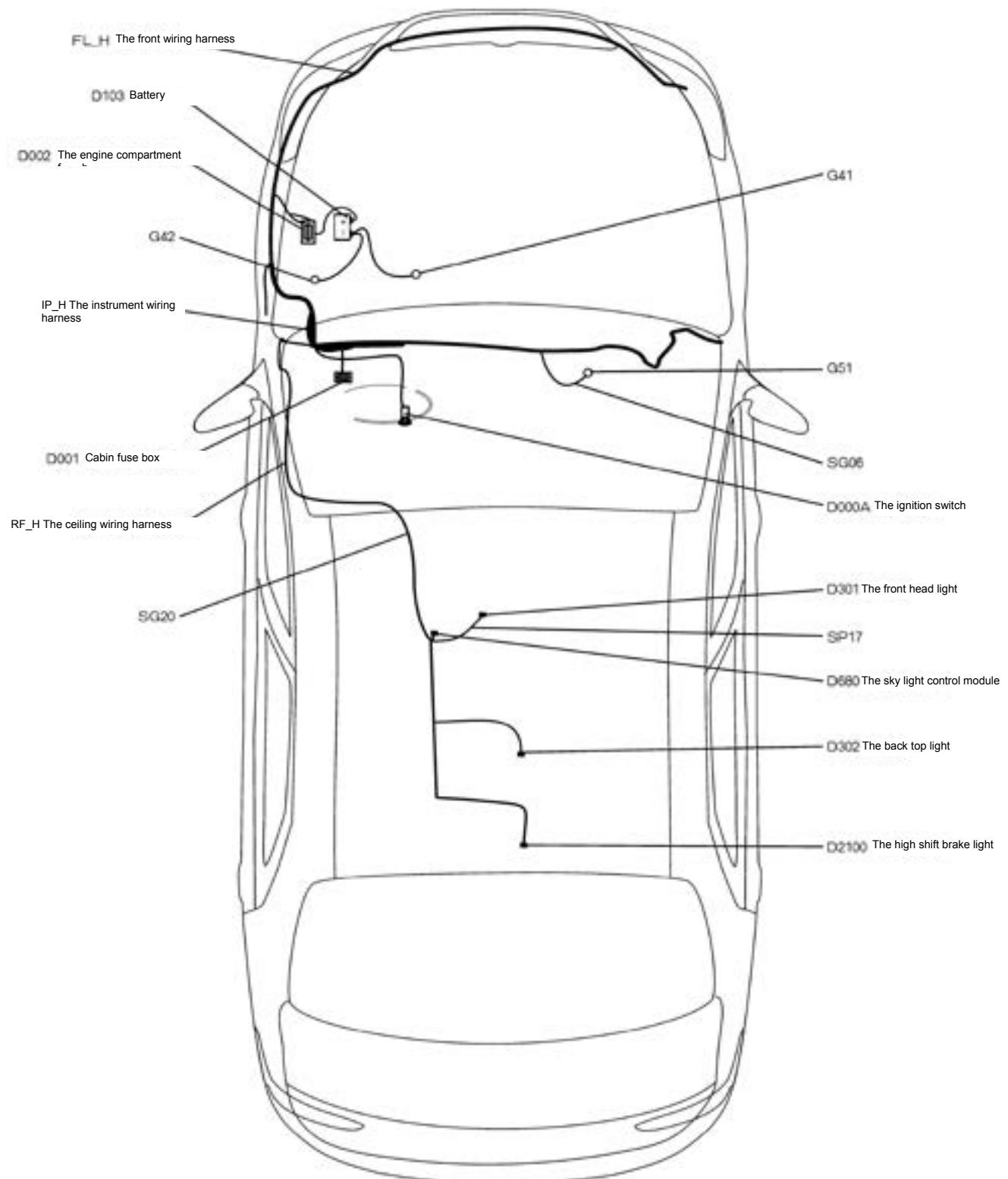
14.3 The electrical schematic diagram for the steering and danger alarm light (H30)



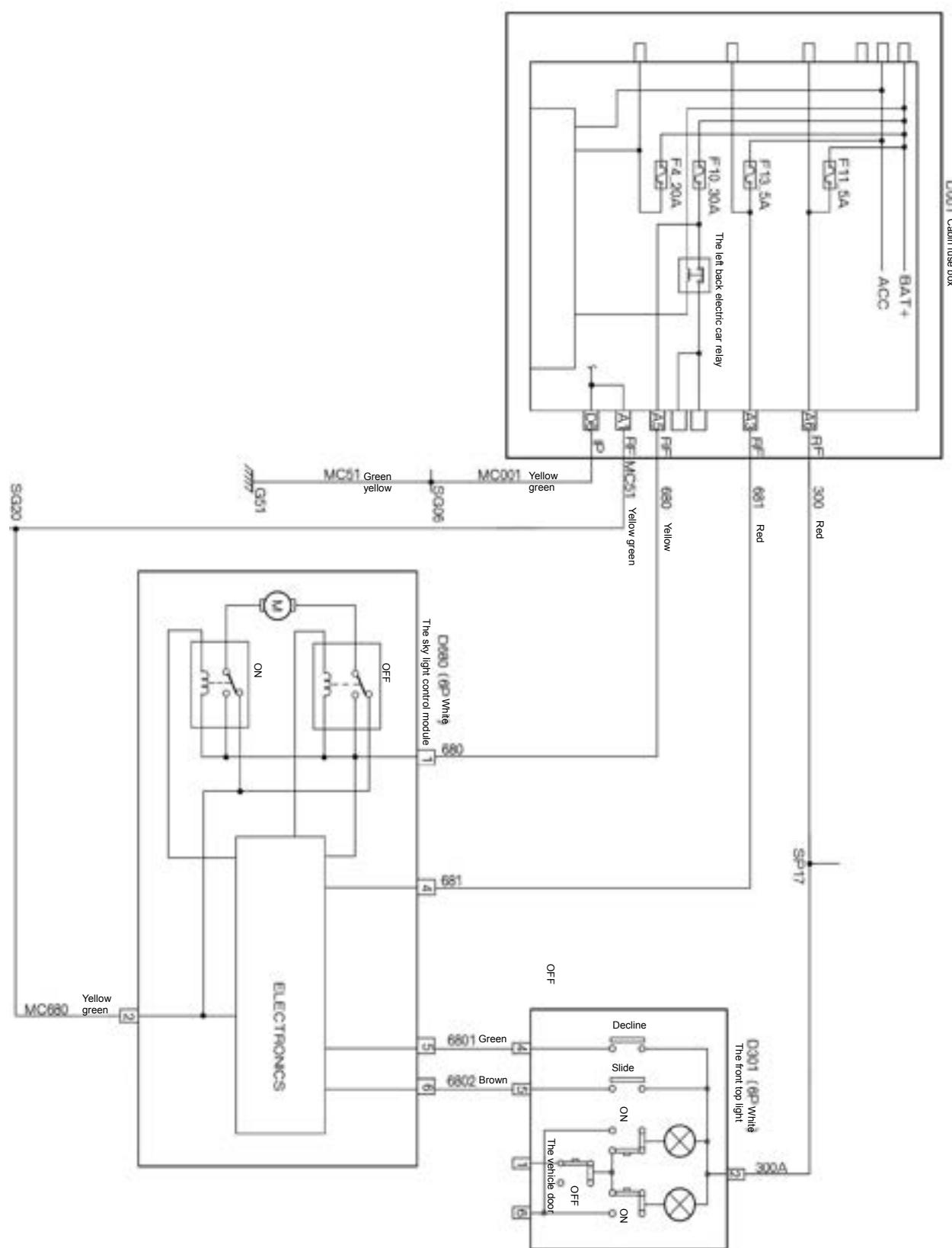
14.4 The electrical schematic diagram for the steering and danger alarm light (H30)



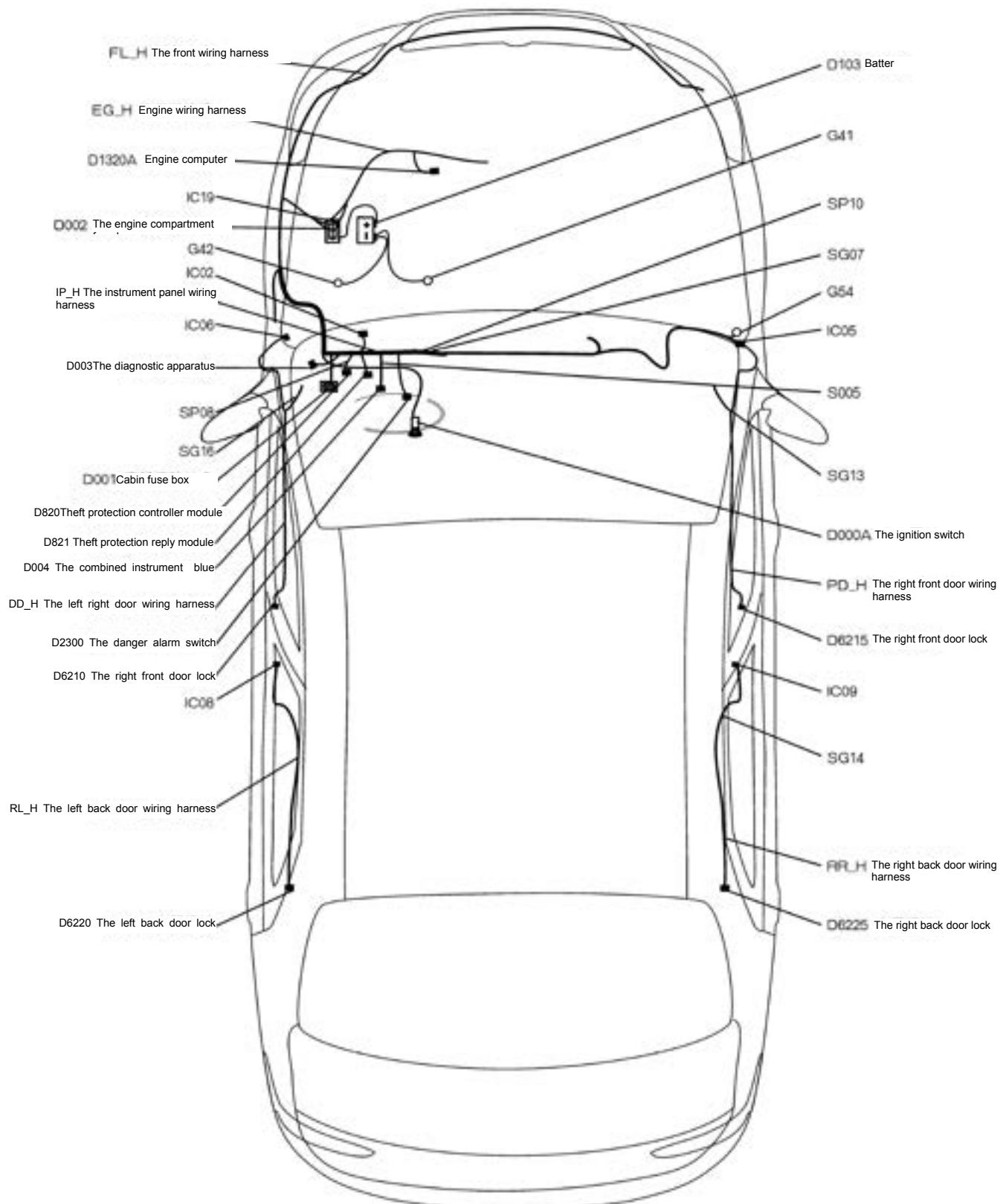
15.1 The electrical location diagram for the electric sun roofS30/H30)



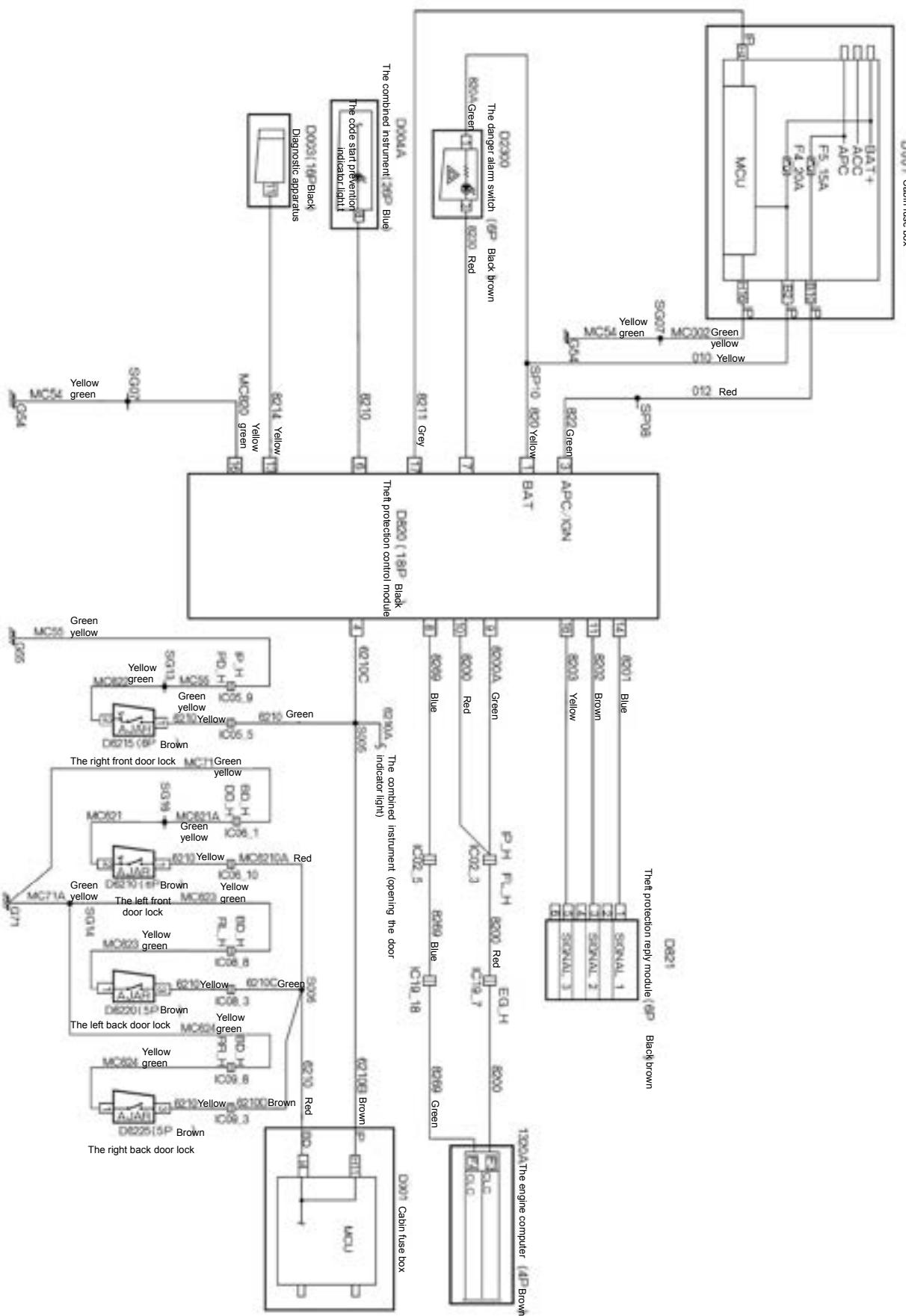
15.2 The electrical schematic diagram for the electric sun roofS30/H30)



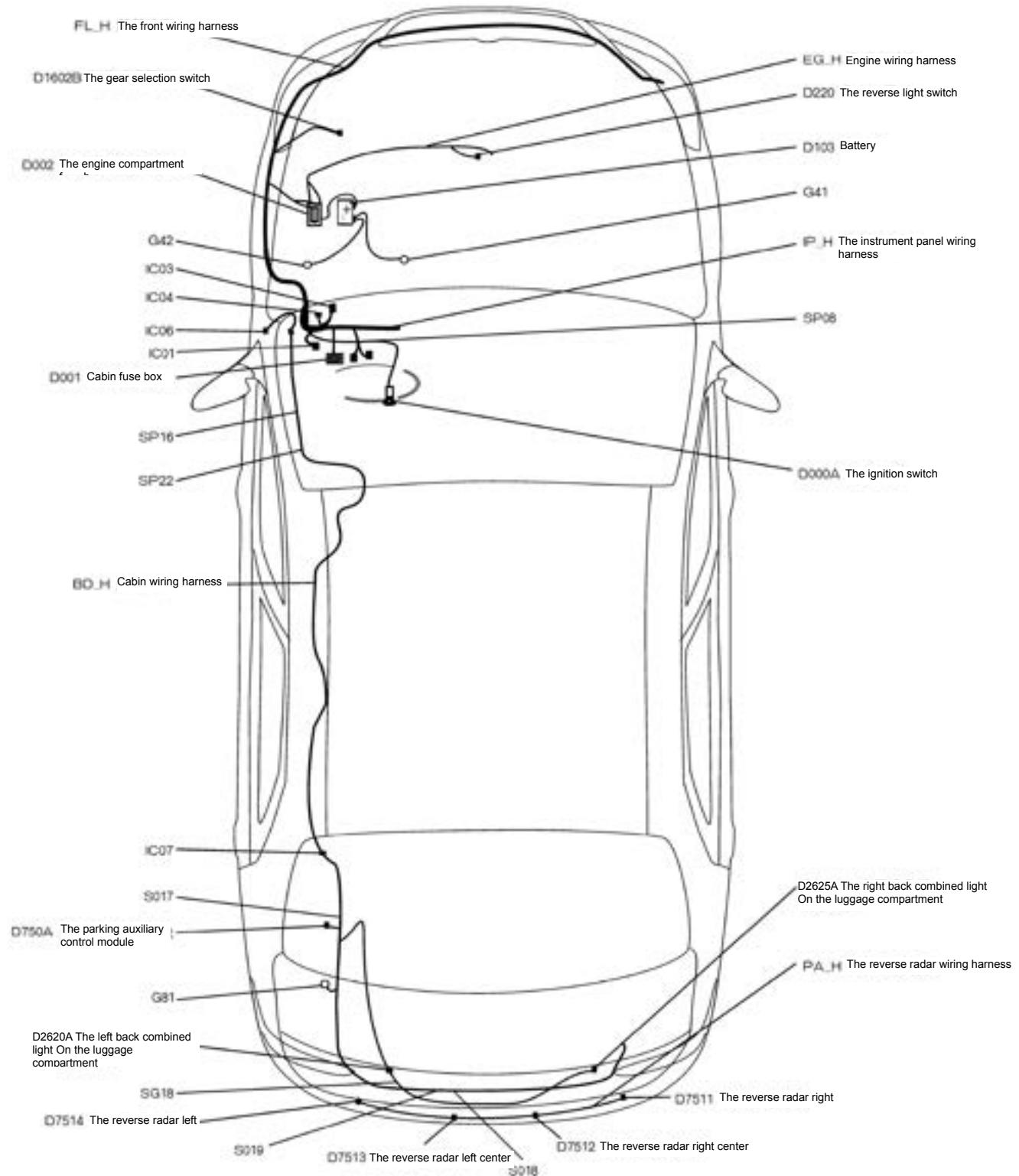
16.1 The electrical location diagram for the ft protection controller S30/H30)



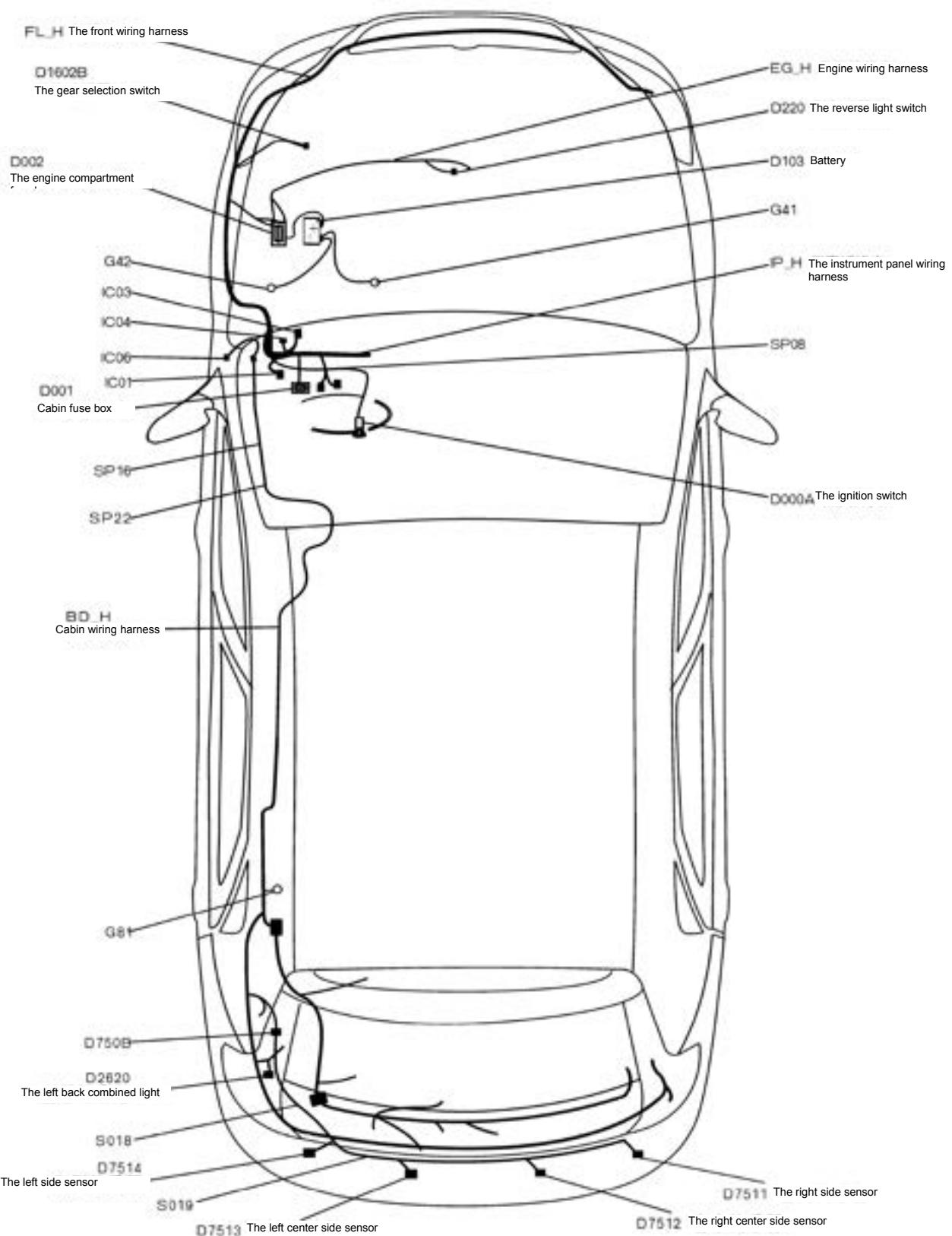
16.2 The electrical schematic diagram for the ft protection controller S30/H30)



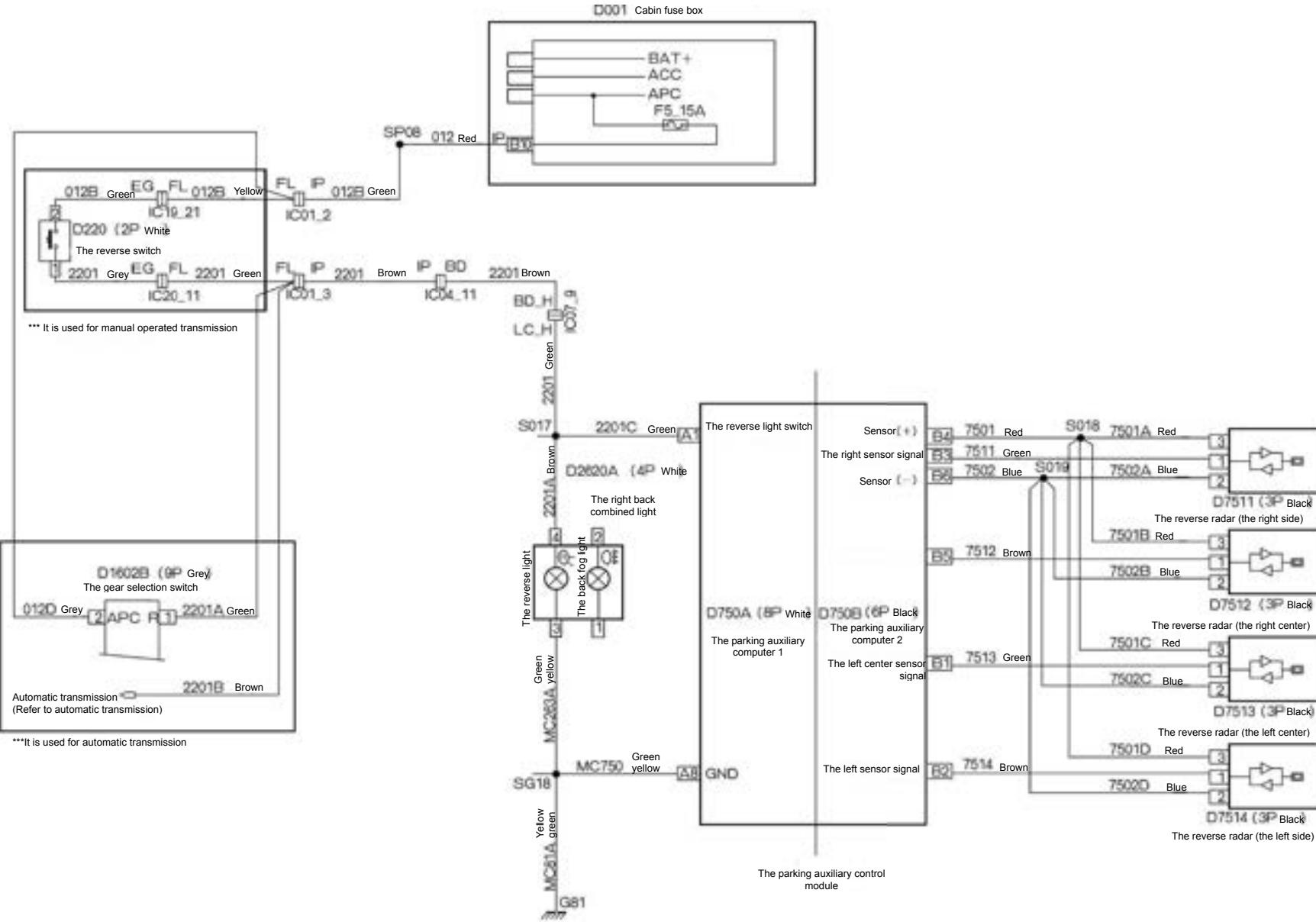
17.1 The auxiliary electrical location diagram for the parking S30



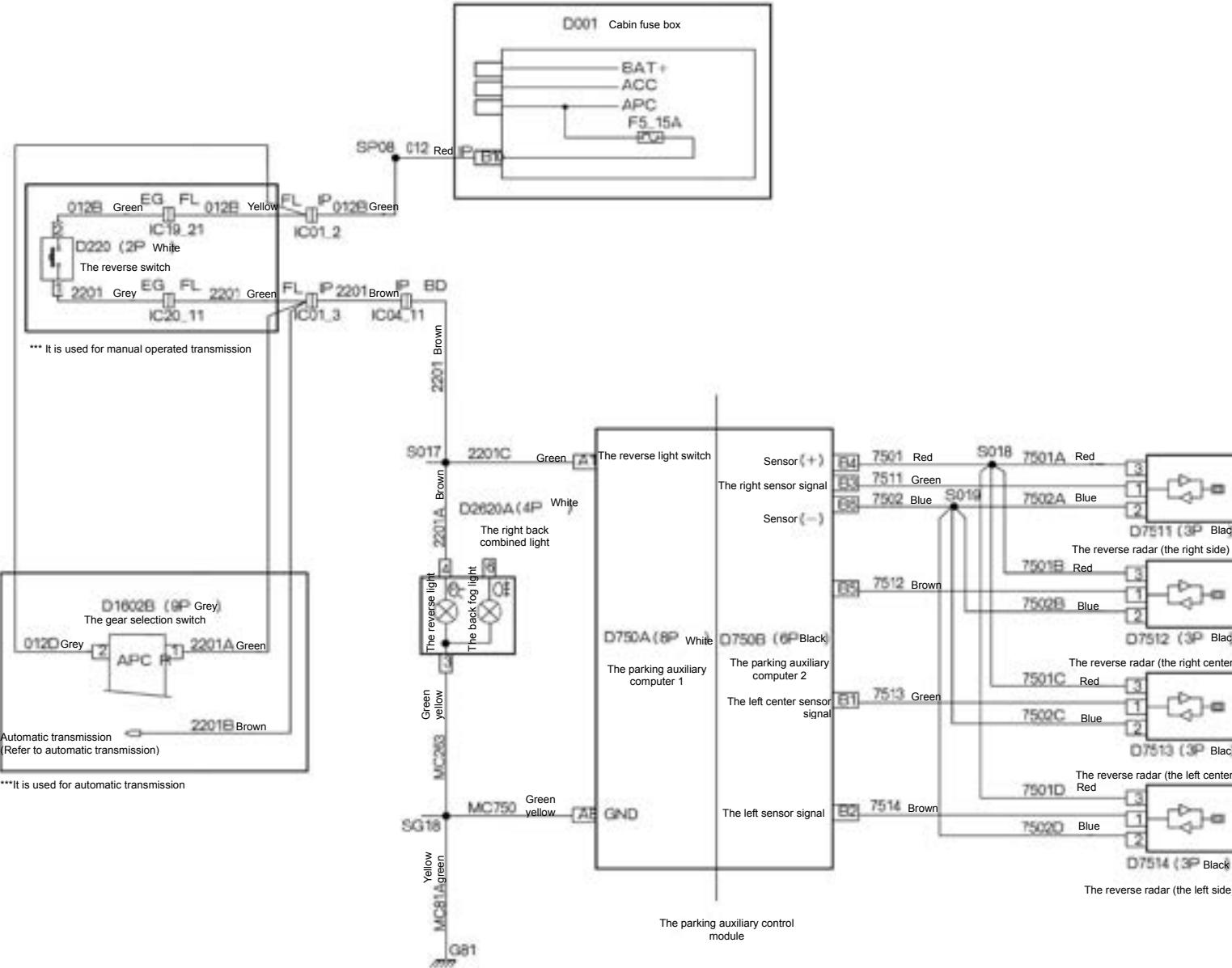
17.2 The auxiliary electrical location diagram for the parking H30



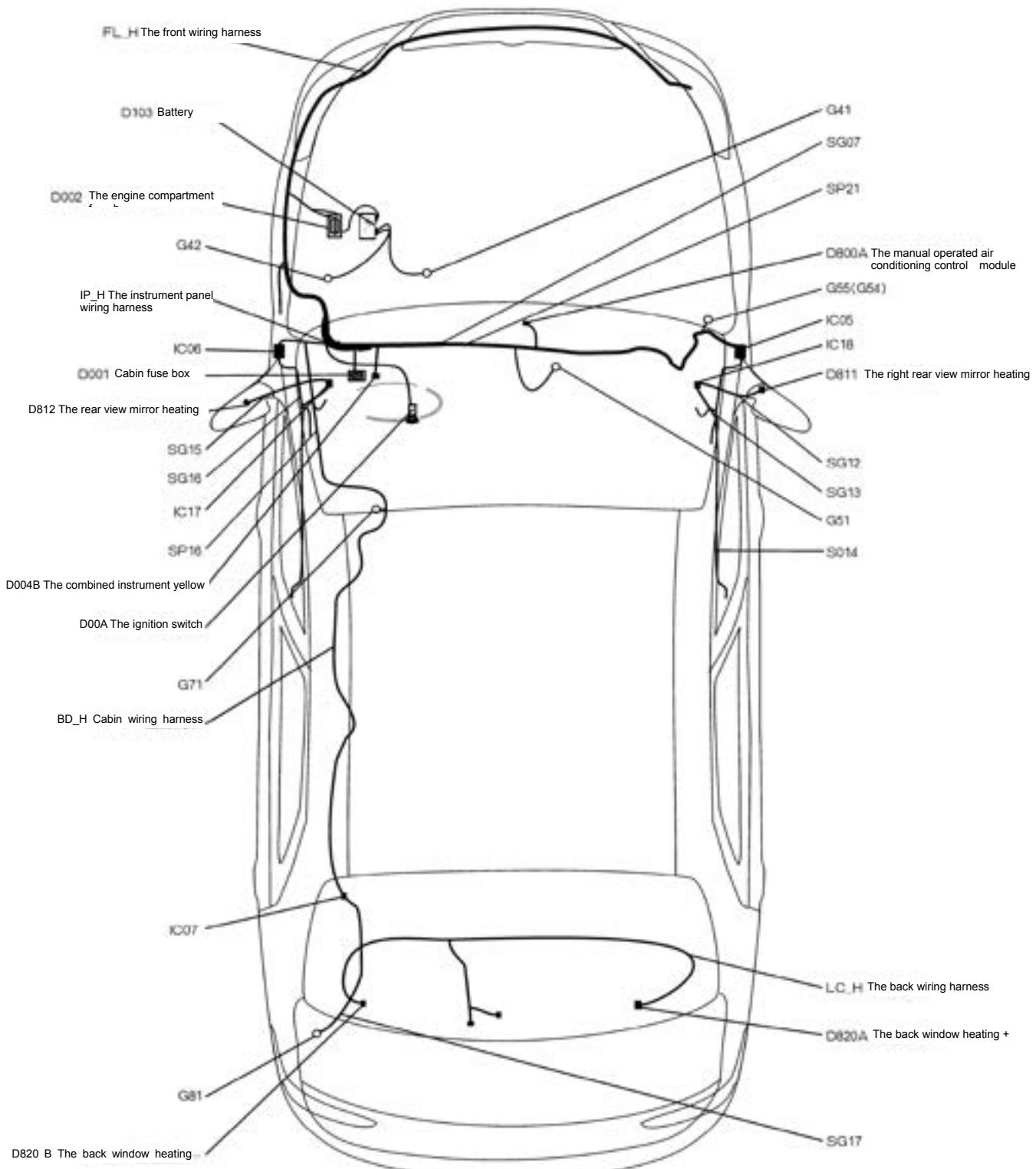
17.3 The auxiliary electrical schematic diagram for the parking S30



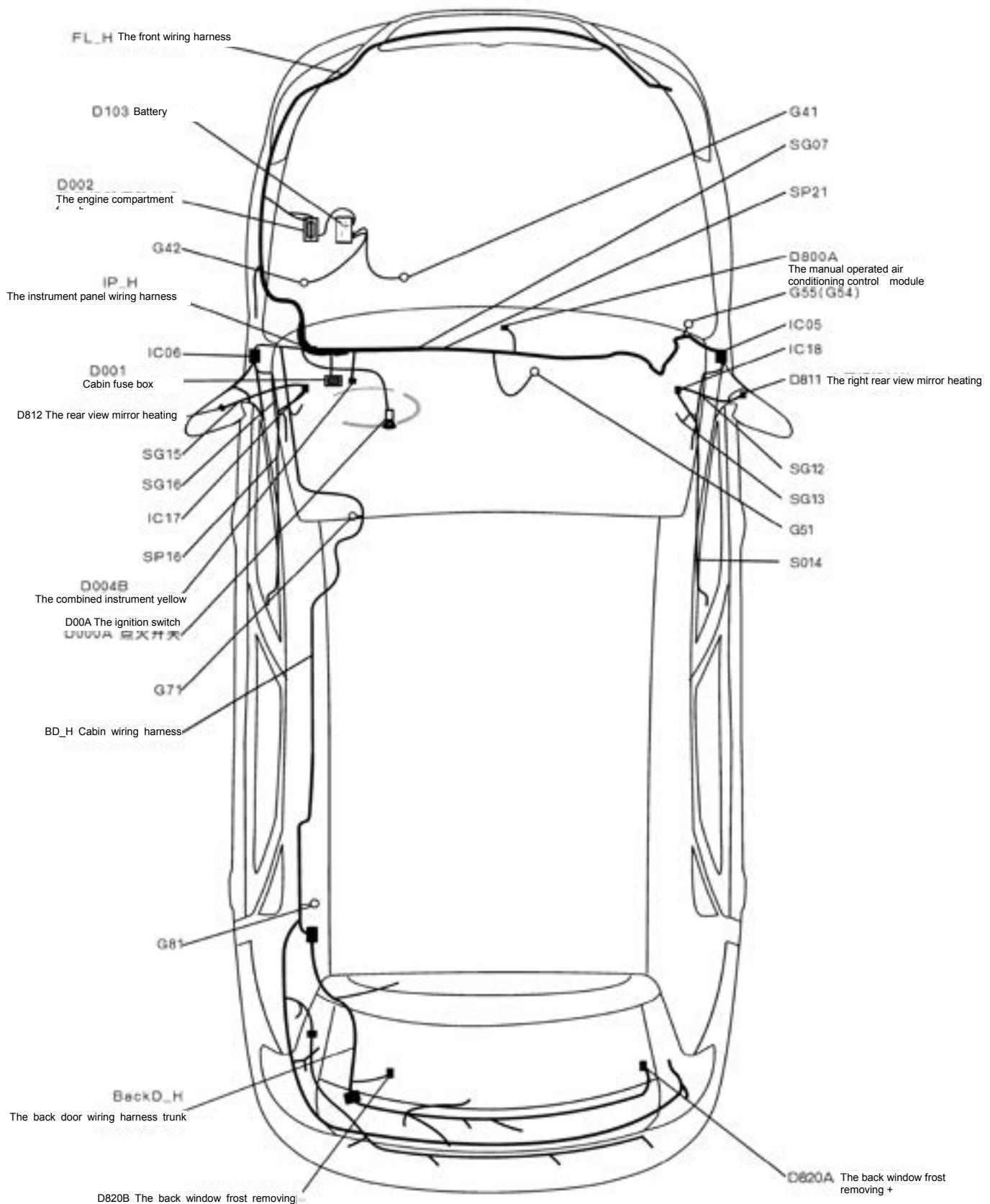
17.4 The auxiliary electrical schematic diagram for the parking H30



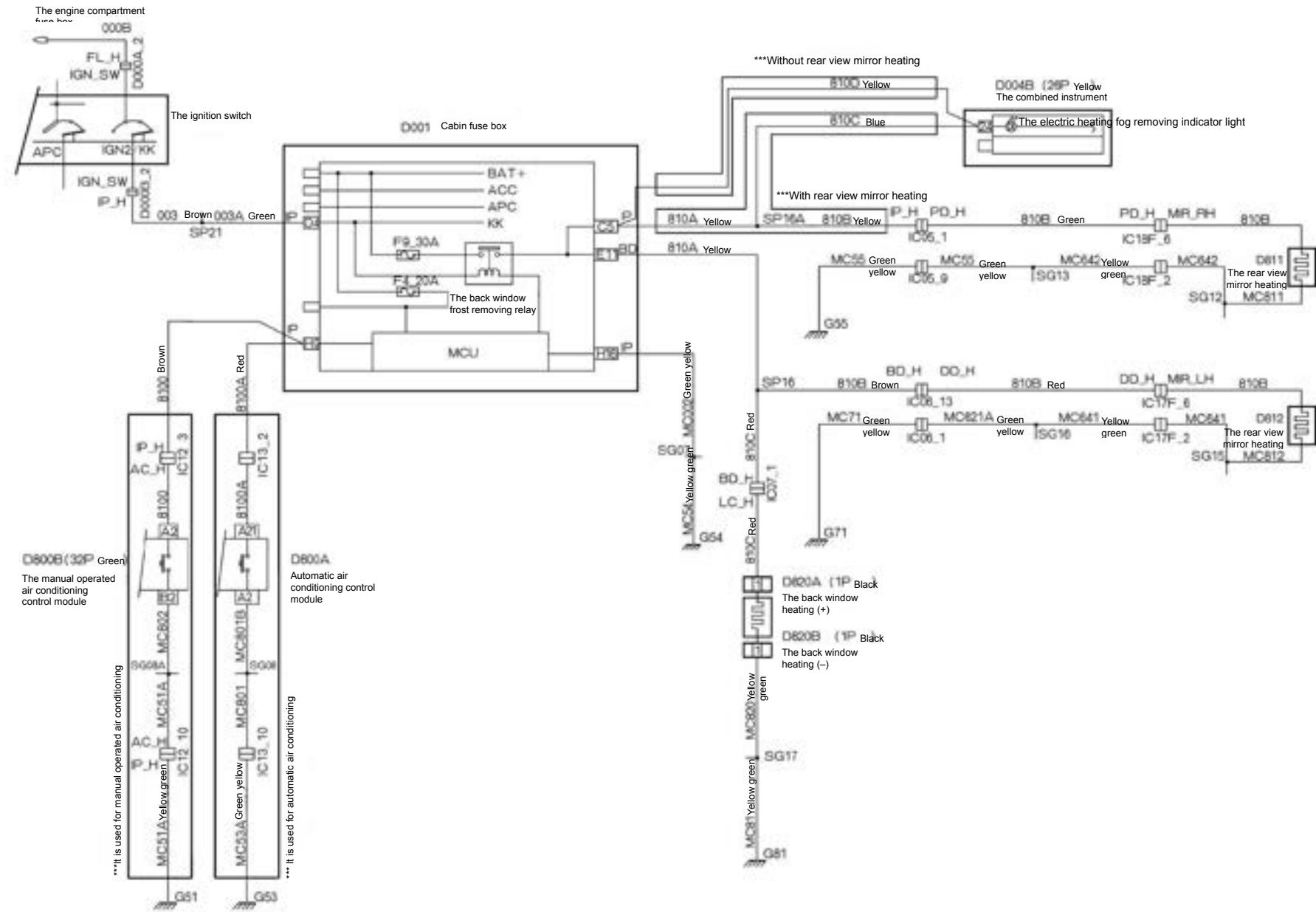
18.1 The electrical location diagram for the back window and rear view mirror S30



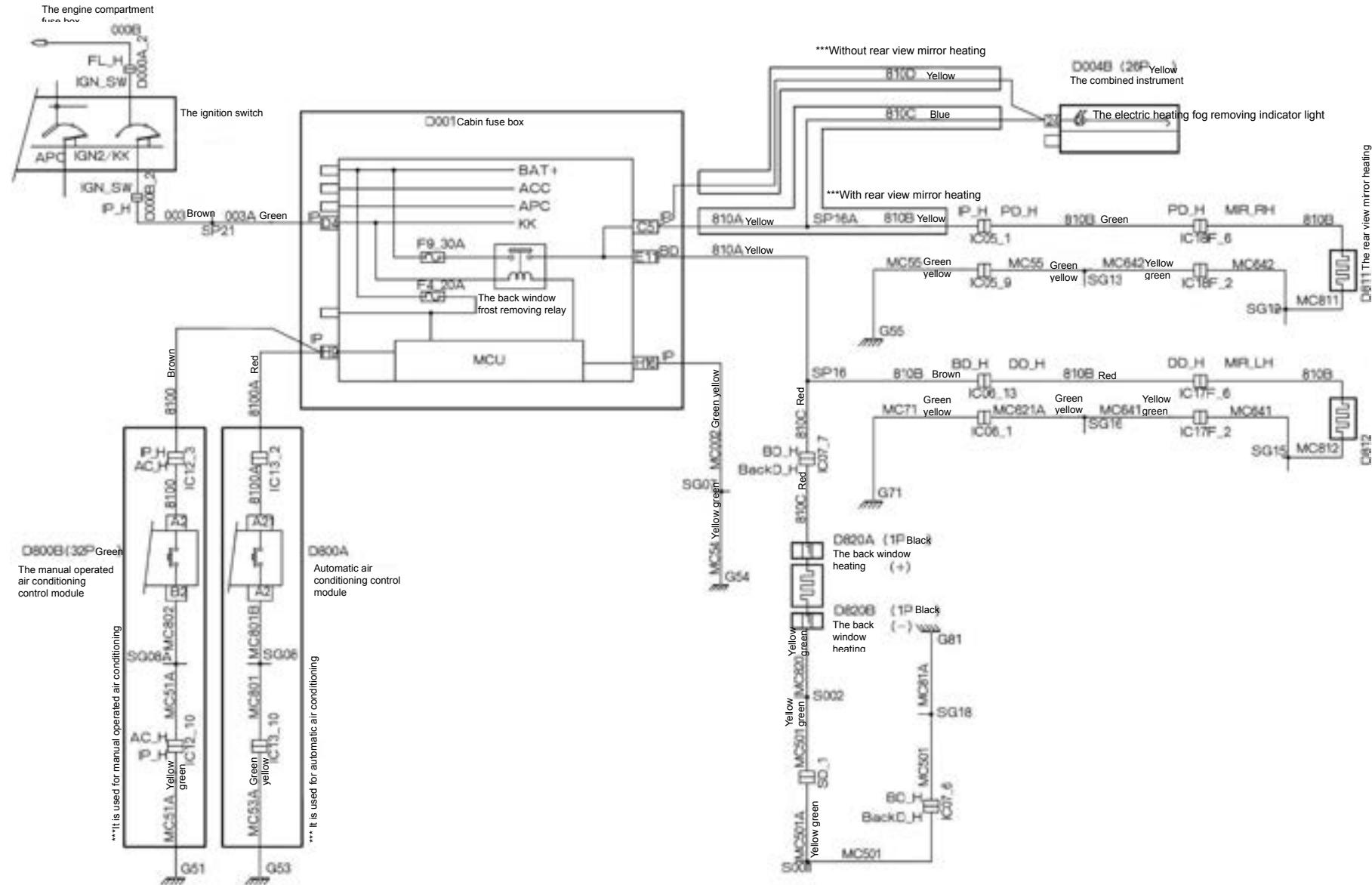
18.2 The electrical location diagram for the back window and rear view mirror (H30)



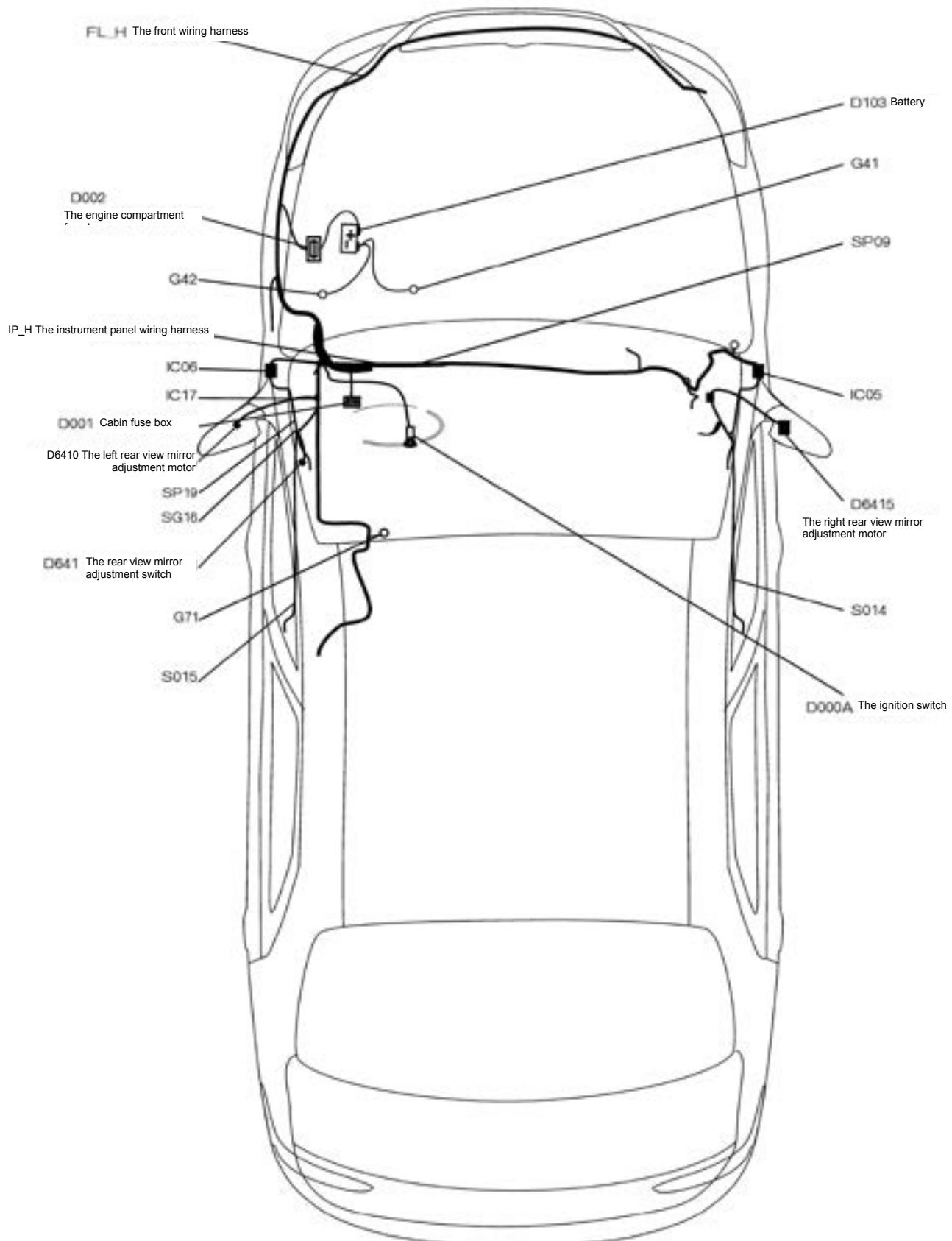
18.3 The electrical schematic diagram for the back window and rear view mirror's fog removing (S30)



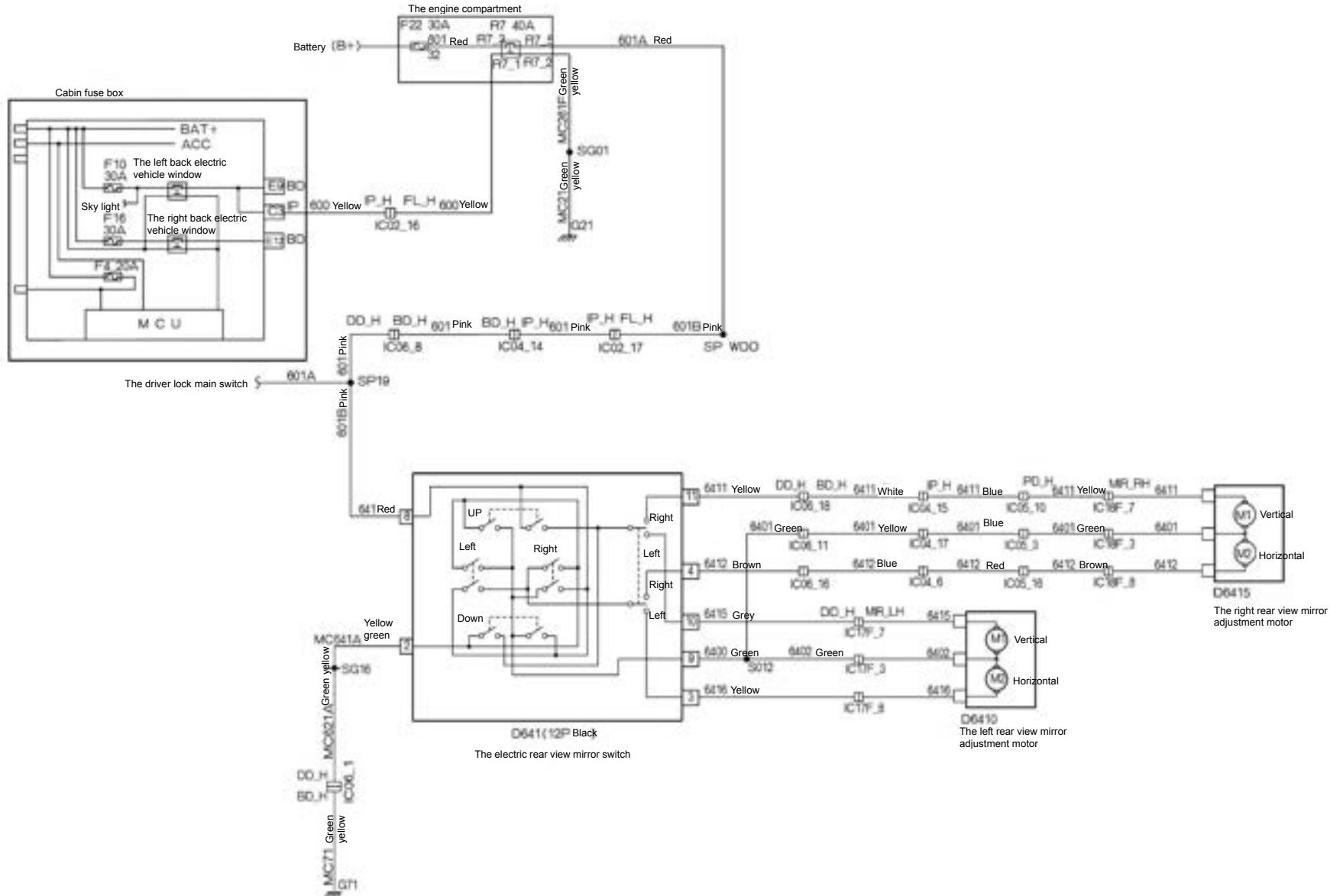
18.4 The electrical schematic diagram for the back window and rear view mirror's fog removing (H30)



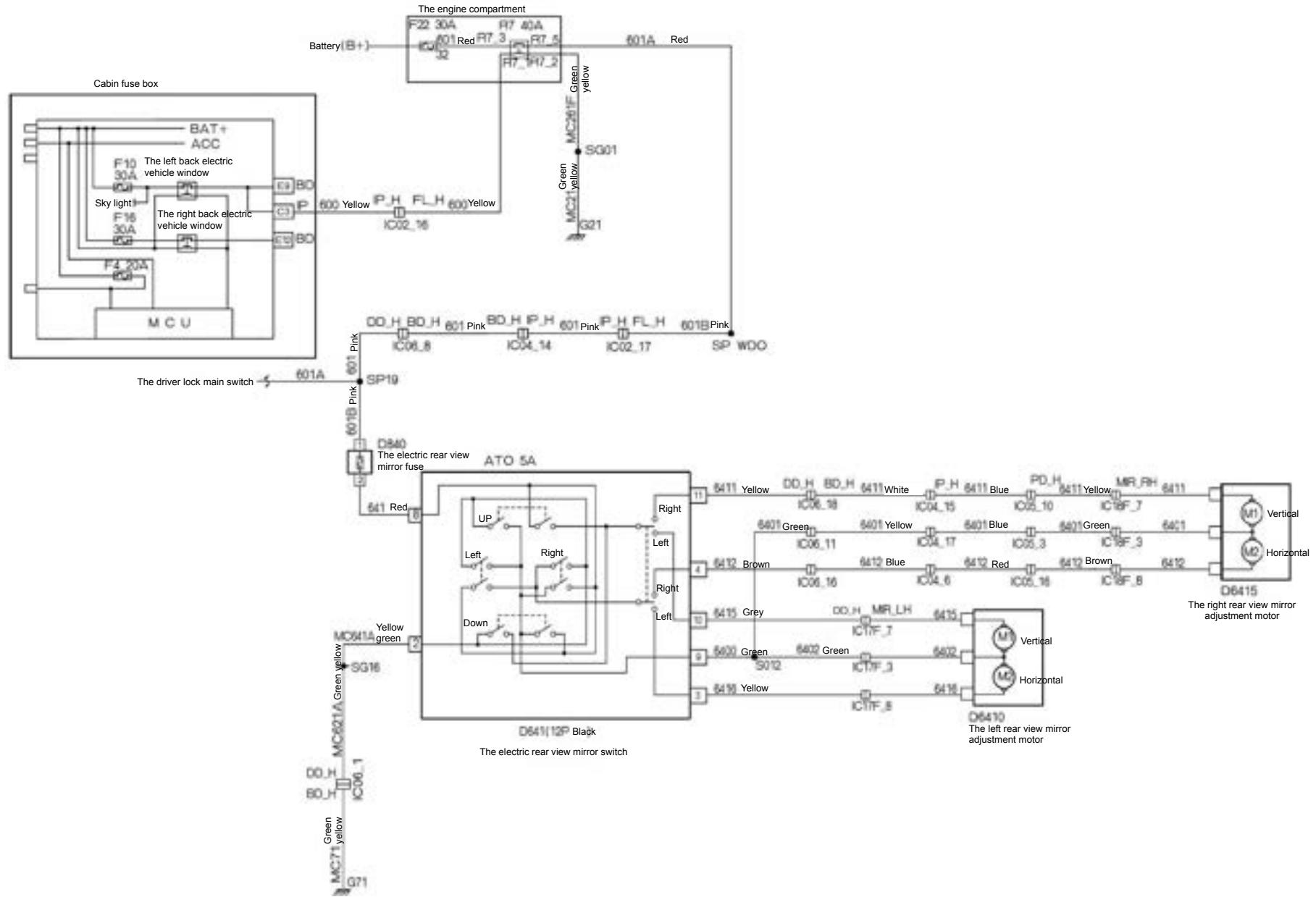
19.1 The electrical location diagram for the electric rear view mirror S30/H30)



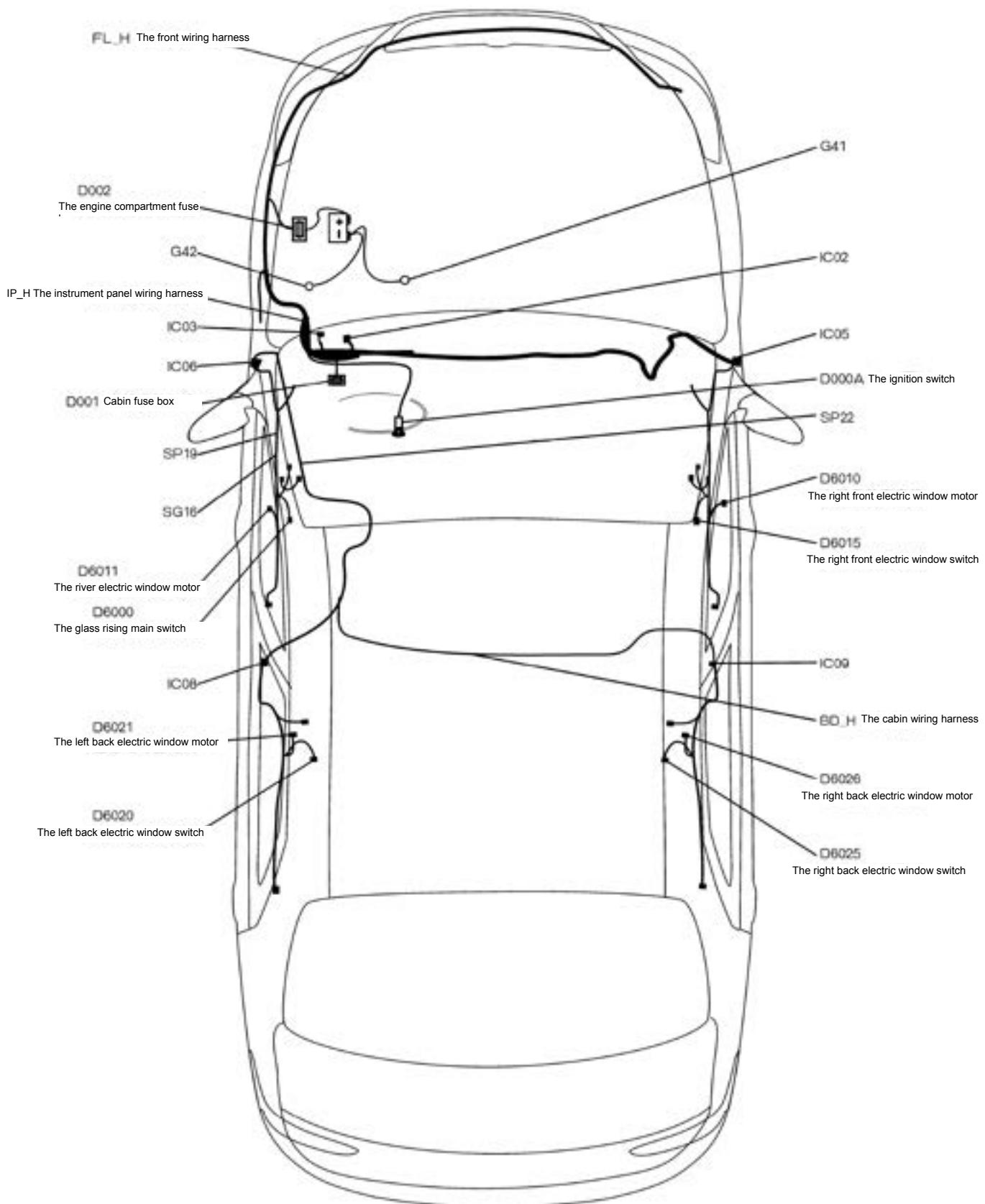
19.2 The electrical schematic diagram for the electric rear view mirror S30/H30 (it is applicable to 6 digits after VIN, VIN <005834



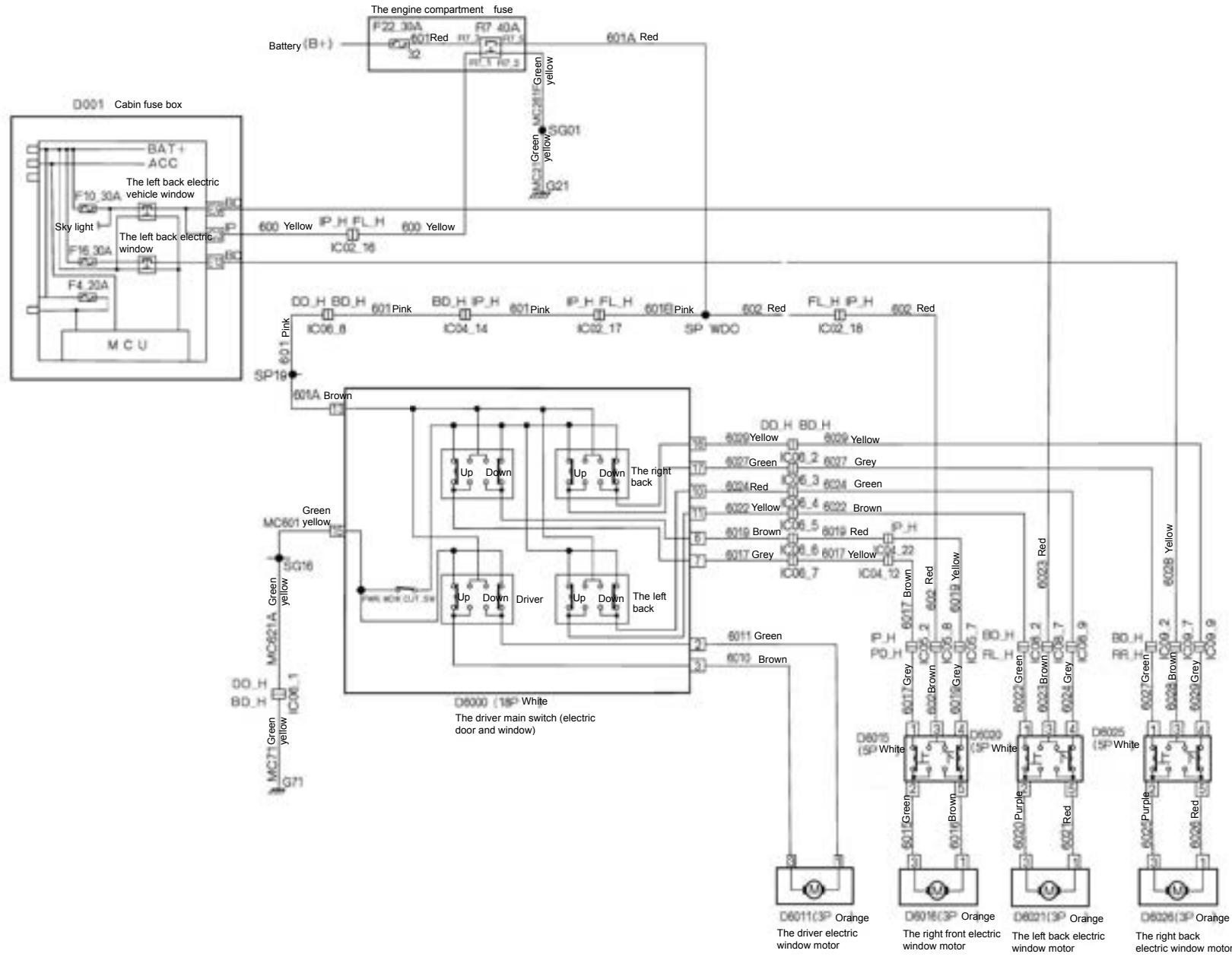
19.3 The electrical schematic diagram for the electric rear view mirror S30/H30 (it is applicable to 6 digits after VIN, VIN ≥ 005834



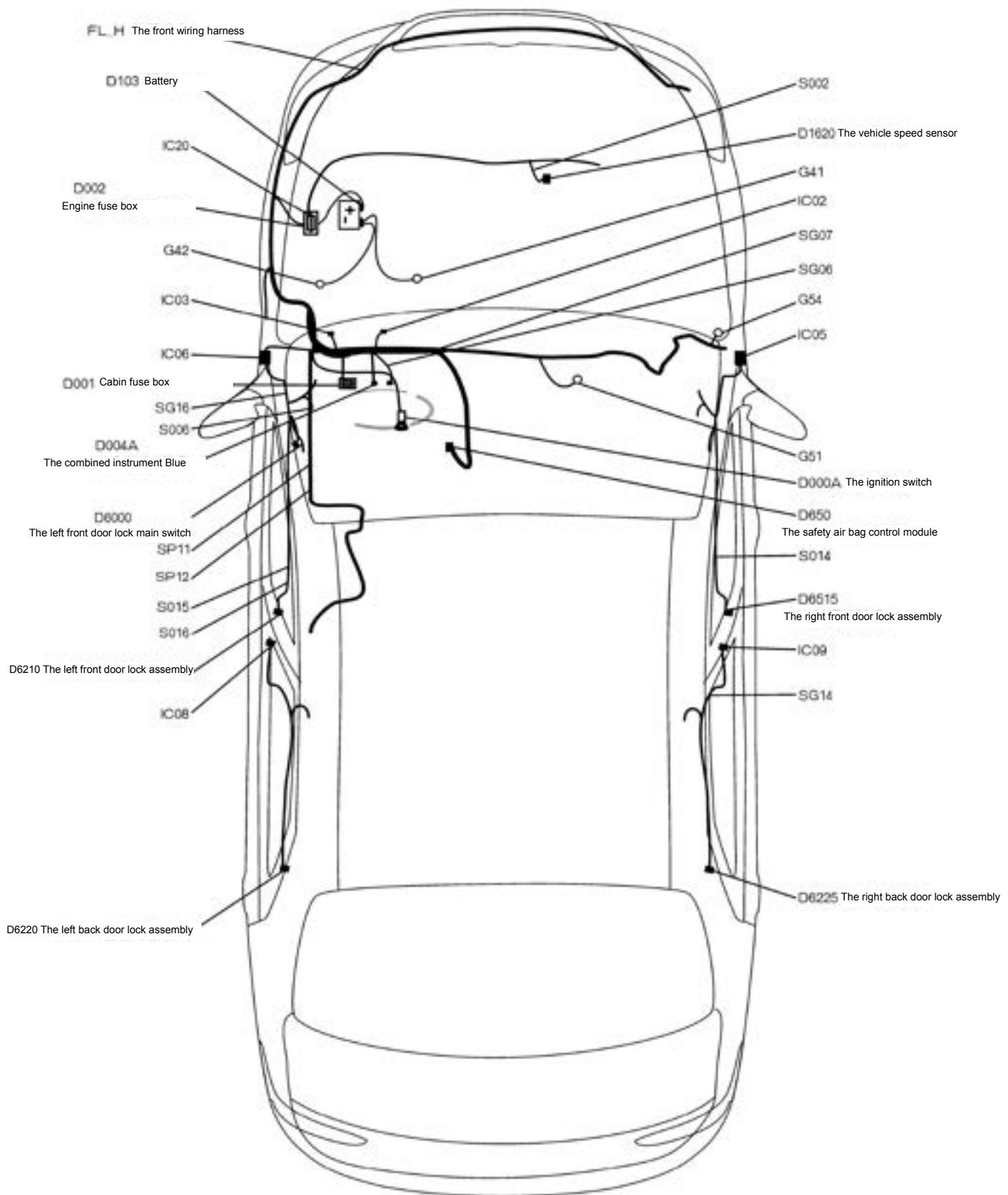
20.1 The electrical location diagram for the electric vehicle door and window S30/H30



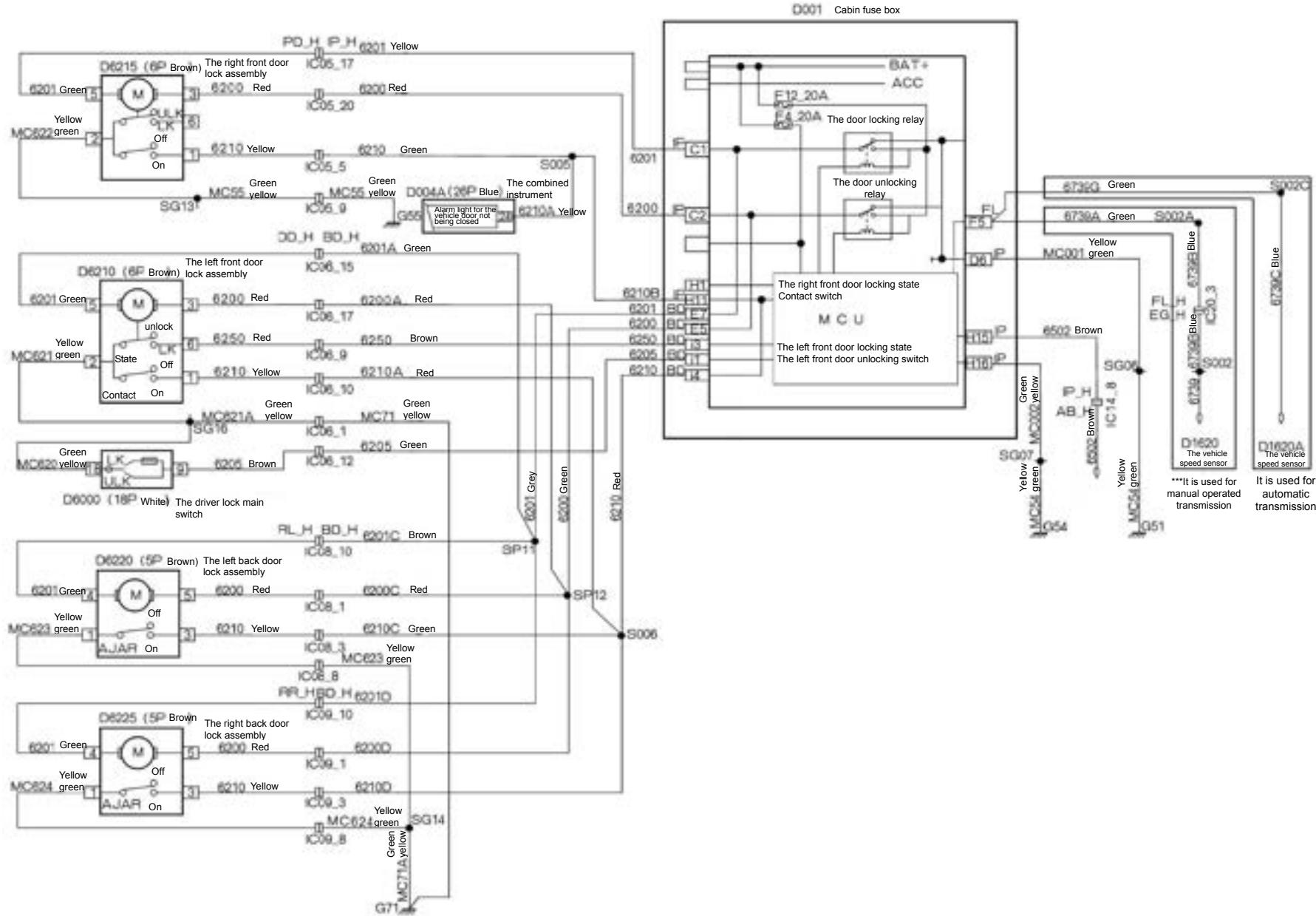
20.2 The electrical schematic diagram for the electric vehicle door and window S30/H30



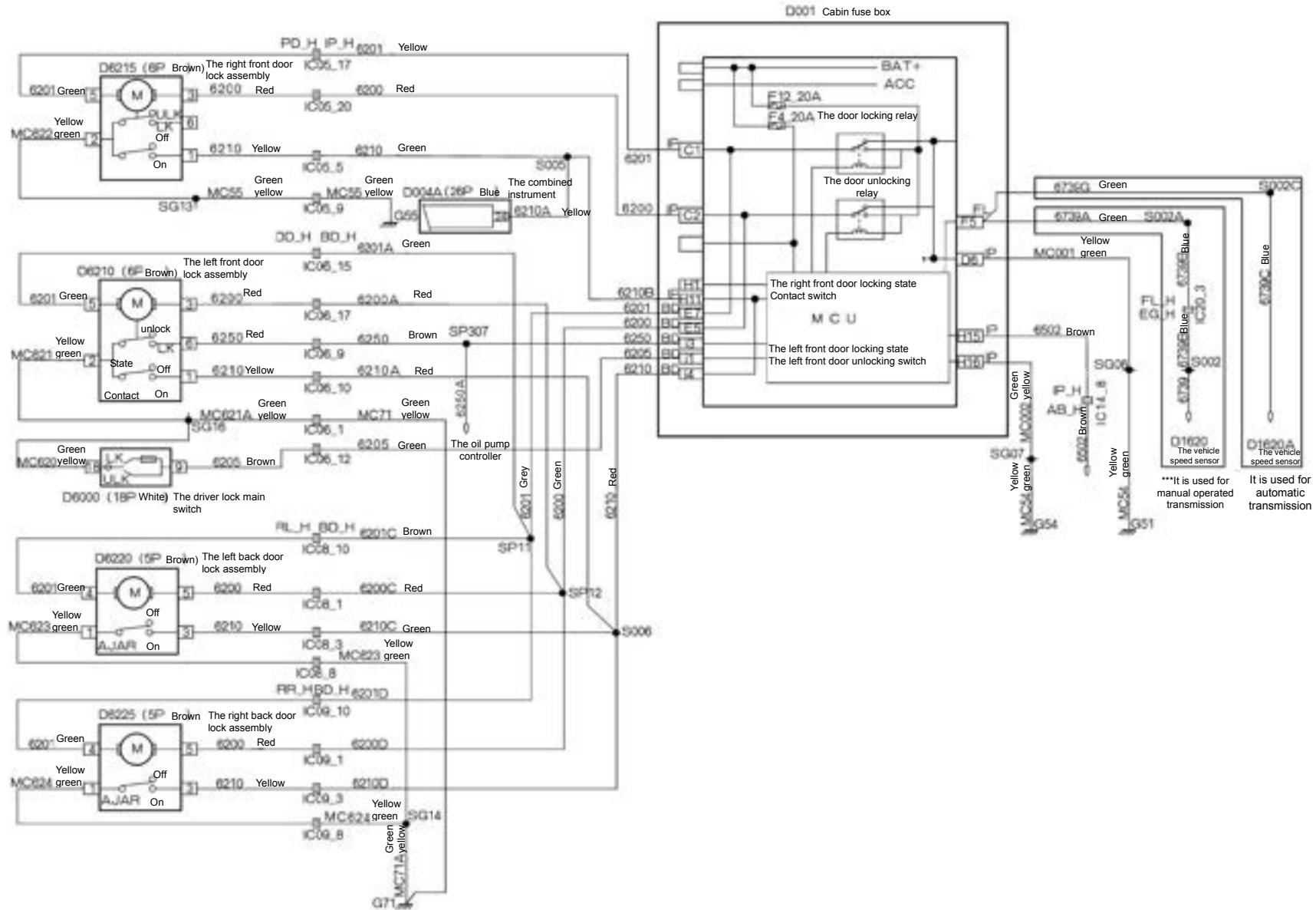
21.1 The electrical location diagram for the electric door lock S30/H30



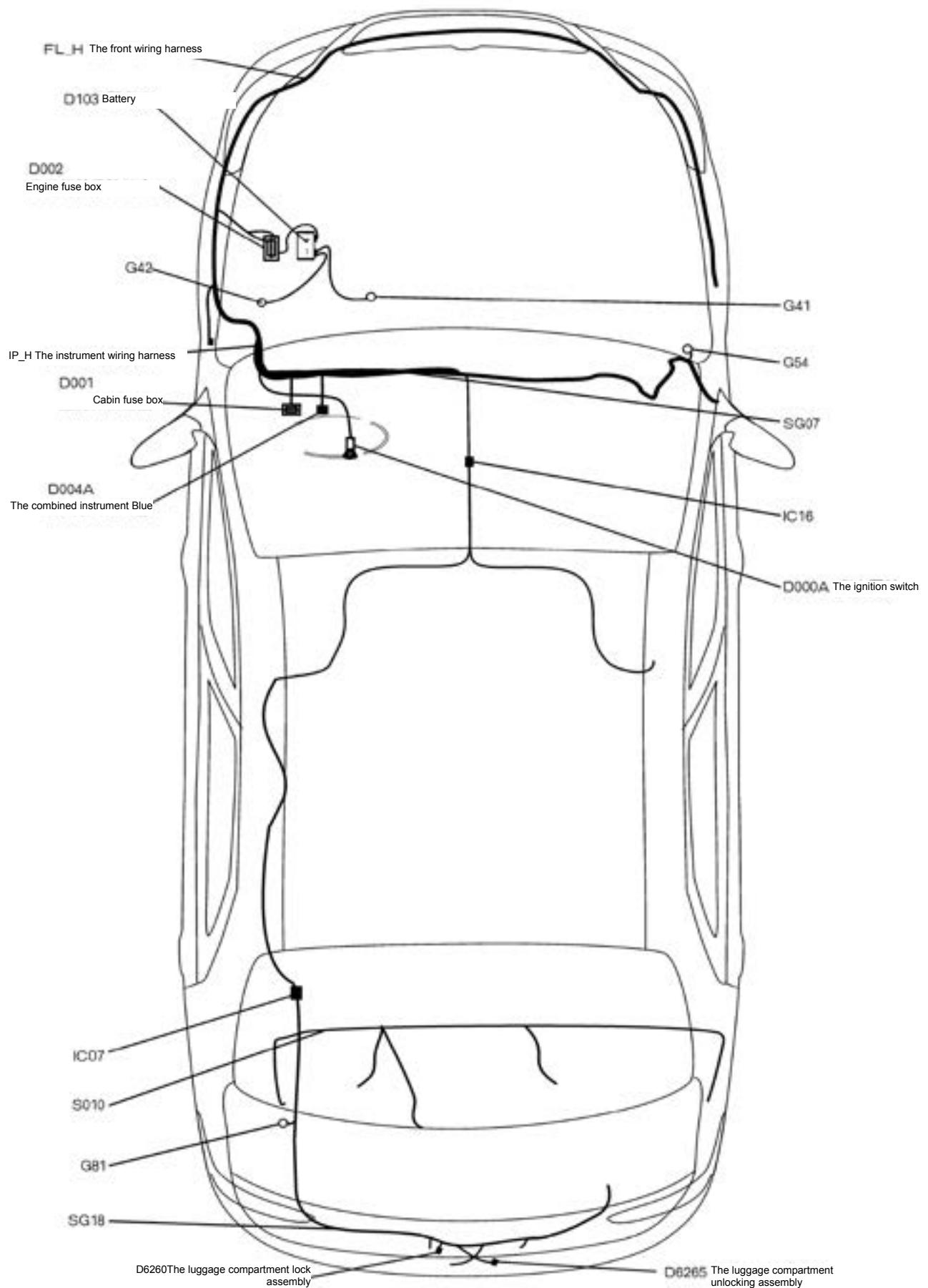
21.2 The electrical schematic diagram for the electric door lock S30/H30 (It is applicable to 6 digits after VIN, VIN <037670)



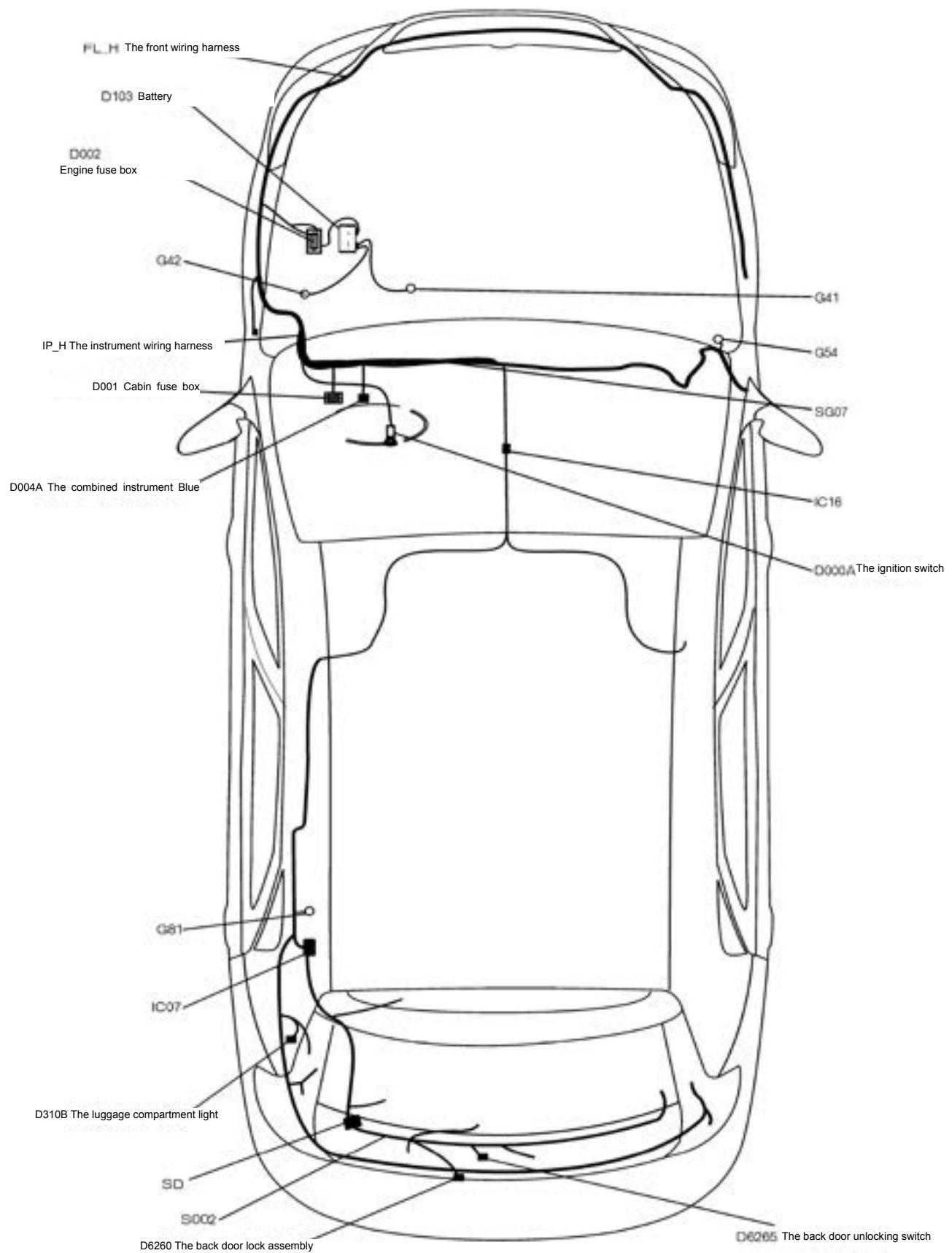
21.3 The electrical schematic diagram for the electric door lock S30/H30 (It is applicable to 6 digits after VIN, $VIN \geq 037670$)



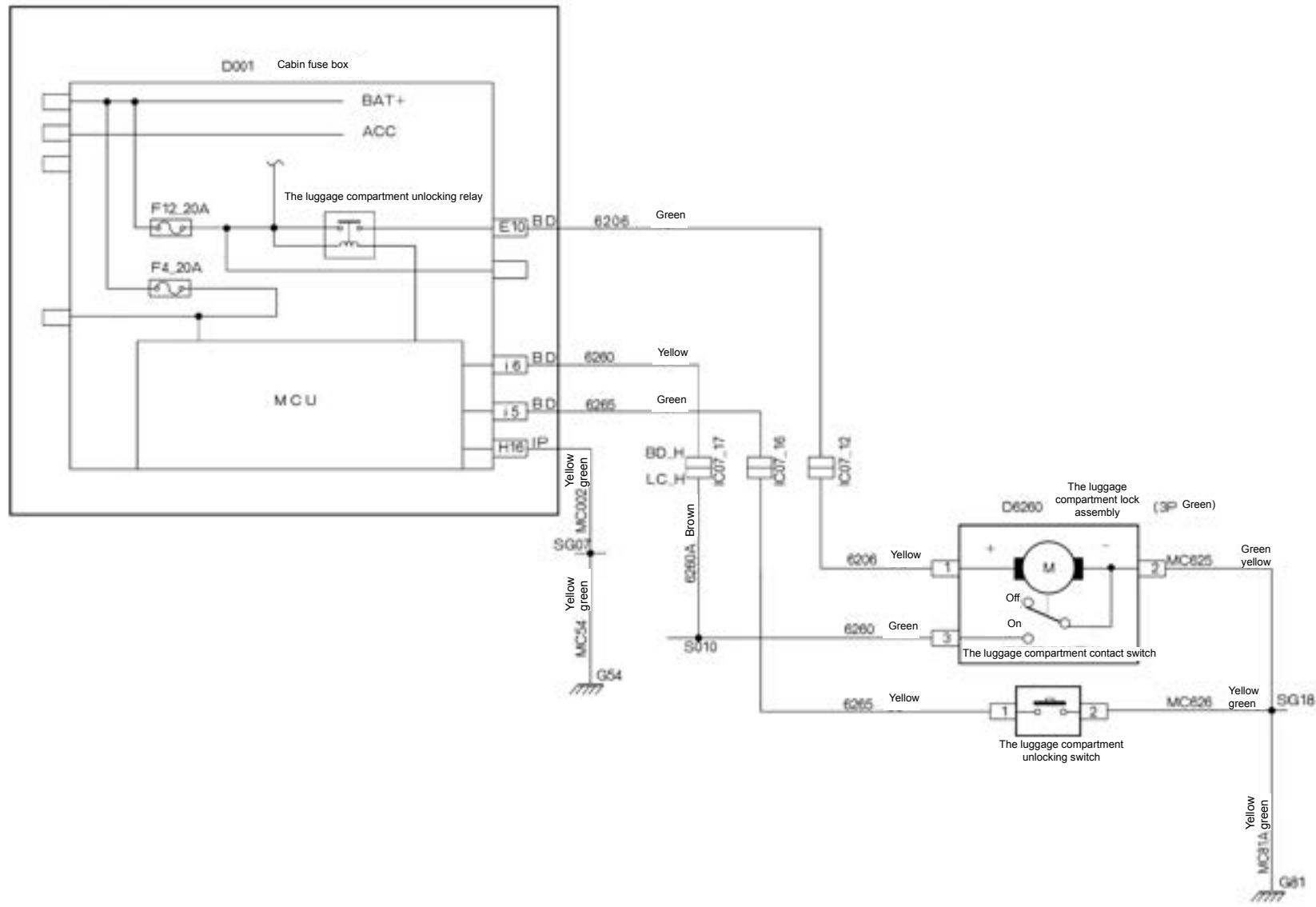
22.1 The electrical location diagram for the luggage compartment unlocking S30



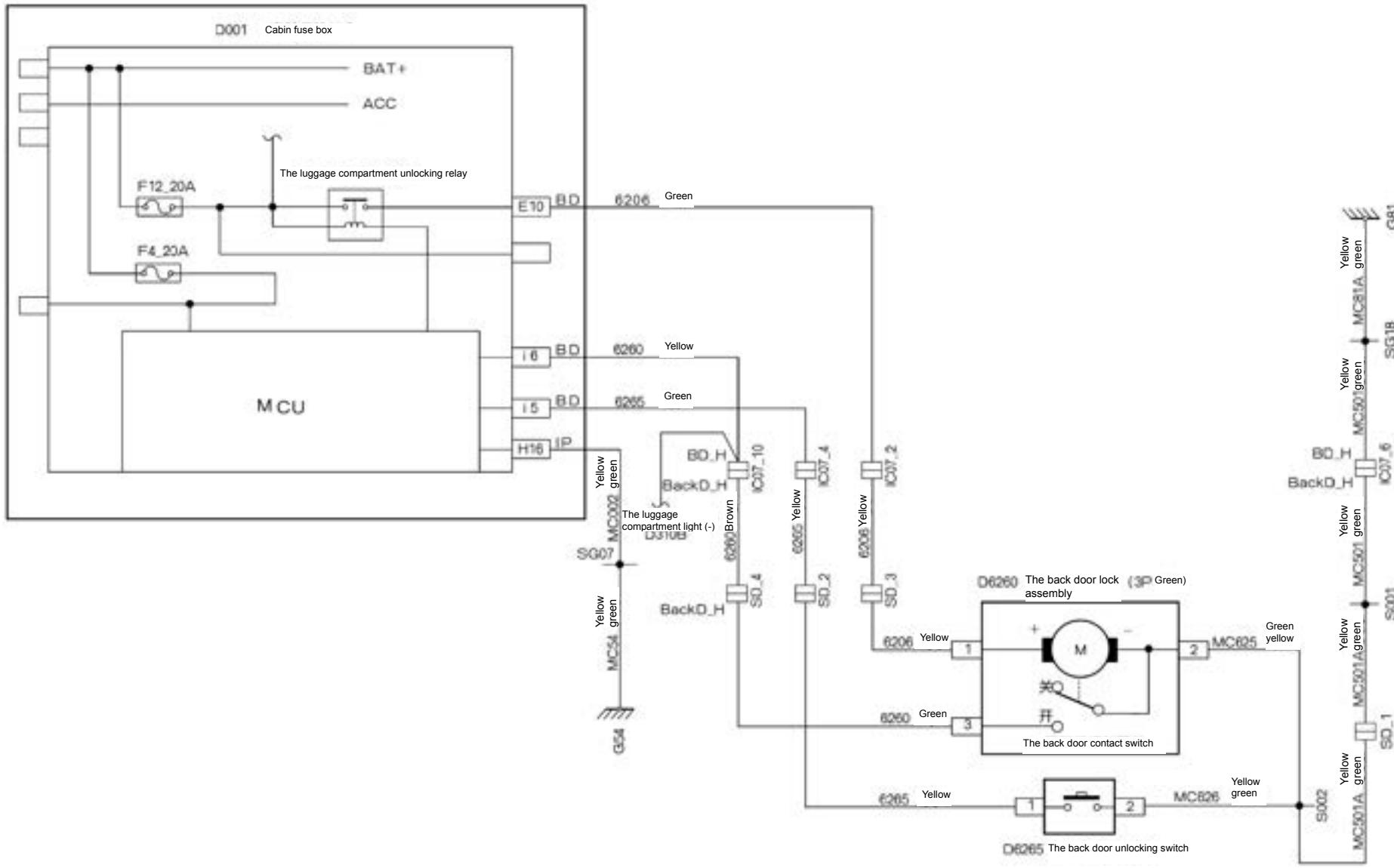
22.2 The electrical location diagram for the back door unlocking H30



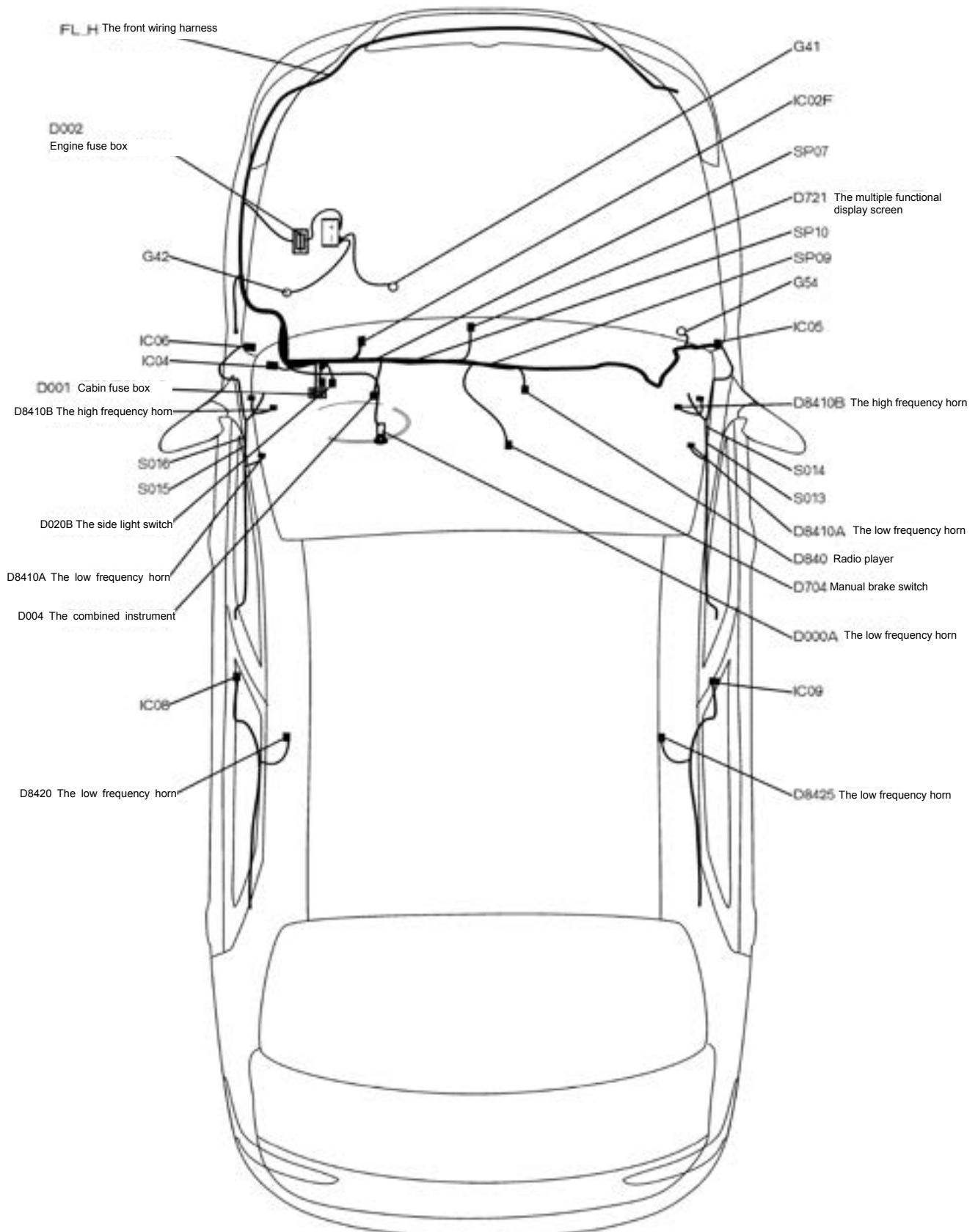
22.3 The electrical schematic diagram for the back door unlocking S30



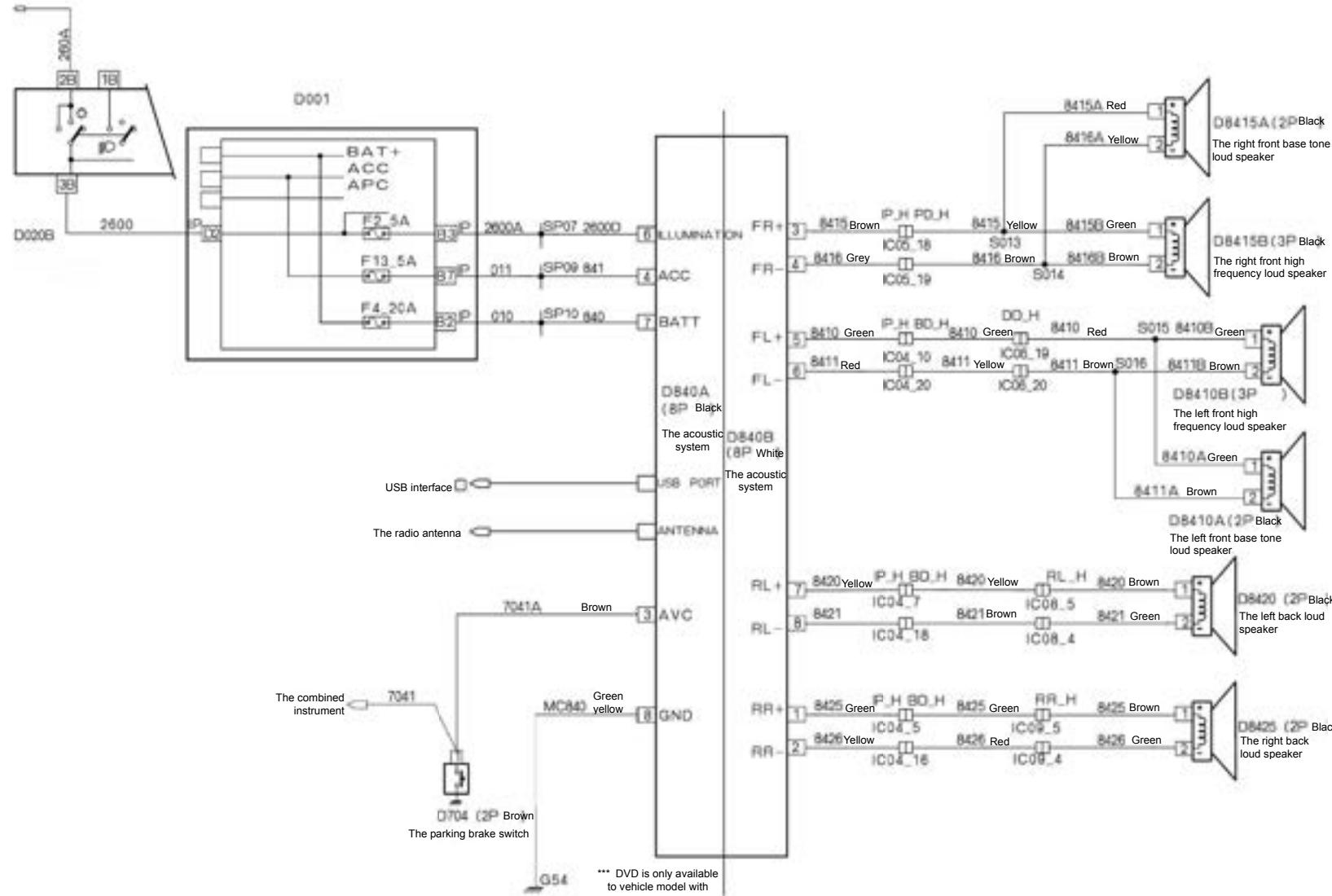
22.4 The electrical schematic diagram for the back door unlocking H30



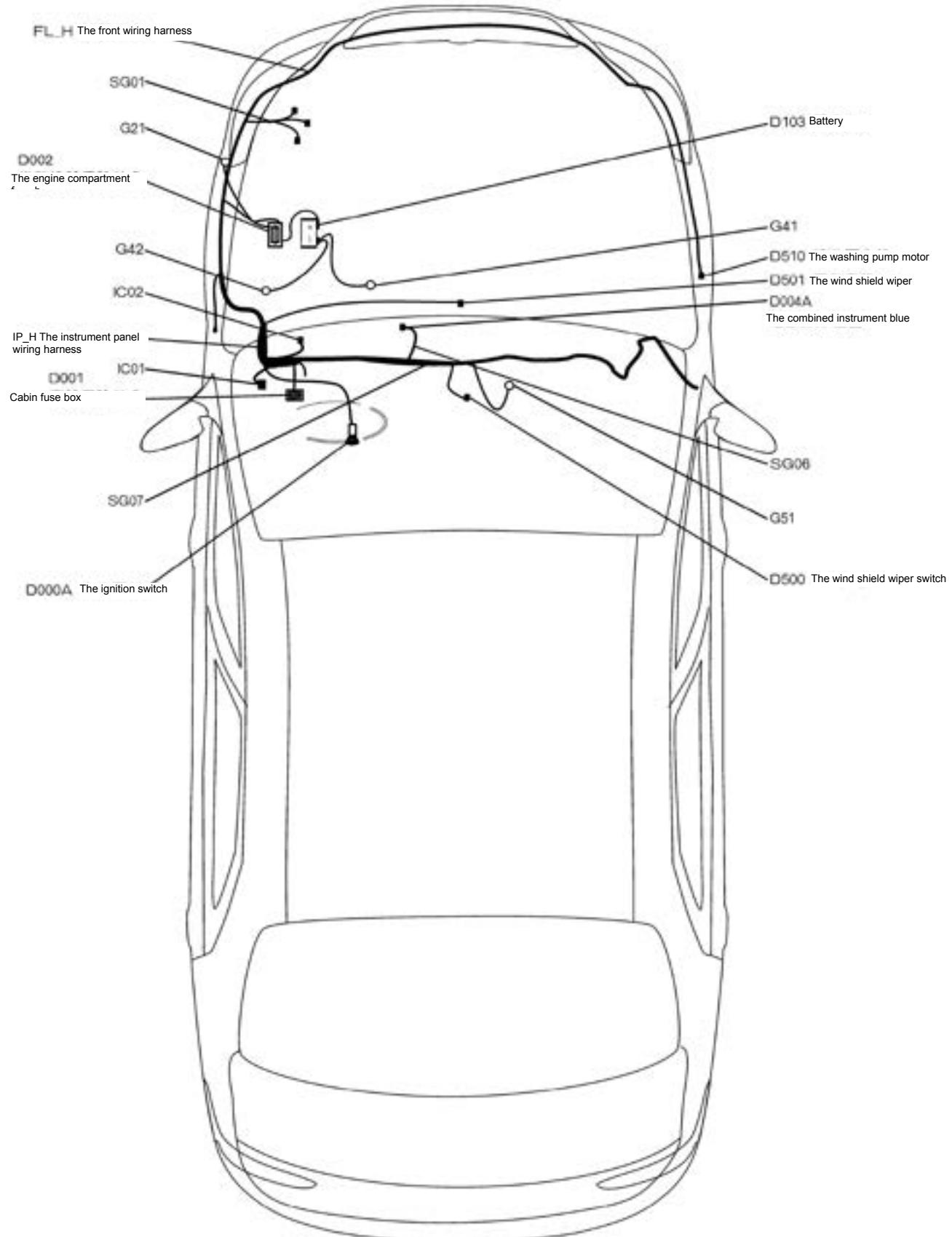
23.1 The electrical location diagram for the acoustic system S30 /H30



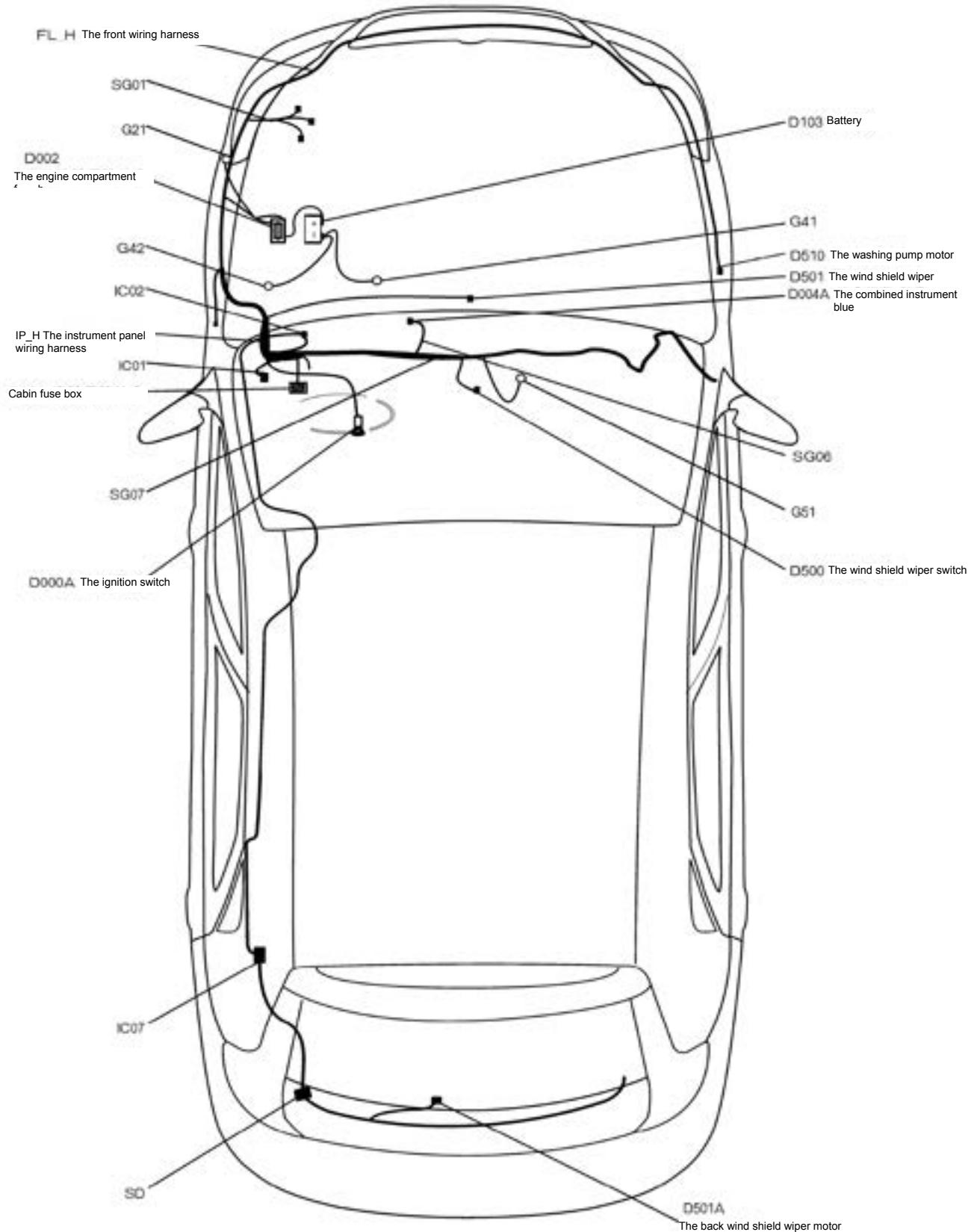
23.3 The electrical location diagram for the acoustic system S30 /H30



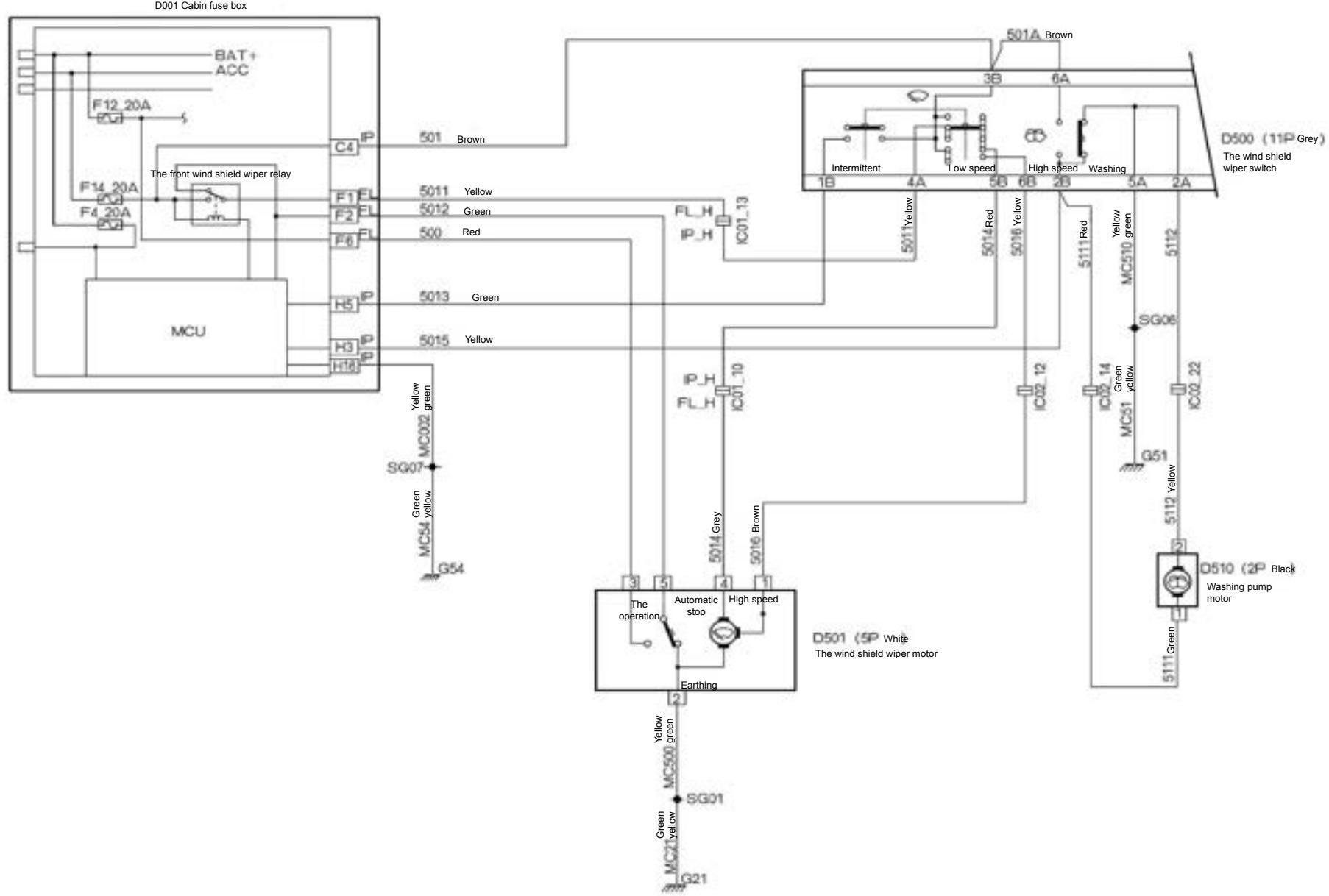
24.1 The electrical location diagram for the wind shield wiper and washing pump (S30)



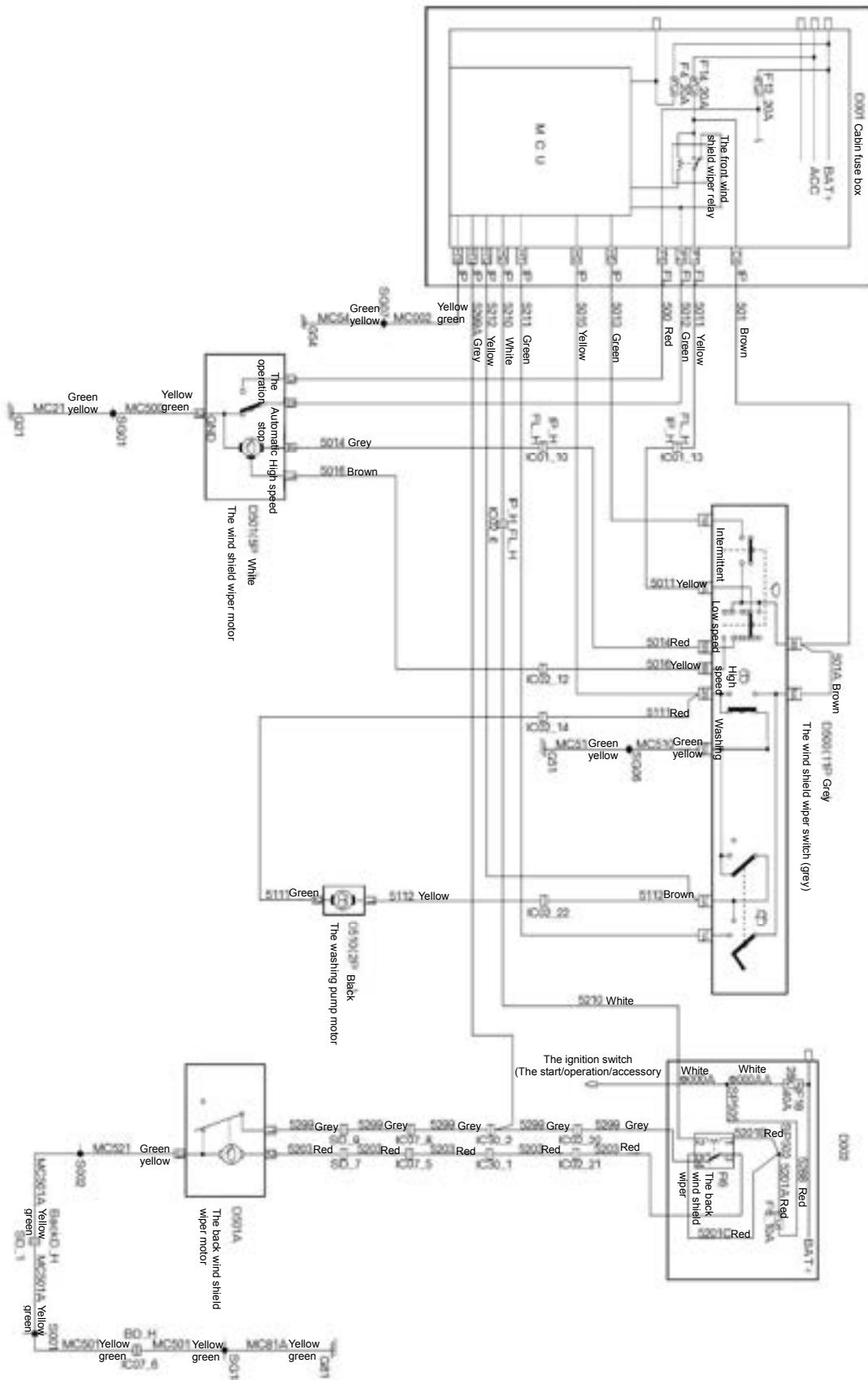
24.2 The electrical location diagram for the wind shield wiper and washing pump (H30)



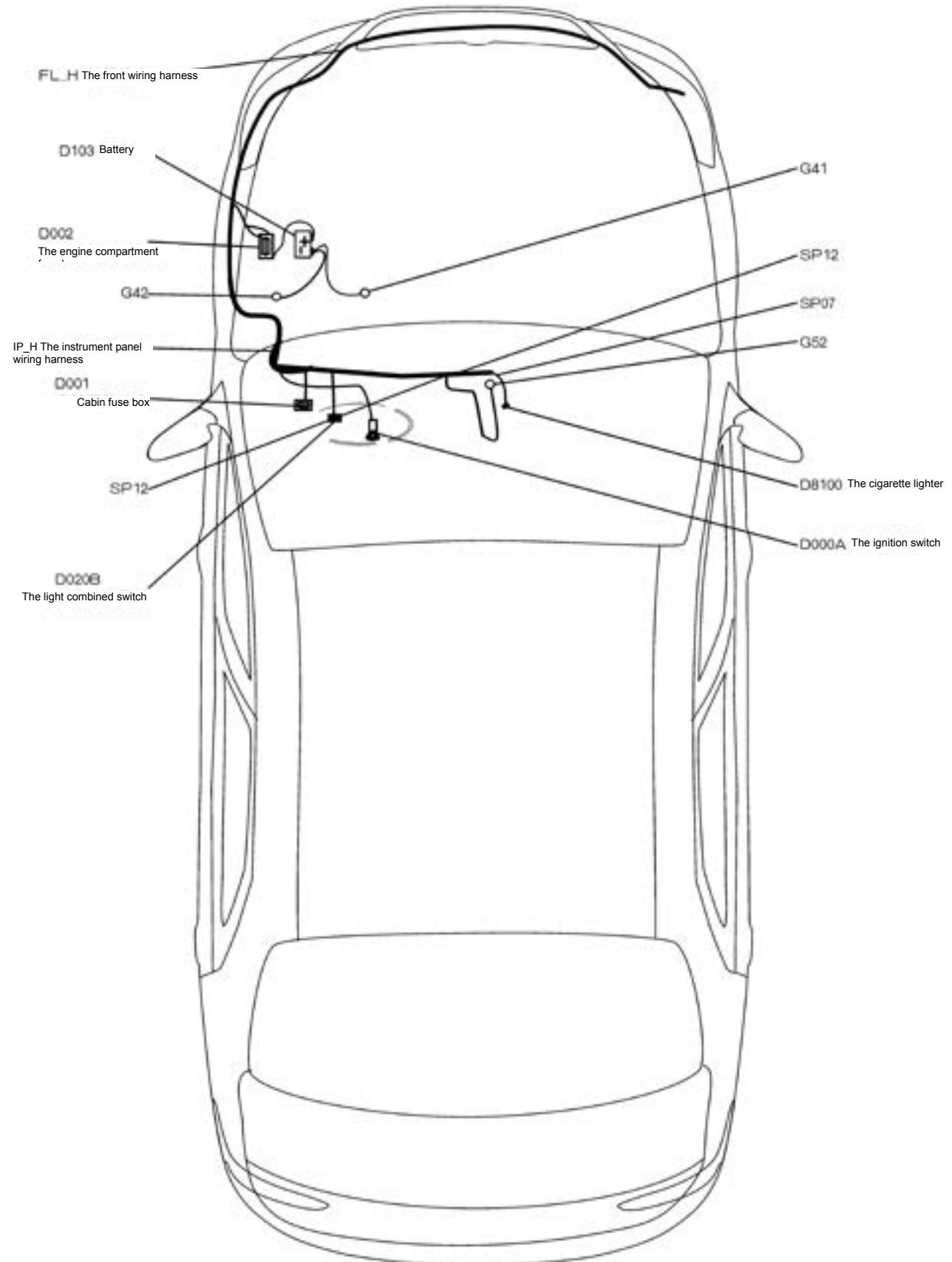
24.3 The electrical schematic diagram for the wind shield wiper and washing pump (S30)



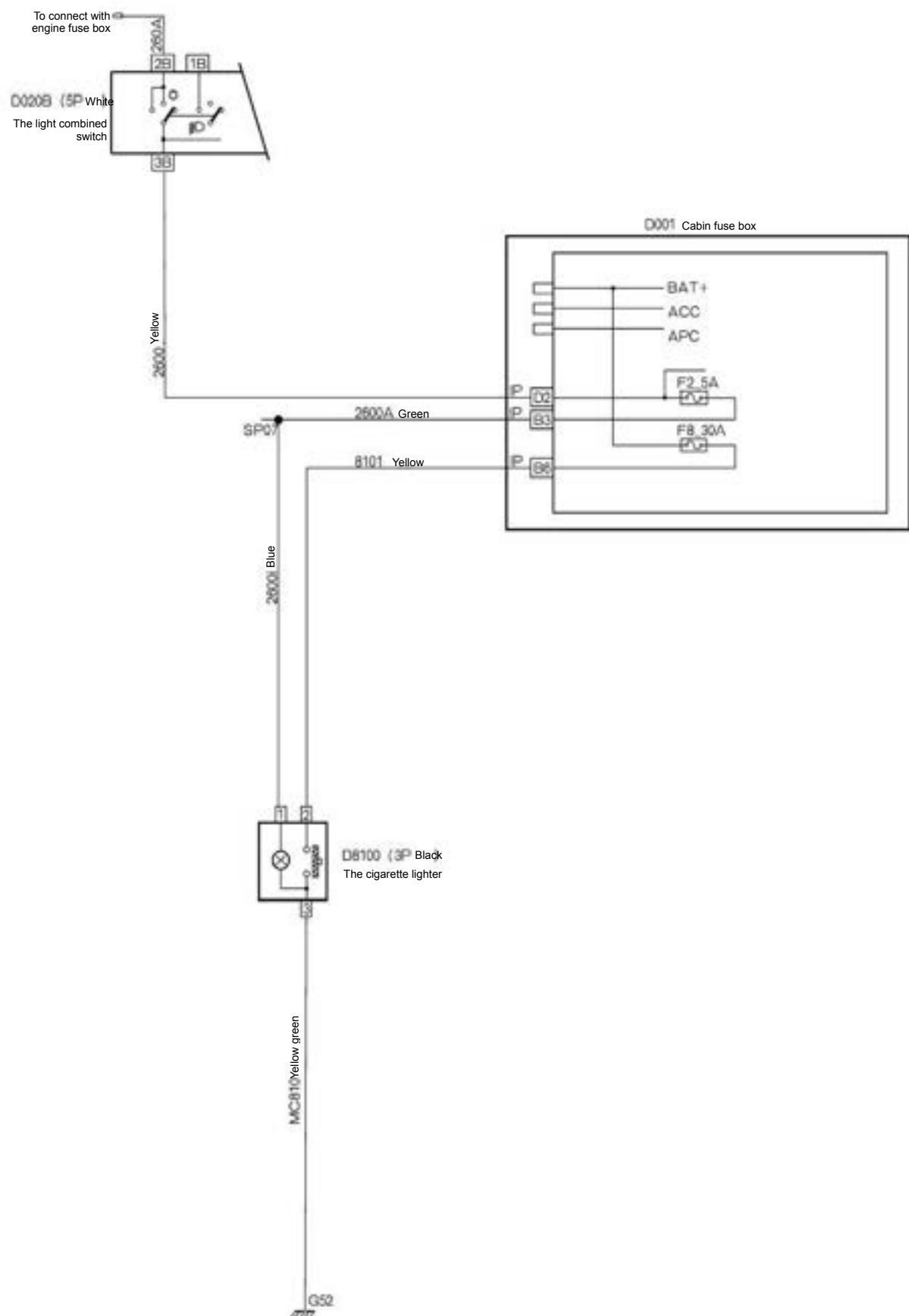
24.4 The electrical schematic diagram for the wind shield wiper and washing pump (H30)



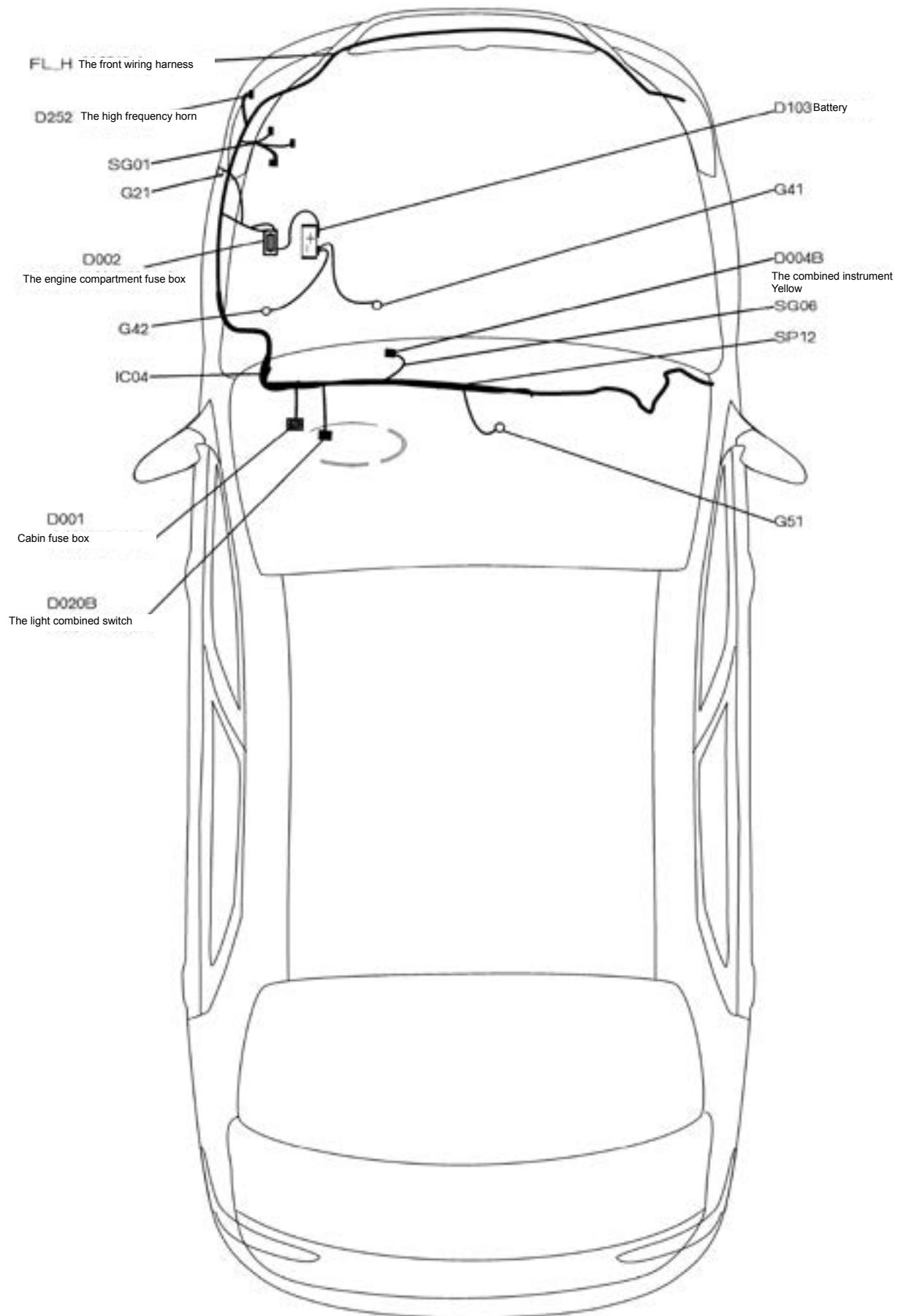
25.1 The electrical location diagram for the cigarette lighter (H30)



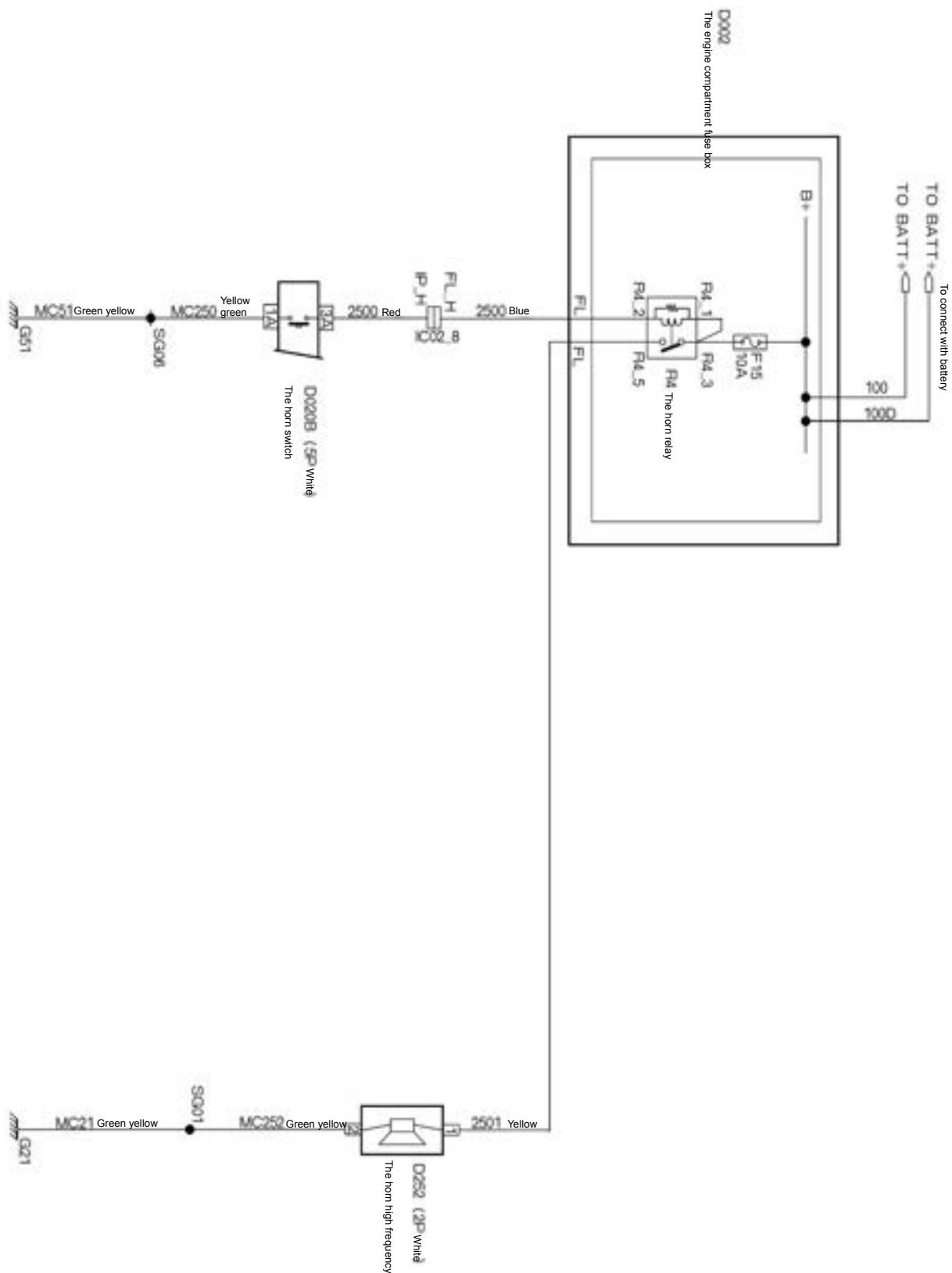
25.2 The electrical schematic diagram for the cigarette lighter S30/H30



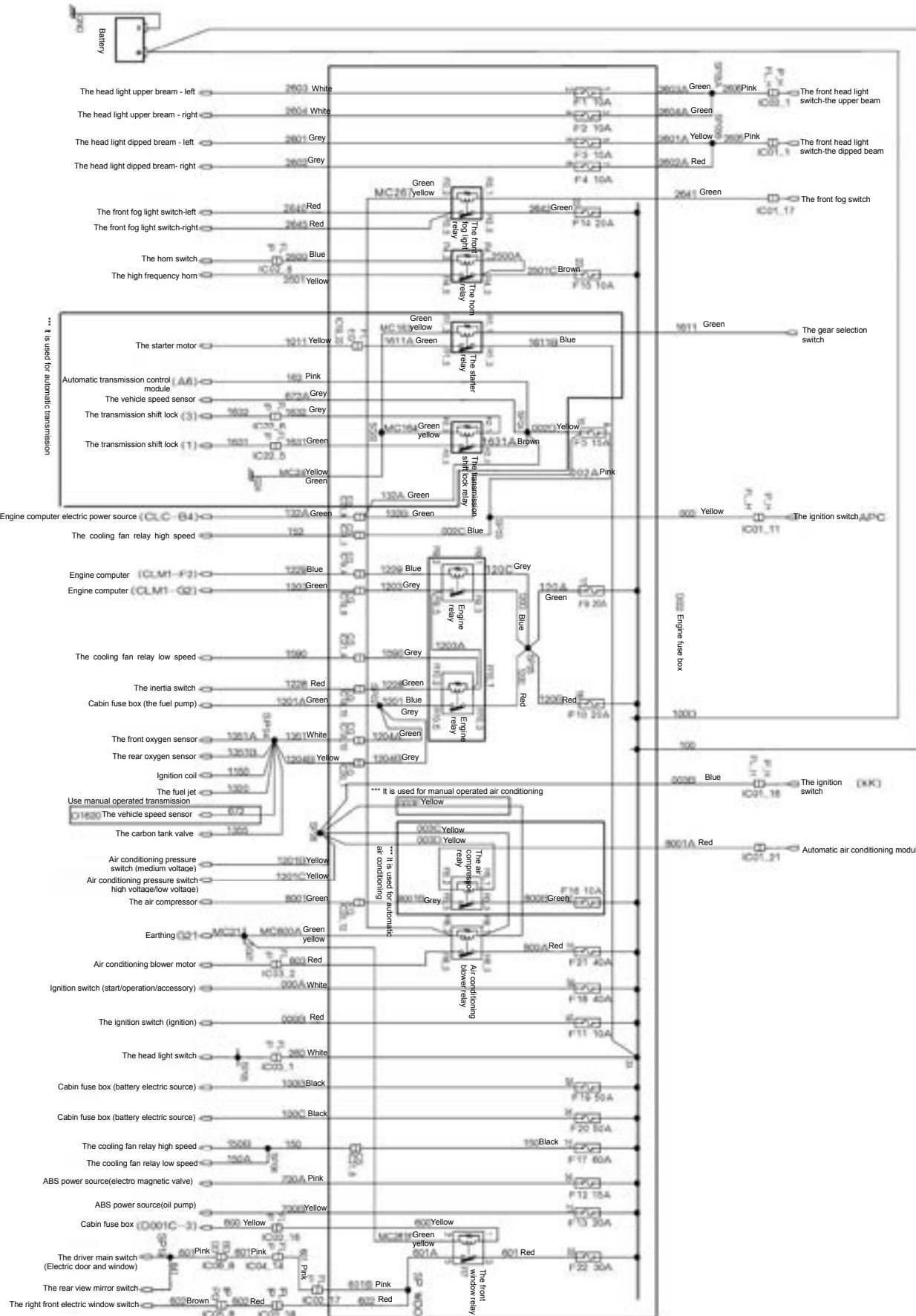
26.1 The electrical location diagram for the horn S30/H30



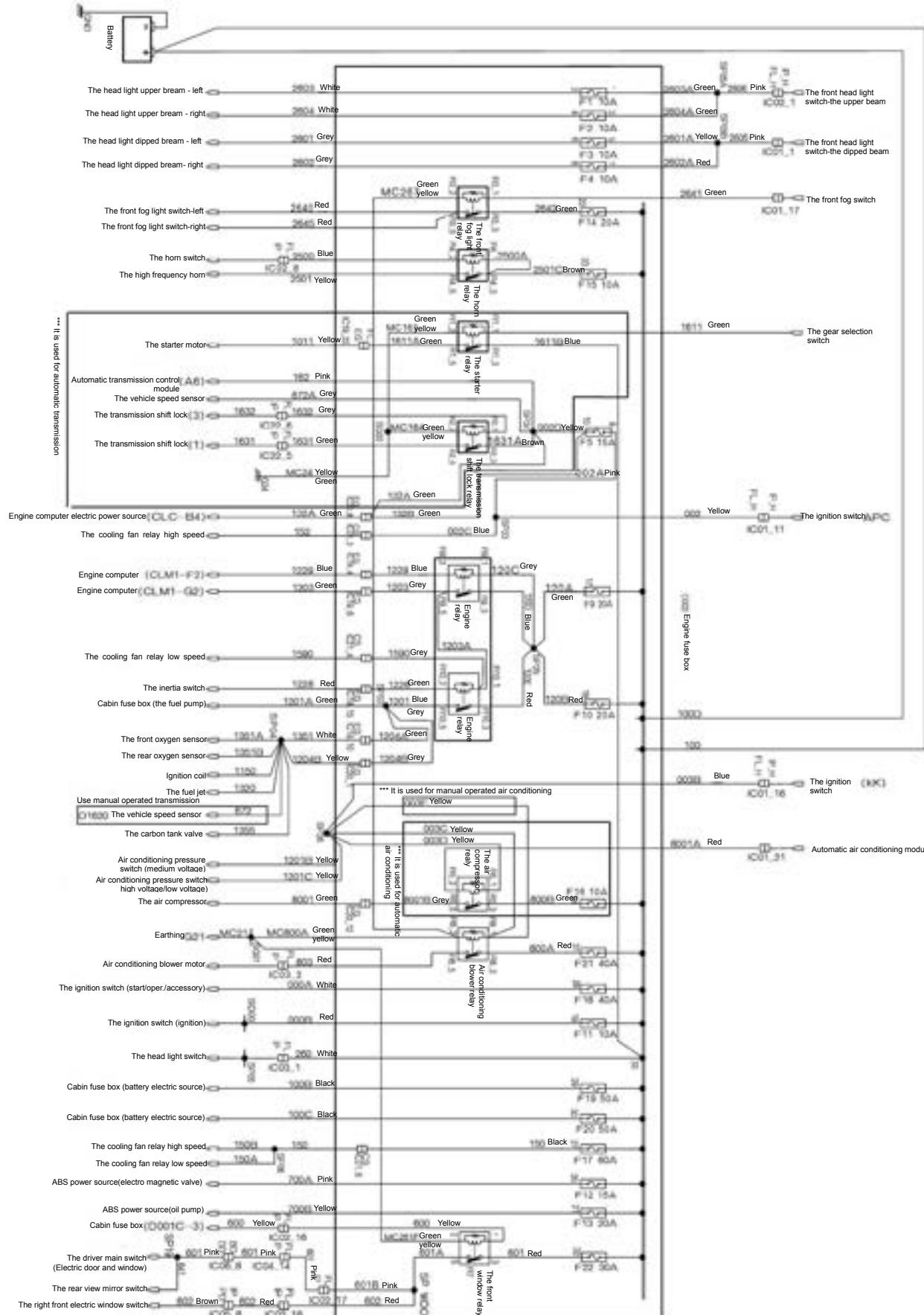
26.2 The electrical schematic diagram for the horn S30/H30



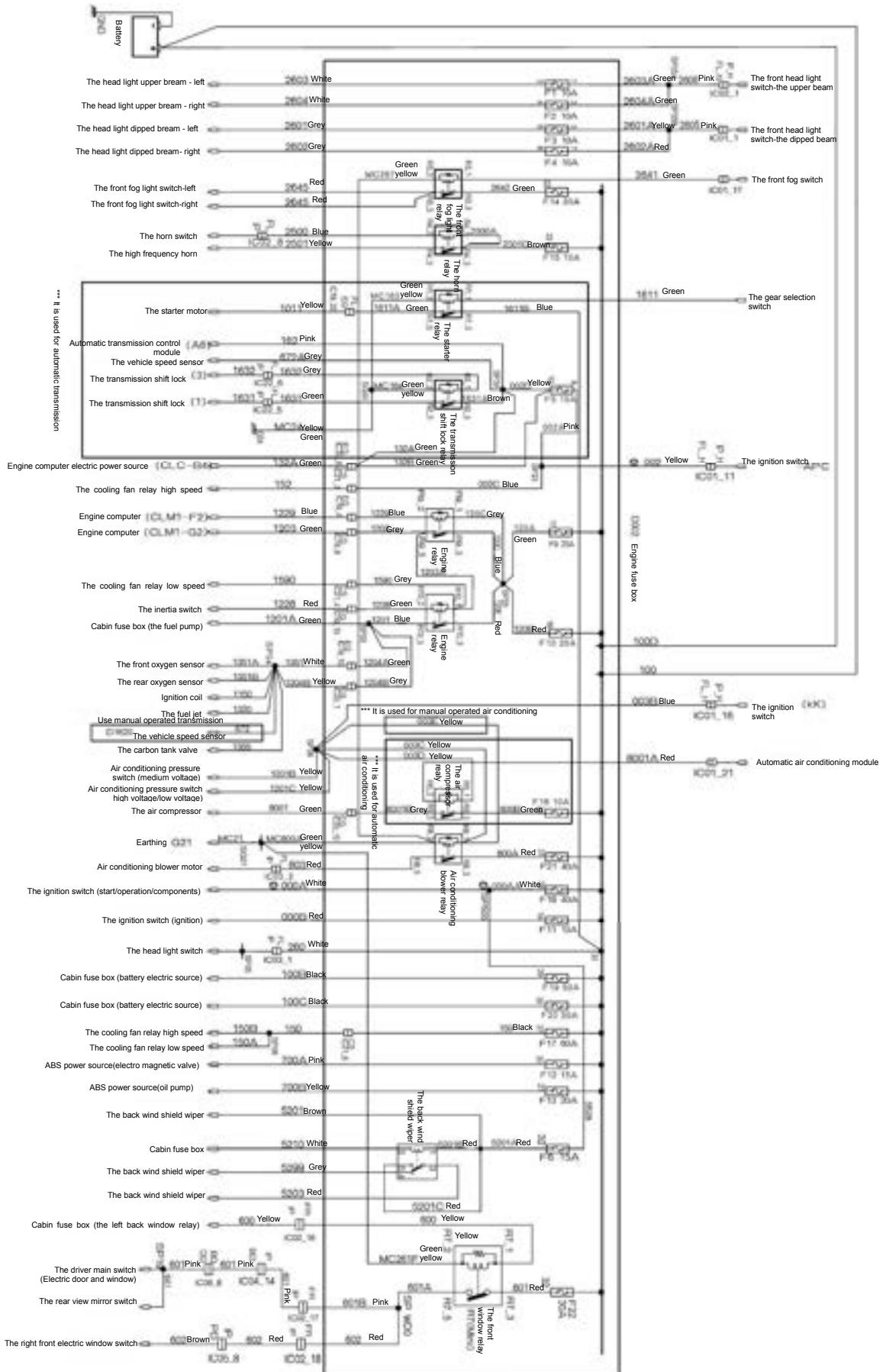
27.1 The electrical schematic diagram for the engine compartment power source distribution S30 (It is applicable to the 6 digits after code VIN, VIN <037670)



27.2 The electrical schematic diagram for the engine compartment power source distribution S30 (It is applicable to the 6 digits after code VIN, VIN ≥037670)



27.3 The electrical schematic diagram for the engine compartment power source distribution H30





Oct. 2010

DONGFENG FENGSHEN/AEOLUS

530 | 630

Maintenance Manual

(Volume IV)

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This manual of maintenance shall be revised and interpreted by the company.

22. Maintenance of Electrical Appliances

Technical Documents for After-sales Services of Dongfeng Motor Corporation

22. Maintenance of Electrical Appliances

Basis for the Maintenance of electrical appliances.....	22-3
1. The battery.....	22-3
2. The generator.....	22-7
3. The starter.....	22-10
4. The engine electronic jet system.....	22-12
5. The instrument system.....	22-53
6. The automatic air conditioning.....	22-56
7. The safety air bag system.....	22-64
8. The automatic transmission.....	22-73
9. The brake locking prevention system.....	22-90

Basis for maintenance of electrical appliances

1. The battery

1.1 The function of the battery

The battery is one of the power sources for the vehicle, it is connected in parallel with the generator, its functions are as follows:

- It is used as the start power source, it supplied the start current to the starter and provides the power to the ignition system when the vehicle engine is started;
- It is used as an auxiliary power source, when the generator is not working properly which has resulted in unable to generate electricity or generate no enough electricity capacity, it shall supply electricity independently or assisting the generator in supplying the electricity to the electricity use equipment;
- It is used for storing power source, it shall change the electric energy of the generator into chemical energy for storing for being used for the next start.
- It is used for stabilizing the voltage, the battery is equal to a capacitor with the large capacity, it can absorb the instant over-voltage in the vehicle Electrical appliances system, with an effect of protecting the Electrical appliances elements. Due to the equipments of Electrical appliances on modern sedan cars are being more and more accurate, so ensuring the battery to be in an excellent state is very important for protecting the equipment of Electrical appliances on the vehicle from the damage by instant over-voltage.

1.2 The basic working principle of the battery

The battery is a lead acid battery, its reaction principle is double-pole vitriol salinization theory. As the battery is electric discharging, lead dioxide and vitriol of anode shall generate vitriol and water, the cathode lead and vitriol shall generate vitriol lead; when the battery is charging, anode vitriol lead and water shall generate lead dioxide and vitriol, and the cathode vitriol lead shall generate the lead and vitriol. The reaction is of reversible reaction.

The battery has the following characteristics during its discharging:

- The discharging shall cause the vitriol concentration in the electrolyte to drop, thus bringing in the drop of the electrolyte density, so it may use the method for inspecting the density of electrolyte as the standard for judging the battery discharging degree and balancing the termination of the discharging. According to the experience, when the density of electrolyte drops for 0.01g/ml, the loss of the battery capacity is about 5~6%.
- The discharging shall increase the vitriol acid of both anode and cathode, and result in the continuous increase of the internal resistance and the drop of electrolyte concentration as well as the drop of the voltage of the battery, in this case, the measurement of the battery and voltage may also be taken as the standard for judging the battery discharging degree and balancing the termination of the discharging;
- Characteristics when the battery is charged are contrary to those of the discharging.

1.3 Characteristics of the battery

The type of the battery is L2 400, the performance indexes as indicated as table below:

The performance of L2 400 type battery	
The type	L2 400
The kind	With charging cell
The capacity 20 hours(Ah)	60
The storage capacity(min)	95
The start current in low temperature (A)	400

The structure of the L2 400 type battery is different to that of the vehicle use battery, it is a fully sealed type, it's unable to supplement the distilled water, it has no blow cock, it has only a air exhaust hole at the side of the battery cover, so it is impossible to indicate the height of the battery electrolyte liquid level. As the indicator is in green, it indicates that the electricity capacity of the battery is not enough, the density of electrolyte is over 1.22g/cm³; If it is black, it indicates that the density of electrolyte is

below 1.22g/cm^3 ; the electricity capacity is not enough, it needs to be charged; If it is colorless, it indicates that the liquid level of electrolyte is quite low, the battery needs to be changed.

1.4 The factors affecting the capacity and lifetime of the battery

- •The influence of the concentration and purity of the vitriol electrolyte: The vitriol electrolyte is not pure, it shall result in the serious self-discharging for the battery and accelerating the corrosion of the clap board and pole plate, shortening the life and lowering the capacity. These harmful substances are: Iron, manganese, chloride, hydrochloric acid, vitriol, sulfate, acetic acid, starch, etc. The concentration of vitriol is too low, with little acid, the capacity is decreased; it needs to appropriately increase the concentration and increase acid and the capacity; The concentration of electrolyte is too high, resistance is increased, the capacity is lowered and corrosion to the pole plate is accelerated. The concentration of the vehicle battery is generally $1.28\sim 1.30\text{g/ml}$.
- The influence of the charging: The charging for the battery is not enough at the first and frequently later on, the vitriol lead shall become very hard dense crystal, when it is charged, it is not easily changed into lead dioxide and lead, and loses the reversible effect, enabling the capacity to lower greatly, it is the phenomenon of vitriol salinization. But, the over-charging shall make the pole plate become loose, and active substances to fall down, and accelerate the corrosion to the plate grille, thus lowering the capacity and lifetime. The general charging capacity of the battery is $110\sim 130\%$ of the actual discharging volume, exceeding 150% is called over-charging.
- Affected by the temperature, within the scope of certain temperature, the life time of the battery shall be extended somewhat along with the rise of the temperature. When $50\sim 60^\circ\text{C}$ is exceeded, the life shall be lowered due to the vitriol salinization and making worse of the corrosion to the anode plate grille.

1.5 The load electricity maintaining of the battery

During the placement of the battery, the phenomenon of the capacity natural drop is called the self-discharging of the cell. The natural self-discharging by harmful impurities of electrolyte is the external factor of the cell, due to the self-discharging caused by anode and cathode plate self-melting being the internal factor for cell self-discharging, the self-discharging is the necessary phenomenon of lead acid battery.

The load electricity maintaining performance for L2 400 battery is very good, its self-discharging is very low, it can be stored for over 6 months under 25°C after being fully charged, the drop of the capacity is very little. As the capacity of the battery is lowered to a certain degree, it needs to be extra charged. Generally, the storage voltage of the battery may not be lower than 12.4V, it is the minimal requirement for avoiding the vitriol salinization.

In its use process, keeping the surface clean of the battery and cleanliness of the terminal is very importance, because if water exists on the cell surface, affected by the trace acid gas discharged by the cell surface, water is in weal acidity, it shall form short circuit current between terminals, and cause the loss of the capacity. The battery used by the vehicle needs to consider the influence of the circuit electricity leakage, sometimes its influence is very obvious, its discharging speed is 6~12 times of the normal self-discharging speed.

1.6 The charging of the battery

L2 400 type battery is a kind of charging battery with liquid, it is can be directly onto the vehicle. But, for extending its use lifetime, when conditions are ripe, extra charging can be conducted, enable the capacity of the battery to be enough.

As the voltage of the battery is lower than 12.4V, extra charging shall be conducted to the battery. Due to L2 400 is fully sealed, water can not be added, it may use constant pressure method to charging L2 400 battery, in order to reduce the loss of water moisture, we propose to use high performance intelligent automatic charging machine to charge the battery.

The charging for a single battery

After the battery is charged in average for each cell terminal voltage to $16\pm0.2V$ with the current of 0.1C20(A), it needs to be charged to current of 0.5C20(A), after the battery voltage of each battery in average reaching $16\pm0.2V$, then charging continuously for 3~5 hours.(C20 indicates the rated capacity of 20 hours). Check after the charging: After the end of the charging, it shall immediately cut off the wiring at two ends, use multi-meter to measure the battery open circuit voltage, if the voltage is less than 12.4V, it indicates that the battery is damaged, it needs to be changed immediately.

Points of attention for charging the battery:

- It is prohibited to use rapid charging method to charge the battery;
- The battery can only be charged after it is removed from the vehicle, it is prohibited to charge when the battery is still on the vehicle.
- Before the charging, it shall check if the air exhaust hole of battery is smooth or in good condition, prevent explosion by blocking. Excellent air ventilation shall be kept during the charging, it is not allowed to have any open fire and combustible substance present.
- During the charging period, the battery shall be placed even and flat, the charging must be firm and solid.
- When ambient temperature is very low, the electrolyte inside the battery shall be frozen, now charging must be conducted after the battery is fully unfrozen, otherwise the danger of explosion shall occur.
- During the charging process, pay attention to watch the battery voltage and the charging current value of the equipment.
- During the charging process, the temperature of the battery case may not exceed 50°C, otherwise it must adopt measures for lowering the temperature(adopt air cool or water cool measures for lowering the temperature).

1.7 Key points for battery regular maintenance

Regular maintenance for L2 400 battery:

- Check if the battery is fixed well on the vehicle, if the case surface has any damage, crack or leakage.
- Check if battery cable is connected reliably, it needs to keep the terminal clean. When it is necessary, Vaseline may be applied, do not use too much torque force when it is tightening, in order to cause breaking of the terminal.
- Regularly check the air exhaust hole if it is blocked by dust, making it to be smooth open, preventing from explosion during the charging caused by blocking.
- It needs to be charged again after long-term storage, it needs to be charged immediately after discharging, over-charging shall be prevented during the charging process.

When the battery is removed, attention shall be paid to the following issues:

- The battery shall possibly occur explosive gas, electrolyte has corrosion, and the battery may possibly occur the current which may burn the skin. During the operation process, observe the correct operation methods, the body, especially the head may not keep too short to the battery, and protective goggles shall be worn. When the electrolyte has contacted with the skin or eyes, it shall be washed away immediately with water, when the situation is serious, go to the doctor for help.
- When it is removed, it needs first to remove the cathode cable joint(earth), then remove the anode joint.
- After anode joint is connected well, before the cathode is connected, it must ensure each element which consumes too large electricity shall be in non-working state. If the spark occurs when it is connected, it indicates that short circuit has occurred or the equipment is working, the following correction measures shall be adopted:
- It shall ensure the terminal to well contact with the joint, the joint and terminal shall be clean and tightly clamped.
- When the vehicle battery is charged again, the battery needs to be removed from the vehicle.

1.8 Common faults

Common faults of battery are as follows: Vitriol salivation, short circuit, breakage, reversed pole, etc. Generally, The loss of effect for the battery due to the following causes is due to the cause of use:

- The pole is connected wrong during the charging, the anode and cathode has reversed pole color.
- The over-charging, the case internal or blow cock color has been obviously changed yellow, the base of the battery has obvious paste peeling phenomenon.

- The concentration of electrolyte is high.
- It is not tightened well, with excessive vibration.
- The battery has fire due to short circuit.
- The liquid level of electrolyte is low.
- Vitriol salination, each single performance is lagging behind due to not timely charging or not enough charging.

1.9 The check of the battery before the whole vehicle being sold out

1.9.1 Before the new vehicle arrives the final user, as for the vehicle in warehousing for over one week, the cathode line of the battery must be taken away, if the battery in warehousing for over three months (camel battery is for one month), regular check must be done according to the provisions, the battery without enough electricity shall be extra charged, it needs to avoid impossible charging or difficult charging due to overdue. Adopting portable Electrical appliances charging refers to operation manual for the portable charger. This requirement is applicable to turnover warehouse and dealer.

1.9.2 Before the new vehicle is delivered to the final user, it needs to check the battery open circuit voltage, the voltage shall not be lower than 12.4V (Z9Camel battery is 12.5V), charging shall be conducted when it is lower than 12.4V.

1.9.3 When the service station treating the maintenance business fro the battery shall first check if the appearance has any of the following problems:

(1) Crack; (2) Terminal with acid; (3) Vent hole is blocked; (4) The cock is leaking the liquid.

When above checked are conducted, it may distinguish the difference sales state (before the sales and after sales) for the whole vehicle, record the chassis number, factory date, the charging date on the anode terminal, the driving miles, description of users' defects(the last two items aim at the situation after sales), in order to meet the requirements of traceability for the product.

Check the open circuit voltage not less than 12.4V (the camel battery is 12.5V), when it is lower than 12.4V, it needs to charge the battery with charging equipment.

1.10 Check on the battery after sales of the whole vehicle

As to the faults of vehicle unable to be started or difficult to be started after repair claimed by the customer, it needs to be checked by the service station, if it is confirmed to be caused by battery, it shall be repaired according to the following processes:

1.10.1 Check the appearance of the battery.

1.10.1.1 Check if the vent hole is blocked, the vent hole is maintenance working smoothly.

1.10.1.2 Check if the cable and connector has any phenomenon of oxidation and corrosion, and if the connection of the cable and connector is tight, if it is loose, it must be tightened.

The treatment methods for oxidized and corrosive cable and connector: Remove the cable from battery connector, and use steel wire brush to respectively remove the corrosive substance and oxidation coat from the cable and connector, and clean the cable and connector, coat grease first, then connect them.

1.10.1.3 The battery with serious acid and leakage shall be changed.

1.10.2 Measure the static current for the whole vehicle (adopt with a precision of 0.1mA current to measure), the measurement value less than 13mA is normal. If the measurement value is over 60mA, it needs to be repaired timely. If the deficiency in electricity for the battery is caused by excessive big static current by the user, it must be corrected, and explain it clearly to the user.

1.10.3 According to the working principle of the vehicle charging system, check the generator and remove the fault of the generator and relevant parts.

Check methods: Start the engine (when it is necessary, it needs to check the emergency battery start), enable the rotation of the engine to stay stably at 2000/min, measure the battery voltage U, it is qualified when it is 14.8V over V over 14V.

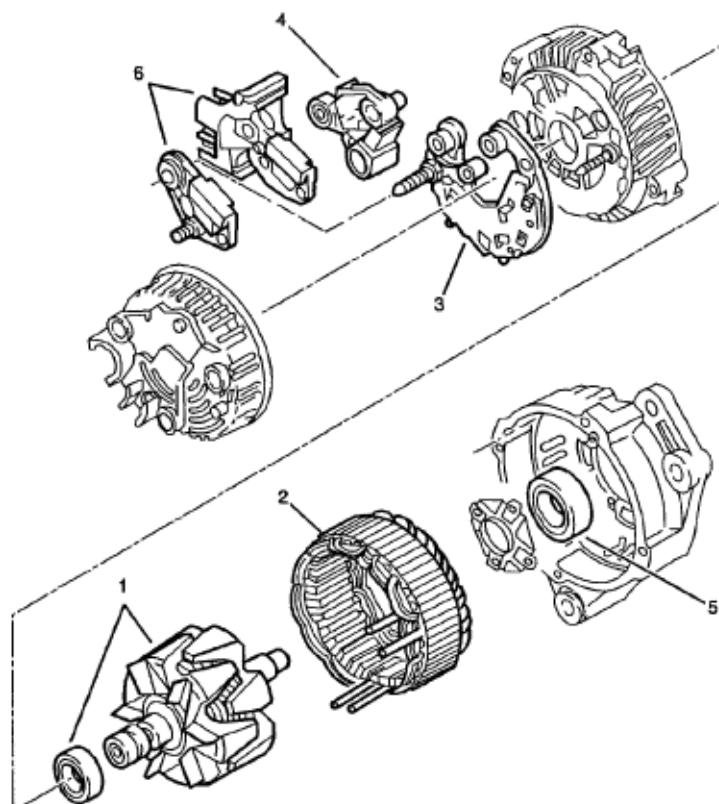
1.10.4 As to battery whose open circuit voltage is less than 12.4V (camel battery is 12.5V), the vehicle may be started. Use engine to charge, as to battery whose open circuit voltage is less than 11V, must use the method of constant voltage and current limit to conduct charging.

2. The generator

2.1 The structure of the generator

The generator is the main power source of the vehicle, when the engine is operating, it is using pulley drive generator to generate electricity. When the generator is generating electricity normal, except supplying electricity to the electricity use equipment, it shall also charging the electricity to the battery, in order to compensate the electricity consumption of the battery during the start up, and ensure the battery to have enough electricity capacity for starting the generator next time.

The generator mainly concludes rotor (magnetic pole), stator (armature), rectifier, regulator, electric brush and brush frame, etc, the composition is as the Fig. below:



1. Generator rotor. 2. Generator stator. 3. Rectifier bridge. 4. Generator regulator. 5. Generator bearing. 6. Anode wiring terminal.

Fig. 2.1 General structure

The generator is a 12V 9+ class AC generator of JFZ19 19 type, the output current is 110A, for adjusting in-set silicone rectification double-internal fan generator in the regulator, the main features are as follows:

- The low noise and in-set fan provides excellent self-cooling function.
- The structure of whole carbon brush and integrated environment protection and dirt-proof.
- The power supply of the rectifier bridge has a little disturbance.
- With a collecting ring of small diameter and low speed, it shall increase the carbon brush use lifetime.
- The adjustment output voltage of the integrated circuit regulator is stable, with automatic temperature compensation, and with extremely small current leakage.
- The external independent plastic cover provides high maintenance performance for the electric apparatus parts.
- The case sealed stator, it reduced electromagnetic noise.
- The working temperature is wide, from -40°C to 105°C.

2.2 The fault of the generator and the judgment

Parts losing effect	The fault phenomena	Mode of losing effect	Cause for losing effect	Repair methods
Regulator	The battery charging alarm light is not on, it can not generate electricity	The regulator is not be connected well ($R_{dr} + GND$) $1MQ$)	The proposed amplifying circuit of the power tube has lost the effect.	The regulator is to be changed.
Regulator	During the static state, the battery charging alarm light is on, the voltage regulation is not be controlled, it gets higher along with the increase of the rotation speed, now it shall first determine that if the battery is in good state (confirm the battery voltage $\geq 11.0V$, and electrolyte is within the stipulated range, and can start the engine normally, otherwise, it shall first change the battery, then test if the generator voltage is normal.	The regulator is broken down ($R_{dr} + GND$ 100Ω)	The power tube is impacted by the large current or high voltage.	The regulator is to be changed.
The brush frame	The engine output is not enough or the the start generating rotation of the generator is too high, and the regulation voltage fluctuates.	Bad contact after the carbon brush is ruptured	The carbon brush is ruptured	The carbon brush is to be changed.
	The charging alarm light is not on, blinks or output is too small and voltage is instable.	The collecting ring jumps are too big, which have caused carbon brush move too frequently, and the lead line fatigue rupture or the quality problem for the lead line itself.	The rupture of the carbon brush lead line.	The carbon brush is to be changed.
	The generator output is too small, carbon brush noise is increased, the lost carbon powder is too much, all of this may possibly break down the collecting ring.	The carbon brush is worn due to long time operation.	The carbon brush is excessively worn away.	The carbon brush is to be changed.
The rectifier bridge	The battery discharging and charging alarm light is not on.	The insulation of the anode and cathode pole plates have lost effect.	The anode and cathode pole plates are short circuits, the reverse resistance is $<1K\Omega$.	The rectifier bridge is to be changed.
	The charging alarm light is not on, the generator sound during the operation is low, if it is operating too long, it shall result in the stator being black, insulation paint being aged and broken down.	Too high ambient temperature, too high reverse voltage and big positive going current.	The anode plate diode are broken down and the reverse resistance is $<1K\Omega$.	The rectifier bridge is to be changed.
	The charging alarm light is not on, the generator sound during the operation is low, if it is operating too long, it shall result in the stator being black, insulation paint being aged and broken down.	Too high ambient temperature, too high reverse voltage and big positive going current.	The anode plate diode are broken down and the reverse resistance is $<1K\Omega$.	The rectifier bridge is to be changed.
The rectifier bridge excitation diode	The charging alarm light blinks, output current is not enough.	The welding point contact is not good, or ambient temperature too high which has caused welding point to open and detinned.	The welding point is in open circuit.	It needs to be welded again.
	The charging alarm light blinks, generally one excitation diode losing the effect shall result in other two excitation diodes to lose effect all together.	The ambient temperature is too high, with big current impact and over-voltage.	The excitation diode is short circuited, and the reverse resistance is $<1K\Omega$.	All three excitation diodes are changed
Collecting ring	The battery charging alarm light is not on, the generator can not generate electricity.	The carbon is collected too much, and carbon brush is broken, carbon brush has caused the collecting ring to be short and the insulation of collecting ring has lost the	The collecting ring copper rings are short circuited, and resistance is $<1K\Omega$.	Change the carbon brush frame or remove the collecting ring oxide coat with

Parts losing effect	The fault phenomena	Mode of losing effect	Cause for losing effect	Repair methods
		effect.		fine sand paper.
	The battery charging alarm light is not on, the generator can not generate electricity.	The too high ambient temperature has caused the welding point to lose the welding and occurred defects.	The outgoing lines of collecting ring and magnetic field coil are in open circuit, or magnetic filed coil is broken, during the measurement, the resistance at both ends of the collecting ring or magnetic field coil is over 100Ω .	Newly weld or change the rotor when the magnetic filed coil is in open circuit.
The stator	The generator sound is low, and output is not enough.	The ambient temperature is too high, and stator coil circles are in short circuit, or the earthing, stator outgoing line has foreign materials, which has caused the generator operating for a long time after earthing and rectifier bridge are in short circuit.	The stator coil changed to black color.	Change the stator, if the rectifier needs also be changed if it has lost the effect.
Rotor	The belt skids, and generator is not generating electricity.	Too high ambient temperature has caused abnormal rising of the generator internal temperature, rotor coil circles are in short circuit, or the earthing, bearing losing effect has caused the rotor deviating the center, friction of the stator and rotor, after the rectifier has lost the effect, the internal circulating flow of the stator and too high temperature rise have burned the rotor coil.	The rotation is not flexible, the rotor coil and frame are burned, and claw pole is worn too much.	Change the rotor.
The bearing	The noise of the generator bearing	Under the conditions of too high working temperature or the generator in short circuit internally, the long time operation has caused the bearing temperature to rise too high, and the great lose its effect. After the generator is dipped in water, water into the bearing shall result in the fatigue point corrosion.	The rotation is not flexible, the bearing oil is dry.	Change the bearing.

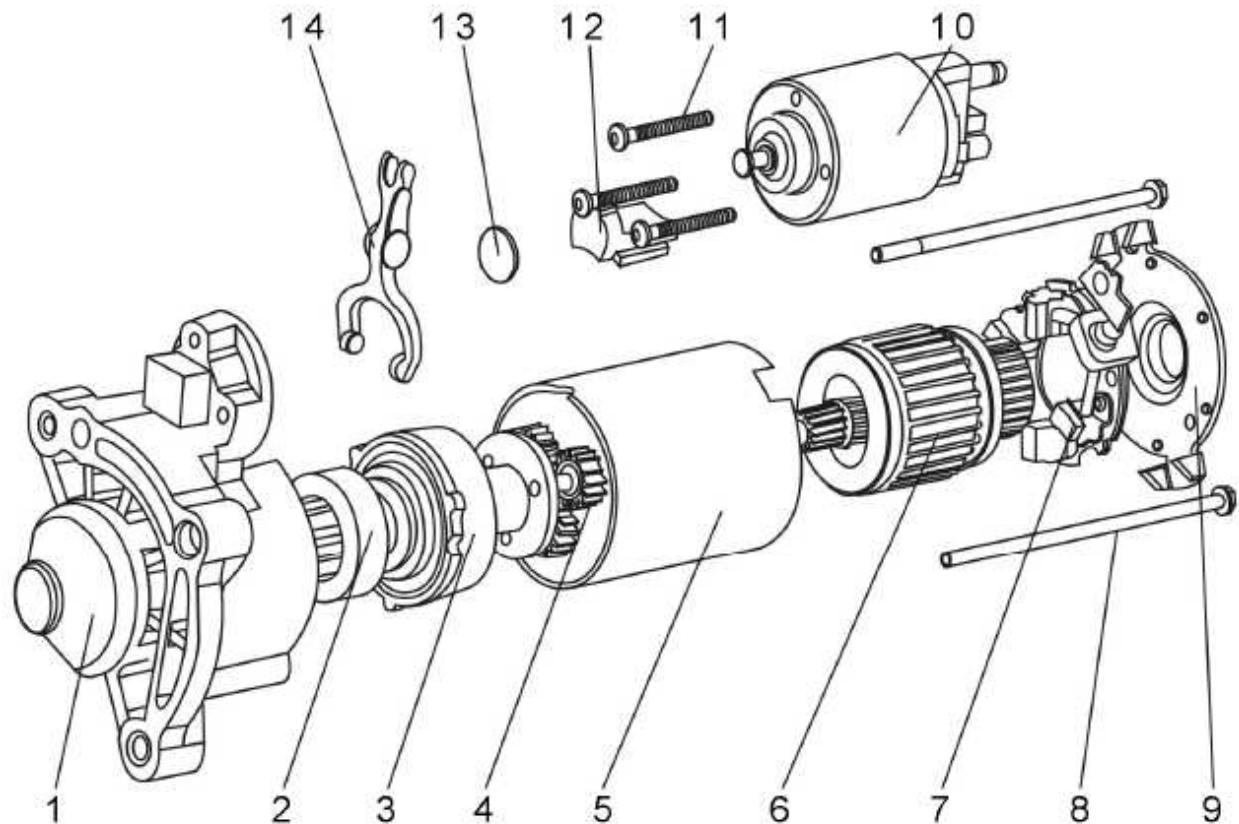
2.3 Reply to common problems

The mechanical noise of the generator are mainly from the bearing, carbon brush, fan, after the vehicle having driven a certain number of miles, due to normal noise for the bearing and the carbon brush, the noise is increased to certain degree, the noise of the fan has almost no changed. Of which, the carbon brush noise is reversible or changed be repair well. Generally no adjustment shall be made if the noise can not be heard inside the vehicle. The judgment of the bearing noise shall be optimally judged by experience serviceman in mechanics. The main features of the bearing noise embody as the mechanical collision sound with click, but, it is not so sharp as that of the carbon brush noise. In most cases, the bearing with the noise has not been damaged, because the vibration and temperature of the generator during the use process will cause uneven deformation, enabling the bearing internal and external circles not concentric, and resulted in the same noise and frequency like the generator rotation speed, this situation shall not affect the bearing use lifetime. If the noise is very little, it needs no maintenance. If it needs to be maintained, it shall first remove the rectifier bridge, regulator and other electronic elements, and make the generator belt pulley end face the ground, and place evenly on the ground or on the table, use wood hammer to lightly beat the cover to close to the bearing position, it shall remove the noise accordingly.

3. The starter

3.1 The basic composition of the starter

The role of the starter shall change the battery electric energy into electromagnetic torque, drive the engine, enable the engine to start working. The starter is mainly composed of DC series excited generator, drive mechanism as well as electromagnetic switch these three sections:



1. The drive end cover
2. isolator
3. The drive shaft assembly
4. The stator assembly
5. The armature assembly
7. The brush frame assembly
8. Tightening bolts
9. Back cover
10. The switch height
11. The switch height screw
12. The seal block
13. Poking fork baffle
14. The poking fork

Fig. The basic composition of the starter

- DC series excited starter: The generator is the power source of the start, it shall change the battery electric energy into electromagnetic torque.
- The drive mechanism: The drive mechanism enable the starter to realize single direction power transfer, during the start, it shall transfer the electromagnetic torque of the starter to the engine fly wheel through decelerating planetary gear; And after the engine is started, then it shall automatically cut off the engine to pass the power reversely to the starter.
- The electromagnetic switch: The electromagnetic switch is a start control mechanism, used for controlling the meshing and separation of the start drive gear and engine fly wheel as well as cut off the starter circuit.

3.2 The type and performance parameters of the starter

The starter is a 12V class 3 starter, its performance parameters are:

- The starter power: 1.3KW;
- The drive gear: 9 teeth.

3.3 Analysis on the fault of the starter

The fault phenomena	Mode of losing effect	Cause for losing effect	Repair methods
The started is not rotating when it is started.	Fault of power supply	The battery has little electricity.	Charge or change the battery.
	Fault of the line	The contact between the battery terminal and the cable joint, the starter terminal and cable joints is bad.	Connect again for ensuring excellent connection.
	Fault of the starter	The contact of the commutator is not good, the armature wiring is broken.	Check or change the starter.
	Fault of The ignition switch	The ignition switch line is loose or internal contact is not good.	Check or change the ignition switch.
The starter rotation is not powerful	Fault of power supply	The battery has little electricity.	Charge or change the battery.
	Fault of the starter	The contact of the commutator is not good, the armature wiring is broken.	Check or change the starter.
The starter is rotating in idle	The engine fly wheel tooth ring not working well.	Rotate the engine fly wheel to another angle for start again, the fault shall disappears, but, sometimes, it shall appear again.	Change the engine fly wheel.
	Fault of the engine	The isolator clutch poking fork is damaged.	Check or change the drive shaft assembly.
The engine is not rotating when it is started, and drive gear moves axially.	Fault of power supply	The battery has little electricity.	Charge or change the battery.
	Fault of the line	The contact between the battery terminal and the cable joint, the starter terminal and cable joints is bad.	Connect again for ensuring excellent connection.
	The absorption of electromagnetic switch is not firm.	The electromagnetic switch keeps the coil in broken, short circuit or the bonding	Check the engine electromagnetic switch.

4. The electronic jet system for the engine

4.1 basic principle for ME7 system

4.1.1 The system description: The management system for ME7-Motronic engine

The engine management system is usually mainly composed of the sensor, the engine computer (ECU) and actuator, for conducting the control on the absorbed air volume, oil jet volume and the ignition lead angle when the engine is working. The basic structure is as Fig. 4.1 below:

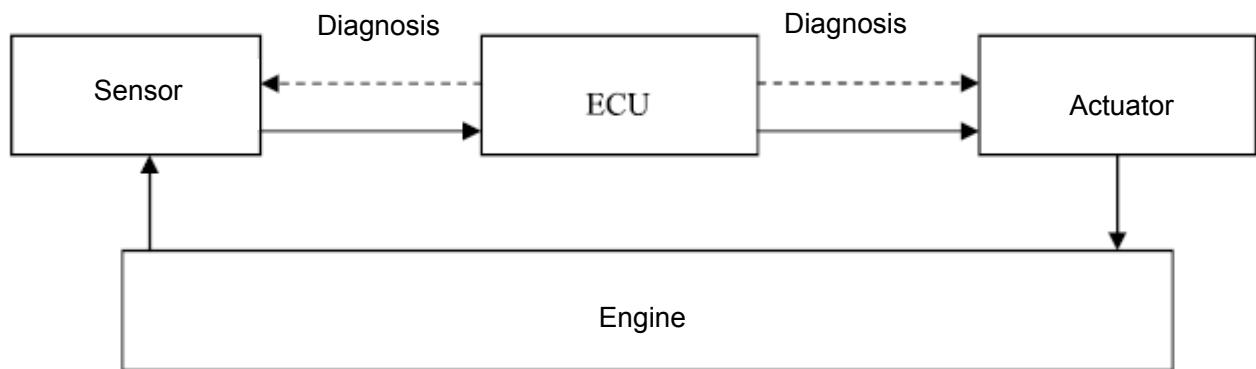


Fig. 4.1 The composition of the engine electric control system

In the engine electric control system, the sensor as part of the input is used for measuring various kinds of physical signals (the temperature, pressure, etc), and changing into relevant electric signals; The role of ECU is to receive the input signal of the sensor, and conducting calculation processing according to the set procedure, and producing relevant control signal output to the power drive circuit, the power drive circuit shall actuate different acts through driving each actuator, enabling the engine to operate according to the control strategy being already set. At the same time, the fault diagnosis of ECU shall monitor each part or control function in the system, as soon as the fault is detected and confirmed, the fault code shall be stored, when the detected fault is solved, then the normal value shall be recovered for use.

The maximal characteristic of ME7 engine electronic control system is using the control strategy based on the torque. The main aim of the strategy for mainly controlling the torque is to connect together a lot of different control aims. This is the only way, based on the engine and vehicle type, flexibly to select and integrate various kinds of functions into the different changed types of ECU.

In the system of mainly on torque, all of these functions reflect the driver needing the act of the specific engine torque, the control system of ME flexible reaction and mainly on the torque can arrange all the requirements according to the preferential sequence, and actuate one most important requirement. It is the structural advantage of mainly based on the torque. All functions shall provide the requirement of the torque independently.

The structural drawing of ME7 engine electric control system is as indicated by Fig. 4.2 below:

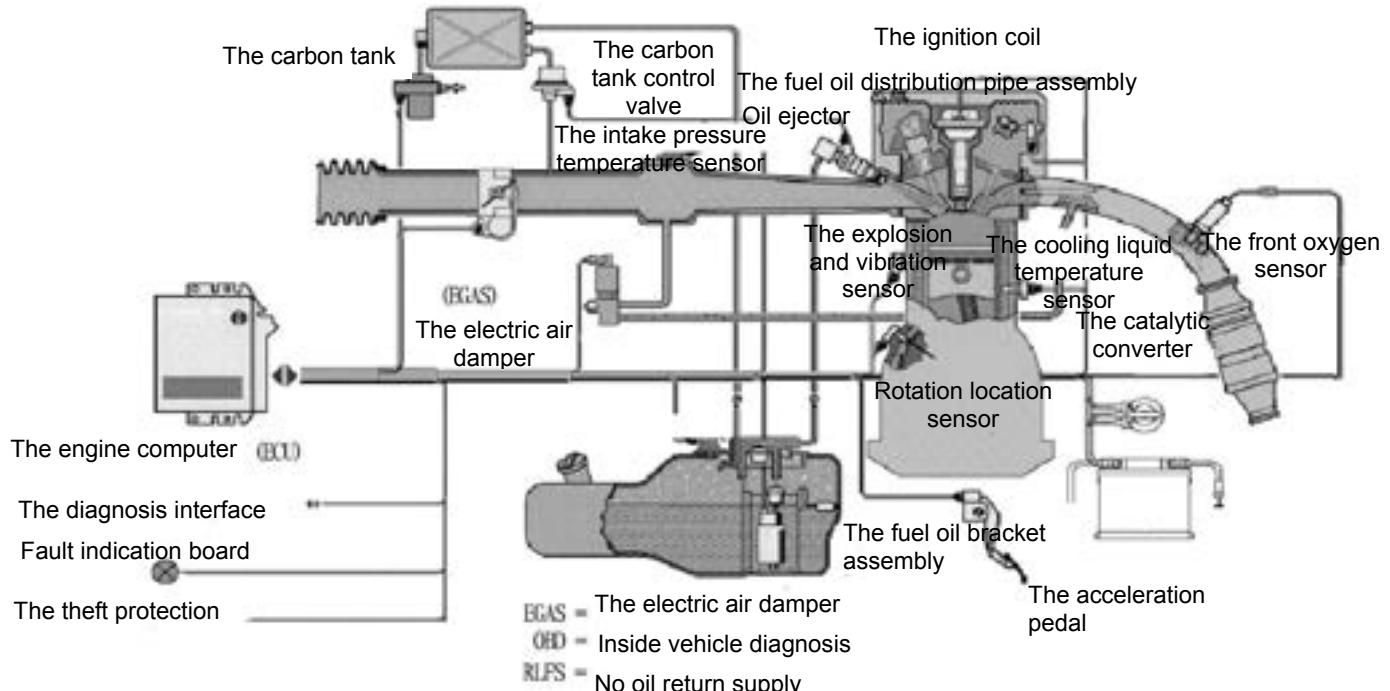


Fig. 4.2 The structural drawing of ME7 engine electric control system

ME7-Motronic engine control system is an electronic steering gas engine control system, it provides a lot of control features relating to operation and vehicle or equipment, the system is adopted the mode of combining the open loop with the closed loop (feed back), it provided various kinds of control signals to the operation of the engine. Its main functions are as follows:

1) The basic management function applying the engine of physical model

- The system structure based on mainly the torque;
- Use the intake pressure sensor/air flow sensor to determine the cylinder load volume.
- It has improved the mixed air control function under the static and dynamic states.
- λ closed loop control.
- The fuel oil to be ejected according to the cylinder sequence.
- Ignition timing, includes control according to cylinder sequence.
- The discharge control function.
- The catalyzer heating.
- The carbon tank control.
- The idle speed control.

2) Additional functions

- The engine control theft protection function.
- The connection for the torque and external system (such as: the dynamic control of the drive mechanism or the vehicle).
- Control for several kinds of engine spare parts, VVt and turbine boosting, etc.

3) OBD diagnosis

- Complete a series of OBD diagnosis functions.
- The management system used for diagnosis functions.

4.1.2 The torque structure: Based on ME7 system of the torque control

In the engine management system of ME7 mainly based on the torque, all external requirements and internal requirements of the engine are defined by the engine torque or efficacy, it is indicated as Fig. 4.3. Through changing various kinds of requirements of the engine into the control variable of the torque or efficacy, then these variables shall be first processed in the central torque requirements coordinator module. ME7 system shall arrange these contradictory requirements according to preferential sequences, and actuate the most important requirement, through the needed oil ejection time, ignition timing obtained by the torque changing module and engine control parameters. The actuation of controlling variable has no impact on other variables. These are advantages of the control system mainly on the torque.

While conducting the engine matching, due to having variable independence nature based on the torque control, during the matching of the engine curve and pulse spectrum drawing, it relied only on the engine data, it has no any interference with other functions and variables, therefore, it has avoided repeated demarcation, and simplified the matching process, and lowered the matching costs.

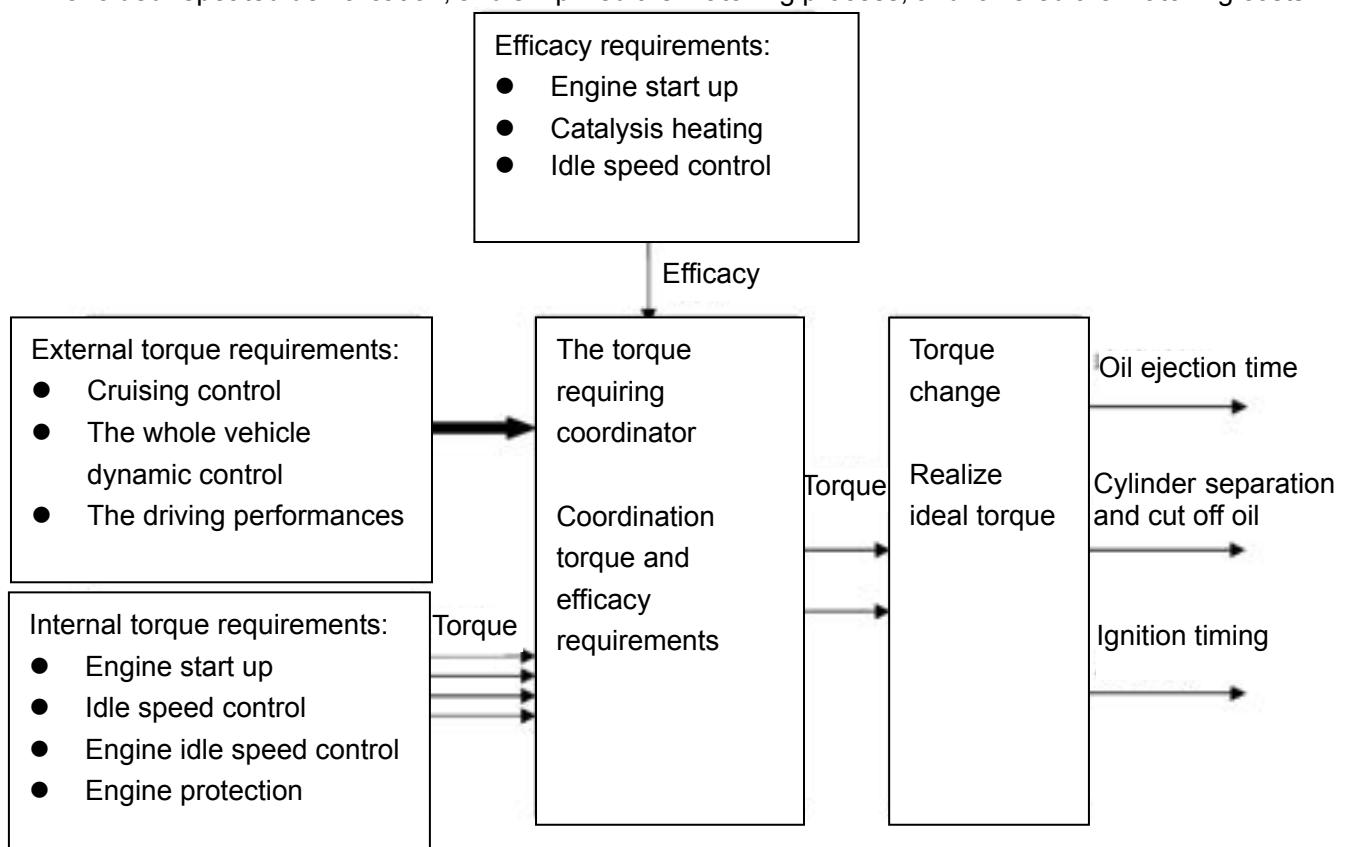


Fig. 4.3 The system structure of ME7 mainly based on the torque

In comparison to former M series engine electrical ejection management system, main features of the ME7 system are as follows:

- The new engine functional structure taking the torque as the variable is very easily compatible to other systems, with strong expansibility.
- The new module software structure and hard ware structure has a strong transplanting nature.
- The basic engine feature drawing based on the model is mutually independent, it has simplified the demarcation process.
- It has the phase sensor, sequence fuel oil ejection, which is favorable to improving the discharge.
- The system has integrated theft-protection function.
- Through centralized coordination of various kinds of torque requirements to improve the driving performance.
- 16 digits central processor, 24 megahertz clock frequency, 512K buffer memory.
- The system may conduct the expansion according to the future need and more strict diagnosis requirements, such as the discharging rules and regulations later on.

4.2 The control signal: ME7 system input/output signal

The main sensor input signals of ECU in ME7 system include:

- The intake pressure signal
- The acceleration pedal signal
- The intake temperature signal
- The air damper corner signal
- The cooling liquid temperature signal
- The engine rotation speed signal
- The battery voltage
- The brake signal
- The transmission shift signal
- The phase signal
- The explosion and vibration sensor signal
- The oxygen sensor signal
- The vehicle speed signal
- Air conditioning pressure signal

After above information have entered into ECU, all the actuator control signal needed by the processing, these signals will be amplified in the output drive circuits, and transmit to each relevant actuator, these signals include the following items:

- Electronic air damper openness
- Oil ejection timing and ejection lasting time
- The oil pump relay
- Main relay
- The carbon tank control valve openness
- The ignition coil closed angle and ignition lead angle
- Air conditioning compressor relay
- The cooling fan relay

4.3 Introduction to the system functions

- The start up control
- The heating control for warming the engine and catalytic Converter
- Control for acceleration and deceleration and reverse towing cut-off oil
- The idle speed control
- λ closed loop control
- The evaporation discharge control
- The explosion and vibration control

4.4 The intake pressure temperature sensor



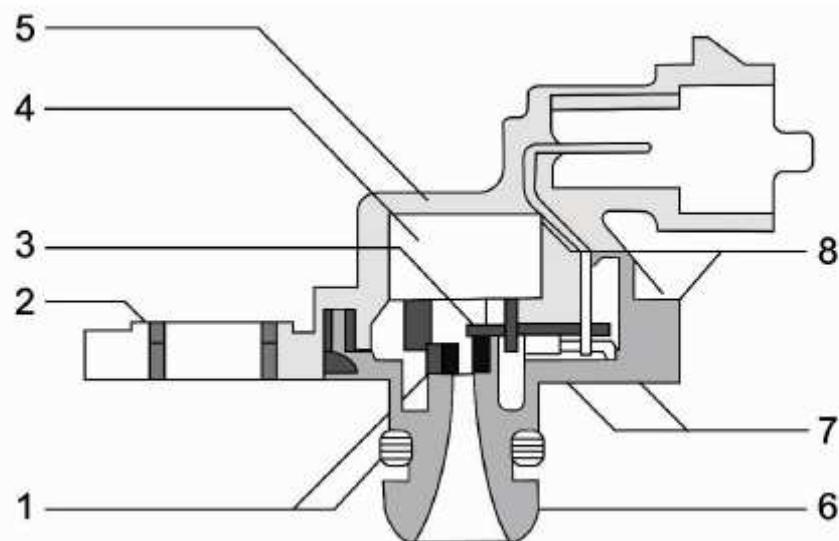
Fig. 4.4 Outline for the intake pressure temperature sensor

4.4.1 The working principle

The intake pressure temperature sensor is composed of two sensors, namely the intake pressure sensor and intake temperature sensor, fixed on the intake manifold branch.

The intake pressure sensing element is composed of one silicon chip. A pressure membrane is etched on the silicon chip. The pressure membrane has 4 piezoelectric resistances. These 4 piezoelectric resistances as the emergency element composes one Huiston bridge. Except this pressure membrane on the silicon chip, it has also integrated the signal processing circuits. The silicon chip and one metal case compose a closed reference space, the gas absolute pressure inside the reference space is near zero. It has formed a micro-electronic mechanical system. The active face of silicon chip shall bear the pressure near zero, its back shall bear the absolute pressure of intake manifold to be led in by a connection pipe and be measured. The thickness of the silicon chip is only several micrometers, so the change of the intake manifold absolute pressure shall make silicon chip occur mechanical deformation, and these 4 piezoelectric resistances will be deformed accordingly, and their resistance values will also be changed. After the circuit is processed through the signal processing of silicon chip, it shall form the pressure signal in linear relationship to the pressure.

The intake temperature sensing element is a resistance of negative temperature coefficient (NTC), the resistance shall change along with the intake temperature, the sensor transmits a voltage indicating the intake temperature change to the controller.



1. The sealing ring 2. Stainless steel bush 3. PCB plate 4. Sensing element 5. The case
6. The pressure bracket 7. Welding connection 8. Binder connection

Fig. 4.5 The profile chart for the intake pressure temperature sensor

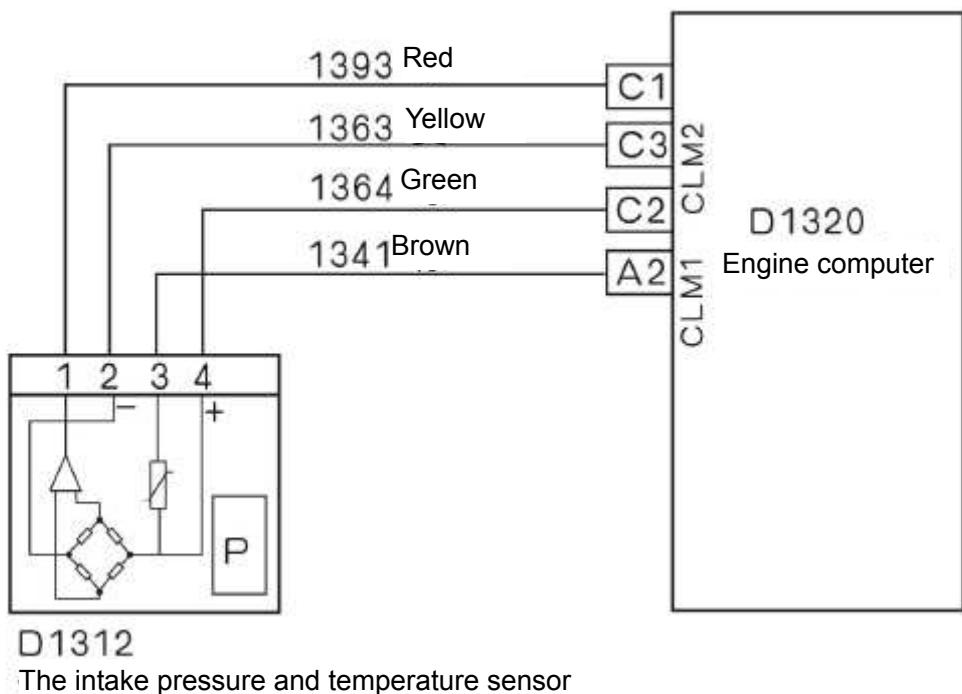


Fig. 4.6 The circuit chart for the intake pressure and temperature sensor

4.4.2 The technical characteristic parameters for the intake pressure and temperature sensor

(1) The characteristic data

Quantity	Values			Unit
	Minimum	Typical	Maximum	
The pressure test scope	20		115	kPa
The operation temperature	-40		125	°C
The operation power supply voltage	4.5	5.0	5.5	V
The current when Us=5.0V	6.0	9.0	12.5	mA
The load current of output circuit	-0.1		0.1	mA
The load resistance to the ground or to the battery	50			kΩ
The resonse time		0.2		ms

(2) The transfer function of the pressure sensor

$$U_A = (c_1 p_{abs} + c_0) U_S$$

In the formula, U_A =the signal output voltage (V)

U_S = the power supply voltage (V)

P_{abs} =absolute pressure (kPa)

$C_0=-9.4/95$

$C_1=0.85/95$ (1/kPa)

It is clear from above formula, under the atmosphere pressure, the signal output voltage of the pressure sensor is near the power supply voltage. If the power supply voltage is 5V, then when the air damper is in fully open, the signal output voltage of the pressure sensor is equal to 4V or so.

(3) The characteristic data of the temperature sensor

The operation temperature: -40/+125°C

The rated voltage, it is operating at 5V with proposed resistance 1kΩ, or operating with the test current of ≤1mA.

20°C rated resistance: $2.5 \text{ k}\Omega \pm 5\%$

The temperature time coefficient in the air is $\tau = 63$, $v=6\text{m/s}$: $\leq 45\text{s}$

4.4.3 The fault phenomena and the judgment methods

The fault phenomena:

Fire extinguished, bad idle speed, etc.

Causes for general faults:

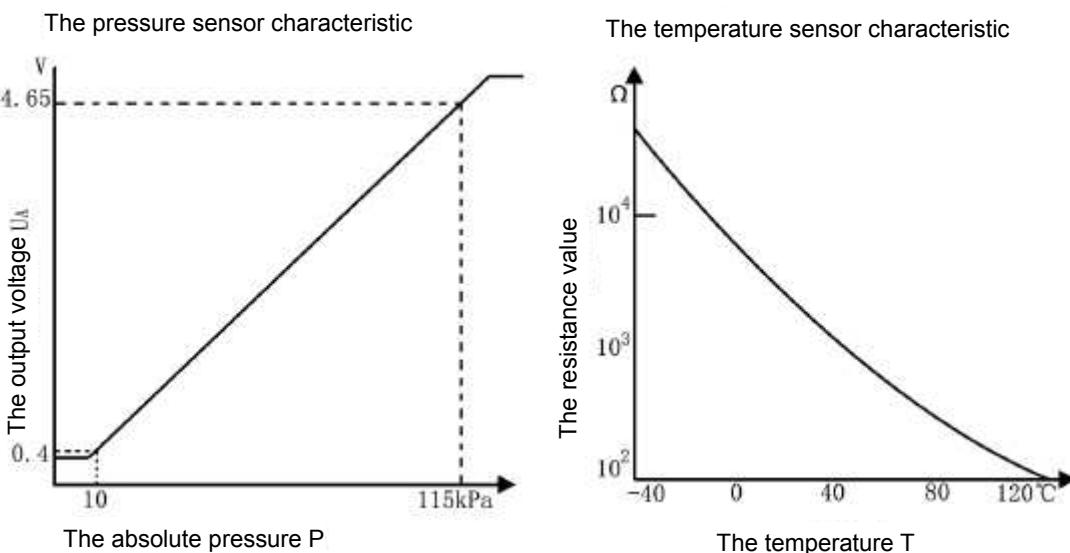
- It has abnormal high voltage or reverse big current during the use process;
- The vacuum elements are damaged in the maintenance process.

Points of attentions to maintenance:

During the maintenance process, prohibit using high pressure gas to impact the vacuum elements; when sensors are changed if any fault is found, pay attention to check if the generator output voltage and current is normal.

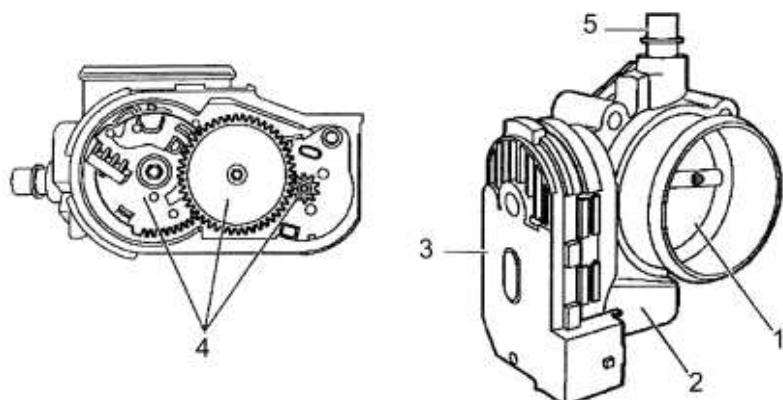
The simple measurement methods:

- **The temperature sensor part:** (Remove the joint) set the digital multi-meter to Ohm level, two meter pens are respectively connected to No.1 sensor and No.2 connection pin, at 20°C, the rated resistance is $2.5k\Omega \pm 5\%$, other corresponding resistance values may be measured by the following characteristic curves. During the measurement, it can also use simulation method, the concrete method is using electric blower to send air to the sensor(pay attention to be not too close), and observe the change of the sensor resistance, now the resistance shall be lowered.
- **The pressure sensor part:** (connect the joint) Set the digital multi-meter to DC voltage level, and put the black meter pen to the ground, red meter pen is respectively connected to No.3 and No.4 connection pins. Under idle speed state, No.3 connection pin shall have 5V reference voltage, and No.4 connection pin voltage is about 1.3V (the concrete values are related to the vehicle model); Under no-load state, open the air damper slowly, the change of No. connection pin is not obvious; Open the air damper rapidly, the voltage of No. 4 connection pin shall reach about 4V instantly(the concrete values are related to the vehicle model); then it shall drop to about 1.5V (the concrete values are related to the vehicle model).



Fighting4.7 Characteristic curve of the intake pressure and temperature sensor

4.5 The electronic air damper



1. The air damper 2. The motor 3. The air damper location sensor
4. The drive mechanism 5. The oil vapor absorbing opening

Fig. 4.8 The electronic air damper

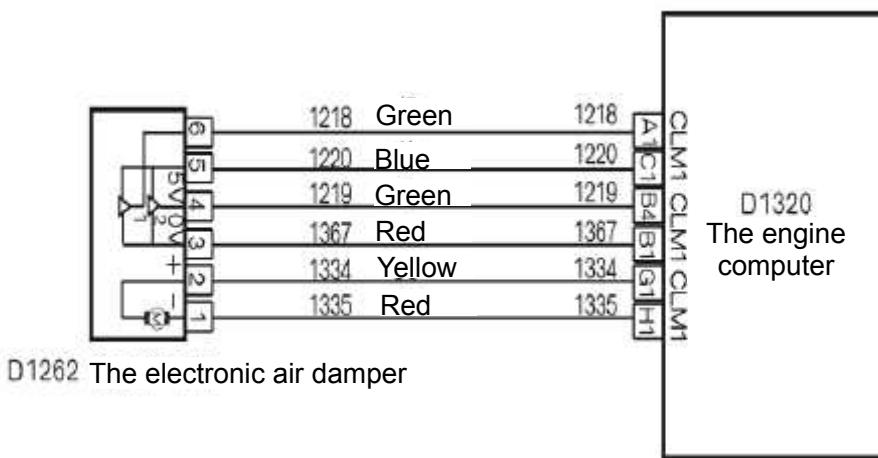


Fig. 4.9 The electronic air damper circuit chart

4.5.1 The function principle

ETC system is composed by the electronic acceleration pedal and engine computer, for replacing the traditional mechanical choking body, the system is used for accurately controlling the engine air inflow. The system drive servo motor enables the air damper to drive by the drive mechanism, including its air damper location sensor providing the location feed back.

E-gas system is made up of electronic air damper, electronic acceleration pedal and engine computer, it directly acts on the air intake working mode of the air damper rotating frame by having replaced the traditional accelerograph dragline. In E-gas system, the engine computer collects the information provided by the electronic acceleration pedal, and combines with the actual working conditions of the vehicle, accurately controls the openness of the electronic air damper body; At the same time, the electronic air damper body shall timely feed back the information to the engine computer, and form a closed loop control.

The electronic air damper is a key part for forming the engine air intake system in E-gas system, its main function is to regulate air intake passage area according to the driver's driving intent, thus controlling the air inflow, and satisfying the air intake demand under different working conditions of the engine, at the same time, it shall feed back the location signal of the air damper valve plate to the control unit for realizing the accurate control.

The electronic air damper is composed of the drive module, transmission module, actuation module and feed-back module, all these spare parts are integrated in one air damper case. The air damper feed-back module has adopted two-way redundancy structure. When an accident happens, the air

damper valve plate shall be stopped at the NLP position determined by using mechanical mode, it is located at the upper part of the mechanical lower stop point.

The electronic air damper shall only be controlled by the relevant electronic control unit or electronic test circuit, in principle, it must ensure that the air damper valve plate shall not operate dynamically to the mechanical stop point.

4.5.2 Analysis on the fault

The fault phenomenon:

The vehicle acceleration is not powerful, air damper valve block is reset or blocked too frequently.

Causes for general faults:

- The wiring harness or sensor does not work well, it has resulted in the engine computer having occurred erroneous judgment, and forcefully controlling the electronic air damper to be in a small openness state;
- During the use process or repair process, the fall down or collision has caused the crack to the internal spare parts (magnet steel) ;
- The vibration magnitude of the engine manifold has exceeded the indexes;
- Due to the problem of the engine, it has resulted in grave carbon collection to the electronic air damper.

Attentions to the maintenance:

During the maintenance process, no collision is allowed with the electronic air damper, it is prohibited to be used after the electronic air damper has fallen down; If any fault occurred similarly by electronic air damper, it may simply measure the resistance value changes between the PIN and use the cross test method for verification.

The judgment methods for concrete mechanical damage are as follows:

- Under conditions of not being connected with electricity, the valve block shall be in NLP position, it can be stirred with hand. The valve block shall be rotating smoothly, if locking occurred, it indicates that the internal spare parts may be possibly damaged.
- Simple measure of the internal sensor; (Take away the joint)place multi-meter to Ohm level.
 - (1) Two meter pens are respectively connected to No.6 and 3 connection pins, and stir the valve block with hand, the resistance value shall be continuously changed.
 - (2) Two meter pens are respectively connected to No.4 and 3 connection pins, and stir the valve block with hand, the resistance value shall be continuously changed.

4.6 The engine water temperature sensor

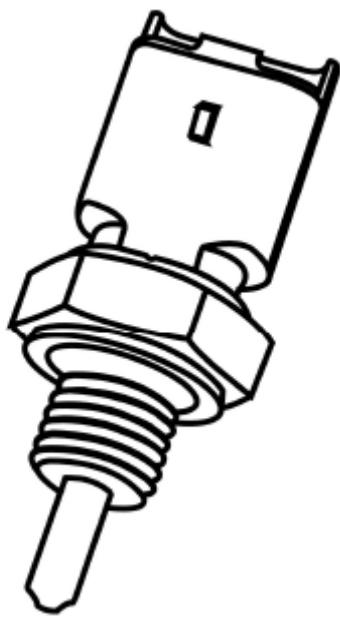


Fig. 4.10 The Outline chart of the engine water temperature sensor

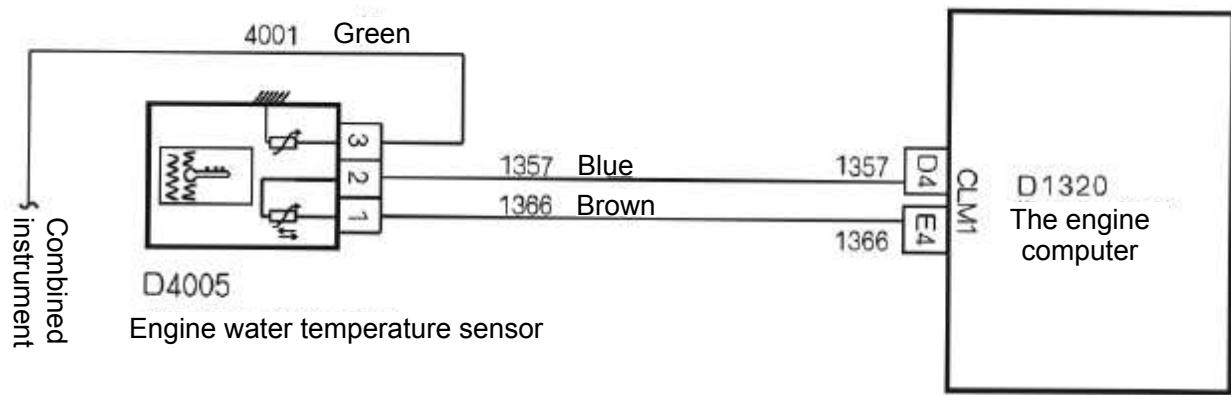


Fig. 4.11 The circuit chart of the engine water temperature sensor

The engine water temperature sensor is a temperature sensitive resistance whose temperature coefficient is negative, the resistance value shall be reduced along with the rising of the temperature, As to the current change of water temperature meter caused by the change of the resistance, it enables the water temperature meter to indicate the water temperature of the engine. The temperature of water temperature sensor and resistance characteristic are as Fig. below:

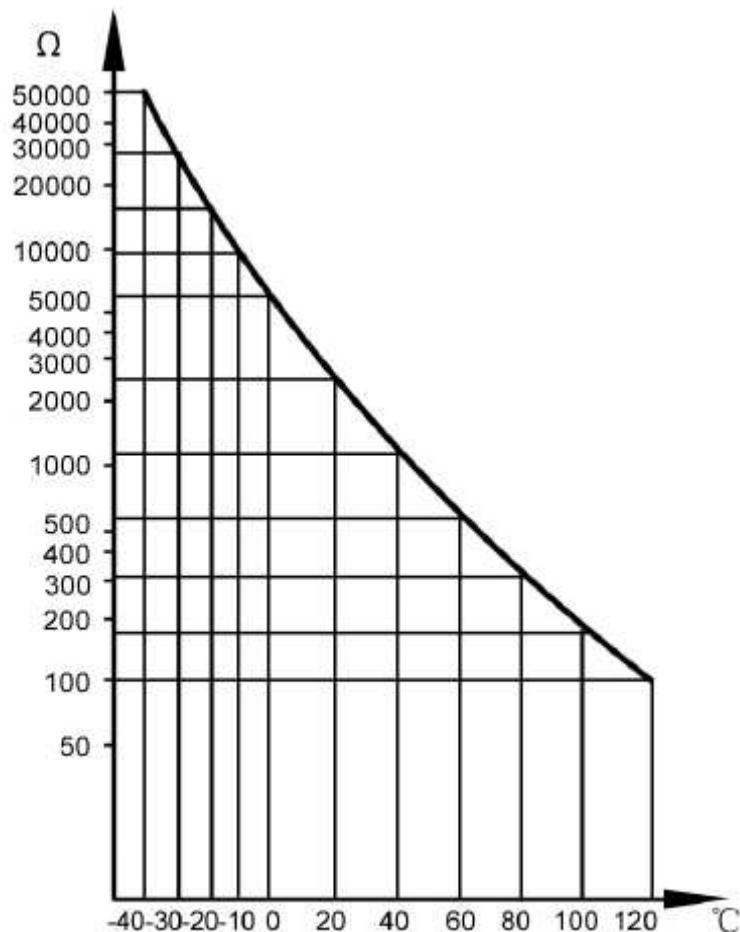


Fig. 4.12 The water temperature sensor's temperature and resistance characteristics

- The engine water temperature shall bring a series of reactions. As the water temperature reaches 85 °C, the thermostat starts to be open, when it is reaching 101 °C, the thermometer shall be fully open. Through the engine water temperature sensor, the engine water temperature shall be indicated to the engine water temperature meter on the instrument panel(each scale of water thermometer is 3.75 °C). At the same time, the engine water temperature sensor shall transfer the temperature signal to the engine ECU, as the water temperature rises to 97 °C, the engine ECU shall instruct the cooling fan to start rotating at low speed, as the water temperature lowers to 94 °C, the cooling fan stops in low speed. As the water temperature rises to 105 °C, the engine ECU shall instruct the cooling fan to start rotating in high speed, as the water temperature lowers to 101 °C, the cooling fan stops in high speed. As the water temperature rises to 112 °C, the engine ECU shall turn on the engine water temperature too high alarm. After the vehicle is stopped in hot state, if the engine water temperature is higher than 105 °C, the radiator cooling fan shall also continuously work for some time.

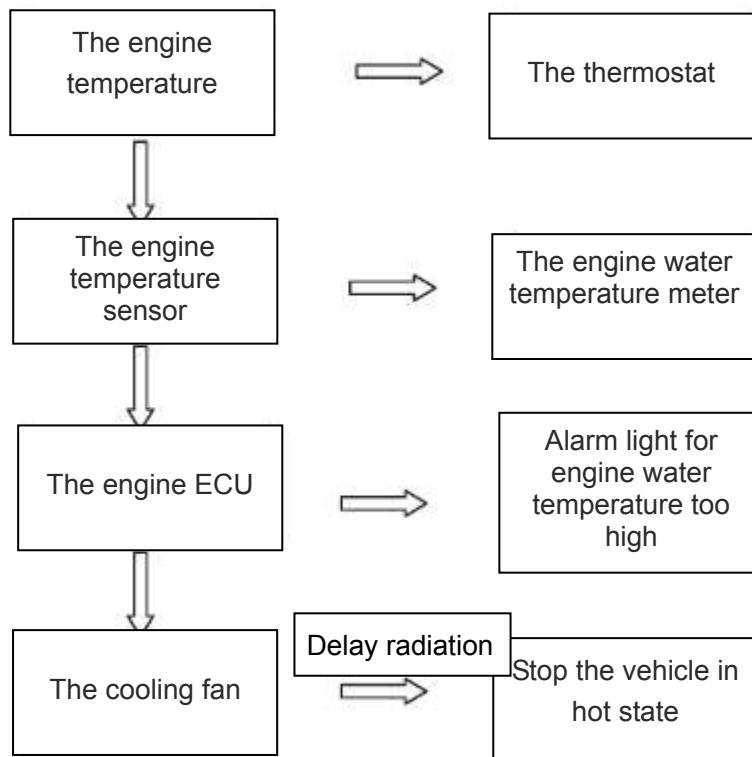


Fig. 4.14 The chart for the engine water temperature control

4.7 The explosion and vibration sensor



Fig. 4.13 The Outline chart for the explosion and vibration sensor

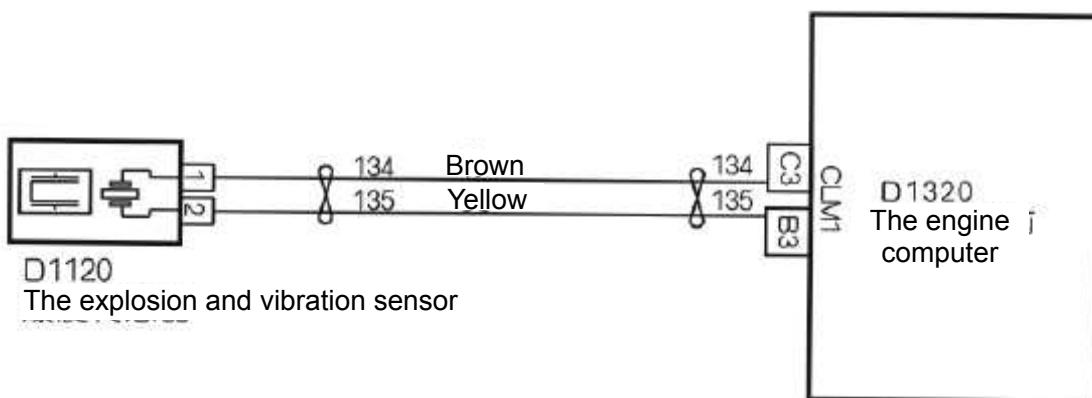


Fig. The circuit chart for the explosion and vibration sensor

4.7.1 The working principle of the explosion and vibration sensor

The explosion and vibration sensor is a kind of moving acceleration sensor fixed on the engine cylinder body. It may install one such a sensor, or may install several sensors. The sensitive element of the sensor is a piezoelectricity element. The vibration of the engine block body is transferred to the piezoelectricity crystal through the mass block inside the sensor. The pressure occurred due the vibration of the mass block by the piezoelectricity crystal shall occur the voltage on two polar fronts, and change the vibration signal into the alternated voltage signal output. The frequency response characteristic curve refers to Fig. below. Due to the frequency of vibration signal occurred by the engine explosion and vibration being much higher than the normal vibration signal of the engine, so after the signal of the explosion and vibration is processed, ECU shall distinguish the signal of the explosion and vibration and the signal of non-explosion and vibration.

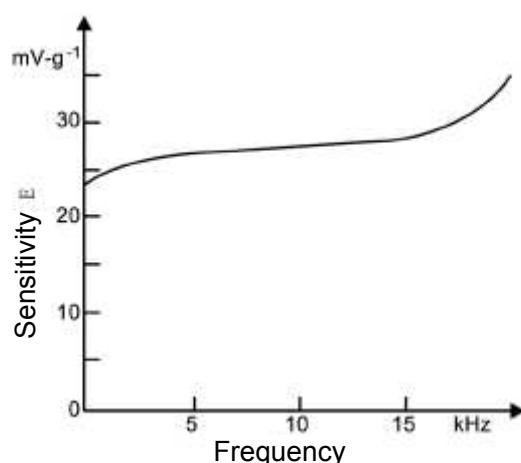


Fig. 4.16 The frequency response characteristic curve of the explosion and vibration sensor

4.7.2 The technical parameters of the explosion and vibration sensor

Quantity	Value	Unit
The sensitivity of the new sensor to 5kHz signal	26±8	mV/g
The linearity between 3~15kHz	±15 of 5kHz value	
The linearity during resonance	15~39	mV/g
The change during the whole lifetime period	Maximal -17%	
The main resonance frequency	Over 20	kHz
Impedance: Resistance	Over 1	MΩ
Capacitance	1200±400	pF
Of which, cable capacitance	280±60	pF/m
The leakage resistance (The resistance between two output connection pins of the sensor)	4.8±10%	MΩ
Change of sensitivity caused by the temperature	≤-0.06	mV/g°K

4.7.3 The fault phenomena and judgment methods

The fault phenomenon:

The acceleration is not good, etc.

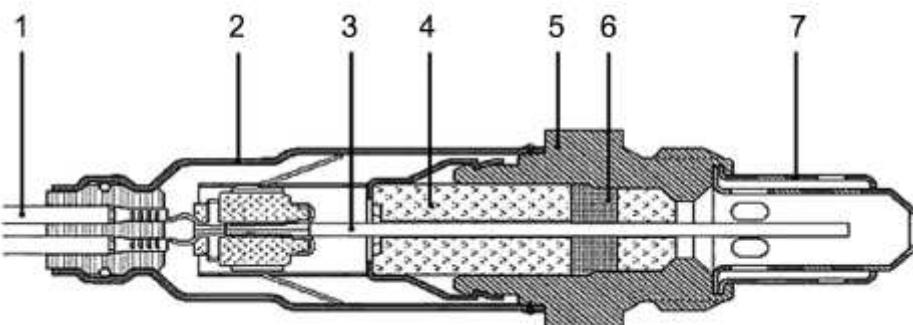
General fault causes:

Various kinds of liquids (such as engine oil, coolant, water and others) have contacted with the sensor for a long time, and has some corrosion to the sensor.

The simple measurement methods:

(Remove the joint) Place the digital multi-meter to Ohm level, two meter pens are respectively connected to No.1, 2 and No.1 and 3 connection pins, under normal temperature, the resistance value shall be over 1 MΩ. Place the digital multi-meter to millivolt level, use small hammer to tap lightly near the explosion and vibration sensor, no the voltage signal output shall appear.

4.8 The oxygen sensor



1. Connecting wire 2. The spring washer 3. Plate type sensor unit 4. Ceramic support case
5. Sensor element 6. Ceramic seal gasket 7. The protection sleeve

Fig. 4.17 Chart for the oxygen sensor structure

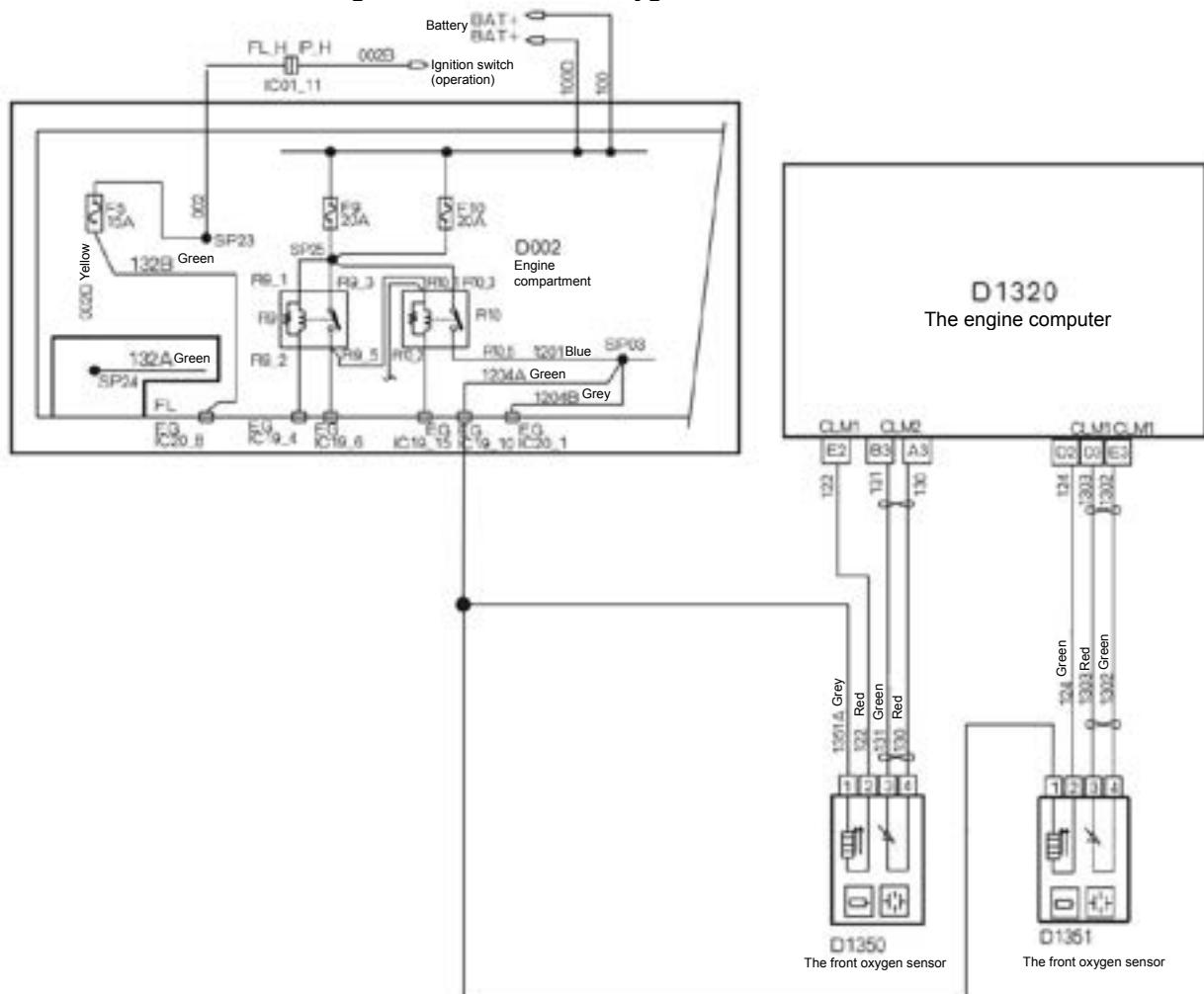
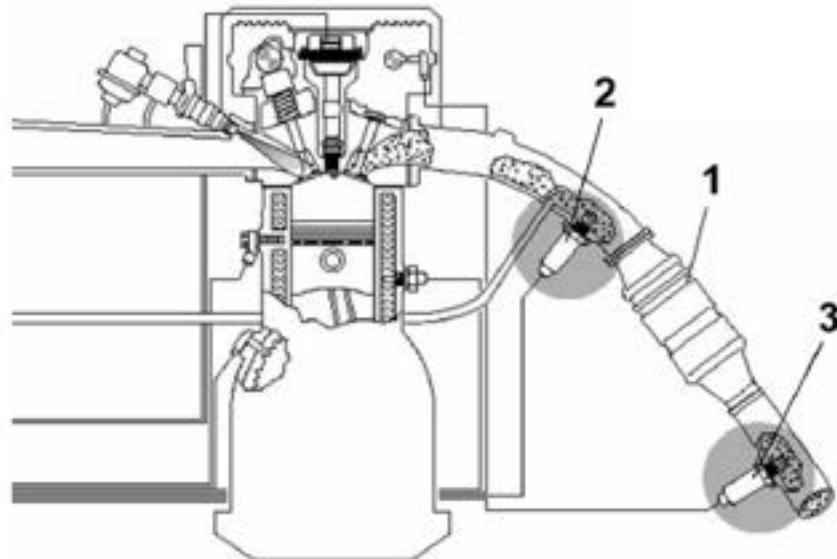


Fig. 4.18 The circuit chart for the oxygen sensor

The oxygen sensor has the cable. Another end of the cable is the electricity joint. The joint has 4 connection pins;

- No.1 connects to heating power supply anode (white)
- No.2 connects to heating power supply cathode (white)
- No.3 connects to signal cathode (grey)
- No.4 connects to signal anode (black)



1. The catalytic converter 2. The front oxygen sensor 3. The back oxygen sensor

Fig.4.19 Double oxygen sensor system

4.8.1 The working principle of the oxygen sensor

The sensing element of the oxygen sensor is a ceramic plane body with a hole (gap), the outer side of the ceramic body is enclosed by the engine air exhaustion, the inner side is connected to the atmosphere. The sensing ceramic body wall is a kind of solid electrolyte, it has an electric heating tube inside.

The working of the oxygen sensor is realized by changing the temperature of the oxygen ion inside and outside the sensing ceramic tube into the voltage signal output. As the temperature of the sensing ceramic tube reaches 350°C , it shall have the solid electrolyte character of the material, it makes the oxygen iron to freely pass through ceramic tube. It just uses this character to change the concentration difference into potential difference, thus forming the electric signal output. If the mixed gas is too concentrated, then the concentration difference of oxygen ion inside and outside the ceramic tube is quite high, the potential difference is too high, and a large number of oxygen iron shall move to the outer side from the inner side, and the output voltage is quite high(close to 800mV-1000mV); If the mixed gas is too thin, then the concentration difference of oxygen iron inside and outside the ceramic tube is quite low, then the potential difference is quite low; Now only small amount of oxygen iron moves to the outer side from the inner side, the output voltage is quite low(close to 100mV). The signal voltage shall be changed abruptly near the theoretic equivalent air fuel ratio (λ), details refer to Fig. 4.18.

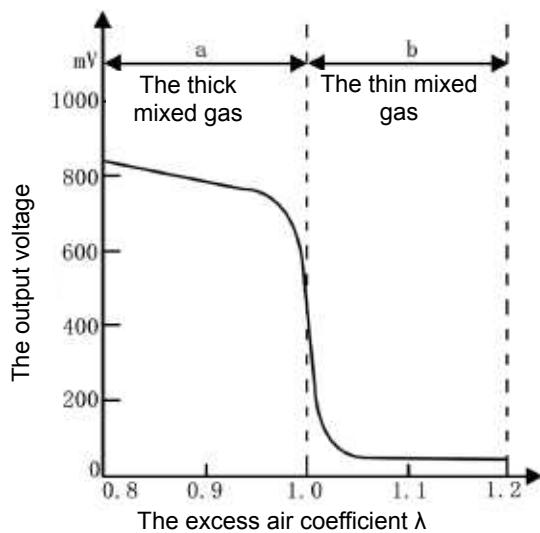


Fig. 4.20 The characteristic curve for 600°C oxygen sensor

4.8.2 The technical characteristic parameters of the oxygen sensor

The oxygen sensor electrical appliances data

Quantity	Values	Unit	
The insulation resistance between the new sensor heating element and sensor joint	Room temperature, cut off electricity to the heating element	≥ 30	MΩ
	Air exhaust temperature 350°C	≥ 10	MΩ
	Air exhaust temperature 850°C	≥ 100	kΩ
The rated voltage	12	V	
The continuous working voltage	12~14	V	

4.8.3 The fault phenomena of the oxygen sensor and the judgment methods

The fault phenomena:

The idle speed is not good, acceleration is also not good, the tail gas exceeds the index and oil consumption is too much, etc.

General fault phenomenon:

- Wet and humid water entered the sensor, temperature changed suddenly, and the probe is broken.
- The oxygen sensor is toxicated. (Pb, S, Br and Si).

Attentions for the maintenance:

During the maintenance period, prohibit using washing detergent, oily liquid or volatile solid on the oxygen sensor.

The simple measurement methods:

- (Remove the joint) set the digital multi-meter to Ohm level, two meter pens are respectively connected to No.1 (white) sensor and No.2 connection pin (white), at normal temperature, the rated resistance is 9Ω.
- (Connect the joint) Under the idle speed state, when the oxygen sensor reaches its working temperature 350°C, set digital multi-meter to DC voltage level, two meter pens are respectively connected to the No.3 sensor (grey) and No.4 (black) connection pin, now the voltage shall be fluctuated rapidly between 0.1~0.9.

4.9 The rotation speed sensor

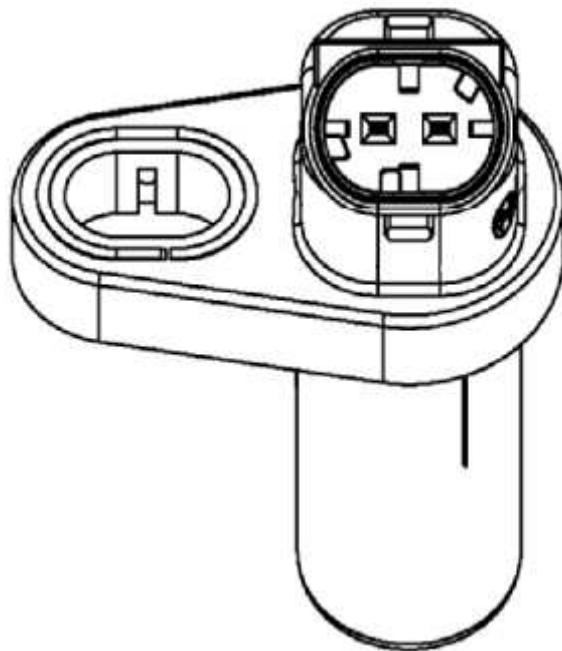
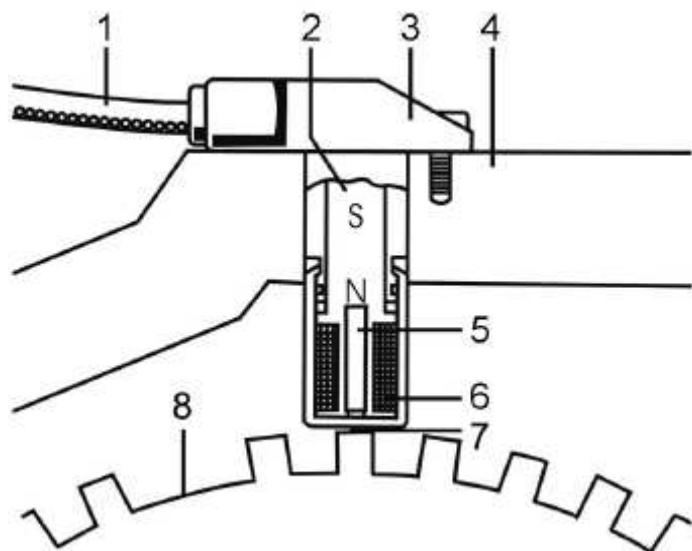


Fig. 4.21 The outline chart for the rotation speed sensor



- 1. The shielded power supply
- 2. Permanent magnet
- 3. The sensor case
- 4. The installation bracket
- 5. The soft magnetic core
- 6. Coil
- 7. The air gap
- 8. Toothed ring with reference mark

Fig. 4.22 The structure of rotation speed sensor

4.9.1 The working principle of the rotation speed sensor

The rotation speed sensor is combined with the pulse disc, used for providing the engine rotation speed information and crankshaft upper stop point information for the ignition system without sub-Electrical appliances. The rotation speed sensor is composed of the coil outside of a permanent magnet and magnet. The pulse disc is a fluted disc, it has originally 60 teeth, but, it has two teeth gap. The pulse disc is installed onto the crankshaft, and shall rotate along with the crankshaft. When the teeth tip passes the end close to the rotation speed sensor, the pulse disc composed of magnetic material shall cut the magnetic line of the permanent magnet in the rotation speed sensor, and it shall occur reductive voltage as the rotation speed signal output.

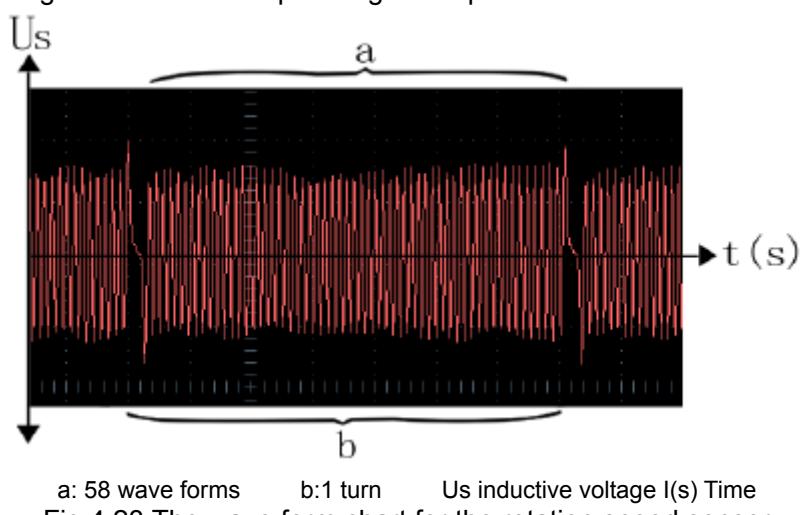


Fig. 4.23 The wave form chart for the rotation speed sensor

4.9.2 The technical characteristic parameters for the rotation speed sensor

The characteristic data

Quantity	Values			Unit
	Minimum	Typical	Maximum	
The resistance under the room temperature of 20°C	731	860	989	Ω
Induction	310	370	430	mH
The output voltage when the crankshaft rotates 416 turns per minute	Over 1650			

4.9.3 The fault phenomena for the rotation speed sensor and the judgment methods

The fault phenomena:

It can not be started, flameout suddenly, etc.

General fault causes:

Individual fault and bad contact.

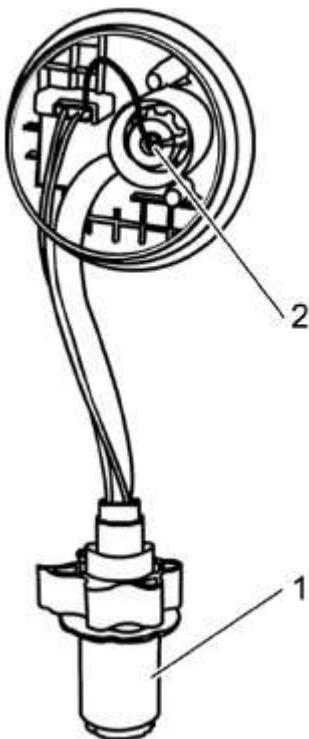
Attentions for the maintenance:

During the maintenance process, use the pressing-in method to install rather than using the hammer to hit.

The simple measurement methods:

- (Remove the joint) set the digital multi-meter to Ohm level, two meter pens are respectively connected to No.2 sensor and No.3 connection pin, when the temperature is 20°C, the rated resistance is $860\Omega \pm 10\%$.
- (Connect the joint) Set digital multi-meter to AC voltage level, two meter pens are respectively connected to the No.2 sensor and No.3 connection pin, now start the engine, and it shall have the voltage output. (We propose to check with oscilloscope for the vehicle use, it may be checked)

4.10 The fuel oil and fuel oil pressure regulator

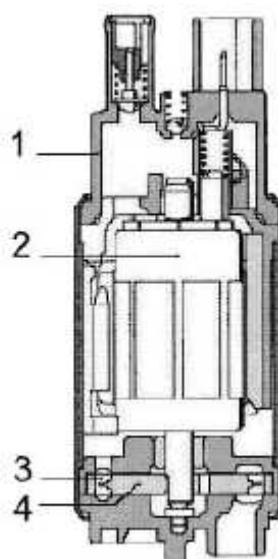


1. The fuel oil pump 2. The fuel oil pressure regulator
Fig.4.24 The fuel oil and fuel oil pressure regulator

4.10.1 The working principle of the fuel oil pump

The electric fuel oil pump consists of DC starter, impeller pump and end cover (it has integrated check valve, pressure relief valve and electromagnetic interference resistant elements) etc. Details refer to Fig. below.

The oil pump is installed together with the starter by the same shaft, and be closed in the same case. The surrounding of the pump inside the case and the starter is fully of gas, it uses the fuel oil to radiate heat and lubricate. Through the oil pump relay, the battery supplies the power to the electric fuel oil pump, the relay can only be connected with the electric fuel oil pump circuit during the start and the operation of the engine. As the engine is stopped due to the trouble, the fuel oil pump shall automatically stop the operation.



1. The oil pump end cover 2. The starter 3. The oil passage 4. Impeller pump
Fig. 4.25 The profile chart for the electric fuel oil pump

The maximal pressure at the electric fuel oil pump outlet is determined by the pressure relief valve, due to the system having adopted the oil return system, the whole fuel oil system pressure shall be determined by the fuel oil pressure regulator, the normal non-start state is 300kPa, it is about 250kPa at the idle speed.

According to the need of the engine, the electric fuel oil pump may possibly have different flow rate. For the convenience of production, the EKP13 serial electric fuel oil pump of the same structure shall adjust the rotation speed of the starter through adjusting the coil circle number, thus adjusting the flow rate. So it may not randomly use the electric fuel oil pump of one kind of the vehicle model to another kind of the model.

4.10.2 The fault phenomena for the fuel oil pump and the judgment methods

The fault phenomena:

The operation noise is too big, the acceleration is not good, it can not be started (it is difficult to be started), etc.

General fault causes:

Due to fuel oil of low quality being used, it has resulted in the following problems: 1. The insulation layer has been formed by glue gathering; 2. The oil pump bushing and armature are locked; 3. The oil face sensor components are corroded, etc.

Attentions for the maintenance:

- According to the need of the engine, the fuel oil pump may have different flow rate, but the outline is the same, the fuel oil pump which can be installed, but it may not be appropriate, during the maintenance, the spare part number of the fuel oil pump being used must be consistent to the original one, it may not be changed to wrong one.
- In order to prevent the fuel oil pump from being accidentally damaged, it may not be operated for a long time under the dry state.
- At the place where the fuel oil pump needs to be changed, attention shall be paid to cleaning the fuel oil tank and the pipeline as well as changing the fuel oil filter.

The simple measurements methods:

(Remove the joint) set the digital multi-meter to Ohm level, two meter pens are respectively connected to two connection pins of the fuel oil pump, and measure the internal resistance, it is not zero or is indefinitely big (namely non-short circuit and break state)

(Connect the joint) Connect the fuel oil pressure gauge onto the oil incoming pipe, and start the engine, observe if the fuel oil pump works normally, if it is not operating, then check + connection pin if it has power supply voltage; If it is operating, under idle speed conditions, check if the fuel oil pressure is about 350kPa; Step onto the air damper to the engine rotation speed to 2500rpm, and observe now if the fuel oil pressure is about 350kPa.

4.11 The electromagnetic oil nozzle

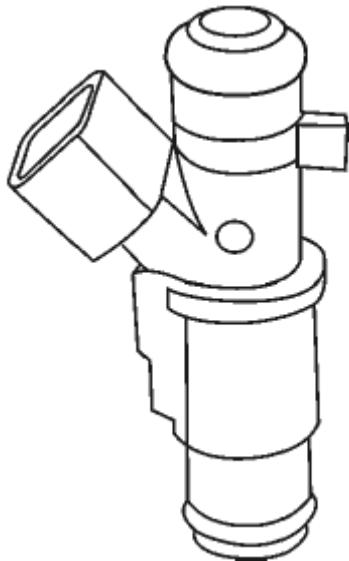
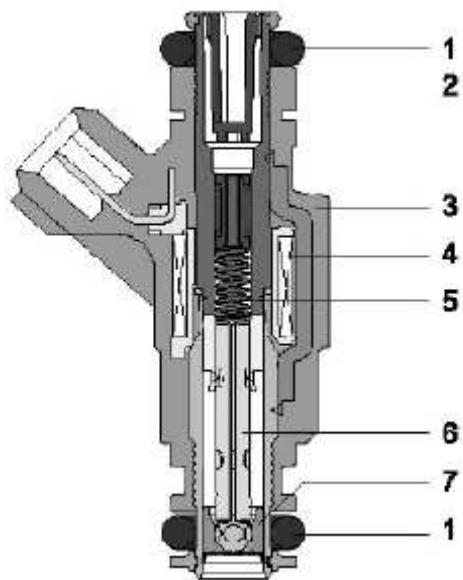


Fig. 4.26 The electromagnetic oil nozzle



1. O ring 2. Filter screen 3. With socket oil ejector body
4. Coil 5. The spring
6. Valve needle with coil gag bit 7. Valve base with jet
orifice plate

4.27 The profile chart for electromagnetic oil nozzle

4.11.1 The working principle of the electromagnetic oil nozzle

ECU sends the electronic pulse to the coil of the oil ejector and forms the magnetic field force. As the magnetic field force rises enough to conquer the resultant force of the coordinate spring pressure, needle valve weight and the friction force, the needle valve starts to rise, now the oil injection process starts. As the oil injection pulse is end, the coordinate spring pressure enables the needle valve to close again.

4.11.2 The technical characteristic parameters for the electromagnetic oil nozzle

The characteristic data

Quantity	Values			Unit
	Minimum	Typical	Maximum	
The working pressure (the pressure difference)		300		kPa
The resistance under the room temperature of 20°C	11		17	Ω

4.10.2 The fault phenomena for the electromagnetic oil nozzle and the judgment methods

The fault phenomena:

The idle speed is not good, the acceleration is not good, it can be started (it is difficult to be started), etc.

General fault causes:

Due to lack of maintenance, it has lost the efficacy due to glue collection inside the oil ejector, and fuel oil quality is low.

The simple measurement methods:

(Remove the joint) Set the digital multi-meter to Ohm level, the two meters are respectively connected to two connection pins of the oil ejector, the rated resistance at 20°C is 11~17Ω.

Proposal:

Use special cleaning analysis instrument for each 20000kM to thoroughly clean the oil ejector.

4.12 The carbon tank control valve



Fig. 4.28 The carbon tank control valve TEV-2

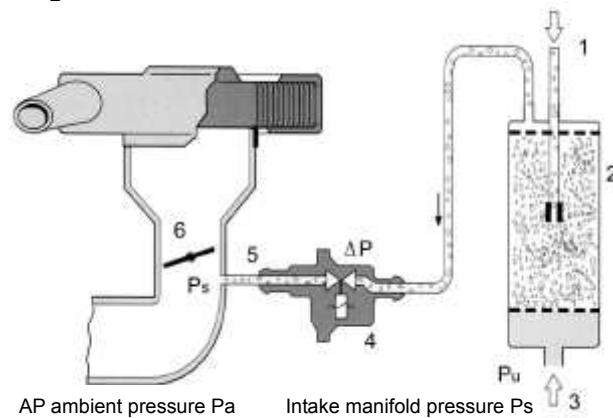


Fig. 4.29 The installation chart for the carbon tank control valve

4.12.1 The working principle for the carbon tank control valve

The carbon tank control valve consists of electromagnetic coil, gag bit and valves, etc. On the one hand, the air flow rate through the carbon tank control valve is related to the duty ratio of ECU output to the carbon tank control valve, on the other hand, it is also related to the pressure difference between the inlet and outlet of the carbon tank control valve. As there is no electronic pulse, the carbon tank control valve is closed.

Different kind of the carbon tank control valve has a 100 duty ratio, namely the flow rate under fully open state is different. The fig. below indicates the typical flow curve of two kinds. It is clear from the Fig. below that also under the pressure difference of 200Mbar, the flow rate of fully open for type A carbon tank control valve is $3.0\text{m}^3/\text{h}$, the flow rate of type B is $2.0\text{m}^3/\text{h}$.

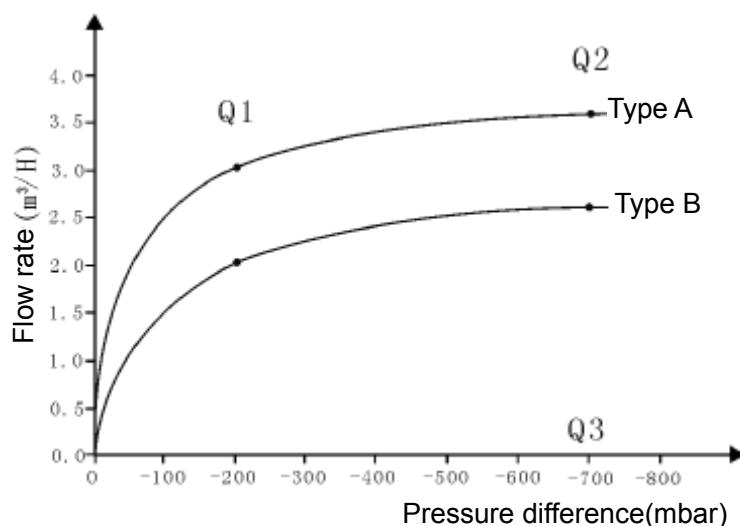


Fig.4.30

4.12.2 The technical characteristic parameters for the electromagnetic oil nozzle

The characteristic data

Quantity	Values			Unit
	Minimum	Typical	Maximum	
The rated voltage		13.5		V
The resistance under the temperature of 20°C		26	17	Ω
The current under the rated voltage		0.5		A
The frequency of control pulse			30	Hz
Typical control pulse width:	Type A	7		ms
	Type B	6		ms
The flow rate when pressure difference=200Mbar, duty ratio is 100%	Type A	2.7	3.0	M ³ /h
	Type B	1.7	2.0	M ³ /h

4.12.2 The fault phenomena and the judgment methods

The fault phenomena:

The function has lost the effect, etc.

General fault causes:

Due to foreign materials having entered the valve, and caused the corrosion and bad sealing, etc.

Attentions for the maintenance:

1. Upon the installation, it must conform to the provisions of the air flow direction;
2. When the control valve is found having lost the efficacy due to inside of the valve body being changed to black color, it needs to be changed, it shall check the carbon tank conditions.
3. During the maintenance process, try the best to avoid water, oil and other materials to enter the valve.
4. In order to avoid the transfer of the solid sound, we recommend to install the carbon tank control valve to the soft hose in suspension.

The simple measurement methods:

(Remove the joint) Set the digital multi-meter to Ohm level, the two meters are respectively connected to two connection pins of the carbon tank control valve, the rated resistance at 20°C is 22~30Ω.

4.13 The trouble shooting for ME7 system

Before conducting the trouble diagnosis according to the fault phenomena of the engine, it shall first conduct the preliminary check:

1. Confirm if the engine fault alarm light works normally;
2. Check with the fault diagnostic apparatus to confirm having no fault record;
3. Confirm the existence of the fault phenomena complained by the vehicle owner, and confirm the conditions for occurring this fault;

Then conduct the appearance check:

- Check if the fuel oil pipeline has any leakage phenomenon;
- Check if the vacuum pipeline is blocked, twisted or connected well;
- Check if the high voltage line of the ignition system is broken, aged, or if the ignition sequence is correct;
- Check if the wiring harness is clear and firm;
- Check if each sensor and actuator joint is loose or has bad contact phenomenon.

Importance notes:

If any above phenomenon exists, first conduct the service operation aiming at the fault situation, otherwise it shall affect the fault diagnosis and service work later on.

The diagnosis assistance:

- Confirm the engine has no any fault record;
- Confirm the existence of the complained fault;
- No any abnormal situation is found after the check according to above said steps;
- In the repair process, never neglect the vehicle service conditions, the influence of cylinder pressure, ignition timing and fuel oil situation on the system;
- Change ECU and conduct the test.
- If the fault phenomenon can be removed at this time, then the fault location is at ECU, and if the fault phenomenon still exists, then change the original ECU, and repeat the process, then conduct the repair work again.

(1) When it is started, the engine is not rotating or rotation is very slowly

General fault position: 1. Battery; 2. Engine; 3. The wiring harness or ignition switch; 4. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Use multi-meter to check the voltage between two spliced poles of the battery, and check if it is about 8~12V when the engine is started.	Yes	The next step
		No	Change the battery
2	The ignition switch is kept at the start position, use multi-meter to check if the spliced poles of the engine anode has the voltage above 8V.	yes	The next step
		No	Repair or change wiring harness
3	Remove the engine, and check the working conditions of the engine. The key is to check if the any locking due to breaking or bad lubrication existing.	Yes	Repair or change the engine
		No	The next step
4	If the fault only occurs in winter, then check if the lubricating oil of the engine and gear box oil is not selected right and it has resulted in the excess resistance of the engine.	Yes	Change the lubricating oil of the appropriate grade
		No	The next step
5	Check if the internal mechanical resistance of the engine is too big, and it has caused the engine refusing to rotate or rotating too slowly.	Yes	Check the internal resistance of the engine
		No	Diagnose assistance

(2) When the engine is started, the engine can rotate by towing, but it can not be started successfully

General fault location: 1. Oil tank has no oil; 2. Fuel oil pump; 3. Rotation speed sensor; 4. The ignition coil; 5. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	To connect the fuel oil pressure gauge (The connecting point is the assembly oil sucking tube front end of the oil distribution tube) and start the engine, check if the fuel oil pressure is about 350kPa.	Yes	The next step
		No	Check oil supply system
2	Connect well the electronic injection system diagnostic apparatus, and the data item of the engine rotation speed, start the engine and observe if it has any rotation speed signal output.	yes	The next step
		No	Repair the rotation speed sensor wire
3.	Pull out one of the cylinder separation lines, and connect the spark plug, set the spark plug electrode at 5mm from the engine block, and start the engine as well as check if it has the blue and white high pressure fire.	yes	The next step
		No	Repair the ignition system
4	Check the pressure situation of each air cylinder for the engine, and check if the engine has the situation of pressure deficiency.	yes	To remove mechanical fault of the engine
		No	The next step

(3) The difficulty for the hot start

General fault location: 1. The fuel oil with water; 2. The fuel oil pump; 3. The engine water temperature sensor; 4. The fuel oil pressure regulator vacuum tube; 5. The ignition coil.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	To connect the fuel oil pressure gauge (The connecting point is the assembly oil sucking tube front end of the oil distribution tube) and start the engine, check if the fuel oil pressure is about 350kPa.	Yes	The next step
		No	Check oil supply system
2	Pull out one of the cylinder separation lines, and connect the spark plug, set the spark plug electrode at 5mm from the engine block, and start the engine as well as check if it has the blue and white high pressure fire.	yes	The next step
		No	Repair the rotation speed sensor wire
2	Connect well the electronic injection system diagnostic apparatus, and the data item of the engine rotation speed, start the engine and observe if it has any rotation speed signal output.		
3.	Pull out the engine water temperature sensor, and start the engine, observe if the engine now is been successfully started.(or the engine water temperature sensor joint is connected in series with one 300 Ohm resistance to replace the engine water temperature sensor, and observe if the engine now is been successfully started.	yes	Check the line or change the sensor
		No	The next step
4	Check of the fuel oil regulator vacuum tube has any loose or air leakage phenomenon.	Yes	To check and change
		No	The next step
5	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To change the oil
		No	The next step

(4) The difficulty for the cold start

General fault location: 1. The fuel oil with water; 2. The fuel oil pump; 3. The engine water temperature sensor; 4. The oil ejector; 5. The ignition coil. 6. The air damper body; 7. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	To connect the fuel oil pressure gauge (The connecting point is the assembly oil sucking tube front end of the oil distribution tube) and start the engine, check if the fuel oil pressure is about 350kPa.	Yes	The next step
		No	Check oil supply system
2	Pull out one of the cylinder separation lines, and connect the spark plug, set the spark plug electrode at 5mm from the engine block, and start the engine as well as check if it has the blue and white high pressure fire.	yes	The next step
		No	Repair the rotation speed sensor wire
3.	Pull out the engine water temperature sensor, and start the engine, observe if the engine now is been successfully started.(or the engine water temperature sensor joint is connected in series with one 2500 Ohm resistance to replace the engine water temperature sensor, and observe if the engine now is been successfully started.	yes	Check the line or change the sensor
		No	The next step
4.	Lightly step down the acceleration pedal, and observe if it is easily started.	Yes	Clean the air damper and idle speed air passage
		No	The next step
5	To remove the oil ejector, and use the oil ejector special wash analysis apparatus to check if the oil ejector has any leakage or blocking phenomenon.	Yes	Change the part in fault
		No	The next step
6	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
7	Check the pressure situation of each air cylinder for the engine, and check if the engine has the situation of pressure deficiency.	Yes	To remove the mechanical fault of the engine
		No	The next step
8	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(5) The rotation is normal, it is difficult to be started at any time.

General fault location: 1. The fuel oil with water; 2. The fuel oil pump; 3. The engine water temperature sensor; 4. The oil ejector; 5. The ignition coil. 6. The air damper body; 7. Air intake duct; 8. The ignition timing; 9. The spark plug; 10. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked, and if air intake duct is leaking air.	Yes	Check air intake system
		No	The next step
2	To connect the fuel oil pressure gauge (The connecting point is the assembly oil sucking tube front end of the oil distribution tube) and start the engine, check if the fuel oil pressure is about 350kPa.	Yes	The next step
		No	Check oil supply system
3	Pull out one of the cylinder separation lines, and connect the spark plug, set the spark plug electrode at 5mm from the engine block, and start the engine as well as check if it has the blue and white high pressure fire.	yes	The next step
		No	Repair the ignition system
4	Check the spark plug of each cylinder, and observe if its type and gap conforms to the requirements of the code.	Yes	The next step
		No	Check or change
5	Pull out the engine water temperature sensor, and start the engine, observe if the engine now is been successfully started.	Yes	Check the line or change the sensor
		No	The next step
6	Step down the acceleration pedal lightly, and observe if it is easily started.	Yes	Clean the air damper and idle speed air passage
		No	The next step
7	To remove the oil ejector, and use the oil ejector special wash analysis apparatus to check if the oil ejector has any leakage or blocking phenomenon.	Yes	Change the part in fault
		No	The next step
8	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
9	Check the pressure situation of each air cylinder for the engine, and check if the engine has the situation of pressure deficiency.	Yes	To remove the mechanical fault of the engine
		No	The next step
11	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(6) The start is normal, but it is at idle speed and instable at any time.

General fault location: 1. The fuel oil with water; 2. The oil ejector; 3. The spark plug; 4. The air damper body and idle speed bypass air passage; 5. The air intake duct; 6. The electronic air damper body; 7. The ignition timing; 9. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked, and if air intake duct is leaking air.	Yes	Check air intake system
		No	The next step
2	Check if the air damper body is with click sound.	Yes	Clean or change
		No	The next step
3	Check the spark plug of each cylinder, and observe if its type and gap conforms to the requirements of the code.	Yes	The next step
		No	Check or change
4	Check if the air damper body air passage has any collection of the carbon.	Yes	Clean
		No	The next step
5	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage, blocking or bad flow, etc.	Yes	Change the fault
		No	The next step
6	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
7	Check the pressure situation of each cylinder for the engine, and observe if the engine cylinder has a great difference.	Yes	Remove the mechanical fault of the engine
		No	The next step
4	Check if the ignition sequence and ignition timing conforms to the requirements of the code.	Yes	The next step
		No	Check the ignition timing
9	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(7) The start is normal, but it is at idle speed and instable during the warming process.

General fault location: 1. The fuel oil with water; 2. The engine water temperature sensor; 3. The spark plug; 4. The air damper body volume carbon; 5. The air intake duct; 6. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked, and if air intake duct is leaking air.	Yes	Check air intake system
		No	The next step
2	Check the spark plug of each cylinder, and observe if its type and gap conforms to the requirements of the code.	Yes	The next step
		No	Check or change
3	Check if the air damper body air passage has any collection of the carbon.	Yes	Clean
		No	The next step
4	Pull away the engine water temperature joint, and start the engine, and observe if the engine is in idle speed and instable during the warming process.	Yes	Check the line or change the sensor
		No	The next step
5	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage, blocking or bad flow, etc.	Yes	Change the fault
		No	The next step
6	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
7	Check the pressure situation of each cylinder for the engine, and observe if the engine cylinder has a great difference.	Yes	Remove the mechanical fault of the engine
		No	The next step
9	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(8) The start is normal, but it is at idle speed and instable during the warming process.

General fault location: 1. The fuel oil with water; 2. The engine water temperature sensor; 3. The spark plug; 4. The air damper body volume carbon; 5. The air intake duct; 6. The engine mechanical part.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked, and if air intake duct is leaking air.	Yes	Check air intake system
		No	The next step
2	Check the spark plug of each cylinder, and observe if its type and gap conforms to the requirements of the code.	Yes	The next step
		No	Check or change
3	Check if the air damper body air passage has any collection of the carbon.	Yes	Clean
		No	The next step
4	Pull away the engine water temperature joint, and start the engine, and observe if the engine is in idle speed and instable during the warming process.	Yes	Check the line or change the sensor
		No	The next step
5	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage, blocking or bad flow, etc.	Yes	Change the fault
		No	The next step
6	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
7	Check the pressure situation of each cylinder for the engine, and observe if the engine cylinder has a great difference.	Yes	Remove the mechanical fault of the engine
		No	The next step
9	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(9) The start is normal, but it is at idle speed and instable during the partial load (such as: air conditioning is on)

General fault location: 1. The air conditioning system; 2. The oil ejector.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if the air damper body air passage has any collection of the carbon.	Yes	Clean
		No	The next step
2	Observe if the engine output power is increased when air conditioning is on, namely use the electronic ejection system diagnostic apparatus to observe the change situation of the ignition lead angle, oil ejection pulse width and air intake quantity.	Yes	T step 4
		No	The next step
3	Connect the electronic ejection system connector, and cut off the connection line for the electronic control unit No.75 connection pin, and check if the wiring harness end is in high level signal when air conditioning is on.	Yes	The next step
		No	Check air conditioning system
4	Check if the air conditioning system pressure, electromagnetic clutch of the compressor and the air conditioning compression pump is normal.	Yes	The next step
		No	Check air conditioning system
5	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage, blocking or bad flow, etc.	Yes	Change the fault
		No	The next step
6	Connect well the electronic ejecting system connector, and open the ignition switch, check if the power supply is normal as well as check if the earth is normal.	Yes	The diagnosis assistance
		No	Check the relevant lines

(10) The start is normal, but its idle speed is too high.

General fault location: 1. The air damper body and idle speed bypass passage; 2. Vacuum tube; 3. Engine water temperature sensor; 4. The ignition switch.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if accelerograph drag line is locked or too tight.	Yes	Adjust
		No	The next step
2	Check if the air intake system and the vacuum pipeline being connected has any air leakage phenomenon.	Yes	Check air intake system
		No.	The next step
3	Remove the air filter hoop, and check if the air damper body and idle speed air passage has any collection of the carbon.	Yes	Clean the relevant spare parts
		No	The next step
4	Pull away the engine water temperature joint, and start the engine, and observe if the engine is in idle speed is too high at this time.	Yes	Check the line or change the sensor
		No	The next step
5	Check if the ignition timing of the engine conforms to the code requirements.	Yes	The next step
		No	Check the ignition timing
6	Connect the electronic ejection system connector, and open the ignition switch, check if the power supply for connection pins of No.12, 13, 44, 45 and 63 is normal, And check if the earthing for pins No.3, 51, 53, 61 and 80 is normal.	Yes	Diagnosis assistance

(11) The rotation can not be increased or become flameout during the acceleration.

General fault location: 1.The fuel oil with water; 2.The intake pressure sensor and air damper location sensor; 3. The spark plug; 4. The air damper body and idle speed bypass passage; 5. Air intake duct; 6. Oil ejector; 7. The ignition timing; .8. Air exhaust pipe.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked.	Yes	Check air intake system
		No	The next step
2	Connect the fuel oil pressure gauge (the connecting point is the general assembly oil intake pipe front end for the fuel oil distribution pipe), and start the engine, check if the fuel oil pressure during acceleration is about 350kPa.	Yes	The next step
		No.	Repair the oil supply system.
3	Check the spark plug of each cylinder, and observe if its type and gas conforms to the code requirements.	Yes	The next step
			Adjust and change
4	Remove the air filter hoop, and check if the air damper body and idle speed air passage has any collection of the carbon.	Yes	Clean the relevant spare parts
		No	The next step
5	Check if the air intake pressure sensor, air damper location sensor and the line is normal.	Yes	The next step
		No	Check the line or change the sensor
6	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage or blocking.	Yes	Change the fault
		No	The next step
7	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
8	Check if the ignition sequence and ignition timing of the engine conforms to the code requirements.	Yes	The next step
		No	repair the ignition timing
9	Check if the air exhaustion of the air exhaust pipe is smooth.	Yes	The next step
		No	Repair or change the air exhaust pipe
10	Connect the electronic ejection system connector, and turn on the ignition switch, check if the power supply for connection pins of No.12, 13, 44, 45 and 63 is normal, And check if the earthing for pins No.3, 51, 53, 61 and 80 is normal.	Yes	Diagnosis assistance
		No	Check the relevant lines

(12) it reacts slowly during the acceleration.

General fault location: 1.The fuel oil with water; 2.The intake pressure sensor and air damper location sensor; 3. The spark plug; 4. The air damper body and idle speed bypass passage; 5. Air intake duct; 6. Oil ejector; 7. The ignition timing; .8. Air exhaust pipe.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if air filter is blocked.	Yes	Check air intake system
		No	The next step
2	Connect the fuel oil pressure gauge (the connecting point is the general assembly oil intake pipe front end for the fuel oil distribution pipe), and start the engine, check if the fuel oil pressure during acceleration is about 350kPa.	Yes	The next step
		No.	Repair the oil supply system.
3	Check the spark plug of each cylinder, and observe if its type and gas conforms to the code requirements.	Yes	The next step
			Adjust and change
4	Remove the idle speed regulator, check if the air damper, idle speed regulator and idle speed bypass air passage has any connection of the carbon.	Yes	Clean the relevant spare parts
		No	The next step
5	Check if the air intake pressure sensor, air damper location sensor and the line is normal.	Yes	The next step
		No	Check the line or change the sensor
6	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage or blocking.	Yes	Change the fault
		No	The next step
7	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
8	Check if the ignition sequence and ignition timing of the engine conforms to the code requirements.	Yes	The next step
		No	repair the ignition timing
9	Check if the air exhaustion of the air exhaust pipe is smooth.	Yes	The next step
		No	Repair or change the air exhaust pipe
10	Connect the electronic ejection system connector, and open the ignition switch, check if the power supply for connection pins of No.12, 13, 44, 45 and 63 is normal, And check if the earthing for pins No.3, 51, 53, 61 and 80 is normal.	Yes	Diagnosis assistance
		No	Check the relevant lines

(13) it is powerless during the acceleration, performance is not good.

General fault location: 1.The fuel oil with water; 2.The intake pressure sensor; 3. The spark plug; 4. The ignition body; 5. Air damper body; 6. Air intake duct; 7. Oil ejector; 7. The ignition timing; 8. Air exhaust pipe.

General diagnosis process:

No.	The operation steps	The check results	Consequent steps
1	Check if the clutch is slippery, the tire air pressure is low, the brake lags behind, the tire size is incorrect, and 4 wheels positioning is incorrect, etc.	Yes	Repair
		No	The next step
2	Check if air filter is blocked.	Yes	Check air intake system
		No	The next step
2	Connect the fuel oil pressure gauge (the connecting point is the general assembly oil intake pipe front end for the fuel oil distribution pipe), and start the engine, check if the fuel oil pressure during acceleration is about 350kPa.	Yes	The next step
		No.	Repair the oil supply system.
3	Connect the fuel oil pressure gauge (the connecting point is the general assembly oil intake pipe front end for the fuel oil distribution pipe), and start the engine, check if the fuel oil pressure during acceleration is about 350kPa.	Yes	The next step
		No.	Repair the oil supply system.
3	Check the spark plug of each cylinder, and observe if its type and gas conforms to the code requirements.	Yes	The next step
		No	Adjust and change
4	Pull out one of the cylinder separation lines, and connect the spark plug, set the spark plug electrode at 5mm from the engine block, and start the engine as well as check if its high pressure strength is normal.	yes	The next step
		No	Repair the ignition system
4	Remove the idle speed regulator, check if the air damper, idle speed regulator and idle speed bypass air passage has any connection of the carbon.	Yes	Clean the relevant spare parts
		No	The next step
5	Check the spark plug of each cylinder, and observe if its type and gas conforms to the code requirements.	Yes	The next step
		No	Adjust and change
6	Check if the air damper and air passage has any collection of the carbon.	Yes	Clean the relevant spare parts
		No	The next step
7	Check if the air intake pressure sensor and air damper line is normal.	Yes	The next step
		No	Check the line or change the sensor
8	To remove the oil ejector, and use oil ejector special cleaning analysis apparatus to check if the ejector has any leakage or blocking.	Yes	Change the fault
		No	The next step
9	Check the fuel oil situation, and observe if the fault is caused just after the oil is filled.	Yes	To check and change
		No	The next step
10	Check if the ignition sequence and ignition timing of the engine conforms to the code requirements.	Yes	The next step
		No	repair the ignition timing
11	Check if the air exhaustion of the air exhaust pipe is smooth.	Yes	The next step
		No	Repair or change the air exhaust pipe

4.14 The definition for the engine computer (ECU) pin

D1320C (The engine computer/CLM2 32P grey)

A1	-	A2	-	A3	The front oxygen sensor	A4	-
B1	The engine rotation speed A1	B2	The engine rotation speed B (Earth)	B3	The front oxygen reference earth	B4	-
C1	Air intake pressure sensor	C2	Air intake pressure sensor	C3	The external sensor power supply 5V2	C4	-
D1	-	D2	-	D3	-	D4	-
E1	-	E2	-	E3	-	E4	-
F1	-	F2	Carbon tank valve	F3	The oil pump relay	F4	-
G1	-	G2	The oil nozzle 2 (the third cylinder)-	G3	The oil nozzle 4 (the second cylinder)-	G4	-
H1	Earth	H2	The oil nozzle 1 (the first cylinder)-	H3	The oil nozzle 3 (the fourth cylinder)-	H4	-

D1320A (The engine computer/CLC 48P brown)

A1	The acceleration pedal sensor 1	A2	The acceleration pedal sensor 2	A3	-	A4	-
B1	The acceleration pedal sensor power supply	B2	-	B3	-	B4	The ignition switch KL15
C1	-	C2	The fuel oil consumption output	C3	Air conditioning compressor switch	C4	The fault alarm light
D1	-	D2	-	D3	Air conditioning compressor switch request	D4	-
E1	-	E2	The fan high speed order	E3	-	E4	-
F1	-	F2	The engine fan fault inspection	F3	The theft protection	F4	-
G1	-	G2	The speed sensor	G3	-	G4	-
H1	-	H2	The diagnosis line K	H3	CAN trunk line CAN-H	H4	CAN trunk line CAN-L
J1	-	J2	The engine rotation speed output	J3		J4	The engine fan rotation speed
K1		K2	-	K3	Water temperature alarm	K4	The engine fan relay
L1	-	L2	-	L3	-	L4	Battery
M1	-	M2	-	M3	-	M4	Oil ejection earth

D1320B (The engine computer/CLM1 32P black)

A1	The air damper sensor 1	A2	Air intake temperature sensor	A3	-	A4	-
B1	The air damper sensor reference earth	B2	-	B3	The explosion and vibration sensor-	B4	The air damper sensor 2
C1	Power supply	C2	-	C3	The explosion and vibration sensor+	C4	-
D1	-	D2	The back oxygen sensor heating	D3	The back oxygen sensor earth	D4	Water temperature earth
E1	-	E2	The front oxygen sensor heating	E3	The back oxygen sensor	E4	Water temperature sensor
F1	-	F2	The main relay control	F3	The phase sensor	F4	-
G1	The air damper drive +	G2	Controllable power supply UBR	G3	The ignition 1 (the first and fourth cylinders)-	G4	-
H1	The air damper drive -	H2	-	H3	The ignition 1 (the second and third cylinders)-	H4	The ignition earth

5. The instrument system

5.1 The combined instrument

(1) The indicator light and alarm light

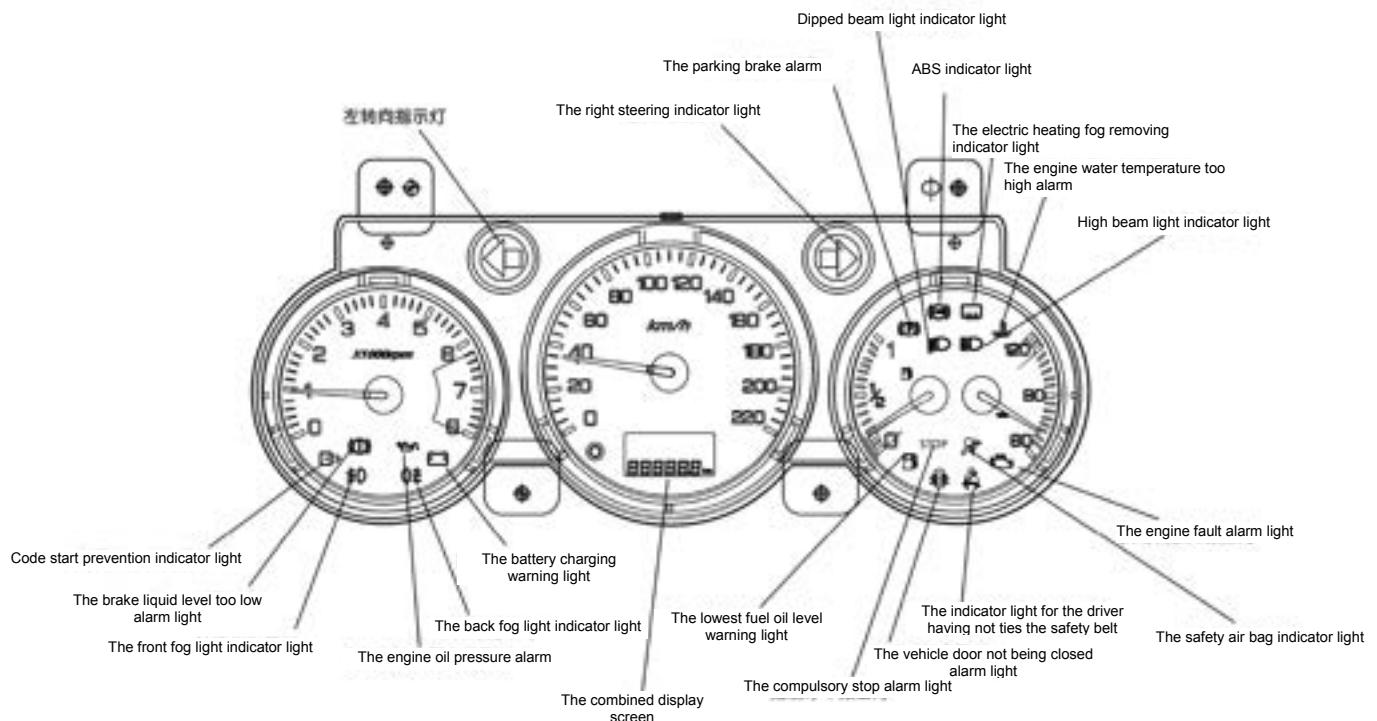


Fig. 5.1 The combined instrument indicator light and alarm light

(2) The instrument

The instruments on the combined instrument are indicator as Fig. below:

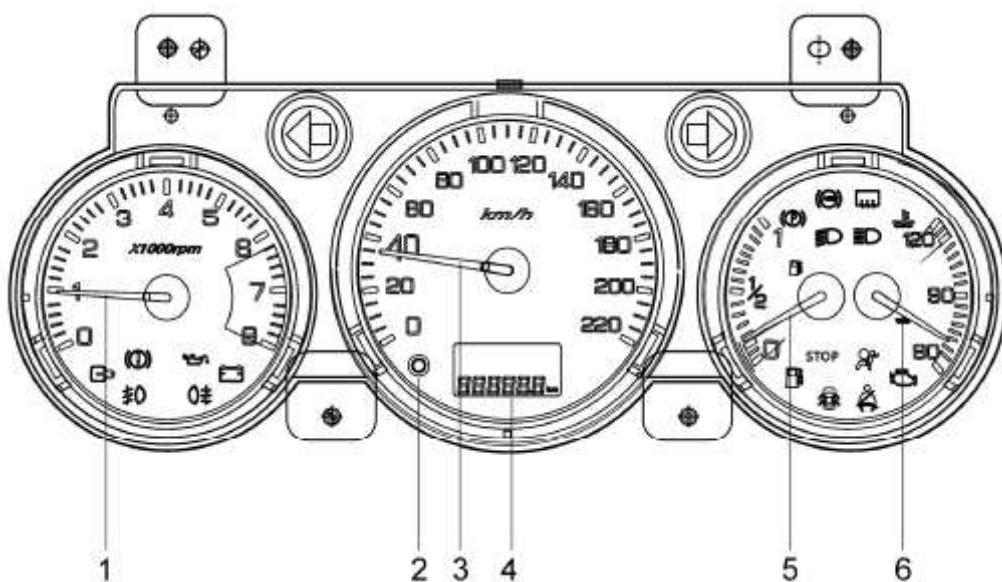


Fig. 5.2 The instrument chart

- | | | | | | |
|---------------|--|--------------------|---|---------------|---------------------------------------|
| 1. Tachometer | 2. The combined instrument left button (general miles and sub-total odometer display, reset the sub-mile meter). | 3. The speedometer | 4. The combined display screen (automatic gear display, odometer) | 5. Fuel gauge | 6. The engine water temperature gauge |
|---------------|--|--------------------|---|---------------|---------------------------------------|

① The engine water temperature gauge

The water temperature is provided by the engine water temperature sensor being installed on the engine cylinder hood, it is used for indicating the temperature of the engine cooling fluid, when the engine is working normally, the display value shall be within 90~100°C. As the cooling fluid temperature of the engine reaches 97°C, the cooling fan rotates in low speed, and when the cooling fluid temperature of the engine is lower than 94°C, the cooling fan shall stop running, when the cooling fluid temperature of the engine is higher than 105°C, the cooling fan rotates in high speed, when the cooling fluid temperature of the engine is lower than 101°C, the cooling fan shall stop running, when the cooling fluid temperature of the engine reaches 89°C, the thermostat shall be started partially, when the cooling fluid temperature of the engine reaches 101°C, the thermostat shall be fully started. If the cooling fluid temperature of the engine reaches or exceeds 112°C, the water temperature alarm light shall be on, now the vehicle shall be stopped and enable the engine to be flameout, and check the cooling fluid level and cooling pipeline.

② The speedometer

According to the speed of the pulse signal of the speed sensor, the deflection current of the speedometer shall occur relevant changes, thus making the meter hand to make relevant deflection for indicating the driving speed of the vehicle.

③ The combined display screen

The combined display screen controls the mileage meter, the shift display and other functions, it shall calculate the vehicle driving miles according to the pulse signal of the speed sensor, and display the miles on the combined display screen.

④ The odometer

Functions of the odometer are integrated into the combined display screen, it controls the function of the general miles. The odometer has two kinds of operation modes: 1. The general odometer, the general driving miles of the vehicle is the number of miles since the vehicle being put into the use; 2. The sub-total odometer is the driving mile number since the previous reset on the sub-total odometer. Pressing the instrument short shall change into the display of two odometers.

When the ignition switch is at + APC position, the sub-total odometer shall be reset at any time. The reset process of the sub-total odometer is as follows: 1. if it is not at the mode of the sub-total odometer, then it shall first be changed to the sub-total odometer; 2. Press the button of the combined instrument for at least 500ms; 3. The sub-total odometer blinks, press the button and hold on for at least 3sec, then reset the sub-total odometer; 4. Release the button, the display of the sub-total odometer is fixed without movement, and the reset is end.

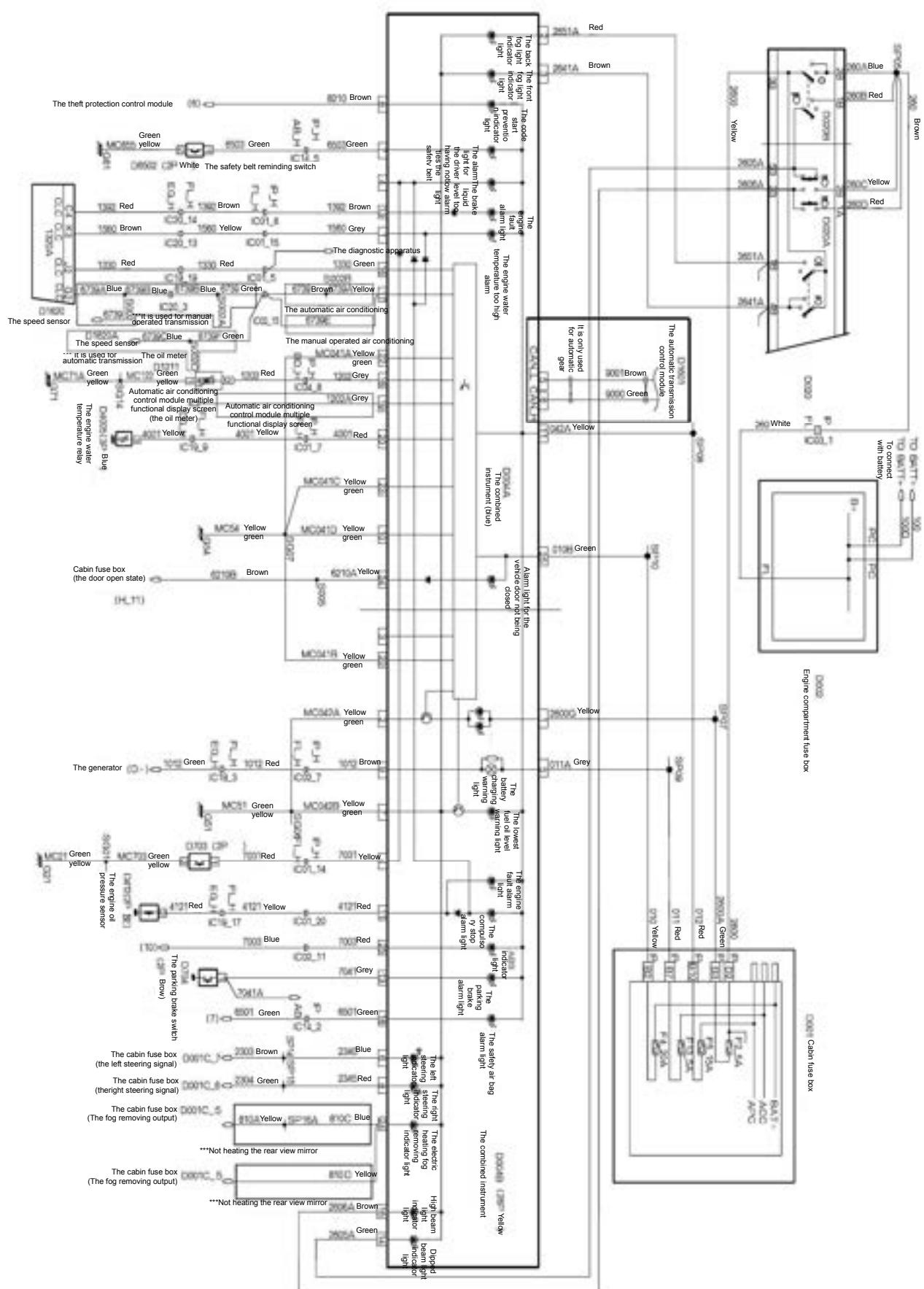
⑤ The tachometer

It is used for displaying the rotation of the engine, the tachometer hand shall make the relevant deflection through occurring the electronic pulse in proportion to the engine rotation speed. The signal of the tachometer comes from the engine rotation speed sensor.

⑥ The fuel gauge

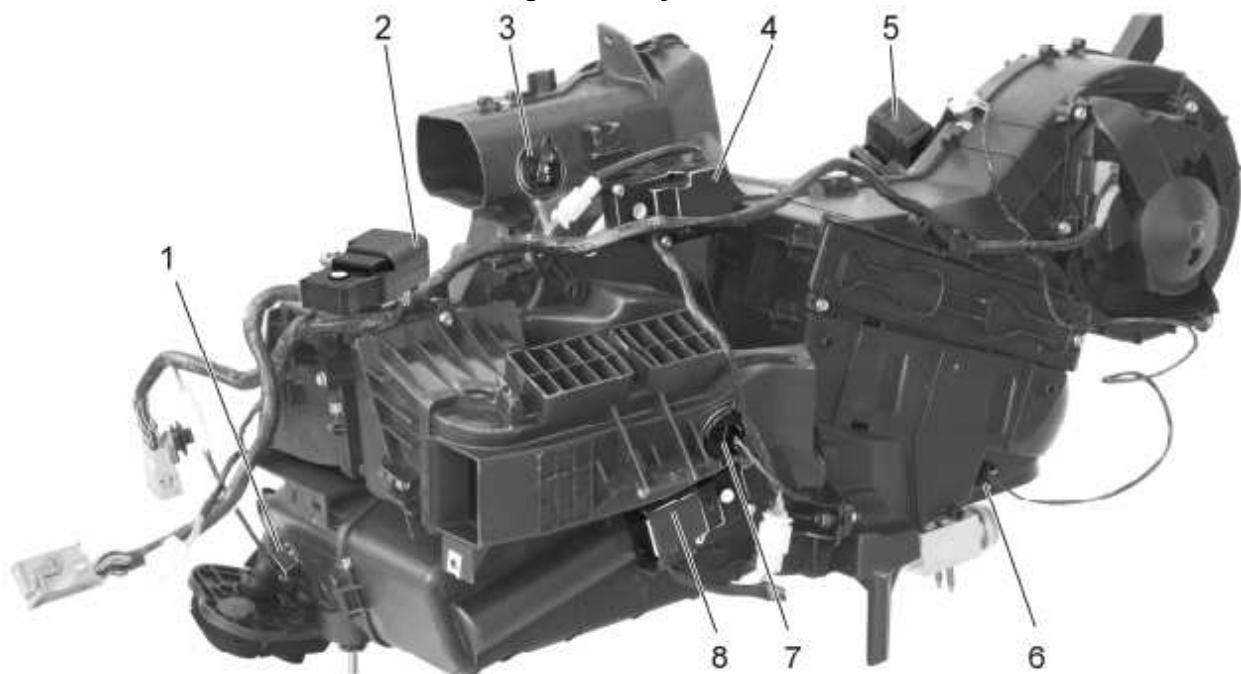
It is used for indicating the high and low level for the oil tank level. As the fuel gauge indicates digit (0), the lowest fuel level alarm light shall be on, now the fuel tank has 6~8liter fuel inside, extra oil needs to be filled at the gas station as soon as possible. The fuel gauge shall obtain the oil level information through the fuel sensor. The fuel sensor is a kind of slide plate resistance potentiometer, the float shall fluctuate up and down according to the change of the fuel tank level, it shall bring the slide plate to move for changing the resistance value of the sensor irruptive into the fuel gauge circuit, through the relevant change of the current of the fuel gauge, it enables the meter hand to swing to the relevant oil level value.

5.2 The electrical appliances schematic diagram of the combined instrument



6. The automatic air conditioning

6.1 The structure for the air conditioning assembly

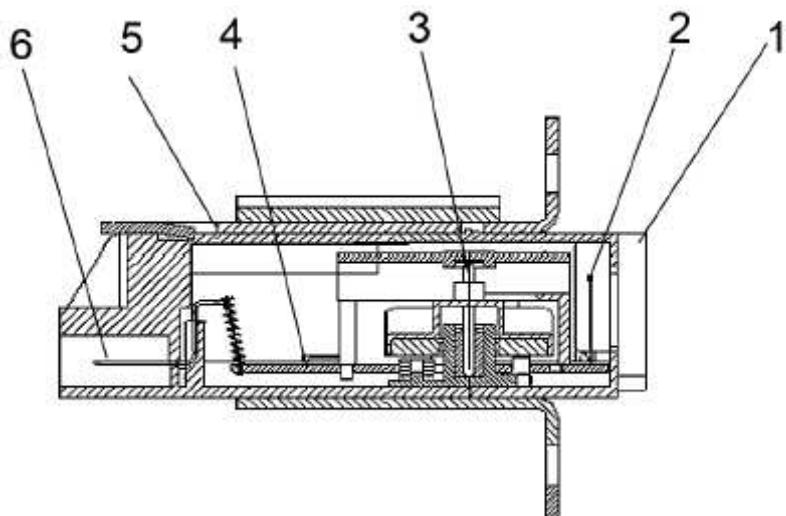


1. The water temperature sensor 2. Foot blowing and defrosting servo motor 3. The face uptake temperature sensor (T-out 1) 4. The face blowing servo motor 5. The inner and outer cycling servo motor 6. The evaporator temperature sensor 7. The foot uptake sensor

Fig. 6.1 The chart for the automatic air conditioning assembly

(1) The indoor temperature sensor

The indoor temperature sensor is installed near the instrument panel at the front row, located at the opposite of the auxiliary driver seat, for delivering the information of air temperature inside the vehicle to the computer, so that the computer shall conduct the management over the mixing and air flow distribution and recycling and other functions. It is a piezoelectricity resistance type sensor, the power is supplied by 5V DC electricity.



1. The sealing strip 2. The thermistor 3. The fan blade combination 4. The circuit board
5. The bracket case 6. The plug connector

Fig. 6.2 The structure for the indoor temperature sensor

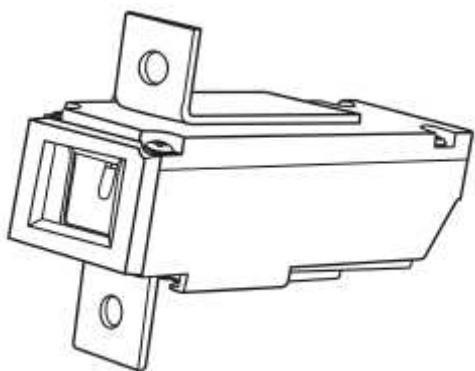
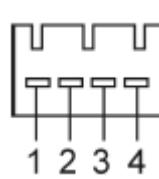


Fig. 6.3 The outline for the indoor temperature sensor

The description for the sensor output

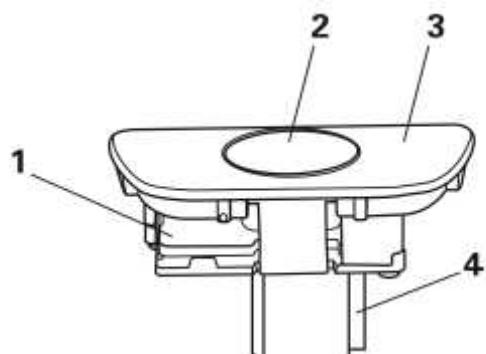


1. The sensor output
2. The sensor output 2
3. The blow power supply -
4. The blow power supply +12V, DC

Fig. 6.4 The definition for the indoor temperature sensor pins

(2) The sun light sensor

The sun light sensor is an indication for the annual average radiation volume for the whole car, it is a current type sensor. It is located in the middle of the instrument panel at the back of the front window glass (shield), in the process of use, the relationship with the real annual average radiation volume shall be demarcated, then the amendment shall be done in the procedure.



1. The circuit board
2. Photodiode
3. The plastic cover
4. The plug connector

Fig. 6.5 The sketch for the sun light sensor

The sun light sensor is a kind of optic-chemical diode (PCD) located on the instrument panel. This sensor shall send the signal to the air conditioning control module (ECCM), and displays the daily sun light intensity of the temperature inside the vehicle. If the sun light intensity is very strong as indicated by the sun light sensor, the air conditioning module shall enable the blower to operate in the maximal speed, and make up the extra radiation heat with the maximal cooling volume. At the same time, if the sun light indicated by the sun light sensor is quite weak (the cloudy), then the air conditioning module shall lower the rotation speed of the blower, and the system shall not possibly operate under the maximal cooling volume state.

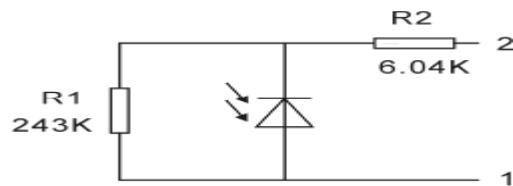


Fig 6.6 The schematic diagram for the inside of the sun light sensor

(5) The water temperature sensor

The water temperature sensor is a temperature indication for the engine cooling fluid, it is a kind of resistance type sensor very close to the radiator surface. It is the indication for the temperature damper heating capacity.

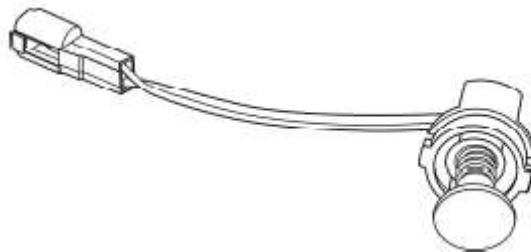


Fig. 6.7 The outline diagram for the water temperature sensor

(4) The evaporator temperature sensor

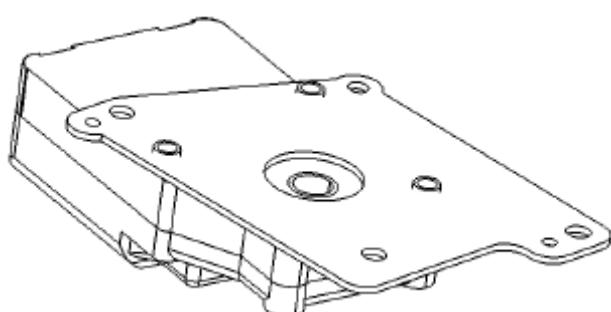
The evaporator temperature sensor is a kind of temperature sensing resistance type sensor, it is fixed in the air at the evaporator air outgoing side through the case. It shall send to the air conditioning control module through the evaporator air outgoing temperature information, so that the air conditioning control module can determine the air temperature being blown out.



Fig. 6.8 The outline diagram for the evaporator temperature sensor

(5) The temperature servo motor

The temperature servo motor is the most important motor for the air conditioning temperature control. Through adjusting the temperature servo motor, the cooling and hot air mixed degree may be adjusted, it shall reach the aim of adjusting the outgoing air temperature. The temperature servo motor is connected with the temperature damper with the gear, because this kind of connection, the motor rotation angle and the damper rotating angle is a linear change, with high rotation accuracy. The temperature damper is continuously control, in this way, it shall maintain the best temperature damper opening angle according to the objective of the temperature damper and the current opening angle. As the preset temperature is 18°C, the air mixed door is fixed at the very cold position, as the preset temperature is 32°C, the air mixed door is fixed at the very hot position.



The fault inspection:

The fault state:

- The exhausted air temperature has no change.
- The temperature servo motor is not working normally.

Fig. 6.9 The temperature servo motor

(6) The face blowing servo motor

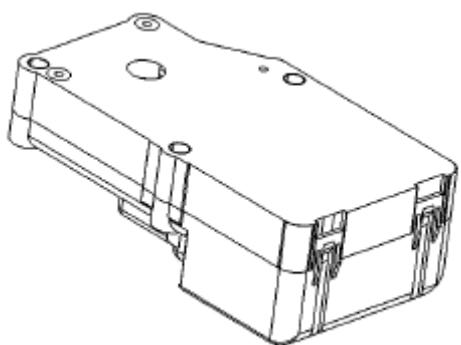


Fig. 6.10 The face blowing servo motor

The face blowing servo motor is the actuator for selecting the outgoing air direction of the air conditioning system, it is divided into the face blowing mode: Off and On.

(7) The foot blowing and defrosting servo motor

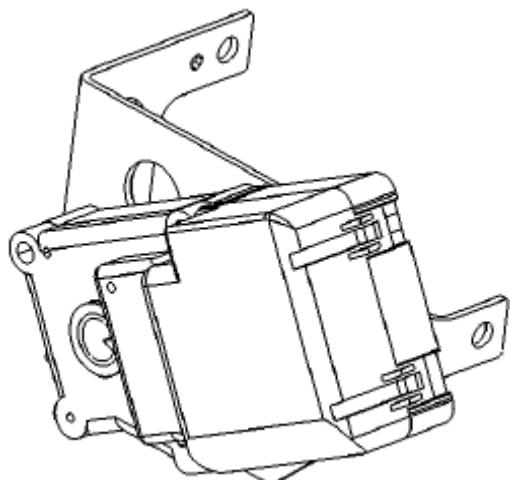


Fig. 6.11 The foot blowing and defrosting servo motor

The foot blowing and defrosting servo motor is the actuator for selecting the air outgoing direction of the air conditioning system. It is divided into three modes of foot blowing, defrosting and foot blowing & defrosting. The mode damper is very important to the air hot exchange for the whole car, under heating conditions, it is adopted foot blowing mode, due to little density of the hot air, it shall rise naturally, it is favorable to the balanced heating for the whole vehicle.

The fault state:

- The uptake has no change.
- The face blowing servo motor is not working normally.

Inspection means: Inspection circuit is cut off or on.

The fault inspection:

The fault state:

- The uptake has no change.
- The foot blowing and defrosting servo motor is not working normally.

(8) The inner and outer cycling servo motor

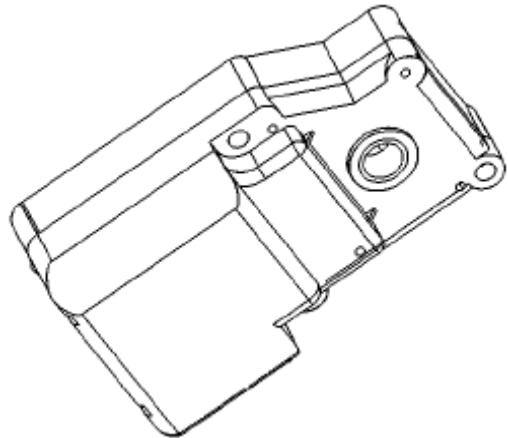


Fig. 6.12 The inner and outer cycling servo motor

The inner and outer cycling servo motor is the actuator for selecting the air incoming direction of the air conditioning system. The air conditioning system incoming air is divided into the inner and outer cycling. The inner and outer selection is very important for removing the humidity inside the vehicle. When the ambient temperature is lower than 0°C, the outside air in theory has no humidity, but due to the relationship of the people, evaporation of steam exists inside the vehicle, the humidity comes from inside the vehicle, at this time, the inner and outer cycling door is at outer cycle, it is favorable to the humidity removal inside the vehicle. When air compressor is working in the summer, the inner cycle shall be used.

The fault inspection:

The fault state:

- The intake valve has no change.
- The inner and outer cycling servo motor is not working normally.

Inspection means: Inspection circuit is cut off or on.

6.2 The self-diagnosis system for the automatic air conditioning

(1) The fault report for the damper actuator and the sensor:

If the damper actuator and the sensor has occurred any fault, then E shall be displayed on the screen, and the relevant fault code shall also be displayed in the self-diagnosis mode.

(2) The self-diagnosis mode:

First press down AUTO and hold it on, then press MODE after 2sec, the system enters into the self-diagnosis mode, and displays the fault serial number at the last two digits of the original set temperature on the screen, the first two digits of the original set temperature displays the fault code, 00 shall be displayed for no-fault, and the fault code shall be displayed if any fault occurred (details refer to table below). Now the set temperature knob is rotated for turning to the pages, for displaying the next or the previous code and fault code. Now press OFF key to quit the self-diagnosis mode, and return to the system original state.

The chart for handling the fault of the damper actuator and the sensor

Fault codes	Fault parts/software edition	Fault cause and description	The handling plan
00	The software edition	Two digits edition number	
01	The temperature servo motor	Difficult to rotate, the potentiometer is short or open	
02	The defrosting servo motor	Difficult to rotate, the potentiometer is short or open	
03	The water temperature sensor	In short or open circuit	Take Twat=90°C
04	The ambient temperature sensor	In short or open circuit	Take Tamb=20°C
05	The temperature sensor inside the vehicle	In short or open circuit	Take Tcab=25oC
06	The evaporator temperature sensor	In short or open circuit	Take Tevap=25oC
07	The heat outgoing air temperature sensor	In short or open circuit	Take Tout1=25°C
08	The foot outgoing air temperature sensor	In short or open circuit	Take Tout2=25°C
09	The sun light sensor	In short or open circuit	Take Ldef=300w/m ²

② The inspection mode



First press AUTO and hold it on, then press  , after maintaining for 2sec, the system enters the inspection mode, and after entering into the inspection mode successfully, Zero shall be displayed for the ten place digit, ones place digit, decimal and degree centigrade of the original set temperature of the screen. Rotate the air speed adjustment knob to turn over the page, and display the previous or the next numerical value, and the original set decimal and degree centigrade of the screen shall display the inspection serial number, the ten place and ones place, now press OFF key to quit the self-diagnosis mode, and return to the original state of the system. The details for the inspection refer to table below.

The table for the inspection numerical value definition

Serial No.	Numerical value	Remarks
01	Tamb	The temperature inside the vehicle
02	Tinc	The temperature outside the vehicle
03	Tevap	The evaporation temperature
04	Twar	The water temperature
05	Tidef (1/20)	The sun light radiation (take 1/20 of the sample value)
06	Tout vent	The breast outgoing air temperature
07	Tout foot	The foot outgoing air temperature
08	Speed (1/5)	The vehicle speed (take 1/5 of the sample value)
09	Tset	

(2) Other functions

When the controller has received the back light open signal, now turn on the controller back light signal. AS the system is at OFF position, the screen back light is off. The screen back light brightness can not be adjusted.

The automatic air conditioning controller is adopted EEPROM mode storage memory contents, the storage time is set as 2sec after end of pressing the key, the storage contents are as follows: the system state, each actuator state, air compressor state and blower state.

As the vehicle ignition lock is open, the controlled starts working with electricity, all equipments return to the electricity cut-off state of the last ignition lock, namely recover all the memory state.

If the memory contents impossible to be correctly read due to the damage of the storage area, the system automatically set up the start initial state to:

The set temperature: 25°C

The system state: The system is off, in manual operated state;

The mode actuator: Manual operated and face blowing;

The cycle actuator: Manual operated and outer cycle

The temperature actuator: The automatic operation

6.3 The definition for the automatic air conditioning control module pins

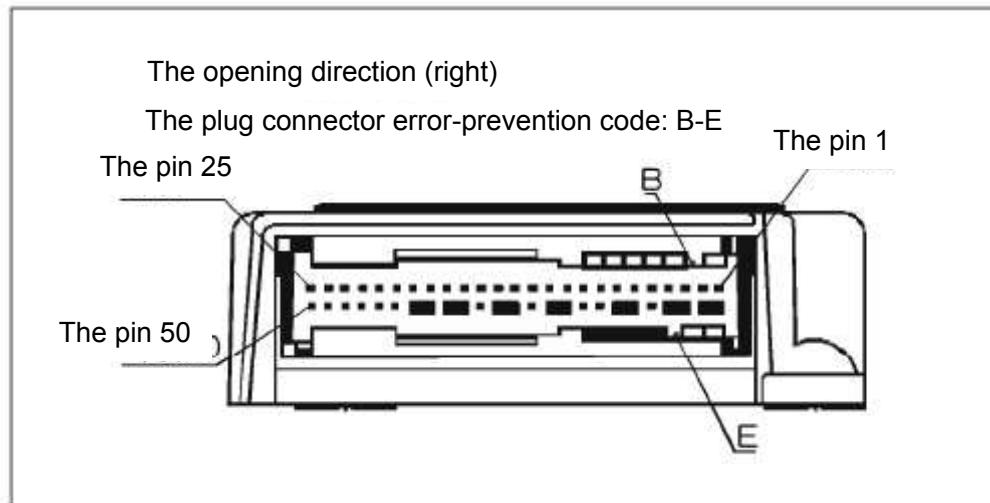
Pins	Signals	The voltage	The current	Remark
1	IG2	12V	<2A	
2	GND	0V	<2A	
3	MI+	0V/12V	300mA	The Defrosting and foot servo motor positive drive (high effective)
4	T-	0V/12V	300mA	The temperature servo motor negative drive (high effective)
5	FRE	0V/12V	300mA	The cycle servo motor outer cycle drive (high effective)
6	FOOT	0V-12V	300mA	The face blowing servo motor and foot blowing drive (high effective)
7	A/C output	0V/12V	<700mA	Air compressor output (high effective)
8	Pressure switch	0V/12V	5mA	The air conditioning pressure switch signal
9	M1 F/B	0V-5V	5mA	The defrosting and foot servo motor feed back signal
10	Tout 1	0V-5V	2mA	The face outgoing air temperature sensor signal
11	Incar	0V-5V	2mA	The vehicle internal temperature sensor signal
12	TB	0V-5V	4mA	The blower speed regulation drive signal
13	Solar	0V-5V	2mA	The sun light sensor
14	Speed	0V/12V	2mA	The vehicle speed signal
15				
16	A/C request	0V/12V	5mA	Air compressor request
17	IG2	12V	<2A	
18	SGND	0V	<2A	
19	T+	0V/12V	300mA	The temperature servo motor positive drive (high effective)
20	M1-	0V/12V	300mA	The Defrosting and foot servo motor negative drive (high effective)
21	R/Defrost	0V/12V	<150mA	The back defrosting relay drive (low effective)
22	REC	0V/12V	300mA	The cycle servo motor inner cycle drive (high effective)
23	VENT	0V/12V	300mA	The face blowing servo motor facing blowing drive (high effective)
24	A/C response	0V/12V	5mA	The air compressor reaction
25	T F/B	0V-5V	5mA	The temperature servo motor feed back signal
26	AMB	0V-5V	2mA	The ambient temperature sensor signal
27	Evap	0V-5V	2mA	The evaporator sensor signal
28	Tout 2	0V-5V	2mA	The foot outgoing air temperature sensor signal
29	Water	0V-12V	2mA	The water temperature sensor signal
30	TC	0V-12V	5mA	The blower voltage feed back signal
31	Lamp +	0V/12V	60mA	The back light signal (positive)
32	+5V	+5V	4mA	5V

7. The safety air bag system

7.1 Definition for the plug connectors and pins of the safety air bag control module

(1) The chart for the air bag module plug connectors

4LOOP plug connector chart



6LOOP plug connector chart

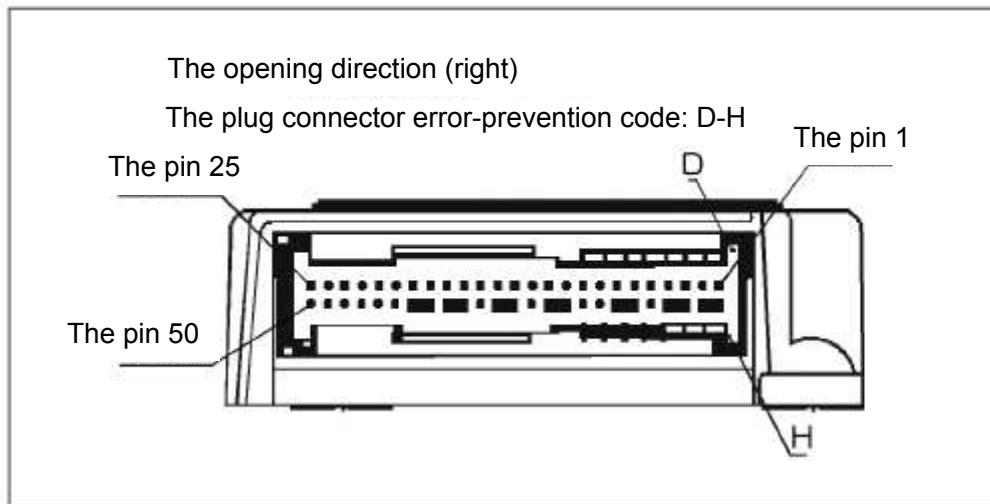


Fig. 7.1 The chart for the air bag module plug connectors

(2) The definition for the control module pins

The definition for 4LOOP/6LOOP safety air bag control module pins

Pins	The definition of pins	4LOOP	6LOOP
1	The air bag at the passenger side, high	×	●
2	The air bag at the passenger side, low	×	●
3	The air bag at the driver side, low	×	●
4	The air bag at the driver side, high	×	●
5	The power supply	●	●
6	The earthing	●	●
7	The alarm light	●	●
8	×	×	×
9	Line K	●	●
10	The air bag at the front of the driver, high	●	●
11	The air bag at the front of the driver, low	●	●
12	The driver belt buckle switch	×	×
13	The driver safety belt pre-tensioner, high	●	●
14	The driver safety belt pre-tensioner, low	●	●
15	Flash codes switch	●	●
16	The passenger safety belt pre-tensioner, low	●	●
17	The passenger safety belt pre-tensioner, high	●	●
18	The air bag at the front of the passenger, high	●	●
19	The air bag at the front of the passenger, low	●	●
20	The collision sensor at the side of the driver, high	×	●
21	The collision sensor at the side of the driver, high	×	●
22	The invalidation switch for the passenger safety air bag	×	×
23	The closing indicator light for the passenger safety air bag	×	×
24	×	×	×
25	×	×	×
26	The short bar	●	●
27	The short bar	●	●
28	The short bar	●	●
29	The short bar	●	●
30	×	×	×
31	The short bar	●	●
32	The short bar	●	●
33	×	×	×
34	The collision output	●	●
35	The short bar	●	●
36	The short bar	●	●
37			

Pins	The definition of pins	4LOOP	6LOOP
37	The passenger side belt buckle switch	×	×
38	The short bar	●	●
39	The short bar	●	●
40	The invalidation switch low end for the passenger safety air bag	×	×
41	The short bar	●	●
42	The short bar	●	●
43	The short bar	●	●
44	The short bar	●	●
45	The collision sensor at the side of the driver, low	×	●
46	The collision sensor at the side of the driver, high	×	●
47	×	×	×
48	×	×	×
49	×	×	×
50	×	×	×

Notes: × indicates not being used, ● indicates being used.

7.2 The inspection for the safety air bag system

Before the inspection of the safety air bag system, it needs using multi-meter to check the vehicle's battery voltage, and confirm its voltage working in normal scope. The working voltage required for the air bag safety system is 10V to 16V.

Warning: Only the fault diagnostic apparatus can be used for inspecting the safety air bag system, it does not permit using other apparatus to inspect the safety air bag system.

(1) Use the alarm light for inspection

The safety air bag alarm light is on the vehicle instrument panel, through the change of the light, it indicates the working state of the safety air bag system. In general situation, when the vehicle key is turned to ON, the safety air bag alarm light shall start blinking, after blinking for 6 times, the alarm light shall be off, and it shall not be on only the key is open for the next time. If it is not this situation, it indicates the safety air bag system has the fault, it needs to be inspected.

① The alarm light is not on or is always on

Place the ignition switch at ON position, if the safety air bag alarm light is not on from the very start or is always on from the very start, it indicates that the safety air bag alarm light is in fault, or the line is in fault, it is possible that the air bag wiring harness is not connected. These faults generally do not belong to the fault inside the safety air bag system, the alarm light and the line shall be repaired according to the repair method for the vehicle electrical appliances.

② The alarm light is always on after the blink

After the safety air bag alarm light is on, it shall be off after blinking for about 6sec. Then it shall be continuously on. It indicates that safety air bag system has the fault, it needs to be repaired well.

(2) The inspection with the fault diagnostic apparatus

After the fault existing in the safety air bag system is found with the safety air bag alarm light, special fault inspection apparatus may be used for confirming the concrete fault. The inspection process chart is indicated by Fig. 7.2 The fault diagnosis process as below:

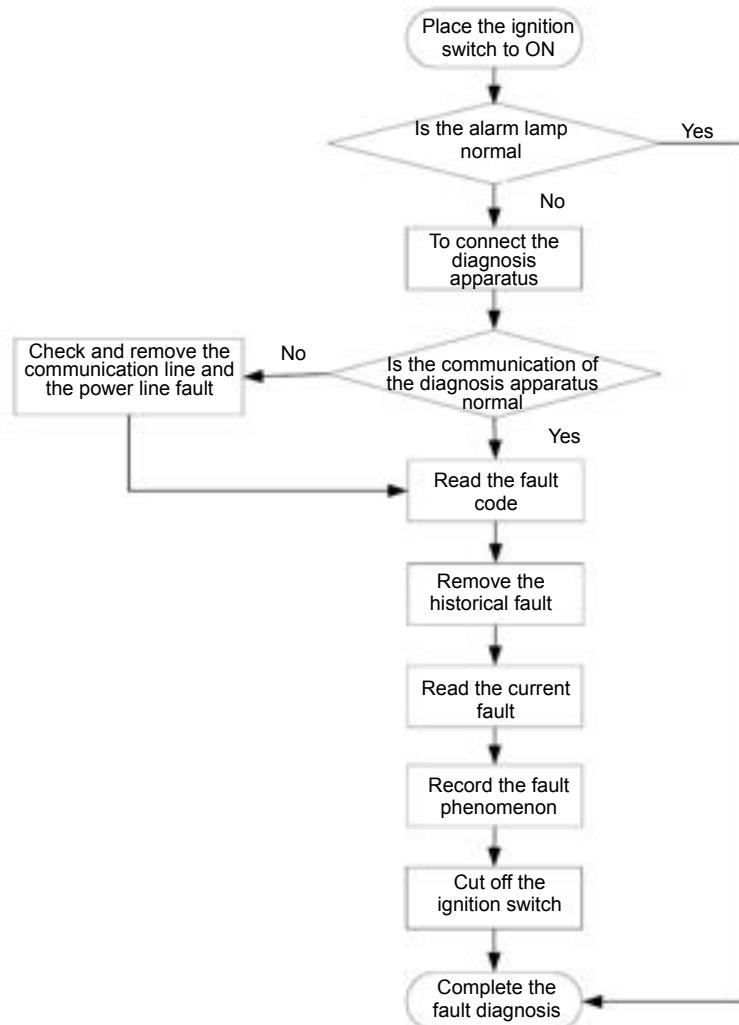


Fig. 7.2 The diagnosis process chart for the safety air bag fault

7.3 The maintenance for the safety air bag system

Once the safety air bag has any fault, it needs to be maintained by professional repair man, non-professional personnel may not conduct the maintenance work for the system.

⚠ Warning: On the professional personnel may conduct the maintenance work for the safety air bag system, otherwise it shall cause grave human injury.

(1) The preparation work before the maintenance

Before the maintenance, it needs first to remove the power supply to the vehicle, the method is as follows: Remove the cathode connection of the vehicle battery, use the insulation tape to wrap well the wire connection head for insulation, and wait for 2 minutes.

⚠ Attention: Inside of the safety air bag control module (ACU) has the power cut-off protection function, namely it shall keep the power supply for a short time inside the safety air bag control module at the power supply is cut off. So it needs to cut off the power for enough long (2 minutes), in order to enable the internal protection function to lose its efficacy.

⚠ Warning: Maintenance with electricity on for the safety air bag system is extremely dangerous, it may greatly possible to cause grave human injury due to mistaken blast of the system.

(2) The fault description and the handling mode

① The safety air bag alarm light has no indication.

The possible causes:

- No power supply is provided (The fuse is broken)
- The combined instrument fault (The alarm light is damaged)
- The wiring harness between the instrument and the safety air bag system has fault

The maintenance process:

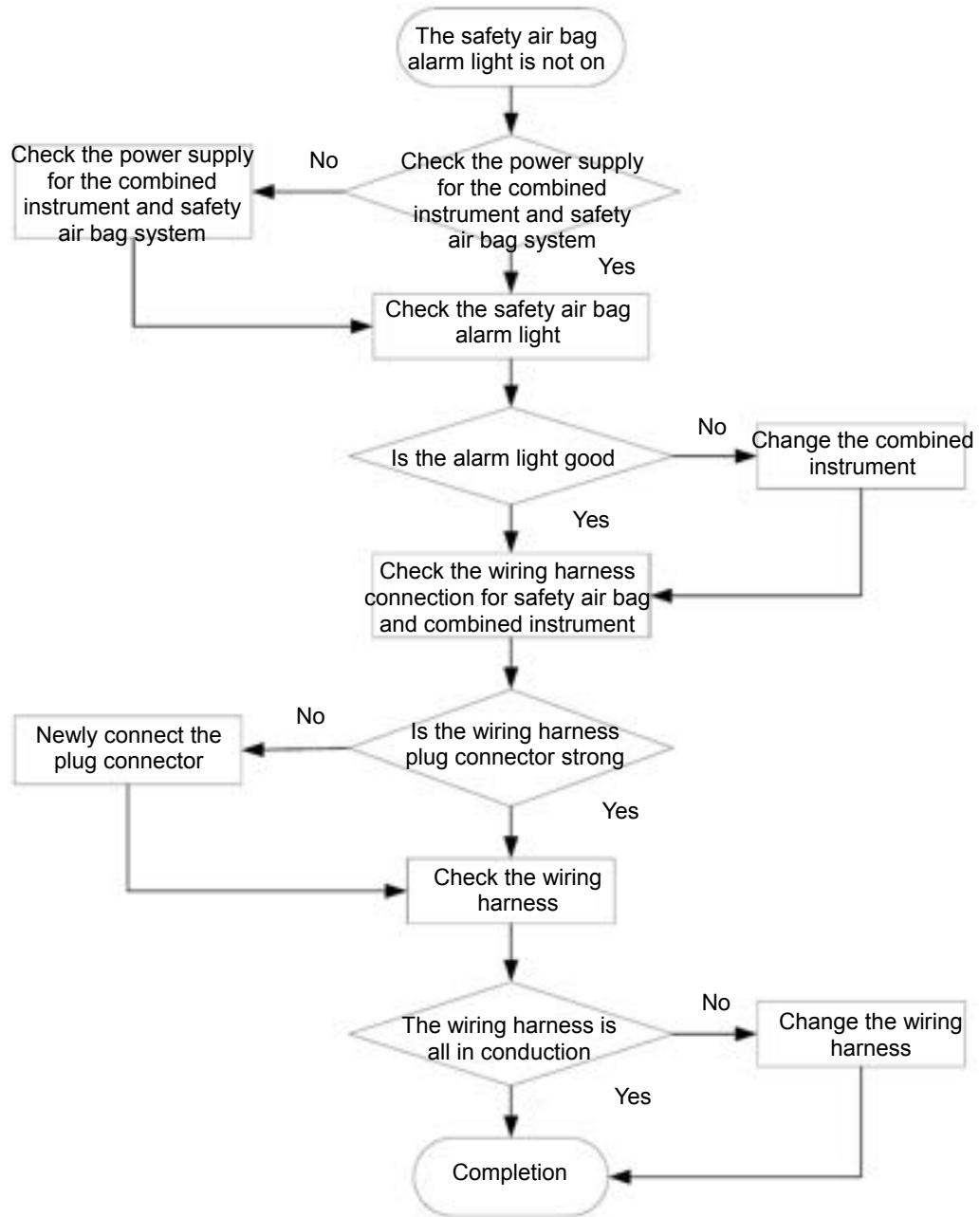


Fig. 7.3 The maintenance process for the safety air bag alarm light

After the end of the maintenance, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

② The fault of the driver air bag

The possible causes:

- The trunk line connection fault between the safety air bag control module (ACU) and the safety air bag system assembly wiring harness
- The fault of the safety air bag trunk line wiring harness
- The connection fault for the safety air bag trunk line wiring harness and the rotating connector
- The internal fault of the rotating connector.
- The connection fault for the rotating connector and the driver's safety air bag module.
- The fault of the driver's safety air bag module.

The maintenance process:

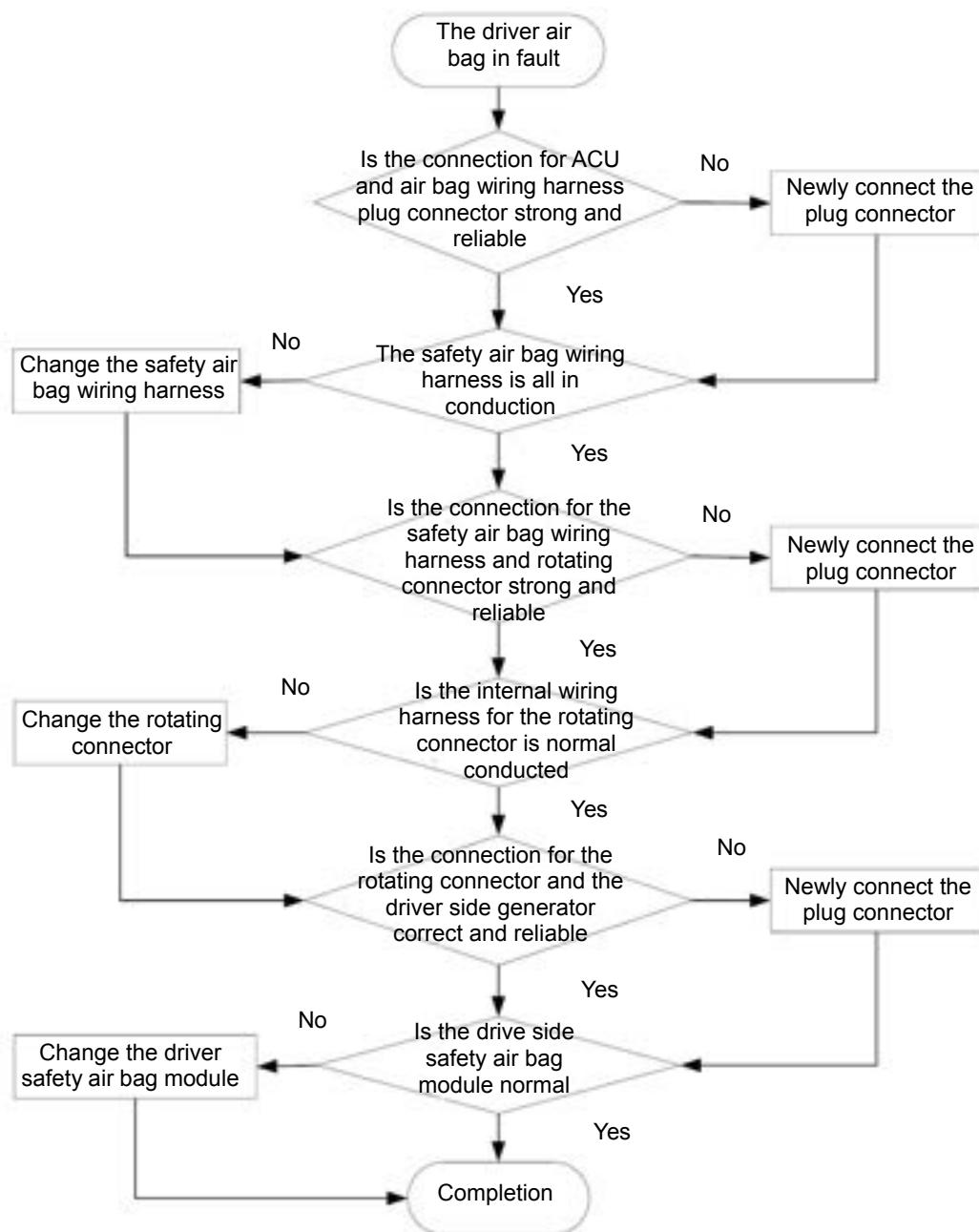


Fig. 7.4 The maintenance process for the driver side safety air bag

After the end of the maintenance, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

③ The passenger safety air bag in fault

The possible causes:

- The connection fault for the safety air bag control module (ACU) and the safety air bag system assembly wiring harness
- The connection fault for the safety air bag assembly wiring harness
- The connection fault for the safety air bag assembly wiring harness and the passenger module
- The fault for the passenger safety air bag module

The maintenance process:

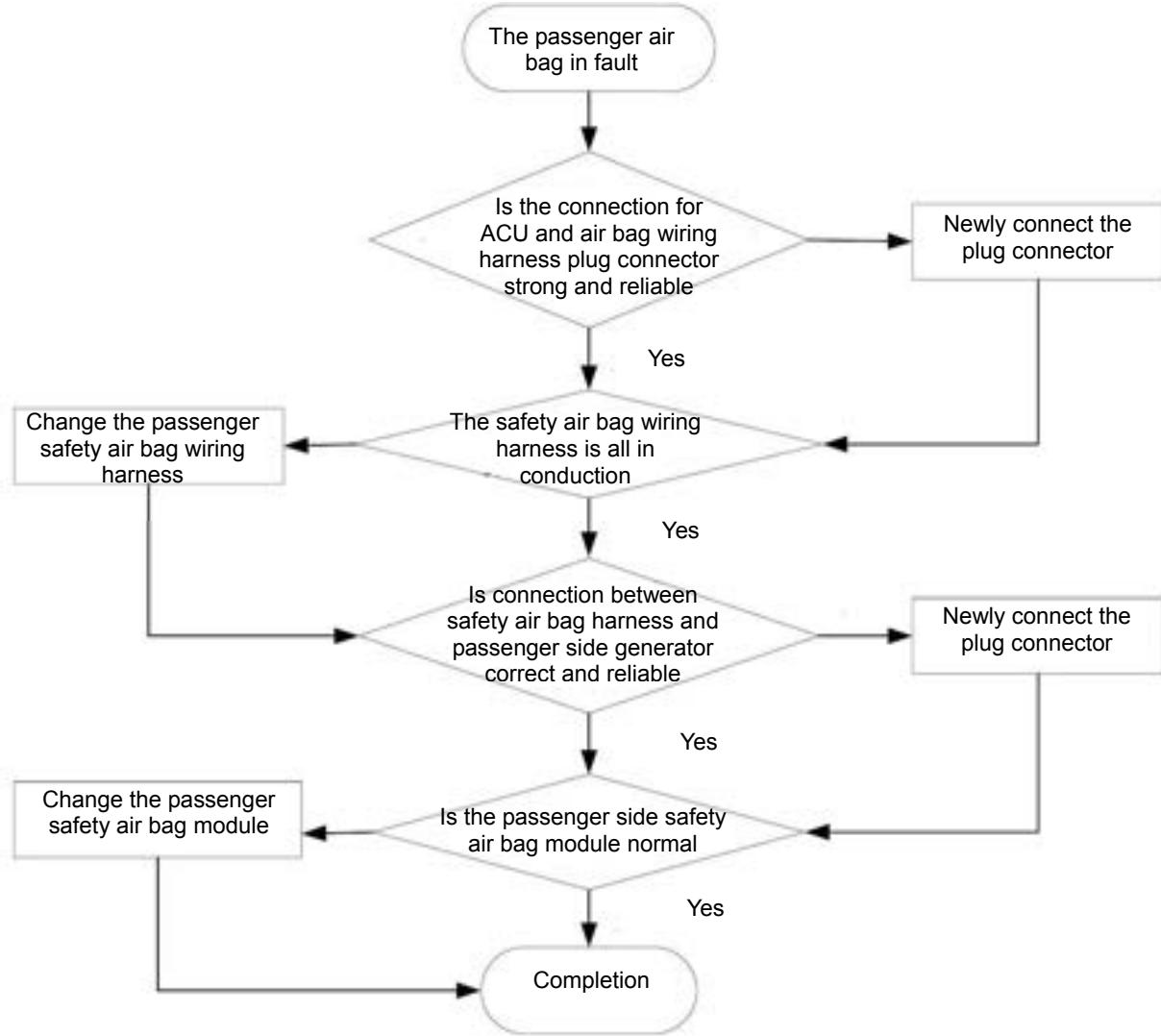


Fig. 7.5 The maintenance process for the passenger safety air bag

After the end of the maintenance, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

④ The fault of the side air bag

The possible causes:

- The connection fault for the safety air bag control module (ACU) and the safety air bag system assembly wiring harness
- The fault for the safety air bag assembly wiring harness
- The connection fault for the safety air bag assembly wiring harness and the side safety air bag module
- The fault for the side safety air bag module

The maintenance process:

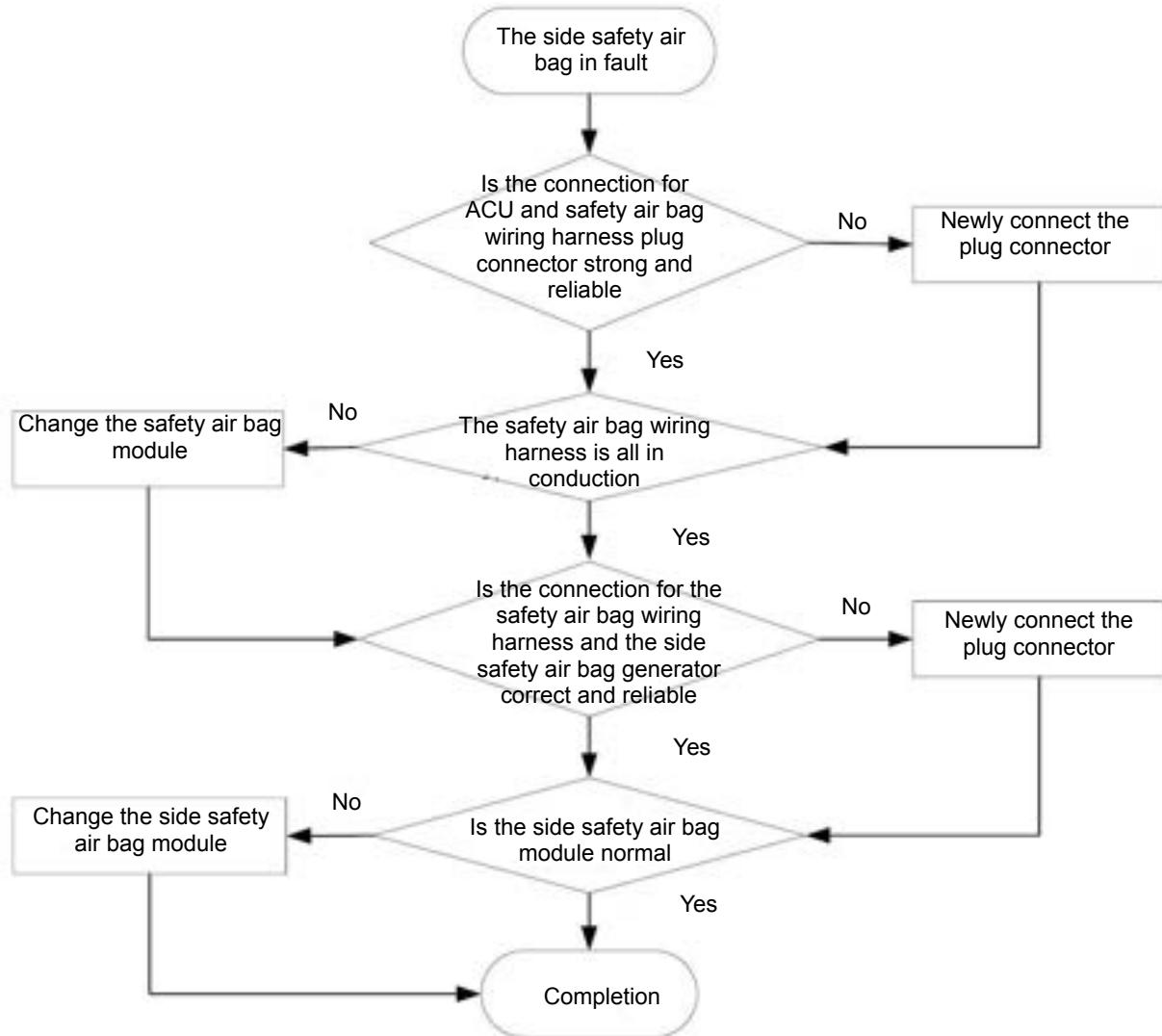


Fig. 7.6 The maintenance process for the side safety air bag

After the end of the maintenance, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

⑤The fault of the side collision sensor

The possible causes:

- The connection fault for the safety air bag control module (ACU) and the safety air bag system assembly wiring harness
- The fault for the safety air bag assembly wiring harness
- The connection fault for the safety air bag assembly wiring harness and the side collision sensor
- The fault for the side collision sensor

The maintenance process:

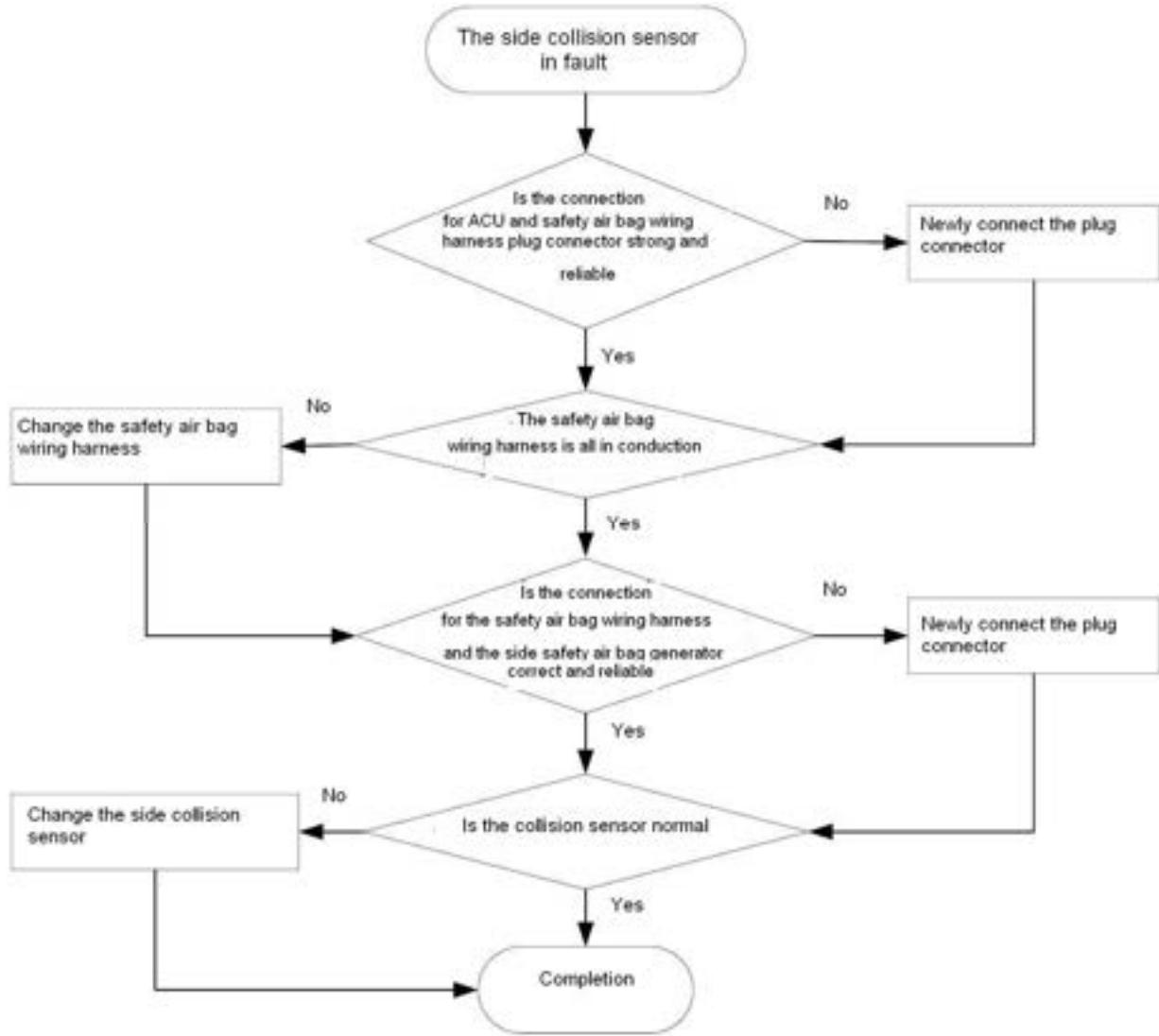


Fig. 7.7 The maintenance process for the side collision sensor

After the end of the maintenance, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

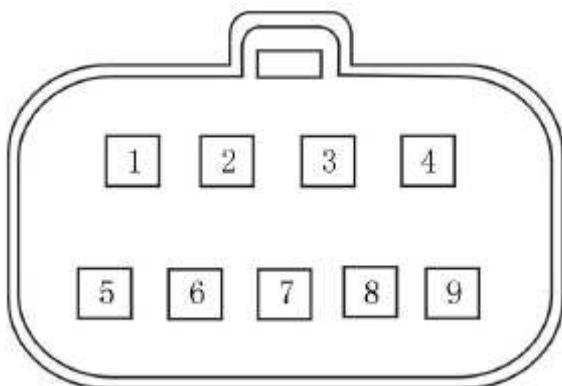
⑥ The internal fault for the safety air bag control module

Once the safety air bag control module reports the internal error, it needs to change the safety air bag control module. After the end of the change, newly inspect the system with the fault diagnostic apparatus, its inspection process refers to Fig. 7.2 The inspection of the safety air bag system.

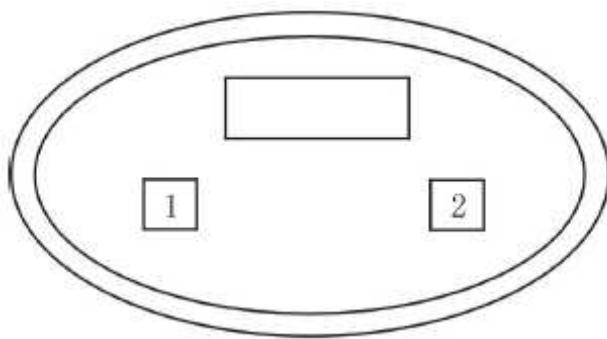
7. The automatic transmission

8.1 The definition for the pin of automatic transmission electrical components

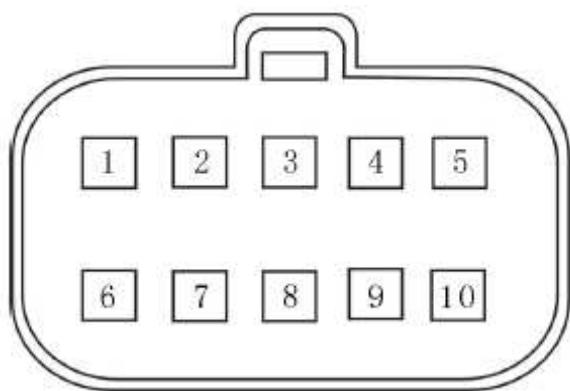
D1602B gear selection switch (9P grey)



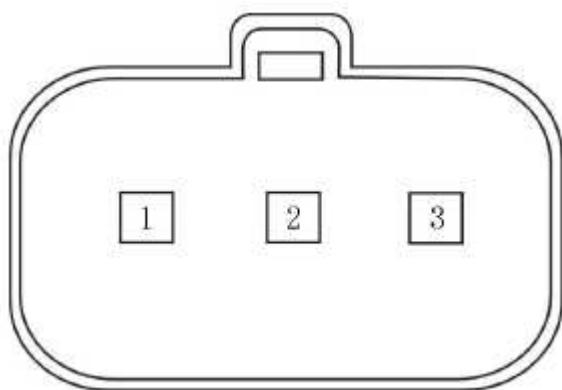
Information for the plug connector	9P	
Pins	The lead colors	The function
1	Green	The reverse signal
2	Grey	Prohibit the start signal
3	Yellow	Gear 2 shifting signal
4	Green	The ignition voltage
5	Green	The start up signal
6	Blue	The parking signal
7	Green	Gear D signal
8	Brown	Gear L signal
9	Red	Neutral position signal

D1605 input speed sensor (2P blue)

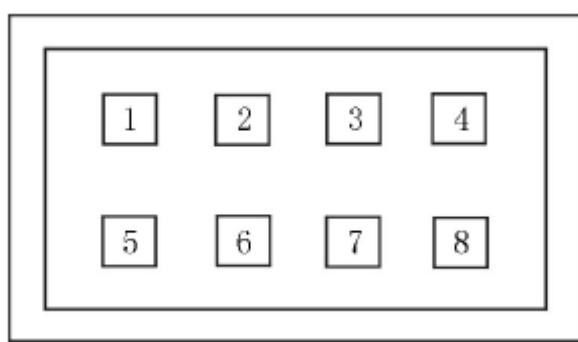
Information for the plug connector	9P	
Pins	The lead colors	The function
1	Green	The input speed sensor signal
2	Red	The input speed sensor earthing

D1602A the transmission unit (10P grey)

Information for the plug connector	9P	
Pins	The lead colors	The function
1	Green	The transmission temperature sensor signal
2	Brown	The timing electromagnetic valve signal
3	Brown	The main oil duct pressure control electromagnetic valve signal
4	Yellow	The locking control electromagnetic valve signal
5	Blue	The shifting electromagnetic valve No.1 signal
6	Red	The transmission oil temperature sensor earthing
7	-	It is not used
8	Green	The main oil duct pressure control electromagnetic valve earthing
9	-	It is not used
10	Green	The shifting electromagnetic valve No.2 signal

D1602A the vehicle speed sensor (3P black)

Information for the plug connector	3P	
Pins	The lead colors	The function
1	Grey	The ignition voltage
2	Blue	The speed sensor signal
3	Green yellow	Earthing

D1603 the mode selection switch (8P grey)

Information for the plug connector	3P	
Pins	The lead colors	The function
1	Red	The movement mode light
2	Green	The snow area mode light
3	Yellow	Overdrive gear close light
4	Yellow green	Earthing
5	Blue	The movement mode light
6	Grey	The snow area mode light
7	Brown	Overdrive gear close mode switch
8	Yellow	The ignition switch

D1601A the automatic transmission control module A (24P white)

	1	2	3	4	5	6	
7	8	9	10	11	12	13	14
17	18	19	20		21	22	23
					15	16	24

Information for the plug connector	3P	
Pins	The lead colors	The function
1	Green yellow	The transmission control module earthing
2	Green	The main oil duct pressure control electromagnetic valve earthing
3	-	It is not used
4	Brown	The main oil duct pressure control electromagnetic valve signal
5	Yellow	The locking control electromagnetic valve signal
6	Pink	The ignition voltage
7	Brown	CAN low voltage signal
8	-	It is not used
9	-	It is not used
10	-	It is not used
11	Blue	The transmission oil temperature sensor signal
12	Red	The transmission oil temperature sensor earthing
13	-	It is not used
14	-	The timing electromagnetic valve signal
15	Green	No.2 electromagnetic valve signal
16	Blue	No.1 electromagnetic valve signal
17	Green	CAN high voltage signal
18	-	It is not used
19	-	It is not used
20	-	It is not used
21	-	It is not used
22	-	It is not used
23	Green yellow	The transmission control module earthing
24	Yellow	The battery anode voltage

D1601B the automatic transmission control module B (26P white)

	1	2	3	4	5	6	
	7	8	9	10	11	12	13 14 15 16 17
	18	19	20	21		22 23 24 25 26	

Information for the plug connector	3P						
Pins	The lead colors		The function				
1	Yellow		The gear selection switch reserve signal				
2	-		It is not used				
3	Green		The snow area mode light				
4	Grey		The snow area mode switch				
5	-		It is not used				
6	Green		The input speed sensor signal				
7	Green		The gear selection switch drive signal				
8			The gear selection switch neutral position signal				
9	-		It is not used				
10	Yellow		Overdrive gear close mode switch				
11	Red		The movement mode light				
12	-		It is not used				
13	Blue		The movement mode switch				
14	-		It is not used				
15	-		It is not used				
16	Red		The input speed sensor earthing				
17	—		It is not used				
18	Brown		The gear selection switch gear L signal				
19	Yellow		The gear selection switch gear 2 signal				
20	Blue		The gear selection switch parking signal				
21	Brown		The over speed gear close mode switch				
22	-		It is not used				
23	-		It is not used				
24	-		It is not used				
25	Blue		The speed sensor signal				
26	-		It is not used				

8.2 The automatic transmission maintenance matrix

The maintenance matrix on the vehicle

The fault phenomenon	The possible causes to the fault
The drive gear is not moving or skids	<ul style="list-style-type: none"> ● The fly wheel is deformed ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The torque converter ● The spare parts inside the transmission drive axle
The reverse is not moving or skids	<ul style="list-style-type: none"> ● The fly wheel is deformed ● The timing electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The torque converter ● The spare parts inside the transmission drive axle
It skids during the acceleration	<ul style="list-style-type: none"> ● The shifting electromagnetic No.1 circuit ● The shifting electromagnetic No.2 circuit ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
The shifting time lag from the neutral position to the drive position	<ul style="list-style-type: none"> ● The input speed sensor ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● The spare parts inside the transmission drive axle
The shifting time lag from the neutral position to the reverse position	<ul style="list-style-type: none"> ● The input speed sensor ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● The spare parts inside the transmission drive axle

The fault phenomenon	The possible causes to the fault
The engine can not be started	<ul style="list-style-type: none"> ● The gear selection switch ● The shifting drag line or neutral positioning position adjustment is not appropriate
The engine losing the speed from the neutral position to the drive position or from the neutral position to the reverse position	<ul style="list-style-type: none"> ● The engine has the fault ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The transmission oil cooling tube ● The spare parts inside the transmission drive axle
The engine losing the speed from the start of the deceleration	<ul style="list-style-type: none"> ● The engine has the fault ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The transmission oil cooling tube ● The spare parts inside the transmission drive axle
The acceleration is not good	<ul style="list-style-type: none"> ● The engine has the fault ● The air damper opening signal
The gear can not be increased from gear 1 to gear 2, or the gear can not be decreased from the gear 2 to gear 1	<ul style="list-style-type: none"> ● The gear selection switch ● The shifting electromagnetic valve No.2 circuit ● The transmission control module (TCM) ● The air damper opening signal ● The spare parts inside the transmission drive axle
The gear can not be increased from gear 3 to gear 4, or the shift can not be decreased from the gear 4 to gear 3	<ul style="list-style-type: none"> ● The gear selection switch ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The transmission control module (TCM) ● The air damper opening signal ● The spare parts inside the transmission drive axle
It is impossible to use the locking function or prohibit using the locking function start, the gear can not be increased or decreased	<ul style="list-style-type: none"> ● Locking electromagnetic valve circuit ● The brake switch ● The transmission control module (TCM) ● The air damper opening signal ● The torque converter ● The spare parts inside the transmission drive axle

The fault phenomenon	The possible causes to the fault
The gear can not be increased or decreased starting from the gear 2 brake	<ul style="list-style-type: none"> ● The shifting electromagnetic valve No.1 circuit ● The transmission control module (TCM) ● The spare parts inside the transmission drive axle
The gear can not be increased or decreased starting from the gear 1 brake	<ul style="list-style-type: none"> ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The transmission control module (TCM) ● The spare parts inside the transmission drive axle
The gear can not be forcefully decreased	<ul style="list-style-type: none"> ● The vehicle speed sensor ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The timing electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve signal ● The transmission control module (TCM) ● The spare parts inside the transmission drive axle ● The air damper opening signal
Abnormal gear shifting	<ul style="list-style-type: none"> ● The vehicle speed sensor ● The gear selection switch ● The transmission control module (TCM) ● The air damper opening signal
No mode selection	<ul style="list-style-type: none"> ● The mode selection switch ● The transmission control module (TCM)
Gear lever hard/soft	<ul style="list-style-type: none"> ● The shifting drag line or neutral positioning position adjustment is not appropriate ● The spare parts inside the transmission drive axle
The engine oil leaks outside from the air tube	<ul style="list-style-type: none"> ● The transmission oil cooling tube ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
The engine oil leaks outside between the engine and the automatic transmission shell	<ul style="list-style-type: none"> ● The fly wheel is deformed ● The oil seal ● The torque converter
The transmission oil leaks outside from the differential gear oil seal	<ul style="list-style-type: none"> ● The oil seal
The transmission oil leaks outside from the left and right semi-axle oil seal	<ul style="list-style-type: none"> ● The oil seal
The transmission oil leaks outside from the automatic transmission shell, the back shell of the oil pan and the automatic transmission shell	<ul style="list-style-type: none"> ● The positioning washer
The transmission oil leaks outside from the automatic transmission oil cooling tube	<ul style="list-style-type: none"> ● The transmission oil cooling tube is installed wrong and damaged
The transmission oil leaks outside from the O- ring sensor and automatic transmission drive axle lead	<ul style="list-style-type: none"> ● O- ring

The fault phenomenon	The possible causes to the fault
It is quite difficult to be shifted from the neutral position to the drive gear	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The suspension system has the fault ● The input speed sensor ● The gear selection switch ● The transmission oil temperature sensor ● The timing electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The engine water temperature signal ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
It is quite difficult to be shifted from the neutral position to the reverse position	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The drive axle ● The suspension system has the fault ● The input speed sensor ● The gear selection switch ● The transmission oil temperature sensor ● The timing electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The engine water temperature signal ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
It is quite difficult to be shifted during the gear increasing process	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The drive axle ● The suspension system has the fault ● The input speed sensor ● The transmission oil temperature sensor ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The timing electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The engine water temperature signal ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle

The fault phenomenon	The possible causes to the fault
It is quite difficult to be shifted during the coasting and deceleration	<ul style="list-style-type: none"> ● The installation for the engine and automatic transmission drive axle ● The drive axle ● The suspension system has the fault ● The input speed sensor ● The gear selection switch ● The transmission oil temperature sensor ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The engine water temperature signal ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
It is quite difficult to be shifted during the compulsive shifting	<ul style="list-style-type: none"> ● The installation for the engine and automatic transmission drive axle ● The drive axle ● The suspension system has the fault ● The input speed sensor ● The gear selection switch ● The transmission oil temperature sensor ● The shifting electromagnetic valve No.1 circuit ● The shifting electromagnetic valve No.2 circuit ● The timing electromagnetic valve circuit ● The locking electromagnetic valve circuit ● The main oil duct pressure control electromagnetic valve circuit ● The transmission control module (TCM) ● The engine water temperature signal ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil ● Water mixed fluid, incorrect automatic transmission oil is used ● The spare parts inside the transmission drive axle
It is quite difficult to be shifted during the acceleration opening and closing process—the shift is impossible to be increased and decreased	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The drive axle ● The suspension system has the fault
The vibration has occurred during the idle speed process	<ul style="list-style-type: none"> ● The engine has the fault ● The fly wheel is deformed ● The installation for the engine and automatic transmission drive axle ● The exhaust pipe resonance ● The drive axle ● Scratch and collide the drive system and the vehicle body ● The suspension system has the fault

The fault phenomenon	The possible causes to the fault
The vibration has occurred during the driving process	<ul style="list-style-type: none"> ● The engine has the fault ● The fly wheel is deformed ● The installation for the engine and automatic transmission drive axle ● The air exhaust pipe resonance ● The drive axle ● The tire has lost the balance ● Scratch and collide the drive system and the vehicle body ● The suspension system has the fault
The noise exists during the idle speed process	<ul style="list-style-type: none"> ● The engine has the fault ● The transmission oil cooling tube has resonance ● The automatic transmission oil is not enough, it has the burning smell of the automatic transmission oil
The noise exists during the reverse position process	<ul style="list-style-type: none"> ● The installation for the engine and automatic transmission drive axle ● The drive axle
The noise exists during the driving process	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The air exhaust pipe resonance ● The drive axle ● The tire has lost the balance ● Scratch and collide the drive system and the vehicle body ● The suspension system has the fault
The noise exists during the gear increasing or decreasing process	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The air exhaust pipe resonance ● The tire has lost the balance ● Scratch and collide the drive system and the vehicle body ● The suspension system has the fault
The noise exists during the acceleration or deceleration	<ul style="list-style-type: none"> ● The engine has the fault ● The installation for the engine and automatic transmission drive axle ● The air exhaust pipe resonance ● The tire has lost the balance ● Scratch and collide the drive system and the vehicle body ● The suspension system has the fault

8.3 The diagnosis information and procedures for the automatic transmission

The table for the fault diagnosis code

OBD	The diagnosis items	Conditions	Type	The safety mode
P0562	The ignition voltage	The system voltage low	B	-----
P0563		The system voltage low	B	
P0601	The inspection and error	The transmission control module fault	A	The emergency mode *1
P0603	EEPROM error	No communication	A	-----
P0604	Random storage error	The transmission control module fault	B	-----
P0705	The gear selection switch (NSW)	No signal (open circuit)	B	--The transmission control module judges all gears are drive positions --No locking control --No self-study control
P0706		The short circuit	B	--The transmission control module (TCM) uses all preferential class D>2>I>R>N>P for judgment. --No locking control -- No reverse gear control --No self-study control
P0711	The transmission oil temperature sensor (OT)	The oil temperature has no change	A	-----
P0712		The earthing in short circuit	A	--No gear 4 --No locking control -- No reverse gear control --No self-study control --The transmission control module's configured transmission temperature at 200°C
P0713		+B short circuit, open circuit	A	--No gear 4 --No locking control -- No reverse gear control --No self-study control --The transmission control module's configured transmission temperature at 200°C
P0717	The input speed sensor (NC2)	No pulse	A	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control
P0722	The vehicle speed sensor (SP)	No pulse	A	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --Use the input speed to replace the output speed
P0741	The locking control electromagnetic valve(SL)	No locking	B	-----
P0742		Has been locked	B	--The transmission control module controls the gear 1 speed below 10km/h
P0751	No.1 shifting electromagnetic valve	It is impossibly to be connected with	B	-----

OBD	The diagnosis items	Conditions	Type	The safety mode
P0752	(S1)	It is impossible to be cut off	B	
P0756	No.2 shifting electromagnetic valve	It is impossible to be connected with	B	
P0757	(S2)	It is impossible to be cut off	B	
P0787	The timing electromagnetic valve	Earthing in short circuit	A	--AS gear 4 is shifted to gear 3, no main oil duct pressure control
P0788	(ST)	+B short circuit, open circuit	A	
P0961	Main oil duct pressure control electromagnetic valve (SLT)	With clicks	A	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --Emergency mode *1
P0962		+B short circuit, open circuit		
P0963		Earthing in short circuit, open circuit		
P0963		+B short circuit,		
P0973	No.1 shifting electromagnetic valve (S1)	Earthing in short circuit	A	--No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --Emergency mode *1
P0974		+B short circuit, open circuit	A	
P0976	No.2 shifting electromagnetic valve (S2)	Earthing in short circuit	A	--No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --Emergency mode *1
P0977		+B short circuit, open circuit	A	
P2769	Locking control electromagnetic valve	Earthing in short circuit	B	--No locking control --As the transmission oil temperature reaches or exceeds 150°C, the transmission control module shall prevent the shifting from gear 3 to gear 4.
P2770		+B short circuit, open circuit	A	--No locking control --As the transmission oil temperature reaches or exceeds 150°C, the transmission control module shall prevent the shifting from gear 3 to gear 4.
U0001	CAN communication	CAN BUS off failure	A	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control
U0100		It has lost communication with ECM (the transmission control module)	A	
-----	CAN signal	The error of the engine speed signal	G	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --TCM judges the transmission rotation speed as 0rpm

OBD	The diagnosis items	Conditions	Type	The safety mode
----		Error of the drive torque signal	G	--No gear 4 --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --TCM judges the transmission rotation speed as 160N.m.
----		Error of the actual torque signal	G	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --TCM judges the air damper opening as 0%.
----		Error of air damper opening signal	G	--No gear 4 --No locking control --No engine torque lowering control --No main oil duct pressure control -- No reverse gear control --No self-study control --TCM judges the air damper opening as 0%.
----		Error of the engine cooling fluid temperature signal	G	--After the ignition switch is connected through for 15 minutes, the transmission control module judges the engine cooling fluid as 90°C.

*1 Emergency mode

The automatic transmission judges all the electromagnetic valve (S1/S2?ST/SL/SLT) to be closed, the manual operated shifting is accelerated.

The shifts		The gear	
D, 2, 1		The advance shift gear	
Shift R		Shift R	

*2 The warning light and the diagnosis code memory conditions

The type	The fault light		The warning light	
	Light	The drive cycle	Light	The drive cycle
A	On	1	Off	--
B	On	2	Off	--
G	Off	--	Off	--

8.4 The road test procedures for the automatic transmission

The purpose of the road test is through the road test to correctly diagnose the fault state and determine the fault state.

Attention: The transmission oil temperature before the road test is 50°C~80°C.

(1)The test for the advance (D)

- The gear shifting point displayed in the shifting code, check the gear increasing and decreasing, compulsory gear decreasing and locking operation.
- Check the engine brake operation.
- Check if there is any abnormal vibration, noise and instable operation.

(2) The test for the parking (P) gear

Drive the vehicle to the slope (the slope is over five degree), put into parking gear (p) and release the parking brake. Ensure that the vehicle can not be moved.

8.5 The test procedure for the automatic transmission functions

Before the function test, first determine if the following conditions are met:

- The transmission oil temperature is at 50°C~80°C.
- Turn off the air conditioning and the lighting lamp, etc.

(1) The test for the loss of speed

The purpose for testing the loss of speed is, through the test of stall of gears D and R, to check the whole performance of the automatic transmission and the engine.

- To stabilize four wheels and fully use the parking brake, and lock the position of the vehicle;
- Tread the left foot on the brake pedal to the bottom;
- Shift to gears D and P, and tread the right foot on the acceleration pedal to the bottom, now record quickly the stall.

The standard value	2280rpm
--------------------	---------

Attention:

- Do not operate continuously over 5sec, the transmission oil temperature may possibly rise quickly.
- Ensure the interval of each time to be over 1min.

The result for the stall test	The fault cause
Gear D and R are lower than the standard values	<ul style="list-style-type: none"> ● The engine power is lowered ● The torque converter one direction clutch in fault
Only gear D is higher than the standard value	<ul style="list-style-type: none"> ● The oil duct pressure low ● The forward gear clutch (C1) in fault (skid) ● No.2 one direction clutch in fault
Only gear D is higher than the standard value	<ul style="list-style-type: none"> ● The oil duct pressure low ● The reverse gear clutch (C3) in fault (skid) ● No.1 and reserve gear brake (B) in fault (skid)
Gears D and R are higher than the standard values	<ul style="list-style-type: none"> ● The oil duct pressure low ● The transmission oil pump in fault ● The transmission oil filter in fault and being blocked ● The transmission oil for oil way of each gear leaking

(2) The test for the time lag

The time lag means that when the engine is in the idle speed condition, vibration shall be felt when the neutral position (N) is shifted to forward gear D as well as from the neutral gear to the reverse gear (R). The test for the time lag shall check the hydraulic conditions and clutch/brake conditions.

- 1) To stabilize four wheels and fully use the parking brake, and lock the position of the vehicle;
- 2) Use the stop watch to measure the time lag when the slight impact may be possibly felt when changing the neutral gear to drive gear as well as change from the neutral gear to the reverse gear.

Points of attention:

- Ensure to measure 3 times, then take the average value
- Between the test for the time lag in two times, ensure the stop time to be over 1 minute, in order to release the residual pressure of the brake and clutch.

The standard:

The time lag from gear N to gear D is less than 0.7sec.

The time lag from gear N to gear R is less than 1.2sec.

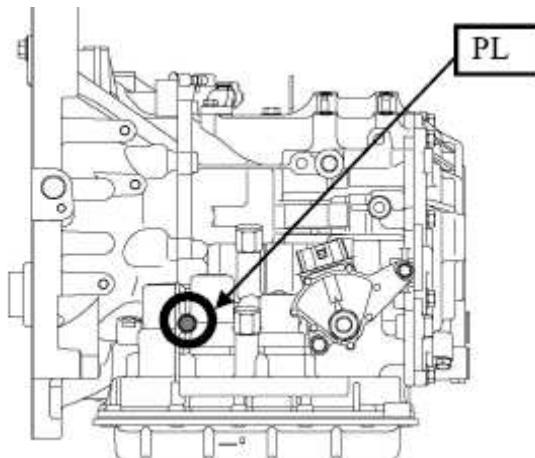
3) Between the test for the time lag in two times, ensure the stop time to be over 1 minute, in order to release the residual pressure of the brake and clutch.

The result for the stall test	The fault cause
The time from the neutral gear N to gear D is longer than the standard time.	<ul style="list-style-type: none"> ● Oil duct pressure is low ● Forward gear clutch (C1) in fault (skid). ● The timing electromagnetic valve in fault ● The transmission oil in oil duct of the drive gear D leaking
The time from the neutral gear to gear R is longer than the standard time.	<ul style="list-style-type: none"> ● Oil duct pressure is low ● Reverse gear clutch (C3) in fault (skid). ● Gear 1 and reverse gear brake (B3) in fault (skid) ● The transmission oil i of the gear R leaking

(3) The hydraulic test

The hydraulic test is to check the internal working state of the automatic transmission through measuring the oil duct pressure under conditions of gears D/R and idle/ stall.

- 1) To stabilize four wheels and fully use the parking brake, and lock the position of the vehicle;
- 2) Install the oil pressure gauge to measure the main oil duct pressure in the inspection hole;
- 3) The left foot is fully treading on the brake pedal to measure the main oil duct pressure under the conditions of idle/ stall at gears D/R.



The standards:

The oil duct pressure (Mpa)	Gear D	Gear R
The engine in idle	0.37~0.41	0.59~0.68
The engine at stall	1.25~1.37	1.65~1.90

Attention:

- Do not operate continuously over 5sec, the transmission temperature may possibly rise quickly;
- Ensure the stall test interval to keep over 1 minute;
- After the oil pressure gauge is installed, ensure to be no any transmission oil leakage.

The hydraulic test structure	Causes to the fault
Gear D and gear R are higher than the standard values	<ul style="list-style-type: none"> ● The oil duct pressure control electromagnetic valve in fault ● The valve block in fault
Gear D and gear R are lower than the standard values	<ul style="list-style-type: none"> ● The oil duct pressure control electromagnetic valve in fault ● The valve block in fault ● The engine oil pump in fault ● The engine oil filter in fault (beign blocked) ● The oil duct transmission oil of each gear leaking
Only gear D is lower than the standard values	<ul style="list-style-type: none"> ● Gear D hydraulic oil duct in fault ● The forward gear clutch (C1) in fault
Only gear R is lower than the standard values	<ul style="list-style-type: none"> ● Gear R hydraulic oil duct in fault ● The reverse gear clutch (C3) in fault ● Gear 1 and the reverse gear brake (B3) in fault

(4) The manual operated gear shifting test

The purpose of the manual operated gear shifting test is to find the fault state belonging to an electrical or mechanical fault.

Cut off the electrical wiring harness of the gear shifting electromagnetic valve, when it is driven in manual shifting, the gears and gear positions conforming to the following table need to be determined.

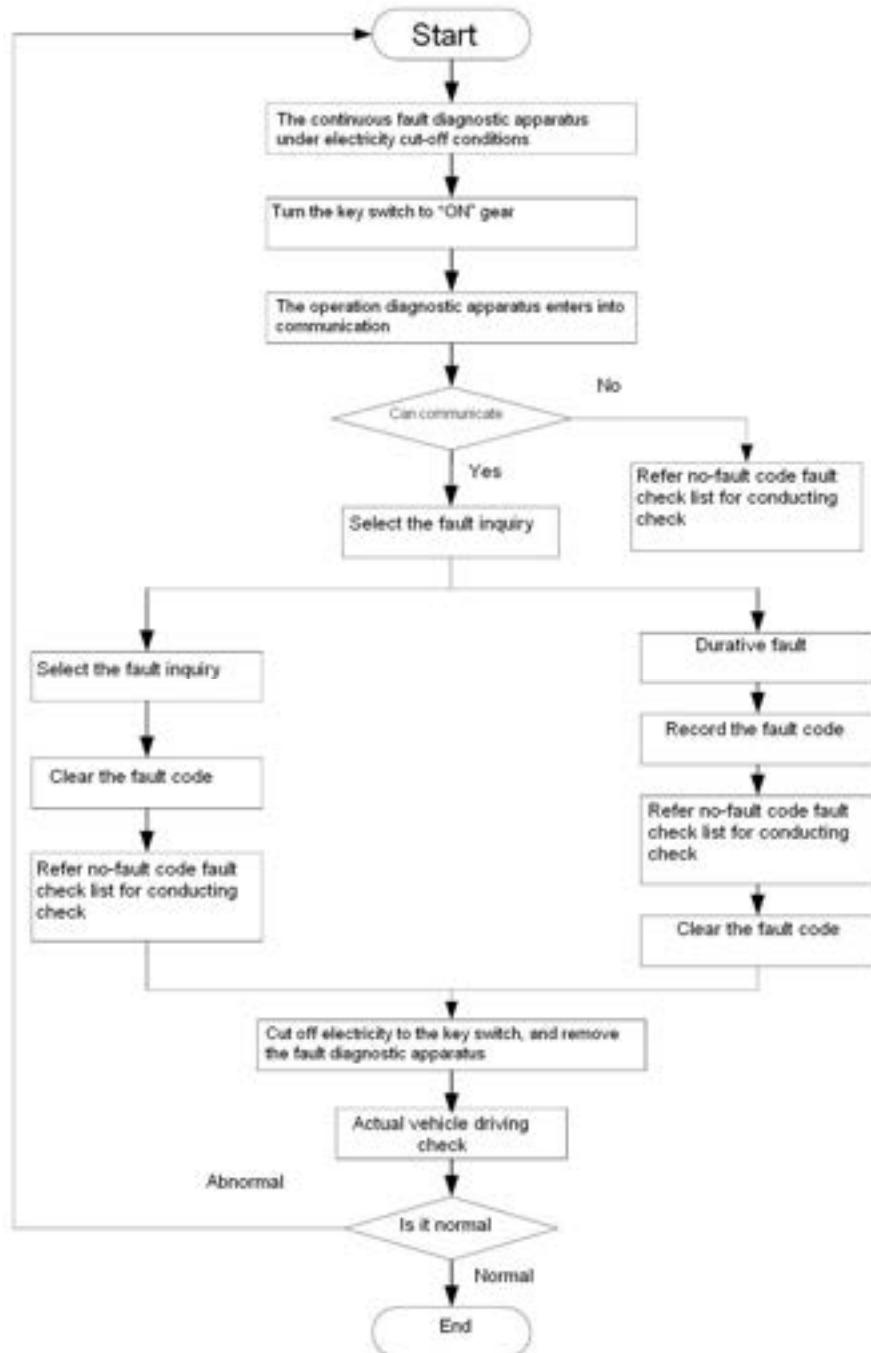
The shifts	Gears
D	The forward gear
R	The reverse gear



Attention: Confirm only the electrical wiring harness of the shift electromagnetic valve is cut off.

9. The brake locking-prevention system

9.1 The fault diagnosis process chart



9.2 Points of attention during the fault diagnosis

ABS is adopted electronic hydraulic control, so under normal working conditions for the ABS system, occurrence of the following phenomena is normal, they are not faults.

The phenomena	Description
The system self-check sound	After the engine is started, sometimes the sound similar to the collision shall be heard from the engine hood, this is the sound of ABS conducting the self-check, it is normal.
The sound when ABS is acting	<p>1) The engine sound inside ABS hydraulic unit. 2) The sound occurred together with the brake pedal vibration. 3) When ABS is working, the collision sound of the suspension caused by the brake, or the click issued by the tire contacting with the ground.</p> <p>Advise: When ABS is working normally, the tire may possibly still have the click.</p>
ABS is acting, but the brake distance is long.	On the snow covered or sand and stone pavement, the brake distance for the vehicle with ABS is sometimes longer than the brake distance of the vehicle without ABS. So it warns the driver to pay more attention when driving on above said pavement.

9.3 Key points for the accidental fault maintenance

In the electronic control system, the location with electrical appliance loop and input and output signal may possibly occur instant bad contact problem, it shall bring in accidental fault or leave the fault code in ECU self-check. If the fault cause is lasting, then only check according to the fault code fault check list, the abnormal location shall be found, but, sometimes the cause for occurring the fault may disappear automatically, in this case, it is difficult to find the cause of the problem.

Under this situation, the fault may be simulated according to the following mode, and check if the fault shall appear again.

(1) When the vibration may be the main cause:

- Shake the joint lightly to the right and left as well as up and down.
- Shake the wiring harness lightly to the right and left as well as up and down.
- Shake other moving parts (such as: wheel bearing) lightly.

Notes: If the wiring harness is twisted or broken due to pulling too tight, then the new spare parts must be changed, particularly during the vehicle moving, due to the up and down movement of the suspension, the sensor may occur instant short or open circuit. Therefore when the sensor signal is checked, actual vehicle driving test must be conducted.

(2) When over-heat or over cold may be the main cause:

- Use the air blower to heat the part which you think may have the fault.
- Use the cold spraying agent to check if it has any cold weld phenomenon.

(3) When the power supply loop contact resistance too big may be the main cause:

- Turn on all electrical appliances switches, including the front head light and the back defrosting switches.

If the fault has not appeared at this time, then the diagnosis and maintenance could be done until the fault appears again in the next time. Generally speaking, accidental fault shall become worse and worse, it could not be changed into better.

9.4 The process for MK 70 ABS system fault diagnosis

(1) Check ABS indicator light

Check if ABS indicator light is on according to the following mode:

- ① Turn the ignition switch to ON, ABS indicator light is on for about 1.7sec, then it is off.
- ② If it is not above said situation, it indicates fault has occurred, now check the fault code.
- ③ If the indicator light is completely not on, refer to no-fault code fault check table.

(2) The read of the state information

After the diagnostic apparatus is connected through, it enters into diagnosis.

(3) Read the fault code

Select read the fault code function, the number of the fault shall be displayed, the fault code and contents for each fault shall appear according to the sequence by pressing the downward key.

(4) Select clean fault code function. If the fault code is impossible to be cleared, it indicates that the fault of the fault code has been existing. If the stored fault can be cleared, it indicates that this is an accidental fault, it shall be checked again during the actual vehicle driving.

(5) The fault code display mode

The system problems		The displaying code
No problem at this time (ABS indicator light is not on)	It has not occurred before	No fault code
	It has occurred before	Accidental fault code
The problem still exists (ABS indicator light is on)	It has not occurred before	Non-accidental fault code
	It has occurred before	Accidental fault code and non-accidental fault code

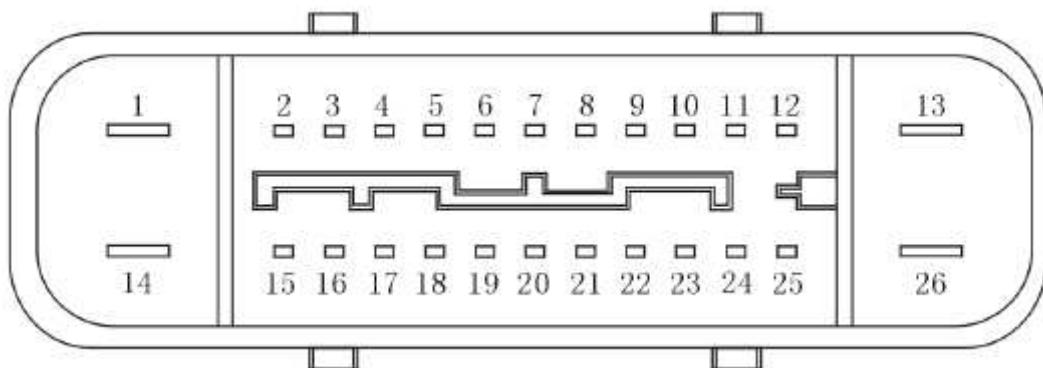
9.5 The diagnosis for the hydraulic control unit

Use the fault diagnostic apparatus to diagnose the hydraulic control unit. The following step shall be taken for operation after the hydraulic unit diagnosis function.

The step	The operator acts	The screen display	The result during normal state
01		The hydraulic pump test	
02		Tread down the brake pedal	
03		The normal open valve: OV, the normal close valve: OV, the wheel is locked	The wheel is locked
04		The normal open valve: power on, the normal close valve: OV, the wheel is locked	The wheel is locked
05	Tread down the brake pedal, and hold it on.	The normal open valve: power on, the normal close valve: power on, can the wheel be freely rotating?.	The wheel can be freely rotating, pedal springs back, the working noise of the pump motor can be heard.
06		The normal open valve: power on, the normal close valve: OV, can the wheel be freely rotating?.	The wheel can be freely rotating.
07		The normal open valve: OV, the normal close valve: OV, the wheel is locked.	The wheel is locked, and the pedal slightly sinks automatically.
08	Loose the brake pedal	Loose the brake pedal	

Above test shall be actuated for each wheel. The sequence is as follows: The left front, the right front, the left back and the right back.

9.6 The definition for pins of the brake locking-prevention control module (ABS ECU)



Pins	The lead colors	Functions
1	Pink	KL30-V (electromagnetic power supply)
2	Green	RL1 (the right back 0)
3	Brown	RL0 (the left back 1)
4	--	--
5	Brown	FR1 (the right front 0)
6	Green	FR1 (the right front 1)
7	--	--
8	Green	PL1 (the left front 1)
9	Brown	PL1 (the left front 0)
10	Blue	WL ABS (ABS indicator light)
11	Brown	RR0 (the right back 1)
12	Green	RR0 (the right back 0)
13	--	--
14	Yellow	KL30-P (pump motor power supply)
15		RR-OUT (the right back wheel speed output)
16	Green	BRL (the brake light switch)
17		RL-OUT (the left back wheel speed output)
18	Brown	DIAG-K (the diagnosis line)
19		PL-OUT (the left front wheel speed)
20		IGN (the ignition switch)
21		CAN-L
22		PCC1
23		CAN-H
24		PCC2
25		FR-OUT (the right front wheel speed output)
26	Yellow green	GND1 (earthing)

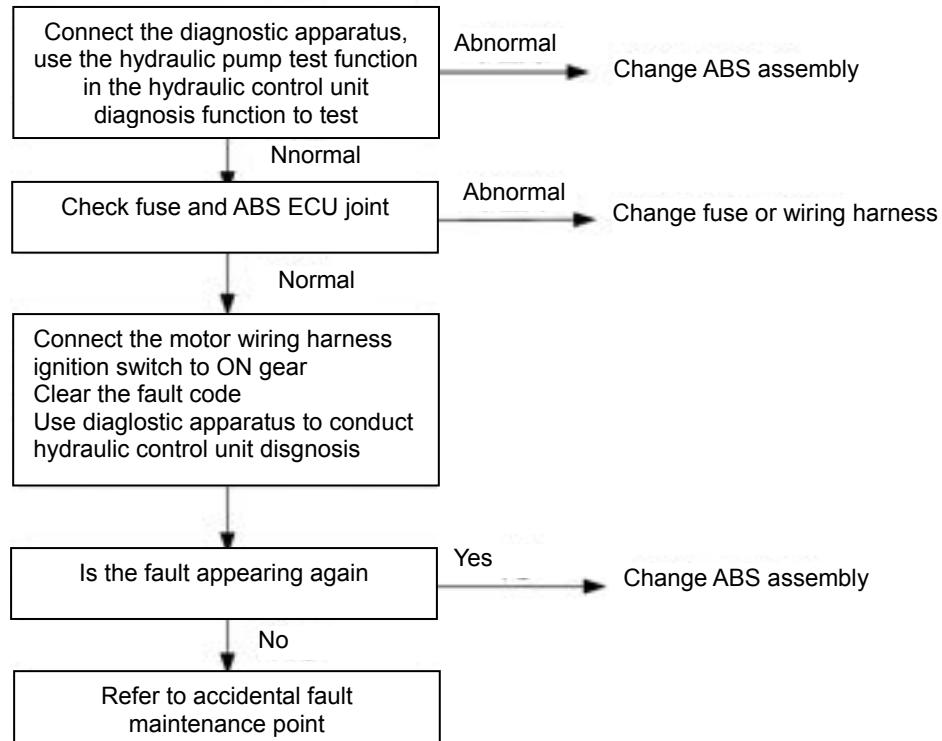
9.7 The check list for the fault code

1. The fault code is P1276	The possible causes
<p>Description: When the vehicle speed exceeds 20km.h, and ABS ECU has monitored that the motor could not work normally, it shall record this fault code.</p> <p>Advise: When this fault code occurs, the wiring harness between the engine and ECU may be loose. Use hydraulic function test of the diagnostic apparatus shall drive the generator for conducting this test.</p>	<ul style="list-style-type: none"> ● The power supply is in short circuit or earthing. ● The motor wiring harness is loose. ● The motor is damaged.

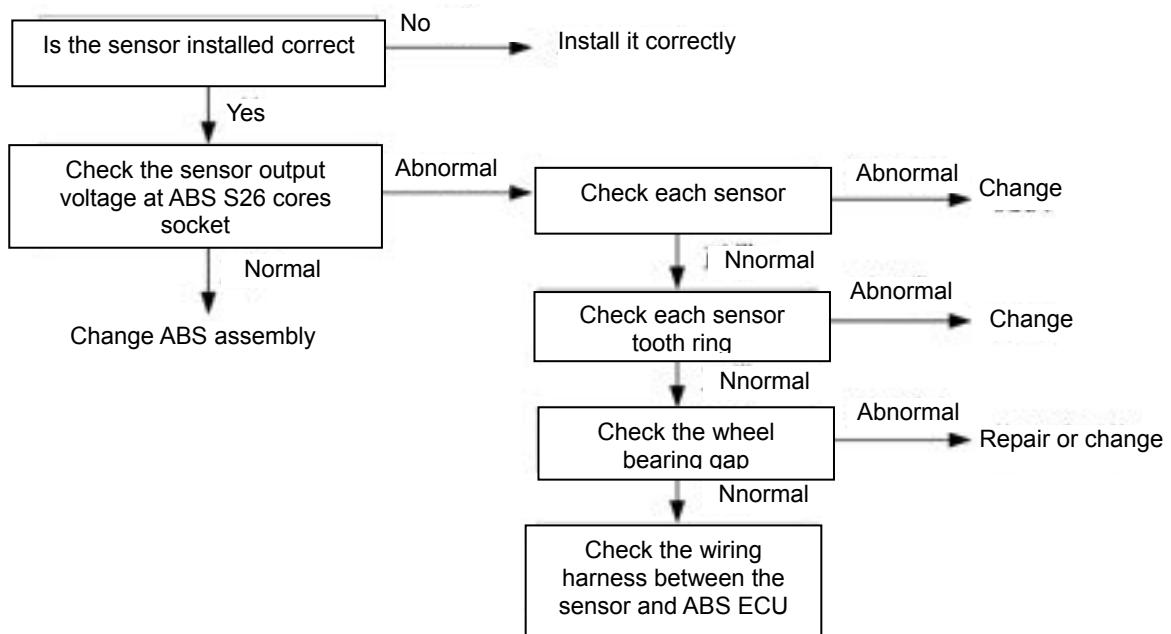


Attentions:

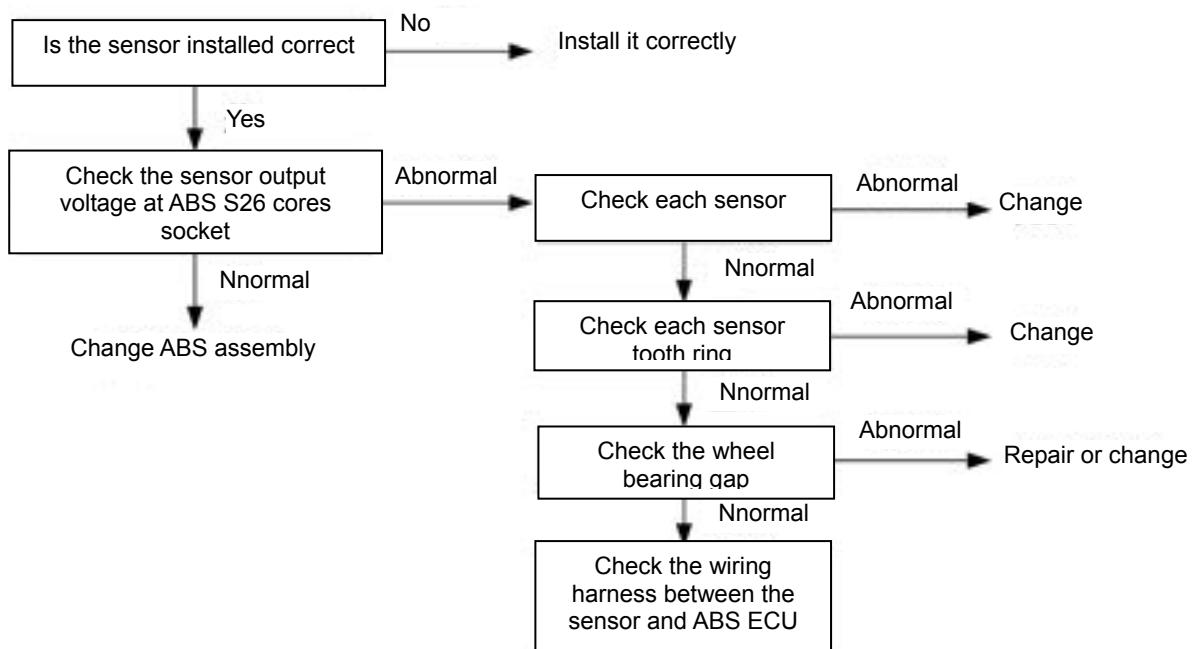
- If the battery discharges too much, the motor shall be impossibly driven, so when the motor drive test is conducted, it needs first to determine if the battery power supply is normal.
- When the motor drive test is conducted, the vehicle must be ins the static state.



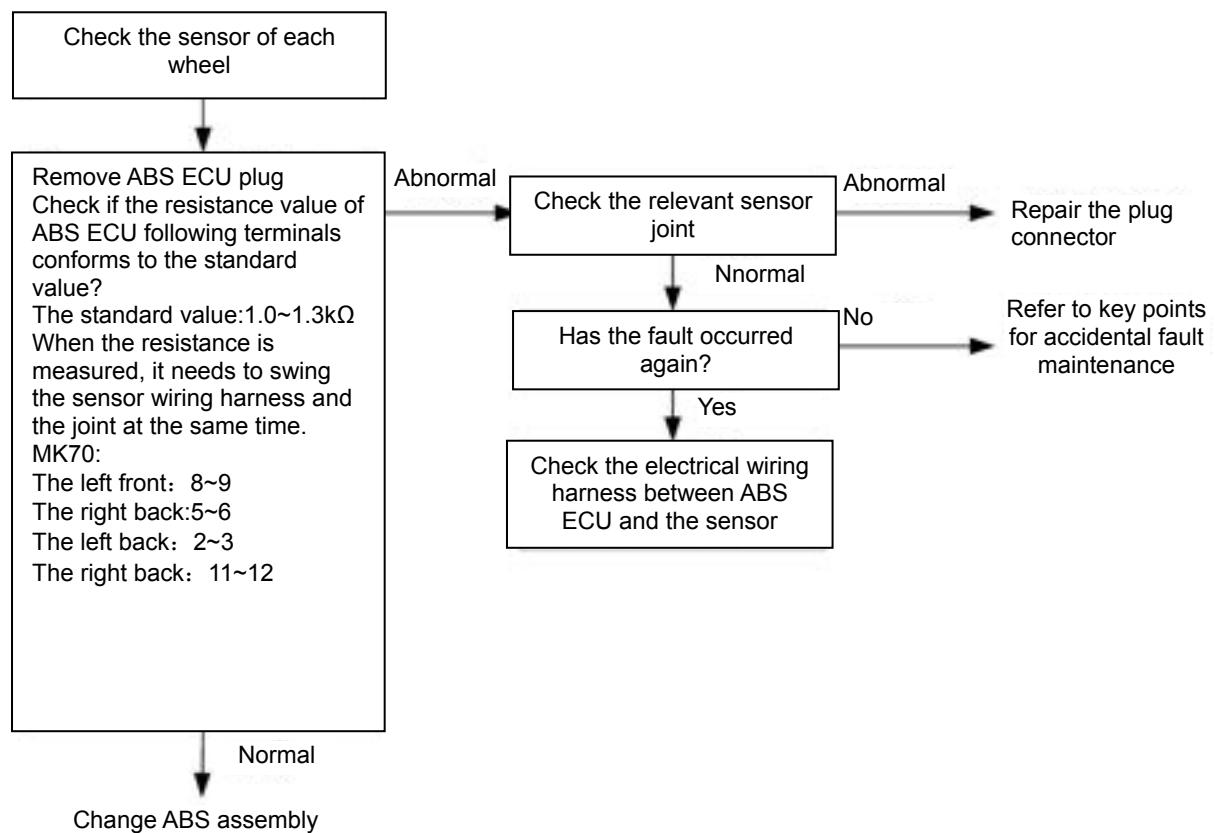
2. The fault codes are P0283, P0285, P0290, P0287	The possible causes
<p>Description: When the loop open circuit can not be found, but there is still no signal output when the vehicle speed reaches over 20km/h, this fault code shall appear.</p> <p>Advise: it is possibly that the sensor is not installed, the sensor coil or wiring harness is in short circuit, the air gap between the sensor and tooth ring is too big or the tooth ring is damaged.</p>	<ul style="list-style-type: none"> ● The sensor is not installed. ● The sensor coil or wiring harness is in short circuit. ● The air gap between the sensor and tooth ring is too big. ● The tooth ring is not installed. ● ABS ECU is in fault.



3. The fault codes are P0283, P0285, P0290, P0287	The possible causes
<p>Description: When the vehicle speed reaches over 20km/h, if the sensor signal exceeds the tolerance range, this fault code shall appear.</p> <p>Advise: The sensor signal is too weak, possibly because that the sensor coil or wiring harness intermittent contact is not good or with intermittent short circuit, the air gap between the sensor and tooth ring is too big or too small. The tooth of the tooth ring is damaged.</p>	<ul style="list-style-type: none"> ● The sensor is not installed. ● The sensor coil or wiring harness intermittent contact is not good or in short circuit ● The air gap between the sensor and tooth ring is too big or too small. ● The tooth of the tooth ring is damaged. ● The bearing gap is too big. ● ABS ECU is in fault.



4. The fault codes are P0283, P0285, P0290, P0287 Description: The sensor has the identifiable loop, this fault code shall appear. Advise: The sensor contact is not good or the sensor signal treatment circuit in ABS ECU is the fault.	The possible causes ● The sensor plug connector or coil is open. ● The sensor plug or earthing or power supply is in short circuit ● The signal treatment circuit of ABS ECU is in fault.
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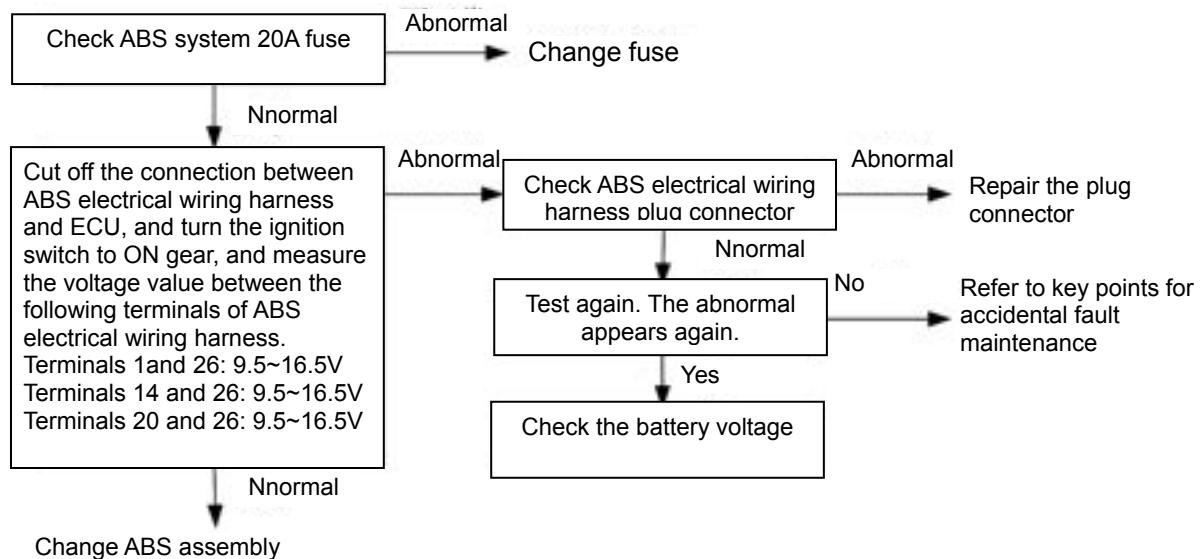


5. The fault codes is P0668

Description: When the power supply terminal KL-30 has not provided voltage or voltage is too high, this fault code shall appear.

The possible causes

- ABS system fuse is burned.
- The battery voltage is too low or too high.
- ABS electrical wiring harness plug connector is damaged.
- ABS ECU is damaged.

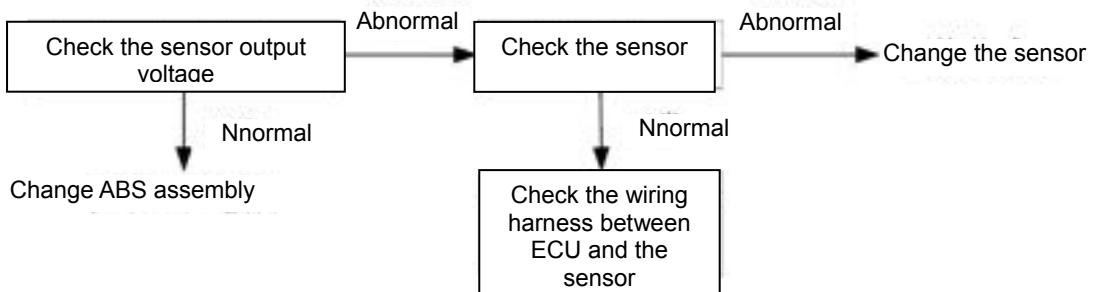


6. The fault codes is P1130

Description: When is ABS interfered by high frequency electromagnetic wave or the microprocessor thinks the input vehicle speed signal is unbelievable , this fault code shall appear.

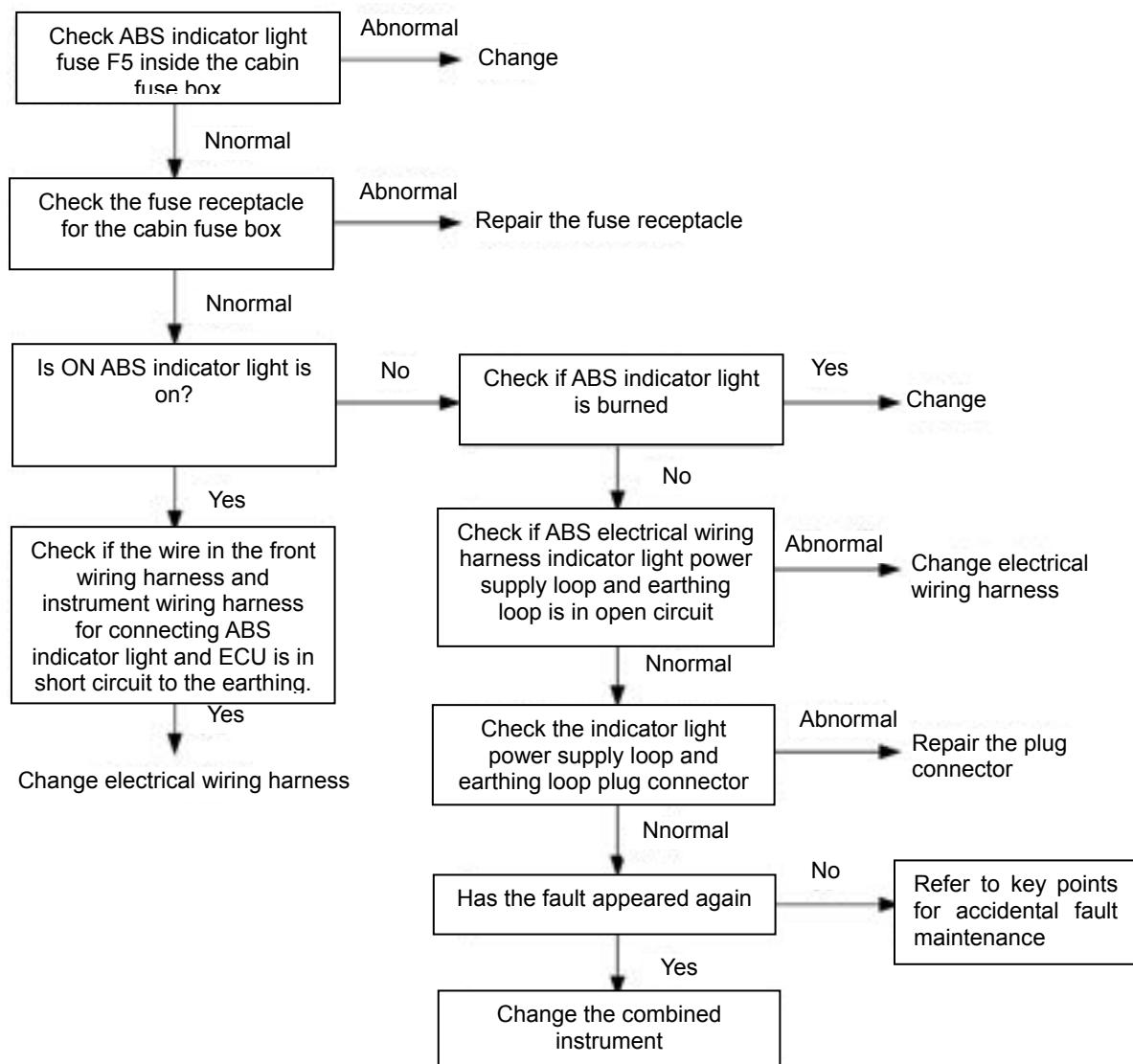
The possible causes

- The interference of high frequency electro magnetic wave..
- The sensor is damaged or the sensor electrical wiring harness is damaged.
- ABS ECU is damaged.

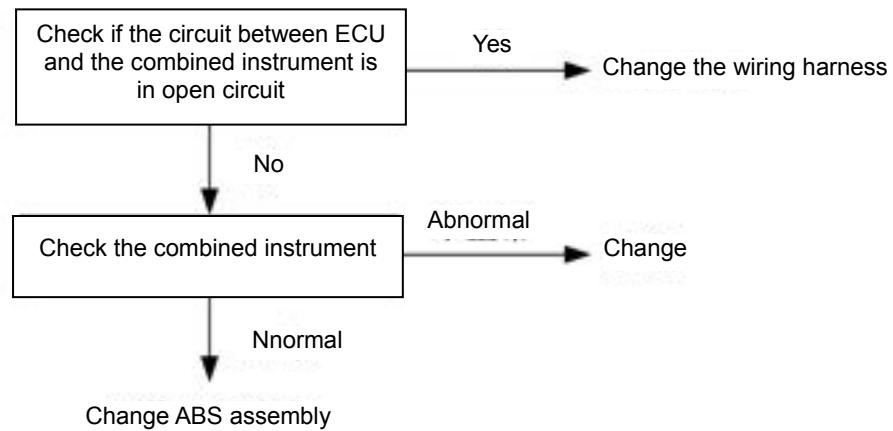


9.8 The fault check list for the no-fault

<p>1. The ignition switch is at ON position (the engine is flameout)</p> <p>Description: ABS indicator light is not on, it may possibly the indicator light power supply loop is in short circuit, the bulb is burned or indicator light controller is damaged.</p>	<p>The possible causes:</p> <ul style="list-style-type: none"> ● The fuse is burned. ● ABS indicator light bulb is burned. ● The power supply line is cut off. ● ABS indicator light controller is damaged.
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<p>2. After the engine is started, ABS indicator light is always on.</p> <p>Description: The possible cause is ABS indicator light controller is damaged or ABS indicator light loop is in short circuit..</p>	<p>The possible causes:</p> <ul style="list-style-type: none">● The indicator light controller is damaged.● ABS indicator light controller loop is in open circuit..● ABS ECU is damaged.
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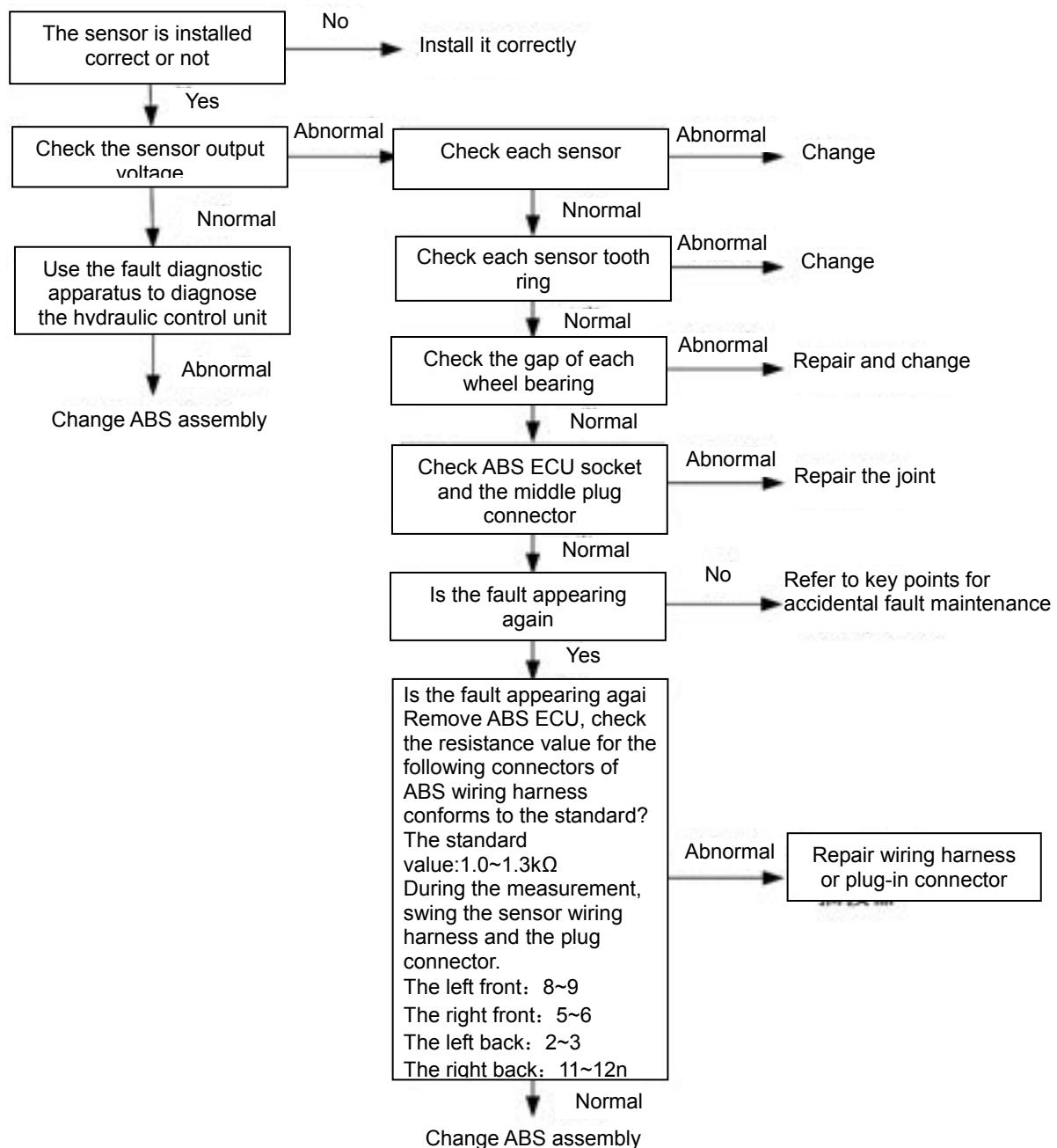


3. ABS is working abnormal

Description: This problem is closed related to the driving conditions and the pavement conditions, so fault is difficult to be diagnosed. But, if no fault code memory, the following checks may be done.

The possible causes:

- The sensor is installed inappropriate.
- The sensor wiring harness has the problem.
- The sensor is damaged.
- The tooth ring has some foreign substance.
- ABS ECU (hydraulic unit) is damaged.
- ABS ECU (electric control unit) is damaged.

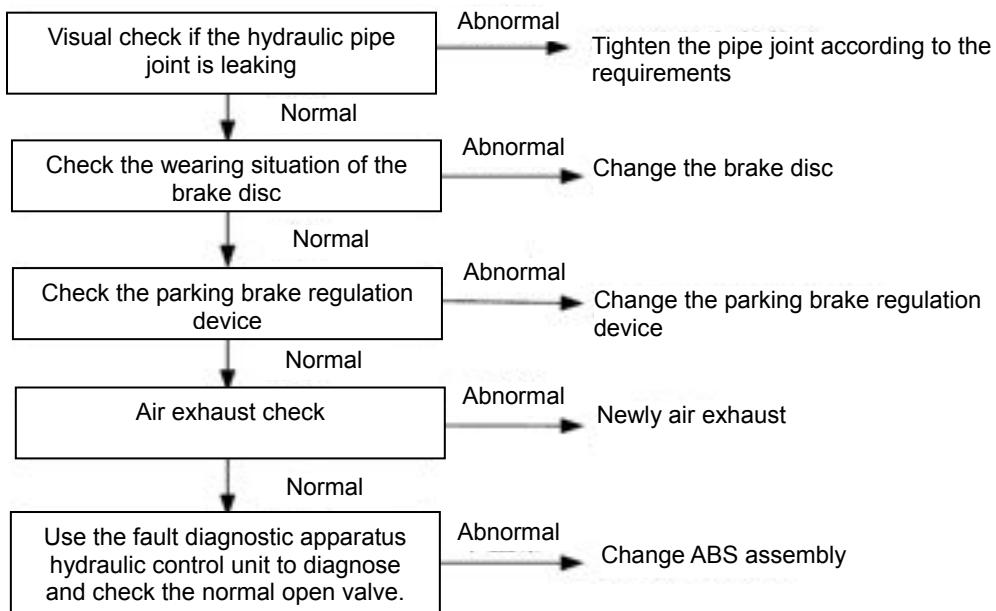


4. The brake pedal stroke is too long

Description: First visual check if it has any external leakage or mechanical fault. Use the air exhaust method to check if there is air in the system. Use the fault diagnostic apparatus hydraulic unit function test and check if the normal close valve has any leakage.

The possible causes:

- The brake oil is leaking.
- The normal close valve is leaking.
- Air is inside the system..
- The brake disc is severely damaged.
- The parking brake is not adjusted well.

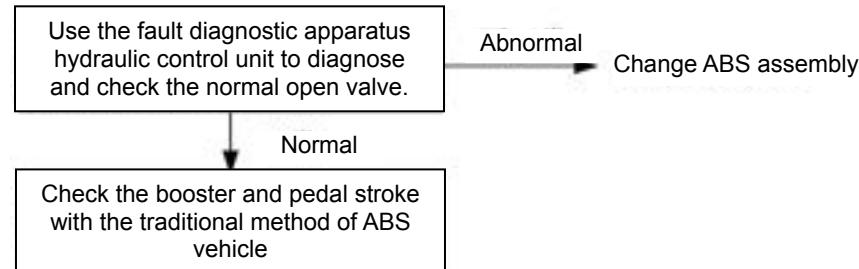


5. Tread the pedal needs some force

Description: Use the traditional method to check the booster and the brake pedal stroke. The fault of the normal open valve may be checked with the fault diagnostic apparatus hydraulic unit function.

The possible causes:

- The booster has the fault.
- The normal open valve has the fault.

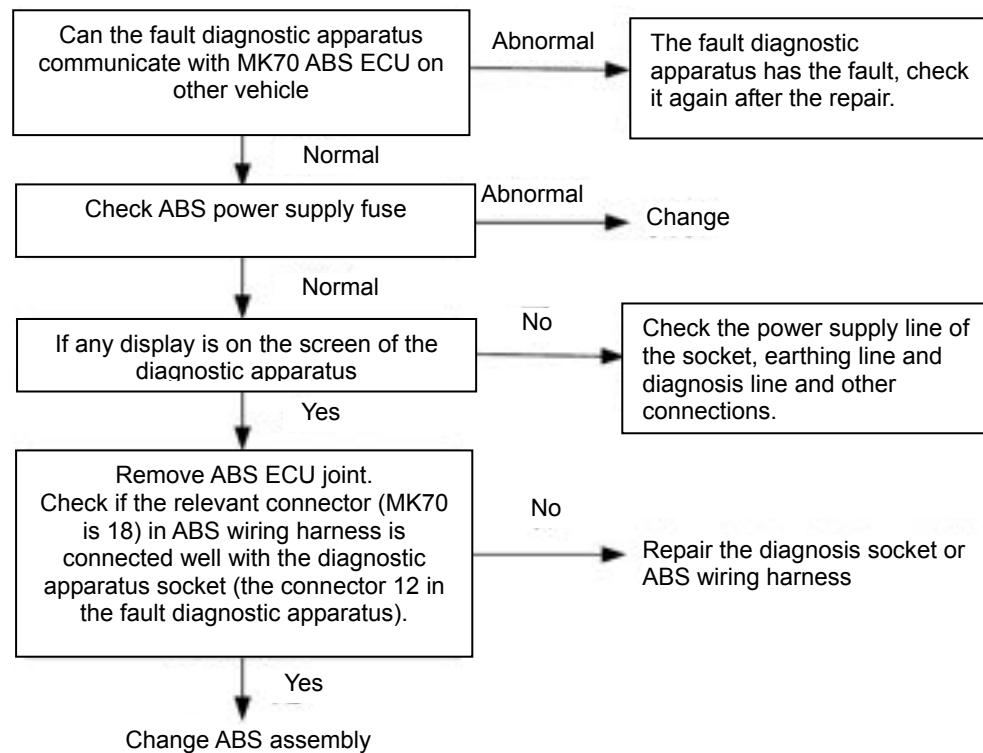


6. No diagnosis code output (it is impossible to communicate with the fault diagnostic apparatus)

Description: When it is impossible to communicate with the fault diagnostic apparatus, it may possibly the power supply loop of ABS ECU be diagnosed as loop in open circuit.

The possible causes:

- The fuse is burned.
- The diagnosis line is broken or the joint is loose.
- ABS ECU is damaged.
- The fault diagnostic apparatus has the fault.



9.9 ABS system check

The Check items	The ignition switch gears	The connector (MK70)	The standard value	Unit
The battery voltage (the motor)	OFF	1~6	10.1~14.5	V
The battery voltage(electromagnetic value)	OFF	14~26	10.1~14.5	V
The power supply insulation performance	OFF	20~26	0.00~0.5	V
The power supply voltage	ON	20~26	10.0~14.5	V
ABS indicator light	OFF	ECU is not connected	The indicator light bulb	Visual check
	ON		The indicator light bulb	Visual check
	OFF	Connect ECU	The indicator light bulb	Visual check
	ON		The indicator light bulb shall be off after about 1.7sec	Visual check
The brake light switch pedal is not treaded down	ON	26~16	0.0~0.5	V
The brake light switch pedal is treaded down	ON	26~16	10.0~14.5	V
The diagnosis socket	OFF	Diagnosis socket K and 18	0.0~0.5	Ω
The resistance value of the left front wheel speed sensor	OFF	8~9	1.0~1.3	kΩ
The resistance value of the right front wheel speed sensor	OFF	5~6	1.0~1.3	kΩ
The resistance value of the left back wheel speed sensor	OFF	2~3	1.0~1.3	kΩ
The resistance value of the right back wheel speed sensor	OFF	11~12	1.0~1.3	kΩ
The output voltage of the left front wheel rotation sensor	OFF	8~9	>7	mV/Hz
The output voltage of the right front wheel rotation sensor	OFF	5~6	>7	mV/Hz
The output voltage of the left back wheel rotation sensor	OFF	2~3	>12.2	mV/Hz
The output voltage of the right back wheel rotation sensor	OFF	11~12	>12.2	mV/Hz
The ratio of the sensor output voltage	The highest peak value voltage/the lowest peak value voltage ≤2.			

The Check items	The key switch gears	The operation	The standard value	Remark
Notes: When the following checks are proceeded, the vacuum must be acted on the vacuum booster.				
The sealing for the left front wheel normal open valve and normal close valve	ON	Tread the pedal	When the left front wheel can not rotate, the pedal shall not sink.	Check the normal close valve
	ON (Two valves and pumps are connected with electricity at the same time)	Tread the pedal	When the left front wheel can rotate freely, the pedal shall not sink.	Check the normal open valve
The sealing for the right front wheel normal open valve and normal close valve	ON	Tread the pedal	When the right front wheel can not rotate, the pedal shall not sink.	Check the normal close valve
	ON (Two valves and pumps are connected with electricity at the same time)	Tread the pedal	When the right front wheel can rotate freely, the pedal shall not sink.	Check the normal open valve
The sealing for the left back wheel normal open valve and normal close valve	ON	Tread the pedal	When the left back wheel can not rotate, the pedal shall not sink.	Check the normal close valve
	ON (Two valves and pumps are connected with electricity at the same time)	Tread the pedal	When the left back wheel can rotate freely, the pedal shall not sink.	Check the normal open valve
The sealing for the right back wheel normal open valve and normal close valve	ON	Tread the pedal	When the right back wheel can not rotate, the pedal shall not sink.	Check the normal close valve
	ON (Two valves and pumps are connected with electricity at the same time)	Tread the pedal	When the right back wheel can rotate freely, the pedal shall not sink.	Check the normal open valve

Description: This item is checked with the diagnostic apparatus in the hydraulic control unit diagnosis.

Dongfeng Motor Corporation

Instruction Manual for Dongfeng S30, H30 CROSS vehicles

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