SQR7080R AUTO SERVICE MANUAL

IV

ELECTRICAL SYSTEM

CHERY AUTOMOBILE CO., LTD

Service catalogue

Type：SQR7080R

SQR7080R Electrical system December, 2005

Please write down the changes notice after each assembly numbers, the function is to remind the users there are changes and the technical department will inform the correlated department keep them in archives for checking.

Assembly	Technical changes notice				
1 General introduction					
2 Made up of the auto electrical system and the function of its elements					
3 Circuit schematic diagram of each system and failure diagnosis					

The service man must master the technical improvement conditions of this car to provide better maintenance work.

FORWORDS

In order to help the technical service man of Chery authorized service station to understand and familiar with the SQR7080R car, to have the ability of fast diagnosis and maintenance, we write this book – "SQR7080R service manual—electrical system sub manual"

This manual introduces the Composing and their relations of SQR7080R electrical system and its subsystem in detail, and gives some explanations. This manual is provided by Chery Automobile Co., Ltd.

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1 GENERAL INTRODUCTION

1. The Electrical System We Mentioned Including The Below Items:

Auto electrical system is made up of lamp, lightening, signal, instrument and warning system.

Also includes body accessories, engine, chassis etc. and other electric equipments. For example: wiper motor, washer; central lock, door/window regulator; audio device and cigar lighter; air conditioning system, air bag etc..

And there will be explanations about the circuit failures.

2. The Function and Position of Electrical System in S11 Car:

The importance of automatic degree;

The function to enhance economy and dynamic;

Safety；

Comfortable；

Exhaust and inspection

3. Notice:

1） Do not judge the failure by ground test at random.

There are not many failures of electrical control system itself, which most of them are caused by wiring connection. If we clear the failure by the traditional way—grounding test, it will cause self-diagnosis code lost and easy to damage the machine, which will increase the difficulty of maintenance. Based on above conditions, we should keep the binding post clean and contact easily. To fix the failure, there should be professional service man with special device. Do not disconnect and fix at random, especially to assemble the accumulator pay attention to the anode and cathode; it is not allowed to start the engine by other starting device without the accumulator, it will damage the electric device because of the over voltage.

2） Do not step on the accelerator when the auto is started.

The engine with EFI system is different from the ordinary oil carburetor engine. Its oil injection control device can adjust the oil supply volume according to engine temperature and working conditions by itself and start the engine smoothly. That is to say at the cold start conditions, the oil injection control device and increase the oil supply volume automatically. So when the EFI system is started it is not necessary to step on the accelerator, and do not continuous step on it before start otherwise the engine can not be started smoothly.

3） Failure of electric control car possibly is not the failure of EFI system.

During repairing the EFI car, do not consider: there is some sensors or circuits with problems inside of the CPU control system. In fact, it is very low fault rates of the CPU system. To repair this kind of car, you should treat it as the ordinary car, especially ask the owner about the detailed failure phenomenon and when this failure appeared, if the owner repaired any part before this failure appeared, etc.. And then test driving the car to find what the failure is. The principle of finding failure is from easy to difficult, from macro to micro. Avoid testing the sensor and circuit blindly even disassembly the component immediately after you

received the failure car.

4） Sensor can influence the engine performance big and small.

Do not consider the performance changes of every sensor will influence the engine performance greatly, this kind of thought has great limit. There are several kinds of sensor which have big influence to the fuel injection volume for example air-flow meter, engine speed sensor and throttle valve position sensor; at the same time there are many sensors which only take a small correction factor, so these sensors will not have big influence to engine working conditions. So when we analysis the failures, we should put these sensors at secondary position to think about, especially for the bad failure phenomenon car, we need not spend too much time to research these sensors.

5） Electrical signal is abnormal probably is not the circuit problem.

Inside of the inspection although there are some electrical signals are abnormal, the failure perhaps is not at circuit. When the timing belt is broken or jumped gear there will appear wrong ignition advance angle, if you only research the sensor and circuit you can not find the failure resource. It is required to master that mechanical and electrical only has a small function for correcting to control the fuel injection volume, for example, air pressure sensor, air intake temperature sensor and oxygen sensor etc.. They send the signal to CPU, and CPU will calculate the pulse width.

6） The influence of using big power wireless transmitting device to electrical device.

The electromagnetic wave produced by big power wireless transmitting device will disturb the auto electrical control computer system even damage the electronic element. So if there is wireless transmitting device exceed 10W on auto, it should be assembled far away from computer and shield it. Additionally, when you disassemble the electrical computer, please be careful and avoid converting and great vibration.

2 AUTO ELECTRICAL SYSTEM COMPOSING AND ITS ELEMENT FUNCTION

2-1 POWER SUPPLY

1. Composing:

Accumulator, generator, adjustor and connection leading line

2. Function:

1） Accumulator function: the accumulator provides power to engine when it is started and secure the engine starting smoothly; store the surplus power after the engine is started; provide power to auto power using device when the engine is stopped.

2） Assembly: left hand side rail inside of engine compartment.

3） Function of generator and adjustor: AC generator will produce AC current when the engine is running, and the adjustor will stabilize the voltage between 13.9–14.3v; rectifier will transfer the AC to DC and provide power to auto power using device; recharge the accumulator.

4） Generator voltage is adjusted by inside adjustor, and the generator is driven by engine multi edges belt.

3. Specialty:

1） Dc

DC is decided by the power requirement of accumulator

2） Low Voltage

12V decided by starter

3） Cathode Grounding

Cathode grounding: the cathode negative electric charge on the body can avoid chemical erosion.

4） Single Wiring

Single wiring: normally there are two wirings for power delivery, because the body is made up of metal which is the good conductor can replace another wiring, there is only one wiring which simplify the circuit schematic diagram.

2-2 STARTING

1. Composing: Ignition Switch, Starter and Its Connection Wiring

2. Function:

1） Starter: input certain torque and rotation speed to make crankshaft running; when the crankshaft is running by the flywheel inertia and piston pushing force, the starter will stop running.

2） Ignition switch: connect and disconnect the power to starter.

2-3 AUTO LIGHTENING AND LAMP SIGNAL DEVICE

1. Composing:

1） Lightening device: headlamp, fog lamp, plate lamp, instrument lamp, ceiling lamp

2） Signal light: turning light, width light, break light, rear light, reverse light, indicator

2 Function:

1） Headlamp: assembled on each front side of the auto, used for night running, there are two lamps of this car.

2） Fog lamp: assembled on each front sides the auto lower than headlamp, used for raining and fog weather, the color is stipulated yellow and orange because of their long wave and can penetrate the fog.

3） Plate lamp: assembled at the rear of the auto, above the plate, for lightening the plate in the night.

4） Instrument lamp: assembled on the instrument panel for lightening the meters, the lamp quantity is decided by the layout of the instrument panel.

5） Ceiling lamp: assembled on the top of lining inside of cab, for cab interior lightening also called as reading lamp.

6） Turning lamp: assembled on the auto front, rear, left and right corners, giving flashing signal for auto turning to remind other vehicles, police and pedestrian its turning direction.

7） Width lamp (front and rear small lamp): assembled on the auto front and rear side rim, to indicate the width of the auto when it is running during night and stop.

8） Break lamp: assembled on the rear side of the auto, most of them are combination type; give signal to the back vehicles when it is breaking or decrease speed for stopping.

9） Rear lamp: assembled on the rear side of auto, to remind the following vehicle and pedestrian during night running.

10） Reverse lamp: assembled on the rear side of auto to remind the back vehicles and pedestrian.

11） Indicator: assembled on the instrument panel, the indicator quantity is decided by the design for indicating the technical conditions of lightening, signal, working system. And give the warning signal for the abnormal conditions.

3. Lightening Specialty of This Auto:

1） Headlamp

- ◄ Half closed, built-in assembled and two lamps;
- ◄ Dual cavities freedom reflection surface, high transparency PC cover;
- ◄ Lamp shell is made up of PP material with high strength and anti combustion；

- Bulb is H7 halogen lamp.
- Round, increase luminance in front of auto 50m and increase the view width, secure the safety. Steps confocal viewfinder.
- Distributing lens: made up of high purity inorganic glass; the inside pattern is composing by lots of different curvatures and different shapes small prism. Now, it is beginning to use organic plastic with high hot set and high transparency.
- Filament: main beam 60W tungsten filament, lower beam 55W, under the temperature of 1400C°, high pressure inertia halogen air and vapor tungsten reacting to one kind of volatility halogenated tungsten; when it is diffused to high temperature area and decomposed to tungsten and halogen, tungsten will go back to tungsten filament, and halogen will be back to react with air tungsten.
- Using little quartz glass bulb with the performance of high temperature resistance and high mechanical strength.

2） Fog Lamp

- The visible light wave of this fog lamp is (380~780mm)PPm。
- Light wave of the fog lamp is longer; reflection light is weak which can penetrate fog, snow, rain and dust.
- It is H4 iodine tungsten lamp.

3） Front Small Lamp, Rear Lamp And Plate Lamp

- Front small lamp and rear tail lamp show the auto position and outline during running and stop when the weather is dark. So it is also called as position lamp, width lamp and outline indicator.
- Plate lamp must lighten the plate at night running and the bulb can not be seen by the back driver.

4） Reverse Lamp

- Lightening the road back of auto and warning other vehicles and pedestrian;
- Not combine with other lamps: 250<=assemble height=>1200；
- Controlled by ignition switch and reverse switch.

5） Luggage Compartment Lamp, Ceiling Lamp (Interior Lamp)

- Luggage compartment lamp: lightening for taking and putting luggage;
- Ceiling lamp: assembled at the right upper of driver seat, to lightening the interior for the driver before and after running; at the same time as the door unclosed warning lamp and time delay lamp for the passengers.

6） Turning Signal Lamp

- Yellow light and 20W；
- Flash mechanism is electronic controller, frequency is 90±30 times per minute;

- Length of the body is not exceed 6m and without 5W side lamp;
- Independent switch and automatic reset.

7） Braking Lamp

- Braking lamp device auxiliary high position braking lamp, and assembled at lower brim of rear windscreen below 60 footcandle.
- During the work of braking lamp when the brake pedal is stepped all the braking lamps are on; when the brake pedal is loosen, all the lamps are off.
- The color of the brake lamp is red; it is 5 times lighter than the other tail lamps and it is belong to combination tail lamp.

2-4 SOUND SIGNAL SYSTEM

1. Composing: Horn and Meter Warning System

2. Function: Meter warning system is sound and warning indicator combined to remind driver the auto has failure or there will be failure.

3. Requirement:

1） The sound must be average, there should have no obvious changes of the sound frequency during working;

2） Can not use alarm, heavy sound device and music;

3） The sound cannot exceed 105Db.

2-5 COMBINATION METER

1. Composing: speedometer, tachometer, water temperature meter, fuel meter, oil pressure meter, clock, temperature warning light, oil pressure warning light, fuel volume warning light, parking warning light, turning indicate warning light and accumulator recharging indicator etc..

2. Function: driver inspects engine running conditions and masters every auto system working conditions.

2-6 AUTO ACCESSORIES AND OTHER ELECTRICAL DEVICES

1. Composing: safety belt lock button, door lock, door/window regulator, wiper and rear mirror.

2. Auto Door Lock

1） Function:

Safety for door closing and anti theft; it can prevent the door open automatically and throw the passengers out of car when there is a collision.

2） Type:

- This car uses block plate lock;
- It is electronic control automatic type

3）Performance

- Lateral loading:
- Full lock 89KN，half lock 44KN；
- Vertical loading:
- Full lock 11KN, half lock 44KN；
- The door can not open automatically:
- Acceleration is 294.2m/S²（30g）.

4）Control To The Door Of Anti Theft Controller:

- The anti theft controller can open and close the door lock within 5m; the main actuate component is electromagnetic inside of the door panel. When the power is shut down the electromagnetic is released, and the warning signal is flashing one time and humming shortly; door lock cable fall down and the door is locked; when the remote controller door open switch is pressed, there are two buzzers; door is opened by the electromagnetic.
- The door lock can be opened and closed by the manual door key; and can be opened inside of the car; but when the “childock ” is used, the door can not be opened inside of the car by the rear door handle.
- Electrical control door lock failure will not cause the door cannot be opened. The door can be opened by the key;
- Pay attention to the remote controller battery volume;
- When one door can not controlled by the remote controller, check the door electromagnetic only; when all the doors can not be controlled by the controller, check the remote controller and anti theft controller.

3. Door/Window Regulator:

1）Function: Regulate the glass down make the passengers close to the nature; regulate the glass up to keep the passengers away from the bad environment. This regulator adopts electrical central control. When lock the door by remote controller, the glass goes up in order automatically.

2）Performance: Using gear driving so the glass can stop at any position; it is easy to manipulate and its life is more than 40 thousand strokes.

4. Wiper and Washer

1） Function: Wipe the rain, snow and dust away from the windscreen; wash the mud secure the view. It is one of the active safety methods.

2） Composing:

- DC permanent magnetic motor, connecting rod driving mechanism, wiper blade and water injector etc..

- Washing reservoir using soft water, adhesive to produce washer; electrical pump is Strontium ferrite DC permanent magnetic high speed motor, 2~25thousand r/min，stop 25s per working 5s;
- Water pump is straight vane centrifugal type， when the injection pressure is 90Kpa, the injection volume is 100ml/10s；

3） Performance: enough wiping area; wiping cleanliness; life 1.5 million times; wiping frequency: high frequency> 45 times/min, low frequency> 20 times/min;

4） Wiper speed changes mechanism

- Blade frequency of the wiper is two grades manual speed changing. The speed changing of motor is realized by the third carbon brush (low speed carbon brush);
- The function of reset mechanism is realized by the reset ring on the worm wheel.

5. Rear Mirror

1） Function: provide rear view for the driver.

2） Requirement:

- Inside rear mirror view: by rear mirror and rear window, the view range should be 60m long and 20m wide.
- Outside rear mirror view: driver side by the right rear mirror, the view range should be 20m long and 4m wide; another side, by the left rear mirror, the view range should be 10m long and 2.5m wide.
- Curvature radius: 1200mm or 1800mm；
- Optical performance: reflectivity: 40%~60%；
- Distortion rate: avoid distorting mirror phenomenon by restrict curvature radius.

2-7 AIR CONDITIONER

Auto air conditioning is to create a comfortable environment by man made type. That is to adjust the air temperature, humidity, and velocity of flow, purify the air. Besides it can take away the fog, frost or ice and snow from the windscreen to provide a clear view for the driver to secure the driving safety.

1. Composing Of the Car Air Conditioner System:

1） Divided by its function: Refrigerating system, heating system, ventilation system, control and manipulate system and air purifying system.

2） Working principle:

- Refrigerating system: decrease the temperature inside of the car by absorbing quantity of heat when the refrigerants evaporating.
- Heating system: the heating system of this car uses cooling water heating, inducting the cooling water from engine to heater inside of the car, and blows the heated air to inside by the blower.

- Ventilation system: there are two kinds of wind- nature wind and obliged wind. Nature wind refers to the ventilation realized by the air in port and air out port according to different wind pressure when the car is running; obliged wind refers to oblige the wind entering the car by blower. Normally these two kinds of ventilation are used together when the car is running.
- Control and manipulate system: it is made up of electric element, vacuum pipe and control mechanism. It can control the temperature of cooling and heating system, control the pressure, and control the air temperature, wind capacity and flow direction inside of the car.
- Air purifying system: filtrate the in taking air by the air filter and discharge the dirt air from the interior keeping the air clean.

2. Cooling System:

1） Composing:Compressor , condenser, expansion valve and evaporator

2） Function:

- Compressor: increase the pressure of gaseity refrigerant from 0℃ and 0.15Mpa on evaporator low pressure side to vapor refrigerant above 70~80℃ and 1.5Mpa;
- Condenser: over heated gaseity refrigerant becomes liquid refrigerant by through condenser；
- Expansion valve: refrigerant after the condensation passes expansion valve and increases its volume, so its temperature and pressure decreased toboggan; it becomes to wet vapor with its low temperature about -5℃ and low pressure about 0.15Mpa. It will be evaporated in the evaporator very fast;
- Evaporator: wet vapor with low pressure and low temperature passes evaporator turning to gaseity refrigerant with 0.15Mpa and 0℃ to absorb the air quantity of heat.

3. Control Function of the Car Air Conditioner

1） Engine idle speed increasing automatically;

When the engine is at idle speed for the vehicle with air conditioner, it is easy for the engine to over heat or stall; after the ECU receive the air conditioner signal it will increase the engine idle speed and then connect to wedge pulley solenoid valve to let compressor working.

2） Engine speed and temperature control:

Engine speed control is to disconnect the air conditioning device automatically when the engine is at low speed running and to prevent the engine from over heating or stalling.

Temperature control circuit is made up of heat resistance with negative temperature coefficient and control circuit; heat resistance is assembled on the exit of evaporator to check the surface temperature of evaporator; when the surface of evaporator has frost and ice, the circuit will output a high voltage signal and temperature control circuit cut off the compressor circuit; when the temperature return to a certain number, the temperature control circuit will make compressor beginning to work.

4. Air-Conditioner System Inspection Knowledge

1） Maintenance of air conditioning system

- Check the quality and degree of tightness of the air compressor belt;
- Clean the surface of condenser and evaporator per certain time to keep the heat exchanging in order;
- Do not disassemble the compressor belt at the season of air condition unused, it is better to run it 10 minutes every week;
- Check the refrigerant system if it is leaking, check it with halogen leakage tester; the halogen is grey blue when there is no leakage, the halogen is Cambridge blue when there is small leakage, and the halogen is blue or purple when the leakage is heavy;
- Check the lubricant volume inside of the AC system accurately: if the volume is not enough it will increase the air compressor wearing and tearing; if the volume is too much, it will decrease the heat exchanging efficiency and influence the cooling result;

2） Notice of the AC maintenance

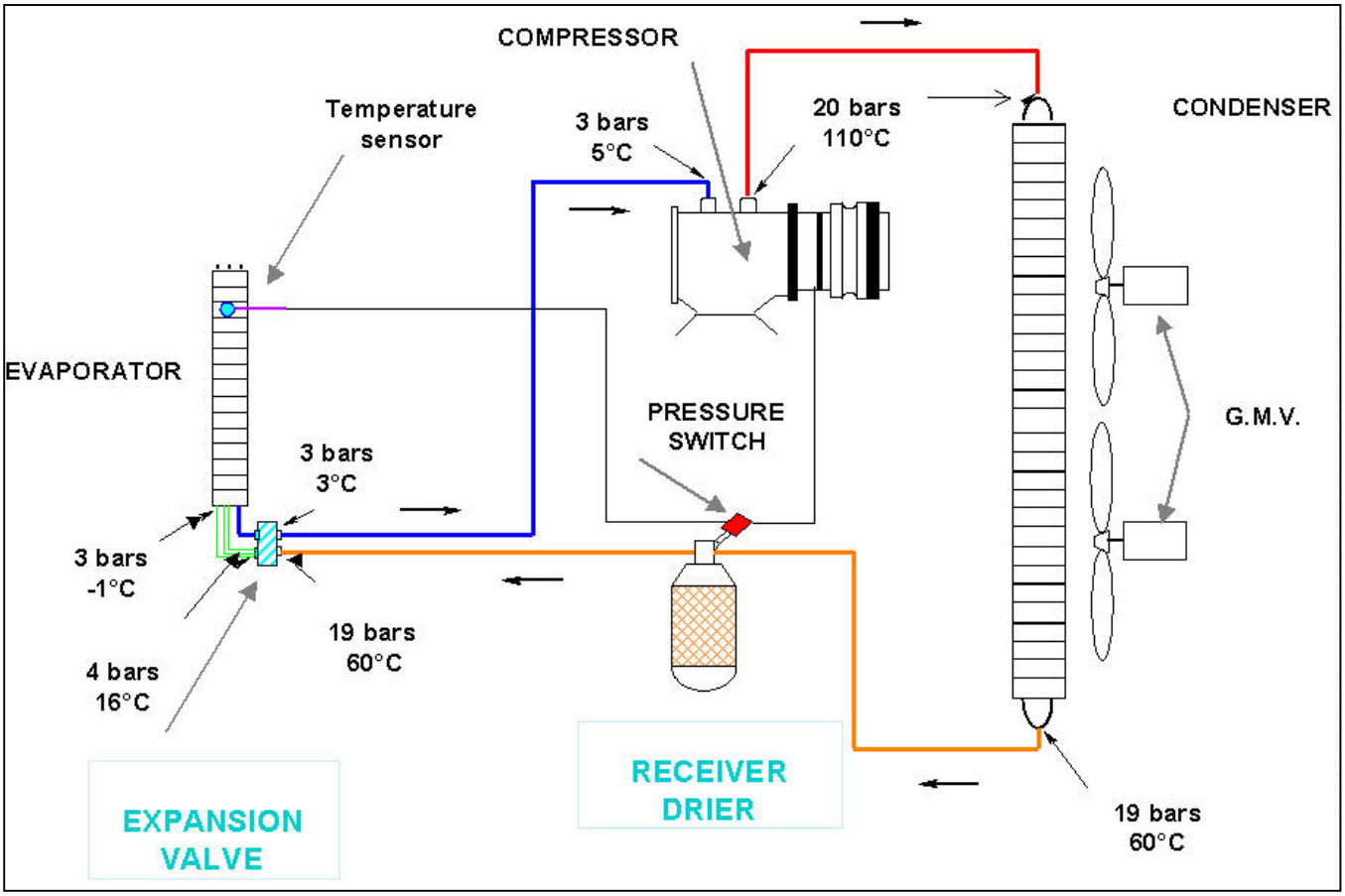
- Avoid to contact the refrigerant to the body, prevent from frostbite by wearing gloves and defending gloves;
- It is must repairing the AC at a place with good ventilation system prevent the refrigerant leaking causing suffocating;
- Do not let the refrigerant go to the air;
- Prevent the refrigerant far from fire, there will be toxicant produced meeting fire;
- The container with refrigerant can not be heated or exposed to the sun.

5、 Refrigerant：

1） R134a had replaced Freon, its code is R12 and it is forbidden to use the refrigerant which contain the Cl in its molecular formula CCl2F2;

2） R134a can damage the freezing oil and pipe, it needs to use PAG lubricant （NO-OIL8）or ester composing lubricant and the pipe should be use nylon. The greenhouse effect of R134a is thousand-time compare to CO2. It is possible to be replaced.

STRUCTURE AND PRINCIPLE CHART OF AIR CONDITIONER



2-8 AIR BAG

1. Function: it is the auxiliary passivity safety device of safety belt. It is a special charging bag to separate the passenger from the second collision when the car has a collision. It can reduce the casualty 20%.

2. Composing:

1） Sensor: Connect the contact within 10ms of the collision instant and send the signal to air generator.

2） Air bag controller: Receive the sensor collision signal and analyze, judge it; record the system failure, analyze it and give the warning message.

3） Air generator and air bag: there are two kinds of generator: one is compressed N2 air proofing container, it will finish the charging within 40ms after it receive the charging signal from the sensor; another kind is innocuous detonator, it is detonated by charging signal with short charging time; the air bag normally is made up of polyamide textile coated with neoprene to secure its air proofing character.。

3. Air Bag Installation and Maintenance Notice:

1） The installation and maintenance work should be done by professional staff;

2） After 30s-1 min of disassembling the accumulator cathode lead before operating the air bag system in order to keep the air bag from detonated accidentally;

3） Do not make the components of air bag system getting the temperature above 85℃;

4） Keep the air bag main component and control computer from knock and vibration;

5） Check the air bag electrical system after the installation of this system, do not check the resistance of air bag solicitation device with multimeter to prevent the air bag from explosion;

6） Do not modify the circuit and element of the air bag system at random;

7） Put the air bag system cushion upward when disassemble it from the vehicle. If it is not correct placed, by any chance the air bag is detonated the air bag will fly uprightness, it is dangerous;

8） Change all the elements after the air bag is detonated for safety reason;

9） It is not allowed to open and repair the air bag system, change new element only;

10) There is replacement date on the air bag device, even if there is no collision it is must to be changed every 10 years.

3 CIRCUIT SCHEMATIC DIAGRAM AND FAILURE DIAGNOSIS OF EVERY SYSTEM

3-1 EXPLANATION OF THE SCHEMATIC DIAGRAM

1. No. of the Relay Box Main Circuit Board:

30：12V power supply anode wiring, no fuse, coming from accumulator directly;

30a：12V power supply anode wiring, via SB—6 fuse（30A）, connect to instrument panel relay box;

15：12V power supply anode wiring, ignition switch at ON has power;

15a：12V power supply anode wiring, ignition switch at ON has power; it is shut down when the engine is started and make power supply discharging;

Ka：12V power supply anode wiring, ignition switch at ACC has power, supply power to radio, cigar lighter, wiper, car parking and engine stop.

2. Code and Distributing Point of Grounding (10 Points):

1）302- grounding of engine compartment cable harness on left front side member;

2）303- grounding of engine compartment cable harness on right front side member;

3）Grounding of the ECU cable harness on the accumulator;

4）Grounding of the ECU cable harness on the engine block starter;

5）300 and 301- grounding of instrument panel below relay box;

6）308-grounding of interior cable harness below gear shift knob;

7）306-grounding of interior cable harness on left C pillar;

8）305-grounding of interior cable harness on right C pillar;

9）Grounding of electric device;

10）Grounding of rear lid cable harness under rear window frame lower part.

3. Inserting Part Explanation:

There are some inserts delivered together with the controller and electric device, in order to divide them and convenient to recognize them, indicate them with capital letter C and different number, then there are sign for the pin of the inserts on the cable in the schematic diagram; there are several inserts sometimes between cables, and they are also divided by this kind of method, signing the correlated sign on the pin. For example: C100/2 means No. 2 C100 pin insert pin on some cable. (It is not signed on the drawing and need to be added)

4. Number of Lead: Function Definition to Separate the Electric Device Pins (It Is Better To Give the Number Definition List)

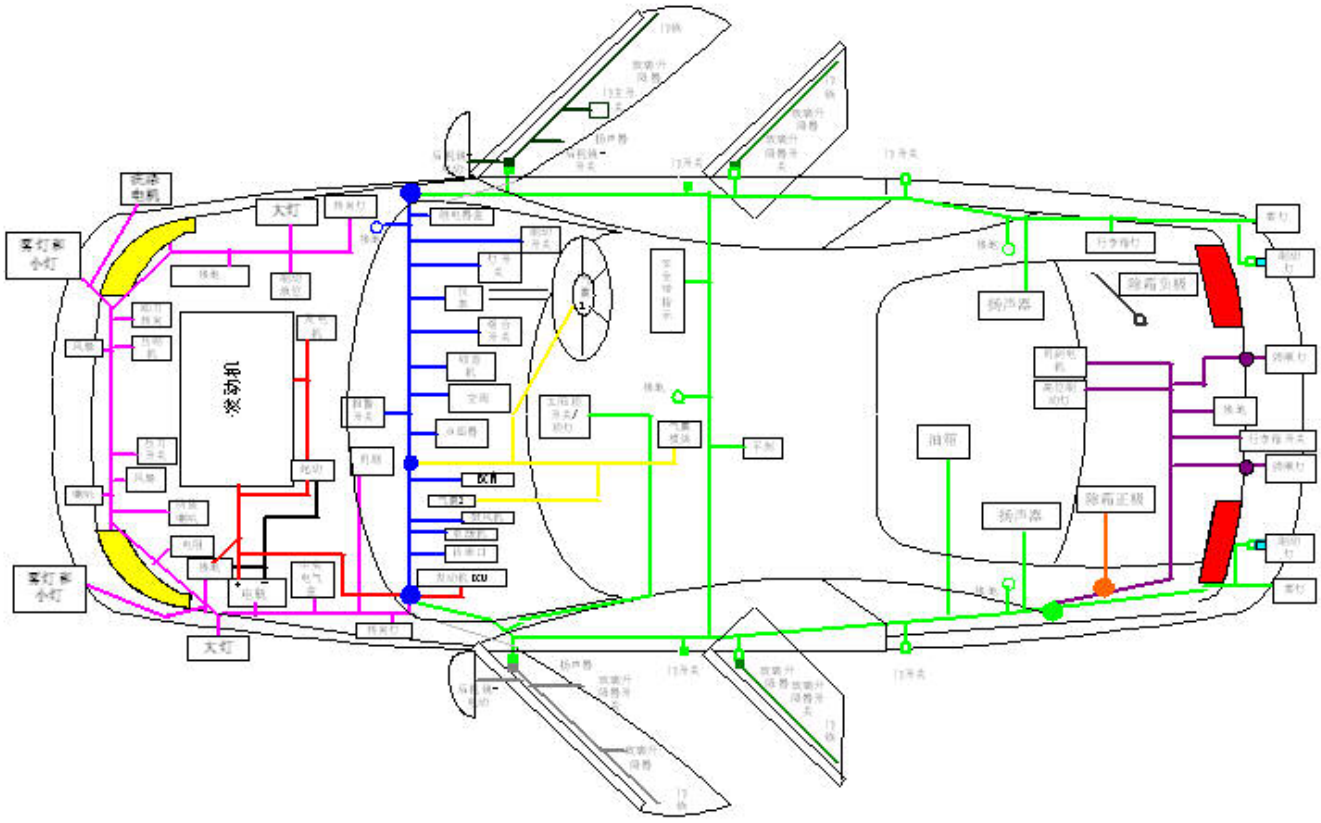
For example: 600 means the power supply anode lead from accumulator to engine electrical box.

5. Color And Section Area（Mm^2）：In order to separate the different lead and fit for different performance lead, specified signs are as below:

W-white	B-black	V-purple
L-blue	Gr-gray	Br-brown
Y-yellow	O-orange	G-green
R-red	P-pink	Lg-light green

Example: 0.85Ry means red yellow lead with the section area 0.85mm^2

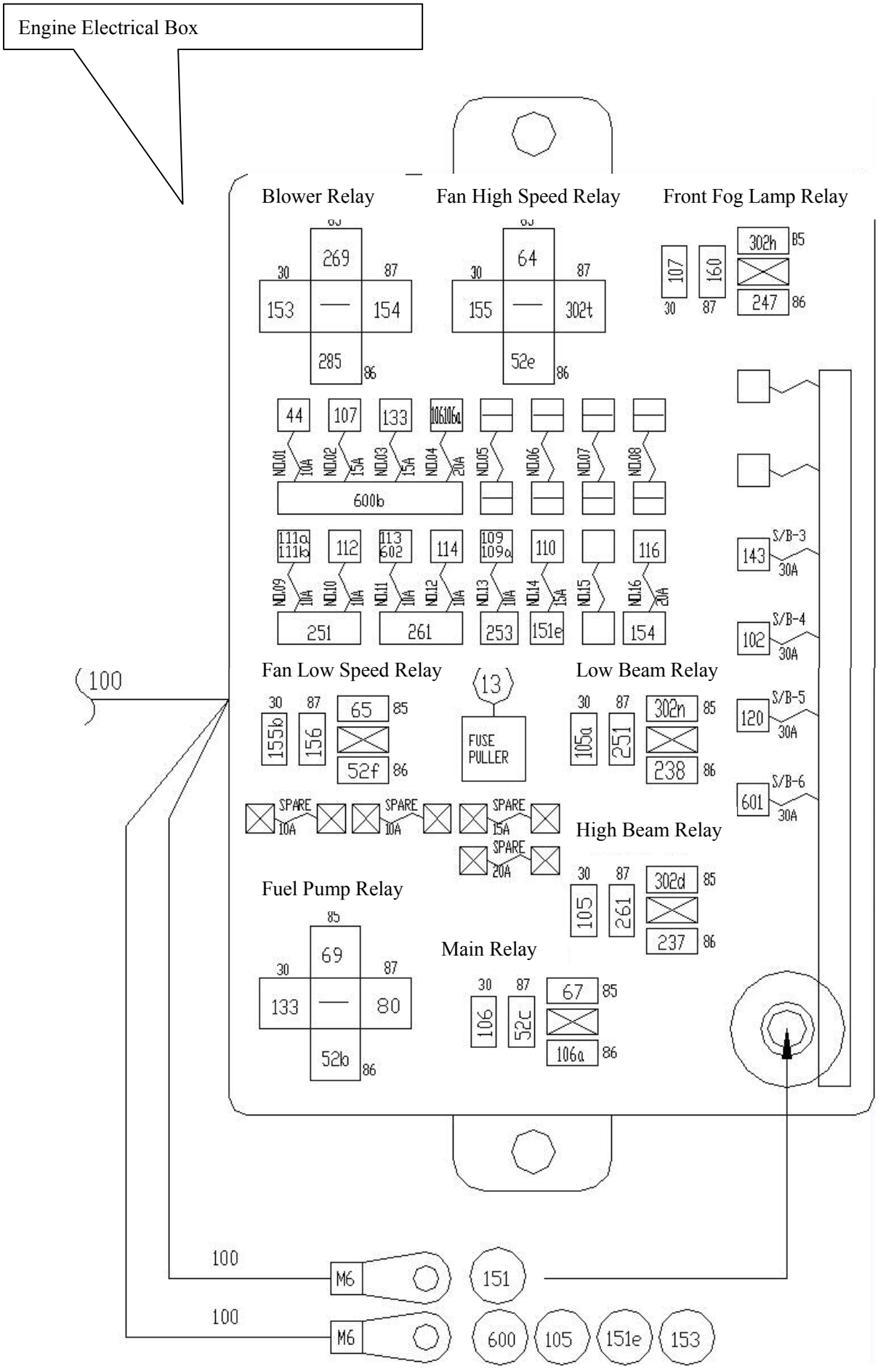
3-2 COMPLETELY VEHICLE ELECTRIC LAYOUT



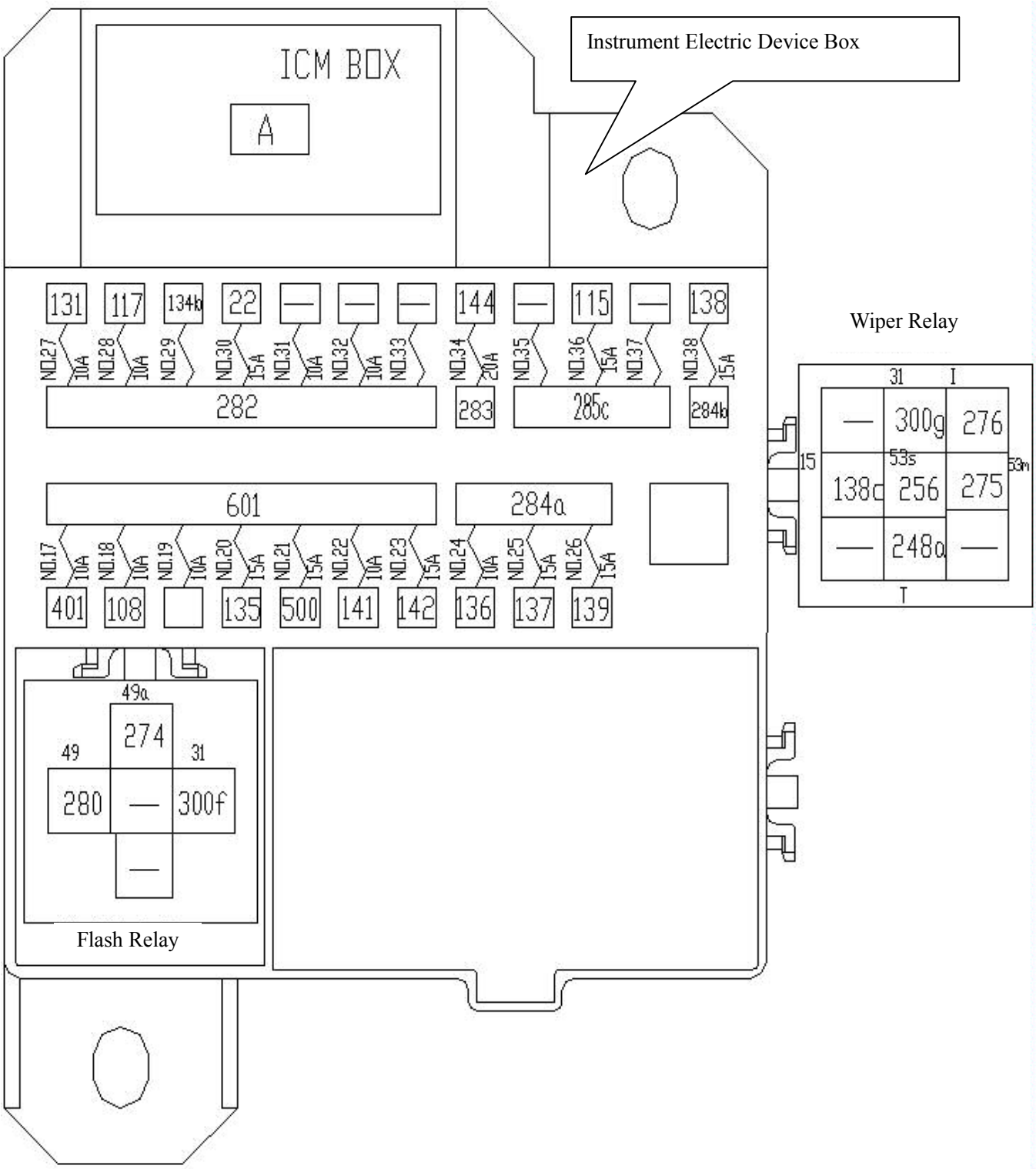
Explanation

Engine Cable	Air Bag Cable	Rear Lid Cable
Instrument Cable	Driver Door Cable	Accumulator Cathode Cable
Front Cable	Co Driver D Cable	Defrost Cathode Cable
Interior Cable	Rear Door Cable	Defrost Anode Cable

3-3 ELECTRIC DEVICE BOX- ENGINE COMPARTMENT ELECTRIC DEVICE BOX


Engine Electrical Box
Blower Relay
Fan High Speed Relay
Front Fog Lamp Relay
Fan Low Speed Relay
Low Beam Relay
High Beam Relay
Fuel Pump Relay
Main Relay
FUSE PULLER
SPARE
600b
251
261
253
151e
154
100
M6
151
600
105
151e
153

Instrument Electric Device Box:



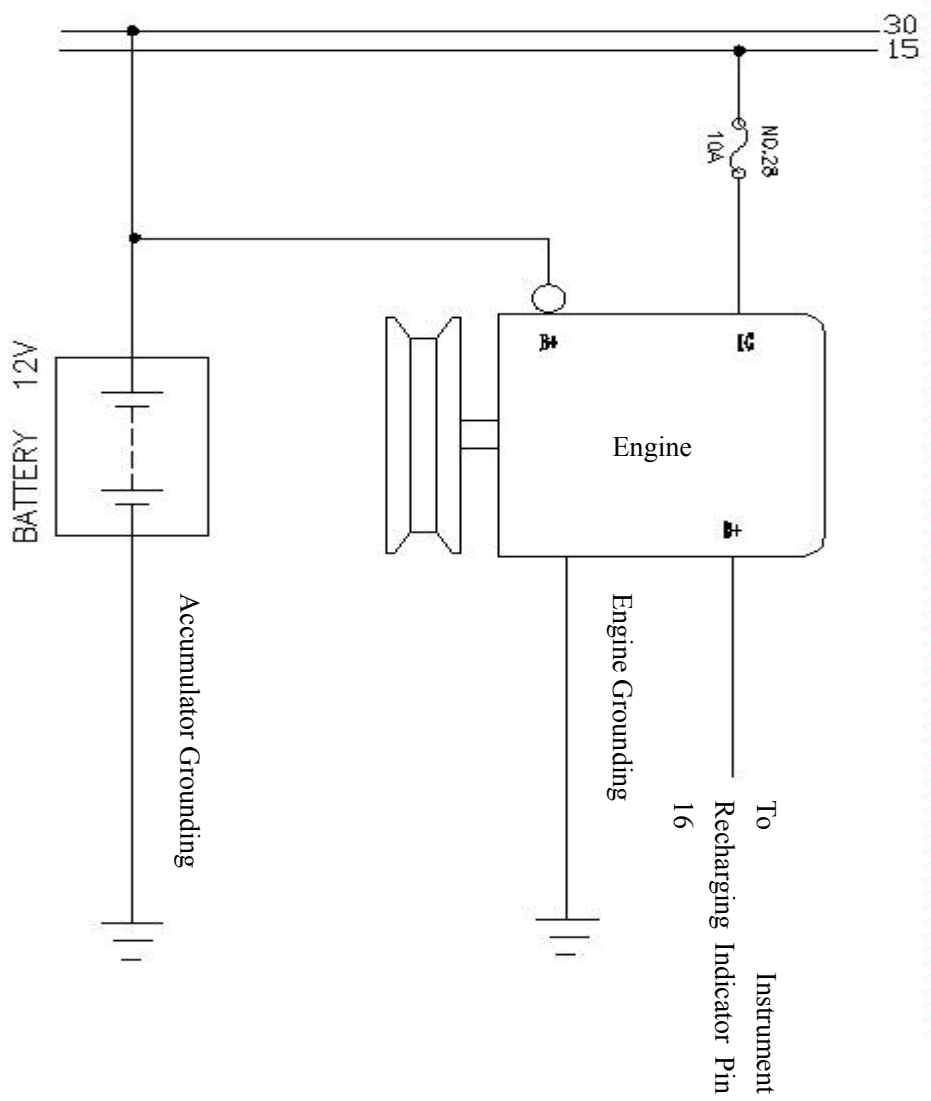
Notice:

This Symbol Means Connection Terminal Or Terminal Line, The Number In It Means The Lead No. Connected Into.

This Symbol Means Fuse Inside Of Electric Box, The Number Above And Below Means The No. And Capacity Of The Fuse.

3-4 POWER SUPPLY SYSTEM

1. Circuit Schematic Diagram



2. Ordinary Failure Of The Car Power Supply

1） Accumulator Deficient

① Phenomenon:

◄ Starter can not work, and the engine can not start;

◄ Turn on the ignition switch but the horn does not work or sound is weak;

◄ Flashing frequency becomes slow of the turning lamp;

◄ Light of headlamp becomes weak.

② Reasons：

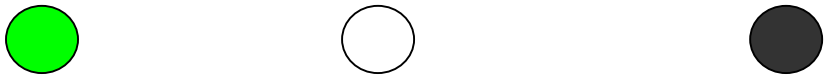
◄ The vehicles parked for a long time(not exceed 3 months);

◄ The power using devices do not switched off during night;

◄ There is short circuit in the electro circuit.

③ Diagnosis And Analysis

◄ Check the electrical voltage; look the peering window of the accumulator and result is:



green-has power (can be used) white-deficient (need charging) black- no power (can not use)

◄ Charging or replace the accumulator for the long term parking vehicle;

◄ Check if there is short circuit or not.

④ Method To Check Short Circuit:

◄ Turn off the ignition switch and all the power using device: serial connecting SB-6(30A) main fuse to main circuit 30a, if the fuse is blown or there is current transflux measured by ammeter, that means there is short circuit of the systems under the control of SB-6; check the below fuse and its correlated circuit system: (see general circuit schematic diagram or correlated circuit schematic diagram and instrument electric device box);

⊙NO.17（10A）AC fuse;

⊙NO.22（10A）instrument and record-replay equipment fuse;

⊙NO.21（15A）braking light switch fuse;

⊙NO.23（15A）anti theft device and alarm switch fuse;

⊙NO.19（10A）horn fuse;

⊙NO.18（10A）rear fog lamp fuse;

⊙NO.20（15A）overtake lamp fuse.

◄ Take off the fuse of the relay serial connected to main circuit 30 and check them, If they are blew, there is short circuit; serial connect ammeter to confirm if there is short circuit(if there is current passing there is short circuit); and then check the below circuit system separately:

⊙NO：1（10A）anti theft system fuse, connected with ECU pins No.44 and No.63 by 44# wiring;

⊙NO：4（20A）main relay fuse, connected with main relay pin No.87 by 106# wiring; main relay is controlled by ECU Pin67 output voltage signal;

⊙NO：3（15A）fuel pump relay fuse, and power of the fuel pump relay control coil is supplied by main relay and controlled by ECU Pin 69 output voltage signal;

⊙NO：14（15A）engine low speed electronic fan fuse is connected to fan motor by 110# wiring;

⊙SB—4（30A）engine high speed electronic fan fuse, connecting to fan motor by

102#wiring; engine low/high speed fans are controlled by ECU pin 65and pin 64 relay;

⊙NO：15（15A）rear defrost fuse, connecting to rear defrost relay by 900/2.0Rwiring;

⊙SB—1（30A） braking system（ABS）control unit fuse, connectingto ABS control unit Pin25 directly；

⊙SB—2（30A）braking system（ABS） control unit fuse, connecting to ABS control unit Pin 9 directly；

⊙SB—3（30A）anti theft controller power supply fuse, connecting to anti theft controller Pin A5. PinA6 and Pin A19 by 143 wiring;

⊙NO：2（15A）front fog fuse, connecting to relay through 107 wiring and controlled by fog switch;

⊙Headlamp power supply, connecting to upper beam relay through 105 wiring and controlled by light switch. Via fuse NO.9, 10, 11 and 12 to illumine the headlamp;

⊙Additionally, door switch and ceiling lamp easy to cause short circuit;

◄ By current checking all of the fuse above mentioned, and at the condition of ignition switch at OFF, the accumulator discharging greatly, we can judge there is short circuit.

2） Generator Does Not Work Or To Accumulator Charging Not Enough

① Phenomenon:

◄ Power supply warning lamp is on;

◄ Accumulator is deficient…

② Reason:

◄ Generator inside field circuit is damaged;

◄ Generator inner adjustor is damaged;

◄ Charging circuit open circuit: generator B+--accumulator+…

3） Accumulator over charging

① Phenomenon:

◄ Electrolyte consuming is too much;

◄ Temperature of accumulator is too high;

◄ It is easy to burn out the power using device…

② Reason:

◄ Generator regulator voltage is too high;

◄ The adjustor is out of control, and exit current too big and out of control;

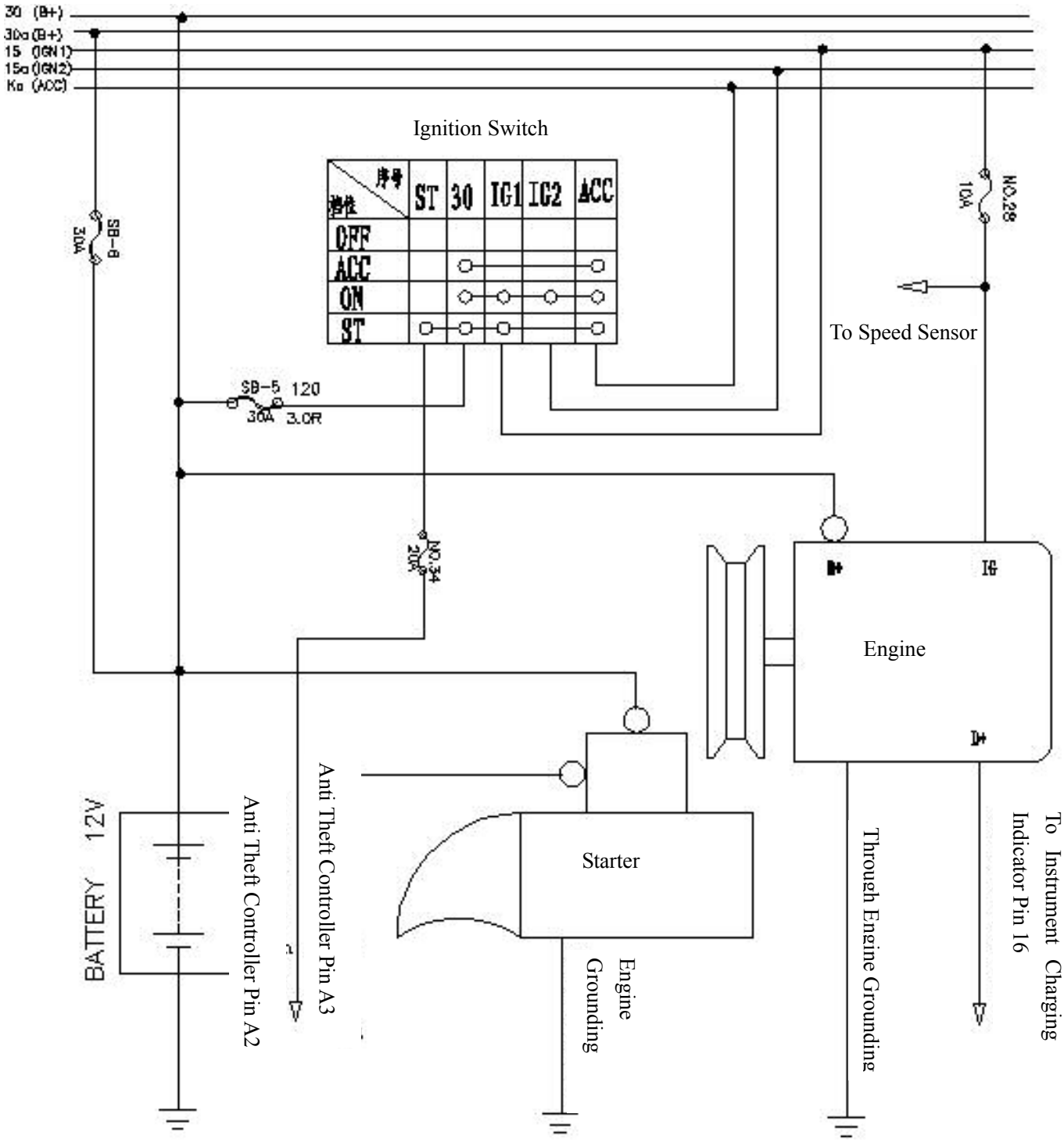
◄ Grounding inside of engine exit circuit…

③ Diagnosis And Analysis:

- Checking generator voltage;
- Generator is over heating; charging circuit is too hot;
- Accumulator is over heating;
- It is easy to burn out the power using device: first the filament of the braking lamp is easy to be burnt out; or some power using device is burnt out frequently.

3-5 STARTING SYSTEM

1. Starting Circuit Schematic Diagram



2. Diagnosis And Analysis Of Starting System Electrical Failure

1） Phenomenon:

Put the ignition switch on Ⅰshift power indicator is lighting, and put the ignition switch to Ⅱ shift the start will not work.

2） Reason:

① If the anti theft device is unlocked;

② Starter failure;

③ Solenoid switch failure;

④ Ignition switch failure;

⑤ Wiring between starting system is rickety.

3） Diagnosis and analysis:

① Check the solenoid switch if it is moving; if there is no motion, check the connecting wiring voltage;

② Check if there is voltage on ignition switch input wire (red line);

③ Check the accumulator voltage…

④ Pay attention to the difficult failure;

⑤ Generator positive rectifier diode breaks down.

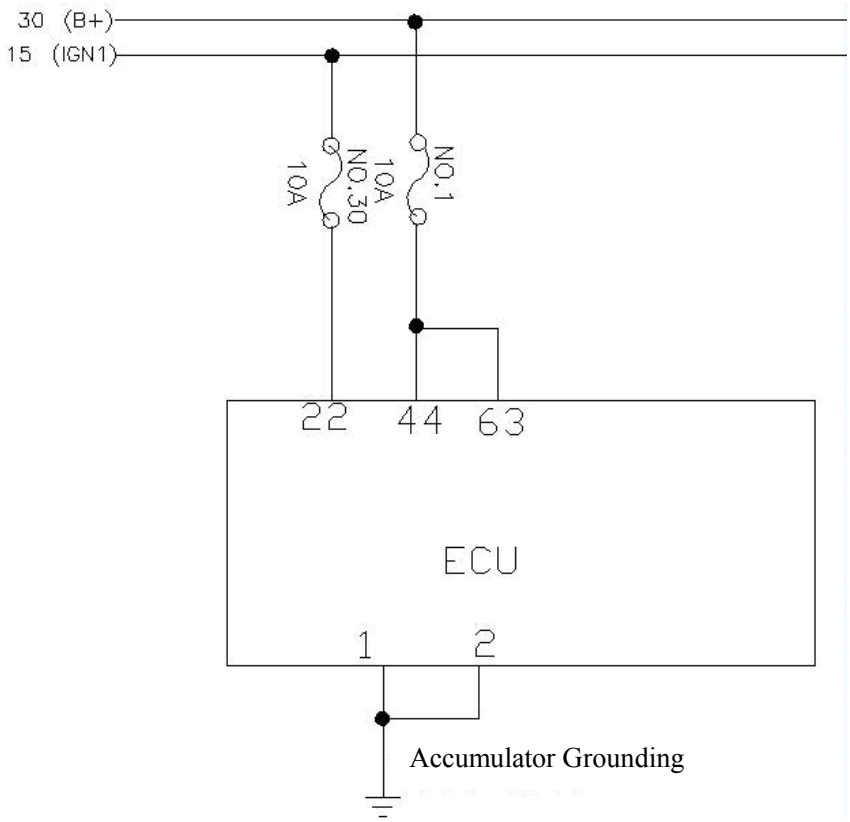
3. Starter Failure and Analysis

Failure phenomenon	Failure position	Possible reason
Starter does not work	starter	Armature winding or excitation winding open circuit or short circuit
		Solenoid switch contact ablation
		Solenoid switch attracting coil or holding coil short circuit or open circuit
		Commutator is ablated badly
		Brush is worn heavily or elasticity deficient
	Additional relay or combined relay	Contact is dirty or ablated
		Contact clearance or air gap is too big
		Contact close voltage can not meet the requirement
		Coil short circuit or open circuit
	Switch and lead	Bad contact of the ignition switch or button
		Bad contact of the lead connection position
		Lead open circuit
Starter running powerless	Starter	short circuit between Armature winding or excitation winding
		Solenoid switch contact light ablation
		Commutator light ablation
		Bearing too tight

		Brush spring force is deficient
	Lead	Lead connection place with bad contact
The driving gear and flywheel toothed ring can not engaged and there is clash	Starter	It is too early to connect the switch
		Driving gear is damaged
		Installation bolt of starter is loosing
	Flywheel tooth ring	Gear is worn or gear broken
The starter does not stop working after the engine is started	Starter	Driving for returning spring is too soft or broken
		Switch contact ablated or contact tray spring is damaged
	Additional relay or combined relay	Contact is ablated
		Contact disconnecting voltage can not meet requirement
After the engagement of driving gear and flywheel toothed ring, the starter is idle running	Starter	One way clutch is skidding

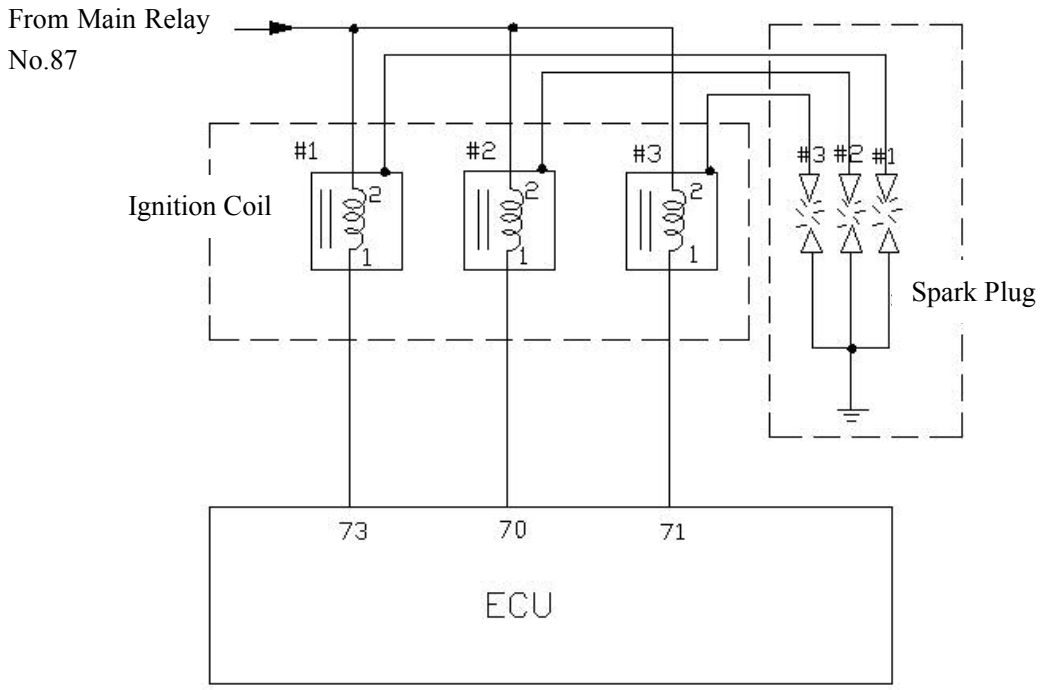
3-6 ECU POWER SUPPLYING SYSTEM

Circuit Schematic Diagram



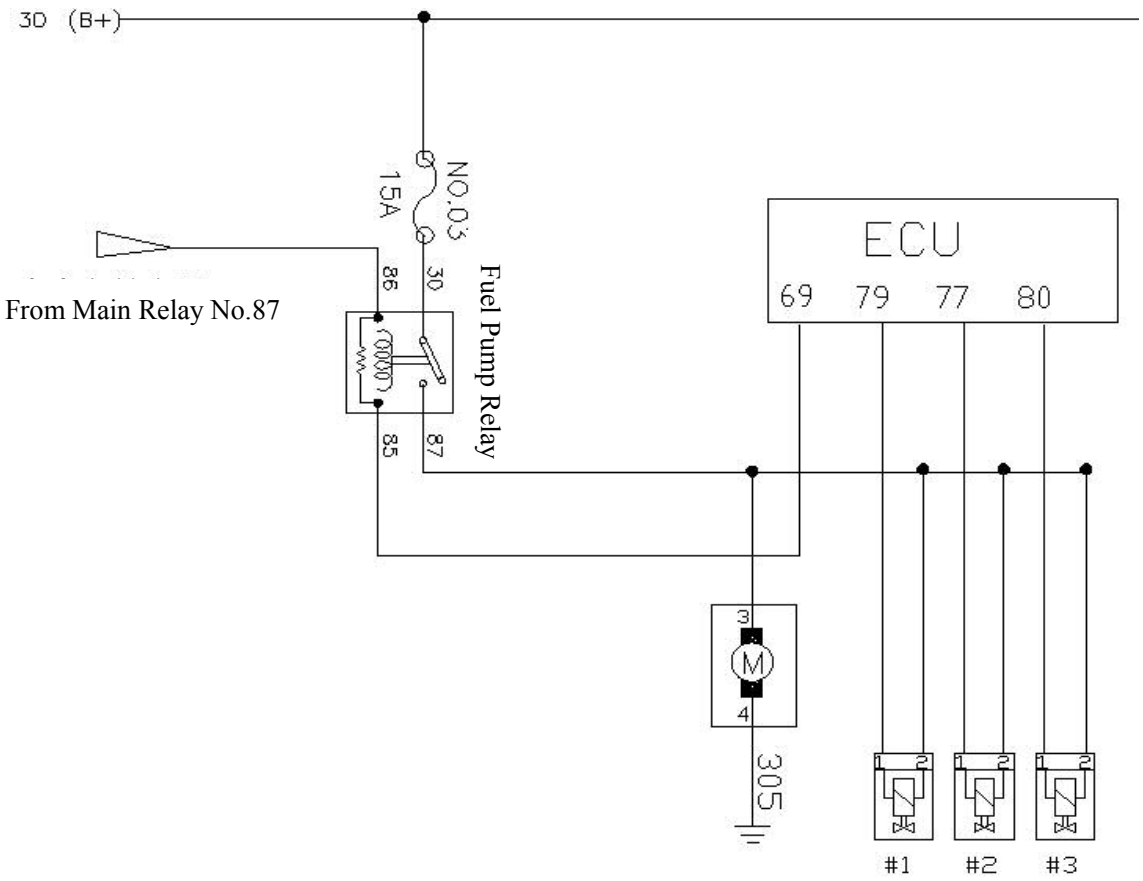
Notice: ECU is engine electronic control device, one of the power supply is coming from accumulator directly; so please shut down the ignition switch first when repair the starter and generator and then disconnect the power supply of the accumulator to avoid damaging the ECU.

3-7 IGNITION SYSTEM SCHEMATIC DIAGRAMS



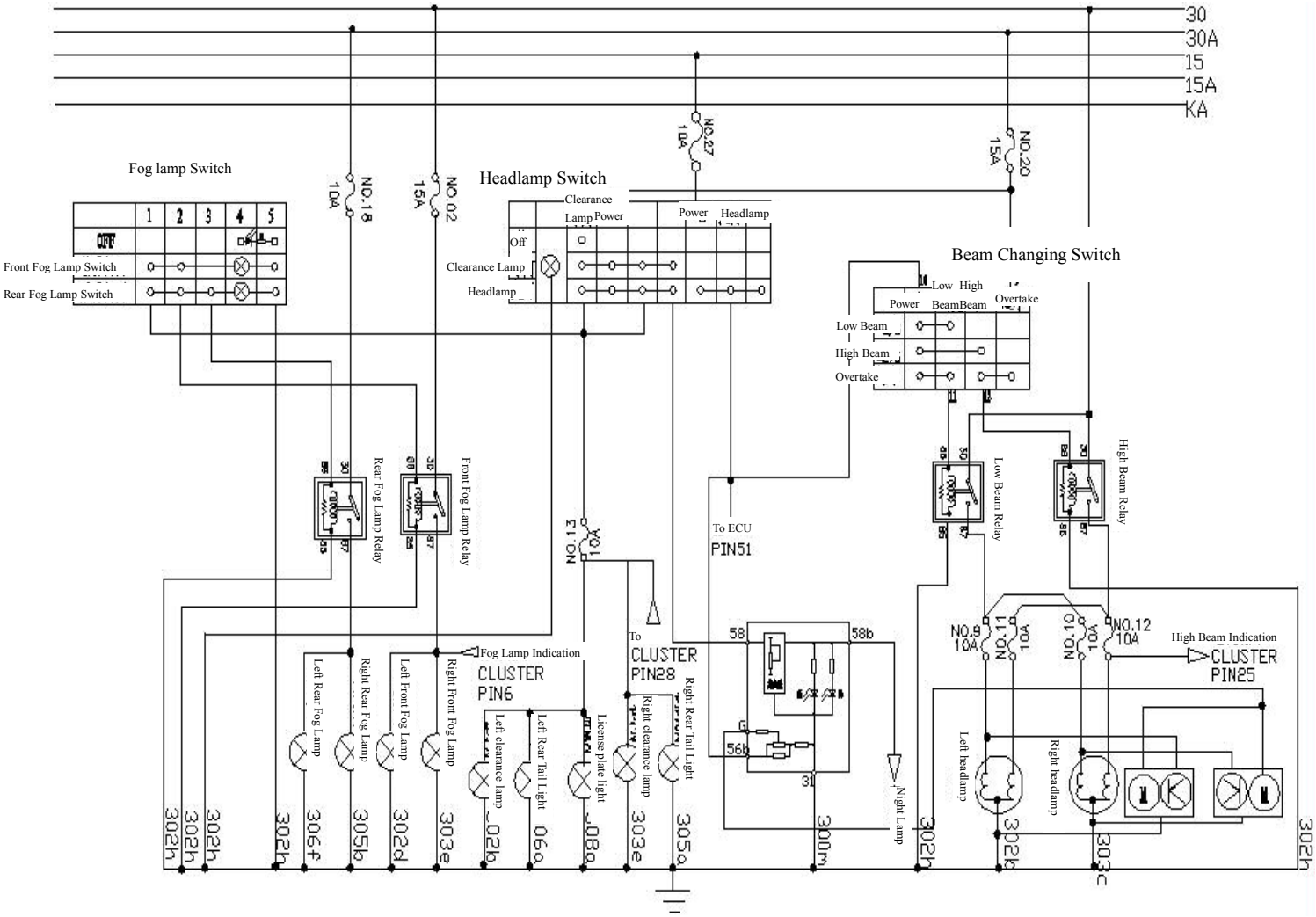
3-8 FUEL SUPPLYING SYSTEM

Fuel Supplying System Circuit Schematic Diagram



3-9 HEADLAMP AND FOG LAMP SYSTEM

1. Headlamp and Fog Lamp Circuit Schematic Diagram



2. Frequent Failure Diagnosis and Analysis

1） Water entering into the lamp

① Phenomenon: there is water or mass fog inside of the lamp

② Reason:

◄ The sealing of the rear lid is not assembled very well;

◄ The socket of the connection wiring is not connected well.

③ Method of the troubleshooting:

◄ Reassemble the rear lid;

◄ Reassemble the cable socket to its right position.

2） Bulb failure(check the fuse first)

① Phenomenon: the bulb is bright and not bright sometimes

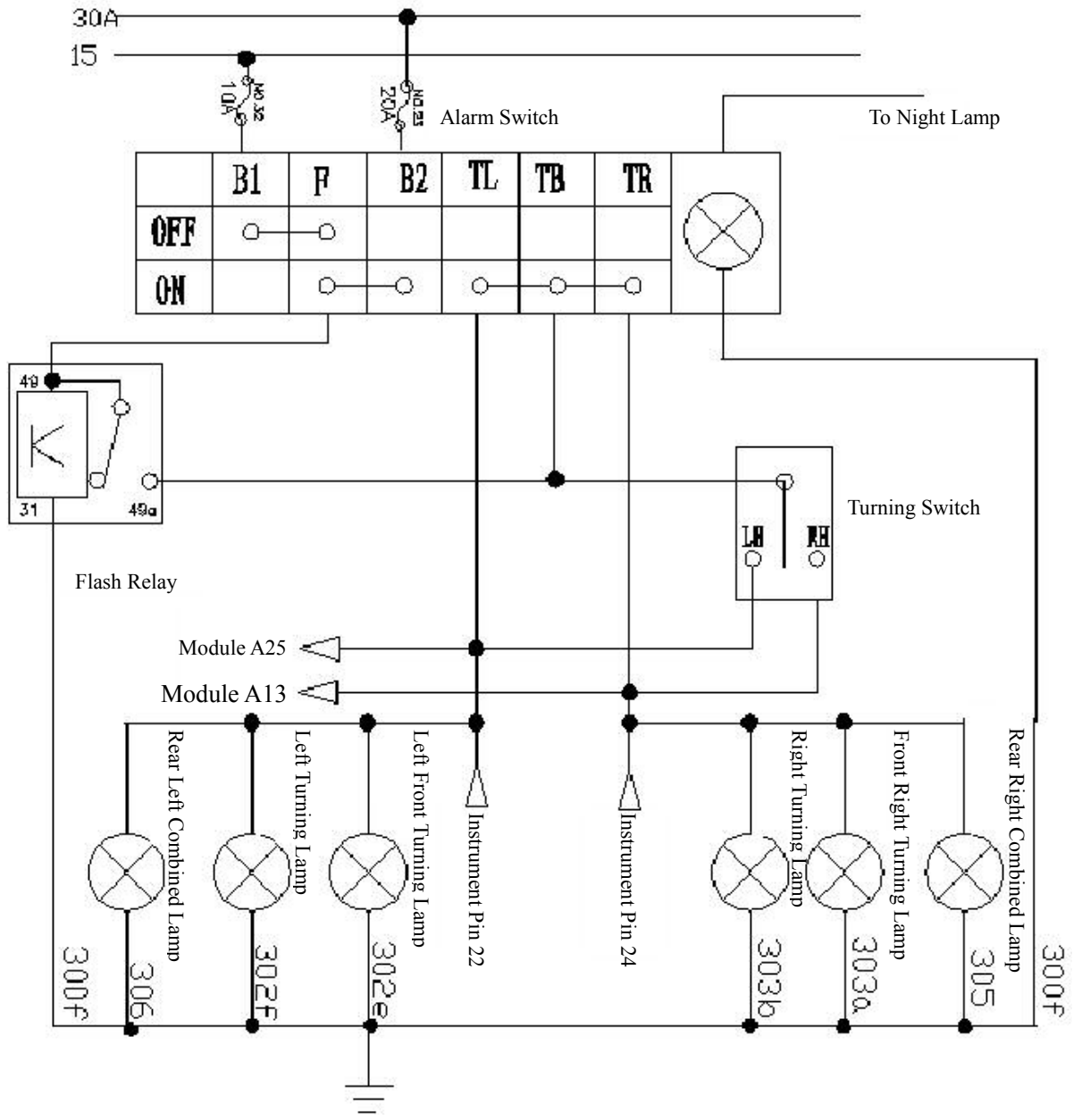
② Reason:

◄ The socket is loosen;

◄ Failure of circuit and ECU.

3-10 STEERING AND WARNING SYSTEM

1. Steering and Warning System Circuit Schematic Diagram



2. Frequent Failure Diagnosis and Analysis

1） Turning signal failure:

◄ The indicator on the switch is controlled by light switch has no relation with this system;

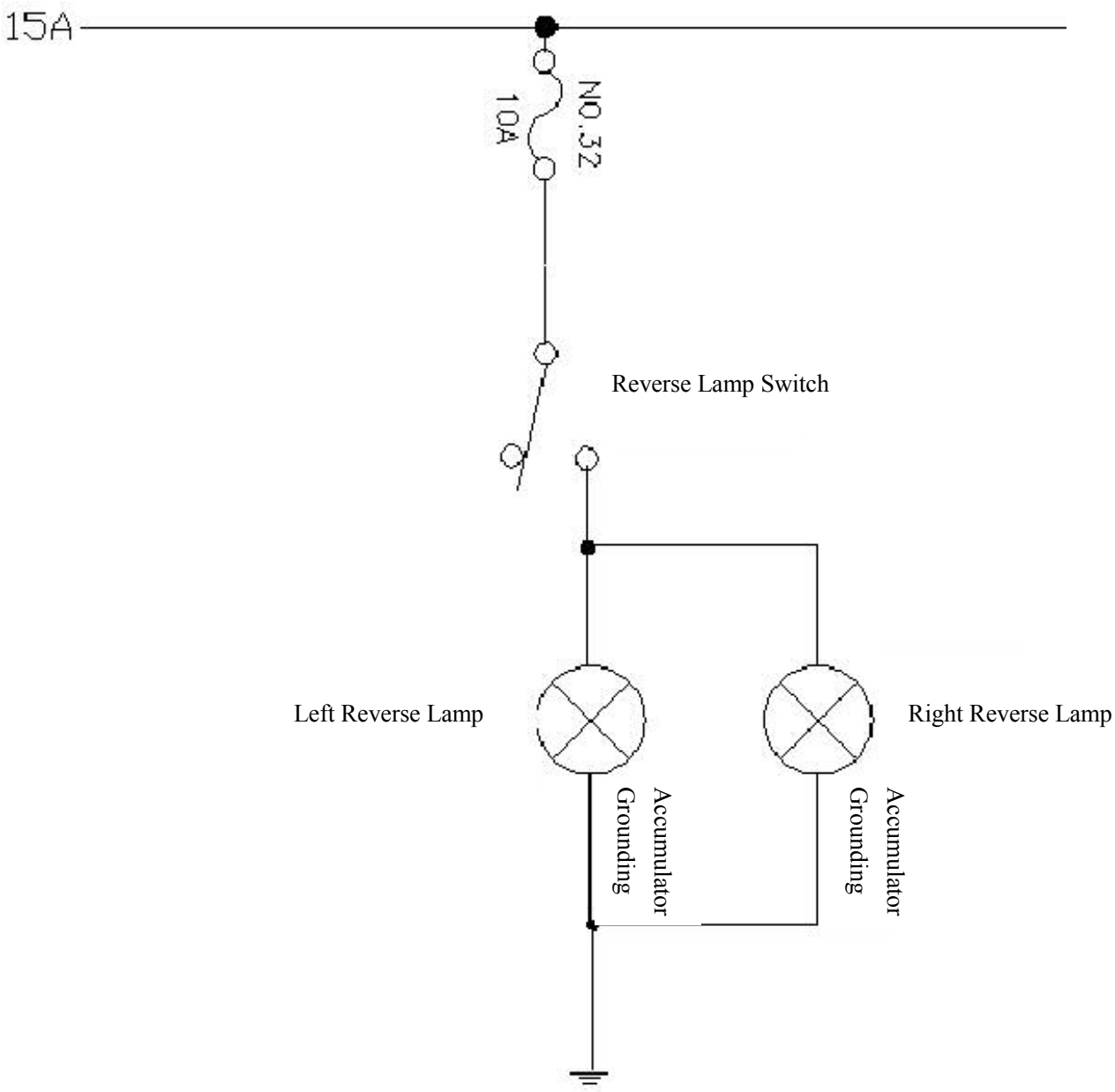
- System power supply is controlled by the NO. 23 fuse of instrument electric box; if all the turning lamps are not bright check the No. 23 fuse at first;
- When there is only one bulb has problem the flicker of others lights and the indicator on the instrument panel will be faster obviously, from that we can find there is filament broken or short circuit inside of the turning system;
- Please see the “body service manual” for the lamp disassembly and replace.

2） Dangerous warning system failure:

- If all the lamps have problems, check the No. 32 fuse and warning switch;
- Other failures are same with steering system.

3-11 REVERSE LAMPS

1. Reverse Lamps Circuit Schematic Diagram



2. Frequent Failure Diagnosis and Analysis

1） Failure: Reverse lamps are not working (2 lamps)

① Phenomenon:

To reverse shift but the reverse lamps are not working.

② Reason:

- ◄ Ignition switch is not switched on;
- ◄ Fuse NO.32（10A）is lacking or damaged;
- ◄ Connecting plug of the reverse lamp switch is damaged;
- ◄ Reverse lamp switch is broken inside(checking method: turn on the ignition switch and to reverse shift, connecting two ends of switch plug by one lead checking the reverse lamps if it is working or not, if it is working means there is short circuit inside of the switch);
- ◄ Bad grounding.

2） Failure: Reverse lamp is not working (1 lamp)

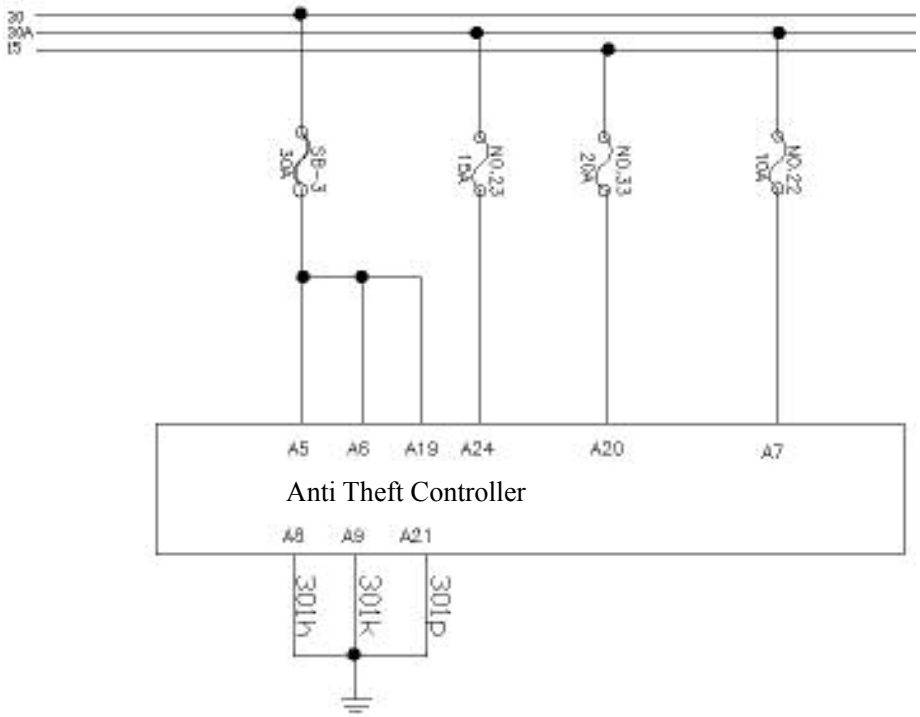
① Phenomenon:

To reverse shift, one reverse lamp is working, but the other one is not working.

② Reason:

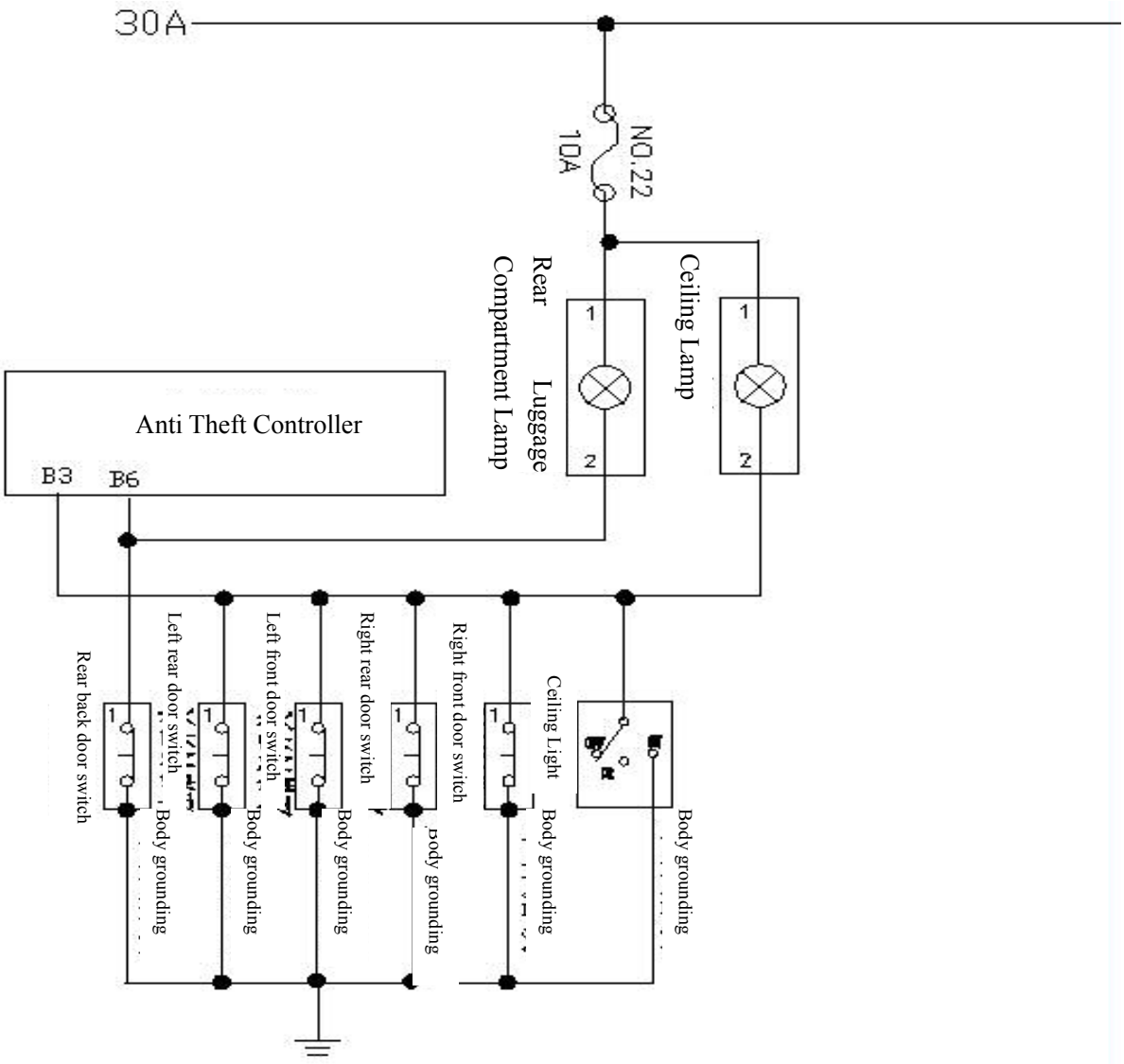
- ◄ The bulb is fall off;
- ◄ Filament is broken;
- ◄ Plug of the rear lamp is fall off (checking the others lamps work or not of this rear lamp)

3-12 ANTI THEFT CONTROLLER POWER SUPPLY SYSTEM



3-13 CEILING LAMP AND LUGGAGE COMPARTMENT LAMP SYSTEM

1. Ceiling Lamp and Luggage Compartment Lamp System Circuit Schematic Diagram



2. Frequent Failure Diagnosis And Analysis

1）Failure:

Ceiling lamp is not working.

① Phenomenon:

The ceiling lamp is not working when the switch is turned to ON position.

② Possible reasons:

◄ Ceiling lamp fuse NO.22（10A）is damaged or not;

◄ The ceiling lamp itself is unqualified;

◄ Bulb of the ceiling lamp is damaged.

2） Failure:

Ceiling lamp is not working.

① Phenomenon:

The lamp is working when the switch is turned to the middle position and it is working when the switch is ON position

② Possible reasons:

◄ Four doors are not open；

◄ The cable is not connected well.

3） Failure:

The ceiling lamp is working all the times.

① Phenomenon:

The ceiling lampworks all the time when the switch at middle position

② Reason:

◄ All of four doors are not closed well or one of them is not closed well；

◄ Door contact switch is damaged and can not separate from the body.

4） Failure:

Luggage compartment lamp is not working

① Phenomenon:

Luggage compartment lamp is not working when the rear luggage compartment lid is opened (check the ceiling lamp is working properly).

② Reasons:

◄ Plug of luggage compartment lamp is bad contacted;

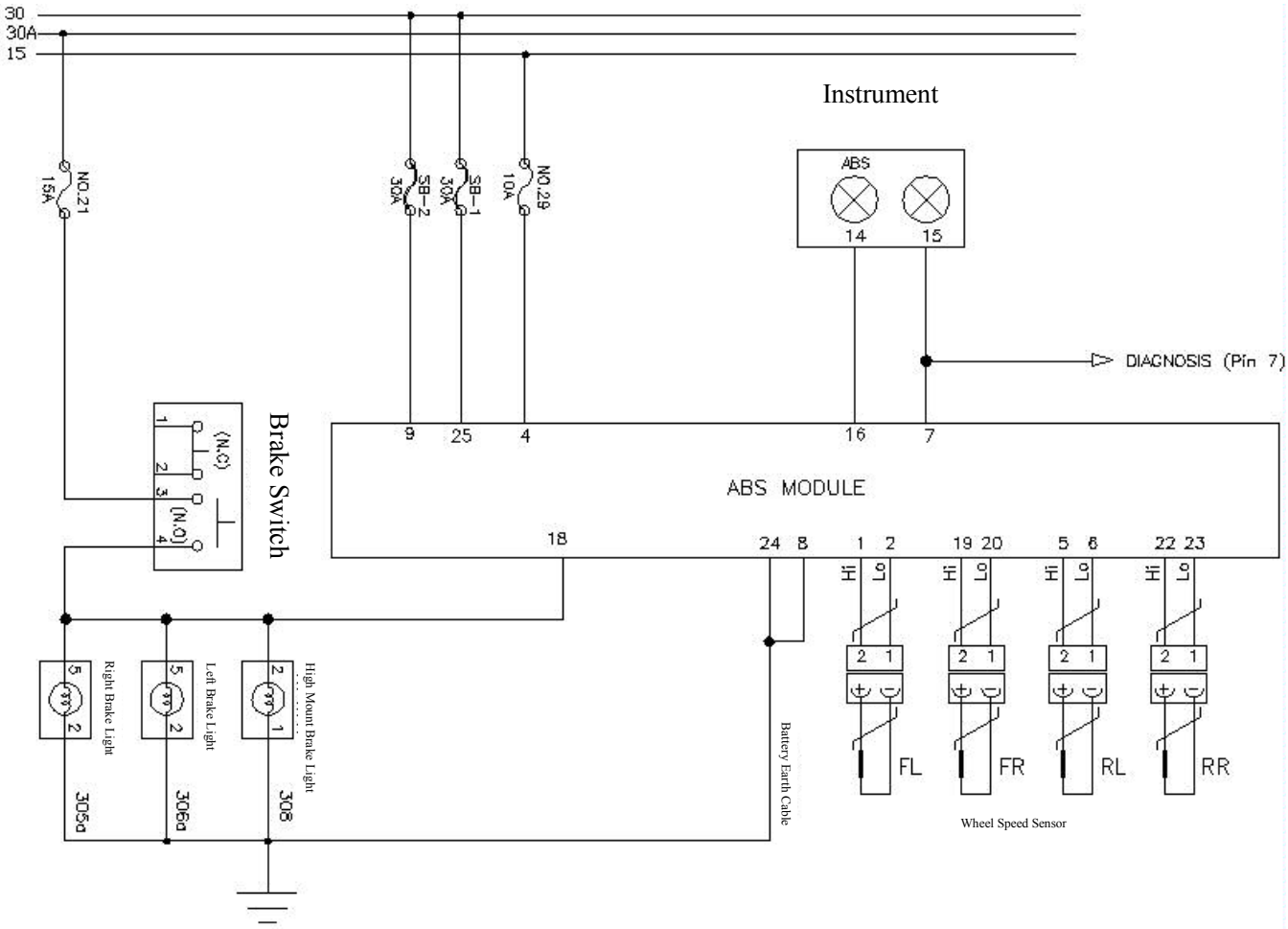
◄ Bulb of luggage compartment lamp is damaged;

◄ Grounding of luggage compartment lamp on luggage compartment is bad contacted;

◄ Plug of luggage compartment lock cable is bad contacted.

3-14 BRAKING SYSTEM

1. Braking Lamp And ABS Circuit Schematic Diagram



2. Frequent Failure Diagnosis and Analysis

1） Failure:

ABS lamp is lighting all the time

① Phenomenon:

ABS warning lamp is working all the time when the ignition switch is turned on

② Reason:

◄ Fuse SB-1/2（30A）or NO.29（10A）is damaged；

◄ Some sensor plug is damaged；

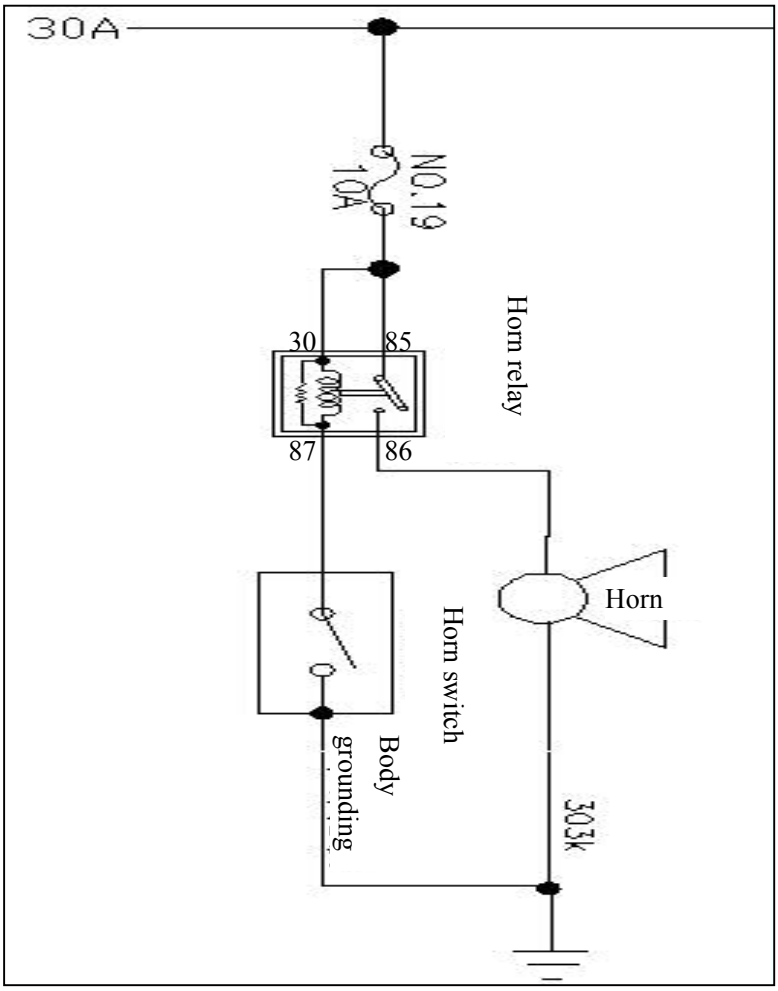
◄ Some sensor is damaged.

③ Method of troubleshooting：

After removing the damaged part using diagnostic tester taking away the failure

3-15 HORN

1. Horn Circuit Diagram



2. Failure Diagnosis and Analysis

1） Phenomenon:：

Horn does not working (push the horn switch but the horn does not work)

2） Reason:

- ◄ Fuse NO.19（10A）is damaged；
- ◄ Horn relay is damaged；
- ◄ Plug of horn switch is bad contacted；
- ◄ Horn plug is damaged or terminal is out of position;
- ◄ Bad horn grounding (303 grounding wire).

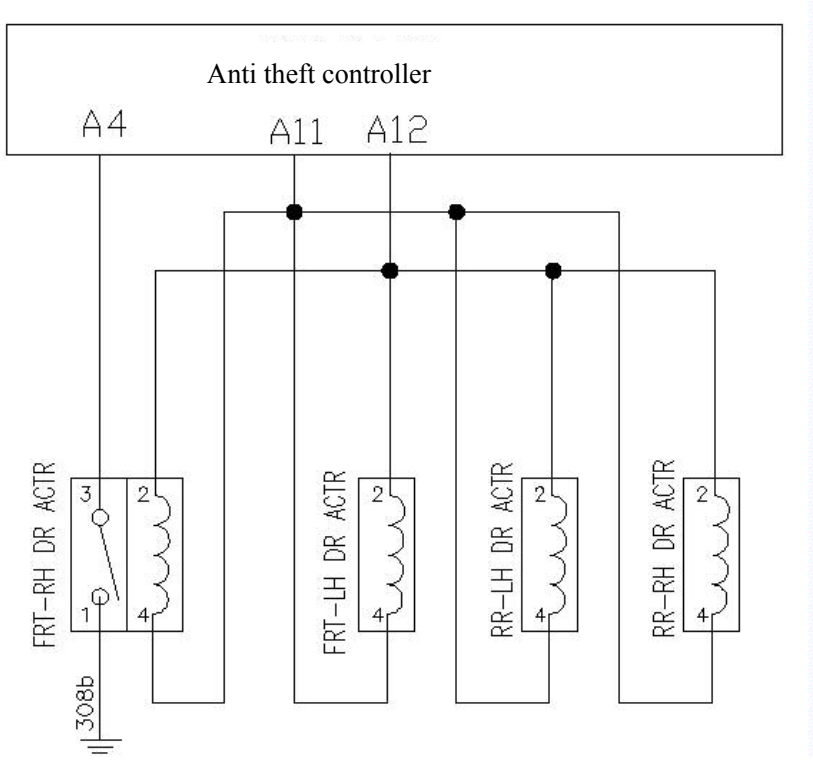
3. The Applying of the Horn Relay in Circuit Inspection:

Horn relay is the key point of the horn circuit inspection. Check the fuse at first and then divide the circuit into rear and front two parts by relay; using one lead with power using device, one end grounding and another end connect to relay No. 87 terminal; if the horn is

working means the front circuit is failed; if the horn does not working but can hear the relay is working means the rear circuit is failed; if can not hear relay working means relay is failed.

3-16 DOOR SYSTEM

1. Door System Circuit Schematic Diagram



2. Failure Diagnosis and Analysis

From the circuit diagram we can see that the right front door lock control the other three door locks, right front door lock can be controlled manually and remote controlled realizing open and close function by changing current flowing direction.

① Phenomenon:

One door lock (not right front door) can not work but the other three works properly.

② Reason:

It is the problem of single circuit, which is the problem of the circuit from right front door lock to this lock and anti theft controller.

① Phenomenon:

Four door locks do not work at manual mode, but only the right front door does not work at remote control mode.

② Reason:

Plug of right front lock is bad contacted;

Locking device of right front door lock is damaged.

① Phenomenon:

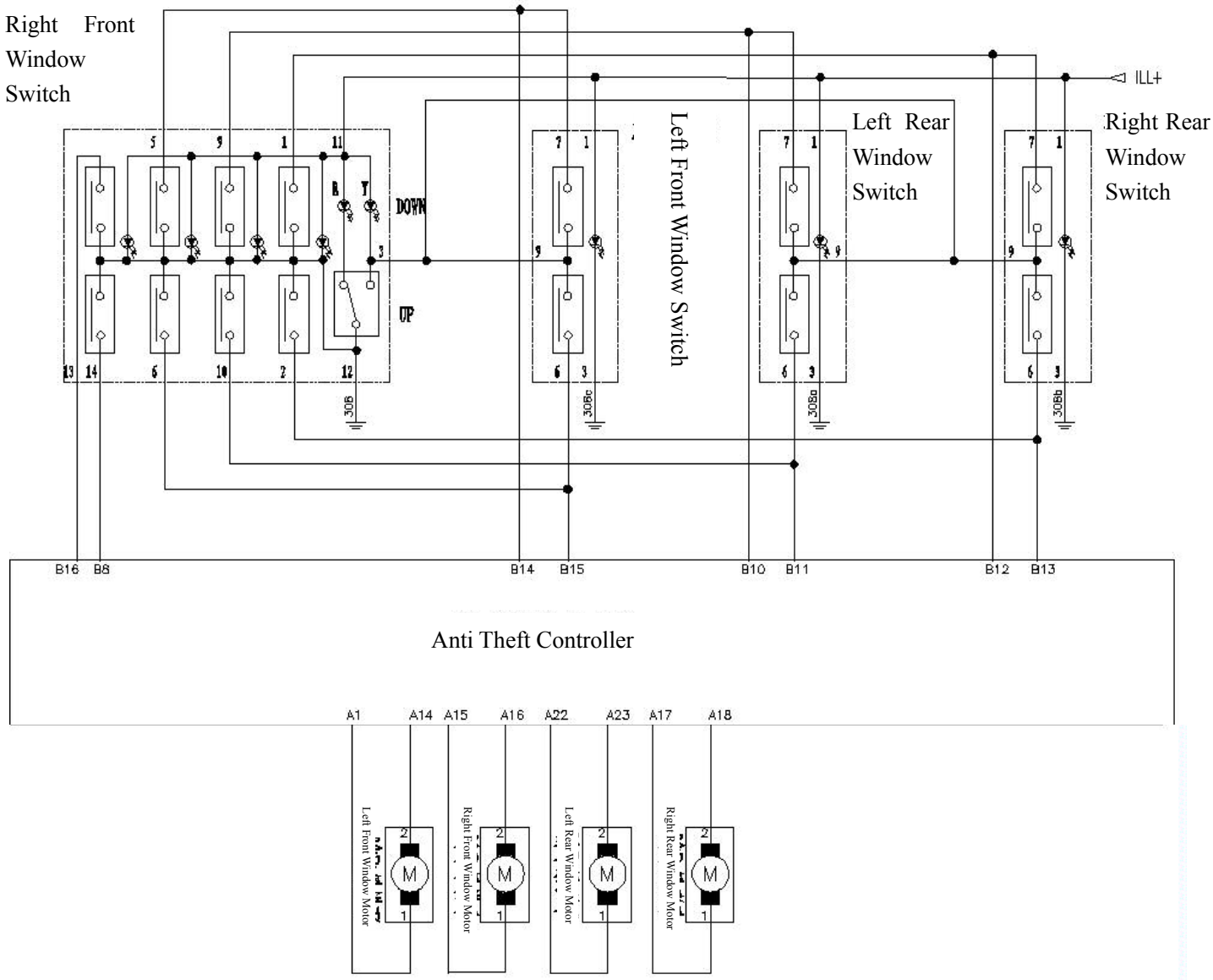
All the door locks do not work at both modes.

② Reason:

Anti theft controller fuse SB-3(30ANo.23）,(15A）,No.33(20A）and N0.23(10A) damaged.

3-17 DOOR/WINDOW SYSTEM

1. Door/Window System Circuit Schematic Diagram



2. Analyzing the Circuit Diagram

From the above chart we can find that the power of the switch is from inside of anti theft controller but grounding coming from automatic shift knob below（308）; power supply and grounding of motor come from anti theft controller; let's analyze the control loop of left door/window:

1） Turn ignition switch to ON, push the child lock switch in lower right front control panel to "R"

◄ Push switch to "A", current flow from anti theft controller B15 to right front panel, passing switch A to grounding 308；

- Push switch “B”, the current flows from anti theft controller B15 to left front panel through switch B to left front switch No.9 then to right front switch No.3. Because the child lock is on “R”, “Y” diode will stop the current to pass and the complete circuit is intermitted the operation is failed, that is the function of child lock.

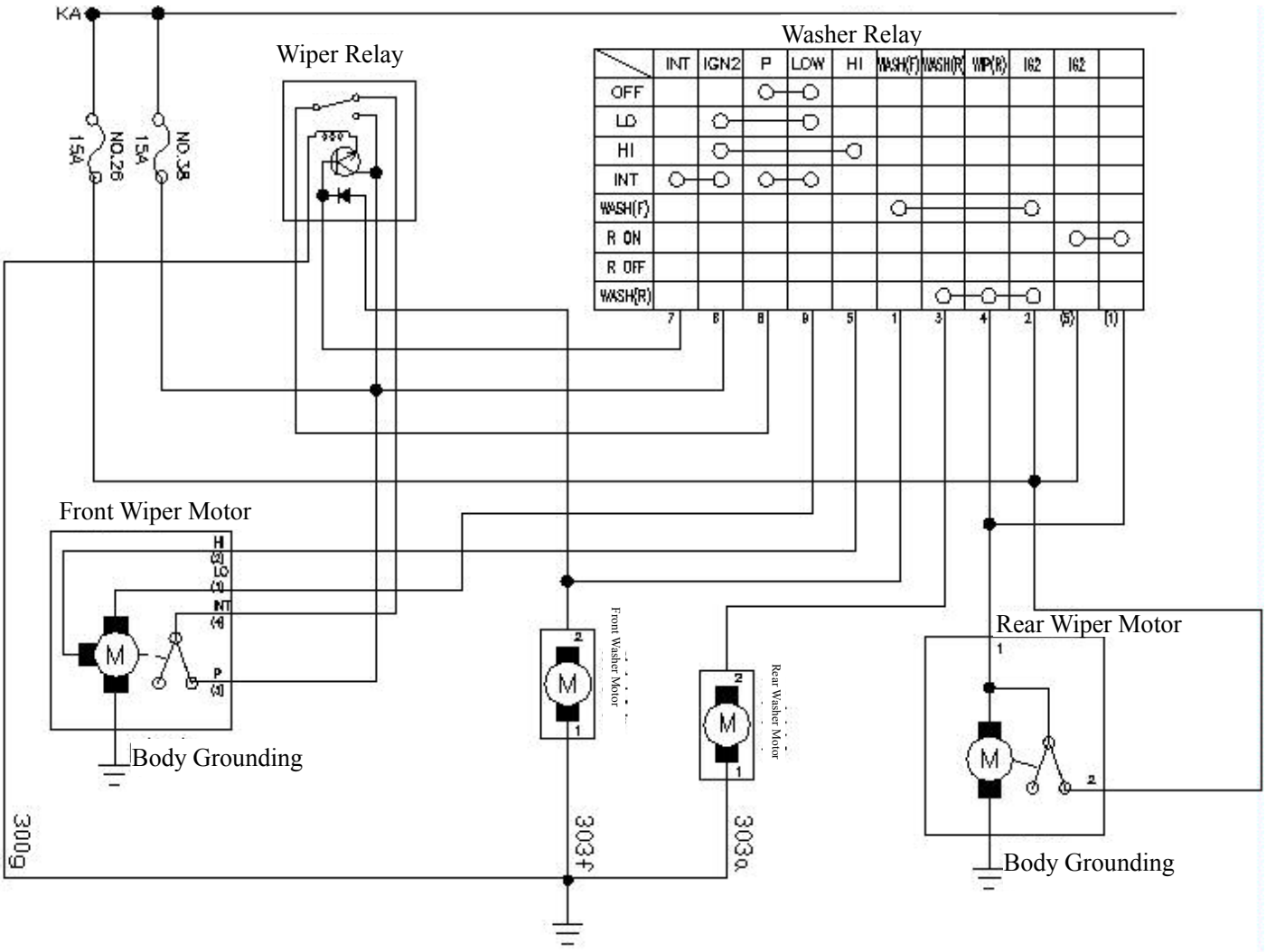
2） When the ignition switch is turned to ON, push the child lock switch to “Y”

- Push switch “A”，current flows from anti theft controller B15 to right front panel passing switch A and back to grounding 308；
- Push switch “B”，current flows from anti theft controller B15 to left front panel passing switch B to left front switch No.9 to right front switch No.3 to right front switch No.12 and back to grounding 308；

Other Switch Circuit Is Completely Similar

3-18 WIPER AND WASHER SYSTEM

1. Wiper and Washer System Circuit Schematic Diagram



2. Front Wiper Circuit Analyzing

1） High/low speed working principle of wiper motor: we can see from the diagram that the wiper motor itself grounding, when the switch is on high/low speed shift, the circuit is from fuse NO.38（15A） to switch No.8，output from No.5 and No.9 passing motor to realize return.

2） Intermission shift working principle of wiper motor: When the switch is at INT shift, the current flows from fuse No.38 (15A) to switch No.8 and then from No.7 to wiper relay triode to grounding wiring 300 through coil.

- When triode guide the current to coil, the switch of relay was closed, so the current flows from No.6 to relay through close switch to No.8 switch then through low speed switch;
- When triode stops current, switch of relay is disconnected and motor current was cut off.

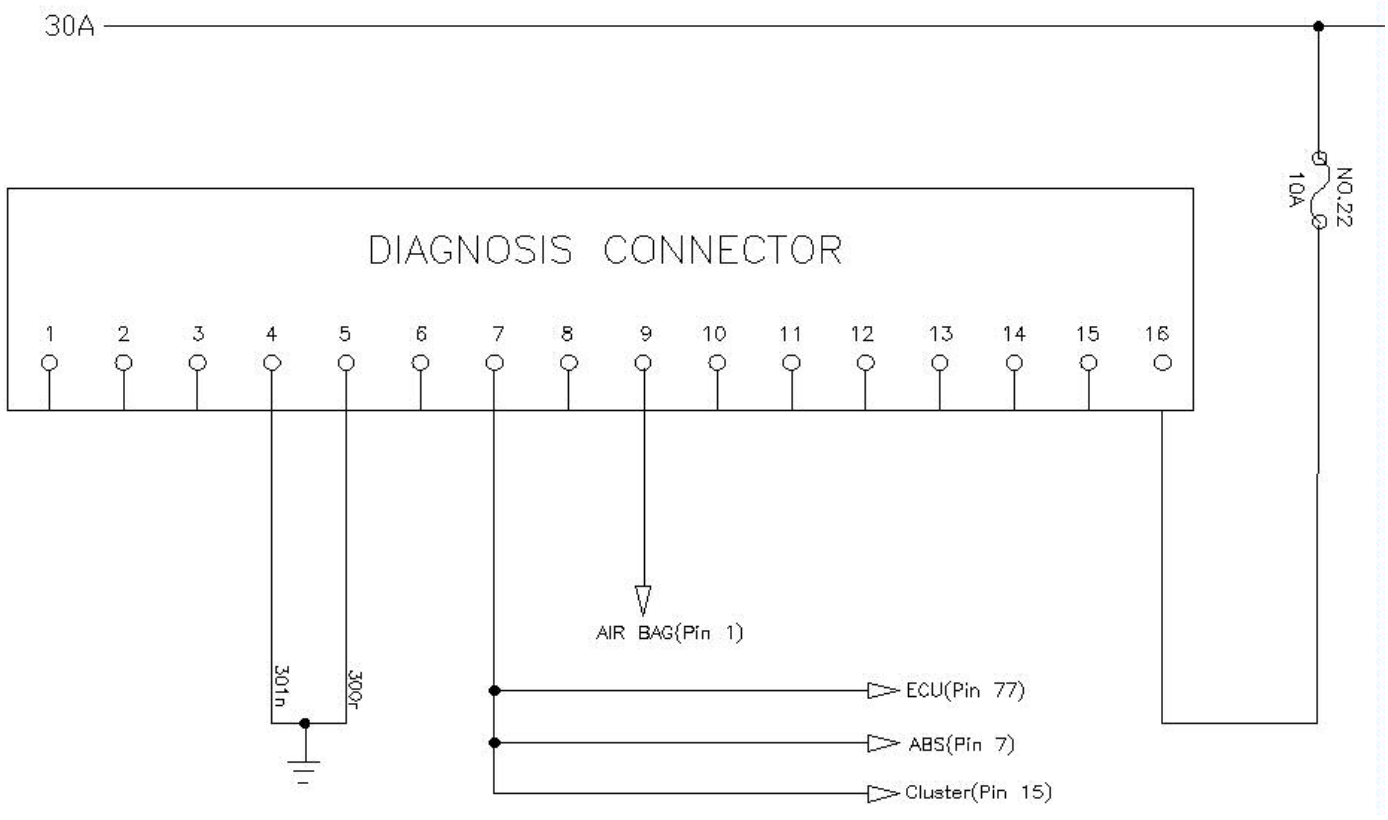
3） Front washer working principle: when the switch is turned to “WASH（F）” shift, current flows from fuse NO.26（15A）to switch No.2 output to two paths from No.1:

- One path to washer motor to grounding 303 to realize washer water spray;
- Another path to front wiper relay to realize wiper interval working.

Working Principle of Rear Wiper Is Similar To Front Wiper

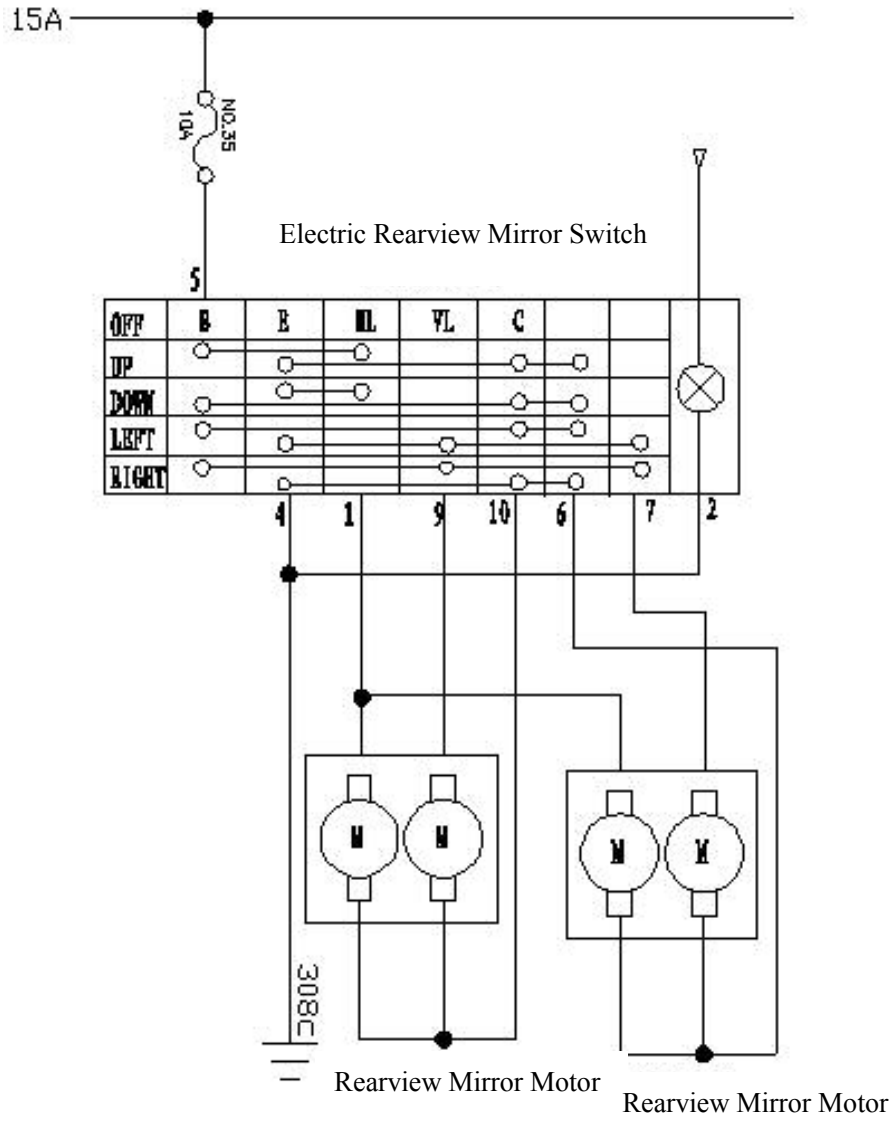
3-19 ECU DIAGNOSIS PLUG

ECU Diagnosis Plug Circuit Schematic Diagram



3-20 Electric rearview mirrors

1. Electric rearview mirror



2. Failure diagnosis and analysis

1） Failure:

Two pieces of electric rearview mirrors do not work at the same time.

① Phenomenon:

When the ignition switch is turned on, pushing the rearview mirror switch, both of the left/right mirrors don't work.

② Reasons:

- Fuse NO.35（15A）is damaged;
- Switch plug is bad contacted;

◄ Switch is damaged.

2） Failure:

One of the rearview mirrors does not work.

① Phenomenon:

One rearview mirror does not move none of four directions when push the switch.

② Reasons:

◄ Switch of the rearview mirror is damaged;

◄ Motor inside of rearview mirror is damaged;

◄ Cable of rearview mirror is bad contacted with door cable;

3） Failure:

One rearview mirror can not work correctly.

① Phenomenon:

When push the switch, one rearview mirror can not be adjusted right/left direction.

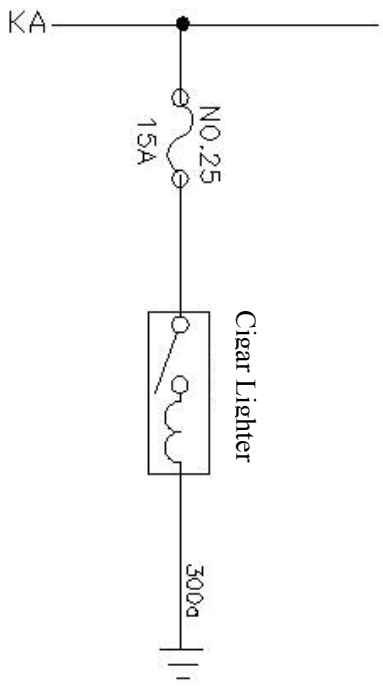
② Reasons:

◄ Cable of rearview mirror is bad contacted with door cable;

◄ Left/right moving motor inside of the rearview mirror is damaged.

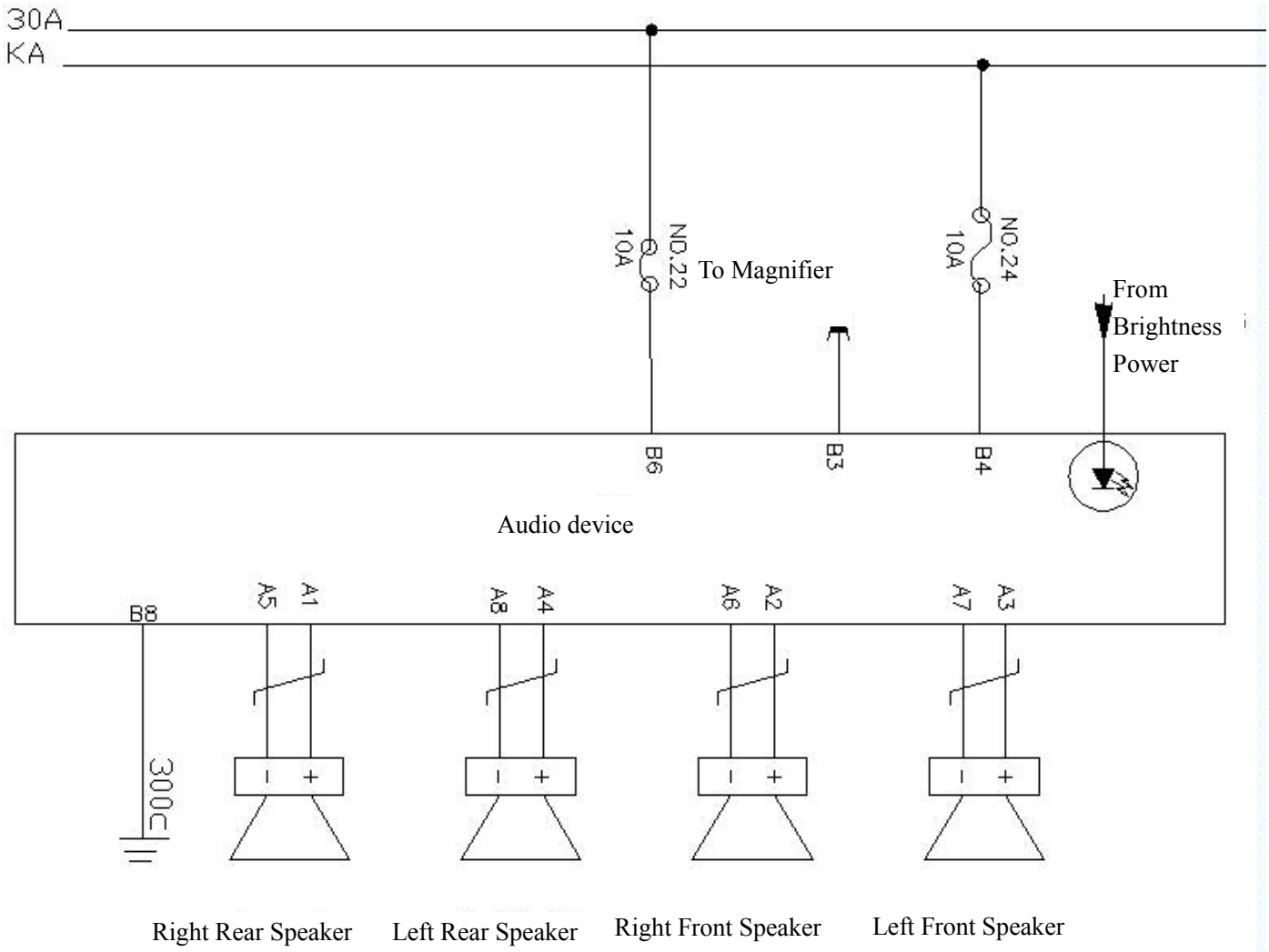
3-21 CIGAR LIGHTER

Cigar Lighter Circuit Schematic Diagram



3-22 RADIO SYSTEM

1. Radio and Speaker Circuit Schematic Diagram



2. Failure Diagnosis and Analysis

1） Failure: Clock of the radio can not work.

① Phenomenon: radio functions are regular but the clock after the radio turned down does not work.

② Reasons:

◄ Fuse NO.22（10A）is damaged；

◄ Radio plug “B6” is bad contacted;

◄ Radio interior is damaged.

2） Failure: Radio can not work properly.

① Phenomenon: the signal of the radio intermittence not stable.

② Reasons:

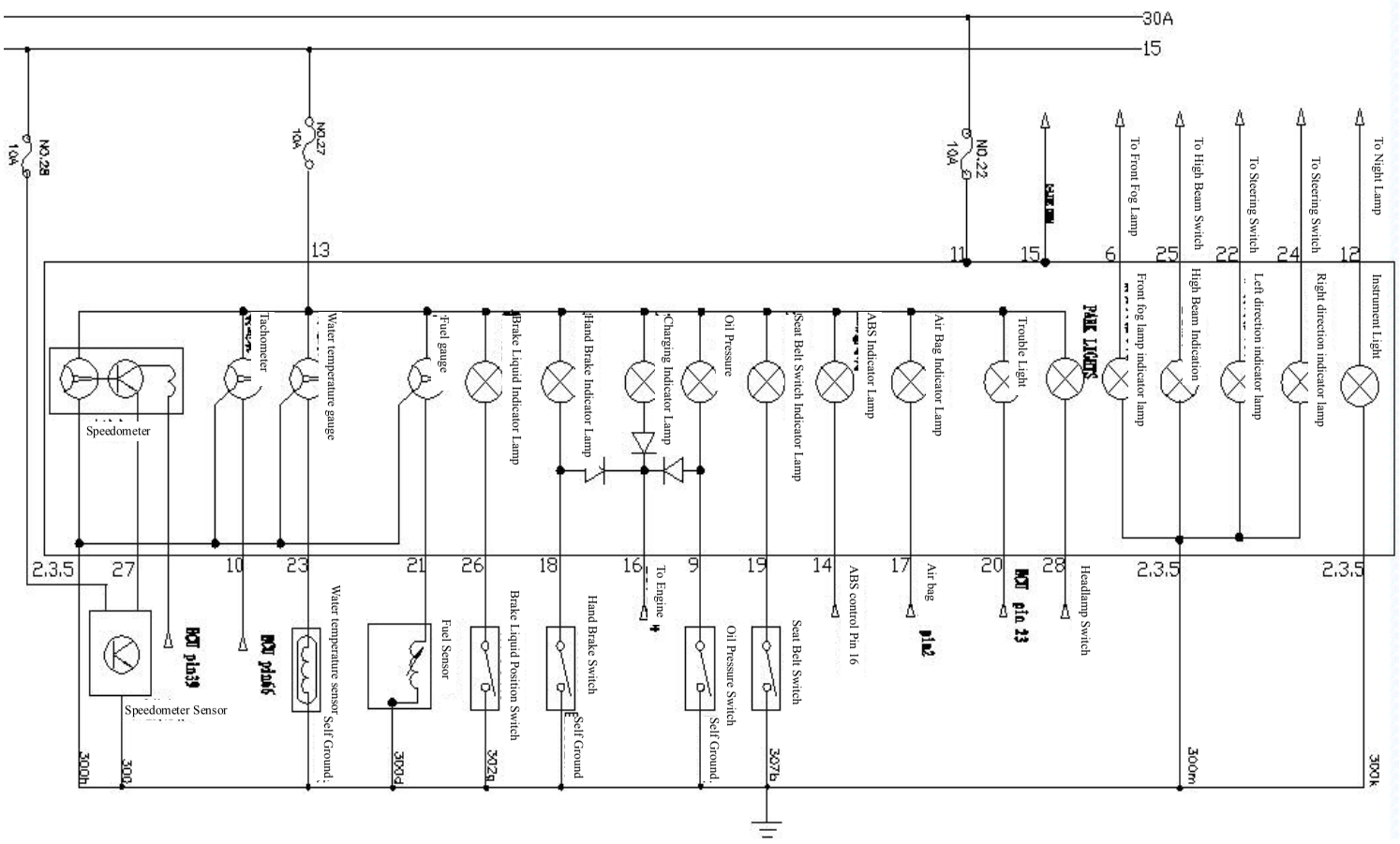
◄ Antenna amplifier cable is bad contacted;

◄ Power supply cable from radio to amplifier is bad contacted;

◄ The ability to receive the signal of the radio is bad.

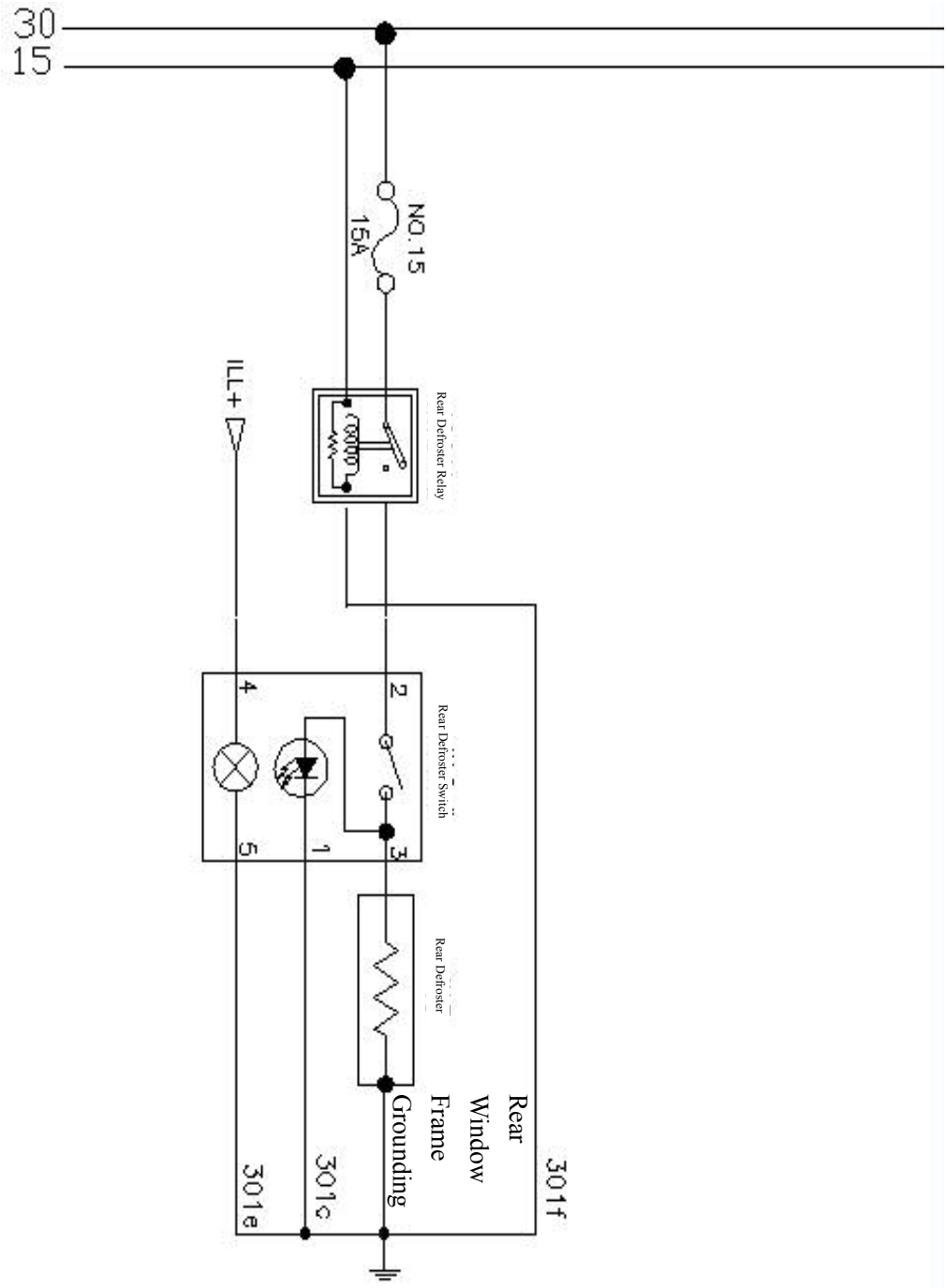
3-23 COMBINED INSTRUMENTS

Combined Instrument Circuit Schematic Diagram

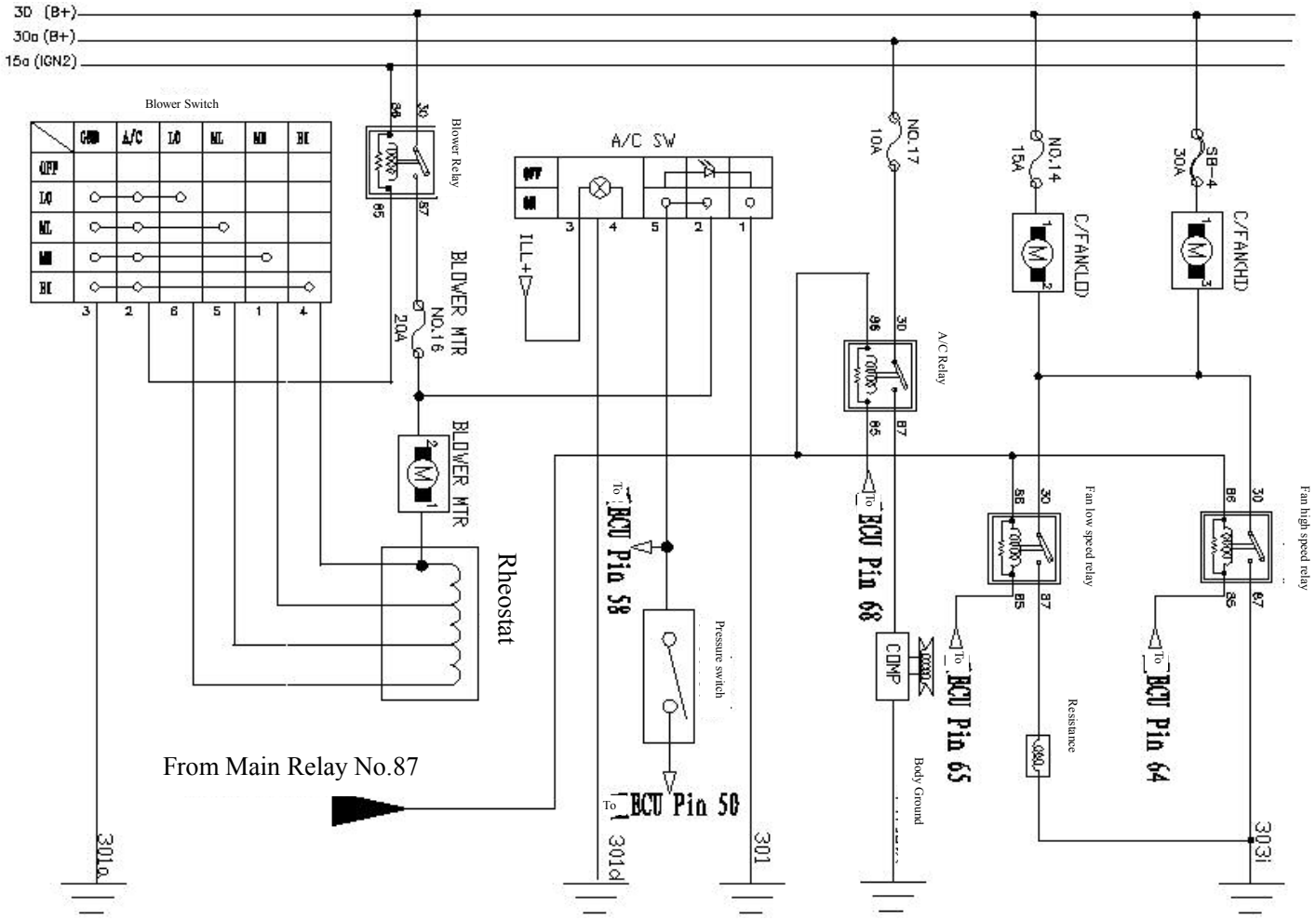


3-24 DEFROST SYSTEM

Defrost System Circuit Schematic Diagram



3-25 AIR CONDITIONING SYSTEM



2. Air Conditioner Function Checking

1） It is showed the circuit is working properly below:

① When air quantity control mode is at any position except for OFF position, the blower motor of the air condition system runs at proper speed. And the air compressor clutch is closed;

② When air quantity controller is at OFF position, blower motor will not run. Except for the air conditioner is working.

2） When it is appointed air port winding out，the air conditioner control head mode selector working properly.

3. Carry out the Following Air Conditioning System Function Testing

Preliminary check

① Check the temperature changing when the temperature knob position was changed.

② Check the air noise when the mode from inside cycling to outside cycling.

③ Check the following conditions exist or not on the instrument air outlet:

- Roller is rolling;
- Impeller is running;
- The roller and impeller should keep at the same position when the blower is at high speed working status.

Steps	Measure	Value	Yes	No
1	1. Push the ignition switch to ON position 2. Listen to the blower motor at the same time adjust the blower speed from low to high by fan speed controller. Check the blower motor if it is switched on and changed the speed.	—	To step 2	To check HVAC blower control system
2	1. Connect air conditioner power. 2. Put the cooling and heating control knob to cooling (blue). When using air conditioning system if the compressor can be switched on or switched off properly?	—	To step 3	To check HVAC blower control system
3	Use mode controller chooses any mode on air conditioner control head to test each air flow mode. The air is out from its correct outlet?	—	To step 4	To check HVAC blower control system
4	Adjust the cooling and heating control button from the coldest (blue) to the hottest (red). Check if the cooling and heating button work correctly.	—	The system is good	Check the blue wire and its connection under air conditioner control panel and evaporator lower shell drive plate protection shelf.

4. HVAC Blower Control System Checking

Steps	Measure	Normal result	Abnormal result
1	Turn ignition switch to ON position	—	—
2	Adjust blower motor from OFF to I, II, III, and IIII positions.	Blower motor runs faster and faster from OFF position.	Blower motor can not work at any position; Blower motor only works at high speed.

5. HVAC Wind Sending System Inspection

Steps	Measure	Normal result	Abnormal result
1	Start the engine; adjust fan control switch to middle speed on AC controller; turn temperature adjusting button on AC control panel to blue area; turn wind direction switch to blow face mode; connect the AC power.	Blower runs at midst speed Air is out from instrument panel air outlet Engine idle speed is accelerated Compressor is power on Air flow becomes cold Engine fan runs perhaps	Please see “power system on board diagnosis system inspection”
2	Turn the air direction switch to defrost mode on AC control panel	Air is out from windscreen air outlet, compressor runs automatic except for the outside temperature is lower than 4℃	Check the blue wire and its connection under air conditioner control panel and evaporator lower shell drive plate protection shelf.
3	Turn the wind direction switch to blow face and blow feet mode on AC control panel.	Air is out from instrument panel and floor air outlets.	Check the blue wire and its connection under air conditioner control panel and evaporator lower shell drive plate protection shelf.
4	Turn the wind direction switch to blow feet mode on AC control panel.	Air is out from floor air outlet.	Check the blue wire and its connection under air conditioner control panel and evaporator lower shell drive plate protection shelf.
5	Turn the wind direction switch to blow feet and defrost mode on AC control panel.	Air is out from windscreen and floor air outlets.	Check the blue wire and its connection under air conditioner control panel and evaporator lower shell drive plate protection shelf.

6. Troubleshooting

Pressure deviation type	Possible reason	Method for troubleshooting
1. High pressure side does not changed or just increased a little (compare to the time engine stopped); low pressure side is within the diagram range or lowers than the diagram range. That means AC refrigerating deficiency. 2. It is properly in high pressure side and low pressure side is with the diagram range, which means AC refrigerating deficiency.	Refrigerant is not enough or expansion valve is failed	Take refrigerant out If the quantity of refrigerant is correct 1. Change the expansion valve 2. Refill refrigerant to system 3. Check the pressure once again If the quantity of refrigerant is not enough 1. check the leaking place. 2. Refill the refrigerant to system 3. Check the pressure once more
High pressure side is higher than the stipulated value, low pressure side decreased fast to diagram range or lower means AC refrigerating deficiency.	Refrigerant pipe is jammed or throttled some where Expansion valve is invalidated	Touch the pipe by hand to feel its temperature If there is temperature different on any part 1. Through the pipe by compressed air and nitrogen and change expansion valve in time 2. Replace the jammed part
		If there is no failure found 1. Blow the pipe by compressed air and N 2. Check the pressure again
It is high at the beginning. Low pressure side is ok, later high pressure side is higher than the stipulated value; low pressure side is within the diagram range or lower, AC refrigerating deficiency.	Expansion valve is invalidated There is vapor inside refrigerant pipe	Check the expansion valve if it is dirty or erosion, replace it if it is necessary Blow through the pipe by compressed air and nitrogen
High pressure side is higher than the stipulated value or too high, low pressure side is too high, AC refrigerating deficiency. Compressor has strange sound (especially when the engine is started).	Refrigerant is too much in refrigerant pipe Expansion valve is invalidated or compressor is damaged	Draw out the refrigerant If the quantity of refrigerant is correct 1. Change the expansion valve 2. Refill refrigerant to system 3. Check the pressure once again If refrigerant is obvious over weight 1. Refill refrigerant to system 2. Check the pressure once again Notice: after recheck the pressure the system is still abnormal, assemble the expansion disassembled and blow through it by compressed air and N, changing compressor and drier.
High pressure side increases slightly, low pressure side decreases slightly, AC refrigerating deficiency.	Compressor is damaged	Blow through it by compressed air and nitrogen Replace compressor and steam trap

High pressure side is correct, low pressure side is too low, AC refrigerating correct, sometimes the evaporator has ice(even the refrigerant quantity is correct)	Expansion valve is invalidated or compressor is damaged	Replace expansion valve, refill refrigerant. Notice: after recheck the pressure the system is still abnormal, assemble the expansion disassembled and blow through it by compressed air and N, changing compressor and drier.
1. high/low pressure sides are correct, AC refrigerating deficiency. 2. high/low pressure sides are correct, compressor is abnormal (especially when the engine is started), AC refrigerating good	Lubricant inside of AC pipe is over weight	Draw out the refrigerant Blow through the pipe by compressed air and nitrogen Notice: adjust the lubricant quantity when replace the AC component like compressor.
The reservoir can not be used	• Perforation • Seal part is damaged • Thread of fasten part is damaged, outside air entering to system	Replace

7. AC System Circuit Failure

1） Solenoid valve works:

① Power supply: NO.17（10A）fuse supplies power;

② Controlled by AC relay and AC relay is controlled by ECU (relay connected to ECU Pin 68)

2） The conditions to use AC(refrigerating):

① Controlled by outside temperature: above 5ºC；

② Engine water temperature: below 112ºC；

③ Throttle valve opening below 95%；

④ Not at urgent accelerating；

⑤ AC system pressure:：when low pressure is higher than standard pressure; high pressure lower than standard pressure;

The above conditions are sent by ECU.Pin68 to AC relay by voltage signal, and connect compressor solenoid making compressor working.

8. Pressure Switch

1） Power supply: supplied by blower relay, fuse NO.16（20A）, A/C switch, connected with ECU .Pin50 and Pin58 to provide pressure signal.

2） Failure: besides the above mentioned circuit failures, there is also pressure valve jammed problem appeared easily.

9. Blower:

1） Power supply: supplied by blower relay and fuse NO.16（20A）; then grounding via rheostat to blower switch.

2） Failure: From the circuit diagram we can see: if the power supply of blower is obstructed, AC compressor will not power on; blower rheostat is easy to have failures and then there will have no low speed running.

10. Electrical Control Cooling Fan (Electronic Fan):

1） Power supply:

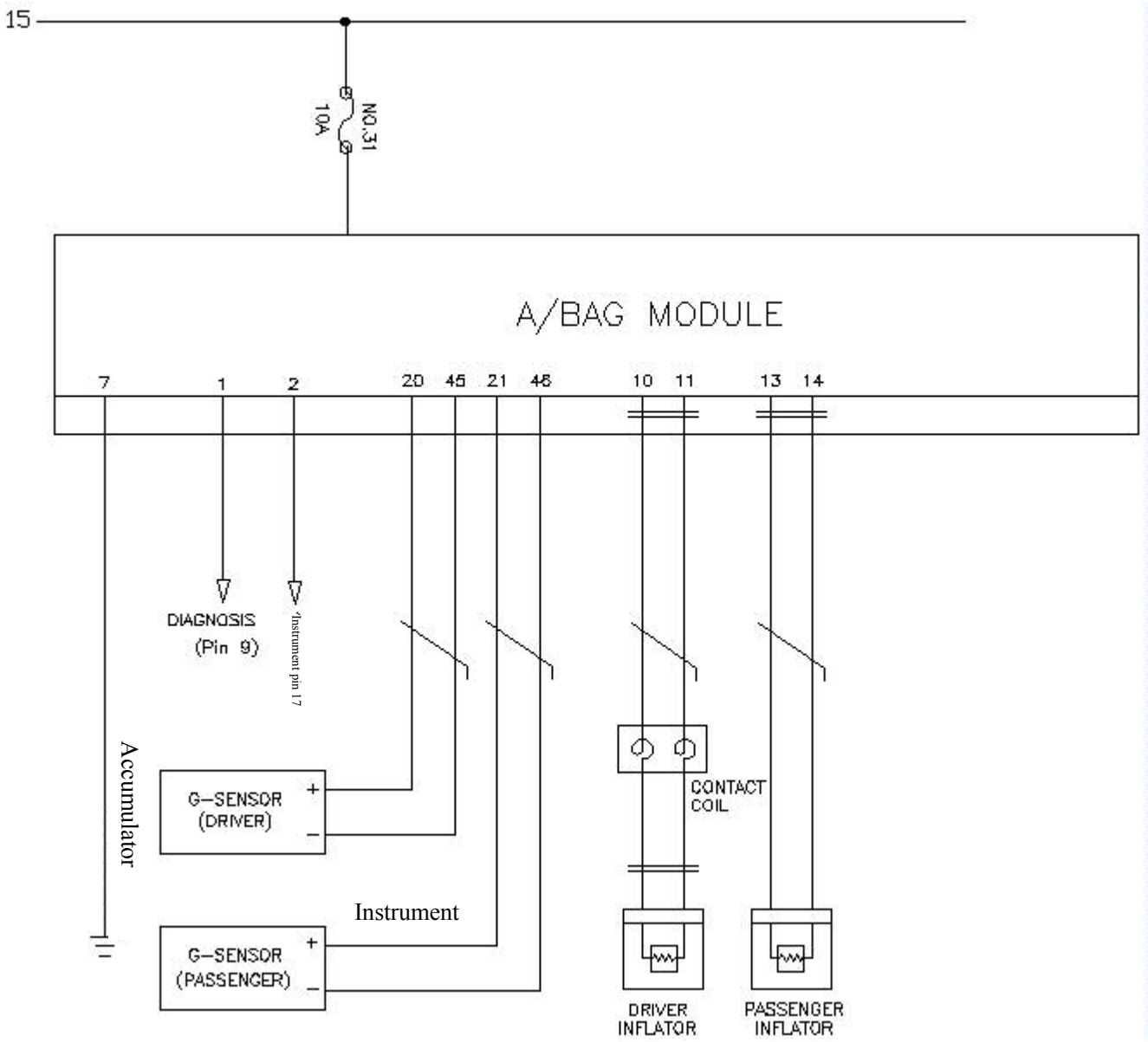
◄ Power of C/FAN（LO）low speed fan is supplied by fuseNo.14（15A）; Via low speed relay and controlled by ECU.Pin65 and then grounding via resistor.

◄ Power of C/FAN（HI）high speed fan is supplied by fuse SB—4（30A）; Via high speed relay and controlled by ECU. .Pin64 then grounding. In order to secure the condenser cooling down efficiency, ECU output voltage signal to high speed relay and connect to high speed fan running when use AC.

2） Failure: Besides fuse and relay failures, it is under the control of ECU which is influenced by temperature sensor signal, so please make sure the temperature sensor is working properly.

3-26 AIR BAG

Circuit Schematic Diagram of Air Bag



（Method of Failure Diagnosis and Maintenance and Notice Please See Page No.10）