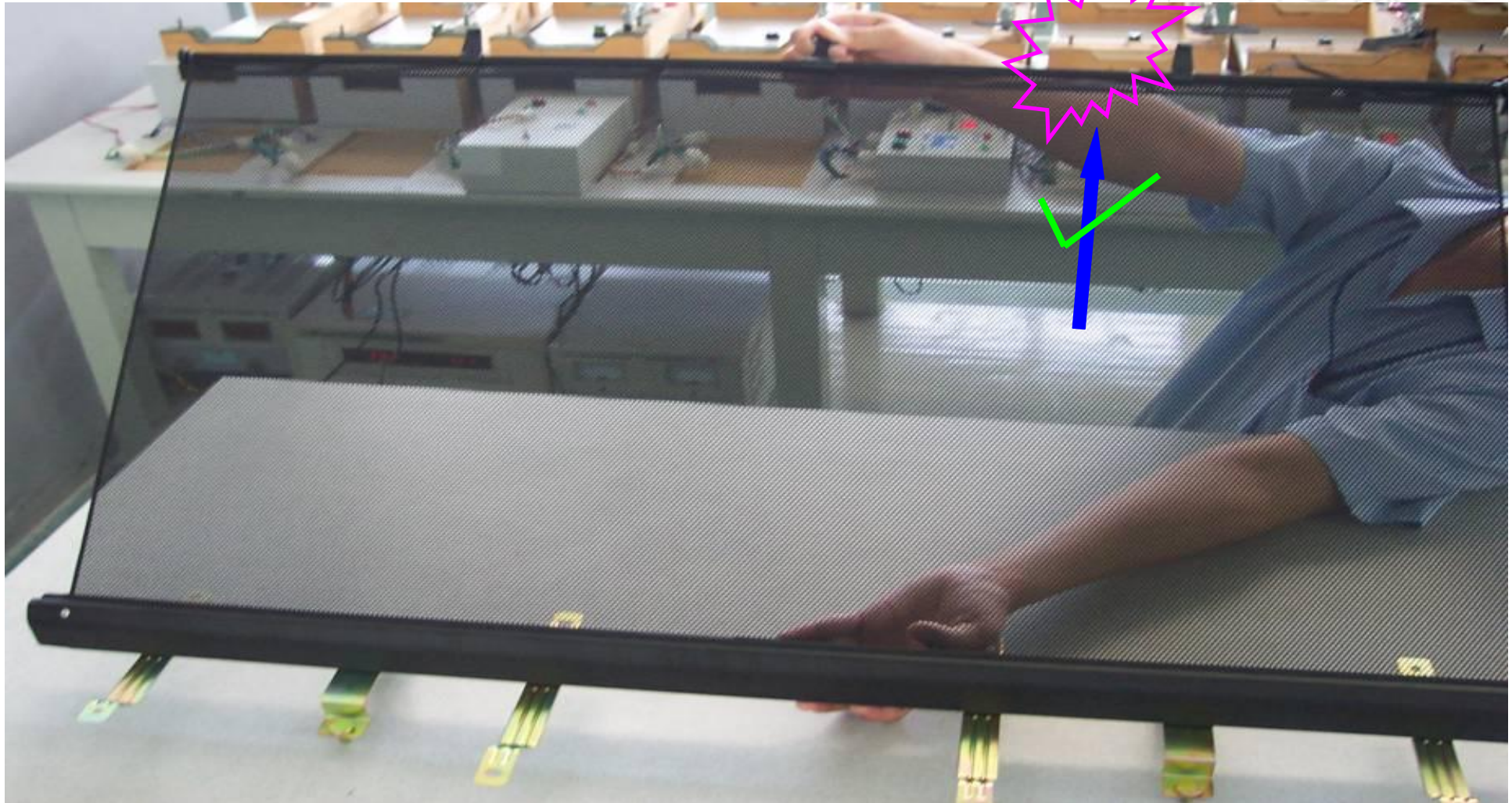


Correct operation of manual curtain

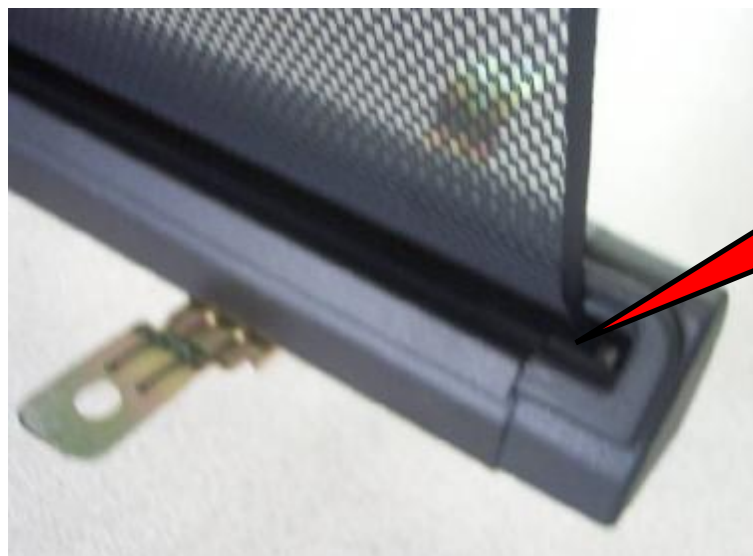
Pull out the curtain smoothly by holding the handle bar and suspend it from the hung seat mounted on the ceiling.



Matters needing attention in manual curtain operation



Do not forcibly pull the cloth curtain from either of its two sides



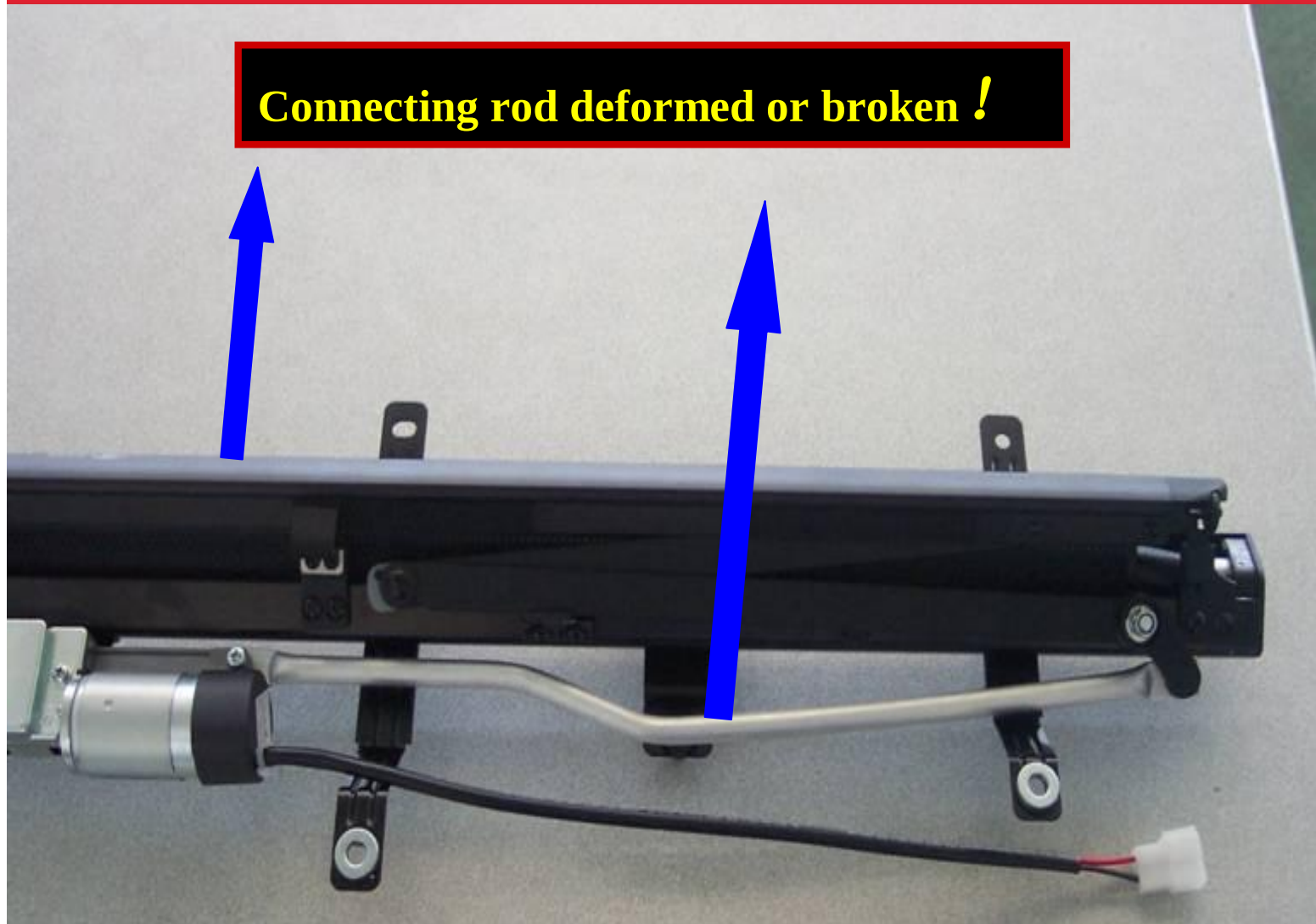
Matters needing attention in power curtain operation



**Power lift/drop
Do not forcibly pull**

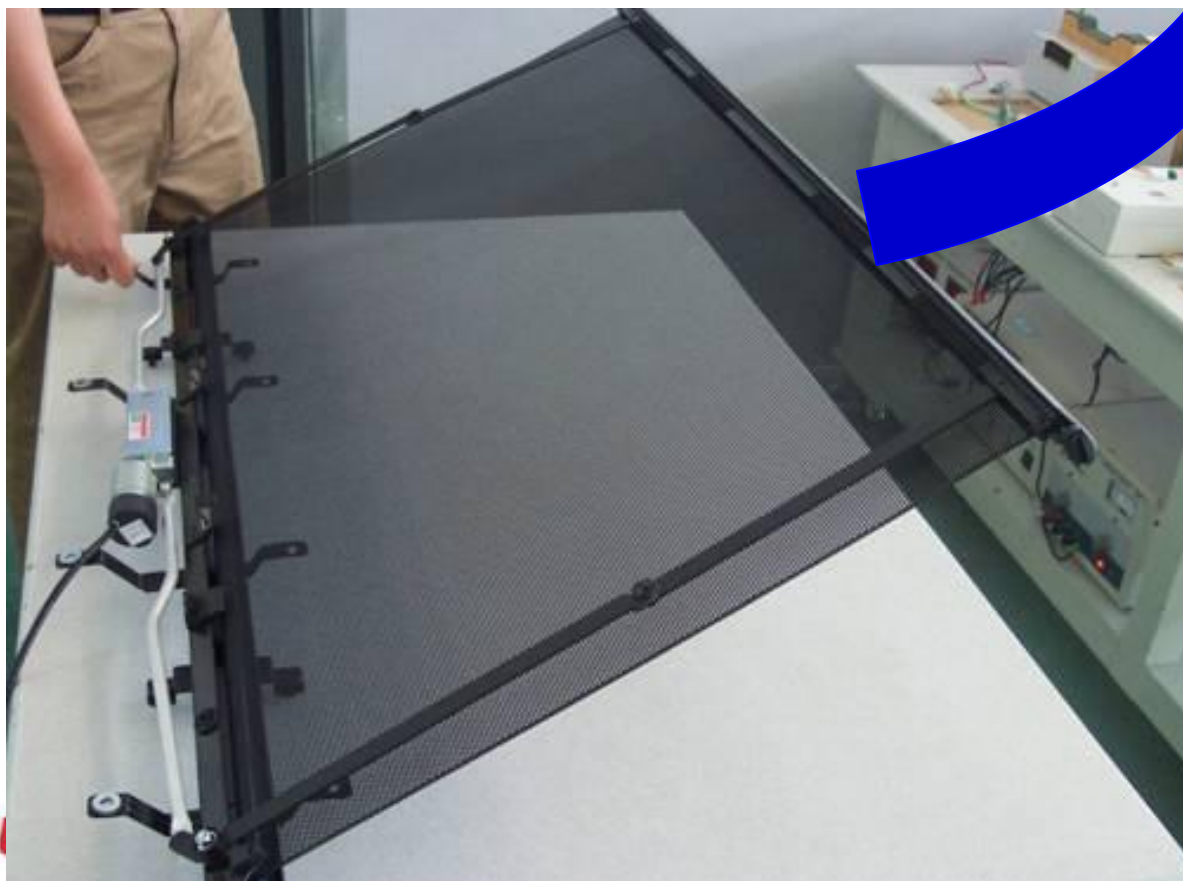


Connecting rod deformed or broken !





**Do not forcibly pull
it or press either of
side strips when it
raises to the top!**





**Do not forcibly pull
it or press either of
side strips during
its lift/drop!**



Part 3: Introduction to Navigation System with DVD Player Used in Chery B11-Series Vehicles

1. Concept

This navigation system with DVD player employs large-scale navigation software and accurate navigation map developed alone by Chery and positions, tracks and guides the vehicle by means of signals from the NAVSTAR system (of GPS satellites) of the USA. Its navigator can accomplish positioning, route calculation and navigation on its own without help of any external system. This self-navigating system features strong independence, extensive scope of application and being not restricted by other factors. In addition, this kind of system is the most sophisticated among all GPS navigating devices. It differs from GPS scheduler used on taxis, whose in-vehicle unit only sends position information from the GPS module to some schedule center so as for it to monitor vehicles and however has no direct significance to the driver.

auto service

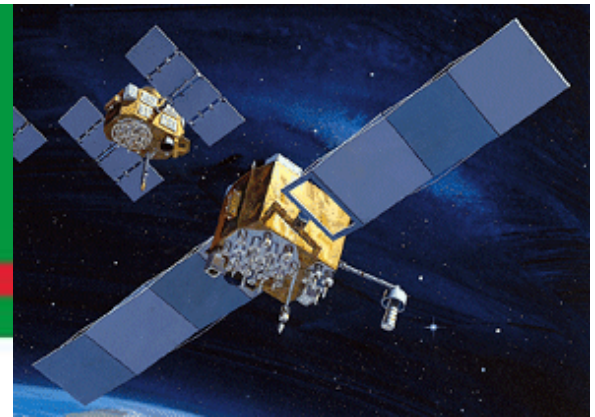
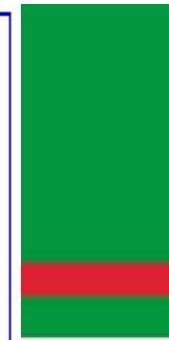
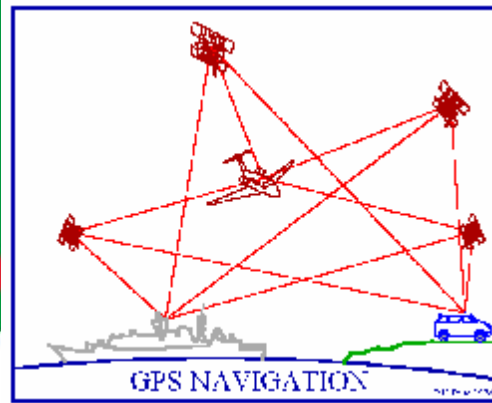
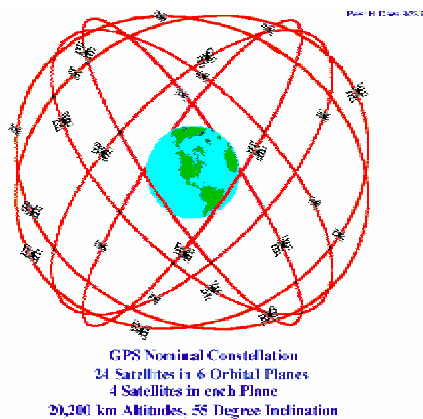


Introduction to GPS

GPS is the acronym for Global Positioning System. Following the Apollo Program and the Space Shuttle Program, this system is the third important space program launched by the US government during the Cold War. GPS is a system of satellites for positioning, which is planned, established and controlled by the US Department of Defense (DOD).

auto service





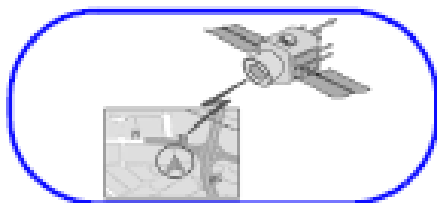
GPS-related data:

- GPS navigation satellites: 24 working satellites & 4 backup satellites
- Geometric distribution: 6 orbital planes & 4 satellites on every orbital plane
- Satellite orbit: 20,200km away from the Earth, elliptic, inclination: 55 degrees
- Orbital period: 12 hours
- Coverage area: the whole globe
- Brought into service on: December 8th, 1993
- Achieved the full operational capacity on: April 7th, 1995
- Launch vehicle: Delta II

auto service



2. Basic functions



Vehicle position determination

To realize high-precision GPS positioning aided with gyro, speed sensing, dead reckoning and map matching and real-timely display the current position of the vehicle.



Recommended drive route

To recommend the optimum drive route with the shortest distance and time.

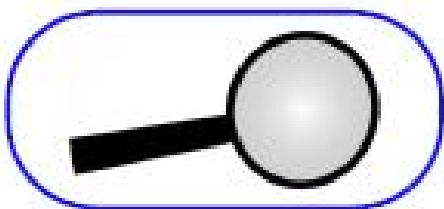


Real-time navigation

To real-timely display current road name as well as current distance to the destination and to provide voice navigation prompts.

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Information search

To support geographic name search, map browsing and search, classified search, surrounding search, etc.



Video/audio amusement

This system integrates AM/FM radio, TV and various players (DVD/VCD/MP3).

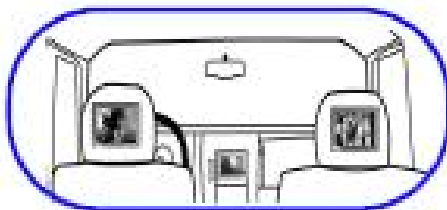


Multi-disc player

This system is equipped with one multi-disc CD/VCD player that can hold 10 discs.

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Headrest display

This system integrates headrest displays, which are mainly used to provide multimedia service for back seat passengers during the drive.



Reverse radar

Rear view will be shown on the system's display screen when the car backs. Once the back of the car is less than 30cm away from any object, the system will issue an alarm.

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3. System composition

(1) In terms of hardware, the navigation system with DVD player is composed of the following components:

- Ø Main unit
- Ø Headrest display
- Ø CD/VCD multi-disc player and support
- Ø Shortcut key
- Ø GPS antenna
- Ø GPS antenna support
- Ø Remote control
- Ø Main unit cables
- Ø Headrest display mounting plate
- Ø Multi-disc player cable
- Ø Junction box
- Ø Earphone



auto service





(2) In terms of functionality, the navigation system with DVD player is composed of the following components:

- Ø Navigation system (GPS)
- Ø AM radio
- Ø FM radio
- Ø TV
- Ø DVD/VCD/CD/MP3 player
- Ø Multi-disc player (capable of holding 10 discs)
- Ø Reverse radar
- Ø Headrest display
- Ø Amusement/navigation display switching device

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Troubleshooting

1. Power-on fails

- (1) No power supply at all. Even the button lights on the panel are not on.
 - A. Check the storage battery
 - B. Check safety fuses
- (2) Button lights on the panel are on but it fails to start the system.
 - A. Check the F19 fuse in the fuse box within the engine compartment
 - B. Check the 7# fuse in the central fuse box
 - C. Check the fuse at the back of the main body
 - D. Fault(s) with the main unit

auto service



2. No picture

(1) No picture is displayed at all

No picture differs from no power supply. In the former case, the screen shows a certain response, such as white screen, jittering, etc., while in the latter case, there is no response at all on the screen. It can be taken that this results from fault(s) with the main unit after power supply is confirmed to be normal.

(2) No TV picture

A. When the TV function is switched to, even no white speck exists on the screen. This often results from fault(s) with the main unit.

B. When the TV function is switched to, there is no picture but white specks on the screen. This often results from fault(s) with the antenna or because no station is selected yet.

C. The picture on the screen is unrecognizable. At first, it is necessary to determine whether TV signals are strong enough at the place, as by using a TV signal generator or another TV set. If so, this problem results from fault(s) with the antenna.

auto service



(3) No picture displayed in use of multi-disc player

- Ø Confirm whether the multi-disc player is provided with any disc(s) and whether they are in good condition if so.
- Ø Confirm whether the multi-disc player works normally.
- Ø Confirm whether the multi-disc player cable is in good condition.

If the above peripheral components are all in good condition, it can be determined that this problem results from fault(s) with the main unit.

(4) No picture displayed on headrest screen(s)

It is through the headrest wire harness that power supply and signals are sent to the headrest screen, so it is necessary to firstly determine whether this wire harness is in good condition.

If no picture exists on one display screen or any other problem, you can interchange the connectors of the two headrest screens to determine whether the main unit is faulty. If the situation after interchange is just opposite to that before interchange, it is indicated that the main unit is free of fault. And if not so, the main unit must be faulty.

auto service





(5) No map display

- Ø Check whether the magnetic head is in good condition by inserting one DVD, VCD, CD, or MP3 disc.
- Ø If the magnetic head is in good condition, check whether there is any dirt on the map disc. If so, wipe them off along the radial direction. It is prohibited to do this along the circumferential direction so as to prevent the map disc from being scratched.
- Ø Failure to position
Check whether GPS antenna is in good condition. Notice: GPS antenna cannot work within workshop or between high buildings.

auto service



3. No sound

- (1) No sound with the radio
- (2) No sound with the TV
- (3) No sound in use of maps
- (4) No sound from some sound channel

auto service



Part 4:

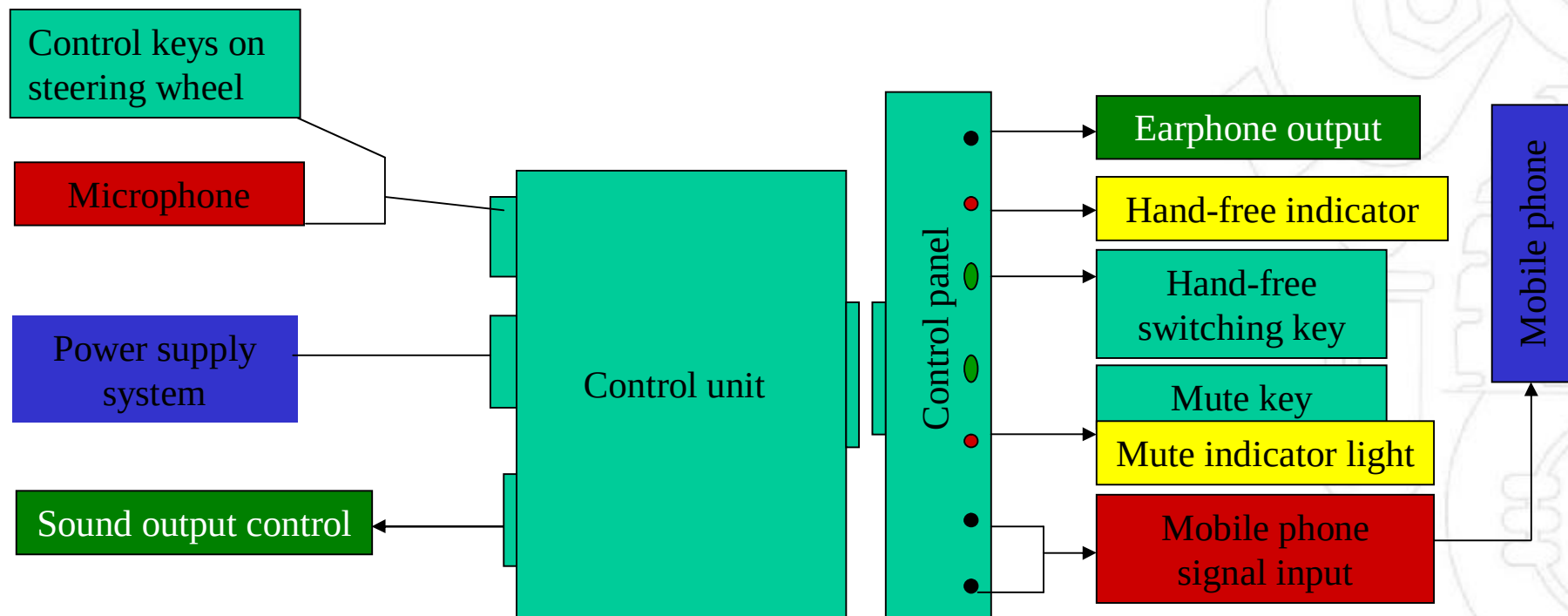
In-vehicle Mobile Communication System

1. Scope of application (for mobile phone selection)
2. Non-directional microphone
3. Echo cancellation
4. Automatic/manual muting & automatic switching to mute condition (sound system closed).
5. Automatic answer function (activated through mobile phone function setup)
6. Private communication (by earphone)
7. Shortcut keys on steering wheel

auto service



Car Phone Control System



auto service



Car Phone Control Panel



auto service



Part 5:

Instrument Cluster

Configuration

- Ø NEC ASSP3 microprocessor
- Ø All Indicating gauges uses MW2000 step motor
- Ø All indicating gauges are directly driven by microprocessor with no additional integrated circuit.
- Ø LED backlight
- Ø Single-LCD display, on which total mileage, subtotal mileage, PRND4321, clock, etc. are displayed
- Ø Damping of each indicating gauge is implemented through software

auto service



Input/output Signals

Analogue input signals

- Ø Fuel signal
- Ø Coolant temperature signal
- Ø Coolant level signal

Digital input signals

- Ø Parking light, left turn indicator light, right turn indicator light, high beam, etc.
- Ø Vehicle speed signal, engine speed signal, gear position signal (PRND43221), etc.
- Ø ABS, airbag, engine oil pressure, brake fault, seat belt, electrical generator, engine check, car door, brake disc fault, parking braking, front fog light, etc.

auto service

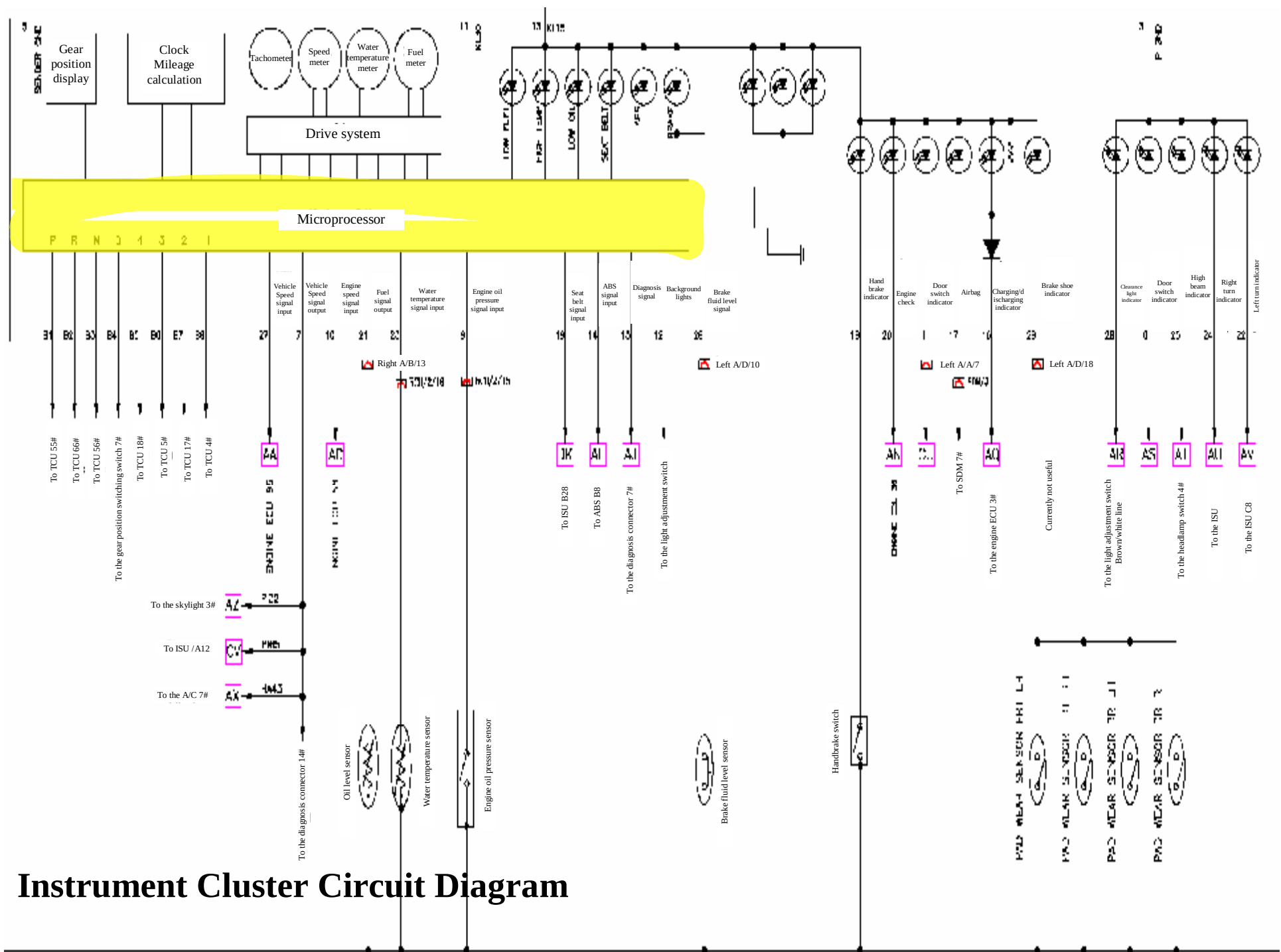


Output signals

- Ø Speed signal output
- Ø Diagnosis connector
- Ø Single-line communication interface

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Instrument Cluster Circuit Diagram

Part 6:

Automatic Air Conditioner for B11-series Vehicles

- Ø Introduction to automatic A/C
- Ø Control principle
- Ø System operations
- Ø Automatic diagnosis
- Ø Fault analysis method

auto service



I. Introduction to Automatic Air Conditioning System

Classification of automotive air conditioning systems

Manual air conditioning system

EX: S11
A11

Full automatic constant-temperature air conditioning system

EX: B11

- Single-temperature area control
- Dual-temperature area control
- Four-temperature area control
- Self-adaptive

auto service



1. Composition of Automotive Automatic Constant-temperature Air Conditioning System

Automotive air conditioning system is composed of HVAC assembly, A/C compressor assembly, condenser & drying reservoir assembly, evaporator & compressor pipeline assembly, compressor & condenser pipeline assembly, dryer & evaporator pipeline assembly, inlet air filter assembly, and A/C control system.

auto service



2. Composition of HVAC Assembly

- Assembly housing
- Actuator
- Blower
- Electronic speed regulation module



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3. Actuators

- Mode actuator
- Internal/external actuator
- Cooling/heating actuator



auto service



4. Sensors

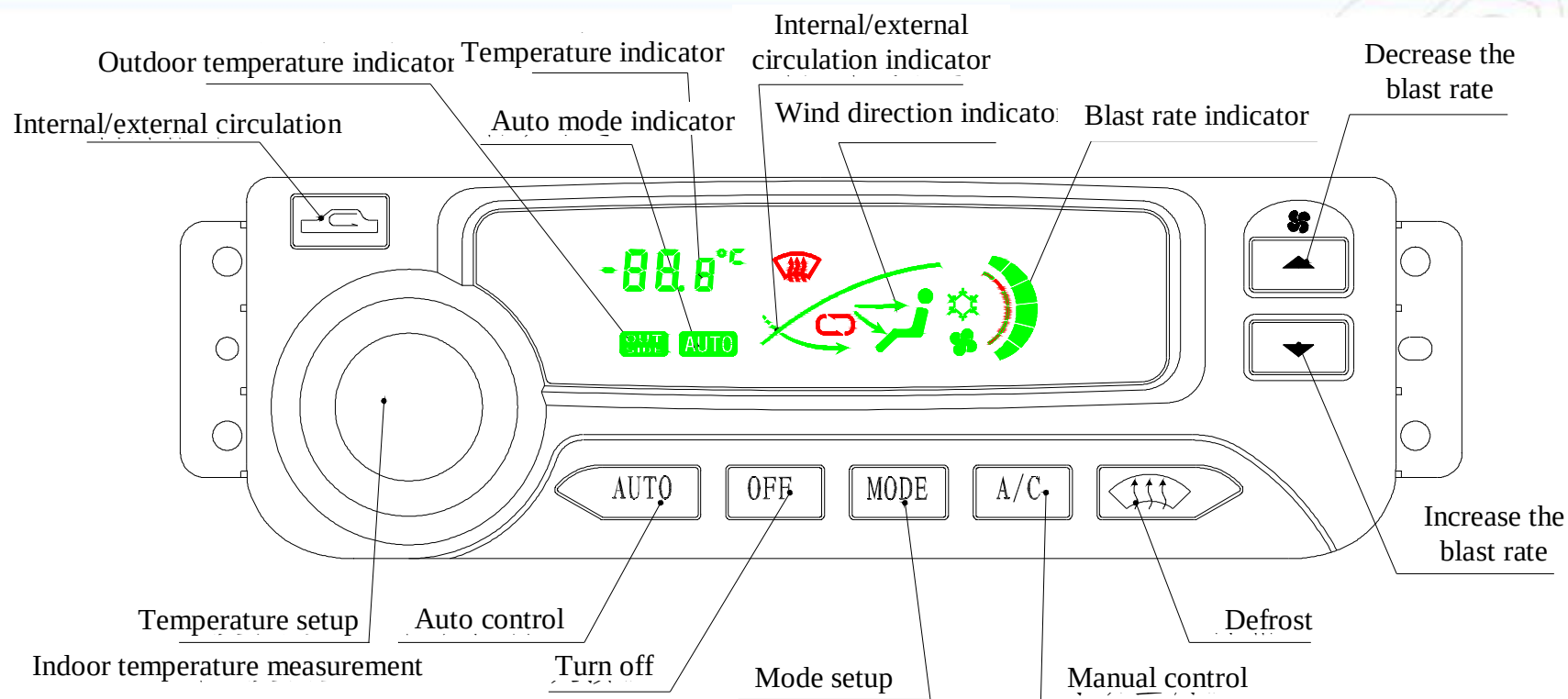
- Indoor temperature sensor
- Outdoor temperature sensor
- Wiper sensor
- Solar sensor
- Vehicle speed sensor



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5. Central Control Panel of Automatic Control System



auto service



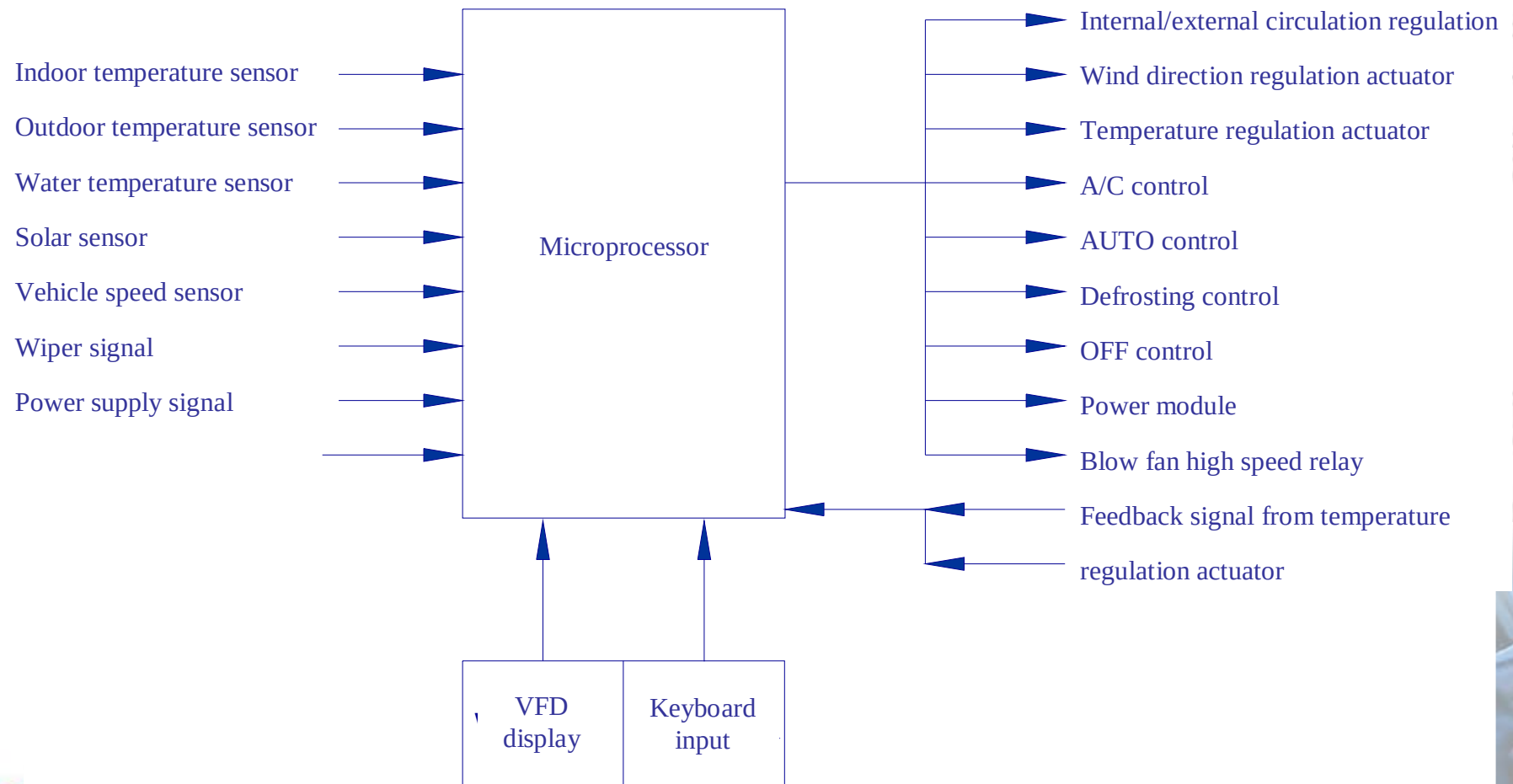
II. Control Principle of Automatic Air Conditioner

1. Control structure
2. Control principle
3. Principle of work

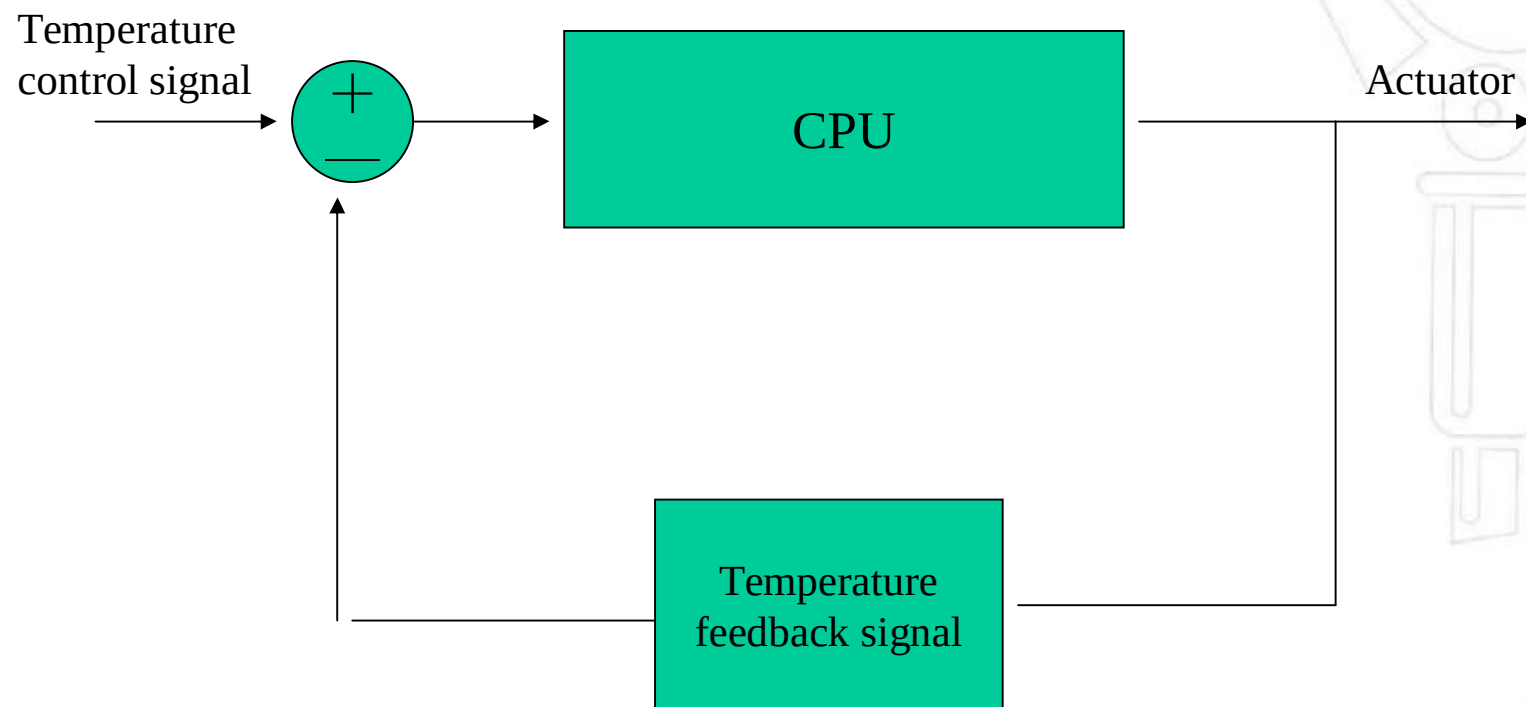
auto service



1. Control Structure



2. Control Principle



auto service



3. Principle of Work

Temperature regulation in vehicle is implemented through the procedure: various sensors sense changes of the indoor environment and convert them into electrical signals; the central controller receives the electrical signals delivered from various sensors and outputs corresponding instructions so as to direct the actions of various actuators after the microprocessor within it carries out integrated computation, thus implementing adjustment of opening of air doors and wind directions as well as blending ratios of cold and hot air at various air outlets. VFD (vacuum fluorescent display) shows the patterns respectively for various instructions from the microprocessor so as to make the driver and/or passengers know the current working condition of the air conditioning system as well as the in-car temperature.

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III. System Operations

1. Temperature control
2. Air blast rate control
3. Internal/external circulation control
4. Defrosting control
5. Refrigeration control
6. AUTO control

auto service



1. Temperature Control

In order to control the in-vehicle temperature, simply press the "AUTO" button on the control panel so as for it to be regulated according to the preset automatic control procedure. Of course, you can manually control the temperature.

auto service

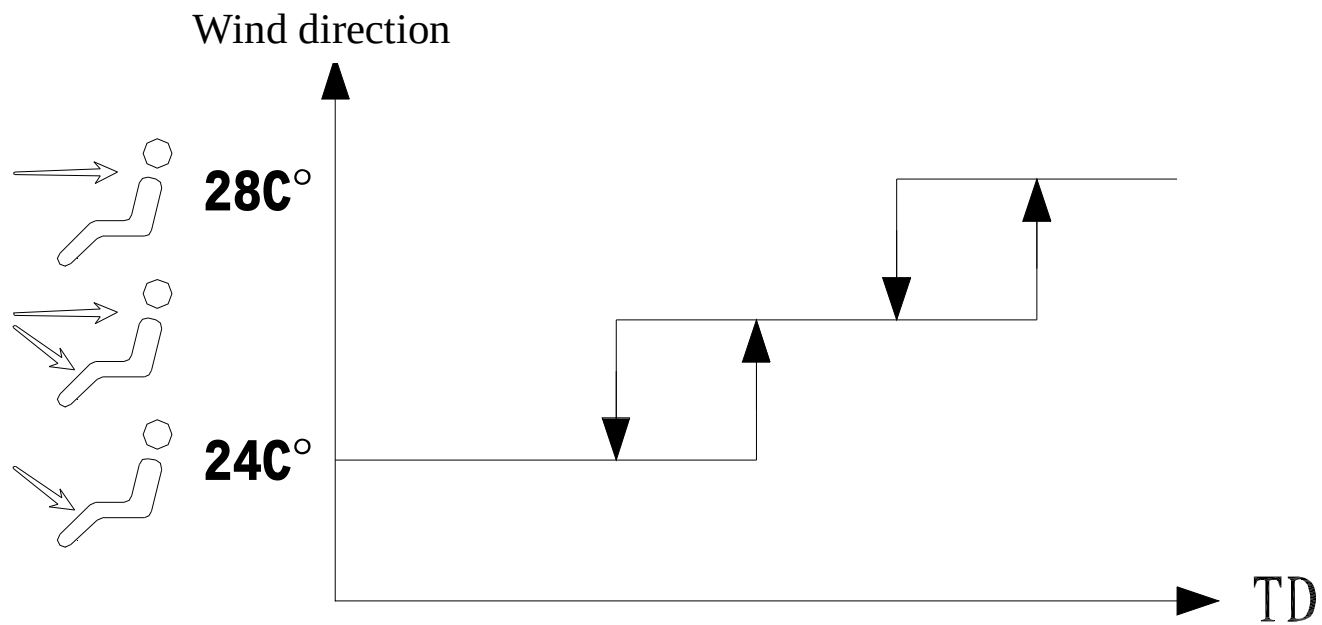


1.1 Automatic adjustment

Once the "AUTO" button is pressed down, the air conditioning system will enter into the working state of automatic control. The central controller receives signals from indoor temperature sensor, outdoor temperature sensor, water temperature sensor and solar sensor, and compares them with data reflected on the synthetic temperature curve resultant from outdoor temperature (TOUT), indoor temperature (TIN) and preset temperature (TS) (See the figure on the next page), and finally, output corresponding signals including air blast rate signal, wind direction signal, opening signals (of internal/external air doors and cold/hot air doors), refrigeration signal, heating signal, defrosting signal, etc., thus realizing automatic adjustment of in-car air temperature. Wind directions of cold and hot air blasts are respectively set for blow towards head and towards feet.

auto service





Synthetic temperature

auto service



1.2 Manual adjustment

In order to manually adjust the indoor temperature to the preset value, i.e. TS, simply press down the “A/C” button on the control panel and then the button to increase or decrease the air blast rate.

auto service



2. Air Blast Rate Control

In order to control the air blast rate, simply press the "AUTO" button on the control panel so as for it to be regulated according to the preset automatic control procedure. Of course, you can manually control the air blast rate.

auto service



2.1 Automatic Adjustment

In the mode of automatic control, the indoor temperature will automatically approach to the target value, i.e. TD.

Note: the value of TD is the preset reference value for temperature automatic regulator, which exactly employs this value to adjust the indoor temperature.

Sunshine amount: automatically adjust the air blast rate according to the concrete sunshine amount.

auto service



2.2 Manual Adjustment

Press down either of the buttons to increase/decrease the air blast rate and the blast fan will rotate accordingly. Every time either of the two buttons is pressed down, the air blast rate will be increased or decreased by one level. There are in total six rate levels for air blast rate regulation. When increased to the 6th level, it cannot be increased any more; and similarly, when decreased to the 1st level, it cannot be decreased any more.

auto service



2.3 Start-up State

- (1) When the engine cooling water temperature is lower than 15°C in winter, its start-up procedure will be automatically activated once the car is started: fix the air blast rate at the 1st level and blow cool air forwards. Keep this blast rate until the water temperature reaches 30°C . After the water temperature exceeds 30°C , the air blast rate will increase with the increased value of TD and become normal 40 seconds later.
- (2) In summer, the hot air within ventilation duct has a temperature more than 40°C . In this case, its start-up procedure will be automatically activated once the car is started: fix the air blast rate at the 1st level and blow hot air forwards; five seconds later, this procedure is deactivated.

auto service



3. Internal/external Circulation Control

(1) Manual mode

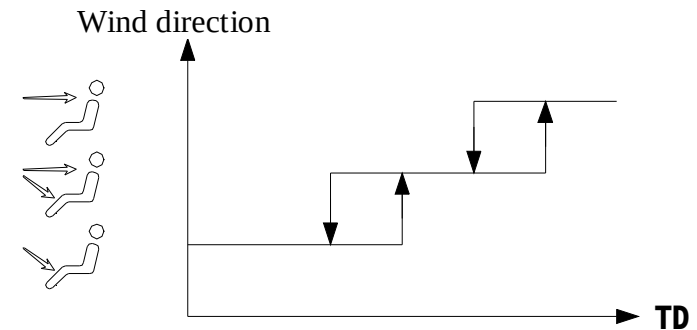
Once the "Internal/external Circulation" button is pressed down, internal/external circulation regulation actuator will start to operate air doors. For conversion of external into internal air, the air blast rate and noise decrease and the blast fan has an automatically reduced voltage (by one volt) and works within the range from 4.9 to 10V. And for conversion of internal into external air, its voltage returns to the original value.

auto service

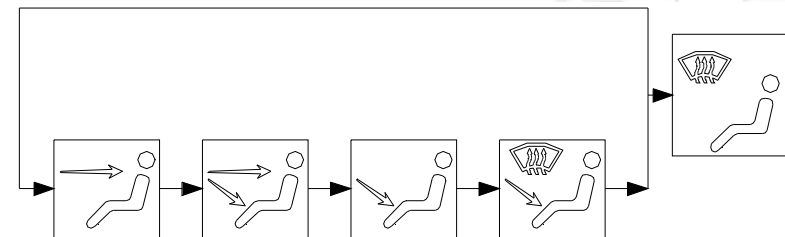


(2) Automatic mode

Basic operations: initially external circulation prevails to internal circulation.



Operations based on vehicle speed: when the "AUTO" button is pressed down, internal circulation will be switched to if the vehicle runs at 10km/h for 10 seconds or is in the stopped state. Ten minutes after this, the system will automatically carry out the procedure as shown in the following figure:



auto service

奇瑞汽车
CHERY AUTOMOBILE

4. Defrosting Control

Once the "Defrost" button is pressed down in the "AUTO" mode, the blast fan will have an automatically increased voltage (by 2 volts) about three seconds later and work within the range less than 10V and in the mean time blow the hot air forwards. If this button is pressed down again, the defrosting function will be deactivated and the blast fan's voltage will return to the original value.

auto service



IV. Automatic Diagnosis of Control Faults

1. Power-on self-test
2. Mandatory self-test
3. Fault codes & meanings
4. Fault elimination

auto service



1. Power-on Self-test

Once the driver switches on the ignition switch, the A/C controller begins to work and its microprocessor begins to carry out the self-test, which covers outdoor temperature sensor, inlet air temperature sensor, water temperature sensor, solar sensor, temperature adjustment actuator, power module, high speed relay, etc. If any fault(s), the corresponding numeric symbol(s) will blink.

auto service



2. Mandatory Self-test

If you adjust the "Temperature setup" knob to allow the displayed temperature value to be 26°C (or 29.5°C for new state) and simultaneously press down both "AUTO" and "MODE" buttons for nearly three seconds, the microprocessor begins to carry out the self-test by scanning outdoor temperature sensor, inlet air temperature sensor, water temperature sensor, solar sensor, temperature adjustment actuator, power module, high speed relay, etc. If any fault(s), the corresponding numeric symbol(s) will be displayed.

If any fault(s), the automatic temperature adjustment device will work to make the ignition switch changed to the "ON" position and in the mean time the temperature indicator on the VFD (vacuum fluorescent display) of the ATC controller will vanish so as to warn the driver of one or more faults that have occurred.

auto service



4.3 Fault Codes & Meanings

Fault code	Meaning
0	Normal
1	Indoor temperature sensor error
2	Outdoor temperature sensor error
3	Water temperature sensor error
4	Temperature adjustment actuator error
5	Solar sensor error
6	Power module error
7	High speed relay error

auto service

