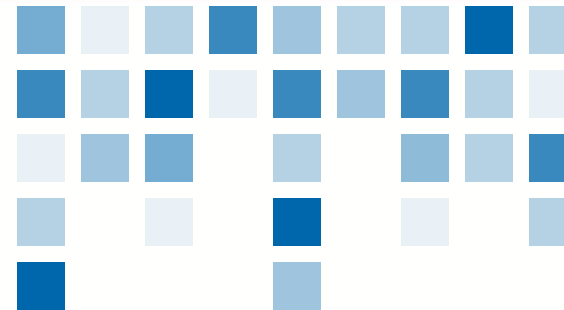
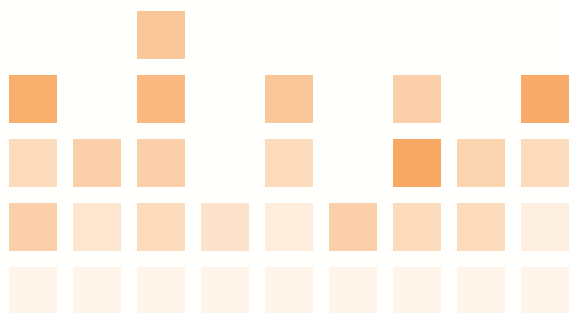




SHACMAN 汽车电器知识培训

F2000-F3000

陕汽进出口公司服务部培训科



第二十四课 德龙驾驶室线束1

1，德龙仪表台线束：

（左置车）驾驶室线束就布置在仪表台下，与其他外围线束接口的拓扑结构如图1所示。

Delong Dashboard Wiring Harness:

For left-hand drive vehicles, the cab harness is arranged under the dashboard. The topological structure of its connection with other peripheral harness interfaces is shown in Figure 1.

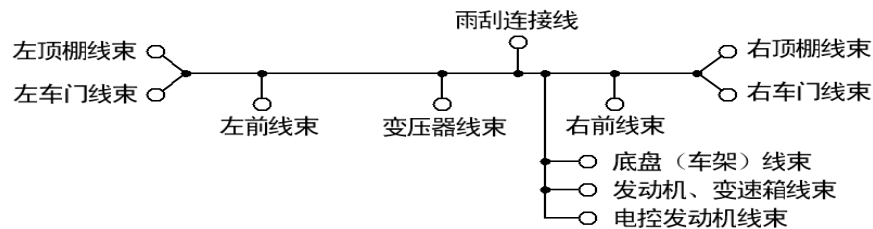


图1 德龙驾驶室线束与外围线束连接结构

驾驶室线束结构如图1所示（德龙F2000，左置驾驶室，WP国三发动机，步进电机仪表），首先线束的两端是顶棚插接器、车门插接器以及门灯开关插接器。左侧有接组合仪表的插接器以及组合仪表上各开关的插接器，在靠近转向柱管的位置是接组合开关（控制灯光、雨刮、转向）、钥匙开关的插接器，向下有接组合踏板上离合器信号开关、制动信号开关、油门踏板的插接器。

The structure of the cab harness is shown in Figure 1 (Delong F2000, left-hand drive cab, WP Euro III engine, stepper motor instrument). Firstly, the ends of the harness are connected to the roof connectors, door connectors, and door light switch connectors. On the left side, there are connectors for the combination instrument and the switches on the combination instrument. Near the steering column, there are connectors for the combination switch (controlling lights, wipers, and indicators) and the key switch. Further down, there are connectors for the clutch signal switch, brake signal switch, and accelerator pedal on the combination pedal assembly.



在组合仪表右侧下方为与左前线束对接的3个插接器。在仪表板右侧为开关板分支，在开关板下方有收放机插接器。在仪表台中部有烟灰盒照明线，风机控制器插接器以及点烟器连接线。诊断板主要用来安装电动摇窗机继电器，电控系统诊断/数据刷写接口，ABS系统诊断接口。X316、X238、X337等驾驶室-底盘主接口顺发动机罩右侧边沿敷设到驾驶室-底盘主接口处。图2是驾驶室线束总成的实物照片。

"Below the right side of the combination instrument panel are three connectors for interfacing with the left front wiring harness. On the right side of the dashboard is a branch for the switch panel, with a retractable radio cassette player connector underneath. In the middle of the dashboard, there are connections for the ashtray illumination, fan controller, and cigarette lighter. The diagnostic board is mainly used to install electric window relay, electronic control system diagnostic/data writing interface, and ABS system diagnostic interface. Main interfaces like X316, X238, X337 from the cabin-chassis are laid along the right edge of the engine hood to the cabin-chassis main interface. Figure 2 shows a physical photograph of the cabin wiring harness assembly."

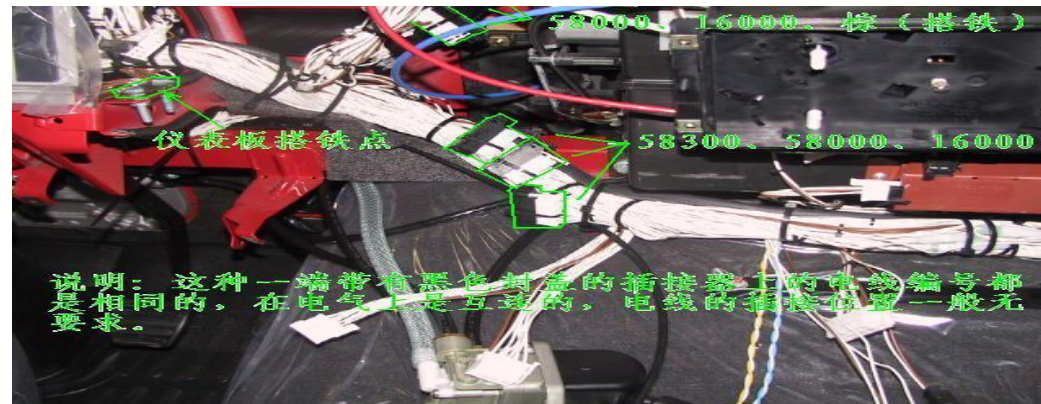
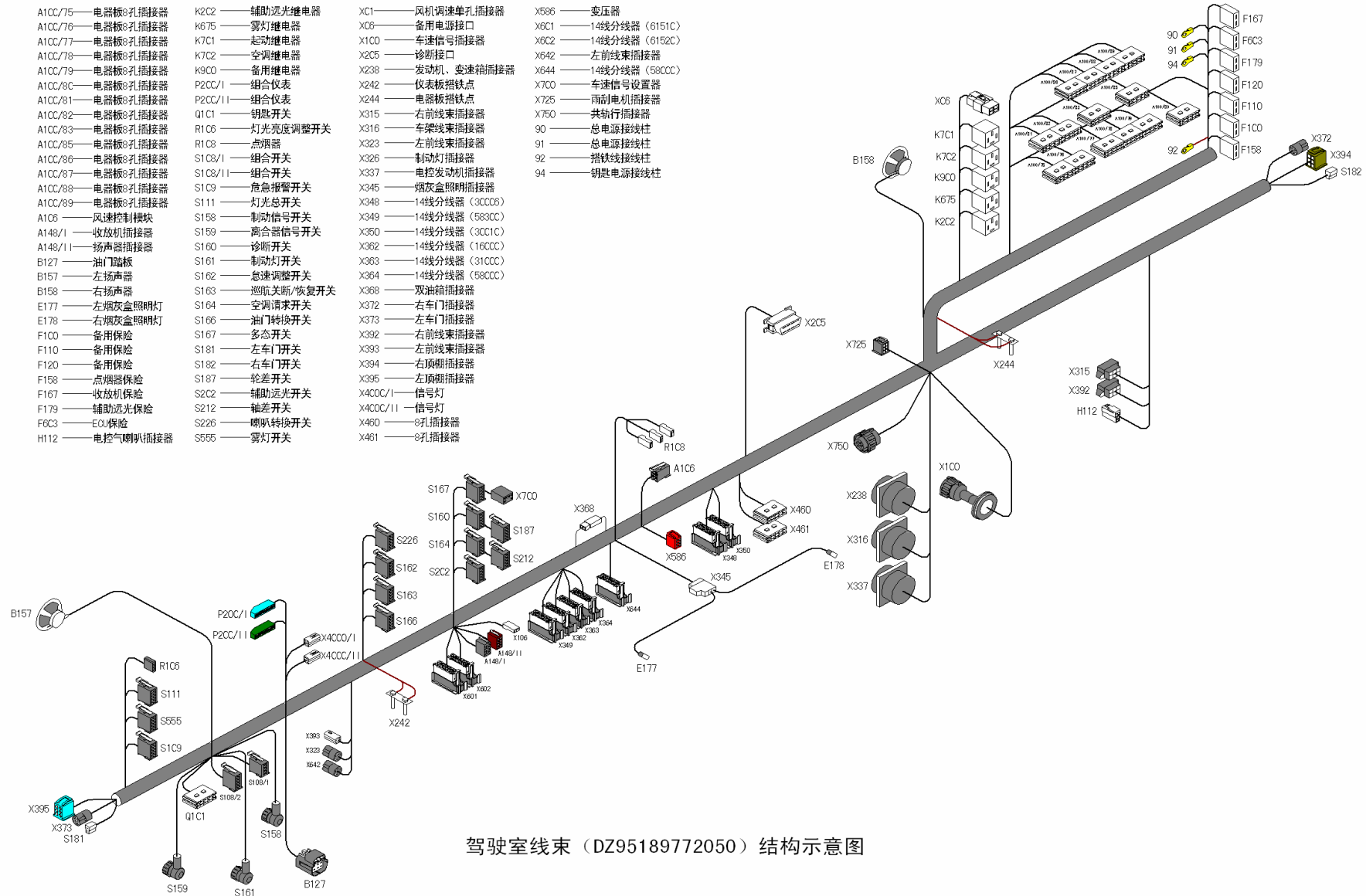


图2驾驶室线束总成





驾驶室线束 (DZ95189772050) 结构示意图

图3 德龙驾驶室线束示意图 (WP发动机, 步进电机仪表)



图3所示驾驶室线束结构（德龙F2000，左置驾驶室，WP国三发动机，步进电机仪表）是驾驶室线束总成，其所有的插接器及分支节点。然后我们详细的以图片带说明的方式展现具体的驾驶室线束总成其左部、中部、右部都有哪些插接器。

"The structure of the cabin wiring harness assembly (DeLong F2000, left-hand drive, WP Euro III engine, stepper motor instrument) as shown in Figure 3 represents all the connectors and branch nodes of the cabin wiring harness assembly. We will then present in detail, with illustrated images, the specific connectors found in the left, middle, and right sections of the cabin wiring harness assembly.

2，德龙驾驶室线束总成左侧部分：

图4所示为左侧部分驾驶室线束部分线束接口，其中最左侧部分：

X395接左顶棚线束，控制示高灯、驾驶室内照明灯等。

X373接左车门线束，控制门灯、后视镜加热器、辅助转向灯等。

S181接车门开关，车门打开时开关接通电路，用来点亮门灯或给CBCU控制器车门开启信号。

扬声器线为蓝、白彩色双绞线。

组合踏板处接线有：**S159**接离合器信号开关（给发动机ECU），**S158**接冗余制动信号开关（给ECU，用于巡航控制），**S161**接主制动、制动灯信号开关（用于点亮后尾灯处的制动灯且给ECU提供制动信号），**B127**接电控油门（给ECU油门信号）。

Left section of the DeLong cabin wiring harness assembly:

As shown in Figure 4, the left section of the cabin wiring harness assembly comprises the following connectors. X395: Connected to the left overhead wiring harness, controlling functions such as high beam lights and interior cabin lights. X373: Connected to the left door wiring harness, controlling functions such as door lights, heated mirrors, and auxiliary turn signals. S181:

Connected to the door switch. When the door is opened, the switch completes the circuit, used to illuminate door lights or provide door opening signals to the CBCU controller.

The speaker wires are blue and white twisted pairs.

At the combination pedal area, the connections include. S159: Connected to the clutch signal switch (providing signal to the engine ECU). 158: Connected to the redundant brake signal switch (providing signal to the ECU, used for cruise control). S161: Connected to the main brake and brake light signal switch (used to illuminate brake lights at the rear and provide brake signals to the ECU). B127: Connected to the electronic throttle (providing throttle signal to the ECU)."



左前线束插接器：左前线束连线包括前大灯、电喇叭、排气制动开关、气压传感器。

Connector for Left Front Wiring Harness: The left front wiring harness connector includes wiring for the front headlights, electric horn, exhaust brake switch, and air pressure sensor.

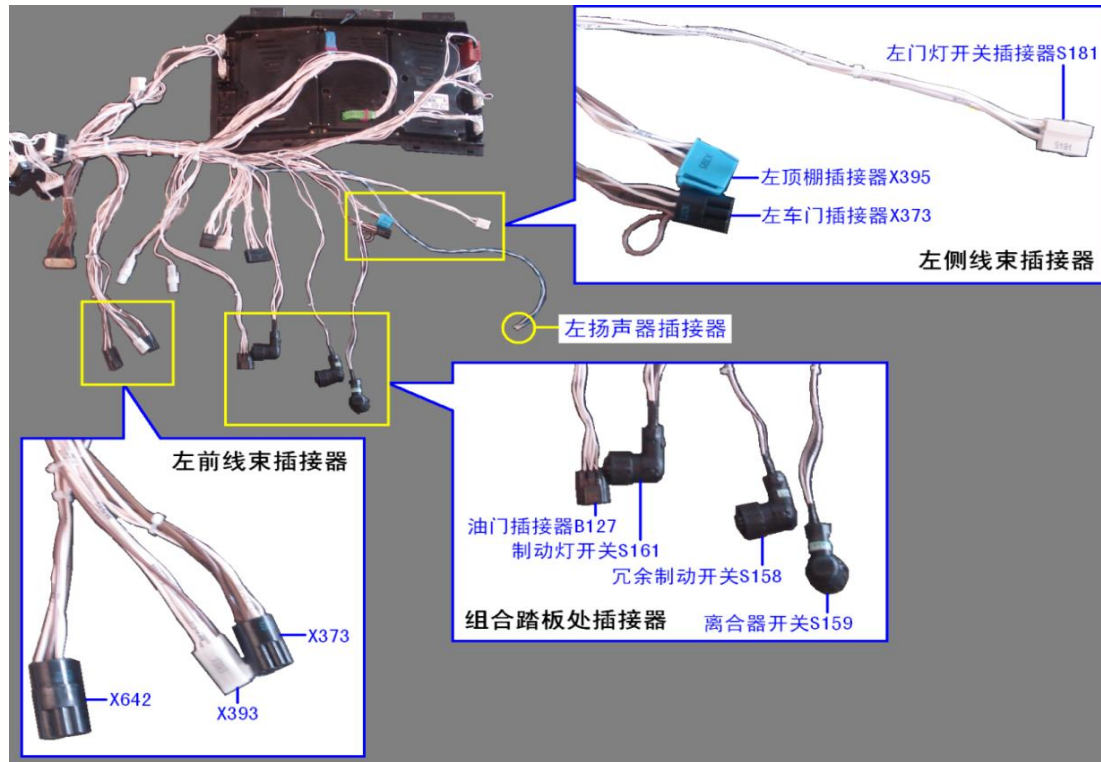


图4 驾驶室线束左侧部分线束插接器（一）

Image 4: Connectors for the Left Section of the Cabin Wiring Harness (Part 1)



3，组合仪表插接器的插接与摘除（参见图5）：

组合仪表插接器插接时注意颜色与组合仪表上的插座颜色一一对应，插接时先将插接器上的锁止杆完全打开，将插接器对准插座后旋转锁止杆，在旋转的过程中插接器自然下沉，将锁止杆完全锁紧后插接器上的锁舌弹起卡死锁止杆，防止锁止杆松脱。

Installation and Removal of the Combination Instrument Panel Connector (Refer to Figure 5):

When inserting the combination instrument panel connector, pay attention to matching the colors on the connector with those on the combination instrument panel sockets. Before insertion, fully open the locking rod on the connector. Align the connector with the socket and then rotate the locking rod to secure it. During the rotation, the connector will naturally sink into place. Once the locking rod is fully secured, the locking tongue on the connector will pop up and lock onto the locking rod, preventing it from coming loose.

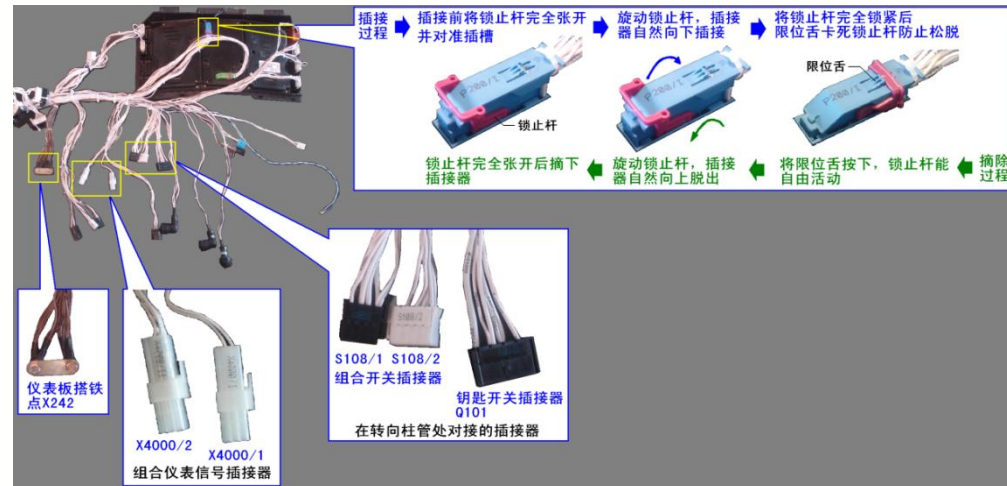


图5 驾驶室线束左侧部分线束插接器（二）

Image 5: Connectors for the Left Section of the Cabin Wiring Harness (Part 2)



组合仪表插接器的摘除：将插接器上的限位舌按下，使锁止杆能自由活动，此时向上扳起锁止杆，同时插接器自然向上脱离插座，待锁止杆完全张开后即可摘除插接器。

转向柱管处的插接器：与转向柱管处甩出的插接器对接的有：

钥匙开关插接器**Q101**：控制钥匙电源和车辆的起动，注意插接时位置不要插反（插接器两端的锁舌和锁孔位置一一对应）。

组合开关插接器**S108/1、S108/2**：其中S108/1与前照灯的控制相关，S108/2与雨刮控制相关。

组合仪表信号插接器：如图 所示的X4000/1和X4000/2，用来将外部的信号引入信号灯板，包括ASR信号灯、缓速器信号灯等。

仪表板搭铁点**X242**：仪表板附近的搭铁点。

Removal of the Combination Instrument Panel Connector: Press down the retaining tongue on the connector to allow the locking rod to move freely. Then, lift up the locking rod while simultaneously lifting the connector upward, allowing it to naturally detach from the socket. Once the locking rod is fully open, the connector can be removed.

Connectors at the Steering Column: Connector mating with the steering column includes:

Ignition switch connector Q101: Controls the ignition power and vehicle starting. Ensure correct orientation during insertion (the locking tongues and holes at both ends of the connector should match).

Combination switch connectors S108/1 and S108/2: S108/1 is related to the control of the headlights, while S108/2 is related to the wiper control.

Combination instrument panel signal connectors: Such as X4000/1 and X4000/2 shown in the diagram, used to input external signals into the signal lamp board, including ASR signal lamp and retarder signal lamp, etc.

Instrument panel bonding point X242: Bonding point near the instrument panel.



4，开关板附近线束插接器：

14线分线器：在开关板线束分支根部及附近的驾驶室主线束上，分布着若干14线分线器（参见图6），其作用是将相同功能的电线连接起来（一般来说电线编号或颜色也相同），主要用于分装附加线束时从主线束引工作电源、照明电源等功能。

分线器起连接作用的是其上带的后盖，后盖脱落会导致其上的电线之间失去连接，所以要求用塑料紧固带将后盖困扎到分线器上。此处的14线分线器接线编号及其功能是：

X349：接58300，亮度可调的背光照明电源。

X362：接16000，工作电源。

X363：接31000，搭铁线。

X364：接58000，背光照明电源（亮度不可调节）。

X601：接61510，WP发动机ECU输出电源（主继电器2电源）。

X602：接61520，WP发动机ECU输出电源（空调、排气制动）。

X644：接58000，背光照明电源（亮度不可调节）。

Connectors Near the Switch Panel:

14-Wire Distributor: Several 14-wire distributors are distributed along the switch panel wiring harness branch and nearby the main cabin harness (refer to Figure 6). Their function is to connect wires with the same function (usually with the same wire number or color). They are mainly used to provide power supply for additional wiring harnesses, such as working power supply and illumination power supply, when installing additional wiring harnesses.

The connection of the distributor is secured by its rear cover. If the rear cover comes off, the wires on it will lose connection. Therefore, it is required to use plastic tie wraps to secure the rear cover to the distributor. The wiring connections and functions of the 14-wire distributor are as follows:

X349: Connected to 58300, adjustable brightness backlight illumination power supply.

X362: Connected to 16000, working power supply.

X363: Connected to 31000, bonding wire.

X364: Connected to 58000, backlight illumination power supply (brightness not adjustable).

X601: Connected to 61510, output power supply of WP engine ECU (main relay 2 power supply).

X602: Connected to 61520, output power supply of WP engine ECU (air conditioning, exhaust brake).

X644: Connected to 58000, backlight illumination power supply (brightness not adjustable).



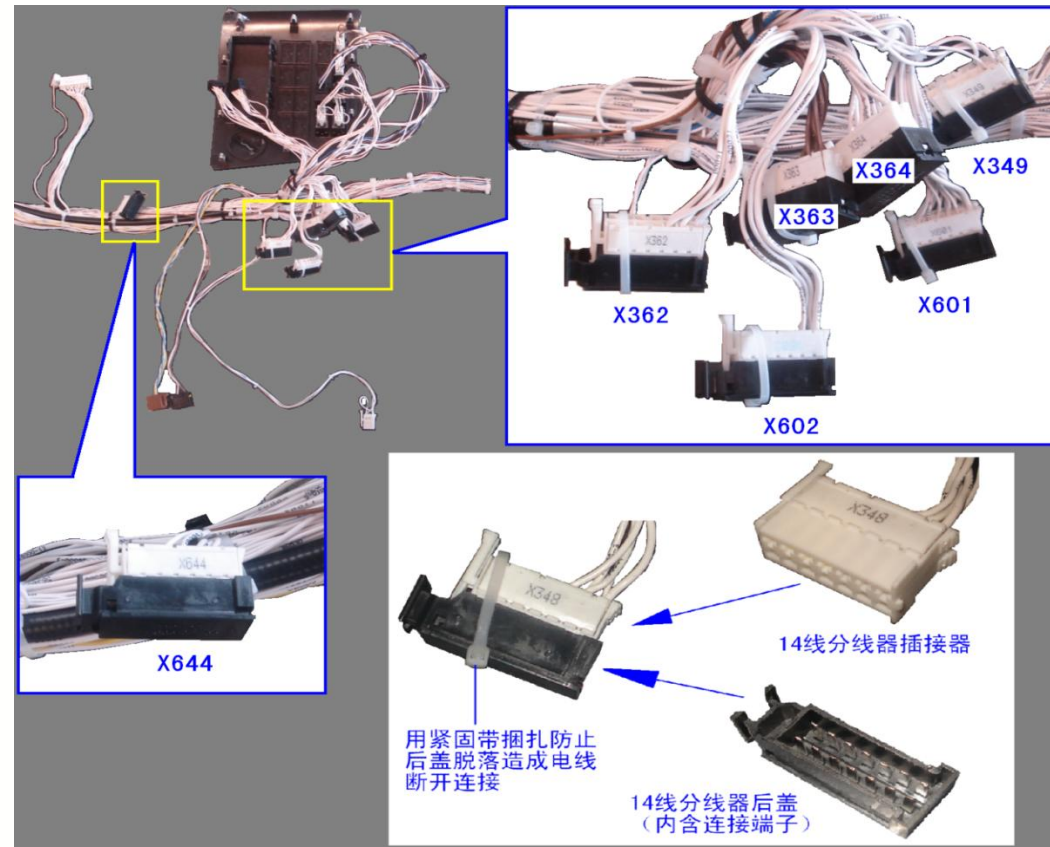


图6 开关板线束分支根部的14线分线器

Image 6: 14-Wire Distributor at the Root of the Switch Panel Wiring Harness Branch



5，空调插接器：如图7所示，包括接开关板上的空调控制器的插接器A104，接空调主机线路的18孔插接器X1132和单孔插接器X1132B。当X1132未插接或插接不实可能会导致空调不制冷，单孔插接器X1132B未插接会导致空调风机不工作。在开关板下方还有一个较长的线束分支接空调室内温度传感器（安装于仪表板下的护面内侧），插接器为6孔插接器X1133。

Air Conditioning Connectors. The air conditioning connectors, as shown in Figure 7, include:

Connector A104, which connects to the air conditioning controller on the switch panel.

18-pin connector X1132, which connects to the main circuit of the air conditioning unit.

Single-pin connector X1132B.

If X1132 is not connected or is not securely connected, it may result in the air conditioning not cooling properly. Failure to connect X1132B may result in the air conditioning fan not working.

Additionally, below the switch panel, there is a longer branch of the wiring harness that connects to the air conditioning interior temperature sensor (installed on the inner side of the dashboard fascia). The connector for this sensor is a 6-pin connector labeled X1133.

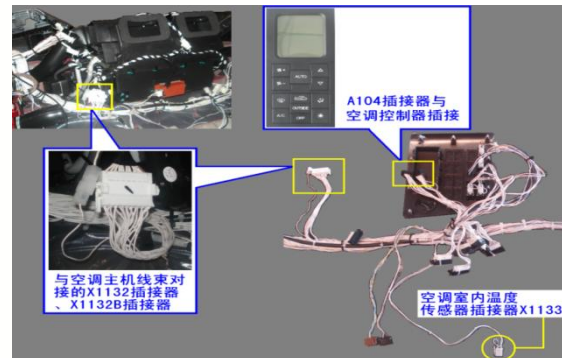


图7 与空调控制器和空调主机对接的插接器



6，收放机插接器：图8所示为收放机插接器，其中A148/1为收放机插接器，主要提供收放机电源，A148/2为扬声器插接器。

Radio Cassette Player Connector:

As shown in Figure 8, the radio cassette player connector consists of: Connector A148/1: This is the connector for the radio cassette player, primarily providing power to the device. Connector A148/2: This is the connector for the speakers

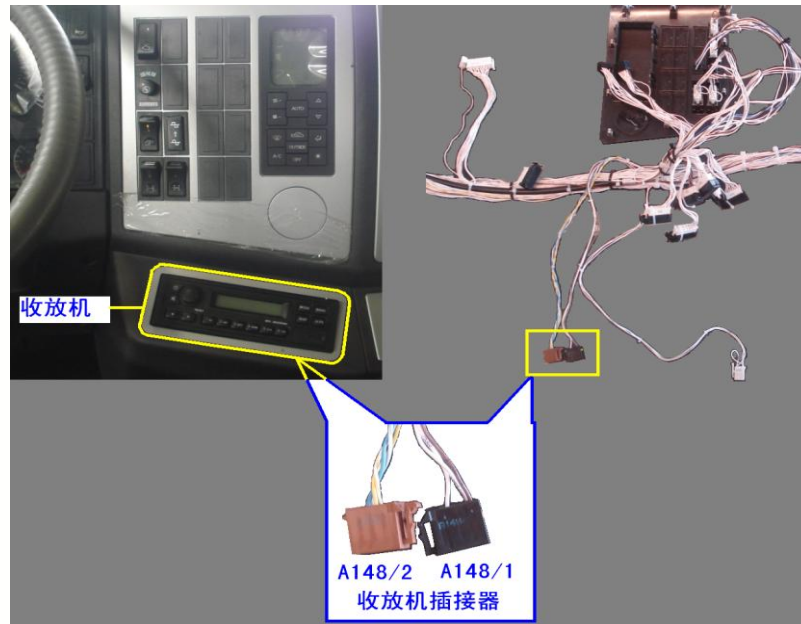


图8 收放机插接器

