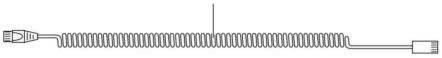
Installation document for alcohol interlocks	Annex B Page 1
Product Supplier: Dräger Corporation Model: interlock 7500 Vehicle Type: K9UD	Drawing no. : none Regulation : --- Directive : 2021/1243

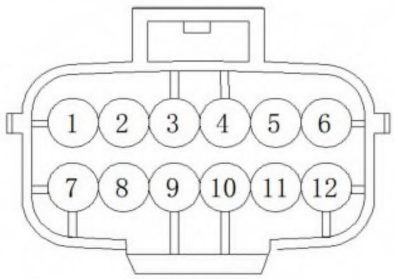
1. Product Introduction

No.	Part Name and Description	Picture
1	7500 ECU	
2	7500 handset	
3	Handset clip fixture	
4	ECU to interlock handset cable	

2.Product end connectors and vehicle end connectors pin definition

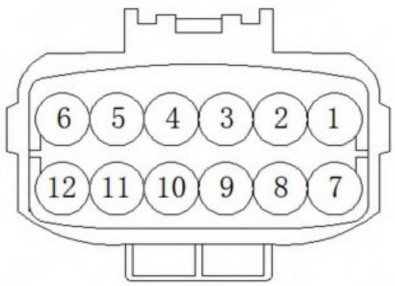
（1） Projection diagram of product end connectors: (ECU end harness)

BYD mating connector in accordance with the relevant requirements of the supplier of alcohol locks.



（2） Projection diagram of wire harness end connectors: (Distribution box end harness on vehicle, connect with ECU end connectors)

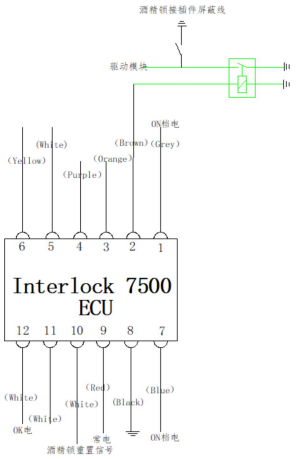
BYD mating connector in accordance with the relevant requirements of the supplier of alcohol locks.

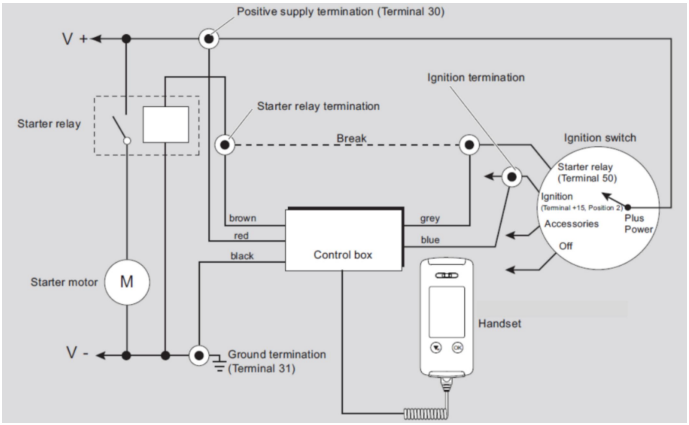


(3) Pin Definition

BYD pin	Wire harness color	Dräger Pin	Location	Connection end	Steady state operating current	Power supply	Remark
1	Grey	1	Input	Distribution box		ON position	Input 24V
2	Brown		Output	Alcohol relay			
3	Orange	2	Horn/INPUT nr2	/			
4	Purple		Horn/INPUT nr2 GND	/			
5	White	3	Horn/INPUT nr1	/			
6	Yellow		Horn/INPUT nr1 GND	/			
7	Blue	4	Ignition switch	Distribution box	Max < 2.5A	ON position	Input 24V
8	Black	5	Ground	Ground			Ground
9	Red	6	Power	Distribution box	10A fuse	Constant electricity	Input 24V
10	White	14	Driver retest	Driver retest button 1#			Input 0V
11	White	15	/	/			
12	White	16	OK position	Drive module		OK position	Input 24V

（4）System principle

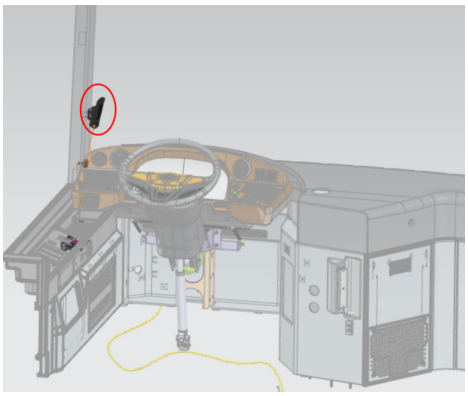


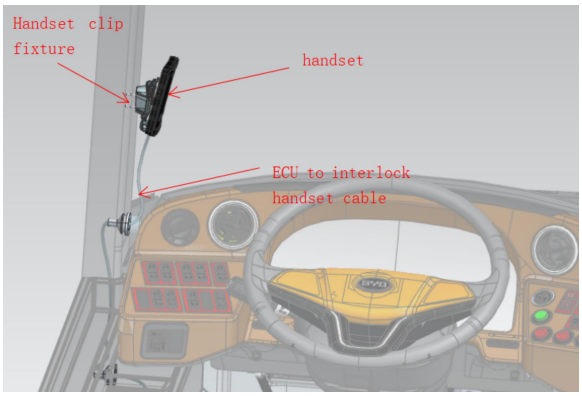


The detailed guide pin definition is shown in the table.

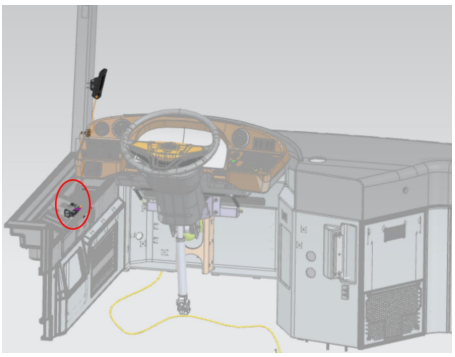
3.Product installation

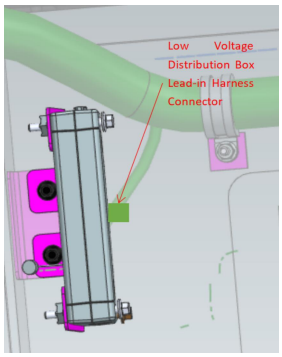
The handset is installed in a place that the driver can reach and is not affected by other components of the vehicle, and is usually installed on the A pillar.
The handset is connected to the ECU by the product's built-in harness.
The handset is installed on the Handset clip fixture, AS shown in the figure.





The ECU is concealed and installed below the instrument panel.
The ECU harness is connected to the vehicle harness.





The lead-in harness connector (reserved for the vehicle) of the low-voltage distribution box is located under the auxiliary dashboard, and the detailed position is near the alcohol lock ECU, which can be seen when opening the auxiliary dashboard.

4.Product function

Before starting a vehicle equipped with the alcohol lock device, the driver must undergo an alcohol test. The vehicle can only be started when the measured alcohol concentration is below the set limit value. (Attention: The device is not a safety device and cannot replace the anti-theft locking device)
The alcohol lock device only interferes with vehicle movement before the vehicle starts and does not affect the vehicle in motion.

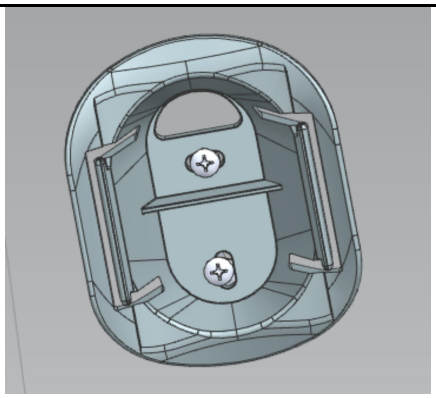
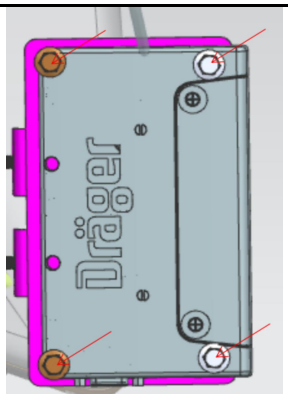
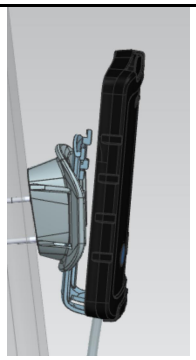
5.Product working principle

Only after the alcohol blowing test and the alcohol lock output high level gives Drive module, Drive module to collect high level signals and sends "the alcohol content normal state" , the vehicle can be allowed to start, in other cases the alcohol lock does not output the high level, which is kept by Drive module to send "alcohol content state - excessive or unenabled" message, so that the vehicle can not be able to drive.
EN 50436-7:2016 Annex C 3B: Pseudo-digital installation.

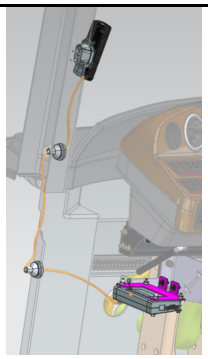
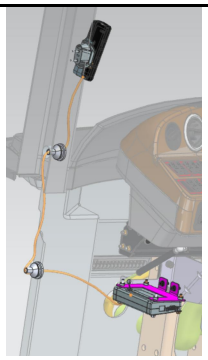
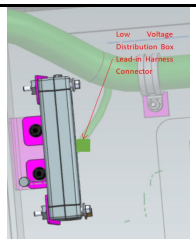
6.Functional testing process

No	Operation Steps	Implementation Results
1	Power, complete self-check	Display “Preparing for test”.Ready for test.please blow indicates that the equipment is ready to be measured.
2	Activate the illegal operation	When sending a continuous signal, the mouth is evenly blown, and then the signal stops immediately, and then inhaled from the bite until the short signal is made. If you do not use air blowing and breathing techniques to provide an exhalation sample in the right way, you will show retesting. Use the ok button to confirm. The equipment request reprovides the exhalation sample. If the blow is too strong or weak, the corresponding message will be displayed. The equipment request reprovides the exhalation sample. After providing full exhalation samples, the test results will be shown to test normal or test errors.
3	Pass-test	The tests were shown to be normal and led were green light (only interlock 7500). Allow the starting car to display the free start time: and the timer specifies how long it can start the car. The device is ready in place after starting and displays drive safely.
4	Test failed	The test is not always shown and led is red (only interlock 7500), and then the next test time is displayed: and the timer displays the remaining, minute, and second, disabled. Leds did not glow when the device did not approve other samples.

7. Installation steps

No	Products	Installation Location/Photo	Fasteners	Number of fasteners
1	Alcohol Lock Parts	 Figure 7.1 1.1 Secure the Handset clip fixture to the interior panel with 4 pieces open end countersunk head blind rivets.	Open end countersunk head blind rivet	2
		 Figure 7.2 1.2 Secure the Alcohol Lock ECU to the bracket using 4 pieces of type 1 hex bolts and nuts.	Type 1 hex bolts and nuts	4
		 Figure 7.3 1.3 Attach the handset to the Handset clip fixture.	/	/

7. Installation steps

No	Products	Installation Location/Photo	Fasteners	Number of fasteners
2	Alcohol Lock Parts Harness	 Figure 7.4	/	/
		2.1 The approximate location of the Alcohol Lock ECU harness is shown in the figure, and it is fixed by tie-wrap and sponge tape.		
		 Figure 7.5	/	/
		2.2 Alcohol Lock ECU harness and handset spiral harness mated in the location shown.		
		 Figure 7.6	/	/
		2.3 Connect product end connectors to Low Voltage Distribution Box Lead-in Harness Connectors, Installation is complete.		

Note: Vehicle type K9UD equipped with alcohol lock as standard configuration (alcohol lock ECU, alcohol lock blowing machine installed on vehicle before vehicle registration), if the user subsequently need to replace to other alcohol lock products, please use the reserved connectors on vehicle-side, the layout of the location see Figure 7.6. and Figure 7.7.
And also please See Table 2.1 for specific connector definition functions.