SERVICE BULLETIN
SB1828B

ADDRESSEES	**:** Owners and operators of vehicles mentioned under "Application"
VEHICLE MODEL	**:** A330 K Hybrid
MANUAL CHAPTER	**:** 10.10 Windscreen wipers and washer
BULLETIN TYPE	**: Field change program**
DATE	**:** February 05th, 2021
SUBJECT	**: Optimisation of windscreen wiper electrical circuit**
CONDITIONS	**:** Refer to chapter “Warranty” further on in this bulletin.

APPLICATION:

The field change program, subject of this bulletin, applies to the following vehicles:

Vehicle model	Vehicle identification number
A330 K Hybrid	66301 → 66332 66442 → 66473

DESCRIPTION:

We have received a number of complaints regarding failure of the windscreen wiper motor. Investigation has shown that a momentarily higher current flows during fast changing between “high wiping speed” and “off”, which causes the switching contacts of the relays to burn in prematurely and results in failure of the relay.

Owners and operators are requested to perform the optimisation below on the above mentioned vehicles. To this end, follow the step-by-step instructions mentioned in this service bulletin.

Van Hool apologises for the inconvenience caused by this field change program and wishes to thank you in advance for your cooperation.

JOB QUALIFICATION:

The task has to be carried out by an experienced automotive technician, trained in the operations at hand.

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COMPONENTS:

Parts of conversion kit VH11744465

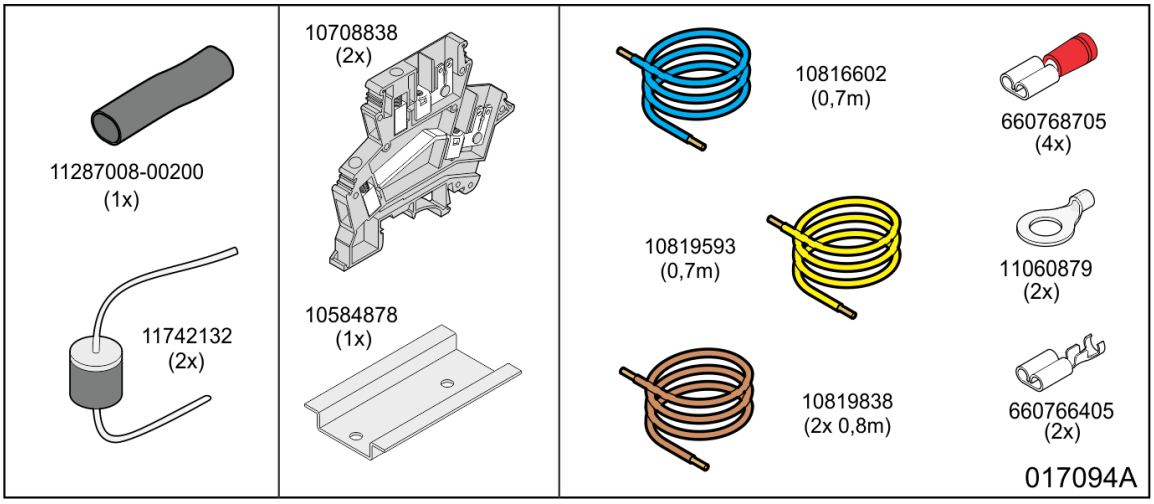


Figure 1

VH reference	Description	Quantity*
11742132	Diode	2
11287008-00200	Heat shrink tubing	1
10708838	Connecting element	2
10584878	Mounting rail	1
10816602	Conducting wire blue (B) (length 700 mm)	1
10819593	Conducting wire yellow (GE) (length 700 mm)	1
10819838	Conducting wire brown (BR) (length 800 mm)	2
660768705	Cable lug (for yellow and blue conducting wires at connecting elements)	4
11060879	Cable lug (for brown conducting wires at earth bolt)	2
660766405	Connector terminal (for yellow and blue conducting wires at relays)	2

*Sufficient for one vehicle

LOCATION OF JUNCTION BOX “EK2”:

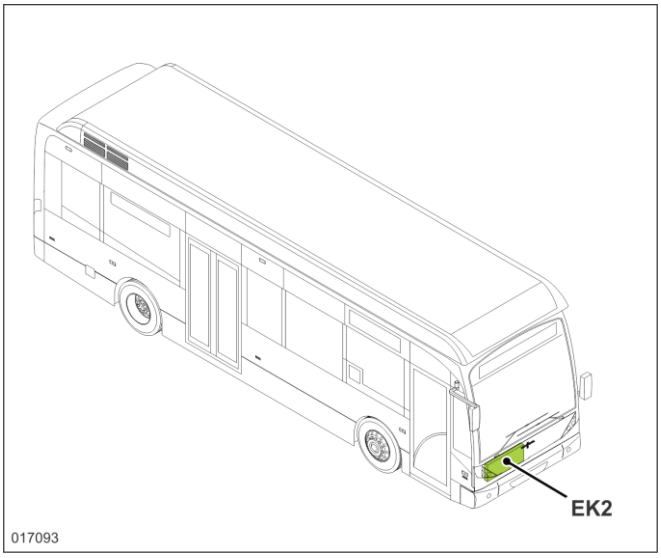


Figure 2: Location of junction box EK2

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SPECIAL TOOLS:

Cable lug/connector terminal	Tools
660768705	• Crimping pliers CERTI-LOK (TE 0169400) • Die for crimping pliers CERTI-LOK (TE 0169404)
11060879	Crimping pliers CERTI-CRIMP (TE 49935)
660766405	Crimping pliers CERTI-CRIMP II (TE 720725-1)

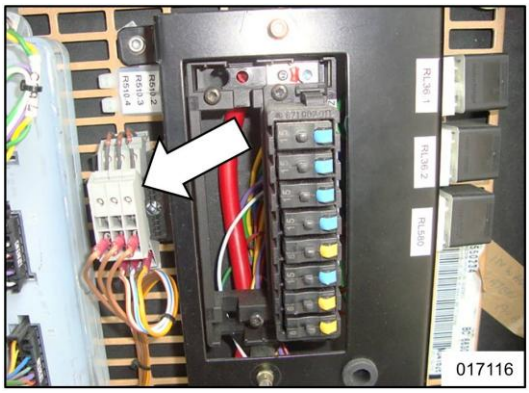
PREPARATION:

- Park the vehicle on a level floor. Apply the parking brake. Stop the combustion engine. Switch off all systems and turn off the battery isolation switch on the dashboard.
- Install a "DO NOT OPERATE" warning message on the steering wheel.
- Put chocks in front of and behind the front-axle wheels.
- **Read the entire procedure before starting the operations.**

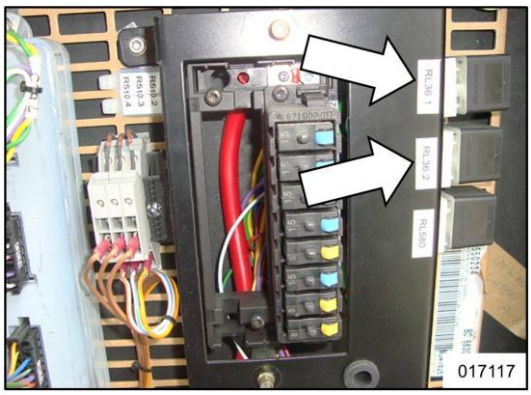
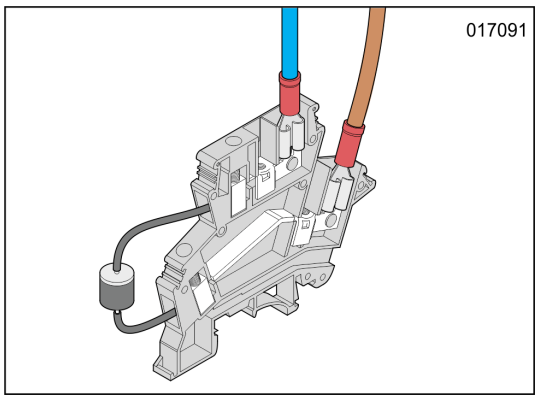
WARNING!

Observe safe shop practices at all times.

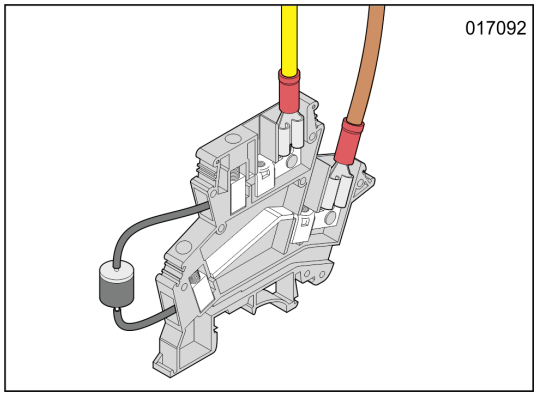
PROCEDURE:

Step	Action
1	**In the compartment containing the 24V-system batteries:** open the mechanical battery isolation switch by turning its handle a quarter of a turn anti-clockwise (= "OFF" position).
2	Insulate both wire ends of each diode from the kit with a length of heat shrink tubing so that approximately 1 cm is left to make the connection.
3	**In junction box EK2:** locate the connecting block with resistors.  017116 **Figure 3**
4	**In junction box EK2:** remove the end piece of the connecting block and slide the connecting elements off the rail.
5	**In junction box EK2:** change the original rail by the longer rail from the kit.
6	**In junction box EK2:** slide an end piece and the existing connecting elements with resistors on the new rail. Do not install the connecting element with the closing plate (which was previously at the outside) yet, but first slide the two extra connecting elements from the kit on the rail. Finally, slide the connecting element with the closing plate on the new rail. Slide the other end piece on the rail and tighten the two end pieces.

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7	**In junction box EK2:** to gain access to the backside of the relay holders of RL036.1 and RL036.2, remove the four bolts securing the mounting plate for the relays/circuit breakers to the grid.  **Figure 4: Location of RL036.1 and RL036.2**
8	**In junction box EK2, to modify wiring of RL036.1:** a. Locate RL036.1 en remove the relay. b. **At the backside of the relay holder of RL036.1**: remove the blue conducting wire by means of a flat blade screwdriver. Cut off the cable lug of the blue conducting wire. Strip back the blue conducting wire as well as an end of the blue conducting wire 10816602 from the kit. Crimp both conducting wires together to connector terminal 660766405 from the kit. Introduce the connector terminal with the two conducting wires on the same location into the relay holder. c. Route the other end of the new blue conducting wire to the connecting block with resistors. Strip back the end of this conducting wire. Crimp cable lug 660768705 from the kit on the conducting wire. Connect the cable lug with the blue conducting wire to one of the two new installed connecting elements as indicated in figure 5. d. Connect one of the two diodes from the kit on the same connecting element (refer to figure 5 for the correct orientation of the diode!). e. Take one of the two brown wires 10819838 from the kit. Strip back a wire end and crimp cable lug 660768705 from the kit to the conducting wire. Connect this conducting wire to the same connecting element (refer to figure 5). f. Strip back the other end of the brown conducting wire and crimp cable lug 11060879 from the kit to the conducting wire. Connect this cable lug to the earth bolt in EK2. g. Re-install relais RL036.1.  **Figure 5**

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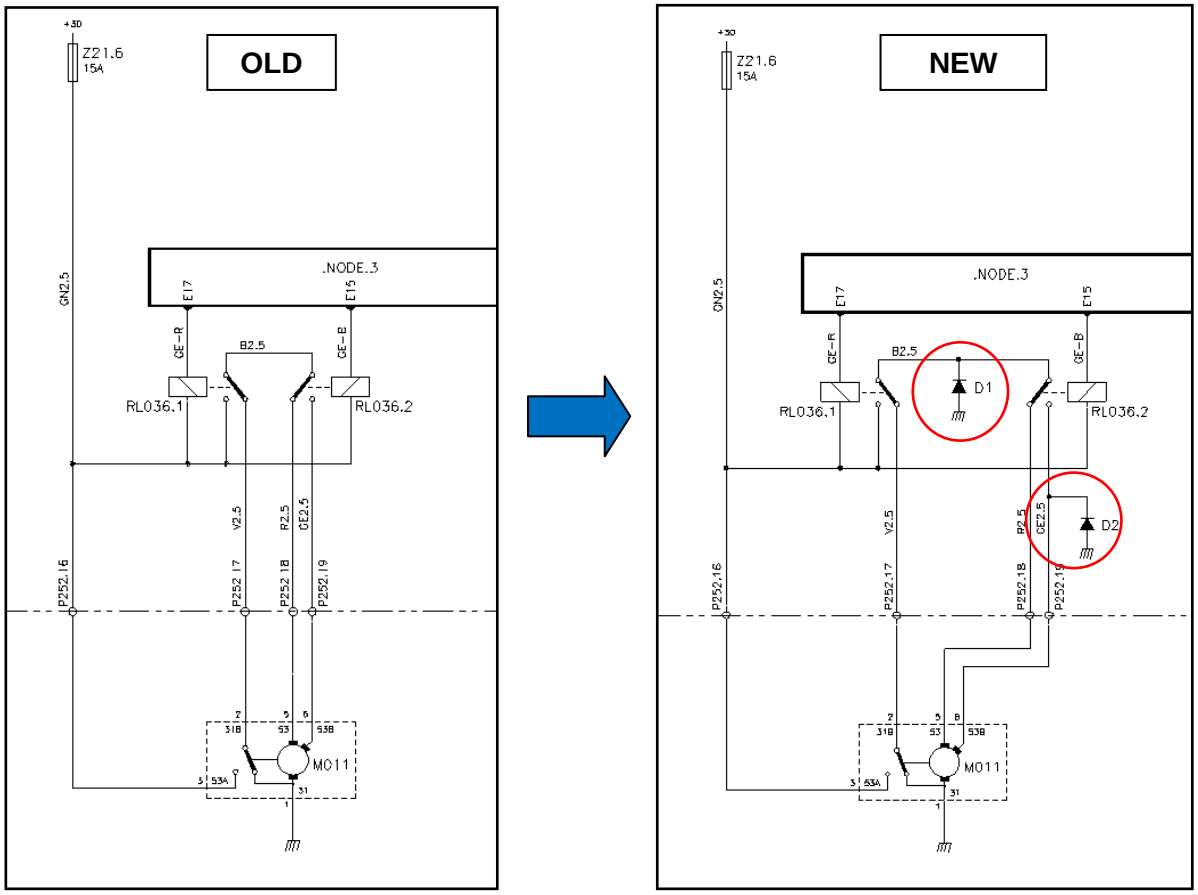
9	**In junction box EK2, to modify wiring of RL036.2:** a. Locate RL036.2 en remove the relay. b. **At the backside of the relay holder of RL036.2**: remove the yellow conducting wire by means of a flat blade screwdriver. Cut off the cable lug of the yellow conducting wire. Strip back the yellow conducting wire as well as an end of the yellow conducting wire 10819593 from the kit. Crimp both conducting wires together to connector terminal 660766405 from the kit. Introduce the connector terminal with the two conducting wires on the same location into the relay holder. c. Route the other end of the new yellow conducting wire to the connecting block with resistors. Strip back the end of this conducting wire. Crimp cable lug 660768705 from the kit on the conducting wire. Connect the cable lug with the yellow conducting wire to the other new installed connecting element as indicated in figure 6. h. Connect the other diode from the kit on the same connecting element (refer to figure 6 for the correct orientation of the diode!). d. Take the remaining brown wire 10819839 from the kit. Strip back a wire end and crimp cable lug 660768705 from the kit to the conducting wire. Connect this conducting wire to the same connecting element (refer to figure 6). e. Strip back the other end of the brown conducting wire and crimp cable lug 11060879 from the kit to the conducting wire. Connect this cable lug to the earth bolt in EK2. f. Re-install relay RL032.2  **Figure 6**
10	**In junction box EK2:** secure the mounting plate for the relays/circuit breakers to the grid again.
11	Download the new program 11553642 (version M2) into the computer module of the multiplex system as described in chapter 11.1 "Multiplex system" of the maintenance manual. The program is available through the Van Hool customer portal under the "Software" section.
12	Register the operations as follows: a. Login on the Van Hool customer portal. b. Enter the vehicle identification number of the modified vehicle. Then click on “SHOW DOCUMENTS”. c. Click on the blue registration button which is located behind service bulletin SB1828. d. Write the text "SB1828 executed" in the "Remark" field and click on "Register". Labour allowance will only be awarded after registration of the operations.

End of procedure

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Figure 7



WARRANTY:

1. Conditions

Van Hool accepts claims for this conversion as follows:

Parts:

- Parts supply: through the usual channels, without costs.
- Parts evacuation: only evacuate unused parts and pollutants in accordance with the law. Check with the environmental authorities to ascertain the rules in force in your country (or region).

Labour hours allowance: 2 hours per vehicle

Expiration date of campaign: service bulletin issue date + 1 year

2. Claim references:

Job code: O61828N

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HELPDESK:

If you still have any questions, address your regular contact person at After-Sales Department or your local Van Hool Service Point.

DISCLAIMER:

The procedures contained herein are not exclusive. Van Hool cannot possibly know, evaluate, or advise the transportation industry of all conceivable ways in which a procedure may be undertaken or of the possible consequences of each such procedure. Other procedures may be as good, or better, depending upon the particular circumstances involved. Each carrier who uses the procedures herein must first satisfy itself thoroughly that neither the safety of its employees or agents, nor the safety or usefulness of any products, will be jeopardized by any procedure selected.

INFORMATION HANDLING

Important supplements to and modifications of technical information not yet included in the manual, are communicated by means of Service Bulletins.

VAN HOOL CUSTOMER PORTAL

Consult the customer portal regularly for the latest service documentation. In addition to the maintenance manual, you will also find the operating manual and the spare parts catalogue of your vehicle on the customer portal. The customer portal is accessible through www.vanhool.be, and only with a code (password) from Van Hool. If you do not have a password yet, request it by using the link on the Van Hool website.