

# PARTS & SERVICE NEWS

REF NO.	AT04196
DATE	July 4, 2004

(C)

**SUBJECT:** REPAIR PROCEDURE FOR LIGHTING SWITCH

**PURPOSE:** To inform Field Personnel

**APPLICATION:** HD465-7 Trucks, S/N 7001 and up  
 HD605-7 Trucks, S/N 7001 and up  
 HM300-1 Trucks, S/N 1001 and up  
 HM350-1 Trucks, S/N 1001 and up  
 HM400-1 Trucks, S/N 1001 and up

**FAILURE CODE:** DDH1FQ

**DESCRIPTION:**

1. Introduction:

With the built-in lamp switch in the combination switch assembly used on Dump Trucks and on all the articulated dump trucks, there is a possibility that the resin material may melt by the heat generated at the contacts and molten resin may cause adhesion of the switches.

When the above failure occurs, replace the head lamp switch and modify the head lamp circuit following the modification procedure described in this **PARTS & SERVICE NEWS**.

2. List of Parts:

Part No.	Part Name	Purpose of Part	Qty.	Remarks
<b>ASSEMBLY PART NUMBERS</b>				
569-06-86413 (569-06-86412)	Wiring (Wiring)	Adjustment	1 (1)	HD465-7 thru HD605-7
56B-06-16418 (56B-06-16417)	Wiring (Wiring)		1 (1)	HM300-1 thru HM400-1
<b>HD465-7 and HD605-7 Arrangements parts for modification</b>				
56B-06-16910	Switch Light & Dimmer	Replacement	1	The Part Number for supplying the lamp switch of internal organs
569-06-61960	Relay	Addition	1	An additional relay
569-99-91590	Harness		1	The Part figure appends to the parts only for repair
08021-00400	Connector		8	The parts for additional construction of the wiring

Part No.	Park Name	Purpose of Part	Qty.	Remarks
08022-04003	Connector	Addition	3	The parts for additional construction of the wiring
08022-04001	Connector		2	
419-09-11380	Connector	Unnecessary	1	
08027-02000	Terminal	Addition	4	

HM300-1 and HM400-1 The arrangements parts for repair of the vehicle with a step relay for flashing head lamps. (HM300-1 S/N up to 1015; HM350-1 S/N up to 1031; HM400-1 S/N up to 1054)

56B-06-16910	Switch Light and Dimmer	Replacement	1	The part number for supplying the lamp switch of internal organs
569-06-61960	Relay	Addition	1	An additional relay
56B-99-12440	Harness		1	The part figure appends to the parts only for repair
08021-00400	Connector		6	The parts for additional construction of the wiring
08022-04003	Connector		2	
08022-04001	Connector		2	
419-09-11380	Connector		1	
08027-02000	Terminal		4	
56B-06-16330	Bracket		1	Additional relay mount bracket

HM300-1 and HM400-1 The arrangements parts for repair of the vehicle without a step relay for flashing head lamps. (HM300-1 S/ N up to 1015; HM350-1 S/N up to 1032; HM400-1 S/N up to 1055)

56B-06-16910	Switch Light and Dimmer	Replacement	1	The part number for supplying the lamp switch of internal organs
569-06-61960	Relay	Addition	1	An additional relay
56B-99-12450	Harness		1	The parts figure appends to the parts only for repair
08021-00400	Connector		6	
08022-04003	Connector		2	
08022-04001	Connector		2	
419-09-11380	Connector		1	
08027-02000	Terminal		4	
56B-06-16330	Bracket		1	Additional relay mount bracket

569-99-81590

The additional harness for modification on the HD465-7 and HD605-7 dump trucks

56B-99-12440

The additional harness for modification on the HM300-1 thru HM400-1 articulated dump trucks equipped with the step relay for flashing head lamps

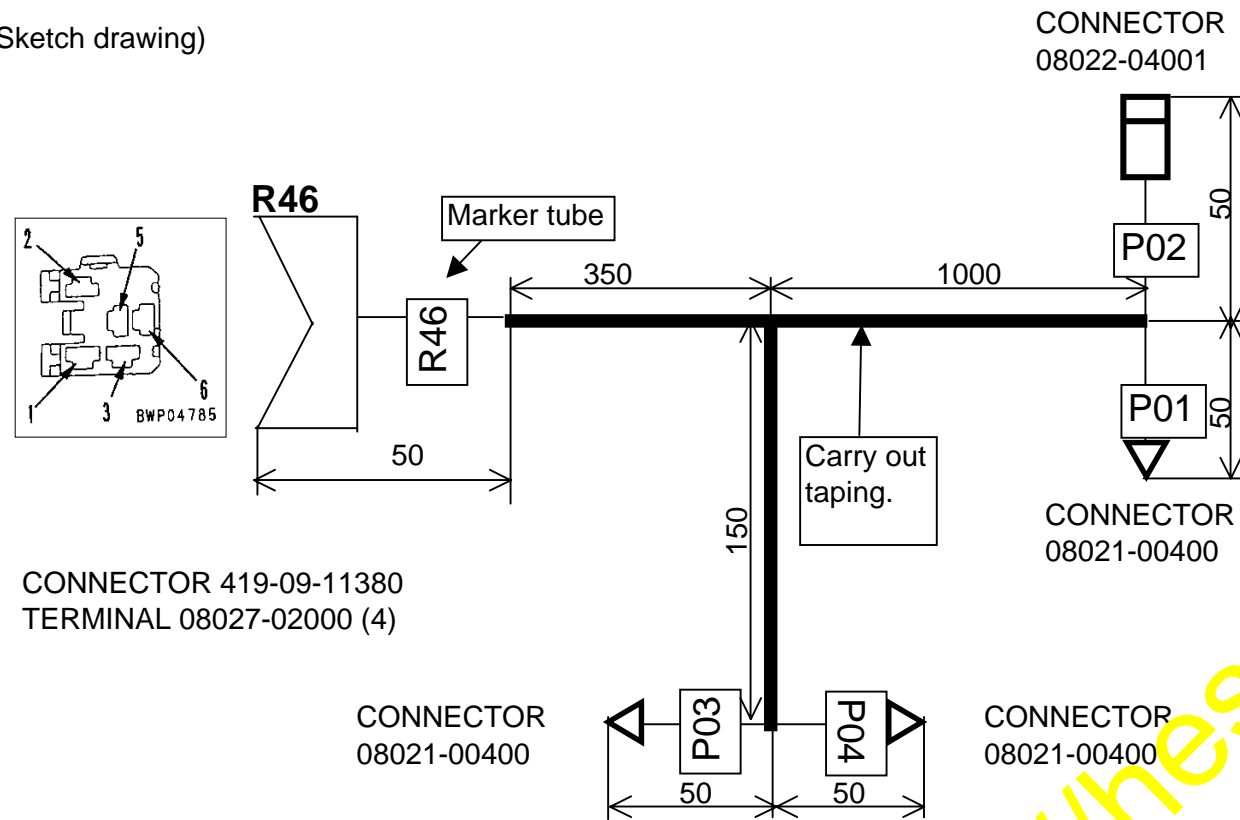
HM300-1 : - #1015

HM350-1 : - #1031

HM400-1 : - #1054

Even if the Serial No. of the vehicle is applicable as above, check that the step relay is attached on the actual vehicle before starting this modification work. (Refer to Section [2] on page 8 for details.)

(Sketch drawing)

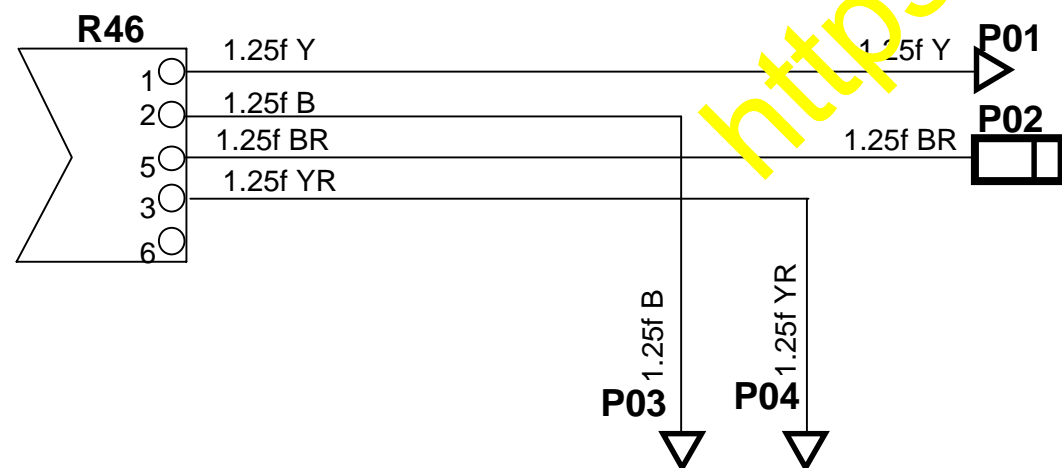


CONNECTOR 419-09-11380  
TERMINAL 08027-02000 (4)

CONNECTOR 08021-00400

CONNECTOR 08021-00400

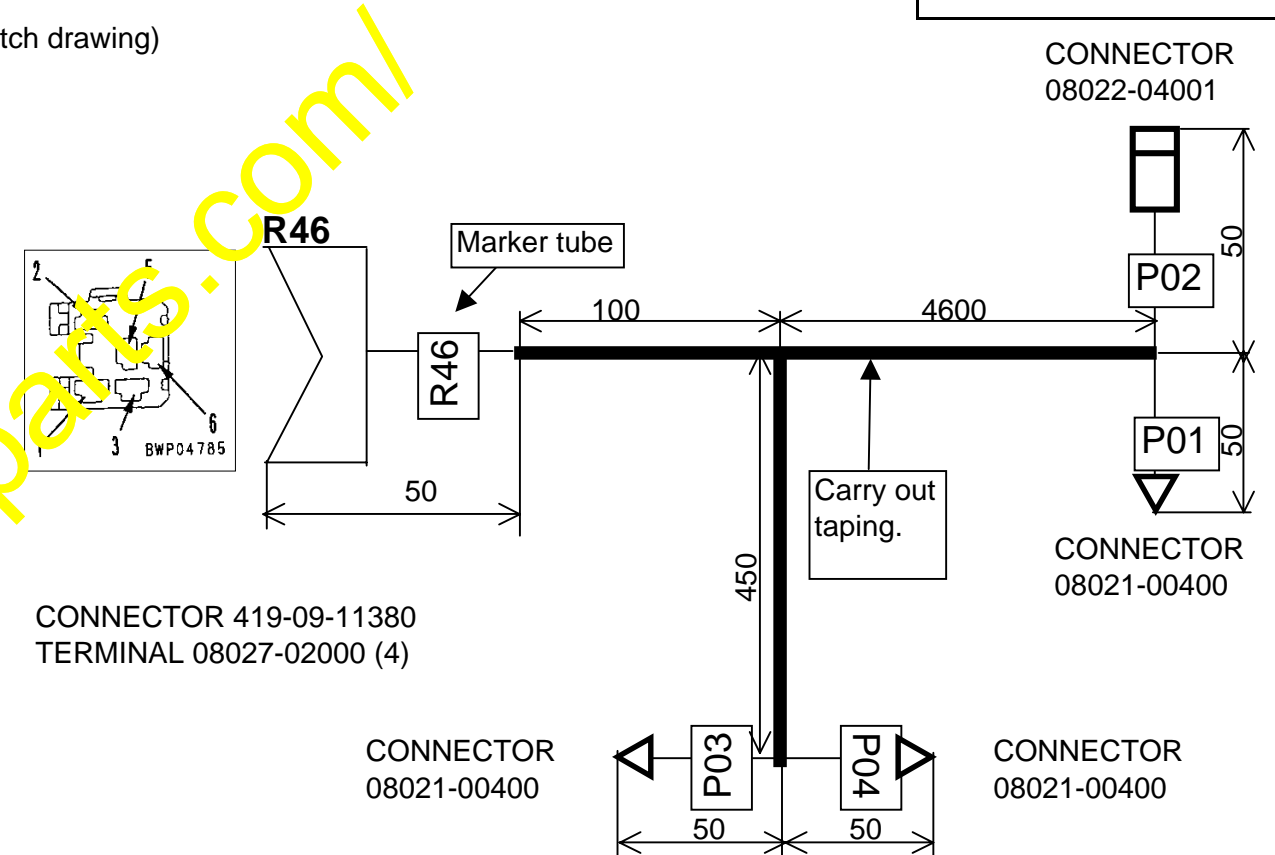
(Wiring diagram)



\* The actual wire colors can be different from the above designation.

Fig. 1

(Sketch drawing)

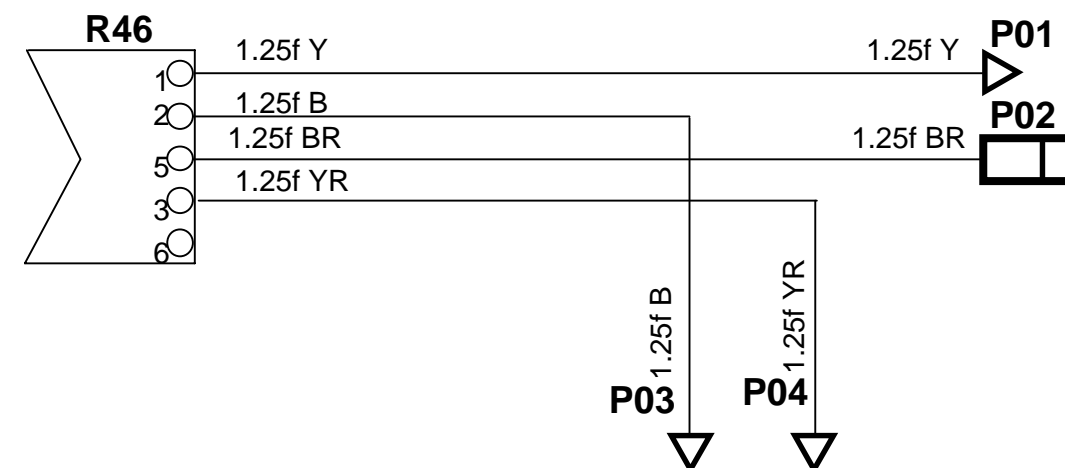


CONNECTOR 419-09-11380  
TERMINAL 08027-02000 (4)

CONNECTOR 08021-00400

CONNECTOR 08021-00400

(Wiring diagram)



\* The actual wire colors can be different from the above designation.

Fig. 2

56B-99-12450

The additional harness for modification on the HM300-1 thru HM400-1 articulated dump trucks without the step relay for flashing head lamps

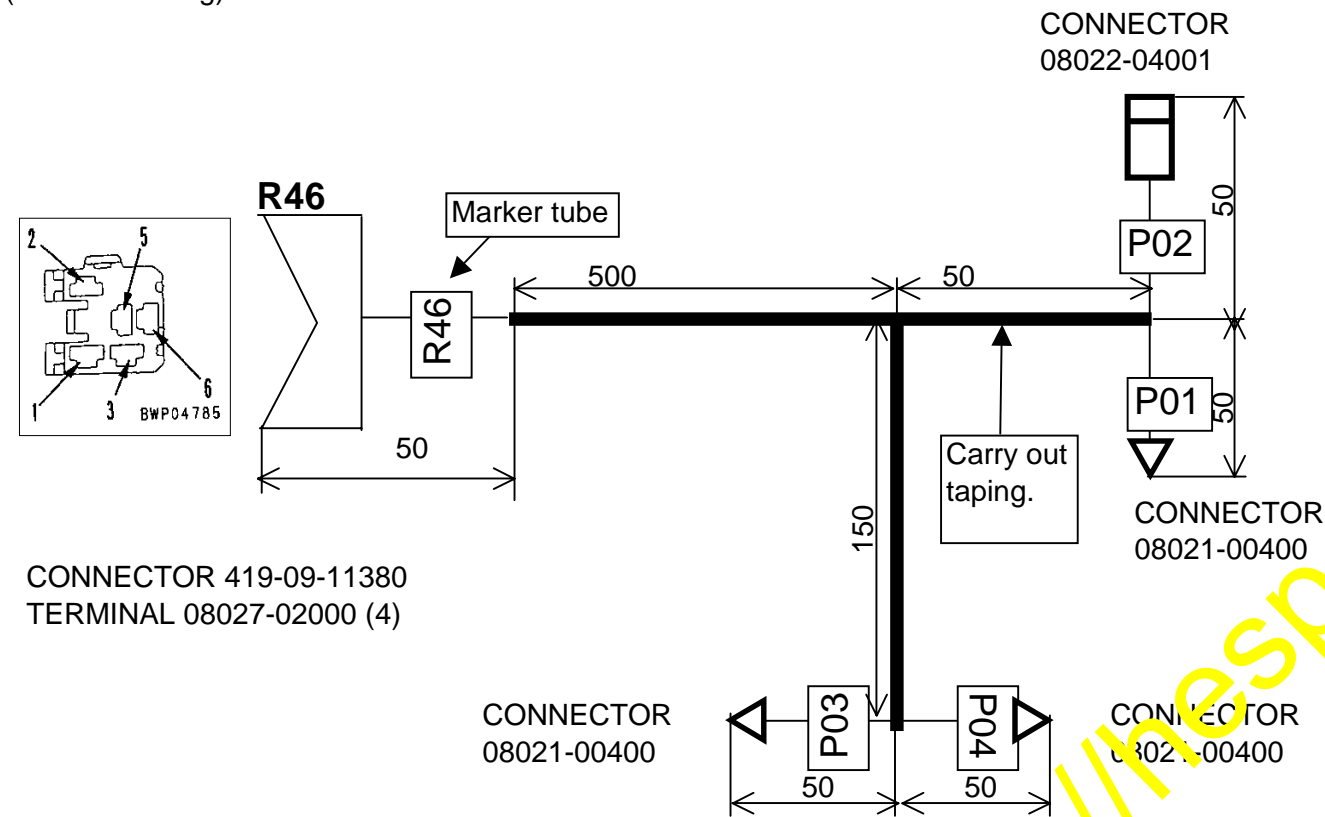
HM300-1 : #1016 -

HM350-1 : #1032 -

HM400-1 : #1055 -

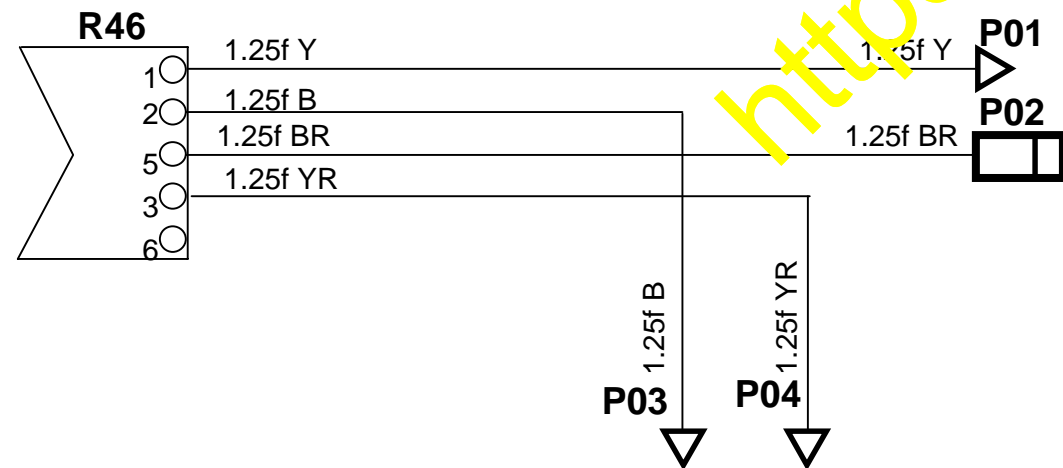
Even if the Serial No. of the vehicle is applicable as above, check that the step relay is attached on the actual vehicle before starting this modification work. (Refer to Section [2] on page 8 for details.)

(Sketch drawing)



CONNECTOR 419-09-11380  
TERMINAL 08027-02000 (4)

(Wiring diagram)



\* The actual wire colors can be different from the above designation.

Fig. 3

1. Details of the modification

1) The head lamp switch is to be changed to an improved one with increased durability.

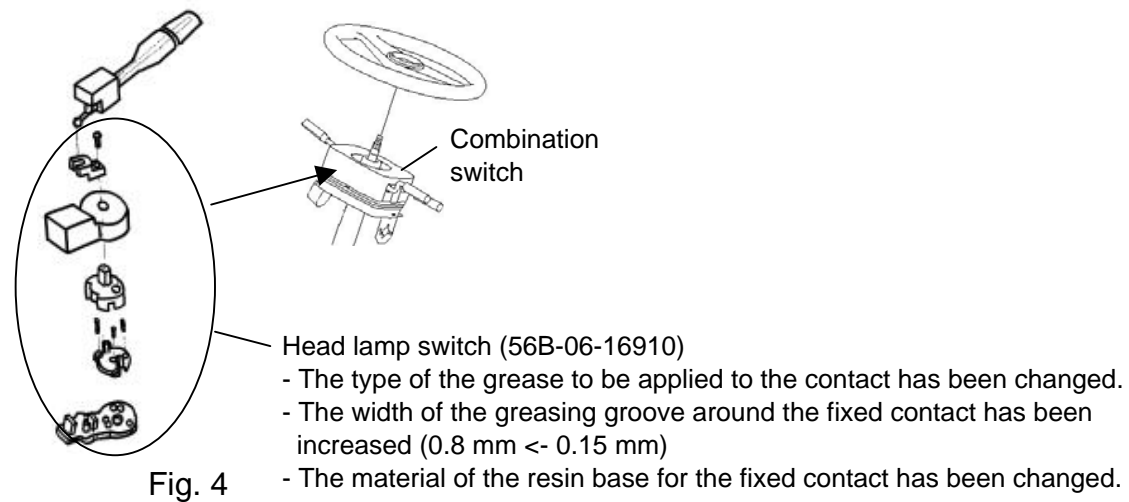


Fig. 4

(Identification method of the new parts and current parts)

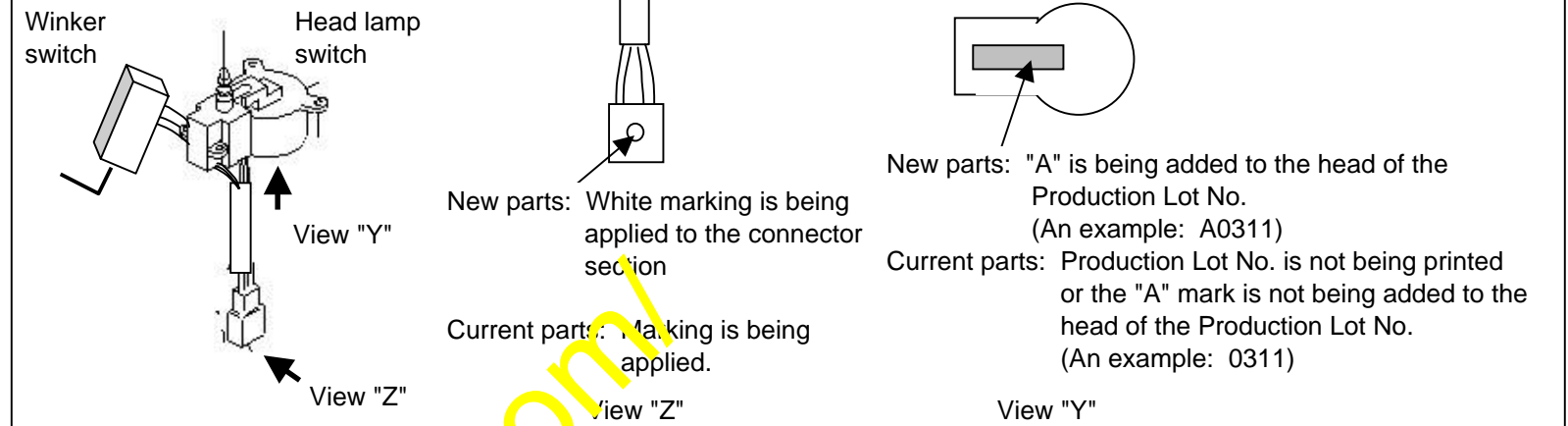


Fig. 5

2) Since the current capacity of the head lamp switch is insufficient, the head lamp circuit is to be modified to reduce the electric current flowing through the contact. (Refer to the circuit diagram shown below for details.)

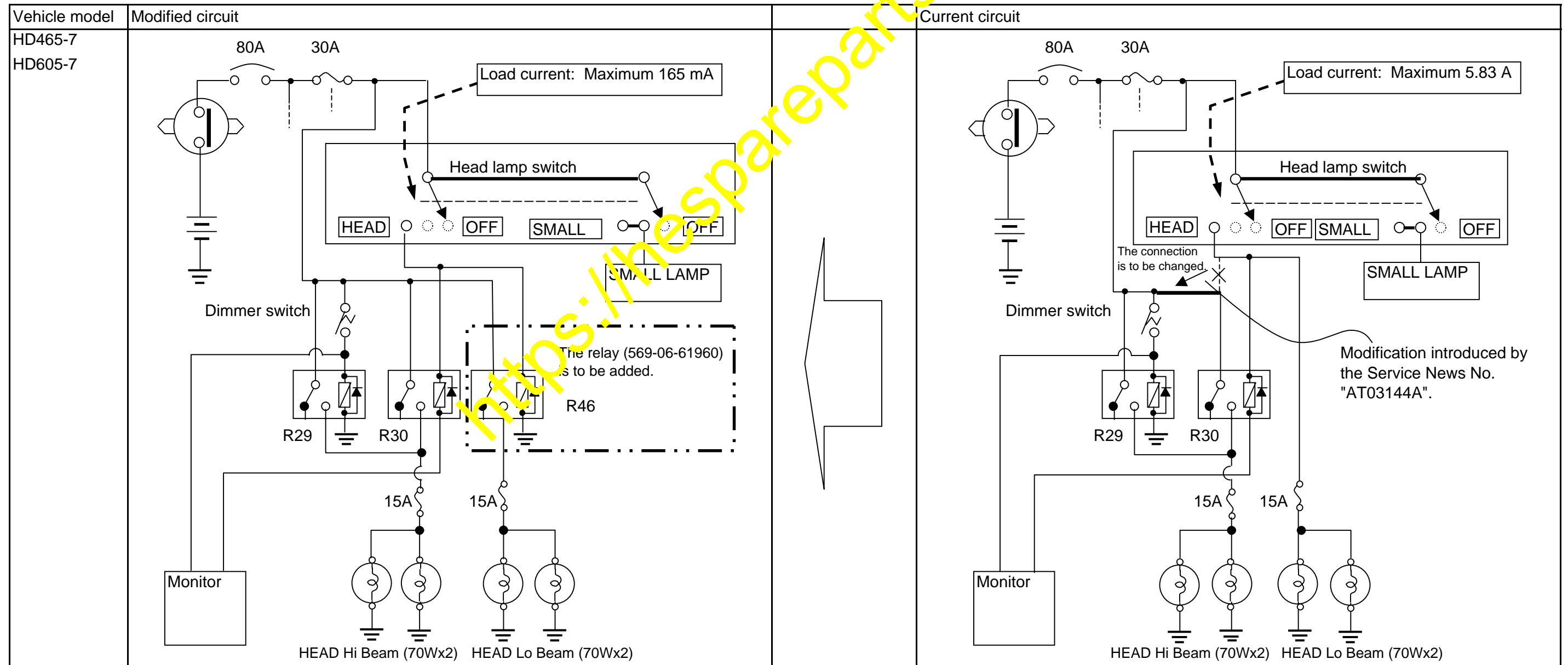


Fig. 6

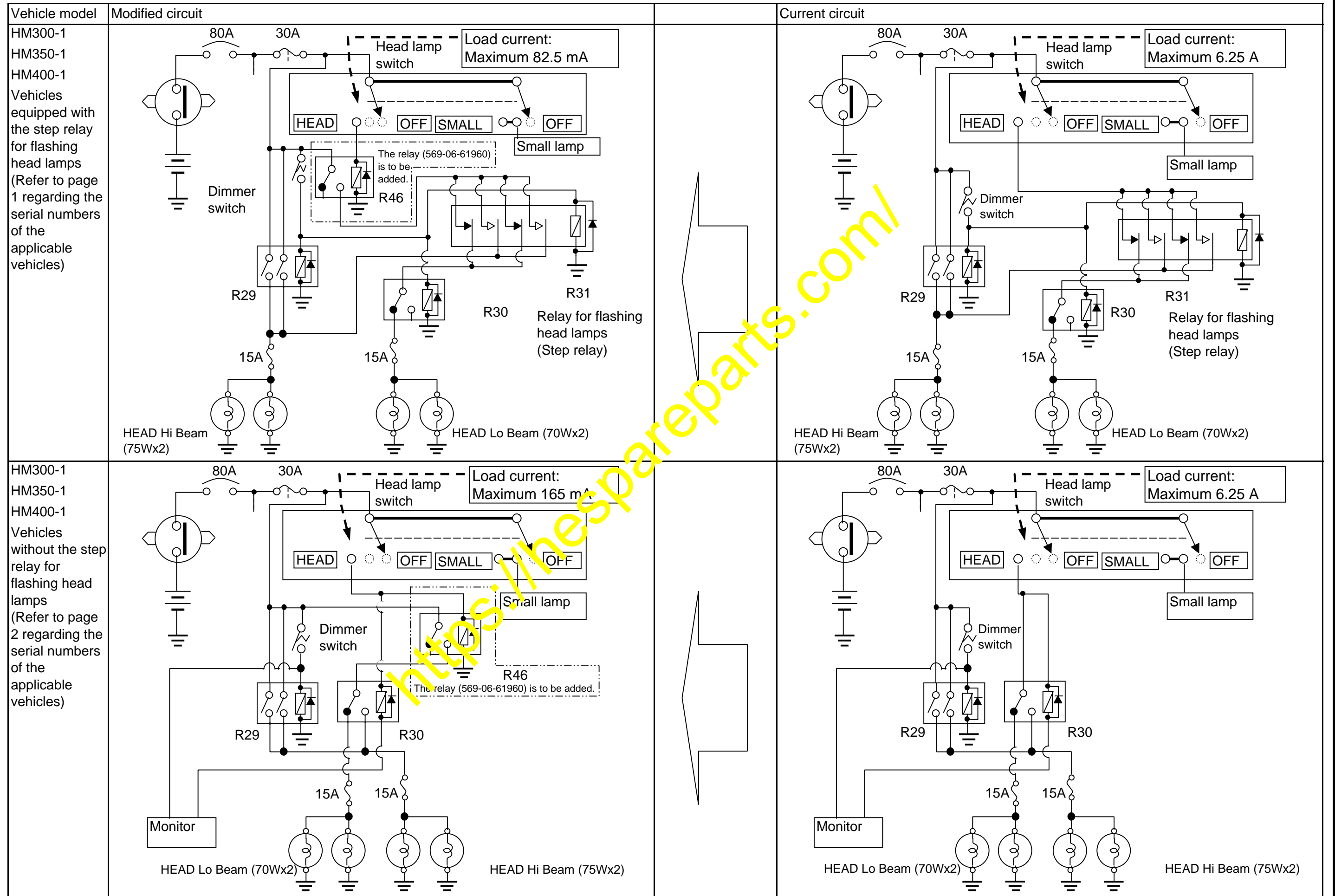


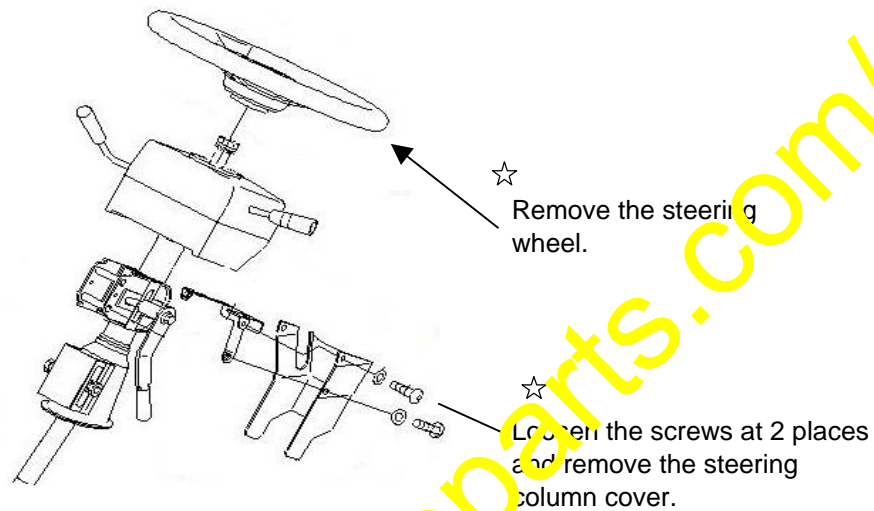
Fig. 7

## 2. Modification procedure

Park the vehicle and apply chocks if the vehicle is equipped with the chocks. After that, carry out the modification work as per the following processes.

### [1] Replacing the head lamp switch

Process 1) Remove the steering wheel and the steering column cover.



Since those parts which are marked ☆ in the processes described hereafter will be reused, be careful for their drop.

Fig. 8

Process 2) Disconnect the connectors of the combination switch and remove the combination switch.

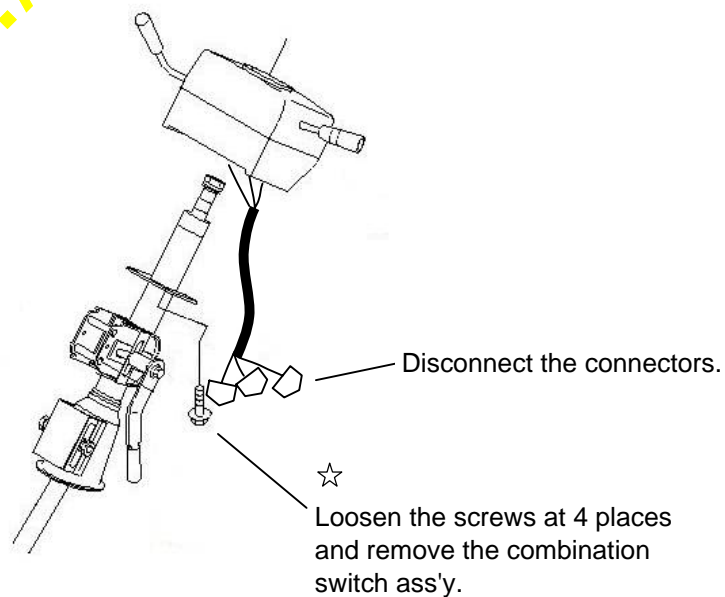
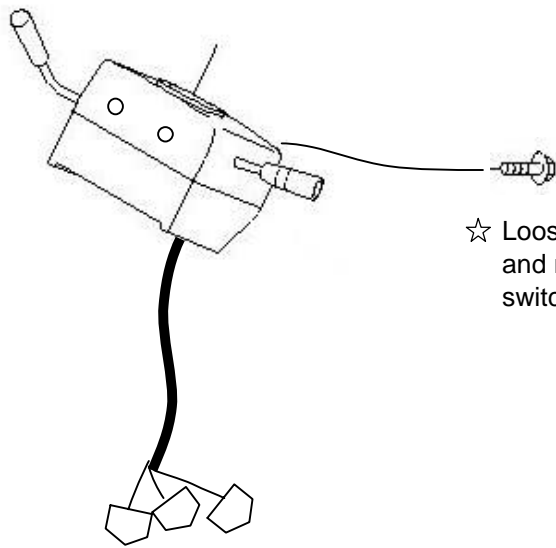


Fig. 9

Process 3) Remove the cover of the combination switch ass'y.



☆ Loosen the screws at 4 places and remove the combination switch cover.

Fig. 10

Process 4) Remove the light switch lever ass'y so that the turn switch ass'y may be seen.

☆ Loosen the screws (3 places) and remove the plate which fixes the switch ass'y.



☆ Detent ball and spring for the turn signal

Fig. 11

Since the detent ball and spring will drop off while carrying out the above removal work, be careful not to lose them.

Process 5) Open the harness clamp and the conduit to separate the wires.

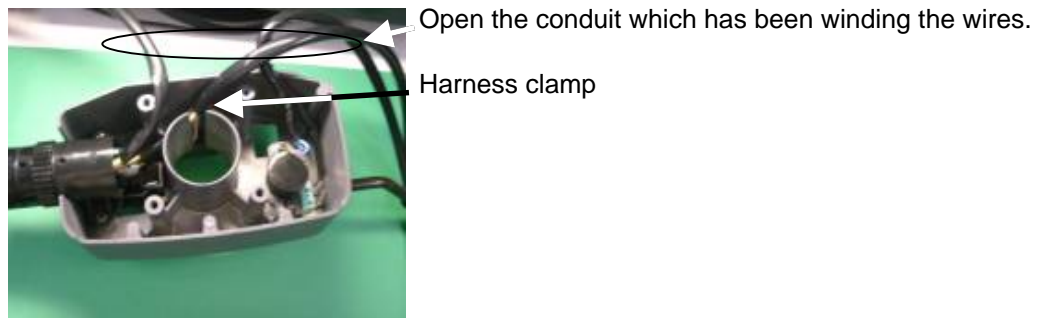
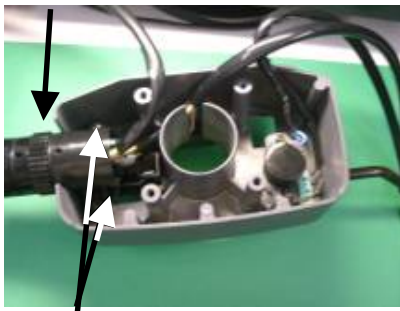


Fig. 12

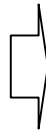


Process 6) Remove the wiper switch so that the lighting switch may be seen.

☆ Wiper switch



Lighting switch



☆ Loosen the screws (2 places) and remove the wiper switch.

Fig. 13

Process 7) Remove the lighting switch and the turn signal switch and replace them with the improved new switches.

(Front side of the switch)



(Rear side of the switch)



☆ Loosen the screws (3 places) and remove the turn signal switch.

☆ Loosen the screws (4 places) and remove the lighting switch.



Replace the lighting switch ass'y with the new lighting switch ass'y.  
New lighting switch ass'y: 56B-06-16910  
↑  
(Newly registered spare part number)

Fig. 14

Process 8) Install the lighting switch ass'y in the reversed procedure to the removal procedure as per the Process 4) through Process 7).

Note 1) When installing the new lighting switch ass'y as a replacement, align the position of the switch lever and the position of the lighting switch.

Put the lever to the small lamp position.



Fig. 15

Position the switch at the intermediate position.

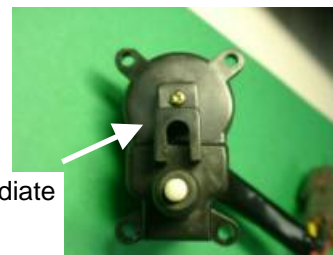


Fig. 16

Process 9) Install the combination switch to the steering column and connect the connectors.

Process 10) Reinstall the covers and the steering wheel.

[2] Using the arranged connectors, make the additional harness.

(Refer to pages 1 and 2 regarding the shape of the harness and the circuit for each vehicle model.)

In case of the HM300-1 thru HM400-1, the additional harness to be made as above and the modification procedure per the following Section [3] become different depending on if the step relay for flashing head lamps is attached or not.

Although the serial numbers of vehicles equipped with or without the step relay for flashing head lamps are shown on pages 1 and 2, check that the step relay is on the actual vehicle by removing the dashboard cover before starting this modification work. (Refer to Fig. 39 regarding the arrangement of the relays.)

[3] Connect the newly made out additional harness to the floor harness and add the relay to the head lamp circuit.

HD465-7/HD605-7: Refer to pages 8 thru 12

HM300-1 thru HM400-1 being equipped with the step relay for flashing head lamps:

Refer to pages 13 and 14.

HM300-1 thru HM400-1 without the step relay for flashing head lamps: Refer to pages 15 thru 17.

[HD465-7/HD605-7]

Regarding the vehicles of the serial numbers applicable to the modification per the Service News No. AT03144A issued in October 2003 "Modification of lamp switch harness on HD465-7 and HD605-7", the Process 1) thru Process 3) will become necessary only in case the modification per the Service News No. AT03144A has not yet been implemented. The Process 1) thru Process 3) will not be necessary in other cases than the above.

(The Process 1) thru Process 3) will be the same as the modification introduced by the Service News No. "AT03144A".)

- Vehicles with other serial numbers than those which are shown below:

The Process 1) thru Process 3) are not necessary.

- Among the vehicles with the serial numbers shown below, those vehicles which have been already modified as per the Service News No. AT03144A:

The Process 1) thru Process 3) are not necessary.

- Among the vehicles with the serial numbers shown below, those vehicles which have not yet been modified as per the Service News No. AT03144A:

The Process 1) thru Process 3) are necessary and they must be carried out before going into the remaining Processes.

(Serial numbers of the vehicles applicable to the modification per the Service News No. AT03144A.)

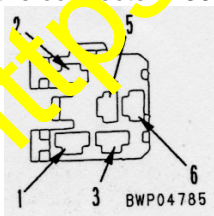
HD465-7 : #7001 - #7069, #7071 - #7120, #7127 - #7138, #7155 - #7167

HD605-7 : #7001 - #7052, #7062 - #7069

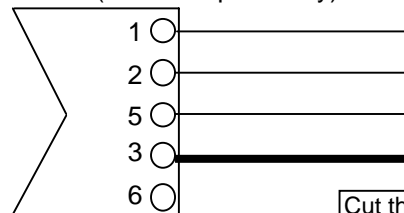
Process 1) Cut the wire connecting to the No. 3 pin of the relay connectors R30 and R29 of the floor harness.

(Refer to Fig. 26 and Fig. 29 regarding the arrangement of the relays.)

Contact surface of the connector R30

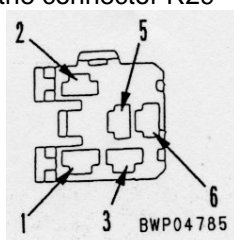


R30 (Head lamp Hi relay)

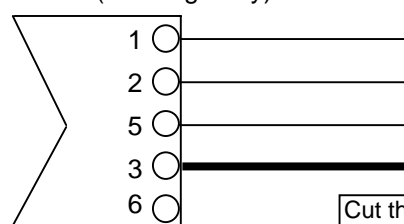


Cut the wire at a point near the connector R30 (at a point of 30 mm - 50 mm from the connector R30) using a nipper.

Contact surface of the connector R29



R29 (Passing relay)



Cut the wire at a point near the connector R29 (at a point of 30 mm - 50 mm from the connector R29) using a nipper.

Fig. 17

Process 2) Connect the cut wire using the connector as per the instructions given in the connection diagram shown below.

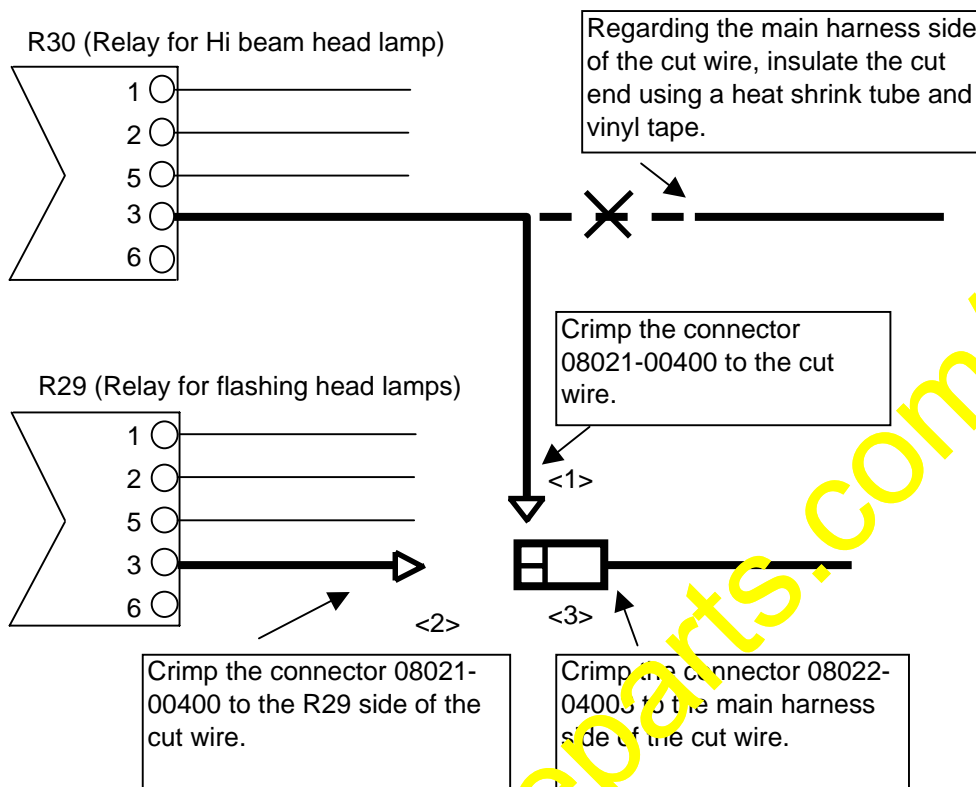


Fig. 18

Process 3) Connect the connector <1> and connector <2> to the connector <3> which has been crimped to the main harness side of the cut wire.

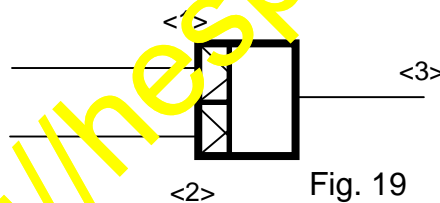


Fig. 19

Process 4) Cut the BT1-7 of the floor harness fuse box and connect the connector as per the instructions given below.

(Refer to Fig. 26, Fig. 27 and Fig. 28 regarding the fuse arrangement and fuse engagement.)

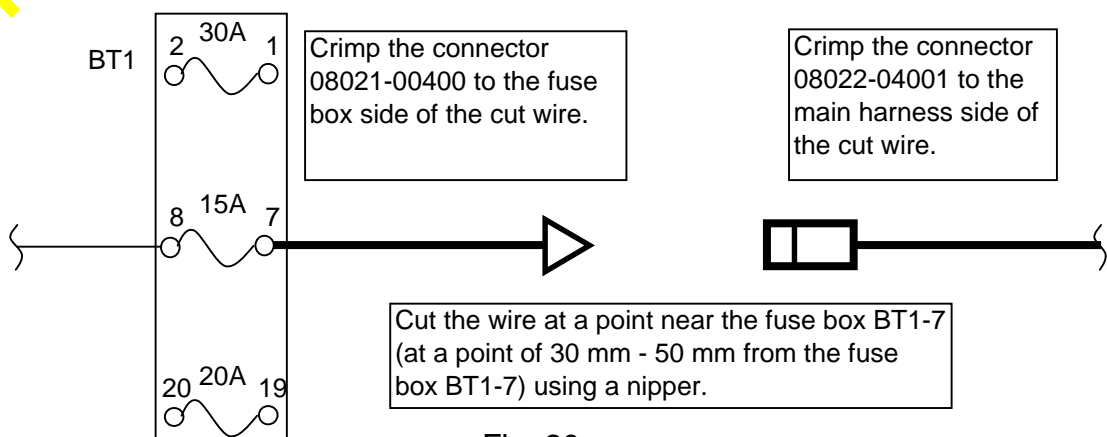


Fig. 20

Process 5) Connect the connector P01 and the connector P02 of the harness (569-99-81590) which has been made out additionally as per Fig. 21.

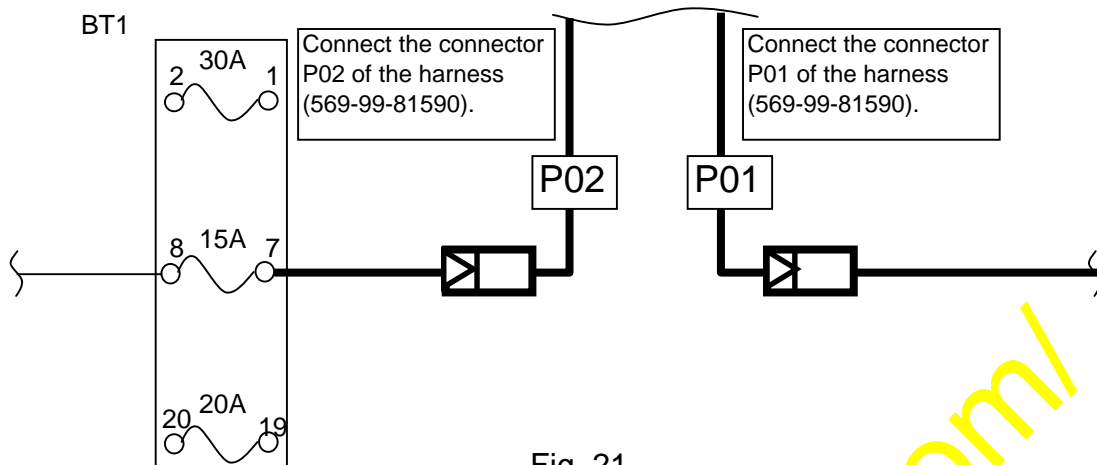
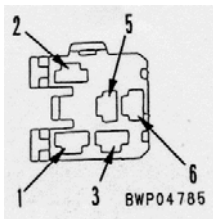


Fig. 21

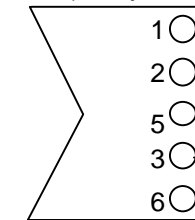
Process 6) Cut the wire connecting to the No. 2 pin of the relay connector R29 of the floor harness.

(Refer to Fig. 26 and Fig. 29 regarding the arrangement of the relays.)

Contact surface of the connector R29



R29 (Relay for flashing head lamps)

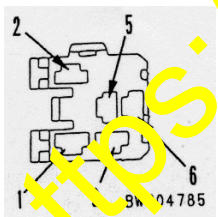


Cut the wire at a point near the connector R29 (at a point of 30 mm - 50 mm from the connector R29) using a nipper.

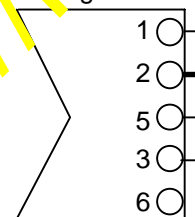
Fig. 22

Process 7) Crimp the connector to the cut wire for flashing head lamps branching as shown in Fig. 23.

Contact surface of the connector R29



R29 (Relay for flashing head lamps)



Crimp the connector 08022-04003 to the R29 side of the cut wire.

Crimp the connector 08021-00400 to the main harness side of the cut wire.

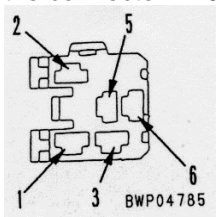
Connect the connector P03 of the harness (569-99-81590) to the crimped connector as above.

P03

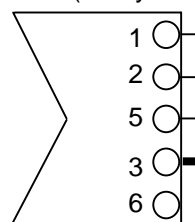
Fig. 23

Process 8) Cut the wire connecting to the No. 3 pin of the relay connector R29.

Contact surface of the connector R29



R29 (Relay for flashing head lamps)



\* The connector which was added when the modification per Service News AT03144A was carried out.

Fig. 24

Process 9) Crimp the connector to the cut wire for branching as shown in Fig. 25.

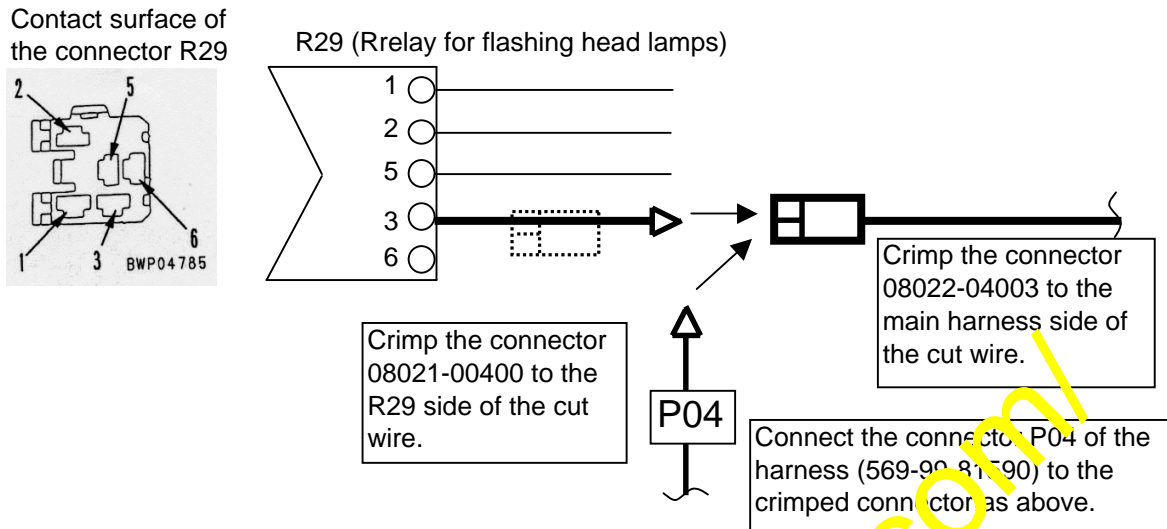


Fig. 25

Process 10) After leading the additional harness along the floor main harness, wind the tape around to fix it.

Process 11) Install the relay connector (R46) to the bracket and connect the relays.  
(Refer to Fig. 29 regarding the arrangement of the relays.)

Process 12) Operate the head lamp switch and the dimmer switch to confirm that the Hi beam and Lo beam changeovers of the head lamp and the operations of the breadth lamps, tail lamps and the rear lamps are normal.

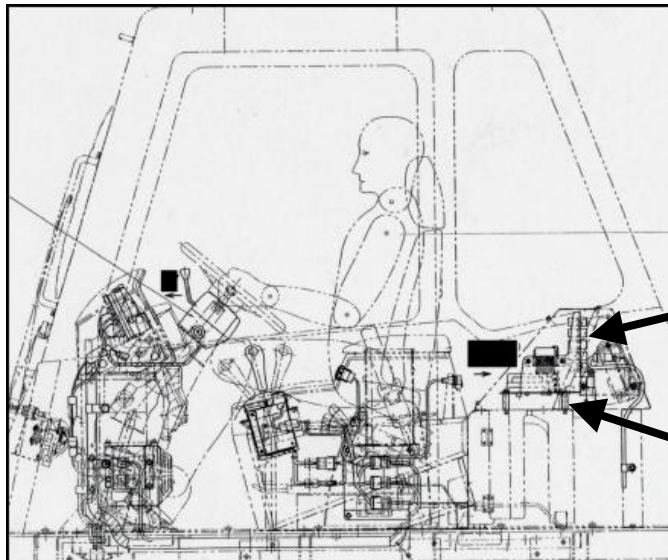


Fig. 26 Positions of the relays and the fuse boxes

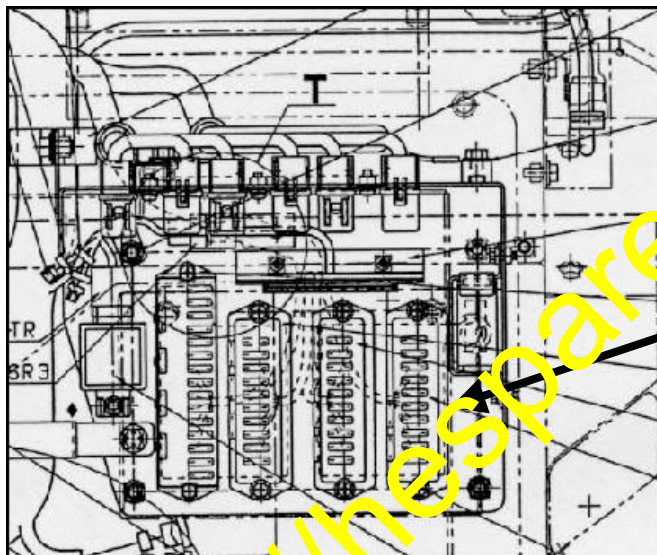


Fig. 27 Arrangement of the fuse boxes

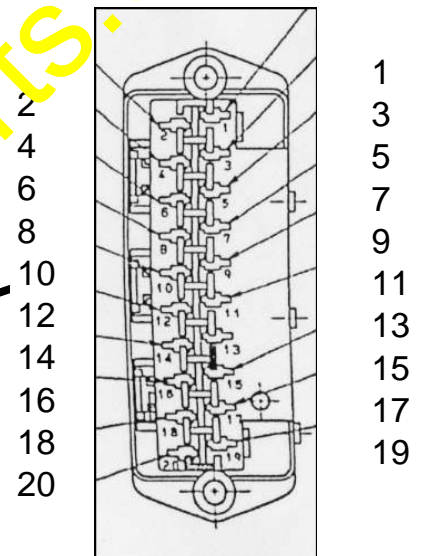


Fig. 28 Wiring of the fuse box BT1

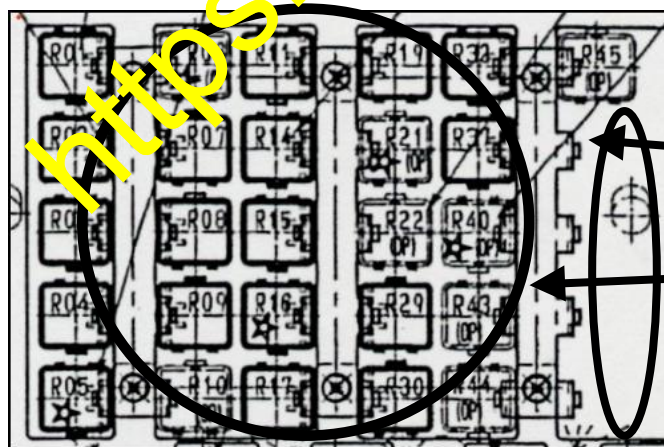


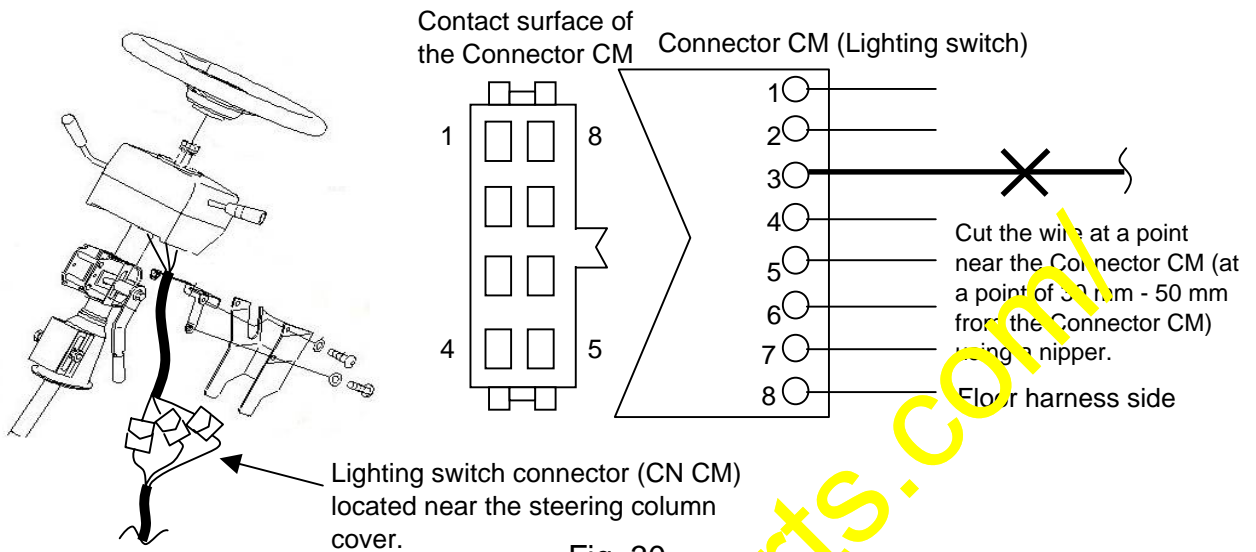
Fig. 29 Arrangement of the relays

Mount the additional relay at the open space on the optional relay mounts.

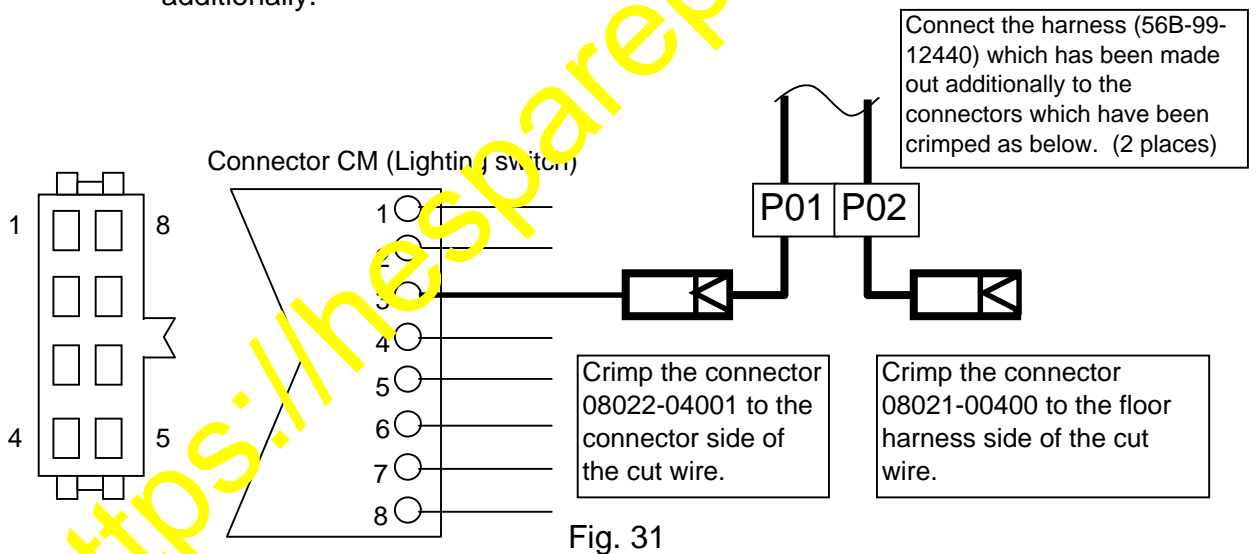
Check the relay connector numbers (R29 and R30) with the marker tube before starting this modification work.

[In case of HM300-1 thru HM400-1 articulated dump trucks equipped with the passing step relay]

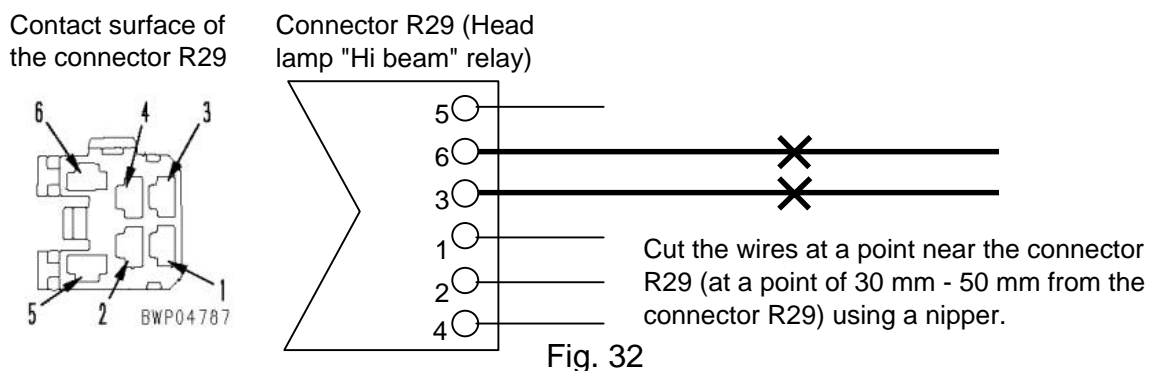
Process 1) Cut the wire connecting to the No. 3 pin on the floor harness side of the lighting switch connector (CN CM).



Process 2) Crimp the connector to the cut wire connecting to the No. 3 pin of the connector (CN CM) and connect the harness (56B-99-12440) which has been made out additionally.



Process 3) Cut the wires connecting to the No. 3 pin and to the No. 6 pin of the relay connector R29 inside the relay box located behind the operator's seat. (Refer to Fig. 40 regarding the arrangement of the relays.)



Process 4) Crimp the connectors to the cut wires and connect the connectors of the harness which has been made out additionally for branching as shown in Fig. 33.

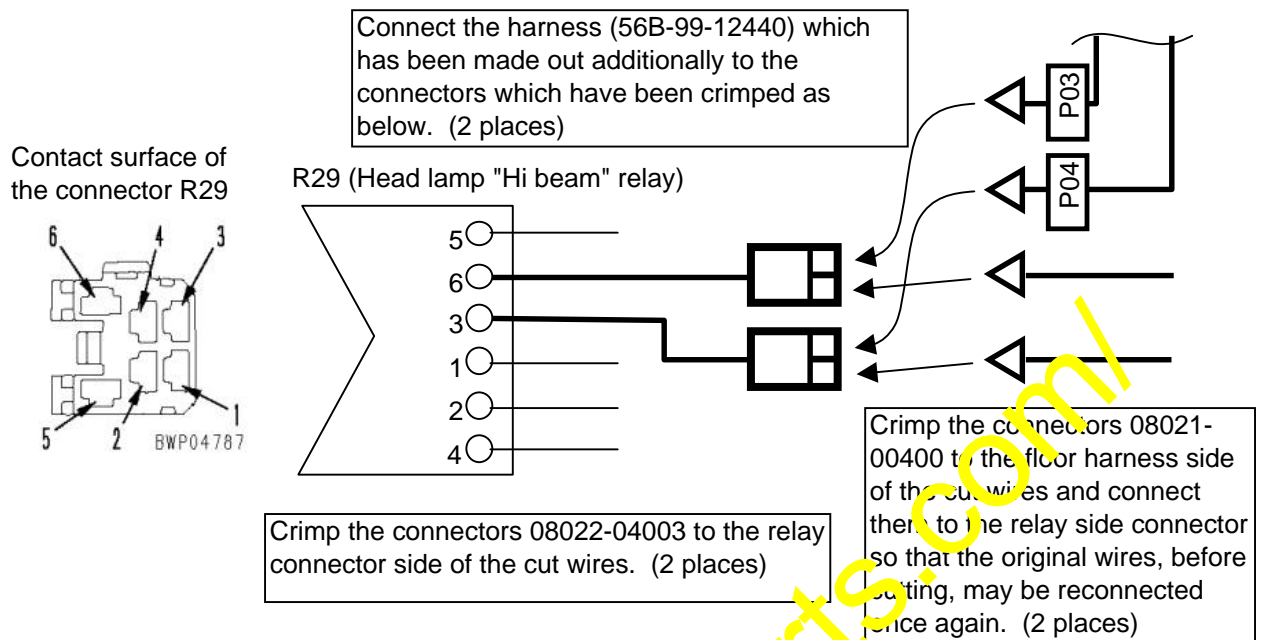


Fig. 33

Process 5) After leading the additional harness along the floor main harness, wind the tape around to fix it.

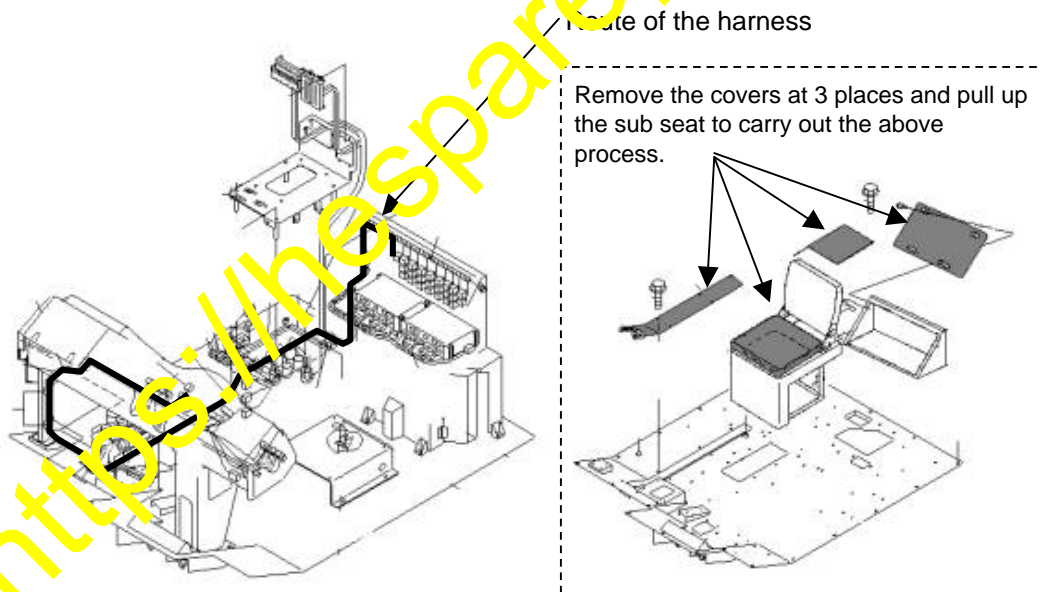


Fig. 34

Process 6) Install the relay bracket (56B-06-16330), install the connector (R46) to the bracket and, after that, connect the relays. (Refer to Fig. 40 regarding the arrangement of the relays.)

Process 7) Operate the head lamp switch and the dimmer switch to confirm that the Hi beam and Lo beam changeovers of the head lamp and the operations of the breadth lamps, tail lamps and the rear lamps are normal.

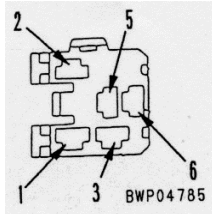
Process 8) Reinstall the covers to their original positions.



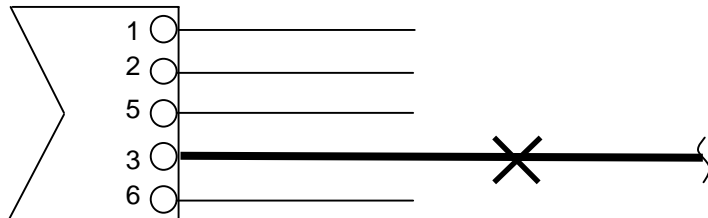
[In case of HM300-1 thru HM400-1 articulated dump trucks without the passing step relay]

Process 1) Cut the wires connecting to the No. 3 pin of the relay connector R30 inside the relay box located behind the operator's seat. (Refer to Fig. 40 regarding the arrangement of the relays.)

Contact surface of the connector R30



Connector R30 (Head lamp "Lo beam" relay)

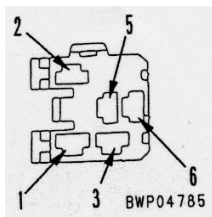


Cut the wire at a point near the connector R30 (at a point of 30 mm - 50 mm from the connector R30) using a nipper.

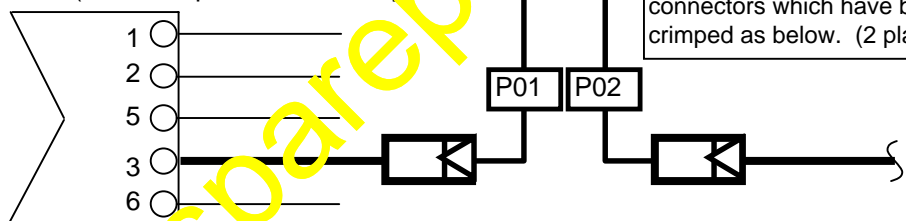
Fig. 35

Process 2) Crimp the connector to the cut wire and connect the connectors of the harness (56B-99-12450) which has been made out additionally for branching as shown in Fig. 36.

Contact surface of the connector R30



R30 (Head lamp "Lo beam" relay)



Connect the harness (56B-99-12450) which has been made out additionally to the connectors which have been crimped as below. (2 places)

Crimp the connector 08022-04001 to the relay connector side of the cut wires. (2 places)

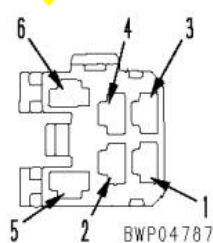
Crimp the connector 08021-00400 to the floor harness side of the cut wire.

Fig. 36

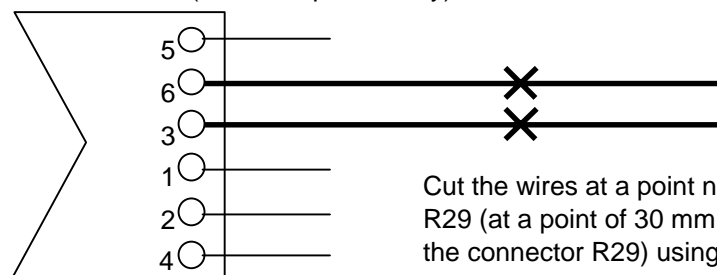
Process 3) Cut the wires connecting to the No. 3 pin and to the No. 6 pin of the relay connector R29.

(Refer to Fig. 40 regarding the arrangement of the relays.)

Contact surface of the connector R29



Connector R29 (Head lamp "Hi" relay)



Cut the wires at a point near the connector R29 (at a point of 30 mm - 50 mm from the connector R29) using a nipper.

Fig. 37

- Process 4) Crimp the connectors to the cut wires coming from the relay connector R29 and connect them with the connectors of the harness which has been made out additionally as shown in Fig. 38.

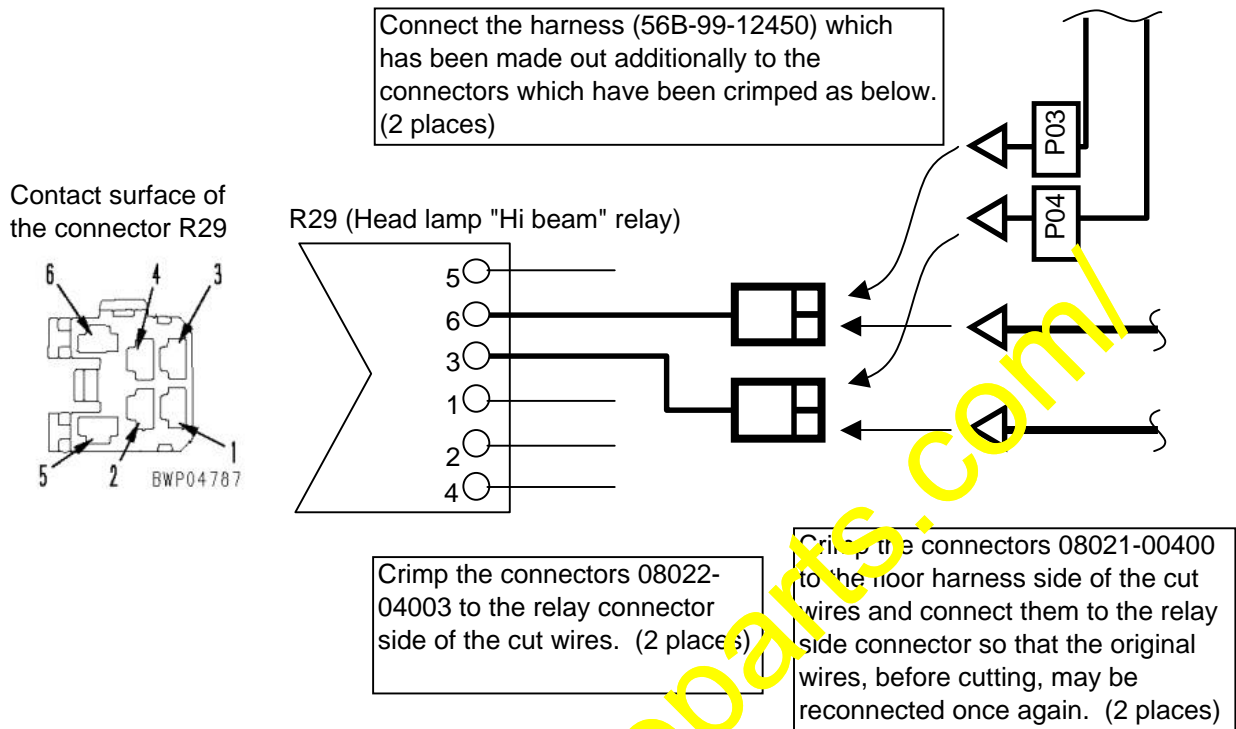


Fig. 38

- Process 5) After leading the additional harness along the floor harness, wind the tape around to fix it.
- Process 6) Install the relay bracket (56B-06-16330), install the connector (R46) to the bracket and, after that, connect the relays. (Refer to Fig. 40 regarding the arrangement of the relays.)
- Process 7) Operate the head lamp switch and the dimmer switch to confirm that the Hi beam and Lo beam changeovers of the head lamp and the operations of the breadth lamps, tail lamps and the rear lamps are normal.

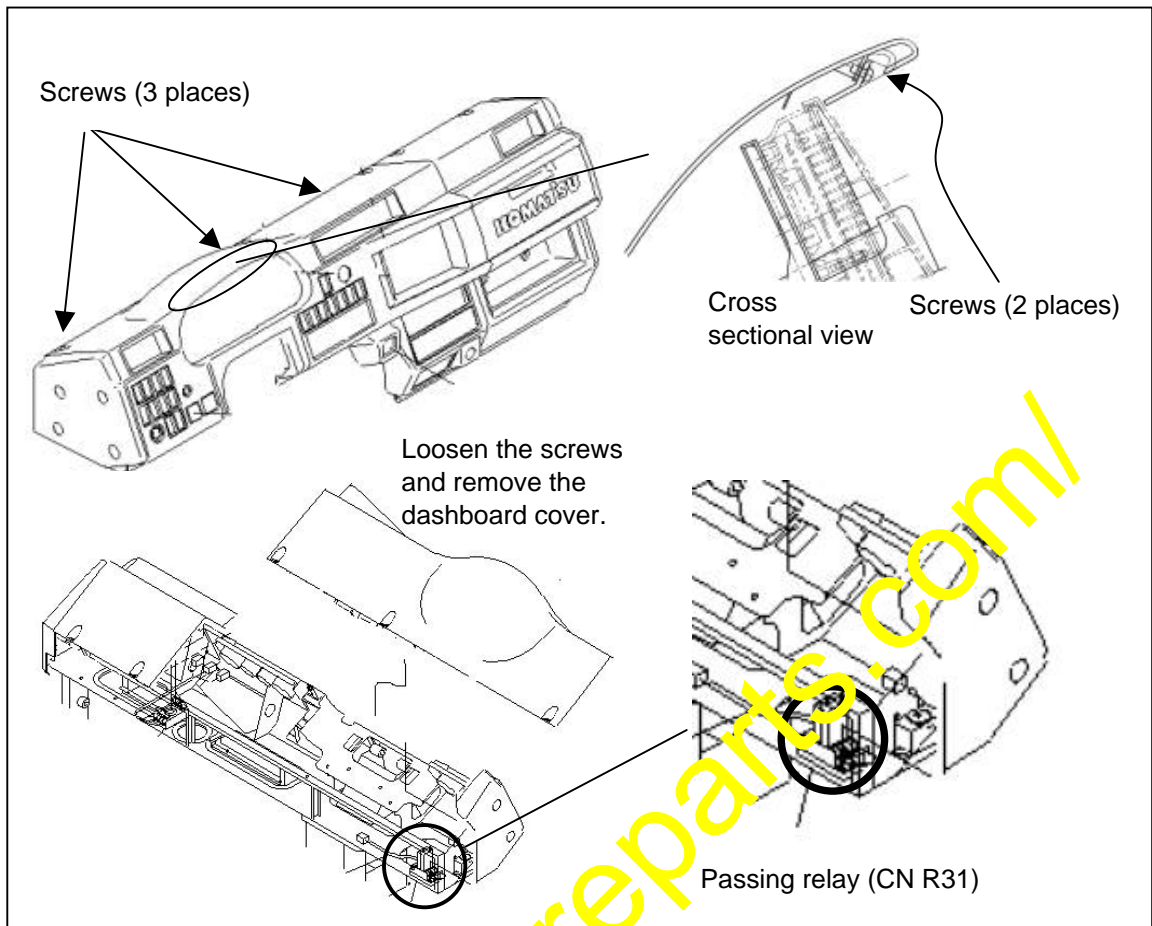


Fig. 39 Arrangement drawing of the passing relay (R31)



Relay mount  
Check the relay connector numbers (R29 and R30) with the marker tube before starting this modification work.

Mount the additional relay at the open space on the optional relay mounts. If necessary, use the ordered bracket (56B-06-16330).

Fig. 40 Arrangement drawing of the relays (inside the relay box located behind the operator's seat)