

# PARTS & SERVICE NEWS

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This PARTS & SERVICE NEWS supersedes the previous issue No. AT98159 dated Aug. 21, 1998 which should be discarded.

**SUBJECT:** IMPROVEMENT OF JOYSTICK STEERING

**PURPOSE:** To introduce modification procedures to prevent malfunctioning of the joystick steering system

**APPLICATION:** WA500-3 Wheel Loaders, S/N 50001 thru 50385  
 WA500-3L Wheel Loader, S/N A70415 and UP  
 WA600-1 Wheel Loader, S/N 10001 thru 11596  
 WA600-3 Wheel Loader, S/N 50001 thru 50061  
 WA600-3L Wheel Loader, S/N A52033 and UP  
 WA700-1 Wheel Loader, S/N 10001 thru 10139  
 WA700-1L Wheel Loader, S/N A20003 and UP  
 WA700-3 Wheel Loader, S/N 50001 thru 50003  
 WA800-1 Wheel Loader, S/N A20003 and UP  
 WA800-2 Wheel Loader, S/N 10001 thru 10131  
 WA800-2L Wheel Loader, S/N A20004 and UP  
 WA800-2LC Wheel Loader, S/N A20021 and UP  
 WA800-3 Wheel Loader, S/N 50001 thru 50004  
 WA900-1 Wheel Loader, S/N 10001 thru 10009  
 WA900-1L Wheel Loader, S/N A20001 and UP  
 WA900-1LC Wheel Loader, S/N A20010 and UP  
 WA900-3 Wheel Loader, S/N 50001 thru 50002

FAILURE CODE: 43A050

**DESCRIPTION:**

1. Introduction:

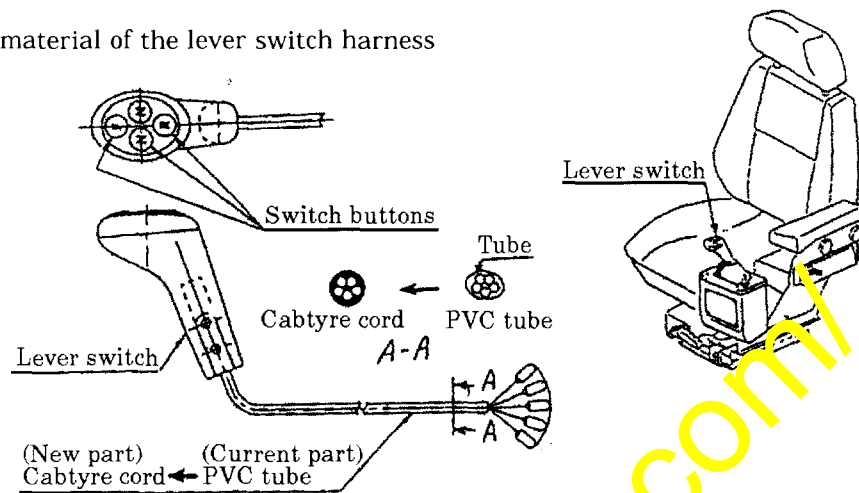
The joystick steering system on the above wheel loaders may malfunction. To prevent such malfunctioning, make the failure preventive modification following the procedures outlined in the PARTS AND SERVICE NEWS.

## 2. List of parts

Part No.	Part Name	Purpose of part	Q'ty	Remarks
427-S33-1162 (427-S33-1161)	Knob (Knob)	} Replacement	1 (-)	WA600-1 – WA900-1
425-S33-2341 (425-S33-2340)	Knob (Knob)		1 (-)	WA500-3 – WA900-3
* 08056-00611 (08056-00611)	Connector (Connector)		1 (1)	Consumable part (for Types "-1")
08034-20310	Band	Additional	2	
* 08056-00630 (08056-00630)	Rear holder (Rear holder)	} Replacement	1 (1)	Consumable part (for Types "-1")
428-S33-1611 (428-S33-1610)	Button (Button)		1 (1)	} Replacement parts to install to the upper sec- tion of the lever switch as independent spare parts.
428-S33-1640	Cover	} Additional	1	
428-S33-1630	Case		1	
428-S33-1620	Tape		1	
04050-12025 (04052-11253)	Cotter pin (Snap pin)	Replacement	2 (2)	
08017-31002	Conduit	Additional	1	Outer diameter ø 14.1 × 200mm (L)
* 08056-10830 (08056-10830)	Connector (Connector)	} Replacement	1 (1)	} Consumable part (for Types "-3")
* 08056-10811 (08056-10811)	Rear holder (Rear holder)		1 (1)	

## 3. Contents of the modification

## ① Changing the material of the lever switch harness

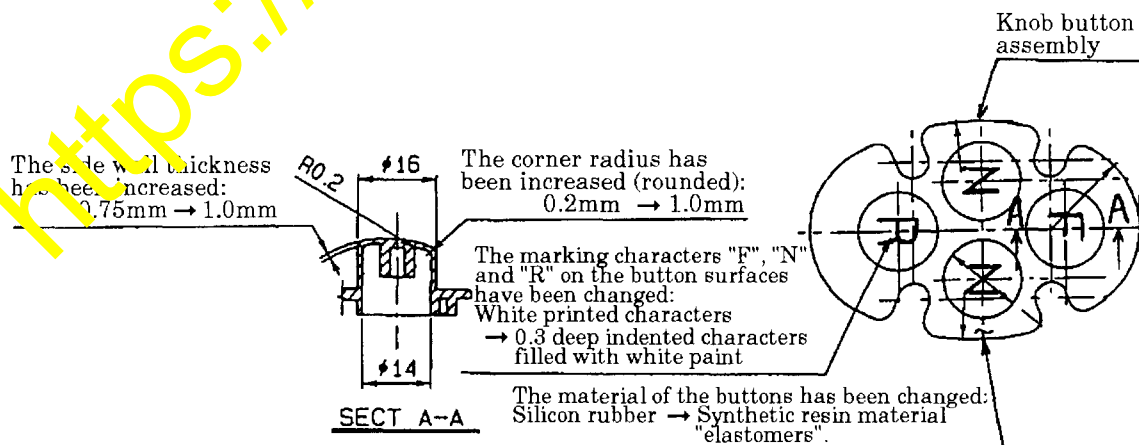


- The material of the lever harness has been changed to cabtyre cord that has superb bend-resistance and is less apt to cause habitual bends.

## ② Changing the knob-button assembly to the new assembly carrying improved durability against wear and breakage of the "F", "N" and "R" markings and switch buttons.

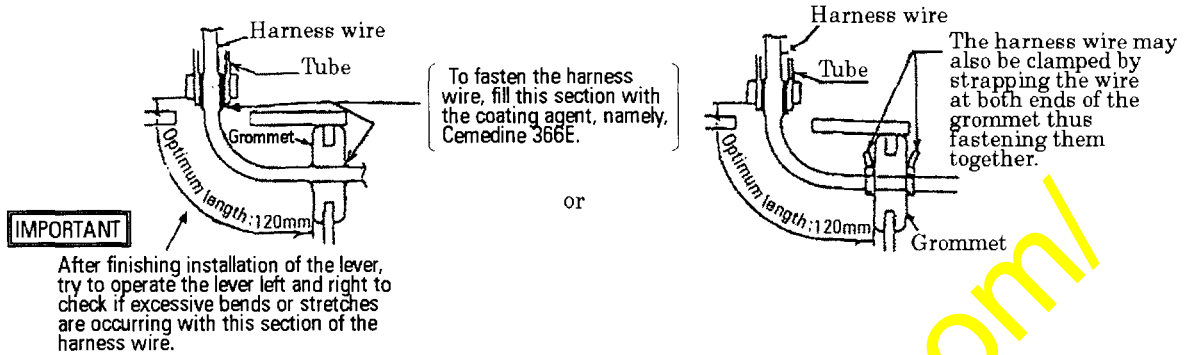
(Detailed modification contents)

- The printed characters "F", "N" and "R" on the button surfaces have been changed to indented characters filled with white paint.
- The material of the buttons has been changed from silicon rubber to synthetic resin material "elastomers."
- Wall thickness of the buttons has been changed.
  - The side wall thickness has been increased from 0.75mm to 1.0mm.
  - The corner radius has been increased (rounded) from 0.2mm to 1.0mm.

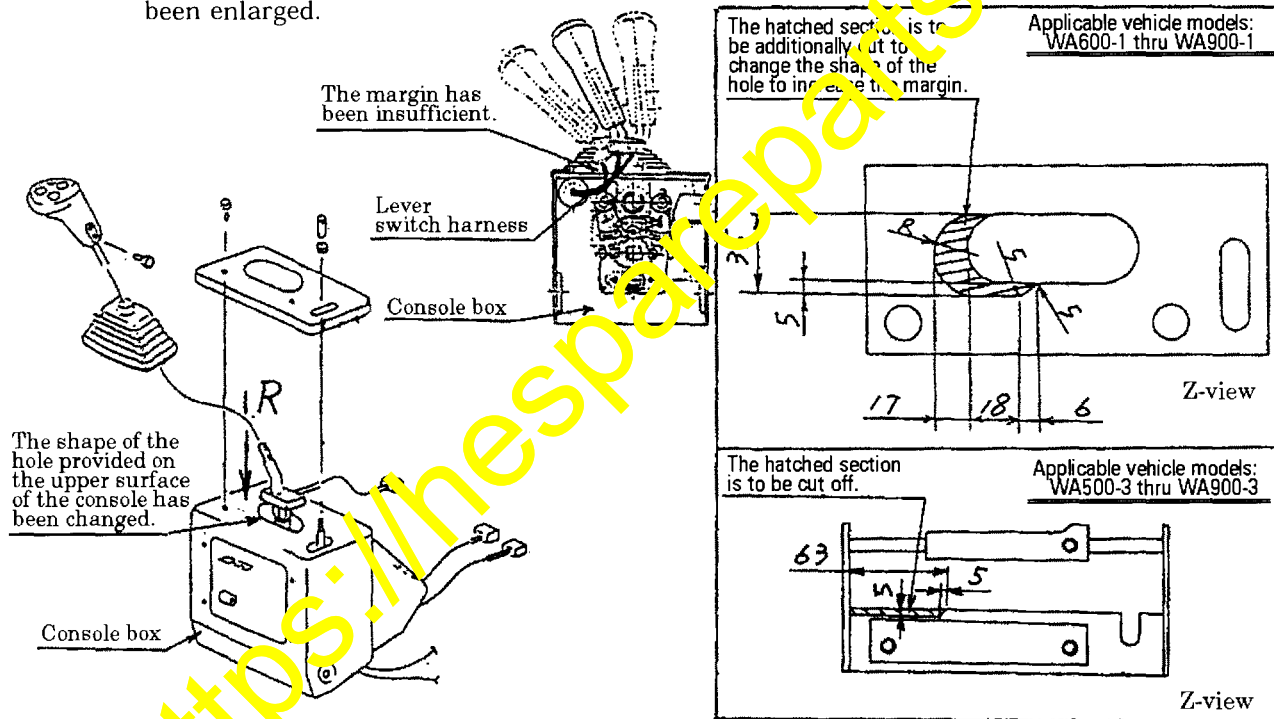


③ Supplementation of the clamping method choice for the lever switch harness wire

Another choice of the clamping method by strapping the harness wire at both ends of the grommet hole by gluing has been added to the current clamping method.



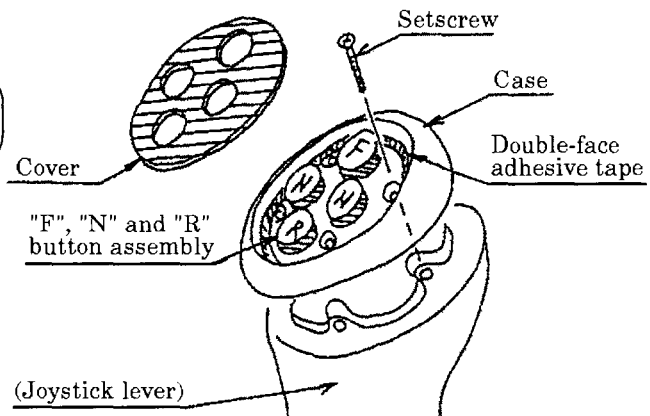
④ Since the margin between the outer peripheries of the lever switch harness wire and the hole provided in the upper surface of the console box has been insufficient, the hole has been enlarged.



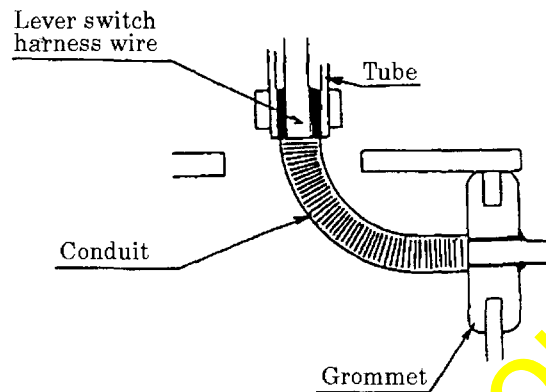
⑤ Supplementation of the "F", "N" and "R" button assembly replacement method choice for the lever switch

(The "F", "N" and "R" button assembly only can now be replaced.)

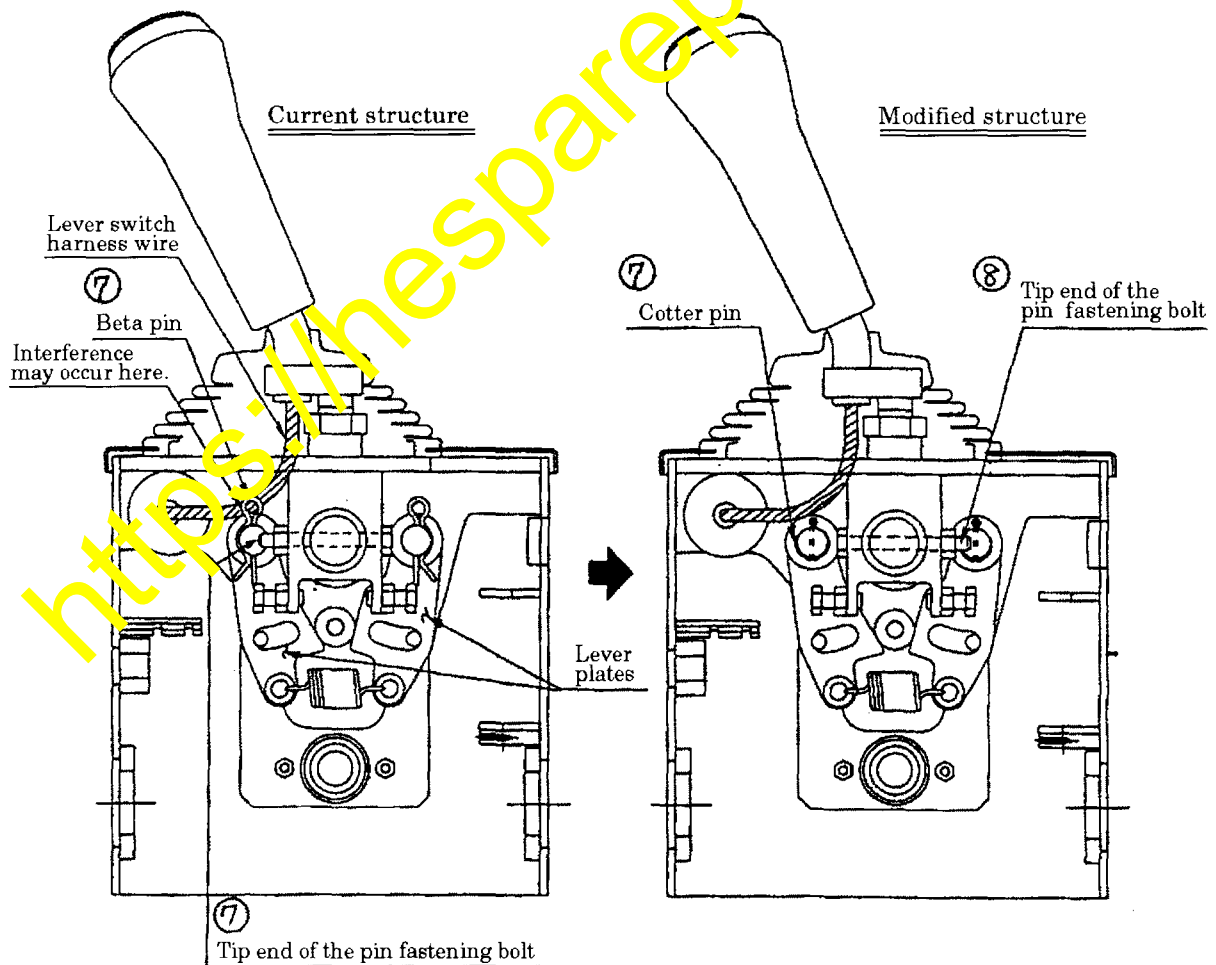
The button assembly replacement can also be made by changing the parts indicated in the schematic diagram at right.



- ⑥ An additional conduit has been supplemented to protect the lever switch harness.



- ⑦ To prevent occurrence of interference between the lever switch harness wire and the lever plate fastening beta-pin, the beta-pin has been changed to a cotter pin.
- ⑧ Since there is the possibility of interference between the lever switch harness wire and the tip end of the pin fastening bolt, depending on the dimensional dispersion or positioning dispersion, the bolting direction has been changed.



4. Modification procedures

① Replacing the lever switch

Replace the lever switch following the procedures outlined below.

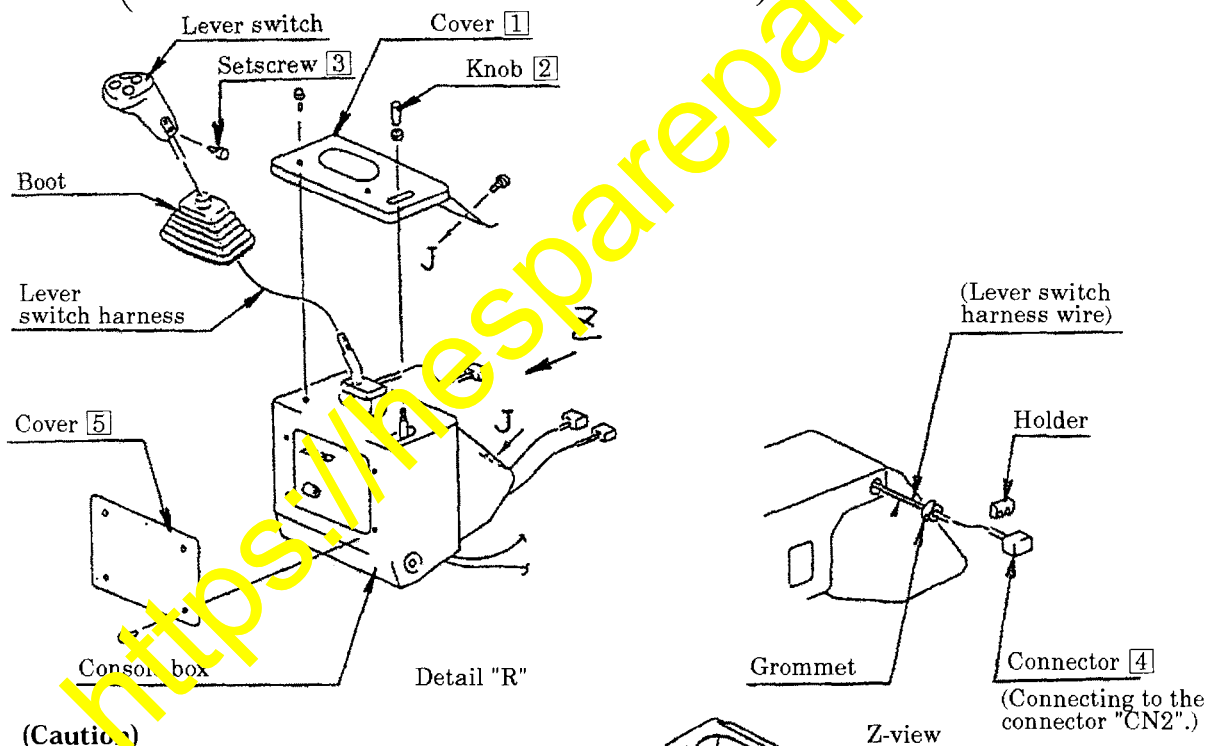
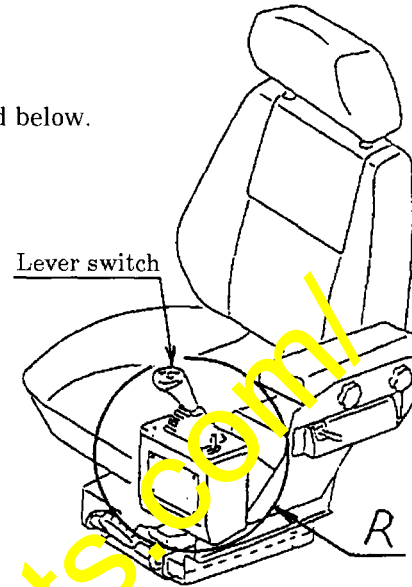
- (a) Remove the cover ① and the knob ② to check if the lever switch harness connector ④ is connected to the connector "CN2" before disconnecting from the harness.

(The lever switch harness connector ④ is connected to the connector "CN2".)

- (b) Pull out to remove all the terminals from the connector ④.

- (c) Unscrew the setscrew ③ for the lever switch to remove the lever switch from the console box.

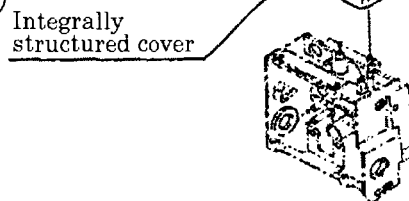
(The harness is integrally connected to the lever switch.)



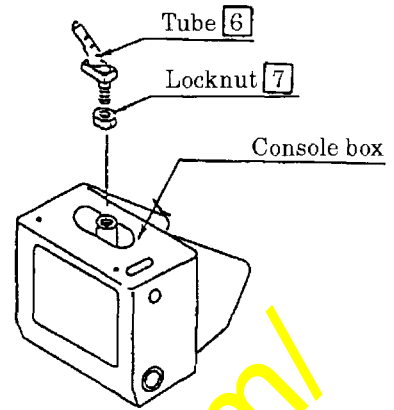
(Caution)

Cover ① and ⑤ on above detail "R" are integrally structured cover.

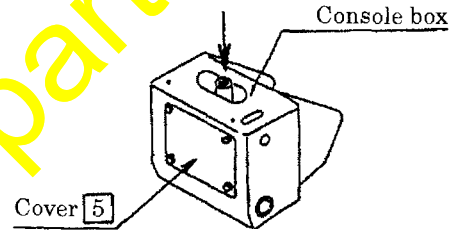
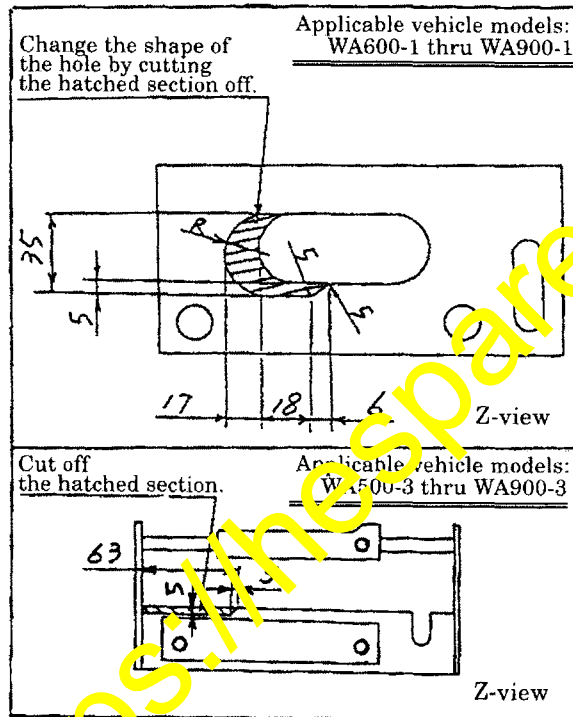
(Applicable vehicle models ;  
WA500-3 - WA900-3)



- (d) Remove the tube from the console box.  
 (Loosen the locknut [7] to remove the tube.)

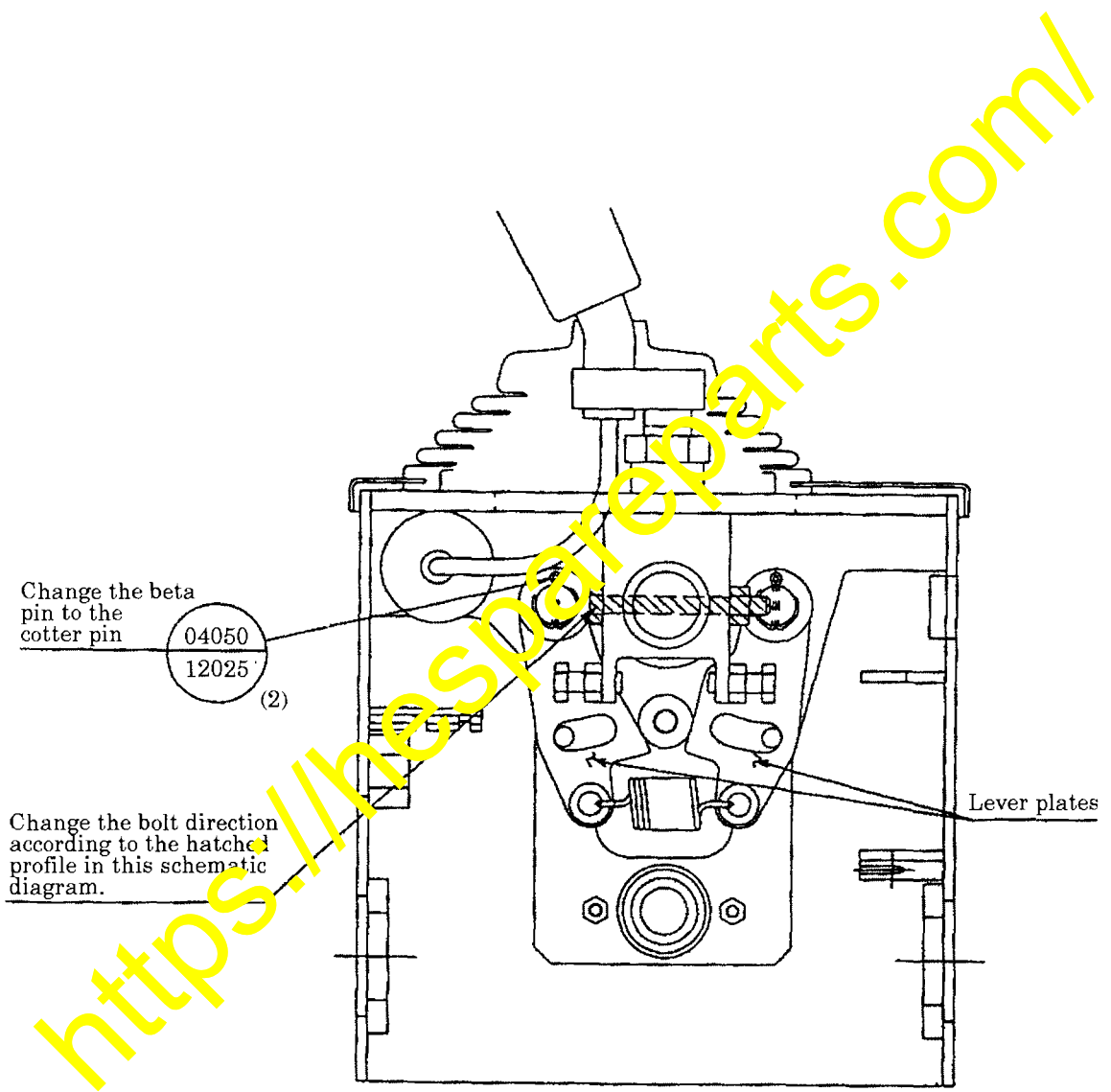


- (e) Enlarge the hole in the upper surface of the console box.  
 (Cut off the hatched sections shown in the drawing below.)



- (Note 1) When doing the above reworking to enlarge the hole, remove the cover [5] and be careful with the parts being installed inside the console box.  
 (After finishing this reworking, remove chips produced by the cutting process from inside the console box by air blowing.)
- (Note 2) All the parts other than the lever switch are reinstalled, so set them aside in a safe place during the work.

- (f) As shown in the schematic diagram given below, change the lever plate fastening pin to the cotter pin. (Beta pin → Cotter pin).  
Note: Bend the cotter pin as designated below.
- (g) Change the bolt direction according to the hatched profile in the schematic diagram given below.

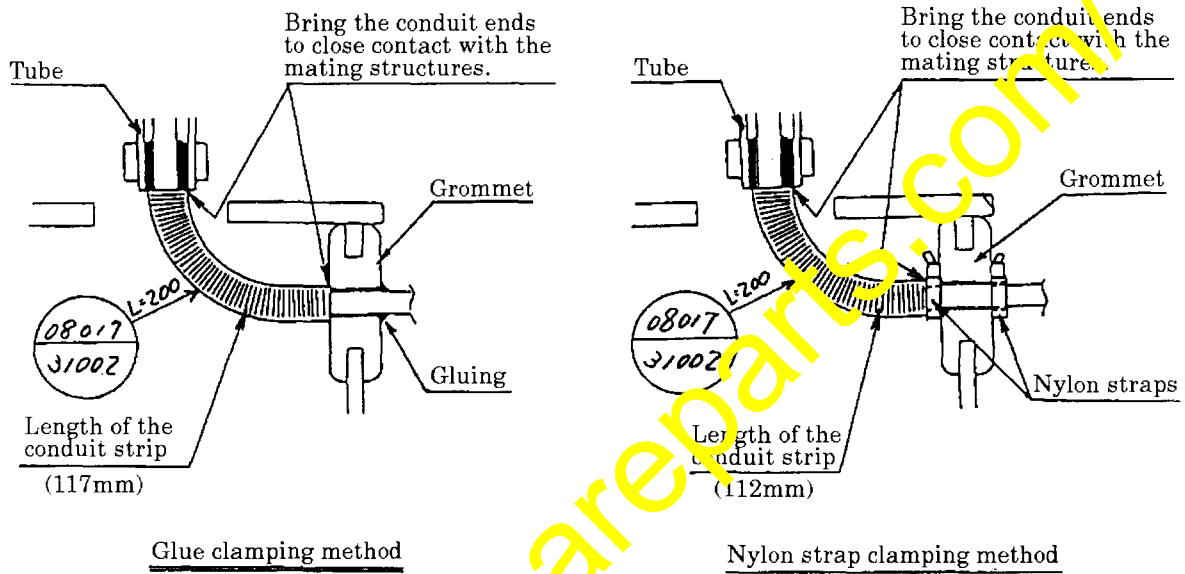




- (j) After clamping the lever switch harness (at the section between the tube and the grommet), cover the harness wire with a slit conduit strip. Fasten the conduit strip by tapping (triple winding) at its ends and in the intermediate section.

**Note:** Since the length of the conduit strip differs between the glue clamping method and the nylon strap clamping method, cut the conduit to the length designated in the schematic diagram for the desired clamping method.

(Total length of the prepared conduit is 200mm.)



- (k) Install the cover 5 back to its original position as shown on page 9.
- (l) Connect the lever harness connector to the connector "CN2" as shown in Fig. 2 below.

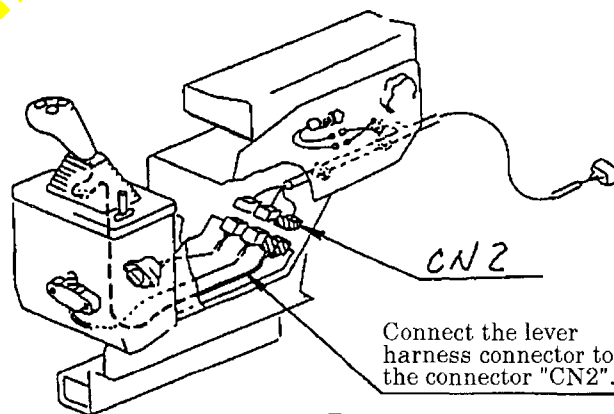
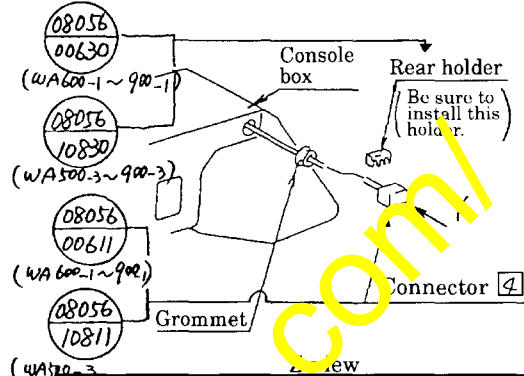
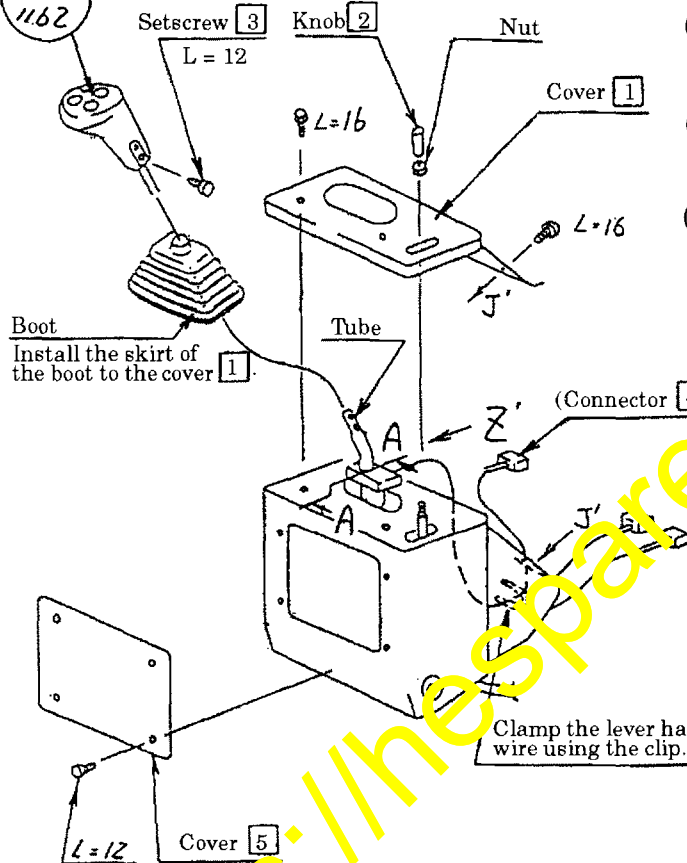


FIG.2

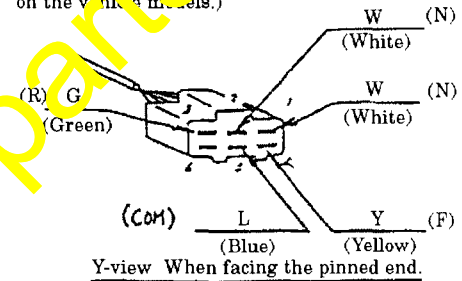
- (h) Pass the harness of the prepared new lever switch (427-S33-1162 or 425-S33-2341) through the boot, tube and grommet located behind the console box and install the terminals into its connector [4]. (Refer to the Y-view regarding the terminal layout.)
- (i) Fasten the lever switch to the tube using the set screws [3] and adjust the length of the harness wire between the tube and the grommet end to the dimension designated in Fig. 1 below. <This is important.>

**425-S33** Applicable vehicle models: WA500-3 thru WA900-3  
**2341**

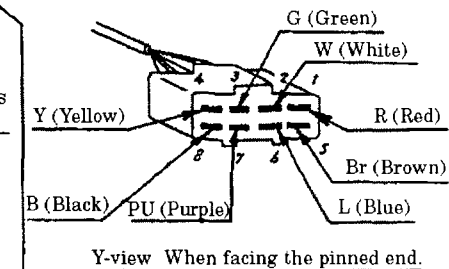
**427-S33** Applicable vehicle models: WA600-1 thru WA900-1  
**1162**



Applicable vehicle models: WA600-1 thru WA900-1  
 (Be careful since the pin layout differs depending on the vehicle models.)



Applicable vehicle models: WA500-3 thru WA900-3



**IMPORTANT**

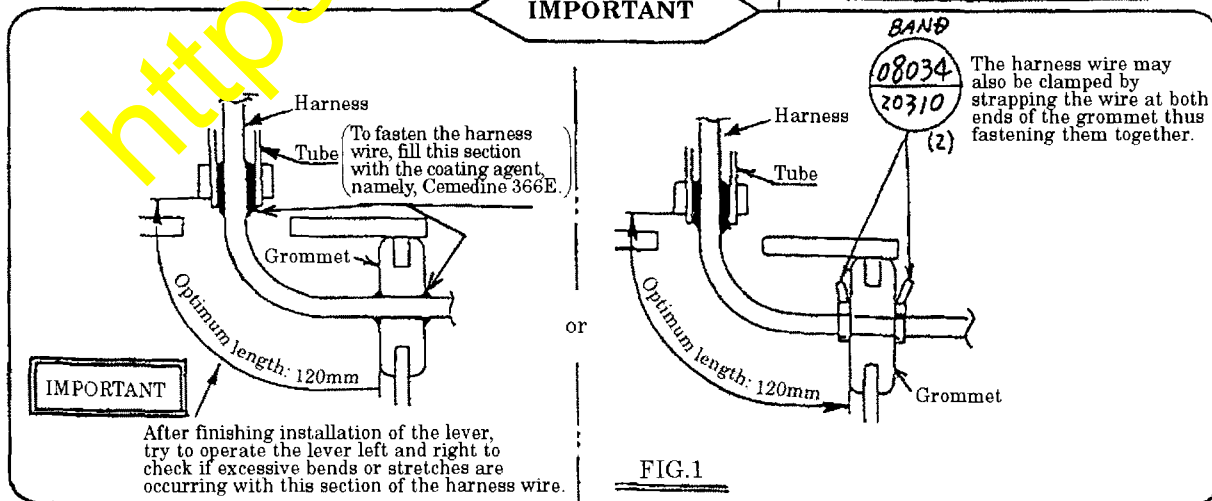
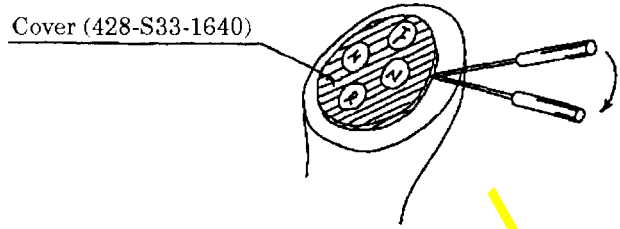


FIG.1

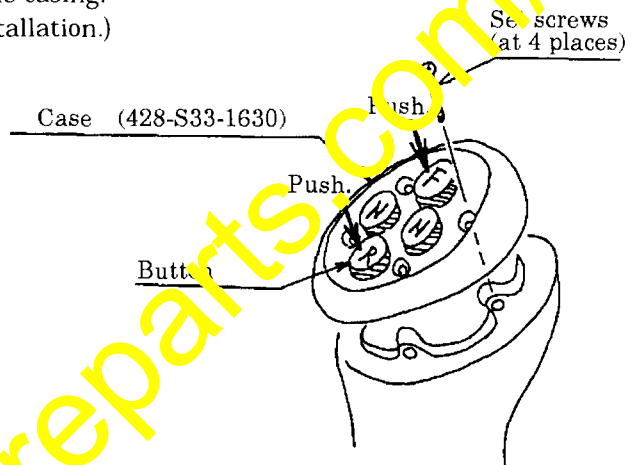
5. "F", "N" and "R" button assembly replacement procedures

1. Remove the cover. (Insert the tip of a sharp tool into the gap occurring around the periphery of the cover and pry the cover up gently to remove it.)



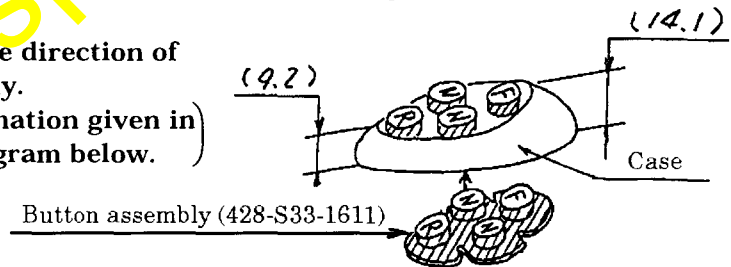
2. Remove the four set screws to separate the casing. (These set screws will be reused for reinstallation.)

3. Remove the button assembly. (Push the buttons down to separate the button assembly from the casing.)



4. Peel off the remaining sticky layer of the double-face adhesive tape from the inside surface of the case.
5. Insert the buttons of the button assembly from behind the casing.

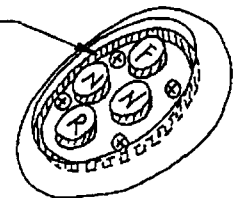
**Caution:** Pay attention to the direction of the button assembly. (Refer to the designation given in the schematic diagram below.)



6. Place the casing to its position and fasten it by tightening the four set screws. (Reuse the removed set screws.)

7. Apply double-face adhesive tape on the bottom surface inside the casing.

Double-face adhesive tape (428-S33-1620)



8. Put the cover in its position. (When the side edge of the cover has been damaged conspicuously while it was being removed, replace it with a new cover.)