

# MITSUBISHI

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# Model A9GT-70LTTB

# Back Light

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## User's Manual

Thank you for purchasing the MELSEC-GOT Series.

To ensure correct use of this equipment, please carefully read this manual prior to use.



|                         |                |
|-------------------------|----------------|
| MODEL                   | A9GT-70LTT-B-U |
| MODEL CODE              | 1DM117         |
| IB(NA)-80033-C(0406)MEE |                |

# ● SAFETY PRECAUTIONS ●

(Always read before starting use)

Before using this product, please read this manual and the relevant manuals introduced in this manual carefully and pay full attention to safety to handle the product correctly.

The precautions given in this manual are concerned with this product. For the safety precautions of the programmable controller system, please read the CPU module user's manual.

In this manual, the safety precautions are ranked as "DANGER" and "CAUTION".



Indicates that incorrect handling may cause hazardous conditions, resulting in death or severe injury.



Indicates that incorrect handling may cause hazardous conditions, resulting in medium or slight personal injury or physical damage.

Note that the  **CAUTION** level may lead to a serious consequence according to the circumstances.

Always follow the precautions of both levels because they are important to personal safety.

Please save this manual to make it accessible when required and always forward it to the end user.

## [HANDING PRECAUTIONS]

### **DANGER**

- Before changing the backlight, always switch off the GOT power externally in all phases (when the GOT is connected to the bus, the PLC CPU power must also be switched off externally in all phases) and remove the GOT main unit from the enclosure.

Not switching the power off in all phases may cause an electric shock.

Not removing the unit from the enclosure can cause injury due to a drop.

### **CAUTION**

- While changing the backlight, do not touch the circuit boards and electronic parts of the GOT.

Doing so can cause a failure or malfunction.

- When changing the backlight, always note the following.

- Wear gloves or fingerstalls before starting the replacement of the backlight.

Not doing so can cause injury.

- Start changing the backlight more than 5 minutes after switching the GOT power off.

Not doing so can cause a burn due to the heat of the backlight.

## [DISPOSAL PRECAUTIONS]

### **CAUTION**

- When disposing, treat this product as industrial waste.

## Revisions

\* The manual number is noted at the lower left of the back cover.

| Print Date | *Manual Number | Revision                                                                                                             |
|------------|----------------|----------------------------------------------------------------------------------------------------------------------|
| Jan., 1999 | IB(NA)-80033-A | First printing                                                                                                       |
| Feb., 2003 | IB(NA)-80033-B | Partial additions<br>Chapter 3                                                                                       |
| Jun., 2004 | IB(NA)-80033-C | Partial correction<br>SAFETY PRECAUTION, Manuals,<br>Chapter 2<br>MODEL CODE change<br>Changed from 13JQ25 to 1DM117 |
|            |                |                                                                                                                      |

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## Manuals

The following manuals are relevant to this product.  
Refer to the following list and order the required manuals.

### Detailed Manual

| Manual name                                                            | Manual No.<br>(Model code) |
|------------------------------------------------------------------------|----------------------------|
| A985GOT/A975GOT/A970GOT/A960GOT<br>User's Manual (Available as option) | SH-4005<br>(1DM099)        |

### Relevant Manual

For relevant manual, refer to the PDF manual stored within the drawing software.

# 1. Overview

This user's manual explains the model A9GT-70LTTB backlight (Referred to as backlight, hereafter).

This backlight is a replacement backlight for the A975GOT-TBA, A975GOT-TBD, A970GOT-TBA, A970GOT-TBD, A975GOT-TBA-B, A975GOT-TBD-B, A970GOT-TBA-B, A970GOT-TBD-B graphic operation terminal.

# 2. Performance

The table below lists the performance specifications of the back lights.

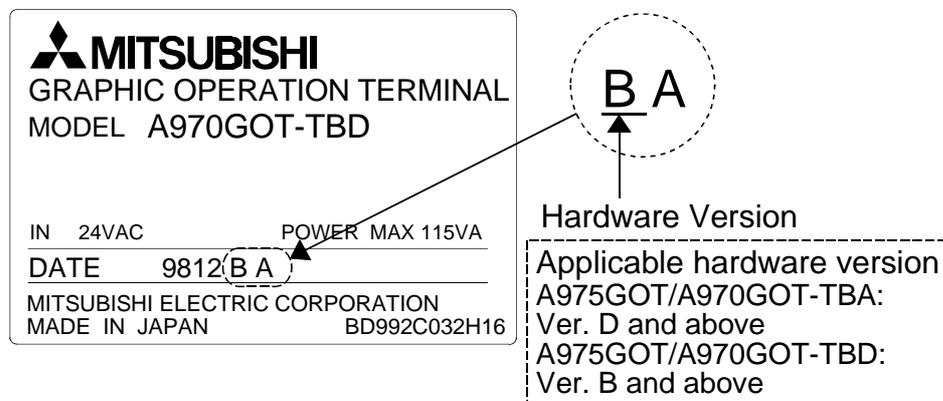
| Item              | Specifications                                                                                                                                                             |
|-------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Applicable models | A975GOT-TBA <sup>*1</sup> , A975GOT-TBD <sup>*2</sup> , A970GOT-TBA <sup>*1</sup> , A970GOT-TBD <sup>*2</sup> , A975GOT-TBA-B, A975GOT-TBD-B, A970GOT-TBA-B, A970GOT-TBD-B |
| Kind              | Cold cathode tube back light                                                                                                                                               |
| Life [Hr]         | 40,000                                                                                                                                                                     |

\*1: This is applicable for the models of the hardware Version D and above.

\*2: This is applicable for the models of the hardware Version B and above.

## (1) How to verify the hardware version

Verify the hardware version, referring to the rating nameplate bonded on the rear face of GOT module.



### 3. How to Change the Backlight for Liquid Crystal

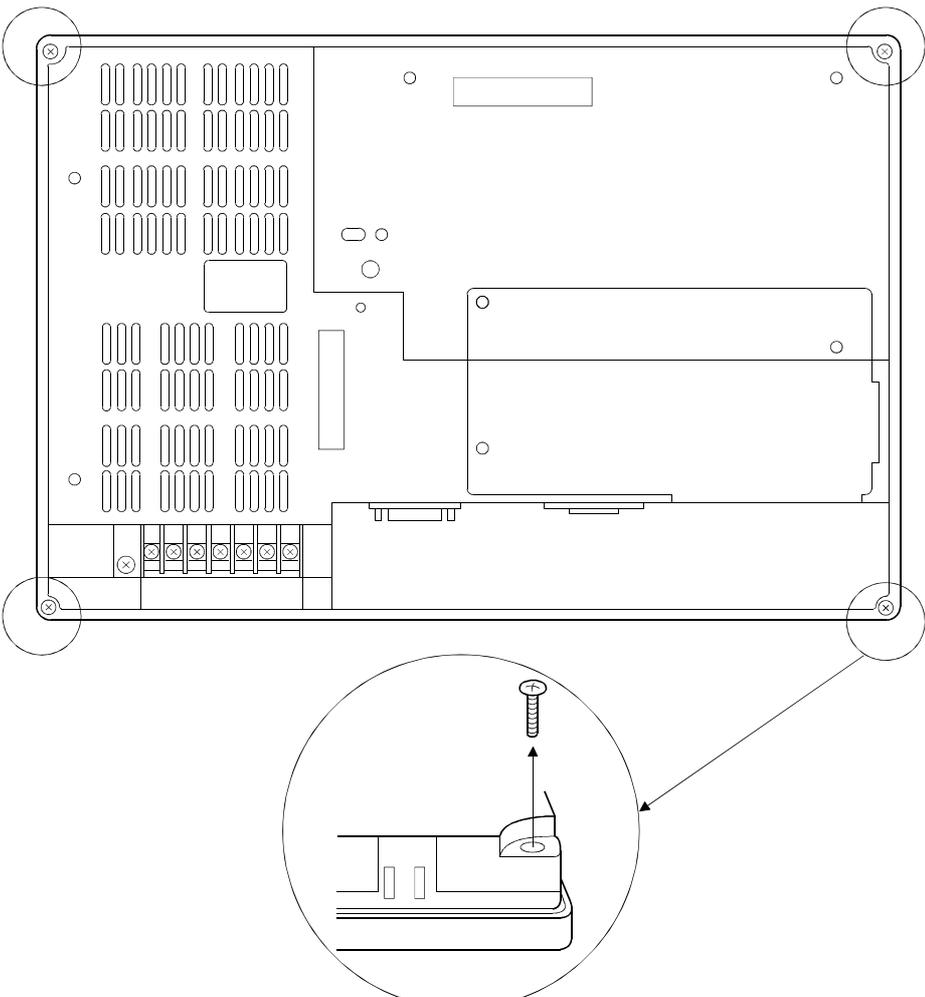
In GOT, back lights are incorporated for the indicator LCD. These back lights lose the luminance as they are used. Replace the back lights if the luminance lowers further than that affects the performance of the indicator screen.

The backlight changing method changes depending on the hardware version of the GOT.

Change the backlight after confirming the hardware version of the used GOT.

| Type            | Hardware Version                                                    | Changing Method Reference Destination |
|-----------------|---------------------------------------------------------------------|---------------------------------------|
| A97□GOT-TBA(-B) | Version K (May, 2001) or earlier,<br>Version R (May, 2002) or later | (1)                                   |
| A97□GOT-TBD(-B) | Version K (May, 2001) or earlier,<br>Version Q (May, 2002) or later |                                       |
| A97□GOT-TBA(-B) | Version L (June, 2001) to Version Q (April, 2002)                   | (2)                                   |
| A97□GOT-TBD(-B) | Version L (June, 2001) to Version P (April, 2002)                   |                                       |

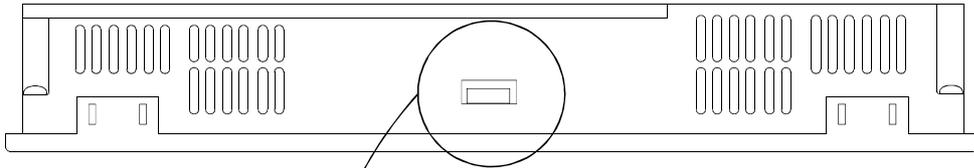
#### (1) Backlight replacement procedure 1



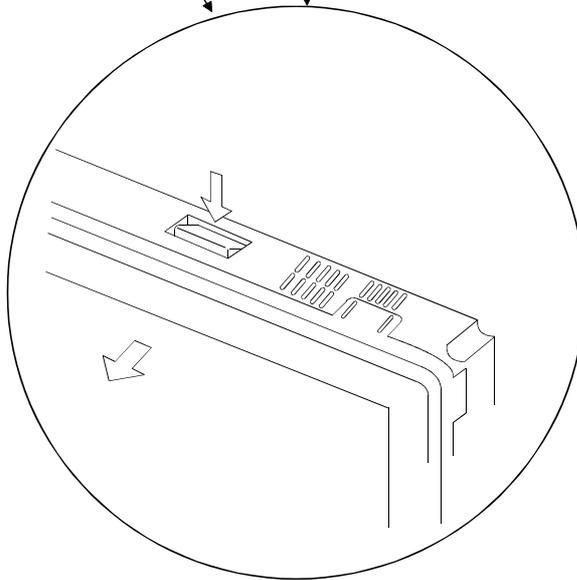
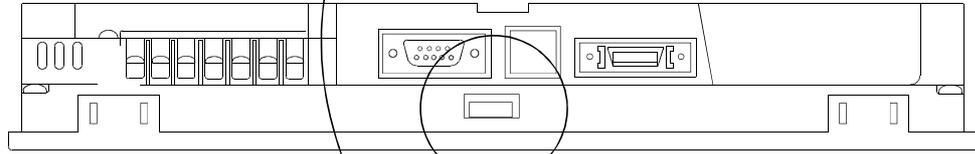
The diagram illustrates the back of the GOT cabinet. It shows a large rectangular panel with various components, including a power terminal block at the bottom left and a communications cable connector. Four screws are marked with an 'X' at the corners of the panel, indicating they need to be removed. A circular inset provides a detailed view of one of these screws being removed from a metal fitting on the back of the GOT.

- 1) Turn off the GOT power supply. Remove the wire from the power terminal. Then remove the communications cable.
- 2) Loosen the metal fitting on GOT to remove GOT from the cabinet.
- 3) Use a screw driver and remove four fastening screws on the back of GOT.

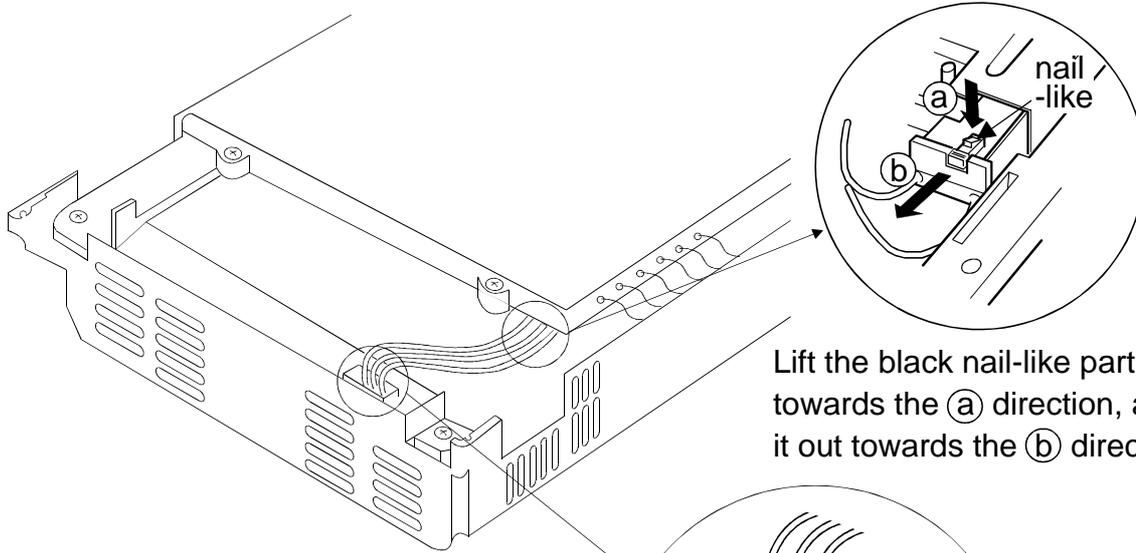
Top part



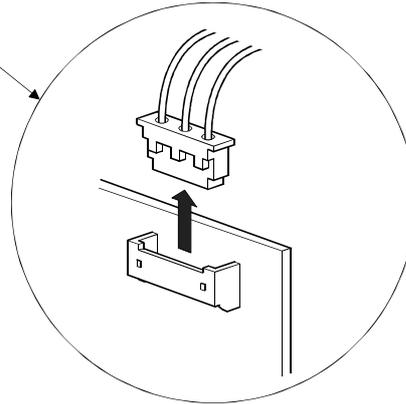
Bottom part



4) After removing the fastening screws, remove the indicator cover from GOT, while pressing two fastening hooks.



Lift the black nail-like part (black) towards the (a) direction, and pull it out towards the (b) direction.

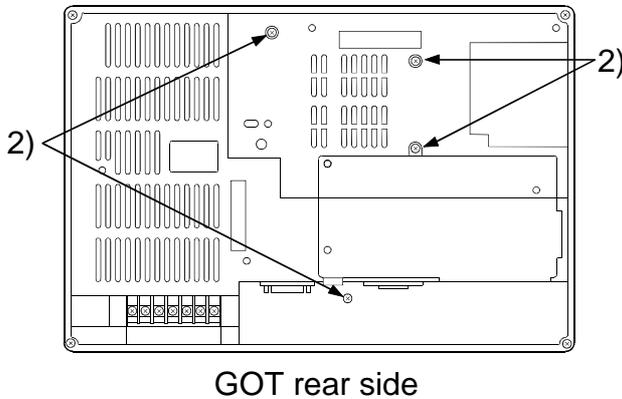


Remove the cable connector on the back lights from the indicator connector.

- 5) Show the front face of GOT, and remove the cable connector that is fitted to the upper one of the back lights from the indicator connector.
- 6) Pull out the upper one of the back lights from the indicator.
- 7) To install new back lights, follow the procedure opposite to that of removing. Similarly, follow the opposite procedure for installing the indicator. Make sure to securely install the indicator and apply a torque within the specified range to the fastening screws for GOT.  
36 to 48N•cm (3.7 to 4.9kgf•cm)(3.2 to 4.2lb•inch)

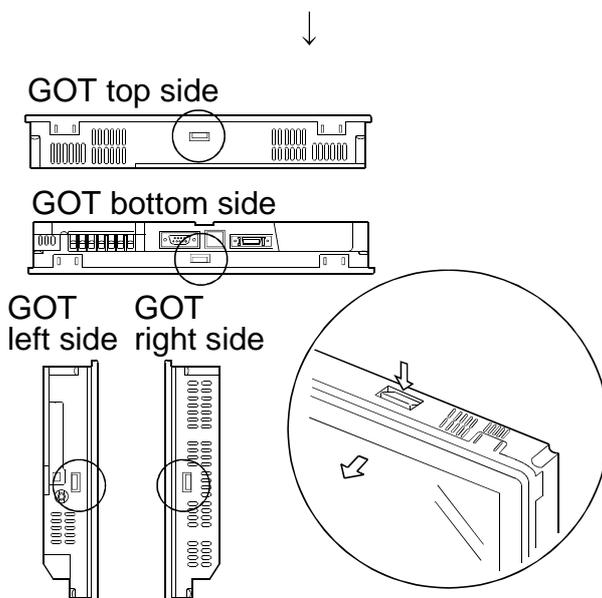
## (2) Backlight replacement procedure 2

Remove the screws recognizing each size during backlight replacement, since they have different sizes depending on the mounted positions. Be sure to store the screws by size after removing them.



1) Remove the connector cover for RS-232C interface, printer interface or communication module, if it has been mounted to the GOT. Also, remove the wires connecting cable, various modules or terminal block to the GOT, if the wiring has been installed.

2) Unscrew four fixing screws on the GOT rear side with a driver. (They cannot be completely removed.) (Tightening torque range: 36 to 48N•cm)



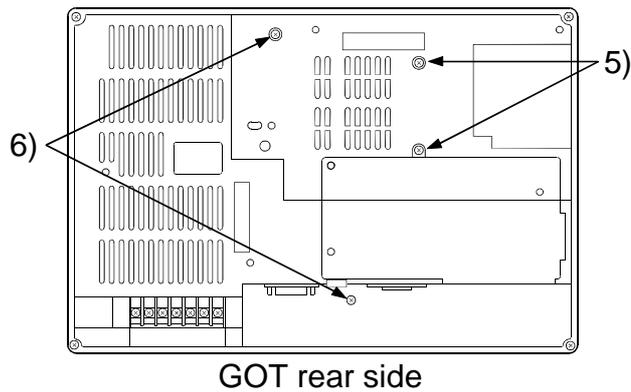
3) Remove the display cover from the GOT while pressing four fixing tabs, which are situated on top/bottom/right/left sides of the GOT.

A flat cable is attached under the fixing tab on the top side of the GOT.

Take care not to apply excessive force on the fixing tabs while pressing them with a driver or similar device. Failure to observe this instruction may damage them. Be sure not to apply excessive pressure on the GOT case, which is made of resin. Failure to observe this instruction may also damage them.

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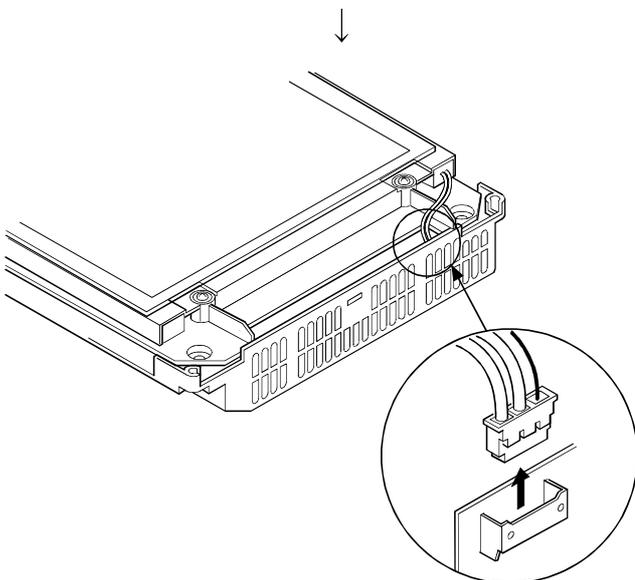


4) Put the GOT on the liquid crystal display side.  
Keep the liquid crystal display away from scratch or dirt by laying a sheet on the work table in advance.

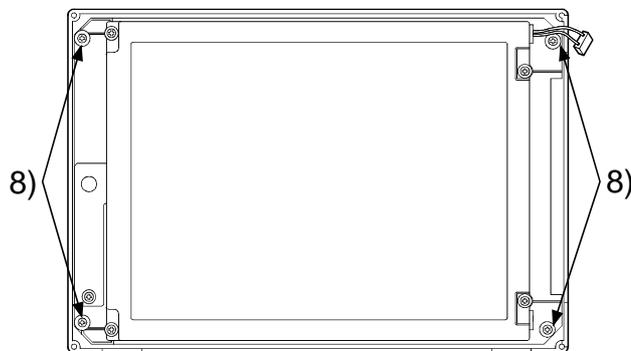
5) Remove two screws from the rear side.  
((M2.6 screw)10 to 13N•cm)

6) Remove two screws from the rear side.  
((M3 screw)18 to 24N•cm)  
Please note that the screws are different in size.

7) Put the liquid crystal display side up and then remove the cable connector for backlight.



Remove the cable connector for backlight.

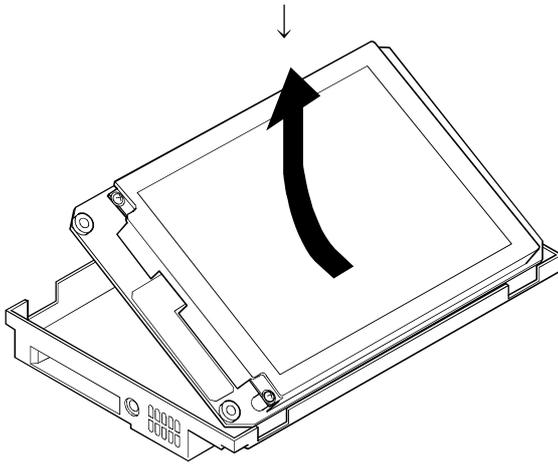


8) Remove four screws (chassis mounting screw) on the outmost side.  
(Tightening torque range: 36 to 48N•cm)

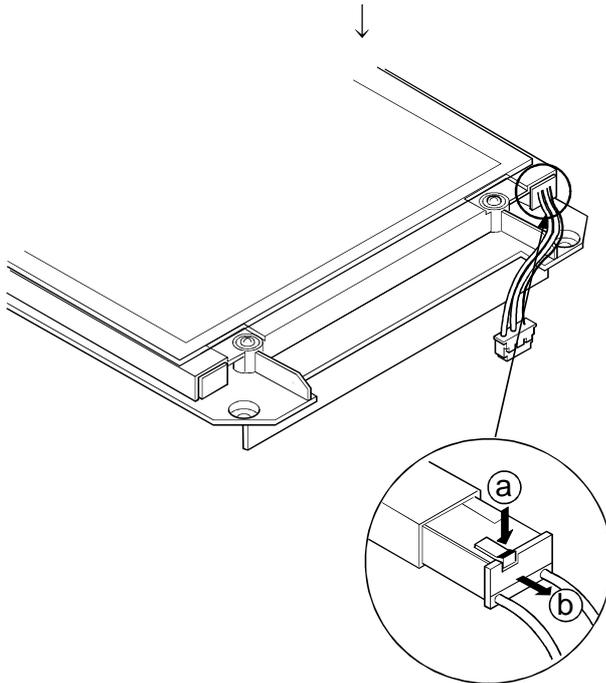
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9) Remove the liquid crystal display and circuit board from the rear case by holding up the top side.



Pull out the backlight in (b) direction pressing the fixing tab (black) in (a) direction.

10) Remove the backlights keeping the liquid crystal display up. Keep the liquid crystal display away from scratch or dirt by laying a sheet on the work table in advance.

11) Mount new backlight(s) in a reverse order to the removal procedures. Then, mount the liquid crystal display, circuit board and display cover in a reverse order as well.<sup>\*1</sup> Be sure to securely mount the liquid crystal display, circuit board and display cover, and tighten the fixing screws within the specified torque range.

\*1: Pay full attention to the followings while mounting the liquid crystal, circuit board and display cover.

- Insert the GOT connectors and terminals into the corresponding holes on the rear case when mounting liquid crystal and circuit board onto it.
- Be sure to gently tighten the screws mentioned in 8) and 2), and then retighten them within the specified torque range.
- Insert the cable connectors for backlights completely, making sure that it is correctly mounted.
- Attach the display cover taking care that the flat cable is not pinched between the GOT and display cover.
- Remove the dust from the liquid crystal display or inside of the front panel.

## Warranty

Mitsubishi will not be held liable for damage caused by factors found not to be the cause of Mitsubishi; machine damage or lost profits caused by faults in the Mitsubishi products; damage, secondary damage, accident compensation caused by special factors unpredictable by Mitsubishi; damages to products other than Mitsubishi products; and to other duties.

### ⚠ For safe use

- This product has been manufactured as a general-purpose part for general industries, and has not been designed or manufactured to be incorporated in a device or system used in purposes related to human life.
- Before using the product for special purposes such as nuclear power, electric power, aerospace, medicine or passenger movement vehicles, consult with Mitsubishi.
- This product has been manufactured under strict quality control. However, when installing the product where major accidents or losses could occur if the product fails, install appropriate backup or failsafe functions in the system.

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