

TFT COLOR LCD MODULE NL3224BC35-20/22

LAMP HOLDER SET REPLACEMENT MANUAL (2nd edition)

This manual applies replacement of lamp holder set.

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Precautions to be observed by the customers

NEC LCD Technologies, Ltd.(hereinafter called “NEC”) recommends that the customer returns the LCD module through the original purchase path to NEC, when replacement of the lamp holder is required. Customer should consider the followings before replacing the lamp holder.


- (1) This work can cause a lowering of the quality (performance). Even if the replacement work is performed in accordance with this manual, NEC is unable to guarantee the lowering of the quality, which is caused by customer's replacement work.
- (2) Replacement of the lamp holder involves the handling of high voltage circuits. If replacement was done incorrectly, the LCD module could present a shock, fire or other hazard, both during and after the replacement work.


Customer's replacing the lamp holder do so at their own risk. NEC will not assume any liability for the LCD module, and will not warrant any LCD module, which have been modified by the customer, including replacement of the lamp holder, even when the attached procedure is used. If it is necessary to return the LCD module to NEC after an attempted repair, NEC will charge the cost of the repairs to the customer.


1. PRECAUTIONS

1.1 MEANING OF CAUTION SIGNS




The following caution signs have very important meaning. **Be sure to read '1.2 CAUTIONS' and '1.3 ATTENTIONS', after understanding these contents!**

 CAUTION	This sign has the meaning that customer will be injured by himself, or the product will sustain damage, if customer has wrong operations.
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	This sign has the meaning that customer will get an electrical shock, if customer has wrong operations.
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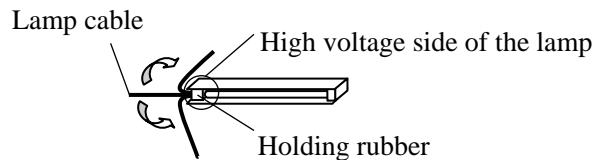
	This sign has the meaning that customer will be injured by himself, if customer has wrong operations.
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1.2 CAUTIONS

-  (1) Do not touch HIGH VOLTAGE PART of the backlight inverter while turn on. There is a danger of an electric shock. So that, be sure to check again before starting replacement work that the power is turned OFF.
- (2) Be sure to wait some time after turning power OFF before starting replacement work. There is a danger of an electric shock because the inverter is charged at a high voltage after working.
-  (3) Be sure to wait some time after turning power OFF before starting replacement work. There is a danger of burn injury, because the lamp holder and high voltage section of the inverter are hot after working.
- (4) Take care not to injure yourself while treating the metal frame of the lamp holder.
- (5) Do not shock and press the LCD panel and the lamp holder. There is a danger of breaking, because they are made of glass.
-  (6) The fluorescent lamp in the LCD module may be damaged in some cases. Take care not to injure yourself while treating the lamp. If the lamp is damaged inside, quality problems may occur, such as un-even brightness by pieces of broken glass left inside. In this case return it to NEC for repair.

1.3 ATTENTIONS 

- (1) Do not press or rub on the sensitive display surface. If customers clean on the panel surface, NEC recommends using the cloth with ethanolic liquid such as screen cleaner for LCD.
- (2) When handling the LCD module, take the measures of electrostatic discharge with such as earth band, ionic shower and so on, because the LCD module may be damaged by electrostatic.
- (3) Do not touch with bare hand or dirt the cold cathode fluorescent lamp in the lamp holder. If do so, display mura might occur.
- (4) Do not bend or unbend the lamp cable at the near part of the lamp holding rubber, to avoid the damage for high voltage side of the lamp.



- (5) Properly connect the adaptable plug (backlight side) to socket (inverter side) without incomplete connection. After connecting, be careful not to hook the lamp cables because incomplete connection may occur by hooking the lamp cables. This incomplete connection may cause abnormal operation of high voltage circuit.
- (6) Do not hook nor pull cables such as lamp cable, and so on, in order to avoid any damage.
- (7) Do not shock and press the LCD panel and the backlight. There is a danger of breaking, because they are made of glass.
- (8) If dirt or dust gets on the cold cathode fluorescent lamp, display mura might occur. Therefore, NEC recommends using a clean room or clean bench (the class "D" level).

2. REPLACEMENT PROCEDURE

2.1 PREPARATION

The following facilities and tools are required.

- (1) Finger stalls (glove)
- (2) Grounding band (earth band)
- (3) Workbench which is covered with conductive mat (workbench equipped to be prevent static charges can be used)
- (4) Radio pliers, tweezers
- (5) Replacing parts

LCD Module	Lamp holder set
NL3224BC35-20/22	55LHS11

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2.2 REGARDING THE LAMP HOLDER SET

- (1) One set consists of two holders.

2.3 REPLACEMENT

Refer to the Fig.1 and Fig.2.

- (1) Put on the fingerstalls and attach the grounding band.
- (2) Turn the ionizer switch on.
- (3) The LCD module should be kept turned off, and wait for a while until the backlight get cool down enough.
- (4) Put the LCD module display side up on the flat workbench, which is equipped for static charge prevention.
- (5) Pull out the lamp cable plug from lamp connector in Figure. Do not fold the high voltage cable as sharp folds can cause permanent damage.
- (6) Release the lamp holder from clamped portion **A** in figure 2 pushing up portion **A**.
- (7) Slowly, gently and in a straight line pull out the lamp holder in the direction of the arrow **B** in figure 2. If the lamp was broken inside of backlight lamp, carefully pull out the lamp holder. If pieces of glass remain inside the enclosure, carefully remove them.
- (8) Slowly, gently and in a straight line push in the lamp holder in the direction of the arrow **C** and lock portion **A** in figure 2.
- (9) Replace the lamp holder. The up side lamp holder is the same as down side.
- (10) Fix the lamp holder through the clamp position **A** in figure 2.
- (11) Replace the lamp holder is possible to set in the upper side lamp and the lower side.

3. DISPOSAL OF THE LAMP HOLDER

The lamp holder includes cold cathode fluorescent lamps. Follow local ordinances or regulations for its disposal. Do not reuse the replaced lamp holder set.

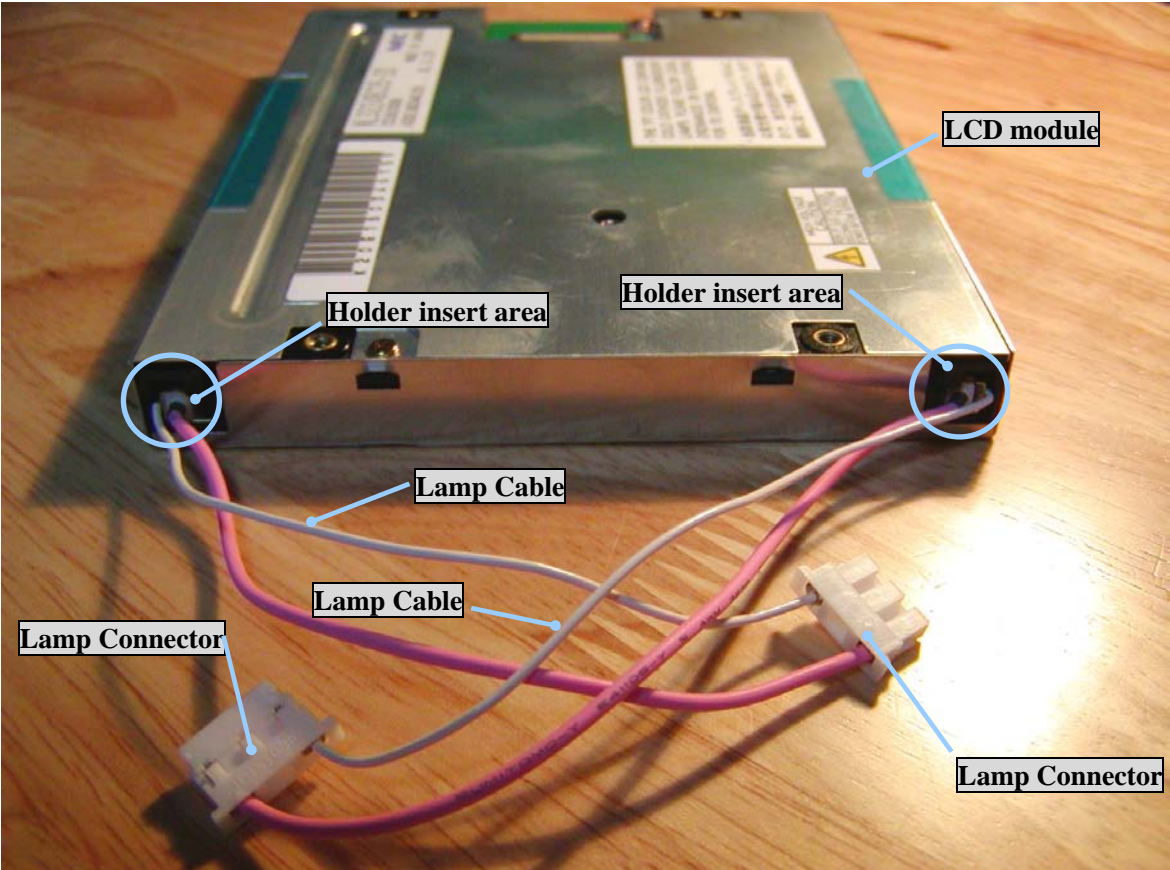


Fig.1 LCD module

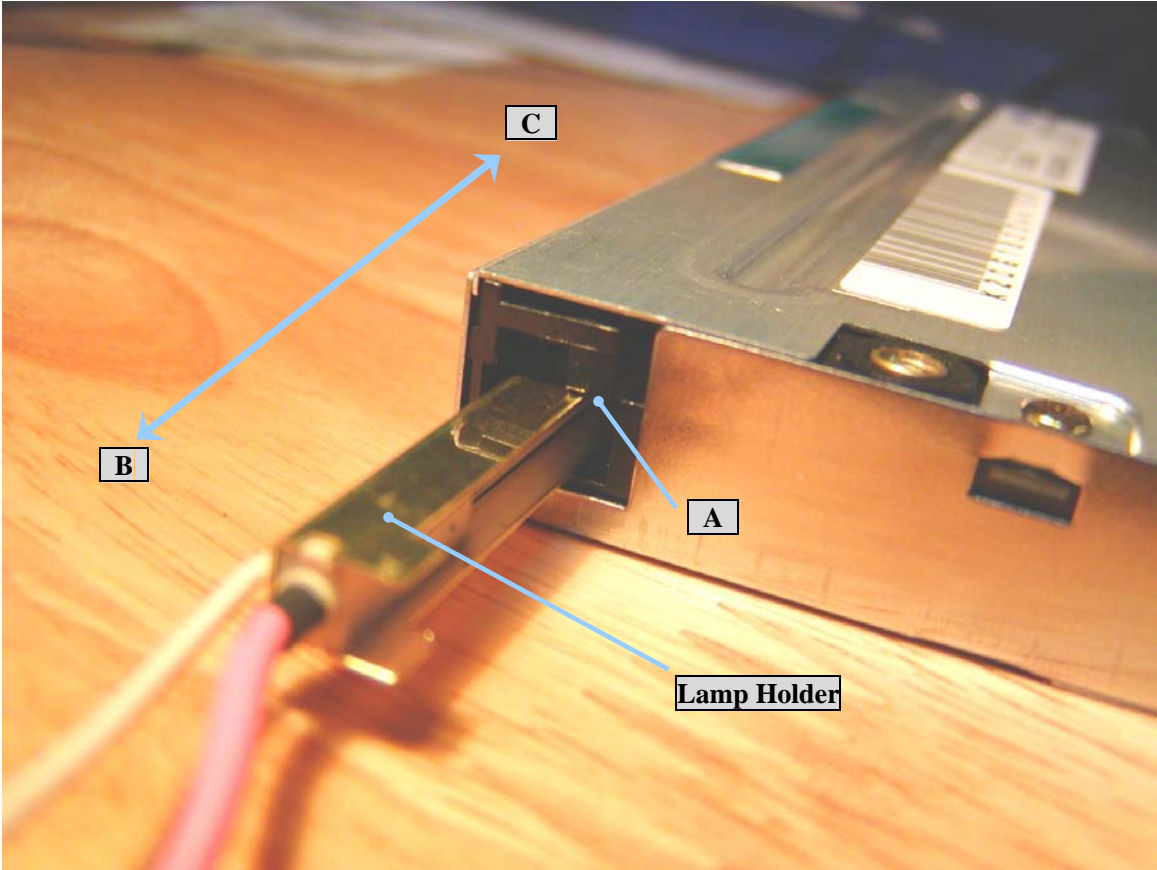


Fig.2 Around the Lamp Holder