MITSUBISHI ELECTRIC

TECHNICAL BULLETIN

GOT-A-0242-A

Request of Preventive Maintenance and Inspections for the GOT3000 Series Models

■Date of Issue

July 2025

■Relevant Models

GOT3000 Series

Thank you for your continued support of Mitsubishi Electric Graphic Operation Terminal (GOT).
We summarized the concept on the life and preventive maintenance of the GOT for planned execution of preventive maintenance.

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1 Useful life of the GOT

The GOT has an estimated useful life of ten years, excluding its life-limited parts such as the aluminum electrolytic capacitor, battery, LCD, and touch panel.
Note that the useful life is a duration in which the GOT can perform proper functions and performance.

2 Necessity of preventive maintenance

The recommended replacement cycle as part of preventive maintenance is five years for units using aluminum electrolytic capacitor as an important part and from five to ten years for other units.
The GOT consists of various electronic components, and can perform the best functions and performance by operating them normally.
To achieve it, finding a sign of GOT failure early by daily/periodic inspections and taking the corrective action are required.
Especially, limited life parts cannot be used indefinitely. Using them exceeding the years specified according to each part type (useful life) may affect the characteristics of the GOT, resulting in a malfunction or a failure of the devices.
Particularly, when the aluminum electrolytic capacitor life ends, the noise immunity lowers due to capacity low or the printed-circuit board is damaged due to a liquid leak, resulting in erroneous input/output or a malfunction of the GOT.
The aim of preventive maintenance is to prevent a device failure as far as possible by replacing parts or units in every certain period.

3 Years of use and failure occurrence

Generally, the failure rate of electronic device such as the GOT is expressed by bathtub curve as Figure 1. The curve is divided into the three stages: initial failure, random failure, and wear-out failure.

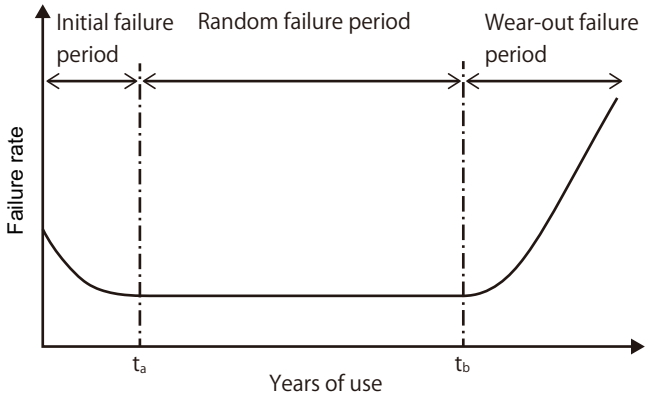

Figure 1 Relationship between years of use and failure rate

Initial failure occurs during the initial failure period and includes a faulty part or defect in manufacturing.
We make every effort to prevent the initial failure by pre-shipment test.
Random failure is unexpected and accidental failure that occurs before deterioration or wear proceeds within useful life of the device.
It is named after its eventuality from the viewpoint of statistics and genesis phenomenon.
Handle the failure by corrective maintenance; that is, preparing spare parts.
Wear-out failure occurs at the end of useful life as a result of deterioration or wear, and failure rate in this period drastically increases as the elapse of the time.
We recommend replacing our GOT within every ten years (rough guide), which corresponds to the point at t_b on Figure 1.

4 Life-limited parts and preventive maintenance

4.1 Aluminum electrolytic capacitor

An aluminum electrolysis capacitor is used with the GOT power circuit, communication unit, and option unit.
The operating ambient temperature affects the life of an aluminum electrolytic capacitor. According to the Arrhenius law, a 10°C rise in temperature reduces the capacitor life in half; whereas a 10°C decrease in temperature doubles the capacitor life.

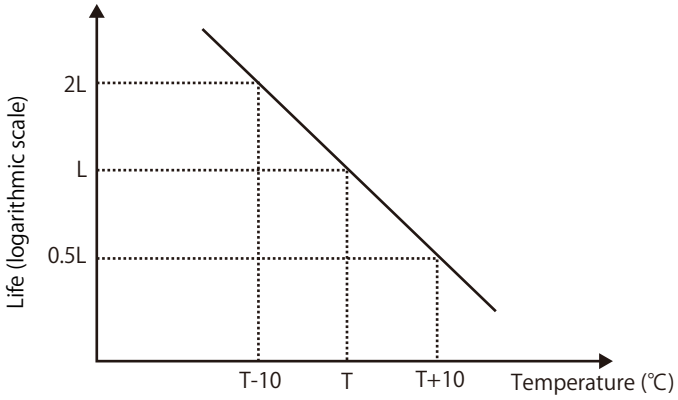

Figure 2 Arrhenius law

The aluminum electrolytic capacitor used with the GOT is designed to satisfy around 10-year life (rough guide) under an environment of average ambient temperature of 40°C.
However, the following preventive maintenance/maintenance and inspection are recommended, according to achievements in the market, operating environment, and application of the aluminum electrolytic capacitor.

GOT

Since the aluminum electrolytic capacitor is used for smoothing input power and output power of 3.3 V, 5 V or others, replace the GOT in every five years (rough guide) as part of periodic preventive maintenance.
When the aluminum electrolytic capacitor life ends, the power supply may become unstable, resulting in a malfunction of the GOT.

Communication unit and option unit

Since the aluminum electrolytic capacitor is used with certain communication units and option units, replace the unit in every five to ten years (rough guide) as part of periodic preventive maintenance.
When the aluminum electrolytic capacitor life ends, the noise immunity lowers due to capacity low or the printed-circuit board is damaged due to a liquid leak, resulting in erroneous input/output or a malfunction.

4.2 Battery

By using a separately sold battery, the clock data can be backed up (power failure retention) at power loss or power failure.
The battery life expectancy is about 5 years at 25°C.
Replace the battery as necessary because the battery discharges on its own.
The GOT can output the low battery voltage alarm when battery capacity has decreased and the voltage is equal to or less than the specified value.
Since there is a retention time of approximately 14 days to one month (differs depending on models) after the detection of low battery voltage, replace the battery within this time.
For how to set the low battery voltage alarm and replace batteries, refer to the User's Manual for the GOT used.

4.3 LCD

The GOT uses an LED backlight whose brightness decreases with use.
The backlight life (the time when the brightness decreases in half) differs depending on the GOT model.
For the specific life of the liquid crystal panel, check the brochure or the User's Manual for the GOT used.
When the energization time indicates that the backlight is near its end of life, replace the GOT or consult your local Mitsubishi sales office for the LCD replacement.

4.4 Resistive touch panel

The GOT3000 series uses a resistive touch panel. (However, the GT37 wide models use a capacitive touch panel.)
If the number of presses exceeds a million times, a touch panel on the GOT may not correctly recognize when the panel is pressed.
The replacement timing differs depending on the customer's use status. Replace the GOT when the number of presses approaches a million.

5 When the GOT has not been used for a long period of time

To prevent accidents such as electric leakage due to the end of service life, deterioration, or insulation failure, be sure to turn off the power of the GOT if it will not be used for a long period of time.

6 GOT replacement before the end of service life

Before the expected service life is reached, consider replacing the GOT with a new one or the latest series GOT as preventive maintenance.

7 Other information

To shorten recovery time required for the GOT failure, preparing spare parts is recommended.
For inspection, contact your local Mitsubishi sales office or representative.
For items and descriptions of daily/periodic inspections, refer to the User's Manual for the GOT used.

Revisions

Version	Issue date	Revision
A	July 2025	• First edition