7. Troubleshooting

Chapter 7. Troubleshooting

7.1 Maintenance Functions Executed from the Menu

This section explains maintenance functions that are executed from the menu.

7.1.1 Starting Maintenance Functions

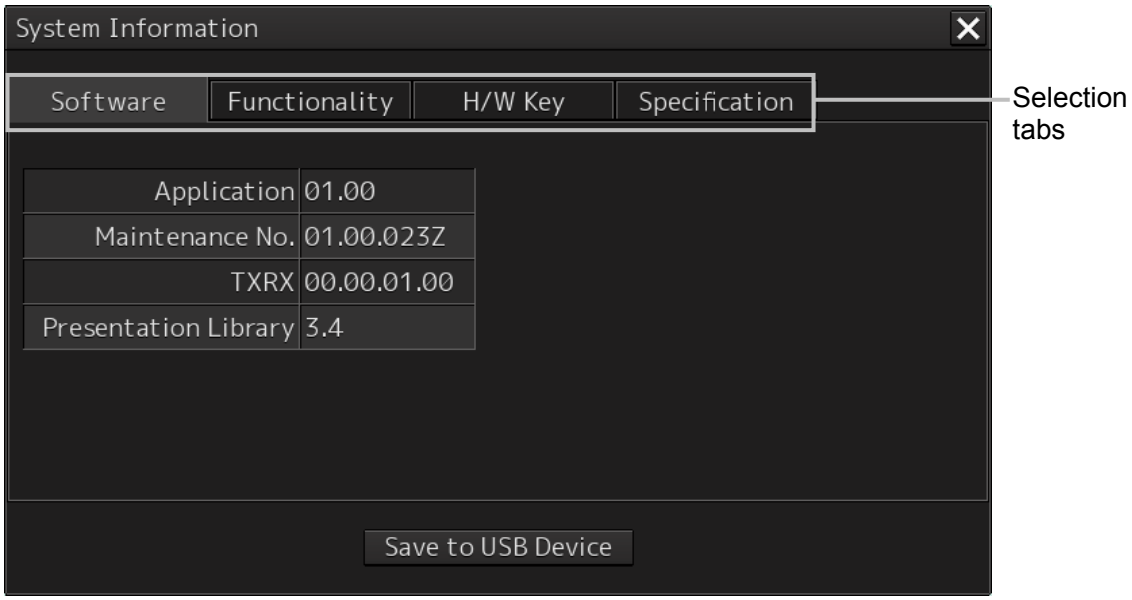
1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] button on the menu.**
   The submenu is displayed.
3. **Click on a button on the submenu.**
   The dialog box of the selected maintenance function is displayed.

7.1.2 Confirming System Information

System information can be confirmed.

1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.

2. **Click on the [Maintenance] - [System Information] button on the menu.**
   The [System Information] dialog box appears.
   The contents of the dialog will be switched by clicking on the selection tabs provided in the dialog box.



7.1.3 Confirming Software Information

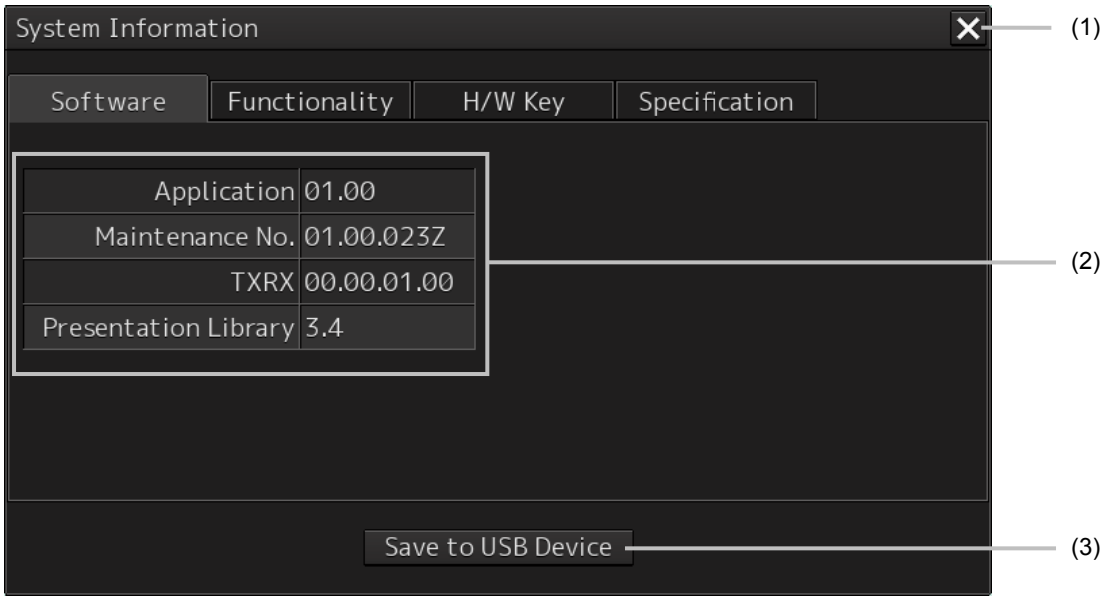
⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

Software information can be displayed.

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [System Information] button on the menu.**
The [System Information] dialog box appears.
Click on the [Software] tab.

3. The software information is displayed.



(1) [X] button

Click on this button to close the "System Information" dialog box.

(2) Software information

Item	Displayed information
Jxx-xxxx	Type and model name of the system
Application	Version of the application software
Maintenance No.	8-digit maintenance number
TXRX	Version of the software used for the radar transmitter-receiver unit * This information is displayed when the system is equipped with the RADAR function.
No.1 GPS	Software version of GPS 1 * Displayed when a medium-sized radar equipped with 1 or 2 units of GPS is used.
No.2 GPS	Software version of GPS * Displayed when a medium-sized radar equipped with 2 units of GPS is used.
TCS	Version of the software used for TCS * This information is displayed when the system is equipped with the TCS function.
Presentation Library	Edition of S52 Presentation Library Displayed for ECDIS or RADAR (ENC chart display license available) only

(3) [Save to USB Device] (Saving to USB flash memory) button

Click on this button to save the displayed information in a USB flash memory in the text format.

7.1.4 Checking the Enable/Disable Statuses of the Functions that Have Been Installed

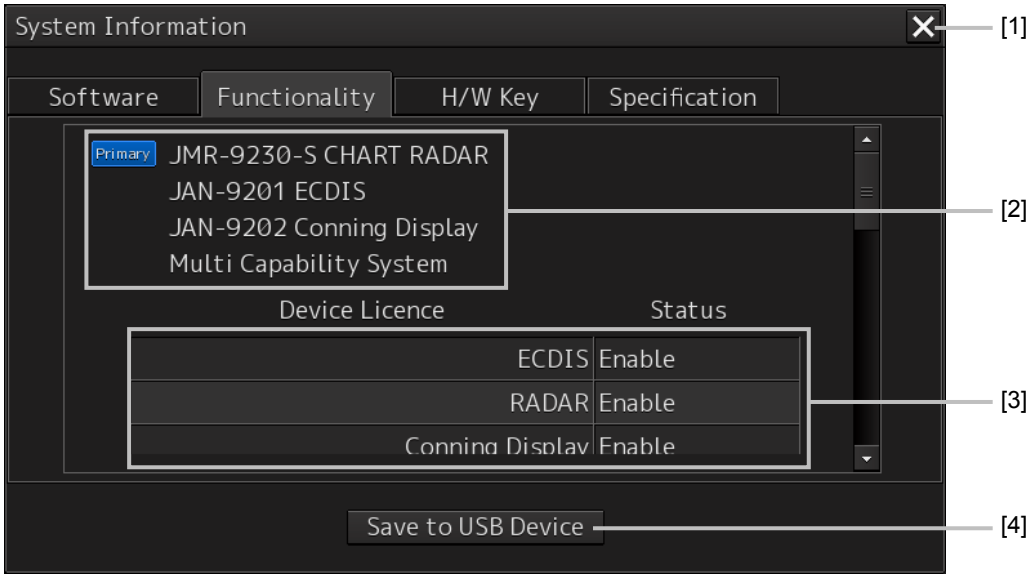
⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

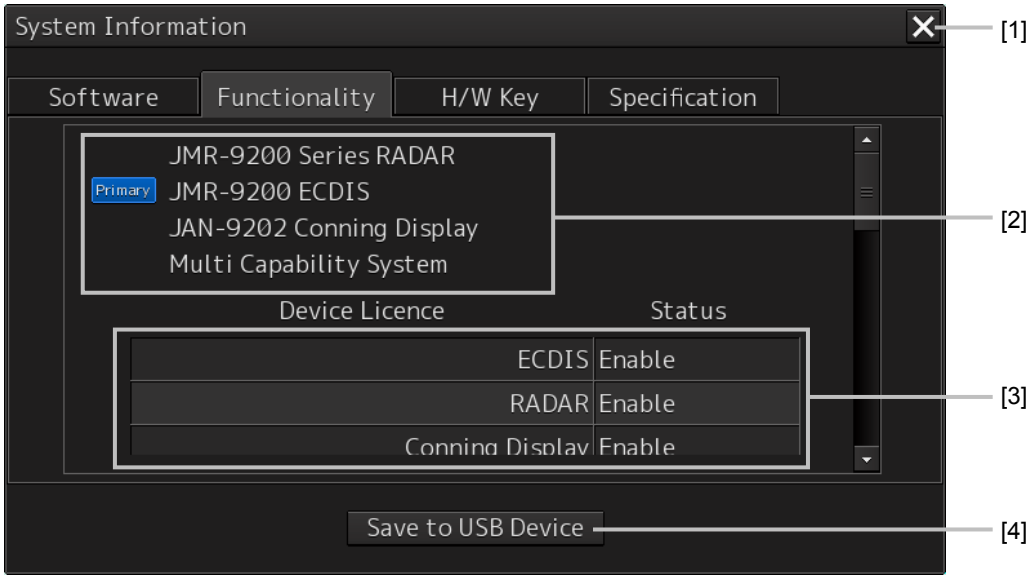
2. **Click on the [Maintenance] - [System Information] button on the menu.**
The [System Information] dialog box appears.

3. **Click on the [Functionality] tab.**
The functionality information is displayed.
The display contents vary depending on the number of operation modes and whether the modes include the primary task (shown by this equipment).

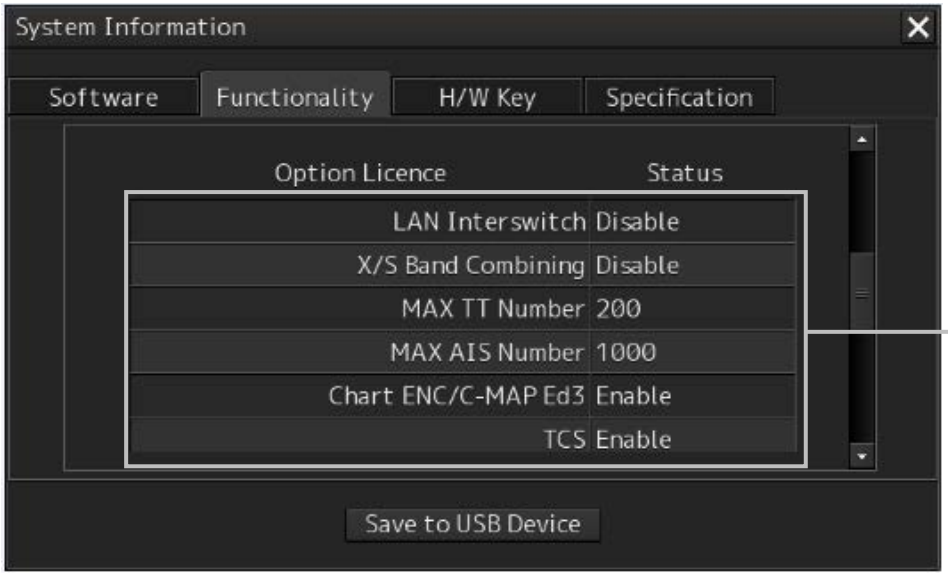
[The system has any one of RADAR, ECDIS, and Conning modes]

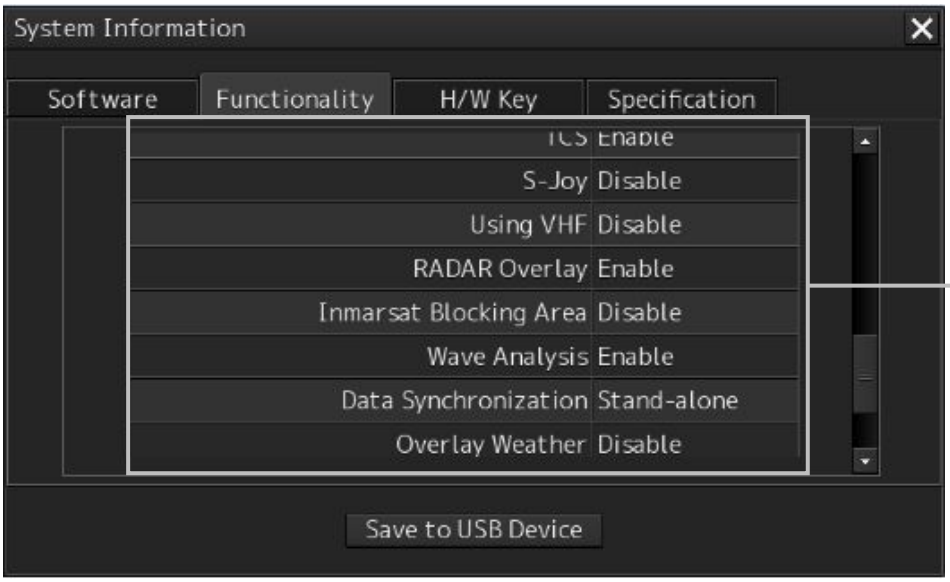


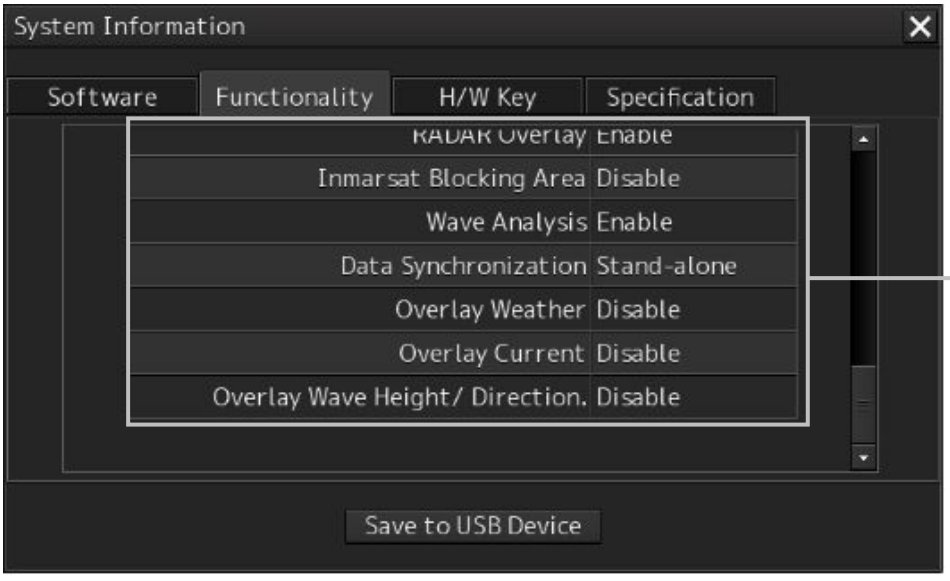
[The system has multiple operation modes and RADAR is the primary task]



[Section that is displayed when the above screen is scrolled down (example)]







[1] [X] button

Click on this button to close the "System Information" dialog box.

[2] Format

The system format and model name of this equipment are displayed.

(Example: JMR-xxxx-x CHART RADAR (for Chart RADAR)

The [Primary] badge is displayed in front of the format for the primary task.

[3] Functionality

The functions that are installed are displayed in [Device License] and [Option License].

One of the following is displayed in [Status].

[Status]	Meaning
Enable	Indicates that the function can be used.
Disable	Indicates that the function cannot be used.
Value (such as 500)	Indicates the setting value of the option license of the function.
Stand-alone	This indicates that it is not possible to use the function of synchronization with other equipment, and independent operation has to be made.

[4] [Save to USB Device] (Saving to USB flash memory) button

Click on this button to save the displayed information in a USB flash memory in the text format.

7.1.5 Confirming the H/W Key

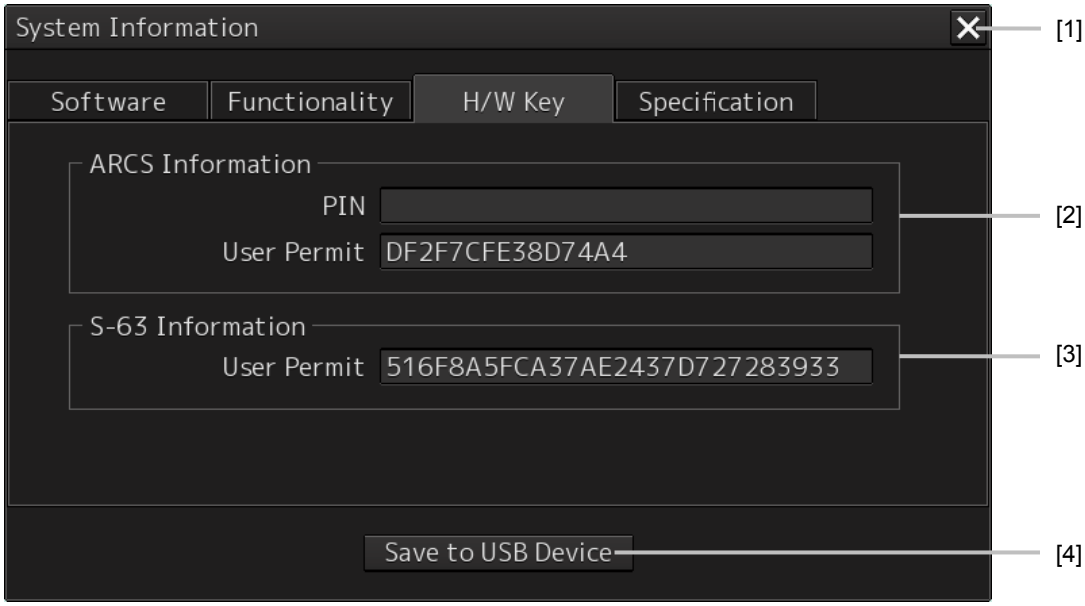
⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

Hardware information can be displayed.
This information is displayed only for the equipment with the ECDIS function.

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [System Information] button on the menu.**
The [System Information] dialog box appears.

3. **Click on the [H/W Key] tab.**
The hardware key information is displayed.



[1] [X] button

Click on this button to close the "System Information" dialog box.

[2] [ARCS Information]

The ARCS PIN number and User Permit are displayed.

[3] [S-63 Information]

The S-63 User Permit is displayed.

[4] [Save to USB Device] (Saving to USB flash memory) button

Click on this button to save the displayed information in a USB flash memory in the text format.

7.1.6 Confirming the Compliant Standards for the Equipment

⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

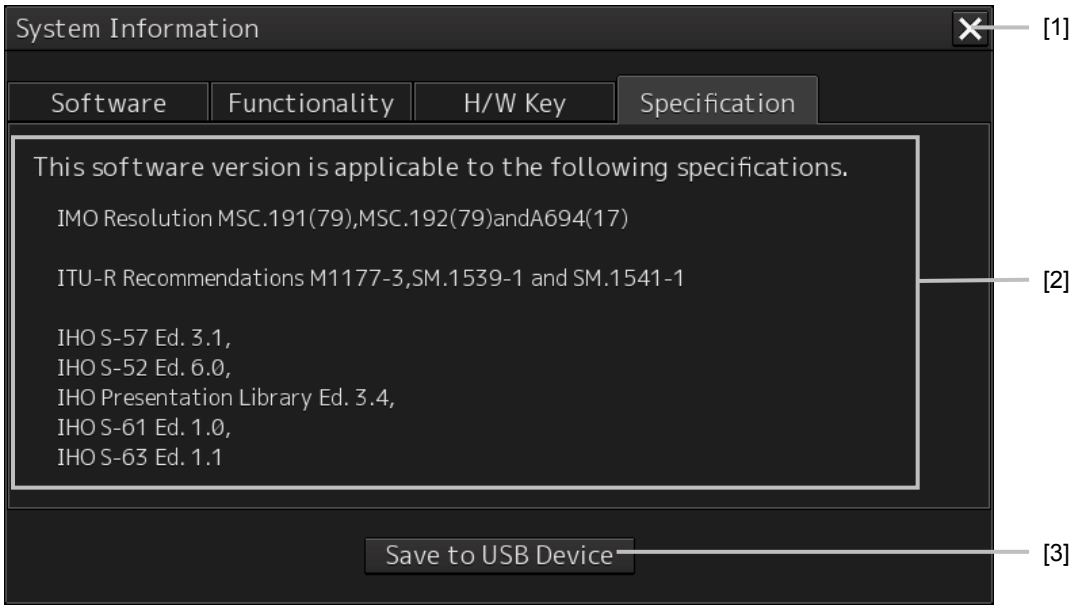
If there is a RADAR or ECDIS equipment license, the standards related to the equipment license are displayed.

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [System Information] button on the menu.**
The [System Information] dialog box appears.

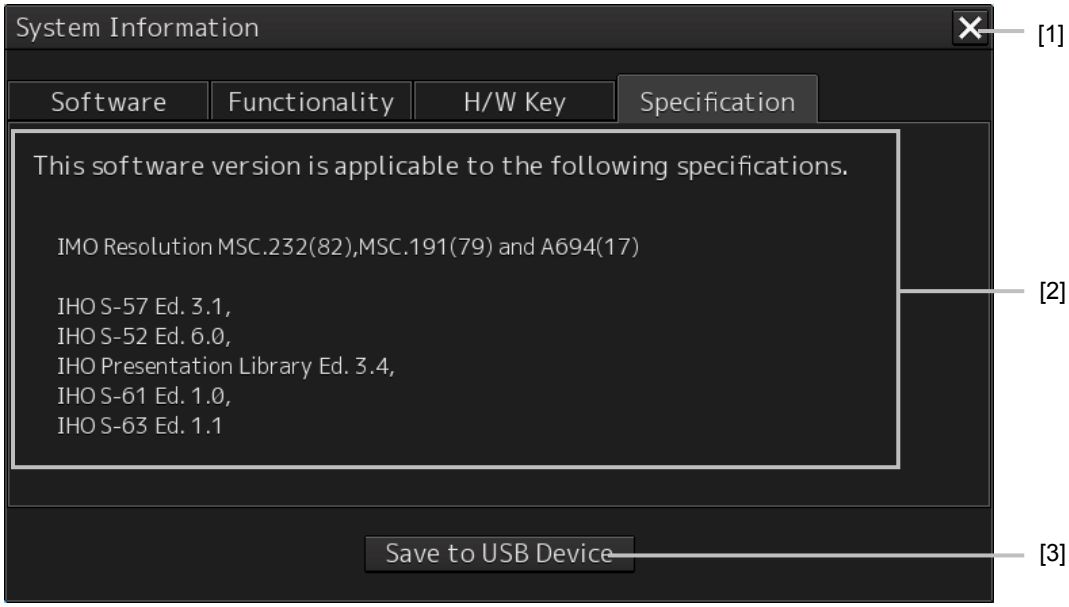
3. **Click on the [Specification] tab.**
The equipment license standard specification information is displayed.

[In the case of RADAR]



Memo
The IHO information is displayed only when there is ENC chart display as an optional license.

[In the case of ECDIS]



[1] [X] button
Click on this button to close the "System Information" dialog box.

[2] Equipment license information
The equipment license standard specification information is displayed.

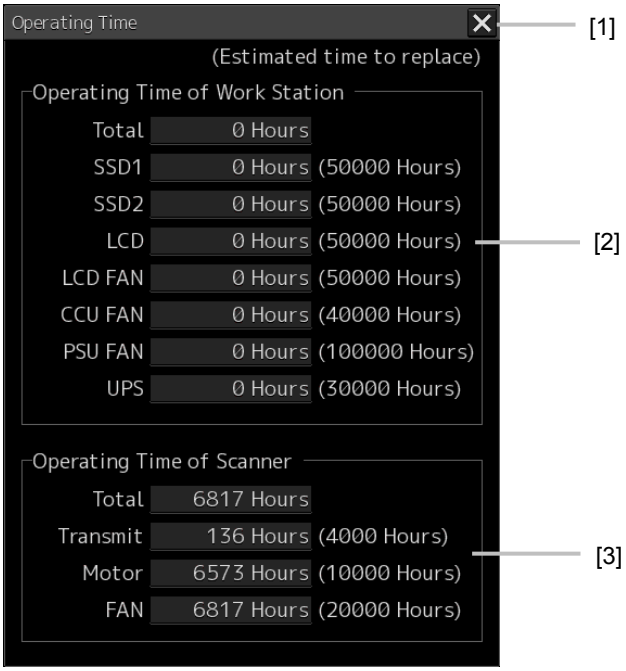
[3] [Save to USB Device] (Saving to USB flash memory) button
Click on this button to save the displayed information in a USB flash memory in the text format.

7.1.7 Confirming the Operating Time

Confirm the operating time of this equipment.

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [Operating Time] button on the menu.**
The [Operating Time] dialog box appears.



[1] [X] button

Click on this button to close the "Operating Time" dialog box.

[2] [Operating Time Of Work Station]

The operating time of this equipment is displayed.

[Total]: Total operating time of this equipment

[SSD1]: Total operating time of SSD1. The estimated replacement time is indicated in ( ).

[SSD2]: Total operating time of SSD2. The estimated replacement time is indicated in ( ).

[LCD]: Total operating time of LCD. The estimated replacement time is indicated in ( ).

[LCD FAN]: Total operating time of LCD FAN. The estimated replacement time is indicated in ( ).

[CCU FAN]: Total operating time of CCU FAN. The estimated replacement time is indicated in ( ).

[PSU FAN]: Total operating time of PSU FAN. The estimated replacement time is indicated in ( ).

[UPS]: Total operating time of UPS. The estimated replacement time is indicated in ( ).

Memo

[UPS] is displayed only when it is installed as an option.

[3] [Operating Time of Scanner]

The total operating time of the scanner unit is displayed.

[Total]: Total operating time of the scanner unit

[Transmit]: Total operating time of the transmitter. The estimated replacement time is indicated in ( ).

[Motor]: Total operating time of the motor. The estimated replacement time is indicated in ( ).

[FAN]: Total operating time of the scanner unit fan.

Memo

[Operation Time of Scanner] is displayed in the RADAR mode only.

Memo

To clear each operating time, see “4.4.4.1 Clearing operation time of Workstation”.

7.1.8 Setting and Confirming the Sensor Source

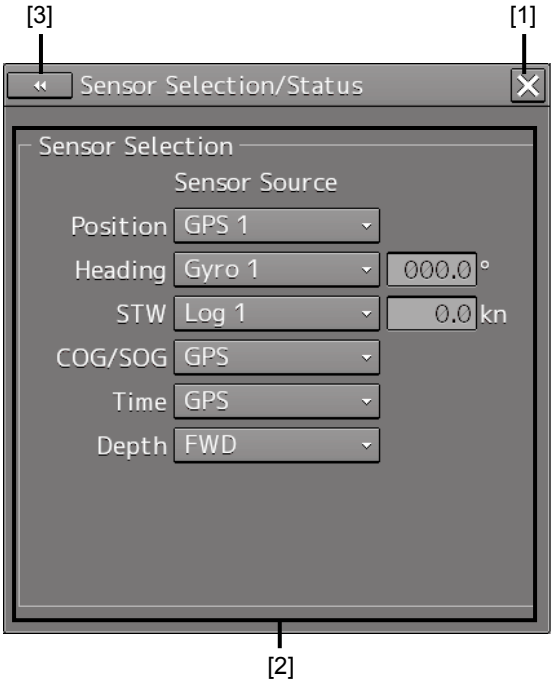
Set and confirm the sensor source.

1. **Click on the [Menu] button on the left toolbar.**

The menu is displayed.

2. **Click on the [Maintenance] - [Sensor Selection/Status] button on the menu.**

The [Sensor Selection/Status] dialog box appears.



[1] [X] button

Click on this button to close the "Sensor Selection/Status" dialog box.

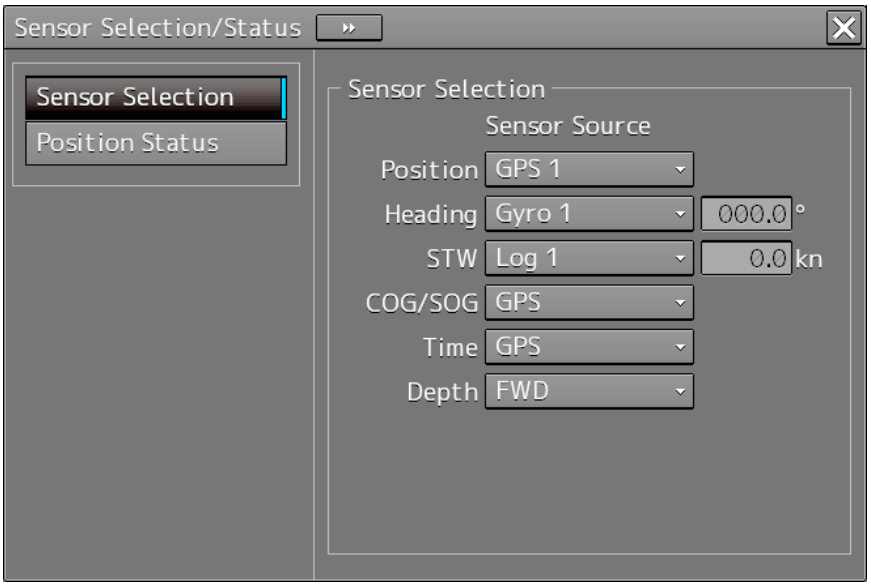
[2] [Sensor Selection]

Enables selection of a sensor source.

Setting item	Setting contents	Setting value
Position	Select a Primary Position sensor source from the combo box.	GPS x DR ("x" indicates the equipment number)
POSN (Sub)	Select a Secondary Position sensor source from the combo box. *Displayed for ECDIS only.	None, GPS x ("x" indicates the equipment number)
Heading	Select a heading sensor source from the combo box. *The source that can be selected varies depending on the installation. When the sensor source is set to [Manual], the heading value can also be input in the input box. Heading value input range: 0.0-359.9°	MAN, Gyro x ("x" indicates the equipment number)
STW (Speed Through Water)	Select a Speed Through Water sensor source from the combo box. *The source that can be selected varies depending on the installation. When the sensor source is set to [Manual], a Speed Through Water can also be input in the input box. Speed Through Water value input range: 0.0-99.9 kn	MAN, Logx ("x" indicates the equipment number)
COG/SOG (Course Over the Ground/Speed Over the Ground)	Select Course Over the Ground/Speed Over the Ground sensor source from the combo box. *The source that can be selected varies depending on the installation. When GPS is selected for Position, the same GPS is selected automatically.	Log x, GPS
Time (Time correction)	Select a sensor source to be used for time correction of this equipment from the combo box. *The source that can be selected varies depending on the installation.	GPS, Ship Clock
Depth (Water depth)	Select a water depth sensor source from the combo box. *The source that can be selected varies depending on the installation.	FWD

[3] Disclosure button

When clicked, the hidden left pane appears.



When the left pane is displayed

7.2 Performance Check

Make performance check on the radar equipment regularly and if any problem is found, investigate it immediately. Pay special attention to the high voltage sections in inspection and take full care that no trouble is caused by any error or carelessness in measurement. Take note of the results of inspection, which can be used effectively in the next inspection work.
Carry out performance check on the items listed in the check list below.

Check List

Equipment	Item to be checked	Criteria	Remarks
Transmitter-receiver unit	Synchronization LED of Receiver	The LED is lit during operation	48 NM range
Display unit	Video and echoes on the screen Sensitivity Brightness Various markers Various numerical indications Lighting	Can be correctly controlled	
	Cleaning the DVD drive	7.2.10 Cleaning the lens of the DVD drive	
	Cleaning the Trackball	4.3.4.2 Cleaning the Trackball	
Scanner Unit	Magnetron current	7.2.7 Checking the magnetron current level of the scanner unit [Magnetron Current]	
	Performance Monitor	7.2.9 Checking the performance monitor status	

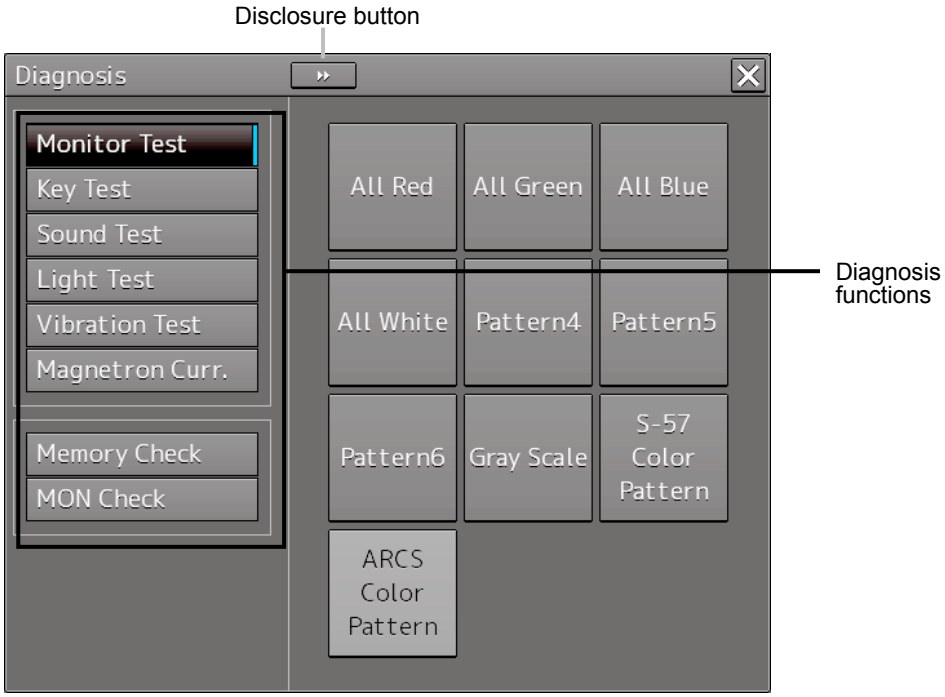
7.2.1 Starting the Diagnosis Function

1. **Click on the [Menu] button on the left toolbar.**

The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] button on the menu.**

The "Diagnosis" dialog box appears.



The Diagnosis functions are displayed in the left pane.

Click on the disclosure button to hide the left pain.

3. **Click on a diagnosis function to be executed.**

The execution dialog of the selected diagnosis function is displayed.

7.2.2 Confirming the screen status [Monitor Test]

Confirm the screen status.

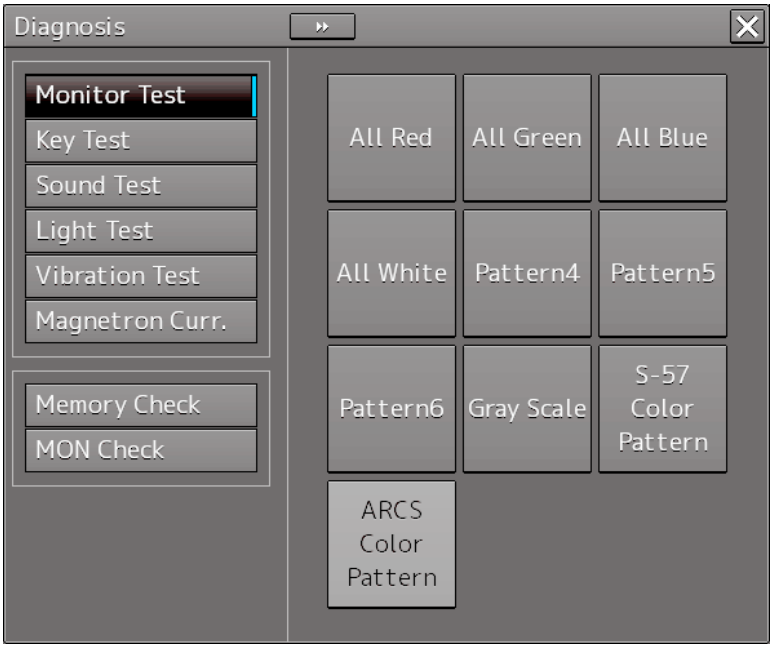
1. **Click on the [Menu] button on the left toolbar.**

The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] - [Monitor Test] button on the menu.**

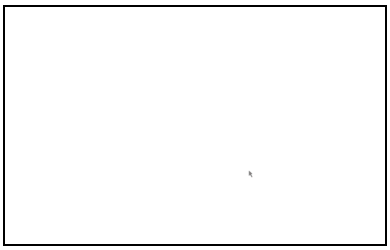
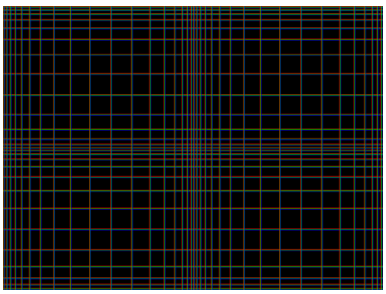
When the color or pattern of the dialog is clicked on, the color or pattern is displayed on the screen.

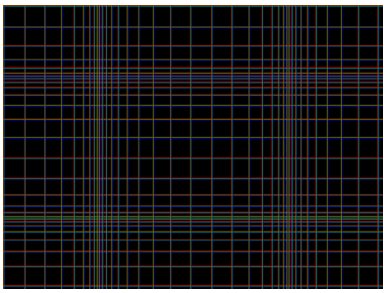
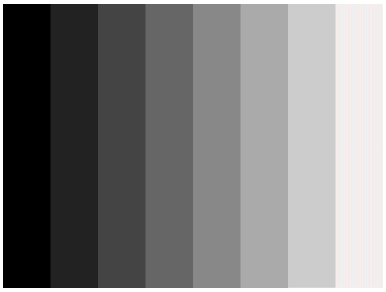
Check the screen status with the display status.

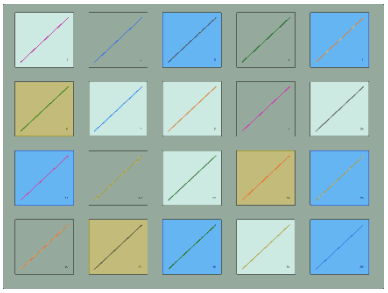
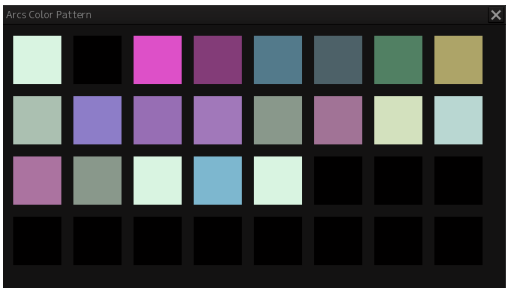


To reset the display, click the button again.

Pattern list

Pattern button name	Display
All Red	 The entire screen is displayed in red.
All Green	 The entire screen is displayed in green.
All Blue	 The entire screen is displayed in blue.
All White	 The entire screen is displayed in white.
Pattern4	 Displays the pattern for checking the communication quality for VDR.

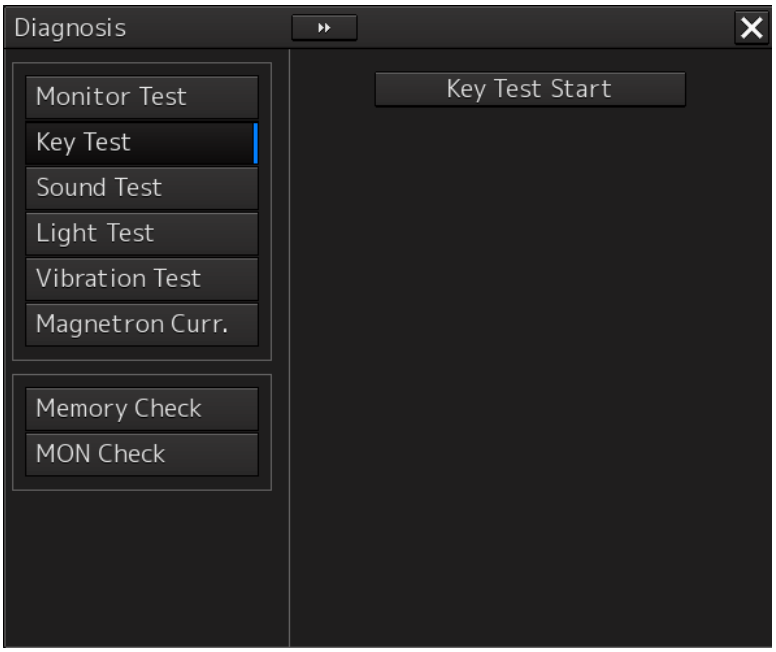
Pattern button name	Display
Pattern5	 Displays the pattern for checking the communication quality for VDR.
Pattern6	 Displays the pattern for checking the communication quality for VDR.
Gray Scale	 Displays the grey scale pattern for checking the monitor brightness adjustment. Grey scale patterns can be identified with brightness in day/night mode. By adjusting the monitor brightness to facilitate identification of grey scale patterns, the optimum brightness can be set. The brightness in night mode can also be adjusted in the same way. Use the Day/Night button on the right Toolbar for switching between the day and night mode. For the details of the Day/Night button, refer to “2.2.1 Right toolbar”.

Pattern button name	Display
S-57 Color Pattern	 A color test pattern of the S57 chart is displayed. By identifying the color pattern, the S57 chart display status can be verified. A color pattern can be displayed in Day/Night mode. Use the Day/Night button on the right Toolbar for switching between the day and night mode. For the details of the Day/Night button, refer to "2.2.1 Right toolbar".
ARCS Color Pattern	The "ARCS Color Pattern" dialog is displayed.  A color test pattern of the ARCS chart is displayed. By identifying the color pattern, the ARCS chart display status can be verified. A color pattern can be displayed in Day/Night mode. Use the Day/Night button on the right Toolbar for switching between the day and night mode. For the details of the Day/Night button, refer to "2.2.1 Right toolbar".

7.2.3 Confirming the Performance of the Operation Unit [Key Test]

Confirm the operation of the keys of the operation unit.

1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] - [Diagnosis] - [Key Test] button on the menu.**
3. **Click on the [Key Test Start] button.**



Key Test window is displayed.

4. **Operate the keys, buttons and dials in the operation unit.**

If the performance of the operation unit is normal, the colors of the keys, buttons and dials are changed.

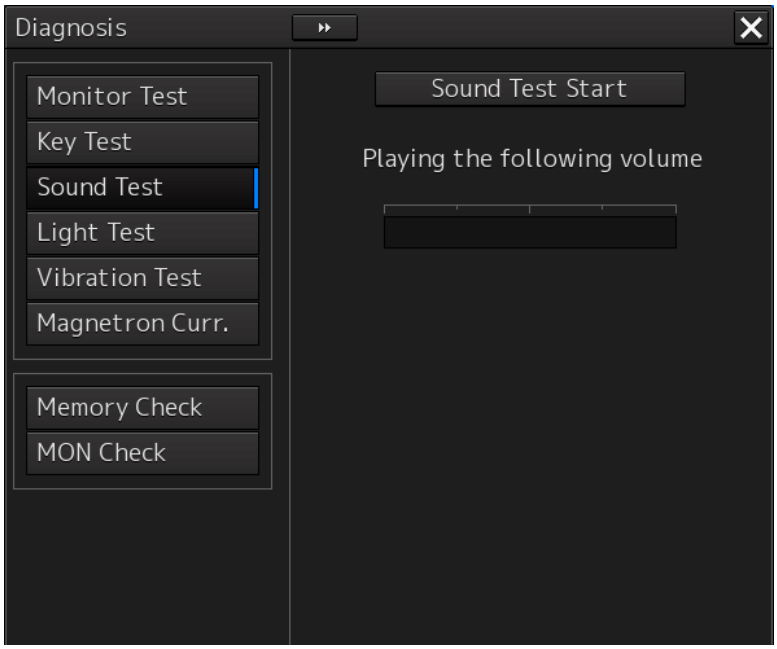
5. **Click on the [Key Test Stop] button after the performance check.**

Returns to the "Diagnosis" dialog box.

7.2.4 Confirming the Alert Sound [Sound Test]

Confirm the alert sound.

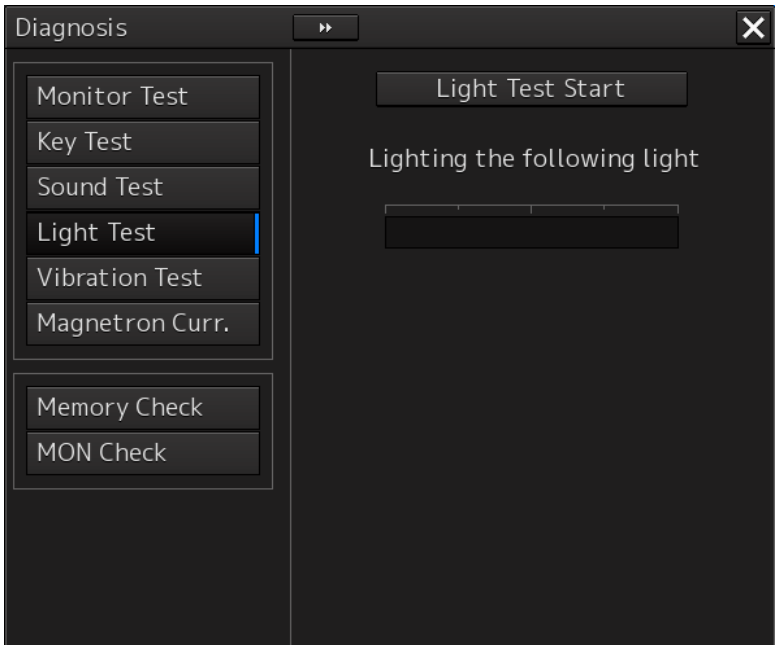
1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] - [Diagnosis] - [Sound Test] button on the menu.**
3. **Click on the [Sound Test Start] button.**
   A sound test starts. All the available beep sound volumes can be tested from 0.



7.2.5 Testing the Brightness of LED [Light Test]

Test the brightness of LED.

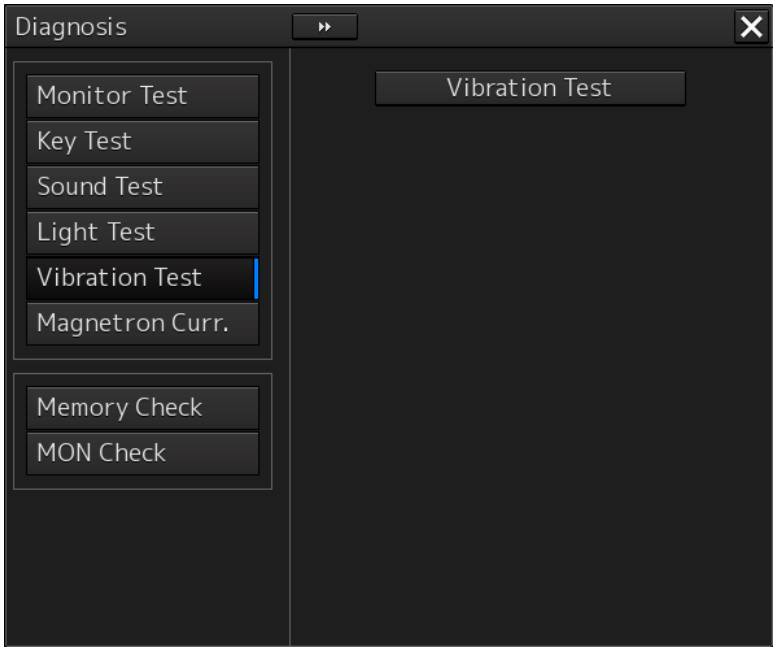
1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] - [Diagnosis] - [Light Test] button on the menu.**
3. **Click on the [Light Test Start] button.**
   An LED brightness test starts. All the available brightness levels can be tested by increasing the level from 0.



7.2.6 Testing a Motor [Vibration Test]

Test the vibrations of the motor.

1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] - [Diagnosis] - [Vibration Test] button on the menu.**
3. **Click on the [Vibration Test] button.**
   The motor continuously vibrates while the button is pressed. When the button is released, vibration stops.



7.2.7 Checking the Magnetron Current Level of the RADAR [Magnetron Curr.]

This function is used to check the magnetron current level of the radar.

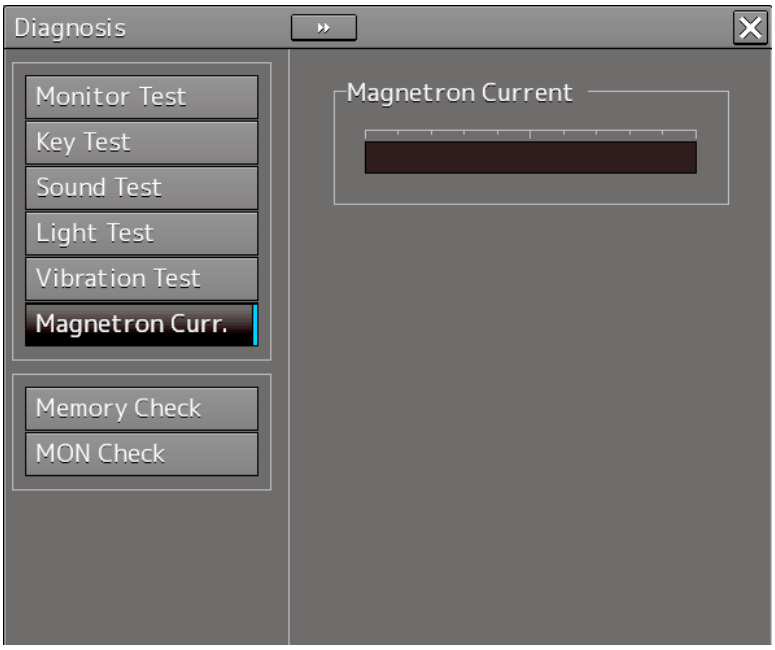
This function is displayed only when the magnetron radar scanner unit is connected.

1. **Click on the [Menu] button on the left toolbar.**

The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] - [Magnetron Current] button on the menu.**

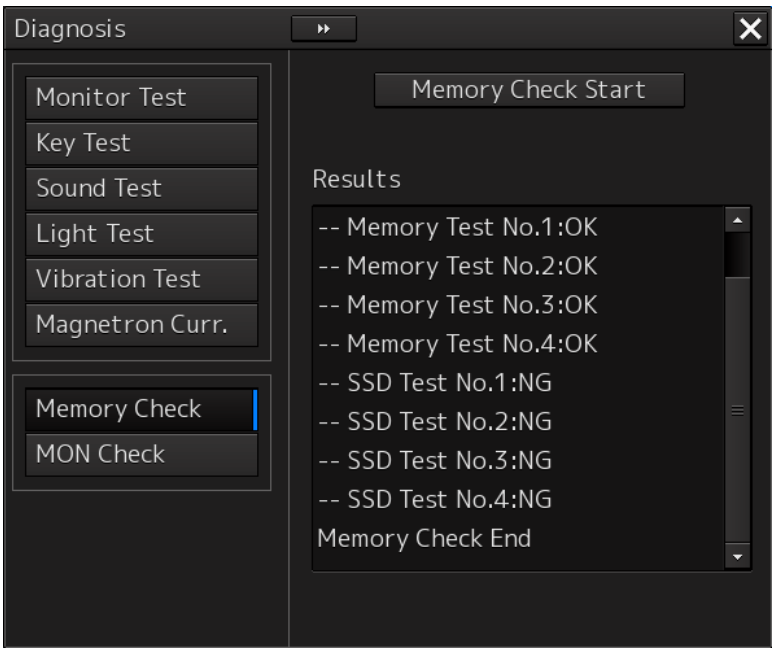
The magnetron current level of the scanner unit is displayed.



7.2.8 Checking the Memory［Memory Check］

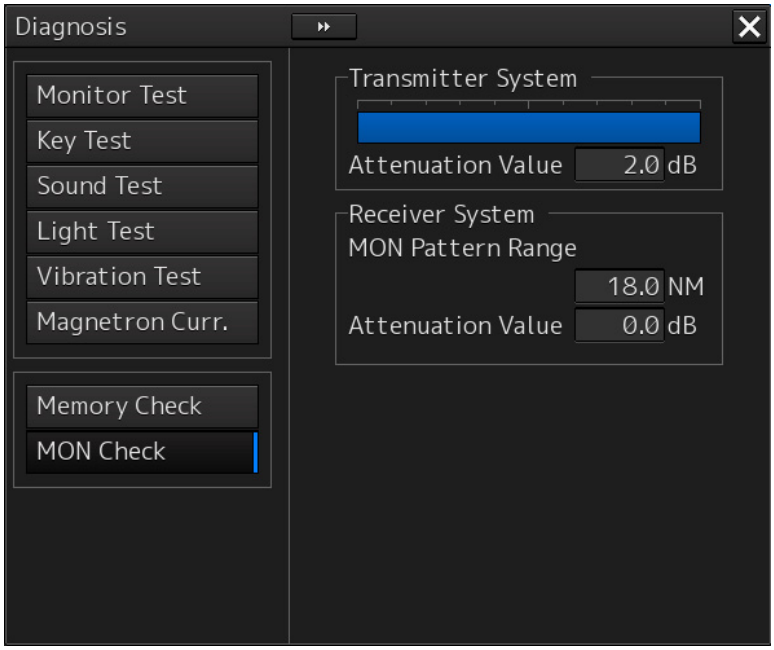
Check the memory.

1. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
2. **Click on the [Maintenance] - [Diagnosis] - [Memory Check] button on the menu.**
3. **Click on the [Memory Check Start] button.**
   Memory checking starts and the checking result is displayed on the [Result] list.



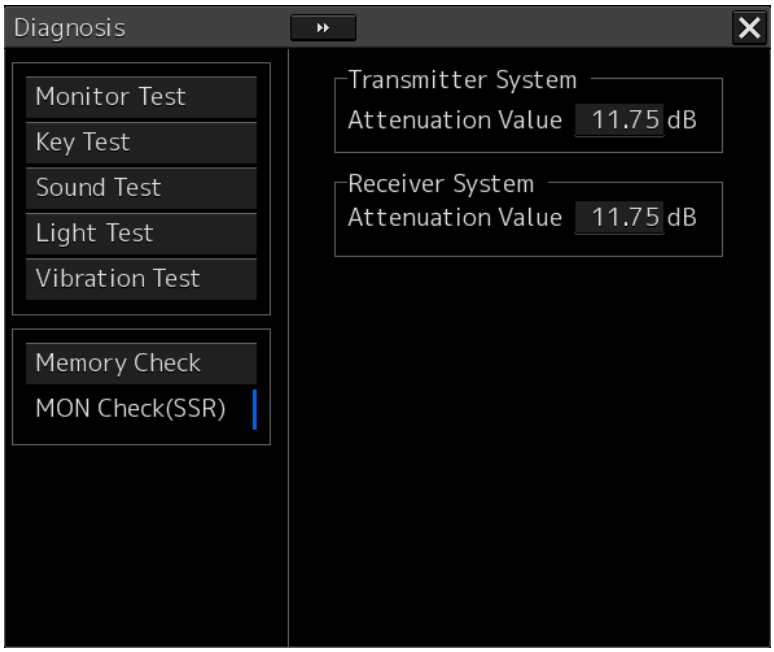
7.2.9 Checking the Performance Monitor Status

This function is used to check the condition of the radar performance monitor.
Items displayed under this function vary depending on the type of the scanner unit.
When magnetron radar is used, the following dialog box appears.



For the details of this dialog box, refer to "MON Check".

When a solid-state radar is used, the following dialog box will be displayed.

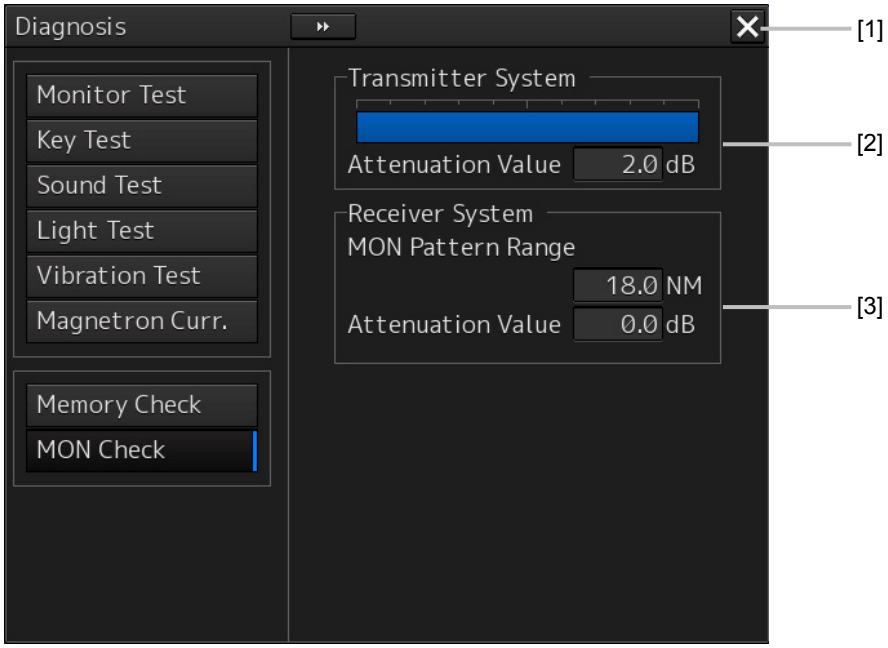


For the details of this dialog box, refer to "MON Check (SSR)".
For more information about the adjustment operation while checking the performance monitor, refer to "Adjusting the performance monitor."

MON Check

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] - [MON Check] button on the menu.**



[1] [X] button
Click on this button to close the "Diagnosis" dialog box.

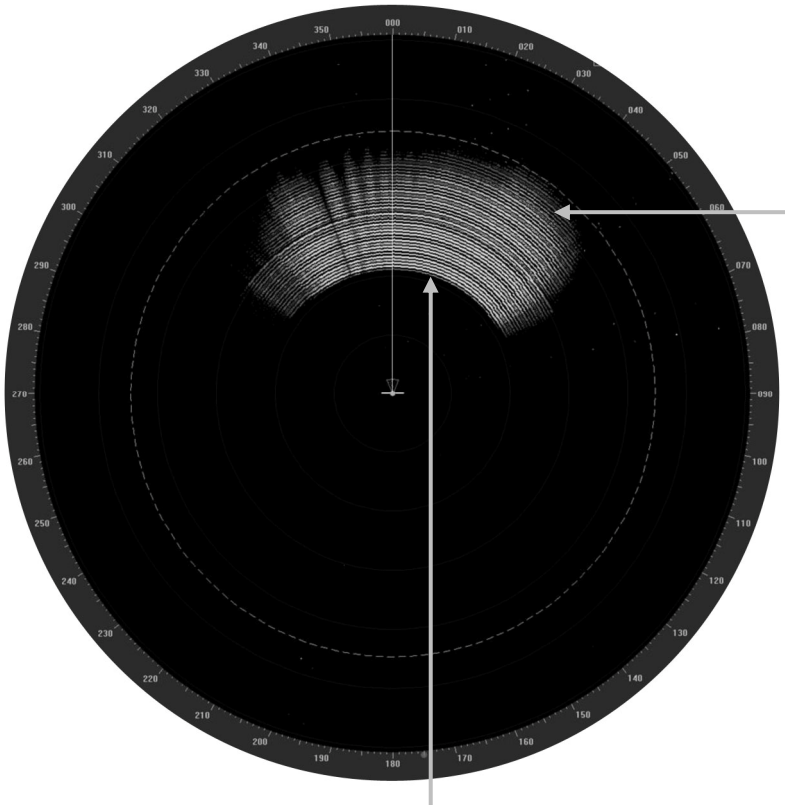
[2] [Transmitter System]
The amount of attenuation at the radar transmitter is displayed in a bar graph as well as in a numerical value [dB].

[3] [Receiver System]
- MON Pattern Range
  The distance [NM] is displayed when the user adjusts VRM to the farthest edge of the performance monitor pattern.
- Attenuation Value
  The amount of attenuation at the radar receiving unit is displayed in a numerical value [dB].

Adjustment of the performance monitor

Check the condition of the performance monitor and adjust the performance monitor as necessary.

In the case of equiped with Interswitch Unit function (Option)
To check the performance with the performance monitor, set the Interswitch Unit connection to straight (i.e. No. 1 scanner unit is connected to No. 1 display unit).



1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] - [MON Check] or [MON Check (SSR)] button on the menu.**

3. **Turn the [VRM] dial on the KOPU to the farthest edge of the performance monitor pattern.**

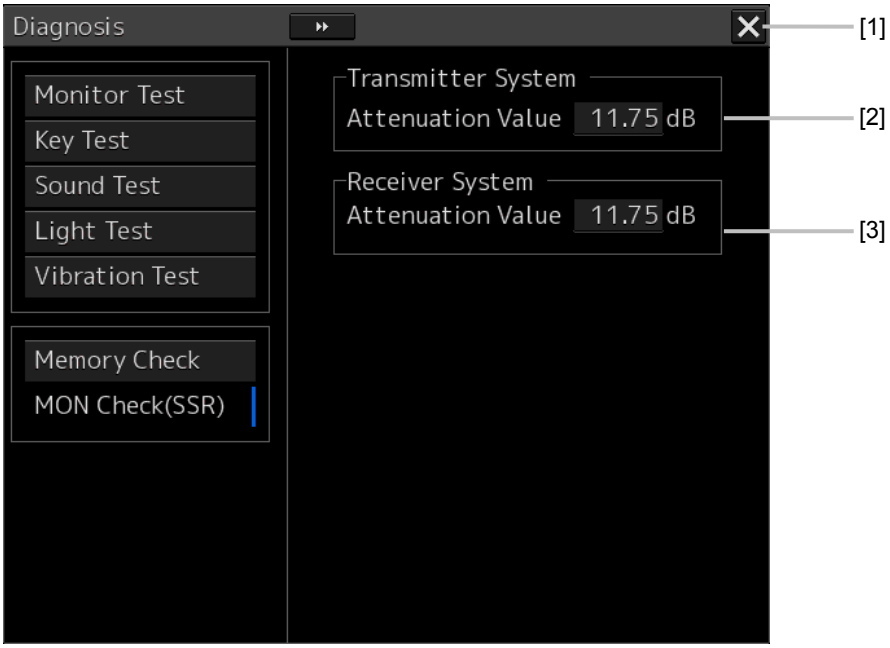
4. **Check the amount of attenuation in the dialog box.**
Benchmarks for the amount of attenuation are as follows:
Attention Value of Transmitter:
At normal: -6.9 dB to +2.0 dB
At degrading performances: -15.0 dB to -7.0 dB
Attention Value of Receiving Unit:
At normal: -2.9 dB to +3.5 dB
At degrading performances: -15.0 dB to -3.0 dB

- When confirming the attenuation value of the transmitter, after opening the dialog box, wait for one minute, and then read its value.
- If the attenuation value of the transmitter is -7dB or lesser, or that of the receiver is -3dB or lesser, it indicates that performances of the transmitter/receiving unit are degrading.
  In this case, inspection by the specialized service personnel is required. Contact our dealer, the nearest service representative or JRC sales.

MON Check (SSR)

1. **Click on the [Menu] button on the left toolbar.**
The menu is displayed.

2. **Click on the [Maintenance] - [Diagnosis] - [MON Check (SSR)] button on the menu.**



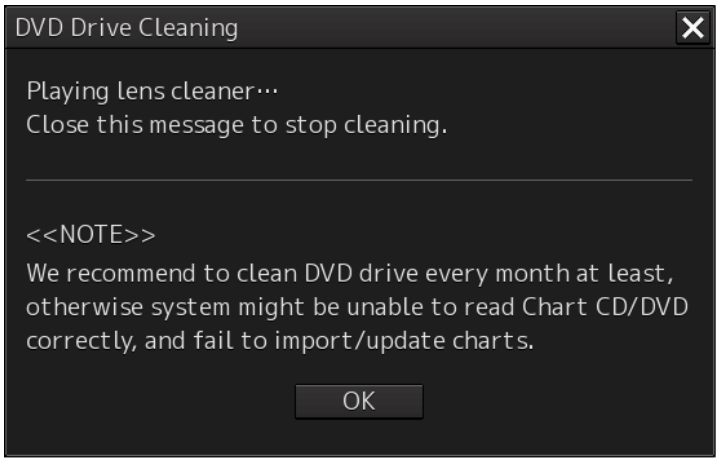
[1] [X] button
Click on this button to close the "Diagnosis" dialog box.

[2] [Transmitter System]
The amount of attenuation at the radar transmitter is displayed in a numerical value [dB].

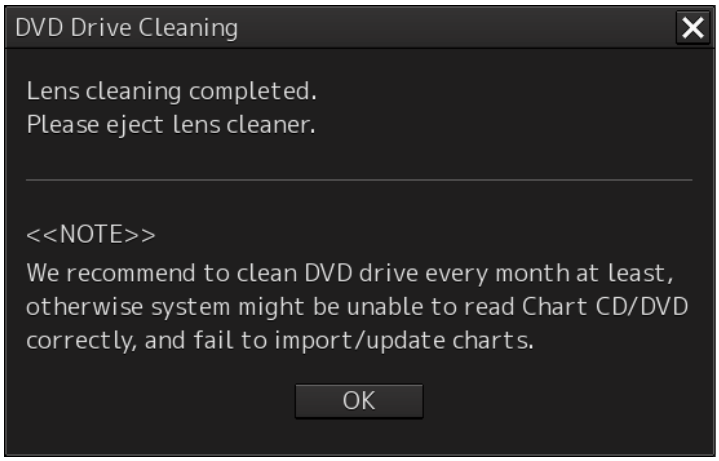
[3] [Receiver System]
The amount of attenuation at the radar receiving unit is displayed in a numerical value [dB].

7.2.10 Cleaning the Lens of the DVD Drive

1. **Insert the supplied lens cleaner CD into the DVD drive.**
2. **Click on the [Menu] button on the left toolbar.**
   The menu is displayed.
3. **Click [Maintenance] - [Diagnosis] - [DVD Cleaning] from the menu.**
   Cleaning automatically starts.
   The following dialog box appears during cleaning:



4. **When the cleaning completion dialog box appears, click on the [OK] button.**



   The supplied lens cleaner CD is ejected.

Note

It is recommended that the DVD drive is cleaned at least once a month. If the lens becomes dirty, it may not be possible to read data from a CD/DVD, or else it may not be possible to install a chart or an update.

When reading the lens cleaner CD fails, an error dialog box appears.

7.2.11 Cleaning the Trackball

Refer to "4.3.4.2 Cleaning the trackball" of Chapter 4.

7.3 Troubleshooting

When this equipment does not operate correctly, check the following points before asking for repairs.

Consult with your nearest subsidiary company, branch office, or sales office if the problem does not get solved even after checking and correcting these points, or if there are any abnormally locations other than the following items.

Symptom	Cause	Action
The power is not supplied. Alternatively, the equipment does not start even if the Power button of the operation unit is pressed.	The AC or DC power supply is not connected.	Connect the AC or DC power supply.
	The circuit breaker at the front of the PSU (NBD-913) is not set to ON.	Set the breaker to ON by pushing up the lever of the breaker.
	The AC or DC power supply is not input within the specified voltage range.	Connect the AC or DC power supply within the specified voltage range.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The PSU (NBD-913) is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
	The CCU (NCE-5605) is faulty.	Make a request to the distributor for repair.
The power is not supplied to the monitor.	The display unit is not activated.	Activate the display unit.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The MNU (NWZ-208/NWZ-207) is faulty.	Make a request to the distributor for repair.
Although the power is supplied to the monitor, the screen is not displayed.	The brightness of the monitor is set to the minimum level.	Adjust the brightness of the monitor to the appropriate level.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The MNU (NWZ-208/NWZ-207) is faulty.	Make a request to the distributor for repair.
The brightness of the monitor cannot be adjusted.	The MNU (NWZ-208/NWZ-207) is faulty.	Make a request to the distributor for repair.
The trackball or the option keyboard cannot be operated.	The internal wiring is faulty.	Make a request to the distributor for repair.
	The display unit (NCE-5605/NCE5625) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
The trackball does cannot be moved smoothly.	The trackball is dirty.	Clean the trackball.
Although the power is supplied and the screen is displayed, the display is frozen, disabling processing to advance up to display of the task menu.	The CCU (NDC-1590) is abnormal.	Make a request to the distributor for repair.
Some task menus cannot be selected.	The device license has not been installed.	Install the license of the device to be used.
The cursor is not displayed correctly.	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
Characters/symbols are not displayed correctly.	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
Position information (GPS) is not displayed.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the GPS unit is not turned on.	Turn on the power supply for the GPS unit.
	The GPS unit does not perform positioning.	Check the state of the GPS unit.
	The connection with the GPS unit is abnormal.	Check the connection with the GPS unit. If a GPS unit is connected to the SLC, check that the LED of the corresponding port is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on. (Case where the GPS unit is connected to the SLC)	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. (Case where the GPS unit is connected to the SLC)	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
AIS information is not displayed.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the AIS unit is not turned on.	Turn on the power supply for the AIS unit.
	The AIS unit does not perform receiving.	Check the state of the AIS unit.
	The connection with the AIS unit is abnormal.	Check the connection with the AIS unit. If an AIS unit is connected to the SLC, check that the LED of the corresponding port is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on. (Case where the AIS unit is connected to the SLC)	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. (Case where the AIS unit is connected to the SLC)	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
The azimuth of the Gyro compass is not displayed. Alternatively, the azimuth rotation direction is not displayed correctly.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the gyro compass is not turned on.	Turn on the power supply for the gyro compass.
	The connection with the gyro compass is abnormal.	Check the connection with the gyro compass. If the gyro compass is connected to the SLC or GIF, check that the corresponding LED is lit during signal reception.
	The power supply for the SLC (CMH-2370) is not turned on. （Case where the gyro compass is connected to the SLC）	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. （Case where the gyro compass is connected to the SLC）	Make a request to the distributor for repair.
	The GIF (CMJ-554） is not set correctly （Case where the gyro compass is connected to the GIF）	Set the GIF correctly according to the gyro compass.
	The fuse of the GIF (CMJ-554) has blown. （Case where the gyro compass is connected to the GIF)	Replace the fuse of the GIF.
	The GIF (CMJ-554）is faulty. （Case where the gyro compass is connected to the GIF)	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Vessel speed is not displayed or the values are not displayed correctly.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the speed log is not turned on.	Turn on the power supply for the speed log.
	The connection with the speed log is abnormal.	Check the connection with the speed log. If the speed log is connected to the SLC or GIF, check that the corresponding LED is lit during signal reception.
	The power supply for the SLC (CMH-2370) is not turned on. (Case where the speed log is connected to the SLC).	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. (Case where the speed log is connected to the SLC).	Make a request to the distributor for repair.
	The GIF (CMJ-554) is not set correctly. (Case where the speed log is connected to the GIF).	Set the GIF correctly according to the speed log.
	The GIF (CMJ-554) is faulty. (Case where the speed log is connected to the GIF).	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Rudder angles are not displayed. Alternatively, the values are not displayed correctly.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the rudder angle indicator is not turned on.	Turn on the power supply for the rudder angle indicator.
	The connection with the rudder angle indicator is abnormal.	Check the connection with the rudder angle indicator. If the rudder angle indicator is connected to the SLC, check that the LED of the corresponding port is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on. (Case where the rudder angle indicator is connected to the SLC or the rudder angle indicator is connected to the AOC)	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. (Case where the rudder angle indicator is connected to the SLC or the rudder angle indicator is connected to the AOC)	Make a request to the distributor for repair.
	The AOC (CMJ-560) is not set correctly. (Case where the rudder angle indicator is connected to the AOC)	Set the AOC correctly according to the rudder angle indicator.
	The AOC (CMJ-560) is faulty. (Case where the rudder angle indicator is connected to the AOC)	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
The digital anemometer values (wind direction and speed) are not displayed.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the anemometer is not turned on.	Turn on the power supply for the anemometer.
	The connection with the anemometer is abnormal	Check the connection with the anemometer. Check that the LED of the corresponding port in the SLC is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on.	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
Water depth values are not displayed.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the echo sounder is not turned on.	Turn on the power supply for the echo sounder.
	The connection with the echo sounder is abnormal.	Check the connection with the echo sounder. Check that the LED of the corresponding port in the SLC is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on.	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Sensor signals are not displayed.	The communication is not set correctly.	Set the communication correctly.
	The power supply for the sensor equipment is not turned on.	Turn on the power supply for the sensor equipment.
	The connection with the sensor equipment is abnormal.	Check the connection with the sensor equipment. Check that the LED of the corresponding port in the SLC is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on.	Turn on the power supply for the SLC.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The display unit such as the SLC (CMH-2370), AOC (CMJ-560), and CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
Auto sailing is disabled.	The communication is not set correctly.	Set the communication correctly.
	The Auto sailing function is not operated correctly.	Operate Auto sailing correctly.
	The power supply for the Auto sailing unit is not turned on.	Turn on the power supply for the Auto sailing unit.
	The connection with the Auto sailing unit is faulty.	Check the connection with the Auto sailing unit. Check that the LED of the corresponding port in the SLC is lit during data reception.
	The power supply for the SLC (CMH-2370) is not turned on.	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Contact signals are not output.	The power supply for the SLC (CMH-2370) is not turned on. (Case where contact signal output is acquired from the SLC)	Turn on the power supply for the SLC.
	The SLC (CMH-2370) is faulty. (Case where contact signal output is acquired from the SLC)	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
The scanner unit is not recognized	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	Power is not supplied from the PSU to the scanner unit.	Check the power supply wiring between the PSU and the RIF. Check the power supply connection inside of the scanner unit. [Note] For checking wiring inside of the scanner unit, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	Only AC power is supplied to the PSU. (NKE-2254 or NKE-2103 is connected as the scanner unit)	To connect the NKE-2254 or NKE-2103 scanner unit, the DC power supply must be connected to the PSU.
	The RIF (CQD-2273) is not set correctly.	Set the RIF correctly.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The scanner unit is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
The power is not supplied to the scanner unit.	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	The connection with the scanner unit is abnormal and overcurrent protection is functioning in the PSU.	Check the connection with the scanner unit and remove the cause of short-circuit.
	DC power is not supplied to the PSU. (NKE-2254 or NKE-2103 is connected as the scanner unit)	To connect the NKE-2254 or NKE-2103 scanner unit, DC power supply must be connected to the PSU.
	The DC24V output fuse is blown out. (NKE-2254 or NKE-2103 is connected as the scanner unit.)	After removing the cause of fuse blow-out, replace the fuse. The fuse is the 15A blade fuse at the front of the PSU (NBD-913).
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The PSU (NBD-913) is abnormal.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
The preheat count down of the scanner unit is not displayed.	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	The safety switch of the scanner unit is set to OFF.	Set the safety switch of the scanner unit to ON. [Note] For operating the safety switch of the scanner unit, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	A solid-state scanner unit is connected.	Preheat count-down is not displayed for a solid-state scanner unit.
	The scanner unit is faulty.	Make a request to the distributor for repair.
	The RIF (CQD-2273) is not set correctly.	Set the RIF correctly.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
The scanner unit does not rotate even if the [Transmit] button is pressed.	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	The safety switch of the scanner unit is set to OFF.	Set the safety switch of the scanner unit to ON. [Note] For operating the safety switch of the scanner unit, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	Power is not supplied from the PSU to the scanner unit.	Check the power supply wiring between the PSU and the RIF. Check the power supply connection inside of the scanner unit. [Note] For checking the wiring inside of the scanner unit, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	The motor driver circuit inside of the scanner unit is not set correctly. (NKE-1632, NKE-2632, or NKE-2632-H is connected as the scanner unit.)	Set the motor driver circuit correctly. [Note] For setting the motor driver circuit, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	The rotating part of the scanner unit is frozen.	De-freeze the frozen section by using the neck heater option.

Symptom	Cause	Action
	Strong wind of relative wind velocity exceeding 100 kt (about 51.5 m/s) is blowing.	When strong wind of relative wind velocity exceeding 100 kt is blowing, the scanner unit does not rotate due to the protection function.
	The scanner unit is faulty.	Make a request to the distributor for repair.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The PSU (NBD-913) is abnormal.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
No radar image is displayed.	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	The GAIN value is set to the minimum.	Set a proper value for GAIN.
	The SEA/RAIN value is set to the maximum.	Set a proper value for SEA/RAIN.
	The magnetron is deteriorated significantly. （Case where an scanner unit that uses a magnetron is connected）	Replace the magnetron. [Note] For magnetron replacement, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	The scanner unit is faulty.	Make a request to the distributor for repair.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The PSU (NBD-913) is abnormal.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Radar images cannot be tuned	The magnetron is deteriorated significantly. （Case where a scanner unit that uses a magnetron is connected）	Replace the magnetron. [Note] For magnetron replacement, always request the work to the specialized service person. Before starting the work, turn off the power supply of the display unit. Otherwise, an unexpected accident may occur.
	A solid-state scanner unit is connected.	Tuning bar is not displayed for a solid-state scanner unit.
The azimuth of the radar image is not displayed correctly.	The azimuth is not set correctly.	Set the azimuth correctly.
	CCRP is not set correctly.	Set CCRP correctly.
	The GPS antenna position is not set correctly.	Set the GPS antenna position correctly.
The range of the radar image is not displayed correctly.	The range is not set correctly.	Set the range correctly.
	CCRP is not set correctly.	Set CCRP correctly.
	The GPS antenna position is not set correctly.	Set the GPS antenna position correctly.
Interswitch Unit does not function.	Power for the Interswitch Unit is not turned on.	Turn on the power for the Interswitch Unit.
	The connection with the Interswitch Unit is abnormal.	Check the connection with the Interswitch Unit.
	The Interswitch Unit is faulty.	Make a request to the distributor for repair.
	The RIF (CQD-2273) is not set correctly.	Set the RIF correctly.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
If the power supply is turned off, the trail data is cleared without being stored.	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.

Symptom	Cause	Action
Radar images cannot be overlaid.	There is no optional license for radar overlay.	Implement an optional license for radar overlay.
	The connection with the scanner unit is abnormal.	Check the connection with the scanner unit.
	The connection with the radar display unit is abnormal.	Check the connection with the radar display unit.
	The RIF (CQD-2273) is faulty.	Make a request to the distributor for repair.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	The PSU (NBD-913) is faulty.	Make a request to the distributor for repair.
	The CCU (NDC-1590) is faulty.	Make a request to the distributor for repair.
UPS does not function.	The connection with UPS is faulty.	Check the connection with UPS.
	UPS is not set correctly.	Set UPS correctly.
	The UPS battery is extremely depleted.	Replace the battery. [Note] At the battery replacement, make a request for the work to the specialized service staff. During the replacement, turn off the corresponding power supply breaker in the ship. Otherwise, an unexpected accident may occur.
	The internal wiring is faulty.	Make a request to the distributor for repair.
	UPS is faulty.	Make a request to the distributor for repair.

7.4 Alert List

When an alert occurs, alert information is displayed in the alert notification area.

Each of the above buttons shows the number of alerts occurred in the corresponding category

Memo
The buttons of the categories in which no alerts have occurred are not displayed.

The display colors of alert messages are defined as follows according to the type and seriousness of alerts.

Alert Type	Alert Class (Seriousness)	Display Color	Alert Display Status	Alert Sound
Alarms (An alert indicating a state asking sailors to pay immediate attention and take immediate action.)	Alarms	Red	Before alarm acknowledgement: Blinking After alarm acknowledgement: Lighting	Present (repetitive)
Warnings (An alert indicating that the state has changed, which although not immediately dangerous, but may become so in the near future if no action is taken. Warnings are alerts displayed for preventing possible future hazardous states.)	Warnings	Orange	Before alarm recognition: Blinking After alarm recognition: Lighting	Present (once)
Cautions (Although these are neither alarms nor warnings, these alerts indicate that it is necessary to pay more than normal attention to cautions, statuses, or to the supplied information.)	Cautions	Yellow	Lighting	No sound
No Alarm	-	Green	-	

The list of alert messages by alert type is shown below.

7.4.1 Alarms

Message	Location of occurrence	Explanation
ACCA	TCS	Warning for reaching wheel over line
ACCA (Back-up Navigator Call)	TCS	Warning for reaching wheel over line (Back-up navigator call)
AIS (CPA/TCPA)	RADAR/AIS	CPA/TCPA alarm
Cross Track	ECDIS	The off-track distance from the planned route exceeded the limit.
Crossing Safety Contour	ECDIS	Crossing the safety contour
Depth Below Keel	ECDIS	Alarm on the depth below the keel
Dragging Anchor	ECDIS	Exited from the dragging anchor monitoring area
End Of Track	TCS	1 to 5 minutes before the arrival of the last WP
End Of Track (Back-up Navigator Call)	TCS	Not acknowledged by EOT alarm for 30 seconds
Failure of reduction in power supply	HCS	Failure or reduction of power supply
Heading (Sensor Failure)	TCS	Heading sensor failure
Heading (Sensor Failure, Back-up Navigator Call)	TCS	Heading sensor failure (back-up navigator call)
POSN1 (Sensor Failure)	TCS	POSN1 sensor failure
POSN1 (Sensor Failure, Back-up Navigator Call)	TCS	POSN1 sensor failure (back-up navigator call)
POSN2 (Sensor Failure)	TCS	POSN2 sensor failure
Speed (Sensor Failure)	TCS	Speed sensor failure
Speed (Sensor Failure, Back-up Navigator Call)	TCS	Speed sensor failure (back-up navigator call)
Track Control Stopped	TCS	TCS stopped.
Track Control Stopped (Back-up Navigator Call)	TCS	TCS stop alarm was not acknowledged.
TT (CPA/TCPA)	RADAR/AIS	CPA/TCPA alarm

7.4.2 Warnings

Message	Location of occurrence	Explanation	Action to take
Blizzard #n (Communication Failed, DSP #m)	Control unit	Communication error with the DSP (ASIC#n - DSP#m)	Make a request to the distributor for repair.
Blizzard 1 (Load Failed, DSP 1)	Control unit	The transfer of the DSP program did not succeed.	Make a request to the distributor for repair.
Blizzard 1 (Load Failed, DSP 2)	Control unit	The transfer of the DSP program did not succeed.	Make a request to the distributor for repair.
Blizzard 1 (Temperature)	Control unit	Blizzard1 temperature rise	Make a request to the distributor for repair.
Blizzard 2 (Load Failed, DSP 1)	Control unit	The transfer of the DSP program did not succeed.	Make a request to the distributor for repair.
Blizzard 2 (Load Failed, DSP 2)	Control unit	The transfer of the DSP program did not succeed.	Make a request to the distributor for repair.
Blizzard 2 (Temperature)	Control unit	Blizzard2 temperature rise	Make a request to the distributor for repair.
CCU (Fan)	Control unit	Drop in CCU fan revolution per minute	Make a request to the distributor for repair.
CIF (Communication Failed)	Control unit	Drop in CCU fan revolution per minute	Make a request to the distributor for repair.
CMP RelaySoftware (Communication Failed)	Control unit	Communication error between the companion MPU relay software and the MFD	Make a request to the distributor for repair.
CPU (Temperature, Core 1)	Control unit	CPU core 1 temperature rise	Make a request to the distributor for repair.
CPU (Temperature, Core 2)	Control unit	CPU core 2 temperature rise	Make a request to the distributor for repair.
Data Disk (Failed)	Control unit	The data disk failed and cannot be accessed.	Make a request to the distributor for repair.
Data Disk (Not Connected)	Control unit	The data disk not acknowledged yet	Make a request to the distributor for repair.
e-Token (Communication Failed)	Control unit	Communication error between the CPU and e-Token	Make a request to the distributor for repair.

Message	Location of occurrence	Explanation	Action to take
GIF (Communication Failed)	Control unit	Communication error between the companion MPU and the Gyro IF (USB connection)	Make a request to the distributor for repair.
GIF-RIF (Open)	Control unit	The open state was detected between the GIF and the RIF.	Check the connection status of the GIF and the RIF.
GIF-SLC (Open)	Control unit	The open state was detected between the GIF and the SLC.	Check the connection status of the GIF and the SLC.
HASP (Communication Failed)	Control unit	Communication error between the CPU and the HASP	Make a request to the distributor for repair.
Keyboard (Communication Failed)	Operation unit	The open state was detected between the OPA and the OPB.	Check the connection status of the TOPU and the KOPU.
OPU (Communication Failed, Serial)	Control unit	Communication error between the companion MPU and the operation unit (serial)	Make a request to the distributor for repair.
OPU (Communication Failed, USB)	Control unit	Communication error between the companion MPU and the operation unit (USB connection)	Make a request to the distributor for repair.
LCD (FAN #n)	MNU	The LCD fan stopped.	Make a request to the distributor for repair.
LCD (Temperature)	MNU	LCD temperature rise	Make a request to the distributor for repair.
Power (AC Voltage, Low)	Power supply	When AC input voltage is 75 V or less	Connect an AC power supply in the designated voltage range.
Power (DC Voltage, Low)	Power supply	When DC input voltage is 18 V or less	Connect a DC power supply in the designated voltage range.
Power (Fan)	Power supply	The fan in the PSU is broken.	Make a request to the distributor for repair.
Power (Unit Failure)	Power supply	When the 48 V output is abnormal/the internal temperature of the power supply has risen	Make a request to the distributor for repair.

Message	Location of occurrence	Explanation	Action to take
RIF (Communication Failed)	Control unit	Communication error between the MPU and the RIF	Make a request to the distributor for repair.
Touch Panel (Communication Failed)	Control unit	Communication error between the CPU and the touch panel	Make a request to the distributor for repair.
TXRX (Azimuth Change Pulse)	Scanner Unit	Azimuth signal abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Azimuth Reset Pulse)	Scanner Unit	Azimuth reference signal abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Fan #n)	Scanner Unit	Fan #n abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Magnetron Drive Voltage)	Scanner Unit	Magnetron drive voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Magnetron Heater Voltage)	Scanner Unit	Magnetron heater voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Motor Communication)	Scanner Unit	Drive unit control/monitoring communication error (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Controller)	Scanner Unit	Operation abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Drive Current)	Scanner Unit	Motor supply current abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Drive Current)	Scanner Unit	Motor supply current abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Drive Voltage, High)	Scanner Unit	Motor drive voltage abnormality (exceeded) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Drive Voltage, Low)	Scanner Unit	Motor drive voltage abnormality (insufficient) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Input Voltage, High)	Scanner Unit	Drive unit input voltage abnormality (exceeded) (drive unit)	Make a request to the distributor for repair.

Message	Location of occurrence	Explanation	Action to take
TXRX (Motor Input Voltage, Low)	Scanner Unit	Drive unit input voltage abnormality (insufficient) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor IPM Temperature)	Scanner Unit	IPM temperature abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Rotation Speed, High)	Scanner Unit	Antenna rotation speed abnormality (high speed rotation) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Rotation Speed, Illegal)	Scanner Unit	Antenna rotation speed abnormality (abnormal rotation) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Rotation Speed, Low)	Scanner Unit	Antenna rotation speed abnormality (low speed rotation) (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Sensor)	Scanner Unit	Motor sensor abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Motor Temperature)	Scanner Unit	Motor temperature abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Option Module)	Scanner Unit	Option module abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Power Supply Circuit)	Scanner Unit	Antenna Power supply circuit abnormality	Make a request to the distributor for repair.
TXRX (Processor Circuit)	Scanner Unit	Radar processor unit circuit abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Received Signal Trigger)	Scanner Unit	Trigger signal abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Received Signal)	Scanner Unit	Radar video signal abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.

Message	Location of occurrence	Explanation	Action to take
TXRX (ROM access, write)	Scanner Unit	ROM value abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Rotation Direction)	Scanner Unit	Antenna rotation direction abnormality (drive unit)	Make a request to the distributor for repair.
TXRX (Safety Switch))	Scanner Unit	The Safety switch is OFF.	Turn on the safety switch.
TXRX (S-band Magnetron Drive Voltage)	Scanner Unit	S-band magnetron drive voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (S-band Magnetron Heater Voltage)	Scanner Unit	S-band magnetron heater voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Temperature)	Scanner Unit	Interior temperature abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (Transmitter Clock)	Scanner Unit	Transmitter clock abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (X-band Magnetron Drive Voltage)	Scanner Unit	X-band magnetron drive voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.
TXRX (X-band Magnetron Heater Voltage)	Scanner Unit	X-band magnetron heater voltage abnormality (transmitting-receiving unit)	Make a request to the distributor for repair.

Message	Location of occurrence	Explanation
ACCI	TCS	The activated AIS target count reached the maximum activation target count.
AIS ACT (MAX Target)	RADAR/AIS	AIS serial communication failed
AIS (Communication Failed, Direct)	INS	AIS communication failed in MAIN LAN
AIS (Communication Failed, Main LAN)	INS	AIS communication failed in SUB LAN
AIS (Communication Failed, Sub LAN)	INS	AIS data validity error
AIS (Invalid)	INS	An AIS target is lost.
AIS (Lost)	RADAR/AIS	The AIS target count exceeded the maximum target display count
AIS (MAX Target)	RADAR/AIS	The AIS is in the initial acquisition state.
AIS (New Target)	RADAR/AIS	AIS data not received yet
AIS (Unavailable)	INS	Anemometer communication failed in MAIN LAN
ALC #n (Communication Failed, Main LAN)	INS	ALC#n communication failed in SUB LAN
ALC #n (Communication Failed, Sub LAN)	INS	Approaching an anchorage area
Anchorage Area	ECDIS	Approaching an anchorage prohibited area
Anchorage Prohibited	ECDIS	The activated AIS target count reached the maximum activation target count.
Anemometer (Communication Failed, Main LAN)	INS	Anemometer communication failed in MAIN LAN
Approach to mariner entered feature	ECDIS	Reached the point set by the navigation officer
Archipelagic Sea Lane	ECDIS	Approaching an archipelagic sea lane
ARCS (Chart Shift)	ECDIS	ARCS chart was shifted
ARCS (Security Failed)	ECDIS	[ARCS] Alert related to ARCS security
ARCS (Shift to WGS84)	ECDIS	An ARCS chart was shifted to WGS84.
ARCS (Unknown Datum)	ECDIS	Attempted to load an unknown geodetic system chart
Arrived at WPT	ECDIS	Arrived at a WPT
AutoPilot (Communication Failed, Main LAN)	INS	AutoPilot communication was disconnected in the Main LAN.
AutoPilot (Communication Failed, Sub LAN)	INS	AutoPilot communication was disconnected in the Sub LAN.
AutoPilot (Invalid, #n)	INS	AutoPilot data validity error

Message	Location of occurrence	Explanation
AutoPilot (Not Plausible, #n)	INS	AutoPilot data plausibility error
AutoPilot (Unavailable, #n)	INS	AutoPilot data not received yet
Cable Area	ECDIS	Approaching a cable area
Cargo Transshipment Area	ECDIS	Approaching a cargo transshipment area
Caution Area	ECDIS	Approaching a traffic precautionary area
Channel	ECDIS	Approaching a channel
Clock (Communication Failed, Main LAN)	INS	Communication with the ship's clock was disconnected in the Main LAN.
Clock (Communication Failed, Sub LAN)	INS	Communication with the ship's clock was disconnected in the Sub LAN.
COG/SOG (Doubtful)	INS	Integrity verification of COG/SOG data is doubtful.
COG/SOG (Failed)	INS	Integrity verification of COG/SOG data failed.
COG/SOG (Invalid, GPS #n)	INS	Validity error in COG/SOG data of GPS #n
COG/SOG (Invalid, Log #n)	INS	Validity error in COG/SOG data of Log #n
COG/SOG (Not Plausible, GPS #n)	INS	Plausibility error in COG/SOG data of GPS #n
COG/SOG (Not Plausible, Log #n)	INS	Plausibility error in COG/SOG data of Log #n
COG/SOG (Unavailable, GPS #n)	INS	COG/SOG data of GPS #n not received yet
COG/SOG (Unavailable, Log #n)	INS	COG/SOG data of Log #n not received yet
Course difference (heading deviates from track course)	TCS	Course difference (ship's heading deviates from track course)
Current (Invalid, Current Meter)	INS	Current data validity error
Current (Not Plausible, Current Meter)	INS	Current data plausibility error
Current (Unavailable, Current Meter)	INS	Current data not received yet
CurrentMeter (Communication Failed, Main LAN)	INS	Current meter communication was disconnected in the Main LAN.
Dangerous Area	ECDIS	Approaching a dangerous area
Dangerous Line	ECDIS	Approaching a dangerous line
DATUM (Invalid, GPS #n)	INS	DATUM data validity error
DATUM (Not Plausible, GPS #n)	INS	DATUM data plausibility error
DATUM (Unavailable, GPS #n)	INS	DATUM data not received yet
Deeper Water Route	ECDIS	Approaching deeper water route

Message	Location of occurrence	Explanation
Depth Area	ECDIS	Sailing shallower water than safety water
DPTH (Doubtful)	INS	Integrity verification of DPTH data is doubtful.
DPTH (Failed)	INS	Integrity verification of DPTH data failed.
DPTH (Invalid, Echo Sounder #n)	INS	Validity error in water depth data of echo sounder #n
DPTH (Not Plausible, Echo Sounder #n)	INS	Plausibility error in water depth data of echo sounder #n
DPTH (Unavailable, Echo Sounder #n)	INS	Water depth data of echo sounder #n not received yet
Dredge Area	ECDIS	Approaching a dredge area
DSP (Heading Data)	RADAR/AIS	Heading data error (heading error received by the companion MPU)
DSP (Sweep Data)	RADAR/AIS	Missing header in sweep data, etc.
Dumping Ground	ECDIS	Approaching a dumping ground
ECCI	TCS	Early notification of turning
ECDIS #n (Communication Failed, Main LAN)	INS	No.#n ECDIS communication was disconnected in the Main LAN.
ECDIS #n (Communication Failed, Sub LAN)	INS	No.#n ECDIS communication was disconnected in the Sub LAN.
EchoSounder#n (Communication Failed, Main LAN)	INS	Echo sounder communication was disconnected in the Main LAN.
EchoSounder#n (Communication Failed, Sub LAN)	INS	Echo sounder communication was disconnected in the Sub LAN.
Emergency Mode	Others	The system is running in the Emergency Mode activated when both disks have failed.
ENC (NON-WGS84)	ECDIS	The ENC is using a geodetic system other than the WGS84.
EPA (Update)	RADAR/AIS	The EPA is placed in the update request state.
External TT (Invalid ARPA #n)	INS	TT#n data validity error
External TT (Unavailable, ARPA #n)	INS	TT#n data not received yet
Fairway	ECDIS	Approaching a fairway
File System Failure	ECDIS	The file system device failed.
Fishing Ground	ECDIS	Approaching a fishing ground
Fishing Prohibited	ECDIS	Approaching a fishing prohibited area
GPS #n (Communication Failed, Direct)	INS	GPS#n communication was disconnected in serial communication.
GPS #n (Communication Failed, Main LAN)	INS	GPS#n communication was disconnected in the Main LAN.

Message	Location of occurrence	Explanation
GPS #n (Communication Failed, Sub LAN)	INS	GPS#n communication was disconnected in the Sub LAN.
HDG (Doubtful)	INS	Integrity verification of HDG data is doubtful.
HDG (Failed)	INS	Integrity verification of HDG data failed.
HDG (Invalid, Heading #n)	INS	Validity error in HDG data of heading sensor #n
HDG (Not Plausible, Heading #n)	INS	Plausibility error in HDG data of heading sensor #n
HDG (Unavailable, Heading #n)	INS	HDG data of heading sensor #n not received yet
Heading #n (Communication Failed, Direct)	INS	Heading#n communication was disconnected in serial communication.
Heading #n (Communication Failed, Main LAN)	INS	Heading#n communication was disconnected in the Main LAN.
Heading #n (Communication Failed, Sub LAN)	INS	Heading#n communication was disconnected in the Sub LAN.
Heading Monitor	TCS	Monitoring of ship's heading
Heading monitor (deviation from second heading source)	HCS	Monitoring of ship's heading (deviating from the second heading of the ship)
Ice Area	ECDIS	Approaching an ice area
Incineration Area	ECDIS	Approaching an incineration area
Inshore Traffic Zone	ECDIS	Approaching an inshore traffic zone
ISW (Communication Failed)	RADAR/AIS	Communication error between the companion MPU and the ISW
LAT (Out Of Bounds)	ECDIS	Exceeded the system's operating latitude range (out of bounds)
Loading Different Datum Chart	ECDIS	Loading a different geodetic system chart
Log#n (Communication Failed ,Direct)	INS	Log#n communication was disconnected in serial communication.
Log#n (Communication Failed, Main LAN)	INS	Log#n communication was disconnected in the Main LAN.
Log#n (Communication Failed, Sub LAN)	INS	Log#n communication was disconnected in the Sub LAN.
Low Speed	TCS	Low speed alarm
Marine Farm/Aquaculture	ECDIS	Approaching a marine farm/aquaculture
Military Practice Area	ECDIS	Approaching a military practice area
Off heading alarm	HCS	Alarm for the ship's deviated heading
Offshore Production Area	ECDIS	Approaching an offshore production area

Message	Location of occurrence	Explanation
Pipeline Area	ECDIS	Approaching a pipeline area
Position Monitor	TCS	Monitoring of the position
Positioning System Failure	ECDIS	Positioning system failure
POSN (Doubtful)	INS	Integrity verification of POSN data is doubtful.
POSN (Failed)	INS	Integrity verification of POSN data failed.
POSN (Invalid, GPS #n)	INS	Validity error in POSN data of GPS #n
POSN (Not Plausible, GPS #n)	INS	Plausibility error in POSN data of GPS #n
POSN (Unavailable, GPS #n)	INS	POSN data of GPS #n not received yet
POSN1 (NON-WGS84)	ECDIS	The primary geodetic system is abnormal.
POSN2 (NON-WGS84)	ECDIS	The secondary geodetic system is abnormal.
PROC (Azimuth Change Pulse)	RADAR/AIS	Azimuth signal abnormality (radar processor unit)
PROC (Azimuth Reset Pulse)	RADAR/AIS	Heading line signal abnormality (radar processor unit)
PROC (Interrupt 1)	RADAR/AIS	Abnormal interrupting of stun in the signal processor unit
PROC (Interrupt 2)	RADAR/AIS	Abnormal interrupting of stun in the signal processor unit
PROC (Received Signal Trigger)	RADAR/AIS	Trigger signal abnormality (radar processor unit)
PROC (Received Signal)	RADAR/AIS	Radar video signal abnormality (radar processor unit)
Radar #n (Communication Failed, Main LAN)	INS	No.#n Radar communication was disconnected in the Main LAN.
Radar #n (Communication Failed, Sub LAN)	INS	No.#n Radar communication was disconnected in the Sub LAN.
RADAR Alarm (In)	RADAR/AIS	Radar alarm (approach)
RADAR Alarm (Out)	RADAR/AIS	Radar alarm (deviation)
RADAR PROC (Data)	RADAR/AIS	RADAR PROC or RADAR Draw control failure
Recommended Traffic Lane	ECDIS	Approaching a recommended traffic lane
Restricted Area	ECDIS	Approaching a restricted traffic area
RNC (NON-WGS84)	ECDIS	The RNC is using a geodetic system other than the WGS84.
ROT (Invalid, Heading #n)	INS	ROT data validity error
ROT (Not Plausible, Heading #n)	INS	ROT data plausibility error
ROT (Unavailable, Heading #n)	INS	ROT data not received yet

Message	Location of occurrence	Explanation
RSA (Invalid, Rudder #n)	INS	RSA data validity error
RSA (Not Plausible, Rudder #n)	INS	RSA data plausibility error
RSA (Unavailable, Rudder #n)	INS	RSA data not received yet
Seaplane Landing Area	ECDIS	Approaching a seaplane landing area
Sensitive Sea Area	ECDIS	Approaching a sensitive sea area
SLC #n (Communication Failed, Main)	INS	SLC (MAIN)1 communication was disconnected.
SLC #n (Communication Failed, Sub)	INS	SLC (SUB)1 communication was disconnected.
Specially Protected Area	ECDIS	Approaching a specially protected area
Spoil Ground	ECDIS	Approaching a spoil ground
STW (Doubtful)	INS	Integrity verification of STW data is doubtful.
STW (Failed)	INS	Integrity verification of STW data failed.
STW (Invalid, Log #n)	INS	Validity error in STW data of Log #n
STW (Not Plausible, Log #n)	INS	Plausibility error in STW data of Log #n
STW (Unavailable, Log #n)	INS	STW data of Log #n not received yet
Submarine Transit Area	ECDIS	Approaching a submarine transit area
TEMP (Invalid, Water Temperature Meter)	INS	Water temperature data validity error
TEMP (Not Plausible, Water Temperature Meter)	INS	Water temperature data plausibility error
TEMP (Unavailable, Water Temperature Meter)	INS	Water temperature data not received yet
TIME (Doubtful)	INS	Integrity verification of TIME data is doubtful.
TIME (Failed)	INS	Integrity verification of TIME data failed.
TIME (Invalid, Clock)	INS	Validity error in TIME data of ship's clock
TIME (Invalid, GPS #n)	INS	Validity error in TIME data of GPS #n
TIME (Not Plausible, Clock)	INS	Plausibility error in TIME data of ship's clock
TIME (Not Plausible, GPS #n)	INS	Plausibility error in TIME data of GPS #n
TIME (Unavailable, Clock)	INS	TIME data of ship's clock not received yet
TIME (Unavailable, GPS #n)	INS	TIME data of GPS #n not received yet
Track Control System Failed	TCS	Automatic sailing is abnormal.

Message	Location of occurrence	Explanation
Traffic Crossing	ECDIS	Approaching traffic crossing
Traffic Precautionary	ECDIS	Approaching traffic precautionary
Traffic roundabout	ECDIS	Approaching traffic roundabout
Traffic Separation Zone	ECDIS	Approaching a traffic separation zone
TT (Lost)	RADAR/AIS	A TT target is lost.
TT (MAX Target)	RADAR/AIS	The maximum number of TT targets is being acquired.
TT (New Target)	RADAR/AIS	The TT is in the initial acquisition state.
Two Way Traffic	ECDIS	Approaching two way traffic
TXRX (Communication Failed)	RADAR/AIS	Communication error between the companion MPU and the scanner unit
VDR (Communication Failed, Main LAN)	INS	VDR communication was disconnected in the Main LAN.
WaterThermometer (Communication Failed, Main LAN)	INS	Water thermometer communication was disconnected in the Main LAN.
Wind (Invalid, Anemometer)	INS	Wind direction/wind speed data validity error
Wind (Not Plausible, Anemometer)	INS	Wind direction/wind speed data plausibility error
Wind (Unavailable, Anemometer)	INS	Wind direction/wind speed data not received yet

The AIS alerts received from external sensors are as shown below.

For the AIS alerts received from external sensors, alert messages are suffixed by (External).

Example: Antenna VSWR exceeds limit (External)

Message	Subject	Explanation	Alert ID
Antenna VSWR exceeds limit	AIS	Abnormality in antenna output	002
Data Flash memory err	AIS	Abnormality in the transponder data storage circuit	063
external EPFS lost	AIS	Abnormality in external EPFS connection	025
general failure	AIS	General error	006
Heading lost/invalid	AIS	Ship's heading data has not been input or is invalid.	032
MKD connection lost	AIS	Abnormality in the connection between the transponder and the controller	008
mkd connection lost	AIS	No response from the transponder (detected in the display)	064
no sensor position in use	AIS	Internal GPS data has not been input or is invalid.	026
no valid COG information	AIS	COG data has not been input or is invalid.	030
no valid ROT information	AIS	ROT data has not been input or is invalid.	035
no valid SOG information	AIS	SOG data has not been input or is invalid.	029
Not Transmitting Tx malfunction	AIS	Abnormality in transmission or while transmitting	001
Pa current error	AIS	Abnormality in the current during transmission	054
Pa temp error	AIS	Abnormal temperature rise during transmission	055
Power supply error	AIS	Abnormality in power supply voltage	053
Program Flash memory err	AIS	Abnormality in the transponder control circuit	062
Rx channel 1 malfunction	AIS	Abnormality in reception channel 1	003
Rx channel 2 malfunction	AIS	Abnormality in reception channel 2	004
Rx channel 70 malfunction	AIS	Abnormality in reception channel 70	005
SSD mismatch	AIS	Mismatch in static information (between the display and the transponder)	065
Tx pll unlock	AIS	Abnormality in the synthesizer circuit for transmission	060
Tx power down	AIS	Transmit by reducing output power due to error	051
Tx power supply error	AIS	Abnormality in power supply voltage during transmission	052
Tx power too high	AIS	Power is higher than the specified transmission power.	059
Tx power too low	AIS	Power is lower than the specified transmission power.	056
Tx stop interrupt	AIS	Transmission is forcibly stopped by the transmission monitoring circuit.	058
Vr error	AIS	Transmission system output error	057

7.4.3 Cautions

Message	Location of occurrence	Explanation
AIS ACT (95% Capacity)	RADAR/AIS	Exceeded 95% of the maximum number of AIS activation targets
AIS (95% Capacity)	RADAR/AIS	Exceeded 95% of the maximum number of AIS targets
AIS (Invalid)	INS	AIS data validity error
AIS (Unavailable)	INS	AIS data not received yet
AutoPilot (Invalid, #n)	INS	AutoPilot data validity error
AutoPilot (Not Plausible, #n)	INS	AutoPilot data plausibility error
AutoPilot (Unavailable, #n)	INS	AutoPilot data not received yet
Chart (License Expired)	ECDIS	The chart license has expired.
Chart (License Will Expire)	ECDIS	The chart license will expire within 30 days.
Chart (Not Up-to-date)	ECDIS	When the chart being displayed is not up-to-date
COG/SOG (Invalid, GPS #n)	INS	Validity error in COG/SOG data of GPS #n
COG/SOG (Invalid, Log #n)	INS	Validity error in COG/SOG data of Log #n
COG/SOG (Not Plausible, GPS #n)	INS	Plausibility error in COG/SOG data of GPS #n
COG/SOG (Not Plausible, Log #n)	INS	Plausibility error in COG/SOG data of Log #n
COG/SOG (Unavailable, GPS #n)	INS	COG/SOG data of GPS #n not received yet
COG/SOG (Unavailable, Log #n)	INS	COG/SOG data of Log #n not received yet
Current (Invalid, Current Meter)	INS	Current data validity error
Current (Not Plausible, Current Meter)	INS	Current data plausibility error
Current (Unavailable, Current Meter)	INS	Current data not received yet
Danger (Buoy/Light)	ECDIS	Approaching a danger (buoy/lighthouse)
Danger (Dangerous Symbol)	ECDIS	Approaching a danger (dangerous symbol)
Danger (Obstruction)	ECDIS	Approaching a danger (obstruction)
Danger (Spot Sounding)	ECDIS	Approaching a danger (spot sounding)
Danger (Under Water Rock)	ECDIS	Approaching a danger (under water rock)
Danger (Wreck)	ECDIS	Approaching a danger (wreck)
DATUM (Invalid, GPS #n)	INS	DATUM data validity error
DATUM (Not Plausible, GPS #n)	INS	DATUM data plausibility error
DATUM (Unavailable, GPS #n)	INS	DATUM data not received yet
Dongle (Disable Mode)	ECDIS	Dongle disable mode (USB dongle still broken)
DPTH (Invalid, Echo Sounder #n)	INS	Validity error in water depth data of echo sounder #n

Message	Location of occurrence	Explanation
DPTH (Not Plausible, Echo Sounder #n)	INS	Plausibility error in water depth data of echo sounder #n
DPTH (Unavailable, Echo Sounder #n)	INS	Water depth data of echo sounder #n not received yet
Exchange BackLight (LCD)	Maintenance	The end of the estimated life span of the LCD backlight is approaching.
Exchange FAN (CCU)	Maintenance	The end of the estimated life span of the CCU fan is approaching.
Exchange FAN (LCD)	Maintenance	The end of the estimated life span of the LCD fan is approaching.
Exchange FAN (Power)	Maintenance	The end of the estimated life span of the power fan is approaching.
Exchange FAN (TXRX #n)	Maintenance	The end of the estimated life span of the TXRX fan is approaching.
Exchange Magnetron (TXRX #n)	Maintenance	The end of the estimated life span of the magnetron is approaching (#n is the antenna number).
Exchange Motor (TXRX #n)	Maintenance	The end of the estimated life span of the TXRX motor is approaching.
Exchange SSD#n	Maintenance	The end of the estimated life span of the SSD#n is approaching.
Exchange UPS	Maintenance	The end of the estimated life span of the UPS is approaching.
External TT (Invalid, RADAR #n)	INS	TT#n data validity error
External TT (Unavailable, RADAR #n)	INS	TT#n data not received yet
GPS #n (HDOP Exceeded)	INS	HDOP increased (GPS accuracy lowered)
GPS #n (Position Not Differential)	INS	GPS#n is not the DGPS.
HDG (Invalid, Heading #n)	INS	Validity error in HDG data of heading sensor #n
HDG (Not Plausible, Heading #n)	INS	Plausibility error in HDG data of heading sensor #n
HDG (Unavailable, Heading #n)	INS	HDG data of heading sensor #n not received yet
Position Shift	ECDIS	When own ship's position was offset
POSN (Invalid, GPS #n)	INS	Validity error in POSN data of GPS #n
POSN (Not Plausible, GPS #n)	INS	Plausibility error in POSN data of GPS #n
POSN (Unavailable, GPS #n)	INS	POSN data of GPS #n not received yet
ROT (Invalid, Heading #n)	INS	ROT data validity error
ROT (Not Plausible, Heading #n)	INS	ROT data plausibility error
ROT (Unavailable, Heading #n)	INS	ROT data not received yet
RSA (Invalid, Rudder #n)	INS	RSA data validity error
RSA (Not Plausible, Rudder #n)	INS	RSA data plausibility error

Message	Location of occurrence	Explanation
RSA (Unavailable, Rudder #n)	INS	RSA data not received yet
Scanner Rotating	RADAR/AIS	The scanner is rotating (waveforms not yet transmitted): ICE CLASS standby
STW (Invalid, Log #n)	INS	Validity error in STW data of Log #n
STW (Not Plausible, Log #n)	INS	Plausibility error in STW data of Log #n
STW (Unavailable, Log #n)	INS	STW data of Log #n not received yet
TEMP (Invalid, Water Temperature Meter)	INS	Water temperature data validity error
TEMP (Not Plausible, Water Temperature Meter)	INS	Water temperature data plausibility error
TEMP (Unavailable, Water Temperature Meter)	INS	Water temperature data not received yet
TIME (Invalid, Clock)	INS	Validity error in TIME data of ship's clock
TIME (Invalid, GPS #n)	INS	Validity error in TIME data of GPS #n
TIME (Not Plausible, Clock)	INS	Plausibility error in TIME data of ship's clock
TIME (Not Plausible, GPS #n)	INS	Plausibility error in TIME data of GPS #n
TIME (Unavailable, Clock)	INS	TIME data of ship's clock not received yet
TIME (Unavailable, GPS #n)	INS	TIME data of GPS #n not received yet
TT (95% Capacity)	RADAR/AIS	Exceeded 95% of the maximum number of TT targets
TT (Out of Range)	RADAR/AIS	A tracked target went out of 32NM range.
USB (Communication Failed)	Control unit	Communication error in general-purpose USB
USB (Over current)	Control unit	Overcurrent occurred in one of the USB terminals.
VDR (Delivery Failed)	RADAR/AIS	The delivery of capture images for the VDR failed continuously for 1 min (i.e, continuously 4 times).
VDR (Unexpected Data)	RADAR/AIS	An abnormality when there was some sort of reception by the socket being connected when distributing images to the VDR (support for error display by IEC62388 Standard H.2.3.3)
Wind (Invalid, Anemometer)	INS	Wind direction/wind speed data validity error
Wind (Not Plausible, Anemometer)	INS	Wind direction/wind speed data plausibility error
Wind (Unavailable, Anemometer)	INS	Wind direction/wind speed data not received yet

7.4.4 List of Alert Icons

The alert icons displayed in the alert notification area are listed below.

No.	Name of alert icon	Functional outline	Alert icon
1	Active – unacknowledged alarm	A flashing red triangle. A symbol of loudspeaker in the middle of the triangle.	
2	Active – silenced alarm	A flashing red triangle. A symbol as in icon number 1 with a prominent diagonal line above it.	
3	Active – acknowledged alarm	A red triangle. An exclamation mark in the middle of the triangle.	
4	Active - responsibility transferred alarm	A red triangle. An arrow pointing towards the right in the middle of the triangle.	
5	Rectified – unacknowledged alarm	A flashing red triangle. A tick mark in the middle of the triangle.	
6	Active - unacknowledged warning	A flashing yellowish orange circle. A symbol of loudspeaker in the middle of the circle.	
7	Active – silenced warning	A flashing yellowish orange circle. A symbol as in icon number 6 with a prominent diagonal line above it.	
8	Active – acknowledged warning	A yellowish orange circle. An exclamation mark in the middle of the circle.	
9	Active - responsibility transferred warning	A yellowish orange circle. An arrow pointing towards the right in the middle of the circle.	
10	Rectified – unacknowledged warning	A flashing yellowish orange circle. A tick mark in the middle of the circle.	
11	Caution	A yellow square. An exclamation mark in the middle of the square.	
a	Aggregation	A plus sign. To be presented together with icons number 1 to 11	
b	Acknowledge not allowed for alarm	A red triangle with a cross in the middle of triangle. To be presented together with icons number 1, 2 and 5.	
c	Acknowledge not allowed for warning	A yellowish orange circle with a cross in the middle of circle. To be presented together with icons number 6, 7 and 10.	

7.5 Password List

7.5.1 Password List

The list of password is shown below.

Table. Password List

Where to enter	Password	Description
System Information*1	0000	Show the detail of software versions.
Code Input	0	Show the Service menu for Users.
	0009	Show the Service menu for Engineers.
	1501	Show the Utilities menu.
	5763	S57/S63 Auto Select ON. (available in ECDIS)
	9999	Return to Task Menu.
Task Menu	0913	Launch a WEB browser
	1074	Open the file chooser for additional maintenance tools from manufacturer. Choose the tool to run.
	1111	Copy \mfd\INI folder into your USB storage device.
	5254	Open the file chooser for Conning INI file renewal. Choose the file to import.
	5963	Shut down. (Power OFF)
	9380	Launch the Licence Import Tool.
	9999	Quit Task Menu. (Launch Windows Task Manager)

*1 To enter the password on “System Information” window, click software information list. The password input dialog will appear.

7.5.2 Password on System Information

⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

7.5.2.1 0000 - Show the detail of software versions.

You can confirm the system information. To obtain the detail information of software, enter the password 0000 to the window. Password input dialog will appear by clicking the software information list.

1. Click on the [Menu] button on the left Toolbar.

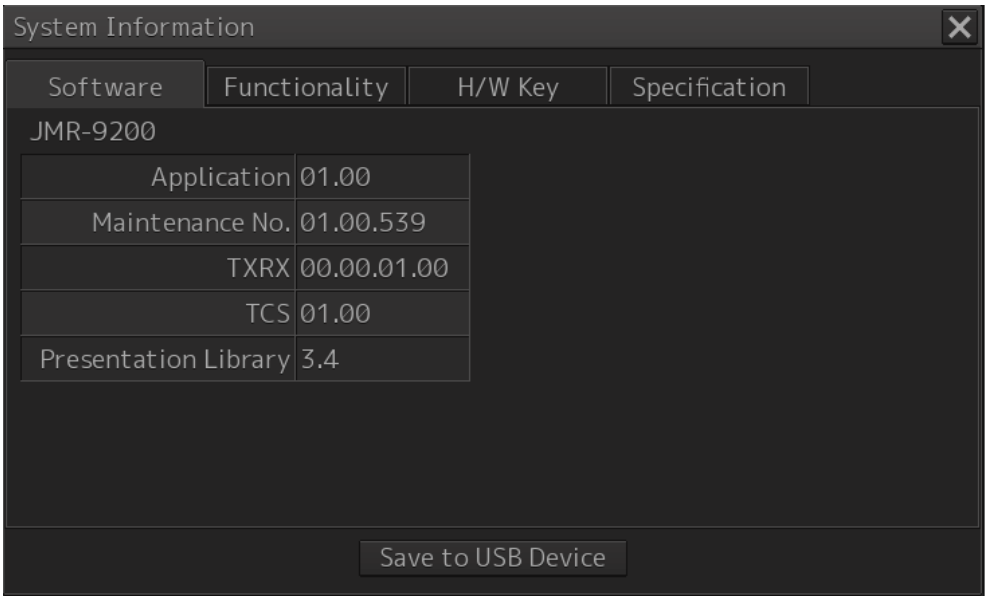
The menu will be displayed.

2. Click on the [Maintenance] - [System Information] button on the menu.

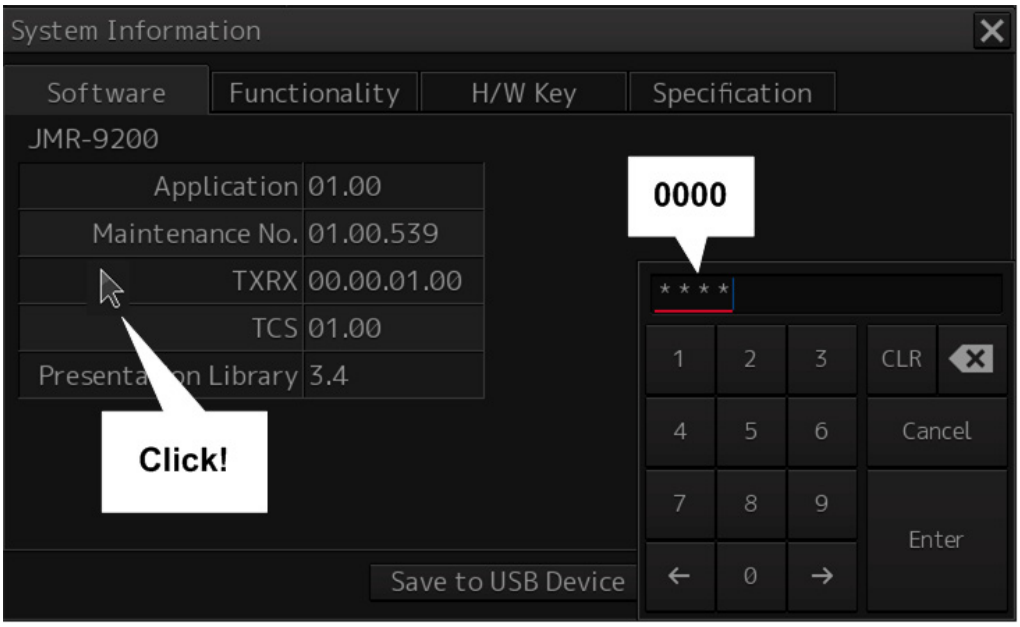
[System Information] dialog box appears.

Click on the [Software] tab.

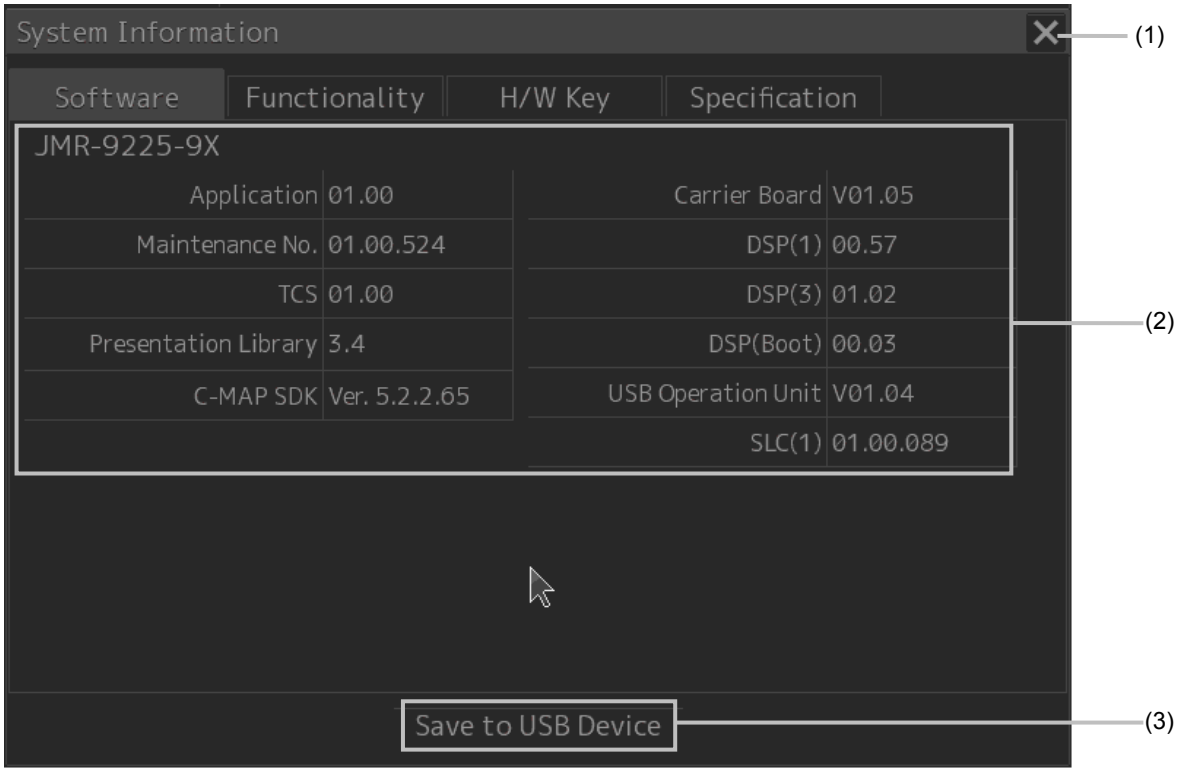
3. Software Information will be displayed.



4. Click on the Software list and enter the password “0000”



5. Details of Software information will be displayed.



(1) [X] button

Details of Software information will be displayed.

(2) Datails of Software Information

Item	Displayed information
Jxx-xxxx	Type and model name of the system
Application	Version of the application software
Maintenance No.	8-digit maintenance number
TXRX	Version of the software used for the radar transmitter-receiver unit * This information is displayed when the system is equipped with the RADAR function.
No.1 GPS	Software version of GPS 1 * Displayed when a medium-sized radar equipped with 1 or 2 units of GPS is used.
No.2 GPS	Software version of GPS 2 * Displayed when a medium-sized radar equipped with 2 units of GPS is used.
TCS	Version of the software used for TCS * This information is displayed when the system is equipped with the TCS function.

Presentation Library	Edition of S52 Presentation Library * Displayed for ECDIS or RADAR (ENC chart display license available) only
C-MAP SDK	Version of the software used for C-MAP SDK * Displayed for ECDIS only
Carrier Board	Software version of Carrier Board.
DSP(n)	Software version of No. n DSP.
DSP(Boot)	Software version of DSP Boot section.
USB Operation Unit	Software version of Trackball Operation Unit.
SLC(n)	Software version of No. n SLC

(3) [Save to USB Device] (Saving to USB flash memory) button

Click on this button to save the displayed information in a USB flash memory in the text format.

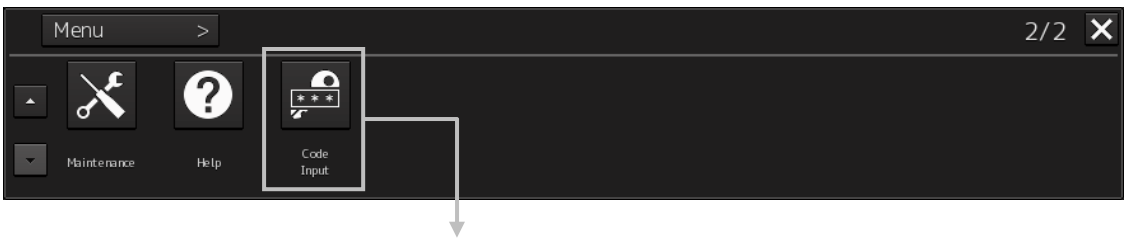
7.5.3 Password on Code Input

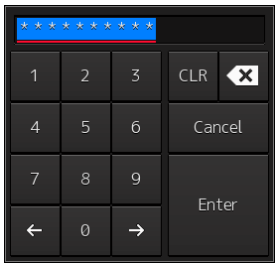
⚠CAUTION	
	Never have the equipment adjusted by unauthorized service personnel. If the equipment is set up incorrectly, it may cause unstable operation. Further, an accident or trouble may occur.
	Never make adjustments while sailing. Doing so may adversely affect the radar functions, causing accidents and/or malfunctions.

7.5.3.1 How to enter.

1. **Click on the [MENU] button on the Left Tool Bar.**
   The menu will be displayed.

2. **Change over to the second page of the menu using the page switching button of the menu. Click on the [Code Input] button on the Menu.**





3. Enter the password.

Additional menu will appear in accordance with the password you enter.

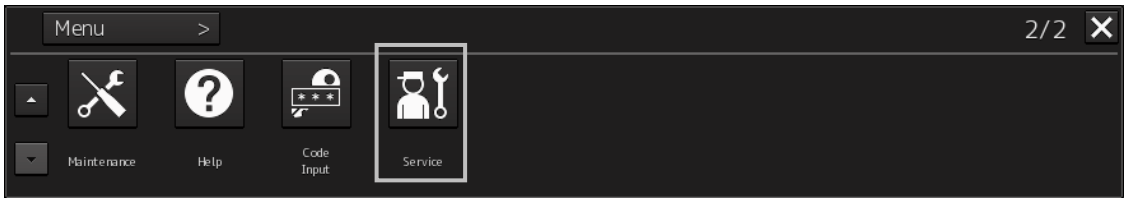
7.5.3.2 0 - Service menu for Users / 0009 - Service menu for Engineers.

The Service menu consists of three submenus of Adjustment, Installation and Maintenance. To display it, password 0 or 0009 is required.

This section also describes the differences between those two passwords.

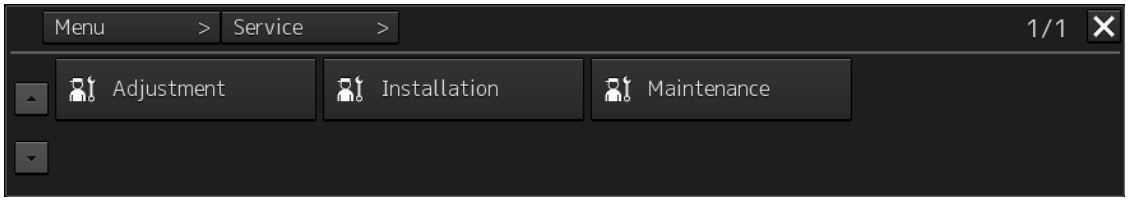
1. Enter the password 0009 in Code Input

The [Service] button will be added at 2nd page of menu.



2. Click on the [Service] button.

The submenu will be displayed.



3. Display a submenu dialog box by clicking on one of the [Adjustment], [Installation], and [Maintenance] buttons.

The contents of each menu will be different in accordance with the password 0 or 0009.

The list of Service menu is shown below.

1st Category	2nd Category	3rd Category	Password	
			0	0009
Adjustment	Basic Adjustment	Tune Adjustment	YES	YES
		Bearing Adjustment	YES	YES
		Range Adjustment	YES	YES
		Master/Slave	YES	YES
	TXRX	Antenna Height	YES	YES
		Tune Peak Adjustment	**-**	**YES**
		Tune Indicator	YES	YES
		Output BP	YES	YES
	PerformanceMonitor/ PerformanceMonitor (SSR)	Performance Monitor	YES	YES
	Sector Blank	Sector Blank	YES	YES
	TNI Blank	**-**	**-**	**YES**
	Input BP Count	**-**	**-**	**YES**
	Output BP Count	**Output Pulse**	**-**	**YES**
	Echo Noise Level	**-**	**-**	**YES**
	TT	TT	YES	YES
	STC/FTC/MBS	-	YES	YES
	Cable Attenuation	**-**	**-**	**YES**

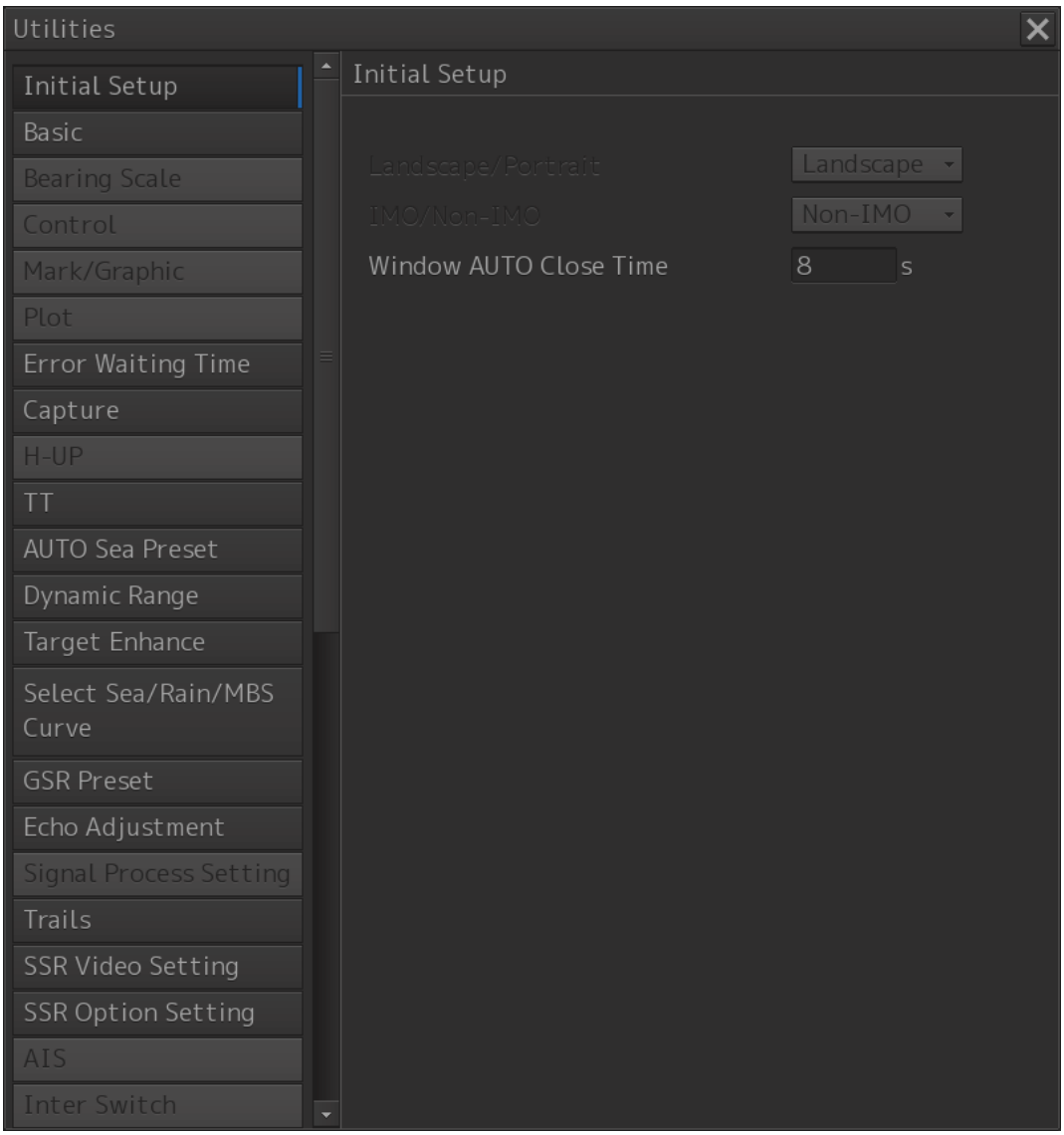
1st Category	2nd Category	3rd Category	Password	
			0	0009
Installation	**Installation Information**	-	-	**YES**
	Language	-	-	**YES**
	System Configuration	**Subsystem Installation**	-	**YES**
		CCRP	YES	YES
		Serial Port	YES	YES
		Contact	-	**YES**
		A/D	-	**YES**
		Data Selection	-	**YES**
		Data Output	-	**YES**
		Network	-	**YES**
	Ship's Parameters	Ship General	YES	YES
	Connection Diagnosis	**LAN communication test**	-	**YES**
		Sensor communication test	-	**YES**
		Data output test	-	**YES**
		Alert communication test	-	**YES**
	Settings	**Alert**	-	**YES**
		AC Power Failure	-	**YES**
		Interswitch	-	**YES**
		VDR	-	**YES**
		TCS	YES	YES
		AFT Operation	-	**YES**

1st Category	2nd Category	3rd Category	Password	
			0	0009
Maintenance	Storage	Management	YES	YES
	RADAR	-	YES	YES
	Operating Time Setup	-	-	**YES**
	Logging	-	-	**YES**
	Initialization	-	YES	YES

7.5.3.3 1501 - Utilities menu.

Password 1501 opens the Utilities menu which is for advanced settings.

1. **Enter the password 1501 in Code Input.**
2. **Utilities menu will be appear.**

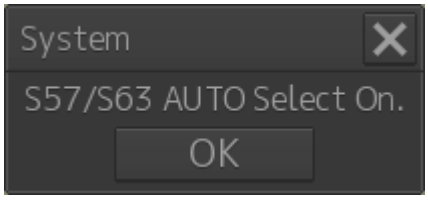


7.5.3.4 5763 - S57/S63 Auto Select ON (available in ECDIS).

Password 5763 enables automatic selection function of ENC S57 chart and S63 chart.

This function is available only in ECDIS.

1. **Enter the password 5763 in Code Input.**
2. **S57/S63 Auto Select ON dialog will be appear.**



3. **Click [OK] button to enable S57/S63 automatic selection function.**

7.5.3.5 9999 - Return to Task Menu.

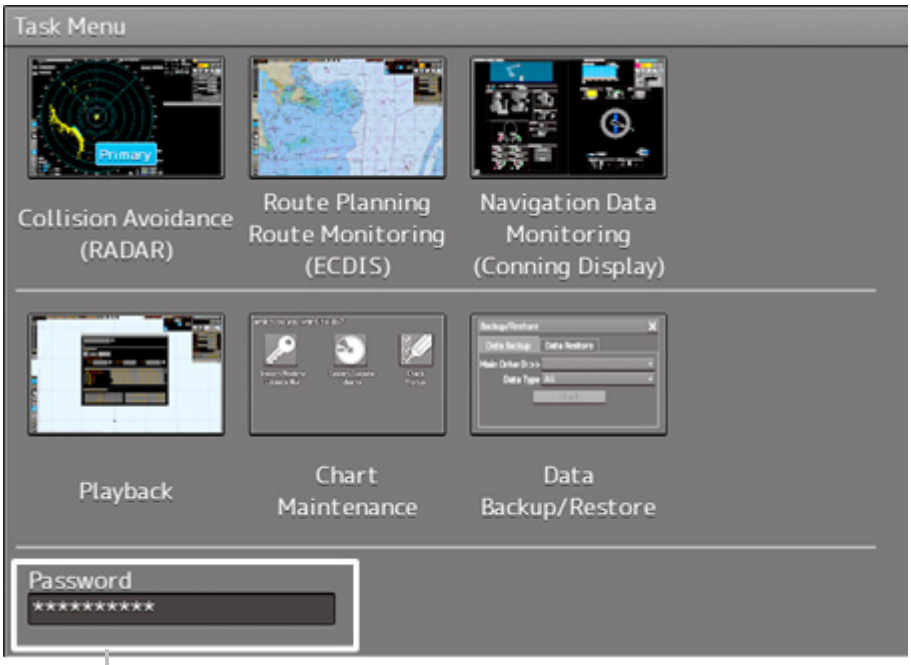
Password 9999 quits the MFD application and you can return to Task menu.

1. **Enter password 9999 in Code Input.**
2. **MFD application will close and return to Task menu automatically.**

7.5.4 Password on Task Menu

⚠WARNING	
	When you want to use a USB flash memory to read or write a file, make sure in advance that the USB flash memory is not affected by a computer virus. If the display unit is infected with a virus, other equipment will also be infected, with the result that a trouble will occur.
	Before removing the USB flash memory, check for the access lamp of the USB flash memory and make sure that it is not being accessed. If you remove the USB flash memory when it is accessed, data may be destroyed and a trouble may occur.

On Task Menu, password input section is located on the lower left of the window.



Password input section on Task Menu

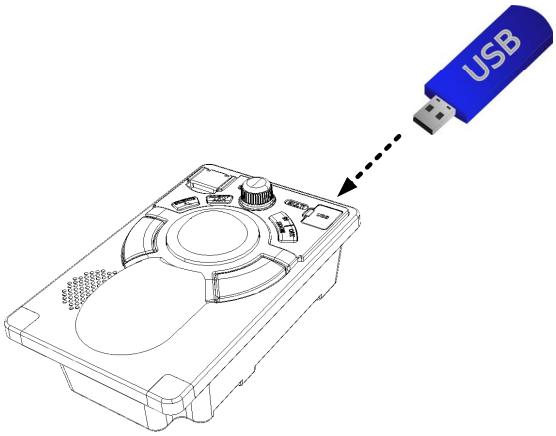
7.5.4.1 0913 - Launch a WEB browser.

Password 0913 on Task Menu launches a WEB browser.

7.5.4.2 1074 - Run the additional maintenance tools from manufacturer.

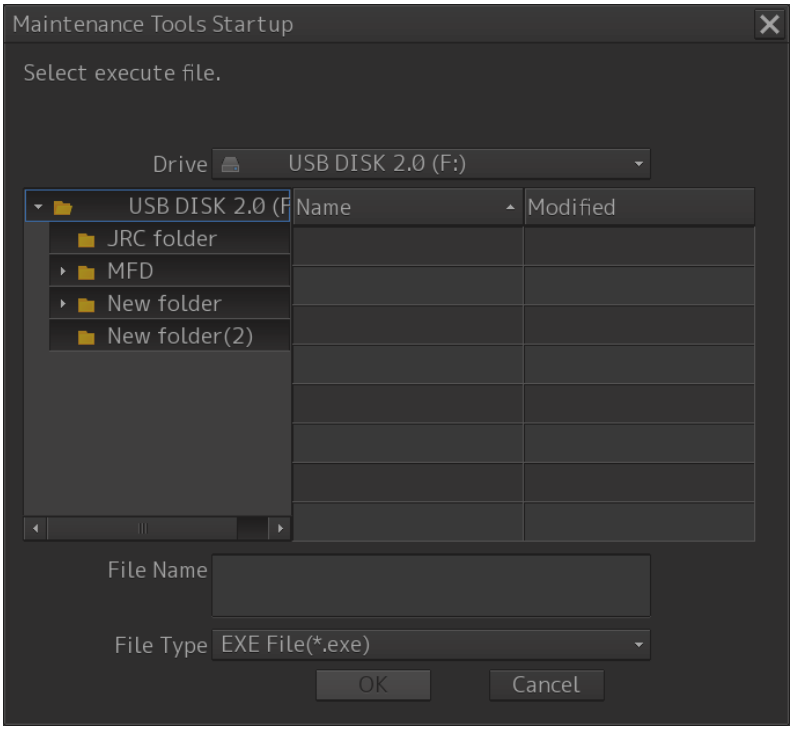
Password 1074 can run the additional maintenance tools (.exe) from manufacturer in your USB storage device.

1. **Connect your USB storage device or CD-ROM which contains the maintenance tools into the Display Unit.**



2. **Enter the Password 1074 on Task Menu.**

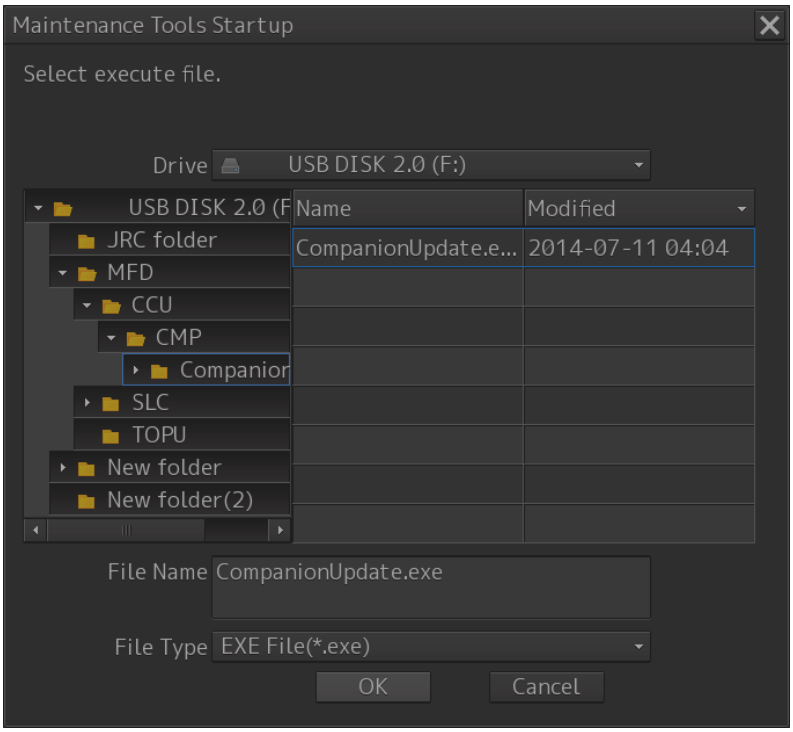
   Maintenance Tools Startup dialog will appear.



3. **Choose the maintenance tool to run.**

   Select the drive which has the maintenance tool to run from the [Drive] combo box.

   Select the name of maintenance tool (.exe) from the [File Name] combo box and click on the [OK] button to run.



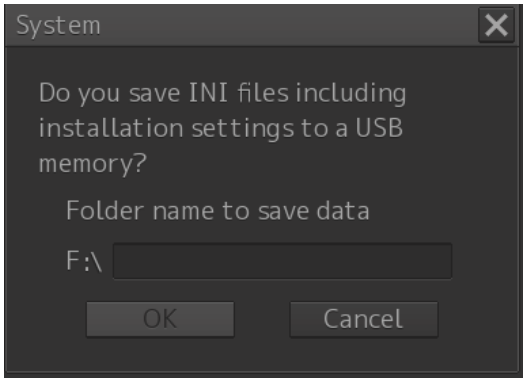
7.5.4.3 1111 - Back up the INI folder.

Password 1111 can back up the INI folder into your USB storage device.

INI folder consists of user configuration information, system configuration information, installation information, and software version information.

1. **Connect your USB storage device into the Display unit**
2. **Enter the Password 1111 on Task Menu**

   System dialog will appear.



3. **Enter the folder name to back up**

   Type an arbitrary folder name and then click on [OK] button.

   That folder will be created into your USB storage device and following folders will be copied in it.

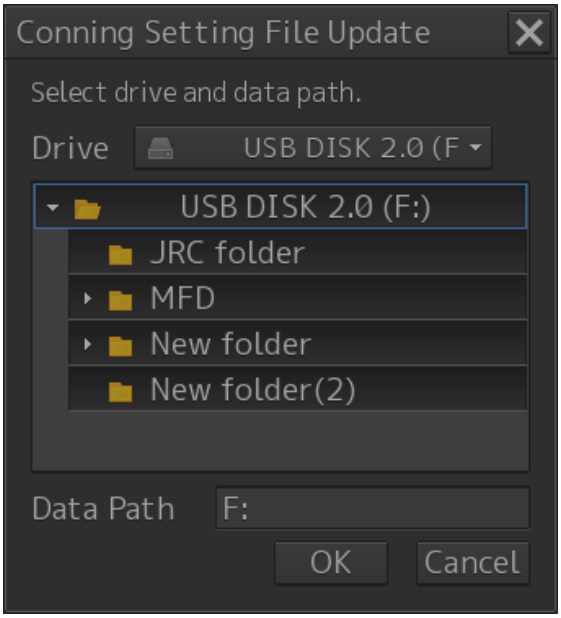
service	folder	has installation information.
system	folder	has system configuration information.
user	folder	has user configuration information.
VERSION.TXT		describes software version.

7.5.4.4 5254 - Renew the INI file of Conning Display INI file.

Password 5254 can change the contents, placement of information of the Conning display by renewing the INI file. The Conning Block in RADAR or in ECDIS will also change by this.

1. **Connect your USB storage device or CD-ROM which contains new INI file for Conning Display into the Display Unit.**
2. **Enter the Password 5254 on the Task Menu.**

   Conning Setting File Update dialog will appear.



3. **Choose the folder which contains the new Conning INI file, and then click on the [OK] button.**

   The new INI file will be loaded, and the Conning Display will be renewal.
4. **Start up Navigation Data Monitoring (Conning Display) to confirm the Conning Display contents**

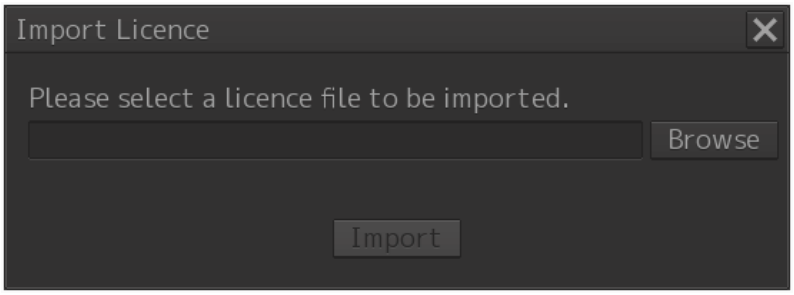
7.5.4.5 5963 - Shut down (Power OFF).

Password 5963 shuts down the Display Unit power.

7.5.4.6 9380 - Launch the Licence Import Tool.

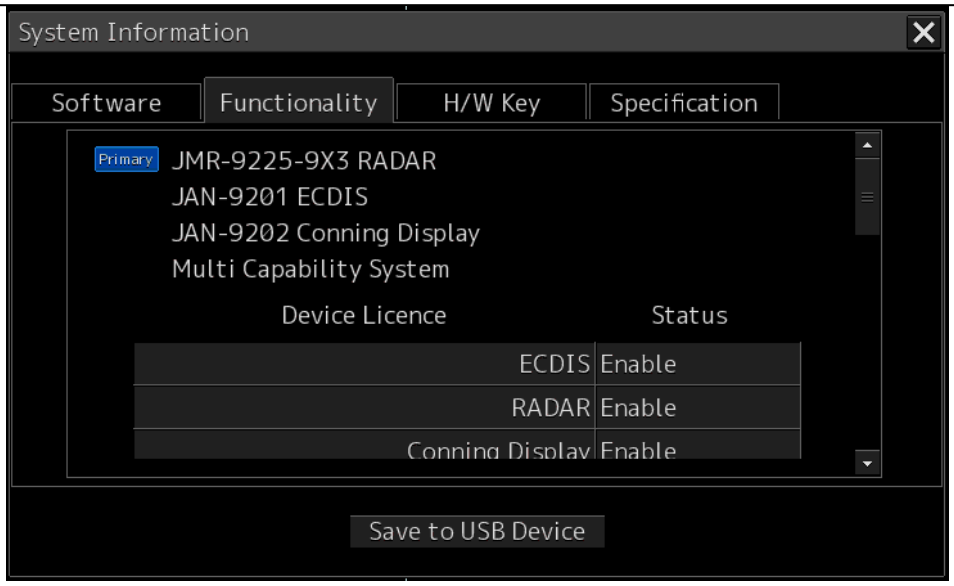
Password 9380 launches the Licence import tool and can import the Licence files.

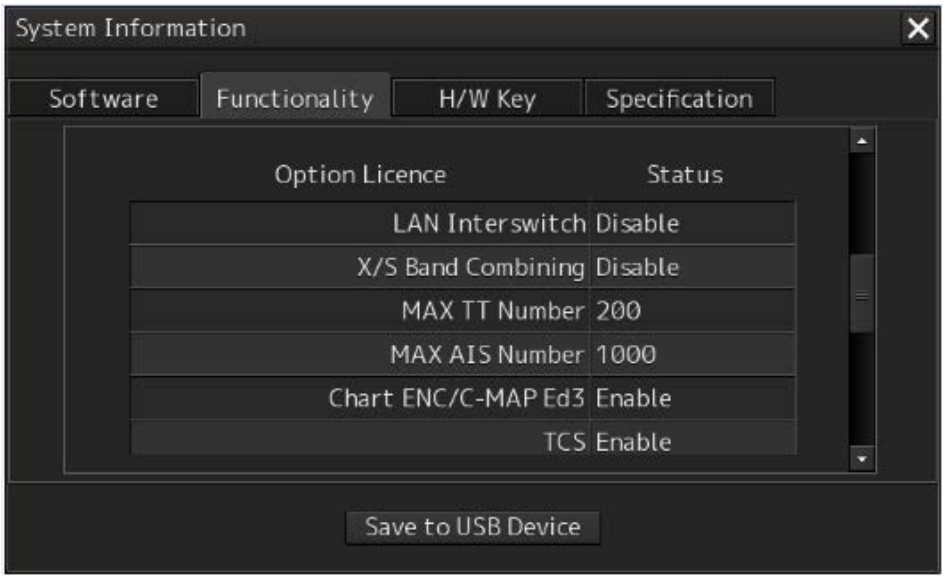
1. **Connect the USB flash memory or CD-ROM in which the license information (.lcn) is stored into the Display Unit**.
2. **Enter the Password 9380 on the Task Menu**
   Import Licence dialog will appear.

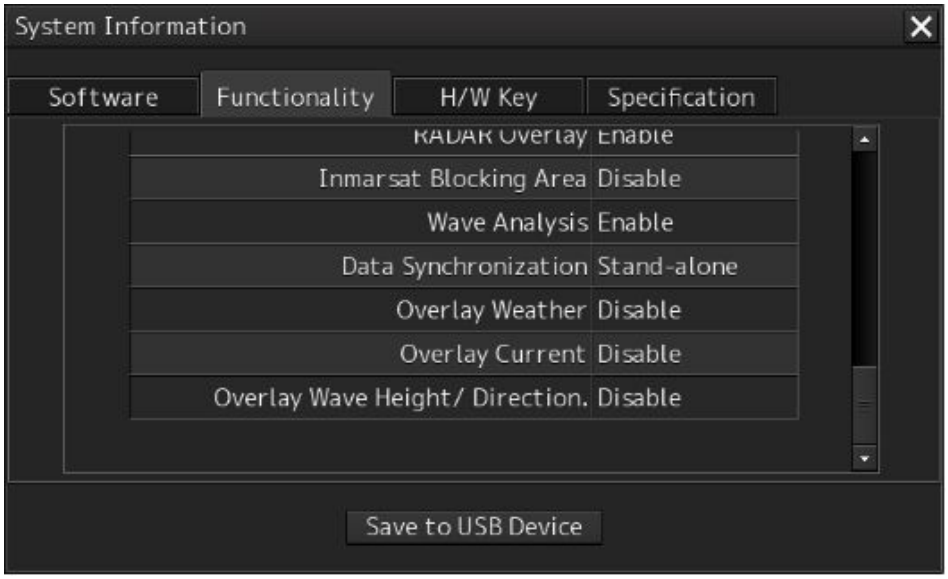


3. **Choose the new Licence file and then click on the [Import] button.**
   Click on the [Browse] button to choose the Licence file (.lcn) to be imported.
   Click on the [Import] button to imported.

4. **Confirm the System Information window.**
   Start up the MFD application (RADAR, ECDIS…).
   Click on the [Menu] - [Maintenance]- [System Information] to display the System Information dialog.
   Click on the Functionality tab, and confirm that the “Status” of the function which corresponding to the Licence file you imported was changed from “Disable” to “Enable”.


System Information
Software
Functionality
H/W Key
Specification
Primary
JMR-9225-9X3 RADAR
JAN-9201 ECDIS
JAN-9202 Conning Display
Multi Capability System
Device Licence
Status
ECDIS Enable
RADAR Enable
Conning Display Enable
Save to USB Device


System Information
Software
Functionality
H/W Key
Specification
Option Licence
Status
LAN Interswitch Disable
X/S Band Combining Disable
MAX TT Number 200
MAX AIS Number 1000
Chart ENC/C-MAP Ed3 Enable
TCS Enable
Save to USB Device


System Information
Software
Functionality
H/W Key
Specification
RADAR Overlay Enable
Inmarsat Blocking Area Disable
Wave Analysis Enable
Data Synchronization Stand-alone
Overlay Weather Disable
Overlay Current Disable
Overlay Wave Height/ Direction. Disable
Save to USB Device

7.5.4.7 9999 – Quit Task Menu.

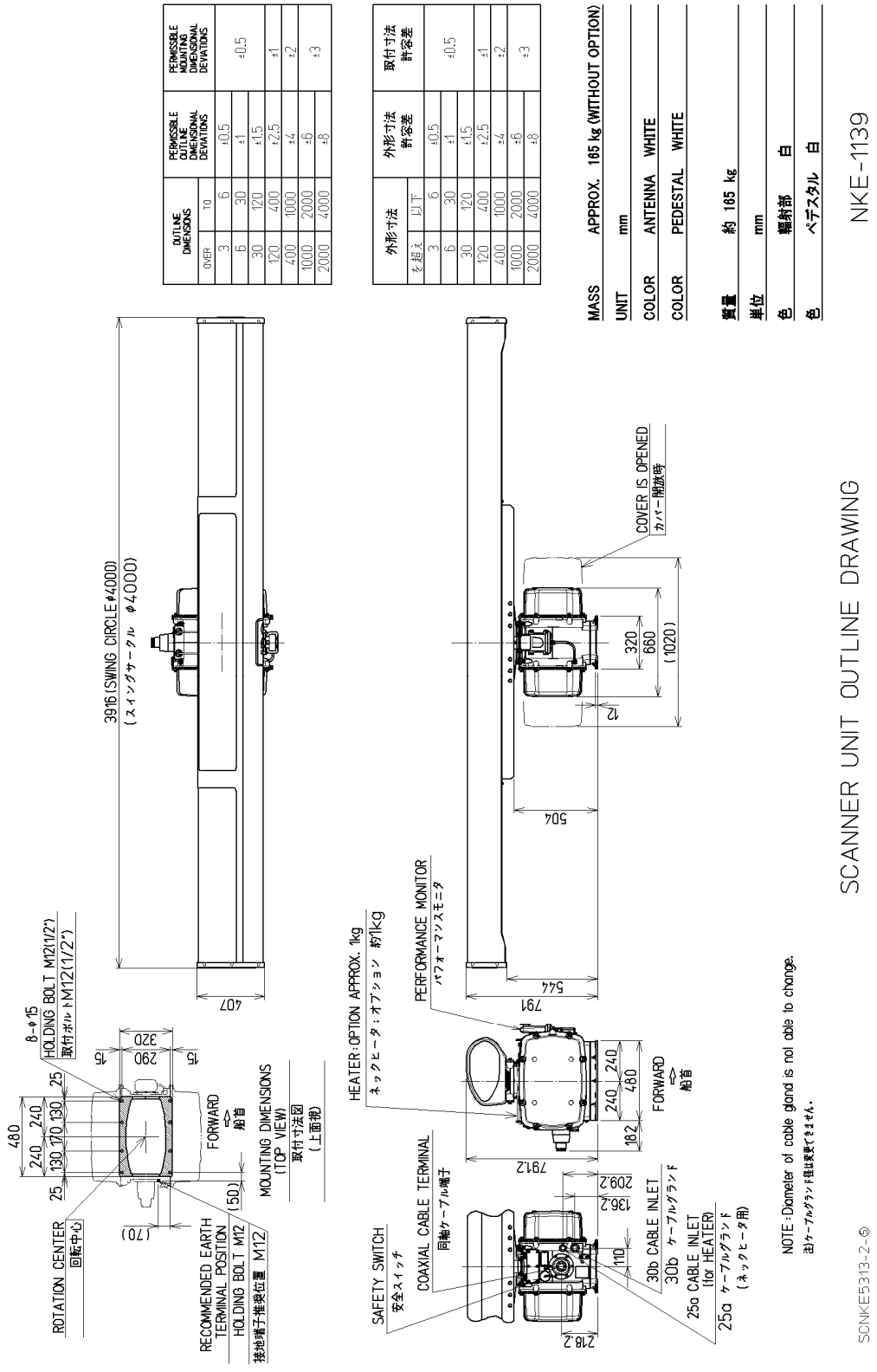
Password 9999 on the Task Menu quits Task Menu and launches Windows Task Manager.

8. Appendix

Chapter 8. Appendix

8.1 Outline Drawings

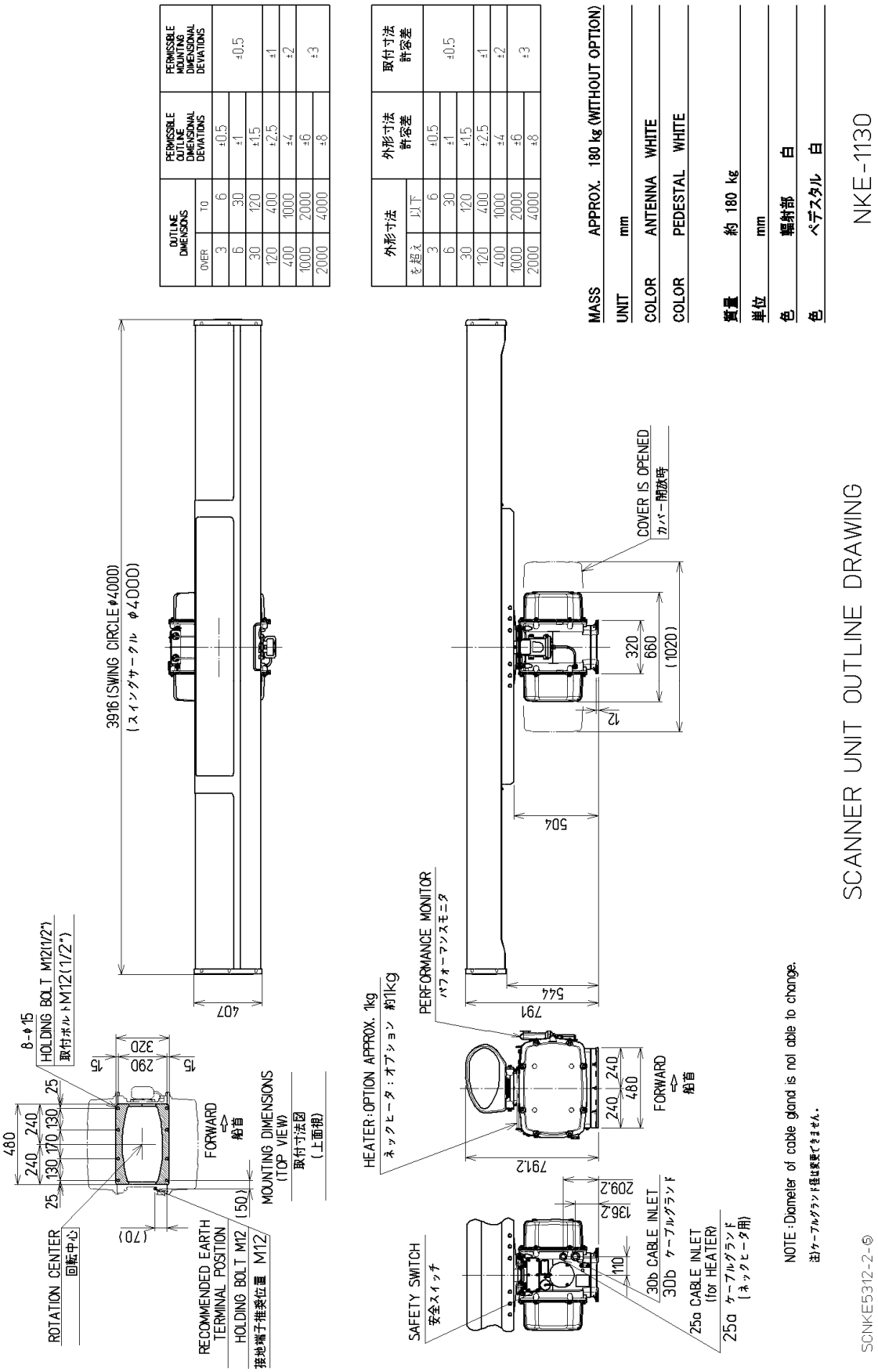
8.1.1 NKE-1139 Scanner Unit Outline Drawings



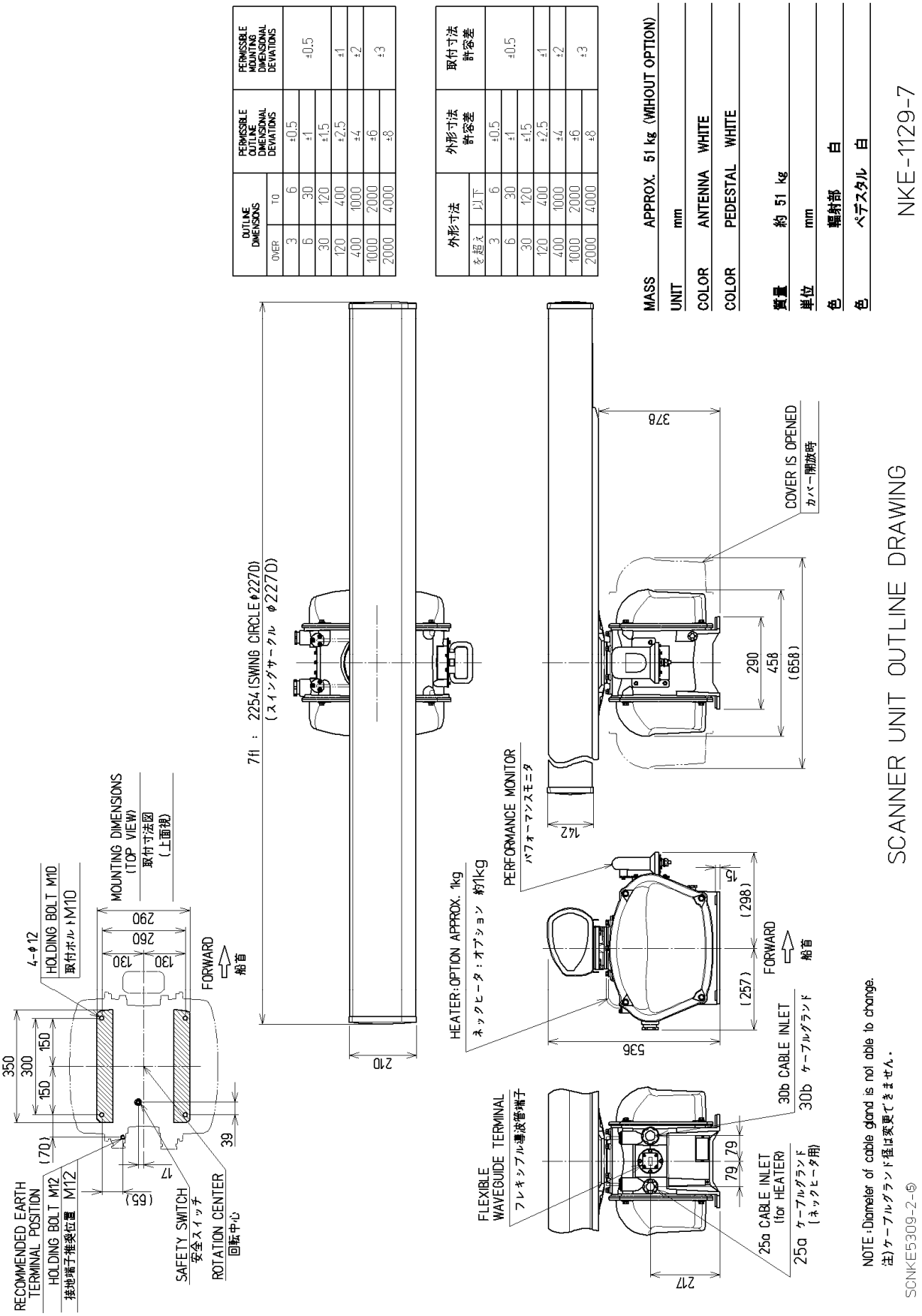
OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

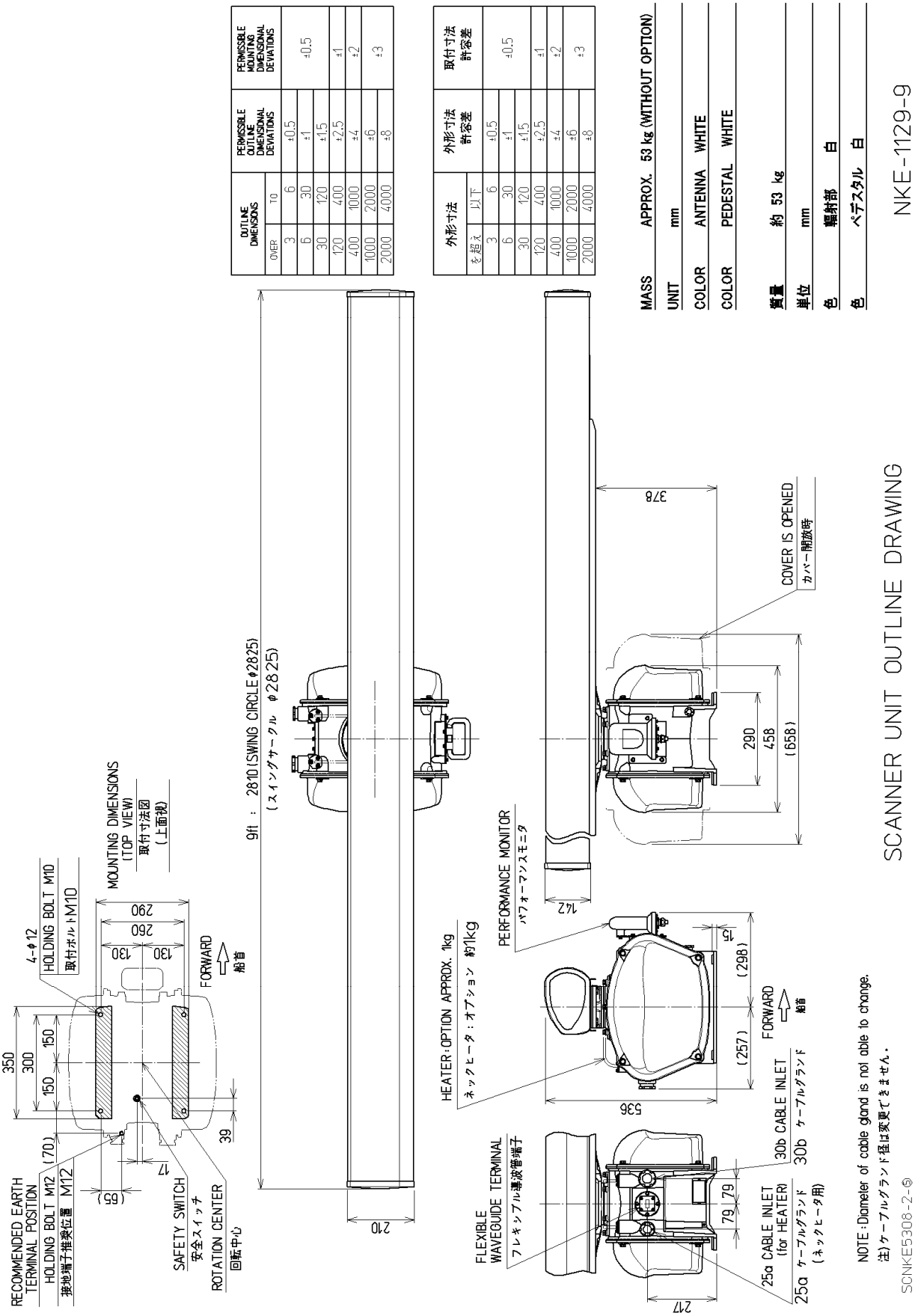
8.1.2 NKE-1130 Scanner Unit Outline Drawings



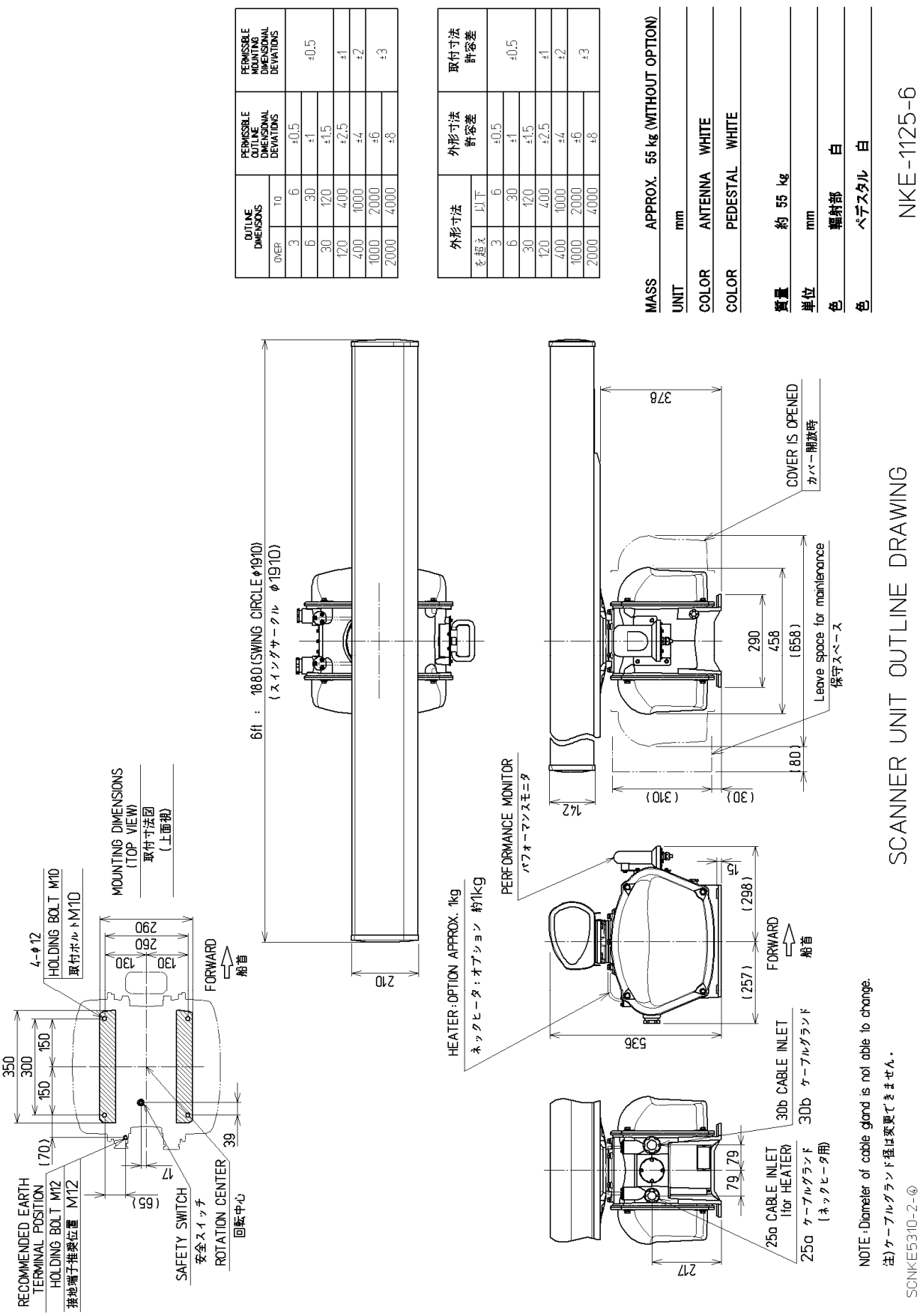
8.1.3 NKE-1129-7 Scanner Unit Outline Drawings



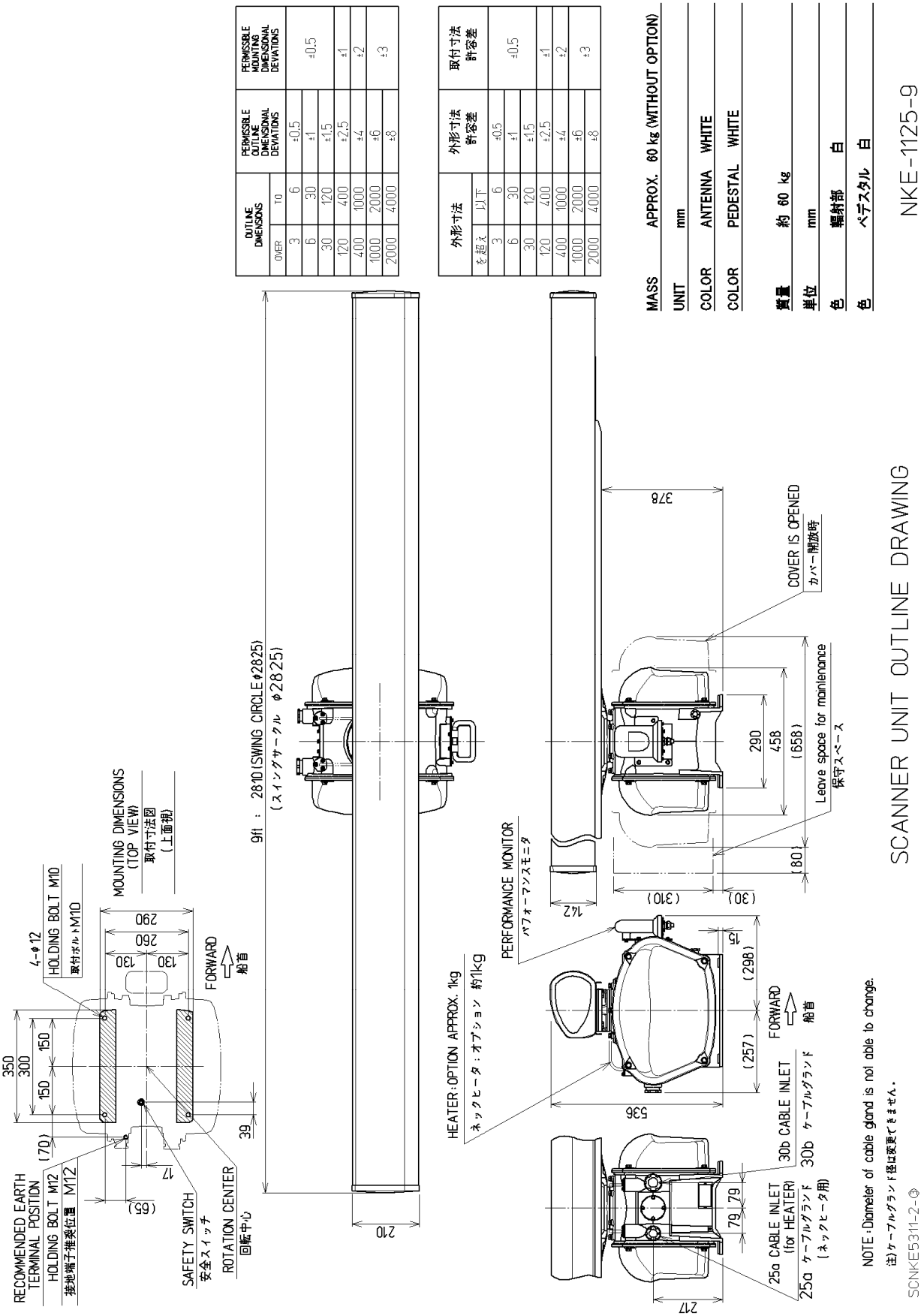
8.1.4 NKE-1129-9 Scanner Unit Outline Drawings



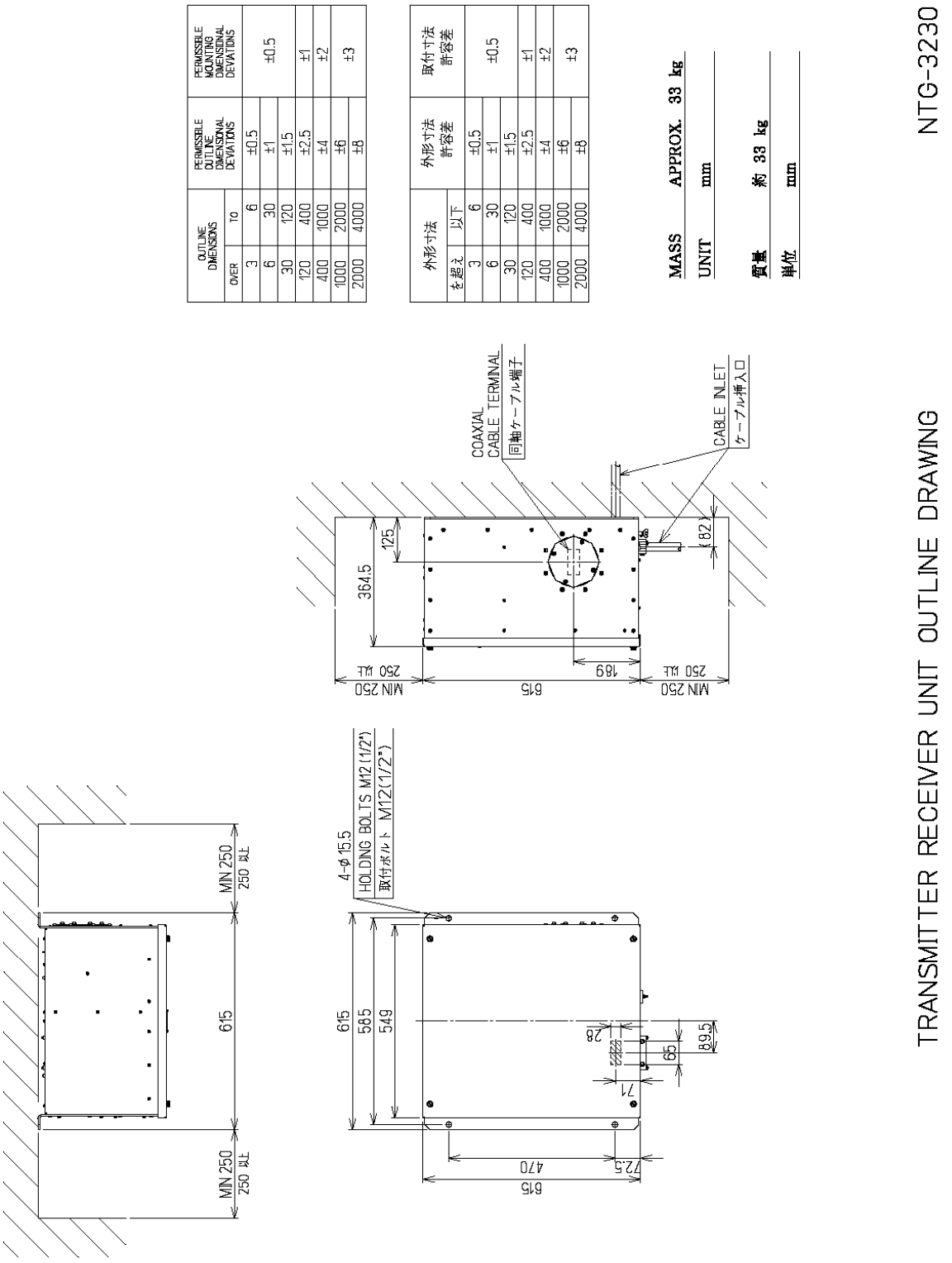
8.1.5 NKE-1125-6 Scanner Unit Outline Drawings



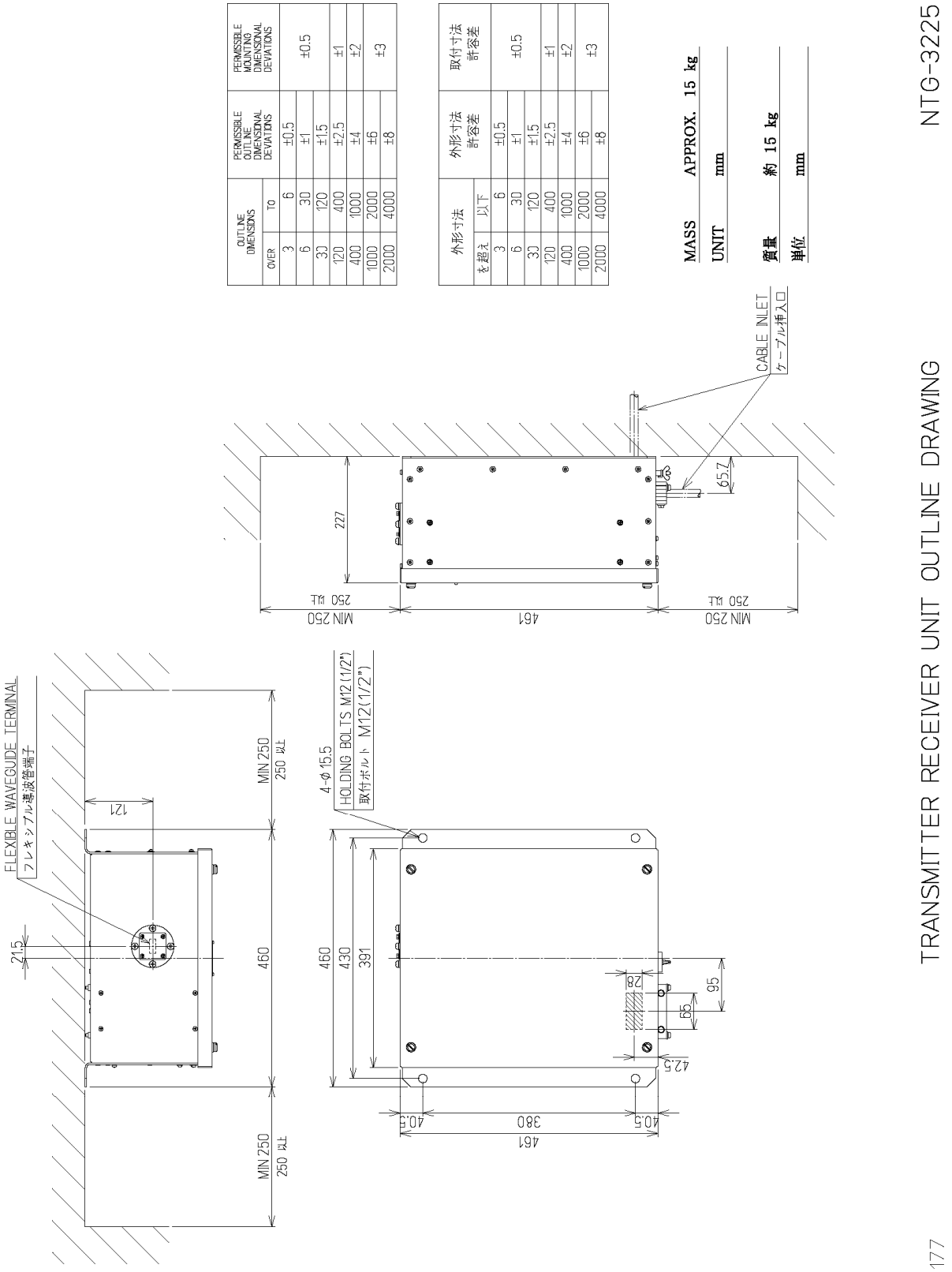
8.1.6 NKE-1125-9 Scanner Unit Outline Drawings



8.1.7 NTG-3230 Transmitter Receiver Unit Outline Drawings



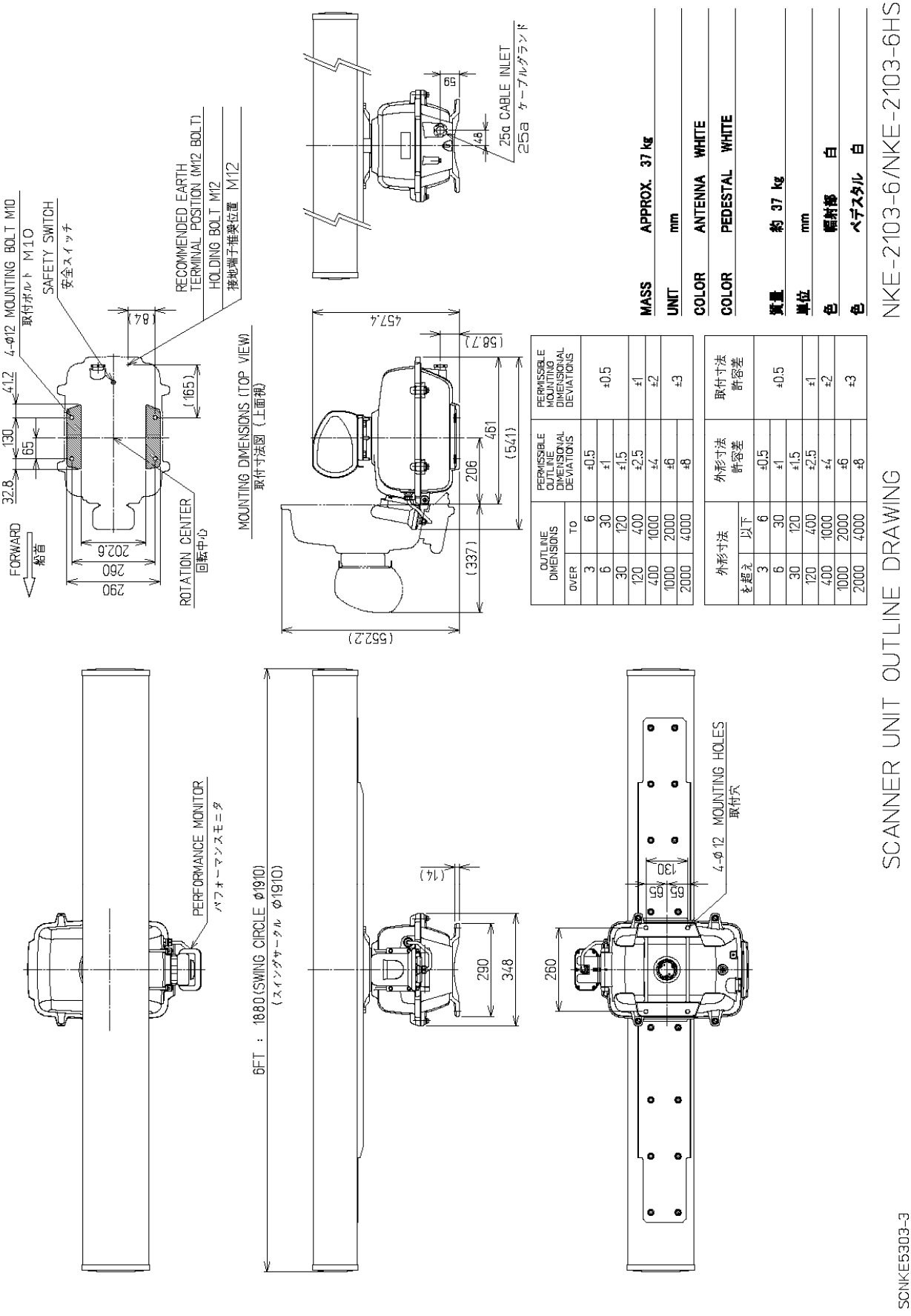
8.1.8 NTG-3225 Transmitter Receiver Outline Drawings



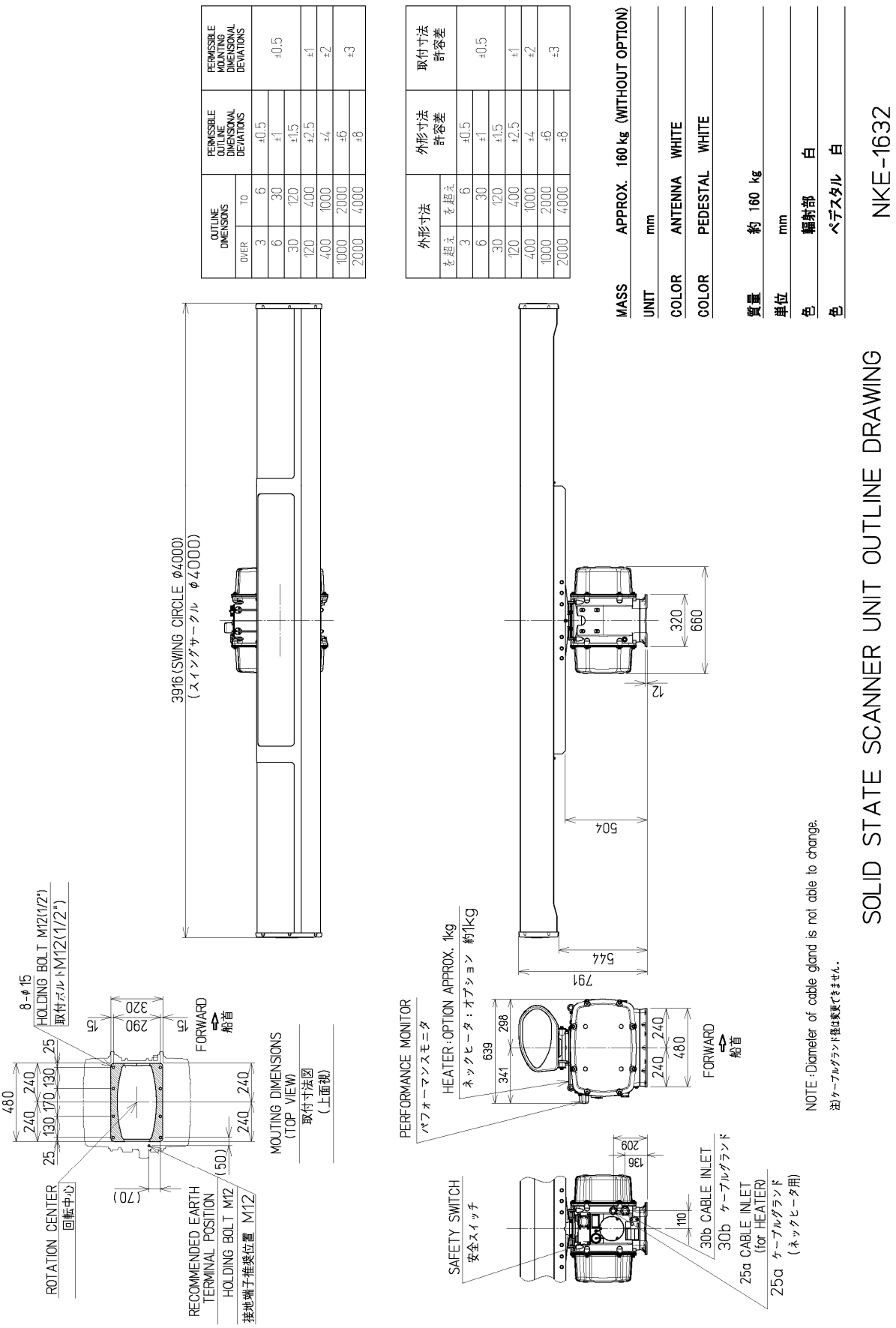
OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	±1
120	400	±2.5	±2
400	1000	±4	±3
1000	2000	±6	
2000	4000	±8	

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	±1
120	400	±2.5	±2
400	1000	±4	±3
1000	2000	±6	
2000	4000	±8	

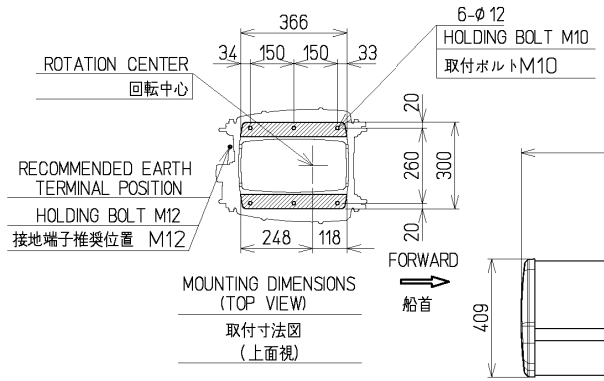
8.1.9 NKE-2103-6/NKE-2103-6HS Scanner Unit Outline Drawings

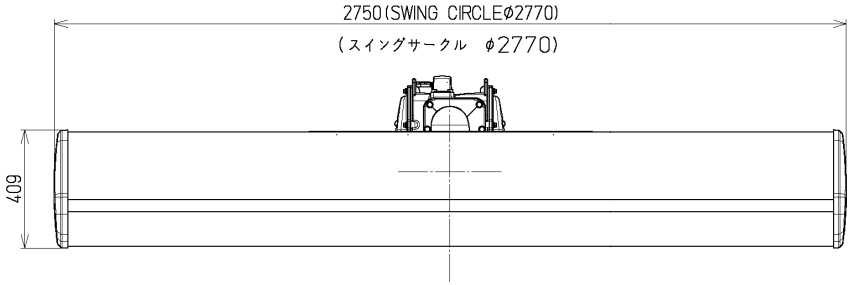


8.1.10 NKE-1632 Scanner Unit Outline Drawings

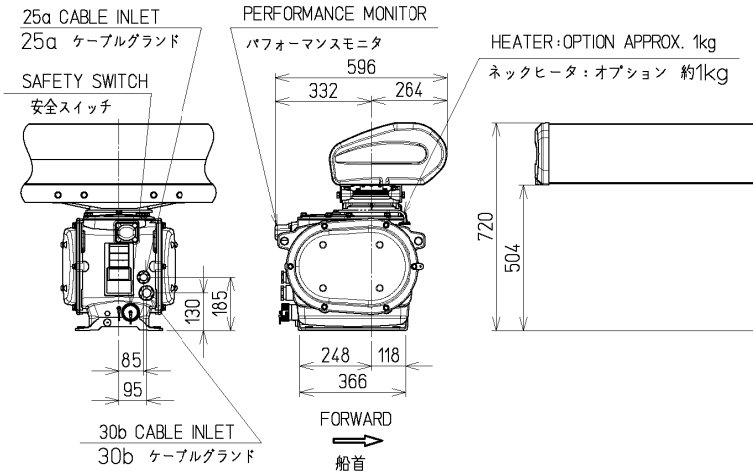


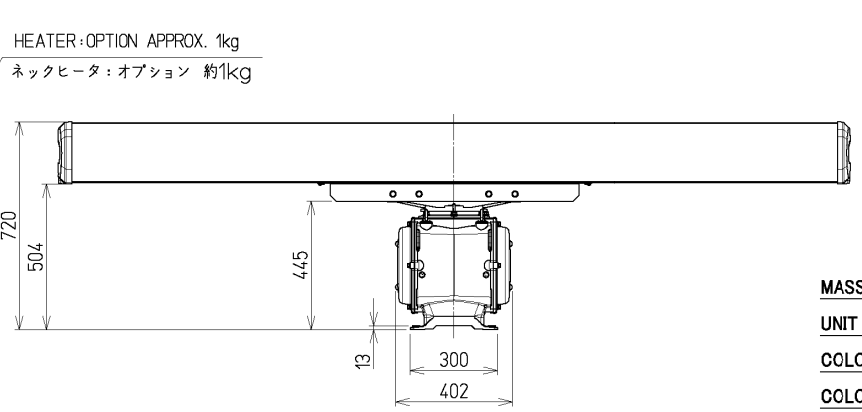
8.1.11 NKE-2632 Scanner Unit Outline Drawings





OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	





外形寸法		外形寸法 許容差	取付寸法 許容差
を超え	を超え		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

MASS	**APPROX. 85 kg (WITHOUT OPTION)**
UNIT	**mm**
COLOR	**ANTENNA WHITE**
COLOR	**PEDESTAL WHITE**

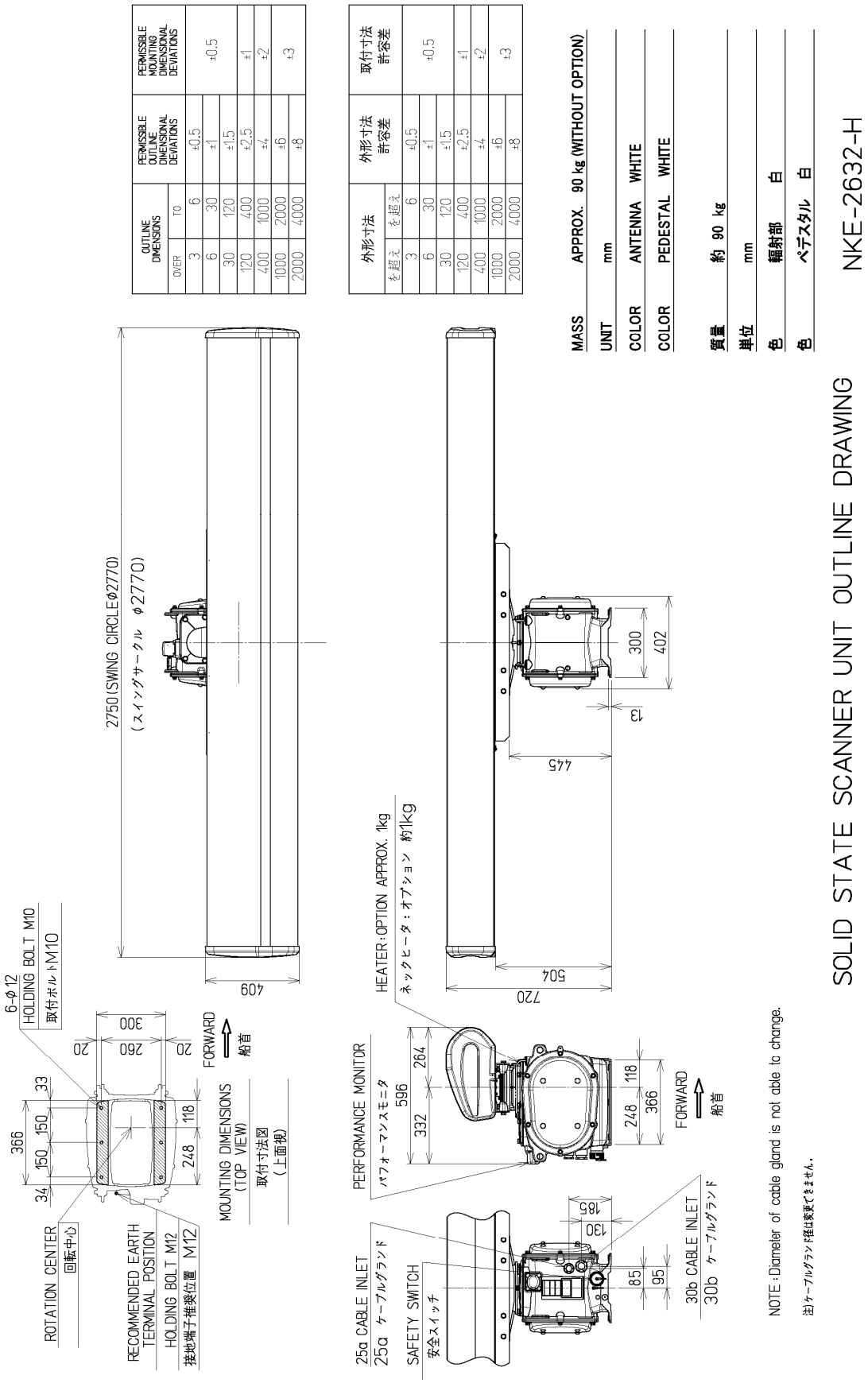
質量	**約 85 kg**
単位	**mm**
色	**輻射部 白**
色	**ペデスタル 白**

NOTE : Diameter of cable gland is not able tc change.

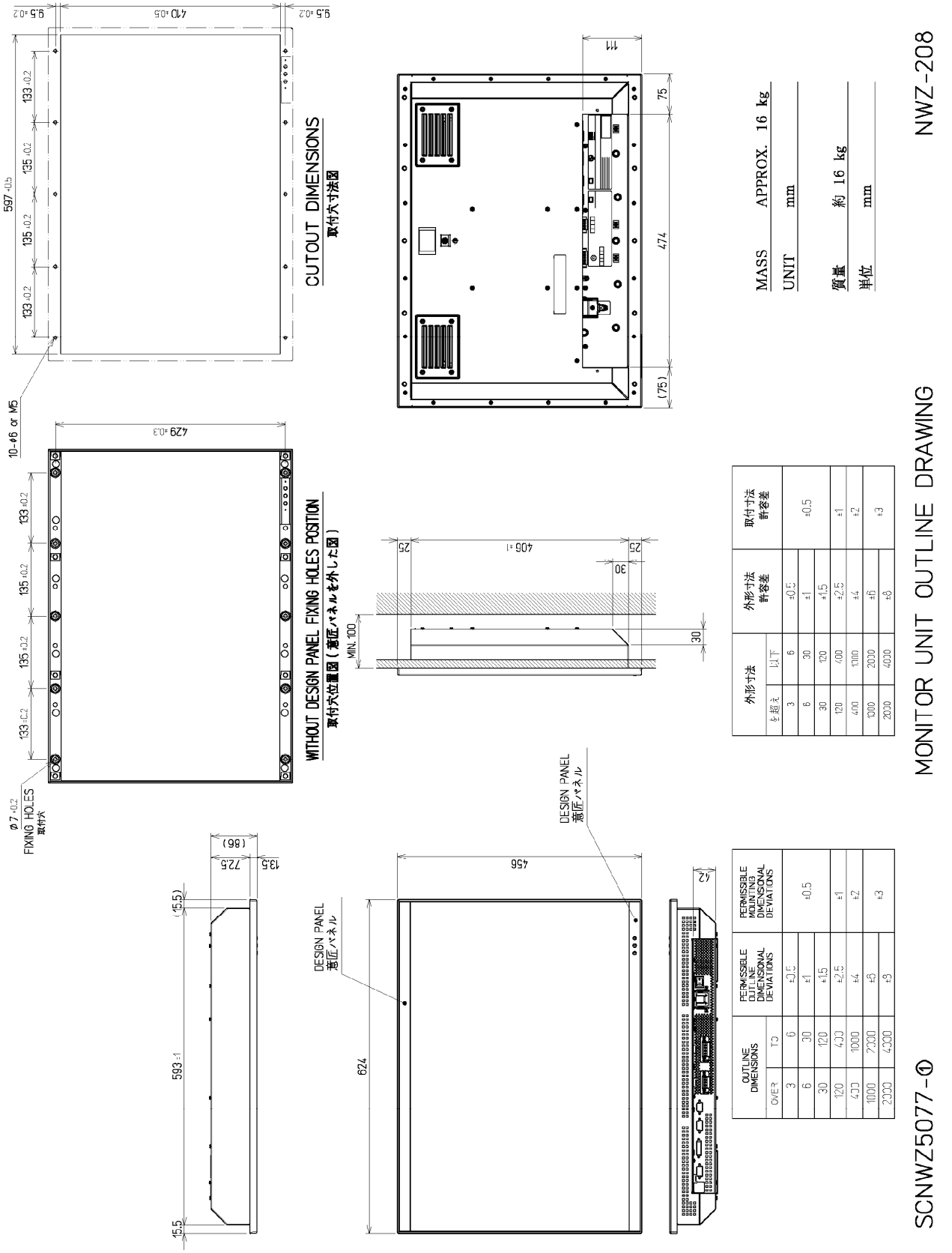
注) ケーブルグランド径は変更できません。

SOLID STATE SCANNER UNIT OUTLINE DRAWING NKE-2632

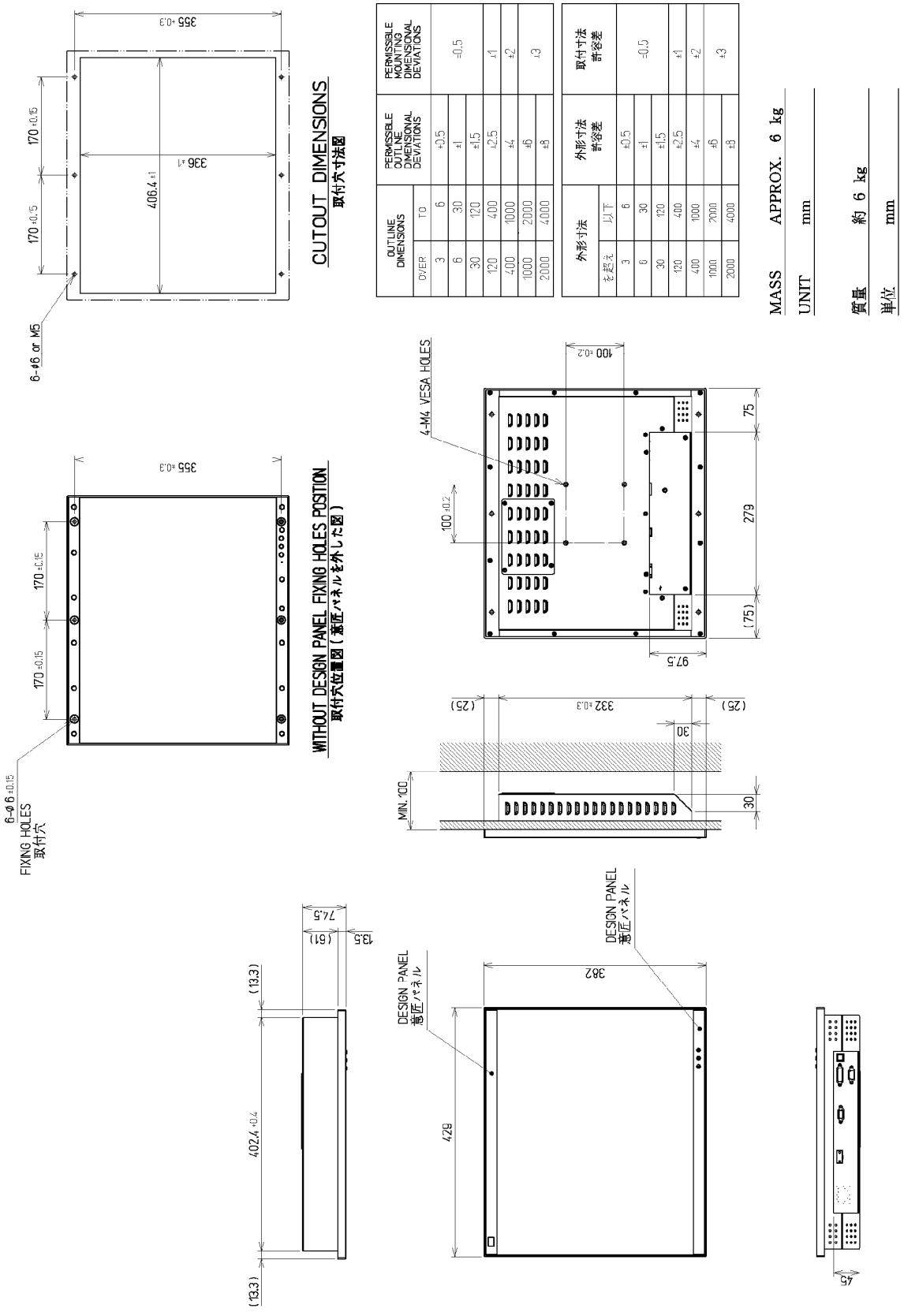
8.1.12 NKE-2632-H Scanner Unit Outline Drawings



8.1.13 NWZ-208 26-inch Monitor Unit Outline Drawings

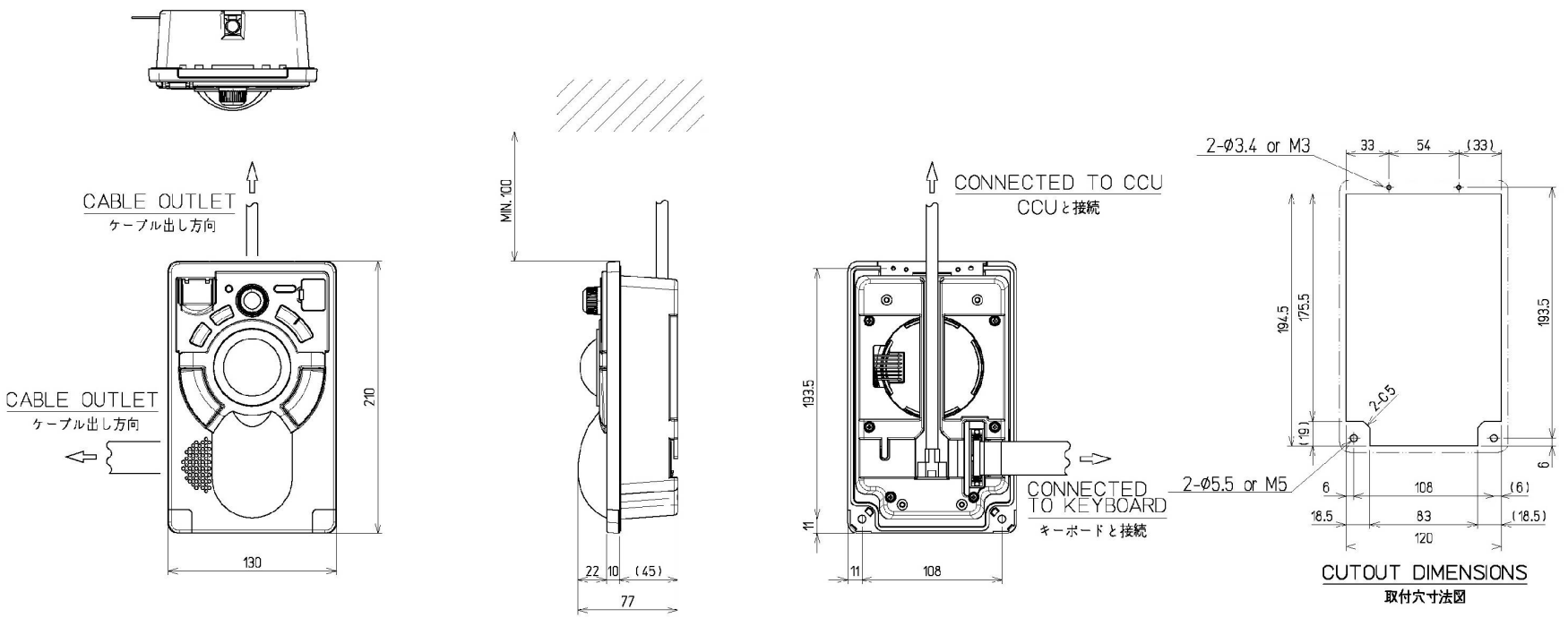


8.1.14 NWZ-207 19-inch Monitor Unit Outline Drawings



OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	±1
120	400	±2.5	±2
400	1000	±4	
1000	2000	±6	±3
2000	4000	±8	

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	±1
120	400	±2.5	±2
400	1000	±4	
1000	2000	±6	±3
2000	4000	±8	



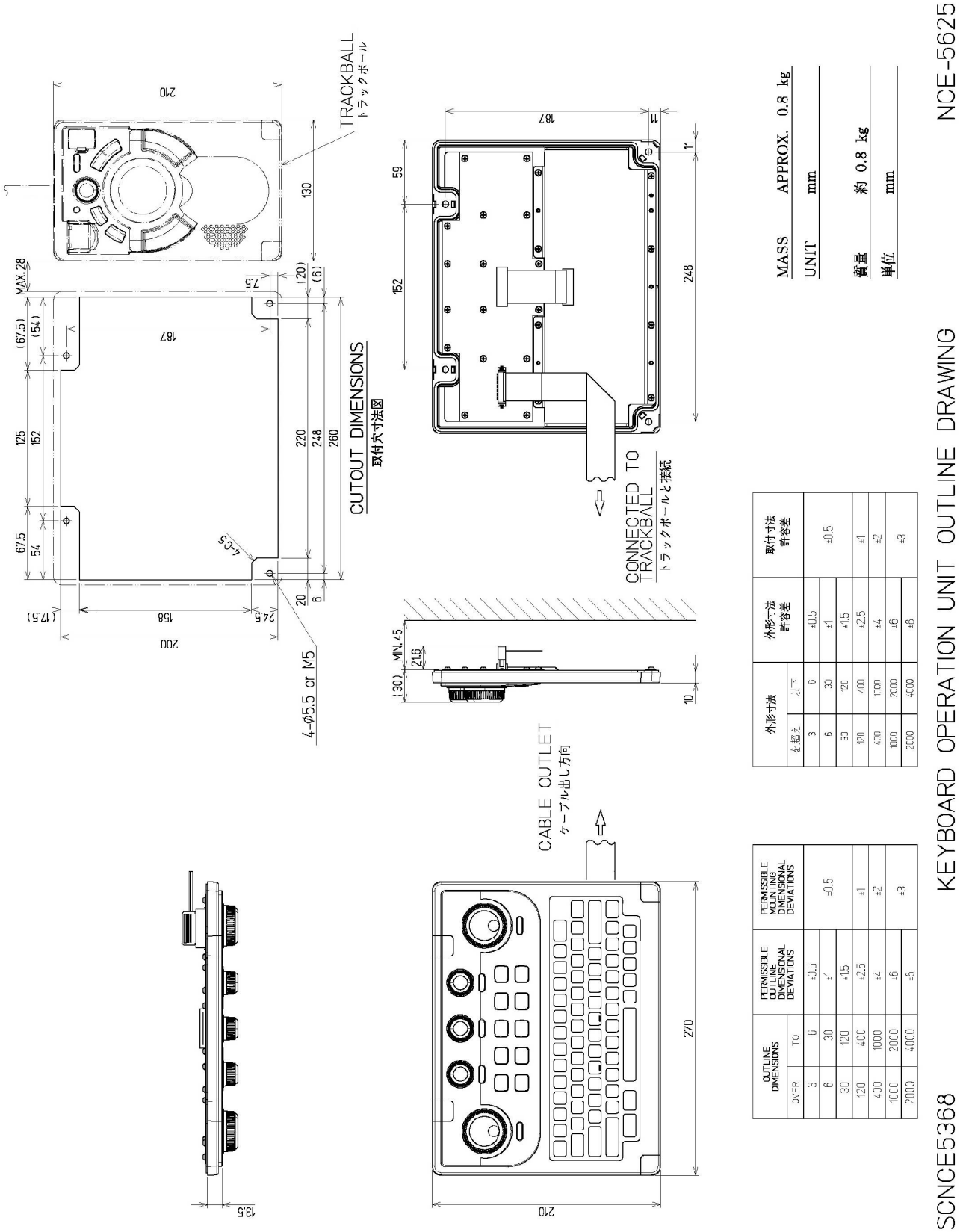
OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

外形寸法		外形寸法 許容差	取付寸法 許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

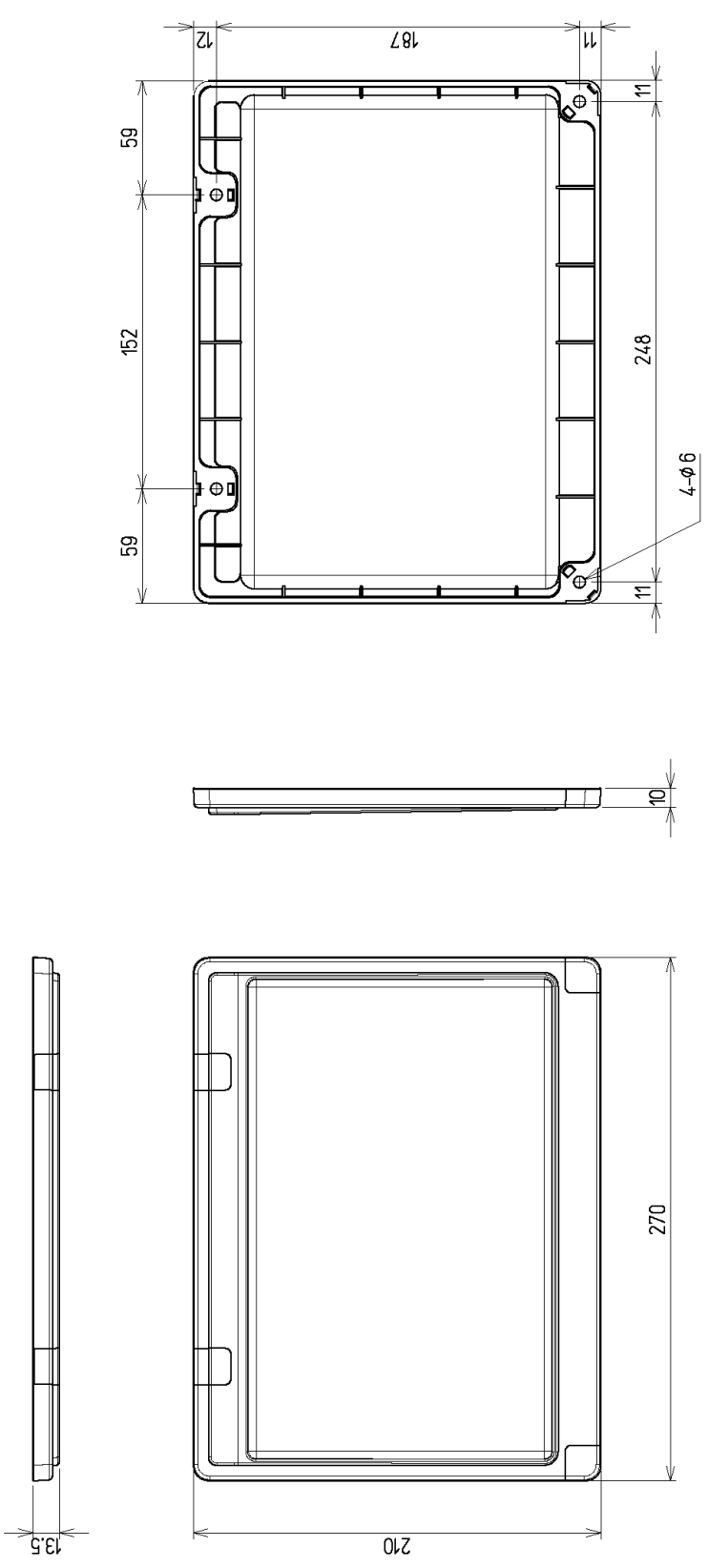
MASS	APPROX. 1.3 kg
UNIT	mm
質量	約 1.3 kg
単位	mm

SCNCE5367 TRACKBALL OPERATION UNIT OUTLINE DRAWING NCE-5605

8.1.16 NCE-5625 Keyboard Operation Unit Outline Drawings



8.1.17 CWB-1593 Large Tray Outline Drawings



OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	±0.5
30	120	±1.5	±0.5
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	±3

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	±0.5
30	120	±1.5	±0.5
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	±3

MASS 0.3 kg

UNIT mm

質量 0.3 kg

単位 mm

CWB-1593

LARGE TRAY OUTLINE DRAWING

SCYW05611

8.1.18 NDC-1590 Central Controll Unit Outline Drawings

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

MASS APPROX. 5.6 kg

UNIT mm

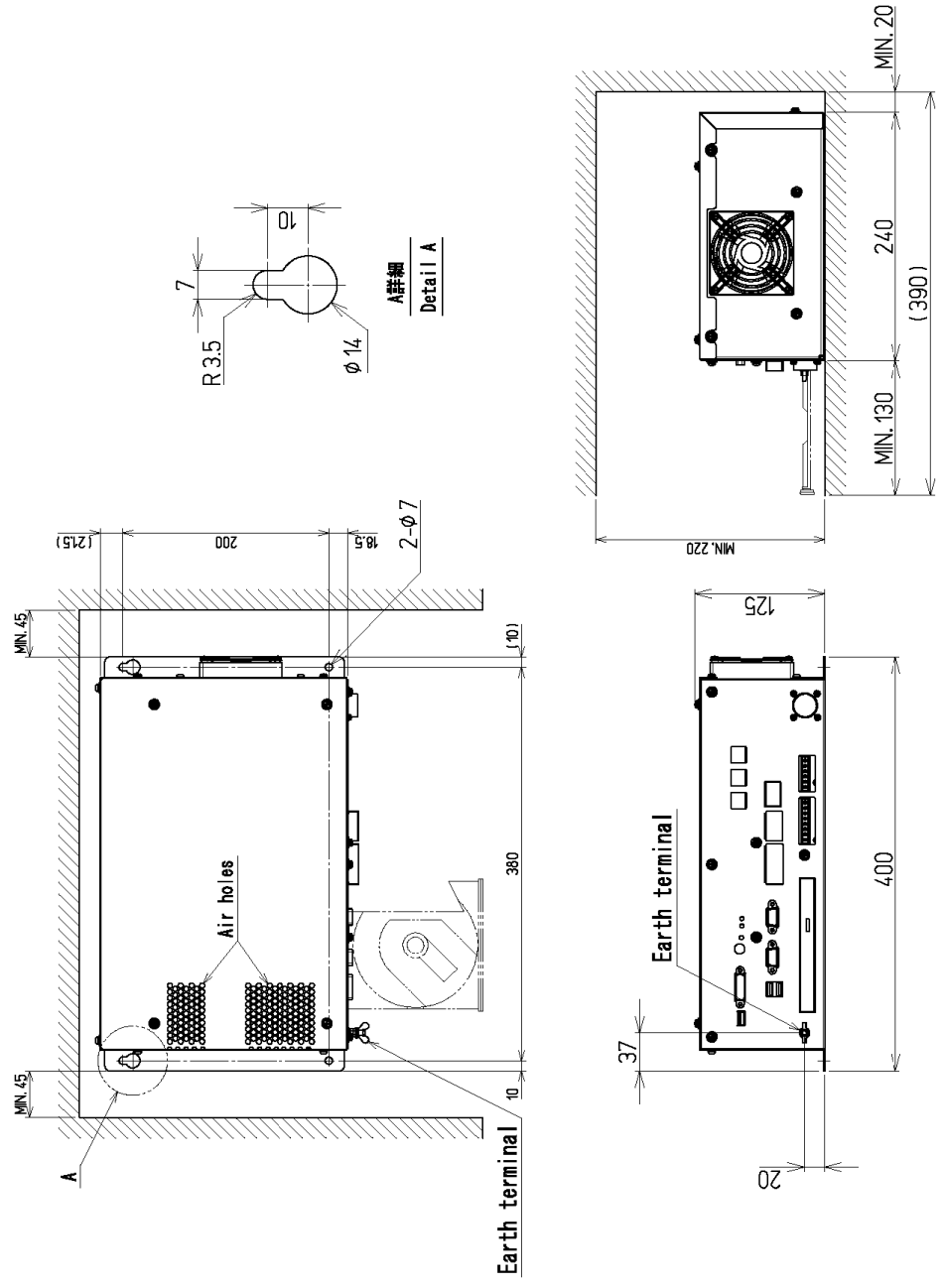
質量 約 5.6 kg

単位 mm

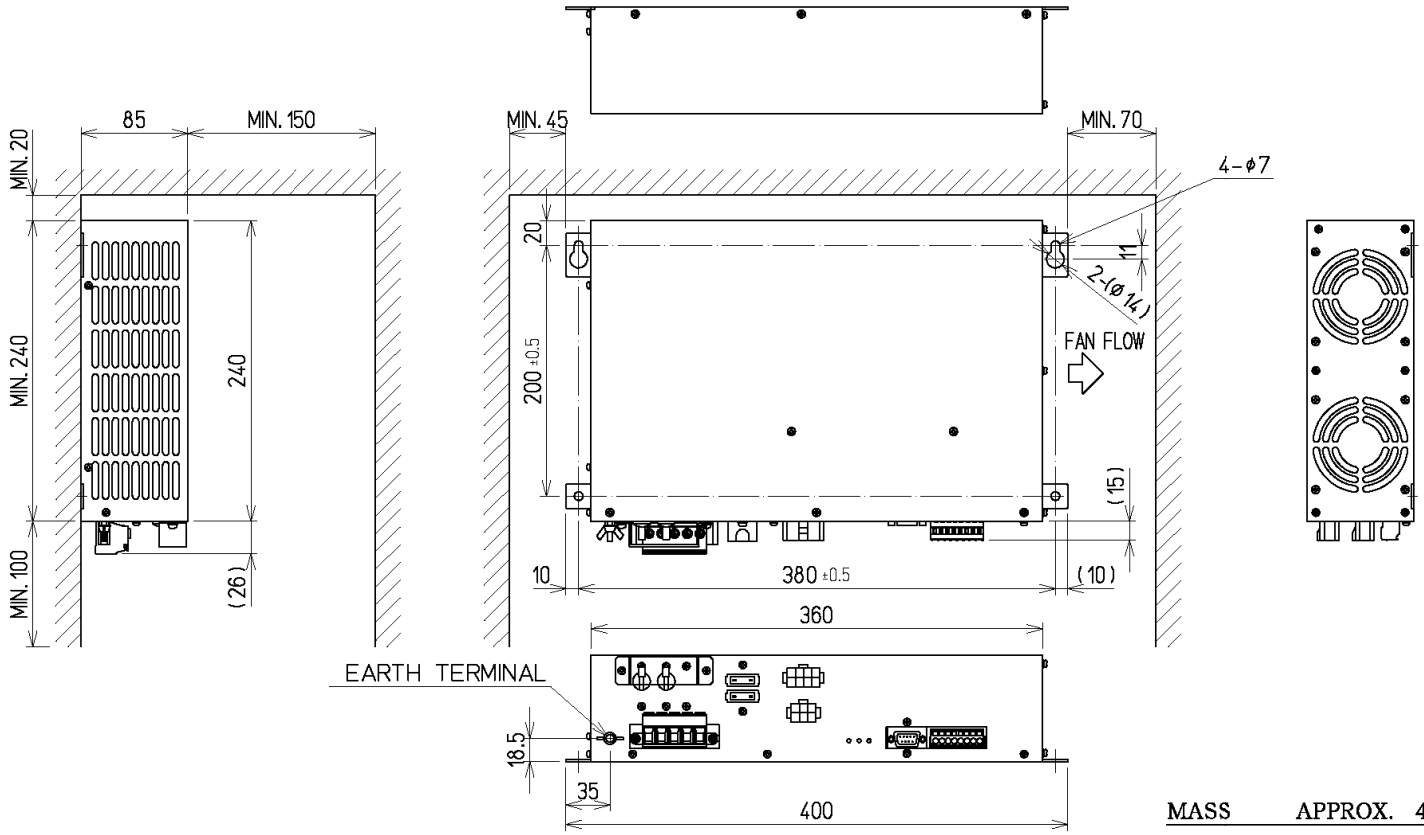
NDC-1590

CENTRAL CONTROL UNIT OUTLINE DRAWING

SCNDC5246-①



8.1.19 NBD-913 Power Supply Unit Outline Drawings



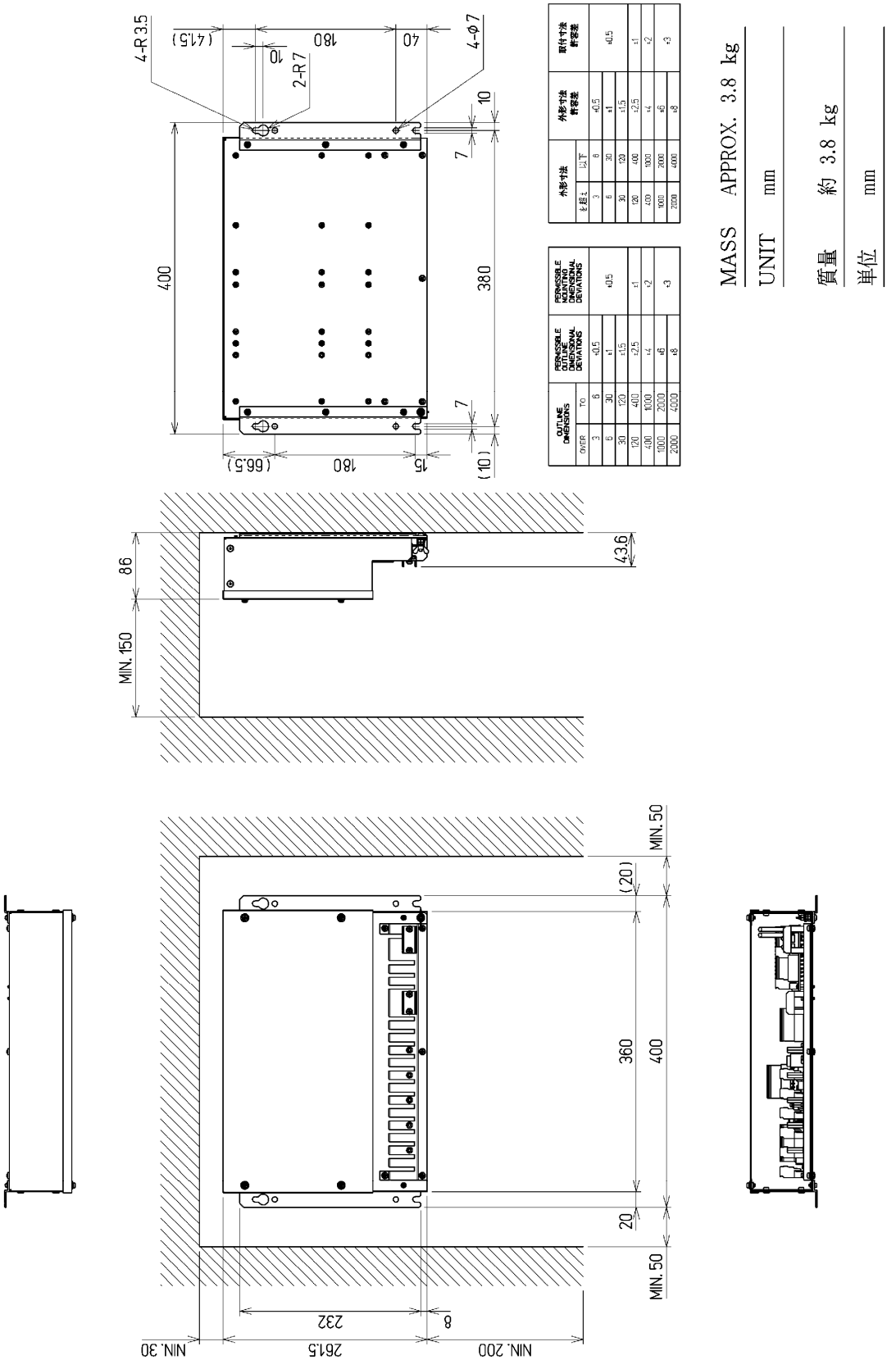
OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

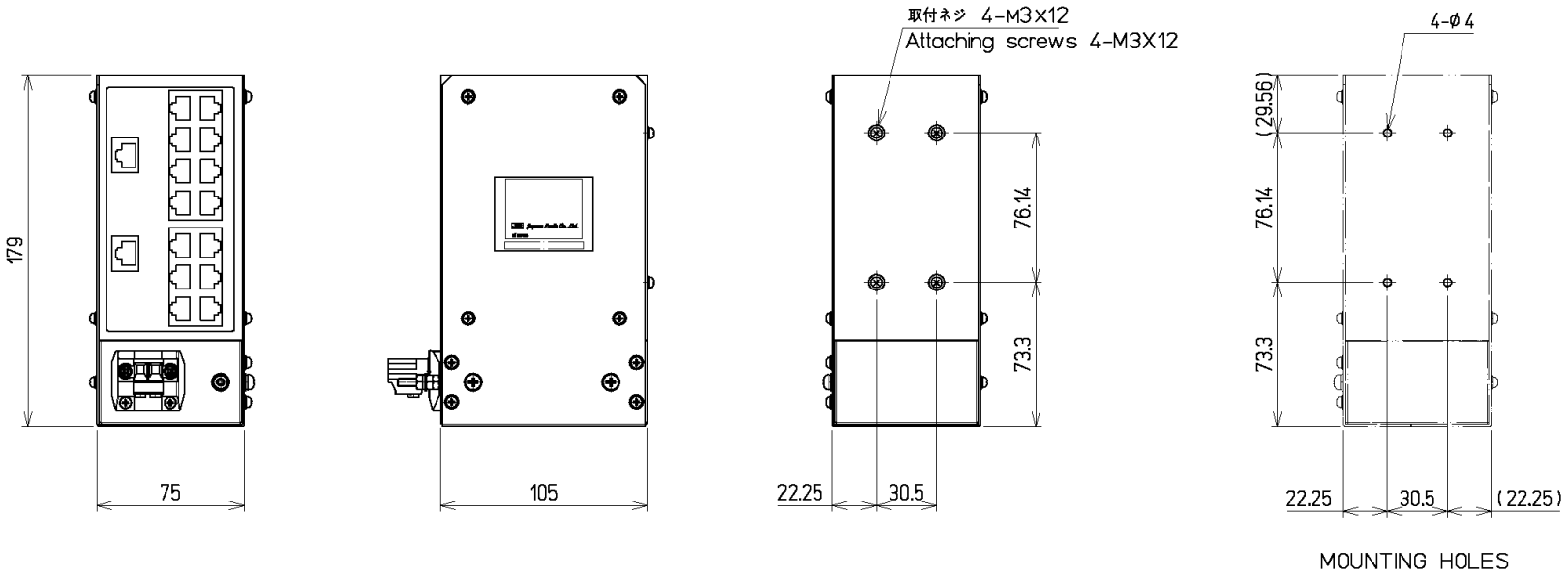
外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

MASS	APPROX. 4.2 kg
UNIT	mm
質量	約 4.2 kg
単位	mm

SCNBD5067-① POWER SUPPLY UNIT OUTLINE DRAWING NBD-913

8.1.20 NQE-1143 Junction Box Outline Drawings





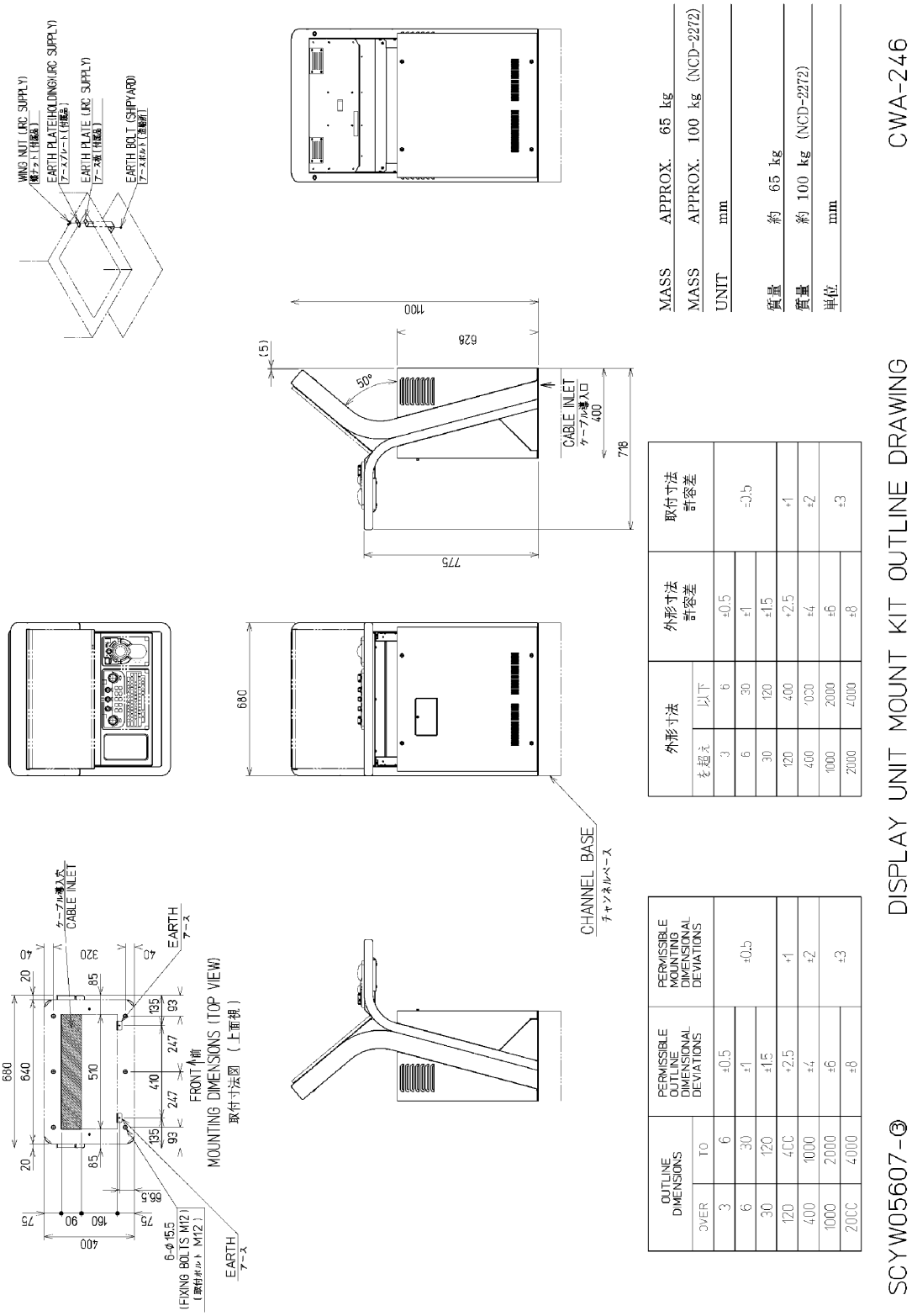
外形寸法		外形寸法 許容差	取付寸法 許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	±0.5
30	120	±1.5	±0.5
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	±3

OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	±0.5
30	120	±1.5	±0.5
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	±3

MASS	1.5 kg
UNIT	mm
質量	1.5 kg
単位	mm

SCNQA5173 SENSOR LAN UNIT OUTLINE DRAWING NQA-2443

8.1.22 CWA-246 26-inch Display Unit Mount Kit Outline Drawings



OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS
OVER	TO	
3	6	±0.5
6	30	±1
30	120	±1.5
120	400	±2.5
400	1000	±4
1000	2000	±6
2000	4000	±8

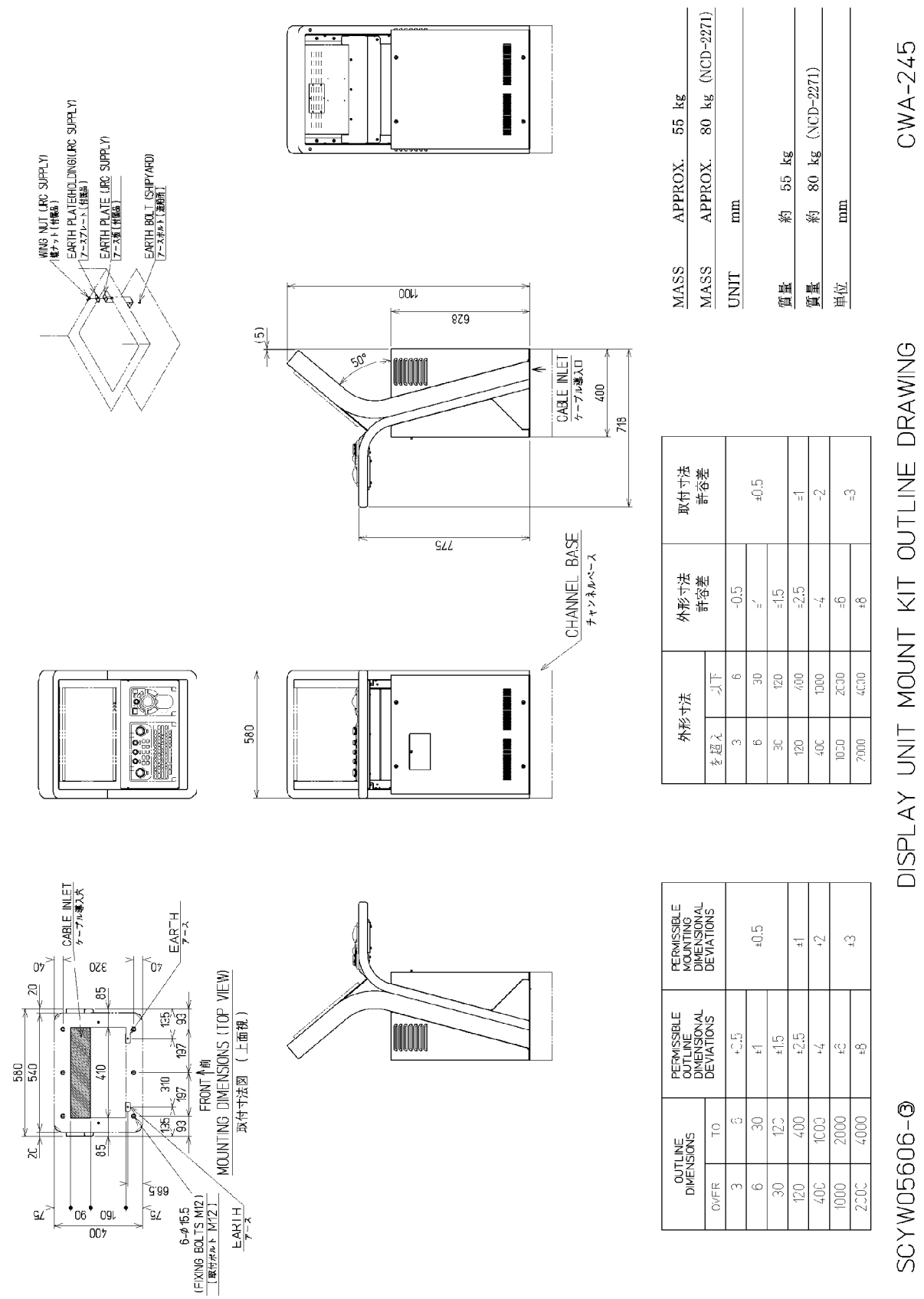
PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
±0.5
±1
±2
±3

外形寸法		外形寸法許容差
を超え	以下	
3	6	±0.5
6	30	±1
30	120	±1.5
120	400	±2.5
400	1000	±4
1000	2000	±6
2000	4000	±8

取付寸法許容差
±0.5
±1
±2
±3

(with display, trackball operation unit and keyboard operation unit installed)

8.1.23 CWA-245 19-inch Display Unit Mount Kit Outline Drawings

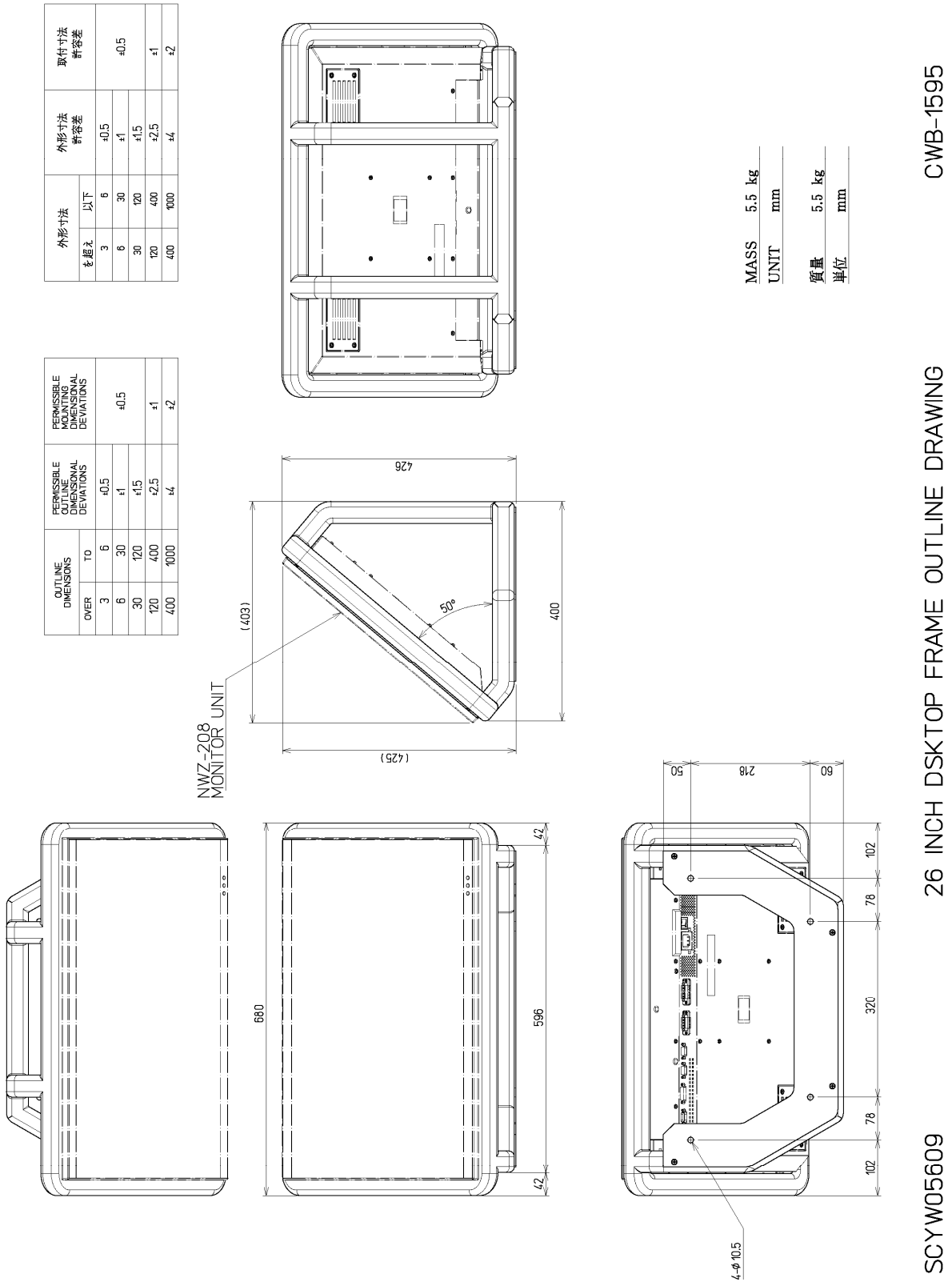


外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	-0.5	±0.5
6	30	-1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	-4	-2
1000	2000	-6	-3
2000	4000	±8	

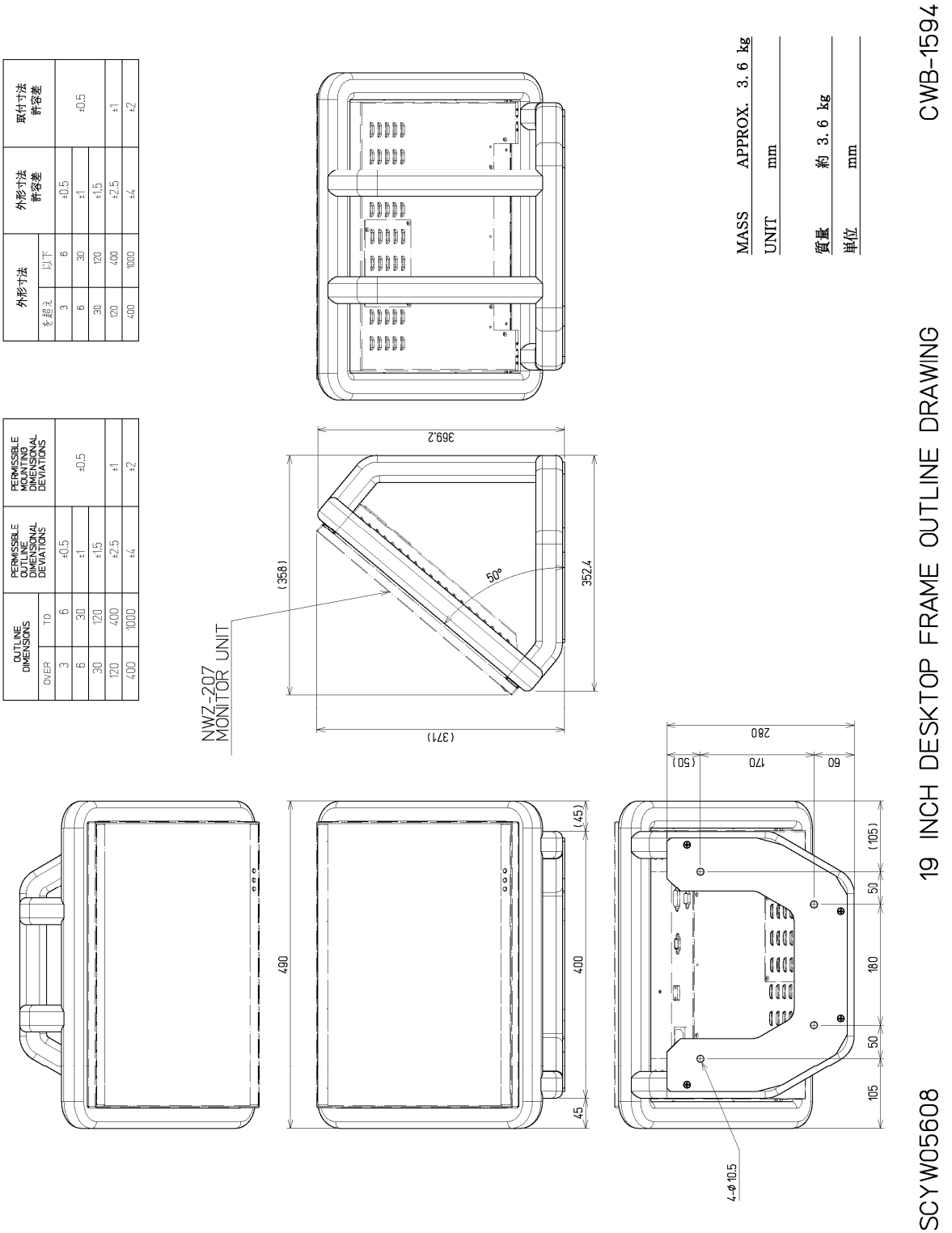
OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	TO		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

(with display, trackball operation unit and keyboard operation unit installed)

8.1.24 CWB-1595 26-inch Desktop Frame Outline Drawings



8.1.25 CWB-1594 19-inch Desktop Frame Outline Drawings



外形寸法 を超え	以下	外形寸法 許容差	取付寸法 許容差
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2

OUTLINE DIMENSIONS OVER	TO	PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2

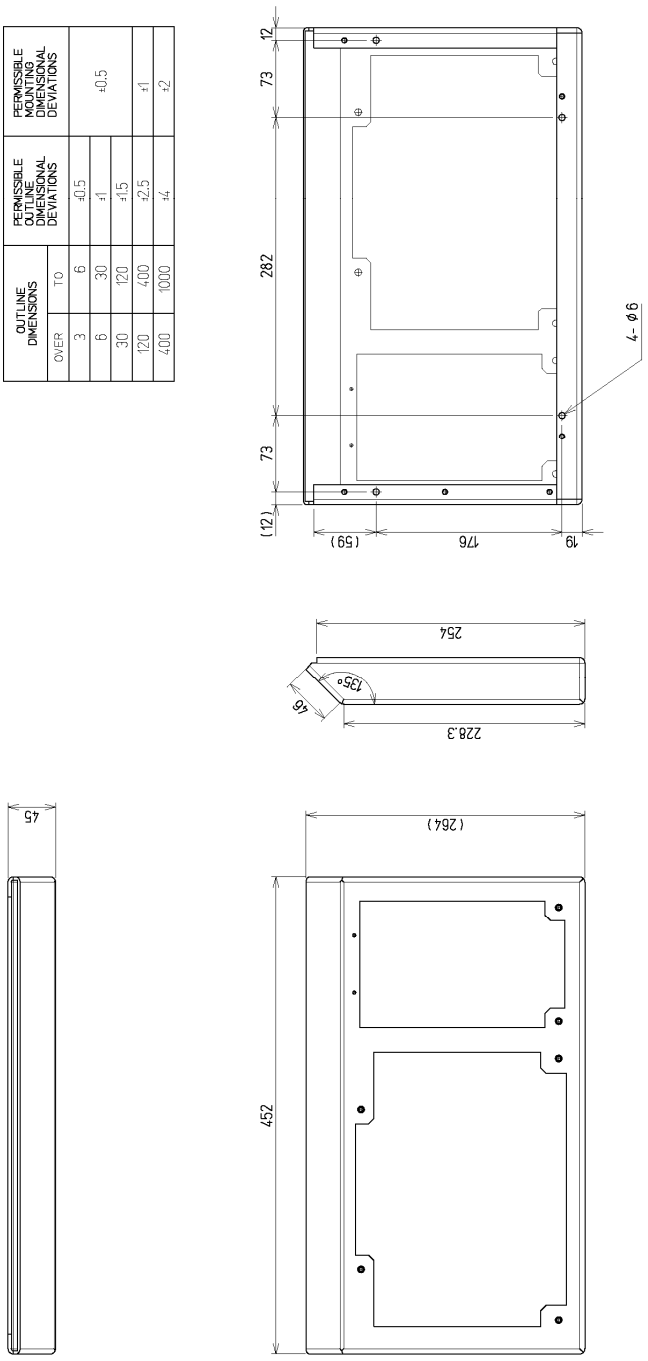
8.1.26 CWB-1596 OPU Desktop Frame Outline Drawings

外形寸法		外形寸法許容差
を超え	以下	
3	6	±0.5
6	30	±1
30	120	±1.5
120	400	±2.5
400	1000	±4

取付寸法許容差
±0.5
±1
±2

OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS
OVER	TO	
3	6	±0.5
6	30	±1
30	120	±1.5
120	400	±2.5
400	1000	±4

PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
±0.5
±1
±2



MASS APPROX. 1 kg
UNIT mm

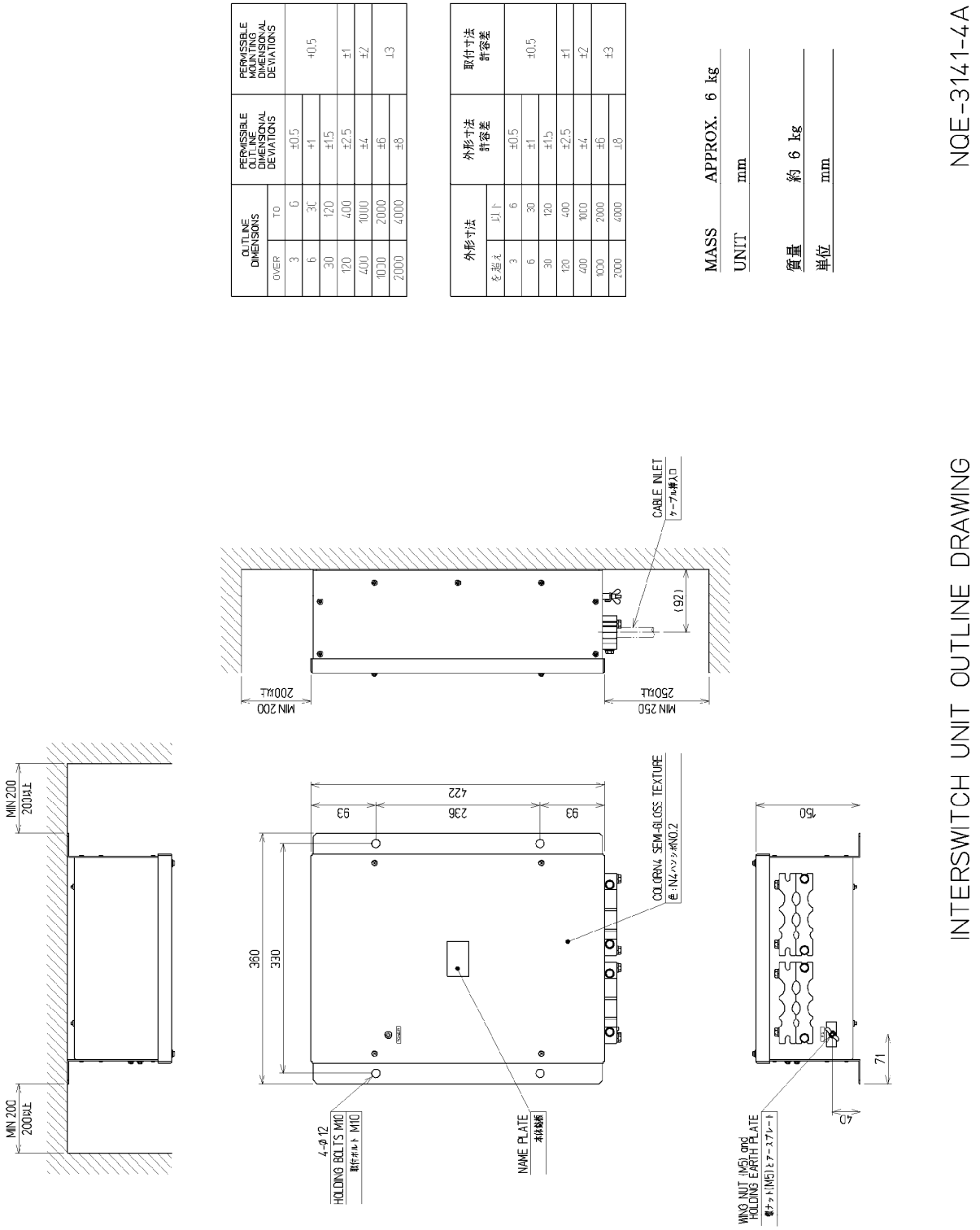
質量 約 1 kg
単位 mm

CWB-1596

OPU DESKTOP FRAME

SCYW05610

8.1.27 NQE-3141-4A Interswitch Unit Outline Drawings (Optional)



8.1.28 NQE-3141-8A Interswitch Unit Outline Drawings (Optional)

OUTLINE DIMENSIONS		PERMISSIBLE OUTLINE DIMENSIONAL DEVIATIONS	PERMISSIBLE MOUNTING DIMENSIONAL DEVIATIONS
OVER	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

外形寸法		外形寸法許容差	取付寸法許容差
を超え	以下		
3	6	±0.5	±0.5
6	30	±1	
30	120	±1.5	
120	400	±2.5	±1
400	1000	±4	±2
1000	2000	±6	±3
2000	4000	±8	

MASS APPROX. 12 kg

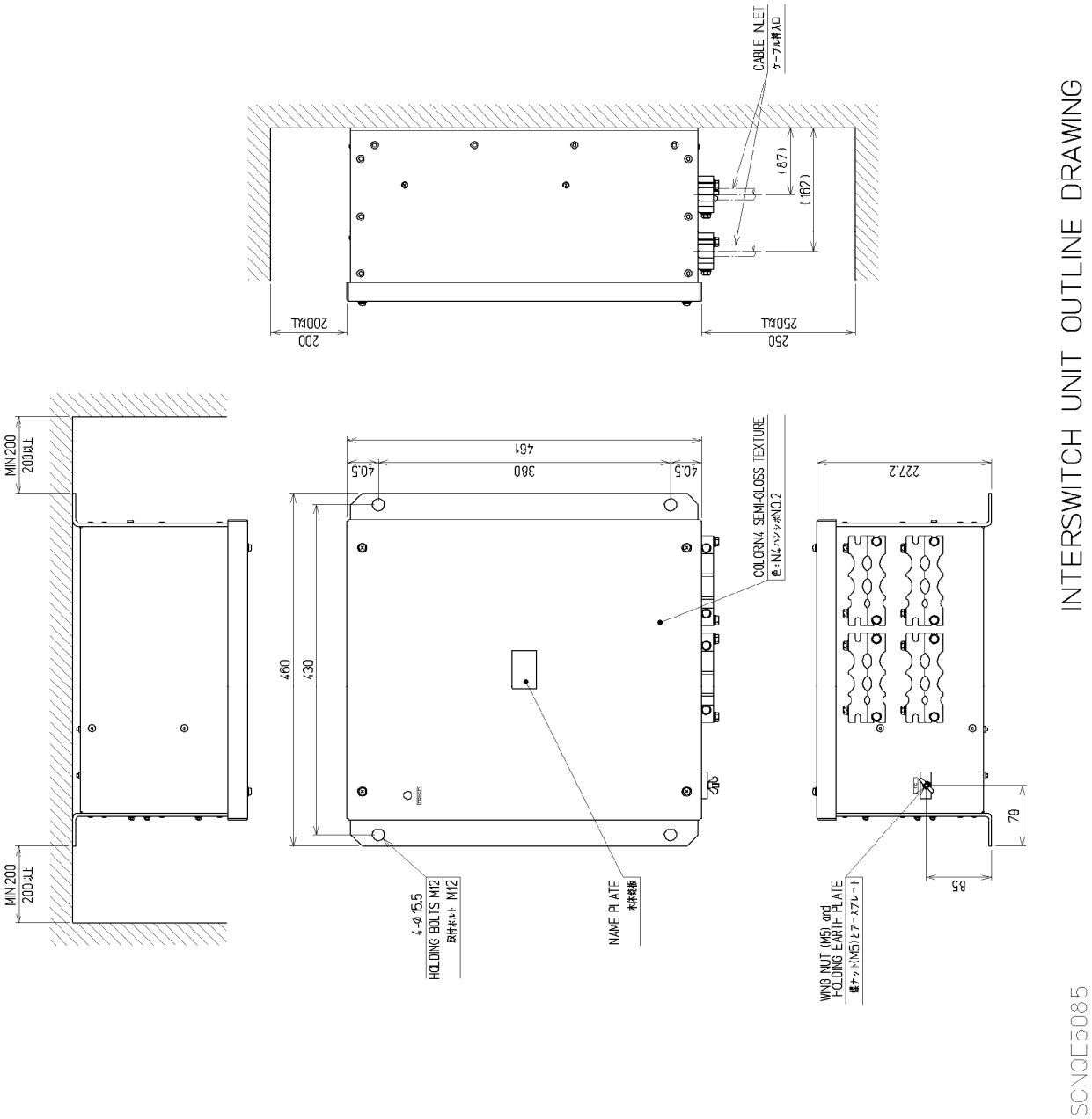
UNIT mm

質量 約 12 kg

単位 mm

NQE-3141-8A

INTERSWITCH UNIT OUTLINE DRAWING



SCNQE3085

8.1.29 NQE-3167 Power Control Unit Outline Drawings (Optional)