INSTALLATION & OPERATION MANUAL

SERVICE TOOL for VRF System

UTR-YSTB

Ver. 1.1

CAUTION
Please read the LICENSE AGREEMENT in the manual first.

FUJITSU GENERAL LIMITED

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(Version 1.1)

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Contents

1. SAFETY PRECAUTIONS

- Before using Service Tool, read this “SAFETY PRECAUTIONS” thoroughly to ensure the correct operation.
- This section describes the important safety information to operate Service Tool.
- The meanings of “WARNING” and “CAUTION” are explained as follows.

⚠ **WARNING!**	This mark indicates the procedures, which might result in the death of or serious injury to the user or service personnel if improperly performed.
⚠ **CAUTION!**	This mark indicates the procedures, which might result in personal harm to the user or damage to property if improperly performed.

This manual is for service personnel authorized to use the Service Tool. Always keep this manual in an easily accessible place for use by authorized service personnel.

⚠ WARNING

The following notices are mainly described for the dealing of transmission adaptor, which is used for transmitting data between Service Tool and the Indoor or Outdoor unit.

1. **The transmission adaptor includes the high voltage circuit. Installation must be performed by an authorized service personnel only.**
2. **This adaptor contains no user-serviceable parts. Always consult the authorized service personnel for repairs.**
3. **When moving this adaptor, consult the authorized service personnel for disconnection and installation.**
4. **If a problem (burning, smell, etc.) occurs, turn off the electrical breaker immediately to stop operation, and then consult the authorized service personnel.**
5. **If the power supply cord is damaged, do not attempt to repair it. Contact your service representative for instructions.**
6. **If any work is to be performed on the transmission adaptor, turn off the power supply and wait at least 10 seconds.**
   Failure to do so might lead to an electric shock.

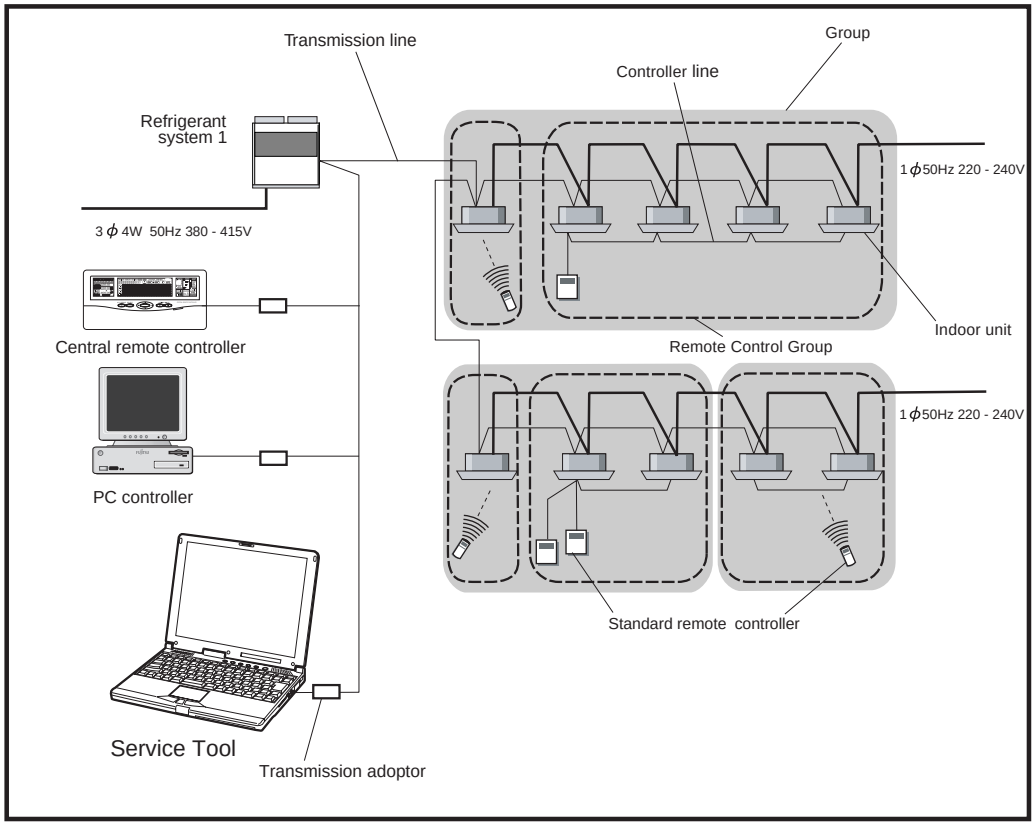
⚠ CAUTION

Service Tool can control the air-conditioner system on a personal computer. Be careful not to turn off the power supply of the personal computer or transmission adaptor, or not to finish the application compulsorily during operation. Otherwise, Service Tool might malfunction.
For personal computer used as Service Tool, refer to the instruction manual.

The following notices are mainly described for the dealing of transmission adaptor, which is used for transmitting data between Service Tool and the Indoor or Outdoor unit.

1. **Ensure that all electronic equipment is at least one meter away from the adaptor. Otherwise, unexpected noise might lead to malfunction of the equipment.**
2. **Avoid installing the adaptor near a fireplace or other heating apparatus.**
3. **When installing the adaptor, take precautions to prevent access from infants.**
4. **Do not use inflammable gases near the adaptor. Otherwise, it might lead to a fire.**
5. **The rated voltage of the adaptor is 220-240V A.C. 50-60Hz. Confirm that the power supply is within this range. If the voltage is out of range, contact your electric company.**
6. **Do not change the DIP-SW setting in the adaptor. Otherwise, Service Tool might malfunction.**
7. **Do not install the adaptor in highly dust locations. Otherwise, it might cause to a fire or an electrical shock.**
8. **The operation temperature range of the adaptor is 0-46°C. Do not use it except within this range. Otherwise, the adaptor might malfunction.**
9. **Install the adaptor where the ambient relative humidity is less than 90%RH. Placing in a highly humid or damp location might lead to a fire or an electrical shock.**
10. **If water, metal or foreign material enters the adaptor, stop operation and disconnect the power supply cord and transmission cord immediately.**
    Failure to disconnect might lead to a fire or an electric shock.
11. **Do not splash water in the adaptor or touch it with wet hands. It isn’t water-proof. If water enters, wipe it off with a dry cloth.**
    Failure to perform, might lead to a fire or an electric shock.

2. OUTLINE



This operating manual explains the operating procedures for the software Service Tools for the VRF control system.
The use of the system tools allows detailed data about the operating condition of each refrigerant system that has been installed in the building's system to be displayed in an easy-to-understand format.
Moreover, it also allows the latest data about pressure and temperature of indoor and outdoor units to be monitored. If there are fluctuations in the conditions, they can be displayed clearly in graph form on a PC screen.
When an error occurs in the transmission line or in an indoor or outdoor unit in the system, details about the error can be displayed on the error information screen for easy assessment of the conditions for fast troubleshooting and resolution.

3. SET UP

3-1. SOFTWARE PREPARATION

To use “Service Tool for VRF system”, install and set up the tool in accordance with the following procedure.
Details are described on the following pages.

Step: **1.** MDAC installation
2. JET (SP3) installation
3. Hardware key (WIBU-KEY) installation
4. Service Tool installation
5. OS environment setup

Notes

1. Install the newest driver for the PC and OS on the PC onto which this application is to be installed. If the newest driver is not installed, operation of the PC and OS without the newest driver is not guaranteed. (This also applies after actual release.)
2. Operation guaranteed specifications (Operation is not guaranteed in other environments.)

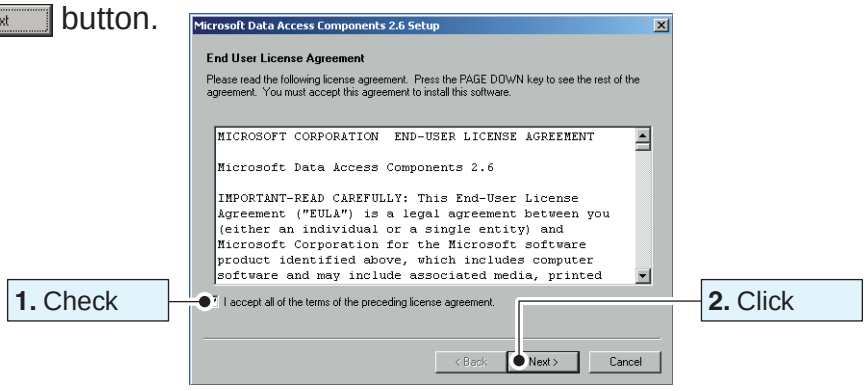
CPU	: Pentium® II 233Hz or higher
Memory	: 128MB or more
OS	: Windows® 98 Second Edition (English Edition) Windows® 2000 Service Pack 2 and later (English Edition)
Display	: 800 x 600 dots or more, high color or more
Interface	: Requires RS-232C port and USB port.
Required software	: Internet Explorer 5.01 or higher (or equivalent browser) Adobe® Acrobat® Reader4.0 or higher.

3-2. MDAC INSTALLATION

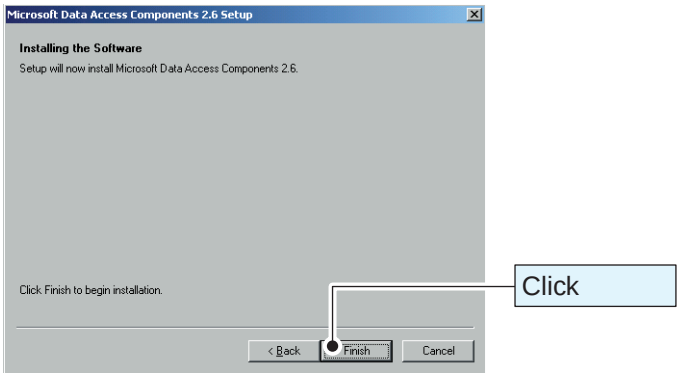
① Click the icons in the following order to open the MDAC.
[My Computer] (on desktop) → **[CD-ROM]** → **[MDAC]**

② Double-click the **[mdac typ.exe]** file in the MDAC folder.

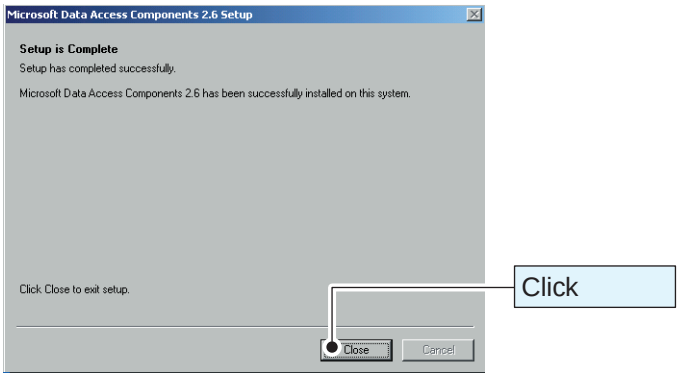
③ The window shown below opens. Agree to the contents of the License Agreement, and then check I accept all of the terms of the preceding license agreement. and click the Next button.



④ Click the Finish button. Installation begins.



⑤ Click the Close button to end installation.



3-3. JET (SP3) INSTALLATION

This installation is required only when the OS of your PC is Windows® 98.
No installation is required with Windows®2000.

① Click the icons in following order to open the JET folder.
[My Computer] (on desktop) → **[CD-ROM]** → **[JET]**

② Double-click the **[Jet40Sp3_Comp.exe]** file in the JET folder.

③ Installation ends when the file has been copied.

3-4. HARDWARE KEY (WIBU-KEY) INSTALLATION

(1) Install the WIBU-KEY driver.

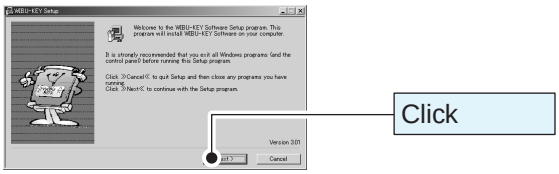
① Click on the icons in the following sequence to open the WIBU-KEY folder.

Click **[My Computer]** (on desktop) → **[CD-ROM]** → **[WIBU-KEY]**.

② Double click the **[WkRt-Int.exe]** file in the WIBU-KEY folder.

The window shown below is displayed.

Click Next.

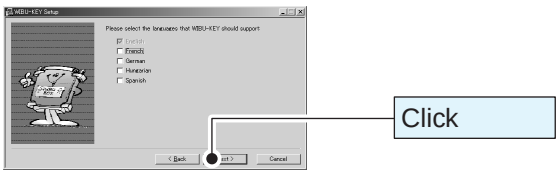


③ The window shown below is displayed.

Make sure there is a check for “English”.

If you want to use another language, select it.

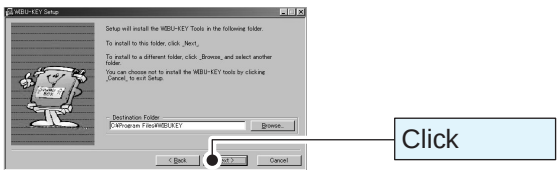
Click Next.



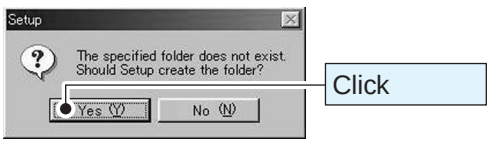
④ The window shown below is displayed.

Specify the Destination Folder.

If the default folder is available, click Next.

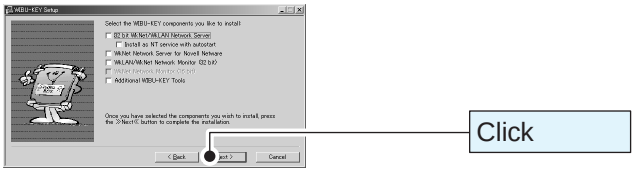


⑤ Click Yes (Y).



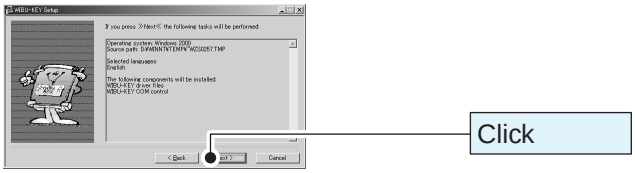
⑥ The window shown below is displayed.

Make sure that all checks have been removed. Click Next.

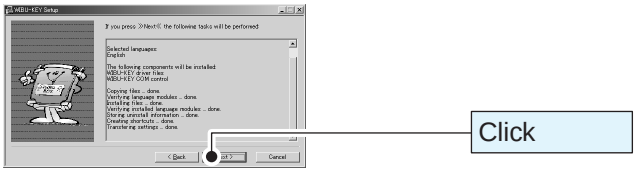


⑦ The window shown below is displayed.

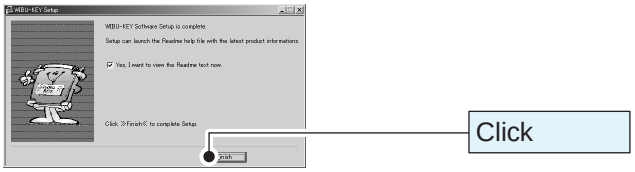
Check the contents. Click Next. The installation begin.



⑧ When the installation is complete, the window shown below is displayed. Click Next.



⑨ When the window shown below is displayed, click Finish to end the installation session.



(2) Connecting the WIBU-KEY

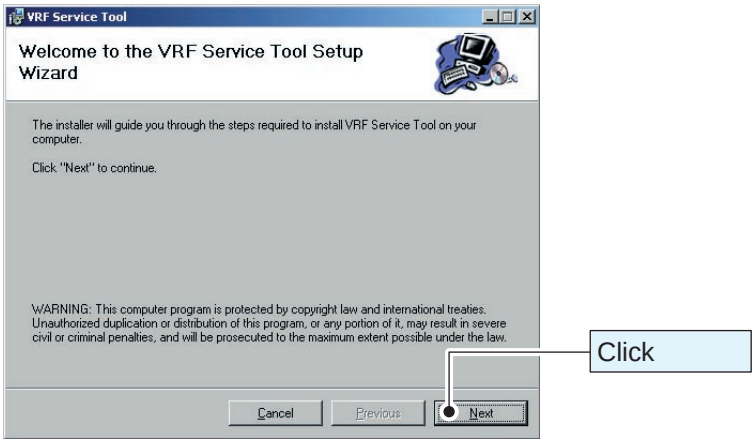
Once installation has been completed, insert the WIBU-KEY into the USB port.

3-5. SERVICE TOOL INSTALLATION

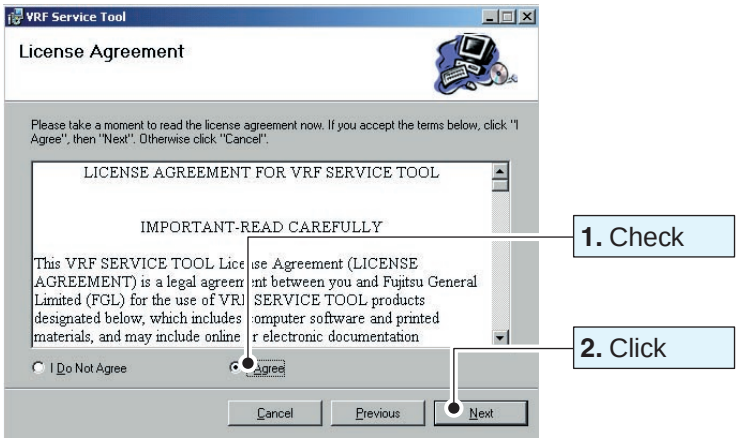
① Click the icons in the following order to open the Service folder.
[My Computer] (on desktop) → **[CD-ROM]** → **[Service]**

② Double-click the **[Setup.exe]** file in the Service folder.

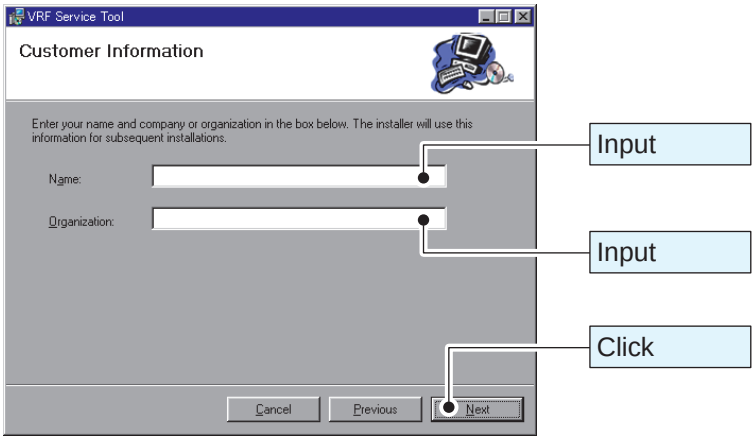
③ The installation window opens. Click Next to begin installation.



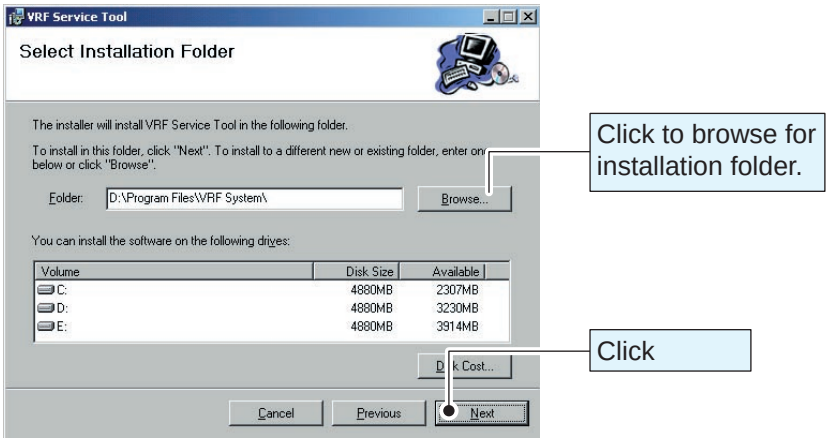
④ The window shown below opens. Agree to the contents of the License Agreement, and then check Agree in the window, then the Next button.



⑤ Enter your name and company or organization, and then click the Next button.

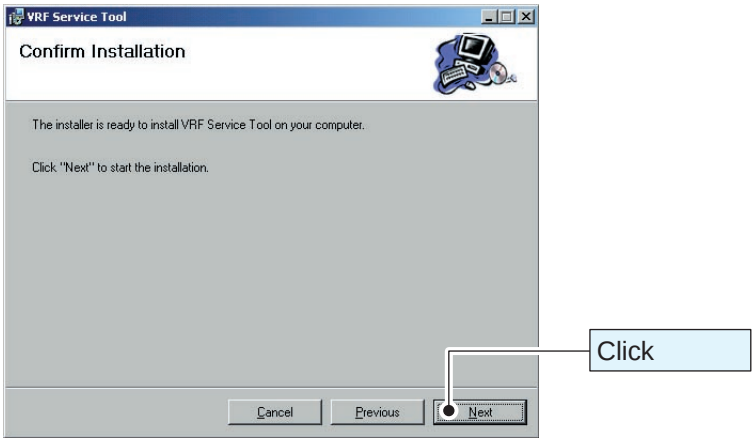


⑥ Select **[VRF System]** (already entered) as the installation destination, and then click the Next button.

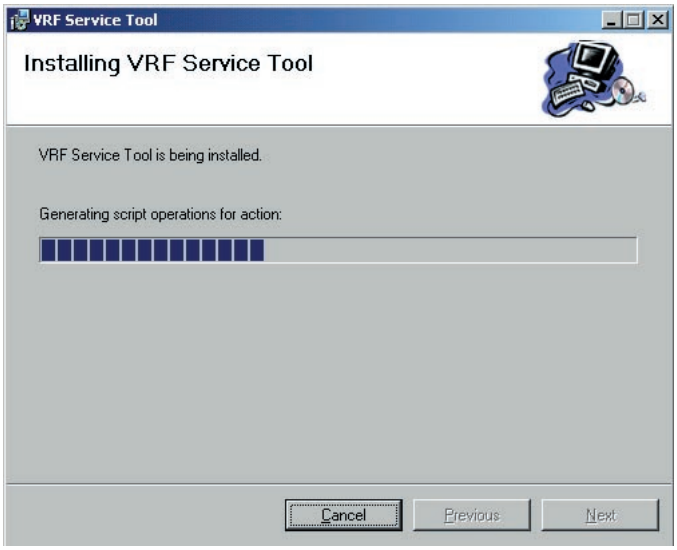


⑦ The window shown below opens.

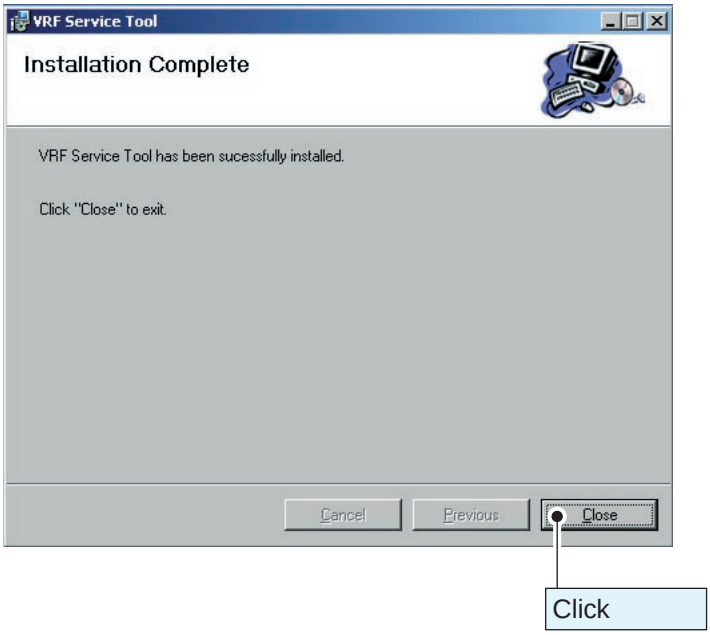
Click the Next button. Installation begins.



⑧ When installation begins, a status bar, as shown below, appears.



⑨ When installation is complete, the window shown below opens. Click the Close button to end installation.

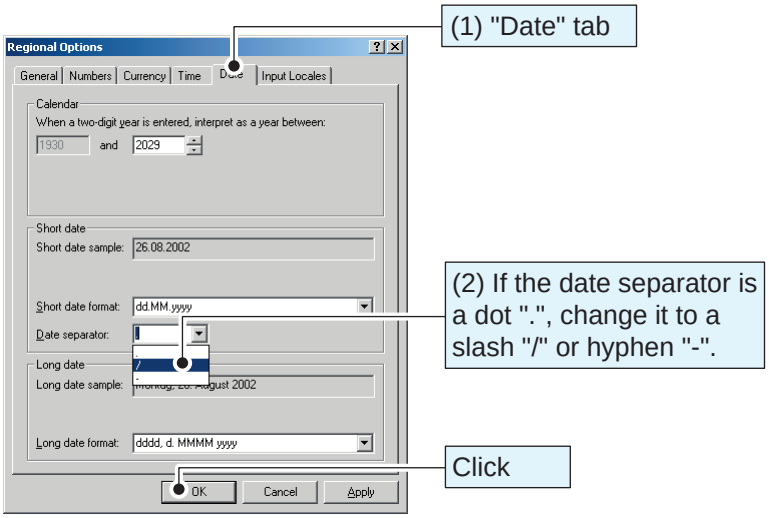


3-6. OS ENVIRONMENT SETUP

① Open the Control Panel window from the menu bar in the following order and double-click **[Regional Settings]**:

[Start](bottom left-hand corner) → **[Setting]** → **[Control Panel]** → **[Regional Options]**

② Use the “Regional Options” window shown below to check the date settings.



NOTE

* Note that if the date separator is left as a dot, normal operation will not be possible.

Notes

1.Set the resolution of personal computer to 800 x 600.
2.Set the screen colors to more than 65,536.
3.Turn off all power-saving modes, such as the screen saver.
4.Don't change the system time during Service Tool operation.

If the above conditions are not fulfilled, normal operation is not guaranteed.

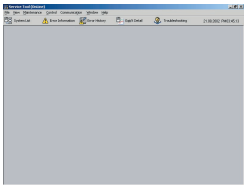
4. OPERATION

4-1. OUTLINE OF SERVICE TOOL

This operation owner's manual explains the operating procedure for "Service Tool" which is the software for VRF system.
By using "Service Tool", detailed data of the state of each refrigerant system installed in the building system is displayed in an easy-to-understand manner.
Further, when an error has occurred in the system, the status can be easily judged and the problem can be solved by troubleshooting.

Online Work **Offline Work**

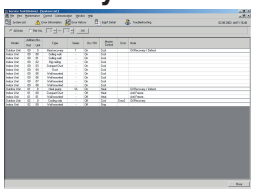
Main screen



* The main screen is displayed whenever the "Close" button is selected on any of the other screens. Normally, the first screen shown is the "Refrigerant System List".

Click each menu and each icon.

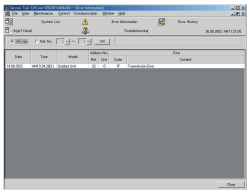
Refrigerant System List



Displays the refrigerant system device information.

(See section **4-3-2, "Refrigerant System List"** on p. 23.)

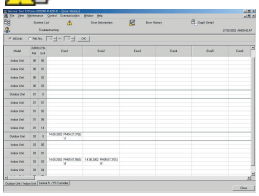
Error Information



Displays the error information occurred at the indoor unit, outdoor unit, Central Remote Controller, and transmission adaptor.

(See section **4-6-2, "Error Information Screen"** on p. 40.)

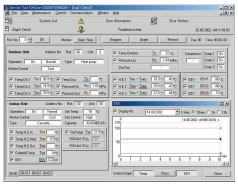
Error History



Displays the history of errors occurred at the indoor unit, outdoor unit, Central Remote Controller, and transmission adaptor.

(See section **4-6-3, "Error History Screen"** on p. 41.)

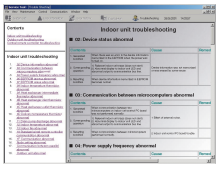
Device Status Details



Displays the circuit diagram, graphs and lists for an indoor or outdoor unit.

(See section **4-3-3, "Device Status Screen"** on p. 24.)

Troubleshooting

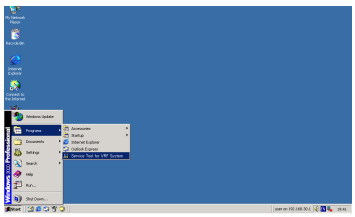


The left window displays the error items and their codes for either the indoor or outdoor unit.
When an error item is selected, the right window displays its detailed error contents and countermeasures.

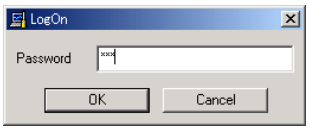
(See section **4-8, "Troubleshooting"** on p. 44.)

4-2. STARTING ONLINE / OFFLINE OPERATION

This section describes the procedure from online / offline work up to display of the system list screen.

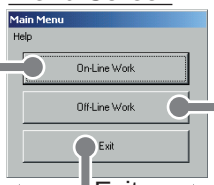


[Start] Start(bottom left-hand corner)
→ **[Programs]**
→ **[Service Tool for VRF System]**



Enter **"fgl"** in the password field. Click OK.

Menu Screen

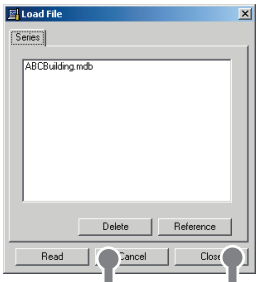


Online work

Offline work

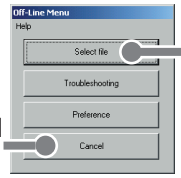
Exit

Loading Equipment Data Screen



Close

Cancel

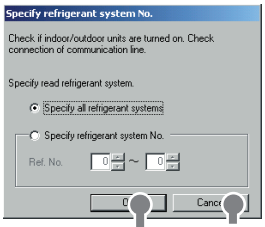


Select file

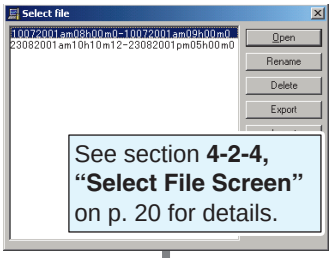
Cancel

System end

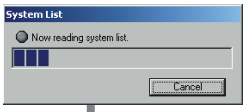
Refrigerant System Selection Screen



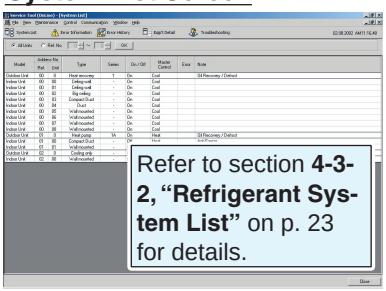
Select File Screen



See section **4-2-4, "Select File Screen"** on p. 20 for details.



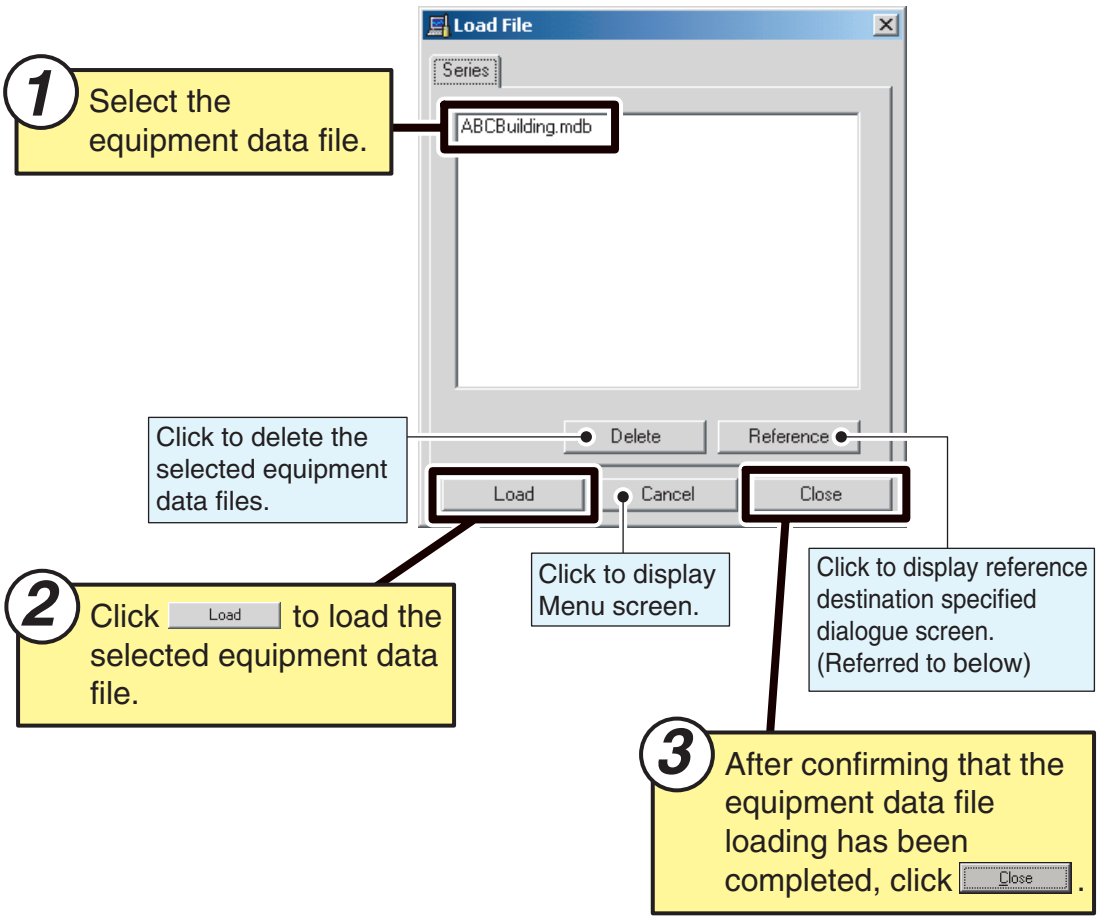
System List Screen



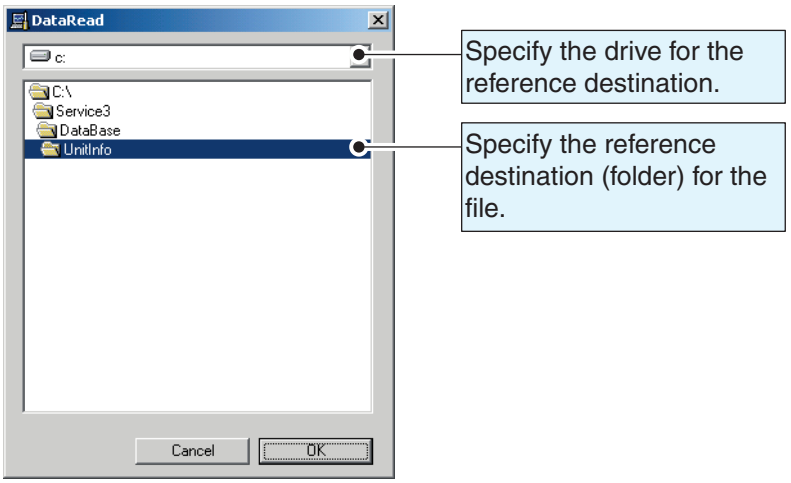
Refer to section **4-3-2, "Refrigerant System List"** on p. 23 for details.

4-2-1. Loading Equipment Data Screen

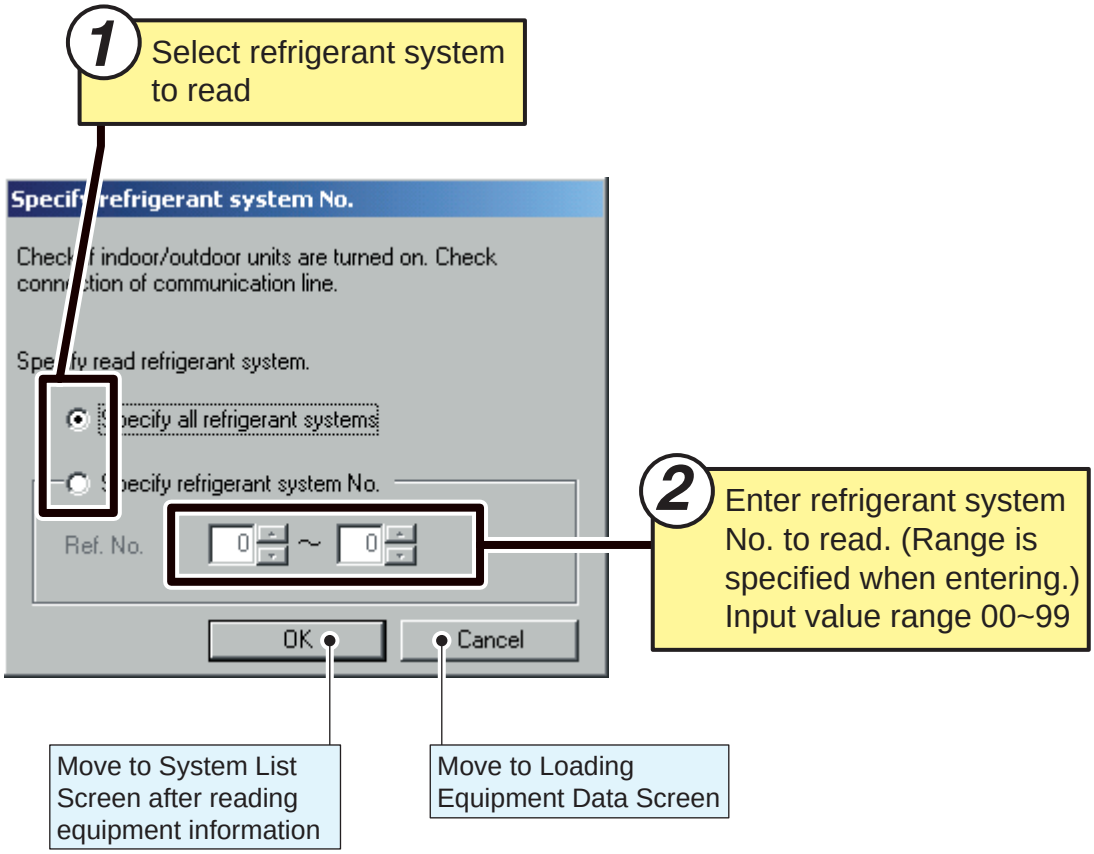
When the system is started, it optionally loads the equipment data (VRF1/1A) for the outdoor unit that has already been stored.



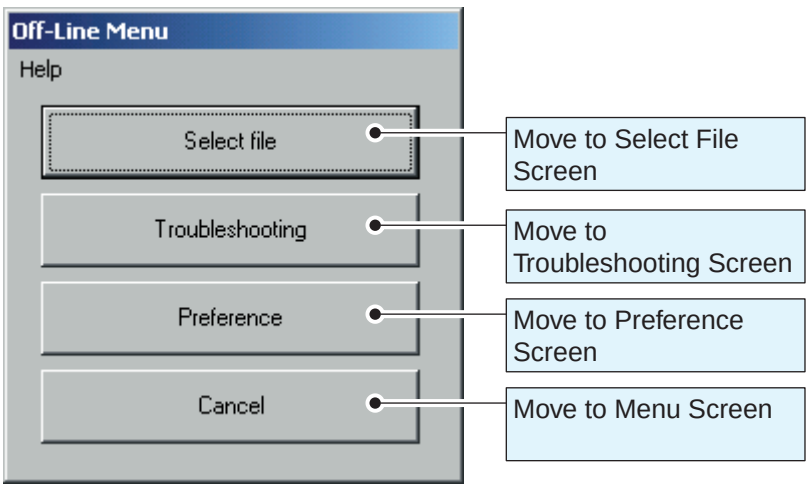
Reference Destination Specified Dialogue screen



4-2-2. Online Operation



4-2-3. Offline Operation



4-2-4. Select File Screen

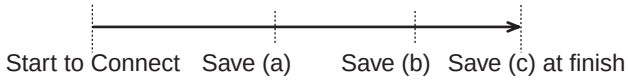
After connecting each equipment, the following two methods to save the collected Device Status details data.

1. Saving by random timing.
   ➡ Selecting **[File]** menu→ **[Save]**
2. Saving the file automatically after finishing the application.
   ➡ Setting in **4-5-1 (4), "Setting Data Saving"** in Preference.

The data that has been saved is created as follows.
Once the [SAVE] button has been pushed N times while the data for all periods is being collected, it will set the program to save the file automatically when the application is ended.

➡ N+1 files are created.

An example is shown below.



3 kinds of data are saved.

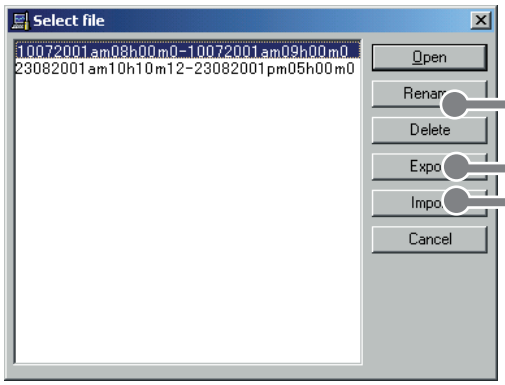
1) Start to connect ~ (a)
2) Start to connect ~ (b)
3) Start to connect ~ (c) at finish

★ If the past Device Status details is refered on Offline screen, select **Offline Screen** → **Select File**

Rename screen

Name input

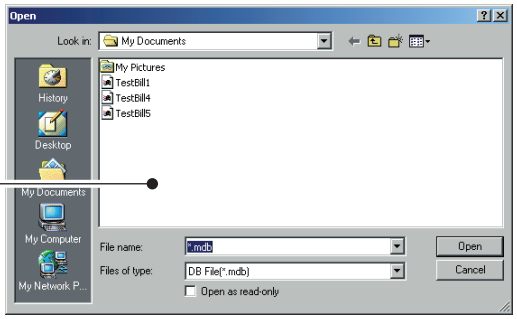
Select file screen



See next page.

Import source selection screen

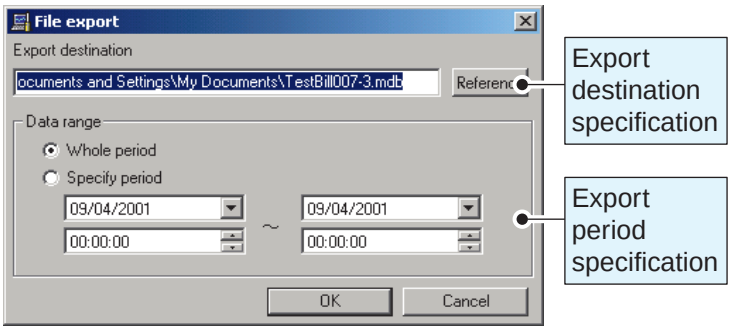
An arbitrary data file can be copied in Select file screen. The default copy source is "My Documents".



Import source specification

NOTE ⚠ When a new file is saved, the file is named "Untitled" as the default setting. Therefore, please input the individual name.

Export destination selection screen



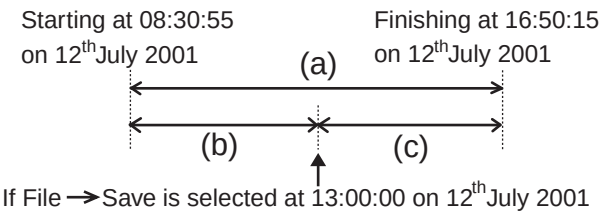
The files in Select file screen can be copied to an arbitrary folder. The default export destination folder is **[My Documents]**.

When **"Whole period"** is selected at Data Range, the default mdb file name is held.
When **"Specify period"** is selected at Data Range, the file can be trimmed in the specified date and time range. In this case also, the file name is as follows.

NOTE The VRF system data is recorded on mdb file. The data is always saved on the Hard disk during Online Work as shown below.

1. If Online Work is performed from start to finish without selecting **[File]** → **[Save]**
   ➡ The file is created as (a).
2. If **[File]** → **[Save]** is selected during Online Work
   ➡ The files are created both period from start to saving point as (b) and the rest of the period as (c).

(ex.)



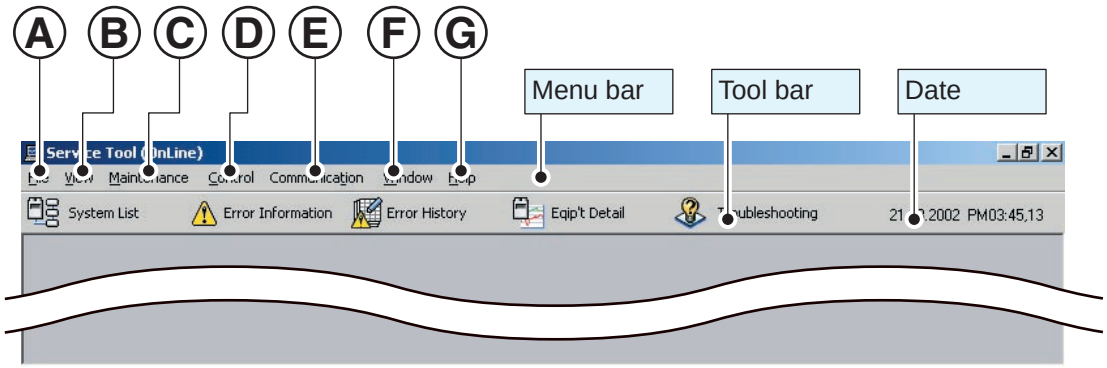
(a) A Building 12 07 2001 am08h 30m 55 - 12 07 2001 pm04h 50m 15 .mdb
File name Day Month Year Hour Minute Second Day Month Year Hour Minute Second Extension

(b) A Building 12072001am08h30m55 - 12072001pm01h00m00.mdb

(c) A Building 12072001pm01h00m00 - 12072001pm04h50m15.mdb

4-3. MAINTENANCE

4-3-1. Main Screen



Ⓐ FILE

Open	Opens a file.
Save	Saves a file.
Print	The Error Information, Error History, and Online Manual can be printed.
Preference	Displays the Preference Screen.
Warning	Performs error warning display and alarm setting.
Unit / Time / Day of week	Sets the time, temperature, and pressure units.
Screen Display	For setting the background color for the screen.
Setting Data Saving	Sets the number of error conditions that are stored on the Error History Screen.
Setting Graph	Sets the items that are displayed on the Device Status Screens.
Setting External Input	For making settings related to the external input.
Setting Mail Transmit	For making settings related to sending mail.
Output Requirement Setting	Sets the interval at which output request is performed.
Exit	Ends the Service Tool.

Ⓑ View

Toolbar	Displays Toolbar.

Ⓒ Maintenance

System List	Displays the System List Screen.
Error Information	Displays the Error Information Screen.
Error History	Displays the Error History Screen.
Equip't Detail	Displays the Device Status Details Screen.
Troubleshooting	Displays Troubleshooting.

Ⓓ Control

Control	Displays the control screen.

Ⓔ Communication

Send Mail	Displays the send mail screen.

Ⓕ Window

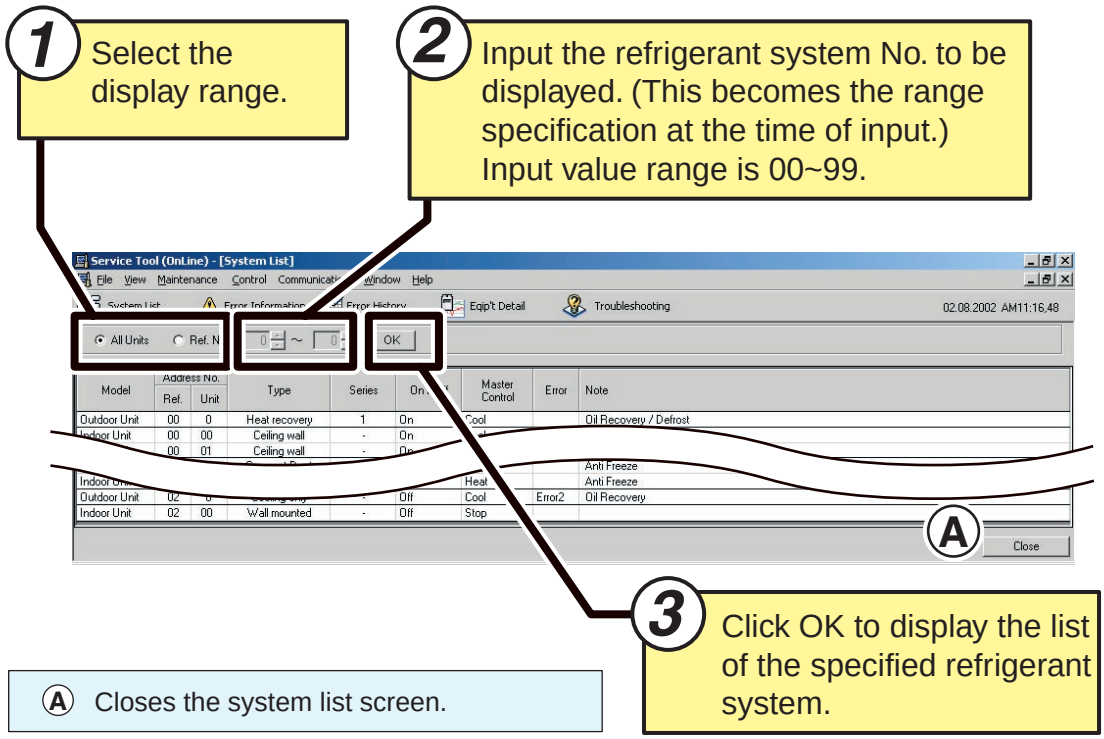
Tile Horizontally	Horizontal display.
Tile Vertically	Vertical display.
Cascade	Cascade display.
Arrange Icons	Arranges the icons.

Ⓖ Help

Manual	Displays the Online Manual.
About Service Tool	Displays the Service Tool version information.

4-3-2. Refrigerant System List

Displays a list that includes the operation status of the outdoor unit and indoor units of the specified refrigerant system.
The results on the screen can be printed by **[File]** → **[Print]**.



Ⓐ Closes the system list screen.

DISPLAY ITEMS

- Model : Outdoor Unit/Indoor Unit
- Address No. : Refrigerant System Address / Indoor Unit Address
- Type : Outdoor Unit : Heat Pump / Heat Recovery / Cooling Only
  Indoor Unit : Wall Mounted / Universal / Big Ceiling / Compact Cassette / Cassette / Duct
- Series : VRF 1 : 1
  VRF 1A : 1A
  Cannot be identified. (Unknown indoor unit.) : -
- On / Off : ON / OFF
- Master Control : Stop / Heat / Cool / Dry / Fan / Auto
- Error : *Error 1 / Error 2

NOTE *1) Error 1 : Errors detected by LCD on outdoor unit PCB and service tool only.
Error 2 : Errors displayed at display device (central remote controller, wired remote controller, PC controller, indoor unit LED) in addition to Error 1.

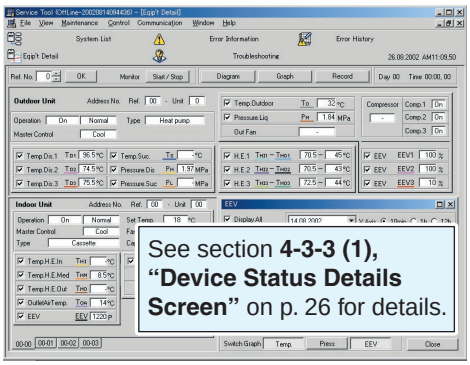
4-3-3. Device Status Screens

(Device Status Details, Device Status Details Log, Device Status Graph, Device Status Circuit Diagram)

The operation status and the internal pressure and temperature of each device in the specified refrigerant system can be checked.

When the Eqip't Detail icon is selected, the Device Status Details Screen is displayed.

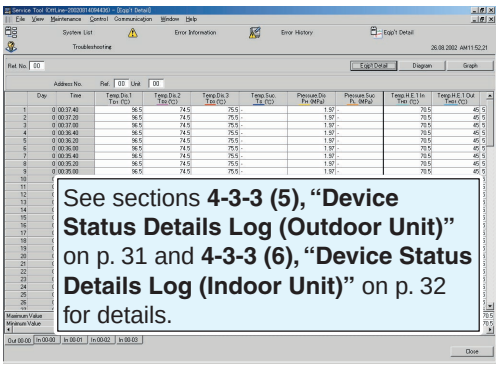
Device Status Details



See section **4-3-3 (1), "Device Status Details Screen"** on p. 26 for details.

Displays the operation status and the internal pressure and temperature of each device.

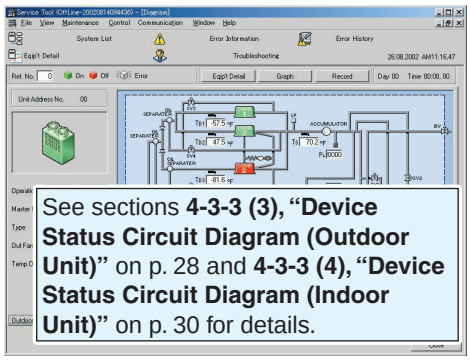
Device Status Details Log



See sections **4-3-3 (5), "Device Status Details Log (Outdoor Unit)"** on p. 31 and **4-3-3 (6), "Device Status Details Log (Indoor Unit)"** on p. 32 for details.

Intermittently displays detailed values such as the temperature and pressure of each unit.

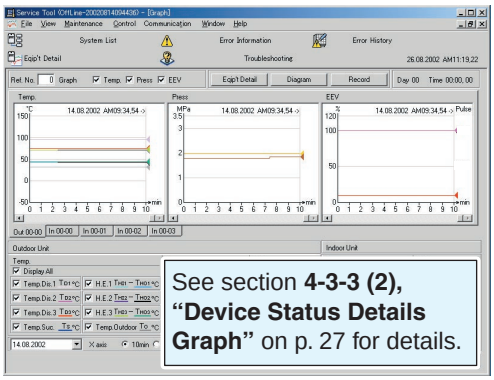
Device Status Circuit Diagram



See sections **4-3-3 (3), "Device Status Circuit Diagram (Outdoor Unit)"** on p. 28 and **4-3-3 (4), "Device Status Circuit Diagram (Indoor Unit)"** on p. 30 for details.

The pressure and temperature of each device is displayed, and the operation status can be checked by illustration.

Device Status Graph



See section **4-3-3 (2), "Device Status Details Graph"** on p. 27 for details.

The time change of the pressure and temperature of each device can be checked by graph.

Notes

The data of each refrigerant system are updated according to Output span in Output requirement setting screen while the refrigerant system is selected and Start/Stop button is being pressed in Device Status Details screen.
If Start/Stop button is not pressed, the whole data are begun to record according to Output Span in Output requirement setting screen after 15-20 minutes when scanning on On-Line is finished.

OUTDOOR UNIT DISPLAY ITEMS

- Address No. : Refrigerant System Address / Outdoor Unit Address
- Operation : ON/OFF + Device status (*1)
  (Normal / Error1 / Error2 / System down)
- Master Control : Idiling / Heat / Cool / Same Mode
- Type : Heat Pump / Heat Recovery / Cooling Only
- Compressor : Compressor Operation step (*2)
- Comp1-3 : Compressor 1-3
- TO : Outdoor Temperature
- OutFan : Outdoor FAN (*3)
- TD1-3 : Discharge 1-3 Temperature
- TS : Suction Temperature
- PH : Discharge Pipe Pressure
- PM : Liquid Pipe Pressure
- PL : Suction Pipe Pressure
- THI1-3 : Heat Exchanger 1-3 Inlet Temperature
- THO1-3 : Heat Exchanger 1-3 Outlet Temperature
- EEV1-3 : Electronic Expansion Valve 1-3 Opening (Percentage: %)

INDOOR UNIT DISPLAY ITEMS

- Address No. : Refrigerant System Address / Indoor Unit Address
- Operation : ON/OFF + Device status (*1)
  (Normal / Error1 / Error2 / System down)
- Master Control : Stop / Heat / Cool / Dry / Fan / Auto
- Set Temp. : 16 ~ 30°C
- Fan Control : Auto / High / Med / Low
- Type :

Icon display	Type	Icon display	Type
	Wall Mounted		Compact Cassette Cassette
	Universal / Big Ceiling		Duct

- Capacity : Capacity
- THI : Heat Exchanger Inlet Temperature
- THM : Heat Exchanger Middle Temperature
- THO : Heat Exchanger Outlet Temperature
- EEV : Electronic Expansion Valve Opening (Pulse value: P)
- TOA : Outlet Air Temperature
- TIA : Indoor Temperature
- SVD : R.B.Unit Discharge Valve
- SVS : R.B.Unit Suction Valve

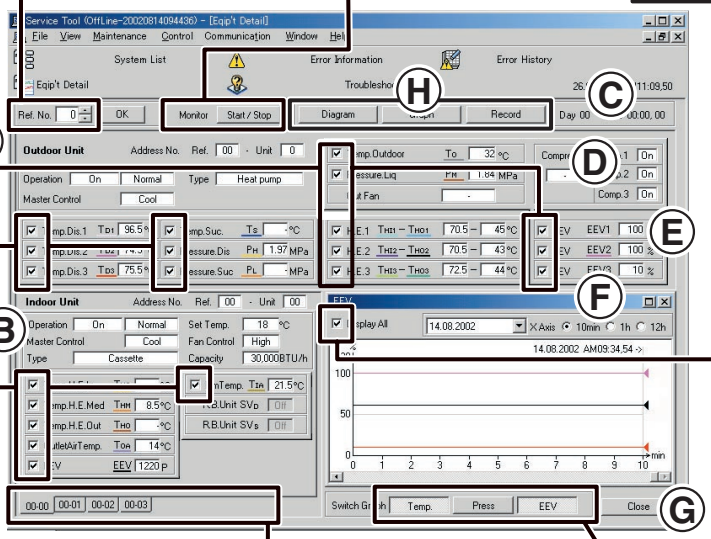
Note *1) Error 1: Errors detected by LCD on outdoor unit PCB and Service Tool only.
Error 2: Errors displayed at display device (Central Remote Controller, Wired Remoto Controller, PC Controller, indoor unit LED) in addition to Error 1.
*2) Displayed with "-" for VRF1A.
*3) Usually displayed in normal display mode for VRF1A. (No display of night mode.)

(1) Device Status Details Screen

1 Select the refrigerant system No., and then click OK.

2 Click Start / Stop key to collect data (*1).

6 When checking Display All, all the items to be displayed are graphed.



4 Select the item that displays unit information on a graph.

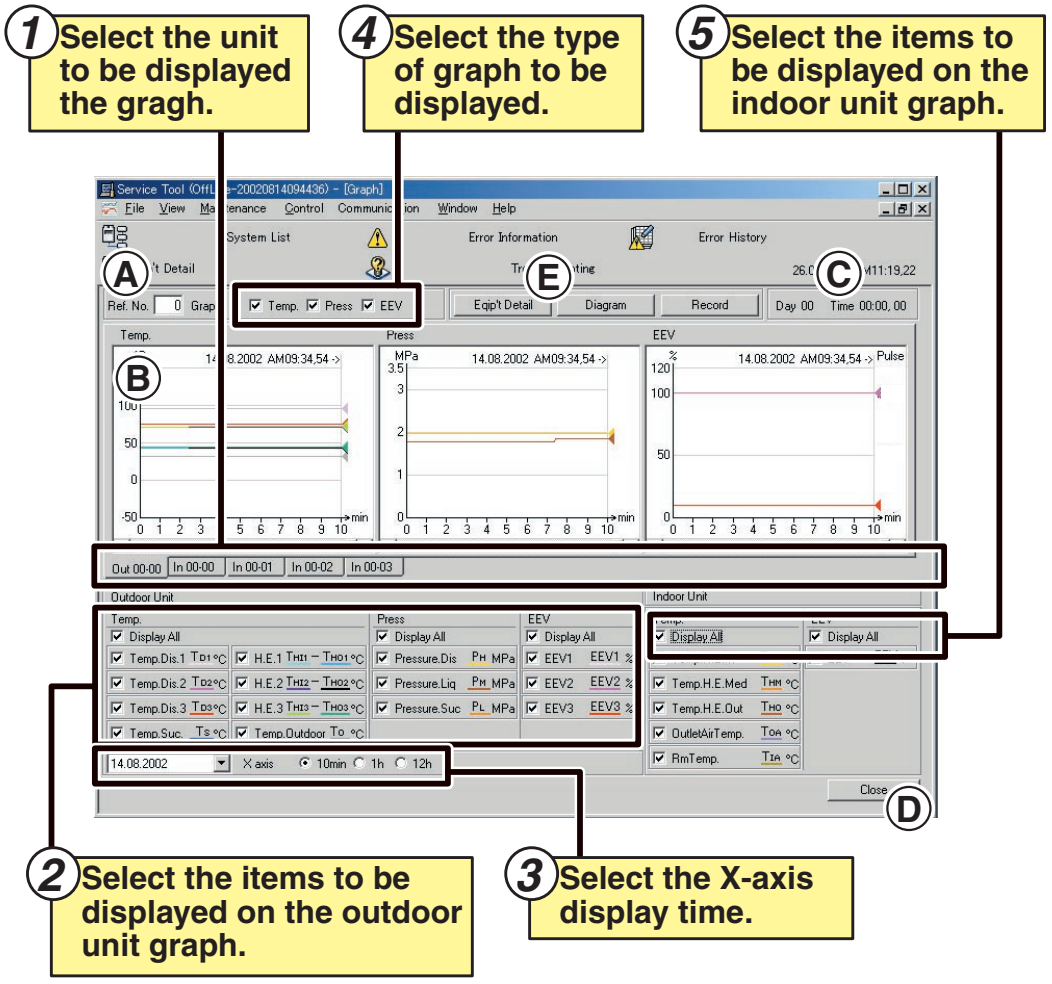
3 Choose the address of the indoor unit you want to display.

5 Choose the temperature, pressure or electronic expansion valve opening you want to display on a graph.

Ⓐ Displays the outdoor unit information.
Ⓑ Displays the indoor unit information.
Ⓒ Displays the time.
Ⓓ Displays the temperature, pressure and electronic expansion valve opening on a graph.
Ⓔ The graph screen can be expanded and controlled.
Ⓕ Selects the X-axis display time.
Ⓖ Closes the screen.
Ⓗ Screen switching
Diagram : Displays the Device Status Circuit Diagram Screen
Graph : Displays the Device Status Graph Screen
Record : Displays the Device Status Details Log Screen

NOTE *1) Graph, Diagram, Record and Equipment detail data of each refrigerant system are updated according to Output Span in Output requirement setting screen while Start/Stop button is being pressed.
If the Start / Stop button is not clicked, the data will not be recorded.
If refrigerant number is changed while the Start / Stop button is being clicked, the request of collecting the whole Device Status data is stopped.

(2) Device Status Details Graph



Ⓐ Displays the reference number selected at the Device Status Details Screen. (Cannot be changed)

Ⓑ Displays the selected unit gragh.

Ⓒ Displays the time.

Ⓓ Closes the screen.

Ⓔ Screen switching

Eqip't detail : Displays the Device Status Details Screen

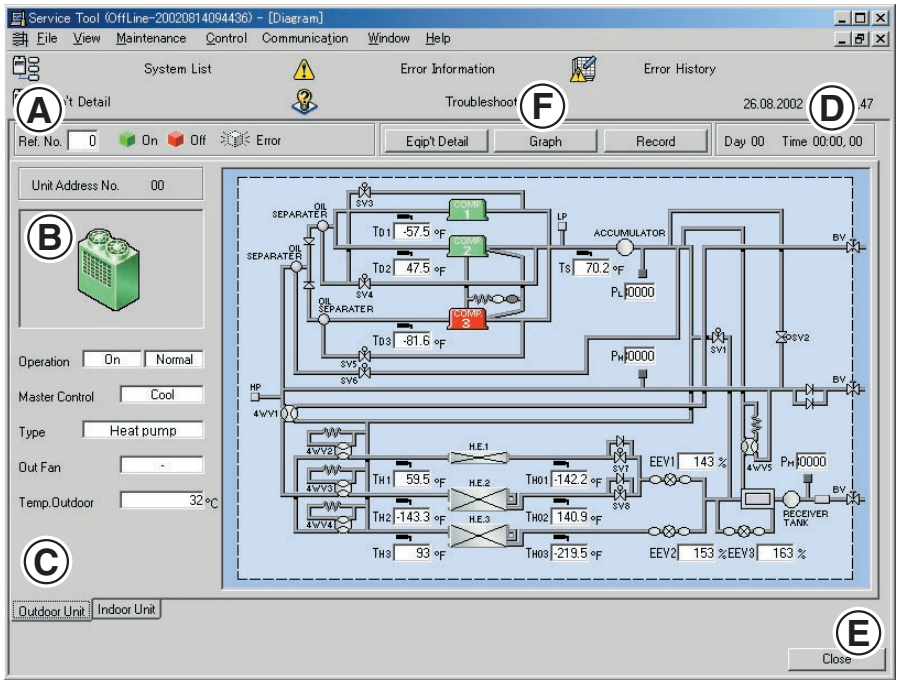
Diagram : Displays the Device Status Circuit Diagram Screen

Record : Displays the Device Status Details Log Screen

NOTE

1. The data is updated according to Output Span setting in 4-5-2, “Output Requirement Setting Screen”.
2. If Output Span setting in Output requirement setting is changed for several times during collecting the whole period data.
   → Updated period in Record screen is unified by the latest Output span setting.
3. If Output Span setting in Output requirement setting isn't changed during collecting the whole period data,
   → Updated period in Record screen is defined by Output span setting.

(3) Device Status Circuit Diagram (Outdoor Unit)



Ⓐ Displays the reference number selected at the Device Status Details Screen. (Cannot be changed.)

Ⓑ Switches the display color according to the status of each device.
- ON : Green
- OFF : Red
- ERROR : Flashing

Ⓒ Selects the Outdoor Unit / Indoor Unit.

Ⓓ Displays the time after line connection.

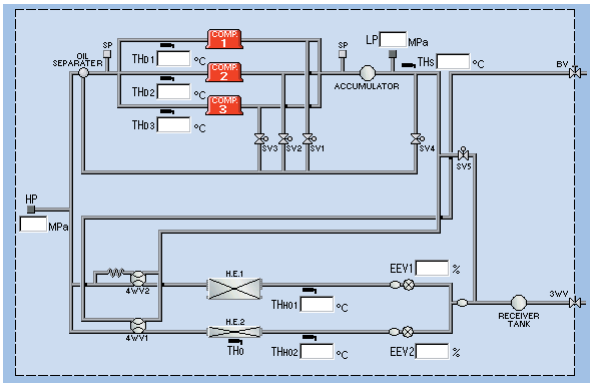
Ⓔ Closes the screen.

Ⓕ Screen switching
- Eqip't detail : Displays the Device Status Details Screen
- Graph : Displays the Device Status Graph Screen.
- Record : Displays the Device Status Details Log Screen

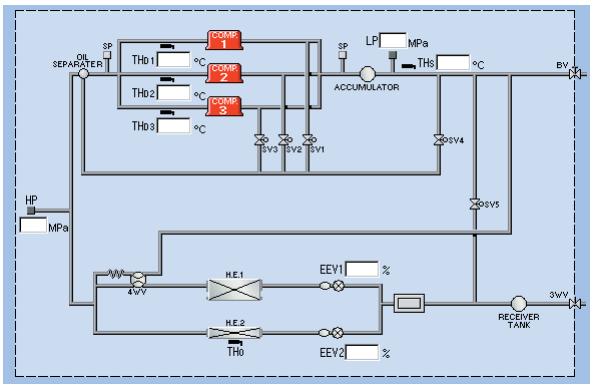
NOTE

1. The data is updated according to Output Span setting in 4-5-2, “Output Requirement Setting Screen”.
2. If Output Span setting in Output requirement setting is changed for several times during collecting the whole period data.
   → Updated period in Record screen is unified by the latest Output span setting.
3. If Output Span setting in Output requirement setting isn't changed during collecting the whole period data,
   → Updated period in Record screen is defined by Output span setting.

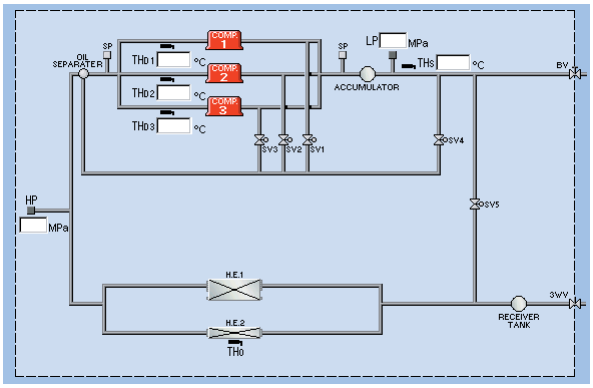
If the outdoor unit is VRF1A, the following circuit diagram will be displayed according to the type of system. If the unit is a VRF1, the existing circuit diagram will be displayed.



Circuit diagram: VRF1A (Heat Pump type R22 / R407)

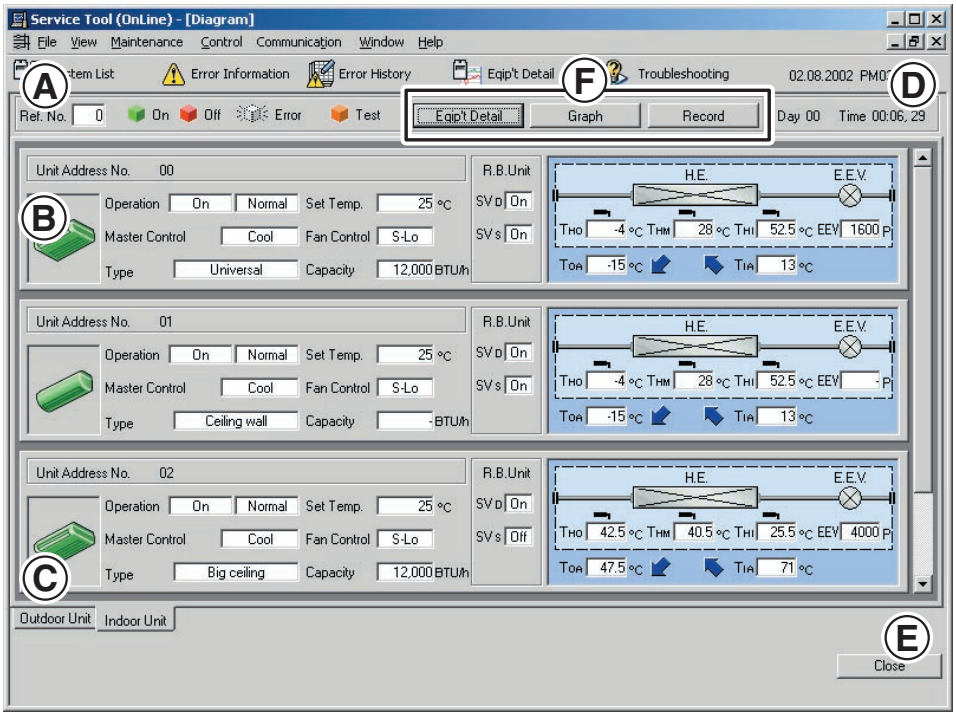


Circuit diagram: VRF1A (Cooling Only type R407)



Circuit diagram: VRF1A (Cooling Only type R22)

(4) Device Status Circuit Diagram (Indoor Unit)



Ⓐ Displays the reference number selected at the Device Status Details Screen.
(Cannot be changed.)

Ⓑ Switches the display color according to the status of each device.
- ON : Green
- OFF : Red
- ERROR : Flashing

Ⓒ Selects the Outdoor Unit/ Indoor Unit.

Ⓓ Displays the time after line connection.

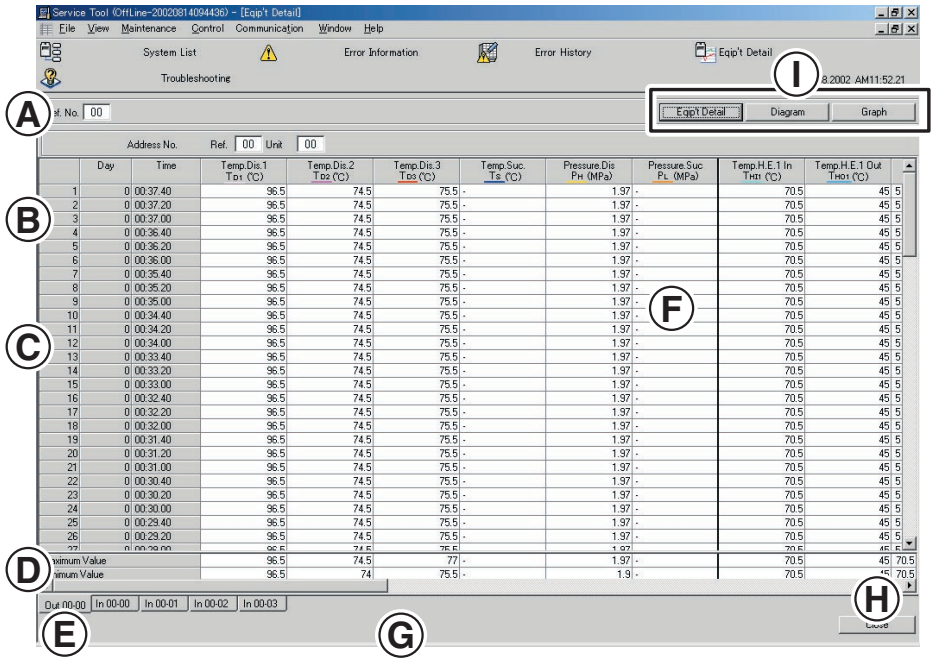
Ⓔ Closes the screen.

Ⓕ Screen switching
Eqip't detail : Displays the Device Status Details Screen
Graph : Displays the Device Status Graph Screen
Record : Displays the Device Status Details Log Screen

NOTE

1. The data is updated according to Output Span setting in 4-5-2, “Output Requirement Setting Screen”.
2. If Output Span setting in Output requirement setting is changed for several times during collecting the whole period data.
   → Updated period in Record screen is unified by the latest Output span setting.
3. If Output Span setting in Output requirement setting isn't changed during collecting the whole period data,
   → Updated period in Record screen is defined by Output span setting.

(5) Device Status Details Log (Outdoor Unit)



Ⓐ Displays the reference number selected at the device status details screen.
(Cannot be changed.)

Ⓑ Displays sequentially from the newest data.

Ⓒ Day: Current day / Accumulated days
Time: Current time / Accumulated time
(Display format is selected by environment setting.)

Ⓓ Displays the maximum and minimum values of all the data.

Ⓔ Selects Outdoor Unit.

Ⓕ Displays suction pipe pressure and heat exchanger 1 inlet temperature Heat exchanger 3 Discharge temperature and compressor 1

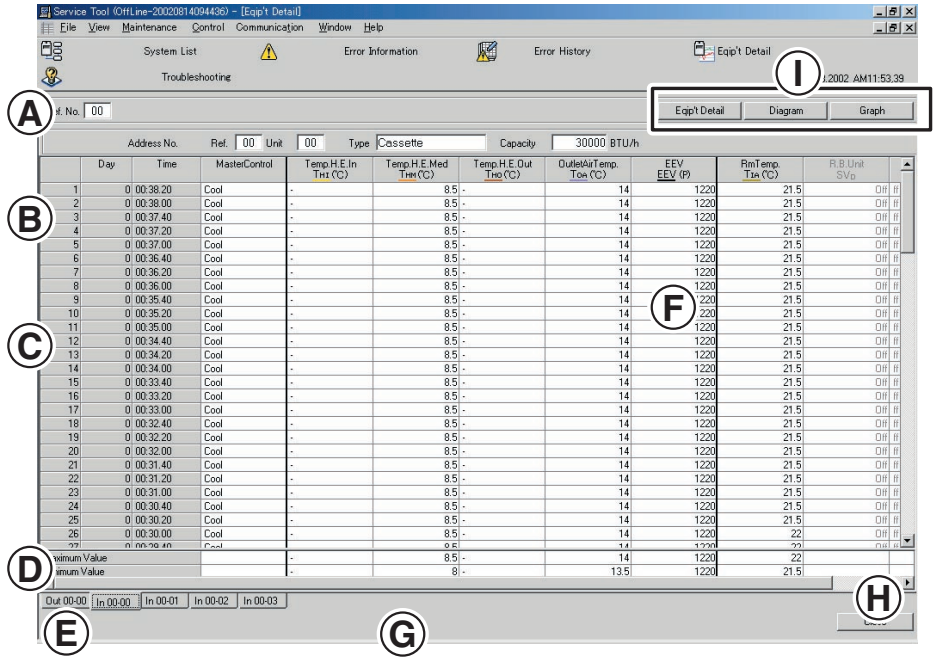
Ⓖ Display items
- Comp 1-3 (Compressor 1-3)
- TD1-3 (Discharge 1-3 temperature)
- THI 1- 3 (Heat exchanger 1-3 inlet temperature)
- THO 1-3 (Heat exchanger 1-3 outlet temperature)
- EEV 1-3 (Electronic expansion valve 1-3 opening)
- Ts (Suction temperature)
- PL (Suction pipe pressure)
- PH (Discharge pipe pressure)
- PM (Liquid pipe pressure)
- Temp. Outdoor (Outdoors air temperature)
- FAN (Outdoor FAN)

Ⓗ Closes the screen.

Ⓘ Screen switching
Eqip't detail : Displays the Device Status Details Screen
Graph : Displays the Device Status Graph Screen
Record : Displays the Device Status Details Log Screen

NOTE After connecting the device, when the device data file, which the data is not changed from a point to the end of application, is browsed on Device Status details log screen, the data of this period is not displayed on the screen. If the data is required to browse on Offline screen, please refer it after the saved data is performed to Export and Import.

(6) Device Status Details Log (Indoor Unit)



Ⓐ Displays the reference number selected at the device status details screen.
(Cannot be changed.)

Ⓑ Displays sequentially from newest data.

Ⓒ Day: Current day / Accumulated days
Time: Current time / Accumulated time
(Display format is selected by environment setting.)

Ⓓ Displays the maximum and minimum values of all the data.

Ⓔ Selects Outdoor Unit/Indoor Unit.

Ⓕ Displays operation mode, heat exchanger inlet temperature, electric expansion valve opening and intake temperature.

Ⓖ Display items
- Master Control (Operation mode)
- THI (Heat exchanger inlet temperature)
- THM (Heat exchanger middle temperature)
- THO (Heat exchanger outlet temperature)
- EEV (Electronic expansion valve opening)
- TOA (Outlet Air temperature)
- R.B.Unit.SVD (R.B.Unit discharge valve)
- R.B.Unit.SVS (R.B.Unit suction valve)
- TIA (Indoor temperature)

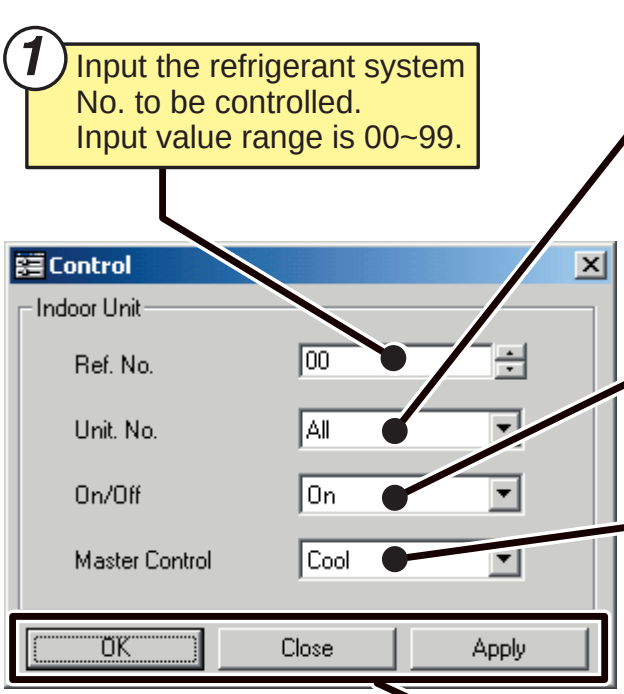
Ⓗ Closes the screen.

Ⓘ Screen switching
Eqip't detail : Displays the Device Status Details Screen
Graph : Displays the Device Status Graph Screen
Record : Displays the Device Status Details Log Screen

NOTE After connecting the device, when the device data file, which the data is not changed from a point to the end of application, is browsed on Device Status details log screen, the data of this period is not displayed on the screen. If the data is required to browse on Offline screen, please refer it after the saved data is performed to Export and Import.

4-4. Control

Operation control is described when **[Control]** is selected.
This setting controls the operation of each refrigerant system.



1 Input the refrigerant system No. to be controlled. Input value range is 00~99.

2 Select the indoor units to be controlled. Select the address of the indoor unit (0 ~ 15) or select ALL (for all indoor units) (*).

3 Select the operation state.

4 Select the operation mode. (COOL / HEAT)

5 **OK:**
Click to set and end the operation control screen.
Cancel:
Click to end the operation control screen without setting.
Apply:
Applies the setting value. (When setting consecutively)

NOTE

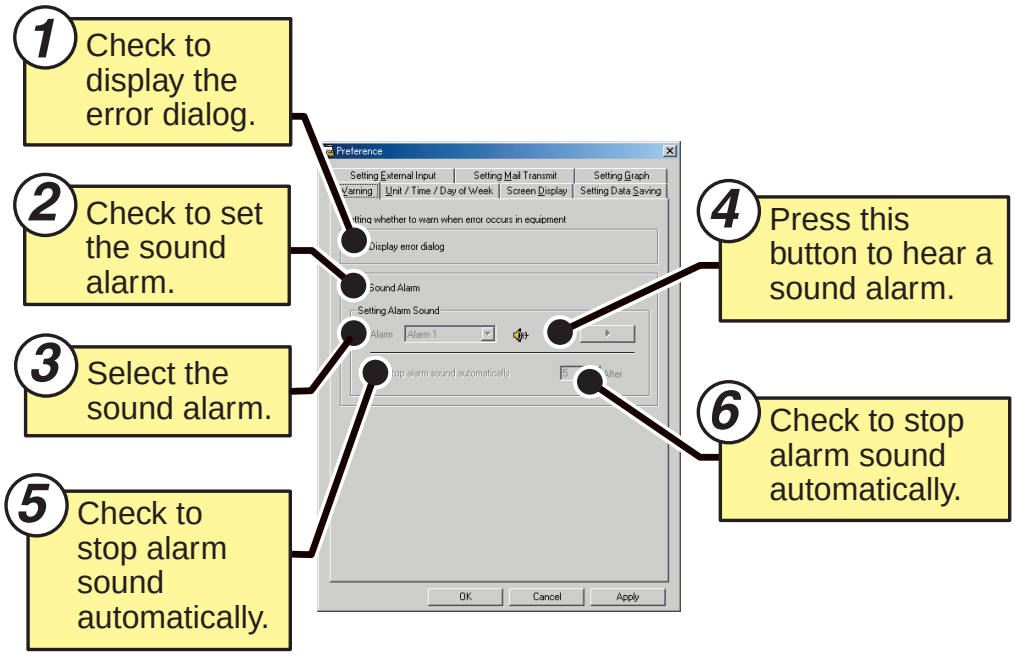
* Select the indoor unit address that has a remote controllers address of "00". The unit will not operate if an address other than the remote controller address is specified.

4-5. FILE

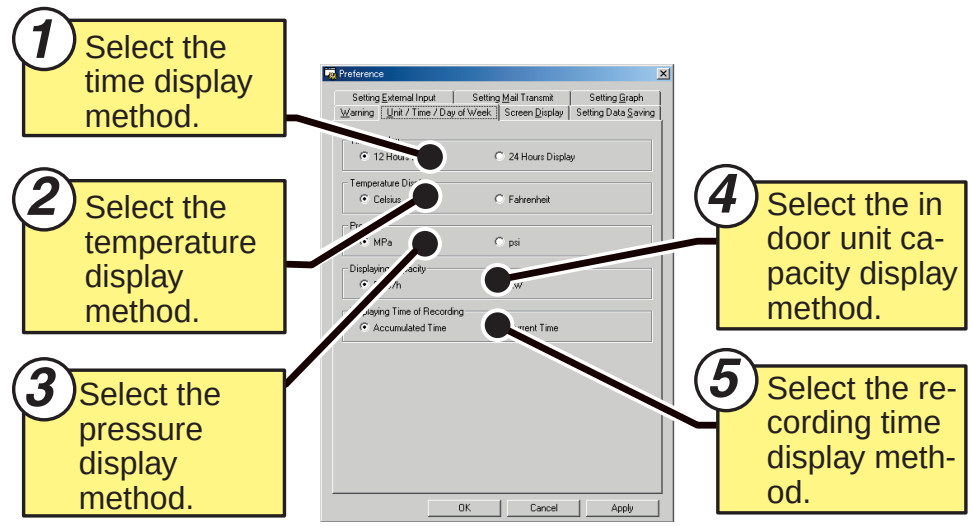
4-5-1. Preference

Perform overall service tool Preference.
Select each tag from **[File]** → **[Preference]**.

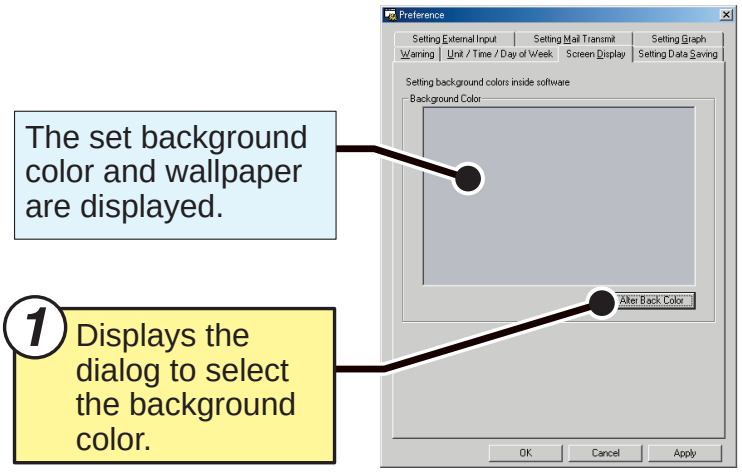
(1) Warning



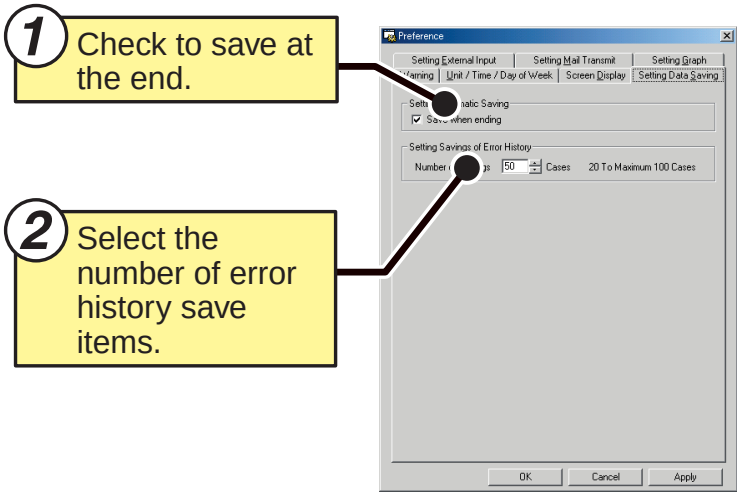
(2) Unit/Time/Day of week



(3) Screen Display

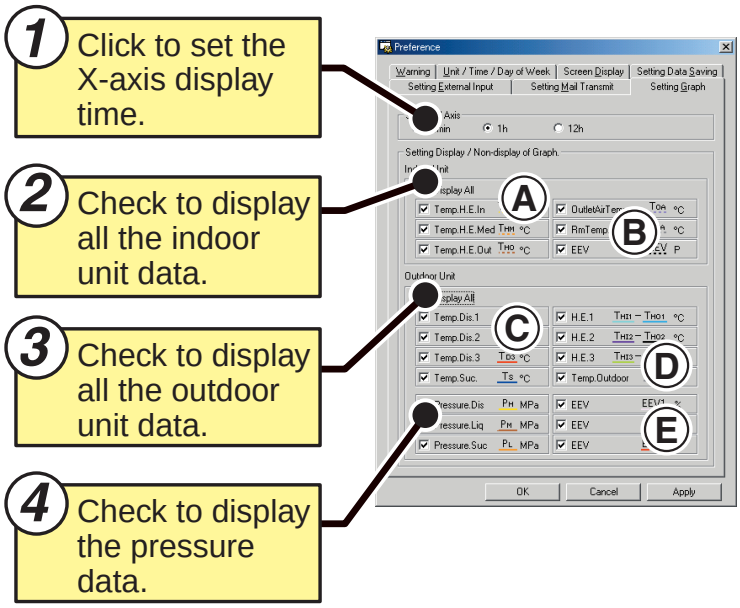


(4) Setting Data Saving



NOTE If “Save when ending” (①) isn’t checked, the service tool asks if the data should be saved or not before online work is terminated.

(5) Setting Graph



Ⓐ Check to display the heat exchanger temperature data.

Ⓑ Check to display the electronic expansion valve opening, room temperature, and discharge temperature data.

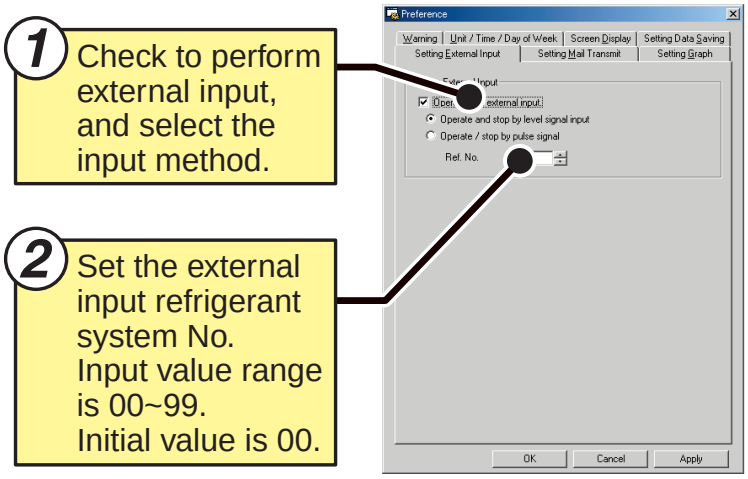
Ⓒ Check to display the discharge temperature and suction temperature data.

Ⓓ Check to display the heat exchanger temperature and outdoors temperature.

Ⓔ Check to display the electronic expansion valve opening data.

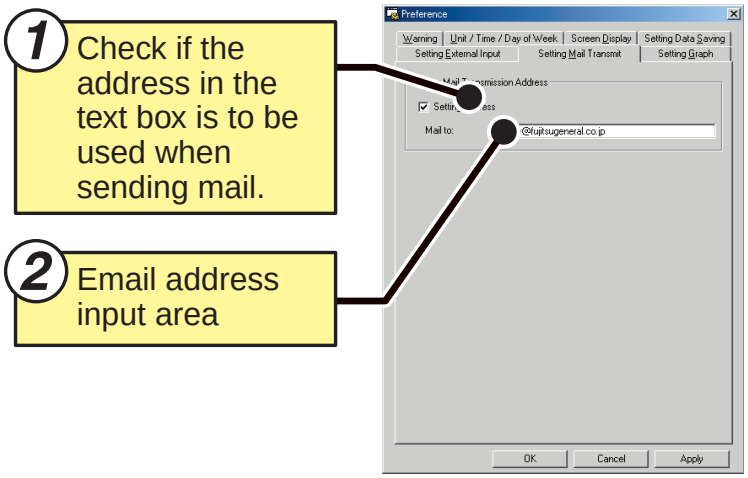
(6) Setting External Input

This setting enables to operate each refrigerant system from external input (CN9) in transmission adaptor.



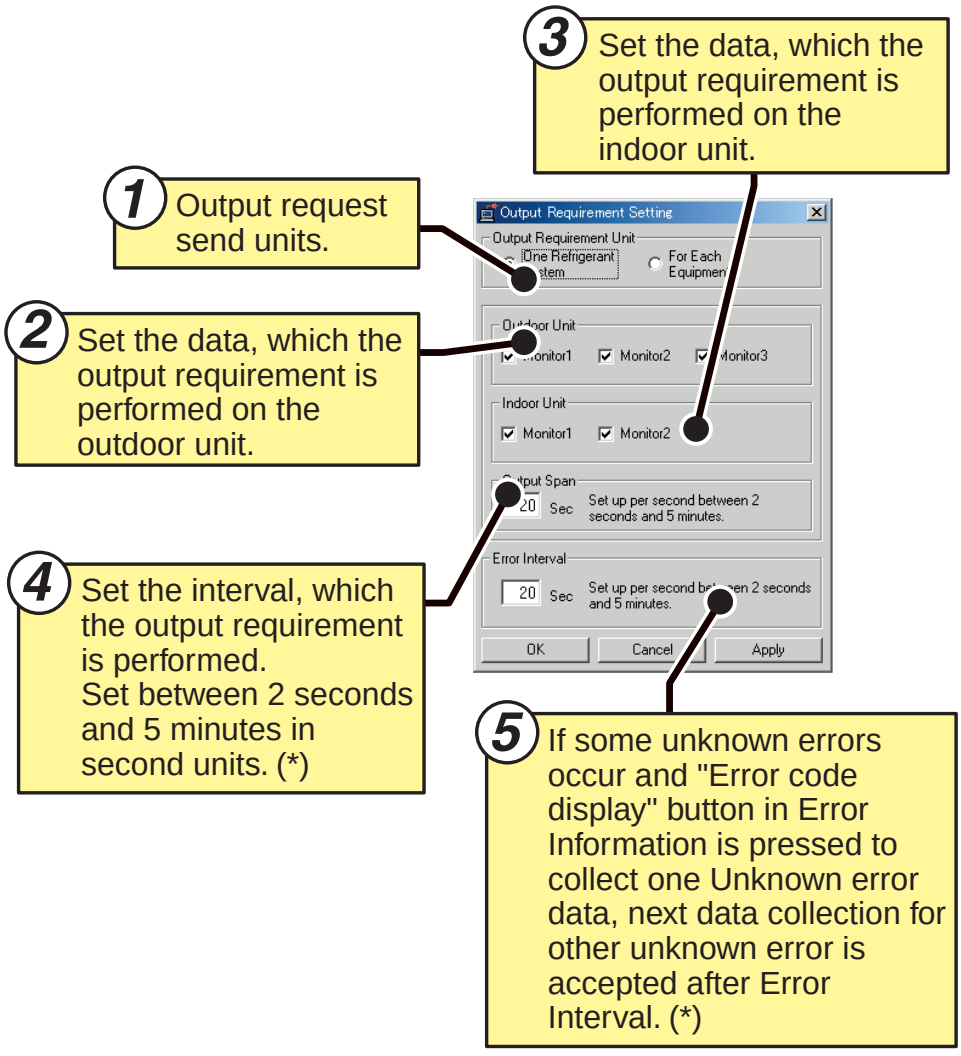
(7) Setting Mail Transmit

When an email address is entered in “Setting Mail Transmit”, choosing **[Communication]** → **[Send Mail]** can open new email with that email address.



4-5-2. Output Requirement Setting Screen

This section describes **[File]** → **[Output Requirement Setting]**.
Setting related to (1) Warning information acquisition at the error information screen and (2) Monitoring information acquisition at the device status screen is performed here.
• It requests indoor and outdoor unit to output.

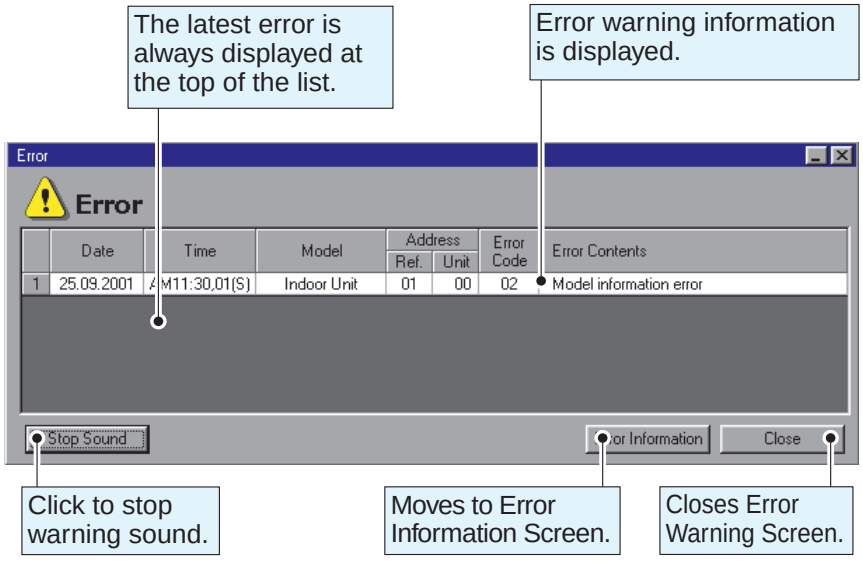


NOTE * If the time is set too shortly, the communication becomes busy. Occasionally, it might lead to operate Service Tool abnormally.

4-6. ERROR DISPLAY

4-6-1. Error Warning

Errors which occurred at the indoor and outdoor units, central remote controller and transmission adaptor are displayed.
When an error occurs, 4-6-1, “Error Warning” is displayed, and the the contents of the unsolved error can be checked by 4-6-2, “Error Information Screen.” After the error is solved, you can refer to 4-6-3, “Error History Screen.”

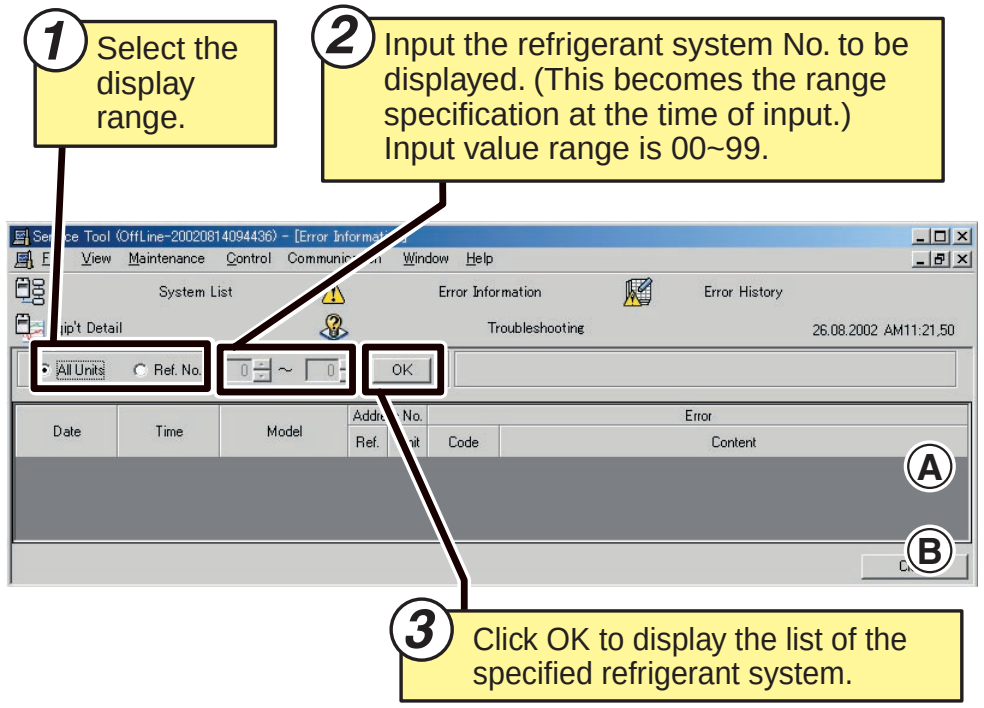


NOTE

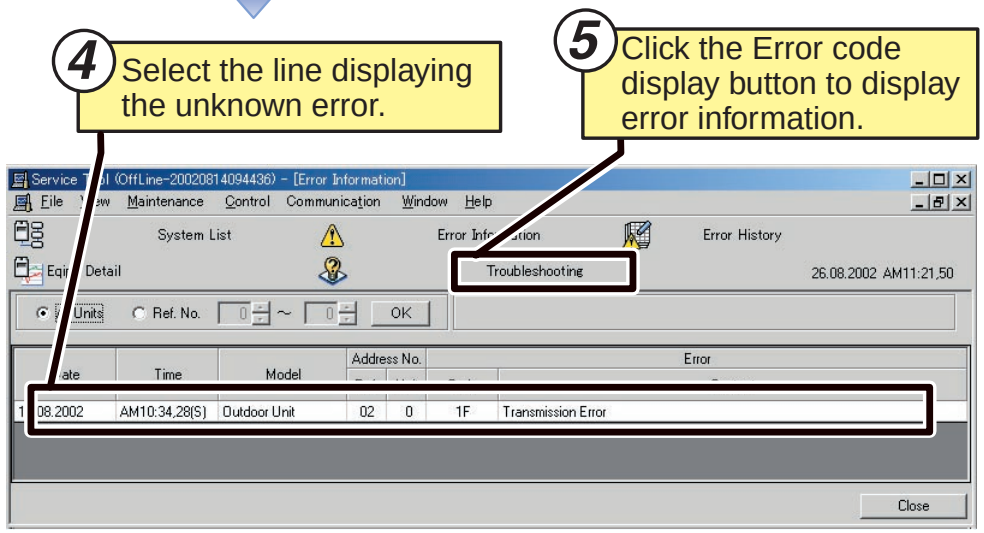
1. Displayed only when the setting is made so that the error warning is displayed in 4-5-1 (1), “Warning”.
2. When closing the Error Warning Screen, the latest error information on display will disappear, but the same information can be checked in 4-6-2, “Error Information Screen”.
3. When you want to minimize the error alarm screen, click the minimize button.

4-6-2. Error Information Screen

Displays the error generated on the indoor unit, outdoor unit and transmission adaptor of the specified refrigerant system.
The results on the screen can be printed by main screen **[File]** → **[Print]**.



When there is an unknown error · · ·

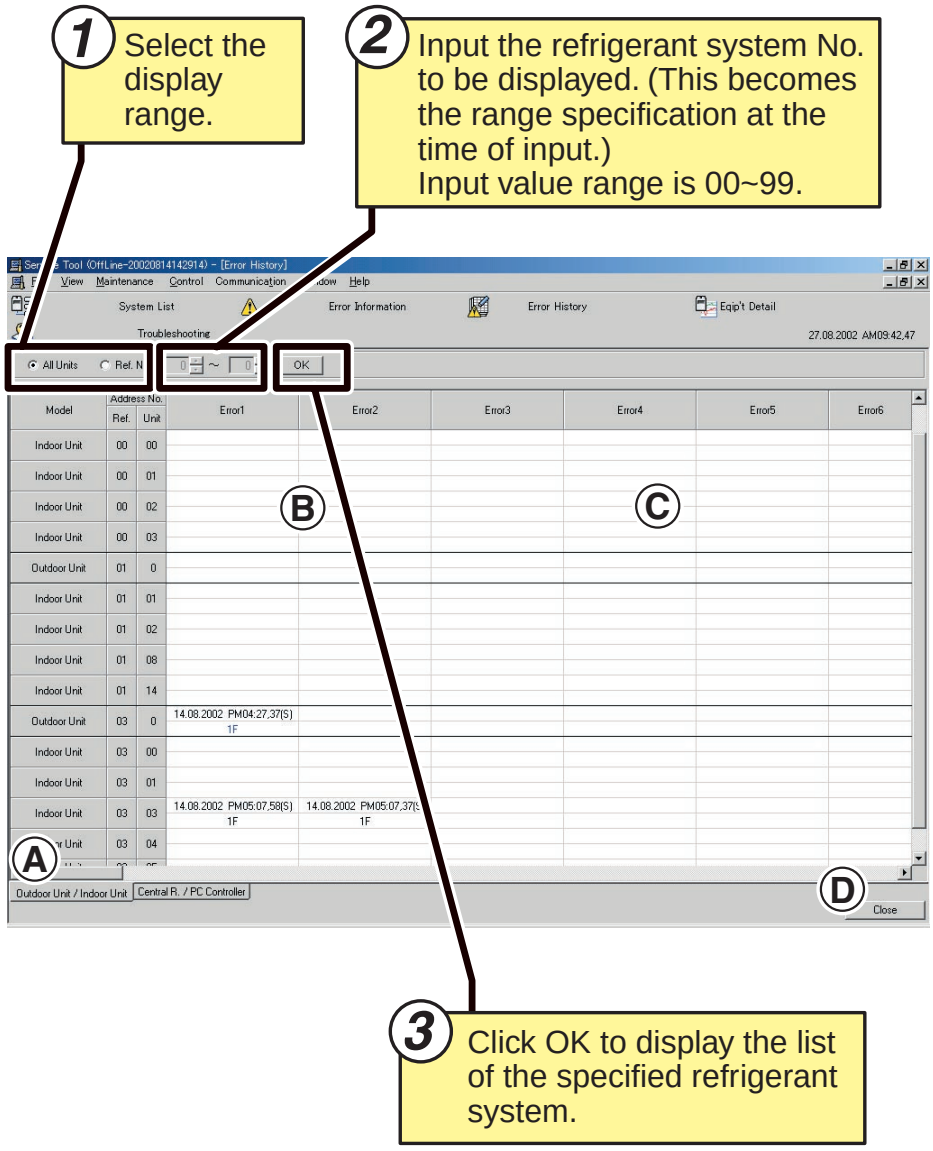


Ⓐ Displays all errors. On the Error Information Screen, a list can be selected for each line.

Ⓑ Closes the Error Information Screen.

4-6-3. Error History Screen

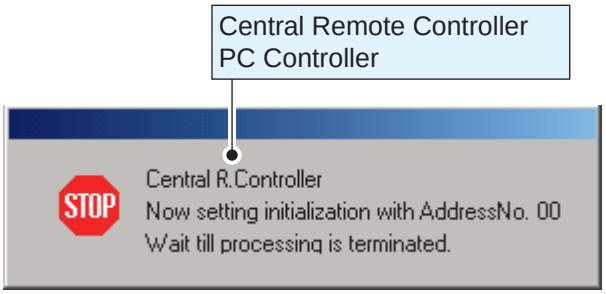
Displays the error contents recovered at each device.
Set the number of error history items as described in 4-5-1 (4), “Setting Data Saving”.
The results on the screen can be printed by main screen **[File]** → **[Print]**.



Ⓐ Selects the type to be displayed.	Ⓒ Displays the error history. Errors being occurred are not displayed.
Ⓑ On the Error History Screen, a list can be selected at every 2 lines, 1 column.	Ⓓ Closes the Error History Screen.

4-6-4. Screen Under Scanning By Other Equipment

When default signal is transmitted from PC Controller or Central Remote Controller connected on the same system, all processes on Service Tool are suspended, and all operations become impossible.
Also, as the suspended operation can not be continued even when default signal from PC Controller or Central Remote Controller is reset, the same operation must be made again.



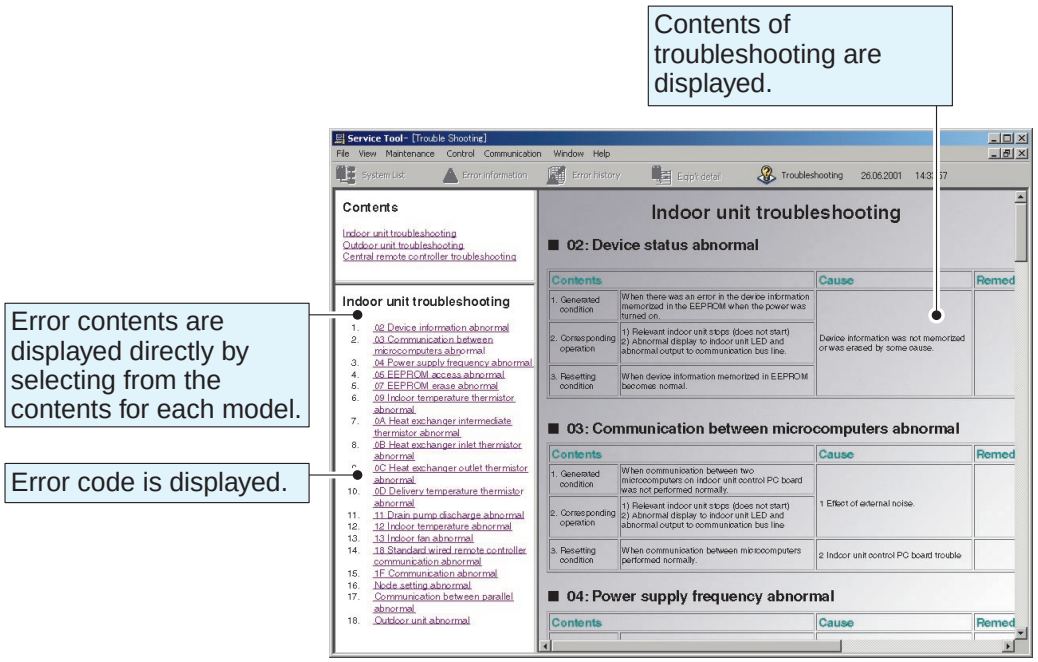
4-7. ERROR CODES

The following explains the meaning of each of the error codes.

Error Code	Indoor unit error	Outdoor unit error	Central remote controller / PC controller error
00	–	–	–
01	–	–	–
02	Model information error	Model information error	Printed circuit board error (Control panel)
03	Microcomputer communication error	Microcomputer communication error	Printed circuit board error (Transmission adaptor)
04	Power supply frequency abnormal	Power supply frequency abnormal	Memory error
05	–	Power supply phase abnormal	Node setting error
06	EEPROM access error	EEPROM access error	Parallel communication error
07	EEPROM deletion error	EEPROM deletion error	–
08	–	–	–
09	Room temperature thermistor error	Compressor 1 error	–
0A	Heat exchanger thermistor (middle) error	Compressor 2 error	–
0B	Heat exchanger thermistor (inlet) error	Compressor 3 error	–
0C	Heat exchanger thermistor (outlet) error	–	–
0D	Blower temperature thermistor error	Discharge temperature thermistor 1 error	–
0E	–	Discharge temperature thermistor 2 error	–
0F	–	Discharge temperature thermistor 3 error	–
10	–	Outdoor temperature thermistor error	–
11	Drain abnormal	Heat exchanger inlet thermistor 1 error	–
12	Room temperature abnormal	Heat exchanger inlet thermistor 2 error	–
13	Indoor Unit fan error	Heat exchanger inlet thermistor 3 error	–
14	–	Heat exchanger outlet thermistor 1 error	–
15	–	Heat exchanger outlet thermistor 2 error	–
16	–	Heat exchanger outlet thermistor 3 error	–
17	–	Suction temperature thermistor error	–
18	Standard wired remote control communication error	–	–
19	–	Discharge pressure sensor error	–
1A	–	Liquid pressure sensor error	–
1B	–	Suction pressure sensor error	–
1C	–	Oil sensor error	Connection error
1D	–	–	Initial setting error
1E	–	–	Manual storing 2 error
1F	Transmission error	Transmission error	Transmission error
20	–	–	–
21	–	Discharge temperature 1 error	Software error (Output)
22	–	Discharge temperature 2 error	Software error (Input)
23	–	Discharge temperature 3 error	–
24	–	High-pressure error	–
25	–	Low-pressure error	–
26	–	–	–
27	–	Oil recovery error	–
28	–	Pump down error	–

4-8. TROUBLESHOOTING

When opening troubleshooting while selecting the error code which occurred on the Error Information Screen and Error History Screen, the relevant error contents can be displayed directly.



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