

Service Support Tool SST Handbook

Service Support Tool DLM0 (Ver 3.03E)

The Canon logo is displayed in its characteristic red, bold, sans-serif font.

Service Support Tool

Version 3.03
bpchost.ini 3.03Ea

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Canon Inc.

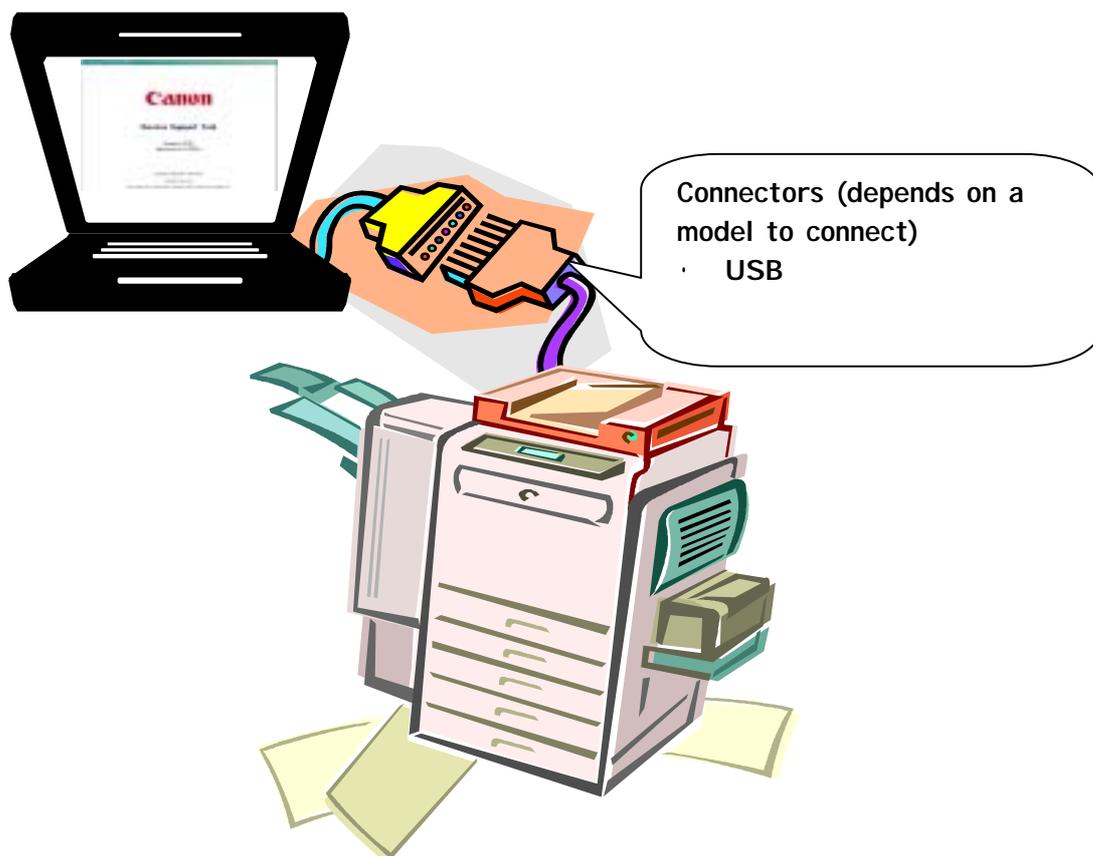
Created on 2004/10/28

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I . Purpose

The service support tool (SST) is a software tool (program) for downloading firmware and uploading / downloading backup data in the field by connecting a personal computer (PC) to the digital copiers.



◆ Target Models of digital copiers

SST v3.02 is applicable to the following digital copiers and connectors:

- MF8100 Series <USB>



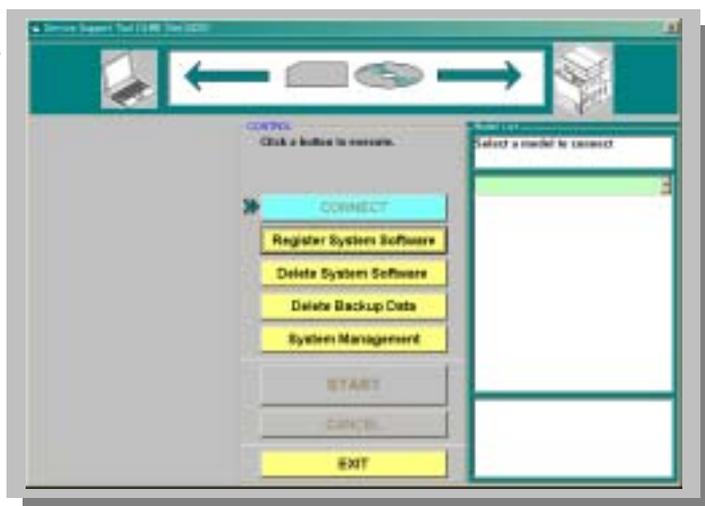
II. Outline

Broadly speaking, the SST's functions are divided into the following: those used to set up individual device models and those used after connection to a specific device model.

● Before connection

Here, you will primarily make initial settings associated with connection to a device:

- ◆ making preparatory work for connection to a device
- ◆ installing the system software
- ◆ uninstalling the system software
- ◆ removing backup data
- ◆ using PC system management



● After connection

Depending on the model in question, you can make use of the following:

- MF8100 Series <USB connection>
 - ◆ downloading of firmware

III. Preparation and SST installation

3.1 PC specifications

To use SST, prepare a PC that meets the specifications below.



Architecture: IBM PC/AT compatible

CPU: Celeron with 400 MHz or higher

Main memory: 64 MB or greater (depends on OS)

Disk space: 400 MB or greater

(Disk space requirement varies depending on the number of firmware products to register.)

Display resolution: SVGA (800 by 600 pixels) or higher

Number of colors: 32000 (16 bit) or greater

USB port: USB 1.1

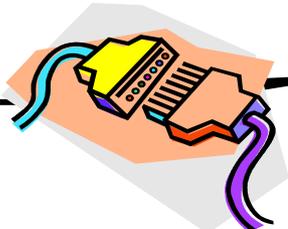
OS: Windows 98/98SE, NT4.0 Workstation, 2000 Professional, XP

Windows NT cannot be used with iR1600/2000 Series because these copiers connect to a main unit via USB cable but the OS do not support USB.

Note that Windows Me is not applicable regardless of the copier models.

3.2 Connection Cables

SST uses connection cables. Select the cables fit for the device to work on with SST. The cable types are listed below with the target devices.

USB cable:	iR1600/2000	
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USB cable

Prepare a USB cable that meets the standard. Use of a cable that is not up to the standard may result in malfunctions due to rfi.

The cable is desired to be as short as possible provided that connection is not hindered

3.3 SST installation

➔ SST Setup Files

The file below is required to setup SST.

SSTv3XXE_Setup.exe *'XX' indicates a version number.

3.3.1. Notes on Installation

- If your PC runs WindowsNT/2000/XP, log on as an Administrator. Driver registration requires editing of Windows registry, which is permitted only to Administrators. Therefore, installation is impossible without administrative privileges.



3.3.2. Points to Note on Upgrading SST - Uninstalling old version SST-

- If an old version of SST is installed on your PC, uninstall it before installing the new version.
 - 1) Open the Windows Start Menu, go to "Settings" to "Control Panel."
 - 2) Start "Add/Remove Programs."
 - 3) Select "ServiceSupportTool" from the list, and click on the "Add/Remove..." button.



Do not directly copy the file into Service Support Tool Folder of Program Files when upgrading SST.

- ✧ On the whole, application program does not operate by itself, but using OS functions provided by *DLL or *OCX. If a version of *DLL or *OCX assumed in the application program and a version installed in OS do not match, the program may not properly operate.
Set up program includes these system files, and if necessary, upgrading *DLL or *OCX is done at the same time with installing application.

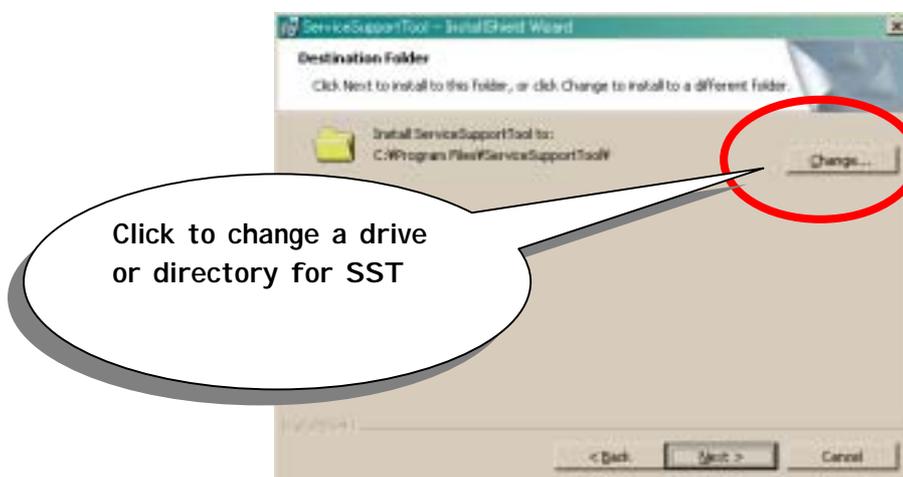
Firmware items registered by previous versions of SST are stored in the ServTool folder on the same drive SST is installed. Leave the ServTool folder alone, and install the new version of SST on the same drive to carry over the previously registered firmware data.

3.3.3. Installation Procedure

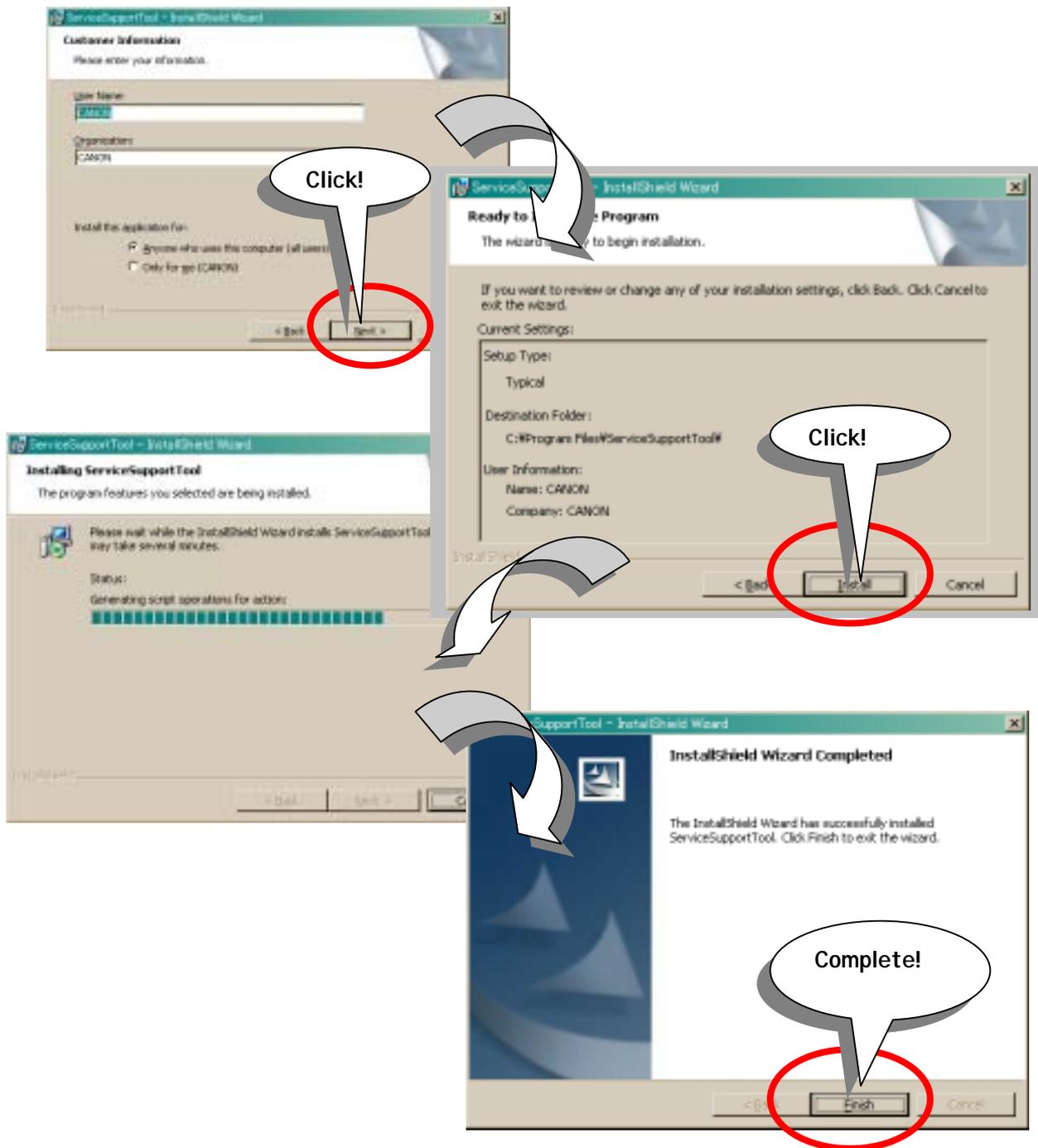
- 1) Turn on power to the PC to start Windows.
- 2) If there are any active programs, terminate them.
- 3) Copy the setup files to a folder on the HD. (In this example, C:\SST.)
- 4) Select SSTv3XXE_Setup.exe(*'XX' indicates a version number).



- 5) If you wish to install SST to a drive or directory other than the indicated, click the "Change..."



6) After install preparations, click "Install" button to begin the Install procedure.



7) Restart the PC.

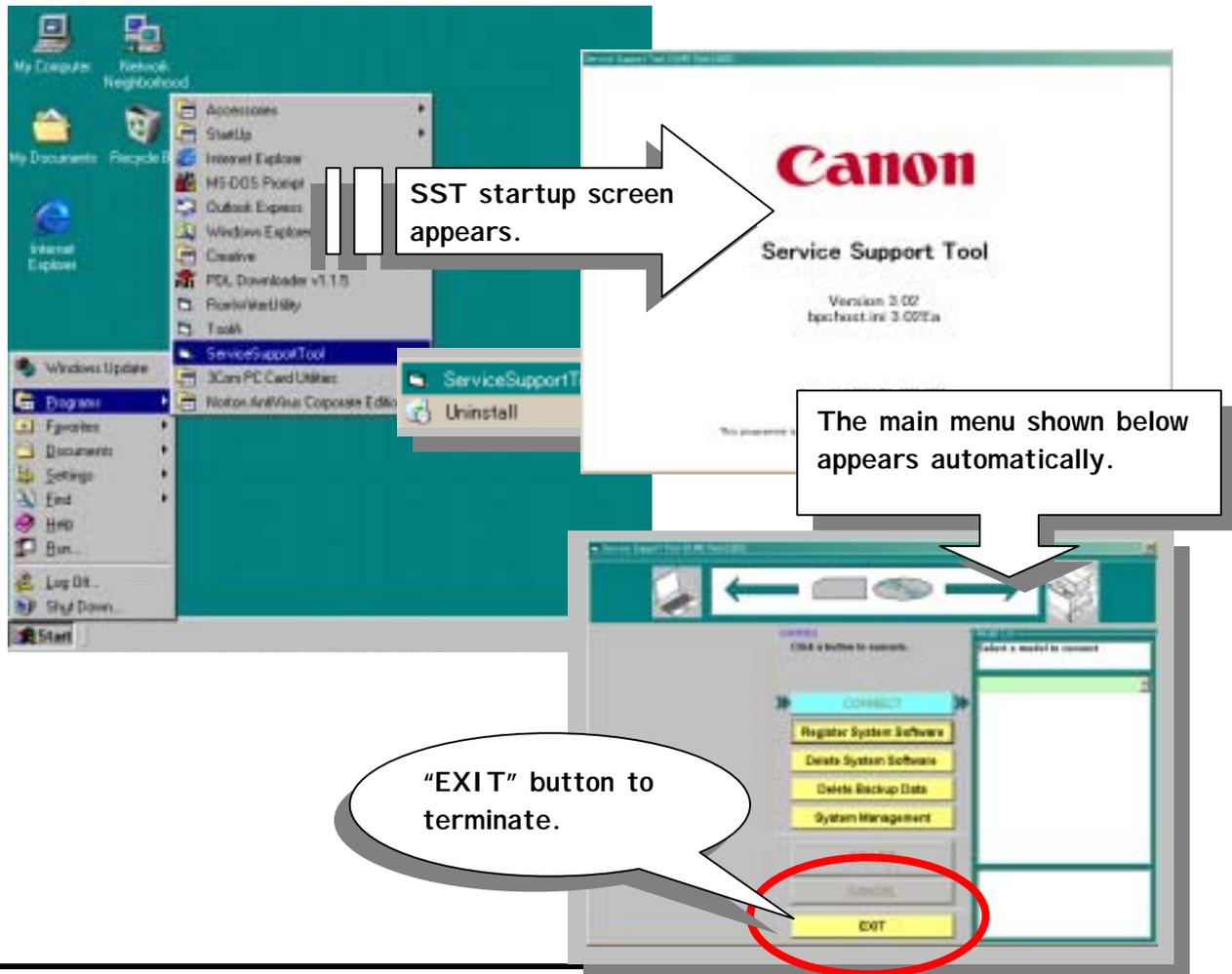
8) Go to "Start" to "Programs" to "ServiceSupportTool" to "ServiceSupportTool" to confirm that ServiceSupportTool starts up.

The above procedure completes installation of SST.

IV. SST Operation

4.1 Starting and Terminating SST

- 1) Start the PC.
- 2) Open the Windows Start Menu, go to "Programs" to "ServiceSupportTool" and select "ServiceSupportTool."

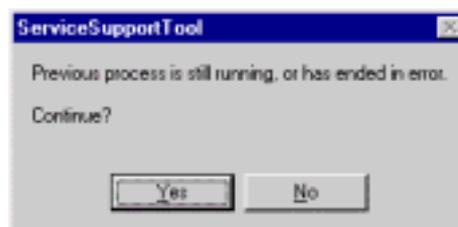


The startup verification dialog appears in the following situations:

- An attempt was made to activate more than one instance of SST.*
- SST was forcibly terminated by the system previous time.*

Activating more than one instance of SST generates operation error. If SST is already active, click "No" and use the active instance of SST.

When restarting SST after it terminated abnormally, click "Yes" to display the startup screen.



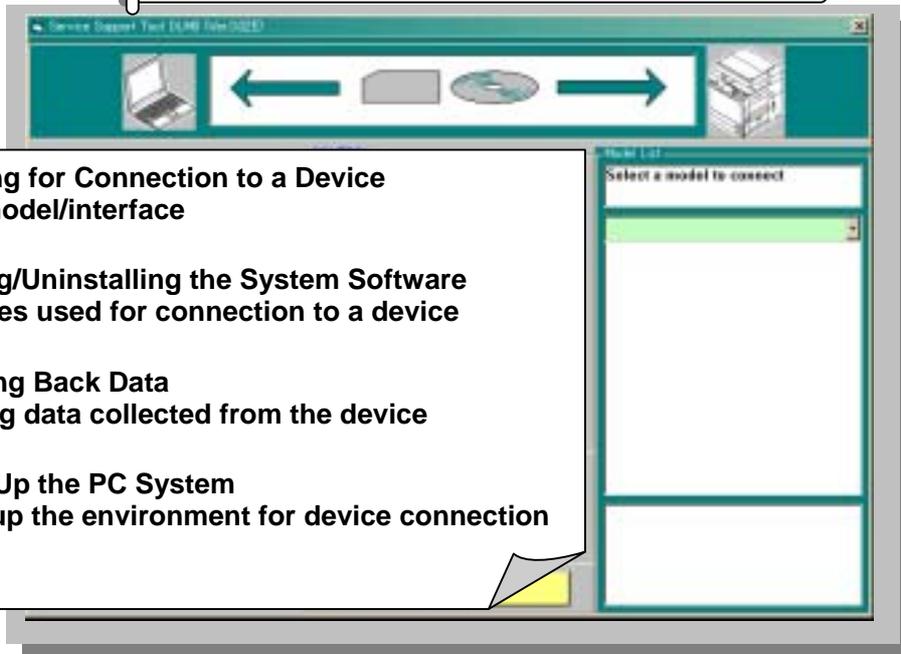
4.2 How to operate SST

Using the SST consists in the following:

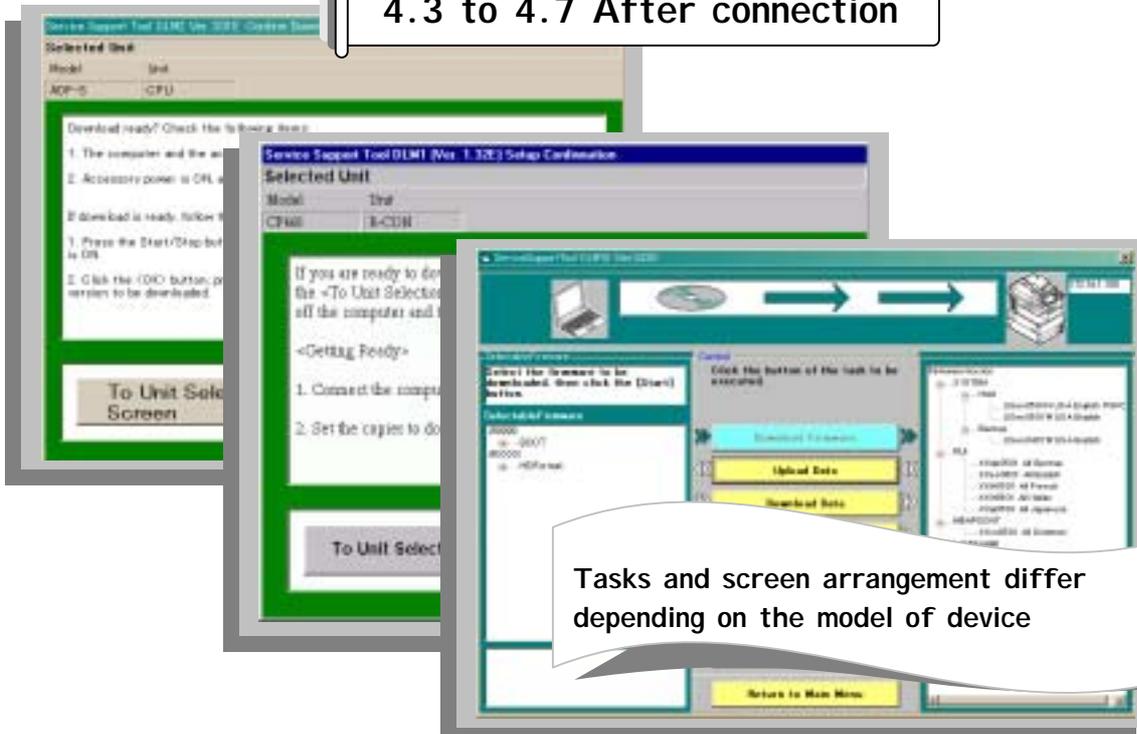
(1) Prepare for connection with a device, and (2) execute tasks in keeping with the model in question.

4.2.1 Preparation for connection

- ◆ **Preparing for Connection to a Device**
 - ▶ select model/interface
- ◆ **Installing/Uninstalling the System Software**
 - ▶ using files used for connection to a device
- ◆ **Removing Back Data**
 - ▶ removing data collected from the device
- ◆ **Setting Up the PC System**
 - ▶ setting up the environment for device connection



4.3 to 4.7 After connection



Tasks and screen arrangement differ depending on the model of device

4.2.1. Preparation for connection

Before you can connect your PC to a device, you will first need to install the appropriate firmware (file), select it, and make mode settings as necessary.

There are 5 functions for preparation as below.

The screenshot shows the Service Support Tool (SST) interface. At the top, there is a navigation bar with icons for a laptop, a left-pointing arrow, a device, a right-pointing arrow, and a server rack. Below this, the main window contains several buttons: a blue 'CONNECT' button, a yellow 'Register System Software' button, a yellow 'Delete System Software' button, a yellow 'Delete Backup Data' button, a yellow 'System Management' button, a grey 'START' button, a grey 'CANCEL' button, and a yellow 'EXIT' button. On the right side, there is a 'Model List' window with the text 'Select a model to connect' and a list area. Five callout boxes are overlaid on the interface, each pointing to a specific button and providing a description of its function.

4.2.1.1 Preparation for connection
 ↪ select model/interface

4.2.1.2 System software registration
 ↪ Register files used for connection to a device

4.2.1.3 System software deletion
 ↪ Delete files used for connection to a device

4.2.1.4 Backup data deletion
 ↪ Non function

4.2.1.5 PC system management
 ↪ Non function

4.2.1.1. Connection

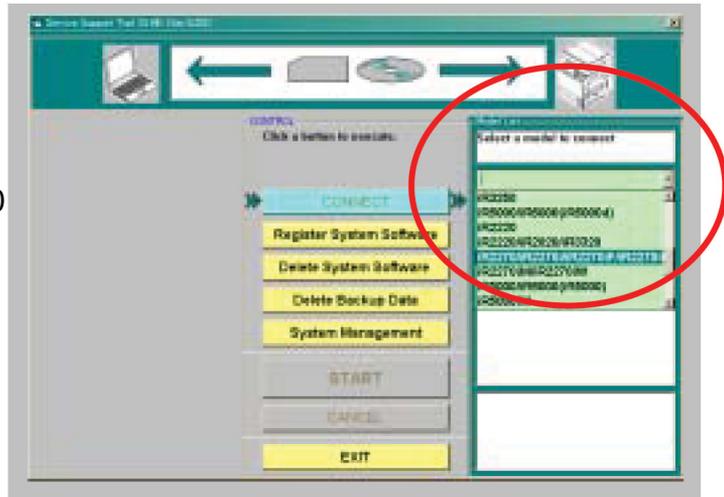
1) Select a model group.

MF8170

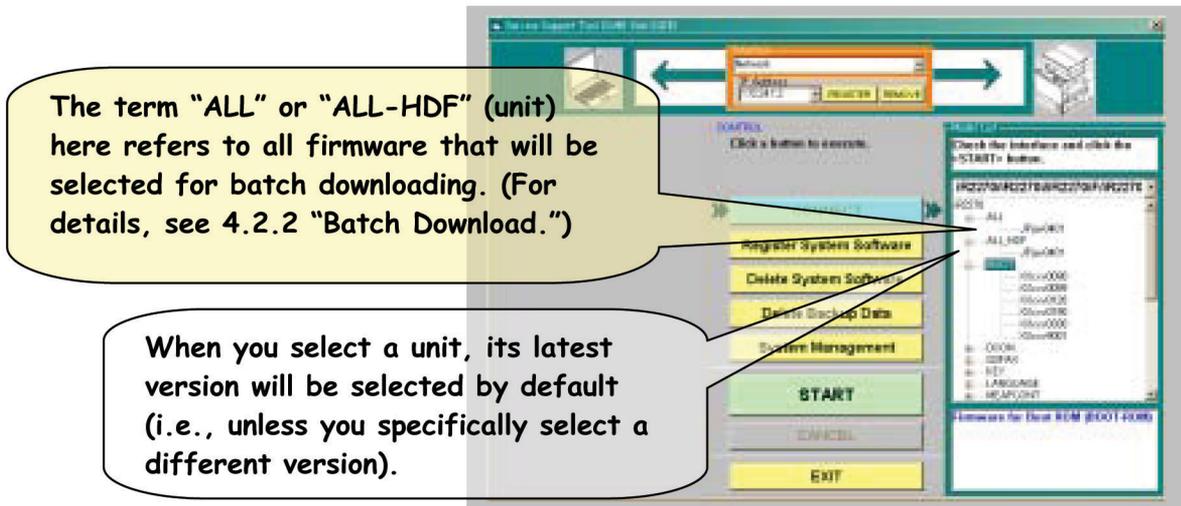
E227MB MF5650/5630

Enn7VΞ MF5770/5750/5730

E227MF: MF3110



2) Select a unit and a version under the model group selected.



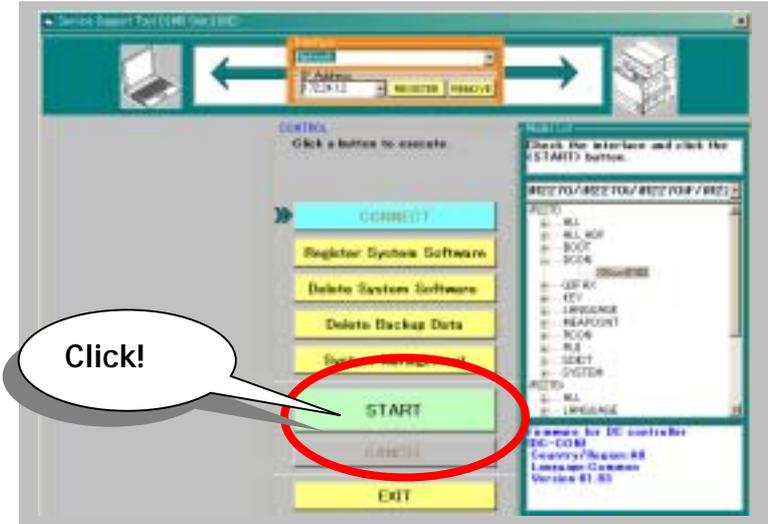
3) Select a interface.

If more than one interface are selectable, click the button on the right end of the interface selector to pull down the menu and select the interface to use.



** When the USB-parallel adapter driver is properly installed, "USB-Adp" is displayed in the interface box by selecting any unit which supports the Bi-Centro interface while the USB- parallel adapter is being connected to a servicing PC.

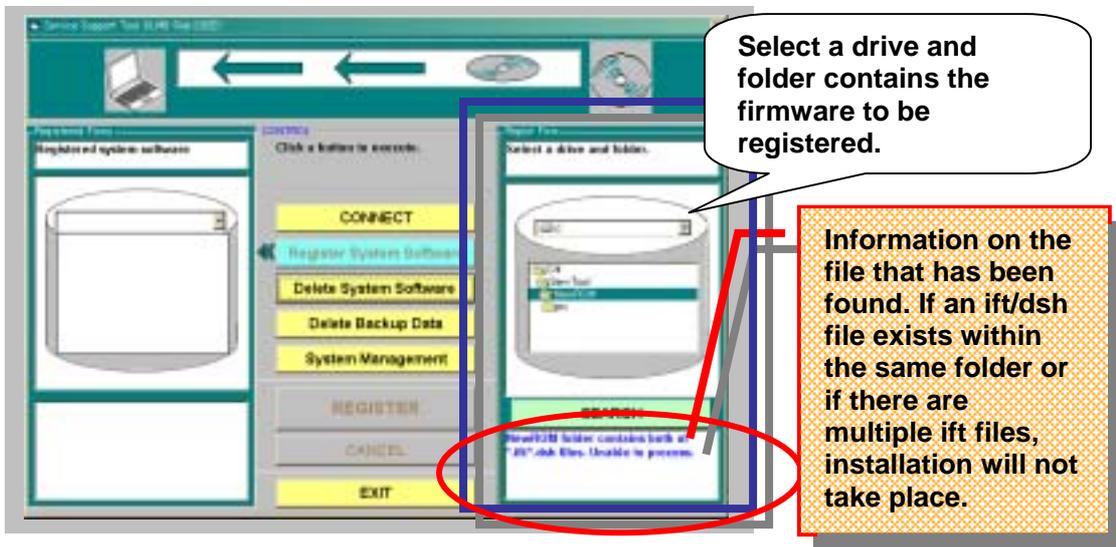
4) Click "START" button to connect.



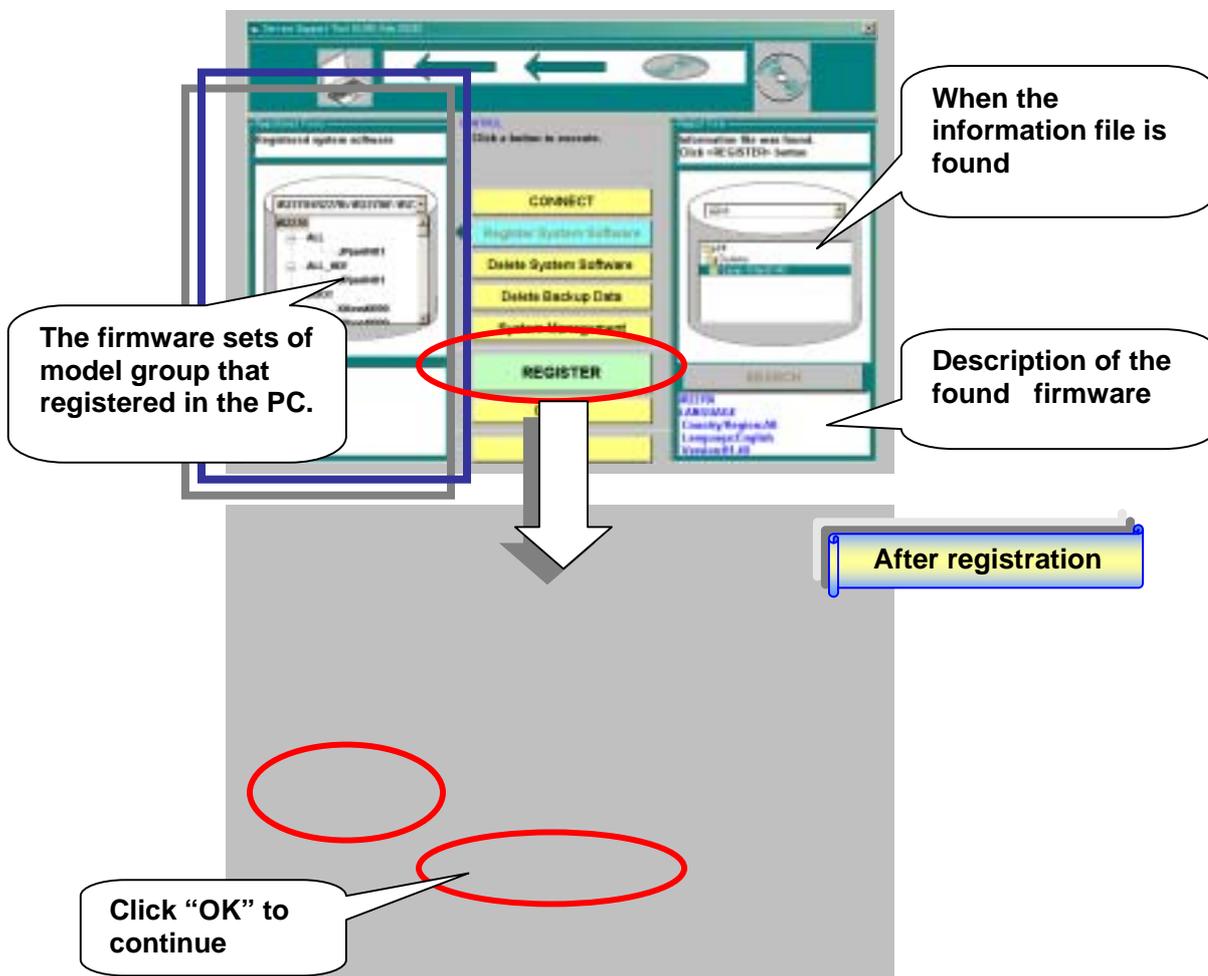
4.2.1.2. System Software registration

Here, you will be installing the firmware (files) needed for connection to a device. A click on "Register System Software" will bring up the following screen.

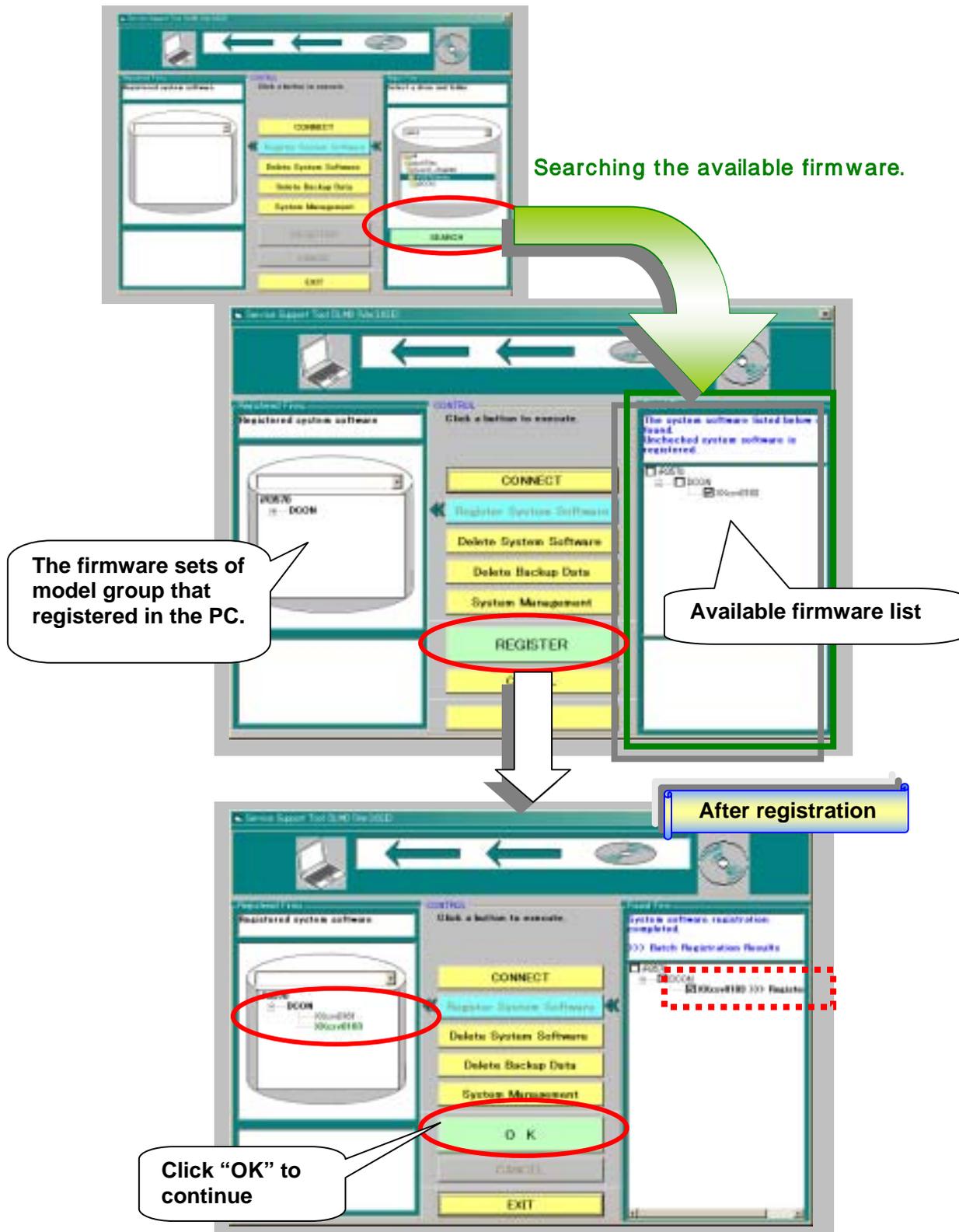
- 1) By default, a search will start in the folder named \ServTool\NewROM of drive c: automatically.



- 2) Select the drive and folder where the file set of the firmware to register is stored. When the information file is found, its file description is displayed and the "REGISTER" button becomes operational and also the registered firmware list of the same model group are shown on the left side window.



3) Select the drive and folder where the file set of the firmware to register is stored and click "SEARCH" button. When the information file is found, the list is displayed.



4.2.1.3. System software deletion

Here, you will be removing firmware (files) stored on your PC.
A click on “Delete System Software” will bring up the following screen.

Select a model group and then select a model/ serial no./ file name.

List of the firmware to be deleted.

A click on “REMOVE” will bring up a confirmation button. To execute, click “REMOVE CONFIRMED”; otherwise, click “cancel”.

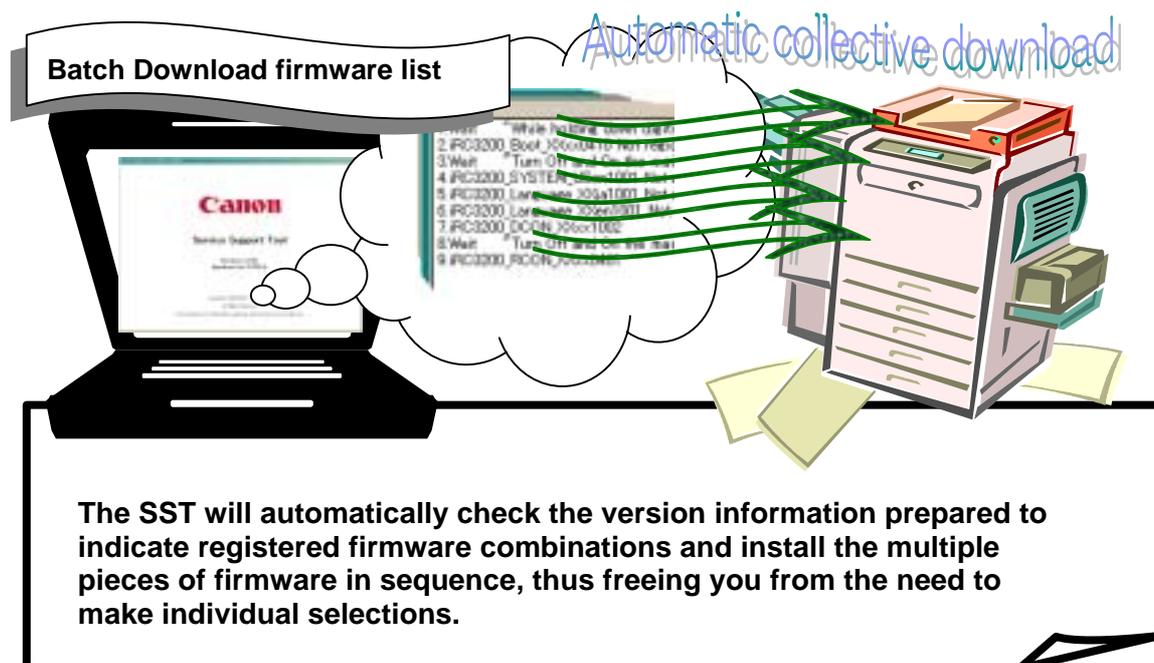
Click “OK” to continue

4.2.2. Batch (Collective) Download

4.2.2.1. Outline

The term “batch download” here refers to automatic and collective downloading of firmware to an iR/iRC Series device. To take advantage of this function, you will first have to build desired combinations of firmware modules.

**You may use collective downloading only when you are downloading firmware; in other words, you will not be able to use it for uploading or downloading backup data.*



The collective downloading function requires:

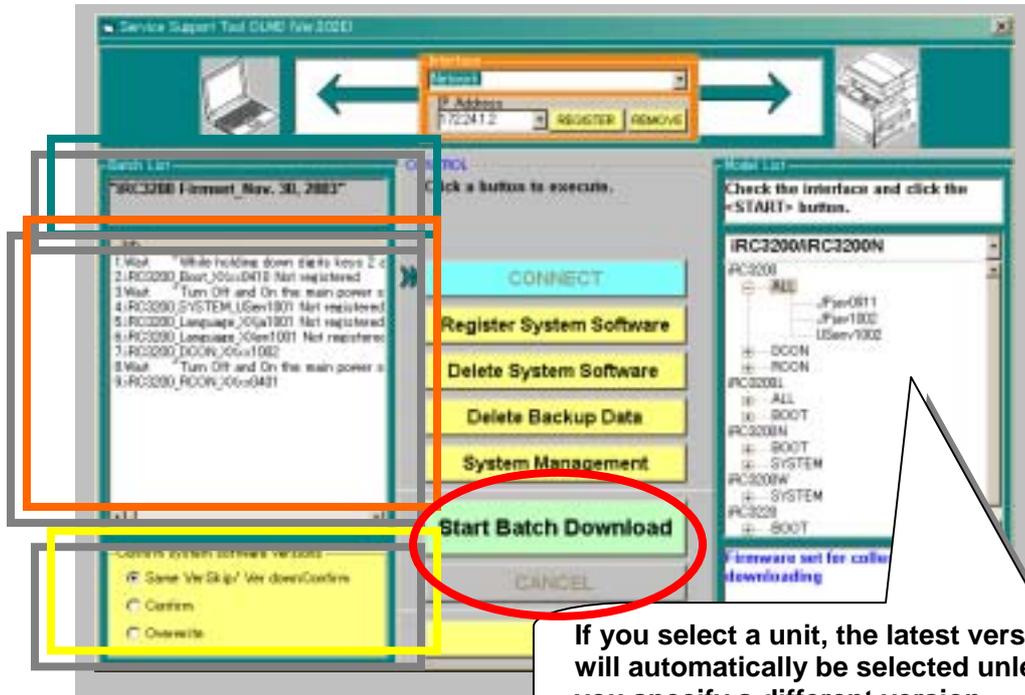
- ✓ The presence of firmware (as do the previous versions of the SST)
- ✓ Information files including a file on firmware combinations

To install, use the steps for a regular installation task.

- Once an information file for collective downloading has been stored, the notation [ALL] for the normal mode or [ALL-HDF] for the safe mode will be added to the Unit Selection screen. To initiate collective downloading, simply select [ALL] or [ALL-HDF] and start the function.
- The interface may be “USB.”

4.2.2.2. Before connection

On the Connection screen (click “connect”), the following screen will appear in response to the selection of [all] indicated under model names.



Description of the batch download list file

"iRC3200 Firmset_Nov. 30, 2003"

Batch download list
Displays in order of download.

A. Item begins with 'Wait': Message breaks.
B. The firmware does not exist indicates 'Not registered.'

If you initiate collective downloading with unregistered firmware, your attempt will be ignored and the next processing will be started.

Batch download mode setting

Confirm system software versions

- Same Ver:Skip/ Ver down:Confirm
- Confirm
- Overwrite

- Ver up: Overwrite / Same Ver: Do nothing / Ver down: Confirm
- Ver up: Overwrite / Same Ver & Ver down: Confirm
- Ver up & Same Ver & Ver down: Overwrite (without condition)

4.2.2.3. Batch download procedures

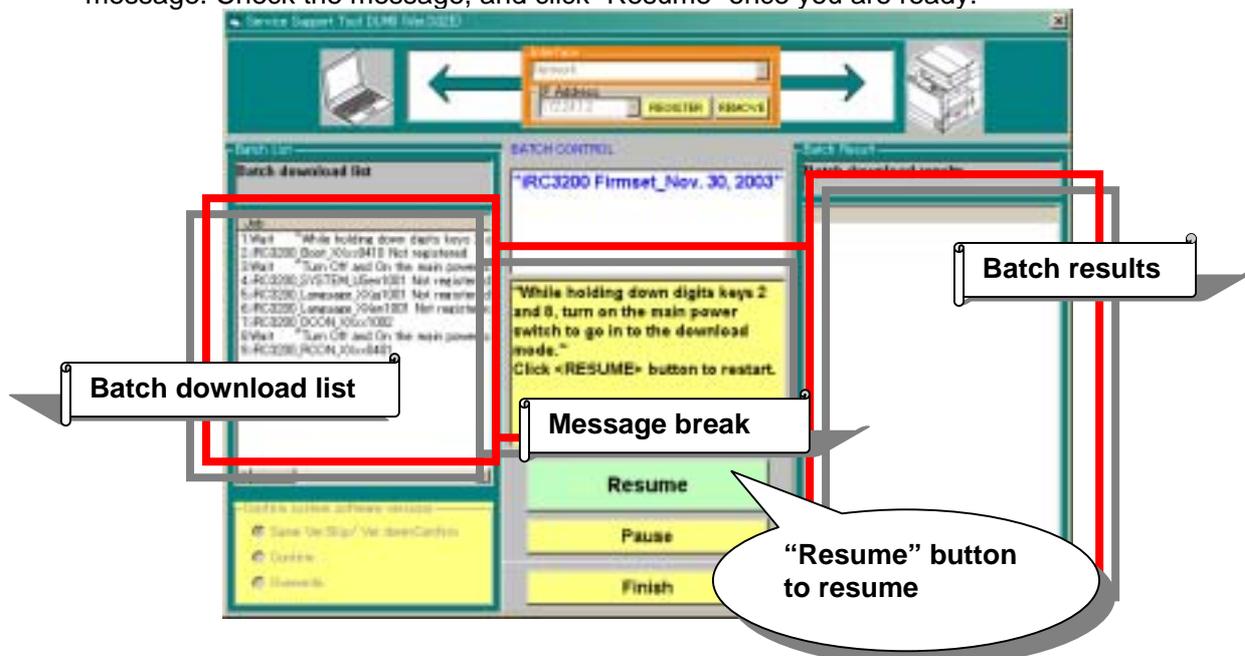
A click on “Start Batch Download” will initiate a batch downloading session. The series of operations that take place after the start may include the following:

- you can check or restart the device as instructed by a message
- you can respond to an error (skip or stop).

In addition, you can also suspend or terminate the ongoing operation.

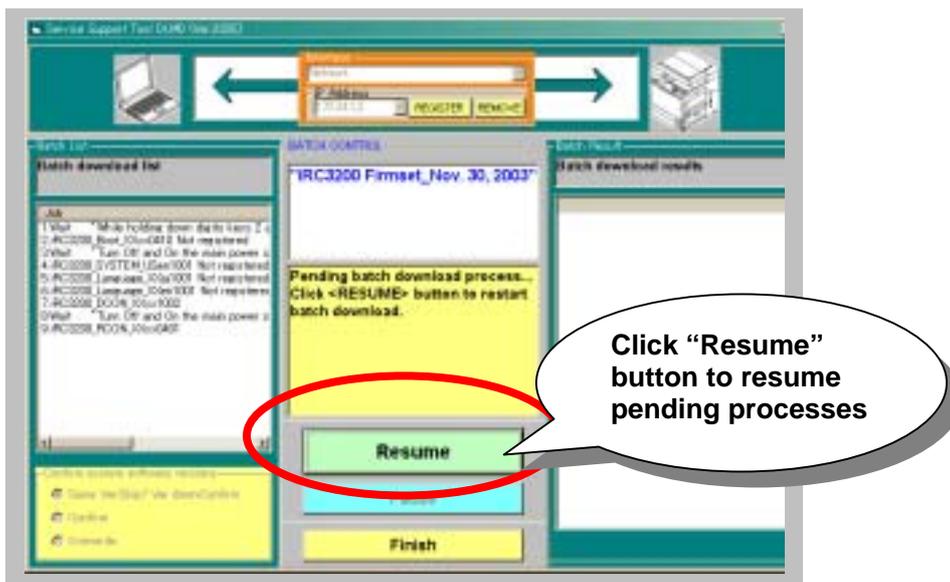
1) Wait / Break message

If there is a need for making a check or restarting the device, you will be shown the following message. Check the message, and click “Resume” once you are ready.



2) "Pause" button

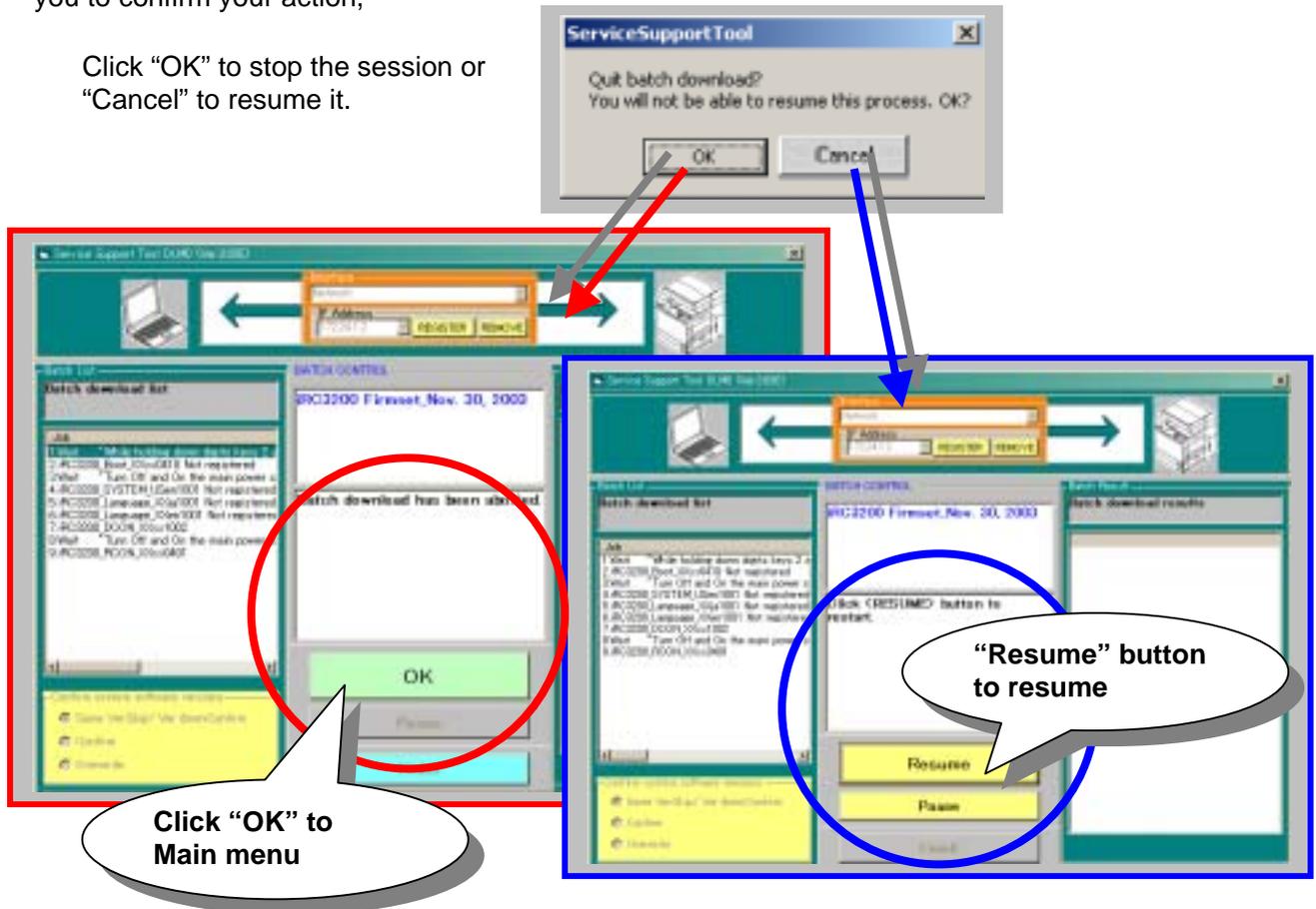
Click “Pause” button to temporarily stop the ongoing downloading. The following screen displays and the batch downloading processes are suspended until “Resume” button is clicked.



3) "Finish" button

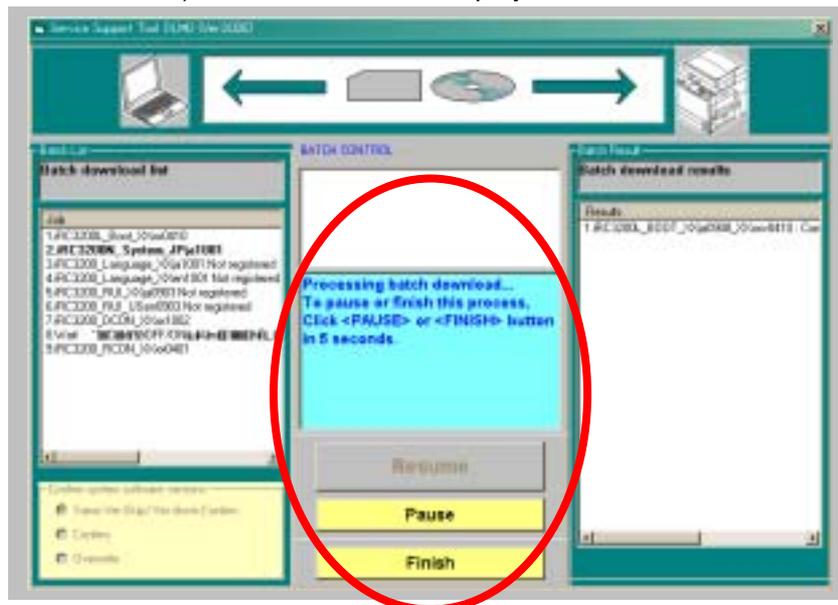
To stop the ongoing downloading session, click "Finish". When a message appears asking you to confirm your action,

Click "OK" to stop the session or "Cancel" to resume it.



4) Pause

While batch downloading is under way, to stop the ongoing downloading session, click [Pause] (about 5 seconds) while the screen is displayed.

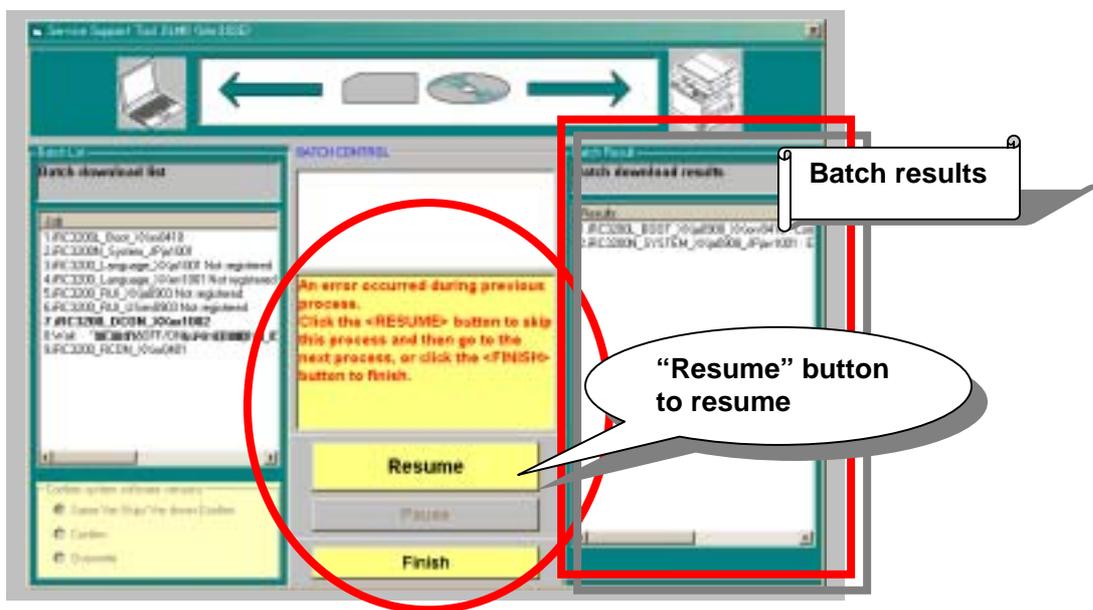


5) Batch download results from the device

The results of downloading will be indicated each time a downloading process is over. The list of results will indicate the following particulars: type of firmware, version before and after the downloading, and appropriate notation of the result.

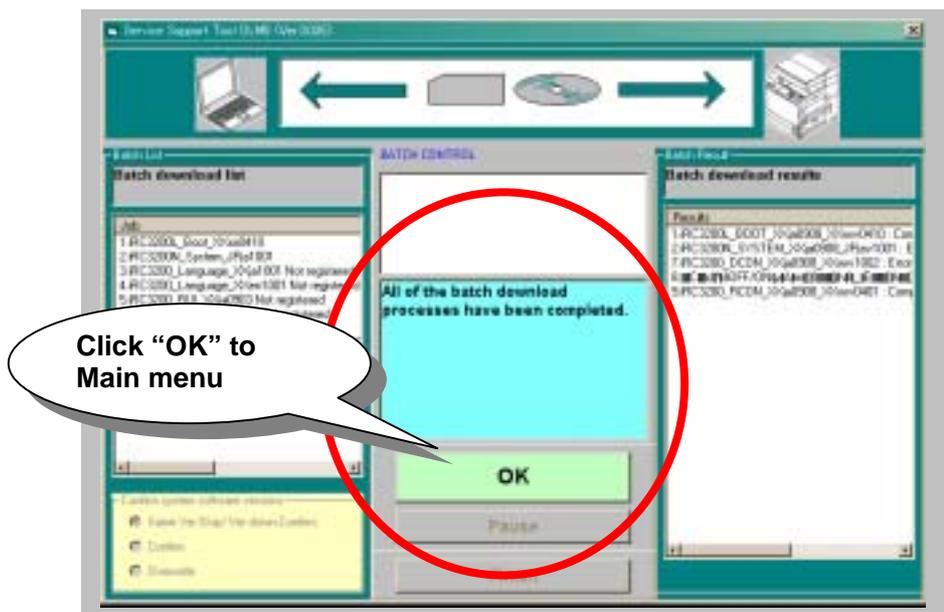
- OK:** downloading ended successfully.
- Skip:** downloading skipped.
- Abort:** downloading aborted by command during execution.
- Error:** error condition detected during downloading.
- Alarm:** alarm condition detected during downloading.
- NoUnit:** specified firmware unit absent.

If an error occurs, the rest of the processes can be allowed to continue or to finish.



6) Final screen

When all downloading processes are over, the following message is displayed.



4.3 Connect to the MF8100 Series

4.3.1 Outline

Since the MF8100 Series products store firmware on their flash ROM, the firmware can be upgraded by downloads.

This series copiers use the USB for the download interface. Because of this, the PC OSes for firmware download for the machines are limited to Windows 98, 98SE, 2000, and XP.

Note that Windows 95 and NT are inapplicable because these OSes do not support the USB. Of MF8100 Series, the USB connector for download is the USB port located on the SCNT board.

On a USB interface, Copiers of this series are recognized as devices of a group called the USB printer class. In order to communicate with a device of the USB printer class, a PC uses a special driver called the USB printer class driver. This special driver is incorporated in Windows 2000 and XP, but not in Windows 98/98SE. Therefore, when connecting SST on a Windows 98/98SE machine to a copier of this series for the first time, this special driver must be installed to the PC. Installation of the driver is not necessary for the second and the following connections.

4.3.2 Deleting Old Version USB Printer Class Driver

This is required only if you have downloaded MF8100 Series with Windows98/98SE.

For procedure, perform MSUSBUN98.exe, which is the setup file set of SST, and re-boot PC.

4.3.3 Installing USB Printer Class Driver (for Windows 98/98SE Only)

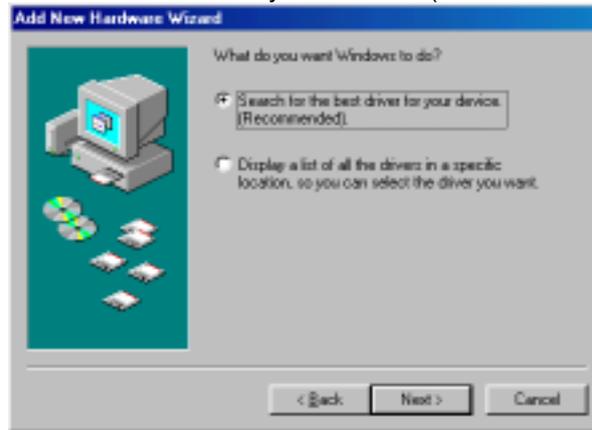
Procedure described in this section is required only when a copier of this series is connected to a Windows 98/98SE PC for the first time. Once you started the procedure, you must complete it. Aborting this procedure in the middle makes it impossible to install the USB printer class driver in the future.

- 1) Connect the PC to the copier with a USB cable.
- 2) Start the PC.
- 3) Turn on the power switch on the copier.
- 4) The Plug&Play function of Windows automatically detects the copier as a new device, and the Add New Hardware Wizard starts.
Click "Next."



F8-300-01

- 5) Select "Search for the best driver for your device. (Recommended)." Click "Next."



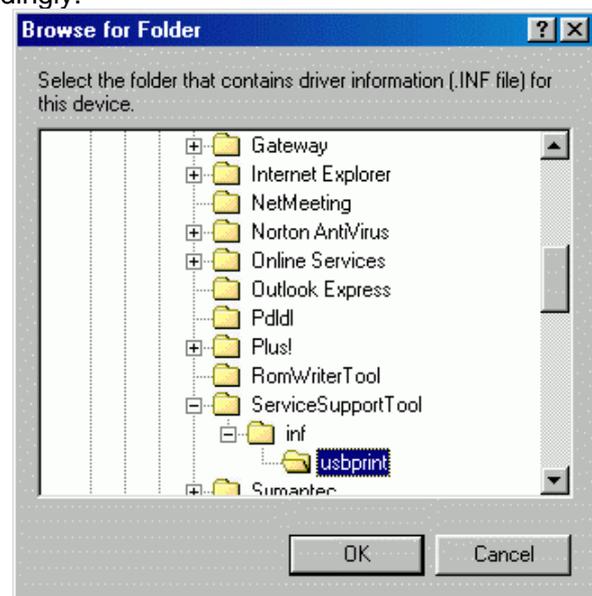
F8-300-02

- 6) Select "Specify a location:" and click the "Browse..." button.



F8-300-03

- 7) Specify "C:\Program Files\ServiceSupportTool\inf\usbprint" and click "OK." If you have installed SST to a place other than the default directory, specify the path to the directory to search accordingly.



F8-300-04

- 8) Click "Next."



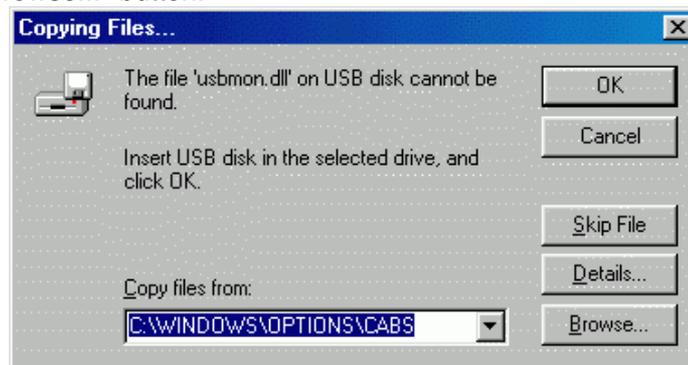
F8-300-05

- 9) The message shown below may appear on some PCs. If it appears, click "OK" and proceed to Step 10).
On other PCs, the message will not appear. In this case, proceed to Step 13).



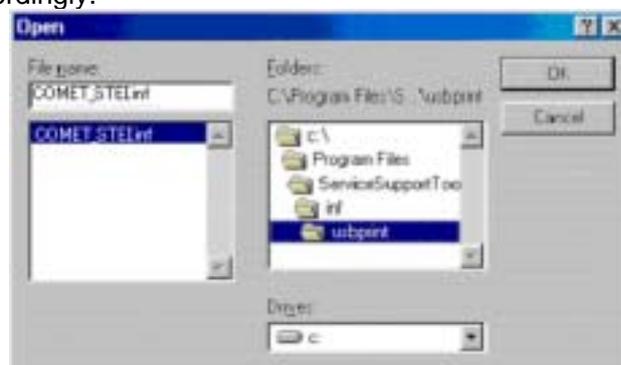
F8-300-06

- 10) Click the "Browse..." button.



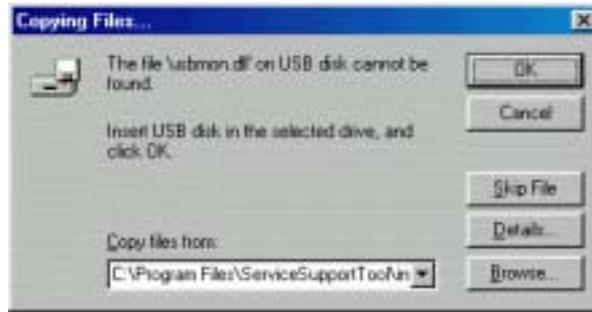
F8-300-07

- 11) Specify "C:\Program Files\ServiceSupportTool\inf\usbprint" and click "OK." If you have installed SST to a place other than the default directory, specify the path to the directory to search accordingly.



F8-300-08

12) Click "OK."



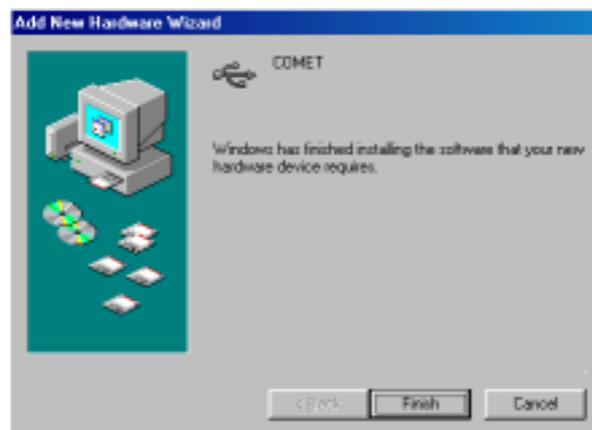
F8-300-09

13) Click "Next."



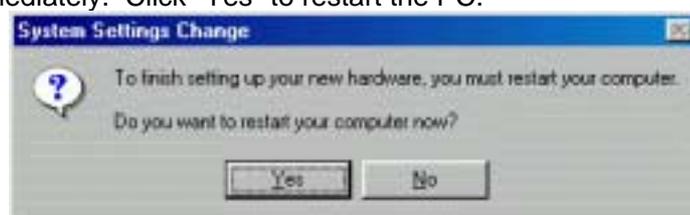
F8-300-10

14) Click "Finish."



F8-300-11

15) When installation of the driver completes, a dialog appears and asks whether to restart the PC immediately. Click "Yes" to restart the PC.



F8-300-12

16) Turn of power switch on the copier.
The above procedure completes installation of the USB printer class driver.

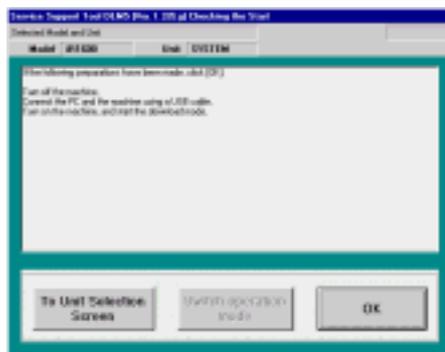
4.3.4 Connection

- 1) Connect the copier to the PC with the USB cable.
- 2) Start the PC.
- 3) Start SST.
- 4) Turn on the power switch on the copier.
- 5) The Plug&Play function of Windows automatically detects the copier as a new device, and the Add New Hardware Wizard starts.
 Provided that the USB printer class driver is already installed, the device name of the copier is indicated as "CanonCFYSA."
 Click "Cancel" to close the Add New Hardware Wizard.



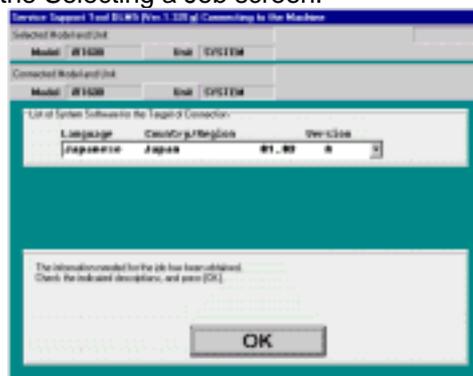
F8-300-01

- 6) Enter the machine to download mode.
 Press the Menu key and # key, and enter the Service Mode.
 Then, select "#DOWNLOAD" using the cursor key, and press the Set key..
- 7) On the SST main menu, select the unit to work on, and click the "START" button.
- 8) Click "OK."



F8-300-02

- 9) SST communicates with the Machine to acquire necessary data. Status of progress of communication is indicated on the progress bar.
- 10) When communication completes, the Connecting to the Machine screen appears. The List of System Software for the Target of Connection displays the data of system software obtained from the machine.
 Click "OK" to display the Selecting a Job screen.

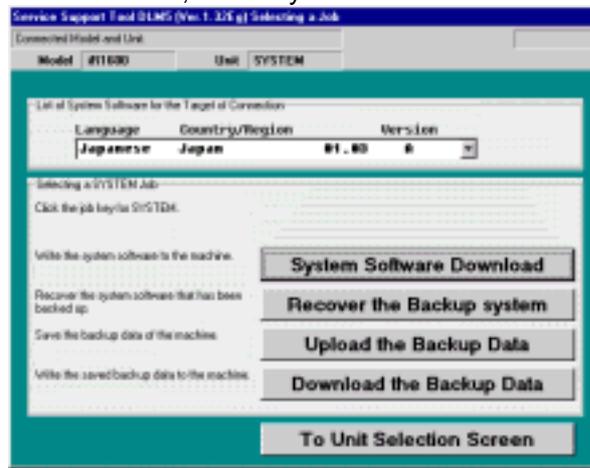


F8-300-03

4.3.5 Downloading Firmware

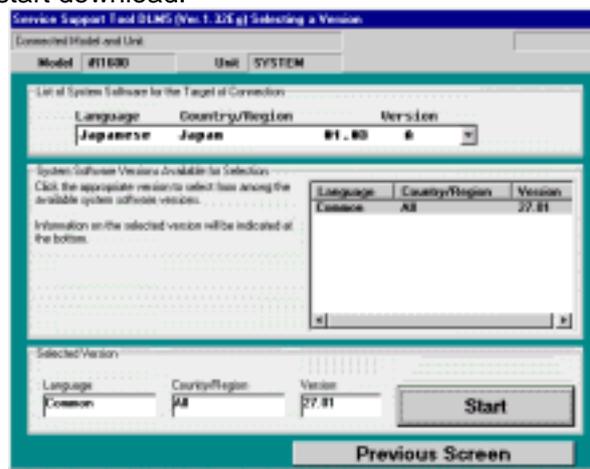
4.3.5.1 SYSTEM

- 1) On the Work Selection screen, click "System Software Download."



F8-401-01

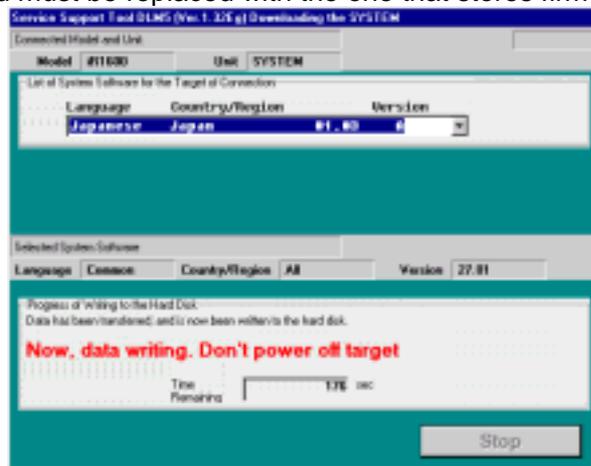
- 2) From the list, select a version to download, and click it to activate the "Start" button. Click "Start" to start download.



F8-401-02

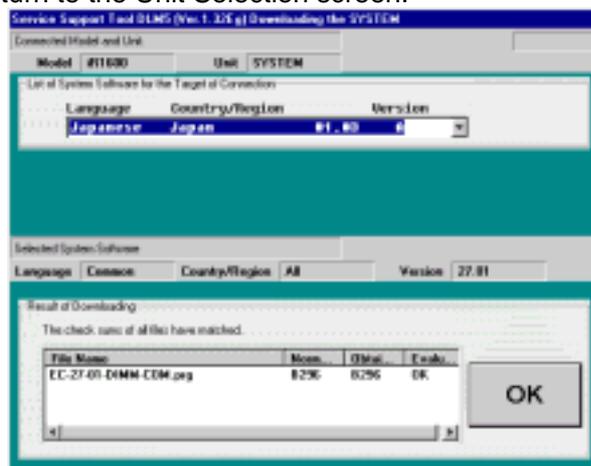
- 3) After download starts, status of progress is indicated on the progress bar.

- 4) The screen shown below appears while received data is being written to flash ROM after download completes. Never turn off power while this screen is displayed, because it makes the copier unable to start up.
If the power switch is turned off in the duration and the copier becomes unable to start, the SCNT board must be replaced with the one that stores firmware.



F8-401-03

- 5) When write completes, the results is shown.
Click "OK" to return to the Unit Selection screen.

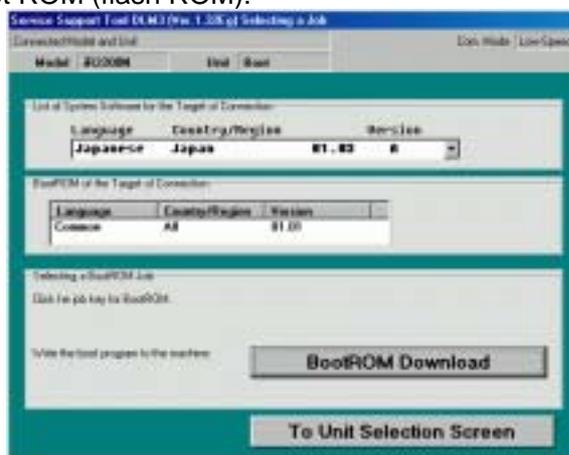


F8-401-04

After the machine downloads firmware and writes it to flash ROM, restart the machine. The PC recognizes restart of the machine as disconnection of the machine from the USB followed by re-connection, and activates the Add New Hardware Wizard. Click "Cancel" to close the wizard.
After restarting, the copier is in normal mode. To make more downloads, enter download mode again.

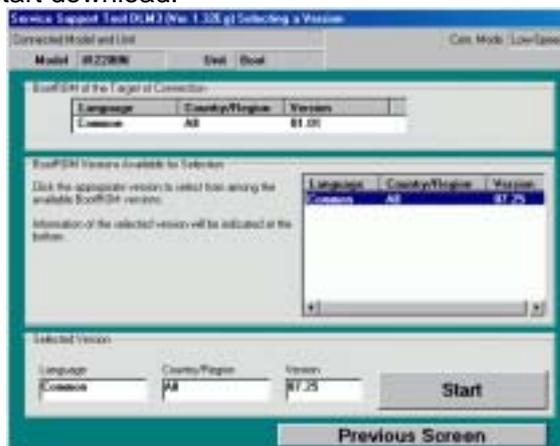
4.3.5.2 Boot

- 1) Select Boot for the unit and make connection.
- 2) On the Selecting a Job screen, click "BootROM Download."
The BootROM of the Target of Connection field displays the data of firmware items saved in the boot ROM (flash ROM).



F7-303-01

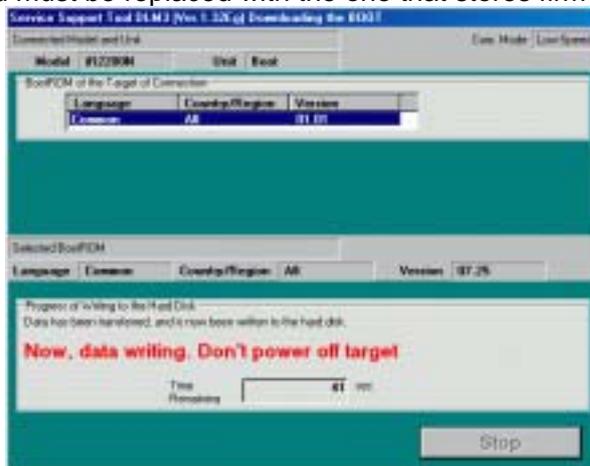
- 3) From the list, select a version to download, and click it to activate the "Start" button. Click "Start" to start download.



F7-303-02

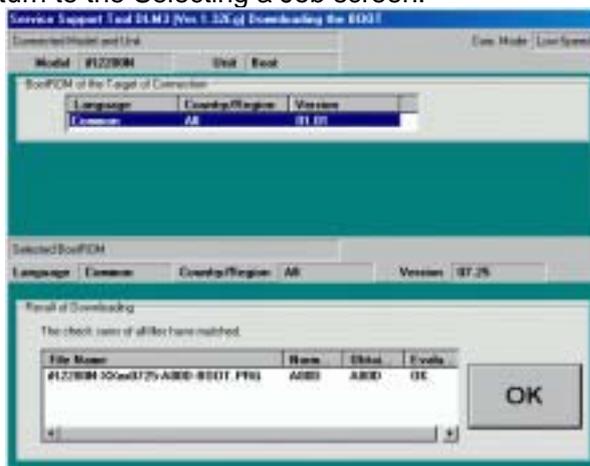
- 4) After download starts, status of progress is indicated on the progress bar.

- 5) The screen shown below appears while received data is being written to the Flash ROM after download completes. Never turn off power while this screen is displayed, because it makes the copier fail in startup. If the power switch is turned off in the duration and the machine becomes unable to start, the SCNT board must be replaced with the one that stores firmware.



F7-303-03

- 6) When download completes, the result is displayed. Click "OK" to return to the Selecting a Job screen.



F7-303-04

- 7) After the machine downloads firmware and writes it to flash ROM, restart the machine.