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# *Dispenser Software Recovery*

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*for FLOWare<sup>®</sup> Software as of ver. 2.9J +*

*for use with all **MAX Series & DS Series Dispensers***

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# Table of Contents

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## The Recovery Process

How & What to Recover .....	1
Recovering from Catastrophe - a Guide .....	2

## Requirements & Suggestions

User Qualifications .....	3
System Requirements .....	3
Suggestions .....	3

## Low-Level Data Backup

Data Backup in Low-Level .....	4
--------------------------------	---

## Restore from Slave Hard Drive

Requirements for Restoring from Slave Hard Drive .....	6
Restore Drive .....	6

## Restore Data Backup

Requirements for Restoring Data Backup .....	8
Restoring Data Backup .....	9
Canceling Restore Backup .....	11
Deleting a Backup .....	11

## Install System Software from CD

Installing System Software from CD .....	12
1 - Create Utility Disk .....	12
2 - Gather Required Items .....	12
3 - Identify Hardware .....	12
4 - Install Software from CD .....	13
5 - Restore configurations .....	19

## Install System Software from USB

Installing QNX OS and FLOWare Software from USB .....	20
1 - Create Utility Disk .....	20
2 - Copy from CD to USB .....	20
3 - Install Software from USB Device .....	20
4 - Restore configurations .....	25

## Install Additional Software

Load Additional Software .....	26
--------------------------------	----

## Appendices

Create a Restore System Boot Disk .....	29
Create an Extract/Install Utility Disk .....	30
DigiBoard Ports .....	31
Select a Sys.f File .....	32
Enter Ethernet Address .....	33

# List of Tables

---

Table 1: Methods of Recovery .....	1
Table 2: Catastrophic Recovery Process - a Summary .....	2
Table 3: Minimum Hardware Specifications .....	3
Table 4: Guide to Data Backup Prompt Responses .....	5
Table 5: Concluding Restore from Slave Hard Drive .....	7
Table 6: Concluding Restoration of Data Backup .....	11
Table 7: Guide to Beginning Software Installation .....	15
Table 8: Guide to Change Node Prompt Responses .....	16
Table 9: Guide to Restoring Configurations .....	19
Table 10: Guide to QNX & FLOWare Installation Prompt Responses .....	20
Table 11: Guide to Change Node Prompt Responses .....	22
Table 12: Guide to Restoring Configurations .....	25
Table 13: Guide to Selection of System File .....	32

# The Recovery Process

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## How & What to Recover

The type of information that needs to be recovered and the current conditions of the machine determine which method of recovery you should use. Choose the method of recovery applicable to your situation:

**Table 1: Methods of Recovery**

What needs to be recovered?	Current Machine Condition	Use this recovery method:
Data	For this non-catastrophic recovery, the system is running but data in the programs is incorrect and you want to restore previously backed up data.  <i><b>NOTE:</b> Can be performed by an operator.</i>	<a href="#">Restore Data Backup</a> (pg 8)
FLOware application software	To use this non-catastrophic recovery option, the system is running but you want to restore the prior version of application software.  <i><b>NOTE:</b> Beyond the scope of activities normally performed by an operator.</i>	<a href="#">Install System Software from CD</a> (pg 12) or <a href="#">Install System Software from USB</a> (pg 20)
Everything!	The GPD Global dispenser software system is completely destroyed, and you have an available data backup or full system backup. These instructions will guide you through installing software and restoring backups in order to return the dispenser to its original state; <b>otherwise, contact the <a href="#">GPD Global Service Department</a> before taking any action.</b>  <i><b>NOTE:</b> Beyond the scope of activities normally performed by an operator.</i>	<a href="#">Recovering from Catastrophe - a Guide</a> (pg 2)

## Recovering from Catastrophe - a Guide

If a hard drive failure/crash occurs, sometimes a backup can be obtained from a low-level state which can recover the most current data. Alternatively, the most current full system backup and most current data backup become the sources of the recovery process.

The following table illustrates the basic steps required to restore the dispenser software. A successful recovery may only require performing steps 1 through 4. If, however, conditions prevent such a simple recovery, subsequent steps must be performed.

**Table 2: Catastrophic Recovery Process - a Summary**

Basic Steps	Purpose of Step	For details, refer to:
1 Perform a low-level data backup	To gather the most current data on the machine.	<a href="#">Low-Level Data Backup</a> (pg 4)
2 Attempt to restore from slave (secondary) hard drive. – If successful, go to step 3. – If unsuccessful, go to step 5.	To restore full system.	<a href="#">Restore from Slave Hard Drive</a> (pg 6)
3 Attempt to restore data. – If successful, go to step 4. – If unsuccessful, go to step 5.	To restore system using a data backup.	<a href="#">Restore Data Backup</a> (pg 8)
4 Verify base locations. – After completion of this step, recovery is complete.	To backup and verify the coordinates of selected locations.	<i>Base Locations</i> in the appendix of the <i>Dispenser Service Guide</i> .
5 If the above steps fail, install software from CD or USB.	To restore software to standard operating condition.	<a href="#">Install System Software from CD</a> (pg 12) or <a href="#">Install System Software from USB</a> (pg 20)

# Requirements & Suggestions

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The following requirements for personnel and the system must be met in order to accomplish a successful software recovery are listed below.

## User Qualifications

These instructions are intended for users who are reasonably familiar with installing software.

## System Requirements

The minimum dispenser hardware and software requirements listed below must exist before you can begin performing the software recovery procedures.

**Table 3: Minimum Hardware Specifications**

Item	Minimum Requirements
CPU	700 MHz or better
Memory	128 MB or better
CD-ROM	must be present
Slave (Secondary) drive	must be present

## Suggestions

GPD Global recommends using a new hard drive when performing software recovery in order to preserve any data remaining on the corrupted hard drive. This recovery process can ONLY be performed if you have either a data backup, can access the drive in low-level and take a current data backup (on USB device or floppy diskettes), or have a full system backup (on a slave/secondary hard drive).

# Low-Level Data Backup

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In many cases, the machine may not be able to boot up completely into standard operational mode, yet it can still be accessed in an alternate operating system referred to as Low-Level.

If Low-Level access is granted, a Data Backup can be performed which will recover all the current and relevant machine data including:

- IO Configurations,
- Options Configurations,
- Servo Files,
- System Files, and
- all Program, Shape, Head, Material, Vision and Process Data.

## Data Backup in Low-Level

To enter the Low-Level System to perform a Data Backup:

1. Turn on the machine. As the computer performs a system check, press ESC a couple times. Immediately after the initial post, a prompt displays:

```
Press ESC for Alternate OS.....
```

This prompt leaves very little time for the operator to perform this instruction so it is best to have already pressed the ESC key. If the machine appears to be booting, it is a good sign that you will be able to recover your data.

2. At the prompt, enter the indicated password:

```
Password: (Contact GPD Service Dept for password)
```

3. Answer the following two questions with *n* for no:

```
Start Low Level Drivers (I/O and Video) (y/n): n
```

```
Start X Windows (y/n): n
```

4. At the \$ prompt that should display, type:

```
su
```

```
press ENTER to continue.
```

5. At the `Password` prompt that should display, type:

```
glue
```

press ENTER to continue.

6. At this point, you can perform the Data Backup. Install the USB device or floppy disk and type the following at the `#` prompt:

```
backup.sh
```

If the following error message displays, you may ignore it.

```
seterrorflg:S11:CommonOpenFails:
```

7. Answer the following series of prompts as indicated:

**Table 4: Guide to Data Backup Prompt Responses**

	Prompt	Response
1	Back up to USB Device?(Y/n) y Press ENTER to use the default backup directory /dos/c/Backup; Otherwise, enter the name of the desired directory	We suggest using the default “Backup” directory here by simply pressing ENTER. If another name is desired, enter it here and a directory with this name will be automatically created on the USB device.
2	Current Backups are:	(lists all backups in the selected directory)
3	Enter a file name for this backup: filename	Avoid spaces, dots, or extensions. Name length is not limited.
4	Do you really want to perform a Data Backup To /dos/c/Backups/ filename (Y/n) y	Confirm with Y and then wait for the prompt to display.
5	Remove all USB storage devices now. Remove all USB storage devices now. Remove all USB storage devices now.	Do as instructed or this prompt will continue to repeat.
6	Backup Complete Bkset: DB connection Done Press Enter to Continue	Press enter and shut down the machine.

8. If the attempt to take a data backup from Low-Level was:
- successful, go to [Restore from Slave Hard Drive](#) (pg 6) to restore the full system.
  - unsuccessful, install software from CD or USB with:
    - [Install System Software from CD](#) (pg 12) or
    - [Install System Software from USB](#) (pg 20)

# Restore from Slave Hard Drive

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## Requirements for Restoring from Slave Hard Drive

- Your system must be equipped with a slave (secondary) hard drive in order to use this procedure.
- Have a Restore System Boot disk available. For details on how to create this disk, refer to [Create a Restore System Boot Disk](#) (pg 29).

## Restore Drive

To restore data from a slave (secondary) drive:

1. With the machine powered off, insert the Restore System Boot Disk.

**NOTE:** If the copy shipped with the dispenser is unavailable, you may recreate this disk. For instructions, refer to [Create a Restore System Boot Disk](#) (pg 29).

2. Boot the machine.
3. When the machine boots up from the Restore System Boot disk, it will display the following:

```
Type "restore [size][type]" to restore a saved system.
```

```
Size is partition size in megabytes (defaulted 5000, minimum 700), type is Y for a badly corrupted disk to force a surface test with bad block testing.
```

```
#
```

4. At the # prompt, type the following and press ENTER:

```
restore
```

5. Answer the next set of questions as follows:

```
Do you really want to ERASE the fixed hard drive and restore all software from the removable hard drive (Y/n)? Y
```

```
Please Wait.....
```

(This process will take a up to 15 minutes to finish.)

Restore Complete  
 Remove Floppy Disk  
 Press Enter to Reboot

Press enter and as the machine begins to Restart, shut it off completely and let it drain all stored energy **for at least a minute** before turning it back on.

6. Verify restored data is correct. If data is correct, continue with [Step 7](#). If data was incorrect, continue with [Step 8](#).
7. Verify all base locations. For details refer to *Base Locations* in the appendix of the *Dispenser Service Guide*.
8. Select the appropriate scenario:

**Table 5: Concluding Restore from Slave Hard Drive**

If restore was:	then...
successful	continue with <a href="#">Restore Data Backup</a> (pg 8).
unsuccessful	Select the applicable scenario: – if you DO NOT have a current data backup, contact the <a href="#">GPD Global Service Department</a> . – if you DO have a current data backup, continue with either: <a href="#">Install System Software from CD</a> (pg 12) OR <a href="#">Install System Software from USB</a> (pg 20)

# Restore Data Backup

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Restoring data is typically performed when something goes wrong. Restore a backup (previously archived material) as a first attempt at restoring data.

- Restoring a backup restores all data files. (To *selectively* restore program-specific files, you must use the import/export process).
- In order to use the restore function, the operator must have a password authorizing Restore Backups.
- The user should be familiar with the differences between the different types of backup: data, application, and full system. For details, refer to *Routine Backups* in the *System Management* section of the *FLOware Software Guide*.

**NOTE:** If errors occur during the data backup restoration, a more complex procedure, [Recovering from Catastrophe - a Guide](#) (pg 2), that is beyond the scope of activities normally performed by an operator may be required.

## Requirements for Restoring Data Backup

The Data Backup to be used ***MUST BE at the same level of software*** as was loaded during the [Install System Software from CD](#) (pg 12) procedure. To verify which version is currently installed on the system, go to the main menu bar and click on Help > About.

**CAUTION:** If the backup was created in a different level of software or if no backup is available, contact the [GPD Global Service Department](#) **PRIOR** to attempting to load the backup.

- [Restoring Data Backup](#)
- [Canceling Restore Backup](#)
- [Deleting a Backup](#)

## Restoring Data Backup

To restore data from a data backup file:

1. From the main menu bar in the FLOWare® software, click on Utilities > Restore Backup.
2. Insert a current Data Backup in either the USB port or the floppy drive.
3. Load data backup:
  - a. When the following prompt displays...

```
Do you really want to Restore Software (Y/n)?
```

press Y and ENTER to continue.

- b. If the following prompt displays...

```
Do you want to restore from the USB device?
```

If a USB device with a data backup on it was inserted earlier, then answer Y and press enter.

If instead, the following prompt displays...

```
Do you want to restore from the removable hard drive (y/N)?
```

press N and ENTER to continue.

- c. When the following prompt displays...

```
To restore a specific backup file, enter the file name of the backup. To restore from the floppy disks, press ENTER.
```

press ENTER to continue.

- d. When the following prompt displays...

```
Restoring from Floppy Disk  
Ensure all disks are write protected.  
Do you want to continue? (Y/n)
```

press Y and ENTER to continue.

- e. When the following prompt displays...

When drive light goes out, insert disk 1 and press ENTER.

press ENTER.

- f. When the following prompt displays...

Remove last floppy disk and press ENTER

press ENTER.

4. After a Data Backup is loaded, the following message will display:

Servo and System configurations should be restored ONLY on the machine from which they were backed up. Restore All or Selected configurations or None? (A/s/n)

- a. Select S and press ENTER. The following prompt displays.

Restore I/O configurations? (Y/n)

- b. Select Y and press ENTER. The following prompt displays.

Restore Machine Options configurations? (Y/n)

- c. Select Y and press ENTER. The following prompt displays.

Restore Servo configurations? (Y/n)

- d. Select Y and press ENTER. The following prompt displays.

Restore System configurations? (Y/n)

- e. Select Y and press ENTER. The following prompt displays.

Update data base with Copy, Import, or Nothing (C/I/n)?

- f. Select I and press ENTER. The data import is complete when the following prompt displays.

Done Import Software Version #.# Operation complete REBOOT REQUIRED Press ENTER to reboot

5. Verify that the floppy disk has been removed and press ENTER to start the reboot. The following prompt displays.

Initiating reboot - takes about 10 seconds

6. Verify restored data is correct.
7. Verify all base locations. For details, refer to *Base Locations* in the appendix of the *Dispense Service Guide*.
8. Select the appropriate scenario:

**Table 6: Concluding Restoration of Data Backup**

If you are restoring this:	and...	then...
data	all appears to be correct,	you have completed the recovery process. Hooray!
application software	all appears to be correct,	continue with either <a href="#">Install System Software from CD</a> (pg 12) OR <a href="#">Install System Software from USB</a> (pg 20)
everything! (data and application software)	the machine boots properly,	continue with <a href="#">Install Additional Software</a> (pg 26)
	the machine will NOT boot properly,	Contact the <a href="#">GPD Global Service Department</a>

## Canceling Restore Backup

To cancel the backup restoration process before it finishes, turn off the dispenser by pressing the red Emergency Stop button.

**CAUTION:** Data corruption is likely to occur in the database if you take this action.

## Deleting a Backup

Obsolete backup files should be deleted from the computer periodically. Use the backup deletion function to delete old backup files from the hard drive.

**NOTE:** Data backups and Application backups can be deleted only from the USB and from the Primary Hard Drive /hd0. The secondary hard drive cannot be accessed for deletion of backups.

To delete backup files:

1. From the menu bar on the Main Control Panel, click Utilities > Backup > Delete. The File Selection window displays.
2. Select a file to delete and click OK.
3. Repeat the select and delete process until all the files you want to delete are gone, then click CANCEL.

# Install System Software from CD

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This section describes how to install the *FLoware control software* from a CD onto a GPD Global dispenser.

## Installing System Software from CD

### 1 - Create Utility Disk

Create an **Extract/Install Utility disk**. For details, refer to [Create an Extract/Install Utility Disk](#) (pg 30).

### 2 - Gather Required Items

Each of the following items must be available for use during the following procedure:

- The **Dispenser Software for S/N 22xxxxx CD**. The serial numbers on this CD and the dispenser must match.
- The **most recent dispenser data backup**.

**NOTE:** The data backup must match both the software version and the serial number of the Dispenser Software disk.

- **Ethernet Address**. This address can be found on the CPU board and is listed in the *Manufacturer Serial Number* section of the dispenser *Conformity Report*.

### 3 - Identify Hardware

1. Determine the **type of video hardware** present in the dispenser. If your system has a card that looks like the following image, your system is equipped with **video mail** hardware. On the other hand, if no such card is present, **video capture** hardware is installed in your system.

**Figure 1:** Video Mail Hardware.



2. Determine **whether or not DigiBoard equipment** is installed on your dispenser. If your system uses a cable like the one shown in the following image, your system is equipped with a DigiBoard. On the other hand, if no such cable is present, no DigiBoard is present in your system.

**Figure 2: DigiBoard Cable.**



## 4 - Install Software from CD

To install system software:

1. Prepare to install system software:
  - a. With the dispenser powered off, insert the Extract/Install Utility disk in the floppy drive.
  - b. Power on the dispenser. The following prompt displays when the boot sequence is complete.

Type "extract" to extract, copy, or install files.

Type "install [size] [type]" to create a new system:  
size is partition size in megabytes (default 5000, minimum 700), or is a letter A/H/Q/T for all/half/quarter/tenth of the disk;  
type is n/r/w/v for no/read/write/verify testing, default r.

Example: install  
Installs a 5000Mb disk with minimal surface testing  
Example: install 1200 v  
Installs to a disk 1,200Mb in size, after thorough surface testing  
Note that the 'v' option is very slow but very thorough

```
Example: install H n
Installs to a partition which is half the physical
disk's size without any surface testing
#
```

2. At the # prompt, insert the FLOWare dispenser software CD in the CD-ROM drive.
3. To accept the default settings for a typical Partition Size of 5000 Mb with a Type of r, type *install* and press ENTER; otherwise, type the following, modifying “nnn” and “type” per the choices listed below, and then press ENTER.

```
install nnn type
```

where *nnn* is the size (MB) of the partition:

5000	[default]. Use any value, but if a value less than 5000 Mb is specified, then 5000 will be used.
H	half of disk
Q	one quarter of disk
T	one tenth of disk
A	all of disk

and *type* is one of the following:

r	[default]. Read only surface check
n	No surface test
w	Read & write surface check
v	Read, write, and verify surface check

- c. When the following prompt displays:

```
Do you really want to ERASE the fixed hard
drive and install QNX software from the CD? (Y/
n)
```

press Y and ENTER to continue.

- d. When the following prompt displays...

```
Are you SURE you want to erase the hard drive?
(Y/N)
```

press Y and ENTER to continue.

- e. When the following prompt displays...

```
Do you want to ERASE the backup drive too?
```

If you are tempted to answer NO because your Backup hard drive contains important data that you do not want destroyed, remove and replace the slave hard drive with a new one and then press Y and ENTER to continue.

Selecting Y will partition both hard disks to the same size at the same time. You are strongly encouraged to choose this *partition and check both disks* choice at this time because if the two drives do not have matching partition sizes, problems will occur during future full system backups.

- f. Wait while a QNX partition of either the default 5000 Mb or the size specified is mounted on the hard drive and a surface check is performed. The surface check takes approximately 10 minutes. When the surface check is finished, the following will display:

```
Disk OK
Surface check is complete
Press ENTER to continue, A to abort:
```

- g. Press ENTER to continue.

4. Begin system software installation. As prompts display, enter values as indicated below:

**Table 7: Guide to Beginning Software Installation**

	Prompt	Response
1	<pre>sys524.f sys624.f sys525.f sys625.f Enter the name of the file to install, press ENTER to abort:</pre>	<p><a href="#">Select a Sys.f File</a> (pg 32) based on the type of hardware with which your system is equipped and then type that file name.</p> <p>Installation will begin.</p>
2	<pre>Do you want to install FLOware: (Y/n)</pre>	<p>Press Y and ENTER to continue.</p>
3	<pre>When the system reboots, log in as root. Remove the floppy disk and press ENTER.</pre>	<p>Remove the floppy disk, leave the FLOware software CD in the drive, and press ENTER. The dispenser will reboot and then begin to install software. When this installation is complete, the TCP/IP Setup Script known as <code>change . node . sh</code> will run.</p>

5. The Change Node sequence will run automatically. As prompts display, enter values as indicated below.

**Table 8: Guide to Change Node Prompt Responses**

	Prompt	Response
1	Current Node Number is 1 What is the node number for THIS machine?	Type <b>1</b>  (Only 1 license comes with each machine so the entry will always be 1. Only at the factory where multiple licenses are used for creation of the intranet will a different value be used.)
2	No known Ethernet Address Enter Ethernet Address for this machine.	Press Enter to ignore this step and continue on to the next.  Although the prompt asks for an Ethernet address, it will not be possible to enter one at this point. After installation of software is complete and the machine is running, you can follow the <a href="#">Enter Ethernet Address</a> (pg 33) as described later in this document.
3	Motors are Enabled, do you want to Disable them (y/N):	Enter <b>Y</b> for normal machine operation. This is the answer typically used.  Enter <b>N</b> if you do not want the servo system to start up and prompt you to home the machine during normal boot up operations.
4	Current Machine number is 1 Master Machine is 1 What is the machine number for THIS machine?	Enter 1 for machine number.
5	Is this a stand-alone machine? (Y/n)	Type <b>Y</b>  (This answer is typically Y. Stand-alone refers to the networking status, not whether or not it is inline with other machines.)
6	Do you use the BNC port on your Ethernet Card? (Y/n)	Type <b>N</b>  (This answer is typically N. If your machine was manufactured after 2004, you will not have a BNC port on your ethernet card.)
7	This machine is currently configured for 2 serial ports. Does this machine have 5 serial ports? (y/N)	Type <b>N</b>  Answer Y to this question if you have a DigiBoard installed on your machine. See details at <a href="#">DigiBoard Ports</a> (pg 31).
8	Does this machine have 4 on-board serial ports (y/N):	Answer Y if machine computer is equipped with four (4) onboard serial ports (motherboard is p/n 2025-0064 and includes CPU, memory, and fan).

**Table 8: Guide to Change Node Prompt Responses (cont'd)**

	Prompt	Response
9	Does this machine have 3 serial ports? (y/N)	<p>Type <b>N</b></p> <p>(This answer is typically N. Only a few machine were set up with a scale and no DigiBoard. If you have a Scale, it is likely you have a DigiBoard and, therefore, do not have 3 serial ports, but 5. The exception is motherboard p/n 2025-0064 equipped with 4 ports.)</p>
10	Does this machine have a modem on serial port 2? (y/N)	<p>Type <b>N</b> if the dispenser was built after 2004. If you are uncertain, contact the <a href="#">GPD Global Service Department</a>.</p>
11	Enter the CUSTOMER name for this machine (IBM, Contax, etc)	<p>Type <b>22xxxxx</b> (where xxxx is the remainder of the serial number for your machine).</p> <p>(It has become customary to enter the serial number from the back of the machine because the resulting serial number stamped data backups helps customers with multiple machines identify their backups.)</p>
12	<p>Node for this machine is node 1, Gantry is gantry 1, Last Gantry in the line is \$lastgan Ethernet Address for this machine is \$addr, uses This Machine number is 1, Master machine is 1 This machine has \$ports serial ports, No Customer name is: \$custName" Is this information correct? (y/ N)</p>	<p>If the information is correct, answer Y</p> <p>If the information is incorrect, answer N. Change node sequence will start again from the top.</p>
13	<p>Building sysinit.1 Updating Data Base Wait... Data Base Updated No database to update Node successfully changed to 1, Customer to: Reboot for all changes to take effect.</p> <p>FLOware Control Software Installation complete. Reboot is required. Do you want to reboot now? (Y/n)</p>	<p>Type <b>Y</b></p>

**Table 8: Guide to Change Node Prompt Responses (cont'd)**

	Prompt	Response
14	<p>There is a backup file on this USB device (or CD). Do you want to install it? (Y/n)</p>	<p>Select the applicable scenario:</p> <ul style="list-style-type: none"> <li>• If a data backup is available – the more recent the better (see list of possibilities below) – it can be restored after software installation is complete and the machine is returned to normal operations. If one of the following data backups is available, select <b>N</b>, press ENTER to continue, and then go to <a href="#">Restore Data Backup</a> (pg 8). <ul style="list-style-type: none"> <li>– <b>1st Choice:</b> the attempt to recover the most current data during <a href="#">Low-Level Data Backup</a> (pg 4) was successful.</li> <li>– <b>2nd Choice:</b> a recent, user-created data backup is available.</li> <li>– <b>3rd Choice:</b> a data backup created by a GPD technician at the time of machine installation or a service call is available. (GPD Global archives all customer backups from installs and service calls.) Call GPD for a copy of your machine data if nothing more recent is available.</li> <li>– <b>Last Choice:</b> the original, generic, software backup CD created when the machine was built is available from GPD Global Service Dept.</li> </ul> </li> <li>• If no data backup is available from either your facility or from GPD Global Service Dept., then select <b>Y</b>, press ENTER to continue, and then proceed with the following steps to restore configurations.</li> </ul>

## 5 - Restore configurations

As prompts display, enter values as indicated below:

**Table 9: Guide to Restoring Configurations**

	Prompt	Response
1	Restore All or Selected configurations or None? (A, s, n)	Press S and ENTER to continue.
2	Restore I/O configurations? (Y, n)	Press Y and ENTER to continue.
3	Restore Machine Option configurations or None? (Y, n)	Press Y and ENTER to continue.
4	Restore Servo configurations or None? (Y, n)	Press Y and ENTER to continue.
5	Restore System configurations or None? (y, N)	Press Y and ENTER to continue.
6	Update data base with Copy, Import, or Nothing? C, I, n)	Press I (for import) and ENTER. The system will automatically reboot.

# Install System Software from USB

---

This section describes how to install the *QNX operating system* and the *FLOWare control software* from a USB device onto a GPD Global dispenser.

## Installing QNX OS and FLOWare Software from USB

A USB device is not supplied with the dispenser, so to install the QNX operating system and FLOWare control software from a USB device, first create a utility disk and then copy those files to a USB device. Then you may install the software from the USB device.

### 1 - Create Utility Disk

To create a `usbextract.raw` utility floppy disk, refer to [Create an Extract/Install Utility Disk](#) (pg 30).

### 2 - Copy from CD to USB

To copy the files from the CD to the USB drive:

**CAUTION:** Make sure you DO NOT create a directory on the USB device in the same location where the CD files already reside.

1. Open the CD in Windows Explorer.
2. Select Edit > Select All.
3. Copy and paste all files from the CD to the USB device.

### 3 - Install Software from USB Device

To install the **QNX operating system** and the **FLOWare control software** onto the dispenser from the USB device:

1. With the machine powered off, insert the `usbextract.raw` floppy.
2. Power on the machine.
3. After the machine has booted up from the floppy disk, follow the instructions in the following table.

**Table 10: Guide to QNX & FLOWare Installation Prompt Responses**

	Prompt	Response
1	Welcome to QNX 4.25 USB Boot Disk. Mount the USB device and press any key to continue	Insert the USB drive into the USB port and press any key.

**Table 10: Guide to QNX & FLOWare Installation Prompt Responses (cont'd)**

Prompt	Response
2 Wait for USB Ready...	1 - The USB drive should now flash, indicating activation of the driver. Once it finishes reading the USB drive, the machine displays a # prompt. 2 - At the # prompt, type <b>install</b> . 3 - Press ENTER.
3 Do you want to ERASE the fixed hard drive and install QNX Software from the USB device? (Y/n).	Type <b>Y</b>  <i>Fixed hard drive</i> actually refers to the master hard drive known as /hd0. It is not actually fixed but is a removable drive that can easily be taken out and stored in a lock box.  <b>IMPORTANT:</b> During the installation of software on this disk, all previous information will be erased and unrecoverable.
4 Are you SURE you want to erase the hard drive? (y/N)	Type <b>Y</b>  <b>IMPORTANT:</b> The hard drive will truly be erased! To abort, if needed, press Ctrl-C.  A QNX partition will be mounted on the hard drive and a surface check will be performed. The surface check lasts approximately 10 minutes. When complete, it will display the next prompt.
5 Disk OK Surface check is complete Press ENTER to continue, A to abort.	Press ENTER.
6 Wait for USB ready... Sys524.f sys525.f sys624.f sys625.f Enter the name of the file to install. Press ENTER to abort.	Type <b>sys625.f</b>  The typical entry here is sys625.f. See details at <a href="#">Select a Sys.f File</a> (pg 32).
7 Do you want to install FLOWare? (Y/n)	Type <b>Y</b> and press ENTER.
8 When the system reboots, log in as root. Remove the floppy disk and press ENTER.	Do as instructed. The system will then automatically reboot.  The machine will now run a TCPIP setup script known as change.node.sh.

4. The Change Node sequence will run automatically. As prompts display, enter values as indicated below.

**Table 11: Guide to Change Node Prompt Responses**

	Prompt	Response
1	Current Node Number is 1 What is the node number for THIS machine?	Type <b>1</b>  (Only 1 license comes with each machine so the entry will always be 1. Only at the factory where multiple licenses are used for creation of the intranet will a different value be used.)
2	No known Ethernet Address Enter Ethernet Address for this machine.	Press Enter to ignore this step and continue on to the next.  Although the prompt asks for an Ethernet address, it will not be possible to enter one at this point. After installation of software is complete and the machine is running, you can follow the <a href="#">Enter Ethernet Address</a> (pg 33) as described later in this document.
3	Motors are Enabled, do you want to Disable them (y/N):	Enter <b>Y</b> for normal machine operation. This is the answer typically used.  Enter <b>N</b> if you do not want the servo system to start up and prompt you to home the machine during normal boot up operations.
4	Current Machine number is 1 Master Machine is 1 What is the machine number for THIS machine?	Enter 1 for machine number.
5	Is this a stand-alone machine? (Y/n)	Type <b>Y</b>  (This answer is typically Y. Stand-alone refers to the networking status, not whether or not it is inline with other machines.)
6	Do you use the BNC port on your Ethernet Card? (Y/n)	Type <b>N</b>  (This answer is typically N. If your machine was manufactured after 2004, you will not have a BNC port on your ethernet card.)
7	This machine is currently configured for 2 serial ports. Does this machine have 5 serial ports? (y/N)	Type <b>N</b>  Answer Y to this question if you have a DigiBoard installed on your machine. See details at <a href="#">DigiBoard Ports</a> (pg 31).
8	Does this machine have 4 on-board serial ports (y/N):	Answer Y if machine computer is equipped with four (4) onboard serial ports (motherboard is p/n 2025-0064 and includes CPU, memory, and fan).

**Table 11: Guide to Change Node Prompt Responses (cont'd)**

	Prompt	Response
9	Does this machine have 3 serial ports? (y/N)	<p>Type <b>N</b></p> <p>(This answer is typically N. Only a few machine were set up with a scale and no DigiBoard. If you have a Scale, it is likely you have a DigiBoard and, therefore, do not have 3 serial ports, but 5. The exception is motherboard p/n 2025-0064 equipped with 4 ports.)</p>
10	Does this machine have a modem on serial port 2? (y/N)	<p>Type <b>N</b> if the dispenser was built after 2004. If you are uncertain, contact the <a href="#">GPD Global Service Department</a>.</p>
11	Enter the CUSTOMER name for this machine (IBM, Contax, etc)	<p>Type <b>22xxxxx</b> (where xxxx is the remainder of the serial number for your machine).</p> <p>(It has become customary to enter the serial number from the back of the machine because the resulting serial number stamped data backups helps customers with multiple machines identify their backups.)</p>
12	<p>Node for this machine is node 1, Gantry is gantry 1, Last Gantry in the line is \$lastgan Ethernet Address for this machine is \$addr, uses This Machine number is 1, Master machine is 1 This machine has \$ports serial ports, No Customer name is: \$custName" Is this information correct? (y/ N)</p>	<p>If the information is correct, answer Y</p> <p>If the information is incorrect, answer N. Change node sequence will start again from the top.</p>
13	<p>Building sysinit.1 Updating Data Base Wait... Data Base Updated No database to update Node successfully changed to 1, Customer to: Reboot for all changes to take effect.</p> <p>FLOWare Control Software Installation complete. Reboot is required. Do you want to reboot now? (Y/n)</p>	Type <b>Y</b>

**Table 11: Guide to Change Node Prompt Responses (cont'd)**

	Prompt	Response
14	There is a backup file on this USB device (or CD). Do you want to install it? (Y/n)	<p>Select the applicable scenario:</p> <ul style="list-style-type: none"> <li>• If a data backup is available – the more recent the better (see list of possibilities below – it can be restored after software installation is complete and the machine is returned to normal operations. If one of the following data backups is available, select <b>N</b>, press ENTER to continue, and then go to <a href="#">Restore Data Backup</a> (pg 8). <ul style="list-style-type: none"> <li>– <b>1st Choice</b>: the attempt to recover the most current data during <a href="#">Low-Level Data Backup</a> (pg 4) was successful.</li> <li>– <b>2nd Choice</b>: a recent, user-created data backup is available.</li> <li>– <b>3rd Choice</b>: a data backup created by a GPD technician at the time of machine installation or a service call is available. (GPD Global archives all customer backups from installs and service calls.) Call GPD for a copy of your machine data if nothing more recent is available.</li> <li>– <b>Last Choice</b>: the original, generic, software backup CD created when the machine was built is available from GPD Global Service Dept.</li> </ul> </li> <li>• If no data backup is available from either your facility or from GPD Global Service Dept., then select <b>Y</b>, press ENTER to continue, and then proceed with the following steps to restore configurations.</li> </ul>

## 4 - Restore configurations

As prompts display, enter values as indicated below:

**Table 12: Guide to Restoring Configurations**

	Prompt	Response
1	Restore All or Selected configurations or None? (A, s, n)	Press S and ENTER to continue.
2	Restore I/O configurations? (Y, n)	Press Y and ENTER to continue.
3	Restore Machine Option configurations or None? (Y, n)	Press Y and ENTER to continue.
4	Restore Servo configurations or None? (Y, n)	Press Y and ENTER to continue.
5	Restore System configurations or None? (y, N)	Press Y and ENTER to continue.
6	Update data base with Copy, Import, or Nothing? C, I, n)	Press I (for import) and ENTER. The system will automatically reboot.

# Install Additional Software

---

Installation of additional software is necessary in instances when a software patch, data converter, or update needs to be installed, or if you have to recover from a system crash but the version of software on your backup CD or USB predates the version running on the system before the crash.

## Load Additional Software

As needed, load any additional software:

1. In the FLOware software, enter the password that allows for access to the **Utilities** menu.
2. From the **Utilities** menu, select **Install Update**.
3. When the following prompt displays...

```
Do you really want to install software (Y/n)?
```

answer Y and press ENTER.

4. When either of the following prompt displays...

```
Do you want to Install software from the USB
device?
```

```
Do you want to Install software from the CDROM (y/
N)?
```

answer Y and press ENTER.

5. When the following prompt displays...

```
Current load files on CDROM are:
```

```
_____.f _____.f _____.f _____.f _____.f
_____.f _____.f _____.f _____.f _____.f
_____.f _____.f _____.f _____.f
```

To restore a specific file, enter the name of the file; Enter A to abort.

enter the name of the file from the list on the screen to install and press ENTER.

6. When the following prompt displays...

```
Installing from CDROM _____ .f. Do you want to  
continue? (Y/n)
```

answer Y and press ENTER.

7. When the following prompt displays...

```
Operation Complete Press ENTER to continue
```

press ENTER.

# Appendices

---

- [Create a Restore System Boot Disk](#)
- [Create an Extract/Install Utility Disk](#)
- [DigiBoard Ports](#)
- [Select a Sys.f File](#)
- [Enter Ethernet Address](#)

## Create a Restore System Boot Disk

If you need to restore data from a slave (secondary) hard drive, you will need a Restore System Boot disk to complete the process.

To create a Restore System Boot disk:

1. Insert the *Dispenser Software for S/N 22xxxx* CD in a Windows Desktop or Notebook PC with 3.5" 1.44 MB floppy drive capability.
2. From Windows Explorer, view the contents of the disk and then double-click on the `rawwritewin.exe` file.
3. Insert a formatted floppy disk in the floppy drive.
4. Select the **Write** tab from the **RawWrite** window, and then double-click the icon to the right of the **Image File** field.
5. Change the **Files of Type** to all files (\*.\*)).
6. Select the `rstr?????.raw` file for the current version of FLOware software where "???" represents the numbers/letters of the version you are installing. For example: `rstr293F.raw`
7. Click on the **Write** button.
8. When **100%** displays in the lower left corner of the **RawWrite** window, remove and label the floppy disk and close the **RawWrite** window.
9. Creation of the disk is now complete. For instructions on how to use the disk, refer to [Restore from Slave Hard Drive](#) (pg 6).

## Create an Extract/Install Utility Disk

If you need to [Install System Software from CD](#) (pg 12) or [Install System Software from USB](#) (pg 20), you will need an Extract/Install Utility disk to complete the process.

To create an Extract/Install Utility disk:

1. Insert the *Dispenser Software for S/N 22xxxx* CD in a Windows Desktop or Notebook PC with 3.5" 1.44 MB floppy drive capability.
2. From Windows Explorer, view the contents of the disk and then double-click on the `rawwritewin.exe` file.
3. Insert a formatted floppy disk in the floppy drive.
4. Select the **Write** tab from the **RawWrite** window, and then double-click the icon to the right of the **Image File** field.
5. Change the **Files of Type** to all files (\*.\*) .
6. Select one:
  - To install system software from CD, select the file name `extract.raw`.
  - To install system software from USB, select the file named `usbextract.raw`.
7. Click on the **Write** button.
8. When **100%** displays in the lower left corner of the **RawWrite** window, remove and label the floppy disk and close the **RawWrite** window.
9. Creation of the disk is now complete. For instructions on how to use the disk, open the `readme` file on the disk in either WordPad or VEdit.

## DigiBoard Ports

During software loading procedures, you may be asked whether or not your machine has a DigiBoard installed. The DigiBoard is a serial bus board that provides four (4) additional RS-232 serial communication ports 2-5.

Various devices optionally installed on the machine require the DigiBoard with its additional ports to support communication between the machine and the device:

- ClearVu Programmable Zoom and Focus Camera,
- LCC Positive Displacement Valve, and/or
- Sartorius Weight Scales (CP153, WZ64, etc.).

Normally, the motherboard is equipped with two (2) serial ports. Serial port 1 is always designated for the trackball. Serial port 2 of the motherboard is rarely, if ever, used and it will never be used if you have a DigiBoard. For details on how to disable serial port 2 on the mother board, refer to the GPD Global document entitled *CMOS Set Up for 2025-0064*.

## Select a Sys.f File

During software loading procedures, you may be instructed to enter or select the system file (sysxxx.f) that applies to your machine. The proper version of system file must be used or else the machine will not function properly. Make the proper selection based on the hardware installed on your machine.

Typical systems have new hardware and USB capability which requires sys625.f; however, older model systems require a different version of the system file. Use the following quick reference whenever you must choose a system file.

**NOTE:** If you have questions at this point or are uncertain about which system file to use, contact the [GPD Global Service Dept.](#) before taking any further action.

**NOTE:** All system file versions are available from the software CD.

**Table 13: Guide to Selection of System File**

For systems with this hardware:	Use this file:	Note
VideoMail without USB support	Sys524.f	These files are described in more detail in the readme file located on the software CD.
VideoMail with USB support	Sys525.f	
WinTV and NVidia without USB support	Sys624.f	
WinTV and NVidia with USB support	Sys625.f ‡	

‡ This is the standard for machines built after 2006.

## Enter Ethernet Address

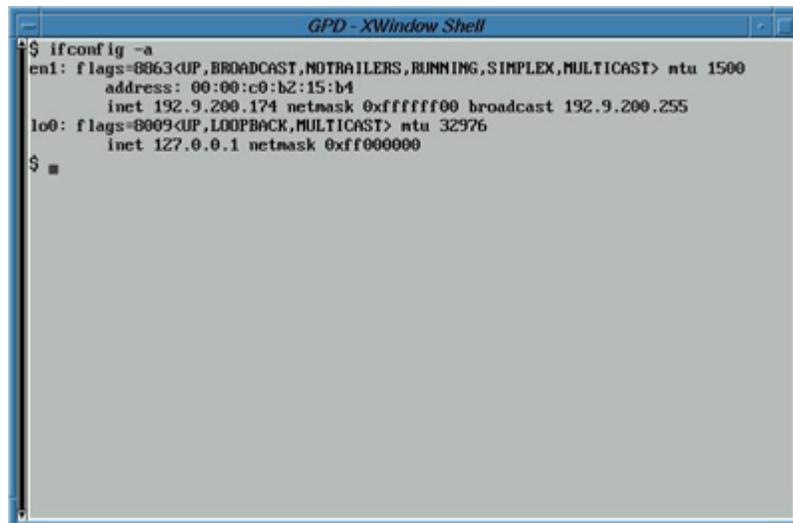
Entering the Ethernet card address to this machine can be performed only after the machine is fully operational. The Ethernet address must be identified and assigned if you want to add this machine to your company network.

To identify and assign the Ethernet address:

1. Open a shell window by clicking System Functions > Shell from the main menu bar.
2. Identify the Ethernet/IP address:
  - a. At the \$ prompt, type:

```
ifconfig -a
```

Press ENTER. The MAC and Ethernet/IP addresses for the dispenser should display.



```
GPD - XWindow Shell
$ ifconfig -a
en1: flags=8863<UP,BROADCAST,NOTRAILERS,RUNNING,SIMPLEX,MULTICAST> ntu 1500
    address: 00:00:c0:b2:15:b4
    inet 192.9.200.174 netmask 0xfffff00 broadcast 192.9.200.255
lo0: flags=8009<UP,LOOPBACK,MULTICAST> ntu 32976
    inet 127.0.0.1 netmask 0xff000000
$
```

- b. Make note of the Ethernet/IP address which will be similar to 192.xxx.xxx.xxx.

**NOTE:** Alternatively, the Ethernet address can be found on the CPU board and is listed in the *Manufacturer Serial Number* section of the dispenser *Conformity Report*.

## 3. Assign the Ethernet address:

- a. At the \$ prompt, type:

```
su
```

press ENTER to continue.

- b. At the password prompt, type:

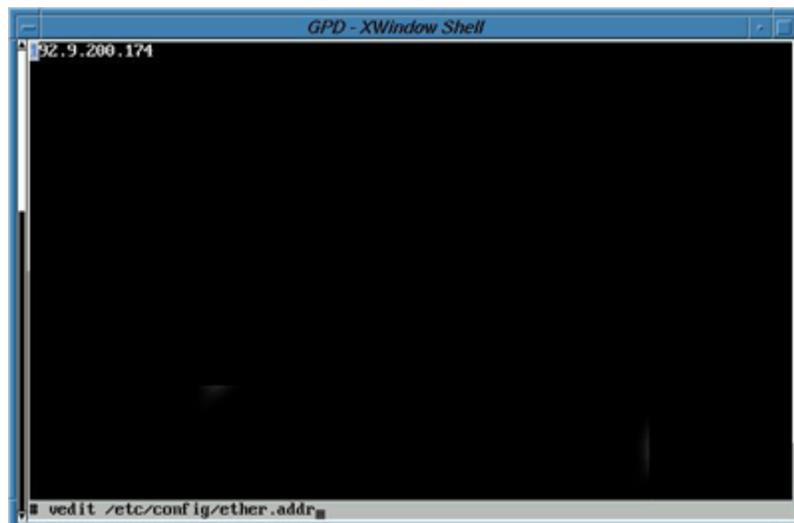
```
glue
```

press ENTER to continue.

- c. At the # prompt, type:

```
su
```

press ENTER. A blank file displays.



- d. Type in the IP address noted earlier.  
e. Press ESC, then type x to exit, and Y to save all.
4. Run the change.node sequence:
- 
- a. Type:

```
change.node.sh
```

- b. Answer ENTER to all prompts (to accept your previously entered answers) **EXCEPT the last one**. Answer **Y** when asked by the following prompt if the information is correct:

```
Node for this machine is node 1, Gantry is gan-
try 1,
Last Gantry in the line is $lastgan
Ethernet Address for this machine is $addr,
uses
This Machine number is 1, Master machine is 1
This machine has $ports serial ports,
No
Customer name is: $custName"
Is this information correct? (y/N)
```

# Index

---

## A

application backup, deleting 11

## B

backup

- application, see application backup
- canceling 11
- data, see data backup
- deleting 11
- low-level 4
- types of 8

## C

cancel restore backup 11  
CD  
installing from 12–19  
CD to USB 20  
change node 16, 22

## D

data backup  
deleting 11  
low-level 4  
most recent 12  
requirements 8  
restore 8–11  
data converter 26  
deleting backup 11  
Digiboard 13, 31  
disk  
dispenser software 12, 14, 29, 30  
extract/install utility 12, 13, 30  
restore system boot  
usb-extract.raw floppy 20  
utility disk, create

## E

erasing hard drive 15  
error message 5  
errors 8  
Ethernet address 12  
entering 33  
extract/install utility disk, see disk 12

## F

FLOware, see system software

## H

hard drive  
erasing 15  
recommended for recovery 3  
slave see slave hard drive  
hardware  
Digiboard 13  
specifications 3  
video 12

## I

installing  
from CD 12–19  
from USB 20–24  
IP address, see Ethernet address 33

## L

low-level data backup 4

## N

node change see change node

## O

obsolete files, deleting 11

## P

partition

QNX 15, 21

size 13–15

patch, software 26

prompts

change node responses 16, 22

data backup responses 5

sys.f files 15

## Q

QNX

installing 20

partition 15, 21

## R

RawWrite 29, 30

recovery

from catastrophe 2

methods of 1

suggestions 3

summary of the process 2

requirements

data backup 8

restore from slave hard drive 6

system 3

user qualifications 3

restore

configurations 19, 25

data backup 8–11

system boot disk, *see* disk

RS-232 serial ports, *see* Digiboard

## S

secondary hard drive, *see* slave hard drive

serial

bus board, *see* Digiboard

ports, *see* Digiboard

slave hard drive 6, 29

software

patch 26

system, *see* system software

update 26

specifications, hardware 3

sys.f files 15, 32

system software

additional 26

FLOware 20, 26

install from CD 12–19

install from USB 20–24

load additional 26

QNX 20

## T

trademarks ii

## U

USB

copy files from CD to 20

install system software from 20–24

sys.f file 32

usb-extract.raw, *see* disk

utility disk

create 20

## V

video

capture 12

mail 12