
Cyclops II Vision Software Install/Update/Restore Guide

Version 1.0
March 10, 2021
Part No. 22240108

for use on:
Dispense System models DS Series & MAX Series

prepared by GPD Global® Documentation Dept.



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Front matter

Revision notes

Date	Version	Notes
05/10/21	1.0	Initial document.

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Notices



OPERATOR SAFETY

Operation of the system involves electrical power, compressed air, and mechanical devices in addition to the use of hazardous materials. It is important that personnel operating and servicing the system are qualified and fully understand the safety and system precautions.

For their own safety and that of the system, operator(s) must understand machine operations prior to using it.

A dangerous condition can result for which the safety features installed in the system may be insufficient.

Do not operate the system beyond the guidelines detailed in this document.

Do not operate a damaged machine/system/device. Operation of a damaged machine/system/device may cause personal injury and invalidate the warranty.

Intended use. Use of the system in any manner other than described in the documents supplied with the equipment may result in injury or damage to the system. Examples include: removing door interlocks, bypassing safety devices, modifications to original design, and using incompatible tools. When using the system, all precautions and operations should be in accordance with local regulations.

Disclaimers

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NOTE: Although reasonable care has been exercised in preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.

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Specifications, descriptions, and all information contained in this manual are subject to change and/or correction without notice.

Although reasonable care has been exercised in the preparation of this manual to make it complete and accurate, this manual does not purport to cover all conceivable problems or applications pertaining to this machine.

Overview

Purpose

This procedure describes how to install/update/restore the Cyclops II vision software onto a GPD Global dispenser from USB device.

These instructions apply to both the MAX Series and DS Series models of dispense systems.

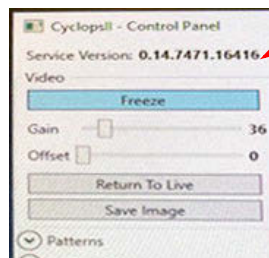
FAQ

What is Cyclops II?

Cyclops II is the current version of the vision system that performs all vision operations for FLOWare® software.

What version of vision software is currently installed?

To determine which version of Cyclops II software is currently installed on your dispense system, open the vision processor control panel.



How do I install or update the vision software on a dispense system using USB?

The “Cyclops II Vision Software USB” contains the vision software and related vision software license information. Using this USB, follow the instructions in this document to install/update/restore the vision software on a GPD Global dispense system.

For additional details about the USB device, refer to [USB](#) (pg 2).

How do I install the vision software license?

The Halcon vision software license is installed during the vision software installation sequence as described in this document.

How do I restore vision software

If a vision failure occurs and/or a vision error message displays, install the Cyclops II vision software per [Install vision software](#) (pg 7).

How do I verify the vision software install/update/recovery was successful?

Test the vision software via the vision processor control panel or by opening a FLOWare® software Jog window where an image should appear in the display area. The Jog window settings for camera lens gain and offset may need to be adjusted.

Requirements

Personnel and the dispense system must meet the following requirements to achieve a successful software installation/update/recovery.

User qualifications

- The user must be reasonably familiar with installing software.
- The user must have access to the Cyclops II computer in the dispense system.
- The user must have access to the Cyclops II Vision Software USB. The USB label looks like similar to this:

```
Vision Software  
9-XXXXXXXX
```

(9-XXXXXXXX is the vision software license number)

Dispense system requirements

KVM switch option

Typically, the KVM (keyboard, video monitor, mouse) option is included with a Cyclops II Vision Software upgrade.

IMPORTANT: If the dispense system is NOT equipped with a KVM switch†, the user must provide a remote (laptop/desktop) computer properly configured for remote access to achieve connection with the vision computer in order to perform vision software install/update.

†To determine if a KVM switch is present, refer to [Computer control with KVM](#) (pg 13); i.e., if the keystroke method works and/or the KVM switch box is present, your system has a KVM switch.

USB

- The Cyclops II Vision Software USB device is your source for the vision software and is included in the original dispense system package.
- **IMPORTANT:** The *license number* for the Cyclops II Vision Software USB **must** match the license on the USB license dongle installed in the Cyclops II computer. To identify and locate the USB license dongle, refer to [Insert USB into machine](#) (pg 5).

Install/Update/Restore Cyclops II vision software

Overview

The vision software installation process requires establishing communications between the Cyclops II and remote computers; installing the vision software and vision software license (camera configuration may be necessary); and then rebooting the dispense system and verifying the vision software has installed successfully.

To install, update, or restore Cyclops II vision software, perform all of these procedures:

1. [Connect to Cyclops II computer](#) (pg 3)
2. [Insert USB into machine](#) (pg 5)
3. [Install vision software](#) (pg 7)

Connect to Cyclops II computer

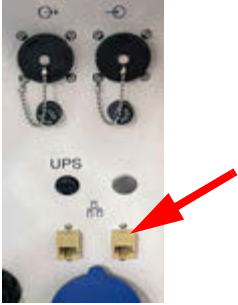
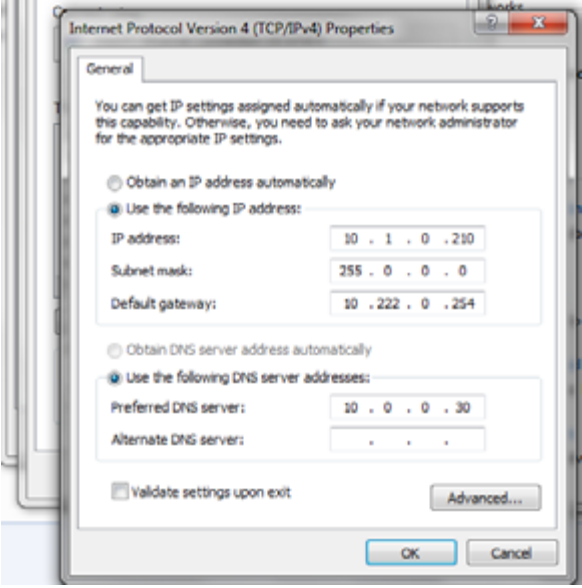
You must establish communications between the dispense system vision computer and your remote computer before you can install, update, or restore the vision software from a USB device onto dispense system.

To establish communications between the Cyclops II computer and remote computer:

1. Power on the dispense system.

~ Procedure continues on the following page.~

2. Choose one of the following methods to switch your interface controls (keyboard/monitor/trackball) so they function with the vision software computer.

Is your dispense system equipped with KVM switch?†	Then do this now:
Yes	Use either Keystroke method (pg 13) or Switch button method (pg 13).
No KVM	<p>1 - Connect a LAN cable from your remote computer to the Ethernet LAN port located on the service panel on the back of the dispense system.</p> <p>NOTE: If only a single port is present, make connection to the router (if present) or switch.</p> <p>Figure 1: LAN port on dispense system service panel</p>  <p>2 - Configure the TCP/IPV4 as shown here:</p> 

† If you're unsure if your system has a KVM switch, assume it does - then if the KVM methods don't work, use the alternate (No KVM) method.


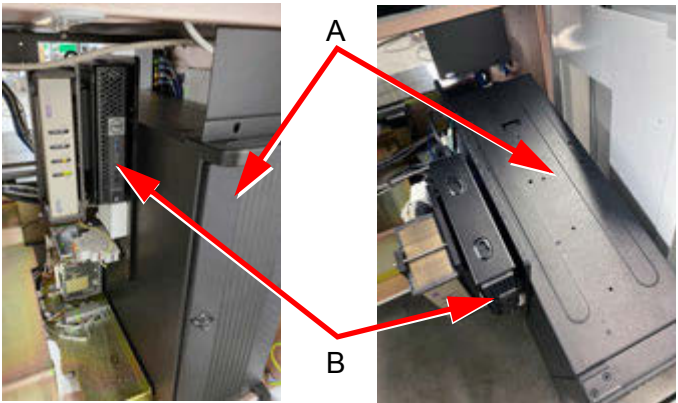
You are now ready to continue with [Insert USB into machine](#) (pg 5).

Insert USB into machine

PREREQUISITE: You must have completed [Connect to Cyclops II computer](#) (pg 3).

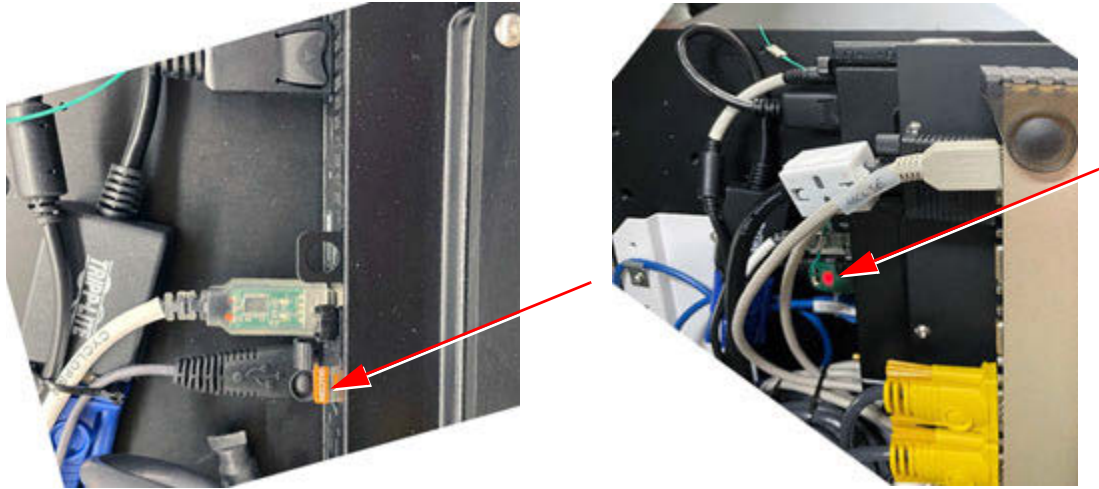
To load the Cyclops II software USB device onto the dispense system:

1. Power off the dispense system.
2. To verify that the license number on the vision software USB and on the vision software license dongle match each other:
 - a. Locate the Cyclops II computer using the instructions applicable to your model of dispense system:

Dispense system model	How to find Cyclops II computer:
DS Series	<p>Locate the Cyclops II computer in the front drawer of the dispense system using the drawer layout guide.</p> <p>Figure 2: Drawer layout indicates location of Cyclops II computer</p> 
MAX Series	<ol style="list-style-type: none"> 1 - Locate the computer tower (Figure 3, Item A) inside the front service panel. 2 - Locate the Cyclops II computer (Figure 3, Item B) typically mounted to the computer tower. <p>Figure 3: Cyclops II computer (shown from front and above) mounted to computer tower inside MAX Series front service panel</p> 

- b. Locate the USB license dongle mounted in the Cyclops II computer. As of 2021, USB license dongles are orange (shown at left); prior versions are green (shown at right).

Figure 4: USB license dongle (orange or green) plugged into rear panel of Cyclops II computer



- c. Verify the license number engraved on the Cyclops II Vision Software USB matches the license on the USB license dongle per [USB](#) (pg 2).
3. Power on the dispense system.
 4. Insert the vision software USB into the Cyclops II computer.
- You are now ready to continue with [Install vision software](#) (pg 7)

Install vision software

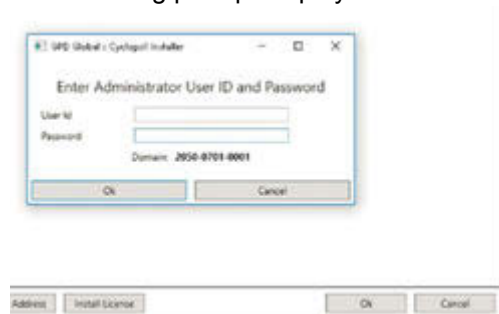
PREREQUISITE: You must have completed [Insert USB into machine](#) (pg 5).

To install the Cyclops II software on the dispense system:

1. Choose one:

Is your dispense system equipped with KVM switch?	Use this method:
Yes	Skip to Step 2 (pg 7) .
No	<p>If you did the "no KVM" method in Step 2 of Connect to Cyclops II computer (pg 3), continue with these steps:</p> <p>1 - Using the remote computer connection, open the application with pre-configured IP address 10.1.0.99 named Cyclops2 connection 10.1.0.99.RDP. User Id: .\GPDUser Password: GPDUser</p> <p>2- Continue on to Step 2 (pg 7).</p>

2. On the remote computer connected to Cyclops II computer, open the folder where you store the most recent vision software for installation and update purposes. The folder name should be similar to `Cyclops.x.x.x`
3. Click on `Install.exe`
The following prompt displays.



4. Enter the Service level user name and password.



WARNING:

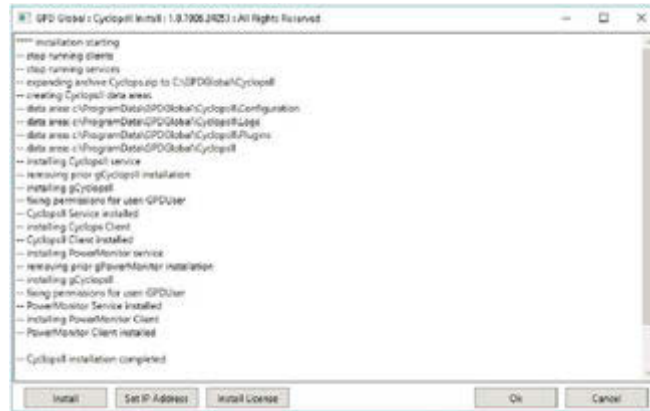
Content made available at the Service level is NOT recommended for use by anyone besides GPD Global personnel or those working under the direct guidance of GPD Global personnel.

Improper application of this information can lead to serious complications in software operations.

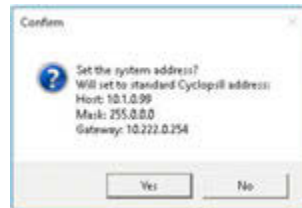
Any non-GPD Global employee who uses this information beyond the stated application specified by GPD Global Service Department personnel is in danger of causing personal injury and invalidating their machine warranty.

5. Click on **Install**.

Wait for the installation process to finish; the following prompt displays when installation is complete.

6. Click on **Set IP Address**.

This action sets the IP Address to 10.1.0.99.

7. Click on **Install License** and then navigate to the Vision Software USB. The license file (.dat) will be saved to this location.

NOTE: For license installation to be successful, the USB device must meet all [USB](#) (pg 2).

8. Configure the camera per [Configuring camera](#) (pg 11)

9. To implement the changes, reboot the system by shutting it down and then powering it on.

10. Wait for the following message to display:

```
--Cyclops installation complete
```

11. Verify installation is successful via the vision processor control panel or by opening a FLOWare® software Jog window where an image should appear in the display area. The Jog window settings for camera lens gain and offset may need to be adjusted.

Vision software installation is now complete and successful.

Troubleshooting

If the dispense system vision software is not functioning per [Expected behavior](#) (pg 9) and/or if any of the following situations occur, perform the [Install vision software](#) (pg 7).

- Power loss or sudden disconnect/unplugging of the dispenser can cause corruption on both the dispenser computer and the vision computer.
- Installation of non-GPD Global software
- Reconfiguration of the user names
- Change of IP addresses

Expected behavior

The following is the expected behavior of the Cyclops II software during any dispense system power on and power off sequences.

Power on

When the dispense system is powered on:

1. The Cyclops II software starts automatically when the dispense system boots.

The vision software application is always available to FLOWare[®]software; i.e., no user need be logged into the system for the application to work.

- The power button on the Cyclops II computer will light.
 - The USB adapter will flash (both red and green LED) several times. The first flash indicates the USB device is power on. The second flash indicates the USB devices is recognized by the operating system.
 - The USB red LED will flash (weakly) every 0.5 seconds to indicate the software is operating properly.
2. When the vision application starts, it connects to the configured camera. Once connected, it continuously acquires images from the camera and publishes* the images to the FLOWare[®]software system for display.
 3. When the camera is attached and image publishing* is established, the application waits for commands from FLOWare[®]software.
 4. The vision application runs until the system is shut down.

**Publishing is done via the network.*

Power off

When the dispense system is powered off with a normal shutdown:

1. The dispense system issues a shutdown command to the Cyclops II software via the network.
2. Cyclops II immediately begins its shutdown sequence.
3. Within 10 seconds the Cyclops II system turns itself off as indicated by:
 - The power light going out.
 - The USB device stops pulsing its red LED at 0.5 second intervals.

Recovery required

Windows 10 issues

If the vision computer crashes and/or the Windows 10 operating system needs to be reinstalled, contact the GPD Global Service Department.

References

Configuring camera

Configure the camera whenever the vision software is installed, updated, or restored.

To configure the camera:

1. Edit the configuration file, as needed, to match the following code:

Vision section

```
[VISION]

VisIPAddress = 10.1.0.99
## The IP address of the vision processor
## Legacy = 169.254.0.10
## CyclopsII = 10.1.0.99

VisIPInterface = 169.254.0.1
VisPort = 8412
VisTimeout = 5
VisType1 = 1010
VisType2 = 1010
VisType1PCIindex = 0
VisType2PCIindex = 1
#IP addresses Port number and communication timeout (seconds) for
#the CYCLOPS vision system: VisPort=0 for the Cognex system;
#VisPort=8412 for the CYCLOPS system. VisType1 and VisType2
are the
#chip types for ports en1 and en2; if these are the same set
ONE of
#VisType1PCIindex or VisType2PCIindex to 1.
```

General section

```
[GENERAL]

CyclopsIIEnabled = True
## When enabled the CyclopsII platform is used.
## If absent or disabled the legacy vision platform is used.
```

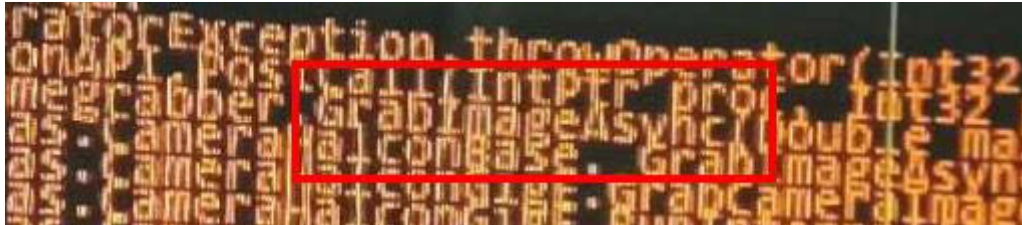
2. Save the configuration file.
3. [Power off](#) (pg 9) the dispenser.
4. [Power on](#) (pg 9) the dispenser.

Info & error messages

GrabImageAsync

An image from the camera fails to arrive at the computer.

Figure 5: Portion of error message indicating GrabImageAsync



A network lag can cause the above error. The potential causes are numerous and likely hardware related.

This problem can be resolved by reinstalling the Windows 10 software.

NOTE: Reinstalling the Cyclops II vision software will not resolve this issue.

Computer control with KVM

The dispense system KVM switch lets you easily change between multiple computers using a single set of KVM (keyboard, video monitor, mouse).

For example, you can switch between FLOWare® software and Cyclops II vision software with several key strokes using only a single set of keyboard/video monitor/mouse. After you've made your selection, the software for the selected computer will display on the monitor.

Alternately, you can also manually press the KVM switch buttons if you have access to the dispense system cabinet.

Keystroke method

To change between computers, press these keys in sequence:

1. SCROLL LOCK key
2. SCROLL LOCK key
3. 1 key or 2 key depending on which computer you want to use.

Table 1: Default KVM Computers IDs*

Computer ID	Computer Description
1	FLOWare® software computer
2	Cyclops II Vision computer

* Default computers in dispense system and their KVM computer identification numbers.

4. ENTER

Switch button method

To change between computers, press the KVM switch box buttons. The KVM switch box is located inside the dispenser cabinet front doors.

Figure 6: KVM switch box control buttons



Table 2: Default KVM switch buttons*

KVM switch button	Computer description
1	FLOWare® software computer
2	Cyclops II Vision computer

* Default computers in dispense system and their KVM switch buttons.