

Uniloy is proud to present this month's web posting which covers machine software downloads and features Backup and Update options for common Legacy and Modern Control Systems used on Structural Foam, Injection Blow, and Reciprocating Screw Blow Molding machines. Since many control systems separate logic from screens, the download options are divided into tables containing Logic Controller Options for the CPU and Screen Interface Options for the HMI.

When Machine Software Downloads Are Required

There are two common instances which require a machine software download.

- **Software Backup**
Internal storage media devices such as CF-cards, EEPROMs, or floppy discs are used to return the CPU or HMI to a usable state after memory corruption. The CPU and HMI are usually configured to automatically restore the software from the storage media, but this can sometimes require operator assistance.
- **Software Updates**
Software updates are often required as a part of machine retrofits or upgrades. This type of change requires that the functional software in the CPU and HMI, and all backup storage media, be updated.

The data included on the storage media is formatted for the specific purpose of restoring or updating machine function. While control logic and configuration may be visible with certain tools, Uniloy does not support nor recommend any non-Uniloy alterations. Such changes may result in safety and performance issues. Furthermore, Uniloy does not allow copying of machine software or transferring of software between machines. If features from one machine are desired on another, Uniloy will analyze the two machines for compatibility and quote updating or replacing the target machine software to accommodate those features. In some cases, there may be additional hardware requirements.

New Software Backups

In the event of memory corruption, the storage media is used to automatically or manually restore the CPU or HMI. To create additional backups, Uniloy can download the program onto the proper storage media and send it to the customer. No visit from Uniloy is required.

Software Upgrade Scenarios You May Encounter

In the two tables below there are three software upgrade scenarios:

- **Only Storage Media Required**
In this case, software-dependent retrofits can be applied automatically or manually. Uniloy will download the new software onto the appropriate storage media and send it to the customer for installation.
- **Storage Media and CPU/HMI Required**
Software-dependent retrofits requiring download to both the storage media and the target CPU/HMI in order to install the update make up this category. In this case, the customer would need to send in their CPU/HMI and memory device or purchase new components for download.
- **On-Site Service Required**
Software-dependent retrofits must be installed with all of the control equipment attached. While this method is recommended for all updates and backups, as it assures complete system functionality, this is only required with Control Logix PLC's due to the sensitivity of the ControlNet configuration.

In all three cases, a Uniloy service representative can help to determine the restoration requirements for your machine, and—if available—the process of manually transferring the software from the storage media to the CPU/HMI.

Logic Controller Options

Logic Control	Software Update Scenario	Storage Media	Backup Notes
B&R	Storage media only	CF-Card	Cannot be removed while running. Loads on power-up.
C20/C40 (OMRON)	Storage media only	EEPROM Chip	Dis-assembly required for removal. Automatic restoration on corruption or battery failure.
Compact Logix	Storage media and CPU module required	CF or SD Card	Card can be removed while running. Automatic restoration on corruption.
Control Logix	On-Site service required	CF or SD Card	Changes require Control-Net update. Card can be removed while running. Automatic restoration on corruption.
MACO 4000/8000	Storage media only	Memory Cartridges	Can be removed while running. Manual download/restoration.
S7 200/300	Storage media only	EEPROM Chip	Chip can be removed while running. Manual download (via HMI) Automatic restoration on corruption
SLC	Storage media and CPU module required	EEPROM Chip	Cannot be removed while running. Automatic restoration on corruption or battery failure.
TI-505 (SIEMENS)	Storage media and CPU module required	EEPROM Chip	Cannot be removed while running. Automatic restoration on corruption or battery failure.

Screen Interface	Software Update Scenario	Storage Media	Recipe Storage	Backup Notes
B&R (APC)	Storage media only	CF-Card	CF-Card USB-Drive	CF cannot be removed while running. Card required during power-up
B&R (Xycom)	Storage media only	CF-Card Floppy Disk	CF-Card USB-Drive Floppy Disk	CF cannot be removed while running. Card required during power-up Floppy disk restoration is manual Floppy can be removed while running
MACO 4000/8000	Storage media only	Memory Cartridges	Memory Cartridge	Can be removed while running. Manual download/restoration Cartridge cannot hold S/W and recipes simultaneously
MP-370	Storage media only	CF-Card	CF-Card	Card can be removed while running Manual download/restoration Automatic restoration on corruption
OP-3 / OP-73	HMI required	Internal to HMI	No Recipe Storage	Used for Manual download/restoration of S7 PLC
OP-37 / OP-47	Storage media only	Floppy Disk *Hard Drive	Floppy Disk	Floppy can be removed while running. Manual restoration.
PanelView 300	HMI Required	Internal to HMI	No Recipe Storage	
PanelView Plus 400	HMI Required	Internal to HMI	No Recipe Storage	
PanelView Plus 600-1500	Storage media only	CF or SD Card	CF or SD Card	Can be removed while running. Manual update/restoration.
QuickPanel	HMI Required	Internal to HMI	No Recipe Storage	
Smart Touch	Storage media only	SRAM Card	No Recipe Storage	Card can be removed while running Card required during power-up Automatic restoration
TP-37	Storage media only	Memory-Module	Memory-Module	Manual update/restoration Module cannot hold Screens and recipes simultaneously
VersaView	Storage media and HMI required	USB drive CF or SD Card *HMI Required	USB drive CF or SD Card	Manual update/restoration System failure requires entire HMI
Xycom	Storage media only	Floppy Disk *Hard Drive	Floppy Disk	Floppy can be removed while running. Manual restoration.

- For Xycom and VersaView series screens, the entire operating system may need to be restored.
- For OP-37, OP-47, and VersaView, the entire screen must be sent in.
- For the B&R Xycom replacement, only a CF-Card is required.
- Recipes cannot be restored from the internal storage if the entire operating system fails. Recipe back-ups should be maintained on external media.

Unlisted PLCs and HMIs

For other Logic controllers (PLC's) and Screens (HMI's) which are not listed in the table, speak to a Uniloy representative to discuss your options. The most common limitations are software, and part availability. In all cases, Uniloy offers an upgrade package for your machine:

- For HMI replacements that retain the existing PLC, refer to [Uniloy's HMI Replacement Solutions](#)
- For PLC replacements and retrofits that include a new HMI, refer to [Uniloy's Control Retrofits](#)

Multiple Controllers

Some machines use more than one PLC or HMI simultaneously (as can be the case with some Structural Foam machines and Siemens-controlled Reciprocating Screw blow molders). In this situation, it is important to identify exactly which part of the system requires a backup. A Uniloy representative can help to determine this along with any of the necessary components.

Remote Service/Restoration

Some HMI Screens and PLC's support remote downloads and troubleshooting. Establishing a remote connection, however, requires preconfigured equipment and adequate signal quality. Speak to your Uniloy Service representative for details on the possibility of utilizing this service.

A remote connection is one possible means for restoring the complete functionality of some PLC's after memory corruption. After automatic recovery from corrupted memory, TI-505 and Control Logix PLC's will continue to run from the backup media (SD-card / EEPROM). When this happens, the active set points will reset to the values stored within the program backup. After machine startup, the user can load recipes and manually adjust the set points, but the values will reset each time the power is cycled. To restore the PLC's automatic storage of active set points, a service technician must connect to the PLC controller, and switch it back to the on-board memory.

Sales and Service

For more information on this product offering or any other machine upgrade, please contact your local Uniloy Parts Sales Representative. Trained Uniloy Service Representatives are available to assist in the installation of these packages at your facility.