Trendsetter 400/800 Quantum Autoloader
MPE Firmware Version 1.45 Release Notes

creo

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1. SCOPE

This document describes the important changes to the TS400/TS800 Quantum Autoloader firmware that comes with version 1.45.

Please refer to the Intranet Tech Library firmware documentation pages or the Creo Service CD-ROM for information on commands, error messages, and NVS parameters for the TS400/TS800 Quantum Autoloader.

Common acronyms used in this document are defined in Appendix A.

2. FORMATTING CONVENTIONS

The formatting conventions used in this document are as follows:

all NVS parameters are in italics and

commands to be typed into the diagnostic terminal are in bold as well as the diagnostic command responses.

3. PRELIMINARY CHECKLIST (READ BEFORE YOU BEGIN!)

Please ensure the following checklist is performed before the upgrade is started.

1. ☐ Using the **list version** command, record the following:

   current MPE version: _____

   current head version: _____

2. ☐ Ensure you have the TSLV145.HEX file available.

3. ☐ **Version 1.45 is only compatible with Head Version 1.56 and above.** If the current head version is less than 1.56, then you will need to upgrade the head after the MPE has been upgraded. Make sure that you have a copy of the Thermal head firmware, Xilinx code, and release notes for instructions on how to upgrade thermal head firmware. Refer to the thermal head firmware release notes for instructions on how to upgrade the head code and MPE code synchronously.

4. ☐ The TS400/TS800 Quantum Autoloader requires Allegro CTP Workstation Software V1.6b plus Service Pack 2 (SP2) or higher or Print Console Version 2.1.1.24. If this software is not installed, please make sure that you have the installation CD and release notes.

5. ☐ Ensure that you allocate at least 4 hours for upgrading and testing the system. After the firmware upgrade, the entire system must be checked to make sure it is operating properly. This includes performing a visual check of plate handling, running a few plots to ensure proper image quality, and instructing the operators on any changes to the system operation.

The customer should also be allowed to run a few plates to make sure the machine works to their satisfaction.

4. UPGRADE PROCEDURE

To upgrade the MPE firmware, please perform the following steps:

1. Save all current NVS using both the **fsave all** command (see Appendix B) and the **nvs dump diff** command. Save the files to the workstation directory E:\Service\Nvs. Use the file names S<#>_<nnn>.mem for the fsave all file, and S<#>_V<nnn>.dif for the nvs dump diff file (# is the machine number, and nnn is the current (before upgrade) version number).

   fsave all file name: _____

   nvs dump diff file name: _____

2. Load new firmware (see Appendix B).

3. Issue the **nvs upgrade <previous version>** command (for example: **nvs upgrade 1.42**). All changed parameters will be displayed, showing the old value and the upgrade value. You may want to open a capture file before running this command to record all the new or changed parameters.

4. During the upgrade, warning messages will be displayed for any disabled sensors. Try to get these sensors working and enabled as soon as possible as they are required for the proper, safe operation of the Trendsetter Autoloader.

5. Reset the machine with the **reset** command.

5. CHANGES SINCE V1.42

5.1 NVS Changes

The following table details which NVS parameters have changed between V1.42 and V1.45.

NVS System	Param Name	Old Default	New Default	Upgrade Value	Description	Refer to Section
config	**version**	**--**	**--**	**1450400**	Parameter: version Holds the firmware version, plus build number and type.	

5.2 Bug Fixes

5.2.1 Workaround for Error 15076: "trailing edge clamps not on actuator"

There have been many reports of the error "trailing edge clamps not on actuator" suspending the machine even if all the clamps were on the actuator during unload. This has been most frequent on machines with the new microswitches used to detect the magnets on the trailing edge clamp backbone. Tests have now shown that the output of these microswitch sensors toggles high and low as the backbone is moving up.

A firmware workaround has been introduced in this version so that the trailing edge sensor is read several times before failing. If the sensors read true when the backbone has moved up off the drum, there is no delay in the unload sequence. If the sensors read false, the firmware polls the sensor once every 25ms, up to a total of 5s. If, during that time, a true reading is detected, the unload sequence continues normally. Otherwise, the system will suspend at the end of 5s with the same "trailing edge clamps not on actuator".

5.3 New Functionality

None.

6. KNOWN DEFICIENCIES

6.1 Low System Pressure can cause PLL Errors or Focus Errors

It is possible for a low spike in system air pressure to cause PLL errors or focus errors. The firmware detects the low air pressure and stops the drum, but the plotting control detects this as a pll error, or as a focus error because the index was not detected as expected. The errors that may be reported are 16012 ("PLL unable to maintain drum tracking") or 17674 ("focus error, check LC-BP cable").

6.2 Carriage move Command Calculates Incorrect Timeout Value

The **carriage move** command calculates an incorrect timeout value for negative speeds.

6.3 Focus error at 2032”

With the device in laser hazards mode (which means power to the laser is cut, but the focus laser still works), and *head wenable* set to 0, the device will not plot. It reports a focus error at 2032".

6.4 Bench Mode Requires “drum tpr” to be 9000

When running in bench mode (*sys bench* set to 1), the *drum tpr* parameter must be 9000. Otherwise, some registers are not setup properly and plots will fail.

6.5 1600dpi Plots May Fail During a Retrace

A 1600dpi plot will often fail with a carriage state error (error #07017) if a retrace is needed. If this occurs, check the *carriage psteps* value. Reducing the *psteps* value to 29 should temporarily fix the problem. However, reducing the value could cause the carriage to stall at higher drum speeds. Refer to the firmware error page at ErrorNumber07017.html.

6.6 Cups may not Push Plate Properly if Plates not Centered in Bay

The rotation routine currently assumes that the plates are centered in the bay. If the plates are shifted to the left, then after rotation the cups may not back up far enough to be able to push the plate properly. For plates shifted to the right (such as any plates less than 20”), the cups move back farther than they need to.

7. AUTOLOADER CONFIGURATION PROCEDURE

There are difference between Trendsetter Autoloader machines which must be set up through firmware:

- the solenoids for air knife and table cups are reversed on the old and new engines
- large plates cannot be imaged on 4-page machines
- some functionality is removed on E-model machines
- machines have different drum speed requirements

To configure the machine type, use the **config “<password>” “<machine_type>”** command.

8. AUTOLOADER CALIBRATION PROCEDURES

If the firmware is being loaded into a new machine or the NVS parameters have been erased without making a backup, then the following Autoloader-related NVS parameters must be calibrated:

8.1 Setting the Plate Measuring Sensor Offset

The *al soff* (sensor offset) parameter specifies the nominal distance between the Leading Edge Clamps (LEC) and the optical plate measuring sensor on the load ramp. This parameter is used by the firmware to measure the main-scan size of plates as they are being wound onto the drum. To calibrate this parameter, place a stack of plates of a known size onto the load table, load the correct plate size information from the workstation by selecting LOAD BAY, and verify that this has been entered by typing **set state bay 1 msz** from the diagnostic terminal. The msz parameter should be equal to the plate main-scan size measured in millimeters.

Type **pick**, then **load cal** through diagnostics. This will cause a plate to be picked and loaded. The plate size will be measured and the *soff* parameter will be calibrated as the plate is wound onto the drum. Make sure to save the *soff* value by typing **nvs save al soff**.

8.2 Calibrating the Unload Table Cup Rotate Position

The *alpos crp* (*cup_rotate_pos*) parameter specifies the nominal position for the unload table traveler to move to before rotating the unload vacuum cups. The firmware moves the traveler to this position and checks the rotate position sensor before attempting to rotate the cups. If the sensor is not tripped, then the traveler is jogged one millimeter at a time towards the away end of the table until the sensor is tripped or the firmware gives up and suspends.

Calibrate this parameter with the unload table in the down position (use the **table down** command). Move the traveler home by typing **table move home**. Increase the traveler speed by typing **table move fast**. Now type **table move rotate**. This command will move the traveler to the position specified by *alpos crp*. The center of the optical interrupter tab on the traveler should be 1-2 millimeters towards the home side of the rotate position sensor, and the sensor should be tripped (check the sensor using the **table** command). Adjust the position by changing the *alpos crp* parameter and re-typing **table move rotate**. When the distance is correct, save the calibrated value by typing **nvs save alpos crp**.

On machines with short unload tables (most 3230 and TS4 machines), the alpos crp parameter should be set to 500 to make sure the traveler stops in the correct place when it is dragging a plate along the unload table during a process command.

8.3 Adjusting Plate Centering

The NVS parameter *alpos ssoe* should be used to adjust the side-to-side position of the plate after it has been rotated. A positive value will shift the plate to the left (when viewed from the front of the recorder); a negative value will shift the plate to the right. The parameters that used to

control this centering, *alpos ltu* and *alpos pco*, should no longer be used for this function. This parameter eliminates the need for the **table cal center** command.

8.4 Enabling Plate Rotation

Two NVS parameters control whether a plate is rotated as it is transferred from the recorder to the processor: Both *al ri (rotator_installed)* and *state bay 1 rp (rotate_plate)* must be set to 1 in order to enable plate rotation for plates that are automatically loaded. Plates that are loaded manually will always be rotated if *al ri* is set to 1.

1. Enter **set al ri 1** to activate the autoloader rotator.
2. Enter **nvs save al ri** to save the new value.
3. Enter **set state bay 1 rp 1** to rotate all automatically-loaded plates.

8.5 Adjusting Eject Speed and Distance

8.5.1 Eject distance

The plate will be pushed towards the processor at fast speed, then slowed down to match the processor intake speed. (If a stacker is installed, the slow speed portion will be skipped.)

1. The *alpos fed* parameter determines when the traveler slows down. This parameter should be set to the distance (in mm) from the traveler home position to the position of the far end of plate when the speed changes. To adjust this distance, enter **set alpos fed <nn>** where <nn> is the new value in millimeters.
2. To adjust the distance that the plate moves at slow speed, enter **set alpos seo <nn>** where <nn> is the new distance value in millimeters.

Enter **nvs save alpos fed** and **nvs save alpos seo** to save the new distance settings.

8.5.2 Eject speed

1. Enter **set aldrv 2 sr** to see the current slow speed setting.
2. Enter **set aldrv 2 sr <nn>** where <nn> is the new speed setting.

   Decreasing the *aldrv sr* value decreases the eject speed. The range is from 1 to 254. The motor will probably stall at speed values of around 200.

3. Enter these commands to test the new speed setting:

table speed slow	loads the new speed settings
table jog –100	moves the traveler back towards home
table jog 100	moves the traveler towards the processor

4. Enter **nvs save aldrv 2 sr** to save the new speed settings.

8.6 Enabling Manual Unloading

You can enable manual unloading for a media type by setting the media type parameter *manual_unload* to a value other than zero: any plate of this particular media type will then unload back up the load table and will have to be removed from the machine manually. Set the value to zero when you manually load a plate of the same media type but of a different size than those stacked on the machine and you want to unload that plate automatically to send it to the processor. Set *manual_unload* to a non-zero value when you want to manually unload plates and process them on a different processor than that attached to the Trendsetter.

In theory, any plate can be manually unloaded whether it has been loaded manually or automatically. However, manual unloading should be reserved for plates that have been manually loaded. There will be no workstation prompt to remove the plate at the end of a manual unload if the plate was loaded automatically.

Steps to enable manual unloading for plates of media type <n>

1. Enter **set media <n> mu 1** where <n> is the media type.
2. Enter **nvs save media <n> mu** to save the new setting.

Appendix A: Common Acronyms

MPE	Main Processor Electronics
CTP	Computer to Plate (this includes Trendsetters and Platesetters)
NVS	Non-Volatile-Storage
TTS	Thermal 3244 Trendsetter
TTSL	Thermal Trendsetter Autoloader
TTSS	Thermal Trendsetter Spectrum
TTSP	Thermal Proofsetter
T324	Thermal 3244 Platesetter
GVLF	Green VLF Platesetter
TVLF	Thermal VLF Platesetter
GVTS	Green VLF Trendsetter
TVTS	Thermal VLF Trendsetter

Appendix B: Backing UP and Restoring NVS RAM

What is NVS RAM?

The NVS RAM in recorder machines provides the following:

- Storage for machine-dependent "configuration and calibration parameters" that must remain intact between power cycles.
- Storage for "state variables" that allow a machine to resume where it left off if power is cycled during loading or imaging.

At power-up, the contents of NVS RAM are copied to regular volatile RAM in the recorder and that is where they are used by the firmware. If any of these parameters are changed for any reason they must be copied back to NVS RAM or the changes will not be preserved after the next power-up. Changing individual NVS parameters is therefore a two-step process:

1. A parameter is first changed in a volatile RAM copy of the parameter
2. The changed value is saved (i.e. copied) to the NVS memory

Generally, there is no need to change "state" variables in NVS RAM since they simply contain a record of where the machine is (or was) during various tasks.

Whenever firmware is upgraded in a recorder machine, some of the NVS calibration and configuration parameters will typically need to be upgraded as well. Simply loading new firmware into a machine will not upgrade the NVS. Steps must be taken to ensure that the NVS is properly configured for the new firmware. This process may be partly or wholly accomplished with the **nvs upgrade** command available from the recorder monitor. In some cases, however it will be necessary for the installer to make certain upgrade configurations depending on the hardware that is present in the particular machine. Instructions on how and when to use **nvs upgrade** as well as any special machine-dependent upgrade procedures will be included near the beginning of this release note.

IMPORTANT: BEFORE UPGRADING THE FIRMWARE OF ANY RECORDER MACHINE YOU MUST BACKUP THE CONTENTS OF THE CURRENT NVS MEMORY IN CASE IT BECOMES NECESSARY TO REVERT TO THE PREVIOUSLY INSTALLED VERSION OF FIRMWARE!

Procedure to Backup and Restore NVS

There are two procedures that must be followed to do a reliable backup (as well as a possible restore) or NVS memory. The required procedure is outlined here. A second procedure, used to produce a human-readable listing is described in Appendix D.

Procedure "A" is used to take an image of the current NVS memory before the firmware upgrade and restore the image at a later date. This procedure is used to save the entire 32k of NVS RAM. The "**fsave all**" monitor command is used to download the NVS memory to a file and the "**fload memory**" command is used to upload the NVS memory from a file.

The procedure outlined here is used to save the entire 32k of NVS RAM. The "**fsave all**" monitor command is used to download the NVS memory to a file and the "**fload memory**" command is used to upload the NVS memory from a file. This procedure MUST be followed to produce a reliable backup of the device parameters.

An overview of the general procedure is shown below

Backing up NVS:

1. Open a log file to collect data that is displayed on the monitor screen
2. Issue a monitor command to allow the desired data to be displayed (and therefore also collected in the log file).
3. Close the log file

Restoring NVS:

1. Issue a command at the monitor that readies the recorder to read a log file.
2. Send the log file to the recorder

Detailed instructions for accomplishing these general steps using various terminal configurations are given in further on in this appendix. An NVS dump file made according to the procedure that follows will be exactly 79508 bytes long. If your file is exactly this long there is a very high probability that it is not corrupt. If you require more assurance concerning the integrity of the file you may examine it with a text editor or listing utility and check for the following:

- The file must consist of exactly 995 lines.
- The first 992 lines will be 78 characters long and look similar to the following

```
S2258000004E56532056657273696F6E203200AAAA55555555555555555555555555555555AABD
```

- Line 993 will be 76 characters long and look similar to the following:

```
S224807FE05555555D5555755575D55DD775555555AA6EAAABBAAAAAAE998E823A4A9FFED671
```

- Lines 994 and 995 (the last two lines) will look exactly like this:

```
S9030000FC
END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
```

Procedure to Backup and Restore NVS

Previous release notes specified two separate procedures for backing up and restoring NVS memory. There is now only one simplified procedure to follow. This procedure is used to save the entire 32k of NVS RAM. The "**fsave all**" monitor command is used to download the NVS memory to a file and the "**fload memory**" command is used to upload the NVS memory from a file. An overview of the general procedure is shown below

Backing up NVS:

4. Open a log file to collect data that is displayed on the monitor screen
5. Issue a monitor command to allow the desired data to be displayed (and therefore also collected in the log file).
6. Close the log file

Restoring NVS:

3. Issue a command at the monitor that readies the recorder to read a log file.
4. Send the log file to the recorder

Detailed instructions for accomplishing these general steps using various terminal configurations are given in further on in this appendix. An NVS dump file made according to the procedure that follows will be exactly 79508 bytes long. If your file is exactly this long there is a very high probability that it is not corrupt. If you require more assurance concerning the integrity of the file you may examine it with a text editor or listing utility and check for the following:

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```

- Lines 994 and 995 (the last two lines) will look exactly like this:

```
S9030000FC
END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
```

Terminal Program Setup

The PCPLUS terminal utility is usually used for NVS backup and restore. This utility may be run from either DOS (or a DOS window) or it may be used with a "Windows" style interface. It is assumed that the terminal program will be run on the system workstation. If it is run on another PC it may be necessary to change all the hard drive reference letters in this appendix from E: to C:. Any files created on the C: drive of a separate PC (i.e. terminal) should be copied over to the workstation on drive E: for archival purposes The following subsections show the necessary changes to the default configurations of the PCPLUS programs.

Setting up PROCOMM Plus for DOS (version 2.0)

Hit "Alt-S" and select "Protocol Options" and "General Options"
Set "Abort transfer if CD lost" to "No"

Hit "Esc" to return to "Protocol Options" menu and choose "Ascii"
Set "Character Pacing (milliseconds)" to "0"
Set "Line Pacing (1/10 sec)" to "0"
Set" Pace Character" to "126"
Save and exit

Setting up PROCOMM Plus for Windows 95 (version 4.0)

Under "Setup" - "System" - "System Options…"
Select "Data" Tab
Select "Path" Tab
On the "Capture Path" entry line, set a path for the capture file. For example, E:\NVS (This specifies only the capture file path, not the filename itself). The filename will be prompted for at the time a download is begun.
Select "OK"

Under "Setup" - "Data" - "Transfer Protocol…"
Under "CR options - upload" select "Don't translate CR"
Under "LF options - upload" select "Don't translate LF"
Under "CR options - download" select "Don't translate CR"
Under "LF options - download" select "Don't translate LF"
Be sure to uncheck the "Use" box
Select "OK"

Under "Setup" - "Data" - "Setup Files…"
Under "Meta Keys" select "None"
Under "Translate Table" select "None"
Under "Capture" select "None"
Select "Setup" (brings up "Capture File Options" window).

In "Capture File Options" window"
Disable "Write text as it appears on screen"
Disable "Write filtered text with no emulation escapes"
Enable "Write raw text including all escapes"
Enable "Overwrite existing capture file"
Enable "Query for file name when capture is started"

Detailed NVS Backup Procedure

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Prepare recorder to dump all NVS	**fsave all** Y/N prompt appears, ignore for now	**fsave all** Y/N prompt appears, ignore for now
Open log file	**Alt-F1** Pop-up window prompts for a filename	**Alt-F1** Pop-up window prompts for a filename
Name log file	Enter a path plus a name that includes the firmware version before upgrade e.g. **E:\NVS\xxx.MEM** (where xxx is the version number).	Enter filename (without path or extension) that includes the firmware version before upgrade. e.g. **xxx**. (where xxx is the version number). Pcplus adds a ".CAP" extension to this name and uses the previously defined path. Click "OK".
Dump entire NVS to log file	**Y** Data is displayed as it is dumped. The dump will take a few minutes. Eventually the following message is displayed: END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)	**Y** Data is displayed as it is dumped. The dump will take a few minutes. Eventually the following message is displayed: END OF NVS MEMORY DUMP - Close log file and hit [Y] (Y/N)
Close log file	**Alt-F1**	**Alt-F1**
Confirm end of download	**Y**	**Y**
Rename file	Not necessary	Rename the file: **E:\NVS\xxx.CAP** To: **E:NVS\xxx.MEM**

Detailed NVS Restore Procedures

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Initialize NVS	**nvs init all creo** All NVS firmware defaults written to NVS	**nvs init all creo** All NVS firmware defaults are written to NVS
Reset the recorder	**reset** Ensures NVS is copied to active RAM	**reset** Ensures NVS is copied to active RAM
Prepare recorder to receive all NVS	**fload memory** "Begin upload…" message appears	**fload memory** "Begin upload…" message appears
Prepare to upload	**PgUp** Pop-up window prompts for protocol	Select "Data" - "Send File"
Select ASCII	**A** Filename prompt appears	ASCII protocol was already selected when PCPLUS was set up.

Enter NVS filename	Enter the path and name of the previously saved configuration file e.g. **E:\FW\xxx.MEM** after hitting ENTER the upload will begin. Pace characters are displayed as the upload progresses. This stops when the upload completes. This will be followed by a "Transfer Successful" message.	Navigate to **E:\FW\xxx.MEM** and Select "Open" Button. The load begins and a "progress" window appears that tracks the progress of the load. When transfer is 100% done a "Transfer Successful" message will appear. Close the progress window.
Reset the recorder	**reset** Ensures NVS is copied to active RAM	**reset** Ensures NVS is copied to active RAM

Appendix C: Loading Firmware

Before loading firmware it is assumed that the installer is running either "Procomm Plus" for DOS or "Procomm Plus" for Windows 95 at the system workstation. It is further assumed that all of the necessary program options have been set up as described in Appendix B "Backing Up And Restoring NVS" and that the "Allegro" software is not running on the workstation.

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Copy firmware to workstation hard drive:	Create a directory on the WS hard drive to hold the new firmware. Give it a meaningful name that includes the version number for example: **E:\FW\xxx**	Create a directory on the WS hard drive to hold the new firmware. Give it a meaningful name that includes the version number for example: **E:\FW\xxx**
Jump to the bootstrap loader	**reset boot** (Bootstrap loader will sign on and display messages)	**reset boot** (Bootstrap loader will sign on and display messages)
Change baud rate to 38400	hit **Alt-P**, select menu item **7**, hit **Esc**	Click baud rate button and select 38400
ready to load	**fload bank 0**	**fload bank 0**
Prepare to upload	**PgUp** (A pop-up window prompts for protocol)	Select "Data" - "Send File"
Select ASCII	**A** (Filename prompt appears)	(ASCII protocol is already selected)
Enter firmware filename	Enter the path and name of the firmware. Hitting ENTER starts upload Pace characters displayed during load and stop when complete	Navigate to the path and firmware file name. Select the "Open" The load begins. Progress is graphically displayed.
Reset	**reset**	**reset**
Change baud rate to 9600	hit **Alt-P**, select menu item **5**, hit **Esc**	Click baud rate button and select 9600

Appendix D: Creating a Human-Readable Copy of all Non-Default NVS Parameters

This file is for reference only and should NOT be used for restoring NVS parameters! Note that this file will not contain any "NVS "state variables". The file created during this procedure will conveniently show the installer a "snapshot" of the NVS configuration before the firmware upgrade was begun.

This procedure uses the **nvs dump diff** monitor command. This command creates a file that contains only those configurations that are different from their firmware default values. This file is fairly short since it does not list unchanged default parameters already embedded in the firmware. The **nvs dump** command (i.e., without **diff**) may optionally be used to create an ASCII file containing all of the NVS configuration and calibration parameters. This file is rather long but contains complete configuration information. Only **nvs dump diff** is necessary to capture all necessary information.

NOTE: This procedure should ONLY be used to make a human-readable text file of any NVS parameters that are set to non-default values. This file should NOT be up-loaded back into the recorder!

Steps	Using PCPLUS in a DOS window	Using PCPLUS with windows interface
Open log file	**Alt-F1** Pop-up window prompts for a filename	**Alt-F1** Pop-up window prompts for a filename
Name log file	Enter a path plus a name that includes the firmware version before upgrade e.g. **E:\NVS\xxx.DIF** (where xxx is the version number).	Enter filename (without path or extension) that includes the firmware version before upgrade. e.g. **xxx** (where xxx is the version number). Pcplus will adds ".CAP" extension to this name and uses the previously defined path.
Dump configuration parameters to log file	**nvs dump diff** Data is displayed as it is dumped. When the dump completes this display stops.	**Nvs dump diff** Data is displayed as it is dumped. When the dump completes this display stops.
Close log file	**Alt-F1**	**Alt-F1**
Rename file	Not necessary	Rename the file: **E:\NVS\xxx.CAP** To: **E:NVS\xxx.DIF**

Appendix E: Upgrading from a base-model Trendsetter to a Trendsetter Autoloader

1. Turn off the recorder and unplug the power cable from the TEE-board (J15).

CAUTION: The Autoloader mechanisms may behave erratically if this step is not done!

2. Turn the power back on and wait for the MPE to finish booting up. Make a record of the existing non-default parameters using the **nvs dump diff** command (see Appendix B).

Note: In particular, make sure to record the media parameters for future reference. This is very important, as these and other NVS parameters are not upgraded properly with the following procedure.

3. Load the latest Trendsetter Autoloader firmware into the MPE (see Appendix C)
4. Type **reset** and wait for the mpe to finish booting up.
5. Type **ale upgrade** and respond with **y** to the prompt.
6. Type **reset** and wait for the mpe to finish booting up.
7. Compare the *nvs media* parameters with the values recorded in the .diff file in step 2. The *cthk* parameter should be 0.
8. Turn off the recorder and plug in the power cable on the TEE-board.
9. Turn the recorder power back on and type **ale init.** This command will activate all of the recorder actuators and return an error message if there are any problems.

Note: The sensor magnet for the unload table is mounted on the back cover panel. If this panel is removed, you will get an 'Unload table timed out moving down" error.

10. Type **cal pressure** to calibrate the analog-to-digital converter that measures the system pressure. This procedure will ask for the system air to be turned off, then back on. Type **ale** to display the system air pressure. Make sure it reads 90 psi.

Note: It is quite common for the ale command to display air pressure readings which are significantly different (up to 10 psi difference) from the readings given by the mechanical air pressure gauge. Please use the ale command when adjusting the system air pressure.

11. Type **list version** to display the exposure head firmware version. If the head firmware version is less than 1.56, then the head firmware must be upgraded. Refer to the latest head firmware release notes for detailed instructions on upgrading the head firmware.
12. Configure the maximum allowable plate size as outlined in Appendix G.
13. Upgrade the Allegro workstation software if required (see the Appendix F).

Appendix F: Configuring the Allegro Workstation Software to support manual bypass

For details, refer to the troubleshooting note at: man_bypass1.pdf. The following is taken from that procedure and included here for convenience.

1. The Trendsetter Autoloader requires Allegro workstation software version 1.6b or higher. If version 1.6b is installed and manual bypass support is required, then service pack 2 (SP2) must also be installed. Refer to the SP2 release notes for detailed installation instructions.
2. After installing SP2, the workstation registry must be modified to enable support for the Trendsetter Autoloader. The following steps outline the procedure for modifying the registry.
3. Shut down the Creo Allegro software.
4. Open a DOS box on the workstation.
5. Run the registry editor by typing regedt32 at the command line.
6. Select the window with HKEY_LOCAL_MACHINE highlighted at the top of the window.
7. Use the mouse to select the following directory:

   HKEY_LOCAL_MACHINE/SOFTWARE/Creo/RIPSW/V1.6b/CtpwsConfig/
8. Select **Add Value** from the **Edit** menu.
9. Type **TrendsetterAL** (no spaces) in the **ValueName** field.
10. Select **REG_DWORD** from the **Data Type** pull-down list.
11. Press Enter and type in the value 1 in the Data field.
12. Select OK and exit the registry editor program.
13. Set up a new media type for plates which need to be unloaded using the manual by-pass feature and set the *manual_unload* parameter for this media type to 1 (see Section 8.6).
14. Re-start the Creo Allegro software.

Appendix G: Configuring the maximum allowable plate size

For instructions on configuring the maximum plate size for the Trendsetter AL, please refer to the following document on either the Creo intranet or the service CD: TS_208.pdf.