EPSON RC+ 3.6.1 Release Notes
May 1, 2003

Thank you for using EPSON RC+ 3.6.1. This document contains the latest information for this release. Please read before using this software.

Documentation

All RC+ manuals are in PDF format and are installed on the PC hard disk. These manuals are accessible from the RC+ environment Help menu.

Getting Started

Read the Getting Started chapter in the EPSON RC+ User's Guide. This chapter will refer you to the RC520 / RC420 Controller manuals Installation chapter. This contains information for initial connections and start up.

Upgrading from Previous Versions of EPSON RC+

You may install EPSON RC+ 3.6.1 without uninstalling the previous version. This is recommended because the upgrade software will know which options were previously installed and your system configuration will be preserved.

1. You must first upgrade Windows NT 4.0 to Windows 2000 Professional before upgrading to EPSON RC+ 3.6.1.
   a. Execute MKVER before upgrading to save your system configuration. Select Tools | Maintenance, then click MKVER. Enter a name and save it to floppy.
   b. Upgrade Windows NT 4.0 to Windows 2000.
      1) Boot Windows NT.
      2) Insert the Windows 2000 CD.
      3) When asked if you want to upgrade the current version of Windows, say Yes.
      4) The Windows 2000 installation will preserve the registry and previous applications.
   c. Install Windows 2000 Service Pack 3. This service pack must be installed before you can install EPSON RC+ 3.6.1.

2. Install EPSON RC+ 3.6.1. During installation, the options that were installed previously should be checked. The previous robot and drive unit configurations will be restored.

   Note: When upgrading Vision Guide systems, you may receive an error during vision driver installation concerning mtxdma drivers. These errors can be ignored.

Conveyor Tracking Notes

The following notes are in addition to the information found in the Conveyor Tracking chapter of the EPSON RC+ User's Guide.

Asynchronous reset cameras should be used with high speed conveyors

When using high-speed conveyors with vision, it is recommended that you use asynchronous reset cameras and strobe the encoder board and vision trigger. If using multiple asynchronous reset cameras, you must use ZeroFlg to lock the vision system until the picture is acquired.

For example:

```
AccessVision ' This routine uses ZeroFlg to lock vision resource
VRun FindPart
On strobe, .2
Do
  VGet FindPart.AcquireState, state
Loop Until state = 3
ReleaseVision
```

Verifying new encoder operation

After wiring one or more new encoders, follow these steps to verify operation.

1. Start RC+.

2. From the Setup | System Configuration | Encoders tab, add an encoder for each encoder that was wired and click OK.

3. Create a new project called TestCnv.

4. From Tools | Conveyor Tracking, add a new sensor conveyor for each encoder. Make sure that conveyor 1 uses encoder 1, conveyor 2 uses encoder 2, etc.

5. Now you can use the Cnv_Pulse function to read pulses from each encoder from a program or from the monitor window.

For example, execute this print statement from the monitor window to read the pulses from encoder 1.

```
>? cnv_pulse(1)
```

Or you can write a program:

```
Function main
  Do
    Print Cnv_Pulse(1)
    Wait .5
  Loop
Fend
```

Vision conveyor calibration

When calibrating a vision conveyor, it is important that the vision sequence steps correlate with the parts you are teaching in the correct order. This allows the system to determine the conveyor camera orientation.

The calibration sequence must find two of the parts used for calibration. When using a simple sequence that uses one object for each part, the first object of the sequence must

be taught by the robot as part 1. The second object of the sequence must be taught by the robot as part 2.

The two parts can be anywhere in the field of view. However, to make it as easy as possible for operators to calibrate the conveyor, the parts that will be found in the vision sequence should be located such that part 2 is after part 1 in the direction of part flow. In the figure below, object 1 in the vision sequence is Corr01, which locates Part 1. Object 2 is Corr02, which locates Part 2.
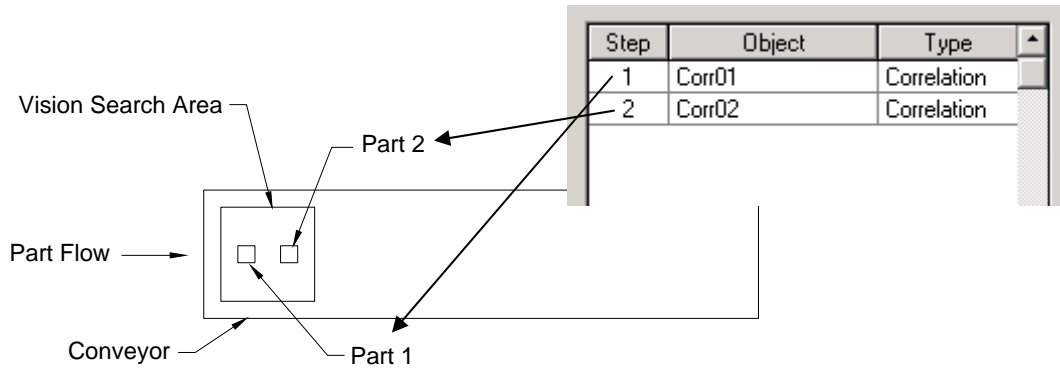
If the vision sequence used to locate the parts is more complex, then the last two objects of the sequence must have the location for parts 1 and 2. The object that finds part 1 must be the second to last object. The object that finds part 2 must be the last object. For example, the following sequence uses two Point objects for the locations of part 1 and part 2. Step 5 locates part 1 and step 6 locates part 2.

Step	Object	Type	Description
1	Corr01	Correlation	Locates feature on part 1
2	Frame01	Frame	Single point frame using Corr01 as origin
3	Corr02	Correlation	Locates feature on part 2
4	Frame02	Frame	Single point frame using Corr02 as origin
5	Point01	Point	Point in Frame01 that locates part 1.
6	Point02	Point	Point in Frame02 that locates part 2.

PG Motion System

The PG Motion System is a new option that enables you to drive multiple stepper or servo drives from SPEL+. For instructions, refer to the PG Motion System manual. This manual is installed on the hard disk when the PG Motion System is installed. It can also be found on the EPSON RC+ Installation CD.

Note that when using PG robots, the PG board(s) must be installed on the system. PG robots are currently not supported in Dry Run. However, if the system is in Dry Run, the PG robots will continue to work.