

The Itermec logo, featuring the word "Intermec" in a bold, blue, sans-serif font. A large, light gray circular graphic with a smaller circle inside and a line connecting them is positioned behind the logo.

Intermec



Installation Guide



Online Verifier Kit
for EasyCoder® 3400e, 4420,
and 4440 Printers

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Document Change Record

This page records changes to this document. The document was originally released as version 001.

Version	Date	Description of Change
002	6/2004	Added ferrites to the printer/power cable illustrations and made minor updates to styles and content.

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Introducing the Online Verifier (OLV)

The RJS™ SV100™ Online Verifier (OLV) analyzes bar code print quality and detects print quality failures as your EasyCoder 3400e, 4420, or 4440 printer prints labels. The OLV can be configured to grade bar codes at a user-specified ANSI level. With the OLV, you can make sure that your printers are operating at specified levels.

Contact your local Intermec Sales Representative for availability of the OLV for the 3400e printer.



Before you apply power to the online verifier, you must read the laser safety information in the *SV Series Scanner/Verifier Operator's Guide*. A copy of this guide is included in the shipping box from RJS.

Avertissement: Avant de mettre sous tension le vérificateur en ligne, vous devez lire les informations relatives à la sécurité laser contenues dans le guide *SV Series Scanner/Verifier Operator's Guide*. Une copie de ce guide est incluse dans la boîte d'expédition de RJS.

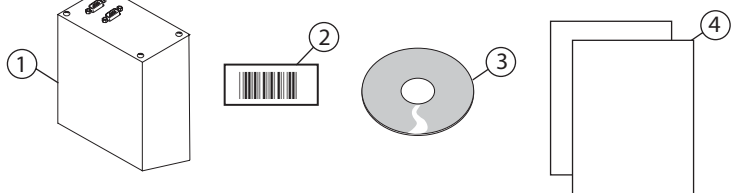
Unpacking the Online Verifier Kit

When you order the OLV kit, you receive a shipping box from RJS and a shipping box from Intermec. The contents of the two boxes are shown next.



Note: If you order a new printer with the online verifier option, you receive a second shipping box from Intermec, which contains the printer.

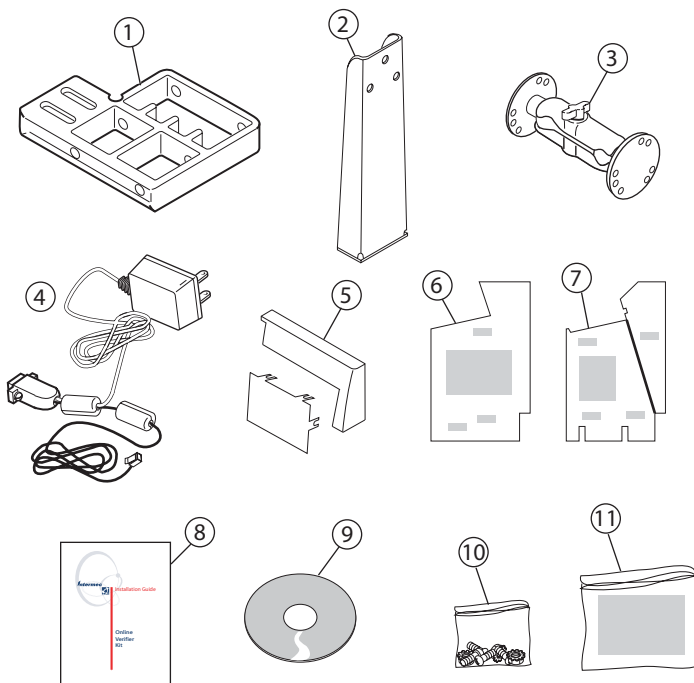
Make sure you have all of these parts. Contact your Intermec representative if anything is missing or damaged.



Contents of the Shipping Box Sent From RJS

Parts supplied by RJS include:

- ① SV100 Online Verifier (OLV)
- ② Calibration bar code in a plastic sleeve
- ③ RJS CD containing ScanVision software and a PDF copy of the *ScanVision User's Manual*
- ④ *SV Series Scanner/Verifier Operator's Guide* (P/N 002-7942 E) and a compliance document



Contents of the Shipping Box Sent From Intermec

Parts supplied by Intermec include:

- ① Horizontal base
- ② Vertical arm
- ③ RAM mount (double socket arm and two rubber balls)
- ④ Combined printer/power cable (P/N 072915) to connect the verifier to both the printer and the power source
- ⑤ New bezel and plate for media cover
- ⑥ Ladder Direction Bar Code Alignment Guide (P/N 073978)
- ⑦ Picket Fence Direction Bar Code Alignment Guide (P/N 073978)
- ⑧ This installation guide
- ⑨ SV100 Online Verifier Kit CD (P/N 073992) containing the printer firmware upgrade files, the configuration file, PrintSet 2.51 (or later), and a PDF copy of this installation guide
- ⑩ Hardware package containing these parts:

Quantity	Description
2	6-32 by 1/2 inch long flathead Phillips screws
2	10-32 by 1/2 inch long flathead Phillips screws
3	10-32 by 5/8 inch long pan-head Phillips screws
2	10-32 by 3/4 inch long pan-head Phillips screws with captive lock washers
2	10-32 nuts with nylon inserts
3	10-32 nuts with captive lock washers
8	Small adhesive cable mounts

- ⑪ Verifier port kit (P/N 074010) containing these parts:

Quantity	Description
1	Verifier adapter cable
1	Connector plate
2	Screws
1	Warning sheet: Do NOT open this package.

Planning the Installation

Make sure you have the cables and tools listed below. Also, you may need to discard or set aside some of the parts in the online verifier kit, depending on how you ordered the OLV.

If you ordered a new printer with the online verifier option:

- Discard the cutter port kit (P/N 074010). These parts have already been installed in your printer.
- Make sure you have a 9-pin to 9-pin serial cable to connect the verifier to a PC. (If you order this item from Intermec, ask for P/N 059167.)
- Make sure you have a 3/8 inch nut driver or socket and a number two Phillips screwdriver with a shaft at least 12.7 cm (5 in) long.

If you ordered an OLV kit to install on an existing printer:

- Contact your Intermec representative to arrange for a qualified service technician to install the verifier port.



A trained Intermec service technician must install the verifier port. If you open the electronics cover, you will void the warranty and may cause damage to the internal components. Opening the electronics cover exposes the user to shock hazards which may result in injury or death.

Avertissement: Le vérificateur doit être installé par un agent de maintenance Intermec qualifié. L'ouverture du couvercle du boîtier des composants électroniques entraînera l'annulation de la garantie, et peut endommager les composants internes. L'ouverture du couvercle du boîtier des composants électroniques expose l'utilisateur à des risques d'électrocution qui peuvent résulter par des blessures ou la mort.

- Set aside the verifier port kit (P/N 074010) for use by the Intermec service technician. Do NOT open this package.

- Make sure you have a 9-pin to 9-pin serial cable to connect the verifier to a PC. (If you order this item from Intermec, ask for P/N 059167.)
- Make sure you have a 9-pin to 25-pin null modem cable to upgrade the printer firmware. (If you order this item from Intermec, ask for P/N 048693.)
- Make sure you have a 3/8-inch nut driver or socket and a number two Phillips screwdriver with a shaft at least 12.7 cm (5 in) long.



Note: If your printer already has a cutter installed, be aware that you cannot use both a cutter and the OLV at the same time. Remove the cutter and use the existing cutter port for the OLV. Contact your Intermec representative to arrange for a qualified service technician to install the internal verifier adapter cable that is part of the verifier port kit (P/N 074010).

Installing the New OLV Hardware

Follow these steps to install the new online verifier hardware:

- Remove the media cover.
- Attach the OLV to the printer and PC.
- Modify the media cover.
- Familiarize yourself with the OLV back panel.

Removing the Media Cover

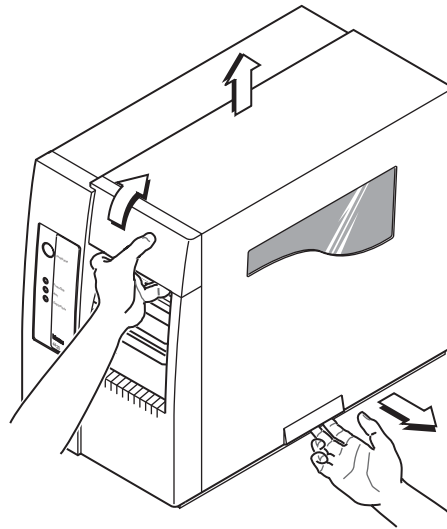
Your first step is to remove the media cover from the printer.

To remove the media cover

- 1 Place the fingers of your right hand under the embossed section of the media cover (the media cover release). Pull the bottom of the media cover away from the base of the printer.
- 2 Grasp the bezel on the front of the media cover with your left hand and lift the front of the media cover upward to release it from the printer frame.

If you ordered a new printer with the online verifier option, there is no bezel. Grasp the front edge of the media cover with your left hand.

- 3 Lift the media cover away from the top of the printer.

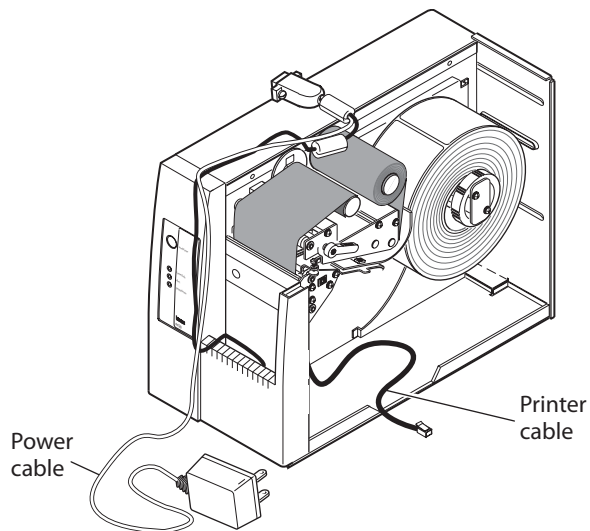


Attaching the OLV to the Printer and PC

Follow these steps to install the mounting kit and OLV onto the printer, and to connect the OLV to your PC.

To attach the OLV

- 1 Place the 15-pin connector of the combined printer/power cable on top of the printer, as shown in the next illustration. Route the printer cable into the media opening of the printer. Route the power cable down the side of the printer.

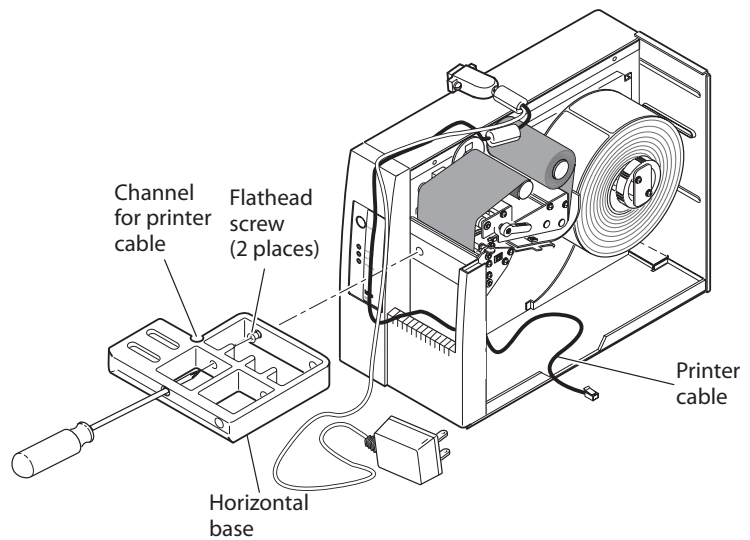


Media Access Door: This printer is shown with the media access door removed. If the media access door is still installed on your printer, you may remove it or leave it open and route the cable above it.

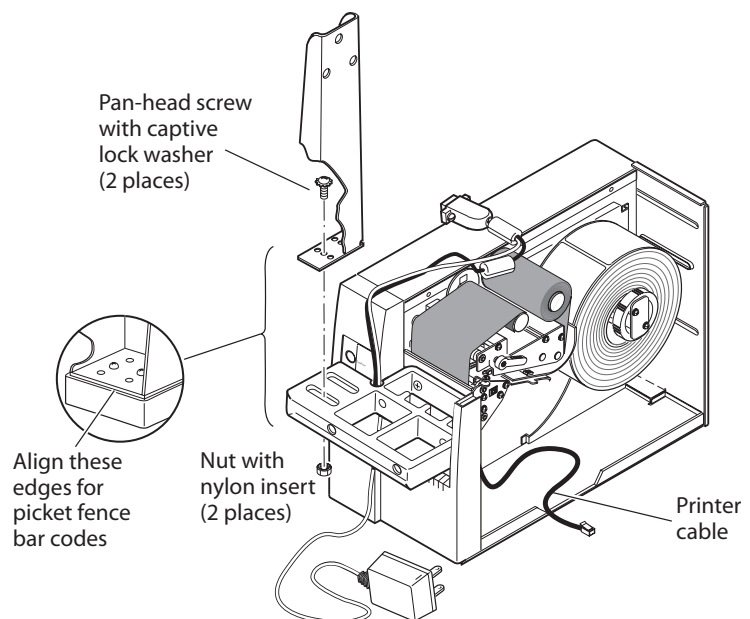
- 2 Attach the horizontal base to the front of the printer using two 10-32 by 1/2 inch long flathead Phillips screws.



Note: Make sure the horizontal base does not pinch the two cables. The printer cable fits into the channel cut into the horizontal base. The power cable fits in the gap between the horizontal base and the side of the printer.



- 3** Attach the vertical arm to the horizontal base using two 10-32 by 3/4 inch pan-head Phillips screws with captive lock washers and two nuts with nylon inserts.

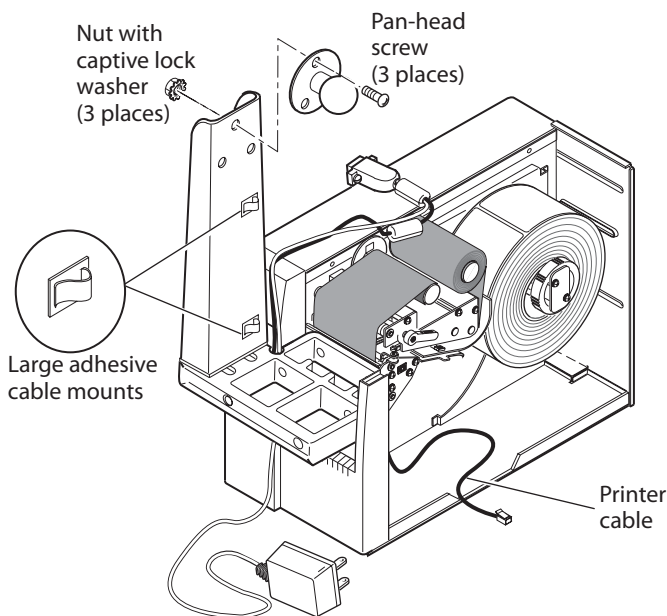
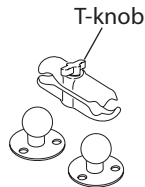




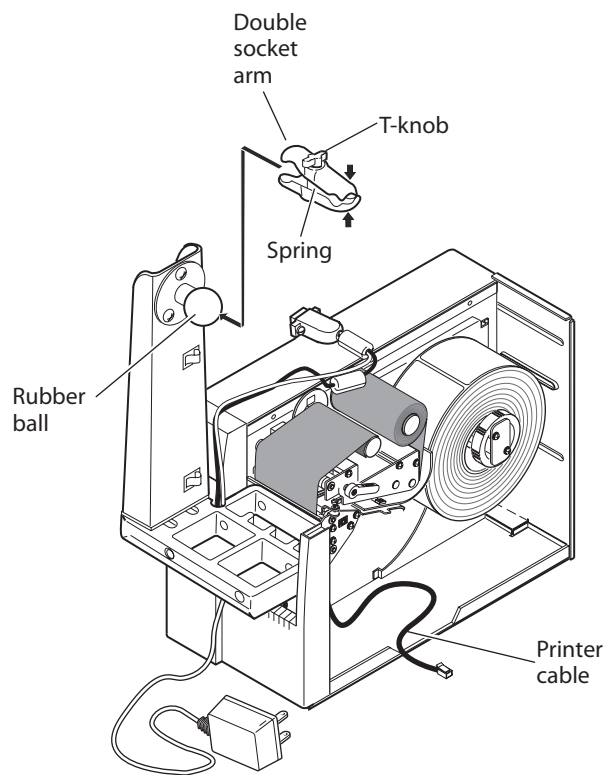
Note: The horizontal base includes two slots for the screws. To determine where along the slot to attach the screws, consider the size and location of the bar code to be scanned as it exits the printer:

- To print *picket fence bar codes* (defined on page 34), mount the vertical arm so the edge lines up with the edge of the horizontal base (shown on page 14).
- To print *ladder bar codes* (defined on page 35), the placement of the vertical arm depends on the location of the bar code on the label.

- 4 Use the nut driver or socket to tighten the two nuts with nylon inserts. Be sure the nuts are tightened completely so the vertical arm cannot move. Later, when you adjust the position of the OLV, you may need to move the vertical arm.
- 5 Loosen the T-knob on the RAM mount and remove the two rubber balls from the double socket arm.
- 6 Attach one rubber ball to the vertical arm using three 10-32 by 5/8 inch pan-head Phillips screws and three nuts with captive lock washers.



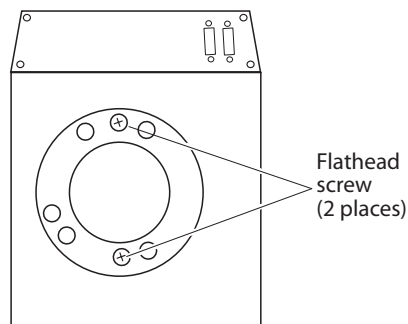
- 7 Attach the two large adhesive cable ties to the vertical arm, exactly as shown in the previous illustration.
- 8 Pinch the end of the double socket arm that contains the spring. Insert the open end of the double socket arm over the rubber ball you attached to the vertical arm. When you release the spring, the double socket arm remains attached to the ball.



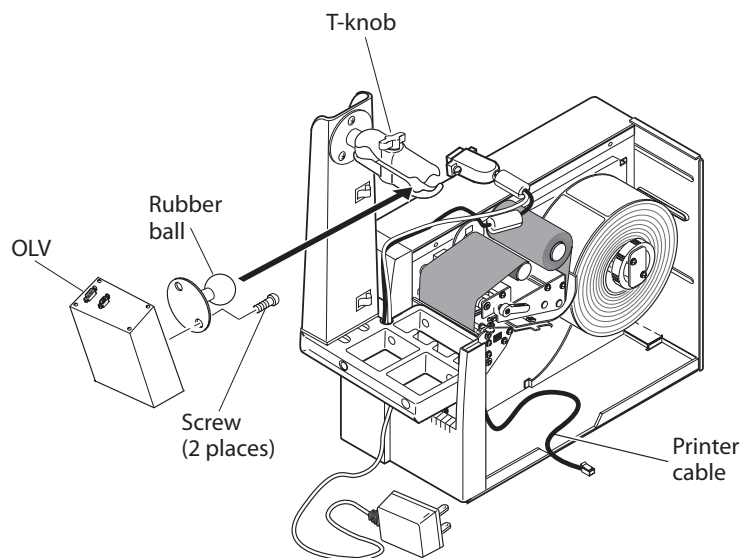
Note: The T-knob should point about 30° from vertical, not straight up.

- 9** Attach the remaining rubber ball to the OLV using two 6-32 by 1/2 inch flathead Phillips screws.

Make sure you orient the rubber ball as shown in this illustration.



- 10** Taking care to hold the OLV firmly, insert the OLV/ball assembly into the double socket arm and tighten the T-knob until the OLV is firmly supported by the double socket arm.



To prevent equipment damage, do not release the online verifier until you are sure that the double socket arm holds the online verifier securely in place.

Attention: Afin de prévenir tout endommagement de l'équipement, ne relâchez le vérificateur en ligne que lorsque vous êtes certain que le bras à double douilles maintient ce dernier solidement en place.

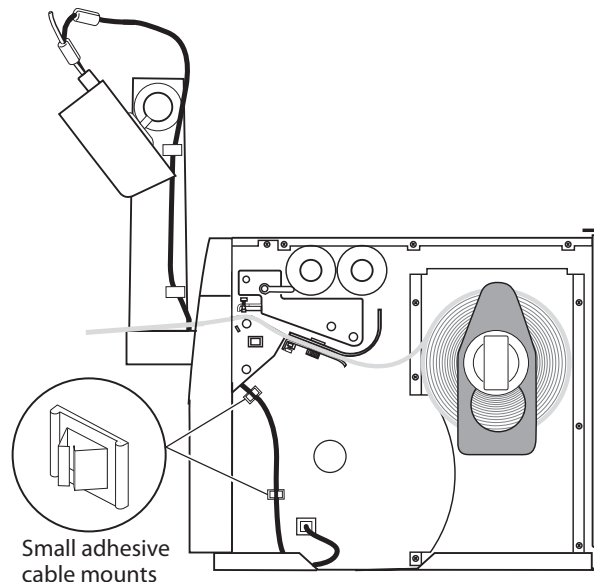


Note: Make sure that you orient the OLV/ball assembly as shown in the previous illustration, with the laser exit window facing down and the 15-pin I/O port close to the vertical arm. Later in the installation, you will use an alignment guide, ScanVision, and the calibration bar code to finalize the position of the OLV.

- 11** Insert the combined printer/power cable connector into the 15-pin I/O port on the OLV.
- 12** Insert the printer cable into the cutter port at the base of the inside wall of the printer.

If there is no cutter port, you need to arrange for an Intermec service technician to install the port. For help, see page 10.

- 13** Secure both cables to the horizontal arm with the large adhesive cable ties.
- 14** Attach the two small adhesive cable ties to the inside wall of the printer. Secure the printer cable with the ties so that any loose cable is looped along the bottom of the printer, where it cannot interfere with printer operation.



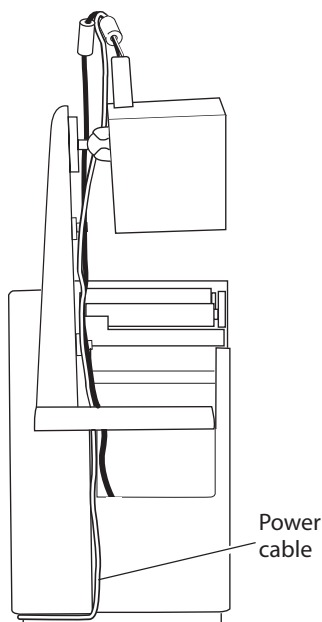
- 15 Attach one end of the serial communications cable (P/N 059167) to the 9-pin serial connector on the OLV. Attach the other end of the cable to the serial connector on your PC.



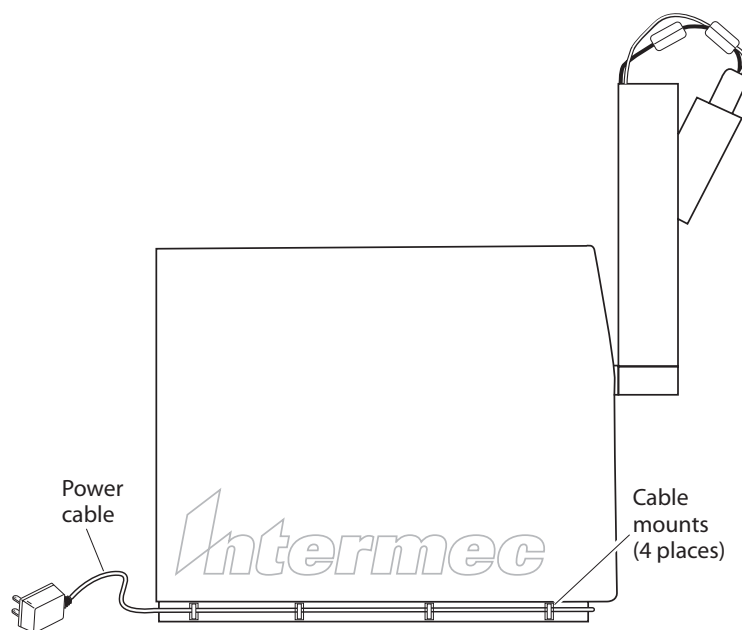
Before you apply power to the online verifier, you must read the laser safety information in the *SV Series Scanner/Verifier Operator's Guide*. A copy of this guide is included in the shipping box from RJS.

Avertissement: Avant de mettre sous tension le vérificateur en ligne, vous devez lire les informations relatives à la sécurité laser contenues dans le guide *SV Series Scanner/Verifier Operator's Guide*. Une copie de ce guide est incluse dans la boîte d'expédition de RJS.

- 16 Route the power cable down the front of the printer as shown in the next illustration.



- 17 Attach the four cable mounts to the side of the printer with the cable clip facing down. Route the power cord along the side of the printer and secure it in the clips.



- 18 Plug the power end of the combined printer/power cable into a surge protector or power outlet.

Modifying the Media Cover

Follow these steps to install the new bezel and plate onto the media cover, but do not replace the media cover onto the printer until later.

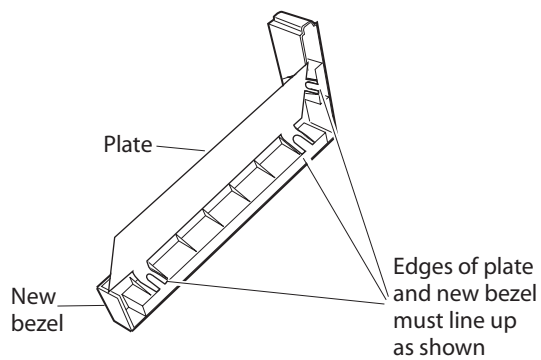
To install the new bezel and plate onto the media cover

- 1 Loosen the three screws and washers that attach the existing bezel to the media cover.

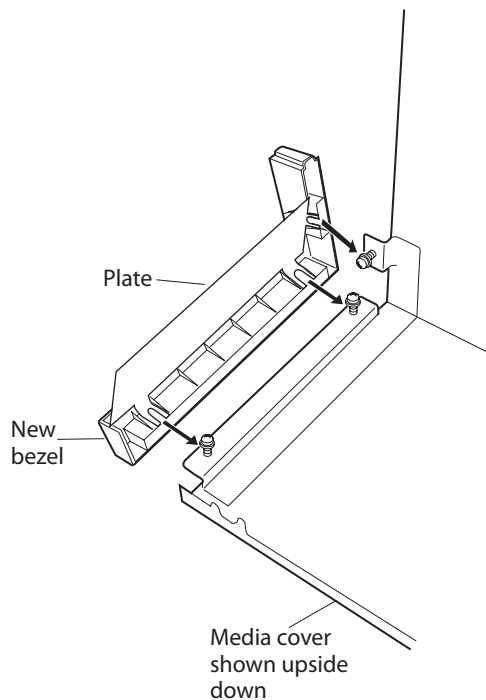


Note: If you ordered a new printer with the online verifier option, there is no bezel to remove. Loosen the three screws on the media cover and skip ahead to Step 3.

- 2 Remove the existing bezel.
- 3 Place the media cover upside down on your work surface.
- 4 Align the edges of the slots on the plate with the edges of the slots in the new bezel.

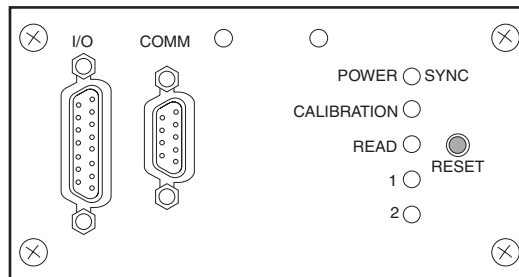


- 5 Attach both plate and bezel to the media cover with the three screws and washers you loosened in Step 1.



- 6 Set the media cover aside. Do not replace the media cover onto the printer at this time.

Familiarizing Yourself With the OLV Back Panel



OLV Back Panel: Use this illustration and the next table to identify the components of the OLV back panel.

Identifying the OLV Back Panel Components

Component	Description
I/O connector	Connects the OLV to the printer and power.
COMM connector	Connects the OLV to the serial port of a PC.
Power/Sync LED	This LED is green when the OLV is receiving power and is yellow when triggered.
Calibration LED	This LED blinks yellow when the OLV is being calibrated.
Read LED	This green LED turns on when the OLV is decoding a bar code.
LED 1	This green LED turns on when an ANSI, contrast, or quiet zone failure occurs.
LED 2	This green LED turns on when the OLV partially reads or does not read a bar code.
Reset button	To turn off the laser beam, press and hold the Reset button until the beam turns off. To turn on the laser beam, press and release the Reset button.

Installing and Configuring the Software

You need to perform several software and configuration tasks:

- Install PrintSet.
- Upgrade the printer firmware.
- Choose Reprint Mode or No Reprint Mode.
- Configure Reprint Mode or No Reprint Mode.
- Install ScanVision.
- Send the configuration file to the OLV.

These tasks are described in detail in the next sections.

Installing PrintSet

You need PrintSet for various tasks associated with installing and using the online verifier. You can install PrintSet from the SV100 Online Verifier Kit CD or from the Intermec web site.



Note: If you already have a copy of PrintSet, make sure you are using at least PrintSet version 2.51. Run PrintSet and click **Help > About** to display the version. If you have an older copy of PrintSet, uninstall it by opening the Control Panel and double-clicking the **Add/Remove Programs** icon. Select **Intermec PrintSet** and click the **Change/Remove** button.

To copy PrintSet from the SV100 Online Verifier Kit CD

- 1 Insert the SV100 Online Verifier Kit CD into the CD drive of your PC. The SV100 Online Verifier Kit window appears.
- 2 Select **Software** and double click **PrintSet 2.51** (or later) to start the installation wizard.
- 3 Follow all the prompts to install the software.

To download PrintSet from the web

- 1 Go to the Intermec website at <http://www.intermec.com>.
- 2 Select **Service & Support > Downloads**.

- 3 Choose your printer (such as **Printers: EasyCoder 4440**) from the drop-down menu.
- 4 Double-click **PrintSet ver. 2.51** (or later) from the table that appears.
- 5 Follow all the prompts to download the software.

Upgrading the Printer Firmware

If you ordered the online verifier kit for an existing printer, you need to upgrade the printer firmware using PrintSet.



Note: If you ordered a new printer with the online verifier option, you do not need to upgrade the printer firmware. Skip ahead to “Choosing Reprint Mode or No Reprint Mode” on page 26.

You need these items to upgrade the firmware:

- Null modem cable (P/N 048693)
- SV100 Online Verifier Kit CD, which contains the two firmware upgrade files
- PrintSet version 2.51 (or later) installed onto your PC, as described in the previous section

To upgrade the printer firmware

- 1 If you are using a laptop, make sure you turn off all power-saving features and you have a 100% fully charged battery before you start the firmware download process. If your laptop turns off during the firmware download process, the printer may be left in a state that requires being sent to an Intermec service office for repair.
- 2 Use a null modem cable to create a serial connection between your PC and printer. A parallel connection is not supported.
- 3 Make sure the printer is turned on and the null modem cable is connected to the PC and the printer.
- 4 Insert the SV100 Online Verifier Kit CD into the CD drive of your PC. The SV100 Online Verifier Kit window appears. Minimize the window.

- 5 Run PrintSet. If you get a communication error, click the **Auto-Connect** button. PrintSet attempts to find the printer. PrintSet must find the printer before you can attempt a firmware download. If PrintSet cannot find the printer, this will need to be resolved before you can download firmware.



Note: If you are using Windows NT 4.0, 2000 or XP, make sure that you do not have any other application or Windows driver configured for the same COM port that the printer is connected to. These operating systems do not allow more than one device on a COM port at the same time. If you have a Windows driver configured for the same COM port that the printer is connected to, go into the Properties of that driver and change the target port to File. This will make the COM port available for PrintSet to use. You may have to reboot the PC before the COM port becomes available.

Once PrintSet has successfully connected to the printer, you can attempt to download the firmware.

- 6 Click **DataXfer** and select **Change Firmware**. The Change Firmware dialog box appears.
- 7 Click the **Select Firmware** button.
- 8 Browse to the Firmware directory on your CD drive.
- 9 Decide which firmware upgrade file to use:
 - **200OLV ν nnn.exe** Use this file to upgrade the firmware in EasyCoder 4420 and 3400e 200 dpi printers.
 - **400OLV ν nnn.exe** Use this file to upgrade the firmware in EasyCoder 4440 and 3400e 400 dpi printers.



Note: The *nnn* in the filename indicates the version of the firmware release.

- 10 Select the file and click **Open**.
- 11 The Change Firmware dialog box displays the current firmware version and what version the printer will be changed to. Click **OK**.

- 12 A DOS window opens, and the firmware files unpack on their own. If the DOS window does not close after 10 seconds, manually close it by clicking the **X** in the upper right corner.
- 13 A warning box tells you what the current firmware version is and what you will be changing it to. Click **OK**.
- 14 PrintSet starts the firmware download. After a few seconds, a progress bar appears and shows the firmware download status. The whole process should take about 10 minutes. **DO NOT** interrupt the download process. Interrupting the download process can cause the printer to no longer turn on correctly and it may have to be sent to an Intermec service office to be repaired.

Once the firmware is finished downloading, the printer warm boots and the PrintSet main screen appears.



Note: If a communication error dialog box pops up right after the firmware finishes upgrading, click the **Retry** button.

Choosing Reprint Mode or No Reprint Mode

This section describes the two printer modes: Reprint Mode and No Reprint Mode. As you study these descriptions, consider the types of bar code print jobs you perform. You may need to select a different mode for each new print job.

Using Reprint Mode

If a bar code fails while you are using the Reprint Mode, the printer voids the failed label and reprints it once.

Operational overview: The printer prints the bar code label and moves it completely out so that the entire label passes under the laser beam.

If the bar code is verified, the printer retracts the label until the printhead is in position to begin printing the next label. (The printer retracts each label so that no labels are left blank.)

If the bar code fails, LED 1 or LED 2 turns on. The printer retracts and voids the failed label, waits for an operator to push the Feed/Pause button, and then reprints the label once. If the reprinted label also fails, pushing the Feed/Pause button prints the next label in the print job.

The label remains at the tear bar until another label is ready to be printed, and then the label retracts. Therefore, if you send one label, it does not retract until you send another. If you send multiple labels, the printer prints, verifies, retracts, and prints the next label until there are no more labels waiting to be printed.

When to use this mode: Use this mode when you print a batch of labels where the data changes for every label, reprints are required, and throughput is not important.

Use this mode when you need the entire printed image to be verified. (In No Reprint Mode, the last 17 mm [2/3 in] of the printed image does not pass under the scan beam so it cannot be verified.)

If you need the entire printed image to be verified, but you do not want failed labels to be reprinted, you can choose Reprint Mode and use the Intermec Printer Language (IPL) command Media Fault Recovery Mode, Set (<SI>e1) to stop the printer from reprinting the failed label.

Throughput: Throughput is reduced substantially because every label is extended to the tear bar and retracted after being printed.

Limitations: None.

Using No Reprint Mode

If a bar code fails while you are using the No Reprint Mode, the printer voids the failed label but does not reprint it.

Operational overview: The printer prints the bar code label and moves it so that all but the last 17 mm (2/3 in) of the label passes under the laser beam. (This allows the printer to continue printing the next label without having to retract the printed label.)

If the bar code is verified, the printer begins printing the next label or waits for another label to be sent.

If the bar code fails, LED 1 or LED 2 turns on. The printer retracts the label and voids it. The failed label is not reprinted. The printer does not print the next label in the print job until an operator presses the Feed/Pause button.

When to use this mode: Use this mode when you print a large batch of identical labels where throughput is important and reprints of a failed label are not necessary.

Use this mode when you do not need the entire printed image to be verified, because in No Reprint Mode the scan stops when the last line of the printed image is printed. Therefore, the last 17 mm (2/3 in) of the printed image is not scanned. For details, see page 50.

Throughput: The next table shows the minimum bar code height required for various print speeds.

Minimum Bar Code Height (inches)	Print Speed (ips)
0.36	8
0.25	7
0.21	6
0.175	5
0.15	4

Limitations: Using No Reprint Mode imposes important limitations on your design of bar code labels. For details, see page 50.

Configuring Reprint Mode or No Reprint Mode

Use PrintSet version 2.51 (or later) to configure the printer for Reprint Mode or No Reprint Mode.



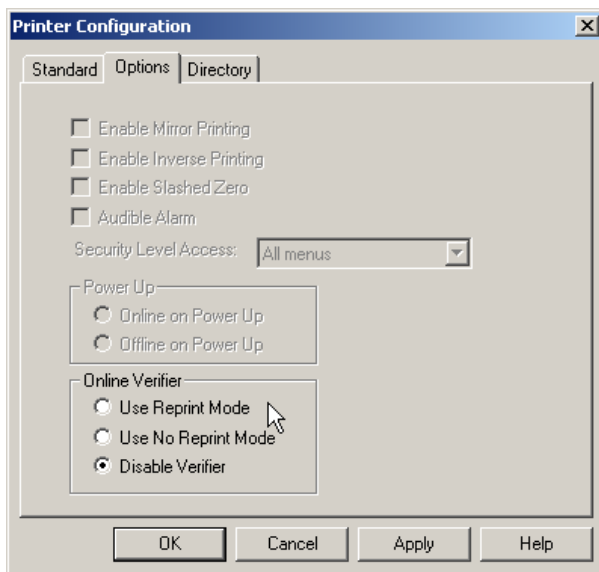
Note: You can also configure the mode with the IPL command Verifier Mode, Set:

<SI>vn

where *n* is 1 for Reprint Mode
 2 for No Reprint Mode
 0 to disable the OLV

To configure the printer mode

- 1 Run PrintSet.
- 2 From the **Configuration** menu, choose **Printer**. The Printer Configuration dialog box appears.
- 3 Click the **Options** tab.



- 4 Click **Use Reprint Mode** to use Reprint Mode.
Or click **Use No Reprint Mode** to use No Reprint Mode.
- 5 Click **OK**.
- 6 From the **File** menu, choose **Exit**.
- 7 PrintSet prompts you to save your changes. Click **Send to Printer**.

Installing ScanVision

You can load ScanVision from the CD that comes with the OLV or from the RJS web site.

The easiest way to configure your OLV is to use ScanVision. If you prefer, you can use the SV100 command language. For a description of the commands and how to use them, see the *SV Series Scanner/Verifier Operator's Guide*.

To install ScanVision from the CD

- 1 Insert the RJS CD into the CD drive of your PC. The ScanVision dialog box appears.
- 2 Follow the instructions for installing ScanVision.
- 3 Remove the CD from the CD drive.

To install ScanVision from the web site

- 1 Go to the RJS web site at <http://www.rjs1.com>.



Note: The RJS web site URL contains the letters R, J, and S, followed by the number 1.

- 2 Click **Download Area**.
- 3 Click **ScanVision vx.xx**, where *x.xx* indicates the current version of the software available on the site. The compressed files download to your PC.
- 4 Extract the files.
- 5 If Setup does not launch automatically, double-click **Setup**. Follow the directions to install the ScanVision software.

Sending the Configuration File to the OLV

The SV100 Online Verifier Kit CD contains a configuration file that controls how the OLV operates. You cannot change many of the parameters; however, you may need to change the parameters that control these characteristics:

Description	Default
Minimum number of bar codes per label	One bar code
ANSI print grade	Disabled
Minimum number of good scans for a valid read	Two good scans
Picket fence or ladder bar codes	Picket fence



Note: An OLV purchased through Intermec Product Links already contains the correct initial configuration. You do not need to send the configuration file to the OLV. However, you should continue reading this section to determine if you need to create a customized configuration file.

You use ScanVision to send this file to the OLV and to create a customized configuration file for each type of print job you perform.

To send the configuration file to the OLV

- 1 Insert the SV100 Online Verifier Kit CD into the CD drive of your PC. The SV100 Online Verifier Kit window appears. Minimize this window.
- 2 Run ScanVision.
- 3 Press **Ctrl-Shift-F5**.
- 4 If a password is requested, type **doorknock** and click **Close**. The Verifier Configuration Setup screen appears. The values on this screen are the factory defaults for the OLV. Ignore these values.

Verifier Configuration Setup -- U:\My Documents\SV100_CONFIG_M00.cfg			
~HS	25	~LT	1
~HP	0	~LP	0
~Sh	0	~LX	1
~SI	0	~LV	0
~LL		~PD	5
~LM	32	~PC	0
~LN	1	~Pt	99
~LF	40	~LD	0
~HQ	0	~PR	0200
~HO	1	~HL	0
~LA	0	~HJ	200
~LS	2	~HK	2000
		~HC	2600
		~HG	1300
		~HN	1300
		~HU	400
		~HV	199
		~HY	70
		~HX	78
		~H=	0
		~HI	450
		~H@	50
		~SN	50
		~Lp	0
		~L	1
		DAC1	255
		DAC2	255
		DAC3	255
		DAC4	255
		~LQ	0
		~Lw	0
		~Ld	0
		~L*	0
		~LC	0
		~H#	10
		~OS	0
		~Hs	0

Command transmissions for unit dependent parameters
☒ Disable ☐ Enable

Send ALL Query Permanent Print Return

- 5 From the **File** menu, choose **Open**.
- 6 Browse to the Software directory on your CD drive.
- 7 Select the IntermecOLV.cfg file and click the **Open** button. The values in the IntermecOLV.cfg file appear in the fields on the Verifier Configuration Setup screen.
- 8 Make sure that the **Command transmissions for unit dependent parameters** at the bottom of the screen is set to Disable.
- 9 Click the **Send ALL** button.
- 10 Click the **Permanent** button.
- 11 Click the **Return** button. The IntermecOLV.cfg parameters have now been sent to the OLV.
- 12 Remove the CD from the CD drive.

To create a customized configuration file

- 1 Run ScanVision.
- 2 Press **Ctrl-Shift-F5**.
- 3 If a password is requested, type **doorknock** and click **Close**. The Verifier Configuration Setup screen appears.
- 4 Click the **Query** button to retrieve the OLV's configuration settings. Any values differing between the file on the screen and the OLV are marked with a red X.
- 5 Enter new parameter settings, as needed. See the table on the next page for help.
- 6 Make sure **Command transmissions for unit dependent parameters** at the bottom of the screen is set to Disable.
- 7 Click the **Send ALL** button to send the new values to the OLV.
- 8 Click the **Query** button to retrieve the OLV's configuration settings. Any values differing between the file on the screen and the OLV are marked with a red X. Resolve any differences before proceeding.

- 9 From the File menu, choose **SaveAs** to save these configuration settings in a new configuration file. The SaveAs Verifier Configuration File dialog box appears.
- 10 Specify the name of the new configuration file and click the **Save** button.

IntermecOLV.cfg Configuration File Parameters

Parameter	Description	Settings
~LN	Sets the minimum number of bar codes per label. The default is 01 (one bar code per label).	01 to 48 for picket fence bar codes 01 for ladder bar codes
~LA	Sets the overall passing grade. For example, if you set this parameter to 32, the OLV fails any bar code with an ANSI Symbol grade of 3.1 or lower. The default is 00 (disabled).	00 to 40
~LS	Sets the minimum number of good scans for a valid read. The default is 02 (two scans).	02 to 99
~LT	Enables or disables partials at the decoder level for Interleaved 2 of 5 codes only. The default is 0 (disabled).	0 = disable 1 = enable
~LP	Enables or disables partials at the decoder level for all symbologies. The default is 0 (disabled).	0 = disable 1 = enable
~LV	Controls how the OLV uses the LEDs to indicate error conditions. Make sure this parameter is set to 02. The default is 02 (Mode 2).	02 = Mode 02 Do not modify this parameter.
~HL	Sets the bar code direction to picket fence or ladder. The default is 0 (picket fence).	0 = picket fence 1 = ladder

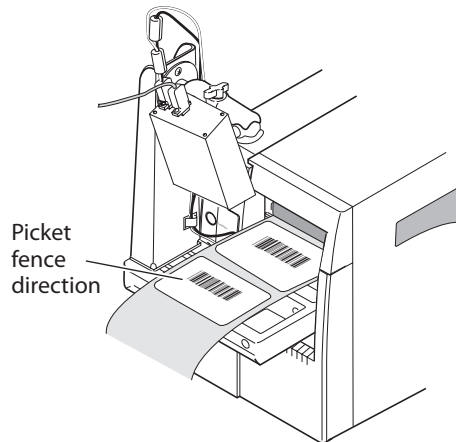
Adjusting and Calibrating the OLV

You need to perform these tasks when installing the online verifier kit for the first time and also when you start a new print job with different media or with bar codes printed in a new location or orientation:

- Identify picket fence and ladder bar codes.
- Position the OLV for picket fence or ladder bar codes.
- Calibrate the OLV.
- (Optional) Fine tune your reflectance profile.

Identifying Picket Fence and Ladder Bar Codes

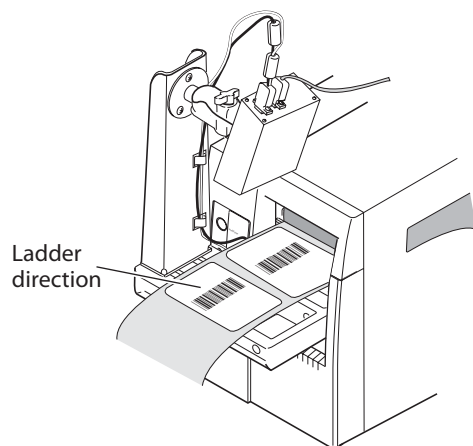
You need to identify the orientation of the bar code as it travels through the laser beam. You can set up the OLV to read picket fence bar codes or ladder bar codes, but not both at the same time.



Picket Fence Direction Bar Code



Note: Although this illustration (and the next one) show the media cover on the printer, your printer should not have the media cover on yet.



Ladder Direction Bar Code

Your next step is to adjust the position of the OLV:

- To print picket fence bar codes, follow the steps in the next section, “Adjusting the Position of the OLV for Picket Fence Bar Codes.”
- To print ladder bar codes, follow the steps in “Adjusting the Position of the OLV for Ladder Bar Codes” on page 41.

Adjusting the Position of the OLV for Picket Fence Bar Codes

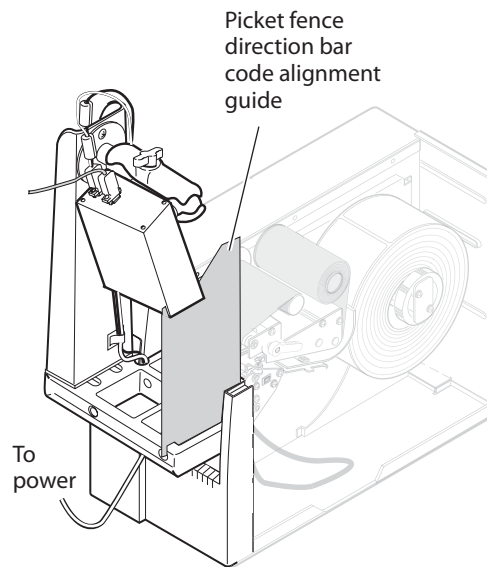
To make sure that the OLV scans the picket fence bar codes at the correct size and in the correct orientation, you need to use the alignment guide, ScanVision, and the calibration bar code as described next.



Note: To print ladder bar codes, skip ahead to “Adjusting the Position of the OLV for Ladder Bar Codes” on page 41.

To position the OLV for picket fence bar codes

- 1 Position the Picket Fence Bar Code Alignment Guide so that the slots fit on the cross beams on the right side of the horizontal base and the notch fits against the printer tear bar. For help, see the callouts on the alignment guide.



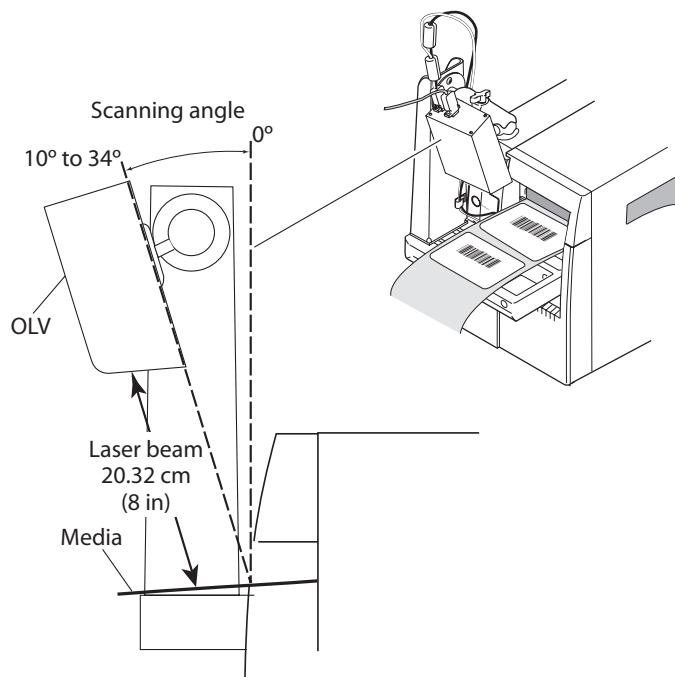
- 2 Loosen the T-knob just enough to allow you to adjust the OLV so the laser exit window presses against the cutout section of the alignment guide, where indicated by the callout on the alignment guide.
- 3 Adjust the position of the OLV until the laser beam is projected onto the printer tear bar. Do not allow the weight of the OLV to bend the alignment guide.



Note: If you print self-strip bar codes, the label taken sensor is installed on the tear bar. You need to position the laser beam in front of the tear bar instead of directly on it.

- 4 Repeat Steps 1 through 3 with the alignment guide placed at the left side of the horizontal base.

When the laser beam is on the tear bar, you have come close to achieving the correct scanning angle of 10 to 34 degrees and the correct mounting distance of 20.32 cm (8 in), as shown in the next illustration.



- 5 Tighten the T-knob to secure the OLV in place. Do not let the OLV move as you tighten the T-knob.
- 6 Place the calibration bar code under the laser beam in the same position as your bar codes will appear on the label. Make sure that the laser beam is still aimed at the tear bar. The Read LED lights when the OLV can read the bar code.



Note: You may need to insert the calibration bar code under the printhead to make sure that the laser beam is on the bar code. Raise the printhead, insert the calibration bar code between the printhead and main platen, and close the printhead.



Note: If you need to place the calibration bar code to the far left, close to the vertical arm, you may need to fold the card on which the calibration bar code is printed. Make sure to leave enough blank space to the left of the bar code for the quiet zone (100 mils or about 1/8 in).



Note: If you cannot position the laser beam so that it appears across the entire calibration bar code, you may need to adjust the position of the vertical arm.

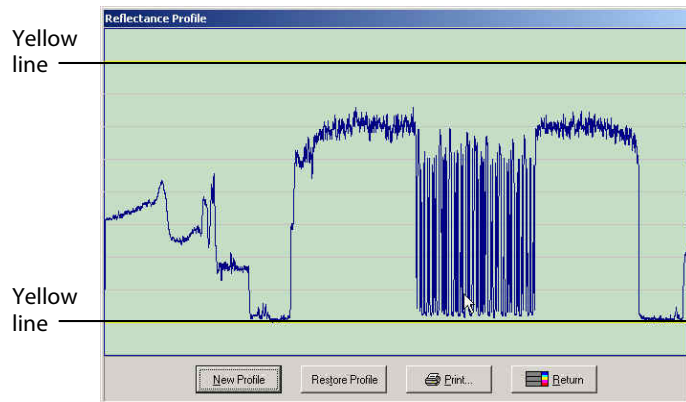
7 Carefully place the media cover back onto the printer.



Note: You may need to adjust the position of the new bezel and plate if the plate hits the label taken sensor (for self strip) or blocks the path of the laser beam. To adjust the position, change the location of the screws in the slots in the new bezel and plate. For help, see Steps 3 and 4 of the procedure that starts on page 21.

8 From the **Support** menu, select **Reflectance Profile**. Or press **F3**. The Reflectance Profile dialog box appears.

A good reflectance profile shows a scan with consistent amplitude (height), and the amplitude occurs between the yellow lines.

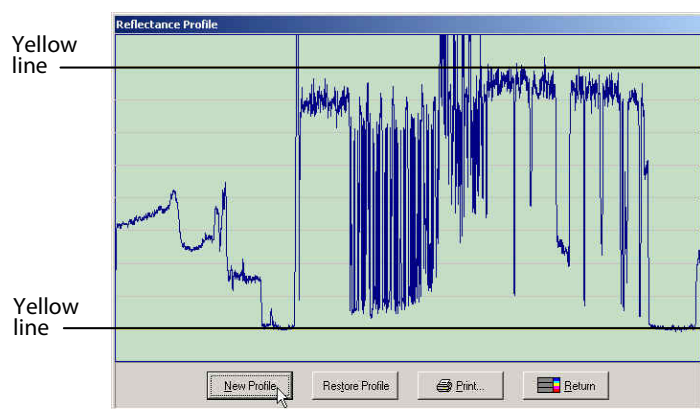


Good Reflectance Profile


A bad reflectance profile shows a scan with amplitude outside the yellow lines and having inconsistent values.

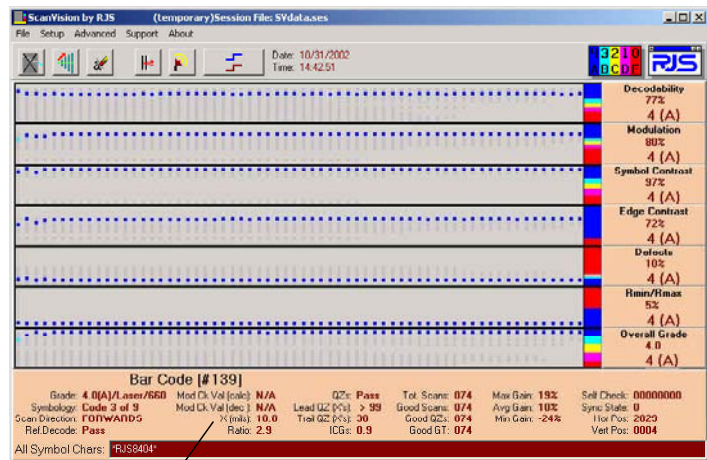


Note: Make sure the media cover is on the printer. The media cover helps reduce the amount of light on the bar code label. With too much light, the bottom edge of the reflectance profile may appear jagged, as shown below.



Bad Reflectance Profile

- 9 To get a better reflectance profile, perform the steps in “Fine Tuning Your Reflectance Profile” on page 46.
- 10 Click **Return** to clear the Reflectance Profile dialog box.
- 11 Click the **Induce a new bar code analysis** button . The Bar Code Analysis screen refreshes.



The **X (mils)** parameter contains the X dimension.

12 Make sure the X dimension shown in the bottom of the Bar Code Analysis screen is within ± 0.1 mil of 10 mils, which is the size of the calibration bar code.

- If the X dimension is too large, move the OLV up (away from the bar code).
- If the X dimension is too small, move the OLV down (toward the bar code).

13 Repeat Steps 8 through 12 until the Reflectance Profile and X dimension are correct. The OLV is ready to verify labels with picket fence bar codes.

Your next step is to calibrate the OLV, as described in "Calibrating the OLV" on page 46.

Adjusting the Position of the OLV for Ladder Bar Codes

To make sure that the OLV scans the ladder bar codes at the correct size and in the correct orientation, you need to use the alignment guide, ScanVision, and the calibration bar code as described next.

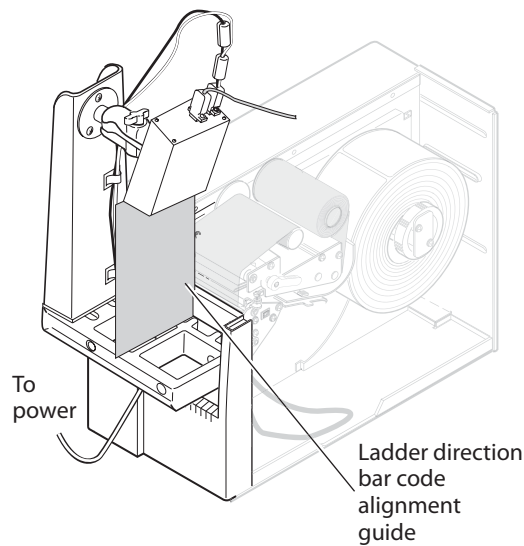
Following this procedure, you also specify the start and stop position of the scan. The Ladder Direction Bar Code Alignment Guide can help you set the start and stop position relatively close to the tear bar. If your print job requires a start and stop position further from the tear bar, you may need to adjust the position of the OLV without using the alignment guide.



Note: If you are printing picket fence bar codes, do not perform these steps. Skip ahead to “Calibrating the OLV” on page 46.

To position the OLV for ladder bar codes

- 1 Rotate the OLV 90° so that the laser beam is aimed to strike a ladder direction bar code. For help, see the illustration on the next page.
- 2 Use the Ladder Direction Bar Code Alignment Guide to position the OLV. See the callouts on the alignment guide for help:
 - a Rest the bottom edge on the horizontal base.
 - b Place the notch against the tear bar.
 - c Align the guide against the side of the OLV that contains the laser exit window, along the edge closest to the double socket arm.



- 3 Loosen the T-knob just enough to allow you to adjust the OLV so that the laser exit window aligns with the cutout edge of the guide.




Note: You may need to rotate the RAM mount so that the T-knob is 30° down instead of pointing straight up.

- 4 Tighten the T-knob to secure the OLV in place. Do not let the OLV move as you tighten the T-knob.
- 5 Carefully replace the media cover on the printer.



Note: You may need to adjust the position of the new bezel and plate if the plate hits the label taken sensor (for self strip) or blocks the path of the laser beam. To adjust the position, change the location of the screws in the slots in the new bezel and plate. For help, see Steps 3 and 4 of the procedure that starts on page 21.

- 6 Click the **Transmit String** button  to open the Transmit String dialog box.


- 7 Enter ~Lp0 and then click **Transmit** to turn off partial decodes. Close the Transmit String dialog box.
- 8 From the Advanced menu, select **Toggle Additional Results**. Additional values should now appear on the bottom of the screen including **Max Gain** and **Hor Pos**.
- 9 Place the calibration bar code under the laser beam in the same position as your bar code will appear on the label during your next print job. Make sure the end of the bar code furthest from the tear bar is positioned approximately where your bar code will start. This will be the start position of the scan.

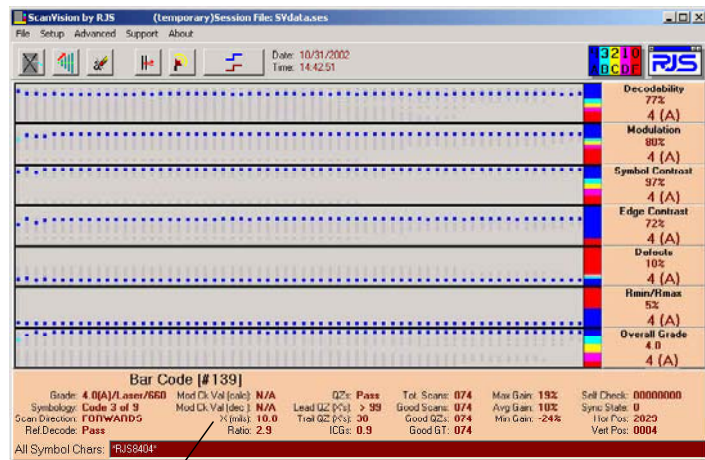


Note: You may need to insert the calibration bar code under the printhead to make sure that the laser beam is on the bar code. Raise the printhead, insert the calibration bar code between the printhead and main platen, and close the printhead.




Note: You can gently crease the calibration bar code so that it slopes away from the tear bar parallel to the OLV laser exit window.

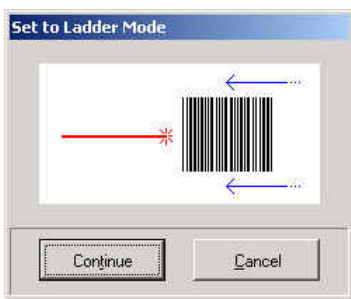
- 10 Click the **Induce a new bar code analysis** button . The Bar Code Analysis screen refreshes.



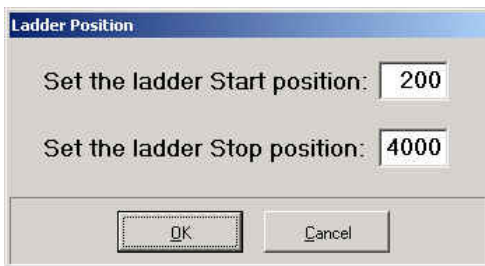
The **X (mils)** parameter contains the X dimension.

- 11 Make sure the X dimension shown in the bottom of the Bar Code Analysis screen is within ± 0.1 mil of 10 mils, which is the size of the calibration bar code.
 - If the X dimension is too large, move the OLV up (away from the bar code).
 - If the X dimension is too small, move the OLV down (toward the bar code).
- 12 Make note of the value shown in the **Hor Pos** field. This value indicates the start position of the scan.
- 13 Move the calibration bar code closer to the tear bar. Make sure the end of the bar code closest to the tear bar is approximately where your bar code will end. This will be the stop position of the scan
- 14 Click the **Induce a new bar code analysis** button . The Bar Code Analysis screen refreshes.
- 15 Make sure the X dimension is still correct, as described in Step 11.
- 16 Make note of the value shown in the **Hor Pos** field. This value indicates the stop position of the scan.

- 17 From the **Setup** menu, choose **Ladder Mode**. The Set to Ladder Mode dialog box appears.



- 18 Click **Continue**. A dialog box appears telling you ScanVision is setting the OLV to Ladder Mode and then the Ladder Position dialog box appears.



- 19 Type the value you noted in Step 12 in the **Set the ladder Start position** field. This should be the smaller of the two values you recorded.
- 20 Type the value you noted in Step 16 in the **Set the ladder Stop position** field. This should be the larger of the two values you recorded.
- 21 Click **OK**.
- 22 If you want to enable partial decodes, from the main menu select **Transmit String**, enter ~Lp1, and then click **Transmit**. Close the Transmit String dialog box. The OLV is now ready to scan ladder bar codes.

Your next step is to calibrate the OLV, as described in the next section.

Calibrating the OLV

You need to calibrate the OLV to make sure the scanning distance and orientation of your labels is acceptable.

- 1 Run ScanVision.
- 2 From the **Setup** menu, select **Moving Codes Mode**.
- 3 From the **Setup** menu, select **Picket Fence Mode**.
- 4 Make sure the calibration bar code is still under the laser beam in the same position that your bar codes will appear on the label.
- 5 Press and hold the **Reset** button until the Calibration LED begins to flash, and then release the **Reset** button.
- 6 Wait for the laser beam and the Calibration LED to turn off, which indicates that the OLV is calibrated.
- 7 Remove the calibration bar code.
- 8 Press and release the **Reset** button to turn the laser beam on.


Fine Tuning Your Reflectance Profile

If you were unable to achieve a good reflectance profile when adjusting the position of the OLV, or if you use flood-coated media, you need to follow the instructions in this section.

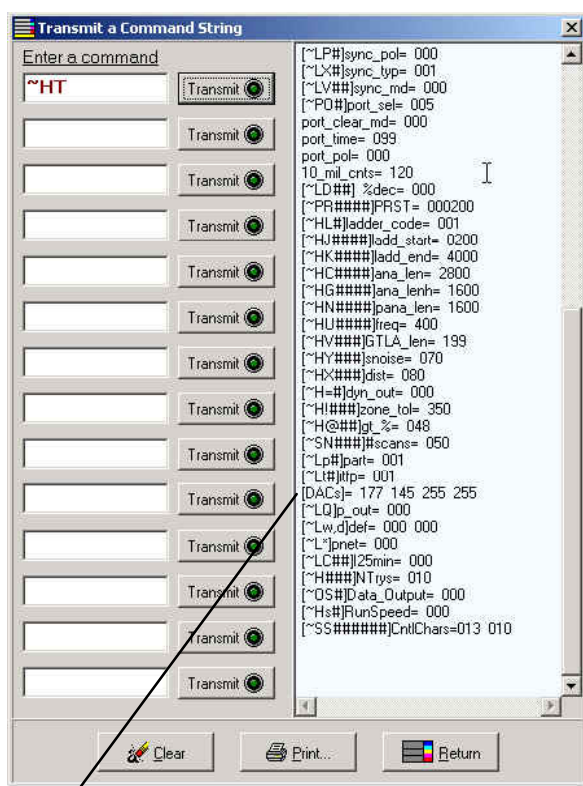
Specifically, this section lets you adjust the way ScanVision converts the analog input to its digital output. You set a new value for gain and offset, which affect the reflectance profile as follows:

- Gain controls the amplitude (height) of the reflectance profile. A high value creates a taller profile.
- Offset controls placement of the reflectance profile on the graph. A high value moves the profile lower.

To adjust the gain and offset

- 1 From ScanVision, click the **Transmit String** button  to open the Transmit String dialog box.
- 2 Enter ~HT in the first blank field on the left side of the dialog box.

- 3 Click **Transmit**. ScanVision responds by displaying the current OLV parameters on the right side of the dialog box.



The [DACs] line specifies the gain (177) and offset (145).

- 4 In the screen shown above, locate the line that reads:

[DACs]= 177 145 255 255

The 177 is the gain setting and the 145 is the offset setting.

- 5 To change the gain setting, enter ~Hd101aaa into the next blank field, where *aaa* is the new value for the gain setting:
 - If the reflectance profile does not cover at least six lines on the graph, it is not tall enough. The *aaa* value needs to be increased. Try increasing it by 25. In this example, the value would go from 177 to 205. The maximum is 225.
 - If the reflectance profile covers more than six lines on the graph, it is too tall. The *aaa* value needs to be decreased. Try decreasing it by 25. In this example, the value would go from 177 to 152.
- 6 To change the offset setting, enter ~Hd201bbb into the next blank field, where *bbb* is the new value for the offset setting:
 - If the reflectance profile is located above the upper yellow line on the graph, it is too high. The *bbb* value needs to be decreased. Try decreasing it by 25. In this example, the value would go from 145 to 120.
 - If the reflectance profile is located below the lower yellow line on the graph, it is too low. The *bbb* value needs to be increased. Try increasing it by 25. In this example, the value would go from 145 to 170.
- 7 Press **F3** to produce a new reflectance profile and see the effect of the new values.
- 8 Repeat Steps 3 through 7, changing the gain and offset values until the reflectance profile is good.
- 9 In the Transmit String dialog box, enter ~Hx and click **Transmit** to save the new gain and offset settings. The OLV will use these new settings when you turn it on.

Designing and Printing Bar Code Labels

When you use the OLV, you need to follow these limitations for the design and printing of bar code labels.

Media Limitations

For best results with the OLV, print black bar codes onto white labels. Do not use metallic media with the OLV.

You may achieve acceptable results using flood-coated media with the OLV. Using flood-coated media requires additional steps during installation, as described in “Fine Tuning Your Reflectance Profile” on page 46.

Minimum Label Length

If you use Reprint Mode, the minimum label length is 12.7 mm (0.5 in).

If you use No Reprint Mode, the minimum label length is 25.4 mm (1 in).

Configuring the Number of Bar Codes Per Label

You need to configure the OLV with the minimum number of bar codes to be verified on each label. This number may need to change for each print job you perform.

To configure this parameter, you can choose one of these methods:

- Using ScanVision, select the **Setup** menu and choose **Minimum Codes per Sync** to set the number.
- Using the default IntermecOLV.cfg configuration file, set the parameter to one bar code per label. Or create customized configuration files that set the parameter to different values. For help, see “Sending the Configuration File to the OLV” on page 30.

Maximum Number of Bar Codes Per Label

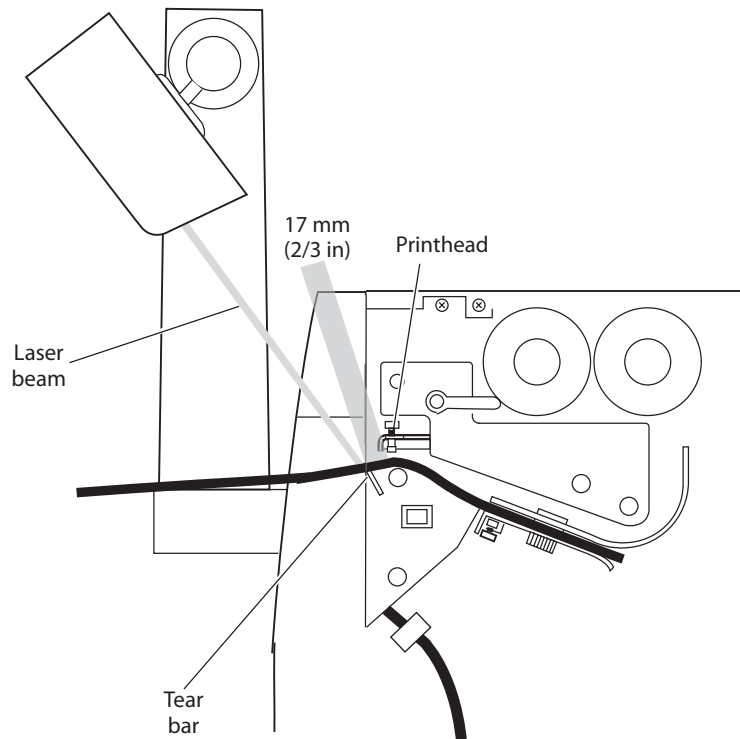
If you are printing picket fence direction bar codes, you can fit up to four bar codes across (width) and twelve bar codes down (length), totaling up to 48 bar codes per label.

If you are printing ladder direction bar codes, you can verify one bar code on each label.

No Reprint Mode

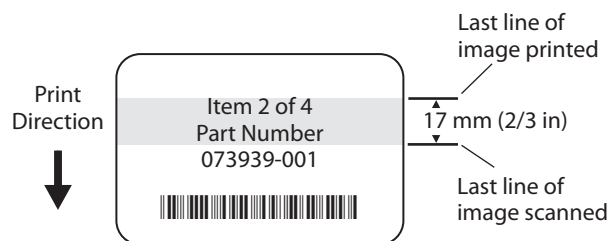
In No Reprint Mode, the start and stop of the OLV scan is controlled by the beginning and end of the image being printed, not by the beginning and end of the physical label. The OLV stops scanning when the last line of the image has been printed.

In a typical printer, there is approximately 17 mm (2/3 in) of space between the OLV scan line and the printhead. That means that the last 17 mm (2/3 in) of the printed image does not pass under the laser beam, so it is not scanned by the OLV.



Setting up the OLV for No Reprint Mode

When you design a label to be printed in No Reprint Mode, make sure that you do not place any bar codes in the last 17 mm (2/3 in) of the printed image.



Area Not Scanned: The gray area on the sample bar code label indicates the last 17 mm (2/3 in) of the printed image that is not scanned.

Here are four designs to consider:



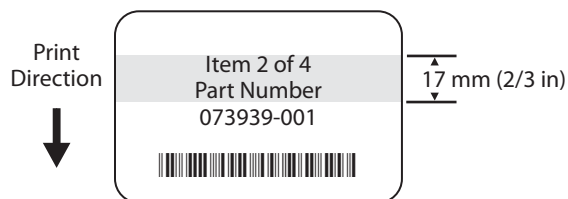
Design 1: This design is unacceptable because the OLV stops scanning before it reaches the bar code.



Design 2: This design is acceptable because the dot printed at the trailing edge (in the upper right corner) of the label causes the OLV to keep scanning until it reaches the last 17 mm (2/3 in) of the label.



Note: Remember, the start and stop of the OLV scan is controlled by the beginning and end of the printed image, not by the beginning and end of the physical label. The OLV stops scanning when the last line of the image has been printed.



Design 3: This design is acceptable because the bar code appears at the beginning of the printed image.



Design 4: This design is acceptable because the dot at the trailing edge causes the OLV to keep scanning. The company logo on this label does not affect the start or stop of the OLV scan because the logo was pre-printed on the media.

Self-Strip and Batch Takeup

Be aware of these considerations when using self strip or batch takeup with the OLV.

- If you print self-strip bar codes, the label taken sensor is installed on the tear bar. This sensor is in the way of the OLV laser beam when you select Reprint Mode, so you need to position the beam in front of the tear bar instead of directly on it. This affects the design of your bar code labels because the entire label will not pass under the beam. Make sure that you do not include a bar code that must be verified in the space between the scan line and the printhead, where it cannot be scanned.
- If you print ladder direction self strip bar codes, you must make sure that the IPL command Label Rest Point, Adjust (<SI>f \bar{n}) is set correctly for the type of media you are using. You can use PrintSet to set this command.
- You cannot use batch takeup when printing ladder direction bar codes longer than 11.43 cm (4.5 in).

Ladder Direction Bar Codes

The OLV can verify only one ladder bar code per label.

The laser beam cannot be aimed so that it strikes both of these bar codes. You need to select which bar code you want verified. Aim the laser beam onto the one bar code you want verified.



Reacting to Failed Bar Codes

When the OLV fails a bar code, LED 1 or LED 2 turns on. The printer retracts the failed label, prints **VOID VOID VOID** along the trailing edge, and then waits for operator intervention.

To clear a voided label

- 1 Check the OLV back panel to see if LED 1 or LED 2 is on.
- 2 Consult the table on the next page to determine the cause of the failure, and perform the recommended solution.
- 3 Push the Feed/Pause button to continue:
 - In Reprint Mode, the printer reprints the label once. If the reprinted label also fails, push the Feed/Pause button to print the next label in the print job.
 - In No Reprint Mode, the printer does not reprint the label. Instead, the printer prints the next label in the print job or waits for another label to be sent to the printer.

To receive a status code when the OLV voids a label

- The <BEL> status code indicates that the OLV has voided a label and is waiting for operator intervention. You can use IPL commands Status Enquiry (<ENQ>) or Status Dump (<VT>) to request status. The printer does not auto-transmit the <BEL> status code.

Online Verifier Error Conditions and Suggested Solutions

LED Status	Error Condition	Solution
LED 1 is on	<p>Quiet zone failure: The quiet zone is the white area extending on both sides (past start and stop) of the bar code.</p> <p>ANSI failure: The bar code did not meet ANSI print grade requirements.</p> <p>Contrast failure: The printing is too light or too dark.</p>	<p>Redesign the bar code label. For help, see your printer user manual.</p> <p>Clean the printer as described in the printer user manual.</p> <p>For help, see your printer user manual.</p>
LED 2 is on	<p>Ribbon wrinkle: Problems with the media can cause the bar code to fail.</p> <p>Print quality: Problems with the print quality can cause the bar code to fail.</p> <p>Dot missing: The printhead may have a dot missing.</p>	<p>For help, see your printer user manual.</p> <p>For help, see your printer user manual.</p> <p>Perform the ScanVision pitch test. If a white line appears, there is a dot missing. Clean the printhead.</p>
Either LED 1 or LED 2 is on	<p>OLV moved: The OLV may have been accidentally moved from the correct position.</p> <p>Good Scans too high: The Good Scans parameter may be set too high for the speed of the media and the height of the bar codes being scanned.</p>	<p>Adjust and calibrate the OLV.</p> <p>Decrease the number of good scans by customizing the configuration file; for help, see page 32. Or use the -LS SV100 command; for help, see the <i>SV Series Scanner/Verifier Operator's Guide</i>.</p>
Both LED 1 and LED 2 are on	<p>Configuration file lost: The OLV may have lost its configuration settings.</p>	<p>Resend the configuration file. For help, see page 31.</p>

Specifications

Physical Specifications	
Package:	112 mm (4.4 in) x 61 mm (2.4 in) x 132 mm (5.2 in)
Indications:	5 LEDs – Power/Sync, Calibration, Read, LED 1, LED 2
Communications Port:	DB-9 male, RS 232C, programmable baud rate
I/O Power:	DB-15 male, 5 programmable outputs, 2 sync inputs - +5 VDC @ 1 amp required
Mounting:	2 sets of mounting holes on 2 different surfaces or a clamp for tightening to a 9.5 mm (3/8 in) rod

Environmental Specifications	
Operating Temperature:	4°C to 41°C (40°F to 105°F)
Storage Temperature:	-20°C to 60°C (-4°F to 140°F)
Humidity:	10% to 90% non-condensing
Ambient Light:	Not to exceed 0.5 mWatts/sq-mm 600 nm to 700 nm

MTBF Specifications	
10,000 hours (estimated) dominated first by motor life and then by laser life	

Laser Scanner Specifications	
Scan rate:	400 scans/second, ± 2 scans/second
Laser power:	3.0 mW, ± 0.5 mW
Wavelength:	650 nm to 670 nm
Beam shape:	Elliptical, RJS proprietary design for detection of print failure mechanisms
Class IIIa Laser Product:	See details in the <i>SV Series Scanner/Verifier Operator's Guide</i>



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Online Verifier Kit Installation Guide



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