

***MICRImage***  
**CHECK READER**  
**TECHNICAL REFERENCE MANUAL**

**Manual Part Number: 99875173 Rev 8**

**AUGUST 2003**

**MAGTEK<sup>®</sup>**

**REGISTERED TO ISO 9001:2000**

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### REVISIONS

Rev Number	Date	Notes
1	20 Oct 00	Initial Release
2	27 Jun 01	Front Matter: Changed Limited Warranty to exclude Scan Bar. Sec 2: Added two cabling diagrams, Terminal and Auxiliary Device and PC and Net Connection. Moved Check Path Cleaning to Sec 3.
3	2 Aug 01	Front Matter, Agency page: Editorial changes to CE and UL/CUL.
4	12 Oct 01	Front Matter: New Figure 1-1, added MSR. Section 1: Added description and P/N of MSR. New Table 1-1, added list of cables. Table 1-2 changed document size from 9" to 8.5" max.. Editorial Changes. Section 2: New Figure 2-1, added MSR and editorial changes. Section 3: New Figure 3-2, added MSR orientation Modified Figures 3-3 and 3-4, added new procedure for opening and closing unit for imaging bar. New Figures 3-5 and 3-6 for new cleaning procedures. Modified Figure 3-7 for closing.
5	9 May 02	Sec 1: Added 2 more Configurations and clarified features; added 1 more Cable; clarified Spec for interface option. Sec 2: changed Fig 2-4 and 2-5 for clarification. Sec 3: Clarified Card Reading Procedure.
6	16 Jul 02	Front Matter: Added FCC, Part 68 Notice. Changed MagTek to MagTek throughout. Sec 2: Changed title of Fig 2-5 from "Net" to "Ethernet or Modem."
7	27 May 03	Front Matter: added ISO line to logo, changed Tech Support phone number, added new warranty statement
8	18 Aug 03	Sec 1, Features: Deleted "Horseshoe design..." Added "Horseshoe check path..." and "Configurable Enhanced Reading (ER) ..."

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This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

## **FCC COMPLIANCE STATEMENT**

This device complies with Part 15 Of The FCC Rules. Operation of this device is subject to the following two conditions: (1) This device may not cause harmful interference. And (2) This device must accept any interference received, including interference that may cause undesired operation.

## **CANADIAN DOC STATEMENT**

This digital apparatus does not exceed the Class A limits for radio noise for digital apparatus set out in the Radio Interference Regulations of the Canadian Department of Communications.

Le présent appareil numérique n'émet pas de bruits radioélectriques dépassant les limites applicables aux appareils numériques de la classe A prescrites dans le Règlement sur le brouillage radioélectrique édicté par le ministère des Communications du Canada.

## **CE STANDARDS**

Testing for compliance to CE requirements was performed by an independent laboratory. The unit under test was found compliant to Class A.

## **UL/CSA**

This product is recognized per Underwriter Laboratories and Canadian Underwriter Laboratories 1950.

## FCC PART 68 NOTICE

The following refers to MICRImage readers with internal modem only:

This equipment complies with Part 68 of the FCC rules and the requirements adopted by the ACTA. On the bottom cover of this equipment is a label that contains, among other information, a product identifier in the format US:AAAEQ##TXXXX. If requested, this number must be provided to the telephone company.

The registration jack Universal Service Order Code (USOC) used by this equipment is RJ-11C. A plug and jack used to connect this equipment to the premises wiring and telephone network must comply with the applicable FCC Part 68 rules and requirements adopted by the ACTA. A compliant modular plug is provided with this product. This equipment is designed to be connected to a compatible modular jack using a telephone cord that is also compliant. See installation instructions for details.

The REN is used to determine the number of devices that may be connected to a telephone line. Excessive RENs on a telephone line may result in the devices not ringing in response to an incoming call. In most but not all areas, the sum of RENs should not exceed five (5.0). To be certain of the number of devices that may be connected to a line, as determined by the total RENs, contact the local telephone company. The REN for this product is part of the product identifier that has the format US:AAAEQ##TXXXX. The digits represented by ## are the REN without a decimal point (*e.g.*, 03 is a REN of 0.3).

If the MICRImage with internal modem equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. But if advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations or procedures that could affect the operation of the equipment. If this happens the telephone company will provide advance notice in order for you to make necessary modifications to maintain uninterrupted service.

If you experience trouble with this equipment, refer to the page titled Limited Warranty near the front of this manual for contact, repair or warranty information. If the equipment is causing harm to the telephone network, the telephone company may request that you disconnect the equipment until the problem is resolved.

There are no user serviceable parts on the modem contained inside this equipment.

Connection to party line service is subject to state tariffs. Contact the state public utility commission, public service commission or corporation commission for information.

If your business has specially wired alarm equipment connected to the telephone line, ensure the installation of the MICRImage with internal modem does not disable your alarm equipment. If you have questions about what will disable alarm equipment, consult your telephone company or a qualified installer.

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**Figure 1-1. MICRImage Check Reader with MSR**

## SECTION 1. OVERVIEW

The MICRImage™ Check Reader is both a MICR Reader (Magnetic Ink Character Recognition) and a check-imaging device. The MICRImage reads the MICR character set at the bottom of a check, and the Imager produces a digitized image of the entire check. The characters and the image can be transmitted to a Host device. The Host device then uses a specific authorization or verification process to validate a business transaction.

The MICRImage Reader improves accuracy and speed because there is no manual data entry; therefore there are no keying errors or unwanted delays.

Both the MICR Reader and the Imaging device will communicate with the Host system using a standard RS-232 interface (contact the factory for other interfaces). MICR data is transmitted as ASCII characters (See Appendix B). The MICRImage Reader has the capability of supporting some hardware handshaking signals.

An optional three-track MSR autodiscriminates different card formats: ISO (International Standards Organization), CDL (California Drivers License), or AAMVA (American Association of Motor Vehicle Administrators).

### CONFIGURATION

Configurations are as follows:

Part Number	Description
22410002	MICRImage, RS-232
22410003	MICRImage, RS-232, with 3-Track MSR
22410004	MICRImage, RS-232, with Ethernet
22410005	MICRImage, RS-232, with Ethernet, 3-Track MSR
22410006	MICRImage, RS-232, with V. 34 Modem
22410007	MICRImage, RS-232, with V. 34 Modem, 3-Track MSR

### FEATURES

The following is a list of features of the MICRImage Reader:

- Full MICR check reader compatible with existing applications
- Horseshoe check path design allows capture of MICR data and check image in a single pass
- Configurable Enhanced Reading (ER) feature allows for automated confirmation of MICR data by comparing the results of multiple MICR reads (up to 3 reads).
  
- Automatic parsing of MICR fields: transit, account, etc.

## MICRImage Check Reader

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- Extensive list of formats to transmit MICR data.
- Capable of scanning 200 dpi image of entire front of check
- CCITT G4 Image Compression
- Ability to send complete image or user-specified portions
- Supports dual interface paths, one for MICR, one for image data
- Dual RS-232 Interface Support
- Models available with Ethernet or V. 34 Modem
- Optional 3-track MSR (Magnetic Stripe Reader)
- Reads E13-B and CMC-7 MICR fonts
- Dynamic Thresholding for image background removal

## ACCESSORIES

Accessories available for the MICRImage Reader include:

- Host Interface Cables (See Table 1-1)
- AC Power Adapter with Cable, 120VAC to 12 VDC, 1.5 Amp, Part Number 64300090
- MICRbase Program, Part Number 22000021
- Sample Checks, Part Number 96530005
- Cleaning Cards P/N 96700004
- Cleaning Swabs P/N 97200078

**Table 1-1. MICRImage Cables**

<b>Part Number</b>	<b>Description</b>
22410302	RS232, DB9F, gray, 8 ft.
22410306	RS232, DB9F + RS232, DB9F, gray, 8 ft.
22410307	RS232, DB9F + Ethernet, RJ8 socket, gray, 8 ft.
22410308	RS232, PC-DB9F + RS-232-DB25M, gray
22410309	RS232, PC-DB9F + RS-232-DB9M, gray
22410310	RS232, PC-DB9F + Modem RJ-11 Socket

## SPECIFICATIONS

Table 1-2 lists the specifications for the MICRImage Reader.

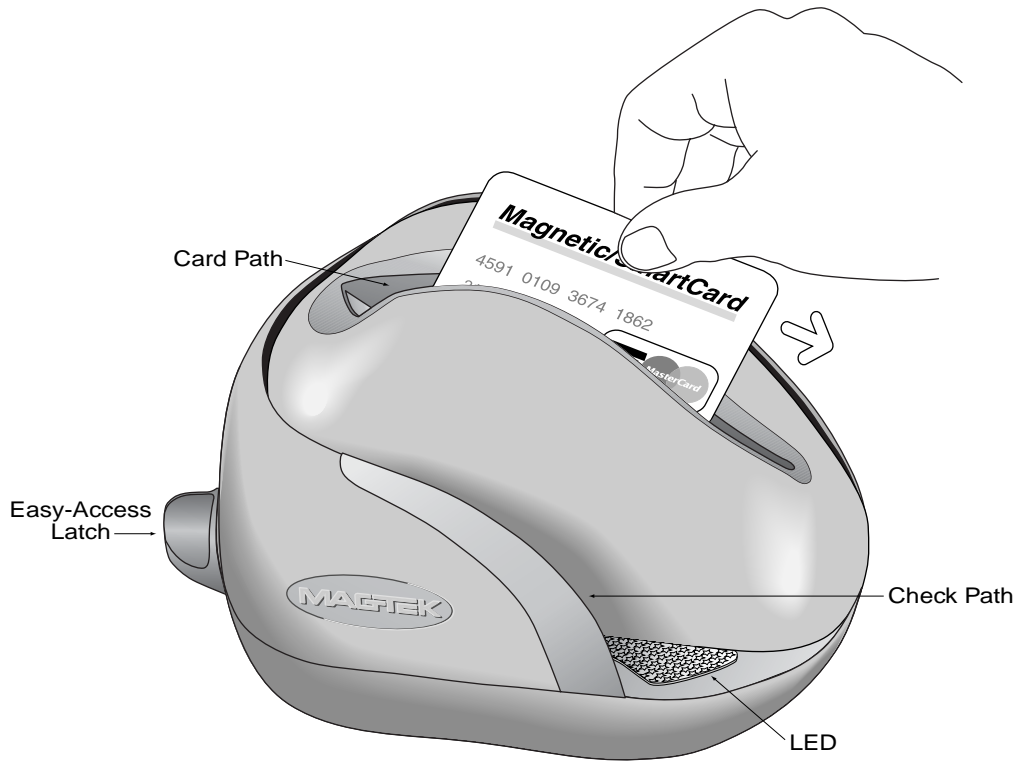
Table 1-2. Specifications

<b>OPERATING</b>	
Reference Standards	ANSI X9.27
Power Input	12VDC regulated, 1.5 Amp
Current (Idle) (Operating)	300 mA 1.5 A Max
MTBF	Electronics: 125,000 hours Check Read Head: 1,000,000 passes MSR Read head: 1,000,000 passes
Document Speed	10 ips
Document Size	4"x 8.5" Maximum
Image Resolution	200 dpi
MICR fonts supported	E13-B CMC-7
Interface Options	Primary: RS-232, RS-485, IBM 4683 Secondary: RS-232, Ethernet 10 Base-T, V.34 Modem
<b>MECHANICAL</b>	
Dimensions	Length 9.0", Width 3.9", Height 6.0"
Weight:	2.5 lbs. Adapter included
Connector: Power and Communication	DB25 female
<b>ENVIRONMENTAL</b>	
Temperature Operating Storage	0°C to 50°C (32°F to 122°F) -30°C to 70°C (-22°F to 158°F)
Humidity Operating Storage	10% to 90% noncondensing Up to 100% noncondensing
Altitude Operating Storage	0 -10,000 ft (0 - 3,048m) 0 - 50,000 ft (0 - 15240m)



## SECTION 2. INSTALLATION

The installation for the MICRImage Check Reader is described below. Figure 2-1 shows the unit with the MSR.



**Figure 2-1. MICRImage with MSR**

### REQUIREMENTS

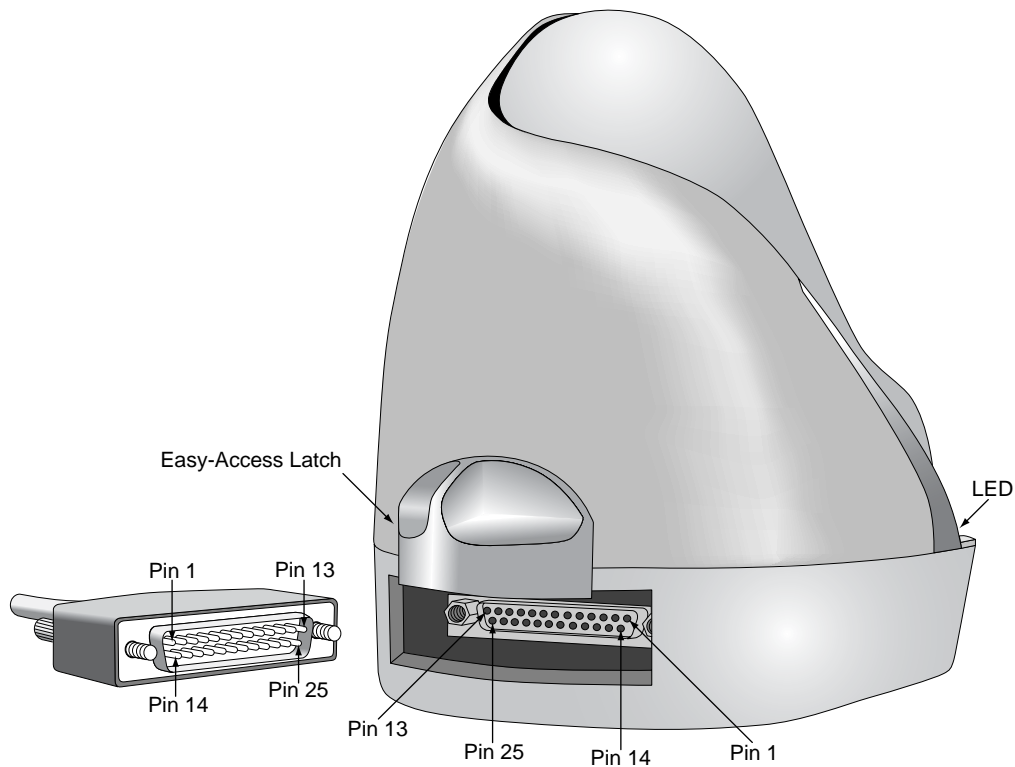
The following is required for the Installation:

- MICRImage
- Interface Cable,
- Power Adapter 12 VDC, 1.5 Amp

## **CABLING PROCEDURE**

The pin lists for all connections are shown in Appendix A. Perform the following steps:

1. Connect the male DB25 connector to the MICRImage as shown in Figure 2-2.



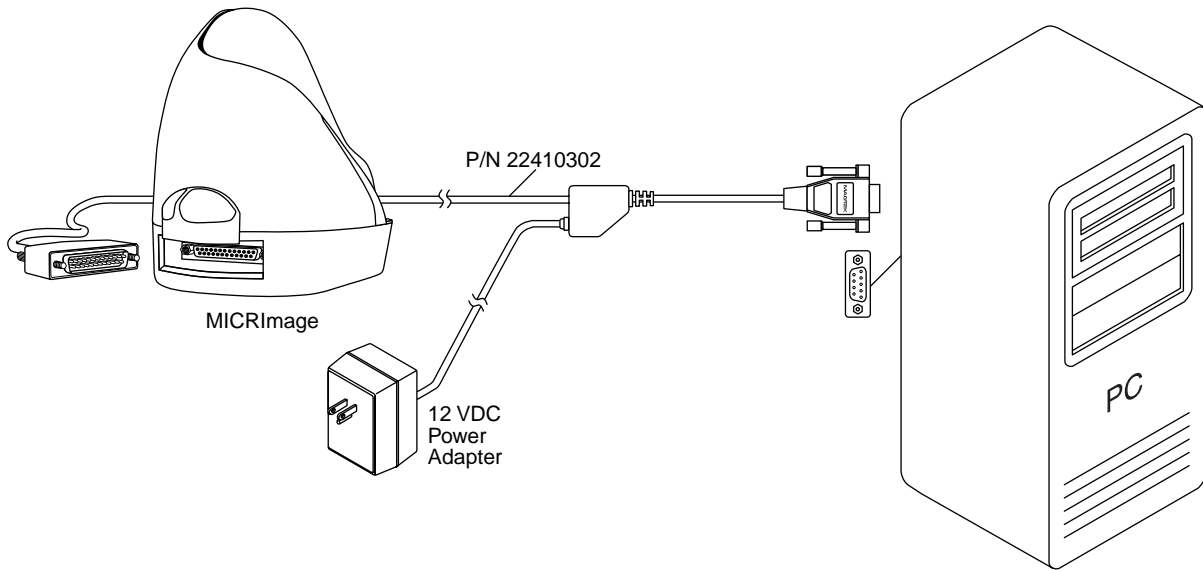
**Figure 2-2. DB25 Connection**

2. Connect the DB9 connector to the PC as shown in Figure 2-3, 2-4, and 2-5.
3. Connect RJ45 Jack to the network connection as indicated in Figure 2-5.
4. On the AC power adapter, connect the jack to the plug on the cable.
5. On the AC power adapter, connect the plug to the wall outlet.
6. The LED indicator on the MICRImage Reader should turn on to a steady green. The LED indicator is located on the slot where the check is first inserted for reading (see Figure 2-1).

**Caution**

*Do not place the MICRImage Reader within 6 inches of a computer monitor or power supply. These devices may cause undesirable interference with the check reading operation.*

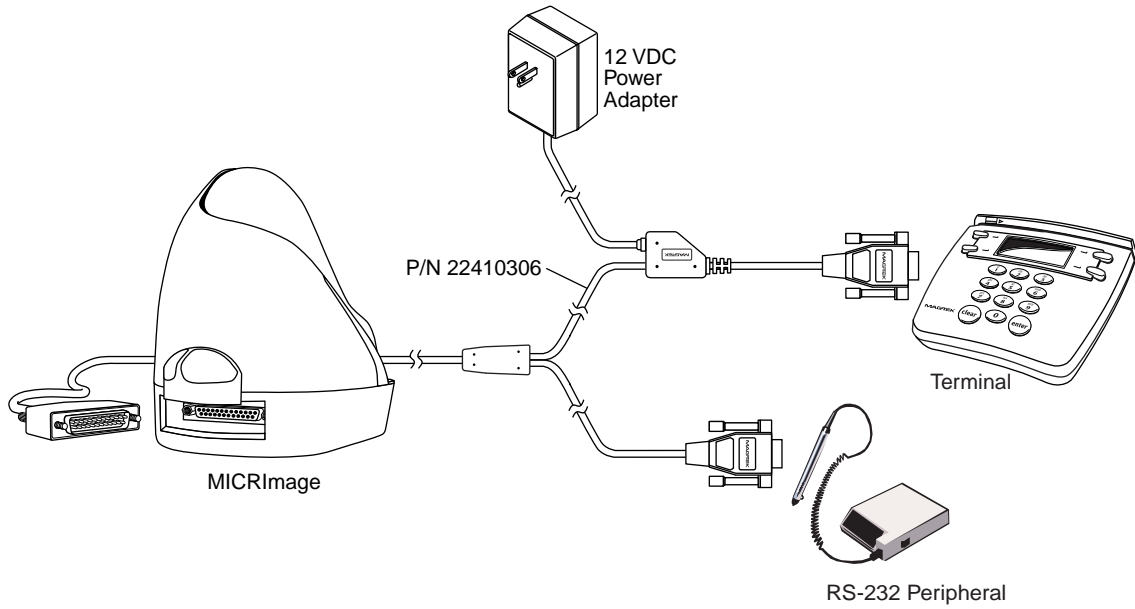
For a single PC, install the MICRImage cables as shown in Figure 2-3.



**Figure 2-3. Cabling – Single PC**

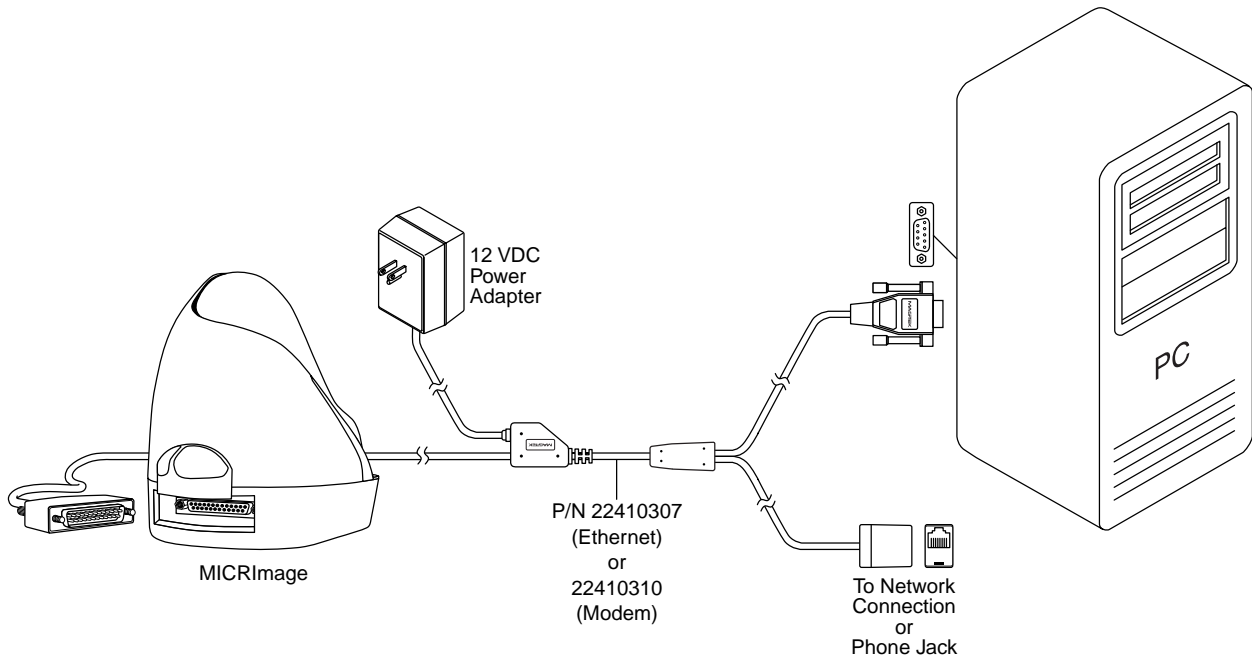
## MICRImage Check Reader

For a Terminal and Auxiliary Device, install the MICRImage cables as shown in Figure 2-4.



**Figure 2-4. Cabling –Terminal and Auxiliary Device**

For a PC and Network connection, install the MICRImage cables as indicated in Figure 2-5.



**Figure 2-5. Cabling – PC and Ethernet or Modem Connection**



**CARD READING PROCEDURE**

1. Orient the card so that the magnetic stripe is down and facing away from the logo on the unit and toward the wide color stripe on the MRS, as indicated in Figure 3-2.
2. Slide the card in one motion from the top of the unit down through the slot as indicated in the illustration.
3. After the card is read, the MICRImage will transmit the data as specified by the parameters.



**Figure 3-2. Optional Magnetic Swipe Reader Orientation**

## LED INDICATORS

Table 3-1 describes the LED indicator conditions for check and card reading operations. The LED indicator is located below the slot where the check is first inserted for reading.

**Table 3-1. LED indicators**

LED INDICATOR	DESCRIPTION
OFF	Power off
SOLID GREEN	Ready to read check or card
OFF→ SOLID RED	Check read error
OFF→ SOLID GREEN	Good read
FLASH GREEN	Needs initialization*
FLASH RED/GREEN	Magnetic Interference Detected
FLASH RED/GREEN	Data sensor blocked (motor does not run)*
FLASH RED	Motor sensor blocked (motor does not run)*

\*Refer to "Section 4. Troubleshooting Guide."

## CLEANING

Clean the outside of the MICRImage unit with a soft, damp cloth and wipe with a dry cloth.

### *Caution*

*To avoid damaging the read head, do not get the inside of the check or card paths wet.*

Use the Cleaning Card, P/N 96700004, on the MSR as described below. Use the Cleaning Swab, P/N 97200078, to clean the Imager Scan Bar as shown and described below.

### Opening the Unit

To open the check path and Imager, grip the access latch, and pull up and then back as shown in Figure 3-3.

### MSR Cleaning Card

Orient the cleaning card similar to Figure 3-2. Swipe the card two or three times to clean the head.





































